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MICROFILM DIVISION
BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
October 3, 1967 Volume 843 Number 1

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of August 1967

Examiner affirmed	145
Examiner affirmed in part	17
Examiner reversed	31
Total	193

Dedication

2,778,055.—*Fernand S. Lapeyre* and *James M. Lapeyre III*, New Orleans, and *Emile M. Lapeyre*, Houma, La. MACHINE FOR PEELING SHRIMP. Patent dated Jan. 22, 1957. Dedication filed Aug. 30, 1967, by the assignee, *The Laitram Corporation*.

Hereby dedicates the term of said patent to the People of the United States of America.

Termination of Daylight Saving Time

Attention is called to the Notice published in 837 O.G. 341, Apr. 11, 1967, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on Oct. 29, 1967.

Disclaimer and Dedication

3,314,932.—*Walter Scholl*, Cologne-Mulheim, and *Gerhard Dittmar*, Leverkusen, Germany. CHROMIUM COMPLEX MIXED AZO DYESTUFFS. Patent dated Apr. 18, 1967. Disclaimer and dedication filed Aug. 30, 1967, by the assignee, *Farbenfabriken Bayer Aktiengesellschaft*.

Hereby disclaims and dedicates that portion of the term of said patent subsequent to Nov. 30, 1982.

Disclaimers

2,882,662.—*Samuel J. Campbell*, Green Bay, Wis. HEAT SEALING PACKAGING MACHINE. Patent dated Apr. 21, 1959. Disclaimer filed July 28, 1967, by the assignee, *FMC Corporation*.

Hereby enters this disclaimer to claim 6 of said patent.

3,176,703.—*Hubert T. Sparrow*, Edina, Minn. PULSED FLUID AMPLIFIER. Patent dated Apr. 6, 1965. Disclaimer filed May 23, 1967, by the assignee, *Honeywell Inc.*

Hereby enters this disclaimer to claim 7 of said patent.

New Applications Received During August 1967

Patents	7377
Designs	377
Plant Patents	5
Reissues	36
Total	7795

Issue—October 3, 1967

Patents	1208	No. 3,344,433 to No.	3,345,640, incl.
Designs	94	No. 208,756 to No.	208,849, incl.
Plant Patents	1	No. 2,770	
Reissues	6	No. 26,274 to No.	26,279, incl.
Total	1309		

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 14, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	2-12-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	3-6-64	3-1-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	7-29-64	4-9-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	3-18-64	5-18-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-3-64	4-16-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-12-64	7-5-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	11-29-63	11-29-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1-8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	9-4-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1-14-66	8-25-65

Total number of pending applications (excluding Designs)	184, 300
Total number of Design applications pending	4, 448
Total number of applications awaiting action (excluding Designs)	135, 131
Total number of Design applications awaiting action	2, 411
Date of oldest new application awaiting action	Nov. 29, 1963
Date of oldest amended application awaiting action	Nov. 29, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during October 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents	Numbers 2,514,026 to 2,528,482, inclusive
Plant Patents	Numbers 962 to 965, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	1-3-66	9-8-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	6-10-65	2-7-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	2-15-65	1-30-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-12-66	12-2-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	10-3-65	4-29-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	8-23-65	9-13-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRED FORTESS AND WERNER A. P. SCHOENEBERG

No. 7578. Decided December 19, 1966

[— CCPA —; 369 F.2d 1009; 152 USPQ 13]

1. PATENTABILITY—REFERENCE—DISCUSSION OF PRIOR ART IN REFERENCE PATENT.
Held, with respect to references to the prior art in a patent, "The prior art thus referred to may be used for what it fairly teaches."

2. SAME—COMBINING REFERENCES—PROCESS.
"Regarding the process, we think it an obvious combination of two processing steps, each lending to the end products the desirable properties each is known to produce when practiced alone. We fail to find evidence of record of a coaction between the steps that produces unexpected results. *In re Williams*, 42 CCPA 988, 223 F.2d 291, 106 USPQ 192; *In re Mostovych*, 52 CCPA 884, 339 F.2d 455, 144 USPQ 38, 40. In such a case it is our view that one of ordinary skill in this art, having the references before him, would perceive the benefits of heat treating a superficially saponified triacetate fiber, or to saponify a heat treated triacetate fiber, without recourse to appellants' specification. No other combination of the references can be made. See *In re Shannon*, 53 CCPA 903, 356 F.2d 548, 148 USPQ 504, 507. The same would be true with regard to the optional and conventional steps of dyeing and bleaching (McKee), on neither of which steps appellants place significant reliance for patentability."

3. SAME—SAME—SAME—NO CO-ACTION BETWEEN STEPS.
"Although we grant there is no specific suggestion in either reference to combine it with the other step, we do not think it required in the circumstances of this case where both steps are taught to be part of the standard fund of modifications in the art, and the two steps do not coact in some mutually dependent way. The independence of the steps is evidenced, too, by the fact that they may be performed in any sequence, and that change in the control parameters of one does not appear to call for a critical change in any of those of the other—each is relatively separate and independent. The resultant properties appear clearly the sum of each step as acknowledged by the specification * * *."

4. SAME—OBVIOUSNESS—ARGUABLE DIFFERENCE.
"* * * an arguable difference where comparative evidence is clearly needed is not convincing."

5. SAME—SAME—STATIC ELECTRICITY IN FABRICS.
"Manifestly, from Mork and Briggs, appellants are not the first to surface saponify a cellulose triester filament. As taught by Mork, improved dyeability is expected and achieved. Appellants do not argue that the effect of raising the safe ironing temperature is unexpected. While that property is not specifically taught with regard to a cellulose triacetate, the British Celanese reference is pertinent as showing the effect of surface saponification in general to result in improvement of that value. British Celanese notes that the maximum increase to be expected cannot exceed pure cellulose or an entirely regenerated fiber. Regarding the anti-static property, the Examiner has commented, without challenge, that the property is entirely expected. Moreover, we think it generally known that there is an absence of static in cotton, the presence thereof on acetates, and that static electricity is a surface phenomenon."

6. SAME—PARTICULAR SUBJECT MATTER—"ANTI-STATICIZED CELLULOSE ESTERS."
The refusal of certain claims in an application entitled "Anti-Staticized Cellulose Esters," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 680,783.

AFFIRMED.

Marvin Turken for appellants.

Joseph Schimmel for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK[1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Patent Appeals affirming the rejection of process claims 1–7, 9–14 and 21, and product claims 17–20 in appellants' application Serial No. 680,783, filed August 28, 1957 for "Anti-Staticized Cellulose Esters."[2] No claims were allowed by the Examiner.

The invention relates to a process of producing surface-saponified, heat-treated filamentary material of cellulose esters, such as a cellulose triacetate fabric, and the products resulting therefrom.

The saponification is effected by the use of an aqueous solution of an inorganic alkali such as NaOH, and the result is a filament having a core of the original cellulose triacetate surrounded by a thin skin of regenerated cellulose. The saponification step can be carried out at a temperature ranging from about room temperature to the boiling point of the solution. The concentration of alkali can range from 25% to as little as 0.2% by weight. The duration of treatment can vary from as little as 15 seconds to as much as 90 minutes.

The heat treatment step may be carried out under the same conditions as are used for unsaponified triacetate material, and heat may be supplied by contact with hot air, steam, hot oil, molten metal, infra-red radiation, or high frequency electric field. The temperature will vary with the heat treating medium used, with optimum results being obtained at about 230° C. The material may be treated in the relaxed condition or while held under tension.

In addition to those two principal steps, a bleaching operation may precede the saponification step. Odors normally imparted by the bleaching agent, e.g. peracetic acid, are eliminated by the saponification alkali which serves to neutralize any residual bleaching agent. Although previously colored cellulose triacetate may be used, the fabric is generally dyed after the saponification step, with dyes of the well-known dispersed cellulose acetate type being preferred. The surface saponified material of the invention is disclosed to take up such dyes at substantially the same rate as the starting material before saponification. The "preferred" sequence of operation is surface saponification, coloring and heat treatment, although one may start with a heat-treated triester fiber.

The treated materials are disclosed to:

* * * exhibit permanent anti-static properties, a better hand, improved resistance to abrasion, better wettability by aqueous liquids such as printing pastes, freedom from odor, resistance to spotting and plasticizing, and the ability to be ironed at relatively high temperatures without damage.

Although the materials against which the above quoted improvements are observed is not explicitly stated, the subsequent paragraph further discloses that in the dyed condition the treated materials "exhibit better resistance to ozone-fading and gas-fading as compared with the usual filamentary materials made up of cellulose esters of low hydroxyl content," i.e., triesters.

The saponification decreases the tendency to stick to the hot iron and raises the safe ironing point temperature to about 220–230° C. from an original unsaponified and not heat-treated value of not above 190° C. The heat treatment raises the safe ironing temperature still further to about 240–250° C.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The application is stated to be "in part a continuation of our copending application Ser. No. 498,113, filed March 30, 1955."

The heat treatment increases the degree of crystallinity, and the crystalline order index, a measure of the size and perfection of the crystallites, and also improves the glazing resistance and shrinkage on pressing with most steam as compared to a non-heat treated or uncrystallized triacetate fiber. The core of the heat treated materials have a crystallinity and index substantially the same as a solid triacetate fiber that has been heat treated to have a safe ironing point about between 210–240° C. The improvement in the above-noted properties and in the safe ironing point are correlated with the increase in the crystalline order index.

Representative claims read:

21. Process for the treatment of textile material, which comprises saponifying the fiber surfaces of a textile material comprising fibers of a cellulose lower fatty acid ester containing at most 0.12 alcoholic hydroxyl group per anhydroglucose unit in the cellulose molecule thereof, with substantially the entire balance of the cellulose hydroxyl groups esterified wih the lower fatty acid radicals while leaving the fiber interiors intact, and treating the textile material to increase the crystallinity and crystalline order index of said intact fiber interiors.

17. Filamentary material comprising a core of cellulose acetate having an acetyl value of at least 61% by weight, calculated as acetic acid, surrounded by a substantially uniform integral skin of regenerated cellulose, ranging in thickness from about 0.05 to 0.3 micron.

19. Filamentary material comprising a plurality of filaments each ranging in denier from 2 to 6, each filament comprising a core of cellulose acetate of at least 61.5% acetyl value, surrounded by a substantially uniform integral skin of regenerated cellulose, the thickness said skin being such that the average acetyl value of each filament ranges from 58.5 to 61% by weight, calculated as acetic acid.

20. Filamentary material comprising a core of cellulose acetate having an acetyl value of at least about 61.5% by weight calculated as acetic acid and a safe ironing point of at least 230° C., surrounded by an integral skin of regenerated cellulose.

Claim 21 broadly calls for a "treatment" rather than a heat treatment step since it is disclosed that effects similar thereto may be achieved by the use of known swelling agents. The thickness of the regenerated cellulose outer skin is alternatively defined in claim 19 as an average acetyl value [3] of the whole filament as compared to the core value of at least 61.5%. Claim 20 is said to be drawn to the product as heat treated by reference to the safe ironing point value of the core. The remaining claims refer in more detail to the coloring step or colored product, to the bleaching step, or to the alkalinity values.

The Patent Office rejected all the claims as obvious variations, 35 U.S.C. 103, of the following references:

Briggs, 1,425,364, August 8, 1922.
McKee et al. (McKee), 1,767,543, June 24, 1930.
Dreyfus et al. (I), 1,884,623, October 25, 1932.
Dreyfus (II), 2,366,241, January 2, 1945.
Finlayson et al. (Finlayson), 2,862,785, December 2, 1958.
Mork (British), 20,672, February 9, 1911.
British Celanese (British), 304,596, January 21, 1928.

[3] Appellants brief states that it is understood in this art that the cellulose triacetate contains an average of 0.12 cellulosic or alcoholic hydroxyl group per anhydroglucose unit. that is, at most a single hydroxyl per about 8 anhydroglucose units. Their brief then defines "acetyl value" as follows:

> Another method which is well-understood in the art of defining cellulose triacetate is that it is a cellulose acetate having an acetyl value (abbreviated a.v.) of at least 59% calculated as combined acetic acid. This merely means that if a sample of cellulose triacetate is treated to remove all its acetate groups and convert them to acetic acid, the weight of such acetic acid will be at least 59% of the weight of the original cellulose triacetate sample. The theoretical acetyl value of completely esterified cellulose triacetate, i.e. which contains absolutely no cellulosic hydroxyl groups, is 62.5%. Thus, a cellulose triacetate having an acetyl value somewhere lower than 62.5% does contain a very few cellulosic hydroxyl groups but, in general, no more than 0.12 such hydroxyl group per modified anhydroglucose unit, as stated above.

High Polymers, volume 5, Emil Ott, Cellulose and Cellulose Derivatives, 230 (1956).

Work, 19 Textile Research Journal, 383,385 (1949).

All the claims were rejected primarily "over British Celanese taken with Finlayson in view of Briggs and Dreyfus II." British Celanese and Dreyfus I were relied on as teaching that surface saponification of "cellulose acetate" raises the safe ironing temperature and enhances dyeing properties. Finlayson discloses heat treating triacetate fibers. Mork is incorporated by reference in Briggs' background discussion of art prior to his invention, and relates to surface saponification of triacetate fibers. McKee was relied on only in connection with claims 3 and 13 calling for the bleaching step. McKee discloses bleaching cellulose ester fibers, including three made by the "cellulose acetate process," with "acetic peracid" (peracetic acid).

The Textile Research Journal article by Work was called to the Examiner's attention by appellants for the following point, all emphasis being added by us:

> *Cellulose acetate yarn*
>
> Although cellulose triacetate is not a textile material, it is always an intermediate in the manufacture *of the commercial grade of cellulose acetate, commonly known as secondary cellulose acetate.* This last is secured by hydrolyzing off the anhydroglucose ring some of the acetyl groups so that the average number of acetyls per anhydroglucose ring is less than 3 but more than 2, with the remaining groups (equal in number to the difference between the number of acetyls and 3) being hydroxyl groups, as in the original cellulose. * * *

That portion of Work was referred to by appellants as support for the view that what the art terms "cellulose acetate" is secondary cellulose acetate, not the triacetate with which appellants deal. Appellants' brief explains:

> A very important product of commerce in the fiber and textile arts is what is known technically as "secondary cellulose acetate," or "secondary acetate." Less technically this material is often referred to simply as "cellulose acetate" or simply as "acetate," often with no reference to its acetyl value or number of hydroxyl groups. In this material, while most of the cellulosic hydroxyl groups are replaced by acetate groups, there are a substantially greater number of cellulosic hydroxyl groups remaining in the cellulose acetate than is the case with cellulose triacetate. Thus, a typical secondary cellulose acetate contains an average of 0.5 hydroxyl group per modified anhydroglucose unit and has an acetyl value calculated as combined acetic acid of about 54.5%. It is to be reiterated that the unmodified terms "cellulose acetate" and "acetate" refer to secondary cellulose acetate; while *cellulose triacetate is sometimes referred to as "cellulose acetate,"* the latter term is always used in this case together with a statement further defining the material such as maximum number of hydroxyl groups, e.g., 0.12 per modified anhydroglucose unit or minimum acetyl value, e.g., no lower than 59% and preferably no lower than 61% or 61.5%. [Emphasis added.]

It is our view that the passage from Work is not conclusive that the art of record here insofar as it refers to "cellulose acetate," means *only* secondary cellulose acetate, and thus is not pertinent to the rejection of claims drawn to triesters. First, the passage quoted does not purport to establish that at the date of the references, "cellulose acetate" meant only secondary cellulose acetate. Nor does it purport to establish that one of ordinary skill at the time of the instant invention would consider that all prior references were thus referring to secondary acetate. It does establish that what is known as "the commercial grade of cellulose acetate" is now commonly known as secondary cellulose acetate. Further, the Briggs reference uses the term "cellulose acetate" in a manner that we consider to be inconsistent with

appellants' contention, that it universally meant secondary cellulose acetate. Briggs, for instance, appears to use the term more generically:

> This invention relates to the treatment of filaments, threads or fabrics of or containing cellulose acetate, having a lower degree of acetylation than triacetate, with the object of rendering them amenable to dyeing, and to the dyeing of such filaments, threads or fabrics.

A second passage of Work shows the significance of whether or not a given reference relates to secondary acetate:

> * * * Furthermore, it is impossible to produce an appreciably increased amount of short-order regularity [in secondary cellulose acetate] by an annealing operation, such as is the case with cellulose triacetate. * * * [4]

Since secondary acetate is not crystallizable, at least by heat treatment, a reference dealing therewith could not be combined with a reference relating to heat treatment of the triacetate to show the claimed process and product were obvious. Thus, with appellants' point about "cellulose acetate" in mind we must consider the references only for what they clearly and fairly teach.

Dreyfus II refers to its "cellulose acetate yarn" as having an acetyl value of 53.2%, which is, as appellants observe, a figure somewhat low even for secondary acetate. That being conclusive of Dreyfus II as relating to secondary acetate, we find its teachings not relevant to the rejection, and we will not further consider it. The earlier Dreyfus I reference is somewhat more ambiguous. It states, in pertinent part:

> An object of our invention is to increase the safe ironing point of textile materials containing organic esters of cellulose by the partial saponification of the same on the surfaces of the fibres thereof only. Other objects of our invention will appear from the following detailed description.
>
> * * * * * * *
>
> We have found that if textile materials containing organic esters of cellulose are treated with a limited quantity of an alkaline solution, and the same is quickly heated, intense saponification on the surface of the fibres of a material takes place, whereby the safe ironing point is raised and the textile material may dye evenly.
>
> * * * * * * *
>
> The fabric treated by our invention is made of fibres of cellulose esters which is intensely saponified on the surface of the fibres. By this is meant that only the outer skin or layer of the fibre is saponified to substantially completely reconstituted cellulose, while the interior of the fibre consists of practically unaffected organic ester of cellulose. This is indicated by the fact that if a textile material comprising yarns of acetone soluble cellulose acetate is treated by our invention so that it suffers a loss of weight of say 6% by the saponification, the resultant product is almost completely soluble in acetone, whereas a cellulose acetate of corresponding acetyl value [5] which is not saponified on the surface is not soluble in acetone. * * * Thus when a cellulose acetate fabric having a safe ironing point of 220° C. is treated by our process, its safe ironing point is raised to 260° C., 290° C. or more.

In view of appellants' statements that a triacetate would have a safe ironing point of more nearly 180–190° C., and a secondary acetate is acetone soluble while the triacetate is not, Dreyfus II appears to be fairly construed as more relevant to secondary acetates than triacetates or generic to both.

Although keeping in mind the technical dificiencies in those references, we do view them as teaching something about surface saponification in general, and resultant improvement in the safe ironing temperature and resistance to acid fading properties of the given fibers. Similarly, we consider the British Celanese reference in referring to "cellulose acetate" does have pertinence in what it teaches about superficial saponification in general:

> It has been found that when a material containing cellulose acetate or other organic ester of cellulose is saponified, the safe ironing temperature is progressively raised with increase in the degree of saponification. Thus, for example, if cellulose acetate material is saponified to an extent corresponding to a loss in weight of 1% of the cellulose acetate it may be safely ironed at 230° C., while saponification corresponding to a 3% loss in weight raises the ironing point to 250° C. With a saponification corresponding to a 5–6% loss in weight the ironing temperature is raised to about 260° C. The saponification may be carried to a degree corresponding to a loss in weight of 10% or even more if desired, but it is obviously of no advantage to raise the safe ironing temperature above 260° C., since cotton itself scorches at this temperature and in fact the cellulose of the cellulose acetate also begins to scorch irrespective of any melting of the cellulose acetate.

From our review of the Board's position it seems clear that the above references were relied on for such general teachings, particularly since the following references of record do explicitly relate to the triacetate, and form the primary and most relevant combination of references.

Although Briggs is also drawn to a "superficial alkaline saponification" treatment for a secondary cellulose acetate, Briggs refers specifically to prior art [6] concerning the triacetate:

> The saponification of triacetates of cellulose to remove acetyl groups by treatment with saponifying agents, e.g. heating with alkaline solutions, is generally known, see for instance Cross and Bevan, "Researchers on Cellulose" 11 (1906), page 11.
>
> * * * * * * *
>
> So far as triacetates are concerned, it has been proposed (see for example British Patent 20672 of 1910 [Mork]) to partially saponify the cellulose acetate in threads, fabrics or materials made therewith, in order to render them more amenable to dyeing.

That reference to a British patent is recognized as the Mork reference. Briggs confirms the improved dyeability with all types of dyes on "surface-saponified" secondary cellulose acetates, while the strength, dry or wet and other valuable properties of the original cellulose acetate is retained. Briggs may perform saponification and also dyeing either consecutively or in one operation.

Mork "relates to a process for obtaining the lower acetates of cellulose from the higher acetates more particularly for the production of sheets of filaments." Mork may use either NaOH or ammonia, and notes that the process does not result in the di- or monoacetate but that the *amount* of acetate groups left in the cellulose acetate is the same quantity as in the di- or monoacetate. Mork states further that "it is not the purpose of my process to produce a definite chemical compound however, but merely to carry on a partial saponification."

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[4] Although the Ott reference was relied on at p. 230 for a different point that we need not consider here, appellants ask us to take judicial notice of another passage in the same reference at p. 342 that tends to confirm the crystallizability point of Work:

> * * * Thus, cellulose acetate rayon in which the D.S. is about 2.5 usually exhibits low crystalline order, and no practical method of controlling the order in various products as in the case of viscose rayon is known. * * *

We note still another passage from Ott at p. 344 that puts the above in proper context:

> * * * The secondary cellulose acetates of commerce are generally not very crystalline and *cannot be readily crystallized by heat* below the softening point. However, crystallization *occurs readily* at temperatures of the order of 100° to 150° C. *in the presence of limited swelling reagents* such as diacetone alcohol, * * * 5% dioxane in water, * * * methanol, * * * or water vapor. [Emphasis added.]

It will be recalled that such treatments other than heat are contemplated as part of the claimed invention herein.

[5] We take "a cellulose acetate of corresponding acetyl value" to mean corresponding to the saponified product, else the quotation would appear to make more sense if the first reference to "acetone soluble" were to read acetone *insoluble*. The ambiguity is not clarified even taking the reference to be referring to secondary acetate, since its disclosure of "an outer skin" of "completely reconstituted cellulose" we are told by appellants' specification is "irregular and not controllable":

> By way of comparison, if a cellulose acetate of intermediate acetyl value is similarly treated its free hydroxyl groups render it hydrophilic throughout its cross section so that saponification partly deacetylates the core as well. Any surface saponification which simultaneously occurs is irregular and not controllable. It is more difficult if not impossible to produce a skin of pre-determined thickness and it is always possible that saponification will proceed so far that the fiber will essentially become regenerated cellulose rather than cellulose acetate.

[1] [6] The prior art thus referred to may be used for what it fairly teaches. *In re Mostovych*, 52 CCPA 884, 339 F.2d 455, 144 USPQ 38, 40. See *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507, 510.

Clearly, "partial saponification" would mean two things: A part being completely saponified, and the remainder untouched, or removal of only some of the acetate groups either throughout or in a part. Mork appears to disclose both possibilities:

> For instance, the back of a photograph film base may be composed of the triacetate and the surface or a pattern on the surface only composed of the lower acetate, *or threads may have an interior of the triacetate and an exterior of the lower acetate*, or a *part* of a film may be changed to the lower acetate from front to back, leaving the remainder unchanged. In short, many combinations of this nature may be produced readily involving my invention. [Emphasis added.]

While "lower acetate" is not cellulose as in appellants' product, Mork states further:

> Of course, when it is desired that the triacetate be entirely changed, it is only necessary to continue the saponification to that point.
>
> For many purposes it is not harmful if the reaction continues so long that the film is *superficially* saponified until the acid groups have been *completely* removed. [Emphasis added.]

Further, Mork's procedure involving the use of NaOH falls within what is disclosed by appellants as exemplary of the saponification step of the claimed process; Mork states:

> Superficial saponification is readily effected by subjecting the portion it is desired to change from the triacetate to a strong hot caustic soda solution or other active alkaline saponifying agent for a very short time, as for instance, a 10% sodium hydroxide solution for one or two minutes at 60° or 70° C.
>
> The saponification will proceed further the longer the reaction is permitted to continue.

As a result of Mork's "superficial saponification":

> Another advantage of the exercise of my invention is the fact that even if the original cellulose triacetate is very flexible and strong, the flexibility and strength are noticeably increased by subjecting the triacetate to partial saponification.

Finlayson discloses a heat treatment of cellulose triacetate either wet or dry spun, of an acetyl value of 60.0–62.5%, to a temperature below the thermal softening point. The heat treatment results in an increased degree of crystallinity, and raises the sticking temperature. The safe ironing temperature is raised from about 170°–180° C. to at least 200° C. and in many cases 230°–240° C. It is also disclosed that the triacetate material may contain pigments, dyes or other effect material. The heat may be applied as hot air, molten Wood's metal, hot water, and wet steam. The tenacity in general remains unchanged.

Finally, the Examiner relied on the Ott text at p. 230 for the following teaching regarding properties (footnote omitted):

> * * * According to Mork, the physical properties—tenacity, elasticity, etc.—are functionally related to the amount of crystalline material, while the reactivity of the fiber—swelling, drying, ease of chemical reactions, etc.—is to be associated with the amorphous parts. * * *

During prosecution appellants submitted an affidavit of Fortess, which they summarize as follows:

> A host of examples are presented in the affidavit, some showing that even a mild saponification produces almost maximum properties in certain regards. Thus Example A4 on page 3 shows the breaking point to be at a maximum at about 58.4 overall a.v. The wet flex abrasion of the filling of the fabric tested in Example B on page 4 is at a maximum at 58.0% a.v. at the top of the page and both warp and filling wet flex abrasion at 60° C. are very close to their maximum values at 58.0% a.v. In the example at the top of page 5 the breaking point and elongation of the warp are at a maximum at 59.9% a.v. The Table on the bottom of page 5 shows that maximum physical properties are produced by a reduction in a.v. of as little as 0.5%. The last table on page 8 shows that the maximum dyeability is achieved at an a.v. of 58.1%.

> Even when the maximum benefit is not achieved by a small degree of deacetylation, usually even this small degree will produce the greatest proportion of the benefit. Thus in Example A1 on page 2 it is shown that a 2.6% reduction in a.v. produces a 27% increase in flex abrasion resistance while a further 9% reduction in a.v. does not produce a corresponding improvement in flex abrasion resistance. Example A3 on page 3 shows the first few percent of deacetylation to produce the overwhelming proportion of improvement in moisture regain. This applies also to the percent elongation at the bottom of page 3 and to the wet flex abrasion at 25° C. for the warp at the top of page 4 and both the warp and filling at 60° C. near the bottom of page 4. The electrical tests in the middle of page 5 also bear out this contention.

We note here that the affidavit starts with triacetate yarn of 61.0 a.v. and reports the saponification results in terms of *overall* a.v., but does not give any evidence on the thickness of the regenerated cellulose skin.

From the above review we conclude that there is no reversible error in the Board's affirmance of the rejection. As noted above the most pertinent references appear to be Briggs and Mork with regard to surface saponification of the triacetate, and Finlayson with regard to the heat treatment.

The main thrust of appellants' argument is that the Mork and Finlayson references, in being each confined to a separate step of the two-step process, do not render the combined process or product thereof obvious. Appellants note a lack in each reference of a suggestion of a combination with the other reference. We shall consider that argument with regard to the product and process separately.

[2] Regarding the process, we think it an obvious combination of two processing steps, each lending to the end products the desirable properties each is known to produce when practiced alone. We fail to find evidence of record of a co-action between the steps that produces unexpected results. *In re Williams*, 42 CCPA 988, 223 F.2d 291, 106 USPQ 192; *In re Mostovych*, 52 CCPA 884, 339 F.2d 455, 144 USPQ 38, 40. In such a case it is our view that one of ordinary skill in this art, having the references before him, would perceive the benefits of heat treating a superficially saponified triacetate fiber, or to saponify a heat treated triacetate fiber, without recourse to appellants' specification. No other combination of the references can be made. See *In re Shannon*, 53 CCPA 903, 356 F.2d 548, 148 USPQ 504, 507. The same would be true with regard to the optional and conventional steps of dyeing and bleaching (McKee), on neither of which steps appellants place significant reliance for patentability.

It is also clear that the step of saponification of the triacetate was considered by appellants to be the significant step, the specification indicating that the heat treatment step was only a "preferred" step with which the saponification step could be combined. [3] Although we grant there is no specific suggestion in either reference to combine it with the other step, we do not think it required in the circumstances of this case where both steps are taught to be part of the standard fund of modifications in the art, and the two steps do not coact in some mutually dependent way. The independence of the steps is evidenced, too, by the fact that they may be performed in any sequence, and that change in the control parameters of one does not appear to call for a critical change in any of those of the other—each is relatively separate and independent. The resultant properties appear clearly the sum of each step as acknowledged by the specification:

> * * * The saponification of the surface of the material decreases its tendency to stick to the hot iron and raises its safe ironing temperature to about 220 to

230° C. Above these temperatures the material tends to stiffen and become boardy unless it has been heat treated. The heat treatment raises the safe ironing temperature *still further*, e.g. to about 240 to 250° C. [Emphasis added.]

Regarding the products, we view claims 17–19 to be drawn to the products of a saponification step alone. While appellants argue technical differences over the product of Mork, particularly the thickness of the skin and the anti-static properties, we think the product to be obvious in view of Mork. Differences in internal structure, if any, over that of Mork have remained a subject of argument. In this connection appellants state about Mork:

It is obvious from the overall disclosure of Mork that he does not teach a filamentary product wherein the filaments are composed of a core of substantially unmodified cellulose triacetate surrounded *and sharply divided from* a thin skin of regenerated cellulose, *although this product may inherently be obtained as a result of Mork's process.* * * * [Latter emphasis added.]

[4] As we noted in a similar situation, an arguable difference where comparative evidence is clearly needed is not convincing. *In re Mostovych*, supra.

[5] Manifestly, from Mork and Briggs, appellants are not the first to surface saponify a cellulose triester filament. As taught by Mork, improved dyeability is expected and achieved. Appellants do not argue that the effect of raising the safe ironing temperature is unexpected. While that property is not specifically taught with regard to a cellulose triacetate, the British Celanese reference is pertinent as showing the effect of surface saponification in general to result in improvement of that value. British Celanese notes that the maximum increase to be expected cannot exceed pure cellulose or an entirely regenerated fiber. Regarding the anti-static property, the Examiner has commented, without challenge, that the property is entirely expected. Moreover, we think it generally known that there is an absence of static in cotton, the presence thereof on acetates, and that static electricity is a surface phenomenon.

We agree with appellants that claim 20 is drawn to a heat or swelling agent treated *and* surface saponified fiber since the *core* is stated to have a safe ironing temperature above 230° C. However, the product so defined is no less obvious in view of what one of ordinary skill would expect as taught by Mork and Finlayson.

Regarding the affidavit, it does not, in our view, purport to show criticality in the surface thickness of the regenerated cellulose. No thicknesses are reported therein. Rather, it shows that a surface saponification *maximizes* certain desirable properties, and further or homogenous saponification will reduce those properties. As the Board stated;

* * * The surface saponification of cellulose triacetate being known and the properties of regenerated cellulose layers being appreciated, we do not see the fact that the surface saponification gives improved results is more than a confirmation of the reasonable expectations of the art or an explanation of the advantages of a prior-art process and product.

Appellants have not convinced us of reversible error in that view.

We consider the remainder of appellants' arguments to be less significant than those here treated and not convincing of a different result. [6] For the reasons given, the decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, took no part in the decision of this case.

MARTIN, *J.*, participated in the hearing of this case but died before a decision was reached.

U.S. Court of Customs and Patent Appeals

CASTLE & COOKE, INC. (ASSIGNEE OF DOLE CORP.) *v.* OULEVAY, S.A.

No. 7697. Decided January 5, 1967

[54 CCPA —; 370 F.2d 359; 152 USPQ 115]

1. TRADEMARK—CONFUSING SIMILARITY—"DOLE" AND "FARANDOLE" FOR FOOD PRODUCTS.

Upon considering a decision of the Trademark Trial and Appeal Board which found no confusing similarity between appellant-opposer's registered mark "Dole" and appellee's mark "Farandole" sought to be registered, both marks being for food products, where the Board held that "In the instant case, applicant's 'Farandole' is an arbitrary and unitary term, and while it may include 'Dole' as a portion thereof, such term is so merged into applicant's mark that it loses its individual identity therein; and the marks of the parties, when viewed in their entireties do not look alike or sound alike," and that "It is concluded, therefore, that 'Farandole' and 'Dole' do not so resemble one another as to lead to a likelihood of confusion, mistake or deception," *Held* that "The decision is affirmed."

APPEAL from the Patent Office. Opposition No. 43,827.

AFFIRMED.

William G. MacKay (*Charles A. Allen, Jr.* of counsel) for appellant.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

Oulevay seeks registration of "Farandole," [2] based on its Swiss registration, for use on "biscuits, wafers, prepared pastries, gelatin desserts, and pastry mix."

Castle & Cooke, Inc. oppose on prior use and registration of the mark "Dole" for canned and frozen fruits, canned fruit juices, canned vegetables and vegetable juices, and canned pie filling.

In dismissing the opposition, the Board held:

In the instant case, applicant's "Farandole" is an arbitrary and unitary term, and while it may include "Dole" as a portion thereof, such term is so merged into applicant's mark that it loses its individual identity therein; and the marks of the parties, when viewed in their entireties, do not look alike or sound alike. It is concluded, therefore, that "Farandole" and "Dole" do not so resemble one another as to lead to a likelihood of confusion, mistake or deception.

We find nothing in the record, including appellant's testimony and registrations, nor in the decisions relied on by appellant, to convince us that the Board committed reversible error in dismissing appellant's opposition.

[1] The decision is affirmed.

AFFIRMED.

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The application (Serial No. 123,830, filed July 12, 1961) states that "Farandole" means "a lively Provencal dance in sextuple measure."

U.S. Court of Customs and Patent Appeals

IN RE HARRY TACON OPENSHAW AND NORMAN WHITTAKER

No 7452. Decided December 19, 1966

[54 CCPA —; 369 F.2d 760; 152 USPQ 9]

1. PATENTABILITY—REFERENCES—*In re Wilson* DISTINGUISHED.

"The trouble with both the Board's and the appellants' view of the obviousness or nonobviousness of the subject invention is the reliance on the 1962 publication which is *not* prior art. Nor can it be regarded as describing the state of the art prior to the filing date of the application on appeal. Quite the

contrary, it evidences the fact that further experimentation was required to elucidate the structure of the compounds involved in the hydrogenation process disclosed in the Swiss patent upon which the appealed claims stand rejected. Additionally, apppellants do not admit that the subject matter described in the 1962 publication was known to them as of the filing date of the application at bar. The foregoing facts clearly distinguish the 1962 publication from the publication considered in *In re Wilson*, 50 CCPA 773, 311 F.2d 266, 135 USPQ 442.

2. SAME—ONE-STEP PROCESS.

Focusing on the Swiss patent, the only *prior art* cited against appellants' claims, it does not teach or concern itself with the *stereospecific* synthesis of (—)-emetine. Nowhere is there mentioned the stereochemical configuration of the starting material or product of the hydrogenation process disclosed in the Swiss patent. Appellants' invention, however, *considered as a whole*, appears to represent a significant advance in the art. The one-step process which is the subject of the appealed claims is an integral step in the *stereospecific* synthesis of (—)-emetine, and appellants have recognized it as such. Nothing in the Swiss patent would make such a discovery obvious.

3. SAME—PARTICULAR SUBJECT MATTER—"METHOD FOR MAKING BENZO(A)QUINOLIZINE DERVATIVES."

The refusal of certain claims in an application entitled "Method for Making Benzo(a)Quinolizine Derivatives," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 71,045.

REVERSED.

James M. Mason, D. Paul Weaver, Donald Brown, Anthony DeLio for appellants.

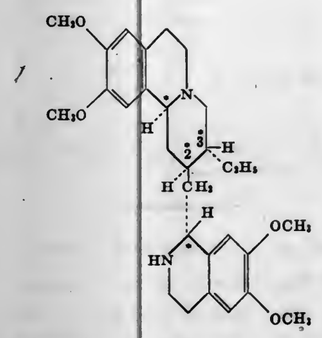
Clarence W. Moore (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the Board of Appeals' affirmance of the rejection of claims 23, 25, and 27 of appellants' application [2] entitled "Method for Making Benzo(a)Quinolizine Derivatives." The rejection is based upon 35 U.S.C. 103. No claim has been allowed.

Appellants' invention is a one-step process in the over-all synthesis of the naturally occurring compound (—)-emetine (hereinafter emetine) having the structural formula: [3]



[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] H. T. Openshaw and N. Whittaker, Serial No. 71,045, filed November 22, 1960.

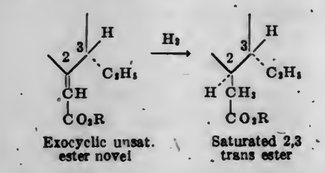
[3] In addition to depicting the *gross* structure of emetine, this formula also shows the spatial relationship of the atoms of the (—)-emetine molecule, or in chemistry parlance its stereochemical configuration. Taking the triple ring benzoquinolizine nucleus as being in the plane of the paper, solid and dashed lines are employed to indicate chemical moieties projecting, respectively, above and below the plane of the triple ring benzoquinolizine nucleus.

Naturally occurring emetine [4] is an established drug in the treatment of amoebiasis, amoebic hepatitis, and amoebic abscesses. According to appellants:

Because of the expense in extraction procedures necessary to recover the naturally occurring alkaloid emetine from "ipecac root," it became a scientific objective to develop a synthetic route to the preparation of synthetic emetine having a stereochemical structure *identical* with that of *natural* emetine.

The gross structure of emetine was elucidated in 1949 and this, according to an article by A. R. Battersby and J. C. Turner, J. Chem. Soc. 717 (1960) "stimulated considerable interest in the synthesis of this alkaloid." At the time of these early synthetic studies, according to Battersby and Turner, the stereochemistry of the four asymmetric centers in emetine (denoted by asterisks in the above formula) was unknown. Subsequent studies, however, established that the stereochemistry on the benzoquinolizine nucleus is that shown above, and this knowledge, the authors state, allowed a stereo-specific synthesis to be designed.

The process here claimed is actually the fourth step in a seven-step synthesis of emetine, the fourth step being as follows: [5]



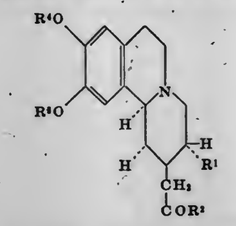
Exocyclic unsat. ester novel — Saturated 2,3 trans ester

The significant aspect of this reaction is that the hydrogen which attaches to C–2 projects *below* the plane of the three-membered benzoquinolizine nucleus, whereas the hydrogen on C–3 is *above* the plane of such nucleus. The two hydrogens just referred to are thus in a

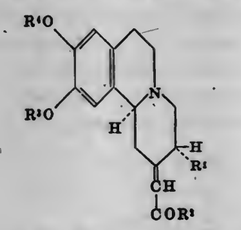
[4] According to the Merck Index 401 (7th ed. 1960), emetine is the principal alkaloid of ipecac, the roots of *Uragoga ipecacuanha* (Brot.) Baill, Rubiaccae.

[5] Claim 23 is illustrative and reads as follows:

23. A method for the preparation of compounds of the formula



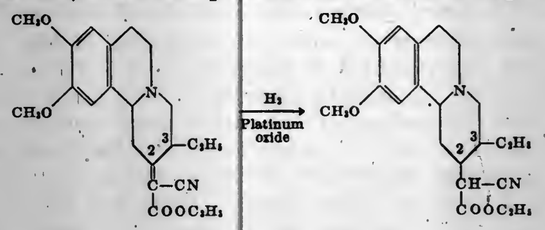
wherein R^1 is an alkyl group having from one to four carbon atoms, R^2 is selected from the class consisting of hydroxy and lower alkoxy groups and R^3 and R^4 are selected from the class consisting of the lower alkyl groups and together form a methylene group which comprises the catalytic hydrogenation of a compound of the formula



Claim 25 differs from claim 23 in calling for "acid catalytic hydrogenation." Claim 27 depends from claim 23 and specifies platinum oxide as the catalyst.

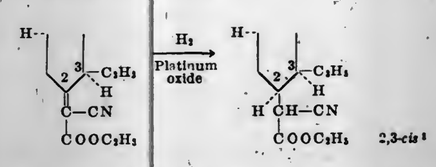
trans position [6] relative to each other. This is the stereochemical configuration found in naturally occurring emetine, as shown in the structural formula reproduced above. According to appellants, this configuration is maintained throughout the emetine synthesis.

The prior art relied upon below is Swiss Patent No. 337,846, published June 15, 1959.[7] This patent discloses the following reactions:



It should be noted that only the gross structures and not the stereochemical configurations of the reactants and products are disclosed.

A subsequent publication (A. Brossi and O. Schnider, Helv. Chimica Acta 45, 1899 (1962)) disclosed the stereochemistry of the compounds involved in the hydrogenation reaction:



Appellants contend that formation of the 2,3-*trans* isomer via their hydrogenation process is unexpected in view of the Swiss patent (as further elaborated on by the 1962 publication). The Examiner and the Board, of course, disagreed. The reasoning of the Examiner and the Board can be summarized as follows: Those in the subject art knew that naturally occurring emetine had the following stereochemical configuration in the 2,3-position:



The Swiss patent (as further elaborated on by the 1962 publication) disclosed a hydrogenation process wherein the incoming hydrogen to C–2 attached below the plane of the rings just as does the corresponding hydrogen in appellants' process. The prior process did not give the appropriate stereochemical configuration for emetine because the hydrogen groups in the 2- and 3-positions were *cis* rather than *trans*. This result would have been different if the hydrogen on C–3 of the starting material had been above the plane of the rings. All appellants have done in obtaining the proper configuration is to reverse

[6] Webster's Third New International Dictionary (1961) defines *trans* as: "having certain atoms or groups on opposite sides of the molecule—opposed to *cis*." *Cis* is defined by the same source as: "having or characterized by certain atoms or groups on the same side of the molecule—opposed to *trans*."

[7] The inventors are A. Brossi and O. Schnider.

[8] According to the authors, compounds having the 2,3-*cis* configuration do not exhibit an *in vitro* amoebicidal effect comparable with that of natural emetine.

the positions of the groups on C–3 in their starting material. It is clear from this analysis that the Patent Office focused only on C–2 in arriving at its conclusion that the results of appellants' hydrogenation process were expected.

Appellants appear to argue for a different point of reference than C–2, specifically the configuration of the hydrogen and alkyl groups on C–3. They analyze the situation this way: The Swiss patent discloses a hydrogenation process in which the incoming hydrogen approaches C–2 on the same side of the ring as the hydrogen attached to C–3 and on the opposite side of the ring from the alkyl group attached to C–3. However, in the process here claimed the hydrogen approaches on the opposite side of the ring from the hydrogen attached to C–3 and on the same side of the ring as the alkyl group attached to C–3. According to appellants, this is the reason why the *trans* configuration is obtained in their process. They further state:

> * * * scientists having in front of them the process of the Swiss patent, and carrying through this process to the inactive end product corresponding to emetine *would be discouraged*, since it is *essential* that this hydrogenation process, step 4, produces the 2,3-*trans* relation which remains the same in subsequent steps in the preparation of active emetine corresponding to the naturally occurring alkaloid. [Emphasis appellants'.]

[1] The trouble with both the Board's and the appellants' view of the obviousness or nonobviousness of the subject invention is the reliance on the 1962 publication which is *not* prior art. Nor can it be regarded as describing the state of the art prior to the filing date of the application on appeal. Quite the contrary, it evidences the fact that further experimentation was required to elucidate the structure of the compounds involved in the hydrogenation process disclosed in the Swiss patent upon which the appealed claims stand rejected. Additionally, appellants do not admit that the subject matter described in the 1962 publication was known to them as of the filing date of the application at bar. The foregoing facts clearly distinguish the 1962 publication from the publication considered in *In re Wilson*, 50 CCPA 773, 311 F.2d 266, 135 USPQ 442. It is very often the case that early endeavors in a scientific field are incomplete and sometimes unsophisticated, and were we to consider as relating back after-acquired knowledge bearing on such earlier work, interim efforts leading to significant advances in the art would go unrewarded. This is entirely contrary to the spirit of the patent system which is "to promote the progress of science and useful arts * * *."

[2] Focusing on the Swiss patent, the only *prior art* cited against appellants' claims, it does not teach or concern itself with the *stereospecific* synthesis of (−)-emetine. Nowhere is there mentioned the stereochemical configuration of the starting material or product of the hydrogenation process disclosed in the Swiss patent. Appellants' invention, however, *considered as a whole*, appears to represent a significant advance in the art. The one-step process which is the subject of the appealed claims in an integral step in the *stereospecific* synthesis of (−)-emetine, and appellants have recognized it as such. Nothing in the Swiss patent would make such a discovery obvious. [3] Accordingly, we find the subject matter here claimed nonobvious under 35 U.S.C. 103 and reverse the Board's decision.

REVERSED.

SMITH, *J.*, took no part in the decision of this case.

MARTIN, *J.*, participated in the hearing of this case but died before a decision was reached.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,531,999, L. Wallerstein, MANUFACTURE OF CRYSTALLINE DEXTROSE, **filed** Sept. 17, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1757, *Baxter Laboratories, Inc.* v. *Corn Products Company.* Judgment; patent invalid and not infringed, May 11, 1967.

2,615,007, S. O. Greenlee, EPOXIDE RESINS; **2,615,008**, same, EPOXIDE RESIN COMPOSITIONS, **filed** May 12, 1967, D.C.N.J. (Newark), Doc. C–522–67, *Celanese Coatings Co.* v. *Resyn Corporation.*

2,615,008. (See 2,615,007.)

2,627,379, H. W. Moore, AUTOMATIC ARMATURE WINDING MACHINE, **filed** July 27, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c1457, *The Globe Tool & Engineering Co.* v. *Ram Tool Corporation.* Judgment; patent invalid and not infringed, May 19, 1967.

2,641,540, Mohling and Dyrkacz, FERROUS BASE CHROMIUM-NICKEL-TITANIUM ALLOY, **filed** May 22, 1967, D.C., W.D. Pa. (Pittsburgh), Doc. 67–637, *Allegheny Ludlum Steel Corp.* v. *The Carpenter Steel Company.*

2,742,327, T. Marks, FULLY AUTOMATIC MACHINE FOR MAKING BRUSHES, **filed** Nov. 17, 1966, D.C., S.D.N.Y., Doc. 66–C–3913, *American Technical Machinery Corp.* v. *Eckmar Corporation.* Stipulation and order of dismissal, May 12, 1967.

2,761,503, A. P. Krueger, MECHANISM FOR PROGRESSIVELY SEVERING TAPE, **filed** May 19, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c846, *Minnesota Mining and Manufacturing Co.* v. *Better Packages, Inc., and A. D. Smith.*

2,813,263. (See Re. 24,031.)

2,861,688, H. H. Harms, LIQUID CLARIFICATION SYSTEM, **filed** May 17, 1967, D.C., S.D. Ind. (Indianapolis), Doc. IP67–C–221, *Henry Manufacturing Co., Inc.* v. *Commercial Filters Corporation.*

2,895,003, G. M. Rapata, STRAIN RELIEF GROMMET; **2,930,840**, F. Klumpp, Jr., STRAIN RELIEF BUSHING, **filed** May 12, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c801, *Heyman Manufacturing Company* v. *Richlock Corporation et al.*

2,930,840. (See 2,895,003.)

2,936,360, J. F. Suarez, ELECTRIC HEATING PAD, **filed** Oct. 13, 1964, D.C. Conn. (New Haven), Doc. 10676, *The Casco Products Corporation* v. *United Whelan Corporation.* Stipulation for dismissal, Apr. 14, 1967.

3,074,653, J. B. Schorsch, METHOD OF SEPARATING WIRE AND ITS CASING, **filed** May 16, 1967, D.C., M.D. Pa. (Scranton), Doc. 9997, *The Metal Bank of America, Inc., formerly L. Goldstein's Sons, Inc.* v. *Diversified Metals Corporation.*

3,170,065, R. J. Prest, METHOD FOR MANIPULATING RADIOACTIVE MATERIAL; **3,237,977**, J. H. Batchelder, CONNECTOR, **filed** Mar. 2, 1967, D.C., N.D. Calif. (San Francisco), Doc. 46635, *Technical Operations Inc.* v. *Gen. Radioisotope Processing Corp.*

3,171,507. (See 3,275,724.)

3,200,312, B. R. Callahan, CAPACITANCE PROBE FOR FLUIDS, **filed** May 17, 1967, D.C., S.D. Tex. (Houston), Doc. 67–H–396, *Odex Engineering Company* v. *National Tank Company.*

3,202,167, De Young and Gandee, LIQUID DISTRIBUTION SYSTEM; **3,265,080**, same, LIQUID DISTRIBUTION METHOD, **filed** Apr. 5, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 66–236–R, *Combustion Engineering, Inc.* v. *Rheem Mfg. Co.*

3,205,532, R. D. MacDonald, LATCHLESS DOOR HINGE; **3,212,124**, same, HINGE FOR LATCHLESS DOOR, **filed** May 4, 1967, D.C., E.D. Mich. (Detroit), Doc. 29897, *Cardinal of Adrian, Inc.* v. *Peerless Wood Products Incorporated.*

3,209,228, A. F. Gawron, SYSTEM FOR CONTROLLING ELECTRIC MOTORS IN POWER TOOLS AND THE LIKE, **filed** Nov. 18, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1925, *Skil Corporation* v. *McGraw-Edison, Inc., and Cutler-Hammer, Inc.* Consolidated with Case No. 66c267; dismissed on agreement, May 15, 1967.

3,212,124. (See 3,205,532.)

3,231,945, Miller and Hohenfeld, WASHER GAIN FOR TIMBER STRUCTURES, **filed** May 15, 1967, D.C., E.D. Mich. (Detroit), Doc. 29930, *Malleable Iron Fittings Company* v. *Dale P. Seyfried, doing business as Dale P. Seyfried Company.* **Same, filed** May 16, 1967, D.C., N.D. Ala. (Birmingham), Doc. 67–279–Sou. Div., *Malleable Iron Fittings Company* v. *Barron Bethea Company Incorporated.*

3,237,977. (See 3,170,065.)

3,265,080. (See 3,202,167.)

3,171,507, J. B. Klingel, MUFFLER FOR FIRED HEATER AUTOCLAVE SYSTEM; **3,275,724**, same, METHOD OF AUTOCLAVING CONCRETE BLOCKS, **filed** Feb. 28, 1967, D.C., W.D. Pa. (Pittsburgh), Doc. 16–67–Erie, *Alton B. Holmes* v. *Struthers Scientific and International Corporation.*

3,302,653, R. A. d'Agostino, HEAD COVERING APPARATUS FOR USE IN STREAK COLORING, **filed** May 16, 1967, D.C., E.D. Mich. (Detroit), Doc. 29937, *Richard A. d'Agostino* v. *Cadillac Beauty Supply Co.*

3,315,274, L. Roody, GARMENT, **filed** May 23, 1967, D.C., S.D.N.Y., Doc. 67–C–1999, *John Meyer of Norwich, Inc.* v. *Leon Levin & Sons, Inc., doing business as Leon Levin, etc.*

Re. 24,031, R. J. Marmorstone, ANNUNCIATOR SYSTEM; **2,813,263**, H. C. Warren, AUTOMATIC CONTROL CIRCUITS, **filed** Feb. 23, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–268–FW, *The Scam Instrument Corporation and SIOC Limited* v. *Ronan Engineering Co., and Ronan Panel Co.*

Re. 24,995, G. A. Lyon, AIR CIRCULATING WHEEL STRUCTURE, **filed** Aug. 19, 1966, D.C., E.D. Mo. (St. Louis), Doc. 66C309(3), *J. Gordon Campbell, Inc. and Allstate Bag Company* v. *Canvas Products Company.* Consent judgment, patent valid and infringed, dismissing defendant's counterclaim with prejudice, May 15, 1967.

D. 201,798, J. K. Rains, SWIMMING POOL, **filed** Mar. 22, 1966, D.C., S.D.N.Y., Doc. 66–C–813, *John K. Rains* v. *Hendon Construction Co., Inc.* Consent order transferring action to the USDC for the District of New Jersey, Feb. 14, 1967. **Same, filed** Aug. 19, 1965, Doc. 65–C–2531, *John K. Rains* v. *Monarch Pool Corp. et al.* Order of dismissal for lack of prosecution, May 8, 1967.

D. 202,783, R. D. Kahn, FUSED MULTIPLE ELECTRICAL OUTLET BOX WITH MASTER SWITCH AND PILOT LIGHT, **filed** Dec. 14, 1966, D.C., N.D. Ohio (Cleveland), Doc. C66–929, *Fedtro, Inc.* v. *Olson Electronics, Inc.* Consent judgment; defendant has infringed and is permanently enjoined, Jan. 31, 1967.

D. 204,175, B. Zuckerman, GARMENT HANGER; **3,249,270**, same, GARMENT SUPPORT MEANS, **filed** Mar. 16, 1967, D.C., S.D.N.Y., Doc. 67–C–1060, *Mr. Hanger, Inc.* v. *Yankee Plastics, Inc.*

D. 205,765, H. Ota, AUTO DEFROSTER, **filed** May 22, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c849, *Fedtro, Inc.* v. *Harben Co., Harry Pollen and Benjamin Polen.*

Plant Pat. 1,141, J. M. Garabedian, PEACH TREE, **filed** May 12, 1967, D.C., E.D. Calif. (Fresno), Doc. F–93–C, *John M. Garabedian* v. *Vaughn Girazian, Girazian Fruit Co., Inc. et al.*

REISSUES

OCTOBER 3, 1967

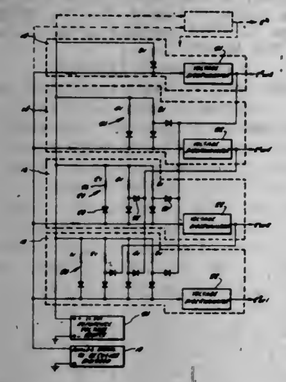
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,274
ANALOG *TO* DIGITAL CONVERTER

James H. Doyle, Orange, Calif., assignor to General Data Corporation, Orange, Calif., a corporation of California

Original No. 3,225,347, dated Dec. 21, 1965, Ser. No. 176,216, Feb. 28, 1962. Application for reissue Dec. 21, 1965, Ser. No. 532,482

16 Claims. (Cl. 340—347)



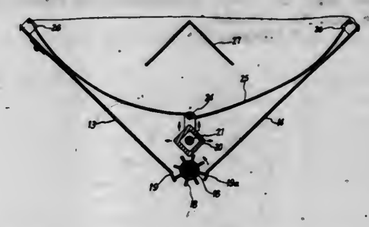
1. An analog to digital converter comprising a first comparison stage having a plurality of comparators for indicating a different digital value in a preselected number system, each of the comparators being normally arranged to be in a preselected indicating condition and to be switchable to another indicating condition whereby the condition of all of the comparators define a single digit in the number system, means for applying an analog signal to be digitized to each of the comparators substantially simultaneously, said comparators each including circuit means connected to be responsive to an output indication from each of the higher valued comparators for modifying the level at which each of the lower valued comparators are responsive only when at least one of the higher valued comparators is switched to said another indicating condition to compensate for the response of said higher valued comparators to the analog signal to be digitized to provide the correct output at each of the remaining comparators to correctly digitize the corresponding portion of the analog signal, a summing circuit connected to be responsive to the analog signal to be digitized substantially simultaneously with said comparators, further circuit means connected to be responsive to the output indications from each of the comparators for providing a signal to the summing circuit corresponding to the difference between the analog signal to be digitized and the portion of the analog signal digitized by the first comparison stage, and a second comparison stage having a plurality of comparators constructed and defined the same as the comparators of the first stage and arranged in the same fashion, each of the comparators of the second stage being connected to be responsive to the output indication from the summing circuit to correctly digitize the remaining portion of the applied analog signal derived from the summing circuit.

26,275
SPREADING MECHANISM FOR PULVERULENT MATERIAL

William B. Stevens, Terrace Park, Ohio 45174, assignor of one-half to Dorothy H. Stevens, Cincinnati, Ohio

Original No. 3,164,305, dated Jan. 5, 1965, Ser. No. 231,255, Oct. 17, 1962. Application for reissue Feb. 16, 1966, Ser. No. 533,111

8 Claims. (Cl. 222—197)



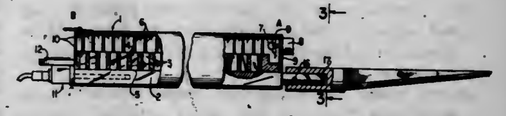
7. A discharge device for pulverulent materials comprising a hopper having a discharge opening at its lowermost end, means for opening and closing said discharge opening to the flow of material therethrough, a vibrating bar mounted for rotational movement within said hopper, said vibrating bar overlying said discharge opening and extending the full effective length thereof, resilient means operatively connected to said vibrating bar for agitating the pulverulent material in said hopper, said resilient means comprising a plurality of resilient arms pivotally connected at their inner ends to said vibrating bar at spaced apart intervals throughout the length thereof, the outer ends of said resilient arms being pivotally connected to wall surfaces of said hopper generally paralleling the length of said discharge opening, with a substantially equal number of the said resilient arms extending in opposite directions and means engageable with said vibrating bar to effect limited yet rapid oscillation thereof, whereby said vibrating bar causes said resilient arms to vibrate and flex and thereby transmit such vibrations to the material being dispensed throughout the effective length and width of the hopper.

26,276
COOLED SURGICAL INSTRUMENT

Max L. Hirschhorn, 5601 13th Ave., Brooklyn, N.Y. 11219

Original No. 3,093,135, dated June 11, 1963, Ser. No. 169,266, Jan. 29, 1962. Application for reissue May 28, 1965, Ser. No. 463,068

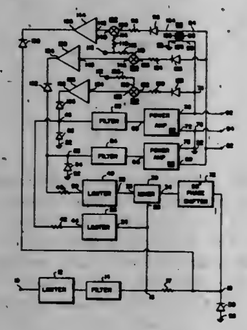
7 Claims. (Cl. 128—303.1)



1. A surgical instrument comprising a heat conductive [body having a knife edge in heat conductive relation with the body,] *surgical tool,* a heat conductive rod heat conductively connected to said [body,] *tool,* a plurality of

Peltier cells each having a cold and a hot junction connected at their cold junction to the rod, means to connect the Peltier cells to a source of direct current electricity, heat radiating metal fins connected to the hot junctions of the Peltier cells, and a thermally and electrically insulative handle [comprising the exterior portion of the instrument whereby the knife edge is] *surrounding the Peltier cells and a portion of the rod whereby the surgical tool is* cooled for surgical operations.

26,277
REGULATED POWER SUPPLY WITH FEEDBACK MEANS
Milton W. Mathias, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Original No. 3,230,441, dated Jan. 18, 1966, Ser. No. 225,080, Sept. 20, 1962. Application for reissue Aug. 1, 1966, Ser. No. 574,264
9 Claims. (Cl. 321—52)

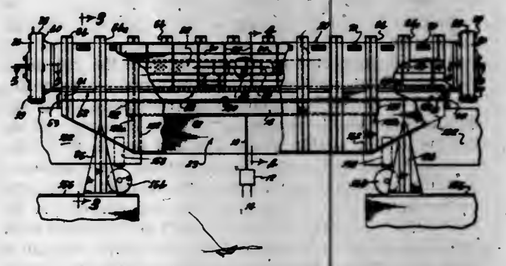


8. Control module apparatus for providing three phase output power signals comprising, in combination:
first means for supplying a first signal of a first phase;
amplifying means including first and second input means and providing first and second separate output signals at first and second output means thereof wherein the output means are connected together for providing;
first amplitude control means connected between said first means and said first input means of said amplifying means and connected to said output means of said amplifying means for receiving the second signal of the second phase therefrom, said first amplitude control means transmitting therethrough the first signal of the first phase, controlling the amplitude of the signal, and applying the amplitude controlled signal to said first input means for adjusting the amplitude of the received signal of the second phase toward a predetermined value;
second amplitude control means for controlling the amplitude of signals passing therethrough in response to deviations from a predetermined value of a control input signal;
phase control means for controlling the phase of a signal between input and output means thereof in response to a deviation from a predetermined value of a control input signal;
second means connecting said output means of said amplifying means to said second amplitude control means for supplying a control input signal to said second amplitude control means indicative of the amplitude of the third phase signal supplied by the amplifying means and connecting said output means of said amplifying means to said phase control means for supplying a control input signal to said phase control means indicative of the amplitude of the fourth phase signal;
third means connecting said second amplitude control means and said phase control means in series combination and connecting said series combination for receiving a signal of the first phase; and
means connecting said series combination to said second input means of said amplifying means for supplying thereto a phase and amplitude regulated signal.

26,278
STORAGE STABLE EXPANDABLE POLYMERIC COMPOSITION CONTAINING EXPANDABLE POLYMERIC PARTICLES AND TWO DIFFERENT BLOWING AGENTS AND METHOD OF MAKING SAME
Carl H. Pottenger, Sewickley, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Original No. 3,089,857, dated May 14, 1963, Ser. No. 21,611, Apr. 12, 1960. Application for reissue, Aug. 17, 1964, Ser. No. 402,674
6 Claims. (Cl. 260—2.5)

1. A storage stable expandable polymeric composition comprising a mixture of first and second portions of *thermoplastic* polymeric particles, said first portion of polymeric particles having incorporated therein a normally liquid aliphatic hydrocarbon boiling in the range of from 20° C. to 100° C. and a carbon dioxide liberating agent selected from the group consisting of carbonates and bicarbonates of the alkali metals and alkaline earth metals, said second portion of polymeric particles having incorporated therein a normally liquid aliphatic hydrocarbon boiling in the range of from 20° C. to 100° C. and an acid selected from the group consisting of boric acid and solid organic acids having at least 10 milli-equivalents of acidic hydrogen per gram, the total amount of said hydrocarbon contained in said composition being between 2% and 15% by weight of the total composition and the amount of carbon dioxide liberating agent in said first portion of polymeric particles and the amount of acid in said second portion of polymeric particles being such that, upon complete reaction of said carbon dioxide liberating agent and acid, there will be formed water and carbon dioxide in an amount between 0.2% and 6% by weight of said polymeric composition.

26,279
SYSTEM OF GASEOUS PRESSURE LOADING USEFUL FOR DYNAMIC LOADING
William W. Boynton, 1018 Olive Lane, La Canada, Calif. 91011
Original No. 3,248,924, dated May 3, 1966, Ser. No. 155,533, Nov. 22, 1961. Application for reissue July 25, 1966, Ser. No. 574,269
38 Claims. (Cl. 73—12)



1. The herein described method of applying reproducible dynamic pressure loads to a subject; said method comprising the steps of

firing a selected chemically reactive charge and thereby creating a body of gas in a firing chamber [as] *at* selectively controlled relatively high pressure and temperature within a time period of pressure rise substantially that of a predetermined time period of controlled pressure rise on the subject,
controllably and restrictedly admitting hot pressure gas from the firing chamber into a pressure holding-and-load-applying chamber to controllably produce in that chamber a charge of heated gas at a controlled peak pressure after said predetermined and controlled time period of pressure rise,
maintaining said charge of heated gas in the pressure-holding-and-load-applying chamber substantially at said peak pressure for a controlled selected time period of peak pressure dwell,
allowing pressure decay, in the pressure holding-and-load-applying-chamber, from the controlled termination of the dwell at peak pressure, controlled at least in part by heat loss from the body of gas in that chamber,
and applying the load of said rising and maintained and decaying gas pressure to the subject in said last mentioned chamber.

PLANT PATENTS

GRANTED OCTOBER 3, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,770
AZALEA PLANT
Howard Kerrigan, 3003 Totterdell St., Oakland, Calif. 94611
Filed June 7, 1966, Ser. No. 555,925
1 Claim. (Cl. Plt.—55)

A new and distinct variety of azalea plant of the Belgian Indica type substantially as herein shown and described primarily characterized by: a unique combination of red and white color in the same flower in which the edge of the corolla is deep red and the ground color pure white with little or no bleeding at the boundary of the two colors, combined with a ruffled hose-in-hose corolla, strong, vigorous growth, and ease of propagation and culture.

PATENTS

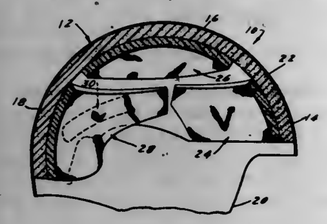
GRANTED OCTOBER 3, 1967

GENERAL AND MECHANICAL

3,344,433
CRASH HELMET

James A. Stapenhill, Glendora, Calif., assignor to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California

Filed Aug. 30, 1965, Ser. No. 483,767
3 Claims. (Cl. 2—3)



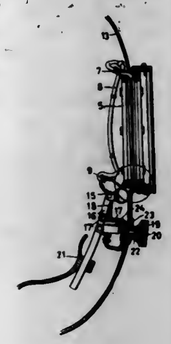
1. A protective helmet comprising:
a relatively hard outer shell, a number of separate resilient head engaging pads at separate and separated spaced locations throughout the crown contour of the interior of said shell which overlies top portions of the head of the user above the perimetral line which determines the conventional size, means releasably securing each pad to said shell including patches of interlocking fabric material at approximate corresponding spaced locations throughout said crown contour of the shell and a layer of interlocking fabric material on faces of said pads adjacent the patches, each fabric material having a raised pile composed of relatively stiff, raised pile threads, said pile threads of at least one fabric material associated with each pad defining pile engaging hooks, and the hooks on said one fabric material associated with each pad being disposed in releasable interlocking engagement with the pile threads on the respective adjacent fabric material, said pads being movable by any increments and in any direction throughout a space intermediate adjacent pads whereby to enable adjustment of pads for fitting the helmet to an individual head.

3,344,434
WELDER'S SHIELD

Gerhard Beckmann, 34 Bohnhofstr., Buchschlag, Hesse, Germany, and Tillo Faulhaber, 34 Ulmenstr., 6 Frankfurt am Main, Germany

Filed July 20, 1965, Ser. No. 473,459
Claims priority, application Germany, July 22, 1964, B 77,782
10 Claims. (Cl. 2—8)

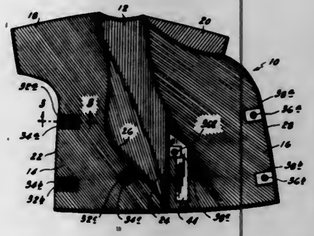
1. A protective shield comprising, in combination:
(a) two disks of transparent material, each disk having an inner face, an outer face, and a rim extending between said faces;
(b) sealing means connecting said rims for movement of said inner faces toward and away from each other, said sealing means and said inner faces jointly defining a sealed chamber;
(c) a spacer member interposed between respective portions of said inner faces adjacent a portion of said sealing means for limiting movement of said face portions toward each other, said portion of said sealing means being formed with an opening communicating with said chamber;
(d) a vessel defining a storage cavity therein;
(e) a conduit secured to said sealing means and to said vessel for connecting said cavity with said opening; and
(f) pressure means movable for varying the effective volume of said cavity between a maximum value and a minimum value.



3,344,435
INFANT'S GARMENT OF THE WRAP-AROUND TYPE

William Walter Artzt, New York, N.Y., assignor to Kapart Inc., a corporation of Pennsylvania

Filed June 2, 1965, Ser. No. 460,624
1 Claim. (Cl. 2—111)



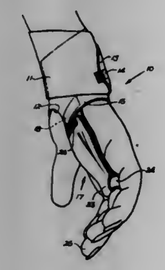
In an infant's garment of the wrap-around type formed of knitted fabric and including a body portion having a back panel and bias cut right and left front panels which are joined to the sides of said back panel by sewn side seams and disposed in overlapping relation, when worn, with a free edge of each of the overlapped front panels extending adjacent to the side seam by which the other front panel is joined to the back panel; releasable securing means for holding the free edge of each of the front panels near to the side seam which is adjacent thereto when said front panels are overlapped; each of said releasable securing means including two tapes respectively attached to said body portion adjacent the free edge of the front panel which is held thereby and at the side seam which is adjacent thereto and a snap-

fastener having complemental elements thereof carried by said two tapes, at least one of said tapes of each securing means being elastically extensible, the warp of said tape being at least partially formed of Spandex, the remainder of said tape being formed of nylon, the ends of said elastically extensible tapes being fused to prevent unravelling thereof, and said tape being folded upon itself with its free ends secured to said side seam, the folded under portion of said one tape having an additional complemental element thereon, said portion being severable adjacent said seam and extendable so as to accommodate the garment, selectively, to bodies of different girth.

3,344,436
PALM PADDED SPORTS AID

Frank F. Stubbs, 6718 Alcove Ave., North Hollywood, Calif. 91606

Filed June 29, 1966, Ser. No. 563,928
17 Claims. (Cl. 2—159)



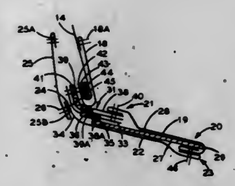
1. A sports device for improving a player's performance in a sports event involving a hand held playing member comprising:
a strap adapted to be wrapped around the wrist of the player;
an elongated cushioning means free at one end and detachably connected at its opposite end to said strap;
means for removably securing said strap at one end to the player's wrist so as to extend a portion thereof across the palm of the player's hand;
means for detachably securing said cushioning means to said strap portion so that the fixed end of said cushioning means is adapted to be located adjacent the heel of the player's palm and the free end of said cushioning means adapted to extend loosely over the major valley or recess portion of the player's palm toward the fingers of the player's hand; and
means carried by said free end of said cushioning means adapted to be releasably anchored to a selected one of the player's fingers whereby said cushioning means is maintained within the palm valley or recess portion.

3,344,437
CAP WITH REMOVABLE VISOR STIFFENER

Ben Greene, 318 W. 51st St., New York, N.Y. 10019

Filed Mar. 2, 1966, Ser. No. 531,285
6 Claims. (Cl. 2—195)

1. In a cap construction having a crown portion and a visor portion projecting from a forward lower portion of said crown portion, said visor portion comprising a pair of superposed washable crescent-shaped fabric panels having forward and rearward peripheral edge portions, the forward peripheral edge portions of said panels being secured together to form a pocket therebetween, a flat crescent shaped stiffening element removably disposed within said visor pocket, a crescent-shaped access opening formed in the rearward peripheral edge portion of the topmost of said visor panels adjacent the forward lower portion of said crown portion for removing said stiffening element from said visor pocket to permit washing of said cap construction and for reinserting said stiffening element into said visor pocket, means for closing said access opening comprising a pair of tapes carrying slide fastener closure elements in laterally opposed relation, one of said tapes being secured to said rearward peripheral edge portion of said topmost visor panel, the other of said tapes

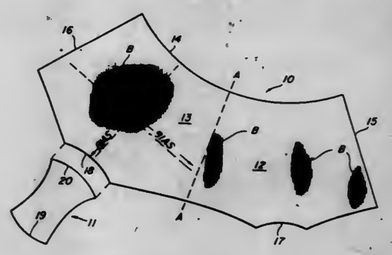


being secured between the rearward peripheral edge portion of the bottommost of said visor panels and the forward lower portion of said crown portion, slide closure means for engaging and disengaging said closure elements on the opposed tapes on slidable movement thereof, and a pair of fabric cover members secured to one of said visor panels and the forward lower portion of said crown portion respectively overlying said tapes, said cover members having opposed abutting edge portions to effectively conceal said tapes, yet permitting movement of said closure member.

3,344,438
ONE PIECE PANTY DESIGN

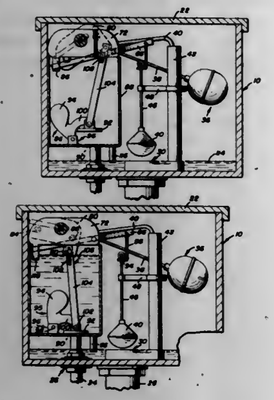
Jack Title, 350 Tait St., St. Laurent 9, Quebec, Canada

Filed Apr. 26, 1965, Ser. No. 450,722
1 Claim. (Cl. 2—224)



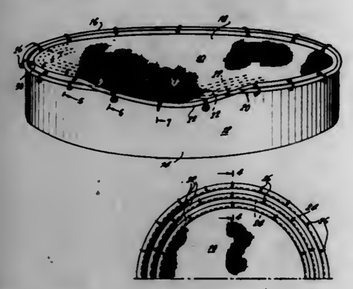
A panty type undergarment having a crotch portion and an upper waist encircling portion and lower leg encircling portions, comprising: a body portion formed from a single panel of material having a pair of side edges joined to form a substantially vertically extending seam located at the side of the garment with respect to the wearer, said panel being cut to form a front portion curvedly extending from one of said edges and a back portion forming a continuation of the front portion extending to the other of said edges, the threads of said front portion being substantially on the straight of said material near the center thereof, the threads of said back portion being on the bias of said material with said bias being approximately 45° near the center thereof and substantially less than 45° near the sides of said back portion, and a gusset joining the lower edges of said front and rear portions at said crotch portion.

3,344,439
WATER SAVING DEVICE FOR WATER CLOSETS
Evan D. Davies, Azusa, Calif.
(8641 SW. 16th Court, Fort Lauderdale, Fla. 33314)
Filed July 12, 1965, Ser. No. 471,024
10 Claims. (Cl. 4—40)



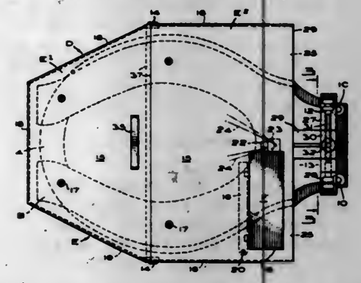
1. In a water closet having a main water tank with an inlet and an outlet for respectively receiving and discharging water, auxiliary tank means positioned within said main tank in water receiving position, said auxiliary tank having port means opening into the interior of said main tank, means for selectively opening and closing said port means, and means for selectively opening and closing said outlet whereby said main tank can be drained independently of or in conjunction with said auxiliary tank.

3,344,440
SWIMMING POOL COVER
Sol Langer, Scotch Plains, N.J., assignor to Andray Products, Inc., East Orange, N.J., a corporation of New Jersey
Filed Nov. 16, 1965, Ser. No. 508,081
5 Claims. (Cl. 4—172)



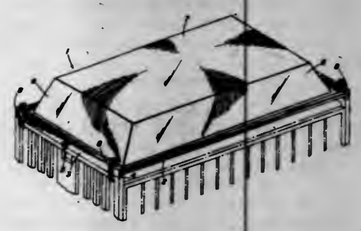
1. A swimming pool cover comprising a body portion having a peripheral edge and plural pool-rim-engaging means secured about said peripheral edge, said pool-rim-engaging means being arranged concentrically about and inwardly of each other along said peripheral edge such that engagement can be selectively made between those of said pool-engaging means and the edge of a pool which align with each other during the fitting of said cover over the pool, whereby proper fit is possible even when the pool is distorted from the original configuration due to age and usage.

3,344,441
TOILET SEAT DISINFECTOR
Anthony J. Kelly, 516 Princeton Road, San Mateo, Calif. 94402
Filed May 24, 1965, Ser. No. 457,954
6 Claims. (Cl. 4—233)



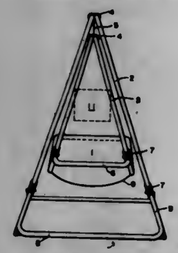
1. The combination with a toilet seat, of a disinfector attachment comprising:
(a) a cover hingedly supported on a toilet bowl for swinging movements into lowered and raised positions relative to the seat;
(b) the cover defining a top wall having marginal flanges depending therefrom, and the cover being dimensioned to receive and enclose the main portion of the seat and the upper rim of the toilet bowl when the cover is lowered, with the marginal flanges projecting below the seat and the bowl rim, whereby the cover provides a hood over the seat and the bowl rim;
(c) a self-contained pressurized container enclosing a disinfecting medium therein under pressure and being secured to the cover to move therewith, the container being provided with a disinfecting medium release button and a trigger arranged to strike the seat and actuate this button to discharge said medium from the container into the interior of the cover so as to disinfect the seat and the bowl rim as the cover is moved into lowered position;
(d) and the cover being movable into a position to expose the main portion of the seat for being occupied by an individual when the cover is raised.

3,344,442
CHILD'S CRIB COVER
Arthur Learmont Andrews, Sanford, and Joseph Richard Anghinetti, Kennebunkport, Maine, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 29, 1966, Ser. No. 538,322
2 Claims. (Cl. 5—97)



1. A child's crib cover comprising a housing adapted to be fitted onto the top of a rectangular child's crib having mounted in said housing on one pair of opposite sides thereof a pair of sliding tracks, a formed transparent plastic bubble mounted on a frame slidably mounted on said sliding tracks of said housing, said frame being fitted with a locking and unlocking means which permits the entire assembly to be locked securely in place and yet readily releasable so as to permit the opening of the crib cover by sliding the assembly laterally along the sliding tracks wherein said formed plastic bubble is composed of a truncated pyramidal base on top of which is an elongated curved structure which provides the appearance of a segment of a large sphere and wherein the locking mechanism can be used to lock the cover in the closed and opened positions.

3,344,443
SUSPENSION SWING-HAMMOCK, CONVERTIBLE CHAIR, AND SUSPENSION SWING-TOY
Roswell W. Bonnell, 24 Corsi Road, Bloomfield, N.J. 07003
Filed Jan. 24, 1966, Ser. No. 522,666
2 Claims. (Cl. 5—120)



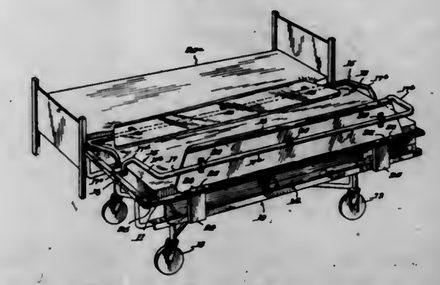
1. A swing-hammock, comprising a supporting frame having a semi-circular seat support portion, and having an auxiliary support portion extending from the lower end of the semi-circular seat support portion, said auxiliary extending portion serving as a supporting means for a suitable canvas covering and a seat extension for the swing-hammock, and a canvas covering supported thereon; means for suspending and supporting the upper end and overall framework of the semi-circular seat portion and auxiliary extending portion, said means including a suspension means embodying a spherical ball socket joint to enable full rotation of the seat section.

3,344,444
BEDCLOTHES STORING AND DISPENSING APPARATUS
Hugh E. McNeal, Spring Valley, Calif., assignor of twenty-five percent to Hugh E. McNeal, twenty-five percent to Carol E. Norton, both of Spring Valley, twenty-five percent to Dianna E. Garcia, Lemon Grove, and twenty-five percent to Fred M. McNeal, San Francisco, Calif.
Filed Nov. 10, 1965, Ser. No. 507,169
6 Claims. (Cl. 5—317)



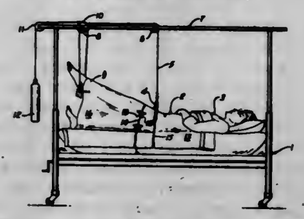
1. In combination: with a bed, a blanket for covering the bed, a roller having a length somewhat in excess of the width of the blanket, means for attaching one marginal edge of the blanket to the roller, means for supporting said roller for rotative movement about the longitudinal axis thereof with the axis in a horizontal position so that the blanket can be wound onto and unwound from said roller, means for rotatively driving said roller to rewind said blanket thereon, and a housing for containing said roller and blanket, said housing including a closure panel hingedly mounted thereon for affording access to said blanket.

3,344,445
SIDE PANEL CONSTRUCTION FOR STRETCHER-BEDS
David C. Crawford, Cincinnati, Ohio, assignor to Institutional Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 12, 1966, Ser. No. 575,486
14 Claims. (Cl. 5—331)



1. In combination, a stretcher-bed having a frame adapted to support a mattress in a horizontal plane above a floor surface, an elongated mattress supported upon said frame, and at least one side panel assembly extending along a side of said mattress, said side panel assembly including a horizontally elongated side panel, and supporting means connected to said frame and pivotally connected to said panel to support said panel for movement between a raised vertical position extending upwardly alongside said mattress and a lowered horizontal position resting upon said mattress, and holding means for selectively holding said panel in said raised position.

3,344,446
ORTHOPEDIC BED COVERING
June M. Tritt, Rte. 2, Omro, Wis. 54963
Filed Aug. 13, 1965, Ser. No. 479,392
6 Claims. (Cl. 5—334)

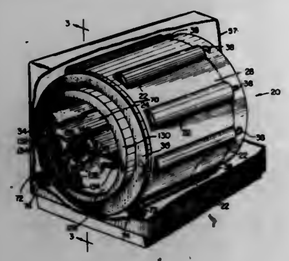


1. A bed covering for use for the patient having an afflicted leg, comprising a sheet having a head, a foot and a pair of side edges, one of said edges having a slit extending transverse to a line extending from the head to the foot and extending a substantial distance from said side edge and adapted to receive a leg of the patient, said slit terminating in spaced relation to the opposite side edge of the sheet, said side edge also having a second slit extending generally parallel to the first slit and located between the first slit and the head.

3,344,447
MATERIAL TREATING MACHINE AND METHOD
Robert R. Candor, Miami Township, Montgomery County, Ohio (5940 Munger Road, Dayton, Ohio 45459), and James T. Candor, Centerville, Ohio (5440 Cynthia Lane, Dayton, Ohio 45429)
Filed Sept. 11, 1963, Ser. No. 308,262
22 Claims. (Cl. 8—159)

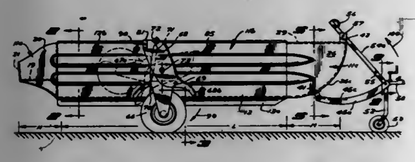
12. A method comprising: retaining liquid in a liquid retaining rotatable drum having a plurality of longi-

tudinal passageways adjacent the periphery of said drum with foraminous constructions providing fluid flow connections between said passageways and the interior of said drum; removing fluid from said drum through said



passageways; rotating said drum to lift and drop accumulations of clothes and the like adjacent said foraminous constructions as said drum rotates about its longitudinal axis.

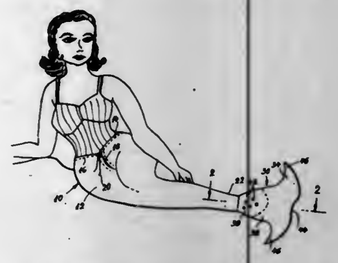
3,344,448
BOAT-TRAILER APPARATUS
George Goetz, 522 3rd St., Bismarck, N. Dak. 58501
Filed Aug. 4, 1966, Ser. No. 570,264
14 Claims. (Cl. 9—1)



1. Boat apparatus comprising a longitudinally elongated boat shell having a bottom wall, said bottom wall having a plurality of transversely spaced, longitudinally extending reinforcing ribs and horizontal planar sections intermediate said ribs, side walls, and a front wall, a front wheel assembly, said front wheel assembly including a front wheel and means mounted on a boat shell for mounting and moving the front wheel between a road traveling condition extending forwardly and below the boat shell and a retracted condition closely adjacent said front wall and at a higher elevation than the bottom wall, and means for releasably locking said front wheel mounting means in a selected one of its positions, and a rear wheel assembly for either side of said boat, each rear wheel assembly including a rear wheel, a transverse pivot member extending outwardly of the respective side wall, means for mountingly retaining the pivot member relative the side wall, and means pivotally mounted on the pivot member for mounting and moving the rear wheel between a position depending below the bottom wall and a retracted position at a higher elevation than the bottom wall, and means for releasably locking the rear wheel mounting means in a selected one of its positions.

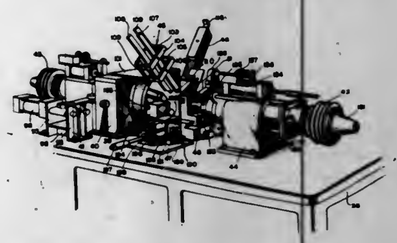
3,344,449
SWIMMING DEVICE OF MERMAID SHAPE
Chlöe Grilli, New York, N.Y. (Hotel Bossert, Montague and Hicks Sts., Brooklyn, N.Y. 21201)
Filed June 10, 1966, Ser. No. 556,688
4 Claims. (Cl. 9—309)

1. A swimsuit of the kind described comprising a tubular tapering fabric body open at its wide end and closed at its narrow end, and a fin structure attached to the narrow end of the body, the closed end of the body and



the body of the fin structure being formed with aligned perforations.

3,344,450
APPARATUS FOR THE AUTOMATIC MANUFACTURE OF PIPE UNIONS
John I. Russo, Cranston, R.I., assignor of one-half to Frank A. Ronci, Providence, R.I.
Filed July 15, 1965, Ser. No. 472,247
50 Claims. (Cl. 10—37)

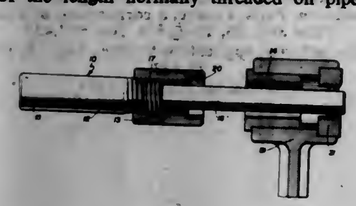


1. A machine for making pipe unions from rough blanks comprising a base, a housing mounted on said base, a chuck rotatably mounted in front of said housing, means for rotating said chuck, a support mounted on said base behind said housing, a spindle mounted in said support and extending through said housing to said chuck, means for rotating said spindle, means for axially reciprocating said spindle to carry a tool into and out of a blank hold in said chuck, a support mounted on said base in front of said chuck, a spindle in said support in axial alignment with said chuck, means for rotating said front spindle, means for axially reciprocating said front spindle to carry a tool toward and away from a blank held in said chuck, a first tool holder mounted on said base to one side of said chuck, means for moving said first tool holder toward and away from a blank held in said chuck, a second tool holder mounted on said base on the side opposite said first tool holder, and means for moving said second tool holder toward and away from a blank held in said chuck.

3,344,451
THREADING TOOL
Clinton S. Finch, Marlow, N.H. 03456
Filed Aug. 2, 1965, Ser. No. 476,600
4 Claims. (Cl. 10—111)

1. A threading tool for use with pipe and a pipe-threading die holder, comprising an integral mandrel having a large portion and a small portion, the small portion having a diameter slightly less than the internal diameter of the said pipe, the large portion being formed with threads in the part adjacent the small portion, an internally-threaded sleeve mounted on the threaded part

of the large portion and extending over the small portion for a considerable distance, the portion of the internal surface of the sleeve which overlies the small portion of the mandrel having a thread which is standard for pipe of the size with which the tool is to be used, the portion of the sleeve overlying the small portion of the mandrel being of the length normally threaded on pipe of the



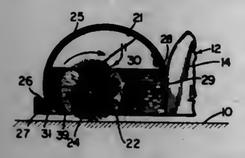
said size so that threaded pipe passed over the small portion of the mandrel and threaded into the sleeve will firmly contact the end of the large portion, and a bushing adapted to fit in a bore in the die holder, the internal diameter of the bushing being equal to the outer diameter of the pipe, the outer diameter of the bushing being equal to the outer diameter of the said sleeve.

3,344,452
CABLE ANCHORAGE
Paul J. Quimby, Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,725
2 Claims. (Cl. 14—21)



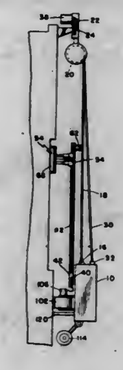
1. A multiple strand cable anchorage adjustable for strand splay comprising:
(a) a plurality of spaced anchorage members,
(b) at least one pivot pin passing through the anchorage members,
(c) circumferentially grooved spools rotatably mounted over the pivot pin between the anchorage members,
(d) the circumferential grooves of at least some of the spools being inclined at an angle from a plane perpendicular to the axis of the spool.

3,344,453
FLOOR TREATING APPARATUS
William B. Price, 1700 E. Washington St., Bloomington, Ill. 61701
Filed Oct. 23, 1965, Ser. No. 503,465
6 Claims. (Cl. 15—50)



1. In apparatus for treating a horizontal floor surface, the combination of a frame, a cylindrical surface treating element mounted on said frame to engage said surface and to rotate about a horizontal axis paralleling the surface while the periphery of the element engages the surface, a motor mounted on said frame and connected to said treating element to rotate the same about said axis at a speed sufficient that liquid on the periphery of the element is thrown by centrifugal force from the element, an elongated disposable collector member extending substantially throughout the length of said surface treating element and above and about the upper portion of the element from a position adjacent said surface to receive and retain substantially all liquid and other material picked up from the surface and thrown by centrifugal force from the element during rotation of the same. said collector member being spaced at all points from said surface treating element and being adapted for and capable of retaining said liquid and other material thrown from the element, and means releasably supporting said collector member on said frame while permitting easy removal and replacement of the member.

3,344,454
REMOTE CONTROLLED WINDOW WASHER FOR HIGH RISE BUILDINGS
Severine Albert Mikalson, 257 B Ave., Coronado, Calif. 92118
Filed Feb. 18, 1966, Ser. No. 538,518
11 Claims. (Cl. 15—50)

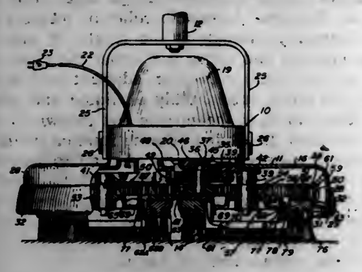


1. A window washer for high rise buildings with fixed glass windows, comprising:
a machine having a casing with a wall-confronting side;
a suspension carriage mounted for traversing motion along the top of a wall containing windows to be washed, said suspension carriage having vertically adjustable hoist drive means by which said machine is suspended;
horizontal and vertical track means fixed on said casing;
a cleaning head movably mounted on said track means and having drive means operable for horizontal and vertical motion, selectively;
and remote control means for said drive means operable by an attendant inside fixed glass windows.

3,344,455
BRUSH ATTACHMENT STRUCTURE
Charles J. Pauler, George A. Westergren, and Erwin E. Nordeen, all of St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,546
5 Claims. (Cl. 15—50)

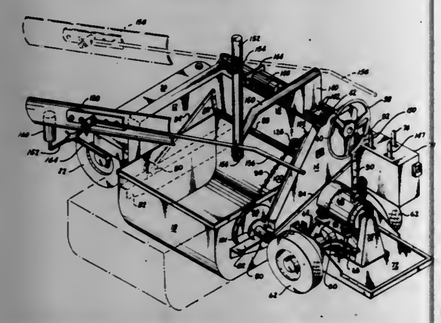
1. A cleaning and polishing machine having fluid storage means, comprising: a housing; a handle pivotally mounted on said housing; power means carried by said housing; a pair of combination gear and brush support means carried by said housing and meshing with each other at a point along the peripheries thereof, said power

means driving one of said meshed gear and brush support means, each said combination gear and brush support means having a chamber for receiving fluid from said



storage means; a brush member resiliently attached to each of said gear and brush support means; and means for dispensing fluid from said chamber in said gear and brush support means to said brush members.

3,344,456
DUMP VEHICLE
Hemmo Schuur, Rte. 2, Box 95, and Harold Goetzinger, 127 Lawrence St., both of Mount Vernon, Wash. 98273
Filed Oct. 24, 1965, Ser. No. 504,487
7 Claims. (Cl. 15—93)



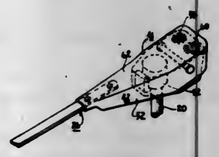
1. A vehicle, comprising:
two spaced apart pairs of wheels;
a transverse frame member associated with each pair of wheels substantially parallel to their axes;
a longitudinal frame member rigidly secured at each end to like ends of and in angular relation to said transverse frame members and substantially in line with like wheels of said pairs;
said transverse and longitudinal frame members defining a well laterally open away from said longitudinal member;
one pair of said wheels being powered by prime mover means carried by said vehicle frame in such manner that the weight thereof is applied to the wheels of said pairs in line with said longitudinal frame member to a greater degree than to said other wheels of said pairs;
an upwardly open receptacle in said well;
means defining a pivot axis longitudinal of said vehicle, said means being located between said receptacle and said transverse frame members and mounting said receptacle for rotary dumping movement about said axis;
means for rotating said receptacle;
means for transversely shifting said pivot axis defining means relative the longitudinal axis of said vehicle to move said receptacle laterally in said well; and scraper blade means carried by said vehicle to operate upon a shelf overlying a portion of said receptacle.

3,344,457
PAINTBRUSHES
Jacques Grobert, Lyon, France, assignor to Societe Rhodiaceta, Paris, France, a corporation of France
Filed July 25, 1966, Ser. No. 567,431
Claims priority, application France, Aug. 13, 1965, 28,323
6 Claims. (Cl. 15—159)



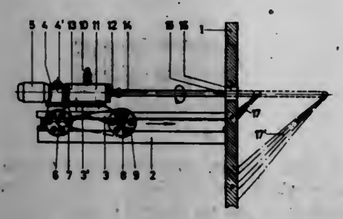
1. A new paintbrush consisting at least partly of synthetic polymer bristles having an essentially tapered longitudinal cross-section and an essentially cruciform transverse cross-section, whose free end is flagged, said bristles being inserted into a ferrule at their point of greatest cross-section, and the cross-sections of the same diameter of the bristles of the same length being arranged essentially in the same plane.

3,344,458
WIPER ARM
Raymond A. Deibel, Cheektowaga, and William C. Riester, Williamsville, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed May 24, 1965, Ser. No. 458,494
2 Claims. (Cl. 15—250.35)



1. A space conserving low profile motor vehicle windshield wiper arm for applying wiping pressure to a windshield wiper blade comprising a shallow arm head section of greater width than thickness including an arm head and arm head cover member including a top and side walls enveloping said arm head to substantially conceal said arm head, said arm head and arm head cover member being hingedly connected about a transverse pivot shaft, an outer arm blade carrying extension rigidly secure to said arm head cover member having its upper surface substantially coplanar with the upper surface of said arm head section, a recess for receiving an end portion of a motor driven shaft within the arm head including means for angularly adjusting the arm head on the shaft, a plurality of coil spring biasing means acting directly between said arm head and said arm head cover member, a plurality of secondary recesses within said arm head and positioned rearwardly of said pivot for receiving and anchoring said plurality of spring biasing means to provide wiping pressure to said blade through said arm head cover member, said spring biasing means disposed in counterbalanced force relationship with respect to the longitudinal axis of said wiper arm whereby the frictional resistance about the transverse pivot shaft is reduced.

3,344,459
SOOT BLOWER FOR STEAM BOILERS
Walter Jankowski, Essen-Katernberg, Germany, assignor to M. Spahr & Co., Essen (Ruhr), Germany
Filed Apr. 16, 1965, Ser. No. 448,746
4 Claims. (Cl. 15—317)



1. In a soot blower for steam boilers wherein a blast pipe member having an angularly positioned fluid outlet communicating with an axial passageway in the blast pipe member is connected to a power means which axially advances the outlet end of the pipe in the furnace while rotating the pipe member so that the discharged fluid describes a spiral path on the furnace wall, the improvement comprising: valve means connected to said pipe member to control the flow of fluid going to said outlet and connected to the power means to be actuated thereby, to throttle the fluid flow when said outlet is closest to the wall, to have the fluid flow substantially unthrottled when said outlet is farthest from the wall, and to gradually change the throttling between those two extremes.

3,344,460
VACUUM CLEANER
Erwin E. Nordeen, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 23, 1965, Ser. No. 450,368
4 Claims. (Cl. 15—351)

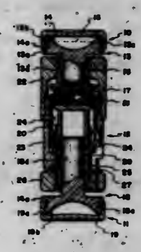


1. A vacuum cleaner, comprising: a nozzle adapted to have dirt laden air drawn therethrough; a rigid housing adapted to contain a filter for separating dirt from air and having an opening through which said filter is accessible for ready replacement; a movable cover across said opening; a first air conduit of rigid material communicating with said nozzle and extending into said housing with an exit end at an upper portion of said housing; air permeable means in said housing spaced from said first air conduit on which said filter rests during the cleaning operation, said air permeable means comprising a rigid air permeable false bottom member in said housing resting on the bottom of said housing and having an air permeable bag supporting portion spaced above the bottom thereof on which said filter rests during cleaning; a rigid second air conduit from said housing on the side of said air permeable means opposite said filter, said rigid housing and first and second conduits being integral with each other, and said bottom member being loosely held within said housing for removal through said opening; and suction means for drawing dirt laden air through said nozzle, through said first conduit and into said filter and drawing clean air from said filter, through said air permeable means and said second conduit and exhausting said air from the cleaner, said first and second rigid conduits exteriorly of said housing having a common wall between them for mutual strengthening and forming a direct connection with said nozzle.

ERRATUM

For Class 15—407 see:
Patent No. 3,344,680

3,344,461
CONTACT LENS HANDLING APPARATUS
Dennis W. Floor, 346 East 3360 South, Salt Lake City, Utah 84115
Filed Oct. 23, 1965, Ser. No. 503,147
9 Claims. (Cl. 15—512)

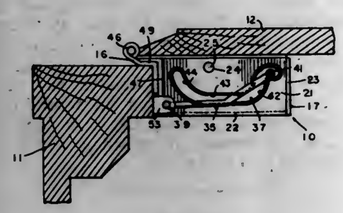


1. Apparatus for handling contact lenses comprising
end means, each including a pad for scrubbing the face of a contact lens; and
central means positioned between said end means for receiving and holding a contact lens to be scrubbed by rotation of the said pad means.

3,344,462
SELF-CLOSING DOOR MECHANISM OR HINGE
Edward M. Webster, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,823
13 Claims. (Cl. 16—80)

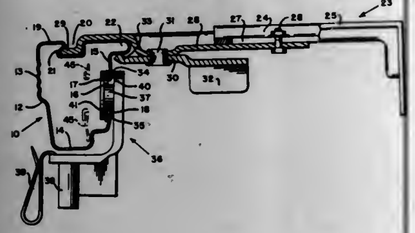
1. A hinge assembly providing a self-closing action from approximately 45° open position comprising a hinge wing adapted to be secured to a cabinet and a housing adapted to be secured to a cabinet door, said housing including parallel side walls joined by a base and having outwardly extending mounting flanges, said housing being closed at one end and open at the end adjacent the hinge wing, a pivotal mounting joining one edge of the hinge wing with the open end of the housing, said side walls having elongated irregular aligned slots therein, a generally U-shaped link having a base extending through said slots and said housing and joining a pair of divergent arms terminating in outwardly extending ends, a pair of spaced ears on said hinge wing adjacent the edge opposite said pivotal mounting receiving the ends of the link, and spring-biasing means within said housing including a pivot pin mounted in said housing nearer the open end thereof, a pair of oppositely disposed guides and a spring urging

said guides outwardly, one guide being pivotally mounted on said pivot pin and the opposite guide being pivotally mounted on said link, said irregular slots each having an arcuate portion adjacent the open end of the housing with



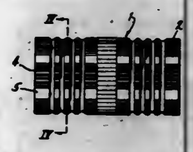
the pivot pin as the axis of the arc, a generally straight portion extending from the arcuate portion toward the closed end of the housing and a second arcuate portion merging onto the opposite end of the straight portion and adjacent the closed end of the housing.

3,344,463
TRAVERSE ROD
Henry Znamirowski, Ellicott City, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed Apr. 16, 1965, Ser. No. 448,679
3 Claims. (Cl. 16—94)



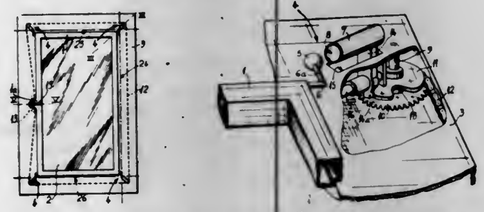
1. A drapery traverse rod and support therefor comprising, a hollow rod having front, bottom, rear and top walls, said rear wall having a slot forming a track for drapery supporting sliders and a flange portion above the slot extending rearwardly beyond the slotted wall portion, said flange portion having its upper surface integral with the top wall of said rod, both said slot and said flange portion extending substantially the full length of said rod, said top wall having a longitudinal groove extending substantially the entire length of said rod, said groove being open at the top of said rod with the bottom wall of the groove disposed below the top wall of the rod and with the front wall of said groove being formed with a re-entrant angle to give a dovetail-like form, and a bracket adapted to be attached to a supporting wall and including a supporting arm for said rod adapted to lie on the rear portion of said top wall and having a forward end portion adapted to fit down into said groove in the top wall in engagement with the front, rear, and bottom walls of said groove with the leading edge of said forward end portion meshing with said dovetail-like form on the front wall of said groove, and a clamping member carried by said supporting arm and adapted to engage the lower surface of said flange portion to clamp said flange portion between the portion of said arm lying on said top wall and said clamping member.

3,344,464
PENCIL FERRULE
Joseph B. Ostrowski, Godfrey, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 31, 1964, Ser. No. 356,196
6 Claims. (Cl. 16—108)



1. A high strength aluminum pencil ferrule comprising a hollow cylinder of aluminum having a plurality of longitudinal serrations on the outer face thereof, said serrations covering the major portion of the outer face of said cylinder and extending longitudinally over the entire surface thereof.

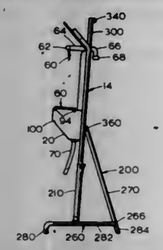
3,344,465
HINGING DEVICE OF A LEAF ON ITS FRAME
Rolf Neumeister, Grand-Lancy, Geneva, Switzerland, assignor of one-third to Arthur Marguelisch, Geneva, Switzerland
Filed Mar. 10, 1965, Ser. No. 438,631
Claims priority, application Switzerland, Mar. 13, 1964, 4,106/64
9 Claims. (Cl. 16—147)



1. In a hinging device of a leaf on frame, permitting rotation of said leaf around at least two different axes, at least three joints each including a ball element and a corresponding integral socket element, said elements being engaged by partial insertion of the ball element in the socket element and disengaged by withdrawal of the ball element from the socket element, said ball element being freely removable from and engageable with the socket element solely by relative linear displacement therewith, one of said elements being carried by the leaf and the other by the frame, each joint being arranged at a corner of the said leaf and frame, the center of each ball element being situated on the bisecting line of one of the said corners, and means whereby one of the said elements of said joints is linearly displaceable as a unit relative to the other element of the joint so that the said two elements of each joint can be selectively separated one from the other, such that, when only two of the said joints have their elements in engagement, the rotation of the leaf can be effected around the geometrical axis passing through the center of the ball elements of the said two joints.

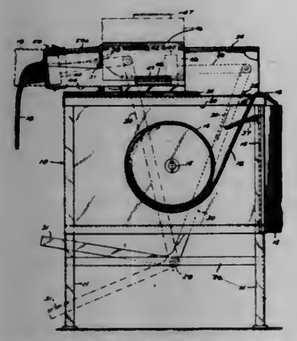
3,344,466
GAME CLEANING STAND
John J. Pleskac, Box 23, Rte. 1, Ulysses, Nebr. 68669
Filed May 10, 1965, Ser. No. 454,379
4 Claims. (Cl. 17—11)

1. A hunter's cleaning stand having a game and poultry supporting section having a bin with an open top for receiving cleanings, an upstanding piece of sheet material extending upwardly from said bin and of a size for guiding drippings into said bin, said sheet material forming a back wall of said supporting section, said piece of sheet material having an upper portion extending angularly forward of the remainder of said back wall, the upper edge



of said back wall portion having a plurality of notches therein, said notches opening outwardly and each notch being generally wedge-shaped for the wedging of the appendages of game therein.

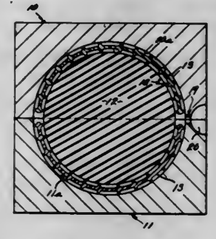
3,344,467
MEAT PRESS
Richard J. Barbu, Lindenhurst, N.Y., assignor to Markbar Corporation, Garden City, N.Y., a corporation of New York
Filed Aug. 23, 1965, Ser. No. 481,576
1 Claim. (Cl. 17—38)



A meat stuffer comprising a meat chamber, a forwardly tapered horn communicating with said chamber, a casing disposed over the outer end of said horn, means for compressing a meat product in said chamber and ejecting the meat through said horn and into said casing, a cabinet supporting said stuffer, said means including a piston head and piston rod arranged to enter said chamber and said horn, an arm pivotally secured to and downwardly depending from said piston rod and a pedal extension of said arm, said arm being pivotally mounted at a stationary site on said cabinet located rearwardly of and below said horn whereby said piston rod is moved arcuately so as to cause the piston bead to scrape the bottom of said horn for removal of substantially all the compressed meat product therefrom.

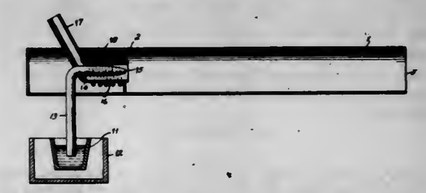
3,344,468
CENTERING INSERT FOR GOLF BALL MOLDING
Ernest P. Moslo, 2443 Prospect Ave., Cleveland, Ohio 44115
Filed June 11, 1964, Ser. No. 374,522
2 Claims. (Cl. 18—1)

1. A slightly less than hemispherical open cage of thermoplastic material, two of which cages are adapted to fit snugly between a golf ball mold having a hollow spherical chamber whose walls are adapted to lie outside of said cage and a spherical golf ball center whose outer surface is adapted to lie inside of said cage, two of said cages adapted to substantially completely embrace a golf ball center, said cage material adapted to fuse with a golf ball cover when injection molded between said center and said mold walls, said cage being provided with a plurality of extending projections some extending outwardly in position to engage said mold walls and some extending inwardly in position to engage said center, said projections being the only portion of said cage adapted to engage said mold walls and said center, each said cage having a base circular ring on the flat side of said near-



hemisphere and having a plurality of equally spaced generally half circular ribs extending from a first point on said base ring through the polar cap of said hemisphere to a second point on said base ring diametrically opposite said first point, said projections on said ring and ribs being of uniform length and being substantially evenly distributed on said ring and ribs, all of said ribs and ring and projections being a unitary structure, whereby to provide sufficient of said projections evenly distributed over all parts of an enclosed golf ball center to hold it against movement in any direction and insuring true concentricity between such a center and the cover molded upon it, and providing concentrically balanced construction in the finished ball.

3,344,469
APPARATUS FOR PRODUCTION OF FINE SPHERICAL METAL PARTICLES
Linton D. Bylund, Chesterfield County, and Francis B. Rethwisch, Goochland County, Va., and William P. Woosley, Jefferson County, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Original application Aug. 16, 1962, Ser. No. 217,415, now Patent No. 3,293,334. Divided and this application Feb. 7, 1966, Ser. No. 559,011
4 Claims. (Cl. 18—2.5)



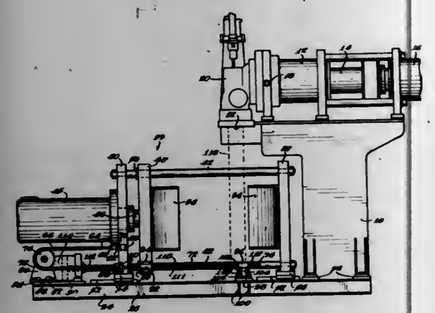
1. Apparatus for the production of fine spherical particles of a reactive metal such as aluminum, by disintegrating the metal in molten condition into fine particles and passing the particles through a spheroidizing zone while maintaining a protective atmosphere within said zone to prevent premature oxidation of said particles, comprising:

(a) an elongated tube defining a spheroidizing zone, said tube having an inlet end and being open at the opposite end to provide an outlet for the finished particles;

(b) means for discharging particles of molten metal into the tube adjacent its inlet end, including molten metal atomizing means having a nozzle to receive the molten metal from a supply thereof, said atomizing means being adapted to disintegrate the molten metal into fine particles; and

(c) means for introducing gas under pressure to maintain a protective atmosphere around the particles within said zone.

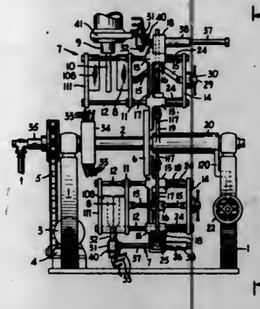
3,344,470
SIMULTANEOUSLY CLOSING BLOW MOLDING MACHINE
Richard A. Hufford, Moline, Ill., assignor to Williams, White & Company, Moline, Ill., a corporation of Illinois
Filed July 16, 1963, Ser. No. 295,485
8 Claims. (Cl. 18—5)



1. A simultaneously closing blow molding machine comprising a clamp assembly including a frame having a first and second plate and columns tying said plates together in spaced parallel relation, said assembly including a clamp mounted between said plates for movement toward and away from said first plate, a cylinder and piston combination connected at one end to said clamp and at the other end to said second plate, a stationary parison extruder having a die head for the downward delivery of a plastic polymer parison between said first plate and said clamp, means mounting said assembly for movement in the line of said clamp movement, a rotatable member having a positionally fixed axis of rotation, means connecting said clamp to said member at a point spaced from said axis whereupon movement of said clamp toward said first plate rotates said member in one direction, and means connecting said assembly to said member at a point equally spaced from said axis whereupon said rotation of said member moves said assembly in the direction opposite to the movement of said clamp.

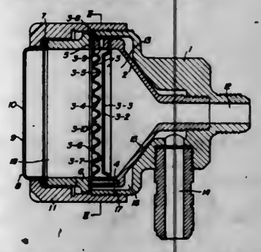
3,344,471
AUTOMATIC ROTARY MACHINE FOR BLOWING HOLLOW BODIES, PARTICULARLY BOTTLES, OF THERMOPLASTIC MATERIAL
Nerio Martelli, Bologna, Italy, assignor to Solvay & Cie, Brussels, Belgium, a Belgian company
Filed Aug. 18, 1964, Ser. No. 390,403
Claims priority, application Italy, Aug. 29, 1963, 18,032/63
4 Claims. (Cl. 18—5)

1. An automatic rotary machine for continuously blowing a parison of a thermoplastic material to form hollow bodies, comprising a frame, a shaft rotatably mounted on the frame, means for continuously rotating the shaft, a plurality of blowing units mounted on the shaft at an angular displacement from one another and for rotation with the shaft, each of the blowing units comprising a pair of complementary half-molds adapted to assume alternatively a closed position and an open position, an extrusion head positioned at the periphery of the path of rotation of the pairs of half-molds for continuously feeding a parison of thermoplastic material to the pairs of half-molds, means for urging each of the pairs of half-molds into a closed position, means for moving each of the pairs of half-molds against said urging into an open position, said means for moving each of the pairs of half-molds into an open position comprising for each of the pairs of half-molds toggle joint means connected at one end to one of the half-molds of the pair and cam means



mounted on the frame and positioned to engage the toggle joint means and thereby to open the pair of half-molds as the pair of half-molds is rotated into juxtaposition to the extrusion head and subsequently to disengage from the toggle joint means and thereby to permit the pair of half-molds to be closed by said urging means as the pair of half-molds is rotated out of juxtaposition to said extrusion head, and, in combination with each of the blowing units, a blowing head adapted to assume alternatively a position at the periphery of the pair of half-molds of the blowing unit for blowing into said pair of half-molds and a position displaced from said periphery of said pair of half-molds and means for moving the blowing head to said displaced position as said pair of half-molds is rotated into juxtaposition to the extrusion head.

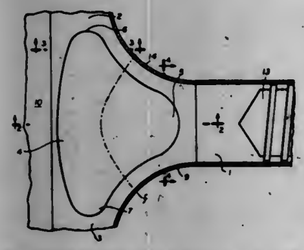
3,344,472
APPARATUS FOR PRODUCING CRIMPED FIBERS
Joichi Kitajima, Keishiro Ueno, and Haruo Sugimoto, Ohtake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd. and Mitsubishi Vonnel Co., Ltd., both of Tokyo, Japan, and both corporations of Japan
Filed Feb. 18, 1964, Ser. No. 345,759
Claims priority, application Japan, Feb. 20, 1963, 38/8,900; Aug. 31, 1963, 38/46,939; Oct. 12, 1963, 38/54,364
11 Claims. (Cl. 18—8)



1. A spinneret assembly comprising a first and second fluid supply means, a distributor common to said first and second fluid supply means and having a plurality

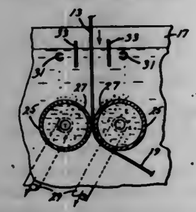
of distribution orifices defined thereby, a spinneret spaced from said distributor and having a plurality of extrusion orifices defined thereby, a fluid carrying chamber defined by said distributor and spaced spinneret, means associated with said distributor for providing a flow of spaced filaments of said first fluid, each of said filaments being substantially encased in a flow of said second fluid to form borders between said fluids, the ratio of the number of extrusion orifices of said spinneret contacted by said fluid borders to the total number of extrusion orifices contacted by said first fluid alone and said second fluid alone being 20–85:80–15.

3,344,473
SHEET EXTRUSION DIES FOR THE EXTRUSION OF THERMOPLASTICS
Arno Achterberg, Troisdorf-Oberlar, Helmut Gormar, Hennef, and Karl-Heinz Kleefisch, Bonn, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany
Continuation of application Ser. No. 327,790, Dec. 3, 1963. This application July 14, 1966, Ser. No. 572,165
Claims priority, application Germany, Dec. 4, 1962, D 40,433
5 Claims. (Cl. 18—12)



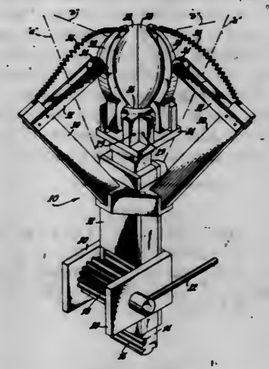
1. In an extrusion device having a slot discharge opening; an extrusion press disposed intermediate the ends of said slot discharge opening and spaced apart therefrom; and conduit means disposed between said discharge opening and said press which joins said press at an inlet; wherein said conduit means extends outwardly from said inlet to the ends of said discharge opening and is adapted to distribute material from said press over the width of said discharge opening; the improvement which comprises providing said conduit means having a cross-sectional area, measured perpendicular to a flow axis therein, of up to the cross-sectional area of said inlet.

3,344,474
FILM MANUFACTURE
Donald M. Davis, Claymont, Del., Anthony J. Schreiber, Philadelphia, Pa., and Harry W. Sherman, Wilmington, Del., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 29, 1963, Ser. No. 319,719
7 Claims. (Cl. 18—15)



1. Apparatus for making a continuous film comprising means for extruding a continuous, generally flat stream of film-forming material, a tank containing a liquid bath for setting the extruded stream into a film, means for advancing the film through and outwardly from said tank, a tube positioned within said tank for engaging with one side of the film, said tube having an opening therein; and suction means connected to said tube for removing bubbles of gas from at least one side of the film as it approaches said tube.

3,344,475
APPARATUS FOR SHAPING MATERIALS AND SUBSTANCES INTO A ROUND BALL
Salvatore M. Gioe, 817 Logan St., Brooklyn, N.Y. 11208
Filed Nov. 8, 1965, Ser. No. 508,190
5 Claims. (Cl. 18—16)



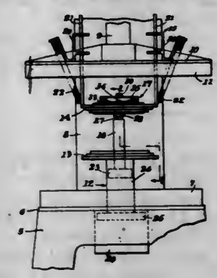
1. Apparatus for forming a spherical article, said apparatus comprising:

(a) a movable support member having a concave, spherical seat portion defined by a circular edge;

(b) a plurality of concave spherical segments pivotally mounted on said support member, said segments each having arcuate edges;

(c) drive means to concurrently move said segments whereby the edges thereof are in abutment with each other and with the circular edge of said seat portion to define a hollow, spherical molding form.

3,344,476
MOLD PRESS
Floyd E. Kite, Van Nuys, Calif., assignor to McWhirter & Sons, Inc., Van Nuys, Calif., a corporation of California
Filed May 4, 1965, Ser. No. 453,049
3 Claims. (Cl. 18—18)



1. In a mold press having a vertically movable top platen and a top bead plate arranged below said top platen for engaging the rim bead on one side of a tire

being compressed in said press, an axially aligned power hoist with an upwardly directed vertically movable power shaft, a bottom bead plate mounted on said hoist in axial register with said top bead plate, the mentioned shaft extending through the center of the top bead plate,

(a) means including guide rods extending from the marginal portion of the top bead plate and extending upwardly therefrom through said top platen,

(b) brackets fixed to said top platen providing guides for the vertical movement of said guide rods, said brackets having lateral extensions,

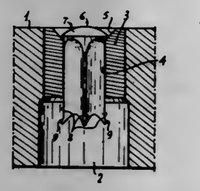
(c) springs suspending the top bead plate from the lateral extensions of said brackets to resiliently support said top bead plate,

(d) a connecting portion at the upper portion of said power shaft,

(e) a spring-urged latch means carried by the top bead plate for automatically connecting said connecting portion of said power shaft to the top bead plate, and

(f) a hinged tongue member mounted on said top bead plate for retaining said latch in retracted position, said tongue member including a portion overlying said shaft for engagement therewith to release said spring latch means upon initial movement of said shaft, whereby said latch means will automatically form a locking connection with said shaft.

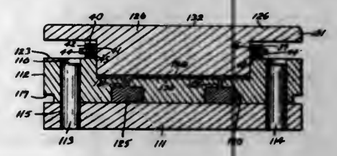
3,344,477
VALVE FOR MOLDING OF PLASTIC UNDER PRESSURE
Edmond Stokis, 6 Square de la Gascogne, Paris, France
Filed Oct. 5, 1964, Ser. No. 401,495
3 Claims. (Cl. 18—34)



1. A non-return valve for plastic injection molding, comprising a valve body having a bore therethrough with a tapered enlargement at one end, a non-return valve member reciprocable in the bore and having a head having a sharp edge that engages said tapered enlargement with line contact, said valve member having a plurality of longitudinally extending ribs thereon which engage with minimum clearance the bore of the valve body and which define between them longitudinally extending passages that communicate with the underside of said head, said ribs being enlarged radially outwardly at their ends opposite said head so as to retain said body in said bore between said head and said enlarged rib ends, said head and said enlarged ends being spaced apart from each other a distance sufficient to permit substantial reciprocal movement of said valve member in said bore.

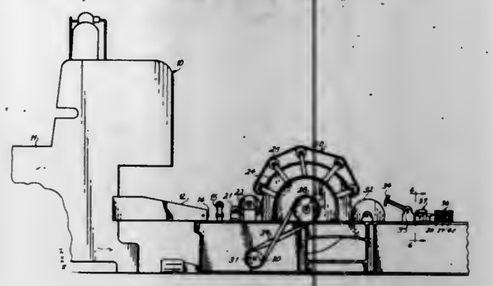
3,344,478
SELF-ALIGNING PISTON FOR TRANSFER MOLDING MEANS
Milton Morse, 1 Horizon Road, Fort Lee, N.J. 07024
Filed Oct. 24, 1965, Ser. No. 504,930
4 Claims. (Cl. 18—42)

1. In a transfer molding device including a cavity plate having an upwardly disposed recess, a plurality of molding cavities and a plurality of sprues interconnecting said recess in said cavities, and a plunger having a portion corresponding in configuration to said recess selectively insertable thereinto, the improvement comprising: a ring means positioned upon and surrounding said last-mentioned portion for controlling the degree of ingress of said



portion into said recess, and axially aligning the principal axis of said portion with respect to that of said recess upon such ingress.

3,344,479
APPARATUS FOR CLEANING FIBERS
Morris M. Bryan, Jr., Jefferson, Ga., assignor to The Jefferson Mills, Inc., Jefferson, Ga., a corporation of Georgia
Filed Oct. 23, 1964, Ser. No. 405,915
9 Claims. (Cl. 19—65)

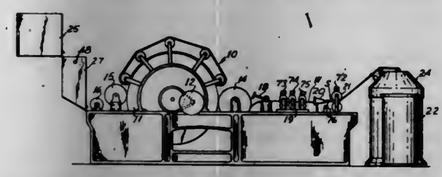


1. In an apparatus for separating foreign matter from fibers, carding means for forming said fibers into a web of fibers; first drafting means for drafting said web of fibers between a plurality of successive pairs of drafting rolls; shaker means for shaking foreign matter from said web of fibers as said web of fibers passes between said carding means and said first drafting means; second drafting means positioned to receive said web of fibers from said first drafting means for additionally drafting said web of fibers by transferring fibers in said web of fibers to the surfaces of each of a plurality of successive rolls having progressively higher surface speeds to provide a relatively thin layer of fibers on the last of said rolls; and collecting means for drawing fibers from said thin layer of fibers on said last of said rolls by an upwardly moving current of air passing over said last of said rolls so as to separate said fibers and for collecting fibers in said current of air on a collecting screen through which said current of air passes and from which fibers are passed for further processing.

3,344,480
AUTOMATIC FIBER PROCESSING APPARATUS
Morris M. Bryan, Jr., Jefferson, Ga., assignor to The Jefferson Mills, Inc., Jefferson, Ga., a corporation of Georgia
Filed Sept. 13, 1965, Ser. No. 486,767
6 Claims. (Cl. 19—65)

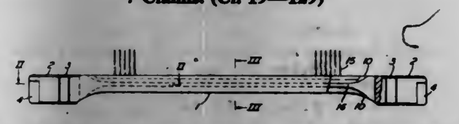
1. In a fiber processing apparatus having a card cylinder driven by a first motor, means for feeding fibers to said card cylinder including a rotatable feed roll positioned to feed fibers toward said card cylinder, and means for removing fibers from said card cylinder including a rotatable doffer positioned to remove fibers from said

card cylinder, an electrical voltage generator operative to provide a variable power output in response to changes in its speed, means for varying the speed of said electrical voltage generator, a second motor operable by said power output at a speed determined by said power output and



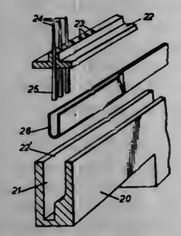
drivingly connected to said feed roll so as to rotate said feed roll, a third motor operable by said power output at a speed determined by said power output and drivingly connected to said doffer so as to rotate said doffer, and means for varying the speed of said third motor independently of said power output.

3,344,481
FALLERS FOR TEXTILE MACHINES
Moore Hill, Belfast, Northern Ireland, assignor to James Mackie & Sons Limited, Belfast, Northern Ireland, a British company
Filed June 24, 1965, Ser. No. 466,558
Claims priority, application Great Britain, June 26, 1964, 26,571/64
7 Claims. (Cl. 19—129)



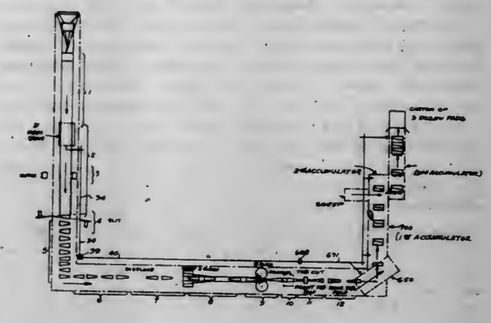
1. A faller for a textile machine, said faller comprising a body having a central portion of substantially uniform depth terminating at each end in a head portion of greater depth, said body being formed with a longitudinal slot passing through the depth of said body and extending beyond the ends of said portion of substantially uniform depth and into the head portions, a mounting of rubber-like elastomer secured in said slot and a plurality of pins extending through and supported by said mounting.

3,344,482
FALLER BARS FOR TEXTILE COMBING MACHINES AND OTHER COMB-LIKE MEMBERS
Matthew Kenneth Mann, Shipley, and Norman Rushworth, Baildon, England, assignors to Plastex Limited, Dublin, Ireland, a corporation of Ireland
Filed June 29, 1965, Ser. No. 467,902
Claims priority, application Great Britain, July 1, 1964, 27,073/64; Mar. 17, 1965, 11,215/65
9 Claims. (Cl. 19—129)



1. A lightweight comb-like member for a textile combing machine comprising a body molded of synthetic resin material and having integral end sections shaped for mounting the member in said machine, a series of pins arranged in a row along an intermediate section of said body disposed between said end sections with their butt ends permanently imbedded within said material and having pointed ends projecting from said body, and a longitudinally extending resilient spring metal reinforcing element permanently imbedded within said body to extend adjacent said butt ends of the pins and having its ends disposed and anchored within said body end sections, said element being shaped as a channel with the butt ends of the pins projecting through the open side thereof into the material filling said channel, and said element and said pins being independently incorporated within said body.

3,344,483
APPARATUS AND METHOD FOR MAKING CELLULOSIC PRODUCTS
Richard D. Anderson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,893
35 Claims. (Cl. 19—145)



1. Apparatus for making tapered sanitary pads of approximate isosceles trapezohedron shape applying pad wrapping, forming end tabs of the wrapping connecting the pads and folding the tabs over the pad, comprising, in combination: means for feeding wrapped wadding intermittently to a clamping mechanism for the wadding; slitting mechanism adjacent said clamping mechanism for alternately cutting said wadding at the clamping mechanism as the wadding is successively stopped in its feeding at equal acute but oppositely disposed angles to the line of feed of said wadding whereby to cut isosceles trapezohedron pads having a wide end and an opposite narrow end and nonparallel sides; a continuously running conveyor means in line with said intermittent feed means and beyond said clamping mechanism and said slitting mechanism in the line of flow of said wadding to transfer the cut pads at equal spaced apart side by side and oppositely disposed relation with their axes normal to the line of movement of said continuously running conveyor means; arresting means at the end of said continuously running conveyor means for arresting said pads with their axes disposed normal to the line of their feed; first transverse conveyor means adjacent the arresting means and said continuously running conveyor means for transferring the pads in equal spaced relation wide end to wide end and short end to short end; spacing mechanism for receiving the pads in line from said first transverse conveyor means and spacing them with their wide ends relatively close together and their narrow ends relatively far apart; wrapping web feeding mechanism feeding wrap to a pad receiving and wrap folding mechanism next adjacent in line of flow to said spacing mechanism whereby pads are received in said spaced relation on said wrap and the wrap is folded

over into a tube of uniform cross section as large as the larger end of said pad whereby loose wrap extends adjacent the tapered sides of the pad from adjacent wider end to the narrower end; a form roll under which said pads and wrap are lead from said wrap folding mechanism, said form roll having a rim whose periphery matches the varying width of said spaced pads and joining wrap portion passing therebeneath, said roll having sides at the rim generally normal to a line generating the peripheral surface of the roll; rotating friction rolls on each side of said form roll with the peripheral friction surface having cooperating contact with said sides of the form roll at the locus of passage of the pads and wrap, the loose wrap being between the sides of the form roll and friction rolls on each side, said friction rolls lying in planes inclined upwardly in the direction of flow of the pads thereunder and generally normal to the plane of the form roll whereby a plane containing the axis of the form roll and the tangental locus of contact of the pads and wrap intersects the planes containing the axes of the form rolls in said locus of contact; means for rotating said friction rolls with peripheral speed equal to or greater than the wrap and pad speed in the direction of flow whereby the loose wrap is drawn up along each side of the form roll; conveyor means having flights for pads and connecting wrap conveying the same from the form roll; folding means following the form roll and cooperating with said just-mentioned conveyor means for folding the wrap formed on each side of the form roll onto the narrower end portion of the pad and as overlap on the wrap connecting the narrow ends of the pads; calender means between which said pads and pad connecting wrap is led for calendering the same; conveying means conveying the wrapped and calendered pads and connecting wrap to a cutter means having a cutter for severing the connecting wrap to form a rear tab for the leading pad and a front tab for the trailing pad as respects the just-mentioned positions to said cutter; said cutter means having rotary mounting means and cooperating with a bed knife over which the connecting wrap is led and severed by said cutter, said rotary cutter means having suction means trailing the cutter thereon for holding the leading tab to the rotary cutter means as the pad is conveyed on in the line of flow on said last-mentioned conveying means; said conveying means conveying the pads and their connecting wrap to the cutter means having a portion extending each side of and below the bed knife in the line of flow; an endless conveyor means following said cutter means in the direction of flow and having a bottom run overlying said conveying means portion following the bed knife, said bottom overlying run just-mentioned stripping said leading tab from the suction means and folding it back over the leading end and top of the pad passing thereunder; a further endless conveyor receiving said pads on a run thereof; and a rear tab folding means for folding the rear tabs over the rear end and top of the pads as they move in the line of flow on said just-mentioned run to complete the formation of said sanitary pads.

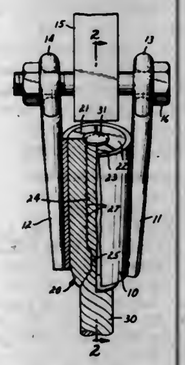
3,344,484
WRITING INSTRUMENT
Nathan A. Zepell, Marina City, 300 N. State, Chicago, Ill. 60610, and Donald P. Grover, Chicago, Ill., assignors, by direct and mesne assignments, to said Nathan A. Zepell, Chicago, Ill.
Filed Sept. 24, 1964, Ser. No. 398,941
5 Claims. (Cl. 24—11)

1. A clip for a writing instrument comprising: a relatively long, slightly curved, flexible, pivot arm of substantially U-shaped cross-section; a bead member positioned at one end of said pivot arm extending in the direction from the concave surface thereof; means for rockably mounting said clip on a writing instrument, such means being positioned on said clip intermediate the ends thereof, said means comprising extensions of generally rectangular shape from the side walls of said clip in a direction extending from the concave surface thereof, and resilient means integral with said pivot arm at the end



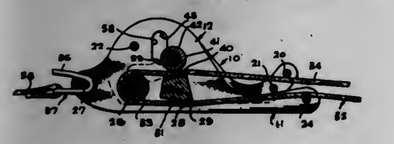
of said pivot arm opposite said bead said resilient means comprising a pair of resilient lugs spring biasing said clip upon cooperation with a tapered slot in a writing instrument.

3,344,485
ROPE CLAMP AND CLEVIS
Alan J. Lommen and Merrel M. Hankenson, both of Dickey, N. Dak. 58431
Filed July 12, 1965, Ser. No. 471,071
3 Claims. (Cl. 24—126)



1. Connecting apparatus comprising:
(a) a rope composed at least in part of nylon;
(b) a first cylindrical member having a radially tapered longitudinal hole therethrough;
(c) means fixedly attached to said first member for further removable connection with exterior apparatus;
(d) a second cylindrical member having a radially tapered outer surface mated within said hole in said first member and a longitudinal hole therethrough having said rope positioned therein with the main body of said rope extending outwardly from one end thereof and one end of said rope extending outwardly a short distance from the other end thereof, the diameter of said hole through said second member being somewhat smaller than the diameter of said rope, and said second member including a plurality of longitudinally separable sections each section forming an arcuate portion of said cylindrical section about said rope;
(e) said one end of said rope extending outwardly from the hole in said second member being at least partially melted to produce a relatively solid enlarged portion of said rope;
(f) the surface of said hole through said second member having a plurality of indentations formed therein;
(g) said hole in said second member having a radius substantially smaller than the radius of said rope and a portion having a substantially reduced radius for providing an extra gripping force on said rope to prevent substantially any relative movement between said rope and said second member; and
(h) the hole through said second member tapering radially outwardly adjacent said one end to provide a smooth surface over which said rope resumes its normal diameter.

3,344,486
BUCKLE HAVING A PRESSURE MEMBER CONNECTED TO SLOTTED PIVOTALLY RELATED FRAME MEMBERS
La Vere J. Eveland, North Hollywood, Calif., assignor of one-half to Irving M. Golden, Burbank, Calif.
Filed June 15, 1965, Ser. No. 464,035
8 Claims. (Cl. 24—194)



1. A buckle for holding a strap comprising:
a first frame member having a first pair of spaced sides;
a second frame member having a second pair of spaced sides, the sides of said second pair being adjacent the sides of said first pair;
pivot means for pivotally connecting said first and second frame members together;
cam means pivotally supported by said first pair of sides and having a gripping portion for engaging said strap;
a first pair of cam slots in said first sides and a second pair of cam slots in said second sides;
a pressure roller normally located opposite said cam member for holding said strap against said gripping portion and having opposite ends, each end passing through the cam slots in the sides of said first and second members adjacent one another; and
said slots being shaped to move said pressure roller away from said strap upon relative movement between said frame members about said pivot means.

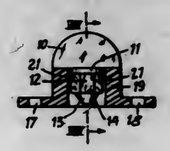
3,344,487
COUPLING FOR RELEASE AT PRE-DETERMINED LOAD
Joseph L. Doutt, Box 335, Wampum, Pa. 16157
Filed Apr. 2, 1965, Ser. No. 445,128
5 Claims. (Cl. 24—201)

1. A tension coupling for release at a pre-determined load comprising a body member, a resilient bifurcated member having a pair of arms extending from a common single end, the exterior surfaces of the opposed ends of said arms being spaced apart a distance at least equal to the inside diameter of the tubular body member, said bifurcated member being slidably positioned within a recess in the body member, a first tension member adapted to extend into the body member and connected to the single end of the bifurcated member, position holding means extending between the body member and the first tension member and in operative relationship between the body member and the bifurcated member whereby the bifurcated member may be axially positioned relative to



the body member as desired from a non-release position in which the ends of the arms of the bifurcated member are contained within the body member to a position capable of releasing a load at a selected load level in which the arms of the bifurcated member project out of the recess in the body member, a second tension member, and non-planar cooperatively engaging surfaces on the bifurcated member and the second tension member whereby the second tension member may be springably clamped between arms of the bifurcated member.

3,344,488
SEPARABLE HEAD AND SOCKET FASTENER ELEMENTS
Jean Pierre Texier, Neuilly-sur-Seine, Seine, France, assignor to Pyraplastic (Société à Réponsabilité Limitée) Paris, France, a corporation of France
Claims priority, application France, Dec. 22, 1964, 999,573
Filed June 28, 1965, Ser. No. 467,286
3 Claims. (Cl. 24—221)

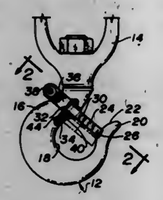


1. A fastener element including cooperative component members adapted to secure an eyelet member therebetween comprising in combination, a plastic socket member including a base portion having means defining an opening therein, parallel coextensive distortable means within said socket member, a rotatable head member for assembly with said socket member and having an operator means therefor, a depending shank portion carried by said operator including lock means carried at the free end thereof, said lock means including a generally conical wall extending therebeyond for distending the parallel coextensive means to facilitate introduction of the locking means between said distortable means thereby enabling subsequent relative rotation between the head and socket members to permit engagement of or removal therefrom of an eyelet member.

3,344,489
SAFETY GATE FOR HOOK
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.
Filed Nov. 26, 1965, Ser. No. 509,768
4 Claims. (Cl. 24—241)

1. A safety gate for a hook of the type having a body forming a basket portion and a throat portion of nar-

rower width than the basket portion, said gate comprising an elongate body having a length greater than the width of the throat portion and less than the width of the basket portion, said body having an arm extending laterally therefrom exterior of said throat, means for mounting said arm to said hook for pivotal movement



about an axis substantially perpendicular to the throat opening, said arm mounting means being adapted to afford movement of said arm and gate body along said axis to a first position bridging said throat and a second position within said basket, and means for resiliently biasing said arm and gate body to said first position.

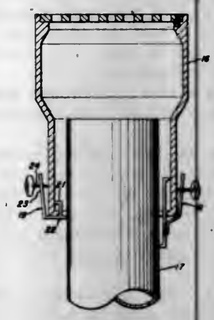
3,344,490
CLAMP FOR BEARING CAGES
Keith C. Converse, Pawnee Rock, Kans. 67567
Filed Apr. 5, 1965, Ser. No. 445,629
10 Claims. (Cl. 24—248)



9. A clamp means for removing a bearing cage comprising, a frame means having first, second and third lengths arranged with connector portions thereof projecting inwardly, means joining the ends of said first and second lengths, means pivotally securing said third length to the other end of said first length, means for securing said third length in a closed position, and said clamp means constructed to in use be positioned about the bearing cage and being clamped thereto with portions of said inwardly directed connector portions of said first, second and third lengths underlying in part the bearing cage for the removal thereof.

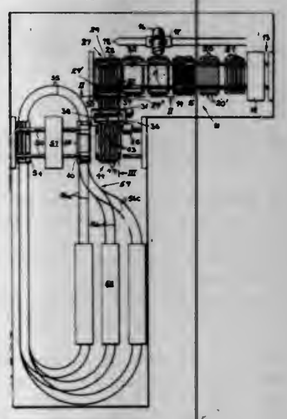
3,344,491
CONDUIT COUPLING CLAMP
Tulon P. Frederick, 5309 E. 4th Place, Tulsa, Okla. 74112
Filed Aug. 10, 1966, Ser. No. 571,607
7 Claims. (Cl. 24—249)

1. A clamp for securing against relative movement conduits positioned one at least partially inside the other, said clamp comprising a substantially strap-like body portion having a first upturned end portion, a second substantially straight end portion and an intermediate contact portion, adjustable urging means carried by said second end portion and adapted to urge said first end against the inside wall of a first conduit positioned between said urging means and said first end and to simultaneously urge



said intermediate portion against the outside wall of a second conduit having at least a portion thereof positioned inside said first conduit.

3,344,492
PLANT FOR THE FABRICATION OF LIGHT-WEIGHT CONCRETE MEMBERS
Ernst Eggeling and Hugo Neese, Castroperstr. 41, and Heinz Nickel, Siegenstr. 111, all of Dortmund-Mengede, Germany.
Filed Oct. 5, 1964, Ser. No. 401,741
13 Claims. (Cl. 25—2)



1. In a plant for the fabrication of concrete members from an incompletely set cast relatively large concrete body formed in a mold, in combination, a first conveyor independent of said mold for receiving said relatively large body and displacing it longitudinally in one direction; severing means forwardly of said first conveyor in said direction and extending generally transversely of said body for parting same into a plurality of relatively small bodies upon passage of said relatively large body through said severing means in said direction; a second conveyor displaceable in said direction and disposed forwardly of said severing means for receiving the relatively small elongated bodies emerging from said severing means, at least one of said conveyors being provided with an array of transversely spaced substantially horizontal support elements extending longitudinally in said direction for carrying said bodies; at least one transport palette provided

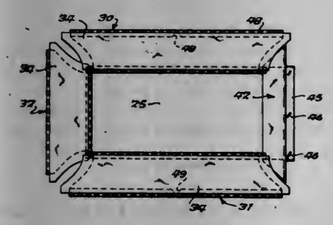
with an array of transversely spaced support elements interfitted with the support elements of said one of said conveyors and lowerable below the latter for selectively elevating one of said bodies from and depositing it upon the support elements of said one of said conveyors; and mechanism for selectively raising and lowering said palette above and below the plane of the upper surface of said support elements of said one of said conveyors.

3,344,493
SPREADER ROLL
Henry E. Telgheider, 291 Avon Road, Springfield, Pa. 19064
Filed Feb. 19, 1965, Ser. No. 433,947
9 Claims. (Cl. 26—63)



7. A spreader roll comprising means defining a cylindrical supporting surface, means mounting said cylindrical supporting surface for rotation about the longitudinal axis thereof, a plurality of elongated elastic elements extending longitudinally on the cylindrical supporting surface in spaced parallel relation circumferentially thereabout, drive members connected respectively to the opposite ends of each of said elastic elements, means mounting said drive members for rotation about axes angularly disposed with respect to each other and lying in a plane containing the axis of said cylindrical supporting surface thereby causing each of said elastic elements successively to be progressively longitudinally elongated and contracted during each revolution of said drive members, and a spring member embedded in and extending longitudinally throughout the extent of each elasttic element with its opposite ends anchored respectively to said drive members and operable to distribute elongation and contraction of each element uniformly therealong.

3,344,494
CASKET TRIM WITH SPACED SIDE MEMBER STIFFENERS
Ralph T. McClive, Kenmore, N.Y., assignor to Eastern Fabricating Co., Inc., Buffalo, N.Y.
Filed Mar. 8, 1965, Ser. No. 438,018
2 Claims. (Cl. 27—19)



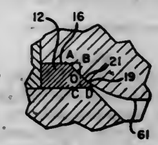
1. An interior decorative unit for insertion into a casket top having inwardly extending flanges at its periphery, including

a substantially flat base member fitting into the casket top and formed of relatively rigid sheet material,

a plurality of side frame members disposed along the sides of the base member and including normally flat stiffeners of resilient sheet material hingedly secured to edges of the base member,

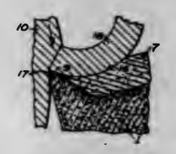
said stiffeners of said side frames being bent about their connections with said base member against their inherent resiliency and engaging said flanges and forming bowed surfaces resiliently supporting said base in said casket top, said stiffeners of said side members being spaced apart at their adjacent ends to form between them slots, a layer of resilient material and a covering of decorative material overlying said padding material and said stiffener and extending beyond the ends of said stiffeners and into said slots.

3,344,495
METHOD OF MAKING GRID
Joseph M. Drees, Saratoga, and Theodore R. Sherwood, Campbell, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application May 17, 1961, Ser. No. 110,692, now Patent No. 3,255,374, dated June 7, 1966. Divided and this application July 1, 1965, Ser. No. 482,653
3 Claims. (Cl. 29—25.14)



3. The method of assembling a grid electrode having a ring with an opening concentric of an axis and a side wall, and spherically shaped screen comprising a network of wires comprising the steps of forming in the side wall of the ring a concave inwardly projecting step with a radius of curvature equal to that of the spherical portion of the screen to be shaped placing the screen on the surface of the support adjacent the formed step, and thereafter simultaneously spherically shaping the screen and permanently securing the margin of the spherical portion of the screen to the ring.

3,344,496
SELF-PROFILING CUTTER
Stephen A. Patkay, San Marino, Calif. (572 E. Green St., Pasadena, Calif. 91101)
Filed July 1, 1966, Ser. No. 565,643
15 Claims. (Cl. 29—95)



1. A self-profiling cutter, comprising:

(a) a cutter body having a cutting edge for engaging a workpiece, a rake land bordering said cutter edge for deflecting chips as they are cut from said workpiece, and a recess bordering said rake land and occupying a region in the path of said chip when cut by said cutting edge;

(b) and an abradable body filling said recess and bonded to said cutter body, said abradable body having less strength than said cutter body and adapted

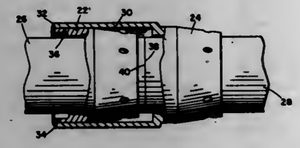
to be abraded by chips to form a chip guiding groove of best suited self-created profile, with a "best suited" rake angle for the specific material which is being cut.

3,344,497
SELF-CLEANING ROUTER
William Albert Osborne, 1520 S. Gerhart, Los Angeles, Calif. 90022
Filed Mar. 23, 1966, Ser. No. 536,823
2 Claims. (Cl. 29—103)



1. An improved, self-cleaning router provided with a shank having flutes, the face of each flute including a marginal recess, a hard cutter strip fastened in said recess to present a face virtually coplanar with the face of the flute, said cutter strip having an outer concave surface merging with the face of the strip to form a cutting edge.

3,344,498
METHOD OF JOINING TUBULAR CONDUITS TO LIGHTWEIGHT BULKHEAD PANELS
William L. Hack, Los Angeles, John A. Stein, Torrance, and Roderick G. Rohrberg, Inglewood, Calif., assignors to North American Aviation, Inc.,
Filed Aug. 23, 1962, Ser. No. 218,924
6 Claims. (Cl. 29—157.4)



1. The method of joining together an elongate first member of tubular form and a second member of panel-like form having two spaced-apart confronting walls penetrated by said first member, said method comprising the steps of:

attaching to the outer surface of said first member intermediate the ends thereof a collar having a substantially cylindrical annular flange extending coaxially about said first member and in spaced relationship with said outer surface,

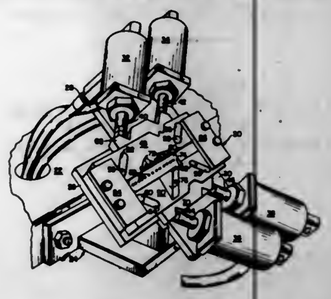
providing an aperture through each of said walls of said second member, said apertures being in substantial alignment permitting passage of said first member therethrough,

attaching a hollow ring to said second member with said hollow ring substantially axially aligned with said apertures, said hollow ring having an annular substantially cylindrical flange extending outwardly from one of said walls and coaxially with respect to said apertures,

aligning said annular flanges on said collar and said ring with each other, so that said flanges are in substantially uniform circumferential surface area contact and said first member extends through said ring and said apertures, and thereafter

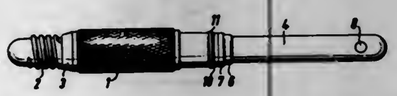
forming a joint between said annular flanges on said collar and said ring.

3,344,499
MACHINE FOR CRIMPING METAL CONNECTORS
Charles A. Cowsert, Council Grove, Kans., assignor to Monarch Molding, Inc., Council Grove, Kans., a corporation of Kansas
Filed Aug. 11, 1965, Ser. No. 478,880
15 Claims. (Cl. 29—203)



1. A machine for crimping a terminal end of a conductor mounted in a dielectric base comprising: three relatively shiftable tool devices, means on said base forming part of one of said tool devices, said three tool devices comprising means for forming, in one cyclic operation, a serpentine connector clip on said terminal end, and power means and control means for cycling said tool devices through a cycle of operation.

3,344,500
TOOL FOR USE IN ASSEMBLING CONDUITS AND END FITTINGS
John William Wilson, Farnham Royal, Slough, England, assignor to Superflexit Limited, Slough, England
Filed Aug. 10, 1966, Ser. No. 571,442
Claims priority, application Great Britain, Oct. 11, 1965, 42,984/65
4 Claims. (Cl. 29—235)



1. A tool to assemble a ring on the end of a convoluted flexible conduit, said tool including a handle portion threaded at one end to screw into the end of the convoluted conduit, a frusto-conical part adjacent said threaded end for initially expanding the end of the conduit, the handle portion at its opposite end carrying a detachable cylindrical spigot, said spigot having a first shoulder to support a ring to be inserted in the conduit, said spigot also having a detachable cutting ring having a diameter greater than that of a ring to be assembled, said cutting ring having a cutting edge, said spigot and opposite end of the handle portion being inserted into such initially expanded end of a conduit so as to have such conduit project beyond said cutting ring to allow an unwanted part of the conduit to be accurately severed from the remainder.

3,344,501
CONSTRUCTION OR REPAIR OF GUIDE PASSAGES
Leonard J. Kulzer, 1909 W. 5th St., Winona, Minn. 55987
Filed May 10, 1965, Ser. No. 454,386
3 Claims. (Cl. 29—401)

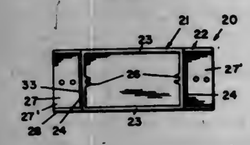
1. A method of composing a bushing within a linear passage in a member, comprising the steps of forming a helical groove of substantially constant diameter within

the interior surface of said passage and guided from the axis of said passage at an area between the opposite ends thereof, inserting into said groove a helix composed of wire which conforms to the configuration of said groove, the interior surface of said helix forming a new passage



of smaller diameter than the original passage, and removing a circular portion of the interior surface of said helix to form a guide passage composed of spaced spiral turns, the interior diameter of which is substantially uniform.

3,344,502
METHOD OF MAKING AN ELECTRICAL OUTLET BOX
William Maier, Bridgeport, Conn.
(125 Lawlor Terrace, Stratford, Conn. 06497)
Original application Jan. 11, 1965, Ser. No. 424,478. Divided and this application Aug. 26, 1966, Ser. No. 575,346
3 Claims. (Cl. 29—417)

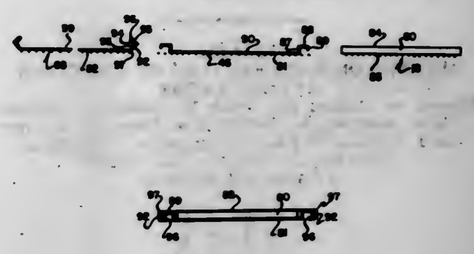


1. In a method of making an electrical outlet box, the steps of making structural extrusions of a running length with cross-sections of said extrusions conforming substantially to that of the box desired, cutting said extrusions at their running lengths into box sections of a desired dimension, and assembling the cut extrusions into a box.

3,344,503
APPARATUS AND METHOD FOR MANUFACTURE OF BUILDING PANELS
Marvin D. Merritt, Streetsboro, Ohio, assignor to The E. F. Hauserman Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 12, 1963, Ser. No. 330,015
17 Claims. (Cl. 29—430)

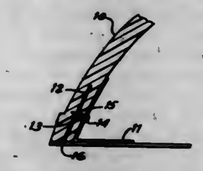
1. The method of making a building panel which comprises the steps of sandwiching an insulating panel between two metallic face plates by partially roll forming the lateral edges of at least one of such face plates, then adhesively coating at least both faces of the insulating panel and at least the opposed lateral edge portions of such partially roll formed face plate, placing the insulating panel on one face plate, and then placing the other face plate against the insulating panel and then finish roll forming said lateral edges thereafter.

11. Apparatus for forming building panels comprising three parallel conveyors, means for placing a face plate on the center conveyor, means for placing a face plate and an insulating panel on the side conveyors, respectively, means for partially roll forming the lateral edges of at least one of said face plates, means for adhesively coating the top sides of said face plates as they move along said conveyors, means for laterally shifting said insulating panel from its conveyor and placing it on the face plate on the center conveyor, means for inverting the face plate on the side conveyor and placing the same on the insulating



panel on the center conveyor, and means for forming fully the lateral edges of such face plates to interlock the same and enclose such insulating panel therebetween.

3,344,504
METHOD OF FASTENING
Richard C. Bolesky, Warsaw, Ind., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 15, 1964, Ser. No. 404,106
7 Claims. (Cl. 29—432.2)



1. The method of attaching a cellular plastic sheet to a structural support member comprising the steps of: embedding a securing element into an end of said sheet; positioning one side of said sheet adjacent said support member; and joining said element and said support member through said one side.

3,344,505
METHOD OF BONDING A BORON NITRIDE BODY TO A REFRACTORY METAL
Clair M. Rively, Rockaway, and Phillip A. Livera, Bloomfield, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 22, 1964, Ser. No. 398,274
5 Claims. (Cl. 29—473.1)

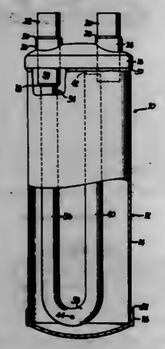


1. The method of bonding a refractory body which includes at least an appreciable proportion of boron nitride to at least one refractory metal of the group consisting of molybdenum, tungsten and tantalum, which method comprises:

(a) placing and maintaining said body and said metal in proximate abutting relationship and placing a thin aluminum member proximate those surfaces of said body and said metal to be bonded; and

(b) heating to a temperature of at least 1200° C. under non-reactive surrounding conditions said aluminum member and at least those portions of said metal and said body which are to be bonded to one another to melt said aluminum member between said body and said metal and cause said body and said metal to form a bond therebetween.

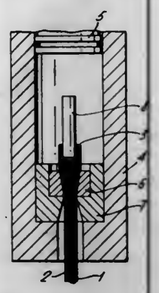
3,344,506
METHOD OF MANUFACTURE OF A SUCTION ACCUMULATOR
Edward W. Bottum and Frank H. Rockwell, Brighton, Mich., assignors to Refrigeration Research, Incorporated, Brighton, Mich., a corporation of Michigan
Filed July 26, 1965, Ser. No. 474,555
5 Claims. (Cl. 29—407)



1. A method of manufacturing a suction accumulator comprising a casing including an open ended tube having an upper end closure and a lower end closure, an inlet opening and an outlet opening in the upper end closure, an inlet tube and an outlet tube extending through the upper end closure, a U-tube within the casing, one end of said U-tube extending from the outlet tube and the other end thereof being open, and a metering opening in the bend of the U-tube, comprising the steps of securing a plate on the exterior surface of the upper end closure, said plate having indicia thereon to identify at least one of the inlet opening and outlet opening, assembling the inlet tube, outlet tube, U-tube and upper end closure, permanently sealing the junctures of said assembled components to secure the components together in fluid-tight relationship, inspecting said assembled components to ascertain that the various tubes have been properly connected and that said metering opening is of the proper size, marking said plate with indicia to indicate that said inspection has been made, and then assembling the upper end closure and attached components, the open ended tube and the lower end closure and permanently sealing the junctures of said tube with said end closures to secure said components together in fluid-tight relationship.

3,344,507
HYDROSTATIC EXTRUSION OF SHEATHED CERAMIC NUCLEAR FUEL MATERIAL
Derek Green, Lytham St. Anne's, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Dec. 12, 1963, Ser. No. 330,047
Claims priority, application Great Britain, Dec. 19, 1962, 48,048/62
15 Claims. (Cl. 29—420.5)

1. In a method of producing an article by hydrostatic extrusion which employs an extrusion die, a pressurised fluid, a container for said fluid and for a workpiece to be extruded to produce the article said fluid being interposed between said workpiece and said container, said container communicating with said die, and means for pressurising said fluid to drive said workpiece through said die, said method including the step of coating said workpiece, prior to extrusion, with a solid tenacious, deformable coating,



which coating prevents direct contact between the die and the surface of said workpiece and provides sealing means preventing escape of pressurised fluid past said die during extrusion, the coating being maintained in substantially unbreached form during extrusion.

3,344,508
PROCESS FOR PRODUCING CLADDED FUEL ELEMENTS
Jacques André Stohr, Bures-sur-Yvette, France, assignor to Commissariat a l'Energie Atomique, Paris, France
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,621
Claims priority, application France, Feb. 20, 1963, 925,479
2 Claims. (Cl. 29—420.5)

1. A process for producing a fuel element comprised of a core section constituting the fuel proper and an outer protective cladding for said core section, said process comprising the following steps: (a) contacting a uranium-zirconium fuel mixture containing from about 2 to 8% weight uranium with a cladding zircalloy to form a composite; (b) subjecting said composite to a temperature of approximately 800° C., at approximately 300 kgs./cm.² pressure for a time of approximately 30 minutes in an inert atmosphere to thereby obtain a metallurgically bonded metallic material; and (c) subjecting the material obtained from step (b) to a plastic state deformation process at a temperature range of from room temperature to 400° C.

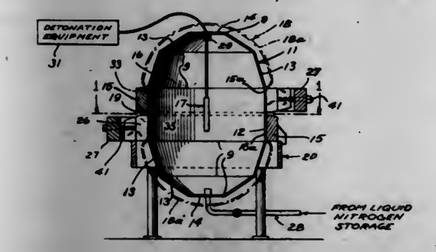
3,344,509
METHOD FOR THE EXPLOSIVE SECTION FORMING OF VESSELS
Laszlo Kunsagi, New York, N.Y., and Svend Mark Jorgensen, Tenafly, and William R. Apblett, Jr., Metuchen, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed June 25, 1965, Ser. No. 467,040
15 Claims. (Cl. 29—421)

1. A method of manufacturing a metallic vessel comprising:

forming by means for explosively expanding a first vessel having an end portion with an opening therein while inhibiting expansion at said end portion to provide a neck in said end portion of said expanded vessel;

connecting said explosively expanded first vessel to a second vessel which has an opening therein substantially of the same size and shape as the opening in said first vessel, said opening in said first vessel and said opening in said second vessel being aligned to produce a continuous connection between the opening of said first vessel and the opening of said second vessel; and

explosively expanding at least a portion of said second vessel and the end portion of said said first vessel including the connection therebetween to enlarge the size of the second vessel and the end portion of the first vessel.



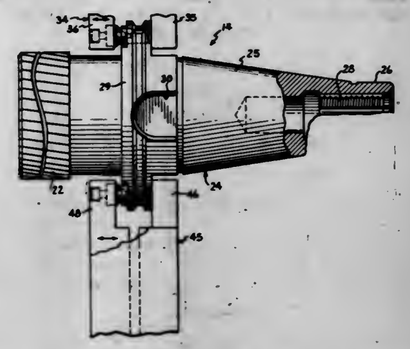
3,344,510
LINE WELDING METHOD FOR METALS BY EXPLOSIVES
Masayuki Kameishi, Ryuichiro Higuchi, and Tooru Niwatsukino, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Feb. 19, 1964, Ser. No. 346,019
Claims priority, application Japan, Feb. 21, 1963, 38/11,028; Mar. 29, 1963, 38/14,114; Aug. 7, 1963, 38/57,648; Sept. 12, 1963, 38/48,068; Sept. 18, 1963, 38/67,999
11 Claims. (Cl. 29—470.1)



1. A method of line welding metal plates by explosion comprising overlapping at least two metal plates having contacting surfaces which are clean at least at the welding location, forming an explosive cord having a surface with a recess therein having a maximum depth which is less than one-half the height of said cord, and a width which is greater than one-half the maximum width of the cord, positioning said surface of the cord with the recess on an exposed surface of one of the plates, and detonating the explosive cord to weld the plates along their contacting surface in the immediate vicinity of the explosion, the recess in the cord producing concentration of the force of the explosion inwardly toward a central longitudinal axis of the cord.

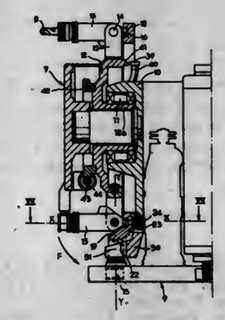
3,344,511
TOOLHOLDER AND GRIPPING DEVICE FOR AUTOMATIC TOOL CHANGERS
Everett E. Hosea, Butte des Morts, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Feb. 8, 1965, Ser. No. 430,795
8 Claims. (Cl. 29—568)

1. For use in an automatic tool changing apparatus for a machine tool wherein a succession of tools is transferred between a storage area and an operating station, the combination comprising a tool gripping device having a pair of relatively movable gripping jaws, a toolholder having a radial gripping flange adapted for engagement between said jaws, a pair of laterally spaced convex teeth on one of said jaws projecting toward said other jaw, means on said other jaw defining a flat abutting surface opposite said one jaw, means defining a pair of laterally spaced



concave recesses in said radial flange, said teeth and said recesses being laterally spaced by a common predetermined dimension, and means defining complementary bearing areas on said teeth and said recesses susceptible of engagement as an incident to closure of said gripping jaws.

3,344,512
DIGITAL CONTROL MACHINE TOOLS
Mosé Zucchellini, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Sept. 8, 1966, Ser. No. 577,885
Claims priority, application Italy, Sept. 17, 1965, 21,036/65
8 Claims. (Cl. 29—568)



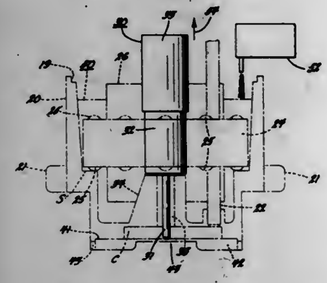
1. A digital control machine tool including an arrangement for varying the angular position of a selected tool holding sleeve in a rotary magazine, the said arrangement comprising, in association with an annular track shaped to engage rollers carried by the said sleeves:

(A) an oscillatable cradle, and

(B) a double-acting hydraulic piston and cylinder arrangement,

the said cradle having formed therein a track section dimensioned to match and replace an interruption formed in the said annular track at a tool change station where said cradle is located, the said cradle being oscillatable under the influence of the said hydraulic arrangement and oscillation of the said cradle being transmitted to a toolholding sleeve, the roller of which sleeve is engaged in the cradle track section.

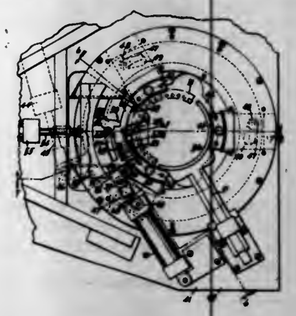
3,344,513
PUMP-MOTOR ASSEMBLY METHOD
Richard W. Bemmann and Werner F. Schultz, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 11, 1962, Ser. No. 201,418, now Patent No. 3,180,267, dated Apr. 27, 1965. Divided and this application Feb. 27, 1964, Ser. No. 347,891
1 Claim. (Cl. 29—596)



A method for attaining and retaining correct alignment of essential parts of a combination electric motor and fuel pump structure relative to a shell-like housing member having a hub-like bottom portion which accommodates, and rigidly supports the motor rotor primary bearing comprising the steps of, positioning a wound stator member axially upon a lateral annular shoulder located intermediate the ends of the inside of said shell-like housing member, axially inserting a special mandrel member, having small and intermediate diameter portions which snugly engage the bores of said primary bearing and said stator members, respectively, and a large diameter portion, centrally through and into engagement with said stator member bore and said primary bearing bore to align the bores of said stator member and said primary bearing upon a common axis, vertically filling the remaining space within said shell-like housing member with a potting compound to embed said stator member and partially surround said large diameter portion of said mandrel member, curing said potting compound, axially withdrawing said mandrel member, inserting the shaft of the motor rotor into said primary bearing which journals said rotor on said common axis and press fitting the motor rotor secondary bearing into the recess produced by the largest diameter portion of said mandrel member in said potting compound.

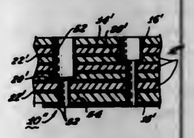
3,344,514
METHOD OF SKEWING AND SECURING STACKED ROTOR LAMINATIONS
James A. Partlow, Vandalia, and Albert B. Mewhinney and Raymond C. Hoefling, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,335
4 Claims. (Cl. 29—598)

1. In a procedure for skewing core slot configuration of a stack of axially positioned rotor laminations each with at least one external slot collectively engageable in predetermined location radially inwardly of the stack by tab-like projections of crescent-shaped shim means respectively of differing arcuate length though cummulatively having thickness substantially equal to that of the lamination stack, the steps of (A) orienting the respective shim means as to a common reference point to facilitate initial axial alignment between the external slots of laminations and tab-like projections of shim means collectively, (B) containing the laminations and shim means in predetermined directions during complementary fit of the projections and slots of laminations thereby engaged to be shifted under force transmitted by shim means (C) positioning the shim means having an outer shoulder edging thereof engaged to be shifted under pushing force to a straight edge stop effected by engagement of shim edging at one end thereof corresponding to axial alignment of the laminations during said orienting, (D) oppositely shifting the shim means under skewing force exerted in a direction parallel to that of the shim means against an



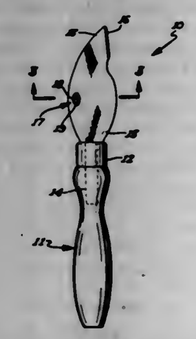
opposite shoulder notching to a straight edge stop effected by engagement of opposite shim edging such that the radially inwardly extending tab-like projections integral with the shim means collectively effect a mirror-like reverse pattern of predetermined skewing configuration transferred to the lamination stack according to collective stacking and said oppositely shifting of the shim means, and (E) securing the lamination stack in the predetermined skewing configuration differing from the initial axially aligned core slot configuration.

3,344,515
MULTILAYER LAMINATED WIRING
Norman J. Schuster, Los Angeles, and Carl H. Wolfe, Santa Monica, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Original application Apr. 21, 1961, Ser. No. 104,683, now Patent No. 3,219,749, dated Nov. 23, 1965. Divided and this application Aug. 21, 1964, Ser. No. 391,170
4 Claims. (Cl. 29—628)



1. In a method for producing laminated circuit boards, the steps of:
- applying to at least one surface of each of a number of substantially cured thermosetting plastic laminas a plurality of conductors having enlarged portions forming terminal pads at predetermined locations;
- securing to the opposite surface of each lamina a sheet of substantially noncured thermosetting plastic for interposition between each pair of adjacent laminas;
- making first, larger apertures through some of said laminas and the sheets secured thereto at locations corresponding to those of said pads on another of said laminas;
- forming a stack by aligning said some laminas and sheets, with said first apertures in registry with said pads and adding the remaining laminas and sheets so that said first apertures form access apertures extending from one surface of the stack to said terminal pads, said pads forming the bottom of an access aperture;
- bonding said laminas to one another by means of said interposed sheets and application of heat and pressure to form a laminated structure having conductors and terminal pads embedded at different levels of depth, with an access aperture connecting the pads with one outer surface of the structure; and
- subsequently forming a smaller continuing second aperture through said pads and the remaining bonded laminas to thereby produce an opening through the pad which interconnects the two external surfaces of the finished laminated circuit board.

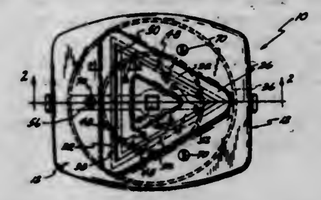
3,344,516
KNIFE FOR REMOVING SKIN FROM CITRUS FRUITS AND THE LIKE
Lloyd S. Officer and I. D. Caples, Brooklyn Park, Minn., assignors to C. & O. Industries, Brooklyn Park, Minn.
Filed July 20, 1966, Ser. No. 566,567
1 Claim. (Cl. 30—24)



An implement for removing the rind from citrus fruit and the like, said implement comprising an elongate handle, an elongate blade secured to one end of said handle and projecting outwardly therefrom, said blade being substantially flat and having longitudinal edges flaring outwardly from the handle to a central portion and thereafter converging to a pointed end portion, one longitudinal edge portion of said blade adjacent said pointed end portion being sharpened to define a straight cutting edge disposed parallel to the longitudinal axis of the implement, an arcuate cutting element integrally formed with and being struck from the general plane of said blade adjacent but spaced inwardly from one longitudinal edge of said blade, said one longitudinal edge being arcuately curved throughout its length and presenting an uninterrupted continuous convex edge surface, said arcuate cutting element having a cutting edge facing oppositely of said first cutting edge, and having an inclined guide portion extending from said cutting edge and being continuous with one flat surface of said blade at a point located on that side of the vertical longitudinal center line plane of the implement positioned closest adjacent to said uninterrupted continuous convex edge surface.

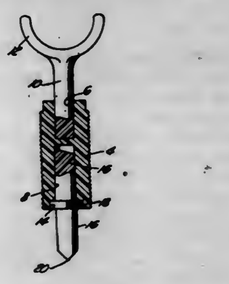
3,344,517
ELECTRIC RAZOR WITH MALE AND FEMALE POLYGONAL CUTTING ELEMENTS
Bertram F. Crane, 2417 N. 59th St., Milwaukee, Wis. 53210
Filed Aug. 16, 1965, Ser. No. 479,889
14 Claims. (Cl. 30—41.9)

1. An electric shaver comprising a first member having means defining a bore having an internal generally planar cutting edge of polygonal configuration, a second member carried by said first member and having means defining a peripheral cutting edge of polygonal configuration located within said bore and generally coplanar to said first mentioned cutting edge, and corresponding



to and cooperable with said cutting edge defining means of said first member, an electric motor, and means operatively connecting said electric motor to one of said first and second members to afford relative movement therebetween in said plane to provide a whisker cutting action.

3,344,518
LEATHER TOOLING IMPLEMENT
Louis C. Roth, Torrance, Calif., assignor to Tandy Leather Company, Fort Worth, Tex., a corporation of Texas
Filed May 6, 1966, Ser. No. 548,271
3 Claims. (Cl. 30—164.9)



1. A leather carving tool comprising a molded plastic exteriorly cylindrical body having top and bottom ends and having socket portions entrant from said top and bottom ends, an upwardly open generally U-shaped finger saddle having a stem extending downwardly therefrom and rotatably supported in said top socket portion, the lower end of said bottom socket portion comprising a noncircular shallow recess of greater cross-sectional area than that of the remainder of the socket portion, a cutter having an elongated shank partially held in said bottom socket portion, said shank having a medial enlargement of a shape to nonrotatably fit said shallow recess, and the projecting end of said shank being sharpened.

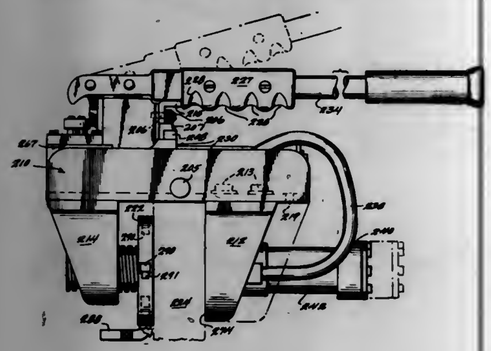
3,344,519
PUNCH DEVICE
Louis N. Goodman, 5510 S. Claiborne Ave., New Orleans, La. 70125
Filed Dec. 21, 1965, Ser. No. 522,011
6 Claims. (Cl. 30—362)

1. A hydraulic punch device comprising:
- a frame means having two outwardly extending arms for placement against opposite surfaces of an article to be punched,
- hydraulic pumping means carried by said frame for pumping hydraulic fluid to and from a separate hydraulic cylinder carried by one of said outwardly extending arms,

a tubular punch means carried within said separate hydraulic cylinder, said punch means including a cutting end projecting out from said separate hydraulic cylinder, a piston carried by said punch, said piston being mounted for reciprocal movements within said separate hydraulic cylinder,

an ejector means carried within said tubular punch means for ejecting plugs of material out of a bore of said tubular punch means, said ejector means being operable for ejecting actions by the same source of fluid pressure which operates said punch means,

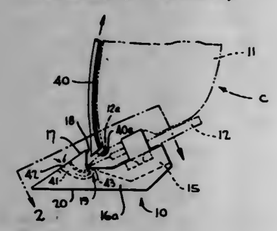
an anvil carried by the second of said two outwardly



extending arms, said anvil being aligned with the tubular punch means so as to receive the tubular punch means upon movement of the punch through the article, and

communication means between said hydraulic pumping means and opposite ends of said separate cylinder for carrying hydraulic fluid to the opposite ends of the interior of said cylinder whereby hydraulic pressure may be applied to opposite sides of the piston so as to actuate the piston and its punch toward and away from an article contained between the two outwardly extending arms.

3,344,520
HAIR CLIPPER ATTACHMENT
Charles A. Williams, 201 F. Berger Road, Paducah, Ky. 42001
Filed Aug. 15, 1966, Ser. No. 572,479
10 Claims. (Cl. 30—200)



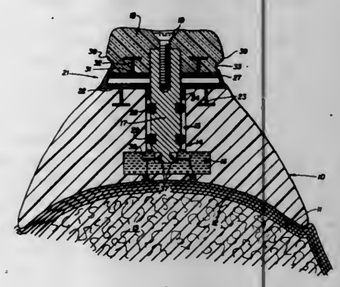
1. A comb-like attachment for use with hair clippers having a cutter head of magnetic material and a movable cutting blade to perform the hair cutting operation comprising a body, an upper surface on said body adapted to cooperate with said cutter head, a plurality of teeth extending forwardly and downwardly from said body, a magnet fixed to said upper surface of said body for magnetically holding said attachment on said cutter head in spaced nonoperative relationship to said blade.

3,344,521
CHEESE DIE TRANSFER CHAIN FOR MACHINES FOR PACKAGING MELTED CHEESE INTO DIFFERENT PRESENTATION PACKAGES
Robert Henri Jules Flevet, Paris, France, assignor to Fromageries Bel-La Vache Qui Rit, Paris, France
Filed Oct. 12, 1964, Ser. No. 405,015
Claims priority, application France, Oct. 11, 1963, 950,305, Patent 84,514
4 Claims. (Cl. 31—46)



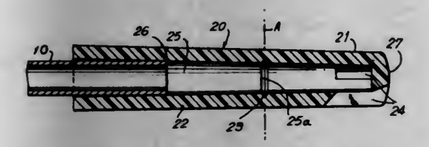
1. A cheese die transfer endless chain for machines for packaging melted cheese into various shapes, said machine having a plurality of rotatable barrels each with equally spaced indents in the periphery thereof, the chain passing at the periphery of the barrels to position dies thereof in the indents, said chain comprising a plurality of links, a plurality of pivot means connecting the links together, said pivot means being equally spaced along the chain at distances equal to the spacing between the indents of the barrels, means mounted at said pivot means for supporting dies thereat adapted to cooperate with working means disposed at least at some of the indents of the rotatable barrels, and indexing means for positioning the dies on said pivot means such that the chain passes itself successively around the various barrels and independently insures conveyance of said dies from a station for discharging the end product to a station for the beginning of the packaging.

3,344,522
ARTIFICIAL DENTURE
Albert Wasserman, 410 N. San Mateo Drive, San Mateo, Calif. 94401
Filed Nov. 23, 1964, Ser. No. 413,273
9 Claims. (Cl. 32—6)



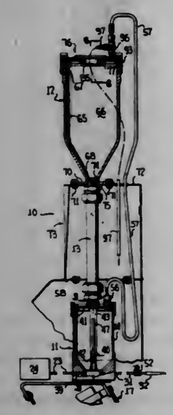
1. In an artificial denture, means forming a denture base, said base including a saddle portion adapted to mount on the gum of the wearer, a closed chamber defined in said base for containing compressible fluid means therein of a type comprised partly of liquid, a tooth assembly including an artificial tooth and plunger means supporting said tooth, said plunger means being disposed for reciprocal movements within said chamber responsive to masticating movement of said tooth, said plunger being disposed to be in communication with fluid in said chamber whereby pressures applied to said tooth become transmitted via said plunger and fluid to the walls of said chamber.

3,344,523
MULTI-STAGE EVACUATING DEVICE
Davis Halsey, 43 Spring St., Lebanon, N.H. 03766
Filed Jan. 18, 1965, Ser. No. 426,008
5 Claims. (Cl. 32—33)



1. A one piece two-stage evacuating device, particularly a disposable device for withdrawing liquid and solid matter from the mouth of a dental patient, comprising an elongated substantially tubular member consisting of a single piece of deformable synthetic plastic material including a tubular section having a first end portion arranged to be connected to a suction generating device and a second end portion; a hollow section having a first end portion adjacent to the second end portion of said tubular section and a substantially cup-shaped second end portion; and a frangible connection portion, comprising an annular portion having at least one circumferential groove intermediate said sections, for integrally but readily detachably connecting said sections with each other so that, on detachment of said second section, the second end portion of said tubular section develops a relatively large opening for entry of solid particulate matter, said hollow section having at least one relatively small inlet for drawing liquid matter into said tubular section when said sections are connected with each other.

3,344,524
APPARATUS FOR STORING AND DELIVERING ABRASIVE AND NON-ABRASIVE POWDERS
Walter Kulischenko, Richmond County, N.Y., assignor, by mesne assignments, to S. S. White Company, Philadelphia, Pa., a corporation of Pennsylvania (1966)
Filed May 5, 1964, Ser. No. 365,123
11 Claims. (Cl. 32—58)



1. Apparatus for storing a flowable abrasive material and mixing the material with a pressurized gas for delivery therewith as a stream, comprising:

(a) a primary storage chamber having upper and lower ends, with said primary chamber having an outlet in a lower end portion thereof, said primary chamber being adapted to store a flowable abrasive material therein at a predetermined level intermediate said upper and lower ends,

(b) an auxiliary storage chamber for the abrasive material,

(c) means for conducting abrasive material from said auxiliary chamber to said primary chamber,

(d) means operatively associated with said conducting means for automatically maintaining the level of abrasive material in the primary chamber at said predetermined level, said level maintaining means coacting with said conducting means to replenish said primary storage chamber with abrasive material from said auxiliary chamber as abrasive material flows through said outlet to said mixing chamber,

(e) means for supplying pressurized gas,

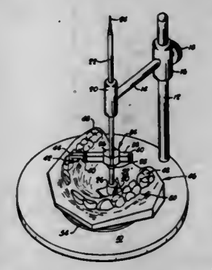
(f) means for delivering a mixture of pressurized gas and abrasive material,

(g) a mixing chamber in communication with the outlet of said primary storage chamber and said gas supplying means, adapted to mix pressurized gas and abrasive material therein and to discharge the mixture to said delivering means, and

(h) a vibrator operatively associated with said primary storage chamber for transmitting vibrations thereto,

the construction and arrangement being such that the vibrator of said primary storage chamber and the maintenance of a predetermined level of abrasive material in said primary chamber ensures the delivery of abrasive material to said mixing chamber at a uniform rate.

3,344,525
PRECISION DENTAL PARALLELING PROCESS AND APPARATUS
William H. Harris, 4513 S. Pennsylvania, Oklahoma City, Okla. 73119
Filed Jan. 14, 1966, Ser. No. 520,782
6 Claims. (Cl. 32—67)



1. The method of drilling parallel holes in teeth comprising:

making a model of the patient's natural teeth in which said parallel holes are to be drilled, and of a substantial portion of the gums and oral cavity adjacent said teeth;

consecutively aligning a movable tubular drill guide with the teeth on said model corresponding to the natural teeth in which said holes are to be drilled, said consecutive alignment being carried out to align the axis of said tubular drill guide with the desired axis of the holes to be drilled in the natural teeth while maintaining the axis of said tubular drill guide parallel to a reference line extending through said model;

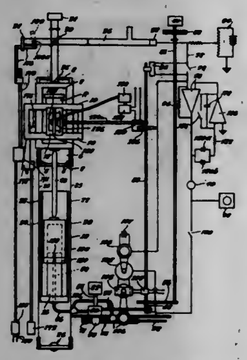
positioning guide means having a linear guiding axis adjacent said model with its linear guiding axis coincident with said reference line;

forming a jig on the model, which jig is complementary in configuration to a portion of said model surrounding said guide means and which jig contains imbedded therein said guide means;

removing the jig from the model with the guide means imbedded therein;

fitting said jig in the mouth of the patient in a position corresponding identically to its previous position on the model before the jig was removed from the model;
securing a cylindrical post to the guide means with its axis aligned with the linear guiding axis of said guide means; then
movably mounting said tubular drill guide on said cylindrical post for vertical and horizontal sliding movement thereon and for rotational movement around the axis thereof;
consecutively aligning the axis of said tubular drill guide with the several points on the natural teeth where it is intended to drill parallel holes; and
using said tubular drill guide to guide a dental drill used to drill said parallel holes so that the axis of said drill corresponds to the axis of said tubular drill guide.

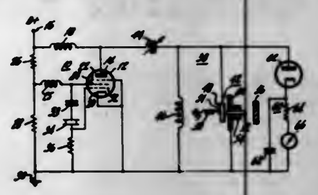
3,344,526
DIFFRACTION GRATING APPARATUS
Walter Reginald Horsfield, Outlook, Warwick, Bermuda
Filed Mar. 1, 1965, Ser. No. 436,107
Claims priority, application Great Britain, Apr. 1, 1964, 13,498/64
25 Claims. (Cl. 33—19)



1. A differential grating ruling mechanism comprising, in combination, a support for a grating blank, a cross-carriage, means for effecting transverse relative movement between the support and the cross-carriage, a ruling tool mounted on the cross-carriage to rule a grating line during said transverse relative movement, means for effecting longitudinal relative movement between the support and cross-carriage to produce a spaced series of said lines upon the blank, said longitudinal movement means comprising a hydraulic ram and a pressure fluid generating device operating said ram, the mechanism including measurement means responsive to the change of relative longitudinal position, at succeeding ruling stations, between the support and the cross-carriage, and servo means actuable by said measurement means and being connected to said pressure generating device to control the flow therethrough to said hydraulic ram in dependence upon the change of said relative position.

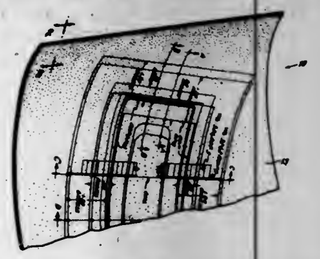
3,344,527
SUBSTANTIALLY LINEAR OUTPUT GAGE DEVICE
Walter R. Murphy, Northville, Mich., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,721
4 Claims. (Cl. 33—172)

2. Dimension gaging apparatus comprising:
a constant frequency constant amplitude source of oscillations having a pair of output terminals;
a two terminal tunable circuit comprising an inductor and a two plate capacitor in parallel;
a connection from one terminal of said oscillator to one terminal of said tunable circuit;
a second connection from the other terminal of said oscillator through a coupling capacitor to the other terminal of said tunable circuit;
said inductor and said coupling capacitor being so chosen that the product of the inductance of said



inductor and the capacity of said coupling capacitor and the square of the expression two pi times the frequency of said source of oscillation is equal to one;
means for varying the distance between said plates in accordance with a dimension to be gaged to cause the voltage across said tunable circuit to vary substantially linearly with said dimension to be gaged; and
means to indicate said voltage across said tunable circuit.

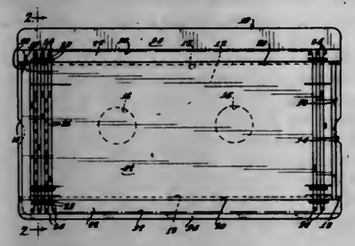
3,344,528
ARTICLE HAVING AN EPOXY SURFACE WITH AN IMAGE IMPREGNATED THEREIN
Cary Purdum and Howard W. Gibney, Middletown, Ohio, assignors to Aeronca, Inc., a corporation of Ohio
Original application June 4, 1963, Ser. No. 285,345. Divided and this application Sept. 23, 1964, Ser. No. 398,587
7 Claims. (Cl. 33—174)



1. A plastic tool having a cured epoxy resin working surface of predetermined contour with image areas comprising control information impregnated in and extending below said working surface, said image areas characterized by being sharp and completely legible against non-image background areas of said surface, said image areas being immobilized in said surface and forming a permanent integral part of said surface whereby said image areas are unaffected by abrasion, heat and solvents to which said epoxy tool would normally be subjected in use.

3,344,529
CARD CHECKER
George E. Brown, 7940 S. Carpenter St., Chicago, Ill. 60620
Filed Mar. 11, 1965, Ser. No. 439,018
4 Claims. (Cl. 33—174)

1. A hand held pocket size punch card checker comprising a rectangular base plate providing a flat surface bounded by parallel guide rails along the top and bottom edges of the surface, said guide rails being spaced apart a distance sufficient to receive a punch card to be checked therebetween between the top and bottom card edges, means providing a multiplicity of straight wire guides in uniformly spaced parallel relation in a plane slightly above



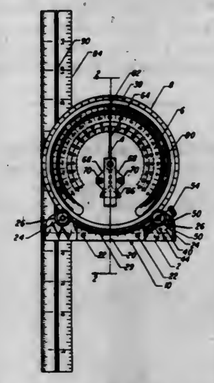
the plane of a card received between said rails, said wire guides extending across a card located between said rails from top to bottom thereof, and the spacing between adjacent wires equaling the standard spacing between adjacent vertical columns of the card to be checked.

3,344,530
MEASURING EQUIPMENT FOR THE GEOMETRICAL CONTROL AND/OR THE TRUING OF RAILWAY TRACKS
Eugène Oville, Lausanne, Switzerland, assignor to Materiel Industriel S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed May 19, 1965, Ser. No. 457,113
Claims priority, application Switzerland, May 20, 1964, 6,542/64
9 Claims. (Cl. 33—174)



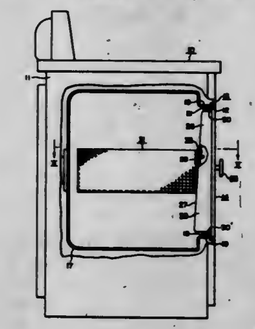
1. Apparatus for the detection of geometrical irregularities in a railway track, said apparatus comprising means for sensing the position of the track at four consecutive reference points along the track and including first and second frames rollable on the track supporting a respective pair of neighboring spaced sensing devices corresponding to the reference points, said devices being supported on the frames at fixed distances and defining respective reference bases, coupling means for said frames including two coupling members each having opposite ends, pivots connecting the coupling members at their ends to the first and second frames such that straight lines passing through the pivots on the frames have an intersection point located between planes perpendicular to the respective reference bases at the reference points thereof closer to the reference points of the other base, whereby the reference bases form a reference system for a curved track line without an inflection point, the position of said track line being determined by the geometrical arrangement of the coupling members with respect to the length of the reference bases and by the position of three of the said reference points, and means for detecting the deviation of one of the interior reference points from the form of the curved line and for controlling a track moving apparatus, said intermediate reference point serving as a correction point.

3,344,531
MEASURING INSTRUMENT
Alfred Adolphe Emerson, 2667 Midland Ave., Agincourt, Toronto, Ontario, Canada
Filed Jan. 19, 1966, Ser. No. 521,596
7 Claims. (Cl. 33—88)



1. A combination level and angle finding and measuring unit comprising a cylindrical casing having front and back panels, at least the front panel of which is transparent, a plumb needle having one end heavier than the other, pivotally mounted in the casing for rotation in a plane substantially parallel with the plane of the front panel, a protractor scale provided within the casing, said casing being carried by a base member and being rotatable with respect thereto, means carried by the base member to secure the base and casing against respective rotational movement, the base member being elongated and flat on its lowermost surface and provided with upstanding front and back wall members throughout its length, the central portion of the top of each wall member being in the shape of a circular arc to receive the circular casing, the height of the circular arc provided in the back wall being greater than the height of the arc in the front wall, and the back wall being provided with an inwardly projecting flange to engage a circular groove provided around the rear periphery of the cylindrical casing.

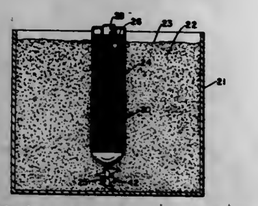
3,344,532
DELICATE OBJECT CONTAINER MOUNTED ON DRYER DOOR
Theodore G. Bigler, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 14, 1965, Ser. No. 463,704
9 Claims. (Cl. 34—133)



6. In apparatus for drying clothes or the like, a cabinet, an open-end drum rotatably supported in said cabinet,

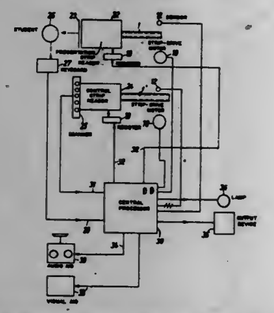
said cabinet having an opening in one wall aligned with the open end of said drum, door structure movable between a first position closing said cabinet opening and a second position providing access to the interior of said drum, and a rigid perforate container removably mounted on said door structure in such a manner that when said door structure is in its said first position said container is positioned within said drum and when said door structure is in its said second position said container is positioned exteriorly of said cabinet for ready loading and unloading thereof.

3,344,533
CYLINDRICAL GRAIN DRYER DEVICE
Alice L. Peterson, 825 James Ave., East Grand Forks, Minn. 56721
Filed Feb. 1, 1966, Ser. No. 524,065
3 Claims. (Cl. 34—230)



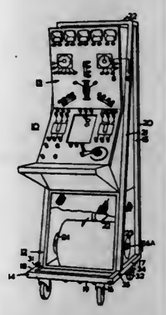
1. A grain drying device comprising an elongated cylindrical upright body having a portion formed of perforated material and adapted to be positioned in a bin, a fan mounted within the body to dry particles in the bin, a shaft extending longitudinally through the body, a motor mounted to the upper end of the body to power the shaft, an auger mounted to the shaft below the body, said device being adapted to have its lower end introduced into particles in the bin with said auger acting to draw the body into the particles in the bin.

3,344,534
TEACHING APPARATUS
Herbert Anschütz, Viernheim, and Norbert Weyss, Mannheim-Kafertal, Germany, assignors to Brown, Boveri & Cie, Aktiengesellschaft, Mannheim-Kafertal, Germany, a corporation of Germany
Filed Apr. 22, 1965, Ser. No. 449,997
Claims priority, application Germany, Apr. 25, 1964, B 76,508
7 Claims. (Cl. 35—9)



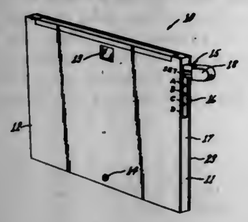
1. In automatically controlled teaching apparatus, strip means having spaced first frames thereon designated by respective different first numbers containing intelligible graphic subject matter, first areas between said first frames and containing a chosen number of information bits thereon for respectively deriving therefrom first binary combinations of electrical signals representing said first numbers, spaced second frames thereon designated by respective different second numbers and containing a plurality of combinations of control bits thereon representing a plurality of steps in a predetermined teaching program pertinent to a particular first frame and the address of the next frame of said program, second areas designated by respective different second numbers between said second frames containing a given number of control bits thereon for respectively deriving therefrom second binary combinations of electrical signals representing said second numbers, a first device for displaying said first frames, a second device for scanning said second frames to produce binary combinations of signals representing said steps, first and second control registers for containing therein settings of said binary combinations of electrical signals representing said frame numbers, means for moving said strip means, said moving means including means for scanning said first and second areas to derive said first and second binary combinations of electrical signals, and control means responsive to the application thereto of the settings in said control registers and said first and second binary electrical signal combinations for halting said moving means upon the matching of said control register settings and said first and second binary combinations, and means for generating a plurality of binary combinations of electrical signals respectively representing different commands, said control means being responsive to the application thereto of said commands and to the combinations of electrical signals representing said steps for effecting said commands, and for carrying out said steps.

3,344,535
PORTABLE ELECTRICAL TEST UNITS
John L. Poesl, Pierrefonds, Quebec, Canada, assignor to Unelco Limited—Unelco Limitee
Filed June 30, 1965, Ser. No. 468,359
Claims priority, application Canada, July 9, 1964, 906,831; Mar. 9, 1965, 925,159
31 Claims. (Cl. 35—19)



1. Portable laboratory electrical test apparatus comprising:
(a) first and second portable electrical test units each including a rotating electrical device secured to a base mounted for rolling along a floor with the rotors of the rotating electrical device of the respective test units disposed in similar positions; and,
(b) a pair of interconnecting members, each said pair having at least one element on each of said first and second test units, the elements on one unit being located at an edge thereof adjacent the other test unit and cooperating therewith detachably to interconnect said test units side-by-side, said pair of interconnecting members being disposed in spaced relation with respect to one another, along said test unit edge.

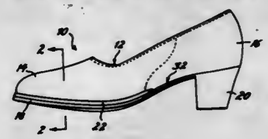
3,344,536
TEACHING APPARATUS
Richard M. Davis, 4417 Glenheath Drive, Kettering, Ohio 45440
Continuation of application Ser. No. 330,707, Dec. 16, 1963. This application June 3, 1966, Ser. No. 562,413
10 Claims. (Cl. 35—48)



1. A teaching apparatus comprising a frame means, a first member movably mounted to said frame means and having lever actuatable means arranged in two predetermined patterns, a second member movably mounted to said frame means and having lever actuatable means arranged in two predetermined patterns, and a lever movably mounted to said frame means, said lever being movable by the user to various answering positions thereof and being movable from a selected answering position thereof to an actuated position thereof, said answering position of said lever being related to one of said predetermined patterns of said lever actuatable means of each of said members, said lever also being movable to a resetting position thereof and being movable from said resetting position thereof to said actuating position thereof, said resetting position of said lever being related to the other of said predetermined patterns of said lever actuatable means of each of said members, said lever having a first means for only advancing said first member one increment in a particular direction for said first member by actuating said lever actuatable means of said one pattern of said first member each time a correct answer is selected by the operator moving said lever between a selected answering position thereof and said actuating position thereof, said first means also advancing said first member one increment in said particular direction for said first member back to its starting position by actuating said lever actuatable means of said other pattern of said first member when said lever is moved by the operator between said resetting position thereof and said actuating position thereof, said lever having a second means thereon for always advancing said second member one increment in a particular direction for said second member by actuating said lever actuatable means of said one pattern of said second member each time an answer is selected by the operator moving said lever between a selected answering position thereof and said actuating position thereof, said second means also advancing said second member one increment in said particular direction for said second member back to its starting position by actuating said lever actuatable means of said other pattern of said second member when said lever is moved by the operator between said resetting position thereof and said actuating position thereof.

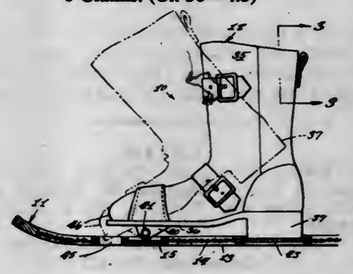
3,344,537
FOOTWEAR
Frederick J. Diamant, % Desco Shoe Corporation, 16 E. 34th St., New York, N.Y. 10016
Filed Mar. 26, 1965, Ser. No. 442,981
9 Claims. (Cl. 36—2.5)

1. A shoe comprising an upper, an outsole, an insole, said upper including a vamp portion and a quarter portion, said insole being secured to said upper only at the vamp portion of said upper, a wrapper strip extending from and secured only to said vamp portion of said upper, said outsole being secured to said wrapper strip



and the quarter portion of said upper, a counter liner in said quarter portion, and said insole being secured to said counter liner adjacent a lower edge of said counter liner.

3,344,538
MECHANICALLY HINGED SNOW SHOE
William Massicotte, Box 103, Wawa, Ontario, Canada
Filed Dec. 5, 1966, Ser. No. 599,186
6 Claims. (Cl. 36—4.5)

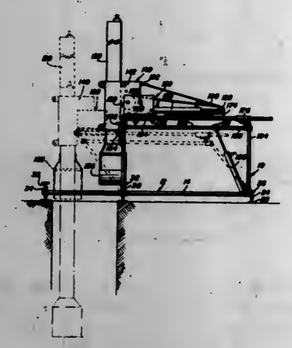


1. In a mechanically hinged snow shoe assembly, a snow shoe for placement upon the surface of snow and a shoe attachment for connecting a wearer's foot covering to the snow shoe; the snow shoe having a frame, a mesh across the frame, a forward and a rearward cross beam, a slide bolt assembly consisting of a plate secured to the forward cross beam, a tubular housing secured to said plate such that the housing is disposed transversely to the snow shoe, a slide bolt in said tubular housing, an angular arm integral with said slide bolt, a pin extending from said slide bolt and cooperating with a U-shaped slot in said housing and a compression spring located between the slide bolt and the housing to bias the slide bolt in a locking position, and a heel pad on the rearward cross beam; the shoe attachment having a transverse sleeve which can co-operate with the slide bolt to form a hinged connection between the shoe attachment and the snow shoe.

3,344,539
VERTICAL EXCAVATOR
Harry O. Crum, Woodward, Iowa, assignor, by direct and mesne assignments, of thirty-three and one-third percent to James J. Kelley, Jr., and thirty-three and one-third percent to William Kehres, both of Monroe, Mich.
Filed Aug. 13, 1964, Ser. No. 389,346
10 Claims. (Cl. 37—103)

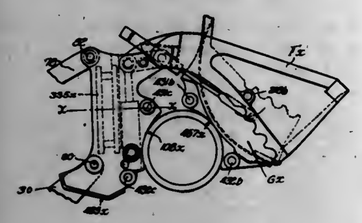
1. A vertical excavator comprising a generally horizontal main support frame including means adapted to engage and be stationarily supported from the ground, support means carried by said main frame, guide means pivotally and laterally shiftably supported from said support means for rotation about a horizontal axis and shifting along said axis and including means defining an elongated guideway extending transversely of said axis, elongated boom means slidably supported from said guide means for longitudinal reciprocation longitudinally along

said guideway, means operatively connected between said guide means and said boom means for longitudinally adjustably positioning said boom means relative to said



guide means, digging means carried by one end of said boom means, and means operatively connected between said support means and said guide means for shifting the latter along said axis relative to said support means.

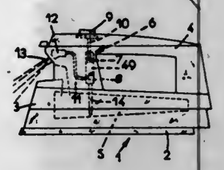
3,344,540
UNIVERSAL LOAD HANDLING APPARATUS
Raymond M. Ulrich, Roanoke, Ill., assignor to Ulrich Manufacturing Co., Roanoke, Ill., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,794
7 Claims. (Cl. 37—117.5)



3. In load handling apparatus for mounting on a vehicle of the class described, the combination of a rear grappling section, a front bucket section, means connecting said sections together for relative opening and closing movements therebetween, a hydraulic power means for effecting such opening and closing movements, first and second vertically spaced sets of socket holes in said rear section, a third set of socket holes intermediately disposed in said front section, and releasable coupling pivot pins receivable in said aligned sets of socket holes in said rear section and in said front section for releasably coupling a load engaging section to at least one of said rear and front sections.

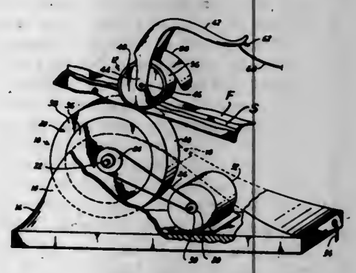
3,344,541
WATER-SPRAY LAUNDRY IRONS
Maurice Marie Achille Trouilhet, Lyon, France, assignor to Calor Appareils Electro-Domestiques, Lyon, France, a company of France
Filed Nov. 29, 1966, Ser. No. 597,682
Claims priority, application France, Dec. 6, 1965, 41,104
2 Claims. (Cl. 38—78)

1. Laundry iron of the type including a device for atomizing water by means of a pump from a water suction duct communicating with a reservoir housed in the iron and for projecting said water through a stationary nozzle located at the front of the iron handle, said pump comprising a cylinder which is substantially vertically housed in said iron above said reservoir, a piston reciprocably movable in said cylinder, a rod, said piston being solid with said rod, a push-button actuatable from the top of the iron handle, the upper end of said rod being rigid with said button, said piston forming in said cylinder a chamber of variable volume, said chamber having in the vicinity of one of its ends two orifices, the first one communicating with a first duct of reduced section connected to said reservoir, a first water-retaining valve for obturating said first duct and opening for drawing water into



said chamber through said first duct which is connected to said reservoir and preventing it from being forced back into said reservoir, and the second orifice communicating with a second duct of reduced section leading into said nozzle, a second valve at the outlet of said nozzle opening for ejecting water out of said nozzle during the atomization of the water and shutting for preventing suction of air during the suction of water into said chamber from said reservoir and wherein said cylinder, said first duct and said second duct are moulded as an integral unit from a flexible synthetic material, said second duct being of great length and capable of being bent to fit in the iron handle.

3,344,542
IRONING APPARATUS
Gertrude C. Watson, 5721 Lancaster, Houston, Tex. 77017
Filed Aug. 30, 1965, Ser. No. 483,573
2 Claims. (Cl. 38—101)



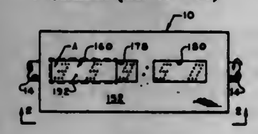
1. Ironing apparatus comprising a rotatably mounted fabric supporting roller having an external circumferential portion formed of yieldable material positioned for engagement with one surface of an article of fabric to be ironed to yieldingly support the fabric, means for rotating said roller, an ironing roller having an external cylindrical face, handle means upon which said ironing roller is rotatably mounted for holding the ironing roller with said cylindrical face in rolling contact with the other surface of the article to iron the article during rotation of the supporting roller, means for heating the ironing roller and illuminating means on said handle means positioned to illuminate the article during ironing of the same.

3,344,543
IDENTIFICATION BUTTON FOR GARMENTS
Anthony L. Griffin, 107 Division St., Amsterdam, N.Y. 12010, and Earl G. Chetwynd, 6 Steele Ave., Gloversville, N.Y. 12078
Filed June 30, 1965, Ser. No. 468,285
2 Claims. (Cl. 40—1.5)



1. A badge-like identification button embodying a first button unit embodying a head having an obverse face provided with identification indicia and having a reverse face provided with an axial recess opening through said face and further provided with a complemental outstanding hollow shank, the hollow portion of said shank being aligned with said recess and combining therewith and defining a socket for telescoping reception of an insertable and removable stud, said shank being provided on an interior with a pair of diametrically opposite substantially L-shaped spring fingers providing latch-like detents, said fingers being anchored and retained in place at outer ends on an outer end portion of said shank and having their inner ends free, said inner free ends being flexed and normally spring biased inwardly and toward each other and assuming converging latching relationship, a readily attachable and detachable second button unit complemental to said first unit and comprising a circular flange provided on an outwardly disposed side with an integral axially extending neck-like stud, said stud telescoping and being fitted removably into the aforementioned socket, said stud having diametrically opposite key accommodating slots and communicating diametrically opposite shoulders providing keepers and registerable with and releasably retaining said latch-like detents in unit assembling but separable relationship.

3,344,544
NUMERIC DISPLAY
James S. Hellen, Wayne, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 533,052
7 Claims. (Cl. 40—68)



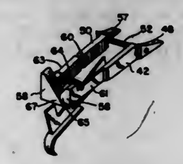
1. An alpha-numeric display device comprising:
a mask with a plurality of peepholes extending therethrough having a selective arrangement; and
a cylindrical display member having stepped displacements relative to said mask and having a surface which underlies said peepholes with a plurality of dots marked thereon and selectively arranged in a succession of groups representing alpha-numeric characters, the arrangement of which as seen through the mask displays alpha-numeric symbols, each symbol being of such size as to subtend an arc of more than 36° of the cylinder, each symbol being displayed through the mask in response to a movement of the display member a distance of less than one-half the size of each symbol;
whereby one numeral at a time in a series of successive numerals is displayed in said peepholes.

3,344,545
PANEL LIGHTING SYSTEM
Bernard V. Strianese, Manhasset, N.Y., assignor to Ackerman Engravers, Inc., Long Island City, N.Y.
Filed Mar. 25, 1965, Ser. No. 442,767
5 Claims. (Cl. 40—130)



1. In an internally lighted panel assembly, the combination of:
(a) a panel having a main, relatively thick light-transmitting layer defining front and rear surfaces, said panel having at least one opening formed by the removal of a section therefrom;
(b) a first insert member comprising a light-transmitting section and at least one lamp having a pair of of terminals imbedded therein;
(c) a second insert member comprising a light-transmitting layer and an indicia-bearing layer, said second insert member being disposed in the opening of said panel in overlaying relationship with said first insert member whereby said indicia-bearing layer is flush with the front surface of said panel;
(d) conductive means arranged to connect said lamp to an E.M.F. source; and
(e) fastener means removably securing said first and second insert members to said panel, wherein the opening in said panel includes a ledge of smaller dimension than the remainder of the opening, wherein said first insert member includes a flange portion seated on the ledge of the opening in said panel and wherein said fastener means passes through said second insert member, said panel further including means to removably capture said fastening means whereby said first and second insert member may be removed from the front of said panel.

3,344,546
SINGLE TRIGGER MECHANISM FOR A DOUBLE-BARRELED SHOTGUN
Dewey M. Morrison, Rte. 1, Walkertown, N.C. 27051
Filed Oct. 27, 1965, Ser. No. 505,331
10 Claims. (Cl. 42—42)



1. A trigger mechanism for a double-barreled shotgun having a single trigger for actuating two independently operable hammers comprising a receiver portion, a trigger having a sear lug-engaging arm pivotally mounted in said portion, first and second sears pivotally mounted and laterally spaced from each other in said portion, each of said sears carrying a forwardly extending hammer-engaging flange and a rearwardly extending trigger-engaging arm, each of said sear-carried trigger-engaging arms having a trigger-engaging lug and a sear-displacing cam mounted thereon, the first sear-carried trigger-engaging arm being laterally displaceable toward the second sear-carried arm, and means normally urging said displaceable sear-carried trigger-engaging arm laterally toward said sec-

ond sear for cooperative engagement between said cams to position said displaceable arm lug in the path of trigger displacement after actuation of the second sear-carried trigger-engaging arm and displacement thereof.

3,344,547
SPINNER OR PLUG CASTER
Frederick A. Schroeder, Sacramento, Calif. (P.O. Box 11, Loomis, Calif. 95650), and Ralph G. Townsend, 2187 54th Ave., Sacramento, Calif. 95822
Filed Dec. 11, 1964, Ser. No. 417,684
10 Claims. (Cl. 43—19)



3. In a mechanical fishing line casting device of the type constructed for attachment to a conventional fishing pole or rod and having a casting arm and a spring adapted for exerting a propelling force on said arm, the improvement wherein:

the spring is an elongate compression spring;

and further comprising:

an elongate cartridge-like housing having a longitudinally extending slot along one side thereof;

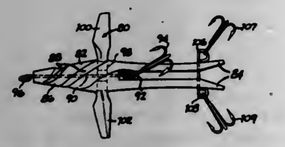
means pivotally mounting one end of the casting arm in one end of the housing

means pivotally securing one end of the compression spring to the casting arm at a point intermediate the ends thereof at a point proximate said one end;

means pivotally securing the other end of the compression spring in the other end of the housing; and

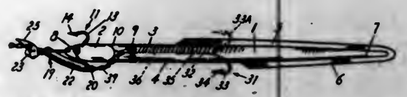
selectively releasable means in the other end of the housing for selectively securing the casting arm and the compression spring substantially inside the housing with said compression spring in a state of compression, and for selectively releasing said casting arm for pivotal movement through said slot to a position substantially outside the housing, said casting arm pivotally moving under force exerted by said compression spring.

3,344,548
FISHING LURE
John Kurlovich, 32225 MacKenzie, Garden City, Mich. 48135
Filed Nov. 16, 1964, Ser. No. 411,205
3 Claims. (Cl. 43—42.08)



2. In a fishing lure, an elongated member of buoyant material having one end attachable to a fishing line, an intermediate body portion and a bifurcated opposite end portion forming two laterally spaced flexible tail portions extending longitudinally from an intermediate body portion and adapted to rotate said buoyant member about its attachment to the fishing line, a wire hook mounting member pivotally mounted and extending through said tail portions and bent to form laterally spaced loops normally engageable with the outer surfaces of the tail portion and adapted to removably and adjustably mount fishing hooks thereon, and said tail portions being deflectable inwardly to permit mounting of fishing hooks on said laterally spaced wire loops.

3,344,549
FISHING LURES AND HOOK HARNESSES THEREFOR
John K. Peters and Bingham A. McClellan, Traverse City, Mich., assignors to Burke Flexo-Products Company, Traverse City, Mich.
Filed July 1, 1965, Ser. No. 468,896
8 Claims. (Cl. 43—42.11)



8. A fishing lure comprising,

an elongated body of flexibly resilient material,

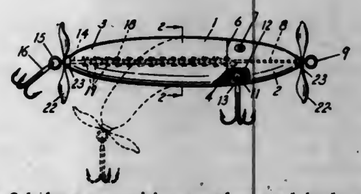
a front hook having a portion of its shank embedded in the front portion of said body member with a portion of the shank projecting forwardly therefrom and with the prong of the hook projecting transversely and forwardly from the body member adjacent the front end thereof,

a weight member disposed with a portion thereof projecting forwardly from the front of the body member and supportedly engaged with the shank of said hook,

a coupling member for said weight member having a portion of substantial length embedded in said weight member and having an embedded eye at its forward end engaged with the shank of the hook in forwardly spaced relation to the front end of the body member and having a looped portion at its rear end projecting from the rear end of the weight member and having an upwardly and forwardly projecting portion projecting into embedding engagement with said body member,

a second hook the shank of which is supportedly mounted in said body member with the prong thereof projecting from the body member, a flexible coupling means connecting the shank of said second hook with the said coupling member for said weight member.

3,344,550
FISH LURES
John K. Peters, Traverse City, Mich., assignor to Burke Flexo-Products Company, Traverse City, Mich.
Filed June 17, 1965, Ser. No. 464,615
2 Claims. (Cl. 43—42.14)



1. A fish lure comprising an elongated body member of bendable springably resilient thermoplastic material and including an intermediate portion of substantial length and of cylindrical cross section and outwardly tapered front and rear portions, a relatively rigid angled line and hook attaching member formed of wire having a portion disposed longitudinally of and embedded in the front end portion of said body member with a portion

thereof projecting forwardly from the body member and having a line attaching eye at its outer end, said line and hook attaching member having a downwardly projecting arm at its inner end terminating in a hook attaching eye, said body member having a downwardly opening recess in which said hook attaching eye is disposed, a hook swingably engaged with said hook attaching eye, a relatively rigid and straight rear hook attaching member formed of wire having a portion thereof embedded in the rear end of said body member and having a portion projecting from the rear end of said body member and provided with a hook attaching eye, said rear hook attaching member having an eye on its inner end, a coupling chain for said line and said hook attaching members comprising a plurality of links, said links being of looped sheet stock and having openings in the arms thereof with which the bights of adjacent links are pivotally engaged, the bight of the foremost link being engaged with said downwardly projecting arm on said line and hook attaching member, said rear hook attaching member having said eye on its inner end engaged within the opening of the rearmost link, a rear hook engaged with said eye on the outer end of said rear hook attaching member, said chain and the nonprojecting portions of said line and hook attaching member and said rear hook attaching member being molded within said body member.

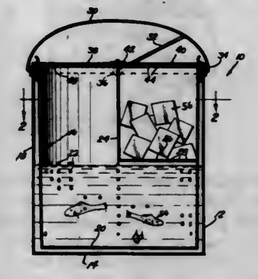
3,344,551
FISHERMAN'S ACCESSORY
Billy D. Chestnut, R.F.D. 1, Magnolia, N.C. 28453
Filed Dec. 18, 1964, Ser. No. 419,349
4 Claims (Cl. 43—55)



1. In a fishing device of the type comprising a ground engaging rod and a fishing rod holder attached thereon, a combined bait box and cutting board attached to said ground engaging rod, said bait box comprising outer, side and inner walls, a portion of said cutting board disposed beneath said bait box and constituting the bottom wall thereof, the other portion extending outwardly from said bait box whereby said cutting board acts as a bottom for said bait box as well as functioning as a cutting board for bait.

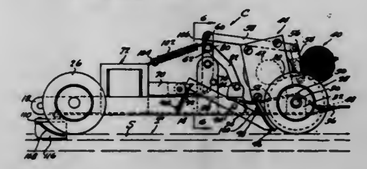
3,344,552
BAIT BUCKET
William R. Glasco, 4534 Linden Ave., Cincinnati, Ohio 45212
Filed Jan. 3, 1966, Ser. No. 518,166
1 Claim. (Cl. 43—56)

A live bait bucket comprising an outer bucket member, an inner bucket member telescoped into the said outer bucket member in a spaced relation thereto, said inner bucket member having a perforated lower portion, structure providing a separate vertically opening compartment in said inner bucket member for receiving ice, and a perforated bottom portion forming a part of said compartment spaced above said lower portion of the inner bucket whereby melting ice will drain therethrough into said inner bucket and entrain oxygen therein for keeping bait alive, said inner bucket member including a pair of hingedly interconnected lids one of said lids closing the ice compartment, the other of said lids closing the remainder of said inner bucket member, said lids having an annular flotation ring of buoyant material bounded on the bottom surface thereof to prevent sinking when the inner bucket



is placed within a body of water, both of the inner and outer bucket members including a pivotal bail connected to each, the bail of the inner bucket member being relatively smaller than the bail of the outer bucket to provide unrestricted pivotal movement of each said bail relative to the other, said inner bucket tapering downwardly and terminating above the bottom of the outer bucket, the lid closing said ice compartment being perforated with openings therethrough to permit cool air circulation downwardly into said inner bucket member, and said structure providing said compartment having one wall thereof defined by a vertical diametric partition extending from the top to approximately the center of said inner bucket member.

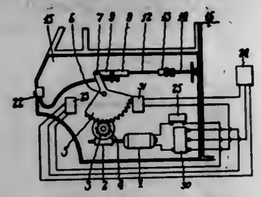
3,344,553
MINIATURE RACING CAR
Owen H. Taggart, 6815 E. Mary Drive, Tucson, Ariz. 85710
Filed Aug. 13, 1965, Ser. No. 479,444
8 Claims. (Cl. 46—45)



1. A miniature racing car comprising a chassis having front track engaging wheels and rear track engaging drive wheels, a gas engine, a motor mount overlying the chassis and hinged at its rear end thereon, the engine being fixed upon the hinged mount forwardly of the pivotal point of the mount, a brake bar pivoted intermediate its ends on the chassis, brake applying spring means acting between the chassis and a forward part of the brake bar, a brake shoe on a rear part of the brake bar normally engaged with the periphery of a rear drive wheel, a solenoid coil mounted upon the chassis and having a plunger working therethrough, said chassis having pendant contactor means adapted to engage electrically charged contact means on a miniature track, said contactor means being electrically connected to the solenoid coil, and means operatively connecting the solenoid plunger with

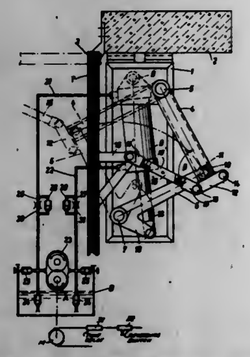
the motor mount, for tilting the motor forwardly relative to a starting position, and brake shoe releasing means operating between the motor mount and said brake shoe.

3,344,554
DOOR OPEN-AND-CLOSE MECHANISM
Yukio Misaka, Fujisawa, and Koichiro Sakashita, Yokohama, Japan, assignors to Isuzu Motors Ltd.
Filed Oct. 5, 1964, Ser. No. 401,424
5 Claims. (Cl. 49—280)



4. A door opening and closing mechanism for a door on the frame of a car, comprising: a reversibly rotatable motor, a worm gear connected to the output shaft of said motor, a worm wheel meshing with said worm gear, a pinion gear fixed coaxially to said worm wheel, a segment gear meshing with said pinion, a swing lever integral with said segment gear, reversibly movable means operable to open and close said door against the car frame, a spring connected between said swing lever and said reversibly movable means for the resilient transfer of movement of said swing lever to operate said reversibly movable means, a door locking means operable to lock and release the door, and a flexible cable means connected between said swing lever and said door locking means to transfer movements of said swing lever without lost motion to operate said door locking means, whereby the swinging movement of said swing lever is firstly transmitted to release the door lock and whereby the releasing is followed by door opening action.

3,344,555
HYDRAULIC DRIVE MEANS FOR A SWINGING DOOR OR THE LIKE
Gebhard Hügle, Asch-Linz, near Pfullendorf, Germany
Filed Oct. 18, 1965, Ser. No. 497,388
12 Claims. (Cl. 49—340)



1. An arrangement of the character described, comprising in combination, support means; a door mounted on said support means turnably between two end positions about a turning axis; a cylinder member; a piston member movable in said cylinder member between opposite ends thereof and including a piston rod projecting with one end thereof beyond said cylinder member, one of said two members being pivotally mounted at one end thereof to said support means; means for feeding a fluid under pressure into one end of said cylinder member and for discharging the fluid from the opposite end thereof and vice versa for reciprocating said piston member in said cylinder member; lever means mounted on said support means pivotable about a pivot axis and pivotally connected at a portion thereof to that end of the other of said two members which is farthest from the end at which said one member is pivotally mounted on said support to be moved between two end positions during movement of said piston member between the ends of said cylinder member; elongated substantially straight guide means pivotally connected at one end thereof to said support means for pivoting movement about a tilting axis, said guide means having a length at least equal to the distance between said pivot axis and a free end of said lever means and being operatively connected to said door for turning the latter about said turning axis during tilting movement of said guide means; and engaging means projecting from said free end of said lever means and engaging said guide means for tilting the latter about said tilting axis during pivotal movement of said lever means, said lever means and guide means being arranged with respect to each other and to said door in such a manner that in either end position of said lever means said door is in a corresponding end position and the portion of said lever means between said pivot axis and said free end thereof includes an angle of substantially 90° with said guide means, whereby said door will be fixedly held in either end position and can be moved only by feeding pressure fluid into one end of said cylinder member and discharging pressure fluid from the other end thereof.

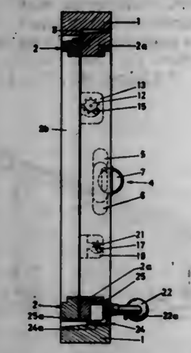
3,344,556
DOOR OPERATING DEVICE
Edward T. Edwards, Ossining, N.Y., assignor to Edwards Power Door Co., Inc., Mount Vernon, N.Y.
Filed Nov. 18, 1965, Ser. No. 508,512
8 Claims. (Cl. 49—360)



1. A reciprocating actuating means comprising: a unidirectional rotational prime mover, a sprocket driven by said prime mover, a first idler sprocket, sprocket chain means reeved about said driven and idler sprockets and forming first and second parallel continuous chain segments, therebetween, bracket means, second and third actuator sprockets mounted for rotation upon said bracket means, each engaging one of said first and second parallel chain segments, and selectively operable means for preventing rotational movement of said second and third actuator sprockets.

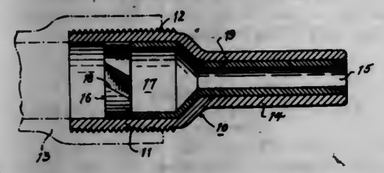
3,344,557
WINDOW STRUCTURES
Gunnar Erik Werner Lewin, Danderyd, Sweden, assignor to Aktiebolaget Overums Bruk, Overum, Sweden, a Swedish joint-stock company
Filed Dec. 10, 1965, Ser. No. 512,849
Claims priority, application Sweden, Dec. 11, 1964, 15,027/64
5 Claims. (Cl. 49—390)

1. In a device for maintaining a center-hung window sash in sealing contact with the frame in closed position, in combination, a pair of pivot-hinge members each comprising an element fixed to the frame and a second element fixed to the sash, said members being vertically movable relative to each other, and means connected with the sash and frame respectively and arranged to pass over



and under each other along arcuate paths during the terminal portion of closing motion of the sash, whereby the sash will initially be lifted and then again lowered as the window reaches its final closed position.

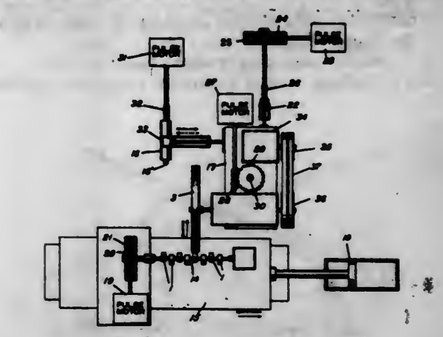
3,344,558
SAND BLAST NOZZLE
Wyatt S. Kirkland, 1536 Chanticleer Ave., Santa Cruz, Calif. 95060
Filed July 23, 1965, Ser. No. 474,358
4 Claims. (Cl. 51—11)



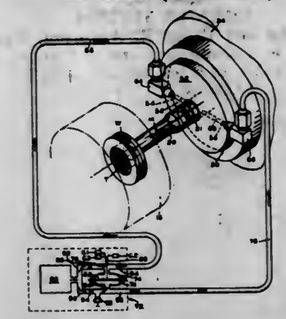
1. The combination with a compressed air and sand-blast conducting hose of, an elongated nozzle forming member having an enlarged cylindrical air and sand accommodating chamber open at one end for connection with said air and sand conducting hose and an axially extending nozzle forming portion of reduced diameter at the other end of said chamber, and a swirl producing member disposed within and intermediate the ends of said air and sand accommodating chamber having plurality of tangentially extending passageways through which the air and sand will be introduced into said chamber, whereby the sand delivered by said hose will be atomized and discharged through the axially extending nozzle portion of said member as a blast of sand with a swirling cyclonic motion.

3,344,559
CAM GRINDING MACHINE BY MEANS OF NUMERICAL CONTROL
Seiuemon Inaba, Kawasaki-shi, and Akira Fujii, Fuchumachi, Aki-gun, Japan, assignors to Toyo Kogyo Company Limited, Aki-gun, Hiroshima-ken, Japan, a Japanese company
Filed Aug. 5, 1964, Ser. No. 387,718
Claims priority, application Japan, Aug. 9, 1963, 38/42,333
8 Claims. (Cl. 51—105)

1. A grinding machine adapted to produce rotating type cams by means of numerical control, comprising grinding means for grinding a rotating type cam to a required contour, said contour being defined by a rotating angle increment $\Delta\theta$ of the cam, a lift increment ΔY and an offset increment ΔX of the contact point between said grinding means and said cam, rotating means for rotating the rotating type cam, and control means controlling said rotating means and said grinding means so that said grinding means will produce the required contour on the revolving type cam, said control means being tape controlled and including a profile tape having numerical information thereon as to the rotating angle increment $\Delta\theta$ of the cam and the lift increment ΔY and the offset increment ΔX of the contact point between said grinding means and said cam.



3,344,560
CONTROL DEVICE
Gordon E. Lillie, Upper Meadows, Bellows Falls, Vt., assignor to Bryant Chucking Grinder, Springfield, Vt.
Filed Aug. 4, 1965, Ser. No. 477,255
15 Claims. (Cl. 51—165)

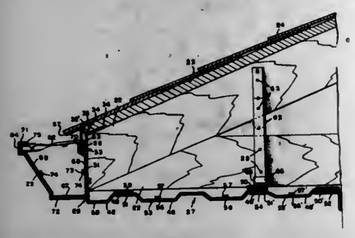


1. In a machine having a workpiece on which a surface is to be formed, comprising, a rotatable spindle carrying a cutting tool, at least one orifice adjacent said spindle, from which issues a stream of controlled fluid impinging on said spindle, a gauging device sensitive to variations in the pressure of the fluid feeding said orifice and a circuit programming said machine which is responsive to said pressure variations occurring as a result of flexure in said spindle.

3,344,561
ASSEMBLY FOR USE IN BUILDING STRUCTURES
Philip R. Anderson, Easton, Md., assignor to Corinthian Cornice Systems, Inc., a corporation of Maryland
Filed Mar. 15, 1961, Ser. No. 95,901
5 Claims. (Cl. 52—11)

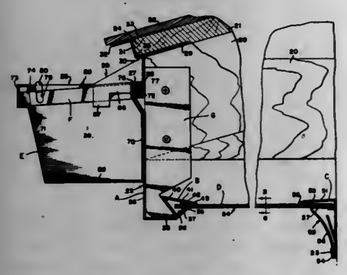
1. In combination with a building having a vertical wall and a sloping roof and covering therefor,
the provision of a structural eaves covering formed from elongated sheet metal,

having a plurality of longitudinal bend lines forming a plurality of juxtaposed panel sections having an angular relation to each other and including,
a lower vertical flange section engaging said vertical wall,
a horizontal soffit section at generally right angles to the flange section,
an upwardly extending vertical facia section,
and a flashing section extending diagonally upwardly



from the facia section and underlying the lower section of said roof covering,
the eaves covering having an upwardly opening substantially U-shaped narrow channel forming the juncture between the facia section and the flashing section,
the leg portions of said channel being in close alignment with each other and defining a flange receiving support, the juncture with the facia section being below the edge of the flashing section.

3,344,562
CORNICE SYSTEM
Russel T. Miles and Philip R. Anderson, Easton Md., assignors to Corinthian Cornice Systems, Inc.
Filed Oct. 18, 1962, Ser. No. 231,499
9 Claims. (Cl. 52—11)



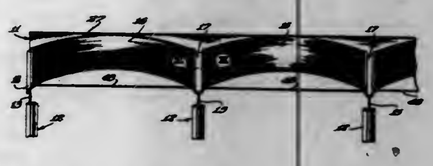
1. In combination with a building having a vertical wall and a roof and covering therefor, a fascia formed from an elongated strip of sheet metal and including a substantially vertical main portion, a substantially horizontal rearwardly extending lower portion connected to the bottom of said main portion, a substantially horizontal soffit formed of an elongated strip of sheet metal, means integral with said lower portion of the fascia to frictionally engage and secure one edge of said soffit, said last mentioned means being disposed along the length of said lower portion and including portions resiliently biased towards engagement with each other, means secured to the wall of the building to frictionally engage and secure the rear edge of said soffit, an upwardly facing channel member integral with said main portion of said fascia intermediate its upper and lower edges, and a gutter having means received in said channel.

3,344,563
ASSEMBLY FOR USE IN BUILDING STRUCTURES
Russel T. Miles and Philip R. Anderson, Easton, Md.; William Reddie, executor of said Philip R. Anderson, deceased, assignors to Corinthian Cornice Systems, Inc., Easton, Md., a corporation of Maryland
Filed Nov. 10, 1964, Ser. No. 410,214
4 Claims. (Cl. 52—11)



1. A supporting and locking assembly for securing a gutter to a building, comprising a hanger bar for spanning the gutter, and a pivotable clamp unit adjacent the outer terminal of the hanger bar engageable with the front wall of the gutter, said clamp unit including a body portion in pivotable connection with said hanger bar, an inverted U-shaped clamp fixed to said body portion at the end thereof and engageable over the front wall of the gutter, and a lock tab connected to said body portion and spaced from said U-shaped clamp and positioned to be bent over said hanger bar to lock the U-shaped clamp in operative position, and the rear terminal of said hanger bar having means for engagement with a stationary part of the building.

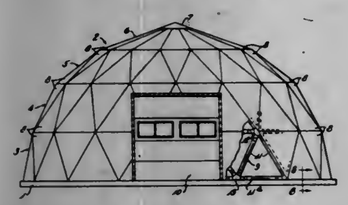
3,344,564
CANOPY STRUCTURE WITH STRESSED BOWED PANELS
Burton L. Siegal, Chicago, Ill., assignor to Kenron Awning and Window Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 12, 1965, Ser. No. 439,342
13 Claims. (Cl. 52—11)



8. In a canopy structure,
at least one intermediate rafter and two parallel outer rafters on opposite sides of said intermediate rafter,
a hanging rail extending horizontally along and secured to the wall of a building and having a gutter for wind blown rain extending along the lower end thereof,
a support ledge extending forwardly of said gutter,
means supporting said rafters on said support ledge to extend forwardly therealong,
an individual post for each rafter supporting the forward end thereof in vertically spaced relation with respect to the ground,
said intermediate rafter including a bottom flange,
a web extending upwardly therefrom,
a top flange extending along the top of said web in the general form of a trough and having parallel upright sides spaced laterally from said web, with attachment flanges extending angularly upwardly and outwardly therefrom,

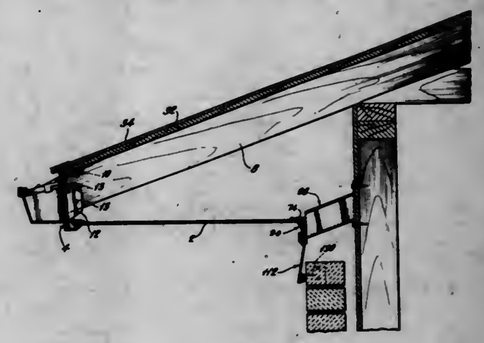
said side rafters each having a bottom flange, a vertical web and a top flange extending to opposite sides of said web and inclined upwardly from said web and facing said intermediate rafter,
said top flange forming attachment means for a corrugated panel and a deflector for rain on the outside of said rafter,
tension straps having end portions conforming to the angles of said flanges and intermediate portions extending across the space between said rafters at intervals and secured thereto,
canopy panels extending along said rafters in the spaces therebetween and secured at one end portion to the top surface of an upwardly inclined flange and bowed to generally conform to the angle of the opposite inclined flange and secured thereto,
the stored up energy in said canopy panels attained by the stressing thereof in a bowed condition, maintaining said tension straps under tension and said canopy in a rigid condition.

3,344,565
INTERLOCKED LIGHTWEIGHT BUILDING STRUCTURE
Norman H. Nye, 1348 Highbridge Road
Cuyahoga Falls, Ohio 44223
Filed Jan. 27, 1965, Ser. 428,438
5 Claims. (Cl. 52—81)



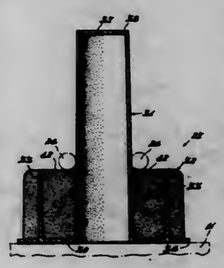
1. In a building structure defining a polyhedron shape the combination of
a plurality of elongate substantially flattened V-shaped in section frames, the ends of each frame being offset from a center plane of the frame and having transversely directed slots extending halfway across the width of the frame about at the joinder of the offset ends with the remainder of the frame,
a plurality of corner supports, each having a polyhedron shaped center portion and a plurality of flattened V-shaped arms extending radially therefrom, the end of each arm being offset from a center plane of the arm and having a transversely directed slot extending substantially halfway across the width of the arm about at the joinder of the offset end with the remainder of the arm with the arms and frames being slotted for interlocking engagement between the offset ends of each arm and the offset ends of each frame to hold the frames in fixed relationship to define the polyhedron shape comprised of a plurality of substantially similar geometric shapes, and
a plurality of cover panels having shapes corresponding to the geometric shapes defined by the frames, said panels having dado recessed grooves in the edges thereof completely around the periphery thereof with each panel having its groove slidably receiving about one half of the width of a respective frame so that the edge thereof is adjacent the edge of another panel around its full periphery to define an enclosure.

3,344,566
BUILDING STRUCTURE
Russel T. Miles and Philip R. Anderson, Easton, Md.; William Reddie, executor of said Philip R. Anderson, deceased, assignors to Corinthian Cornice Systems, Inc., Easton Md., a corporation of Maryland
Filed May 25, 1964, Ser. No. 370,026
6 Claims. (Cl. 52—94)



1. A soffit mounting and frieze assembly comprising an L-shaped body member, means integral with one leg of the body defining a pair of oppositely opening grooves, an L-shaped wedge member mounted with one leg in one of the grooves and the other leg adjacent the other leg of the body member and a frieze member fitted in the other of said grooves.

3,344,567
VOID DRAIN FOR BOX BEAMS
John D. Cowan and Charles C. Waldbillig, Columbus, Ohio, assignors of one-third to Charles Jinkens, Columbus, Ohio
Filed Feb. 19, 1965, Ser. No. 433,910
6 Claims. (Cl. 52—99)

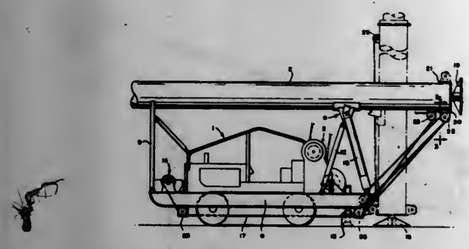


1. In a reinforced concrete box beam having bottom, top and side walls and longitudinally extending steel wires in at least the bottom wall and spaced upwardly from its bottom surface, a void drain for said beam comprising
an elongated tube extending transversely through said bottom wall,
a base integral with the lower end of said tube and projecting laterally therefrom,
shoulder forming means integral with said tube and projecting laterally therefrom at a location spaced above said base, said shoulder forming means engaged by and underlying at least one of said steel wires.

3,344,568
SPAR TOWER ERECTING AND ANCHORING SYSTEM

Louis A. Erickson, Seattle, Elmer R. Hogan, Bellevue, and Bernhard R. Klinke, Seattle, Wash., assignors to Smith-Berger Manufacturing Corporation, a corporation of Washington

Filed Jan. 29, 1965, Ser. No. 429,004
2 Claims. (Cl. 52—116)

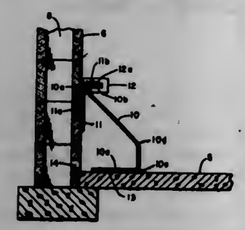


1. In combination with a portable spar tower and a carrier vehicle including a yarder device and means to support said tower in a substantially horizontal transport position and to allow said tower to be pivoted to a substantially erected position to be completely supported by the ground, an anchoring device for securing said vehicle and yarder to the bottom end of the tower in the erected position comprising; a winding drum mounted on said vehicle, a first bank of sheaves adapted to be carried on the bottom end of said tower, first and second mounting means on opposite sides of the bottom end of the tower for receiving said first bank of sheaves, and means to detachably fix said first bank of sheaves alternately to one or the other of said mounting means, a second bank of sheaves mounted on one end of said vehicle and adapted to be substantially aligned with said first bank of sheaves, said winding drum being mounted on the opposite end portion of the vehicle from said second bank of sheaves, and cable means on said drum, said cable means passing beneath said vehicle and alternately about the sheaves of said banks of sheaves with the free end thereof being fixed to either the vehicle or the tower, whereby said tower may be pivoted to the erected position by hauling in on said cable, said cable providing a releasable anchoring connection between the bottom of said tower and the vehicle in the erected position of the tower.

3,344,569
BASEMENT DRAIN CONDUIT

Robert L. Cotten, 1375 Laurel Ave., St. Paul, Minn. 55104

Filed Oct. 14, 1965, Ser. No. 496,109
7 Claims. (Cl. 52—287)

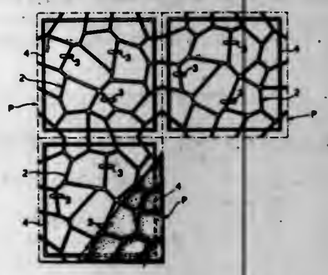


1. A basement drain conduit in combination with a basement wall and floor comprising a main conduit member consisting of an elongated sheet of plastic material of self-sustaining thickness and stiffness and having a bottom flange overlying the basement floor adjacent to said wall, said main conduit member having a second flange projecting inwardly from said wall at an elevation substantially above the floor, means sealing said bottom flange to the floor continuously along said wall, a fastening member having a flange overlying said second flange of the main conduit member, a wall-engaging portion of said fastening member permanently secured to said wall, and a removable clamping member for securing said second flange to said flange on said fastening member.

3,344,570
REINFORCED FLOORING TILE

Emilio Marson, 1 Via Stacchetti, Genoa, Italy

Filed Dec. 11, 1964, Ser. No. 417,750
1 Claim. (Cl. 52—315)

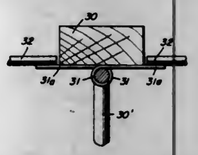


A reinforced flooring tile of rectangular form comprising a body of concrete with a reinforcing framework embedded therein, said framework being composed of a rectangular frame, all four sides of which are spaced inwardly a short distance from the periphery of the tile and downwardly below the upper surface of the tile, the space inside the rectangular frame being covered by a reinforcing network formed of edgewise positioned flat bars integral with the rectangular frame and with their upper edges lying in the plane of the upper surface of the tile, the space between the rectangular frame and the periphery of the tile being traversed by rectilinear prolongations of said bars, said prolongations extending across and being integral with said frame, the free ends of the prolongations terminating at the periphery of the tile at points equally spaced from one another and from the corners of the tile along all four edges of the tile.

3,344,571
BUILDING CONSTRUCTION SYSTEM AND COMPONENTS THEREFOR

Paul T. Day, Jr., Baltimore, Md., assignor to Inland Steel Products Company

Filed Dec. 28, 1964, Ser. 421,250
15 Claims. (Cl. 52—376)

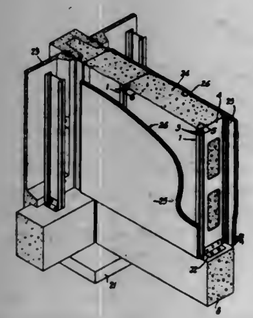


14. A structural framework comprising:
a plurality of interconnected truss members, each of the truss members including:
a pair of spacially separated longitudinally extending chord members;
and a sinuous diagonal member intermediate said chord members, said diagonal member extending alternately between and substantially along the entire length of said chord members;
a pair of metal lath members for interconnecting each of said truss members, each of said metal lath members extending across and immediately adjacent a respective one of each of said pairs of chord members on each side of said diagonal members; and
a plurality of clip members for interconnecting said metal lath members to said truss members;
each of said clip members hingedly engaging at least said metal lath member and said immediately adjacent chord member, enabling said plurality of truss members to rotate about one of said longitudinally extending chord members to position said plurality of truss members in a substantially co-planar position;
whereby the framework can be collapsed into a compact shipping package.

3,344,572
CONCRETE BUILDING STRUCTURES WITH PRE-LAMINATED PLASTERBOARD FACING SHEETS

George James Sell, Bishop's Stortford, England, assignor to Trusteel Corporation (Universal) Ltd.

Filed Jan. 4, 1965, Ser. No. 423,129
Claims priority, application Great Britain, Jan. 4, 1964, 471/64
1 Claim. (Cl. 52—426)



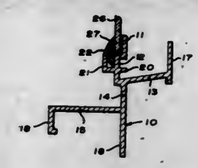
A wall comprising a plurality of upright members set in a common base, each of said members having first and second spaced and oppositely facing flanges, and each of said first and second flanges including means defining a recess for receiving and retaining fastening means, cladding comprising pre-laminated plasterboard sheets, each lined on one face thereof with metal foil, fastening means engaging with said recesses in said first and second flanges, said fastening means removably securing a first set of said plasterboard sheets with said lined faces in engagement with said first flanges, and removably securing a second set of said plasterboard sheets with said lined faces in engagement with said second flanges, said first and second sets of plasterboard sheets defining a mould cavity between the lined faces thereof, and a core of no-fines concrete set in said cavity, said upright members being embedded in said core.

3,344,573
WINDOW GLAZING SYSTEM

Gerald E. Martin and Douglas L. Cole, Seattle, Wash., assignors to Durell Products Inc., Seattle, Wash., a corporation of Washington

Filed May 17, 1965, Ser. No. 456,133
2 Claims. (Cl. 52—476)

1. In combination, a unitary frame presenting a light opening, a unitary light assembly covering said light opening and bearing against the rim thereof, said light assembly comprising a pane and glazing strip means bonded thereto, said rim and glazing strip means presenting peripheral interfitting teeth, the spacing between the teeth

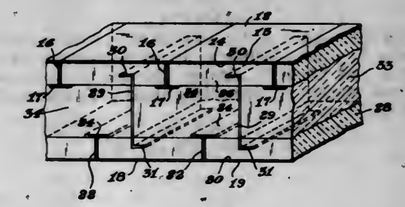


of said glazing strip means being different from the spacing between the teeth on said rim, and removable retainer means carried by said frame for holding said light assembly against said rim.

3,344,574
BUILDING PANEL

Albert J. Palfey, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 2, 1964, Ser. No. 393,941
5 Claims. (Cl. 52—615)



1. A building panel comprising at least a pair of spaced apart metallic facing sheets, each of the sheets having defined therein a plurality of rib members in spaced apart relationship over the sheet, each of the rib members projecting toward the inside of the panel and each of the spaced apart metallic sheets having a coating on the inner surface thereof comprising a layer of an inorganic nonflammable nonmetallic material, a plurality of connecting members in spaced apart relationship between the sheets, the connecting members extending generally between the inorganic layers adjacent the facing sheets and securing the layers in spaced relationship, each of the connecting members being partially embedded in each of the layers of inorganic material and being in spaced relationship to the metallic facing sheets.

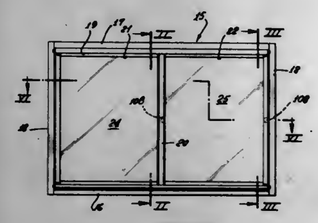
3,344,575
FENESTRATION CONSTRUCTION

Abraham Grossman, Northridge, Calif., assignor of one-half to Thomas P. Mahoney, Santa Monica, Calif.

Filed Aug. 17, 1965, Ser. No. 480,319
11 Claims. (Cl. 52—656)

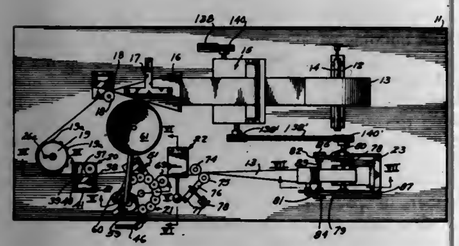
1. In a fenestration construction comprising: vertically spaced head and sill frame members; jamb frame members interconnecting ends of said head and sill members; said head and sill members having outer longitudinal walls provided with end wall portions having end faces abutting said jamb members; said jamb members having outer vertical walls having end wall portions positioned behind said head and sill outer wall portion; said jamb wall portions each having a positioning and support tab element for seating engagement wtih the opposed edge of the associated outer wall portion of the head or sill member; means securing said end portions of said jamb members to the respective head and sill members and comprising a single securing element at each corner formed by said head, sill and jamb members; a divider member extending

between said head and sill members and located intermediate their ends; and means at each end of said divider member securing said divider member to the associated head and sill member, said securing means being carried



by said divider member and having interlocking and frictional engagement with said head and sill members, said securing means including an anchor plate having spaced spreadable leg portions for engaging a wall of said divider member and a wall of said associated head or sill member.

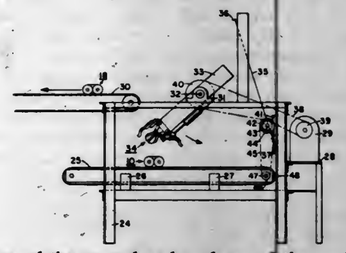
3,344,576
METHOD AND APPARATUS FOR PACKAGING
Charles E. Cloud, Wilmette, James R. George, Franklin Park, and Lloyd N. Krohn, Chicago, Ill., assignors to Cloud Machine Corporation, Skokie, Ill., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,725
36 Claims. (Cl. 53—28)



10. The method of forming filled packages from at least one continuous strip of flexible material, which comprises,
processing the strip forming successive pockets along the length of the strip with ends of the pockets along one margin of the strip being open,
converting the strip from an essentially flat form to an undulated form,
successively opening the pockets along the length of the strip by moving one pocket side wall on each pocket relative to an adjacent pocket side wall,
successively filling the pockets, and
closing open ends of the pockets along the length of the strip.

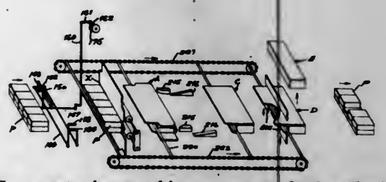
3,344,577
APPARATUS AND METHOD FOR MAKING PACKAGES FOR CYLINDRICAL OBJECTS
Alson R. Harm, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 23, 1964, Ser. No. 353,856
4 Claims. (Cl. 53—39)

1. A method for removing excess material in the form of ears from a package containing cylindrical articles wherein said package is overwrapped with a heat-sealable, thermoplastic film comprising the steps of holding said package so that its ears protrude outwardly, severing said ears and forming a seam at the line of severance at the



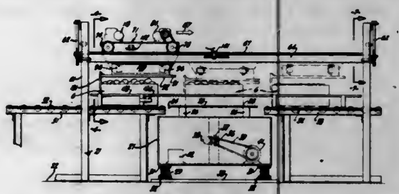
juncture of the curved end surfaces of the package with the planar surfaces of the package which lie substantially perpendicular to the axes of the articles.

3,344,578
CARTONING MACHINE
Andrew W. Anderson, West Caldwell, N.J., assignor to Scandia Packaging Machinery Company, North Arlington, N.J., a corporation of New Jersey
Filed Jan. 8, 1964, Ser. No. 336,437
7 Claims. (Cl. 53—54)



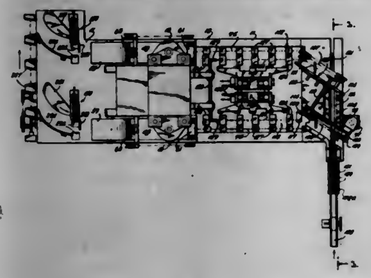
1. In a cartoning machine, means to feed a blank into the path of movement of a predetermined number of assembled articles to be enclosed therein, means for feeding the articles into engagement with the blank, operating means for the blank feed, detecting means engageable with selected ones of the articles and operatively connected to the blank feed means, operating means for disconnecting the said blank feed operating means when the detecting means indicate that the predetermined number of articles has not been assembled, means responsive to the detecting means for discharging an assembly of articles differing from the predetermined number, and means for transporting a blank and the predetermined number of the assembled articles in response to said detecting means.

3,344,579
MACHINE FOR SETTLING FRUIT
Joe P. Gentry and George R. Giannini, Davis Calif., assignors to The Regents of The University of California, Berkeley, Calif.
Filed Feb. 6, 1964, Ser. No. 343,025
7 Claims. (Cl. 53—126)



2. A machine for settling fruit in a box comprising a frame, a pair of horizontal box supports on said frame in spaced relationship to leave an intervening gap, a vibrator table disposed in said gap and substantially continuing said box supports, a carriage, means for mounting said carriage on said frame for reciprocating movement over said box supports and over said vibrator table, means on said carriage for engaging a box on one of said supports and moving said box with said carriage, and means on said carriage for movement toward the top of said box while said box is on said vibrator table.

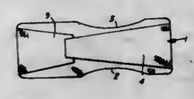
3,344,580
MACHINE FOR MAKING AND LOADING PAPER CUPS
Arthur J. Griner, Wyckoff, N.J., assignor to National Biscuit Company, a corporation of New Jersey
Filed Oct. 15, 1965, Ser. No. 496,511
19 Claims. (Cl. 53—160)



1. A machine for making and loading paper cups with cookies or the like including cookie infeed conveyor means in which cookies are fed in seriatim, a selector conveyor transversely disposed with relation to said infeed conveyor means, a pair of parallel conveyors including an accumulating conveyor and a cross feed conveyor leading from the selector conveyor and to which cross feed conveyor is supplied a predetermined number of cookies by said selector conveyor, cookie pusher means for moving said predetermined number of cookies out of the cross feed conveyor into the accumulating conveyor, cup forming means beneath which said accumulating conveyor passes, pivoted cup carrier means between the cup forming means and the accumulating conveyor for receiving from said forming means a finished paper cup right side up and depositing the same in inverted capping position over a bucket of the accumulating conveyor to enclose the cookies therein, cup righting and transfer means for picking the inverted cup and cookies as a unit out of the accumulating conveyor bucket, and a discharge package pushing means within operating range of which is deposited, right side up by said transfer means, said cup and cookie unit for discharge.

3,344,581
APPARATUS FOR THE MANUFACTURE OF CELLULOSIC PRODUCT
Richard D. Anderson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 361,436
13 Claims. (Cl. 53—177)

12. Apparatus for continuously wrapping a plurality of elongated articles having a configuration which varies longitudinally th reof, comprising means carrying a wrap with pads thereon through a predetermined path linear in one plane and of shallow V configuration in a plane disposed normal thereto, there being an apex area at the bottom of said predetermined linear path, means comprising driven counter-rotating members having friction creating means on their peripheries rotated about axes parallel to said linear plane and obliquely disposed in respect to the general paths of movement of said wrap for frictional engagement and partial encirclement of elongated marginal portions of said wrap about said elongated articles during the movement of said wrap through the apex area of said path, folding means for completing the enclosure of said wrap about said articles with mar-



ginal portions thereof in overlapped relation, article press means extending over said articles and the means carrying the wrap and articles and having upstanding sides in general alignment with the elongated sides of said articles and fence means along the entrance portion of said pad press means for raising the wrap up against the outsides of said upstanding sides of the pad press means.

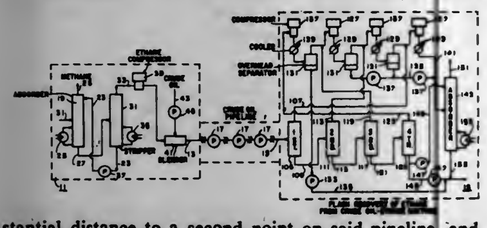
3,344,582
IRREVERSIBLE HYDROGEN MEMBRANE
Robert P. Merrill, Walnut Creek, Calif., and Richard P. Crowley, Milton, Mass., assignors to ABCOR, Inc., Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,118
18 Claims. (Cl. 55—16)

10. A method for separating hydrogen by diffusion from gaseous mixtures and for preventing the back diffusion of the separated hydrogen mixture which method comprises:
providing a diffusion cell having a semi-permeable membrane comprising a first layer of a metal which catalyzes the dissociation of the hydrogen molecule into hydrogen atoms and permits the passage of the hydrogen atoms therethrough and a second layer of a material which has a high solubility for the hydrogen atoms so diffused through the first layer, but which is substantially impervious and insoluble to the passage of hydrogen molecules;
heating the first layer to an elevated temperature sufficient to provide for the rapid dissociation of the hydrogen molecule;
contacting the first layer with a hydrogen-containing gas stream at an elevated pressure which stream is subject to variations in the partial pressure of the hydrogen therein;
withdrawing diffused hydrogen at a reduced pressure from the down stream side of the second layer; and
withdrawing the non-diffused component from the upstream side of the first layer whereby the second layer prevents back diffusion of the hydrogen molecule when the hydrogen pressure of the gas stream falls below the pressure of the hydrogen on the downstream side of the second layer.

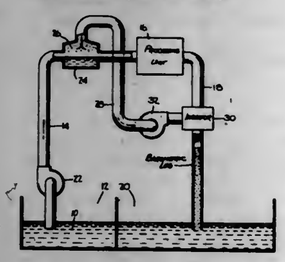
3,344,583
TRANSPORTING ETHANE IN A CRUDE OIL PIPELINE
Ralph E. Styring, Henry F. Dunlap, and Charles L. Rogers, Dallas, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 9, 1964, Ser. No. 417,087
19 Claims. (Cl. 55—44)

1. A method for transporting ethane over substantial distances comprising separating ethane from methane to form a hydrocarbon comprised of at least 10 percent by volume of the separated ethane, blending at a first point in a pipeline, said hydrocarbon with crude oil to form a mixture of said crude oil and said hydrocarbon, said mixture containing less than 15 percent by liquid volume of propane and butane and containing at least 3 percent

by liquid volume of ethane and having a vapor pressure of less than 400 pounds per square inch absolute at 95° F., flowing said mixture through said pipeline for a substantial distance to a second point on said pipeline, and separating from said mixture at said second point at least 85 percent by volume of said ethane in said hydrocarbon blended with said crude oil.



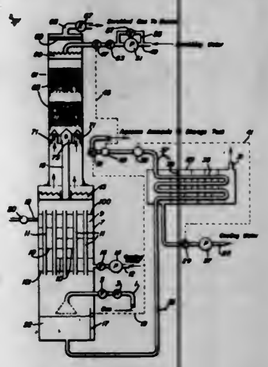
3,344,584
METHOD AND APPARATUS FOR DEGASSING AND DISTILLING LIQUID
Edward C. Kehoe and Elwood C. Walker, North Caldwell, N.J., assignors, by mesne assignments, to Saline Water Conversion Corporation, a corporation of New York
Filed July 29, 1964, Ser. No. 385,841
13 Claims. (Cl. 55—46)



1. A method of distilling a liquid comprising the steps of causing said liquid to flow rapidly from a source upwardly through a conduit into a low pressure region, releasing dissolved non-condensable gases therein, subjecting a portion of said liquid to evaporation in said low pressure region, separating the evaporated portion, and condensing and recovering same in liquid form, returning the unevaporated portion of said liquid to said source by causing that unevaporated portion to flow rapidly down to said source through a barometric leg, and preventing pressure buildup which tends to occur through the release of said dissolved, non-condensable gases in said low pressure region by conveying the released gases to the top of said barometric leg and injecting said gases into the downwardly flowing liquid in said leg while maintaining the downward velocity of the liquid in said leg at a value sufficient to overcome the buoyancy of said gases in said liquid, whereby said gases become entrained by the rapidly flowing liquid and are carried along thereby to become compressed by the increasing pressure of the liquid in said stream.

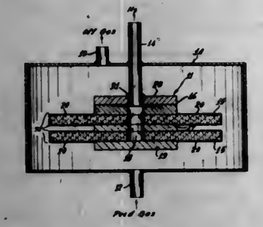
3,344,585
METHOD FOR RECOVERING AMMONIA FROM GASEOUS MIXTURE
Eugene G. Hollowell, 13163 Fourposter Court, St. Louis, Mo. 63141
Filed May 12, 1967, Ser. No. 638,040
10 Claims. (Cl. 55—70)

1. A method for recovering at least 95% of the ammonia present in a first gaseous mixture consisting essentially of about 10–30 mole percent ammonia and about 90–70 mole percent inert gas, said inert gas consisting essentially of a mixture of hydrogen, methane, nitrogen, and argon with the hydrogen and methane components comprising at least about 50 mole percent of said first gaseous mixture, said method comprising:
(a) passing a stream of said first gaseous mixture at a pressure of at least about 200 p.s.i.a. through a wetted-wall scrubber having scrubbing tubes in which said gaseous mixture is scrubbed with a countercurrent stream of a first aqueous solution of ammonia, said first aqueous solution being prepared in a later-recited scrubbing step and consisting essentially of about 3–10 weight percent ammonia and about 97–90 weight percent water, while cooling said scrubbing tubes externally with water to maintain the temperature of the aqueous ammonia solution within the tubes below about 110° F., to form therein a second aqueous solution consisting essentially of about 23–27 weight percent ammonia and about 77–73 weight percent water and a second gaseous mixture consisting essentially of about 1–6 mole percent ammonia and about 99–94 mole percent of the aforesaid inert gas;
(b) recovering the second aqueous solution;
(c) passing the second gaseous mixture at a pressure of at least about 200 p.s.i.a. through a packed scrubbing column where said gaseous mixture is scrubbed with a countercurrent stream of water to form the aforesaid first aqueous solution of ammonia and a third gaseous mixture consisting essentially of about 0.1–0.5 mole percent ammonia and about 99.9–99.5 mole percent of the aforesaid inert gas;
(d) passing the first aqueous solution to the wetted-wall scrubber; and
(e) removing the third gaseous mixture from the packed scrubbing column.

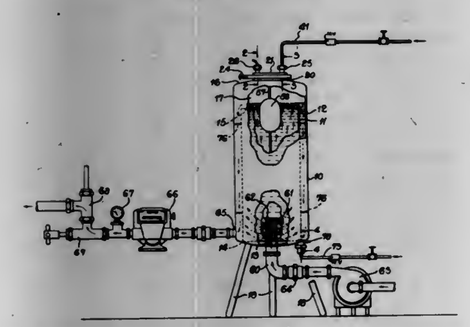


3,344,586
GAS SEPARATION APPARATUS
Robert C. Langley, Millington, John W. Lindenthal, Freehold, and William C. Pfefferle, Middletown, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed June 22, 1965, Ser. No. 465,861
5 Claims. (Cl. 55—158)

1. Apparatus for separating a gas from a mixture of gases comprising in combination a chamber having an inlet and an outlet for the passage of a mixture of gases through the chamber, a gas diffusion assembly in the chamber, and a conduit for conducting separated gas from the diffusion assembly to the outside of the chamber, said diffusion assembly comprising a plurality of thin, flat elements of porous ceramic material arranged axially in a stack with a spacing member secured between each adjacent pair of elements, said spacing members each having a smaller circumference than the adjacent elements, said stack having an axial bore therein, said conduit being secured to the stack in gas flow communication with the bore, and a non-porous film of material selectively permeable to hydrogen coated on exterior surfaces of the stack to form a selective gas permeable membrane between the porous interior of the elements and a mixture of gases containing hydrogen in the chamber.

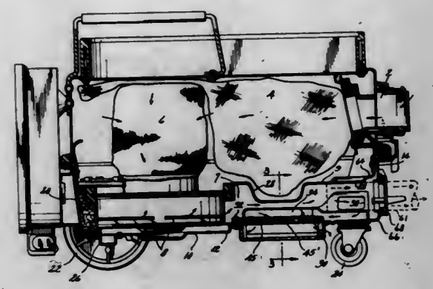


3,344,587
APPARATUS FOR SEPARATING AIR FROM LIQUIDS
Alden H. Wakeman, Lake Mills, Wis., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,639
3 Claims. (Cl. 55—170)



1. Apparatus for separating gases from liquid comprising in combination: a closed tank of substantial height; an inlet for the liquid at the bottom region of the tank and an outlet therefor also at the bottom region of the tank but spaced from the inlet, the upper portion of said tank normally being adapted to contain a volume of air above a normal liquid level spaced from the top of the tank; means for dispersing the liquid entering said inlet and for directing same as a slowly-moving volume up to substantially such liquid level and thence slowly downwardly to said outlet; valve means and control means therefor for automatically releasing from time to time excess amounts of air from said upper portion of the tank; means for maintaining a preselected air pressure in the space above the liquid level, said last named means including an air inlet pipe connected to the upper portion of said tank above said liquid level, a check valve mounted in said inlet pipe for admitting air under pressure to said space above the liquid level when the pressure in said space is sufficiently below that of the source of air for said air inlet pipe, thereby to supply air to said space in addition to such air as is supplied thereto by separation from the liquid.

3,344,588
VACUUM CLEANER
Louis J. Szabo, Fairview Park, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,195
7 Claims. (Cl. 55—276)

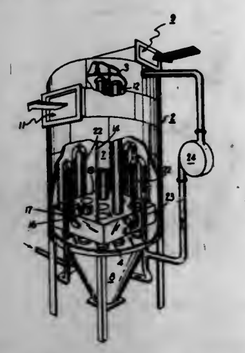


1. A vacuum cleaner comprising:
(a) a casing having an air inlet opening;
(b) an electric motor and suction fan mounted within said casing for causing suction air to flow into said casing through said air inlet opening;
(c) a filter positioned within said casing between said air inlet opening and said suction fan;
(d) exhaust air passage means within said casing, said exhaust air passage means being positioned adjacent to said suction fan to receive air which is exhausted from said suction fan;
(e) said casing including a base member having a generally flat horizontal bottom wall having an outlet opening therein; a vertical end wall extending upwardly from said bottom wall, an opening formed in said end wall;
(f) a muffler member having a generally flat top wall and depending side wall means, said muffler member being positioned on top of the bottom wall of said base member to form a muffler chamber between the top wall of said muffler member, the side wall means of said muffler member, and said generally horizontal flat bottom wall;
(g) said muffler member also being formed with a curved top wall portion, said curved top wall being generally aligned with the opening formed in said end wall;
(h) said muffler member forming part of the lower wall of said exhaust air passage means, and being provided with opening means formed in its curved top wall portion for permitting exhaust air from said exhaust air passage means to enter said muffler chamber; and
(i) tubular coupling means selectively insertable through the opening in said end wall and positionable on top of said curved top wall portion of said muffler member for covering said opening means thereby preventing exhaust air from entering said muffler chamber.

3,344,589
SECONDARY SYSTEM FOR DUST COLLECTOR
Tom R. Smith, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 579,314
4 Claims. (Cl. 55—294)

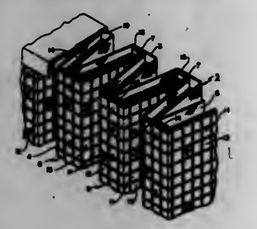
1. A dust collector comprising: a housing having spaced dirty gas inlet means and clean gas outlet means; vertically extending gas cleaning tube means disposed within said housing in communication with said dirty gas inlet

means and said clean gas outlet means whereby dirty gas can be introduced from said dirty gas inlet means into and passed through said tube means to separate contaminant particles therefrom with the clean gas passing to said clean gas outlet means; reverse blow ring frame means adapted to longitudinally traverse said tube means, said reverse blow ring frame means including an inlet



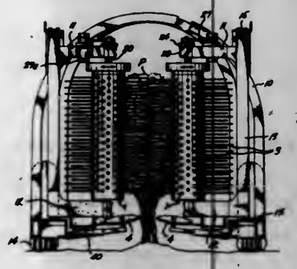
opening to receive clean air from a clean air supply and an outlet opening to direct such clean air against the side of said gas cleaning tube means for reverse cleaning of said tube means; and hood means cooperable with said reverse blow ring frame means along the same side of said tube means to entrain particulate material shaken from said tube means by said blow ring frame means as it traverses said tube means.

3,344,590
UNIT FILTER ASSEMBLY
Tom R. Smith and Robert J. Boylan, Louisville, Ky., assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 579,317
4 Claims. (Cl. 55—484)



1. A unit filter assembly comprising: an open-ended frame member having an upstream dirty gas inlet and a downstream clean gas outlet; a first self-sustaining, deformable, gas pervious, longitudinally extending, plenum-forming web disposed within said frame member in continuously pleated fashion to provide adjacent pleats of generally U-shaped cross section, each pleat having a base portion extending a small distance transversely across said dirty gas inlet and having flank portions extending from said dirty gas inlet toward said clean gas outlet; a second, self-sustaining, deformable, gas pervious, longitudinally extending, plenum-forming web disposed within said frame member in continuously pleated fashion to provide adjacent pleats of generally U-shaped cross section, each pleat having a base portion extending a small distance transversely across said clean gas outlet and having flank portions extending from said clean gas outlet toward said dirty gas inlet, said flank portions of said pleats of said first and second webs being incrementally folded upon themselves to provide inwardly turned flange members of smaller extent than said base portions engaging against flank portions of pleats of an opposite web of the plenum-forming webs to space adjacent flank portions of said first and second webs and form gas pervious plenum chambers therebetween; and foraminous material disposed within said gas pervious chambers in sufficient quantities to substantially fill the same.

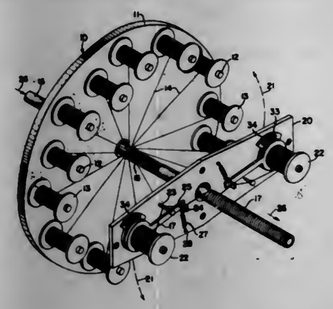
3,344,591
MOVING CARRIAGE MECHANICAL BERRY HARVESTER WITH ROTATIONALLY OSCILLATIVE SHAKERS
David E. Christie and Karl E. Winquist, Portland, Oreg., assignors to OECO Corporation, Portland, Oreg., a corporation of Oregon
Filed Apr. 27, 1964, Ser. No. 362,611
18 Claims. (Cl. 56—330)



1. In a berry harvester comprising a carriage movable progressively along a row of berry plants, a pair of rotary generally cylindrical shakers disposed in the harvester opposingly to engage the opposite sides of the row of berry plants as the harvester traverses the length of the row, said shakers including a plurality of plant-engaging finger elements projecting generally radially outwardly therefrom at intervals lengthwise and circumferentially thereof, means mounting said shakers to permit them to revolve freely about upright axes progressively accompanying such advance of the harvester along the row, thereby to permit successive engagement of said elements with the plants being traversed by the harvester, and means to oscillate the shakers rotatively about their respective axes at an amplitude and frequency producing speed of vibrative circumferential motion of said elements which is at least several times the speed of their progressive circumferential motion.

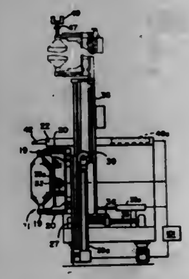
3,344,592
WIRE TENSIONING DEVICE
Abel F. Geisinger, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 30, 1965, Ser. No. 517,700
3 Claims. (Cl. 57—3)

1. In a machine for spiral wrapping wire under tension onto a tubular hose member during the building operation, the combination of carrying means mounted for rotation about the hose member to support at least one spool of wire thereon as the hose member passes said carrying means and braking means positioned between said spool and said carrying means to maintain a substantially constant tension on said wire as it is wrapped on said hose, said braking means consisting of a first part mounted on said carrying means and a second part rotatably mounted adjacent said first part on the side opposite said carrying means, each of said first and second parts having engaging cam surfaces on their opposing faces so that relative rotation therebetween will change the axial distance between said first and second parts, an arm portion extending in a substantially radial direction from the edge of said second part toward said hose member and having means adjacent the outer end thereof to guide the wire as it is wrapped on the tubular member, means to resiliently rotationally urge said second part in a single angular direction with respect to said first member, wire training means attached to said carrying means over which the wire from said spool passes



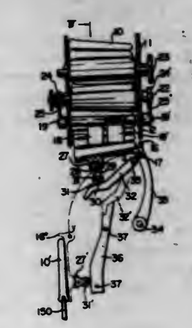
prior to its engagement with the guide means on said arm portion, said training means being positioned between said spool and guide means to cause the wire to follow an angular path between the spool and cylindrical member during the wrapping operation and friction means disposed between the opposed faces of said second part and said spool to control the tension on said wire by its frictional engagement therewith, the extent of the frictional engagement being directly related to the tension in the wire.

3,344,593
DOFFING MACHINE
Takashi Morikawa, Amagasaki-shi, Hyogo-ken, Kunio Aoki, Higashisumiyoshi-ku, Osaka, Minoru Nakamura, Itami-shi, Hyogo-ken, Yutaka Maruyama, Hirakata-shi, Osaka, and Kazuichi Sakurai, Hidaka-gun, Wakayama-ken, Japan, assignors to Daiwa Boseki Kabushiki Kaisha and Osaka Kiko Company Limited, Osaka, Japan
Filed June 22, 1964, Ser. No. 376,645
1 Claim. (Cl. 57—53)



An apparatus for exchanging bobbins in a spinning frame having flyers mounted thereon which flyers are rotatable in a fixed position and the bobbins are adapted to rotate in the center of the flyers and are removable laterally from the flyers when the rotating shaft and supporting element at the upper end of the flyer is raised, the apparatus being for conveying the full bobbins to an overhead bobbin conveyor which also conveys empty bobbins into position for transfer to said spinning frame, said exchanging apparatus comprising a carriage movable along the front face of the spinning frame, a bobbin holder assembly means mounting said bobbin holder assembly on said carriage for movement toward and away from the front face of the spinning frame and for movement up and down, means on said carriage for moving said bobbin holder assembly toward and away from the front face of the spinning frame and means for moving said bobbin assembly up and down, a plurality of pairs of bobbin gripping chucks spaced along said bobbin holder assembly at distances equal to the spacing of the flyers on the spinning frame, the individual chucks in each pair of chucks being spaced vertically for engagement with the ends of the bobbins, a plurality of engaging members, one associated with each pair of bobbin gripping chucks and positioned just above the upper bobbin chuck of each pair, and engaging member moving means on said carriage on which said engaging members are mounted and movable toward and away from the front face of the spinning frame independently of said bobbin assembly for engagement and lifting of said supporting element at the upper end of each bobbin in a flyer to disengage said supporting element from the bobbin supported thereby, whereby the bobbin gripping chucks can be advanced to engage full bobbins on the spinning frame and simultaneously the engaging members lift the supporting members to release the bobbins, and while the supporting members are held in the raised position by the engaging members, the bobbin assembly is withdrawn from the face of the spinning frame, raised so that the bobbins are engaged by bobbin hangers on the overhead bobbin conveyer, the bobbin gripping chucks are released and withdrawn, the overhead bobbin conveyer is moved to present empty bobbins to the chucks, the chucks are engaged with the empty bobbins, and the bobbin assembly is lowered and moved toward the front face of the spinning frames to place the bobbins into the flyers, after which the bobbin assembly and engaging members are simultaneously withdrawn.

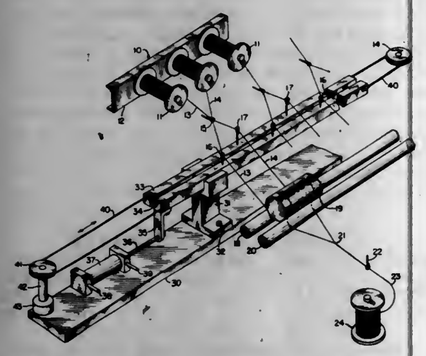
3,344,594
AUTODOFFING APPARATUS
Kazuhiko Takemura, Takatsuki-shi, and Tetsutaro Noguchi, Fukuno-Machi, Japan, assignors to Kureha Spinning Co., Ltd., Osaka, and Toyama Machine Works, Ltd., Toyama-ken, Japan, both corporations of Japan
Filed Oct. 29, 1964, Ser. No. 407,493
Claims priority, application Japan, Oct. 31, 1963, 38/57,668; Dec. 5, 1963, 38/65,072
14 Claims. (Cl. 57—53)



1. An automatic bobbin doffing apparatus for a textile machine, comprising driving means, travel means coupled to the driving means for causing the apparatus to travel along the front of the textile machine, stopping means coupled to said driving means for stopping said driving means to stop the apparatus accurately at pre-

scribed positions relative to said textile machine, lappet reversing means coupled to said driving means, bobbin loosening means coupled to said driving means, bobbin removing means coupled to said driving means for removing a plurality of full bobbins simultaneously from spindles of the textile machine, bobbin receiver raising and lowering means coupled to said driving means for lowering the removed bobbins loaded on bobbin receivers and discharging said removed bobbins at the bottom point of the descent of said raising and lowering means, and bobbin supplying means coupled to said driving means for simultaneously mounting a plurality of empty bobbins on the spindles and from which the full bobbins have been removed, said bobbin supplying means moving said empty bobbins from their horizontal position along a curve to a substantially vertical position, and control means for controlling the operation of said aforementioned means for actuating them in the sequence in which they are set forth.

3,344,595
CORD TREATMENT
William H. Johnson, Cartersville, Ga., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 29, 1965, Ser. No. 491,229
5 Claims. (Cl. 57—106)

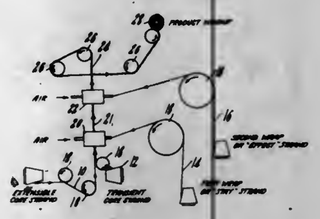


1. A cord twisting apparatus comprising a twist device, a plurality of guide means respectively associated with a plurality of yarns for guiding the yarns into a Y twist configuration for the formation of a cord by said twist device and means responsive to deactivation of said twisting apparatus to halt the movement of yarns therethrough for moving said guide means toward each other so as to remove the Y twist configuration thereby eliminating non-uniformities in the finished cord.

3,344,596
TEXTILE YARN AND PROCESS THEREFOR
Ronald F. Spicer and Preston F. Marshall, Walpole, Mass., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Apr. 1, 1965, Ser. No. 444,586
10 Claims. (Cl. 57—152)

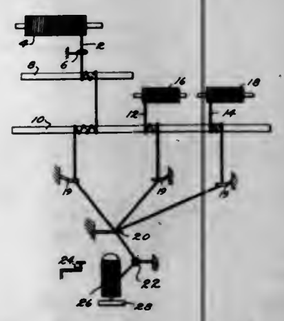
1. A transiently stabilized yarn capable of eventual limited elongation comprising:
- a first extensible core strand and
- a second, substantially inextensible, transient core strand,
- said core strands being disposed in substantially parallel arrangement, together with
- a first wrapping strand disposed about both core strands in the form of doubled-back loops in bifilar arrangement,
- and a second wrapping strand disposed about the resulting three-component yarn in the form of doubled-back loops in bifilar arrangement,
- both wrapping strands possessing no net true twist around said core strands, said first wrapping strand having a lower degree of overfeed than said second wrapping strand.

6. The process of making a transiently stabilized yarn capable of eventual limited elongation which comprises:
- combining in essentially parallel arrangement an extensible core strand and a substantially inextensible transient core strand,
- wrapping both core strands with a first wrapping strand associated with said core strands in the form of



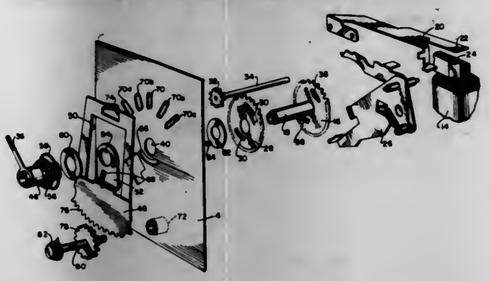
doubled-back loops disposed in bifilar ararngement around said core strands,
- said first wrapping strand possessing no net true twist around said core strands;
- and wrapping the composite three-component yarn with a second wrapping strand,
- said second wrapping strand also being associated with said composite yarn in the form of doubled-back loops disposed in bifilar arrangement about said composite yarn and possessing no net true twist around said composite yarn,
- said first wrapping strand having a lower degree of overfeed than said second wrapping strand.

3,344,597
METHOD OF MAKING COMPOSITE YARN
David W. Petree, High Point, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Dec. 12, 1963, Ser. No. 330,121
2 Claims. (Cl. 57—157)



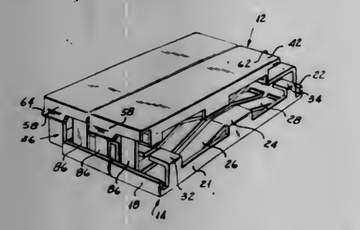
1. The method of preparaing a composite stretch yarn which comprises stretching an essentially twist-free elastomer yarn up to 90% of its maximum stretched length and twisting the thus stretched and essentially twist-free elastomer yarn with at least one spun yarn which has a twist therein of about 6–30 turns per inch, and keeping the degree of stretch in said elastomer yarn constant throughout said twisting.

3,344,598
ALARM CONTROL MECHANISM
Samuel Polonsky, Medway, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 18, 1965, Ser. No. 497,182
5 Claims. (Cl. 58—22.5)



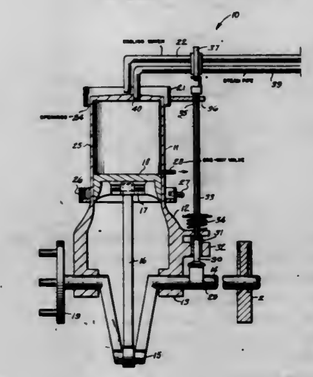
1. An alarm control mechanism comprising:
- (a) a rotatable alarm set member;
- (b) primary means for adjusting the rotary position of said alarm set member to set an alarm time;
- (c) a secondary alarm set lever frictionally connected with said alarm set member for providing an incremental adjustment in the rotary position of said alarm set member;
- (d) detent means positioned on one portion of said secondary alarm set lever for releasably holding said secondary alarm set lever in one of a plurality of pre-selected positions;
- (e) gear teeth formed on another portion of said secondary alarm set lever; and
- (f) gear means in meshing engagement with the ge teeth formed in the lower portion of said secondar alarm set lever for moving the secondary alarm set lever to one of a plurality of pre-selected positions in order to vary the position of said alarm set member.

3,344,599
DETACHABLE LINK EXPANSIBLE BAND
Seymour Hauser, North Bergen, N.J., assignor to Jacques Kreisler Manufacturing Corporation, North Bergen, N.J., a corporation of New Jersey
Filed Dec. 23, 1964, Ser. No. 420,532
8 Claims. (Cl. 59—79)



1. An expansible band comprising in combination a plurality of upper links and a plurality of lower links, respective springs carried by each of said upper and lower links, a plurality of U-shaped connectors interconnecting said upper and lower links at their sides, each of said U-shaped connectors having a long leg and a short leg, said short legs housed in said upper links and said long legs housed in said lower links, a flange formed across each side of each of said upper and lower links, said springs forcing the legs of said connectors against said upper and lower links, connector retaining lug carried by each of said upper links adjacent each side thereof, each of said upper links formed with a connector blocking tab partially across said sides, said tabs extending from said sides downwardly for a distance to block the removal of predetermined ones of said connector legs from said links while permitting the removal of other ones of said legs from said links, the ends of said removable legs being cut on a bias forming a camming surface directing said removable legs toward the center of the links in which said removable legs are housed.

3,344,600
POWER PLANT
Joseph J. Eddy, 8511 Sharp Ave., Sun Valley, Calif. 91352
Filed Sept. 3, 1965, Ser. No. 484,980
1 Claim. (Cl. 60—1)



In a power plant, the combination of a cylinder, a piston slideable within said cylinder, said piston being connected by a wrist-pin to one end of a connecting rod, the opposite end of said connecting rod being connected to a crank journal formed on a crank shaft, said crank shaft being rotatably supported between a pair of spaced apart bearings in axial alignment, said bearings being formed in a lower part of a crank case having said cylinder formed at the upper portion thereof, one end of said crank shaft being flanged for connection to any of various driven mechanisms, the opposite end of said crank shaft having a flywheel secured thereto, a cam carried by said crank shaft, a cam follower at the lower end of a vertical rod, said cam follower being in engagement with said cam of said crank shaft, valve means at the upper end of said vertical rod, said valve means comprising a flat valve having a vertically sideable plate, a pair of openings extending through said plate, each said opening in said plate being moveable into alignment with a water pipe and steam pipe passing through said flat valve, one end of said water pipe being connected to a water tank, one end of said steam pipe being connected to a steam tank having a burner located there beneath, the opposite end of said steam pipe being connected to the upper end of said cylinder for the purpose of directing steam against the upper side of said piston, a collar comprising an outwardly extending flange around the upper portion of said cylinder, said flange having an integral upwardly extending side wall to form a container above said cylinder, said container having a plurality of openings within said flange, the opposite end of said water pipe being directed into said container for delivering water from said water tank into said container and outwardly through said openings around the sides of said cylinder, a lower collar around

a lower portion of said cylinder, said lower collar comprising a peripheral container for catching said water moving downwardly around the outer side of said cylinder, said lower collar having a drain pipe secured thereto for draining outwardly said water therefrom, and said cylinder having a port at its lower end and a one-way valve connected to said port and permitting flow from the interior of said cylinder when said piston is at a lower end of a stroke within said cylinder, said valve providing a means for escape of exhaust steam from within said cylinder.

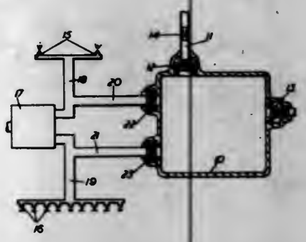
3,344,601
INTERCONNECTION FOR FLAMETUBES
William W. Mieczkowski, Jr., Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 521,342
3 Claims. (Cl. 60—39.32)



1. In a burner construction, the combination with closely adjacent substantially parallel flametubes, of a laterally projecting tube extension on one of the flametubes projecting toward the other flametube and having a flange on the end remote from one flametube, a cooperating tube extension on the adjacent flametube extending toward said one flametube and in substantially axial alignment with the laterally projecting tube extension, the adjacent ends of the tube extension being axially spaced apart, and a connector having a tube portion in mutually overlapping relation to the outer end of the cooperating tube extension, said connector also having a flanged end substantially coextensive with the flange on the first tube extension, and means for securing said flange and said flanged end together, the means including at least two bolts extending through said flange and said flanged end with clearance around the bolts to permit the tube portion of the connector to be positioned concentric to the cooperating tube extension.

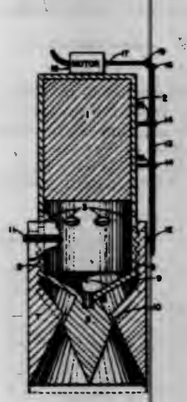
3,344,602
FUEL PURGING SYSTEM FOR GAS TURBINE ENGINES
David Omri Davies, Kingsway, Derby, and Alan Parker, Ockbrook, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Nov. 18, 1965, Ser. No. 508,433
Claims priority, application Great Britain, Dec. 12, 1964, 50,665/64
4 Claims. (Cl. 60—39.28)

1. A system for purging fuel conduits in a gas turbine engine having a combustor, fuel burners for said combustor and a first conduit for supplying a fuel under pressure to the burners, comprising:
- a reservoir for containing air under pressure,
- a second conduit for supplying air under pressure to said reservoir, said second conduit being in communication with a compressor of the gas turbine engine so as to receive compressed air from the compressor for delivery to the reservoir, said compressor also supplying air to said combustor,
- a first pressure responsive valve controlling fluid flow between said first conduit and said reservoir, said first pressure responsive valve being closed during normal operation of the gas turbine engine when the pressure in said first conduit exceeds that of said reservoir but being opened to allow passage of air from said reservoir to said first conduit only when the pressure of fuel in the first conduit is less than the pressure of air in the reservoir by a predetermined amount, and



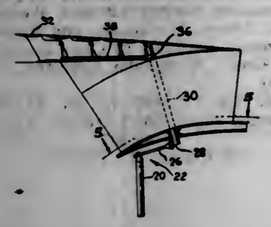
- a second pressure responsive valve controlling fluid flow between said second conduit and said reservoir, said second pressure responsive valve being open during normal operation of the gas turbine engine only when the pressure in said second conduit exceeds that of said reservoir but being closed when the pressure of air in said second conduit.

3,344,603
VARIABLE IMPULSE ROCKET MOTOR
Bernard L. Iwanciow, Sunnyvale, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,406
5 Claims. (Cl. 60—204)



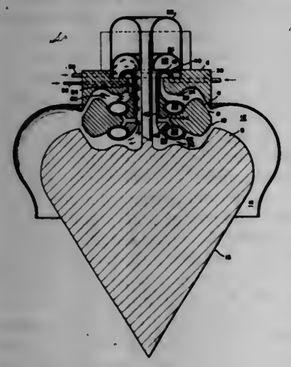
4. A method of varying the thrust of a rocket motor comprising the steps of
(a) generating combustion gas in a combustion chamber;
(b) venting a portion of said combustion gas through a thrust producing nozzle having a predetermined maximum area;
(c) venting a portion of said combustion gas through opposed ports having a total maximum area equal to said nozzle maximum area whereby no effective thrust is produced, and
(d) varying the area of said thrust producing nozzle inversely with the area of said opposing ports.

3,344,604
APPARATUS FOR SELECTIVELY REVERSING THE THRUST OF FRONT FAN JET ENGINES
Armand D. Mattia, La Mesa, and Robert C. Harbison, San Diego, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 14, 1965, Ser. No. 513,809
10 Claims. (Cl. 60—229)



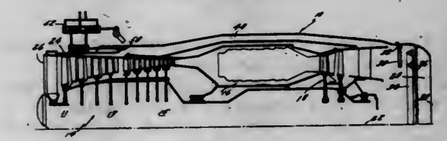
3. A thrust reverser mechanism for turbo fan bypass engines with a fan exhaust duct disposed about the engine compressor cowl, comprising in combination:
(a) a plurality of blocker vanes pivotally mounted in said fan exhaust duct on radially positioned pivot points for accomplishing closure and opening of said fan exhaust duct,
(b) an acutation ring member movably mounted on said engine adjacent said radially positioned pivot points,
(c) linkage means pivotally connecting said blocker vanes with said actuation ring member for transmitting movement from said ring member to said blocker vanes,
(d) said ring member connected with associated actuating means for inducing rotating motion to said ring member, and
(e) cascade means having a plurality of air deflecting foils, pivotally and radially mounted in and about said fan exhaust duct and cooperating with said blocker vanes so that movement of said blocker vanes induces movement of said cascade means deflecting foils.

3,344,605
VARIABLE THRUST ROCKET ENGINE
James V. Mageean, Torrance, and Eugene V. Rutkowski, Los Angeles, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed May 16, 1966, Ser. No. 550,376
5 Claims. (Cl. 60—258)



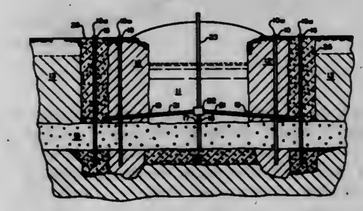
1. A gas generating device comprising;
a combustion chamber,
an injector assembly comprising;
a fixed injector wall,
an annular plug adapted to move toward and away from from said wall,
a movable injector wall, said movable wall being adapted to move toward and away from said plug and said fixed wall,
bias means between said fixed wall and said plug adapted to bias said plug toward said fixed wall,
bias means between said movable wall and said fixed wall adapted to bias said movable wall toward said fixed wall and said plug,
means to inject a first propellant between said fixed wall and said plug,
means to inject a second propellant between said plug and said movable wall,
a first cavitating venturi formed between said fixed wall and said plug, and
a second cavitating venturi formed between said plug and said movable wall.

3,344,606
RECOVER BLEED AIR TURBOJET
Robert B. Abernethy, North Palm Beach, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 27, 1961, Ser. No. 141,571
6 Claims. (Cl. 60—241)



1. A recover bleed air engine comprising a compressor having forward, intermediate and rear stages, a turbine spaced rearward of said compressor, a combustion chamber between said compressor and turbine, an afterburner downstream of said turbine, an engine case enveloping said compressor, combustion chamber, turbine and afterburner and having an inlet and an outlet so that air which enters said inlet is compressed in said compressor, heated in said combustion chamber, has energy extracted therefrom by said turbine, and is reheated in said afterburner before discharge to atmosphere through said outlet to generate thrust, and means responsive to supersonic flight speed to bleed air from said compressor intermediate stage and discharge said bleed air into said afterburner for reheating.

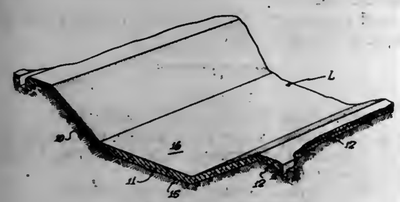
3,344,607
INSULATED FROZEN EARTH STORAGE PIT AND METHOD OF CONSTRUCTING SAME
Barney Vignovich, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,593
7 Claims. (Cl. 61—.5)



2. In the method of constructing a frozen earth storage pit wherein the walls and floor of the pit are formed of a water saturated frozen earth shell, the improvement

comprising injecting a gas into the earth adjacent the outer surface of the frozen earth shell remote from the pit so as to form a layer of gas bubbles in the water saturated earth on the outer surface of the frozen earth shell so that the layer of bubbles is frozen to the outer surface of the shell.

3,344,608
METHOD OF LINING DITCHES
Paul R. McEachran, Downey, Calif., assignor to MacMillan Ring-Free Oil Co., Inc., Los Angeles, Calif., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 424,092
9 Claims. (Cl. 61—7)



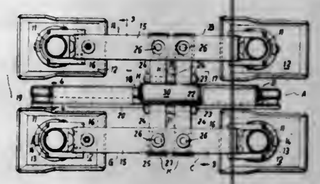
1. The method of forming a waterproof liner over a surface, that includes the steps of:
laying over the surface to be covered a netting of open mesh providing openings of widths substantially no smaller than one-fourth of an inch and being made from organic vegetable fibers;
applying to the netting an emulsion of asphalt and water to bond the netting to said surface;
spreading a layer of sand over the netting to a depth to substantially fill the openings in the netting;
and finally applying to the netting and the layer of sand an emulsion of asphalt and water in sufficient quantity to form a non-porous asphalt liner in which the sand and netting are embedded.

3,344,609
PREVENTION OF BEACH EROSION AND ENCOURAGEMENT OF LAND RESTORATION
Melvin R. Greiser, % Carthage Mills, Inc., 124 W. 66th St., Cincinnati, Ohio 45216
Filed Oct. 23, 1959, Ser. No. 848,238
7 Claims. (Cl. 61—38)



1. A method of beach erosion control which comprises configuring a beach so as to comprise a bank sloping toward the water, and subject to wave action, covering said bank with an anti-erosion means comprising a layer of thin, flexible, foraminous sheet material, said layer being pervious to water but substantially impervious to the substance of said beach, providing said layer with means at its edges for inhibiting the entrance of water therebeneath, covering said layer with means for holding it in place gravitationally, said means comprising panel-like concrete blocks having interengaging edge portions, the interengagement of said edge portions being relatively flexible and such as to permit water to seep therethrough.

3,344,610
SELF-TRAVELING PROPPING APPARATUS
Gunther Dommann, Bergrat Altlunen, Westphalia, Manfred Flöter, Lunen, Westphalia, and Kunibert Becker, Werl, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Lunen, Westphalia, Germany, a corporation of Germany
Filed Apr. 13, 1965, Ser. No. 447,762
Claims priority, application Germany, Apr. 21, 1964, G 40,402
10 Claims. (Cl. 61—45)



1. A self-traveling mine roof-propping apparatus which comprises:
(a) a first roof-propping frame which is adapted to travel along a mine floor and is extendable for supporting engagement with the roof, said frame being substantially immobile when extended for roof-supporting engagement, said frame having a pair of propping column members disposed in spaced-apart parallel relation to each other in a plane parallel to their line of travel;
(b) a first parallelogram linkage; comprising a pair of shackle members, each of which being fixedly connected to the bottom portion of a propping column in the frame, and a pair of superposed parallel bar members of substantially equal length disposed in spaced-apart relation and pivotally connected at their ends to said shackle members, whereby said parallelogram is defined by a pair of oppositely disposed parallel bar members and a pair of oppositely disposed parallel shackle prop column members; connecting the propping columns of said first frame to each other in mutually spaced parallel relationship;
(c) a second roof-propping frame, similar to the first, disposed in laterally spaced-apart parallel relation thereto for travel along a line parallel to the line of travel of said first frame;
(d) a second parallelogram linkage; comprising a pair of shackle members, each of which being fixedly connected to the bottom portion of a propping column in the frame, and a pair of superposed parallel bar members of substantially equal length disposed in spaced-apart relation and pivotally connected at their ends to said shackle members whereby said parallelogram is defined by a pair of oppositely disposed parallel bar members and a pair of oppositely disposed parallel shackle prop column members; connecting the propping columns of said second frame to each other in mutually-spaced parallel relationship;
(e) linear actuating means for sequentially moving said first and second propping frames relative to each other and in side by side relation along parallel line paths; and
(f) cross member means connecting said actuating means to said first and second parallelogram linkage means whereby said first and second frame members can be moved one at a time along their respective parallel travel lines, with one of said frames being extended in roof-supporting engagement and thereby immobilized while the other frame is moved relative thereto by said actuating means.

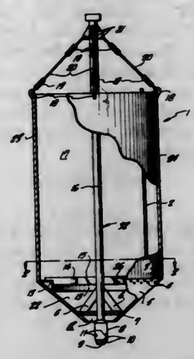
3,344,611
SELF-EXTRACTING MANDREL FOR PUMPED-IN-PLACE-PILE
Kenneth W. Philo, 21 St. Francis Lane, San Rafael, Calif. 94901
Filed Nov. 9, 1964, Ser. No. 409,862
6 Claims. (Cl. 61—53.64)



6. A mandrel for forming concrete piles in place comprising four substantially identical segments conjoined along longitudinally extending parallel seams to define a hollow elongate casing of generally square cross section having an upper end and a lower end, said seams being adapted to afford relative longitudinal movement between said segments, an end cap for closing the lower end of said casing, a shell disposed in said casing for sliding reciprocal movement with respect to said casing, a concrete impervious bearing plate affixed to said shell adjacent the lower end of said casing, said bearing plate having an outer periphery substantially coextensive with the interior cross section of said casing so as to prevent passage of concrete between said plate and said casing, said bearing plate defining a concrete discharge aperture therethrough, a tube secured to said bearing plate in communication with said discharge aperture and extending toward the upper end of said casing for conveying concrete below said bearing plate and within said casing, four hydraulic actuators each having a cylinder and rod reciprocally movable with respect to said cylinder, each said actuator being mounted between one of said segments and said shell for individually and selectively moving each said segment in reciprocal movement with respect to said shell, and means exterior said casing for controlling said actuators.

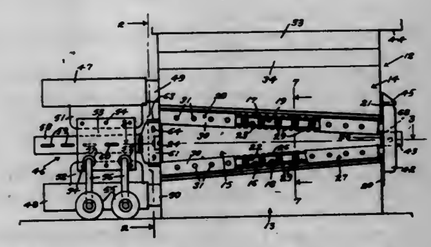
3,344,612
SHALLOW WATER CAISSON
Paul R. Rininger, Woodland Hills, Calif., assignor to Global Marine Inc., Los Angeles, Calif., a corporation of California
Filed Feb. 17, 1966, Ser. No. 528,263
6 Claims. (Cl. 61—63)

1. A shallow water caisson capable of providing space below the floor of a body of water when such floor is composed of fluid displaceable material, such space being suitable for well fabricating and producing equipment, said shallow water caisson comprising:
(a) a shell having an interior defining the space;
(b) a hollow tapered base fluid tightly joined at its largest end to the bottom of said shell with its taper extending downwardly and inwardly from said shell and having an opening at its apex of sufficient diameter to pass well drilling equipment;
(c) means for discharging fluid under pressure to the exterior of said caisson around its outer periphery proximate to the junction of said shell and said base with both a vertical and horizontal component of velocity; and



(d) a removable jetting nozzle assembly comprising: a jetting nozzle disposed below and coaxial with the opening having a plurality of fluid ports in fluid communication with the exterior of the nozzle, such ports being disposed to provide both a vertical and horizontal component of fluid velocity, means for providing fluid under pressure to the fluid ports, and means for preventing the material from the floor from entering the interior of said shell through the opening.

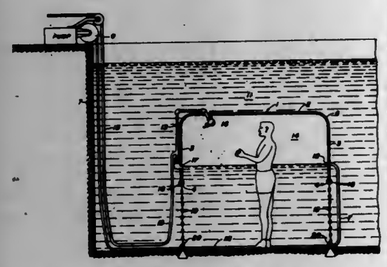
3,344,613
REMOVABLE KEEL BLOCK
William E. Thompson, 2159 Emogene St., Mobile, Ala. 36606, Bowie G. Simmons, deceased, late of Dauphin Island, Ala., by Horace G. Simmons, executor, 1166 S. Skyland Circle, Mobile, Ala. 36609
Filed July 14, 1965, Ser. No. 472,064
1 Claim. (Cl. 61—66)



A removable keel block comprising a lower block, an upper block and an intermediate block, said blocks being elongated, said intermediate block having top and bottom surfaces converging from end to end of the block, said lower block and upper block having top and bottom surfaces, respectively, disposed in substantially parallel relation to the bottom and top surfaces, respectively, of the intermediate block, roller assemblies interposed

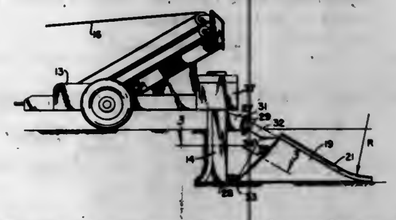
between said blocks including rollers disposed transversely of the blocks and engaged by the adjacently disposed parallel block surfaces and journal members straddling portions of the blocks and in which said rollers are journaled and maintained in spaced apart substantially parallel relation to one another, and jack means engaging said blocks and operable for moving the intermediate block between the lower and upper blocks in a direction for raising the upper block, said jack means including a mobile frame, upper and lower fluid pressure actuated rams fixed to said frame in a position to abut simultaneously against corresponding ends of the lower and upper block, a drawbar secured to the frame between said rams, and means connecting the drawbar to an end of the intermediate block located between the ends of the lower and upper blocks engaged by said rams whereby when the rams are pressurized and extended the mobile frame will be propelled away from the ends of the blocks engaged by the rams for exerting a pull on the said end of the intermediate block.

3,344,614
UNDERWATER OBSERVATION BELL CHAMBER
Walter Byck, 121 St. James Drive, Santa Rosa, Calif. 95401
Filed Oct. 4, 1965, Ser. No. 492,623
4 Claims. (Cl. 61—69)



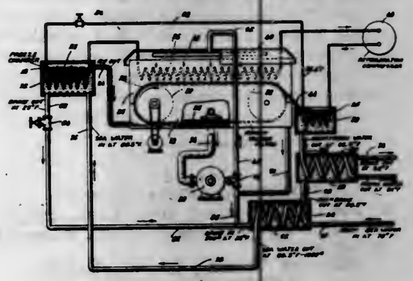
1. In an underwater observation bell chamber for swimming pools and the like,
(a) a transparent dome,
(b) a top,
(c) sides extending from the top so as to define the area of the dome, the bottom edges of the sides defining an opening into the dome,
(d) anchor means connected to said sides to anchor the bell at a predetermined distance from the bottom of the swimming pool,
(e) means to conduct air from the outside to the interior of said bell chamber,
(f) means for releasing air from said bell chamber,
(g) the ratio between the air intake and release being predetermined for maintaining a substantially constant air condition in the bell chamber above the water level in said chamber,
(h) the volume of intake flow through said air conducting means exceeding the volume of outflow through said releasing means,
(i) exhaust means at about a predetermined water level in said bell chamber for releasing said excess air volume at about said predetermined level, thereby to prevent the lowering of said water level in said bell chamber to below said predetermined level, and to maintain a substantially constant air exchange in said bell chamber,
(j) normally closed valve means openable by the lowering of the water level to said predetermined level for allowing release of air through said exhaust means.

3,344,615
CONDUIT BURYING ATTACHMENT
Eugene R. Coffey, Littleton, Colo. (107 Duncan Place, Montrose, Colo. 81401)
Filed Apr. 9, 1965, Ser. No. 446,815
9 Claims. (Cl. 61—72.6)



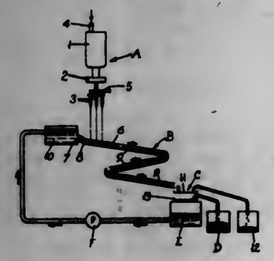
1. A flexible conduit emplacing attachment for use with tractor type equipment to place conduit beneath earth surfaces comprising a frame, a downwardly depending ripper tooth on said frame to which the towing forces of said equipment are transmitted, means for adjusting the earth penetrating depth of said tooth, a separate mole implant unit for use behind said ripper tooth of operative height corresponding to the height of said tooth whereby a portion of such mole unit is adjacent or above the earth surface for all selected penetration depths of said ripper tooth and mole, means disposed at a rearwardly inclined angle for selectively and pivotally connecting said mole unit to said frame and ripper tooth establishing an inclined pivot axis for said mole unit whereby the forces tending to move said tooth will be transmitted to said mole unit, a leading edge on said mole unit disposed at a rearwardly inclined angle greater than the angle of inclination away from the vertical for said mole connecting means, and conduit guide means on said mole unit adapted to receive flexible conduit from positions above the earth surface and direct said conduit along a path to the bottom of said mole unit whereby said conduit is deposited and emplaced at the bottom of a furrow dug by the ripper tooth and mole unit of said attachment, said rearwardly inclined pivot axis and leading edge for said mole unit being coactive with the weight and length of said mole unit to limit abrupt swinging movements of said mole that might damage said flexible conduit.

3,344,616
DESALINIZATION
Margaret Louise Owen, 18 Prospect Ave., Apt. A–6, Norwalk, Conn. 06850
Filed Aug. 23, 1963, Ser. No. 304,076
6 Claims. (Cl. 62—58)



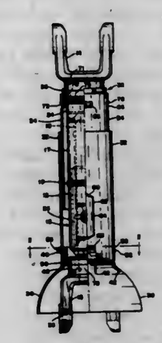
1. A continuous desalinization process which comprises: extracting heat from saline water in a precooler by passing said saline water in heat exchanging relationship with cooled residual brine; passing the precooled saline water into a freeze chamber in heat exchanging relationship with the evaporated phase of a refrigerant to partially freeze said saline water and form a sludge of ice crystals floating in cooled residual brine; passing a first portion of said cooled residual brine to said precooler; bringing said ice crystals and a second portion of said cooled residual brine into intimate contact with the first side of a rotating filter screen; removing air from the second side of said rotating filter screen to create a pressure differential across said filter screen to attract said crystals thereto; rotating said filter screen to remove a portion of said screen and the attracted crystals thereon from said second portion of cooled residual brine; passing rinsing air across said attracted crystals and through said screen from its first to its second side; cooling said rinsing air to a temperature just above the melting temperature of said crystals to melt the surface of said crystals and remove salts therefrom; removing the remaining ice crystals from said screen and placing them in heat exchanging relationship with the compressed phase of said refrigerant to melt said crystals and form fresh water; and recycling the moisture laden air removed from the second side of said filter screen to function as at least a portion of said rinsing air so that the rinsing air will be of higher moisture content in order to insure washing of the crystals.

3,344,617
APPARATUS FOR THE PRESERVATION OF BIOLOGICAL SUBSTANCES
Arthur P. Rinfret, Buffalo, Clement W. Cowley, Tonawanda, and William J. Timson, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Original application Feb. 25, 1965, Ser. No. 444,483. Divided and this application Mar. 18, 1966, Ser. No. 569,770
1 Claim. (Cl. 62—322)



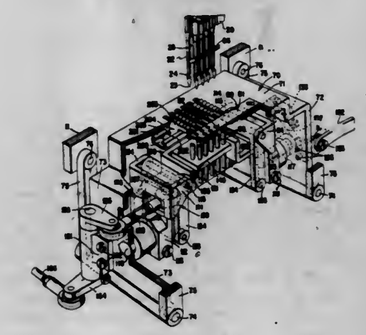
An apparatus for freezing droplets of a biological substance which comprises a device for delivering droplets of said biological substance, said device consisting of a container for storing the biological substance connected to at least one spray nozzle; a series of trays adapted to carry a liquid refrigerant and said droplets of said biological substance, said series of trays consisting essentially of an uppermost tray for receiving said droplets from said delivery device, a plurality of inclined trays to conduct said liquid refrigerant and said droplets of biological substance in a substantially downward direction, and a series of weirs to channel the liquid refrigerant and said droplets from the uppermost tray onto the plurality of inclined trays; a sieving device in co-acting relationship with the lower tray, said sieving device containing two screens, an upper screen for discarding large droplets and a lower screen for conducting small droplets; collection means for collecting the droplets; a reservoir for storing liquid refrigerant; and circulating means for carrying liquid refrigerant to the uppermost tray of said series of trays, said circulating means comprising a pump and delivery tubes exiting from said reservoir and entering at a point above said uppermost tray of said series of trays.

3,344,618
SAFETY SHIELD
John R. Young, Allegan, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,291
20 Claims. (Cl. 64—3)



1. For use with a power transmitting shaft assembly of the type wherein two shaft sections extend from longitudinally spaced end portions into longitudinally slidable non-rotatable engagement, a shield assembly comprising annular mounting members adapted to be frictionally mounted on said end portions, and tubular members of different diameter having separable snap-fit direct end attachment to the respective mounting members so as to extend toward each other into telescoped relation surrounding said shaft sections, each said mounting member and the tubular member secured thereto being adapted to normally rotate with its associated shaft section but said frictional mounting permitting unimpeded rotation of the shaft assembly should contact by an operator or the like with the shield assembly tend to arrest rotation of said shield assembly.

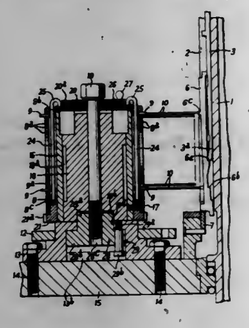
3,344,619
KNITTING MACHINES
Bernard H. Wittler, Roswille, Ga., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 18, 1965, Ser. No. 440,835
7 Claims. (Cl. 66—84)



5. In a knitting machine having a casing, a plurality of knitting needles carried in said casing in alignment laterally of the direction of knitting, each of said knit-

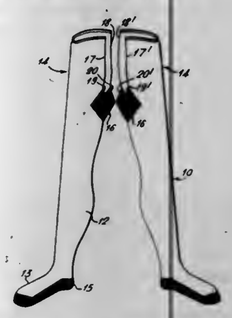
ting needles being formed with an open yarn engaging throat, a work supporting plate carried on said knitting machine casing having knitting needle accommodating apertures formed therein, means for imparting endwise reciprocatory motion to said knitting needles in unison through said work supporting plate apertures, a plurality of endwise shiftable bolts one for each of said knitting needles, means for imparting endwise reciprocatory motion to said bolts in timed relation with said needle reciprocation to open and close the yarn engaging throats of said knitting needles, yarn guiding means carried in said casing for directing yarns into said opened yarn engaging throats, and means for drawing yarn loops from said knitting needles comprising a shiftable work feed member, disposed rearwardly of said knitting needles in the direction of knitting, and means operated in timed relation with said needle reciprocating means for imparting work feeding motion to said feed member while said knitting needles are reciprocated out of said work supporting plate, said work supporting plate being formed with apertures accommodating movement of said work feeding member therethrough into and out of engagement with knitting disposed on said work supporting plate, and means for shifting said work feeding member through said work supporting plate apertures and into engagement with knitting thereon while said knitting needles are reciprocated out of said work supporting plate.

3,344,620
PATTERNING MECHANISM FOR CIRCULAR KNITTING MACHINES
Alfred P. Saunders, Kirby Muxloe, England, assignor to Wildt Mellor Bromley Limited, Leicester, England, a British company
Filed Apr. 12, 1965, Ser. No. 447,131
Claims priority, application Great Britain, Apr. 15, 1964, 15,568/64
4 Claims. (Cl. 66—156)



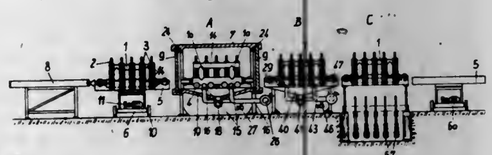
1. For application to a circular knitting machine having a cylinder and selectable patterning elements in said cylinder, a patterning mechanism comprising a bank of individually movable selector members selectively operable for the purpose of influencing selection of said patterning elements, a rotary patterning drum formed with rows, extending parallel to the axis of the drum, of regularly spaced radial holes regularly spaced angularly about the axis of the drum, pins located in selected ones of said holes in said drum and projecting radially therefrom for selectively rendering operative said selector members, the portion of each of said pins within the drum being formed with a groove, and a plurality of identical locking members each of non-circular cross section extending in an annular series about and parallel to the axis of the drum, the locking members extending intermediate and for the full length of adjacent pairs of rows of holes, each locking member normally extending into the grooves in, and retaining, pins in any of said holes in said adjacent rows of holes, and each of the locking members being turnable about its axis, whereby all of said pins are normally held within the drum but can be released for removal from the drum as a result of angular turning movement of the locking members about their axes.

3,344,621
MANUFACTURE OF KNITTED GARMENTS
Reginald Selby Gilchrist, London, England, assignor to The Klinger Manufacturing Company Limited, London, England
Filed Apr. 15, 1965, Ser. No. 448,532
Claims priority, application Great Britain, Apr. 22, 1964, 16,733/64
5 Claims. (Cl. 66—175)



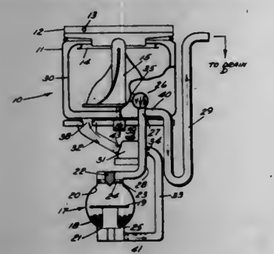
1. A knit garment having a tubular body encircling portion and two tubular limb encircling portions extending therefrom and a crotch section integrally knit with, and extending laterally between, the limb encircling portions, said crotch section having at least one course of knitted stitches which does not extend to another part of the garment.

3,344,622
TEXTILE DYEING DEVICE FOR YARNS
Curt Kronsbein, Hagen, Germany, assignor to Maschinenfabrik Eugen Bellmann G.m.b.H.
Filed July 6, 1965, Ser. No. 469,479
Claims priority, application Germany, July 4, 1964, M 61,618
5 Claims. (Cl. 68—10)



1. A textile-dyeing device for yarns wound onto bobbins, including: a stationary circulating pipe system with supply and discharge pipes going to and from a series of work stations; and a loading carriage adapted to pass through the work stations and carrying a second pipe system coupleable to the stationary pipe system at each station, wherein the improvement comprises: as said second pipe system, a pipe network of vertical risers and horizontal distributor pipes linking said risers, said network lying in the vertical central plane of said carriage, a series of laterally projecting distributor pipes connected to said network and projecting laterally therefrom, and perforated bobbin-carrying pipes removably communicating with said laterally projecting distributing pipes, there being a bobbin-carrying pipe for each of said laterally projecting pipes.

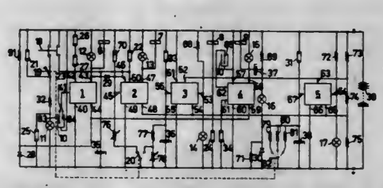
3,344,623
BI-DIRECTIONAL FLOW CONTROL CONDUIT
Edmund B. Eaman, Benton Harbor, and William R. Rickel, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed July 16, 1964, Ser. No. 383,084
5 Claims. (Cl. 68—12)



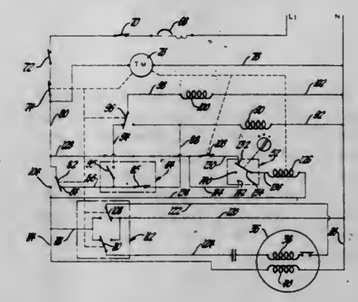
1. A hydraulic circuit for a washing machine operable through an agitation period and a drain period comprising,
a tub adapted to contain fluid during an agitation period,
first and second outlets in said tub,
conduit means interconnecting said first and second outlets,
a drain conduit connected to said conduit means,
filter means in said conduit means for filtering fluid passing therethrough,
reversible flow pump means in said conduit means for pumping fluid at a first volume flow rate from said first outlet through said filter means and through said drain conduit during said drain period,
a resilient hose included in said conduit means between said pump means and said filter means,
said hose manufactured to have such resilient properties that it will partially collapse under negative internal pressure and thereby impede fluid flow through said filter means by at least ⅓ when under negative internal pressure and revert to a normal expanded condition when under positive internal pressure,
and control means for reversing the flow through said pump means to effect flow through said second outlet, through said filter means, and through said partially collapsed hose to said tub at said reduced volume flow rate during said agitation period.

3,344,624
AUTOMATIC WASHING MACHINE PROGRAM CONTROLLER
Willem Ebbinge, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 12, 1965, Ser. No. 479,258
Claims priority, application Netherlands, Aug. 14, 1964, 64—9,363
11 Claims. (Cl. 68—12)

1. A program controller for actuating a washing machine through a rinsing program comprising one or more cycles of successive operations, each of said cycles comprising the following sequence of operations; filling the washer tub with water, a rinsing operation, and draining the water from said tub, said controller comprising, a source of supply voltage, a first switching stage arranged to control said water filling operation, control means coupled to the output of said first switching stage and responsive to the condition thereof for sequentially controlling said washing machine through the rinsing and draining operations upon completion of said filling operation, a timing circuit including a resistor-capacitor network having an RC time constant for timing the rinse program, said timing circuit having an operative state determined by said RC time constant and which corresponds approximately to the period of a rinse program and a rest state which terminates said program, a first photosensitive resistor interconnecting said first switching stage with said source of supply voltage, a first light source electrically coupled to said timing circuit and optically coupled to said first photosensitive resistor so as to illuminate same in the operative state of said timing circuit, and switch means interconnecting said first switching stage with said source of supply voltage for initiating a rinse program by energizing said first stage.



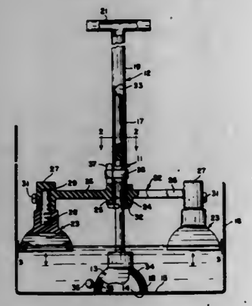
3,344,625
PLURAL LEVEL FILL SYSTEM FOR WASHER APPARATUS
Thomas H. Fogt, West Carrollton, and Thomas J. Brinkman, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 20, 1966, Ser. No. 580,724
4 Claims. (Cl. 68—12)



1. In a clothes washing apparatus, a water container, means for directing fluid to said container including electrically energizable fluid supply means, means for energizing said fluid supply means including first timer controlled switch means, means including an electrically energizable timer motor for conditioning said first timer controlled switch means to deactivate said electrically energizable fluid supply means following a fill operation, means for varying the output speed of said timer motor including speed solenoid means, circuit means for energizing said speed solenoid means during a predetermined fill operation including a water level selector, said first timer controlled switch means and second timer controlled switch means, said second timer controlled switch means being bypassed when said selector switch is in a first position whereby said timer speed solenoid is energized under the control of said first timer controlled switch means to operate said timer motor at its higher output speed and to terminate the fill operation following a first predetermined period of time, said water level selector being positionable at a second position so as to

maintain said timer speed solenoid deenergized during the fill operation and said timer motor operative at its low speed output to produce longer filling time terminated by operation of said first timer controlled switch means, said water level selector switch having a third position wherein said timer speed solenoid means is energized during the fill operation by said second timer controlled switch means that is operated by said timer motor following a first predetermined period of said fill operation to deenergize said timer speed solenoid whereby said timer motor advances at its lower output speed during the remainder of the fill operation to produce an intermediate fill time terminated by said first timer controlled switch means.

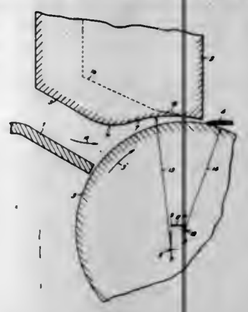
3,344,626
WASHING APPARATUS
William Gilbert Spangler, Chatham, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 482,486
12 Claims. (Cl. 68—122)



1. A manual washing machine comprising a support member having releasable attachment means on its lower end for firmly but removably mounting it on the bottom of a container adapted to receive water and clothing and like articles to be washed, an agitator member carrying a plurality of downwardly open cups on its lower end and having an operating handle on its upper end, and cooperating slide guide means on said support and agitator members mounting said agitator member for substantially vertical reciprocation on said support member whereby repeated down and up movement of said agitator member causes operative engagement and disengagement respectively of said cups with said articles being washed.

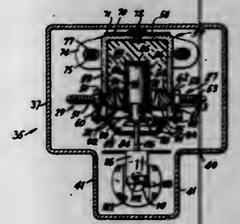
3,344,627
CUTTING DEVICE
Dieter Braun, Doffingen, Wurttemberg, Germany, assignor to Fortuna-Werke Spezialmaschinenfabrik A.G., Stuttgart-Bad Cannstatt, Germany
Filed Aug. 5, 1965, Ser. No. 477,391
Claims priority, application Germany, Aug. 8, 1964, F 43,703
11 Claims. (Cl. 69—10)

1. In a cutting device, particularly for splitting leather and like materials, the combination of a travelling guide member travelling in a predetermined direction; a stationary guide member, one of said guide members having a guide surface convexly curved in said predetermined direction and the other of said guide members having a guide surface concavely curved in said predetermined direction, and said guide surfaces defining between themselves a gap decreasing in width in said predetermined direction of travel of said travelling guide member; and a cutting member extending across said gap and having a cutting edge facing the same in the direction opposite said pre-



determined direction, whereby material which passes through said gap in said predetermined direction is slit by said cutting edge.

3,344,628
AUTOMOBILE ANTI-THEFT DEVICES
Eliezer L. Shainmark, 2686 Bailey Ave., Bronx, N.Y. 10463
Filed Aug. 25, 1965, Ser. No. 482,347
5 Claims. (Cl. 70—255)



1. In combination, a circuit, an electric starter motor for a combustion engine of a motor vehicle, in said circuit, a battery in said circuit in series with said electric starter motor, a first switch in said circuit in series with said battery and starter motor, a closed box, a second switch mounted within said box and in said circuit, in series with said electric starter motor and first switch, said second switch comprising a pair of spaced contacts, the leads for said contacts passing to the outside of said closed box through openings formed in said box, a switch plate in said box, means to mount said switch plate for movement within said box for electrically connecting said contacts in one position of said plate, means to bias said switch plate away from said connecting position, releasable key actuated means in said box to urge said switch plate into said connecting position, said box being formed with another opening to permit access of a key into said key actuated means, and ignition key control switch means in said circuit to control said first switch.

3,344,629
ELECTRONIC LOCK WITH INDUCTIVELY COUPLED TUNED KEY CARD
Charles F. Burney, Milpitas, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 2, 1966, Ser. No. 547,020
3 Claims. (Cl. 70—280)

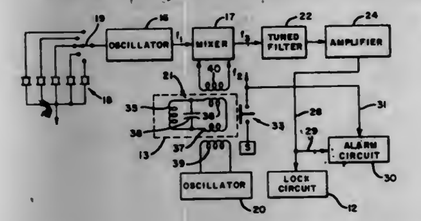
1. A key card for an electronic locking system comprising

an electromagnetic wave-pervious electrically nonconducting sheet having a circuit formed thereon and covered by another like sheet,

said circuit comprising

a pair of inductive coupling coils connected in series,

a plurality of parallel line capacitor elements separately connected in parallel with said coils whereby a unit of capacitance is removed from



said circuit for each of said connections that is severed, and

a plurality of series-connected inductance elements separately shunt-connected across said coupling coils whereby a unit of inductance is added to said circuit for each of said shunt connections that is severed.

3,344,630
PORTABLE CONDUIT BENDER
William A. Lauck, Elyria, Ohio, assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Dec. 21, 1964, Ser. No. 419,916
7 Claims. (Cl. 72—2)

1. A portable conduit bender comprising a support frame, shoe means supported on said support frame, roller means, lever means connected with said roller means for moving the roller means relative to said shoe means for cooperation therewith, rotatable drive means connected with said lever means for driving said roller means, said drive means being mounted on said support frame for rotation about a first axis, and support means for supporting said support frame for movement over a supporting surface, said support means being rotatable about a second axis which is substantially perpendicular to said first axis.

3,344,631
MACHINE FOR SHAPING CURVED SURFACES
Menahem Suliteanu, Palo Alto, and Roland S. Nyerges, Belmont, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,694
9 Claims. (Cl. 72—7)

1. A machine for forming objects comprising

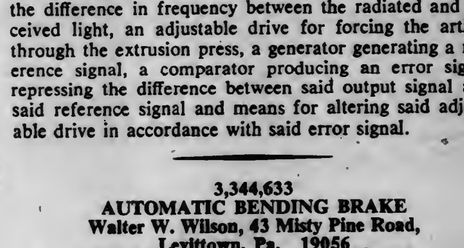
a tripod frame having three legs adapted to rest on a base at spaced locations and converging to a common connection above the base,

an elongated vertically extending boom supported for vertical movement at said common connection and having a forming tool at the lower end thereof,

a turntable assembly under and within said legs adapted to support a workpiece and comprising

track means on said base,

a carriage supported for lineal movement along



said track means in a direction transversely of the direction of movement of said boom, and

a turntable mounted on said carriage for rotation about a vertical axis, and

means for synchronizing the movements of said boom and said carriage and said turntable whereby said tool forms said workpiece to a predetermined shape.

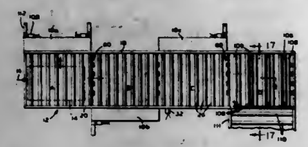
3,344,632
PROCESS CONTROL APPARATUS
Alan Phillipson, London, England, assignor to Decca Limited, London, England, a British company
Filed May 5, 1965, Ser. No. 453,349
Claims priority, application Great Britain, May 6, 1964, 18,889/64
15 Claims. (Cl. 72—10)

7. Apparatus for use with an extrusion press extruding an elongated article; a laser for directing a coherent light beam on to the moving article in a direction having a component along the line of movement of the article, a receiver receiving light reflected back from the article, mixing means producing an output signal dependent on the difference in frequency between the radiated and received light, an adjustable drive for forcing the article through the extrusion press, a generator generating a reference signal, a comparator producing an error signal repressing the difference between said output signal and said reference signal and means for altering said adjustable drive in accordance with said error signal.

3,344,633
AUTOMATIC BENDING BRAKE
Walter W. Wilson, 43 Misty Pine Road, Levittown, Pa. 19056
Filed Sept. 16, 1964, Ser. No. 396,868
15 Claims. (Cl. 72—14)

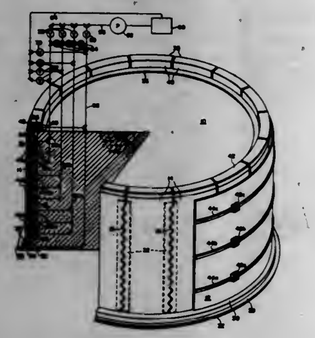
1. In an automatic machine for bending flanges along opposed edges of a rectangular sheet metal plate, the combination of an elongated frame, a driven conveyor on the

frame for moving the plate downstream, a plurality of brake assemblies along the sides of the frame and parallel with the path of movement of the plate, each assembly including a relatively movable bed and nose piece for receiving the blank therebetween in clamped relation, and a power driven folding leaf pivoted adjacent the nose



piece for making the bend, retractable stops at the downstream end of each brake assembly, a pusher assembly with retractable clamping fingers for moving the blank into the brake assembly a predetermined distance for the bending operation and for retracting it back to the conveyor after the stops have retracted for travel to the next brake assembly.

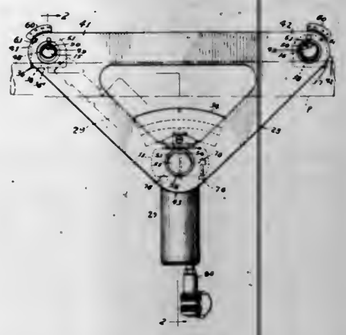
3,344,634
SIZING CYLINDRICAL SECTIONS
George W. Ellenburg, Ardmore, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 20, 1964, Ser. No. 346,305
9 Claims. (Cl. 72—34)



1. Apparatus for stretching and sizing a casing section, said apparatus comprising a plurality of expansion-shoes mounted in an annular array having a configuration corresponding to that of said casing section, a compression member mounted adjacent said array of shoes and being substantially coextensive therewith, said array of shoes being spaced from said compression member and normally spaced from said casing section when so mounted, said array of shoes being mounted for movement toward and away from positions of forcible engagement with said work piece, and fluid actuated expansion means substantially coextensive with said array of shoes and with said work piece when so mounted for moving said array of shoes toward and away from said positions of forcible engagement, said expansion means being disposed in engagement with said array of shoes and in encompassing relation with said compression member.

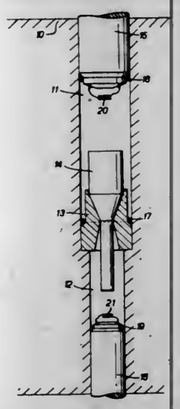
3,344,635
PIPE BENDERS
Richard F. Van Allen, Loves Park, Ill., assignor to Greenlee Bros. & Co., a corporation of Illinois
Filed Apr. 28, 1964, Ser. No. 363,116
7 Claims. (Cl. 72—34)

1. A pipe bender having, in combination, a frame comprising a first generally triangular plate having a ram post mounted on one corner thereof perpendicular to the plate and having a cylindrical bearing portion adjacent its free end, a ram secured to said ram post and extending therefrom and having a plunger extending through the post, a bending shoe on the plunger, a pair of pins positioned equidistant from said ram post adjacent the other corners of the plate and fixed thereon perpendicular thereto, rotatable pipe supporting members on said pins, a triangular top plate having a hole at one corner thereof forming a



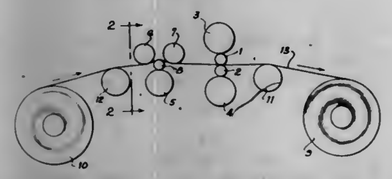
loose pivotal connection with the cylindrical bearing portion of the ram post and having holes adjacent the other corners thereof for connecting the top plate with said pins, means on the free end of the ram post for retaining the top plate connected thereto and permitting tilting thereof to disconnect the other corners of the top plate from said pins and thereafter rotation of the top plate on the ram post to give access to the first plate and bending shoe, and means for securing said top plate to said pins.

3,344,636
EXTRUSION OF METALS
Hubert L. D. Pugh, East Kilbride, Glasgow, Scotland, assignor to Council for Scientific and Industrial Research, London, England, a corporate body
Filed Apr. 3, 1964, Ser. No. 357,115
Claims priority, application Great Britain, Apr. 4, 1963, 13,360/63; Apr. 25, 1963, 16,270/63, 16,271/63; June 7, 1963, 22,700/63
16 Claims. (Cl. 72—60)



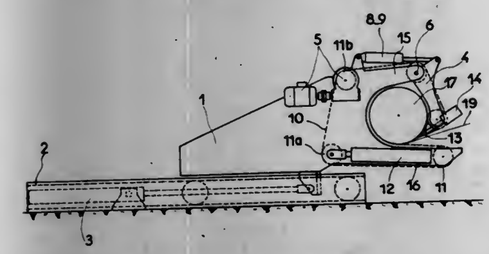
1. Hydrostatic extrusion process which comprises inserting a non-straight billet into a hydrostatic pressure chamber; sealing extrusion dies into opposite ends of said chamber; inserting each end of said billet in fluid-tight manner into the adjacent die, and establishing a high hydrostatic pressure in said chamber between said dies while maintaining a lower pressure in a chamber on the outlet side of each of said dies whereby to cause extrusion of the opposite ends of said billet through the respective dies.

3,344,637
STRIP ROLLING MILL SYSTEM AND PROCESS
Natalis H. Polakowski, 500 Kin Court, Wilmette, Ill. 60091
Filed Feb. 1, 1965, Ser. No. 429,352
8 Claims. (Cl. 72—64)



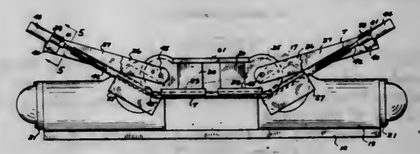
1. In a rolling mill operation for rolling of metal sheet, strip and the like wherein the metal is passed between reducing rolls for decreasing its thickness, the improvement comprising means adapted to twist said metal relative to the rolling plane for selectively increasing the tension of the lateral edges of the metal to increase the elongation in said edges and thereby offset the over-rolling of the center of the strip by the reducing rolls whereby a more uniform rolled product will result, in which said twisting means comprise the combination of a pair of aligned deflector rolls adapted to contact one surface of said metal, a flexing roll situated between said deflector rolls and adapted to contact the other surface of said metal whereby said metal is flexed when passing over said rolls, and a backup roll for said flexing roll.

3,344,638
EQUIPMENT FOR STARTING THE WINDING OF A STRIP
Lucien Eugène Diolot, Neuilly-sur-Seine, France, assignor to Societe Nouvelle Spidem, Paris, France, a corporation of France
Filed Feb. 4, 1965, Ser. No. 430,279
Claims priority, application France, Feb. 18, 1964, 964,206
6 Claims. (Cl. 72—148)



1. An apparatus for restarting the winding of a flat band made by a device such as a rolling mill comprising: a receiving drum for said band, a mobile frame carrying a pressure member for ensuring the winding under pressure of the first turns of said band onto said drum, said pressure member including a plurality of pinions, one of said pinions being power driven, at least one endless chain means mounted on said pinions and surrounding the periphery of said drum approximately 270° for defining a free passage necessary for the introduction of said band between said chain means and said drum, said mobile frame further carrying a pivotally supported arm the free end of said arm supporting one of said pinions adjacent said passage and a jack means having a linearly reciprocable wedge, said wedge being oriented to form an acute angle of extremely small magnitude with the linear direction of said band before being wound on said drum, whereby said wedge guides the free terminus of said band to thereby close the first turn of said band on said drum.

3,344,639
TUBE BENDING MACHINE AND MANDRIL ASSEMBLY
Frank Sassak, Dearborn, Mich. (1033 Vermont Ave., Detroit, Mich. 48216)
Filed Dec. 15, 1964, Ser. No. 418,399
1 Claim. (Cl. 72—150)



In a tube bending machine characterized by an upper vertically reciprocable arcuate die and a straight lower die block rotatably and adjustably secured to the bed of the machine, beneath the upper die on an axis of rotation offset from the path of the center of curvature of the upper die, the improved means for preventing cross-sectional distortion in the bend zone of a tube being bent which comprises:

a mandrel having an inner end adapted to be inserted into a tube to be bent and an outer end;

a mandrel-positioning link pivotally mounted at one end to the upper arcuate die at the center of curvature thereof, the opposite end of said link being removably secured to said outer end of said mandrel;

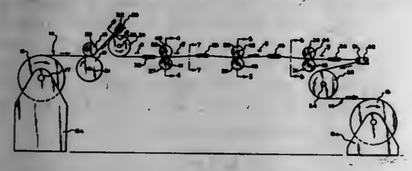
the point at which said link is secured to said mandrel being so positioned along the length of said mandrel that, when said mandrel is inserted in a tube lying on the lower die block, said mandrel inner end lies substantially at the point of tangency of the tube and the upper arcuate die;

whereby when the upper arcuate die is driven downwardly into engagement with the tube, causing the lower die to pivot and the tube to bend, the swinging of the free end of the tube and said mandrel causes said link also to pivot, the pivoting of said link effecting a controlled withdrawal of said mandrel from the zone of the bend, such that said mandrel inner end remains at said tangency point as said tangency point shifts during the bending of the tube.

3,344,640
MEASURING RIBBON FORMING METHODS AND APPARATUS
Charles Zelnick, Saginaw, and Alden D. Swartz, Sebewaing, Mich., assignors, by mesne assignments, to Tintarella, S.A., Glarus, Switzerland, a corporation of Switzerland
Filed June 1, 1965, Ser. No. 460,356
13 Claims. (Cl. 72—168)

1. A method of forming a ribbon spring capable of being used as a measuring stick comprising: forming a longitudinal curvature in successive lengthwise increments of a metallic ribbon of a radius sufficient to permanently stress the ribbon and cause it, if permitted to assume a repose condition, to wind into a tight coil with engaging

adjacent planar convolutions; permanently stressing the ribbon to form a cross curvature in said ribbon which has a convex side toward an adjacent convolution at a time when the ribbon is in a state of winding or unwinding from coiled form; the stress imparted by the cross curva-



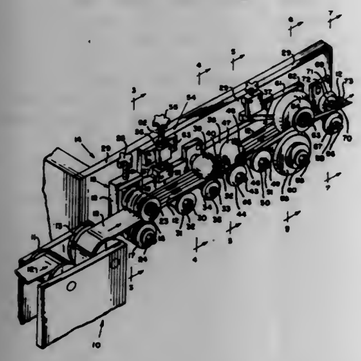
ture reducing the stress imparted by the longitudinal curvature; and forming a longitudinal curvature in successive lengthwise increments of the ribbon to substantially balance the permanent stress imparted by longitudinal curvature relative to the permanent stress imparted by cross curvature.

3,344,641

METHOD FOR TREATING SHEET METAL STRIP

Alexander M. Pomory, Baltimore, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland

Filed Aug. 11, 1965, Ser. No. 478,810
10 Claims. (Cl. 72—177)



1. The method of preparing relatively thin, narrow strip material for use as slats for Venetian blinds and the like, which comprises forming longitudinally extending corrugations along said strip material; and subsequently reducing the effect of said corrugations near the edges of said strip material while retaining said corrugations in the longitudinal central region of said strip material.

3,344,642

ROLLING MILL BAR TWISTING APPARATUS

Russell M. Weigle, Harrisburg, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

Filed Aug. 12, 1964, Ser. No. 389,032
6 Claims. (Cl. 72—231)

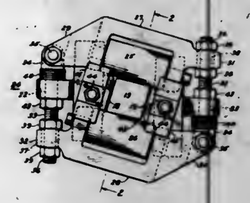
1. A bar twisting apparatus for a rolling mill comprising:

(a) a pair of opposed rollers arranged symmetrically with respect to the pass line,

(b) each roller rotatably mounted in a separate frame,

(c) means for separately adjusting each frame to vary the opening between the rollers,

(d) means for separately adjusting each frame about the pass line including two mounting pins each having a head pivotally attached in diagonally opposite bifurcated ends of the frames and a threaded shank portion ad-



justably attached to the other ends of the frames, and

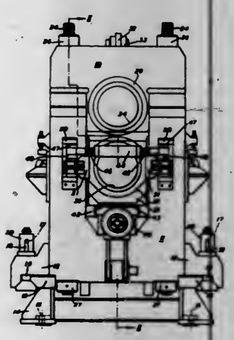
(e) means mounting the apparatus adjacent the mill.

3,344,643

ROLLING MILLS

David Robert Howard and Dennis Stubbs, Sheffield, and Reginald Dennis Swallow, Todwick, near Sheffield, England, assignors to Davy and United Engineering Company, Limited, Sheffield, England

Filed Nov. 6, 1963, Ser. No. 321,951
Claims priority, application Great Britain, Feb. 7, 1963, 39,611/61
13 Claims. (Cl. 72—237)



12. A rolling mill having first and second roll neck bearing assemblies, a housing comprising a first housing member constituting a support for said first bearing assembly, a second housing member arranged to support said second bearing assembly, means for prestressing together the first and second housing members, and hinging devices between said housing members and located at a position along the axis of said first roll neck bearing assembly, permitting relative hinging of said housing members about an axis parallel to the pass-line of the mill.

3,344,644

PILGER ROLLING MILLS

Heinz H. Fahrenholz, Monchen-Gladbach, Germany, assignor to Mannesmann-Meer Aktiengesellschaft, Monchen-Gladbach, Germany, a corporation of Germany

Filed Sept. 29, 1964, Ser. No. 400,033
Claims priority, application Germany, Sept. 30, 1963, M 58,371
2 Claims. (Cl. 72—250)

1. In a pilger rolling mill including a reciprocating roll stand; a pass consisting of rollers and roll jaws disposed

therein; a billet engaged in said pass; a drive shaft for rotating said billet, a control shaft connected to said drive shaft; the improvements which comprise said drive shaft and control shaft being connected by means of gears, and a cam disc interposed between said gears, said cam disc having at least two cam surfaces extending away from the center of rotation of the disc to distances which are different relative to each other; said disc being con-



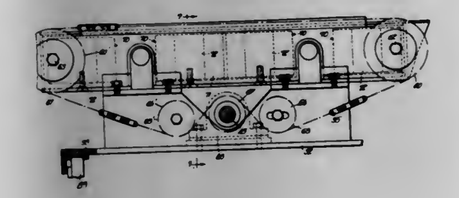
nected to said control shaft by a reduction gear having a reduction ratio corresponding to the number of cam surfaces on said disc.

3,344,645

MAGNETIC STRIP CONVEYOR

Dario Buccicone, Gary, Ind., assignor to Bucciconi Engineering Co., Inc., Gary, Ind., a corporation of Indiana

Filed May 13, 1965, Ser. No. 455,512
15 Claims. (Cl. 72—251)



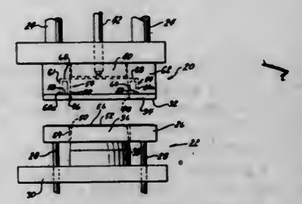
1. An apparatus for supporting and conveying a flat metal strip between one mill stand and the next succeeding mill stand in a strip processing line, said apparatus comprising a vertically adjustable frame having mounted thereon a pair of laterally spaced, endless side chains with horizontally disposed upper runs for supporting the strip along its side margins and a pair of endless center chains with horizontally disposed upper runs for supporting the strip along its center portion, said side chains being mounted on laterally adjustable frame members having associated side guide rails for holding the strip in a predetermined path, the center chains being mounted on opposite sides of a box-like frame with the upper runs thereof traveling in a plane offset below the corresponding plane in which the upper runs of the side chains are traveling, a plurality of magnets arranged in the box-like frame between the center chains with pole pieces extending vertically and with the upper ends of the pole pieces connected by an elongate bar forming member extending between the upper runs of the center chains so as to exert a pull on the strip and draw the center portion thereof down against the upper runs of the center chains, power means operative to drive the chains in the same direction whereby to advance the strip across the conveyor and to bow the strip transversely so as to stiffen the leading portion as it is advanced to the entrance side of the next succeeding mill stand.

3,344,646

METHOD FOR MAKING THIN METAL SHEET TAPERED RECEPTACLES

Jens L. Moller, Henrico, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Original application Mar. 15, 1961, Ser. No. 95,957, now Patent No. 3,182,482, dated May 11, 1965. Divided and this application Oct. 6, 1964, Ser. No. 401,924
5 Claims. (Cl. 72—348)



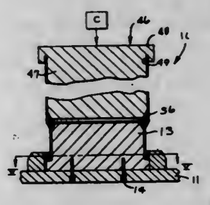
1. The method of preventing the formation of wrinkles during the drawing of a receptacle from a relatively thin sheet of metal which comprises the steps of drawing said sheet between a female die member having a surface surrounding the cavity thereof and a punch member while a press plate cooperates with said surface of said die member to hold said sheet of metal thereagainst with said sheet of metal spanning said cavity whereby said members draw said sheet of metal into said cavity and form a cup-shaped receptacle with the outer peripheral portion of said sheet still being held between said press plate and said surface of said die member, and additionally stroking the resulting side wall means of said receptacle while said receptacle is being drawn between said members by flexible stroking means to prevent formation of wrinkles in said receptacle.

3,344,647

MECHANICAL DEVICE

Barron D. Berger, Bay City, Mich., assignor to National Electric Welding Machines Co., Bay City, Mich., a corporation of Michigan

Filed Apr. 7, 1965, Ser. No. 446,188
5 Claims. (Cl. 72—354)



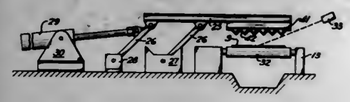
1. A method for flanging the end of an annular shell comprising the steps:

radially supporting the shell;

deflecting at least one end of the shell substantially radially;

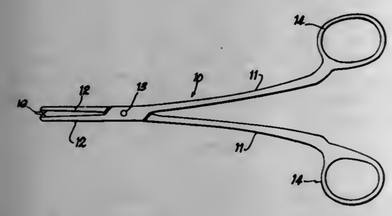
preventing the edge of said deflected end from crossing a radially movable closed boundary of predetermined size and shape.

3,344,648
METHOD AND APPARATUS FOR CONTROLLING THE TEMPERATURE OF HOT STRIP
Richardson Gray, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 22, 1964, Ser. No. 405,669
Claims priority, application Great Britain, Nov. 19, 1963, 45,589/63
8 Claims. (Cl. 72—364)



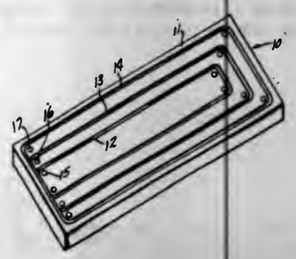
1. In a method of controlling the radiation losses of a heated strip during a rolling process, the steps comprising:
passing the strip over a predetermined path of travel during a rolling process,
selectively positioning a radiation inhibiting member between a position over the strip and a position away from said strip to control the radiation losses, thereby to obtain a desired temperature for at least a portion of the strip.

3,344,649
HEMOSTATIC CLIP REMOVER
Ernest C. Wood, Los Angeles, Calif., assignor of thirty-three and one-third percent to Peter B. Samuels and thirty-three and one-third percent to Rene G. Le Vaux
Filed Dec. 18, 1964, Ser. No. 419,464
4 Claims. (Cl. 72—392)



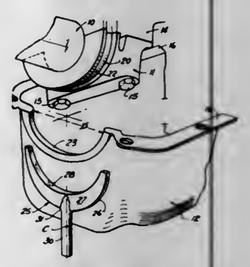
1. For use with clip members having arms foldable about a midsection into clamping engagement about opposite sides of a tubular member for strangulation when in use, a device for removing said clips from position of use comprising a pair of jaw members rockable about a pivot in the direction toward and away from each other between closed and open positions respectively, a pointed tooth on the inner surface of one jaw member in crosswise alignment with a pointed tooth on the other jaw member with the pointed teeth facing each other but spaced one from the other when the jaw members are in open position and which by-pass each other when the jaw members are in closed position, said teeth having a combined width in by-pass position which is greater than the spaced relationship between the folded arms of the clip member when in position of use whereby, when the teeth are crosswise aligned on the opposite sides of the clip member, the folded arms of the clip are spread responsive to movement of the jaws in the direction towards each other as the teeth enter into the space between the folded arms and in which the jaw members are capable of lateral flexure when displaced in the direction towards each other beyond point to point contact.

3,344,650
DIE STRUCTURE
James A. Kilmer, Bethalto, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Oct. 15, 1965, Ser. No. 496,364
5 Claims. (Cl. 72—469)



1. A die structure adapted to be modified for use with blanks of material each of a different predetermined size, comprising
(A) a platen having on one surface thereof a plurality of systems of indentations, each of said systems being adapted for cooperation with a blank of predetermined size, and
(B) means for closing off a selected number of said systems lying within one of said systems corresponding to a selected blank.

3,344,651
TOOL FOR REFORMING OIL SEAL RIM BEAD
Peter Pedone, 962 Moorpark, San Jose, Calif. 95126
Filed May 7, 1965, Ser. No. 453,922
5 Claims. (Cl. 72—479)

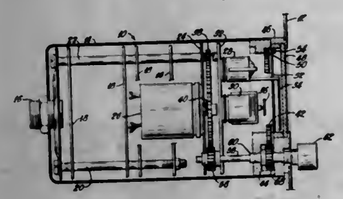


1. A tool for reforming a rim bead oil seal on the oil pan of an automotive engine in situs in the oil seal groove of the crank shaft main bearing thereof comprising a hardened steel die having an arcuate anvil face struck on a radius comparable to that of the under surface of such rim bead, and a handle shank formed on said die centrally of the arcuate anvil surface and extending radially outward therefrom to receive a hammer blow for transmitting the force of the latter to said rim bead.

3,344,652
CALIBRATION MEANS FOR AN OMNI INSTRUMENT
Clovis F. Priser, 6444 Santa Aurelia, Tucson, Ariz. 85715
Filed June 21, 1965, Ser. No. 465,694
15 Claims. (Cl. 73—1)

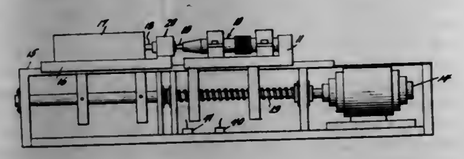
1. An omni instrument comprising an elongate housing closed at one end and having a transparent cover at the other end, circuit means and a resolver carried in said housing, a resolver gear attached to said resolver in said housing, said gear being located in a plane perpendicular

to the longitudinal extent of said housing, a resolver drive gear in mesh with said resolver gear, a first shaft affixed to said resolver drive gear, a dial gear having a 360° dial on the periphery thereof and rotatably carried in said housing, a left-right needle, means in said housing carrying said needle, said carrying means being responsive to said resolver to move said needle to a central position when said instrument is in a predetermined position relative to a VHF station and said resolver gear and said dial gear



are in predetermined positions relative to one another, a second shaft coaxial with said first shaft, a dial drive gear meshing with said dial gear and mounted on said second shaft, a knob affixed to one of said shafts externally of said housing for rotating one of said drive gears, and means selectively connecting said knob and the other of said shafts to enable relative rotation between said resolver gear and said dial gear.

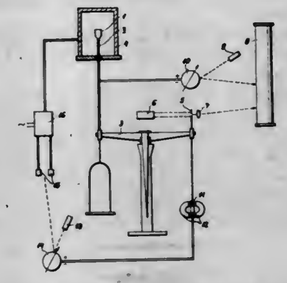
3,344,653
IMPACT TOOL TRIGGERING FORCE TESTER
Russell E. Benner, Quakertown, Pa., assignor, by mesne assignments, to Valco Products Development, Inc., Bethlehem, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1965, Ser. No. 449,814
7 Claims. (Cl. 73—11)



1. Test apparatus for determining the release force of a triggered mechanism which imposes a mutative force upon a workpiece comprising in combination, a mechanically deformable gauge for registering a maximum force encountered, means for gradually forcing said triggered mechanism against said gauge to deform said gauge, and impact absorbing means intermediate said mechanism and said gauge for filtering out the mutative change of force produced when said mechanism is triggered to thereby produce a maximum reading on said guage identifying the release force required to overcome the trigger mechanism without modification by the released mutative force.

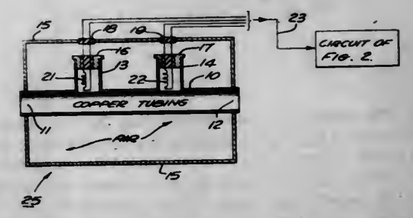
3,344,654
HEATER CONTROLLER FOR ISOTHERMIC THERMOGRAVIMETRIC ANALYSIS
László Erdey, Ferenc Paulik, and Jenö Paulik, Budapest, Hungary, assignors to Magyar Optikai Muvek, Budapest, Hungary, a corporation of Hungary
Filed Oct. 19, 1964, Ser. No. 404,688
1 Claim. (Cl. 73—15)

Apparatus for controlling the temperature of a test piece undergoing static thermogravimetry, comprising means for heating the test piece, a thermobalance movable under the weight of the test piece, and means responsive to the speed of movement of the thermobalance to change the amount of heat supplied to the test piece by



said heating means, said responsive means comprising differentiating means to control the heating means output according to said speed of movement.

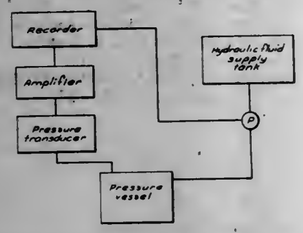
3,344,655
VACUUM LEAK DETECTOR
Robert G. Nordberg, 8939 Canby Ave., Northridge, Calif. 91324; Alex Reithoffer, 20334 Leadwell St., Canoga Park, Calif. 91306; and Jack J. Jenkins, 462 Stanford Place, Santa Barbara, Calif. 93105
Filed Dec. 17, 1963, Ser. No. 331,165
3 Claims. (Cl. 73—27)



1. A vacuum leak detector comprising, in combination:
an elongated tube having first and second test wells opening outwardly therefrom, and a pair of sensing elements disposed within respective ones of said test wells;
a Wheatstone bridge circuit including a pair of input terminals, first and second fixed resistance arms connected in series between said input terminals, said sensing elements being connected in series between said input terminals and being characterized by variation of their resistance values in response to a vacuum leak to be measured, and a pair of output terminals connected at the junctures between said first and second arms and said pair of sensing elements, respectively;
means for applying to said bridge input terminals a square-wave voltage of predetermined frequency and amplitude, whereby if said bridge is unbalanced there is produced at said output terminals a square-wave error signal whose polarity indicates the direction of unbalance and whose amplitude indicates the magnitude thereof;
an amplifier having an input coupled to said bridge output terminals, for amplifying said error signal;
means for generating a sine-wave reference voltage whose frequency is the same as the frequency of said square-wave signal and whose amplitude is substantially greater than the amplitude of said square-wave signal;

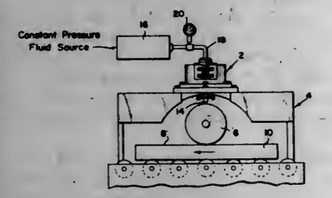
a phase comparison circuit having a pair of reference signal connections, a pair of error signal connections, and a pair of output terminals;
circuit means connecting the output of said amplifier to said error signal connections of said phase comparison circuit;
circuit means connecting said reference signal generator to said reference signal connections of said phase comparison circuit;
and an indicating meter connected to said output terminals of said phase comparison circuit, said indicating meter including indicating means which is deflectable in either of two directions so as to indicate the direction as well as the magnitude of unbalance of said Wheatstone bridge and thereby indicate a vacuum leak in one or the other of said test wells.

3,344,656
METHOD OF FILLING A VESSEL COMPLETELY WITH A LIQUID
Beverley H. Van Horne and Alden W. Hanson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 4, 1963, Ser. No. 327,943
4 Claims. (Cl. 73—37)



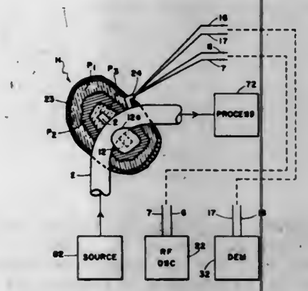
1. The method of completely filling the free space in a vessel with a liquid, the vessel being initially filled with a gas which is immiscible with and insoluble in said liquid, the interior of said vessel having at least one unvented portion in which said gas will be trapped by the liquid on being introduced into the vessel, which comprises:
(a) purging the vessel with a fluid which is capable of sorption in the liquid; and
(b) introducing the filling liquid along with a wetting agent into the vessel until all the remaining gases are sorbed by said liquid and the liquid substantially completely fills the vessel.

3,344,657
WHEEL SIZE CONTROL
Loring Coes, Jr., Princeton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 10, 1965, Ser. No. 486,341
12 Claims. (Cl. 73—37.6)



1. Apparatus for monitoring variations in the diameter of a grinding wheel rotatably mounted in a frame for grinding a work surface, comprising
means including a nozzle for directing a continuous jet of constant pressure fluid against the periphery of the wheel;
a housing adapted for connection with said frame adjacent said wheel;
nozzle support means adjustably connected with respect to said housing for longitudinal movement of the nozzle relative to said housing;
temperature-responsive means connecting said nozzle to said support means for longitudinal movement of said nozzle relative to said support means by an amount dependent on changes in temperature; and
means for monitoring the back pressure of the fluid supplied to said nozzle.

3,344,658
TEST CELL USING ACOUSTIC ENERGY
Charles G. Heisig, Brighton, and Richard L. Mitchell, Rochester, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed Sept. 23, 1964, Ser. No. 398,561
17 Claims. (Cl. 73—53)

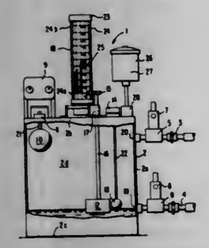


8. In the combination of acoustic wave energy transducing means and a pipe-section of rigid material, said acoustic wave energy transducing means being arranged to respectively create acoustic wave energy in material in said pipe-section, and to sense acoustic wave energy in said material in said pipe-section for determining a property of said material, the improvement comprising a mantle enveloping substantially the entire exterior surface of said pipe-section corresponding to the active length thereof, said mantle contacting substantially the entire said surface; said mantle being made of acoustically dead material and loading said pipe-section such as to reduce said active length.

3,344,659
APPARATUS FOR DETERMINING THE COMPOSITION OF MULTIPHASE FLUIDS
Rex Chambers, Albany, Tex., assignor of one-half to H. R. Stamey, Albany, Tex.
Filed Mar. 19, 1965, Ser. No. 441,029
3 Claims. (Cl. 73—61.1)

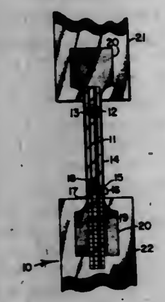
1. An apparatus for determining the composition of multiphase fluids, said apparatus comprising:
a reservoir;
inflow conduit means communicating with the interior of said reservoir and adapted to supply multiphase fluid thereto;
outflow conduit means connected with said reservoir, communicating with the interior thereof, and adapted to discharge fluid from said reservoir;
first valve means in said inflow conduit means;
second valve means in said outflow conduit means;
first operating means for said first valve means;
second operating means for said second valve means;
timer means for actuating said first operating means to open said first valve means after a predetermined

first time interval subsequent to a first actuating signal, and thereafter actuating said second operating means to open said second valve means after a predetermined second time interval subsequent to a second actuation signal;
first float means adapted to be buoyantly supported by the least dense phase of said fluid;
first signal generating means adapted to be actuated by said first float means to generate said second actuating signal and to simultaneously actuate said first operating means to close said valve means;
second float means adapted to be buoyantly supported by the most dense phase of said fluid;
indicating means carried by said second float means and adapted to indicate the elevation of said second float means with said reservoir;



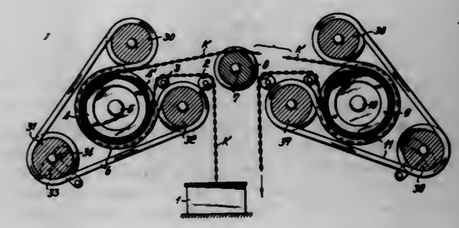
recording means adapted to cooperate with said indicating means to provide a record of elevation indications provided by said indicating means;
third float means adapted to be buoyantly supported by the least dense phase of said fluid and supported within said reservoir at a lower elevation than that of said first float means; and
second signal generating means adapted to be actuated by said third float means to generate said first actuating signal and to cause the actuation of said second operating means to close said second valve means.

3,344,660
VACUUM-ATTACHED GAGE FOR MEASURING STRAINS IN ELASTIC, VISCOELASTIC, AND LOW-MODULUS PLASTIC MATERIALS
John B. Baldwin, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,672
1 Claim. (Cl. 73—88)



A strain gage for elastic materials having indicating marks thereon, comprising a strip of transparent material, a hollow coupling positioned in said strip adjacent one end thereof, means for supplying a vacuum to said coupling to retain it in fixed relation to the elastic material, groups of transversely-disposed gradient marks on said strip of transparent material that are adapted to coact with the indicating mark on the elastic material as strain is imposed thereon, means secured to the material and engaging the strip of transparent material to maintain close contact between the strip of transparent material and the elastic material, said gradient marks being positioned along an axis between the point at which said strip is fixed to the elastic material, the indicating mark on the material and the means engaging said strip, a portion of the longitudinal area of said elastic material varying between the point at which said strip is fixed to the elastic material and the means engaging said strip to provide relative movement between said strip and the elastic material for indicating by means of said indicating mark the strain placed thereon.

3,344,661
DEVICE FOR TESTING THE TENSILE STRENGTH OF CHAINS OR THE LIKE
Heinz Breuer, Van der Giesestrasse 19, Duren, Rhineland, Germany
Filed May 1, 1964, Ser. No. 364,123
Claims priority, application Germany, May 2, 1963, R 35,072
3 Claims. (Cl. 73—95.5)



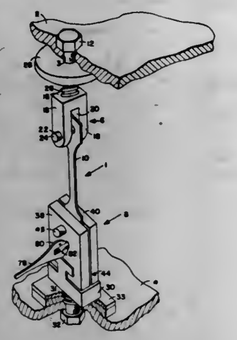
1. Device for continuously testing the tensile strength of chains or the like comprising
a first peripherally grooved wheel mounted on a first axis for continuous rotation and adapted to continuously receive about the majority of its periphery the strand for testing,
supply means for freely passing the strand to be tested to said first grooved wheel,
brake means for said first-grooved wheel to inhibit the rotation thereof,
a second peripherally grooved wheel mounted for rotation on a second axis parallel to said first axis, said second grooved wheel being adapted to continuously receive about the majority of its periphery the strand for testing downstream from said first grooved wheel,
driving motor means for said second grooved wheel to effect continuous rotation thereof at a given rate and under a given force, to provide the length of strand between said first and second wheels with a given tension,
separate means for firmly retaining the strand to be tested within the peripheral groove of each of said wheels to inhibit sliding of the strand therein, each said means comprising a supple and flexibly yielding endless belt overlying the strand about said majority of the periphery of each said wheel,
means to measure the tension of the length of unsupported strand between said first and second wheels, said measuring means comprising a rotatable spindle contacting said unsupported strand between said

wheels, said first wheel including auxiliary drive means operatively connected thereto for advancing the strand being tested to said second wheel for rethreading the device in the event the continuous strand being tested is broken.

3,344,662
SPECIMEN HOLDING DEVICE FOR TENSILE TEST APPARATUS

William T. Pruett, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 2, 1965, Ser. No. 476,764
4 Claims. (Cl. 73—103)



1. A specimen holding device for gripping one end of a relatively thin, flat specimen, said device comprising:
- a mounting head adapted to be fixed to a support and having an integrally formed, T-shaped key extending from one face thereof and in normal relationship therewith;
- a pair of gripper jaws, each jaw having a T-shaped keyway formed in the lower end thereof for matingly receiving said key therein, each of said jaws being further formed intermediate the ends thereof with an aperture extending transversely therethrough, said apertures being in coaxial alignment;
- holding means carried by the upper end of the jaws for affixing said one specimen end thereto;
- locking means carried by one of said jaws for preventing relative movement of said one jaw with respect to said key; and
- an actuating mechanism disposed intermediate opposite ends of said jaws and operable therewith for moving said one jaw toward the other jaw so as to tightly interengage said specimen end therebetween said jaws, said actuating mechanism including an operating rod extending through said aligned apertures and formed on one end with a head and on the other end with an elongated slot extending axially thereof, said rod further having a transversely extending aperture formed through the other end near the terminal portion thereof, a disc-like cam disposed within said slot, said cam having a plurality of holes formed therein, each of said holes being offset and eccentrically arranged with respect to the axis of said cam, and an operating handle operatively connected with said cam for use in rotating the same, said handle being connected with said cam by a pivot pin extending through said transversely extending aperture and through a selected one of said holes in the cam.

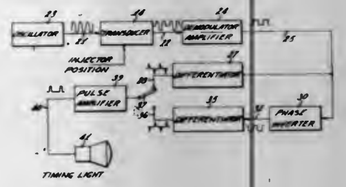
3,344,663
STROBOSCOPIC MEANS FOR TIMING FUEL INJECTION

Alexander Dreisin, Olympia Fields, and John Terrell, Tinley Park, Ill., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed June 3, 1964, Ser. No. 372,270
4 Claims. (Cl. 73—119)

1. Means for producing a signal for selectively indicating the opening and closing of a fuel injection valve, said means comprising:

means for producing an oscillating output; a differential transformer having a primary winding, a secondary winding, and a movable magnetic core, said primary winding connected to receive the oscillating output as an input, and said core connected to move in response to movement of the injection valve and positioned within said transformer to vary the magnetic coupling between the primary winding and the secondary winding to produce a modulated output at the secondary winding having one voltage when the valve is closed and another voltage when the valve is open;



means connected to receive the transformer output and demodulating said modulated output to provide a demodulated output having voltage changes of one polarity corresponding to the opening of the valve and voltage changes of another polarity corresponding to the closing of the valve;

means for inverting the demodulated output;

differentiating means responsive to voltage changes of the one polarity to produce pulses;

stroboscopic means responsive to the pulses for producing a flashing light signal in response to the pulses; and

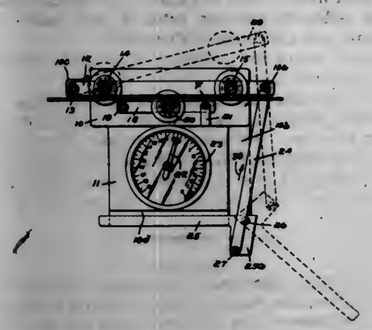
means for selectively connecting the differentiating means to receive the modulated output and the inverted modulated output.

3,344,664
TENSION METER

Erwin J. Saxl, Harvard, Mass., assignor to Tensitron, Inc., Harvard, Mass., a corporation of Massachusetts

Filed Apr. 8, 1965, Ser. No. 446,689
3 Claims. (Cl. 73—144)

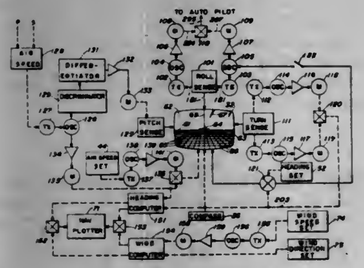
1. A tension meter comprising a base; a first filament engaging element movably mounted on said base; means connected to said first element for indicating its movement; an arm having one end connected to said base and the other end free; said arm being swingable toward and away from said first element; a second and a third filament engaging element mounted on said arm one to either side of said first element, said filament engaging elements being adapted to engage a filament with said first element and said second and third elements disposed on opposite sides of the filament; means resiliently urging said first element in a direction to deflect from a straight path a filament engaged by said elements; a link connected to the free end of said arm; and a lever disposed to fulcrum on said base and connected to said link, said lever and link being swingable between a closed position, in which said second and third filament engaging elements are in operative relationship to said first element, and an open position in which said arm is swung away from said first element.



3,344,665
INSTRUMENTATION SYSTEMS

Myron L. Anthony, 6040 Brainard, La Grange, Ill. 60525

Filed Apr. 1, 1964, Ser. No. 356,462
11 Claims. (Cl. 73—178)

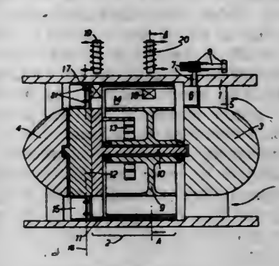


1. An integrated performance display for aircraft instrument flying, presenting aircraft attitude and related information from the viewpoint of a pilot flying by visual observation, but with the aircraft itself taken as a fixed reference representative of the environment, comprising:
- means defining a display field having a constantly fixed reference horizon line separating an upper sky area from a lower ground area;
- an attitude indicator, located within said display field;
- means for rotating said indicator about an axis normal to the plane of said display field to indicate roll of the aircraft while the reference horizon line remains fixed;
- means for moving said indicator upward and downward normal to said horizon line, within said display field, while the reference horizon line remains fixed, to indicate pitch attitude of the aircraft;
- and means, within said display field, for displaying variations of the actual aircraft speed and heading with respect to predetermined speed and heading conditions, whereby all attitudes of the aircraft are depicted by movements of said indicator during which movements the reference horizon line remains fixed and need not be moved to depict attitudes of the aircraft relative to the ground.

3,344,666
MASS FLOWMETERS

John W. Rilett, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company

Filed Dec. 7, 1964, Ser. No. 416,552
Claims priority, application Great Britain, Dec. 10, 1963, 48,688/63
10 Claims. (Cl. 73—231)

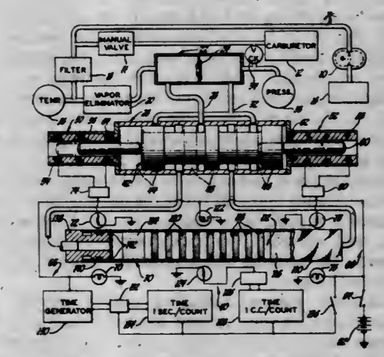


1. A mass flowmeter comprising a fluid flow tube, a fluid turbine and an impeller member, means mounting said fluid turbine and said impeller member in said flow tube for rotation about a common axis disposed longitudinally to said tube, said fluid turbine including a rotor having turbine blades disposed at an angle to the direction of fluid flowing through said tube, said impeller member including a rotor having radial vanes substantially parallel to the axis of rotation of said rotor, resilient coupling means interconnecting the turbine rotor with said impeller rotor for driving the impeller rotor from said turbine rotor to impart to said fluid a swirl having an angular velocity substantially equal to the angular velocity of said impeller rotor whereby the impeller rotor due to the resiliency of said coupling means lags behind the turbine rotor by an angle which is a function of the mass flow rate of fluid within the tube, and means for measuring the angle of lag.

3,344,667
FLOW MONITOR

Raymond W. Maltby, Brighton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 9, 1964, Ser. No. 402,738
13 Claims. (Cl. 73—239)



1. Flow measuring apparatus comprising, in combination, an inlet and an outlet communicating respectively with the source of fluid and a fluid system; a cylinder having a piston slidable therein; the cylinder and the piston together having a predetermined displacement;

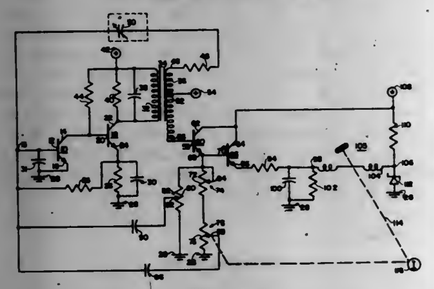
means controlling the flow of fluid to and from the cylinder so as to cause the fluid to be transferred relatively unimpeded between the inlet and the outlet; the flow controlling means including valve means operative to reversibly flow-connect the opposite ends of the cylinder to the inlet and the outlet so that each end of the cylinder is alternately connected to the inlet and the outlet thereby causing the piston to be reciprocated at a rate corresponding to the flow of fluid transferred from the inlet to the outlet, electromagnetic means for operating the valve means, and means actuated by the piston when moved to each of the end positions thereof for causing the electromagnetic means to be energized; the latter means including means operative to develop an output when the piston moves within the proximity thereof, trigger means operative in response to the output to cause the electromagnetic means to be energized and time delay means operative to cause the electromagnetic means to be deenergized after a certain time delay; and means monitoring the rate of movement of the piston so as to enable the quantity of the fluid transferred to the system to be measured.

3,344,668

CONTROL APPARATUS

Jack W. Schuck, Hopkins, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 30, 1964, Ser. No. 386,307
9 Claims. (Cl. 73—304)



1. Liquid level measuring apparatus comprising, in combination:

capacitive tank unit means for insertion in a container of a liquid the quantity of which is to be measured;

oscillator means having input means and first, second and third output means, said first and second output means supplying first and second opposite phase output signals to be used respectively for positive and negative feedback around said oscillator means;

means connecting said tank unit between said first output means and said input means of said oscillator means, the amplitude of the positive feedback signal being dependent upon the quantity of liquid between the electrodes of said tank unit means;

variable feedback means connected between said second output means and said input means of said oscillator means for supplying a negative feedback signal thereto, said variable feedback means including input means for varying the amplitude of said negative feedback signal;

demodulator means, including output means, connected to said third output means of said oscillator means for receiving a third output signal therefrom, said demodulator means providing a fourth output signal at said output means of said demodulator means which is amplitude dependent upon the signal received from said oscillator means;

reference signal supplying means for supplying a reference signal;

motive means, including mechanical output means, connected between said voltage reference means and said output means of said demodulator means, said motive means supplying an output at said mechanical output means when more than a predetermined voltage differential occurs between said fourth output signal and said reference signal;

indicator means for providing an output indicative of liquid level; and

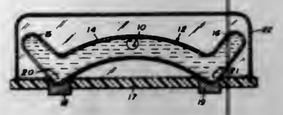
means connecting said mechanical output means of said motive means to said indicator means for providing an output indication and to said input means of said variable feedback means to alter the amplitude of oscillation of said oscillator means toward a predetermined level by varying the negative feedback signal.

3,344,669

DEVICE FOR SENSING THERMAL GRADIENTS

Edwin W. Roedder, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Interior

Filed Aug. 23, 1963, Ser. No. 304,285
6 Claims. (Cl. 73—339)



5. An instrument for indicating and measuring thermal gradients comprising a sealed tubular enclosure of thin transparent material containing a liquid and a pocket of gas at least partially confined by said liquid, said enclosure having an arched central section each end of which converges smoothly with a separate upwardly and outwardly extending straight section relatively shorter than said central section.

3,344,670

TIME/TEMPERATURE INTEGRATORS

Douglas A. Olsen, Minneapolis, and A. Jean Osteraas, St. Paul, Minn., assignors to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed Dec. 31, 1964, Ser. No. 422,834
9 Claims. (Cl. 73—356)



1. A method for determining a quality related to the time/temperature history of a heat-sensitive product which comprises:

(a) co-locating treated paper with said heat-sensitive product;

(b) exposing said treated paper to the same time/temperature history as said heat-sensitive product, said treated paper having been prepared by impregnating paper with a solution of silver nitrate and thereafter drying said paper to thereby form said treated paper; and

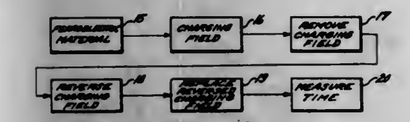
(c) selectively determining the quality of said heat-sensitive product by comparing the color of said co-located paper with a predetermined color standard.

3,344,671

TIME MEASUREMENT AS INDICATION OF TEMPERATURE

Irving Gordy and Henry J. Bush, Rome, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Dec. 3, 1964, Ser. No. 415,837
3 Claims. (Cl. 73—362)



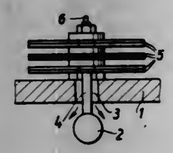
3. In a method for measuring temperature the steps of, charging a ferroelectric material in the environment whose temperature is desired, removing the charging field and permitting the material to stabilize, reversing the polarization and applying said field to the material, measuring the time required for the material to switch to a second stable state and correlating the time to temperature.

3,344,672

HEAT OPERATED DISCHARGER FOR CONDENSATION WATER

Josef S. Lingnau, Bremen-Borgfeld, Germany, assignor to Gustav F. Gerdts K.G., Bremen, Germany, a corporation of Germany

Filed Apr. 5, 1965, Ser. No. 445,428
6 Claims. (Cl. 73—363.5)



1. In a thermally operated discharger for condensation water, a thermostat comprising a plurality of superposed bimetallic plates, each of said bimetallic plates being of rhomb-like shape and having a middle portion and at least two long supporting extensions on opposite sides of said middle portion, and torque-reducing means upon at least said middle portion, wherein said means comprise at least one recess formed in the plate.

3,344,673

TESTING APPARATUS FOR SPACE VEHICLES, IN PARTICULAR FOR SATELLITES

Lionel Henri Gabriel Laming, Paris, France, assignor to Societe d'Exploitation des Materiels Hispano-Suiza, Bois-Colombes, Seine, France, a society of France

Filed Jan. 14, 1965, Ser. No. 425,469
Claims priority, application France, Jan. 17, 1964, 960,781
7 Claims. (Cl. 73—432)

1. An apparatus for testing a space vehicle which comprises, in combination,

a main spherical cap adapted to have said space vehicle secured thereto in such manner that the geometrical center of said main spherical cap coincides with the center of gravity of the whole of said main spherical cap and of said space vehicle secured thereto,

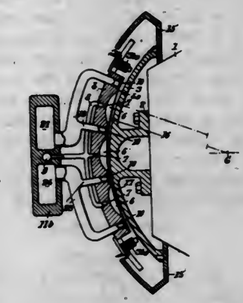
a complementary spherical cap of the same radius as said main spherical cap and adapted to match it,

fluid bearing means for holding said main spherical cap in concentric juxtaposition with said complementary spherical cap, said fluid bearing means being operative when the weight of the space vehicle tends to tear the main spherical cap away from the complementary spherical cap,

a support fixed with respect to the ground,

deformable mechanical means for connecting said complementary spherical cap with said support so that the center of the spherical surface of said complementary spherical cap remains fixed with respect to said support, and

resetting means responsive to relative displacements of the main spherical cap with respect to the complementary spherical cap for automatically controlling said mechanical means to move said complementary cap in such manner as to keep the amplitude of said relative displacements within given limits.

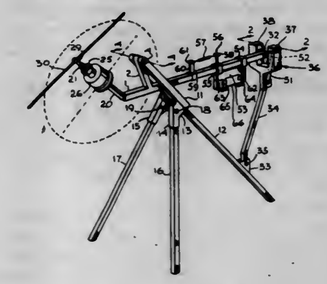


3,344,674

WHEEL BALANCER

Floyd A. Lane, Palos Verdes Peninsula, Calif., assignor to TRW Inc. a corporation of Ohio

Filed Apr. 13, 1965, Ser. No. 447,752
4 Claims. (Cl. 73—480)



1. A static wheel balancer comprising:

a balance arm having wheel support and indexing ends;

a frame means for supporting said balance arm in a substantially horizontal position;

a substantially frictionless pivot means between said balance arm and said frame means for providing relative movement between said balance arm and said frame means;

a spindle means on the wheel support end of said balance arm and extending upwardly from said balance arm at an angle of substantially 135 degrees means for supporting a wheel on said spindle means;

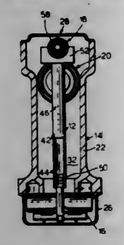
an optical indexing means supported on said frame means adjacent the indexing end of said balance arm for detecting any movement of said balance arm;

an indexing arm supported by said spindle means and adjacent a wheel to be balanced for position reference of the wheel; and

an adjustable weight means positioned for movement along said balance arm at a location between said pivot means and the indexing end of said balance arm for balance adjustment to the mass of any wheel mounted on said spindle;

said spindle means being at such an angle as to place a portion of the periphery of a wheel to be balanced above said pivot means for said balance arm to provide for accurate isolation of the unbalanced weight as distinguished from the symmetrical wheel mass located on opposite sides of the spindle means while at the same time providing a large leverage for detecting a heaviest point on the wheel with the leverage equal to substantially the projected horizontal distance of the diameter of the wheel on the 135 degree slant measured from the pivot means to the farthermost point on the wheel.

3,344,675
PIVOTAL CONNECTION
James S. Hellen, Wayne, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,991
13 Claims. (Cl. 73—517)



10. Pivot means for supporting a pendulum from a housing of a single-axis accelerometer comprising:

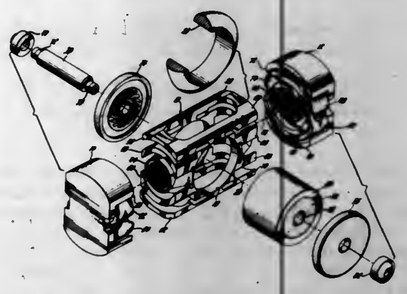
a rocker beam having a center portion connecting to the pendulum and having end portions with respective bearing surfaces;

a pair of base members connecting to said housing and respectively supporting the ends of said rocker beam and having bearing surfaces respectively confronting said bearing surfaces of said rocker beam, one of each pair of confronting surfaces being arcuate in profile;

two pairs of diagonal filaments respectively interconnecting said beam ends to their base members, each pair of diagonal filaments extending from opposite sides of its end of said rocker beam to opposite sides of the adjacent base member, each diagonal filament having a center portion with a point clamped between said confronting surfaces and with a helical shape that reverses in curvature at its clamping point and having an end portion connecting to said rocker beam and having an opposite end portion connecting to said base member.

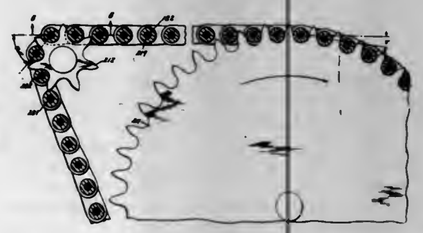
3,344,676
WINDINGLESS GYRO FLOAT
Argyle G. Lautzenhiser, Gloucester, and Harold E. Clark, Middleton, Mass., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,450
5 Claims. (Cl. 74—5.7)

1. Gyro apparatus including a hollow float member of magnetic material and having a support axis and a rotor axis perpendicular to the support axis, rotor means disposed within the flat member and supported for rotation about the rotor axis, a hysteresis ring mounted on the rotor means is radially spaced relation with the float member, a pair of stator members disposed adjacent but spaced from opposite ends of the float member along the support axis, a plurality of pole pieces formed on said opposite ends of the float member, the pole pieces being radially spaced outwardly from the support axis and extending



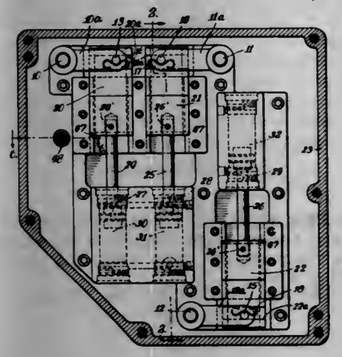
therealong and communicative with the rotor means at circumferentially spaced points therearound, corresponding pole pieces formed on said stator members, winding means disposed on the stator members for energizing the pole pieces to produce a magnetic field which rotates about the rotor means tending to torque the hysteresis ring about the rotor axis, and magnetic means for supporting the float member between the stator members.

3,344,677
ROLLING LINK BICYCLE CHAIN
Milton Morse, 1 Horizon Road, Fort Lee, N.J. 07024
Filed Jan. 9, 1967, Ser. No. 608,200
1 Claim. (Cl. 74—219)



The combination of a driven sprocket, a driving sprocket, and an offset sprocket chain including a plurality of pivotally interconnected links, each of said links including a pair of offset plates having relatively inwardly and outwardly disposed portions in parallel relation, there being openings in each of said inwardly and outwardly disposed portions, pins extending through and maintained within a plurality of aligned openings in adjoining links, and roller members surrounding said pins, the improvement comprising: said pins having an outer surface, said rollers having an inner surface, there being a sufficient clearance between said last mentioned surfaces to permit a limited degree of rolling motion therebetween, said clearance being sufficient to allow pure rolling motion between said pins and said rollers over the relative angular displacement of a pair of adjoining links upon entering engagement with said driven sprocket, said driven sprocket being of predetermined pitch, and said chain under tension having a pitch in excess of said given pitch, and in the absence of tension having a pitch less than said given pitch.

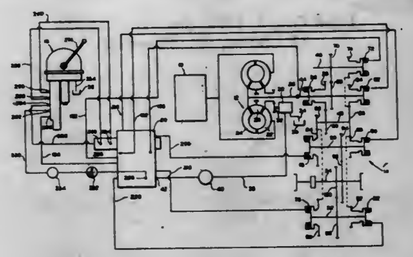
3,344,678
CHANGE SPEED MECHANISM
Bernard E. Olson, Loves Park, Ill., assignor to Rockford Machine Tool Co., a corporation of Illinois
Filed Sept. 1, 1965, Ser. No. 484,209
18 Claims. (Cl. 74—334)



15. A preselect change speed shifter assembly for a lathe headstock or the like, comprising: a housing having an outside wall; three gear shifting shafts mounted rotatably on said housing extending generally transversely to said wall, and being rotatable to different operable positions; a crank arm on each of said shafts for rotating said shafts; means for rotating said crank arms to various operable positions including three slides, one connected to each crank arm for reciprocating movement in a direction to oscillate said crank arm and a piston and cylinder device to move each slide including a piston rod connected to and movable in the direction of the reciprocating movement of said slide; means for normally applying fluid under pressure to one end of each of said pistons to urge said slides in one direction toward extended positions; a stop pin movable into the path of one of said slides for determining a first extended position for said slide, a second stop pin movable into position for determining a second intermediate extended position for said first slide, and a fixed pin positioned for determining a third extreme extended position for said slide; similar pins for determining extended positions for a second of said slides; a movable and a fixed pin for determining two extended positions for the third of said slides; a circular rotatable cam formation mounted on said housing wall and having concentric cam track surfaces comprised of a plurality of rises and falls for engaging said movable stop pins for selectively operating said pins to determine the angular positions of said gear shifting shafts in predetermined combinations; means to hold said stop pins in engagement with said slides while said cam formation is rotated to another position where the pins may be preselectively operated to preselect a successive position for said crank arms; and means for reversing the flow of fluid to the opposite ends of said cylinders to release said held pins and to rotate said crank arms away from the previously effective pins and to withdrawn positions preparatory to reverse movement of the crank arms to said predetermined operable positions.

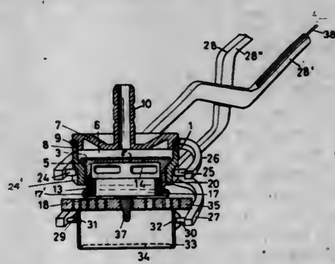
3,344,679
TRANSMISSION CONTROL SYSTEM
Burton S. Zeller, Parma, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 9, 1965, Ser. No. 446,932
10 Claims. (Cl. 74—360)

1. For use with a source of pressurized fluid and a transmission having a plurality of fluid actuated clutches connectible to the source of pressurized fluid for engaging the various gear trains therein, a control system comprising a speed ratio control valve movable between a first position in which a first one of the clutches is connected to the source of pressurized fluid and a second position in which a second one of the clutches is connected to the source of pressurized fluid, first fluid actuated means connected to said valve for moving said valve between said positions, a range control valve movable between a low range position in which a third one of the clutches is connected to the source of pressurized fluid and a high range position in which a fourth one of the clutches is connected to the source of pressurized fluid, second fluid actuated means connected to said range control valve



for moving said range control valve between said low and high range positions, and a master control valve connected to the source of pressurized fluid and said first and second means, said master control valve being operable to connect said first and second means to the source of pressurized fluid so that said speed ratio control valve is in said first position and said range control valve is in said low range position, said speed ratio control valve is in said first position and said range control valve is in said high range position, said speed ratio control valve is in said second position and said range control valve is in said low range position or said speed ratio control valve is in said second position and said range control valve is in said high range position.

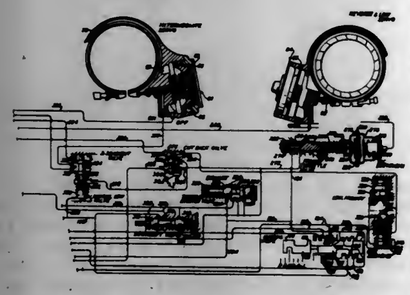
3,344,680
CLEANING DEVICE FOR MEAT GRINDER CUTTING PLATE
Clemens Neef, Freiherr von Stein-Strasse 2, Alzey, Germany
Filed Oct. 18, 1965, Ser. No. 496,829
12 Claims. (Cl. 15—407)



1. A device for cleaning a cutting plate having holes therein, comprising a valve housing, means to admit a cleaning fluid to said housing, a valve seat within said housing, a movable valve body in said housing, said valve body having a valve face adapted for sealing engagement with said seat under the pressure of cleaning fluid, said body having a cylindrical tubular portion provided with openings, said portion having a ring-shaped lower end,

a ring-shaped member removably attached to said portion, said member having an outwardly-directed flange, an intersticed member clamped between said flange and said ring-shaped lower end, and means for pressing said intersticed member against said cutting plate and simultaneously lifting said valve face from said valve seat for admitting said fluid to said cutting plate through said openings and through said intersticed member.

3,344,681
CONTROL VALVE SYSTEM FOR AN AUTOMATIC POWER TRANSMISSION MECHANISM
John J. Searles, Garden City, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,356
12 Claims. (Cl. 74—472)



8. In a control system for a power transmission mechanism adapted to deliver driving torque from a driving member to a driven member, gear elements forming plural torque delivery paths between said driving member and said driven member, fluid pressure operated servo means for controlling the relative motion of said gear elements, a fluid pressure operated clutch actuated by one servo means for connecting together two elements of said gearing to establish a high speed ratio condition, fluid pressure operated brake means actuated by said other servo means for anchoring an element of said gearing to establish a relatively low speed ratio condition, said brake servo means comprising a fluid pressure cylinder, a piston in said cylinder cooperating therewith to define a pressure release chamber and a pressure apply chamber, a fluid pressure source, conduit structure interconnecting said pressure source and each chamber of said brake servo and connecting also said source with said clutch, fluid pressure distributor valve means in said conduit structure for distributing pressure selectively from said source to said clutch and to said brake servo chambers, said brake servo assuming a released condition when both chambers thereof are pressurized and assuming an applied condition when one chamber thereof is pressurized and the other chamber thereof is exhausted, a fluid pressure passage communicating with said other chamber, a portion of said fluid pressure distributor valve means being disposed in said passage and adapted to selectively pressurize and exhaust the same, an accumulator valve situated in said passage comprising a movable valve element and a valve chamber that receives said valve element, said valve chamber defining in part said passage, means for biasing said valve element to a passage closing position, said piston developing a back pressure as said brake servo becomes applied, said accumulator valve including pressure responsive means for urging the valve element to a passage opening position in response to a pressure buildup in said other servo chamber and said passage, the application of said brake servo thereby being cushioned, means for pressurizing said valve element to shift the same to a passage opening position thereby rendering said accumulator valve inoperative, a vehicle speed sensitive valve means for distributing pressure from a high pressure region of said circuit to said main regulator valve means at low vehicle speeds thereby modifying regulating characteristics of said regulator valve means to produce an increased control pressure, and means for establishing fluid communication between said accumulator valve and said speed sensitive valve means whereby an auxiliary pressure is imposed upon the former to augment the action of said spring means thereby increasing the magnitude of the back pressure developed by said brake servo upon application thereof.

3,344,682
ROLLER BEARING PUSH-PULL CABLE
Otto J. Bratz, Adrian, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 16, 1964, Ser. No. 360,358
11 Claims. (Cl. 74—501)

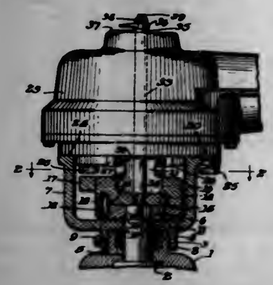


11. A push-pull cable assembly comprising:
(a) a casing having a substantially smooth bore;
(b) a core element axially translatable within said casing;
(c) a plurality of rollers in rolling engagement with the casing bore and the core element and each comprising
(i) a central groove engaging said core element, and
(ii) opposed circular end tracks on each side of said groove engaging the casing bore; and
(d) substantially cylindrical cage means between said casing and core element for maintaining said rollers in spaced position, each cage means constituting a self-supporting sub-assembly with its rollers and being formed with holes to receive the respective rollers and with tabs extending into the respective roller grooves to hold them in position.

3,344,683
ACTUATING MEANS ADAPTER FOR QUARTER-TURN VALVES
Joseph A. Cerow, Jr., Chicago, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 6, 1965, Ser. No. 511,647
4 Claims. (Cl. 74—526)

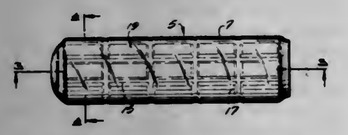
1. Valve actuating means in combination with a quarter turn valve having a limitedly rotatable axially immovable shaft and a closure member actuated by rotation of the shaft initially connected to a removable operator lever or the like, a valve casing having a stuffing box cooperating with said shaft, the said shaft having an end portion projecting from said stuffing box, the said casing having an upper threaded neck portion around the stuffing box for normally receiving a stuffing box packing nut, comprising a stuffing box adapter for said valve actuating means mounted on said upper threaded neck portion of valve casing having a depending hub portion cooperating

with said upper threaded neck portion of the casing retaining the stuffing box packing and said stuffing box adapter in fixed relation to said casing, a shaft adapter plate mounted non-rotatably on said shaft projecting portion within said stuffing box adapter, said valve actuating means having a drive sleeve, a driven stop member supported on said shaft adapter plate having a lower portion operatively engaged by the said shaft adapter plate, a housing for the said drive sleeve, the said stuffing box



adapter being axially aligned above the shaft adapter plate and driven stop member with the said drive sleeve, the stuffing box adapter having a mounting flange at an upper portion thereof effecting attachment of the said housing to the said stuffing box adapter, the said drive sleeve having clutch lugs engaging said driven stop member for rotating said shaft, stop lugs on said driven member and on said stuffing adapter for effecting limited rotation of said shaft and closure member.

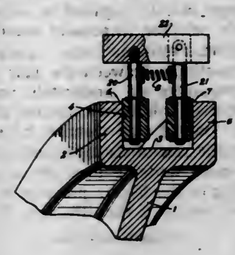
3,344,684
GRIP
Frank W. Steere, Jr., Akron, and John R. Russell, Cuyahoga Falls, Ohio, assignors to Steere Enterprises Inc., Tallmadge, Ohio, a corporation of Ohio
Filed Oct. 5, 1965, Ser. No. 492,992
15 Claims. (Cl. 74—551.9)



1. A grip designed to fit over a support, and formed of two structural elements and only two structural elements, namely (1) a plastic inner shell and (2) a resilient outer shell located over the inner shell, said inner shell being visible through said outer shell and being supported away from the inner shell by pattern-forming projections formed on at least one of the adjacent faces of the respective shells, which projections on one of said faces are constantly in contact with the other of said adjacent surfaces.

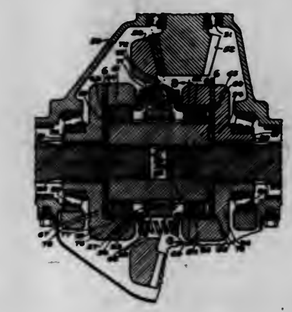
3,344,685
CAM FOLLOWER
Henri Crouzet, Roanne, France, assignor to Ateliers Roannais de Constructions Textiles, Roanne, Loire, France, a corporation of France
Filed Oct. 7, 1965, Ser. No. 493,795
Claims priority, application France, Nov. 13, 1964, 994,829
4 Claims. (Cl. 74—569)

1. Cam follower mechanism for producing rapid reciprocatory motion comprising a rotating cam roll having a peripheral surface, a closed helical cam track formed on said surface and having opposed parallel radial surfaces, a pair of cam rollers disposed to engage the respective radial surfaces for following said cam track, said



rollers being held in contact with the respective radial surfaces by a spring means, and a member carrying said rollers and adapted to be reciprocated thereby as said cam roll rotates.

3,344,686
OVERRUNNING CLUTCHES INCLUDING DIFFERENTIAL DRIVE DEVICES
Herbert K. Baker, Detroit, Mich.
(24481 Republic, Oak Park, Mich. 48237)
Filed Oct. 18, 1965, Ser. No. 496,811
25 Claims. (Cl. 74—650)

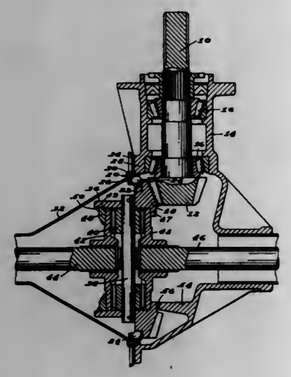


1. An overrunning clutch comprising a pair of clutch members operatively spaced apart in unyielding relation, a circular series of sprags interposed between the clutch members, each sprag having opposite engaging surfaces spaced an effective distance apart for wedging action against each of the pair of clutch members, a cage member having a circular series of apertures with a portion of each sprag mounted therein, a circular series of cam recesses formed in a clutch member in an arrangement of each cam recess to act upon an opposite portion of the sprag to that portion mounted in the cage member, resilient means for abutting the cage member against a clutch member to provide a differential of rotative movement between the cage member and the clutch member with the cam recesses in arrangement for initiating oscillation of the sprags, into a wedging action of clutch engagement or, for a reverse action providing clutch release.

13. A differential drive mechanism comprising a pair of interacting overrunning clutches interposed between a drive member and a pair of driven shafts, a pair of engaging members for each of said clutches with one engaging member of each pair in driving connection with said drive member and the other engaging member of each pair in driving connection of each to a separate driven shaft, two circular series of sprags with each series

thereof interposed between the engaging members of each pair, a pair of cage members each having a separate series of said sprags mounted therein, resilient means exerted on the cage members in an endwise direction thereof for abutting each cage member against an adjacent engaging member of each pair for responsive rotative movement therewith, additional resilient means operative in a rotative direction coactingly between the pair of cage members in an arrangement of moderately urging the cage members to rotate in unison in a manner to permit sprag release in either one of said clutches by exertion of an overrun or an underrun of its cage member to an extent of diminished sprag wedging pressure to a release factor corresponding to the urging pressure of said resilient means while the sprags of the other clutch are engaged.

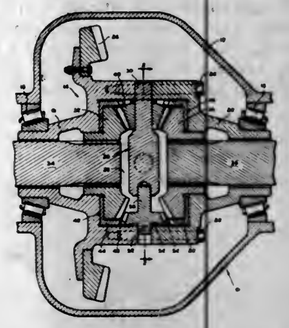
3,344,687
AXLE SUBASSEMBLY
Thomas R. Stockton, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,862
12 Claims. (Cl. 74—710)



1. An axle subassembly having a power input shaft and a pinion bevel gear integral therewith and including, a ring bevel gear meshing with said pinion gear, a housing rotatably supporting said input shaft, a pair of axially aligned power output shafts, differential gearing supported rotatably within and by said ring gear for driving said output shafts, and means for locating and supporting said ring gear with respect to said housing against radial and axial thrust loads comprising a single annular bearing means concentrically mounted with respect to said ring gear and having a portion engaging a radially outer portion of said ring gear and another portion engaging at least a portion of said housing spaced substantially diagonally outwardly from the engagement with said ring gear.

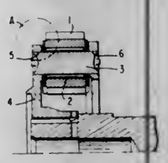
3,344,688
LIMITED SLIP DIFFERENTIAL
Barry L. Frost, Jackson, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 29, 1965, Ser. No. 517,340
2 Claims. (Cl. 74—711)

1. A limited slip differential comprising a rotatable case, a spider mounted in the said case, a pair of opposed side gears mounted for rotation in the said case, a friction plate disposed between each side gear and the said case, each friction plate having teeth along the outer periphery thereof, a plurality of pinion gears mounted on the said spider for rotation, the said pinion gears meshing with both side gears, and a plurality of gears mounted on the said spider for rotation, each of the said last-mentioned



gears being disposed between adjacent pinion gears and meshing with at least one of the said adjacent pinion gears, the said last-mentioned gears also meshing with the said teeth of both friction plates.

3,344,689
BEARING STRUCTURE
Fritz Naumann, Unterensingen, Kreis Nurtingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Aug. 12, 1964, Ser. No. 389,117
4 Claims. (Cl. 74—801)

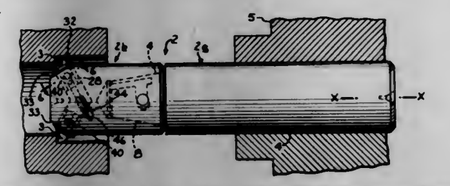


1. In a planet gear change-speed transmission assembly having at least one planet gear rotatably supported on a bolt mounted on a planet gear carrier, wherein the gear is supported on the bolt by means of a plurality of bearing needles disposed for direct engagement with a surface of said gear and of said bolt, the improvement comprising:
   at least two abutment discs of different hardness rotatably mounted on said bolt and positioned axially between each end face of said gear and a surface of said planet gear carrier,
   each of said abutment discs being arranged with axial play with respect to said bolt and to the other abutment discs, thus providing for relative rotation between said abutment discs at each end face of said gear,
   the relatively harder abutment disc, which is disposed to contact the end face of said gear, having a hardness approximately matching the hardness of said bearing needles.

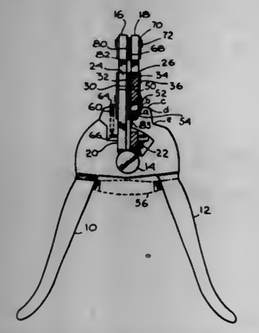
3,344,690
BORING BAR ASSEMBLY
Arthur J. Proksa, Elmwood Park, Ill., assignor to Everede Tool Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 17, 1965, Ser. No. 488,032
6 Claims. (Cl. 77—58)

1. A boring bar assembly to be inserted into the rotatable head of a machine for driving the boring bar, said assembly comprising: a shank piece for carrying tool bits only at the outer end thereof and having an inner end for

mounting the shank piece in said rotatable head and an outer tool bit carrying end, a relatively short head piece releasably attached only to the endmost surface at the outer end of the shank piece and adjustably supporting a boring tool bit laterally extending therefrom which tool bit is to be accurately adjusted to a proper spacing from the center of the head piece by measuring instruments used on the head piece and tool bit when the head piece is removed from the shank piece, and cooperating means on the inner end of the head piece and the endmost surface of the outer end of the shank piece for removably interconnecting the same along the longitudinal axis of the boring bar assembly and for establishing an accurate concentricity between the head piece and the shank piece, said cooperating means comprising telescoping tapered portions on the head and shank pieces longitudinally tightly fitted together, the degree of taper thereof being at least about 16 degrees so the head piece can be readily removed by manually grasping the head piece and pulling the same from the shank piece and being no greater than about 20 degrees so the head piece is accurately centered on the shank piece, said cooperating means further including an axial end slot extending across the tapered portion of the piece telescoping into the tapered socket of the other piece which end slot opens onto the end of the former piece within the socket, and a transverse pin in the latter piece which pin fits into the end slot, the former piece having a peripherally open, laterally extending and inwardly curved slot intersecting one side of said axial end slot at one side of the piece and a peripherally open, laterally extending and inwardly curved slot intersecting the other side of said axial end slot at the other side of the piece, wherein said lateral slots are diametrically opposed and form channels into which said lateral pin becomes manually separably wedged firmly to hold the head and shank pieces together.

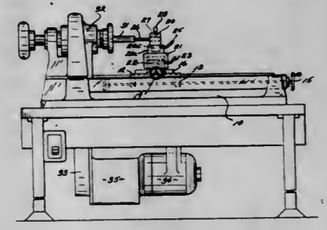


3,344,691
CAM OPERATED WIRE STRIPPER
Jesse D. Staggs, 620 N. Florence, Burbank, Calif. 91505
Filed Jan. 24, 1966, Ser. No. 522,744
14 Claims. (Cl. 81—9.5)



1. Means for cutting and stripping insulation from wire comprising first and second carriage means, cam means for moving said first and second carriage means adjacent and parallel to one another from one end to the other end of a predetermined travel path, first and second opposing means positioned for abutting said respective first and second carriage means at the other end of said travel path, first blade means carried by said first opposing means, second blade means carried by said first carriage means for cooperating with said first blade means for cutting the insulation of an insulated wire placed between said first and second blade means at said other end of said path of travel, said second opposing means and said second carriage each having groove means for holding a wire placed between said first and second carriage means and said first and second opposing means, means for separating said first and second carriage means and said first and second opposing means in a direction transverse to said predetermined travel path, said cam means preventing said separation until after said first and second carriage means have reached said opposite end of said travel path, means for restoring said first and second carriage means to their position adjacent one another, and means for returning said first and second carriage means to their positions at one end of said path.

3,344,692
METHOD AND APPARATUS FOR PRODUCING ASPHERIC CONTACT LENSES
David Volk, 3336 Kersdale Road, Pepper Pike, Ohio 44124
Filed Oct. 1, 1965, Ser. No. 492,217
10 Claims. (Cl. 82—1)

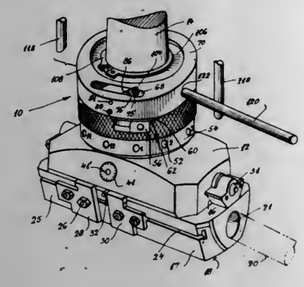


7. The method of generating as aspherical surface on a workpiece of optical material comprising rotating a workpiece about a work axis and causing relative approach movement between the workpiece and a tool having a generally elliptical cutting face while holding the plane of the cutting face at an angle to the axis of the workpiece with the apex of the elliptical face coincident with the work axis.

3,344,693
MEANS FOR AUTOMATICALLY ADVANCING AND RETRACTING A TOOL HOLDER IN A BORING AND FACING HEAD
Jule A. Scholl, 41—31 51st St., Woodside, N.Y. 11377
Filed Aug. 8, 1966, Ser. No. 571,016
14 Claims. (Cl. 82—1)

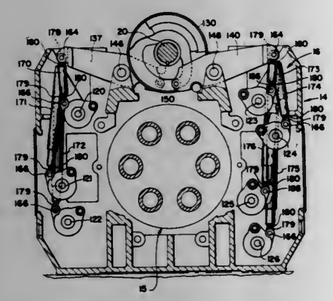
1. A clutch device for a boring and facing head having a shaft rotatable on an axis, a body joined to said shaft and rotatable therewith, a tool supporting carriage mounted on said body and movable thereon in a straight path transversely of said axis, a gear train operatively engaged with said carriage to drive the same transversely of said body, a first ring slidably mounted on said body concentric and coaxial with said shaft, said ring having a plurality of pins selectively engaged with a member of said gear train for driving the gear train; said clutch device comprising first means for engaging and holding said ring stationary while the shaft and body rotate on said axis

and the carriage moves transversely of said axis until the carriage encounters a first obstruction on said body, said clutch device further comprising yieldable means to release said ring for rotation with said body and shaft when said carriage encounters said obstruction, whereby



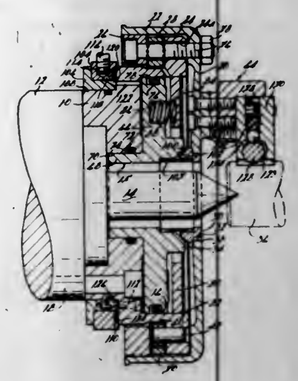
reversal of direction of movement of said shaft results in reengagement of said first means with said ring to hold the ring stationary again while the carriage moves transversely of said axis in a reverse direction until it encounters a second obstruction on said body.

3,344,694
CROSS SLIDE OPERATING MECHANISM
Philip Henry White, Claremont, N.H., assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,131
9 Claims. (Cl. 82—3)



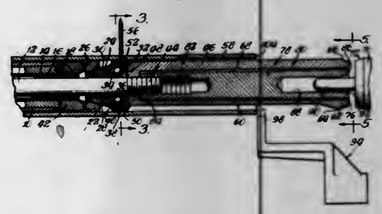
1. In a multiple spindle lathe having a multiple spindle carrier adapted to be angularly indexed for indexing the spindles successively to a plurality of spindle stations, a cam shaft mounted above the spindle carrier for rotation about an axis parallel to the axis of the carrier, a plurality of tool cross slides mounted for rectilinear reciprocable movement transversely of the axis of the spindle carrier, and cross slide operating means driven by the cam shaft for reciprocating the cross slides in timely sequence with the angular indexing of the spindle carrier; the improvement wherein a plurality of individual tool cross slides are provided which include a pair of individual tool cross slides at least at one of the spindle stations, and wherein the cross slide operating mechanism comprises cam means on the cam shaft providing a plurality of axially spaced drive cams for the plurality of cross slides respectively, and individual drive means for the cross slides operatively connecting the axially spaced cams with the cross slides respectively for reciprocation thereof.

3,344,695
FLOATING WORK DRIVER CHUCK
George Hohwart, Farmington, Mich., assignor to N. A. Woodworth Company, Ferndale, Mich., a corporation of Michigan
Filed Aug. 1, 1966, Ser. No. 569,334
8 Claims. (Cl. 82—40)



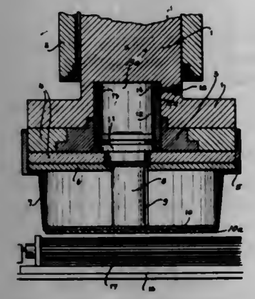
1. A free floating rotatable chuck for clamping the driving a previously positioned and held workpiece comprising a mounting portion,
a mounting portion,
a face portion,
means interconnecting said mounting portion and said face portion establishing a rotary driving connection therebetween while permitting said face portion to move freely radially within limits on and relative to said mounting portion,
jaws on said face portion having
adjustable working engaging elements thereon,
actuator means for opening and closing said jaws to move said work engaging element into and out of engagement with a workpiece in the chuck, the face portion of said chuck being adapted to shift radially on the mounting portion thereof and said work engaging elements being adapted to adjust simultaneously in said jaws to accommodate the chuck to the workpiece without bending or distorting the latter when clampingly engaged by said jaws.

3,344,696
TRANSFER DEVICE
Ronald B. Harvey, Hortonville, Wis., assignor to Appleton Manufacturing Company, Appleton, Wis., a corporation of Wisconsin
Filed Feb. 7, 1966, Ser. No. 525,632
11 Claims. (Cl. 82—101)



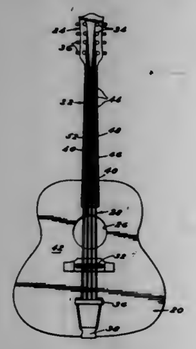
1. The combination comprising a tube cutting machine having a first tubular stock supporting mandrel and a cutter movable into and out of engagement with stock supported on said first mandrel to effect severing of segments therefrom, and transfer means supported to receive and support cut segments from said first supporting mandrel preparatory to introducing said segments onto a second support mandrel, said transfer means being adapted to guide said cut segments onto said second mandrel.

3,344,697
PROCESS OF CLAMPING A PILE OF SHEETS DURING CUTTING THEREOF
Willi Schneider, Adliswil, Zurich, Switzerland, assignor to Frey Wiederkehr & Cie., Aktiengesellschaft, Zurich, Switzerland
Filed Sept. 9, 1964, Ser. No. 395,262
Claims priority, application Switzerland, Nov. 8, 1963, 13,749/63
8 Claims. (Cl. 83—19)



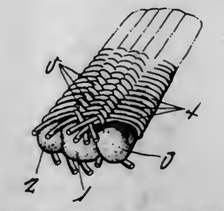
1. A process for cutting sections out of a stack of sheets by means of forcing a cutting knife through said stack, said process comprising applying a first pressure to the top of said stack prior to applying the knife thereto, applying the knife to said stack, and applying a second pressure to the stack when the knife has moved a predetermined distance and independently of the pressure of the knife to assure the dimensional consistency of said sections throughout said stack.

3,344,698
MUSICAL INSTRUMENT
Richard J. Ferrara, Grosse Pointe, Mich. (20045 Mack Ave., Grosse Pointe Woods, Mich. 48236)
Filed July 22, 1966, Ser. No. 567,215
3 Claims. (Cl. 84—267)



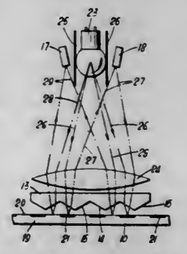
1. A string musical instrument comprising: a body portion having a conventional guitar sound box, a tenor guitar neck, and an eight-string mandolin head, and four pair of vibratory strings strung on said body portion, said strings tuned in fifths and of the caliber range of a six-string guitar.

3,344,699
BRAIDED STRAND FOR RUG
Masaichi Ohno, 3367 Hamaderashowacho, 3-cho, Sakai, Osaka Prefecture, Japan
Filed Sept. 23, 1965, Ser. No. 489,699
1 Claim. (Cl. 87—7)



A tubular rug, comprising a rope having a central core member and two side core members, one on each side of said central core member, a plurality of first covering yarns wound in one helical direction around the outside of the three side by side core members, and a plurality of second covering yarns wound in the opposite helical direction around only the central core member and interwoven with the plurality of first covering yarns, said rope being in side by side lengths which together make up the rug.

3,344,700
DISPLACEMENT MEASURING SYSTEM
David George Brake, Langley, England, assignor, by mesne assignments, to British Aircraft Corporation (Operating) Limited, Stevenage Hertfordshire, England, a British company
Filed May 14, 1962, Ser. No. 194,549
Claims priority, application Great Britain, May 23, 1961, 18,633/61
17 Claims. (Cl. 88—14)



2. A displacement measuring system comprising a scale having scale divisions formed by alternate strips of different light propagating properties spaced at uniform pitch along the scale, scale lighting means, light utilization means, and a light refracting body movable relative to the scale, characterized in that said body is disposed between the scale and light utilization means and has a plurality of repetitive sets of mutually inclined refracting portions, each set being optically juxtaposed to an integral multiple, including one, of said scale divisions, such that light beams from corresponding points in a plurality of scale divisions are refracted to said utilization means at different angles than light beams refracted from a plurality of corresponding points respectively spaced less than one pitch from the first said corresponding points, whereby said utilization means may distinguish accurately between light refracted from each said pluralities of corresponding points despite defects in particular scale divisions.

3,344,701
INTERFERENTIAL LENGTH MEASUREMENT DEVICE

Kurt Räntsch, Heidenheim (Brenz), Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany, a corporation of Germany

Filed July 28, 1964, Ser. No. 385,673
Claims priority, application Germany, Aug. 3, 1963, Z 10,271
4 Claims. (Cl. 88—14)



1. Interferential length measuring device including a measuring light of a predetermined wavelength with a beam splitter providing two separate light beam paths, a fixed reflector arranged in th path of one of said light beams and a movable reflector arranged in the path of said other light beam, a measuring scanner, and a movement transmitting linkage for reducing movement by triangulation connecting said scanner with said movable reflector, said movement transmitting linkage including two rods of which one is longitudinally movable and is pivotally connected between its ends with one end of said other rod, the other end of which is pivotally connected with said measuring scanner, said first rod which is longitudinally movable forming with the direction of movement of said measuring scanner an angle φ which complies with the relation

$$\cos \varphi = \frac{\lambda'}{\lambda}$$

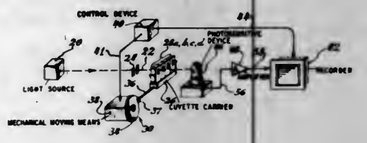
wherein λ is the wavelength of the measuring light and λ' is a rounded off number close to the wavelength of said measuring light, whereby the conversion factor with respect to the relationship between the number of interference bands displaced and the distance actually moved by a test object will be reduced to a reasonably convenient numeral amount.

3,344,702
MULTIPLE SAMPLE ABSORPTION RECORDING APPARATUS HAVING A SELECTIVELY VARIABLE CUVETTE POSITION CYCLE AND MEANS TO DEENERGIZE THE RECORDER BETWEEN MEASUREMENT PERIODS

Willis A. Wood, Okemos, Mich., and Saul R. Gilford, Oberlin, Ohio, assignors to Gilford Instrument Laboratories, Inc., Oberlin, Ohio, a corporation of Ohio

Continuation of application Ser. No. 54,421, Sept. 7, 1960. This application Oct. 23, 1965, Ser. No. 518,496
9 Claims. (Cl. 88—14)

2. Apparatus for recording continuously the light absorbance of a plurality of samples disposed respectively in separate cuvettes, some of which may be selected, which comprises: a source of light and means forming a beam of said light, a cuvette positioning device having cuvettes arranged for sequential disposition thereof intercepting the beam, electric circuit pre-settable control means programming the operation of the positioning device for repetitive cycles of selected cuvettes in said disposition for a predetermined measuring period, menas for converting the light passing through a cuvette into an output signal the character of which is related to the absorbance in the cuvette and including photo-sensitive means arranged in the beam at a position to receive light that has passed through said cuvette, and recording means adapted to record the relative amplitudes of the absorbance output signals during the measuring periods of the selected cuvettes solely as a function of time upon a single recording surface, said recording means comprising marking means movable in a first direction in response to output signals and a recording surface for receiving marks



applied by the marking means, said recording surface moving with respect to said marking means in a second direction transverse to said first direction, wherein said control means has means for stopping the movement of the marking means upon the recording surface in said first direction at such times as the cuvettes are being moved between their respective positions and wherein said recorder registers an indication of relative signal amplitude only when a cuvette is in proper intercepting disposition.

3,344,703
LASER DETECTOR

Richard D. Milton, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

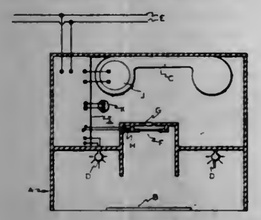
Filed Oct. 4, 1963, Ser. No. 314,075
1 Claim. (Cl. 88—23)

A detector comprising: a closed container which is divided into first and second channels by a wall means, said container having first and second aligned holes at opposite ends of each channel, said wall means having a third hole therein and positioned towards one end of the container, said container having a fourth hole on the second channel side which is aligned with said hole in the wall means, a first glass plate which is positioned in the first channel so that part of a beam of light entering the hole in said first channel at the other end of the container will be reflected through the hole in the wall means to a second glass plate, said second glass plate is so positioned in the second channel that the plate will reflect part of the beam of light it receives, an optical band pass dielectric filter and a diffuse surface element positioned in said second channel and disposed for passing said beam of light, a photosensitive diode positioned in the second channel at the other end of the container to receive the light from the diffuse surface element, said diode being connected in a measuring circuit which comprises a source of D.C. voltage, a capacitor, a resistor and said diode connected in a series circuit, a first meter connected in parallel with said resistor for measuring the instantaneous power of said light, and a second meter connected in parallel with said capacitor for measuring total energy of said light.

3,344,704
ILLUMINATION CONTROL

Lewis Edward Simpson, 255 W. 234th St., Wilmington, Calif. 90744, and William Eugene Karow, 7367 W. 93rd Place, Los Angeles, Calif. 90045

Filed Sept. 24, 1964, Ser. No. 398,992
9 Claims. (Cl. 88—24)



1. An exposure control arrangement for an electrically powered illuminating source comprising:

capacitor means connectable to a charging voltage substantially proportional to the voltage supplied to said illuminating source;

switching means connected to said capacitor for discharging said capacitor when the voltage thereacross reaches a predetermined switching value; and

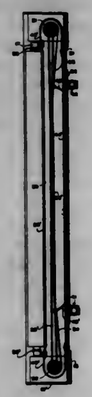
exposure control means connected to said switching means and to said capacitor to initiate an exposure at approximately the same time that said capacitor means begins to charge, and for terminating the exposure at approximately the same time that said capacitor is discharged,

said switching means comprising a unijunction transistor means having two bases and an emitter, and further including a zener diode means connected across said bases, and wherein said capacitor is connected across said emitter and one of said bases, whereby the exposure period decreases or increases with the increase or decrease, respectively, of voltage across said illuminating source.

3,344,705
PENUMBRA-AVOIDING SHUTTER DEVICES FOR VIEWERS AND PROJECTORS

Elias Gordon, 131 E. 93rd St., New York, N.Y. 10028

Filed Mar. 8, 1965, Ser. No. 437,943
15 Claims. (Cl. 88—24)

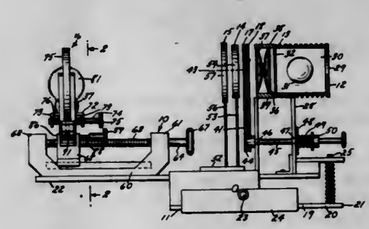


1. In a shutter device of the character described, the combination with a frame holding a transparent pane, two parallel rollers rotatably mounted in spaced relation on said frame behind said pane, two pliable opaque shades, one carried on each of said rollers, to unwind and wind up thereon; the lead edges of said shades being between said rollers, stiff members mounted one along the lead edge of each of said shades, an endless belt connecting said rollers; the flights of said belt crossing each other and secured to said stiff members respectively; the plane of said belt being substantially perpendicular to said pane, elongated members carried parallel, one by each of said lead edge members and in a direction along the lead edge member it is carried by; said elongated members resiliently pressing against said pane and each of said elongated members being in at least line contact with said pane and means to move said belt.

3,344,706
OPTICAL PROJECTOR WITH PROJECTION LENS ADJUSTMENT MEANS

William Dian, 81—56 192nd St., Hollis, N.Y. 11423

Filed July 6, 1965, Ser. No. 469,525
3 Claims. (Cl. 88—24)



1. In an optical projector for producing decorative light patterns, including a projection objective lens, a focal plane having an image to be projected, and a light source adjacent said focal plane, the improvement comprising: first means for moving said objective lens along a fixed axis toward and away from said focal plane, second means for rotating said objective lens about a second axis perpendicular to said first-mentioned axis, and third means for rotating said objective lens about a third axis perpendicular to each of said first and second axes.

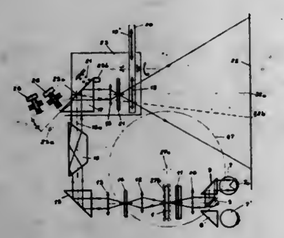
3,344,707
TOPOGRAPHY INDICATOR FOR AIRCRAFT

Jean Jullien-Davin, Valence, France, assignor to Crouzet, Valence, Drome, France, a French company

Filed Mar. 8, 1966, Ser. No. 532,707
Claims priority, application France, Dec. 7, 1965, 689, Patent 1,437,509
18 Claims. (Cl. 88—24)

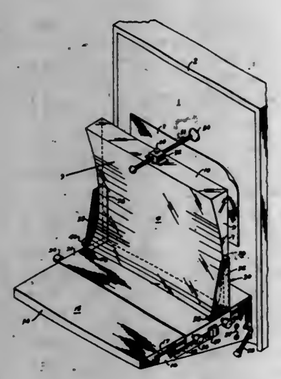
1. In an aircraft topography indicator controllable by a navigation computer yielding flight data of the speed, direction and drift type for continuous indication of the position of an aircraft by the projection onto a screen of a map of the area over which the said aircraft is flying, the aircraft being represented by a symbol projected onto the same screen over which the image of the map passes, the said map being movable, associated with identification means, and having its movements controlled by the said navigation computer, comprising: projection means consisting of at least one light source, an optical system and a projection screen, the symbol denoting the aircraft being disposed in an object plane of the optical system so as to be projected on the said screen; a magazine to contain detachable individual maps of the area over which the aircraft is to fly, the maps together forming a grid; carrier means whose orthogonal movements are controlled from the navigation computer to move

the map in its object plane during its projection; selection means whereby a map corresponding to the area over which the aircraft is next to fly is selected from the individual maps in said magazine in dependence on the position of the map still being projected onto the screen and the position occupied by the next map in the grid; and transfer means controlled by the said selection means for individually bringing each of the individual selected maps into an object plane of the optical system for projection on to the said screen and for return to the said magazine; said individual map magazine being movable with respect to the object plane provided for



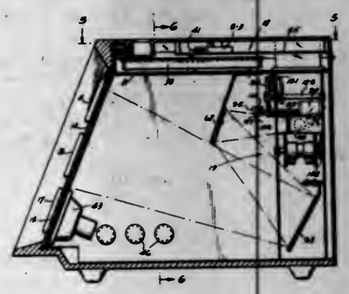
the map being projected, said individual map magazine having compartments to contain the said maps, the said compartments communicating with the exterior through apertures for the passage of the maps and apertures for the passage of the transfer means, the movement of said individual map magazine being controlled automatically so that it stops and presents the compartments containing the sleected individual map to the said object plane so that said map can be projected, said magazine maintaining the stopped position until the map which has been removed from its compartment has been returned into the same.

3,344,708
UNIVERSAL LENS MOUNTING
Richard J. Decker, Huntington, N.Y., assignor to Electrographic Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,822
4 Claims. (Cl. 88—24)



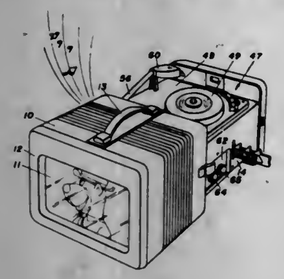
1. A reproportioning lens with a universal mounting attachable to an image plane upon which work to be copied is placed, comprising:
a bed mount;
means secured to said bed mount for detachably securing the same to an image plane upon which work to be copied is placed;
a reproportioning lens including a pair of transparent face pieces spaced to form a cavity filled with a transparent liquid, at least one of said face pieces being curved to provide a reproportioning effect;
a lens mount secured to said reproportioning lens and including a carriage slidably mounted for movement along said bed mount; and
a focusing structure operative to control the distance between said lens and the image plane, said lens remaining parallel to said copy work regardless of position.

3,344,709
AUDIO-VISUAL INSTRUCTIONAL APPARATUS
Stanford E. Taylor, Hawk Drive, Lloyd Harbor, N.Y.
Filed Nov. 6, 1964, Ser. No. 409,412
10 Claims. (Cl. 88—28)



1. An audio-visual apparatus for use as an instructional aid comprising in combination: an electrically operated sound reproducing mechanism for reproducing the sound from a multi-channel recording one channel of which carries audible sound modulations and a second channel of which carries inaudible signal modulations, said sound reproducing mechanism including a pick-up head for each channel and a first amplifier for amplifying sound from the audible channel and a second amplifier for amplifying the inaudible signal modulations from the other channel, said recording being in the form of a record disk which may suitably be mounted on a turntable that is controllably driven by an electric motor when a record is in place so that a tone arm having a pick-up head and a record engaging stylus mounted adjacent said turntable is adapted upon rotation to track the grooves of said record disk from the initial playing position to the final playing position whereby said sound is reproduced; an electrically operated projection mechanism for projecting images from a multi-frame film strip to a screen and including at least one light source for illuminating said strip, a film support having an aperture and feed means for advancing the film strip one frame at a time and exposing an individual frame of said film at said aperture and an occluding shutter shiftable between an image-occluding position in which the image is occluded from said screen and an image-exposing position in which the projected image is exposed to said screen and view; and electrically operated means in the form of electrical circuitry interconnected between the second amplifier of the sound reproduction mechanism and the feed means and occluding shutter of the projection mechanism so as to control the operation of the feed means and occluding shutter and causes advance of the film and exposure of the image to view in response to signals from the second channel of the sound recording.

3,344,710
SOUND SYNCHRONIZED SLIDE PROJECTOR
Sid Bersudsky, Toronto, Ontario, Canada, assignor to National Sales Incentives Limited, Don Mills, Ontario, Canada
Filed May 26, 1965, Ser. No. 458,993
4 Claims. (Cl. 88—28)



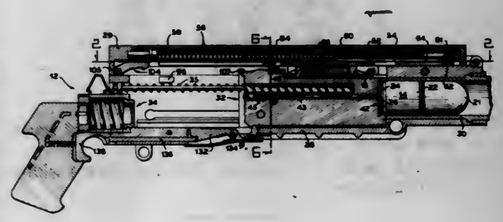
1. A sound synchronized slide projector for a series of film slides and a separate record therefor having a viewing sound programme comprising: a housing in the form of an open-ended structure and a viewing screen forming part of the opposite closed end thereof said screen presenting an externally viewable image when receiving an image projected thereon within said housing; a sliding frame having structure for closing the open end of said housing and mounted in the latter for relative slidable positioning with respect thereto; a slide projector on said frame adapted to focus a slide image on said screen when said frame is moved to a predetermined viewing extension relative to said housing; a record reproducer including an electric motor and a tone arm therefor on said frame exposable to the operator at said viewing extension and a record having a predetermined programme therefor; step motion means including a motor for said projector for successively projecting a programme of viewing slides over said predetermined programme period of time upon energizing of the motor thereof; and switch means actuated by manual motion of said tone arm to a sound reproducing position for energizing and de-energizing both said motors simultaneously at start and end positions for said arm relative to the programme of said record.

3,344,711
JAVELIN STABILIZED QUIET ROUND
Robert C. Mawhinney, 4661 Heyer Ave., Castro Valley, Calif. 94546; Bert F. Gould, P.O. Box 820, Berkeley, Calif. 94701; Arthur T. Biehl, General Delivery, and Robert Mainhardt, P.O. Box 225, both of Diablo, Calif. 94528; and William D. Barton, Panama, Panama (P.O. Box 2723, Balboa, Canal Zone)
Filed Feb. 23, 1965, Ser. No. 437,345
(Filed under Rule 47(a) and 35 U.S.C. 116)
11 Claims. (Cl. 89—14)



1. A small arms hand weapon comprising in combination
(a) a smooth bore launching tube,
(b) a cartridge having a combustion chamber and a smooth bore passage communicating therewith, said bore formed for axial alignment with the bore of said launching tube,
(c) an elongated projectile in said passage and having an *L/D* ratio at least 15 to 1 and a c.g. at least 70% of the length from the tail end,
(d) a silencer having an internal volume equal to a cylinder approximately 15 projectile calibers in diameter and approximately 100 calibers in length communicating with the discharge end of said guide tube means, and
(e) means for firing said cartridge.

3,344,712
SPRING ACTUATED FEEDING MECHANISM FOR USE WITH PUSHTHROUGH-TYPE CARTRIDGE LINKS
Richard H. Colby, South Hadley, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 14, 1961, Ser. No. 139,048
5 Claims. (Cl. 89—33)

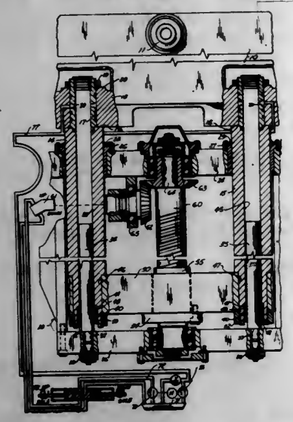


1. In combination, a machine gun and cartridge belt for supplying cartridges thereto for discharge, said machine gun being provided with a bolt disposed for cyclic reciprocation responsive to energy produced by discharge of each of the cartridges and a feeding mechanism adapted to progressively advance said cartridge belt through said machine gun, said feeding mechanism being provided with energizing means including a spring assembly having a compressible recoil spring and a slidable piston disposed in abutment therewith, means for transferring energy produced by cartridge discharge to said energizing means, said transfer means including a cam plate disposed for sliding reciprocation parallel to the reciprocation of said bolt means for transferring travel of said bolt in a recoil stroke to said cam plate and means for joining said cam plate to said piston for actuation therebetween against said spring, and means for interrupting the cyclic reciprocation of said bolt a period determined by the difference between the energy stored in said energizing means and that required to advance said cartridge belt.

3,344,713
DRIVE MECHANISM FOR ACTUATING A MOVABLE MACHINE MEMBER
Frank Zankl, Milwaukee, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Aug. 9, 1965, Ser. No. 478,290
6 Claims. (Cl. 90—16)

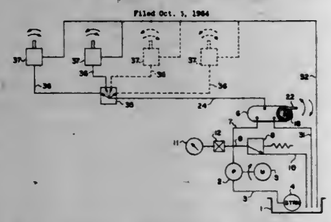
1. In a feed drive mechanism for driving a movable member of a machine having a bed and in which the movable member is disposed in spaced relationship with said bed and is movable toward and away from the bed:
an enclosure formed in said bed, said enclosure excluding from its interior the dust and debris that may be present about the exterior of the machine;
drive means in said enclosure;
a driven element within said enclosure connected to said drive means to be driven thereby in a rectilinear path within said enclosure;

coupling means connected to said driven element within said bed for movement therewith relative to said enclosure, said coupling means extending outwardly of said bed into engagement with the movable member so that the latter will move in its path of travel with said driven element; and,



operating means for operating said drive means within said enclosure.

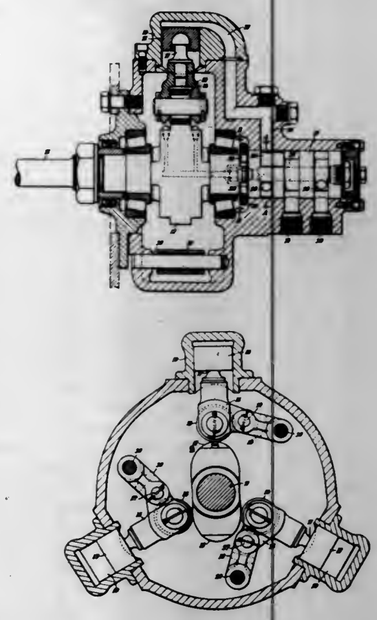
3,344,714
FLUID PRESSURE TRANSMISSION SYSTEM
Ralph F. Hereth, Tacoma, Wash., assignor to Wilkins & Associates, Inc., Tacoma, Wash., a corporation of Washington
Filed Oct. 5, 1964, Ser. No. 401,520
7 Claims. (Cl. 91—175)



1. A fluid pressure transmission system comprising; a fluid motor having reciprocable pistons therein and a rotatable element driven by some of said pistons while returning others, a movable valve means having high and low fluid pressure chambers, conduit means for connecting the pistons of said motor to said valve means, and selectively operable drive means independent from said rotatable element for moving said valve means to sequentially connect said pressure chambers and said pistons for positioning said rotatable element in synchronized response to the positioning of said valve means.

3,344,715
HYDRAULIC MOTORS
Ronald Holdsworth Wilson, Horsforth, near Leeds, England, assignor to Kirkstall Forge Engineering Limited, Leeds, England
Filed July 27, 1964, Ser. No. 385,295
1 Claim. (Cl. 91—180)

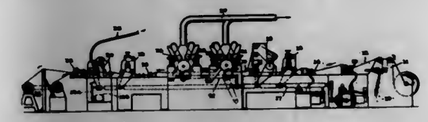
A hydraulic motor comprising a plurality of radially-disposed cylinders respectively having pistons reciprocable therein in response to fluid pressure in the cylinders, a rotary valve driven by said motor for connecting the cylinders in succession to fluid under pressure and to exhaust, a central output shaft and a cam affixed to said shaft for rotation therewith, said cam having only two relatively diametrically-opposed lobes, and follower means carried by the respective pistons for operative engagement with said lobes to rotate said cam, said motor having only three cylinders angularly spaced from each other, the lobes of said cam respectively occupying diametrically-opposed halves of the cam profile, the said profile being shaped to produce a constant acceleration and deceleration of the piston movement throughout the first and last quarters respective of the power stroke of each piston, and to maintain a constant piston velocity throughout the second and third quarters of the power stroke of each piston, when the cam is driven at a constant



angular velocity, the pistons and cam being arrange relatively to each other so that the first 30 degrees of cam rotation from a rotational position in which the crest of one of said cam lobes is engaged by a said follower means corresponds to the first quarter of the power stroke of the piston, the second 30 degrees of rotation of said cam corresponds with the second and third quarters of the power stroke of the piston, and the third 30 degrees of rotation of the cam corresponds to the remaining quarter of the piston power stroke, to thereby generate three separate output curves corresponding to said three cylinders, each of said curves having angular intersections between said first and second quarters of said power stroke and between said third and fourth quarters of said power stroke, whereby to provide a substantially smooth summation output curve of said motor.

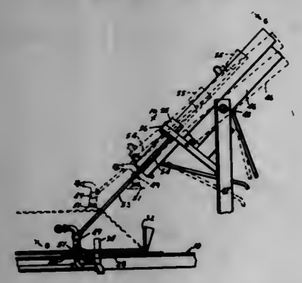
3,344,716
APPARATUS FOR MAKING APERTURE CARDS
John F. Langan, Atlanta, Ga., assignor to Langan Aperture Cards, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 23, 1965, Ser. No. 489,666
13 Claims. (Cl. 93—1)

1. Apparatus for making aperture cards comprising a base, a supply of continuous web of card material, means mounted on said base for continuously drawing said web from said supply, means for maintaining the alignment of said web between said supply and said drawing means, means mounted on said base for continuously printing card indicia on said web received from said drawing means, a rotary embossing roll mounted on said base for continuously embossing areas about the aperture location on each printed card indicia on said web received from said printing means, adjustable means between said printing means and said embossing roll for positioning said printed card indicia on said web with respect to said embossing roll, grinding means adjacent said embossing roll for removing a part of the thickness of the embossed areas



on said web, a rotary support roll mounted on said base for continuously receiving said web from said embossing roll and for supporting the embossed areas on said web, means between said embossing roll and said support roll for adjusting the position of said web with respect to said support roll, grinding means adjacent said support roll for removing a further part of the thickness of the embossed areas on said web, means mounted on said base for continuously drawing said web from said support roll, slitting means on said base for continuously slitting said web received from said last named drawing means into card width continuous sub-webs and means for winding said sub-webs individually into rolls.

3,344,717
APPARATUS FOR SETTING UP CARTONS
Reinhold A. Pearson, % R. A. Pearson Co., S. 12 Division, Spokane, Wash. 99202
Filed Dec. 10, 1964, Ser. No. 417,422
4 Claims. (Cl. 93—53)



3. An apparatus for setting up carton blanks having first and second side walls joined respectively at their ends by a pair of end walls,

a rigid supporting framework including a carton blank supporting work station comprising a surface on which blanks are individually located;

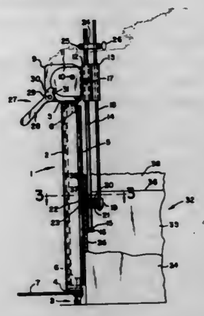
vacuum means on said framework recessed in said surface engageable with one side wall of a blank located at the work station to maintain said one side wall stationary relative to said framework;

a cylinder assembly pivotally connected to the framework about an axis parallel to said surface, said cylinder assembly being spaced outwardly from said surface, said cylinder assembly including a reciprocable piston rod angularly directed toward said surface, the piston rod axis being located in a plane perpendicular to said surface;

outwardly directed vacuum gripping means at the outer end of said rod to selectively grip the remaining one of said side walls on a blank;

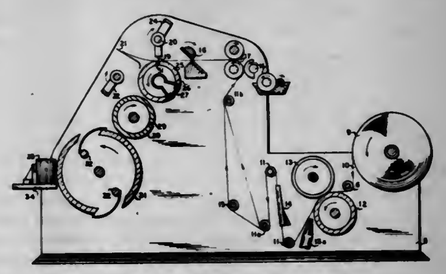
and means on said rod selectively engageable with said framework to limit pivotal motion of said cylinder assembly relative to said framework when said rod is fully extended.

3,344,718
APPARATUS FOR SIZING CARTONS OR THE LIKE
Harry W. Schollard, 416 N. State St., St. Ignace, Mich. 49781
Filed Feb. 1, 1965, Ser. No. 429,429
10 Claims. (Cl. 93—58)



1. Apparatus for sizing a carton having a wall, said apparatus comprising support means; a mandrel; means mounting said mandrel on said support means for engagement with one side of said wall; scoring means; means journaling said scoring means on said support means for rotation and for clamping engagement with said wall on its opposite side directly opposite said mandrel; and cutting means journaled on said journaling means for cutting engagement with said opposite side of said wall in spaced relation to said scoring means.

3,344,719
METHOD AND APPARATUS FOR MAKING ENVELOPES
Peter Weisshuhn, 114–1425 Esquimalt Ave., West Vancouver, British Columbia, Canada
Filed Mar. 15, 1965, Ser. No. 439,566
6 Claims. (Cl. 93—63)

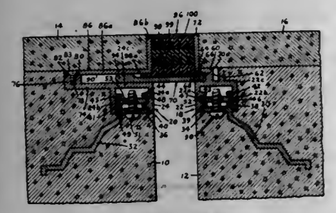


1. In a method of making envelopes from a strip of foldable material moving in the direction of its length, the steps of:

(a) effecting a longitudinal cut in the moving strip dividing it into two adjacent individual strips,

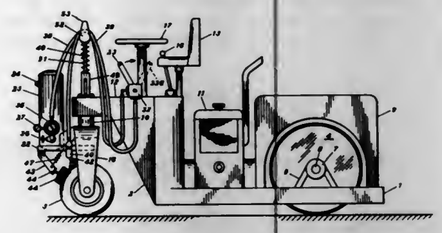
(i) the individual strips having alternate uniformly spaced wide and narrow portions,
(ii) the wide portions being adapted to be folded to form side flaps of the envelope;
(b) folding the wide portions on lines defining side edges of the envelopes to form the side flaps;
(c) causing motion of one individual strip relative to the adjacent individual strip as to align the folded flaps to be opposite one another;
(d) cutting the individual strips along transverse cut lines intermediate the aligned flaps, dividing the individual strips into envelope sections,
(i) having a generally rectangular back portion, an outer edge of which is defined by a transverse cut line aforesaid,
(ii) a front portion between the folded flaps,
(iii) and a generally rectangular closure flap, an outer edge of which is defined by a tranverse cut aforesaid;
(e) applying an adhesive to exposed side flap faces, and to an inner surface of the closure flap adjacent the outer edge thereof;
(f) folding each envelope section transversely on a line joining ends of the folded flaps adjacent the back aforesaid, and placing the back in contact with the glued side flap surfaces.

3,344,720
EXPANSION JOINT FILLER
Edward C. Hallock, 86 Woodland Ave., Summit, N.J. 07901
Filed July 7, 1966, Ser. No. 563,507
5 Claims. (Cl. 94—18)



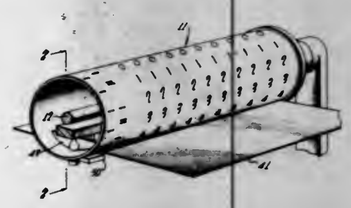
1. A construction joint filler for closing up the surface part of an elongated expansion joint between a pair of spaced-apart structure elements having external surfaces and oppositely disposed substantially parallel wall portions forming the joint comprising first and second frame members extending along and secured to respective structure elements, each of said frame members having a body portion spaced below the external surface of the structure elements, said body portion having a surface generally contiguous to the oppositely facing walls forming the joint, said first frame member having a removable outer wall nearest the external surface of said structure element, and a substantially parallel inner wall defining a longitudinally extending slot between said walls in a plane substantially parallel to the direction of relative movement of the structure elements upon expansion or contraction thereof, said second frame member having a longitudinally extending locking groove formed therein, said locking groove including angularly related portions, an elongated bridge strip having an angularly related flange portion extending along one edge thereof and detachably received in said locking groove and an opposite longitudinal edge slidably received in said slot in said first frame member, and a resiliently compressible filler strip supported on said bridge strip between said frame members and extending outwardly to about said external surfaces of said structure elements.

3,344,721
PNEUMATIC COMPACTION OF ASPHALT COMPOSITIONS
Richard L. Ferm and Robert J. Schmidt, El Cerrito, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,521
7 Claims. (Cl. 94—22)



1. A method for efficiently compacting and rolling bituminous pavement compositions at temperatures in excess of 180° F., which comprises compacting the pavement with a plurality of pneumatic tires while spraying onto the faces of said pneumatic tires at a sufficient rate to prevent adhesion of the bituminous pavement composition to said pneumatic tires an oil-in-water emulsion comprising from 0.5 to 10 weight percent of a hydrocarbonaceous fluid boiling in the range of about 200° F. to 1000° F. and having a viscosity at 210° F. of less than about 100 SSU, from 0.1 to 15 weight percent based on the weight of said hydrocarbonaceous fluid of a hydrophilic emulsifier and water.

3,344,722
DATA RECORDER
Nathaniel Cunningwell, Hollywood, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Mar. 29, 1965, Ser. No. 443,283
3 Claims. (Cl. 95—4.5)

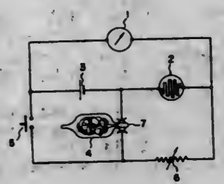


1. In a data recording device having a continuously rotating member,
said member being generally opaque to radiant energy and having a first column of characters spaced thereabout,
said characters being transparent to radiant energy,
means for guiding a photosensitive medium adjacent a first surface of said member,
a first source of radiant energy adjacent an opposite surface of said member and in alignment with said first column,
and a coincidence gate having an output circuit operatively connected to said first source,
said gate having a first set of inputs and a second set of inputs and effective to energize said first source when a combination of input signals on said first set corresponds with a combination of signals on said second set,
the combination comprising a second column of transparent marks spaced around said member in different coded patterns representing respective ones of said characters,
said marks being located in a single line extending along the length of said second column,
a second source of radiant energy adjacent one of said surfaces of said member and in alignment with said second column,
radiant energy sensing devices located in a line extending along the length of said second column adjacent the other of said surfaces,
means responsive to simultaneous sensing of a pattern of said marks by certain of said sensing devices for applying input signals to respective ones of said first set of inputs, and
means for energizing said second source when each of said characters passes adjacent said photosensitive medium.

3,344,723
PHOTOGRAPHIC CAMERA WITH AUTOMATIC MEANS FOR SETTING THE DIAPHRAGM IN MAKING PHOTOFLASH EXPOSURES
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed July 13, 1964, Ser. No. 382,286
Claims priority, application Germany, July 13, 1963, G 38,183
10 Claims. (Cl. 95—10)

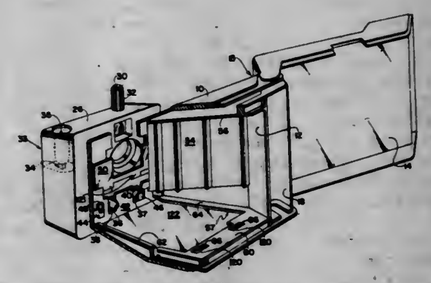
4. A photographic camera comprising: a variable diaphragm; a diaphragm setting member connected to said diaphragm to control the aperture size thereof; an exposure meter comprising a photocell; automatic means connected to said exposure meter to be controlled thereby; a distance control; a guide number setting control; a differential mechanism comprising a rotatable output shaft operably connected to said diaphragm setting member in the flash range of said camera, said differential mechanism being associated with means for connecting said diaphragm setting means alternately to said automatic means for automatically controlling the aperture size of said diaphragm in accordance with light striking said photocell or to said distance control and said guide number setting control for automatically controlling the aperture size of said diaphragm in accordance with the settings of said controls; an indicating device comprising a field and a needle connected to said shaft to indicate the aperture size of said diaphragm as controlled by the settings of said controls; and means comprising a second needle connected to said exposure meter to indicate the aperture size of said diaphragm as controlled by said automatic means.

3,344,724
FLASH CIRCUIT FOR PHOTOGRAPHIC CAMERAS
Tatsuya Taguchi, Tokyo, Japan, assignor to Canon Camera Kabushiki Kaisha, Ohta-ku, Tokyo, Japan, a corporation of Japan
Filed Oct. 5, 1964, Ser. No. 401,625
Claims priority, application Japan, Nov. 14, 1963, 38/85,596
2 Claims. (Cl. 95—10)



1. A flash circuit for a photographic camera comprising an exposure meter circuit having a galvanometer, a photoconductive cell and an electric source for the exposure meter circuit, in which a series circuit comprising a flash bulb socket and a variable resistor cooperating with camera distance are arranged in parallel with said photoconductive cell.

3,344,725
PHOTOGRAPHIC CAMERA WITH BATTERY HOLDER
Patrick L. Finelli, Sudbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 16, 1965, Ser. No. 464,464
5 Claims. (Cl. 95—11)

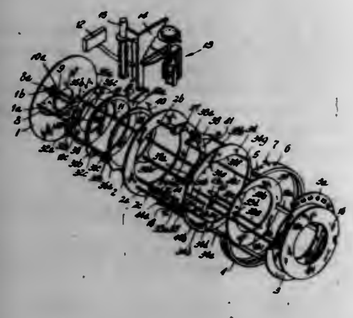


1. A photographic camera including a film-receiving compartment and means defining an exposure aperture, said camera comprising:
(a) housing means, said housing means defining a light-impervious exposure chamber between the film-receiving compartment and the exposure aperture, said chamber having sides, one side including an outer wall and an inner wall defining a battery pocket therebetween, said inner wall having an opening therein;
(b) a battery holder comprising:
a support member for holding a battery, said member closing said opening in said inner wall to form at least a portion of said inner wall when said battery holder is in place within the camera,
means on said support member for retaining a battery on said member,
contact means on said member comprising a flexible contact arm for engaging a terminal of said battery, and

stop means on said support member for limiting movement of said battery caused by the bias imposed by said contact arm; and

(c) terminals for terminating electrical leads to an electrically powered accessory, said terminals being arranged for electrical connection with the battery supported in said pocket on said battery holder.

3,344,726
PHOTOGRAPHIC CAMERA WITH CONTROLLED DIAPHRAGM SETTING
Erwin Weller, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed July 13, 1964, Ser. No. 382,285
Claims priority, application Germany, July 12, 1963, G 38,177
4 Claims. (Cl. 95—64)



1. A photographic camera comprising: a variable aperture diaphragm having maximum and minimum aperture settings; a distance value setting member; a guide number setting member; a differential mechanism having a first input connection to said distance value setting member and a second input connection to said guide number setting member; a diaphragm control connected to said differential mechanism to be actuated thereby and connected to said diaphragm to control the size of aperture thereof; and locking means engageable with said distance value setting member for preventing the latter from being set at a value outside of a range determined by the guide number equation guide number=distance value×diaphragm value and by the minimum and maximum aperture settings of said diaphragm and for returning said distance value setting member to said range after said guide number setting member has been set.

3,344,727
PHOTOGRAPHIC CAMERA WITH DISTANCE AND DIAPHRAGM APERTURE SETTING MEMBERS
Waldemar T. Rentschler, Calmbach (Enz), Germany, assignor to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Aug. 25, 1964, Ser. No. 391,901
Claims priority, application Germany, Aug. 28, 1963, G 38,567
8 Claims. (Cl. 95—64)

1. In a photographic camera having a case and a shutter housing including a distance setting member and a diaphragm setting member, the improvement comprising:

(a) an indicator carried by said distance setting member;

(b) a fixed, progressively graduated, non-linear distance scale cooperatively associated with said indicator;

(c) a linear setting scale associated with said diaphragm setting member;

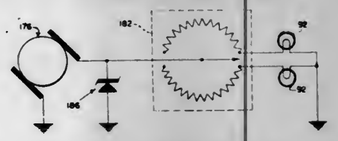
(d) a channel scale associated with said graduated distance scale to correlate the settings of said distance scale to the settings of said linear setting diaphragm scale; and

(e) a resetting indicator operatively associated with said



diaphragm setting member which is set to the same channel of said channel scale as said indicator of the distance setting member for pairing the distance and diaphragm scale values true to the guide number equation when carrying out photoflash exposures.

3,344,728
PHOTOGRAPHIC DOCUMENT COPYING APPARATUS
Allan B. Macquarrie, Needham, Mass., and Arthur J. Sable, Saratoga, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation of application Ser. No. 133,482, Aug. 23, 1961. This application July 1, 1964, Ser. No. 379,681
2 Claims. (Cl. 95—75)



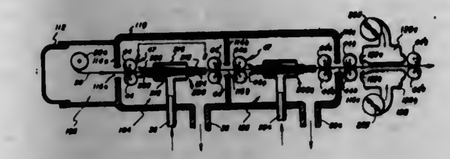
1. In manually operated photographic copying apparatus including an electric lamp providing a source of illumination for exposing a photosensitive sheet and sheet engaging means in driving engagement with said sheet during movement thereof through said apparatus relative to said source of illumination for exposing said photosensitive sheet to light from said source, said manual operation providing the drive means for advancing said photosensitive sheet through said apparatus, comprising in combination:

an electric generator;

transmission means coupled with said sheet engaging means and said generator for operation of the generator thereby during advancement of said photosensitive sheet through said apparatus, said lamp being connected in series with the output of said generator, said generator being capable of developing an electrical potential which is proportional to the speed at which said generator is operated by said drive means; and

a Zener diode connected across said generator output and in parallel with said lamp so as to provide a very high resistance to the flow of current when the potential across said generator is less than a predetermined voltage and offering a very low resistance to the flow of electrical current when the potential across said generator output is greater than said predetermined voltage, whereby said generator is caused to function as a governor offering very little resistance to the advancement of said sheet through said apparatus at a rate less than a predetermined rate and offering a very high resistance to the advancement of said sheet through said apparatus at a rate exceeding said predetermined rate.

3,344,729
PHOTOGRAPHIC SHEET MATERIAL PROCESSING APPARATUS
Samuel Kitrosser, Lexington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,979
23 Claims. (Cl. 95—89)



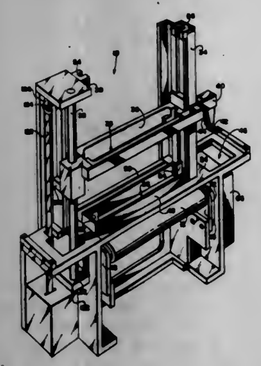
15. In a processor for applying processing fluid to web material transported therethrough:

(a) a fluid applicator having a channel forming wall portion substantially parallel to the surface of said web material for applying fluid to said web material at a flow rate sufficient to fill the channel by said wall portion between said applicator wall portion and said web material,

(b) said fluid applicator having a web inlet portion and a web exit portion, and

(c) means positioned between said wall portion of said applicator and said web material for intercepting and deflecting fluid emerging from said fluid applicator to cause turbulence in said channel between said applicator wall portion and said web material, thereby to increase processing uniformity and speed.

3,344,730
PHOTOGRAPHIC PROCESSING APPARATUS
Philip D. Bartlett, Worcester, Herman E. Erikson, Winchester, and Joseph F. Sadlow, North Reading, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware.
Filed July 12, 1965, Ser. No. 471,091
18 Claims. (Cl. 95—89)



1. Processing apparatus for a self-developing film unit held in a cassette and adapted to be withdrawn from a leading edge thereof, said apparatus comprising, in combination:

(a) a pair of juxtaposed, rotatably mounted pressure rolls;

(b) a movable member;

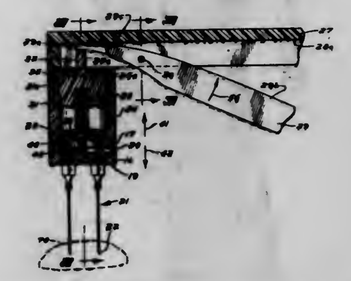
(c) mounting means constraining said member for movement toward and away from said rolls;

(d) positioning means for holding said cassette on said member with said leading edge directed toward said rolls;

(e) mechanically wound motor means; and

(f) means connecting said movable member to said motor means to transmit movement of said member toward said rolls to said motor means to effect winding movement thereof.

3,344,731
SEASONING APPARATUS
Alonzo F. Trees, 1710 Center St. North Cedar, Cedar Falls, Iowa 50613
Filed Feb. 10, 1965, Ser. No. 431,574
7 Claims. (Cl. 99—257)

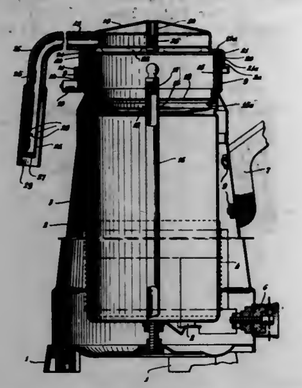


1. Apparatus for seasoning foods such as meat, fish and fowl comprising a cylinder having a cylinder chamber, said cylinder having a tubular wall, a cover at one axial end of said tubular wall and a bottom wall at the opposite axial end of said tubular wall, means forming a manifold chamber attached to said bottom wall, a plurality of hollow needles mounted on said manifold means to open into the manifold chamber, a piston mounted in said cylinder chamber for movement axially between the cover and the bottom wall, means in the cylinder for resiliently urging the piston toward the cover, said cover having an aperture and said piston having a stud extending outwardly through said aperture, a pump lever, handle means joined to said cover and mounting said pump lever for pivotal movement to force said piston from adjacent the cover to adjacent the bottom wall, said manifold means and bottom wall cooperatively forming a valve bore, check valve means mounted in the aforementioned valve bore for permitting fluid flow from the cylinder chamber to the manifold chamber when the piston is moved toward said bottom wall and blocking fluid flow when the piston is moving from the bottom wall toward the cover, and check valve means mounted on the cylinder in fluid communication with the cylinder at a location adjacent the bottom wall to permit fluid flow into the cylinder chamber when the piston moves toward the cover and preclude fluid flow in the opposite direction therethrough.

3,344,732
ELECTRIC COFFEE MAKER
Ludwig von Kleydorff, Wilton, Conn., and Joseph Perucco, Rorschach, Saint Gally, Switzerland, assignors to Zappia-Paradiso, S.A., Lugano, Switzerland, a corporation of Switzerland
Filed Feb. 18, 1965, Ser. No. 435,408
Claims priority, application Switzerland, Apr. 2, 1964, 4,168/64
1 Claim. (Cl. 99—292)

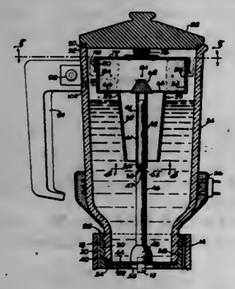
A pressure coffee maker comprising an open top liquid container having means for heating water therein, and having an outwardly extending flange at the top, and a cover which has an outwardly and downwardly extending skirt portion adapted to extend over and around the top

of the container when the cover and container are assembled, and coacting means carried by the container and cover respectively for locking the cover on the container when the cover is placed over the top of the container and rotated relative to the container, the said coacting means serving also to space the skirt of the cover above the said flange of the container, a cup-like member supported within the upper portion of the container and having an outwardly extending peripheral edge portion, and a sealing ring disposed on the container flange in the space between the said flange and the skirt of the cover, the said skirt



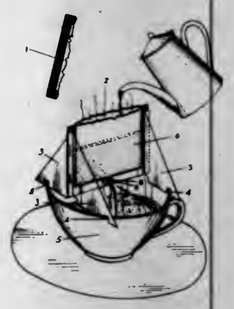
portion of the cover being so dimensioned relative to the top of the container and to the sealing ring that when the cover and container are interlocked the sealing ring is supported on the edge of the cup-like member in an uncompressed condition within a space between the top of the container and the skirt portion of the cover, the sealing ring having on its inner face an incision, the rim portion of the cup-like member being engaged within said incision, said sealing means being responsive to heat and steam within the coffee maker to expand outwardly against the top of the container and against the inside of the skirt portion of the cover.

3,344,733
COFFEE-MAKING MACHINE
Juan Hernandez Herrera, Miami, Fla., assignor to Ultramatic National Coffee Machine Inc., Hialeah, Fla., a corporation of Florida
Filed Mar. 3, 1966, Ser. No. 531,520
12 Claims. (Cl. 99—302)



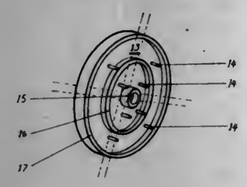
1. A coffee-making machine comprising: a brewing container for water and including a base portion with a shaft rotatable in the container and adapted to be driven by drive means exterior of the container; a centrifugal pump mounted for rotation with the shaft, said pump having an inlet end of a first cross-sectional area and an outlet end of a second and larger cross-sectional area, said ends being below and above the normal water line of the container respectively with the cross-sectional area of the pump between the said ends increasing between the said ends to effect raising of water above the water line on rotation of the pump, a centrifugal strainer connected to and coaxial with the pump in fluid communicating relation with the outlet end of the pump and defining an annular chamber to receive a batch of infusion material, barrier means between the strainer and the outlet end of the pump to support a batch in the strainer while permitting flow of water from the pump into the strainer, said annular chamber being defined by a side wall having a roof portion, said strainer having a plurality of openings so that on rotation of the pump at a relatively constant angular velocity, a batch of coffee grounds in the strainer will be thrust radially outwardly against the side wall beneath the roof portion defining a torus of slush type consistency with the particulate material of the slush steeping in the torus and the brew which passes out of the openings is continuously replaced by liquid from the brewing container, the said lateral openings being arranged in a symmetrical pattern with all of the openings being of a diameter not more than one sixty-fourth of an inch, and means to heat water in the container.

3,344,734
INDIVIDUAL COFFEE EXTRACTOR WITH CONTROLLED EXTRACTING TIME
Francisco Aguirre-Batres, Pedro Solis, Jr., and Rafael Murillo-Solis, all of Guatemala, Guatemala, assignors to Instituto Centroamericano de Investigacion y Tecnologia Industrial, Guatemala, Guatemala, a corporation of Guatemala
Filed Nov. 16, 1964, Ser. No. 411,969
4 Claims. (Cl. 99—304)



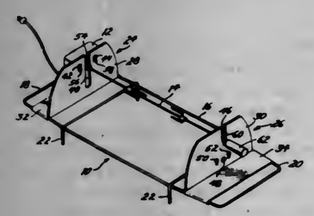
1. A device for the extraction of soluble portions of vegetable matter suitable for the making of aqueous infusions thereof, comprising an outer impermeable container formed of juxtaposed sheets having edges thereof sealed together to define a bottom end, two upwardly extending walls and a top, said bottom end of the outer impermeable container being fitted with a supporting means with means to facilitate the piercing of the container, said outer impermeable container enclosing an inner water permeable bag, generally conforming to the shape of said outer container, said outer container having attached supporting flap members, provided with means to accommodate the rim of a receiving vessel, whereupon the device can be placed, while making a hot infusion of the vegetable matter therein.

3,344,735
COMBINATION GRIDDLE AND HOT PLATE
Miroslav Kochman, 34-43 Crescent St., Long Island City, N.Y. 11106
Filed Sept. 28, 1966, Ser. No. 582,636
8 Claims. (Cl. 99—340)



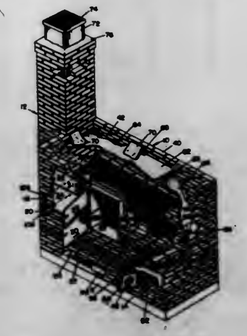
1. A combination griddle and hot plate which comprises a substantially flat plate adapted to be used in operable association with a source of heat, wherein one surface of said plate has extending therefrom a substantially centrally disposed continuous rib wall and a multiplicity of legs, wherein said legs are of a height which is greater than the height of said rib wall.

3,344,736
ROTISSERIE
Geroge W. Myler, Emmaus, and Robert A. Clark, Allentown, Pa., assignors to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Sept. 15, 1965, Ser. No. 487,509
2 Claims. (Cl. 99—421)



1. A rotisserie including:
a base,
a spit,
a first spit supporting member (26), a first means (slot 46) carried by said first member for supporting one end of said spit at a relatively high position above said base,
a motor,
a motor shaft (54) engageable with the other end of said spit,
a second spit support (24),
second means (key slots 42 and 44) carried by the second support member for supporting said motor with its shaft at a correspondingly high position for engagement with the other end of said spit, to support the latter in a horizontal position,
third means (bottom of slot 40) carried by said second support member (28) for supporting said one end of the spit in a relatively low position above said base,
fourth means (opening 48) carried by said first support member (26) for supporting the motor with its shaft at a correspondingly low position above said base for engagement with the other end of said spit when the latter is in its lower position, each of said spit-supporting members comprising a vertical wall and a horizontal member, the length of each of said horizontal members being greater than the width of said base, and the ends of each horizontal member being bent toward each other to form channels for detachably and slidably engaging the opposite ends of said base, respectively.

3,344,737
BARBECUE PIT
James W. Sanders, 812 Meadowbrook Drive, Seymour, Ind. 47274
Filed Oct. 18, 1965, Ser. No. 497,353
13 Claims. (Cl. 99—446)

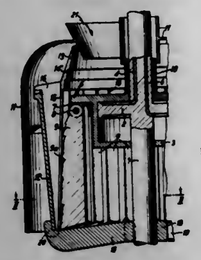


1. A barbecue oven of the class described, comprising an accessible barbecuing area including a plurality of broiling grates therein and external temperature observing means communicating with said grates, draft means, an end chimney selectively communicating by said draft means with one side of the barbecuing area, an end fire box area having a downwardly sloping roof portion for communicating with the other side of said barbecuing area, said selective chimney draft means communicating with said broiling grates, said draft means comprising a plurality of draft dampers between said chimney and said barbecue area, one of said dampers being above the lowermost grate and another below the lowermost grate to selectively pass the hot gases of the fire box over and under the lowermost grate in said barbecuing area, an external frontal fuel charging door including draft means therein communicating with said fire box area, means for externally removing grease drippings from the barbecuing area, said chimney including ash cleanout means.

3,344,738
CENTRIFUGAL PRESS
Kurt Pause, Zedernstr. 13, Grevenbroich, Germany
Filed Jan. 22, 1965, Ser. No. 427,324
Claims priority, application Germany, Jan. 22, 1964, P 33,424
11 Claims. (Cl. 100—116)

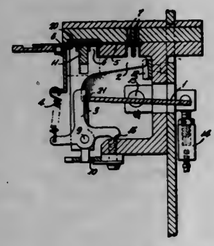
1. A centrifuge comprising, in combation, a rotary filter drum having an axis of rotation and being composed of a plurality of circumferentially adjacent filter elements having lateral edge portions separated from each other by gaps extending substantially in axial direction, said lateral edge portions projecting outwardly so that each filter element has a curved cross section in a plane perpendicular to said axis, said filter elements being adapted to permit passage of a liquid to the outside under the action of the centrifugal force and to retain a residue on the inner surface thereof; and rotary presser means mounted within said filter drum for movement toward said inner surface under the action of the centrifugal force, and including a plurality of presser members pivotally mounted within said filter drum staggered in cir-

cumferential direction to said filter elements, each presser member having an outer surface located opposite portions of two adjacent filter elements and having a contour matching the same so that the residue is subjected to



mechanical pressure between said pressure members and the inner surfaces of said filter elements whereby liquid is pressed out of the residue and passes through said filter drum under the action of the centrifugal force.

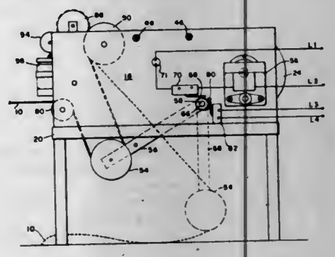
3,344,739
PUNCHED TICKET PRINTER
Jacob H. Drillick, Hackensack, N.J., assignor to Ohr-Tronics, Inc.
Filed Nov. 29, 1965, Ser. No. 510,303
3 Claims. (Cl. 101—69)



1. A mechanism for printing selected characters corresponding to coded punched holes on paper tape comprising a separate print bar for each character, said print bars being in parallel alignment and spaced apart a distance equal to the spacing of the characters to be printed on said tape, each print bar having a character type and spaced fingers extending beyond and in a code corresponding to said character type for passing through the coded punched holes corresponding to that character, means for positioning and holding the paper tape in the path of the coded fingers and character types, means for simultaneously urging all print bars against the paper tape, whereby only the character types of those print bars which have print bar fingers passing through correspondingly coded holes in the tape will imprint their characters on the tape.

3,344,740
TAPE FEEDING MACHINE WITH TENSION CONTROLLED SUPPLY SPOOL
Frank E. Hilton, Milwaukie, Oreg., assignor to Package Containers, Inc., Portland, Oreg., a corporation of Oregon
Filed Dec. 16, 1965, Ser. No. 514,279
2 Claims. (Cl. 101—228)

1. Apparatus for feeding wire reinforced paper tape, comprising:
a supporting plate;
a supply spool for carrying a supply of said tape rotatably mounted on said supporting plate;
a motor connected in driving relationship with said spool;
a first guide means mounted forwardly of said spool and on which said tape is supported;
a second guide means mounted forwardly of said first guide means and under which said tape passes;
a first pulley fixedly mounted forwardly of said second guide means and over which said tape is trained;
a tensioning arm pivotally mounted at one end thereof below said first and second guide means;
a second pulley rotatably mounted on the other end of said tensioning arm and under which said tape from said first pulley supportingly passes;
a third pulley fixedly mounted forwardly of said tensioning arm and over which said tape passes on its way to a tape consuming apparatus;
a first circuit including a normally-open switch adapted on closure to energize said motor and unwind tape from said supply spool, said normally open switch having an operating member;



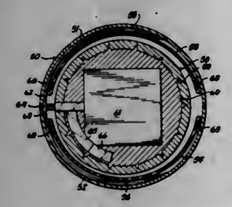
a second circuit including a normally-closed switch adapted on opening to de-energize said tape consuming apparatus, said normally-closed switch having an operating member;
a first cam on said tensioning arm to engage said operating member on said normally-open switch and close the same when the tension on said tape causes said other end of said tensioning arm to be raised to a first level, said first cam disengaging said operating member on said normally-open switch when the tension on said tape permits said tensioning arm to be lowered to a second level, said first and second levels being selected to hold said tape substantially under a predetermined amount of tension;
a second cam on said tensioning arm to engage said operating member on said normally-closed switch and open the same when said tape breaks and permits said tensioning arm to drop to a vertical position; and
rotatable printing means adapted to engage said tape as it passes over said first pulley and print a message thereon.

3,344,741
RECEIVING SHEET FOR USE AS A MASTER OR COPY IN THE DTR PROCESS
Ruth E. Ormsbee, River Forest, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Sept. 20, 1965, Ser. No. 488,479
4 Claims. (Cl. 101—462)

1. A receiving sheet for imaging by a diffusion transfer reversal process comprising a paper base sheet and a coating on the surface of the paper base sheet consisting essentially of the combination of colloidal silica, a nucleating agent for reduction of a soluble silver halide complex to an oleophilic ink receptive imaging material and present in an amount within the range of 0.1 to 0.5 part by weight per 9 parts by weight of colloidal silica

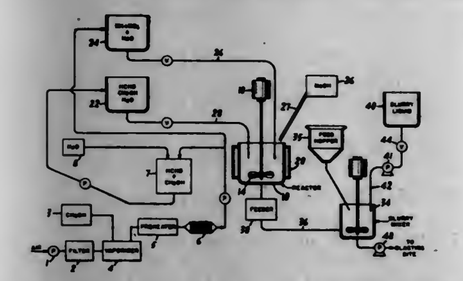
and in which the nucleating agent comprises the combination of sodium sulfide and silver nitrate present in the ratio of 1 part by weight of sodium sulfide to 1 to 1.5 parts by weight of silver nitrate, and a resinous binder selected from the group consisting of a vinylidene chloride polymer and an acrylate polymer and in which the coating is a water insoluble coating which is water receptive, ink repellent, hydrophilic and lithographic.

3,344,742
EXPLOSIVE PROJECTOR
Clayton J. Schneider, Jr., Amherst, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed May 10, 1965, Ser. No. 454,470
1 Claim. (Cl. 102—7.2)



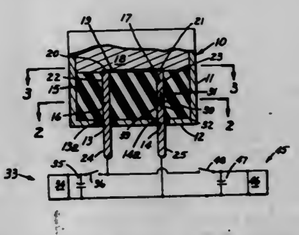
A munition device, comprising a case including two separable generally semi-spherical shells arranged with their rims opposing each other, a flexible diaphragm for each of said shells and having a marginal portion sealingly secured to the same adjacent its rim leaving a movable central portion unsecured to the corresponding one of said shells, a generally spherical projectile arranged within said case between said diaphragms, a propellant charge arranged between each of said diaphragms and the corresponding one of said shells, a burster arranged within said projectile, means for igniting said charges, and time delay igniting means operatively interposed between said charge igniting means and said burster, said central portion of each of said diaphragms being movable upon ignition of the corresponding one of said charges to a position exterior of the corresponding one of said shells while said marginal portion of the same one of said diaphragms remains secured to such corresponding one of said shells.

3,344,743
METHOD OF BLASTING USING EXPLOSIVE SLURRIES MADE AT THE BLASTING SITE
George L. Griffith, Coopersburg, Pa., assignor to Trojan Powder Company, Allentown, Pa., a corporation of New York
Filed Aug. 16, 1966, Ser. No. 572,793
8 Claims. (Cl. 102—23)



1. A method of blasting using polyalkylene polyamine sensitized explosives made in situ proximate to the blasting site from nonexplosive starting materials, which comprises mixing and reacting formaldehyde and an ammonium containing compound forming a polyalkylene polyamine in an inert reaction medium which desensitizes the polyalkylene polyamine explosive sensitizer formed as a reactant product, thereby forming a reaction mixture comprising the explosive polyalkylene polyamine sensitizer, incorporating in the mixture additional formulating components, if necessary, to form an explosive composition comprising the explosive sensitizer, an oxidizer, and a fuel in amounts to oxygen-balance the mixture and ensure detonation, delivering the composition to the blasting site, and detonating the composition.

3,344,744
SAFETIED ORDNANCE DEVICE
Weldon S. Bankston, Jr., Fountain Valley, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Continuation of application Ser. No. 439,170, Mar. 12, 1965. This application Dec. 14, 1966, Ser. No. 621,084
10 Claims. (Cl. 102—28)

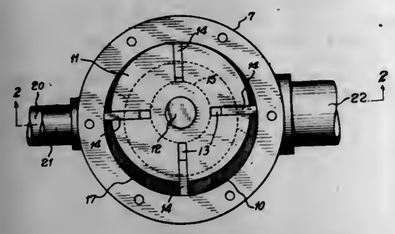


1. An automatically safetied ordnance device comprising: an explosive charge; an explodable bridgewire adapted to explode the charge and having a pair of terminals; a pair of electrodes, one of which is conductively connected to each of said terminals; and a body of conductive plastic material in series connection with one of said electrodes, whereby a series electrical circuit can be completed through the body, an electrode, the bridgewire, and the other electrode, the material comprising the body having a first and a second stable state of electrical resistance constituting a relatively higher and a relatively lower resistance, conversion to said first stable state when the body is initially in said second stable state being caused by passage therethrough of a current of sufficient magnitude to accomplish the change, and conversion to said second stable state when the body is initially in said first stable state being caused by applying a voltage across the terminals of the body of sufficient magnitude to accomplish the change, said states being attainable from the other without degradation of the ability to return to the former state, the magnitude of current passed to the bridgewire in the course of either conversion being insufficient to explode the bridgewire.

3,344,745
MULTIPLE FLOW ROTARY MACHINE
Frank Scognamillo, 118 Walnut St., Ridgewood, N.J. 07450
Filed Nov. 16, 1965, Ser. No. 508,094
4 Claims. (Cl. 103—4)

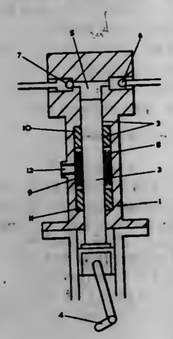
1. A rotary machine comprising in combination,
a casing having a cylindrical chamber defined by a cylindrical peripheral wall and connected parallel end walls,
a shaft journaled eccentrically in said cylindrical chamber,
a cylindrical rotor on said shaft in tangential relation to the surrounding peripheral wall,

said end walls and rotor having flat single plane ends in free rotational relation,
said rotor having a deep parallel sided concentric annular groove in the mid-portion of the same,
a flat sided circular partitioning ring concentric with and in rotary sliding relation with said surrounding cylindrical wall and said ring being in free sliding and rotational confinement in said groove in the rotor,
said partitioning ring seating flush in the rotor at the point of tangency and projecting from within the rotor into cooperative relation with the surrounding cylindrical wall at the point of greatest separation of the rotor from the surrounding cylindrical wall,



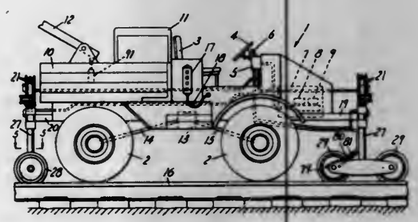
said free floating ring thereby forming a partition separating compartments in the cylindrical chamber at opposite sides of the same, and
inlet and outlet passages to the respective compartments so formed,
said rotor having longitudinally extending radial slots intersected by said annular groove,
blades slidingly engaged in said slots extending across the annular groove and having notches in the outer edge portions of the same in line with said annular groove,
said ring being slidingly and rotatably engaged in said notches in the blades.

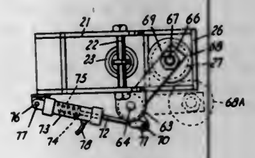
3,344,746
PISTON OPERATED PUMPS FOR LIQUID CARBON DIOXIDE
Peter Eric Scovell, South Croydon, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company
Continuation of application Ser. No. 388,205, Aug. 7, 1964. This application Dec. 22, 1966, Ser. No. 604,068
Claims priority, application Great Britain, Aug. 21, 1963, 33,004/63
7 Claims. (Cl. 103—153)



1. A piston pump apparatus adapted to pump liquid carbon dioxide, comprising a cylinder member having a pumping chamber therein, a piston member reciprocally slidable within the cylinder member to pump fluid from the pumping chamber, the members having sizes such that liquid carbon dioxide leaks from the chamber between the members, at least one of said members having a cavity therein opening laterally against the other member, a source of gas under a pressure greater than the triple point pressure of the carbon dioxide being pumped, and conduit means coupling said source of gas and said cavity for applying the gas under said greater pressure to the space between the piston member and the cylinder member wall, whereby when said gas is supplied to the cavity and applied to the liquid carbon dioxide which leaks from the pumping chamber between the piston member and the cylinder member wall, it will prevent liquid carbon dioxide from solidifying between the piston member and cylinder member wall.

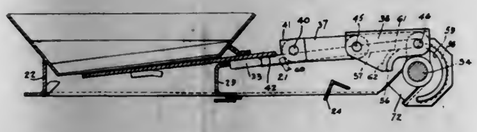
3,344,747
ADJUSTABLE MOUNTING AND SUPPORT FOR THE FLANGED WHEELS OF A CONVERTIBLE RAIL-HIGHWAY VEHICLE
Ralph E. Keller, Kalamazoo, Mich., assignor to Kalamazoo Manufacturing Company, Kalamazoo, Mich.
Filed Sept. 20, 1965, Ser. No. 488,689
11 Claims. (Cl. 105—215)





1. In a roadway to rail conversion assembly for motor vehicles having rubber roadway wheels, a frame element at four rectangularly spaced points on the vehicle defining upright slideways, rail wheel support posts reciprocable in said slideways and laterally rigidly supported thereby, fluid pressure operated cylinders with extensible piston rods carried by said frame elements parallel to said posts, and a rail wheel mounting on the lower end of each of said posts,
means for horizontally angularly adjusting said wheel mounting through 90° of rotation, means for rigidly fixing the angularly adjusted position of said wheel mounting,
a releasable connection between the extensible part of said cylinder and piston rod and said wheel mounting,
said releasable connection being engageable in angularly adjusted positions of said wheel mounting,
a support post abutment movably mounted on said frame element and movable thereon between clearing relation and vertically blocking load supporting relation to said post,
and remotely operable means connected to swing said abutment out of post engaging position.

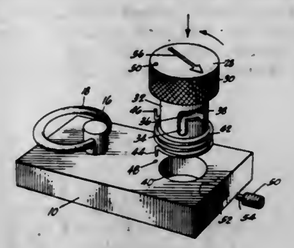
3,344,748
HOPPER CAR DISCHARGE OUTLET ASSEMBLY
George B. Dorey, Westmount, Quebec, Canada, assignor to Continental Transport Appliances Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Mar. 9, 1964, Ser. No. 350,277
6 Claims. (Cl. 105—282)



1. In combination,
(a) an outlet assembly for a hopper having an opening for discharge of lading,
(b) a gate for closing the opening movable to an open position beyond said opening,
(c) trackways carried by the assembly at each side thereof supporting the gate when in open position the ends of said trackways remote from the opening comprising downwardly curved ends,
(d) means for moving the gate including:
(1) a shaft rotatably carried by the assembly,
(2) radially extending arm means non-rotatably carried by the shaft,
(3) terminal linkage means pivotally connected at one end with the gate and
(4) intermediate linkage means pivotally connected at one end to the other end of the terminal linkage means and at its other end pivotally connected to the distal end of the radial arm means,
(5) said linkages being foldable over the shaft for movement of the gate in an opening direction upon turning the shaft in a first direction and unfoldable for movement of the gate in a closing direction upon turning the shaft in a second direction,
(6) said arms and linkages upon closing movement of the gate being arranged to assume a straightened overcenter toggle locked relation, and
(7) shoulders extending laterally from the intermediate linkage means and underlying trackways to engage therewith for biasing the pivotally connected linkages towards a straightened toggle locked position.

3,344,749
CARGO FITTING ASSEMBLY
Paul D. Bass, Los Alamitos, and Robert A. Warren, Long Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Oct. 8, 1964, Ser. No. 402,524
5 Claims. (Cl. 105—369)

1. A cargo fitting for use with a track secured to a supporting structure, said cargo fitting comprising:
a base having means secured thereto adapted to engage said track,
a plunger assembly mounted on said base, said plunger assembly comprising a body portion mounted within said base, and adapted to be engageable with the track to fix the position of said cargo fitting thereon,
follower means on said base engageable with cam means on the plunger body establishing a cam and follower arrangement therebetween, said cam means allowing both longitudinal and rotational movement of the plunger body relative to the base, said cam having a first position and a second position, when the follower means is located in the said first position the plunger body is disengaged from the track, when the follower means is located in said second position the plunger body is engaged with the track and
a spring means mounted between said plunger body and said base, said spring means being pre-stressed to exert a longitudinal and a rotational force upon said



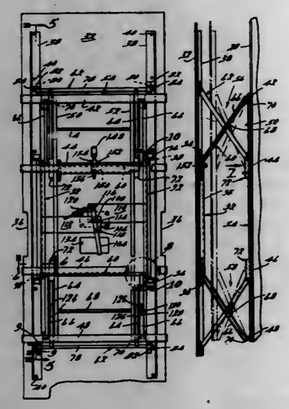
plunger body, said longitudinal force tending to move the plunger body into non-engagement with the track when said follower means is located in said first position of the cam means, when said plunger body is moved into engagement with the track said longitudinal force acts to lock the follower means in said second position of the cam means, said rotational force tending to move the plunger body toward the second position of the cam means.

3,344,750
FREIGHT BRACING APPARATUS
John J. Kostrewa, Detroit, Mich., assignor to Evans Products Company, a corporation of Delaware
Continuation of application Ser. No. 344,124, Feb. 11, 1964. This application Jan. 6, 1967, Ser. No. 622,376
18 Claims. (Cl. 105—369)

1. Freight bracing apparatus adapted to be connected to an associated wall structure and adjustable for supporting freight in a plurality of selected positions relative to said wall structure and against movement toward said wall structure, said apparatus comprising a panel adapted to engage a freight and frame means connecting said panel to said wall structure for movement substantially at right angles to the plane of said wall structure between a stowed position closely adjacent said wall structure and a plurality of desired operative positions spaced differing distances from said stowed position while at all times maintaining said panel in substantially parallel relation to said wall structure, said frame means comprising a first pair of spaced parallel legs, a second pair of spaced parallel legs and means intermediate the ends of the legs of each pair of legs pivotally interconnecting the respective legs of said pairs, means at one end of said first pair of legs connecting corresponding ends thereof to said wall structure for pivotal movement about an axis fixed relative to said wall structure, means at one end of said second pair of legs connecting corresponding ends thereof to said panel for pivotal movement about an axis fixed relative to said panel, latch pin means on said first pair of legs at the other end thereof, latch strip means mounted on said panel and having a plurality of latch openings selectively receiving said latch pin means, means for effecting relative movement between said latch pin means and said latch strip means to withdraw said pin means from said openings, said latch strip means co-operating with said panel when said pin means is withdrawn from said openings to guide said pin means for sliding movement along said panel while preventing movement at right angles thereto, co-operating means connecting the other end of said second pair

of legs to said wall structure for sliding movement therealong while preventing movement of that end at right angles to the wall structure.

17. Freight bracing apparatus adapted to be connected to an associated wall structure and adjustable for supporting freight in a plurality of selected positions relative to said wall structure and against movement toward said wall structure, said apparatus comprising a panel adapted to engage freight and means connecting said panel to said wall structure for movement substantially at right angles to the plane of said wall structure between a stowed position closely adjacent said wall structure and a plurality of desired operative positions spaced differing distances from said stowed position while at all times maintaining said panel in substantially parallel relation to said wall structure, said means including an element movable parallel to and closely adjacent the face of said panel adjacent the wall structure during movement of said panel relative to said wall structure between said operative positions, said panel having an opening therethrough permitting observation of said element from the opposite side of said panel and indicia on said panel at the positions occupied by said element when said panel is in its operative positions and indicating for each position the spacing of the panel from the wall structure.



3,344,751

DEVICE FOR MAKING CONFECTIONS

William Roger Cammack and Vernon C. Olson, St. Paul, Minn., assignors to Marigold Foods, Inc., Minneapolis, Minn., a corporation of Minnesota

Continuation of application Ser. No. 339,151, Jan. 21, 1964. This application Nov. 4, 1966, Ser. No. 592,230
7 Claims. (Cl. 107—1)

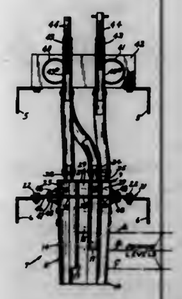
1. An extruding die head for making confections and having an inlet and an outlet, said die head further comprising:

(a) a peripheral wall formed to a configuration to define the outline of the confections and terminating in a lower edge portion to provide said outlet,

(b) inner partition wall means separating said head into at least a pair of generally tubular extruding sections,

(c) at least a portion of said partition wall means terminating in inwardly spaced relation to the outlet of said head, and the corresponding extruding section defined at least partly by said partition portion merging at said termination of said partition portion with another extruding section to combine the outputs thereof, and

(d) means for compressing the merged portions of said combined confection streams together by increasing the pressure upon the combined confection streams generally at the level of combination of said confection streams and also for a distance downstream from said level of combination sufficient to securely weld said merging confection streams together, said compression means including sections of said peripheral wall and said inner partition wall means, one of said sections converging generally slightly inwardly with respect to the other from the level of said extruding section merger to the outlet of said head so as to cause said welding together of said merging streams.

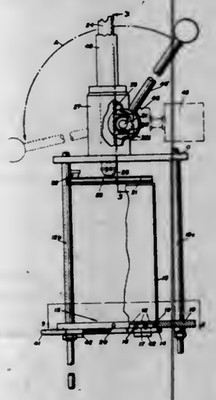


3,344,752

POTATO DOUGH EXTRUDER

Laurence James Ilines, 26 Dale Ave., Scarborough, Ontario, Canada

Filed Dec. 15, 1965, Ser. No. 517,505
8 Claims. (Cl. 107—14)



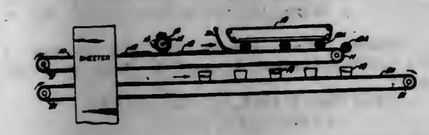
1. Apparatus for forming potato chips by extrusion of potato dough and comprising: a cylindrical container for said dough; an extrusion die secured to one end of said container, said die defining a plurality of extrusion holes therethrough; lead-in means about each said extrusion hole, having an included angle of magnitude decreasing toward the peripheral edge of said die; a pressure plate member operable within said container; and manual pressure means operable to apply pressure to said pressure plate, whereby the dough is extruded through said die to provide potato chips, said lead-ins providing chips of uniform length.

3,344,753

METHOD FOR APPLYING COLOR TO BREAD DOUGH

James E. Ramsey, 111 Aiken Road, New Castle, Pa. 16101

Filed May 1, 1964, Ser. No. 364,170
2 Claims. (Cl. 107—54)



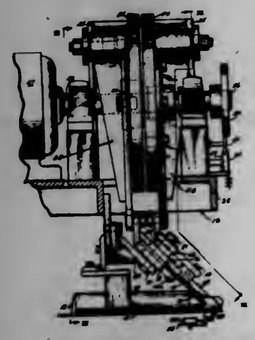
2. The method of imparting various colored sections to a loaf of bread which comprises sheeting the dough from which the loaf is to be formed, forming portions of the sheeted dough, applying areas of color to the portions of dough, rolling the portion of dough so that the colored areas are separated from one another by intervening layers of the portion of dough, permitting the rolled dough to raise and baking the same to form a loaf of bread.

3,344,754

APPARATUS FOR MANUFACTURING PASTRY

Mariano V. Artiaga, Chicago, Hans Van Eikeren, Lincolnwood, and Andrew Wolf, Deerfield, Ill., assignors to Kitchens of Sara Lee, Inc., Deerfield, Ill., a corporation of Maryland

Filed May 19, 1965, Ser. No. 457,144
16 Claims. (Cl. 107—69)



1. Apparatus for shaping a generally continuous ribbon of pastry dough comprising a conveyor belt having means associated therewith for positioning the ribbon longitudinally thereof for movement thereby along the longitudinal axis of the ribbon, means operable transversely of the ribbon and acting to cut the ribbon from the top to a point adjacent to but spaced from the bottom thereof, flipper means immediately downstream of said cutting means and transversely movable relative to the ribbon and alternately contacting opposite sides thereof to flip successive sliced leaves of dough in opposite directions about the unsevered portion of the ribbon, and means severing the flipped ribbon into lengths each having a plurality of flipped leaves.

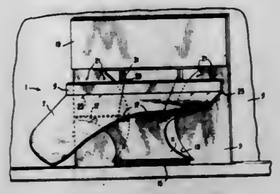
3,344,755

FOLDING TABLE

Russell D. Gover, 97 Wise Ave., Baltimore, Md. 21222

Filed Aug. 19, 1966, Ser. No. 573,674
5 Claims. (Cl. 108—40)

1. In a folding table adapted to extend outwardly from a wall and comprising a table top, a vertically swinging support pivotally secured adjacent to its lower end to a fixed structure, and means mounting the table top on the support adjacent the upper end of the support for vertical swinging movement relative to the support; the improvement comprising an upright strip carried by and extending lengthwise of and upwardly from the inner edge of the table top, and a fixed vertical panel having a horizontal lower edge so positioned that when the upper edge of said strip is disposed under and against the lower edge of said panel the table top is horizontal.

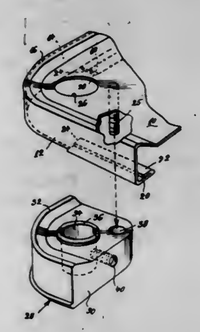


3,344,756

STAINLESS STEEL SHEET METAL STORAGE SHELVING

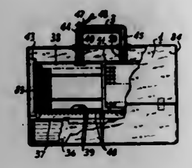
Lester Kelson, Closter, N.J., assignor to S. Blickman, Inc., Weehawken, N.J., a corporation of New York

Filed June 17, 1965, Ser. No. 464,610
1 Claim. (Cl. 108—106)



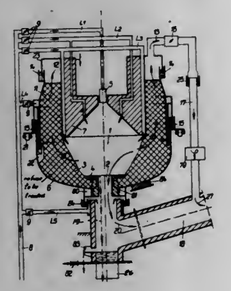
Shelving comprising a plurality of spaced shelves supported on upright legs, each shelf comprising a rectangular panel having openings spaced from the corners thereof, through which said legs extend, flanges depending from the peripheral edges of the panels and extending about the entire periphery of each shelf, inwardly extending flanges along the bottom peripheral edges of the depending flanges, turned-over hems on the inner peripheral edges of said inwardly extending flanges, said inwardly extending flanges having cutouts at the corners of the panel, leg supporting solid brackets in said cutouts, said brackets containing leg receiving openings perpendicularly to the plane of the panel, in line with the corner openings of the panel, beads around the openings in the brackets extending above the top surface of the bracket through the corner openings in the panel, set screw means for removably securing the brackets to the legs, screws depending from the panels adjacent the corner openings thereof, said brackets having holes therethrough adjacent and parallel to the openings through which the screws depend from the panels, and lock nuts on the protruding ends of the depending screws.

3,344,757
ARRANGEMENT FOR THE SAFE CONVEYANCE OF BILLS AND NOTES
Roger Touyet, Arzacq, France
Filed June 3, 1965, Ser. No. 461,101
Claims priority, application France, June 6, 1964, 977,382; Jan. 13, 1965, 1,796 (addition); May 14, 1965, 17,027 (addition)
4 Claims. (Cl. 109—25)



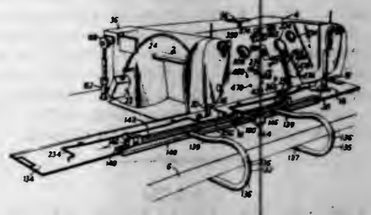
1. In a casing for the conveyance of bills, notes and the like valuables, the provision of a safety arrangement protecting said valuables through their indelible marking at the moment of a theft, said arrangement comprising a handle for the casing, at least one partly perforated rack housed inside the casing and adapted to carry the valuables, at least one container provided with a yielding wall also housed inside the casing and carrying an indelible marking fluid, the number of said racks being at the utmost equal to that of the containers, an energy-storing system, a control mechanism adapted to release the energy stored in said energy-storing system, and means whereby said released energy produces a relative movement of the racks with reference to the containers to thereby make the racks deform the yielding walls of the containers and subject the marking fluid in the latter to pressure and make it enter the racks through the perforations in the latter.

3,344,758
APPARATUS FOR THE THERMAL DECOMPOSITION OF WASTE PRODUCTS
Johannes Wotschke, Guntherstrasse 26, Hannover-Waldhausen, Germany
Filed Dec. 5, 1963, Ser. No. 328,325
13 Claims. (Cl. 110—18)



5. Apparatus for the thermal decomposition of waste material comprising means defining a substantially cylindrical furnace including a casing, and a body in said casing having an arched surface constituting an upwardly arched roof for said furnace, said body being disposed in said casing in spaced relation therewith to define an upper peripheral annular passageway for feeding the waste material to said furnace to cause the material to form freely in said furnace an interior conical space opening upwardly, said furnace having a central lower outlet, the apparatus further comprising a heat source substantially centrally located in said arched roof, and means supporting said body for vertical displacement.

3,344,759
WORKHOLDERS FOR USE IN APPARATUS FOR GUIDING A WORKHOLDER RELATIVE TO A TOOL
George William Palmer, London, England, assignor to Light's London Limited, London, England, a British company
Filed Mar. 1, 1965, Ser. No. 435,848
4 Claims. (Cl. 112—2)



1. A workholder by which a seam can be stitched along a desired line through plies of fabric by means of a sewing machine in which the workholder is guided for motion in a plane below and normal to a sewing needle of the machine, and which machine has means for urging the workholder in opposite directions along each of a pair of coordinate axes in said plane, and a pair of switches mounted at fixed locations, a switch for each of the axes, each switch providing for control of the direction in which the workholder is urged for motion along its axis, said workholder comprising:

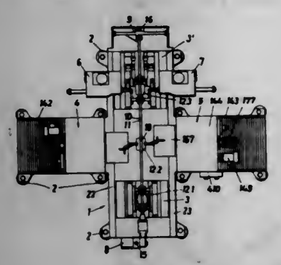
(A) upper and lower plates of substantially rigid material between which plies of fabric are adapted to be flatwise confined, each of said plates having a slot defining a path along which said desired line of stitching is to be made;

(B) cooperating means on the plates for holding them in superimposed relation with their slots in register; and

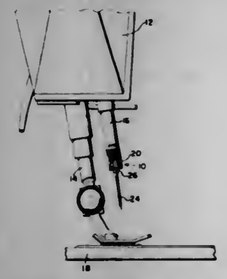
(C) upstanding switch operating means fixed on the upper plate, located intermediate the ends of the slot therein and to one side of said slot and in such relation thereto that the appropriate switch is actuated by said means whenever change of direction of motion of the workholder along one of said axes is required to enable the sewing needle of the machine to follow the slot.

3,344,760
MECHANISM FOR WINDING COIL HEADS OF STATORS
Willi Muskulus and Josef Muller, both of Bergen-Enkheim, Germany, assignors to Balazer & Droll Schnitt- u. Werkzeugbau, Bergen-Enkheim, Germany
Filed May 18, 1965, Ser. No. 456,648
Claims priority, application Germany, May 30, 1964, B 77,000
58 Claims. (Cl. 112—2)

1. Apparatus for lacing the coil heads of windings positioned in the stator of an electrical machine, comprising means for lacing a thread in successive loops around the coil heads, means for knotting the ends of the laced thread, a pair of parallel guide rails, said lacing means and said knotting means being located closely adjacent said guide rails at spaced positons therealong to operate on a stator guided thereby, said guide rails extending at both ends beyond said lacing and knotting means, means to introduce a stator between the guide rails and to move it into a first position in operative relation to the lacing means, and means to move a laced stator from such position to a second position in operative relation to the knotting means.



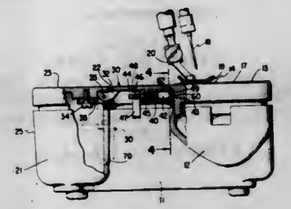
3,344,761
SCREWLESS NEEDLE-CLAMPS
Roger J. Ross, Dover, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 10, 1964, Ser. No. 395,380
12 Claims. (Cl. 112—226)



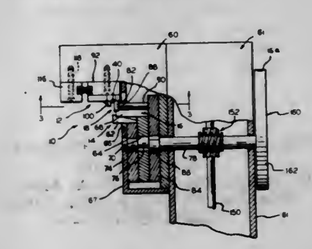
1. A needle-clamping device for a sewing machine including a cylindrical needle-bar formed with a needle-shank receiving slot, comprising a cylindrically shaped sleeve having an inner and outer surface and adapted for mounting on the needle-bar, said inner surface defining a needle-bar accepting bore disposed eccentrically to the longitudinal axis of said cylindrically shaped sleeve, said needle-bar being slidably received within the bore, and means acting between said sleeve and needle-bar for biasing the cylindrically shaped sleeve continuously to urge said sleeve to turn on the needle-bar in a direction toward needle clamping relationship with said needle-bar, and a needle-shank engaging pin secured to the cylindrically shaped sleeve and extending through a portion of the needle-bar accepting bore, whereby said pin is utilized to clamp the needle-shank within the needle-shank receiving slot as said sleeve is urged to turn in the needle clamping direction by said bias means shank.

3,344,762
WORK SUPPORTING BED FOR SEWING MACHINES
Jan Szostak, Linden, Manfred R. Laidig, Whippany, and Norman E. Zacher, Livingston, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 10, 1965, Ser. No. 462,798
8 Claims. (Cl. 112—260)

2. In a sewing machine having a casing including an elongated cylinder bed freely projecting from said casing and having a work-supporting top surface, and an elongated supporting leg projecting from said casing in spaced relation to said cylinder bed and having a top surface substantially co-planar with the work supporting top surface of said cylinder bed, a work supporting platform, means pivotally securing said platform on said supporting leg for turning movement from a work supporting position substantially flush with the top surface of said cylinder bed to a retracted position spaced from said cylinder bed and substantially perpendicular to the top surface of said cylinder bed, and interengaging latch means on said platform and on said sewing machine casing for sustaining said platform in said work supporting position.



3,344,763
CAN OPENING DEVICE
Claude A. Young, 126 N. Kensington St., La Grange, Ill. 60525
Filed Sept. 11, 1964, Ser. No. 395,811
6 Claims. (Cl. 113—1)



1. In a can opener of the type adapted to open cans by unfolding the can ridge that is formed at the end of the can by folding the can closure and body end rims folded over against the side of the can, and wherein the can opener comprises means for supporting the can in an upright can opening position, an anvil member defining an internal shoulder positioned and proportioned to engage the outwardly projecting edge of the can ridge in said position of said can, a wedge member and a hammer member reciprocably mounted below said shoulder for up and down movement and shaped to unfold said rims as the can is rotated in said position, means for rotating said can, and means for driving said wedge and hammer members and said can rotating means, the improvement wherein said can opener includes:

automatic shut off means for controlling said driving means,

said shut off means including an actuating member positioned to be engaged by said unfolded portion of said ridge when the ridge unfolding operation is substantially completed,

said shut off means including manually actuatable actuator means for controlling said shut off means,

a disc member coupled to said wedge and hammer members and mounted for rotation about a substantially horizontal axis,

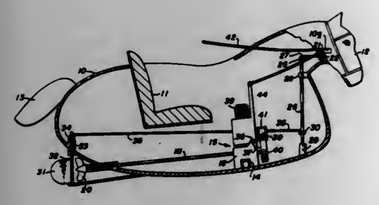
said disc member defining an upstanding projection along one edge thereof,
with said disc member being oriented with respect to the sequence of movement of said wedge and hammer members such that when said projection is in an upstanding position said wedge and hammer members are retracted from said anvil member.

3,344,764
FLOATING BODY
Attila Ziermann, Rigistrasse, Buochs, Switzerland
Filed May 3, 1965, Ser. No. 452,579
Claims priority, application Switzerland, May 15, 1964, 6,412/64
9 Claims. (Cl. 114—121)



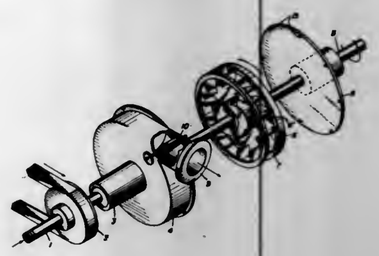
1. A floating body comprising a number of floating chambers open at their lower end and closed at their upper end, said chambers being rigidly interconnected side by side, at least three chambers being disposed in symmetrical distribution relatively to a vertical plane through the center point of the body, and a flow connection of high flow resistance from a place vertically spaced from said upper end and from the rim of said opening of each chamber to the outside of the chamber, an air cushion being formed in each chamber substantially between said place and said upper end when the floating body is positioned for use in water.

3,344,765
WATER AMUSEMENT DEVICE SIMULATING AN ANIMAL
Chester D. Tucker, Rte. 1, Box 18–A, Aledo, Tex. 76008
Filed Jan. 10, 1966, Ser. No. 519,789
1 Claim. (Cl. 115—34)



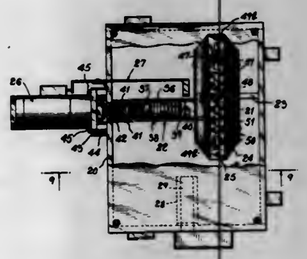
A water amusement device comprising a buoyant body in the form of an animal including a head at one end, a rudder mounted on said body at the other end, a steering mechanism connected with said rudder and including a turning bar extending from both sides of said body adjacent said head, a prime mover rearwardly of said turning bar and pivotally mounted at its forward end in said body, said prime mover including a forwardly directed drive pulley, propelling means including a driven pulley beneath said drive pulley, a pulley belt around both said pulleys and of a length to support the unbalanced weight of said prime mover, and reins slidably extending through holes in the extending ends of said turning bar and connected with the upper portion of said prime mover.

3,344,766
ROTATING LIQUID WHISTLE
Eric C. Cottell, Crystal Springs, St. James, Barbados, West Indies
Filed Oct. 18, 1965, Ser. No. 497,427
3 Claims. (Cl. 116—137)



1. A liquid whistle of the jet-blade type comprising in combination:
(a) a disc shaped element having a central axial opening, at least one opening in its periphery shaped to form a jet orifice when liquid is forced therethrough and oriented so that the opening can produce a jet at right angles to the axis of the disc, the element having internal conduits from the axial opening to each opening forming a jet orifice,
(b) means for connecting the axial opening of the element to a source of liquid medium under pressure, and
(c) a second element rotatable about the axis of the disc shaped element and adjacent thereto, said second element having a plurality of blades forming a rigidly connected whole therewith, the edges of the blades being radially aligned with the opening of the first element and positioned so that on rotation the edges of said blades move through jets produced from the openings of the first element in a direction counter to the jets from the openings in the first element whereby the velocity of jet blade collision is increased over jet velocity, and
(d) means for rotating said second element in a direction to move the blade edges counter to the motion of jets produced from the orifices of the first element.

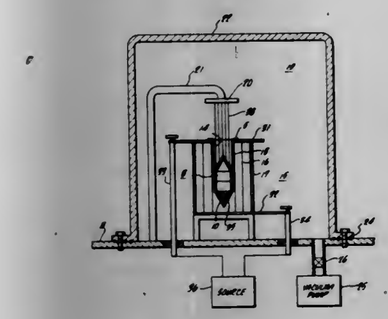
3,344,767
PASTE APPLICATOR
Lawrence J. Talarico, South Plainfield, N.J., assignor to Union Camp Corporation, a corporation of Virginia
Filed Dec. 3, 1963, Ser. No. 327,757
2 Claims. (Cl. 118—2)



1. A machine for applying paste in controlled amounts to the flaps of a container, comprising a paste reservoir, a paste applicator mounted adjacent said reservoir com-

prising a nozzle body having a nozzle plate thereon, ducts interconnecting said nozzle body and said plate, a paste cylinder assembly, a check valve assembly, an external power actuated air cylinder in line with the internal paste cylinder assembly, said check valve assembly having an intake opening with means for receiving heated paste from said reservoir, a discharge opening with means for delivering paste to said nozzle body, and also having check valves responsive to the piston for determining the direction of flow of paste and for cutting off the flow of paste to prime the applicator for the next application of heated paste to said flaps, said paste cylinder assembly having a piston actuated by said air cylinder and which on the pressure stroke forces paste from the cylinder, through the check valve assembly, ducts of the nozzle body to the nozzle plate thereon, and on the suction stroke of said piston sucks paste from the reservoir to the check valve assembly and cylinder, heating elements connected to the bottom of said paste reservoir for heating the paste contents within said reservoir to a condition of easy flow, a thermoswitch to control temperature of the nozzle body, sensing means to actuate said power actuated air cylinder, said sensing means being responsive to touching movement with the flap surfaces to which the paste is applied.

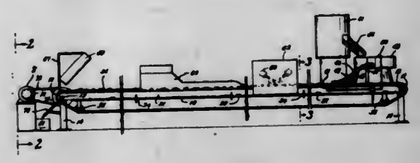
3,344,768
POWDER EVAPORATION APPARATUS
Ermont V. Jennings, Covina, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 30, 1965, Ser. No. 483,570
13 Claims. (Cl. 118—48)



8. A vapor deposition apparatus comprising a vacuum chamber, a furnace of radiant heat in said chamber, and a container for powder in said furnace, said container including successive convolutions of a closely wound wire refractory metallic material forming a cylinder having an impervious cone at each end with the base of each cone fastened to an end of the cylinder.

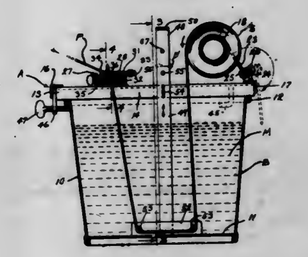
3,344,769
APPARATUS FOR PAINTING SCREW HEADS
Charles L. Williams, 9736 Shady Lane, Houston, Tex. 77016
Filed Oct. 24, 1965, Ser. No. 504,434
10 Claims. (Cl. 118—69)

1. An apparatus for painting screw heads comprising:
an endless moving belt having a longitudinal space therein, the space being dimensioned to accommodate therein the shanks of the screws being painted while the belt is supporting the screw heads thereabove,
an inclined trough generally longitudinally aligned with the belt with the discharge end of the trough vertically aligned over the space in the belt for depositing the screws thereinto,
means for feeding the screws in single file to the top end of the trough,



means positioned adjacent the top of the belt and near the discharge end of the trough for removing misaligned screws, and
means positioned above the belt for spray painting the screw heads while being held by the belt.

3,344,770
IMMERSION DEVICE INCLUDING DOCTOR MEANS
Roland J. Schaefer, R.R. 1, Slinger, Wis. 53086
Filed Oct. 15, 1965, Ser. No. 496,570
3 Claims. (Cl. 118—122)

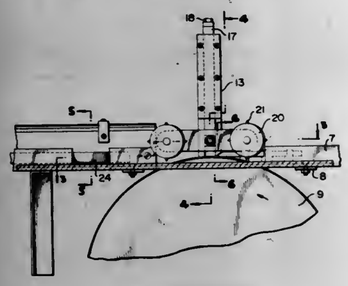


1. A strip material dispensing attachment for fluid containers, pails, buckets and the like of the type having a continuous side wall, a bottom wall and an upper open end comprising, an open rectangularly shaped frame adapted to rest on the upper peripheral edge of said container having spaced longitudinally extending legs and end cross arms with said cross arms being positioned beyond the end terminations of the container wall, means for releasably and adjustably securing said frame to said container, the continuous strip material being in roll form, a holder for said roll extending above and transversely across said frame adjacent one end thereof, locator fingers pivotally carried by said frame, each finger being adapted to engage a side of said roll, means for adjusting each finger toward and away from said roll to accommodate different sized rolls, a squeegee unit carried by said frame adjacent the opposite end including, a pair of spaced wiper members between which said strip is threaded, one end of one wiper member of said squeegee unit being pivotally connected to a leg of said frame whereby to be adapted for pivotal movement upwardly and away from said other leg, means for holding said member in a locked operable position, means for adjusting the tension between the members, and a strip guiding and holding means positioned intermediate said roll holder and said squeegee unit for guiding and holding respective portions of said strip material adjacent the bottom of said container.

3,344,771
APPARATUS FOR APPLYING A COATING TO THE EDGE OF A CUT PIECE OF CARPET

Le Roy M. Penman, Bloomsburg, Pa., assignor to The Magee Carpet Company, Bloomsburg, Pa., a corporation of Pennsylvania

Filed Jan. 24, 1967, Ser. No. 611,360
8 Claims. (Cl. 118—200)

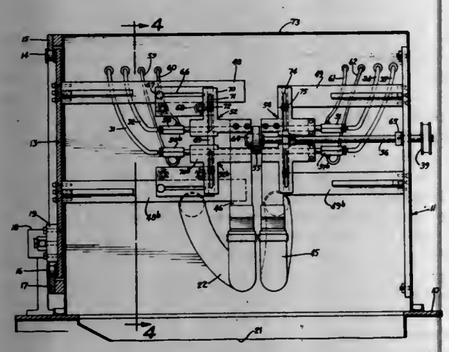


1. Apparatus for applying a plastic coating to the edge of a cut piece of carpet comprising a table, means along one edge of said table for guiding the carpet along the edge of the table, a rotating wheel mounted parallel to the edge of the table adjacent the edge of the carpet adapted to pick-up a supply of coating material on its periphery, and a spring blade extending at an angle across the periphery of said wheel with its free end disposed for contact with the edge of said carpet whereby the blade removes the coating material from the periphery of said wheel and applies it to the edge of the carpet.

3,344,772
SPRAY COATER

Floyd Lobash and Alexander J. Gilchrist, Minneapolis, and Melvin J. Straub, Hopkins, Minn., assignors to Possis Machine Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Apr. 1, 1963, Ser. No. 269,395
15 Claims. (Cl. 118—301)

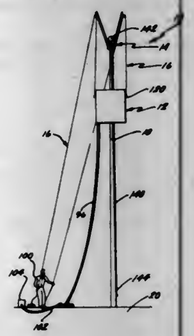


1. A spray coating machine comprising: a cabinet, spray nozzles mounted within said cabinet, a door movably mounted on the cabinet closing one side of said cabinet, additional spray nozzles secured to said door, means to adjust the positions of said spray nozzles secured to said door to and from the nozzles mounted inside said cabinet independently of door movement, means for supporting movably an object to be coated in the center of all of said nozzles, each of said nozzles having a discharge outlet and a restricted passage open to the discharge outlet, said passage having a periphery and a center means for applying air under pressure to said nozzles, means for applying resin powder carried in an air stream to said nozzles, the air stream carrying said powder being different from the air stream carrying the air under pressure applied to said nozzles, said air under pressure applied to said nozzles being applied at the periphery of said restricted passage and the air carrying resin powder being applied at the center of said restricted passage and means for withdrawing excess resin powder from the area surrounding the means for supporting an object and between the nozzles.

3,344,773
FLAG POLE PAINTER

William A. Engstrom, 585 Plymouth, North Muskegon, Mich. 49445, and Michael S. Wojewodzki, 1136 Woodside Road, Muskegon, Mich. 49441

Filed Oct. 28, 1963, Ser. No. 319,215
18 Claims. (Cl. 118—307)

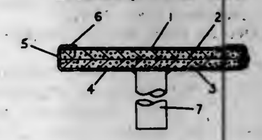


1. Pole spraying apparatus comprising: hoistable suspension bracket means adapted to be hoisted up a flag pole, and including clamping means shiftable from a first unclamped position to a second pole clamping position to anchor it on the pole and thereby enable it to support spray means therebeneath; spray means configurated to be movable up and down a pole, and separate from said bracket means to be movable independently thereof; manually actuable suspension elements depending from said bracket means and suspendably supporting said spray means at selected vertical positions on a pole, and said suspension elements extending down from said bracket means to allow manual raising and lowering of said spray means from said bracket means by a person at the base of the pole.

3,344,774
WEB SUPPORT

Geoffrey Swindells, Hyde, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed June 29, 1966, Ser. No. 561,577
Claims priority, application Great Britain, June 29, 1965, 27,496/65
1 Claim (Cl. 118—500)

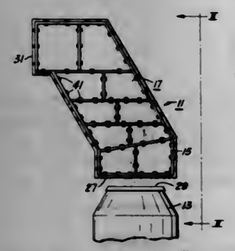


In a coating apparatus, means supporting a traveling web to be coated; said means comprising a fixed support mounting a rectangular channel member; at least one resilient foam pad carried by and within the channel section of said member; a flexible metallic sheet overlying said pad and adapted to support the web being coated; said sheet being impervious to and resistant to reaction with the coating material; an inturned portions formed by the channel member side walls whereby to retain the pad and sheet in assembled relationship within said channel member.

3,344,775
EXHAUST HOOD

Jack Hyde, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed July 15, 1965, Ser. No. 472,229
11 Claims. (Cl. 122—7)

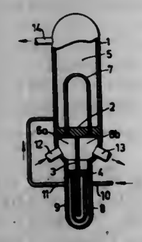


1. A hood for a metallurgical furnace comprising:
(a) a reticular frame disposed relative to said furnace including a plurality of spaced apart fluid conductive interconnected members;
(b) a plurality of panels of refractory material mounted in said reticular frame and forming the effluent conducting walls of said hood;
(c) means to circulate coolant in the fluid conductive members of said frame structure; and
(d) means to removably secure in operative positions said panels to said reticular frame.

3,344,776
STEAM GENERATOR ARRANGEMENT HEATED BY REACTOR WATER FROM A NUCLEAR REACTOR

Jöns Arthur Dahlgren, Saltsjobaden, Sweden, assignor to AB Rosenblads Patenter, Stockholm, Sweden

Filed July 6, 1965, Ser. No. 469,481
Claims priority, application Sweden, Oct. 14, 1964, 12,314/64
1 Claim. (Cl. 122—32)

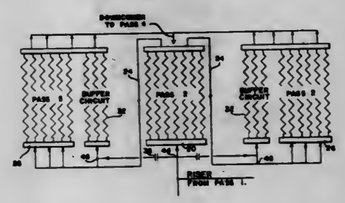


A steam generator- and heater-unit to be heated by hot reactor water of a nuclear reactor, comprising in combination a closed substantially vertical elongated pressure vessel of circular cross-section;
an upper tube wall and a lower tube wall, extending substantially horizontally in said vessel in spaced relation;
a substantially vertical partition wall therebetween, said tube walls and partition wall together dividing the inner space of said vessel into a steam generator space above the upper tube wall, a heater space beneath said lower tube wall and between said tube walls two header spaces one on each side of said partition wall;
a first bundle of tubes, having a U-shape, in said steam generator space connected to said upper tube wall so as to form a communication between said two header spaces;
a second bundle of tubes, having a U-shape, in said heater space and connected to said lower tube wall so as to form communications between said two header spaces;
an inlet for reactor water to one of said header spaces;
an outlet for reactor water from the other one of said header spaces;
said steam generator space being provided with an inlet for liquid to be evaporated and an outlet for steam respectively; and
said heater space being provided with an outlet and an outlet for liquid to be heated.

3,344,777
ONCE-THROUGH VAPOR GENERATOR FURNACE BUFFER CIRCUIT

Walter P. Gorzegno, Florham Park, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Oct. 22, 1965, Ser. No. 501,168
6 Claims. (Cl. 122—406)



1. A once-through vapor generator which includes a plurality of parallel vertically oriented tubes welded into laterally adjacent panels to define an essentially gas-tight furnace enclosure, and header means connecting panels laterally remote from each other to define at least two upflow flow passes in series so that fluids entering said panels are at different enthalpies, the improvement comprising
at least one additional header means connected to the panel intermediate said remote panels; and
means for transmitting to said additional header means predetermined portions of the flow to said remote panels, the enthalpy of the fluid entering said intermediate panel thereby being intermediate the enthalpies of the fluids entering said remote panels.

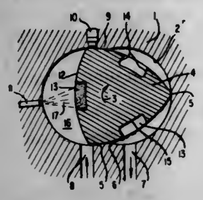
3,344,778
ROTARY PISTON ENGINE

Wolf-Dieter Bensinger, Stuttgart-Unterturkheim, Germany, assignor to Daimler-Benz, Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Continuation of application Ser. No. 280,375, May 14, 1963. This application July 22, 1966, Ser. No. 567,313
20 Claims. (Cl. 123—8)

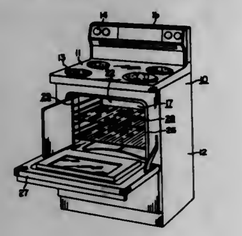
5. A mixture-compressing injection-type internal combustion engine of trochoidal construction, comprising: housing means provided with multi-arched internal surface means, shaft means provided with eccentric means in said housing means, polygonal piston means accommodated within said housing means, said housing means

being provided with inlet and outlet channel means which are effectively valved by the corners of said piston means, said piston means being provided with combustion space recess means, and fuel injection means in said housing



means for injecting fuel into said recess means approximately at a time when the trailing piston corner coordinated to the respective flank, as seen in the direction of rotation has begun to close the inlet channel means.

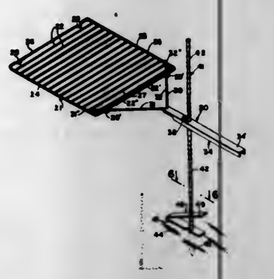
3,344,779
REMOVABLE PANELS FOR OVENS
Stewart C. Johnson, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 29, 1965, Ser. No. 517,404
6 Claims. (Cl. 126—19)



1. In range apparatus comprising an oven cavity delineated by top, bottom, side and rear walls: removable means adjacent each side wall for supporting removable racks therebetween; each of said rack supporting means comprising upper and lower horizontally disposed members interconnecting vertically oriented front and rear members; a removable rear panel; said horizontally disposed members and said rear wall being provided with means cooperating to removably support said rear panel adjacent the rear wall of the oven cavity; a pair of side panels, means carried by each of said rack supports for removably supporting said side panels adjacent respective side walls during use of said oven and permitting removal of said panels independently of said rack supports and said racks; and a bottom panel supported solely by said bottom wall and removable independently of said rack supports.

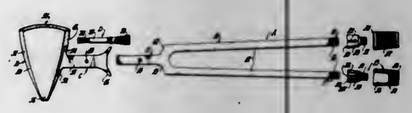
3,344,780
PORTABLE GRILL DEVICE
Arvid P. Anderson, Warwick, N. Dak. 58381
Filed Sept. 1, 1965, Ser. No. 484,271
3 Claims. (Cl. 126—30)

1. A barbecue grill device comprising a grill member, an elongated handle, a pair of resilient metal arms diverging outward and having their outer ends hooked to said grill with their inner ends attached to said handle, said grill having V-shaped grooves which cooperate to hook said arms to said grill, said handle having an inversely channel shaped cross-section with a cut out opening portion and a projecting tongue along its forward end, an elongated stake having a plurality of annular recesses along its length and adapted to be inserted into the ground, said handle being adapted to be slid over said stake with said tongue and cut out portion of said handle adapted to



engage the recesses in said stake from opposite sides to secure said handle to said stake at a selected height, a resilient metal V-shaped stabilizer plate having apertures in each leg with said plate adapted to be slid over said stake, with the plate apertures engaging said stake.

3,344,781
MULTI-PURPOSE NEUROLOGICAL DIAGNOSTIC INSTRUMENT
Derek R. Allen, Glendale, Calif., assignor to Allen Medical Instrument Corporation, Glendale, Calif., a corporation of California
Filed Oct. 23, 1964, Ser. No. 406,101
3 Claims. (Cl. 84—457)

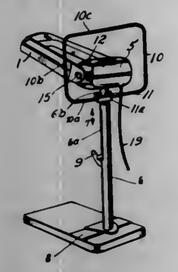


1. A medical diagnostic tuning fork embodying opposed furcations having respective tips at their free ends; and a pair of weights detachably connected to said free ends to provide for vibration at relatively low pitch in the range for testing vibration sensation, said tuning fork being vibratable at relatively high pitch in the range for audio testing for air and bone conduction when said weights are detached, each of said weights conprising a collet jaw having at one end a socket proportioned to snugly receive a respective furcation tip and having at its other end a threaded stem, and a collet-closing collar having an internally-threaded head for threaded coupling to said stem, and a skirt portion having a frusto-conical internal wall cooperable with said collet jaw to wedge the same into tight clamping engagement with said tip.

3,344,782
BELT MASSAGE MACHINE WITH HANDLE SURROUNDING MOTOR
Gottlieb Stoll, Hirschlandstrasse 125, Esslingen (Neckar), Germany
Filed Mar. 31, 1964, Ser. No. 356,116
8 Claims. (Cl. 128—63)

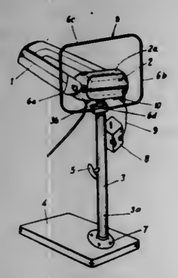
1. A device for automatic massage comprising in combination; a base plate; a carrier column rising in vertical direction from said base plate upwards; a driving electric motor carried by said carrier column; a case of prismatic shape containing said driving electric motor, the longitudinal axis of said case running in horizontal direction

transverse to said carrier column; a driving shaft running in horizontal direction transverse to said carrier column, said driving shaft being arranged in operative relationship with said driving electric motor and being thereby driven by said electric motor; an eccentric on each end of the driving shaft; a massage belt having the shape of a U, the free ends of said belt being connected with the ends of said drive shaft by said eccentrics on said shaft ends; a handle carried by said carrier column contained in a plane parallel to the plane of said carrier column and displaced in rearward direction with respect to the central



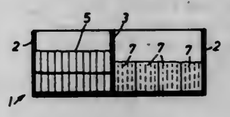
plane of the said carrier column, the handle having legs extending on both sides of said case in upward direction outside of the ends of the driving shaft and their free ends being connected to the carrier column at a level below the level of the driving shaft, the said legs being interconnected above the said case by a cross bridge, extending in the longitudinal direction of said case.

3,344,783
DEVICE FOR AUTOMATIC BELT MASSAGE
Gottlieb Stoll, 125 Hirschlandstrasse, Esslingen (Neckar), Germany
Filed Dec. 8, 1964, Ser. No. 416,726
Claims priority, application Germany, Dec. 14, 1963, St 16,722
16 Claims. (Cl. 128—63)



1. A device for automatic massage comprising in combination: a base plate, a carrier column rising vertically from the said base plate, the said carrier column being constituted of two tubes telescoped into each other, the lower tube receiving the upper one for up and down gliding movement; an electric motor, a case containing said electric motor and arranged crosswise to the said longitudinal direction of the said carrier column, said case and said motor being carried by said upper tube of said carrier column; a drive shaft driven by the said electric motor and extending on both sides of said motor; eccentrics mounted on the free ends of the drive shaft for movement with respect thereto in a direction transverse to the axis of the drive shaft to change their eccentricity, said eccentrics having roughened surfaces, and means to lock the eccentrics releasably in their adjusted positions, said locking means including means axially pressing the eccentrics against front surfaces on the ends of the drive shaft, such front surfaces being roughened, a U-shaped massage belt the free ends of which are attached to the said eccentrics; a U-shaped handle extending upwards in a plane parallel to the said carrier column and offset in rearward direction with respect to the central plane of the said carrier column, said handle having two legs that are fixed with their free ends on the said carrier column and extend vertically on the two front sides of the said motor case, said handle having also a cross bar running in the longitudinal direction of the said case containing the said motor and being situated above the said case thereby interconnecting the said legs of the said handle; whereby the lower tube of the said carrier column carries on its upper end a removable slit clamping block in which the said upper tube of said carrier column is guided, whereby the said upper tube can be releasably affixed to the said block with the aid of clamping means.

3,344,784
METHOD FOR PRODUCING STERILIZED ELEMENTS FROM FIBROUS MATERIAL AND AN ARTICLE PRODUCED THEREFROM
Hermann Michels, Rauschendorf, near Siegburg, Germany, assignor to Ypsilon-Werk Wienke & Michels K.G., Troisdorf, Germany
Filed Apr. 1, 1964, Ser. No. 356,537
Claims priority, application Germany, Apr. 4, 1963, Y 694
6 Claims. (Cl. 128—156)



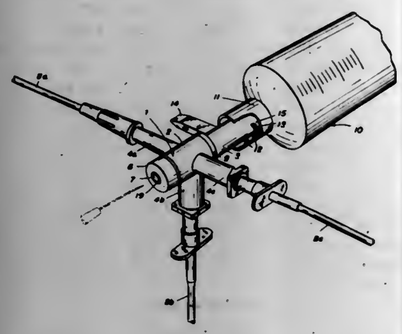
3. A method of producing a sterilized surgical packet of fibrous reboundable material for dressing purposes comprising the steps of subjecting a predetermined quantity of fibrous material to a pressing operation thereby imparting a particular configuration to the fibrous material, thereafter wrapping the contoured and pressed fibrous material in a covering, subjecting the wrapped and conformed fibrous material to a clamping pressure less than the pressing pressure but adequate to maintain the configuration of the conformed material, sterilizing the packet by application of heat, cooling the packet, and thereafter removing the clamping pressure from the packet.

3,344,785
VALVE FOR EXCHANGE TRANSFUSION SYSTEM
Donald A. Hamilton, Burbank, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Feb. 1, 1965, Ser. No. 429,410
7 Claims. (Cl. 128—214)

1. A disposable medical valve comprising:
(a) a body with a bore therethrough;
(b) tubular side arms extending outwardly from the body and communicating with the body bore;
(c) a core rotatably mounted in said body bore and having a longitudinal passage extending between first and second ends of the core, said core having a portion adjacent its first end adapted to receive a syringe tip in fluid-tight engagement and having a port for selectively connecting the core passage with said tubular side arms upon rotary movement of said core relative to said body;

(d) locking means on said first end of said core for holding a syringe tip against rotary movement with respect to said core;

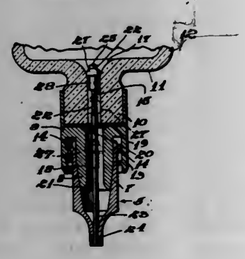
(e) a retaining member connected to the core adjacent its second end for slideably engaging the body to



limit axial movement of said core in said body; and

(f) a pierceable, resealable diaphragm closing off an injection aperture in the retaining member, through which diaphragm medicaments can be added to the core passage.

3,344,786
SYRINGE STRUCTURE
Robert H. Berg, 196 Clinton Ave., Elmhurst, Ill. 60126, Carl Arthur Youngdahl, Elmhurst, and Lynn E. Ellison, Crystal Lake, Ill., said Youngdahl and said Ellison assignors to said Berg
Filed May 2, 1963, Ser. No. 277,656
1 Claim. (Cl. 128—215)



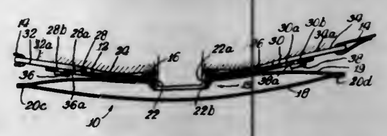
A syringe having a barrel, a reduced end portion on said barrel having a discharge passage therethrough a fitting on said reduced end portion having a passage aligned with said discharge passage and forming with said reduced end portion a discharge nipple having a plurality of different internal diameters, said fitting having threads thereon, a closure device having cooperative means removably engaged with said threads and comprising a closure cap engaged with said fitting; an elongated thin rod-like stem having one end portion firmly anchored to said cap and projecting substantially from said cap into the nipple, the opposite end portion of said stem carrying an elastomeric plug of substantially larger diameter than said stem and having an annular flange dimensioned to act in wiping engagement with the multiple internal diameters of said nipple and to provide a sealing stopper at the innermost portion of said multiple diameters by an umbrella-like folding back of the wiping flange of said plug.

3,344,787
HYPODERMIC NEEDLE HOLDERS
Donald Maclean, Waterbury, Conn., assignor to Truelove & Maclean, Inc., Waterbury, Conn., a corporation of Maine
Filed Aug. 13, 1964, Ser. No. 389,291
5 Claims. (Cl. 128—221)



1. Mounting means for a hypodermic needle comprising a substantially cup-shaped hub having means for retaining a needle in axial projection from its closed end, interrupted threads circumferentially arranged in columns on the inner wall of the hub, and grooves on the external wall of the hub radially aligned with the columns of threads.

3,344,788
DISPOSABLE SURGICAL DRAINAGE POUCH
Arthur E. Marsan, Chicago, Ill., assignor to Hollister, Incorporated, a corporation of Illinois
Filed May 7, 1964, Ser. No. 365,756
1 Claim. (Cl. 128—283)



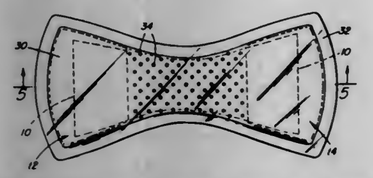
A post surgical pouch for receiving discharge from the stoma of a patient, comprising: an enclosed waterproof bag having an inner and outer wall with a stoma opening in the inner wall; a belt for holding the pouch on the patient; and a backing member of plastic material heat sealed to the inner wall of the pouch in the area of the stoma opening to combine with the pouch to thereby provide a unitary structure, said backing member being relatively stiff and waterproof and having an opening in registration with said pouch stoma opening, said backing member opening including an inwardly extending annular flange concentrically positioned within the stoma opening of the pouch in a position to loosely and comfortably embrace protruding portions of internal organs of a patient; and means on said backing member for connection with said belt, whereby said pouch may be supported about the body of a user without patient irritation and may be disposed of after a single use.

3,344,789
DIAPER WITH FILM ENCLOSED ABSORBENT
Edwin Warren Arnold, Suffern, N.Y., Otis L. Updike, Jr., Charlottesville, Va., and Norman Robert Zinner, Brooklyn, N.Y., assignors to Azur Associates, New York, N.Y., a partnership
Filed Dec. 29, 1964, Ser. No. 421,779
6 Claims. (Cl. 128—287)

2. An article adapted for use as a diaper or for a similar purpose which article comprises:

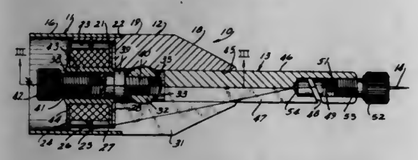
(a) fibrous means for distributing liquid by capillary action,

(b) to solid sorptive means for receiving, and retaining liquid, from said fibrous means, said sorptive means having the ability to maintain the solid state after sorbing liquid and to retain sorbed liquid when pressure is applied to the sorptive means, and



(c) liquid impermeable film means enclosing said fibrous means and said sorptive means to form an elongated, pliable member suitable for the intended use in connection with a human body, said film means being provided with a liquid ingress for the entry of body fluid.

3,344,790
SURGICAL SUTURING DEVICE WITH AUXILIARY SPOOL-BRAKE MEANS
Richard L. Dorner, 5460 S. 12th St., Texas Township, Kalamazoo County, Mich.
Filed Nov. 2, 1964, Ser. No. 408,072
5 Claims. (Cl. 128—340)



1. A surgical suturing instrument, comprising:

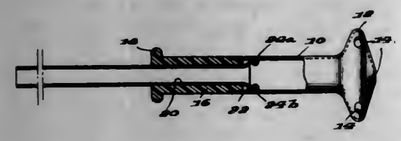
a spool holder having an internal recess therewithin;

a spool rotatably disposed within said recess and being of smaller size than said recess so that it can be moved within said recess between a position in which said spool engages the wall of said recess so as to be restrained against rotation and a position in which said spool is spaced from said wall so as to be free to rotate;

means for moving said spool between said positions, said means for moving said spool comprising a resiliently urged actuating member mounted in said spool holder for movement in a direction perpendicular to the axis of rotation of said spool; and

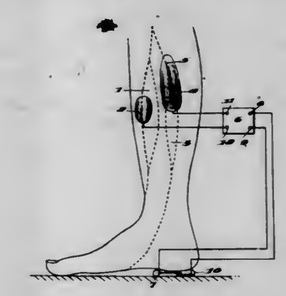
a needle holder projecting away from said spool holder.

3,344,791
BULBOUS URINARY CATHETER WITH AXIAL EXTENSION MEANS
John W. Foderick, 217 Board of Trade Bldg., Superior, Wis. 54880
Filed Feb. 12, 1965, Ser. No. 432,337
6 Claims. (Cl. 128—349)



1. A catheter comprising, in combination: a catheter proper including a tubular sleeve of flexible material having a radially enlarged, normally bulbous shaped retaining head at its distal end and which is radially contractible with axial extension thereof from within, and said head being provided with drainage openings, a tubular collar of relatively stiff material coaxial with said sleeve and to which the proximal end thereof is connected, and a tube slidably received in said collar and having length as to effect axial extension of said retaining head responsive to its distal end being moved axially against the same from within by axial push force applied to the proximal end of said tube, and coacting means on said sleeve and tube, respectively, for releasably securing the latter in a normally retracted position within the collar and in which its distal end makes sealing engagement with the corresponding end of said collar, the bore of the tube when the latter is in said retracted position providing a drain passage for liquid entering the sleeve through its head openings.

3,344,792
METHOD OF MUSCULAR STIMULATION IN HUMAN BEINGS TO AID IN WALKING
Franklin F. Offner, 1890 Telegraph Road, Deerfield, Ill. 60015, and Wladimir T. Liberson, V.A. Hospital, Box 28, Hines, Ill. 60141
Filed Jan. 13, 1965, Ser. No. 426,476
1 Claim. (Cl. 128—419)



In the method of stimulating into action in a periodic manner the toe raising tibialis anticus and peroneus longus muscles of the leg on a human body not otherwise under proper neurological control in order to obtain a quasi-normal use of said muscles to assist in walking which includes the steps of attaching electrode means to the muscles to be stimulated, connecting a source of pulse type electrical stimulating current to the electrode means, and interposing a switch in the circuit of the source to alternately energize and de-energize the source and thereby stimulate the muscles, the improvement which resides in the step of locating said switch under the heel part of the foot on said leg for automatic periodic operation coordinated to the periodic up and down movements of said heel during walking.

3,344,793
FOUNDATION GARMENT
Ronald Weintraub, New York, N.Y., assignor to Flexnit Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,496
20 Claims. (Cl. 128—547)

1. A foundation garment comprising, in combination, outer means for providing molding and supporting pressures to the normally flaccid tissues of the hips, thighs, abdomen and derriere of a torso to enhance the appearance thereof, and inner means for providing figure controlling forces to the abdominal and lower spinal region of the torso to enhance and aid in controlling posture, said inner

means being secured with said outer means at an abdominal region of the garment, and at least at a portion of a waistline region disposed generally laterally thereof, and comprising elastic band means disposed at least at the rear of the garment, and control panel means connected with said elastic band means at least at a substantially



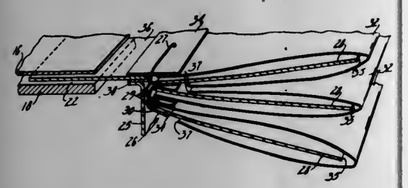
lower portion thereof and said outer means generally along a line that corresponds generally with the gluteofemoral crease, enabling said inner means to transmit the forces developed therein to the torso at locations away from the lower spinal region.

3,344,794

DISPLAY ALBUM

Robert W. MacWilliams, Winchester, Mass., assignor to Samuel Ward Manufacturing Co., Inc., Boston, Mass., a corporation of Massachusetts

Filed Sept. 10, 1965, Ser. No. 486,491
1 Claim. (Cl. 129—20)



A display album comprising a multiplicity of leaflets, each of said leaflets consisting of

a first leaf coated on both surfaces with adhesive,

a second leaf coated on both surfaces with adhesive,

a first transparent protector,

a second transparent protector,

a leaf strip binding tape, and

a protector strip binding tape,

each said leaf including an inner edge and an outer edge,

each said protector including an inner binding edge, a second inner edge, and a fold edge,

the inner said binding tapes being bent into a cross-section of U-shape when the leaflet is in closed position,

said protectors being adhesively secured respectively along said binding edges to the sides of said protector tape,

the outer of said binding tapes being bent into a cross-section of U-shape including therebetween said inner edges of each said leaf and said inner binding edges of each said protector when the leaflet is in closed position,

the leaves being adhesively secured to said leaf binding tape along said inner edges of said leaves,

said fold edges of said protectors being adpacent respectively to outer edges of said leaves,

said second inner edges of said protectors being free,

said leaf inner edges being spaced apart when said leaflet is in open position,

said protector inner binding edges being spaced apart when said leaflet is in open position,

each said leaf tape adhering to a said protector tape over an area between the spaced apart leaves and protectors,

said leaflets when closed being in side-by-side relation, with outer U-shaped binding tapes abutting, and

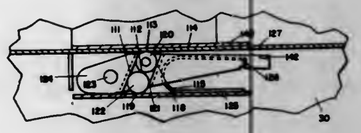
said leaflets being anchored in said album by stitches extending through said area.

3,334,795

FILE DRAWER AND COMPRESSOR

Gene B. Hasbrouck, Corry, Pa., assignor to Corry Jamestown Corporation, Corry, Pa., a corporation of New York

Filed Dec. 30, 1965, Ser. No. 517,691
14 Claims. (Cl. 129—29)



1. In combination, a wall and a partition disposed in generally perpendicular relation thereto,

latch means,

said latch means comprising a lever swingably supported on said partition,

a flange fixed to said wall,

said lever having a cam surface thereon spaced from said flange,

and a roller supported on said cam surface between said cam surface and said flange,

said cam surface being inclined toward said flange,

the periphery of said roller being in frictional engagement with said cam surface and said flange whereby said roller rolls on said cam surface away from said flange when said partition is pushed in a first direction,

and said roller rolls on said cam surface toward said flange when said partition is pushed in a second direction whereby said partition is locked relative to said wall, said cam surface comprising a slot in said lever, a flange on said compressor having a surface parallel to said flange on said drawer, said slot being inclined relative to said flange, and means in said slot engaging said roller, urging said roller into frictional engagement with said cam surface.

3,344,796

FLAVORED TOBACCO SMOKE FILTER CONTAINING HIGHER FATTY ACID ESTER OF SUCROSE

Goro Yamaji, Yokohama-shi, and Toshiki Ohtake, Zushi-shi, Japan, assignors to Dai Nippon Seito Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed May 17, 1965, Ser. No. 456,489
5 Claims. (Cl. 131—267)

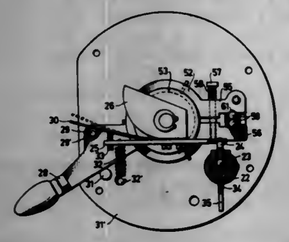
1. A tobacco smoke filter made up of a filter material carrying a flavoring solution in an amount of 1% to 20% by weight of the filter material, which flavoring solution contains a flavorant and at least one of the higher fatty acid esters of sucrose, in which one to three hydrogens of the eight hydroxyl groups in the sucrose molecule are substituted with at least one of the acyl groups having twelve to eighteen carbon atoms, and at least one of the remaining hydroxyl hydrogens is substituted with acetyl groups, in an amount of 1% to 20% by weight of the flavoring solution.

3,344,797

FLUID MOTOR REGULATING MECHANISM HAVING FRICTION COMPENSATOR

Lennart Gransten, Lannersta, Sweden, assignor to Rederi Ab Soya, a corporation of Sweden

Filed May 10, 1965, Ser. No. 454,592
8 Claims. (Cl. 137—18)



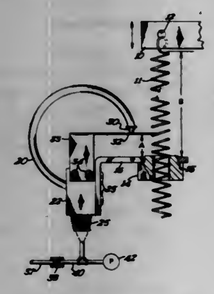
1. A mechanism for regulating motors driven by a pressure medium, comprising a control device and regulating means, the control device being adapted to control the pressure of the pressure medium to the motor to provide for regulating movements of the regulating means to augment and reduce the number of revolutions of the motor, the regulating means comprising members causing friction against the regulating movements resulting in the requirement of a higher pressure of the pressure medium during increasing admission of pressure medium to the motor than during decreasing admission thereto, the control device including a friction coupling adapted to counteract said friction of the friction members of the regulating means.

3,344,798

PRESSURE TRANSDUCER

Joseph E. Hogel, River Grove, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Apr. 6, 1965, Ser. No. 445,945
4 Claims. (Cl. 137—85)



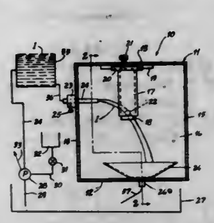
1. A pneumatic transducer comprising, a frame, a nut rotatable in said frame, a coil spring having one portion in threaded engagement with said nut, said coil spring having a second portion axially positionable with respect to the first portion, a spring strip having a first end supported by said frame and a second end engaging said coil spring at a point between said nut and the second end thereof, a pressure responsive chamber carried by said frame and a nozzle carried by said chamber in cooperative relation with an intermediate portion of said spring strip.

3,344,799

APPARATUS FOR CONTROLLING THE VISCOSITY OF A LIQUID

Jerry Lee Hardin, Centralia, Ill., assignor to Hardin, Inc., Pana, Ill., a corporation of Illinois

Filed July 20, 1964, Ser. No. 383,685
6 Claims. (Cl. 137—92)



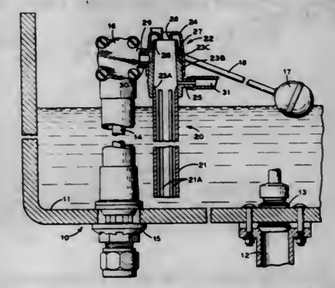
1. A viscosity control device comprising means to transmit a beam of light, means in the path of the beam of light for intercepting the light including a photoelectric cell, a source of fluid, means to discharge the fluid in a path of free flowing fluid wherein the direction of the fluid path varies with the viscosity of the fluid, means to position the path of fluid such that when its viscosity is at a desired level, the fluid flowing in the said path is at a predetermined position relative to interception of the light beam, and means responsive to changes in reception of light by the photoelectric cell resulting from variations in the path of said fluid flow caused by changes in the fluid viscosity for controlling the viscosity of the fluid to reestablish the desired viscosity level, the last named means comprises an electric circuit including control means for a valve and including switch means to close the circuit and open the valve in response to variations the path of fluid flow caused by changes in the fluid and means connected through the valve for delivering thinner to the fluid when the valve is open.

3,344,800

CLOSET TANK FITTING

Richard G. Parkison, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed July 8, 1964, Ser. No. 381,075
6 Claims. (Cl. 137—216)



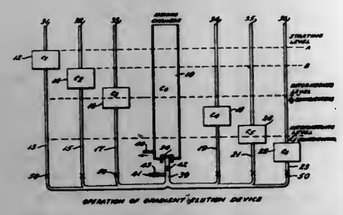
1. A water closet tank refill fitting comprising:

(a) a tank refill tube, said refill tube having an open lower end, and an outlet means between said upper and lower ends and disposed tangentially to said tube; and

(b) a backflow preventer, said backflow preventer being disposed at the upper end of said refill tube and having an annular member circumscribing said upper end of said tube and forming a hollow swirl chamber having a closed lower end and an open upper end, fluid inlet means proximate said closed

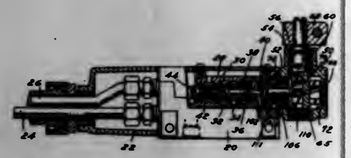
lower end and disposed tangentially relative to said hollow chamber, and an inwardly and downwardly extending downspout extending from the upper end of said annular member to a position proximate the upper end of said refill tube, the outside diameter of said downspout being less than the inside diameter of said refill tube.

3,344,801
GRADIENT GENERATOR
Samuel P. Bessman, 1410 Woodcliff Ave., Catonsville, Md. 21228
Filed Nov. 7, 1966, Ser. No. 592,375
6 Claims. (Cl. 137—263)



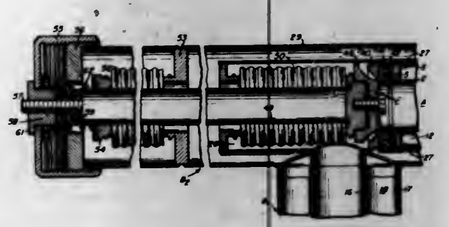
1. A gradient generating device which comprises a vertically disposed mixing chamber and a multiplicity of smaller vertically disposed storage chambers, said mixing chamber and each of said storage chambers having the same uniform horizontal cross-sectional area, the individual storage chambers being smaller in fluid capacity than said mixing chamber by virtue of a lesser height, each said storage chamber being connected for fluid flow to mixing chamber, each storage chamber being disposed at a different relative elevation without overlap and all of them being elevationally disposed between the upper liquid level of said mixing chamber and the lower inside surface thereof, each storage chamber having a narrow vertical outlet higher than the maximum fluid level in the mixing chamber, and said mixing chamber and each storage chamber being under the same hydrostatic head when fluid filled.

3,344,802
FLUID VALVE
Donald E. McGeachy, Highland, Mich., assignor to Numatics Incorporated, Highland, Mich., a corporation of Michigan
Filed Dec. 19, 1966, Ser. No. 602,885
10 Claims. (Cl. 137—270)



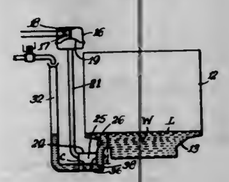
1. A rotary control for a valve intended to have lineal motion along an axis in a valve housing to operative positions which comprises a control housing adapted to be operatively related to a valve housing, an actuator shaft mounted in said control housing transversely of the axis of motion of the valve to be controlled, a cam surface on said shaft, and means to be actuated by said cam surface comprising an operating plug adapted to be interposed between said cam surface and a valve to be actuated having an end to extend toward said valve in the direction of the axis of motion and an end shaped as chordal segment to underlie said cam surface, and means to orient said plug in one of two positions circumferentially to obtain axial motion of said plug upon clockwise or counterclockwise rotation of said shaft selectively and alternately, and in a third position to obtain axial motion of said plug upon both clockwise or counterclockwise rotation of said shaft.

3,344,803
DEVICE FOR CONNECTING AND SEALING-OFF BETWEEN TWO SECTIONS OF A PIPELINE FOR CONVEYING LIQUEFIED GAS
Pierre Charles, Sceaux, Camille Prevost, Le Chesnay, and Olivier Testard, Clamart, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Nov. 4, 1965, Ser. No. 511,562
Claims priority, application France, Nov. 19, 1964, 995,512
4 Claims. (Cl. 137—375)



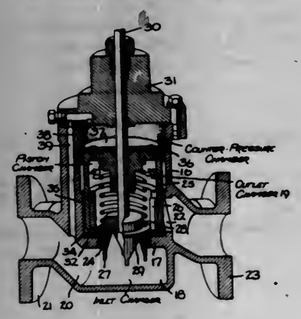
1. Device for connecting and sealing-off between two sections of a liquefied-gas pipeline of the type in which each section has an inner pipe for the circulation of liquefied gas and an outer pipe coaxial with the inner pipe and forming with said inner pipe a leak-tight annular vacuum space, said device comprising disconnectable means providing a leak-tight coupling between the cooperating terminal portions of the two sections, the diameters of said terminal portions being such that the first section is slidably fitted within the second section, cooperating means provided on each of said two sections applying a clamping force on a seating element when said two sections are brought together for coupling, and a control member which passes in leak-tight manner through the outer and inner pipes of said second section to apply against said seating element a member for sealing-off the inner pipe of said first section.

3,344,804
LIQUID LEVEL CONTROL
John B. Lyman, Minneapolis, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,186
5 Claims. (Cl. 137—406)



1. Apparatus comprising: a container for holding a preselected volume of liquid and having a bottom; means defining a space having a lower portion at a level lower than said bottom; means defining a liquid flow passage communicating with said lower space portion and the bottom of said container; control means responsive to air pressure for providing a signal; duct means communicating with an upper portion of said space and said control means for transmitting to the control means the head pressure of the liquid in said passage and said container above said lower portion of said space; means for delivering liquid through the lower portion of said space and said flow passage into said container; and means for providing a supply of air to said liquid prior to the delivery thereof through said space, whereby a portion of the air in said liquid rises upwardly thereform in said space to said upper portion thereof to cause said duct means and said upper portion of the space to be substantially fully air filled as an incident of the delivery of said preselected volume of liquid to said container and provide to said control means an air pressure accurately corresponding to said liquid head pressure.

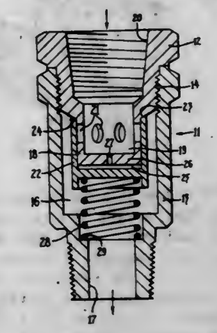
3,344,805
AUTOMATIC FLOW RATE CONTROL SYSTEM
Joseph S. Wagner, Levittown, Pa., assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania
Filed Mar. 24, 1965, Ser. No. 442,426
10 Claims. (Cl. 137—486)



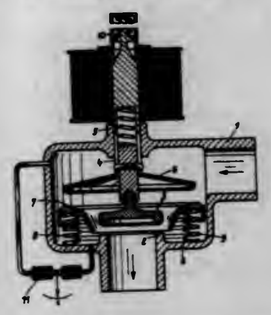
1. A flow rate process control system comprising:
(A) a low torque flow-rate regulator interposed between a fluid source and a process to control the flow of fluid thereto, said regulator including a metering valve which is settable to provide for a given line pressure a desired flow rate and a throttle valve imposing a counter-pressure on the metering valve and responsive to a deviation in pressure from said given pressure to effect a gross correction substantially maintaining said desired flow rate,
(B) means to measure the actual flow rate of fluid passing through said process and to compare it with a reference value to produce an error signal depending on the extent and direction of the deviation of the measured value from the reference value, and
(C) a motor-operator operatively coupled in the floating mode to said metering valve in said regulator and responsive to said error signal to cause the flow rate to assume a value determined by said reference value.

3,344,806
CHECK VALVE
Forrest O. E. Schultz, Owosso, Mich., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 413,863, Nov. 25, 1964. This application Sept. 27, 1966, Ser. No. 582,457
3 Claims. (Cl. 137—494)

1. In a check valve, the combination including a housing member having a fluid inlet and a fluid outlet, a hollow guide portion fixedly positioned in said housing and having an end wall and a side wall, a valve seat in said housing, the interior of said guide portion being in fluid communication with said inlet, a port formed in said side wall of said guide portion in spaced relationship with respect to said valve seat and placing said inlet in communication with said outlet, a generally cup-shaped valve element slidably supported on said guide portion in sealing relationship with respect to the side wall thereof and controlling the flow of fluid through said port, said valve element having a portion thereon adapted to engage said valve seat in sealing relationship therewith, said valve element and said end wall of said guide portion cooperating to define a control chamber, an orifice in said end wall of said guide portion restricting the rate of flow of fluid between said control chamber and said fluid inlet, said valve element being reciprocable in response to differentials in fluid pressure between said outlet and said control chamber and being effective to control the flow of fluid through said port while remaining spaced from said seat.

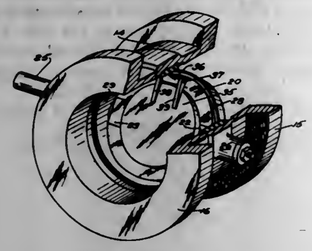


3,344,807
SHUT-OFF VALVE
Fritz Lehrer, Doblergasse 1, Vienna 7, and Maximilian Casutt, Paniglgasse 20, Vienna 4, Austria
Filed Aug. 27, 1965, Ser. No. 483,253
10 Claims. (Cl. 137—557)



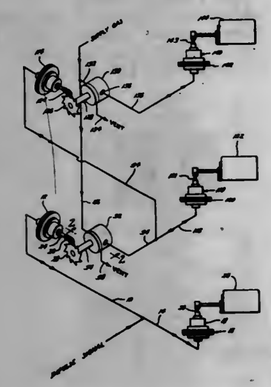
1. A shut-off valve, which comprises a housing defining a fluid flow path, two seats in said housing, said seats defining with said housing a blocking chamber which forms part of said fluid flow path, and two valve members in said housing, each of said valve members being movable to and from engagement with one of said seats and being adapted to seal said blocking chamber in both directions when both said valve members are in engagement with the respective seats, said valve members being axially movable relative to each other while in engagement with their respective seats so as to vary the volume of said blocking chamber.

3,344,808
COMBINED BUTTERFLY AND CHECK VALVE
Francis H. Cary, Hope, R.I., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Nov. 23, 1964, Ser. No. 413,050
3 Claims. (Cl. 137—599.2)



1. A valve for a flow line comprising a body through which fluid may flow, a vane of a size to block the flow of fluid through said body, stub shafts attached to said vane at diametrically opposite locations and extending radially of the vane on the same axis and journaled in said body for moving said vane relative to said body upon the application of rotative force to said shaft for open or closed position therein, said vane having a central opening therethrough, a flapper pivoted on said vane closing said opening but movable relative to said vane from said closed position to open position upon the occurrence of fluid pressure greater on the side tending to open the flapper than the other side of said flapper.

3,344,809
PRESSURE RESPONSIVE CONTROL SYSTEM
Horace V. Smith, Houston, Tex., assignor to Metrol Corporation, Houston, Tex., a corporation of Texas
Filed Jan. 27, 1965, Ser. No. 428,499
2 Claims. (Cl. 137—624.18)



1. A control system for operating a plurality of pressure responsive devices comprising:
(a) First and second pilot valves each including a casing containing a cylindrical valve chamber having a cylindrical wall, a port through the cylindrical wall of the casing, a fluid vent passageway through the casing communicating with the cylindrical valve chamber, a rotor in the valve chamber with its axis of rotation coinciding with the axis of the valve chamber, the rotor including a projection extending radially from said rotor circumferentially aligned with the port, and contacting the cylindrical wall of the casing at the port, a fluid pressure passageway through the rotor communicating between the exterior of the pilot valve and the projection and forming an orifice in the projection whereby when fluid pressure is in the fluid pressure passageway and the projection is over the port, fluid pressure may flow through the pilot valve,
(b) A first pressure responsive actuator associated with the first pilot valve for moving its rotor a portion of a revolution to successive positions each time the first pressure responsive actuator receives a pressure impulse, including one position in which its orifice covers its port,
(c) A second pressure responsive actuator associated with the second pilot valve for moving its rotor a portion of a revolution to successive positions each time the second pressure responsive actuator receives a pressure impulse, including a position in which its orifice covers its port,
(d) A fluid pressure line in communication with the port on the first pilot valve and operatively connected to the second pressure responsive actuator and including a portion adapted to be connected to a pressure responsive device, and
(e) A fluid pressure line communicating with the port of the second pilot valve and adapted to be connected to a pressure responsive device.

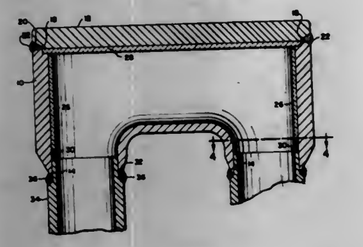
3,344,810
TRANSMITTING ELEMENT FOR GAUGING INSTRUMENTS
Adam Zauszuica, Bandhagen, Sweden, assignor to Ingenjörsfirma A. Alfredéen AB, Bandhagen, Sweden
Filed June 3, 1963, Ser. No. 284,968
1 Claim. (Cl. 138—46)



A transmitter element for pneumatic gauging instruments functioning by effecting balance between two air streams in the gauging instrument, construced as a substantially tubular body divided into two parts whereof one end constitutes the inlet for an air stream and the other end contains a piston movable into and out of said end and to restrict the air stream passing through said tubular body according to the insertion depth of said piston, at least one outlet in the wall of the tubbular body, the size and form of said outlet being adapted to be restricted in in that the piston partly covers the same, the said outlet having a section corresponding to a certain desired relation between the parameters of the air flow and the insertion depth of the piston, the said main part of the cylindrical body being ground in the proximity of the outlet openings, the radius of grinding exceeding essentially the external radius of the cylindrical body, so that the outlet opening has sharp edges.

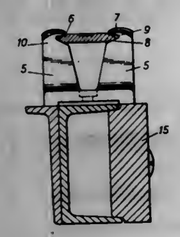
3,344,811
CERAMIC LINED RETURN BEND
Paul Raymond Hoffmann, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,458
7 Claims. (Cl. 138—95)

1. A U-shaped return header for the interconnection of adjacent ends of a pair of spaced parallel tubes comprising opposed end and side wall means defining a main hollow body portion, and a cover portion; said body portion including a pair of spaced cylindrical ports extending through a said side wall means for receiving said tubes and an elongated oval shaped opening opposite said ports for receiving said cover portion, groove means formed in each of said end wall means of said body portion extending between each of said cylindrical ports and the adjacent end of said oval shaped opening, and first and



second ceramic insert means slidably engaged respectively in each of said groove means for protecting said end wall means; means for securing said cover portion in tight sealed relationship in said oval shaped opening, and third ceramic insert means covering the inner surface of said cover portion for forming a protective surface on the interior wall of said header opposite said cylindrical ports.

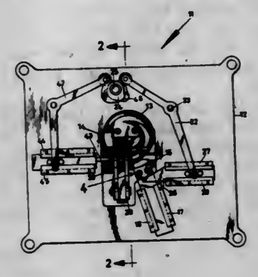
3,344,812
LOOMS WITH STATIONARY WEFT SUPPLY
Magin Desveus Duran, San Olegario 35, Sabadell, Spain
Filed Apr. 6, 1966, Ser. No. 540,544
Claims priority, application Spain, Apr. 6, 1965, 311,799
6 Claims. (Cl. 139—123)



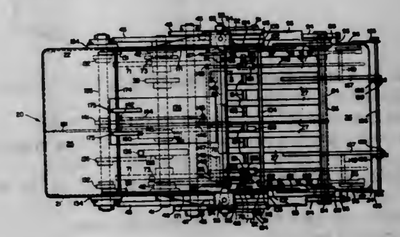
1. A rapier guide element for a rapier loom wherein at least one side of said rapier has a longitudinally extending bevelled side edge, said element having a horizontally open slot having outwardly diverging upper and lower sides for slidably engaging said bevelled rapier edge.

3,344,813
METHOD OF FORMING A LOCK KNOT FOR COIL SPRINGS
Martin Kaiser, 66 Spencer Ave., Toronto 3, Ontario, Canada
Filed Apr. 13, 1964, Ser. No. 361,929
5 Claims. (Cl. 140—101)

1. A method of forming a lock knot on a coil spring by means of a knotting pinion, said pinion having a radial slit extending from the center to the peripheral edge thereof; and means to control same and comprising the steps of: securing said coil spring at one end thereof and leaving a tail end of said coil spring free; bending the tail of said coil inwards towards the center of said coil until said tail is substantially at right angles to the adjacent coil winding; moving said knotting pinion with said radial slit at a slight angle to the plane of the end coil of said coil spring, into position about said adjacent winding backwards towards the base of said coil to form a first and partially second bend; rotating said knotting pinion to wind said tail about said adjacent coil winding for at least one-half turn; moving said knotting pinion away from said coil thereby to bend said winding in a direction away from the center of said coil, thereby to complete said second bend and form said end coil into a circular configuration; further winding said tail about said adjacent coil winding for a total of approximately two and a half turns; and bending said coil close to said turns in a direction toward the base of said coil, thereby to form a third bend to secure said turns and to form said lock knot.



3,344,814
MACHINE FOR PLEATING METAL FABRICS AND THE LIKE
Paul F. Wilber, Richland, N.Y., assignor to Dollinger Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,601
11 Claims. (Cl. 140—107)



1. A machine for pleating metal fabric and the like, comprising
(a) a frame having thereon a flat surface across which successive sections of a length of a metal fabric are fed,
(b) a first plate mounted on said frame at one side of said surface for reciprocation into and out of an operative position in which its lower edge is adapted to secure the leading end of a section of metal fabric on said surface,
(c) a second plate mounted on said frame at the same side of said surface in confronting, generally parallel relation to said first plate,
(d) means for intermittently reciprocating said second plate across said surface toward and away from said

first plate, when said first plate is in its operative position,

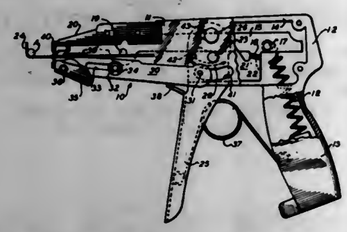
(e) clamping means for releasably securing the trailing end of a section of metal fabric beneath said second plate, each time the said second plate is advanced toward said first plate, thereby to advance the trailing ends of successive sections of said fabric across said surface with said second plate toward said first plate,

(f) folding means movable into the space between said plates during each advance of said second plate to engage and fold successive sections of fabric successively into the space between said plates to be pressed therebetween on each advance of said second plate,

(g) means for intermittently reciprocating said first plate, when said second plate is in its extreme advanced position, to lift said first plate over the fold between said plates, and then to drop said first plate downwardly behind the trailing side of the fold to secure the leading end of the next successive section of fabric on said surface, and

(h) means operative, after each reciprocation of said first plate, for releasing said clamping means to release the metal fabric during the succeeding movement of said second plate away from said first plate.

3,344,815
STRAP TIGHTENING AND CUTTING TOOL
Gustaf R. Lawson, Somerset, and George C. Bailey, East Orange, N.J., assignors to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 28, 1964, Ser. No. 392,782
15 Claims. (Cl. 140—123.6)



1. In a strap tightening and cutting tool having a tool body and a grip portion:

an arm movably connected to the tool body;

a cutter portion for movement into cutting engagement with the strap on movement of the arm;

yieldable holding means normally resisting the motion of the arm;

means on said tool for moving the strap;

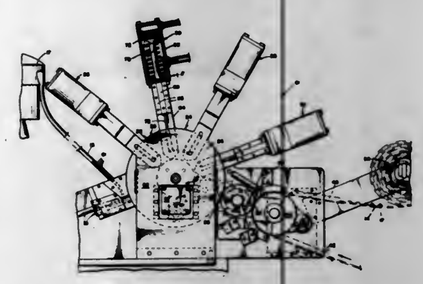
a handle member;

first connecting means connecting the handle member with the strap moving means so that movement of said handle member in one direction causes corresponding movement of said straps so as to tend to tighten said strap;

and second connecting means connecting said handle member to said arm throughout the motion of said handle as said handle is moved in said one direction so that when motion of said handle places more than a predetermined amount of tension on said strap the second connecting means moves the arm and overcomes the resistance of said yieldable holding means so that the arm is rapidly moved;

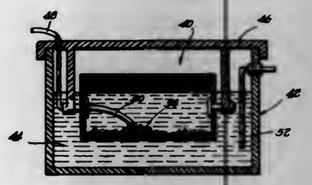
whereby the cutting means is rapidly brought into engament with the strip, to cut the strap when the strap has reached said predetermined tension.

3,344,816
TRANSISTOR LEAD RIPPLER AND STRAIGHTENER
Albert W. Zemek, Binghamton, N.Y., assignor to Universal Instruments Corporation, Binghamton, N.Y., a corporation of New York
Filed Oct. 6, 1964, Ser. No. 401,857
19 Claims. (Cl. 140—147)



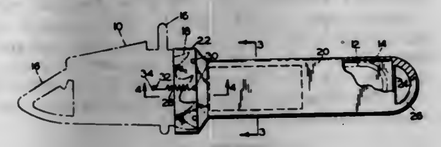
1. A machine for straightening at least one wire lead extending from a face of a body portion of an electrical component, said machine comprising first means for impressing a stationary ripple pattern along substantially the entire length of said lead while movement of said lead with respect to said impressing means in a direction lengthwise of said lead is arrested, and second means for straightening said rippled lead to remove the ripple and produce a straight lead with no appreciable tendency to bend.

3,344,817
METHOD OF SELECTIVELY HARDENING A CORROSION RESISTANT PART AND THE ARTICLE PRODUCED THEREBY
John M. Connard, Elgin, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed May 28, 1965, Ser. No. 459,826
5 Claims. (Cl. 148—12.1)



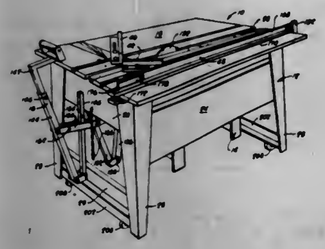
1. A method of selectively hardening a corrosion resistant drilling and thread cutting screw comprising the steps of: providing a threaded screw body of a corrosion resistant ferrous alloy selected from the group consisting of Cr and Cr–Ni steels; electroplating said screw body to coat is uniformly with a substantially gas impervious metallic layer; subjecting the coated screw body to a metal forming operation to remove a portion of the tip portion as well as an axially extending portion of the threaded shank along with said layer to selectively expose the ferrous alloy at the tip as well as said shank portion where a hardened case is desired; contacting said processed screw body with an atmosphere comprising a reactable gas selected from the group consisting of a nitrogen bearing gas, a carbon bearing gas and mixtures thereof at an elevated temperature, said gas being reactable with the ferrous alloy to produce a new and harder substance at the tip and along said shank at their exposed location; and removing the gas impervious layer from said part to reveal the unreacted regions of the ferrous alloy.

3,344,818
CHAIN SAW GUARD
John F. Musgrove, Box 583, Sutherlin, Oreg. 97479
Filed Feb. 12, 1965, Ser. No. 424,257
7 Claims. (Cl. 143—32)



1. A guard for chain saw mechanisms of the type having a motor housing and an elongated saw bar having a continuous chain saw operative thercaround, comprising a tubular housing having an outer end and an open inner end adapted to telescopically fit over the saw bar to cover the same, a grip handle on the outer end of said tubular housing for carrying the saw with said guard thereon, and means on said saw guard adapted for removably attaching the latter to a motor housing of the chain saw mechanism.

3,344,819
TABLE SAW
William A. Mitchell, Fort Worth, Tex., assignor to Donald H. Benson, Oklahoma City, Okla.
Filed Oct. 20, 1965, Ser. No. 498,794
11 Claims. (Cl. 143—36)



1. A table saw comprising:

a table including

a horizontally disposed top member having an elongated slot therein,

a pair of end members disposed in parallel, spaced relationship below and connected with said top member, and

a pair of side members disposed in parallel, spaced relationship below said top and connected with said end members and top member, said side members each having an elongated inwardly facing guide surface and an upwardly facing guide surface thereon;

a reciprocating carriage including

a frame,

a first set of roller members mounted on said frame for rotation about vertical axes and in engagement with the inwardly facing guide surfaces on said side members,

a second set of roller members mounted on said frame for rotation about horizontal axes and in engagement with the upwardly facing guide surfaces on said side members, said roller members and guide surfaces cooperating to mount said carriage for reciprocating movement in said table parallel to said slot,

a support member pivotally connected with said frame,

a cutter member rotatably mounted on said support member and having a portion thereof disposed in said slot,

driving means mounted on said support member and operably connected with said cutter member, and

adjusting means mounted on said frame and connected with said support member to pivot said support member relative to said frame; and

reciprocating means including

an elongated guide member having an upper end connected with one of said end members,

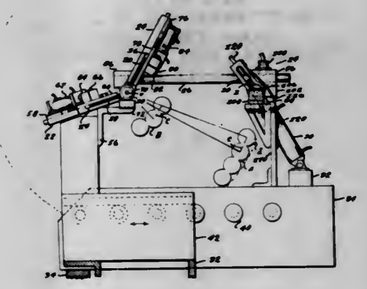
a first lever having a lower end pivotally connected with the lower end of said guide member,

a second lever having an upper end pivotally connected with said one end member,

a link having one end pivotally connected with a medial portion of said first lever and the other end pivotally connected with a medial portion of said second lever, said link cooperating with said guide means to aid in limiting said first and second levers to pivotal movement in a vertical plane, and

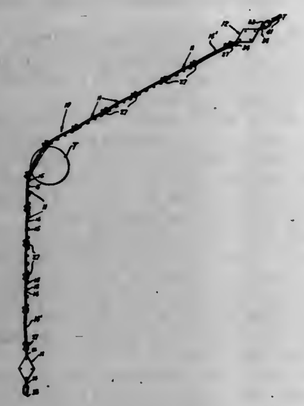
a third lever having an upper end pivotally connected with said frame and a lower end pivotally connected with said second lever, whereby pivotal movement of said first lever causes an amplified pivotal movement of said third lever to reciprocate said carriage in said table a greater distance than the movement of said first lever.

3,344,820
INDEX CONTROLLING MEANS FOR A TUBULAR SAWING APPARATUS
Richard Ferguson, Charlotte, N.C., assignor to The Terrell Machine Company, Charlotte, N.C., a corporation of North Carolina
Filed June 15, 1965, Ser. No. 464,006
8 Claims. (Cl. 143—85)



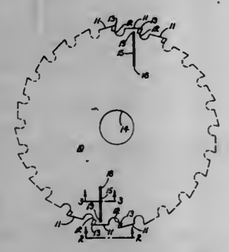
1. In a tubular sawing apparatus for cutting cylindrical billets from a wooden workpiece in which the workpiece is supported for circular indexing about an axis parallel to the tubular sawing axis and is shiftable laterally to change the spacing between said indexing and sawing axes, the improvement comprising means incorporating a positioning element aligned axially with said sawing axis, and means acting in relation to said element to determine the extent of circular indexing of said workpiece by a constant chord at any spacing of the indexing axis from the sawing axis.

3,344,821
DRAG SAW
Valentine Paganini, Billings, Mont., by decree of distribution to Lena Grenko, Laura Vergo, Rena Wait, Anita Parent, and Jean Byers
Filed Feb. 5, 1965, Ser. No. 430,670
5 Claims. (Cl. 143—135)



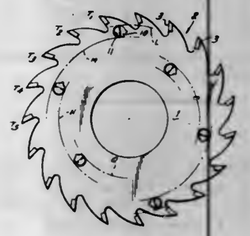
1. In a drag saw, in combination, a plurality of arcuate saw sections each having a plurality of alternate side cutting and drag teeth welded to an edge thereof, means for connecting a plurality of saw sections in aligned relation to form the saw, a drag weight at each end of said saw, means at each end of said saw for connection to a source of power, each saw section being provided with an opening at each end, said means for connecting said sections comprising a clevis having one leg insertable through the hole in the adjacent end of adjacent saw sections, the legs of said clevis having aligned openings therein, and a cotter pin extended through said openings.

3,344,822
SAW BLADE
Archie P. Wilder, 3252 Brown Ave., Fresno, Calif. 93703
Filed July 19, 1965, Ser. No. 472,931
3 Claims. (Cl. 143—140)



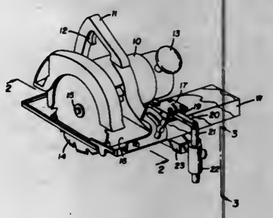
1. A rotary saw blade comprising:
(A) a circular plate having opposite sides, a concentric mounting opening, and a predetermined direction of operational rotation;
(B) cutting teeth disposed about the periphery of the plate including points having forwardly disposed surfaces extended inwardly and rearwardly with respect to the direction of rotation and oppositely axially extended from the plate and terminating in predetermined planes spaced from the plate; and
(C) elongated planing elements integral with opposite sides of the plate having longitudinal scraping edges disposed forwardly of said direction of rotation and oppositely extended from the plate distances substantially equal to the opposite axial extension of the cutting points, said elements being disposed substantially radially of the plate and exercising a radial blowing effect during rotation of the plate to cool the plate and teeth and to blow sawdust outwardly therefrom.

3,344,823
EDGER SAW
Arthur H. Demsky, 6631A NE. Hancock Court, Portland, Oreg. 97213
Filed Sept. 24, 1965, Ser. No. 489,894
6 Claims. (Cl. 143—140)



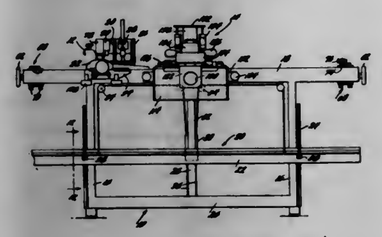
1. An edger saw comprising a saw disk having peripheral teeth and a plurality of apertures positioned radially inward of the saw teeth, a planing cutter fitting in each such aperture and a spring keeper element holding said planing cutter in place in its aperture, said apertures, being substantially circular and the planing cutters and keepers being substantially semicircular.

3,344,824
GUIDE DEVICE FOR PORTABLE ELECTRIC SAWS
Anthony Greco, Rte. 5, Box 209A, near Fairmont, W. Va. 26554
Filed May 21, 1965, Ser. No. 457,751
3 Claims. (Cl. 143—160)



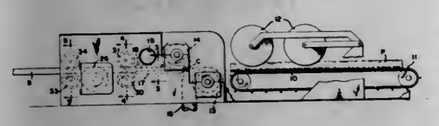
1. A guide device for a portable electric saw comprising a body member having one portion offset from the other, spaced guide engaging means on said offset portion, the other portion of said body member having means arranged to be attached to a portable electric saw at one side thereof, and a guide bar and supporting means therefor, said spaced guide engaging means on said offset portion of said body member being registrable with said guide bar for movement longitudinally thereof, positioning means for said guide bar, said means comprising columns located at either end thereof, said guide bar being pivoted at one of its ends to one of said columns.

3,344,825
ROUTING AND PLANING APPARATUS
Andrew M. Kvalheim and Irwin S. Kvalheim, both of 823–25 Petaluma Blvd. S., P.O. Box 77, Petaluma, Calif. 94952
Filed Oct. 24, 1965, Ser. No. 504,398
20 Claims. (Cl. 144—1)



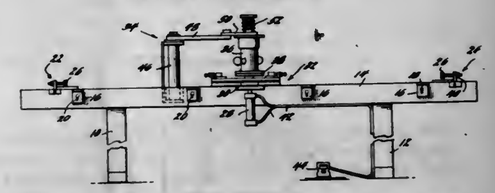
1. An apparatus for routing a first and a second workpiece comprising a frame, first means for holding the first workpiece on the frame, second means for holding the second workpiece on the frame, a router platform for supporting a router, first template means for guiding the router in routing, substantially in a single plane the first and second workpieces, second template means for guiding the router in routing the first workpiece in a plane substantially at right angles to said first routing, a router support on said router platform, a plurality of stops within said router support, and base guide means on said router for cooperating with said plurality of stops and both said template means in a routing operation, said plurality of stops being arranged in at least two positions, vertically with respect to the surface of the workpiece being routed, for routing said workpieces to at least two depths.

3,344,826
PRODUCTION OF PULP CHIPS AND STUD LUMBER FROM PEELER CORES
Leonard A. Mitten, Vancouver, British Columbia, Canada, assignor to Ernest E. Runnion, Shelton, Wash.
Filed Nov. 10, 1965, Ser. No. 507,112
4 Claims. (Cl. 144—3)



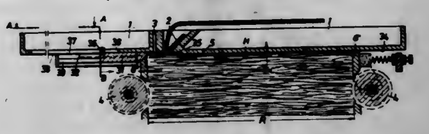
1. In a stud mill, a localized cutting station, means for conveying a succession of logs having a diameter of 5½" to 6", approximately, along an established travel path which includes said cutting station, and a set of cutter heads occupying said cutting station and together acting upon the conveyed log to reduce to pulp chips four segmental portions of the travelling log leaving a square cant measuring 4", approximately, along a side, guide means being provided which establish and maintain a bearing upon each of the four flats of the developing cant as soon as said flats take form and thereby constrain the cant against either turning about its axis or deviating from the established travel path as the following portion of the log is being chipped.

3,344,827
ROUTING DEVICE
Andrew M. Kvalheim and Irwin S. Kvalheim, both of 823–25 Petaluma Blvd. S., P.O. Box 77, Petaluma, Calif. 94952
Filed Oct. 12, 1965, Ser. No. 495,167
13 Claims. (Cl. 144—144)



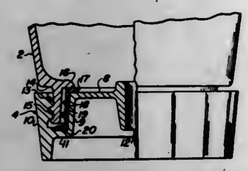
1. An apparatus for routing a suitable workpiece to at least two depths comprising a frame, means for holding a workpiece on said frame, support means for a router, template means on said frame for guiding the router in a routing operation, and base guide means on said router for cooperating with said template means in a routing operation, said template having a central opening therein, a pair of longitudinal guides one on each side above the opening and end stops at each end of the opening above the longitudinal guides, said base guide comprising a first generally square guide plate and a second lower guide plate secured to the bottom of said first plate and having a length generally equal to the base of the first plate and a width substantially less than the internal spacing of said longitudinal guides, said second plate being contact with said longitudinal guides in routing to a first depth, said first guide plate being in contact with said longitudinal guides in routing to a second depth.

3,344,828
WOOD CUTTING MACHINE, PARTICULARLY EXCELSIOR MACHINE
Paul Arthur Kirsten, Ernst-Moritz-Arndt-Strasse 6, Beuel, near Bonn, Germany
Filed July 15, 1965, Ser. No. 472,278
7 Claims. (Cl. 144—180)



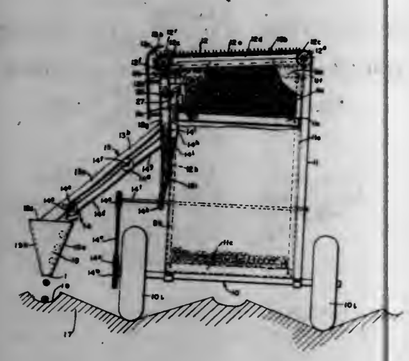
1. In a machine of the class described embodying conveyor means for feeding an elongated wood section transversely of its length with respect to a knife carriage mounted forward and rearward reciprocatory movement in the lengthwise direction of said wood section, and having forward and rearward plate means for engaging the forward and rearward ends of said wood section to hold the latter in position for cutting, the combination of knife means mounted in said carirage means for cutting said wood section in the forward movement of said carriage means, said carriage means having a first carriage surface lying ahead of said knife and a second carriage surface lying rearwardly of said knife, said forward plate means and said knife defining a gap therebetween in the forward movement of said knife toward said forward plate means at the forward terminal end portion of said wood section, locking plate means mounted outwardly of said forward plate means providing for cutting of said wood section at said gap by said knife, said second carriage surface lying in a plane not extending below the plane of said first carriage surface, and a relief depression between said knife and said second carriage surface.

3,344,829
GASKET ARRANGEMENT FOR BLENDER CONTAINERS
Melvin H. Ripple, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Oct. 22, 1965, Ser. No. 501,977
6 Claims. (Cl. 146—68)



1. A base assembly for blender containers or the like comprising a base member having a substantially flat circular portion with an opening through the center thereof for mounting a cutter shaft, an inner circumferential wall depending from the periphery of said circular portion, and a substantially horizontal circumferential wall projecting outwardly from the bottom edge of said inner wall, the improvement comprising; circular top gasket means positioned on the top periphery of said circular portion and circular bottom gasket means positioned on said horizontal circumferential wall.

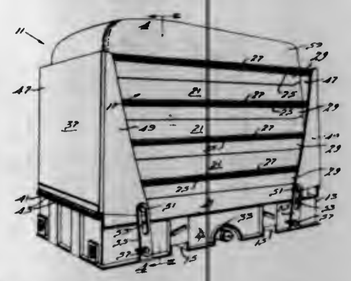
3,344,830
SUGAR CANE PLANTER
Orville O. Longman, P.O. Box 242, Baldwin, La. 70514
Filed Sept. 9, 1965, Ser. No. 486,083
11 Claims. (Cl. 146—129)



8. A sugar cane planter comprising
(a) a container for carrying a quantity of sugar cane stalks with their axis disposed longitudinally of the cane row into which they are to be planted,
(b) a planting apron downwardly declined from the top of the container and positioned to receive cane stalks from the top of said container,
(c) cane transfer means positioned at the top of the container to engage the sugar cane stalks and laterally transfer the stalks from the top of the container onto said apron, and
(d) cane dispensing metering means carried by the lower free end of said apron and being positioned to gravitationally receive cane stalks from said apron and to discharge any predetermined number of cane stalks into an open cane row.

11. A sugar cane planter as claimed in claim 8, further comprising cane severing means positioned above the container for severing the length of the sugar cane stalks in said container for a distance below the top thereof to free the sugar cane stalks from any disengagement with the cane lateral transfer means.

3,344,831
PALLET CONTAINER
Ralph C. Brackett, Fresno, Calif., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed July 30, 1964, Ser. No. 386,152
4 Claims. (Cl. 150—0.5)



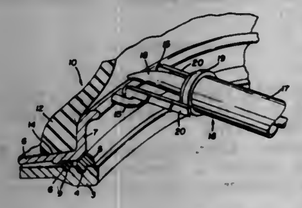
1. A pallet container comprising
a base,
a flexible collapsible container disposed upon said base and having a lower portion connected thereto.
means providing a sealable inlet opening to said container adjacent the lower end portion thereof for the reception and delivery of a fluid substance,
at least one door pivotally attached to said base for movement from a position substantially overlying said base to a position generally vertically thereof,
and a plurality of vertically spaced frames surrounding said container and each having an outer portion engageable with said door,
whereby insertion of a fluid substance within said container will expand said container vertically with said frames engaging and pivoting said door to its generally vertical position and delivery of said substance from said container will permit said container to collapse and said door to move to its base-overlying position.

3,344,832
PNEUMATIC TIRE
Alfred Horne, 417 Market, San Diego, Calif. 92101
Filed Sept. 8, 1965, Ser. No. 485,777
1 Claim. (Cl. 152—175)



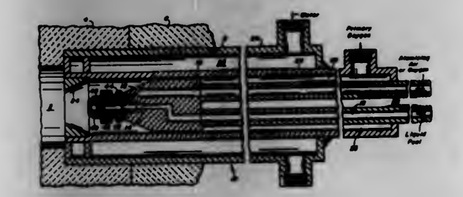
An improved pneumatic tire having a detachable tread section comprising;
an inflatable portion having rim beads for supporting said inflatable portion on a wheel rim and a pair of side shoulders having supporting beads therein;
a rigid outside casing having two substantially symmetrical halves said outside casing having a pair of flanges cooperating with said side shoulders and resting thereon: and
a circular integral tread member having a tire tread on the outside surface thereof; and
an inside rigid casing carrying said tread member, said inside rigid casing being fixedly attached to said rigid outside casing.

3,344,833
TIRE BEAD LOOSENING TOOL
William D. Pile, Stow, Ohio, and Donald R. Shuster, Lansing, Mich., assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 21, 1965, Ser. No. 499,158
4 Claims. (Cl. 157—1.17)



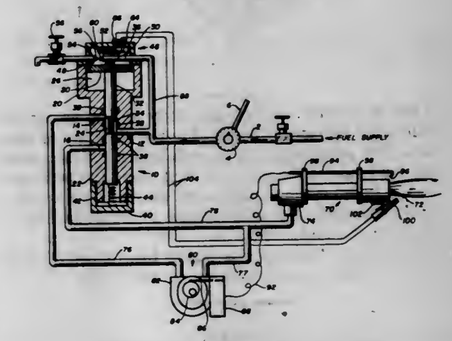
1. The combination of a tire bead loosening tool and a special adaptor means for attaching the tool to the side flange of a wheel rim during the loosening of a tire mounted thereon, comprising:
(a) an actuator;
(b) a plunger driven by the actuator for imparting inward movement to the tire bead away from the side flange to break the seal between the bead and the rim;
(c) a plurality of adaptors permanently attached at spaced locations around the circumference of the side flange; and
(d) hook means mounted on the actuator for removably attaching said actuator to at least one of the adaptors to hold the actuator in spaced relationship to the side flange during the operation of the tool.

3,344,834
APPARATUS FOR PARTIAL COMBUSTION OF HYDROCARBON FUELS
Jerome Feinman, Monroeville, Pa., and David A. Muskat, North Madison, Ohio, assignors to United States Steel Corporation, a corporation of Delaware
Filed May 26, 1965, Ser. No. 459,019
3 Claims. (Cl. 158—4)



1. Apparatus for partially combusting non-gaseous hydrocarbon fuel comprising a tubular member having an entry and exit end, said tubular member having a substantially constant inside diameter for the majority of its length; a nozzle within said tubular member adjacent its exit end, said nozzle including an outer cylindrical portion closely fitting the inside of said tubular member, said cylindrical portion having at least four spiral grooves therein equally spaced around its periphery and each having an opening at each end into the inside of said tubular member, and a burner tip at its exit end of less diameter than the inside of said tubular member, said nozzle including a central axial passageway for said fuel and means for delivering an oxygen containing gas around said passageway; means within said tubular member for separately delivering fuel and oxygen containing gas to said nozzle, and means for introducing oxygen into said tubular member and into said spiral grooves.

3,344,835
PILOTLESS AUTOMATIC IGNITION APPARATUS
Robert A. Hodgson, Tulsa, Okla., assignor to Maloney-Crawford Tank Corporation, a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,507
8 Claims. (Cl. 158—125)



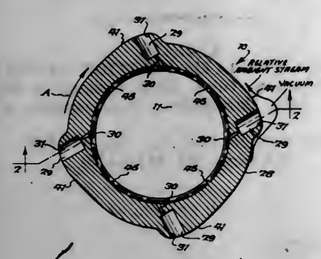
1. In a fluid fuel burning control system comprising:
a main burner having a burner tip portion;
a fluid fuel supply conduit;
a fuel switching valve having a fuel supply entrance port, and first and second exit ports, said valve normally positioned to provide communication with said first exit port;
a first conduit connecting between said burner and said first exit port;
a second conduit connecting between said burner and said second exit port;
a spark generator integrated in said first conduit so as to be driven by said fuel flow through said first conduit on its way to said burner;
a spark-rod connected electrically to said generator and insulatively positioned adjacent said main burner tip portion to form a space gap therewith; and
an actuator means to operate said fuel switching valve to a position providing communication of said entrance port with said second exit port.

3,344,836
REVOLVING DISC SPRAY TYPE EVAPORATOR
John F. Kopczynski, 1671 Sweeney St., North Tonawanda, N.Y. 14120
Filed Dec. 3, 1965, Ser. No. 511,485
12 Claims. (Cl. 159—3)

1. A device for converting a component of a liquid into a vapor, which comprises:
(a) an annular body mounted for rotation and having therein a closed chamber substantially concentric with the axis of rotation of the body,
(b) said body having therein a plurality of recesses opening outwardly through the outer peripheral wall

of the body and arranged in succession and circular spaced apart along that wall and also a corresponding number of passages each respectively opening at one end into said chamber through the inner peripheral wall of the chamber and at its other end into the inner end of a said recess,

(c) the width of each recess at its open face in a direction parallel to the axis of rotation of the body being less than the width of said wall at the recess in a direction parallel to said axis of rotation,



(d) the peripheral wall of said body having an air foil cambered surface with regard to the direction of rotation, just preceding and at each recess for increasing the tendency of the ambient fluid along the periphery of the body, during rotation of the body, to create a partial vacuum radial lift action at the open face of each recess, and

(e) means for delivering a liquid for vaporization to said chamber during rotation of said body.

3,344,837
FOLDING PANEL ASSEMBLY
John C. Young, Reedsville, Pa., assignor to Hinge Gear Products, Inc., Fairfax, Va., a corporation of Pennsylvania
Filed July 15, 1965, Ser. No. 472,210
18 Claims. (Cl. 160—189)

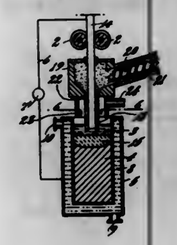


1. A folding panel assembly for an opening in a structure operable between an extended limit position closing the opening and a retracted limit position exposing the opening, comprising a pair of spaced apart parallel trackways in the sides of the opening, each trackway consisting of a pair of parallel inner and outer channels, at least two pairs of panel members, means pivotally connecting the panel members of each pair along adjacent side edges, control hinge gear means connecting adjacent panel members of the pairs of panels and control means for connecting said panel members to said structure, said control means including a torque control arm at each side of said folding panel assembly adjacent said hinge gear means, said torque control arm having guide rollers at opposite terminal ends engaging in said channels, said hinge gear means and control means cooperating to effect controlled movement of said panel members with respect to one another between extended and retracted positions, said torque control arm maintaining the pivotal axes of the hinge gears in a predetermined common plane during movement of said panel members between said extended and retracted positions.

3,344,838
METHOD FOR PRODUCING AN EXOTHERMIC LINING FOR INGOT AND FOUNDRY MOLDS AND HOT TOPS
Henry Nouveau, Saint-Germain-les-Corbeil, France, assignor to Societe a Responsabilite Limitee Doittau Produits Metallurge, Seine-et-Oise, France, a French company
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,586
Claims priority, application France, Dec. 31, 1963, 958,963; May 29, 1964, 976,414
9 Claims. (Cl. 164—33)

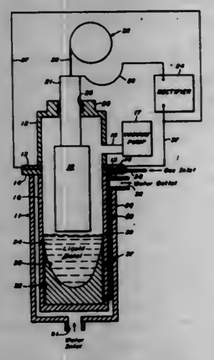
1. A method for producing an exothermic lining for ingot and foundry molds and hot tops, comprising producing at least one mixture with water, of a powder selected from the class consisting of calcium silicide and aluminum silicide of a powder insoluble in water of an oxide of a metal selected from the class consisting of manganese and iron in an amount effective to oxidize said silicide, and of a filler and a binder insoluble in water, depositing said at least one mixture in at least one layer on a porous substrate by filtration, and drying the deposit and setting the binder at elevated temperature.

3,344,839
PROCESS FOR OBTAINING A METALLIC MASS BY FUSION
Jean Albert Francois Sunnen, Uccle, Brussels, Belgium, assignor to La Soudure Electrique Autogene, Procedes Arcos, Brussels, Belgium, a corporation of Belgium
Filed May 18, 1964, Ser. No. 368,124
Claims priority, application Belgium, Nov. 28, 1963, 513,653, Patent 648,541
8 Claims. (Cl. 164—52)



1. A process of obtaining a metallic mass by fusion, which comprises maintaining a pool of molten metal in a mold, maintaining a pool of molten slag on said pool of molten metal in said mold, merely compacting metallic powders, directly above the pool of molten slag, in order to form at least one fusible electrode presenting compacted metallic powder on at least a portion of its periphery, said electrode being a composite electrode comprising a solid metallic core and a layer of metallic powder compacted on said core having a weight at least several times the weight of the core, continuously forcing said fusible electrode into the pool of molten slag, passing electric current from said fusible electrode through said molten slag in order that by the heat resulting from its passage through the molten slag, it progressively melts the electrode and keeps the slag and the nearby metal covered by the slag in a molten condition, and cooling the mold to cause the molten metal to solidify.

3,344,840
METHODS AND APPARATUS FOR PRODUCING METAL INGOTS
Russell C. Buehl, Beaver, Pa., and Reinhold Schempp, Clay, N.Y., assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
Filed July 1, 1966, Ser. No. 563,636
6 Claims. (Cl. 164—122)



1. In a vacuum arc melting process, a method of enhancing the rate of melting of a metallic consumable electrode and of enhancing the rate of solidification and the homogeneity of a metal ingot produced thereby, in a mold having fixed sides and bottom, comprising arc melting the electrode into a metal mold, cooling the mold to solidify an outer skin about the molten metal and to form a solid metal ingot below the solidified skin whereby the solidified metal shrinks away from the mold wall to form an annular shrinkage space therewith, retaining a seal of molten metal between the mold and the molten metal above the solidified outer skin, introducing into the shrinkage space below the seal at least one gas substantially non-reactive with the metal, and maintaining the gas pressure in said space at a value less than that sufficient to rupture the molten metal seal and substantially static within said cooling zone, thereby maintaining the gas below the seal and within the shrinkage passage.

3,344,841
CONTROL APPARATUS FOR A CONTINUOUS CAST BILLET
Fredrick W. Rys, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 18, 1965, Ser. No. 465,089
20 Claims. (Cl. 164—150)

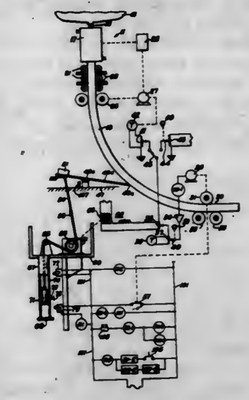
13. A continuous casting machine comprising:

(a) a casting mold;

(b) pinch rolls for withdrawing continuously a cast strand from said mold;

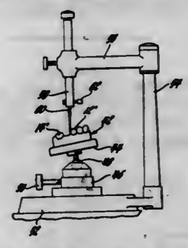
(c) straightener rolls for straightening said cast strand;

(d) means for driving said straightener rolls at a speed proportional to the speed of said pinch rolls whereby said cast strand extends in an arc from said pinch rolls to said straightener rolls; and



(e) means for changing the proportional speed relationship as a function of curvature of the arc of said cast strand.

3,344,842
APPARATUS FOR FORMING AN INTERPROXIMAL INTERLOCK
Alan F. Cameron, 3106 Maplewood, Royal Oak, Mich. 48073
Filed Apr. 13, 1964, Ser. No. 359,156
9 Claims. (Cl. 164—236)



6. A device for forming an interlock between first and second inlays in a dental bridge wherein said inlays are formed from first and second patterns, said device comprising:

a body of continuous cross section adapted to be mounted for movement along a line, a portion of said body along one edge thereof being of enlarged cross section;

and means for moving said body repeatedly along said line during formation of said first and second patterns to form a groove in said first pattern and a matching tab extending from said second pattern;

whereby, when said inlays are formed from said patterns, said first inlay will be provided with a groove and said second inlay will be provided with a tab of the same shape, dimension, and angular relation as said groove to fit perfectly therein.

3,344,843
APPARATUS FOR MAKING WROUGHT IRON AND STEEL PLATE
Jorge Miller, Carrera 10, No. 1964, Of. 911, Bogota, Colombia
Filed Mar. 2, 1965, Ser. No. 438,463
6 Claims. (Cl. 164—259)

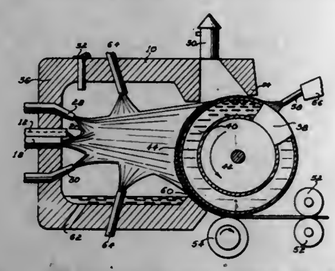
1. An apparatus for conversion of molten metal into plate, comprising:

(A) a reactor having an entry port at a closed end

thereof and an exhaust gas exit port at an open end thereof;

(B) cupola fore-hearth means for conveying said molten metal to said reactor;

(C) gaseous compound primary nozzle means supported in said entry port, said primary nozzle means having opposed sides for emitting a trough-like jet beneath said molten metal falling from said fore-hearth into said reactor, and an auxiliary gaseous compound nozzle co-axially disposed with respect to



the line of maximum vacuum created by said opposed sides of said trough-like jet;

(D) means directing said gaseous compound through said nozzles at a pressure sufficient to shatter said molten metal into particles having a diameter in the range of 10 to 1,000 microns; and

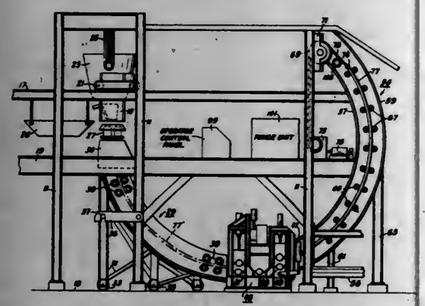
(E) endless rotatable wall means positioned at said open end of said reactor opposite said primary nozzle so as to recover shattered molten particles and remove said particles from said reactor as metal plate.

3,344,844

APPARATUS FOR HANDLING A CURVED CONTINUOUS CASTING STARTING BAR

Kurt Reinfeld and Joseph Rokop, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,562
9 Claims. (Cl. 164—274)



2. A starting arrangement for a continuous metal casting machine having an arcuate roller apron structure with an entrance end adjacent the bottom of a fixed vertical flow-through casting mold and a discharge end oriented in a substantially horizontal direction, comprising:

(a) an arcuate rigid starting bar conformable to the curvature of said apron structure; and

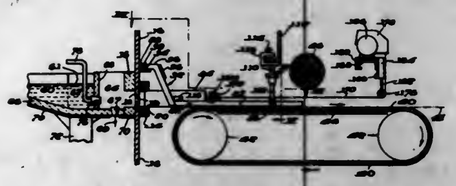
(b) straightener rolls positioned adjacent the discharge end of said apron structure and adapted to operate upon said arcuate starting bar for advancing the same into mating relation with said casting mold and controllably withdrawing said bar and casting from said mold.

3,344,845

HORIZONTAL CONTINUOUS CASTING APPARATUS

John A. Blessinger, Maryville, Tenn., and Gerald L. Molvik, East Wenatchee, and Richard C. Harris, Wenatchee, Wash., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 16, 1965, Ser. No. 480,055
2 Claims. (Cl. 164—274)



1. In continuous casting apparatus comprising a plurality of horizontally disposed open ended chilled molds sharing a common molten metal supply and common prime ingot support and withdrawal means, the improvement comprising

means for closing the flow of molten metal to a selected mold without interrupting flow to the remaining molds and

means for restarting casting at the selected mold comprising

a separate starting plug constructed to close the mold outlet to the flow of molten metal,

means for supporting the starting plug so as to maintain said starting plug in axial alignment with said selected mold,

means for withdrawing the starting plug and the ingot connected thereto at a rate independent of the prime ingot withdrawal means,

means to prevent starting plug response to said prime ingot withdrawal means, and

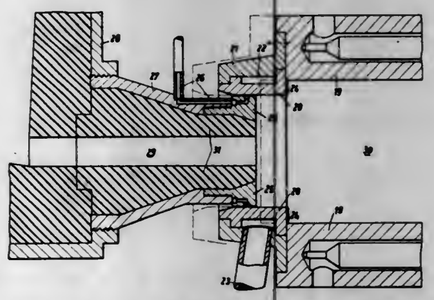
means for transferring support and withdrawal of the starting plug and the ingot connected thereto to the prime ingot withdrawal and support means.

3,344,846

APPARATUS FOR CONTINUOUSLY HORIZONTALLY CASTING HIGH MELTING METALS, PARTICULARLY STEEL

Alexander V. Rossing, Gerlafingen, Switzerland, assignor to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany

Filed Aug. 27, 1965, Ser. No. 483,104
Claims priority, application Germany, Sept. 1, 1964, D 45,324
1 Claim. (Cl. 164—281)



Apparatus for continuously horizontally casting high melting metals, especially steel, comprising a horizontally disposed axially reciprocable continuous casting mold

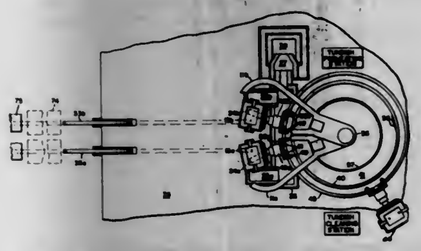
and a pouring spout attached to a stationary pouring vessel and by way of which the molten metal can enter and at least partly solidify in the mold, said mold having rigidly affixed to its entry end an extension having a channel which is axially aligned with the mold and has a diameter to form with the internal surface of the mold a shoulder.

3,344,847

APPARATUS FOR THE CONTINUOUS CASTING OF MOLTEN METAL

Paul K. Beemer, Laguna Beach, Calif., assignor, by mesne assignments, to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 14, 1966, Ser. No. 534,185
2 Claims. (Cl. 164—281)



1. Continuous casting apparatus comprising:

a plurality of independently operable spaced mold means for forming strands of solidified metal;

a multiple-stream tundish box having a plurality of discharge openings spaced to register with said spaced molds;

a plurality of single-stream tundish boxes, each of said single-stream tundish boxes having a single discharge opening therein;

means for mounting said tundish boxes and for selectively interchangeably moving said tundish boxes into and out of a position with the discharge openings thereof in registry with said molds; and

means for discharging molten metal into said tundish boxes, including ladle carrier means mounted for pivotal movement about a vertical axis in a plane above said tundish boxes and said molds.

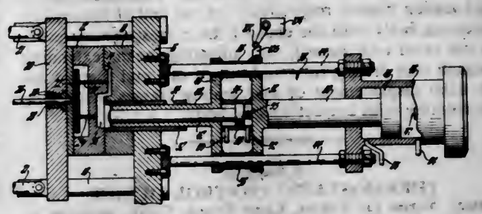
3,344,848

DIE CASTING APPARATUS WITH NON-TURBULENT FILL AND DUAL SHOT PLUNGER ARRANGEMENT

Harry D. Hall, Birmingham, Mich., David C. Salatin, Anderson, Ind., and Don R. Sutherland, Mount Clemens, and Clayton J. Trible, Berkley, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application June 24, 1963, Ser. No. 289,903, now Patent No. 3,270,383, dated Sept. 6, 1966. Divided and this application Apr. 25, 1966, Ser. No. 545,112
4 Claims. (Cl. 164—312)

1. In a die casting apparatus the combination comprising a stationary cover die and a movable ejector die movable between die open and die closed positions cooperatively defining a cavity therebetween, a shot sleeve having one end extending into the cover die, said dies including a substantially nonrestricted passage extending upwardly from said end of said shot sleeve to said cavity, said shot sleeve having a molten metal charging opening externally of said cover die, a first shot plunger having a tip reciprocable within said sleeve between a retracted position in which said opening is exposed for receiving a charge of molten metal and an advanced position near the said one end of said sleeve, said first plunger including a second smaller plunger reciprocable within a longitudinal bore in said first plunger substantially centrally thereof between a retracted position in which the tip forms the



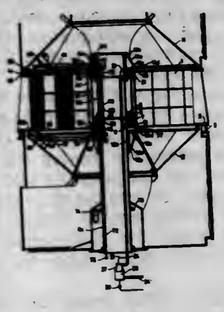
central portion of the first plunger tip and an advanced position substantially beyond said first plunger tip, means for advancing said first plunger from its retracted position to its advanced position while the second plunger is maintained in its retracted position.

3,344,849

SEALING AND BEARING MEANS FOR ROTARY-REGENERATIVE HEAT EXCHANGERS OF THE TYPE HAVING A STATIONARY ROTOR

Werner Firgau, Heidelberg-Pfaffengrund, and Albert Gsell, Weinheim an der Bergstrasse, Germany, assignors to Svenska Rotor Maskiner Aktiebolag, Stockholm, Sweden, a company

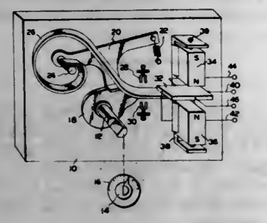
Filed Jan. 3, 1964, Ser. No. 336,854
9 Claims. (Cl. 165—4)



6. In regenerative heat exchanger apparatus of the character described and having an annular stationary regenerator body containing a heat exchanging mass forming passages for the flow of a heating fluid and a fluid to be heated axially therethrough, and a rotatable duct member at each end of said regenerator body for directing one of said fluids through said body and having a sector-shaped opening adjacent the end surface of said body, the combination which comprises a driving tube passing centrally through said regenerator body and rigidly interconnecting said rotatable duct members, radial and thrust bearing means disposed between said driving tube and said body, a movable sealing frame yieldingly and sealingly connected to each duct member opening and adapted to follow the deformations of the adjacent end surface of said regenerator body, a lever disposed adjacent each end of each of said sealing frames with the inner and outer edges of said frames being suspended from its respective lever, pivot means disposed centrally of said levers between the radial inner and outer ends thereof for pivotally supporting said levers, said pivot

means having bearing means disposed on the adjacent rotatable duct members, casing means surrounding said rotatable duct members and forming inlet and outlet chambers for said heating fluid and said fluid to be heated respectively, and adjusting means connecting the ends of the levers connected to the radial inner and outer ends of said sealing frames, respectively, at one end of the said regenerator body with the ends of the corresponding levers on the other end thereof, said adjusting means extending through said driving tube and out of one end thereof for the axial displacement of said sealing frames while they are rotating with respect to said body.

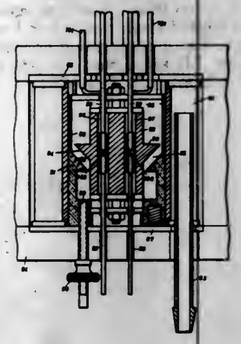
3,344,850
THERMOSTATIC CONTROL DEVICE
Wesley Verne De Forest, Long Beach, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,789
13 Claims. (Cl. 165—26)



1. In a thermostatic control system for combined heating and cooling systems, the combination comprising
means establishing a pair of magnetic fields spaced from each other to define a null position therebetween,
Hall plate means normally disposed in the null position between said magnetic fields,
input current means for said Hall plate means,
output voltage means for said Hall plate means,
thermally responsive means operatively connected to said Hall plate means for moving the same from the null position into one magnetic field in response to heating demand and into the other magnetic field in response to cooling demand whereby said output voltage means present one phase signal for heating demand and another phase signal for cooling demand,
heating and cooling control means including electric circuit means receiving the signals from said output voltage means and being separately operated thereby in accordance with the phase of each signal.

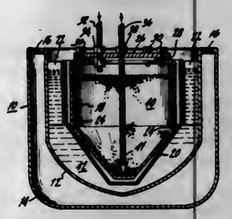
3,344,851
THERMOSTAT
Eberhard König, Uberlingen (Bodensee), and Hans-Egon Rödel, Sipplingen (Bodensee), Germany, assignors to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Uberlingen (Bodensee), Germany
Filed May 22, 1964, Ser. No. 369,456
Claims priority, application Germany, June 1, 1963, B 72,138; Dec. 16, 1963, B 74, 681
6 Claims. (Cl. 165—39)

1. A device for maintaining an object at a closely controlled desired temperature comprising:
a hollow cylindrical heat source, the temperature of which is controlled so as to have an average value substantially at said desired object temperature, but which fluctuates about said average value;
heat flow damping means having a high thermal resistance positioned substantially inside said cylindrical heat source and at least partially surrounding said object, for smoothing out the effect on said object of the short-term fluctuations of said heat source temperature;
and a substantially cylindrically shaped heat bridging body of good heat-conducting material, having its outer wall in close physical and thermal contact with said heat source;
said cylindrical heat bridging body being movable in the direciton of its cylinder axis and comprising an internal flange having a substantially conical surface extending generally perpendicular to said axis;



said object comprising an outwardly extending part including a substantially conical surface, which in a first optional position of said heat bridging body substantially mates with said conical surface of said heat bridging body internal flange, so that a good heat-conduction path from said source to said object is effected;
whereby said heat flow damping means is effectively bypassed when said heat bridging body is in said first position, thereby allowing a rapid change of the object temperature so as to approximate that of said source when a great temperature difference exists.

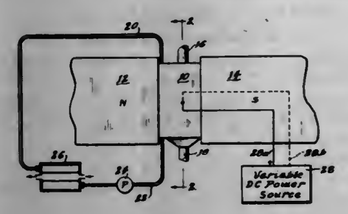
3,344,852
GAS DRYING APPARATUS
Gustav Bergson, Apt. 319, Benson Apartments, Jenkintown, Pa. 19046
Filed June 15, 1964, Ser. No. 375,238
2 Claims. (Cl. 165—71)



1. Gas drying apparatus comprising,
a substantially conically shaped container having an upper base portion and a lower apex portion,
a gas inlet opening communicating with the interior of said container near the upper portion thereof,
a gas outlet opening communicating with the interior of said container near the lower apex portion thereof, and
a granular material chemically and physically inert with respect to the gas being dried providing interstices for gas flow therebetween substantially filling said container,

said container adapted to be refrigerated to a temperature below the dew point of the gas to be dried,
a temperature insulating container enclosing said substantially conically shaped container, and
including a perforated centering member positioned in said temperature insulating container between said temperature insulating container and said conically shaped container for holding said conically shaped container substantially centered with said insulating container and permitting the free flow of liquid refrigerant through the perforations thereof.

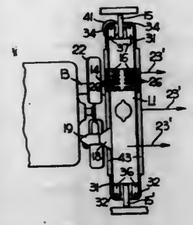
3,344,853
APPARATUS FOR CONDENSING AND CONTROLLING THE RATE OF CONDENSATION OF AN ELECTRICALLY CONDUCTING LIQUID
Ralph M. Singer, Naperville, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 2, 1965, Ser. No. 506,138
1 Claim. (Cl. 165—105)



A heat exchanger for condensing the vapor of an electrically conducting liquid comprising:
(1) a condensing chamber having a substantially planar and vertical surface of nonelectrically conducting material capable of being wetted by said vapor;
(2) means for forcing said vapor into said chamber;
(3) means for cooling the nonelectrically conducting surface of said chamber, whereby said vapor condenses, forming a continuous conducting film thereon;
(4) means for establishing a D-C magnetic field perpendicular to said condensing surface;
(5) metal electrodes placed in said chamber on either side of said condensing surface and extending substantially the vertical length thereof, said electrodes being electrically isolated from said chamber by said electrically conducting surface and being adapted to contact said condensate film;
(6) voltage-generating means; and
(7) means for connecting the output of said voltage-generating means to said electrodes, thereby establishing a current in said condensate film and inducing a force in said condensate to accelerate it in the direction of gravity.

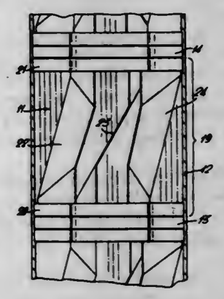
3,344,854
ANTICLOG DEVICE FOR ENGINE RADIATORS
Myron J. Boyajian, Chicago, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 20, 1965, Ser. No. 473,354
3 Claims. (Cl. 165—119)

1. In combination:
an engine radiator structure having passageways between opposite ends thereof for flow of cooling air therethrough,
a support structure mounting said radiator structure,
an endless belt screen around said radiator structure covering opposite ends of said passageways,
mounting means supporting said belt screen including at least two rollers rotatably mounted on brackets on one of said structures at opposite sides of said radiator structure,
means for moving said belt screen in its endless path around said radiator structure, and
an engine fan on the outer side of said belt screen operative to force air through said belt screen, thence



through said passageways, thence again through said screen whereby air flowing through said passageways will deposit foreign material on said belt screen at one end of said radiator structure and blow foreign material off said belt screen on the other end of said radiator structure thereby preventing clogging of said air passageways.

3,344,855
HEAT EXCHANGE ASSEMBLY INCLUDING GUIDE VANE STRUCTURE THEREIN
Peter Joseph Clark, Nelson, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 11, 1965, Ser. No. 431,962
Claims priority, application Great Britain, Nov. 30, 1964, 48,492/64
5 Claims. (Cl. 165—159)



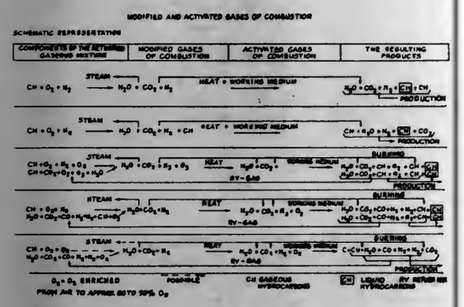
4. In an assembly of elongate heat exchange elements arranged in a cluster which is generally symmetrical about a central axis, the combination comprising a plurality of guide vanes disposed symmetrically about said axis, each guide vane being tilted with respect to said axis and formed with apertures through which the elements pass whereby to cause fluid flow over the elements to follow a generally helical path about said axis, and means extending transversely of said axis at opposite ends of the guide vanes for maintaining a spaced parallel relationship of the heat exchange elements and for supporting the guide vanes, said means including a mesh of metal element-engaging strips and having ends of the vanes connected thereto.

3,344,856

PROCESS FOR THE EXTRACTION OF LIQUID AND SOLID BITUMENS FROM UNDERGROUND DEPOSITS

Hans Lange, Wietze, Kreis Celle, Germany, assignor to Deutsche Erdol-Aktiengesellschaft, Hamburg, Germany

Filed Mar. 18, 1965, Ser. No. 440,852
Claims priority, application Germany, Mar. 26, 1964, 47,426
15 Claims. (Cl. 166—4)



2. A process for the extensive recovery of liquid and solid bitumens from underground deposits comprising the following steps:

(a) locating at least one relatively deep flooding boring, at least one relatively shallow production boring, at least one treatment boring and at least one leading boring, said treatment and leading borings located between said flooding boring and said production boring and spaced a predetermined direction apart from one another in a stratum of an underground deposit of bitumens;

(b) introducing into said treatment boring an activated gas of combustion comprising oxygen and hot modified gas of combustion comprising steam and carbon dioxide;

(c) developing a hot reaction zone between at least one of said treatment borings and at least one of said leading borings having a given temperature range by the sensible heat of said gas of combustion and the reaction of a portion of said bitumens and oxygen and producing additional modified gases of combustion;

(d) conducting further into said stratum ahead of said reaction zone said additional modified gases of combustion from (c), where they condense and dissolve to form a liquid phase with the contents of the stratum; and

(e) advancing said reaction zone and displacing ahead of it the stratum contents with the condensed and dissolved gas of combustion in the direction of the production boring by the introduction of water through said flooding boring, and removing the advanced stratum contents through the production boring.

3,344,857

FLUID DRIVE PRODUCTION OF OIL

Ralph E. Gilchrist, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 8, 1965, Ser. No. 437,994
7 Claims. (Cl. 166—9)

1. A process for producing oil from an oil-bearing stratum penetrated by an injection well and a production well comprising the steps of:

(a) injecting into said stratum thru said injection well in the following sequence:

(1) a bank of aqueous solution of surfactant which decreases the solubility of CO_2 therein as compared to pure water, the concentration of surfactant being in the range of 0.0001 to 10 weight percent;

(2) a bank of gaseous CO_2; and

(3) a second bank of the aqueous solution of (1);

(b) driving the injected banks thru said stratum toward said production well by fluid drive so as to displace oil thereinto; and

(c) producing the oil displaced in step (b) from said production well.

3,344,858

PRODUCTION OF OIL BY AQUEOUS DRIVE WITH SURFACTANT FORMED IN SITU

Ralph E. Gilchrist and Richard J. Sonnenfeld, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 2, 1965, Ser. No. 484,557
14 Claims. (Cl. 166—9)

1. A process for producing oil from an oil-bearing stratum comprising the steps of:

(1) injecting into said stratum thru a well therein a slug of an aqueous alkali solution capable of forming surfactant wth the acid of step (2);

(2) thereafter, injecting a slug of surfactant forming organic acid dissolved in a light hydrocarbon, so as to cause mixing of said alkali and acid adjacent the interface of the slugs to form surfactant;

(3) driving the surfactant formed in step (2) thru said stratum toward a production well to displace oil into said production well; and

(4) recovering the produced oil from said production well.

3,344,859

METHOD OF INHIBITING PARAFFIN DEPOSITION IN OIL WELLS

Salim M. Bucaram, Tulsa, Okla., assignor to Sinclair Research Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 30, 1964, Ser. No. 364,000
3 Claims. (Cl. 166—40)

1. A method of inhibiting paraffin deposition in an oil well by depositing naphthalene in the underground oil-bearing formation adjacent the well which consists essentially of introducing into said well formation, at a temperature above about 200° F., a solution of naphthalene in crude oil previously produced by the well being treated containing from about 30% to 80% by weight of naphthalene based on the weight of the oil and allowing the solution to cool to formation temperature whereby a major portion of the naphthalene is deposited in the formation when the solution of oil and naphthalene reaches the temperature of the formation.

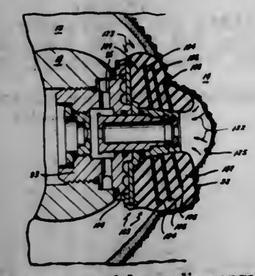
3,344,860

SIDEWALL SEALING PAD FOR BOREHOLE APPARATUS

Ulrich E. Voetter, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed May 17, 1965, Ser. No. 456,309
7 Claims. (Cl. 166—100)

1. A sealing pad adapted for sealing against the wall of a well bore traversing earth formations comprising: a tubular member; reinforcing means extending laterally of said tubular member and movable relative thereto; resilient sealing means around said tubular member and reinforcing means, said resilient sealing means having a forward sealing surface adapted for sealing engagement with a wall of a well bore; and means for supporting the rearward portions of said tubular member and resilient sealing means.

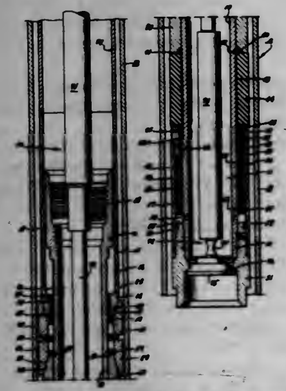


3,344,861

STAGE SET WELL PACKERS

Jackson R. Claycomb, Monroeville, Pa., assignor to Baker Oil Tool, Inc., City of Commerce, Calif., a corporation of California

Filed May 13, 1965, Ser. No. 455,508
14 Claims. (Cl. 166—120)



2. In a well packer adapted to be lowered in a well conduit disposed in a well bore: a body having a passage; initially retracted slip means disposed about said body; expander means fixed to said body and engageable with said slip means to expand said slip means against the well conduit upon longitudinal movement of said body and expander means relative to said slip means; initially retracted packing means on said body having an end portion engaging said expander means; and hydraulically operable means on said body engaging the other end portion of said packing means and movable toward said expander means in response to fluid pressure in said body passage to expand said packing means against the well conduit after expansion of said slip means against the well conduit.

3,344,862

COMBINED TUBING ANCHOR COLLAR LOCATOR AND SWIVEL

Martin B. Conrad, P.O. Box 1026, Downey, Calif. 90240

Filed Mar. 1, 1965, Ser. No. 436,041
13 Claims. (Cl. 166—216)

7. A casing collar locator, comprising: an elongate tubular body adapted to be connected in a string of pipe to be run into a cased wall, friction means disposed about said body and frictionally engageable with the well casing, control means for retaining said body in a first position and operable to allow longitudinal movement of said body to a second position relative to said friction means, collar locator means on said body expansible to engage said casing, means holding said collar locator means retracted when said body is in said first position, means



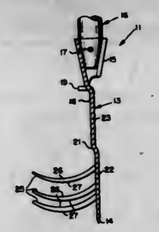
for causing expansion of said collar locator means upon movement of said body to said second position, and anchor means expansible to anchor with said casing upon further longitudinal movement of said body relative to said expanded collar locator means, said means for holding said collar locator means retracted including means connecting said collar locator means to said anchor means, and means connecting said anchor means to said body.

3,344,863

COMBINATION EDGER, SPADE, AND RAKE

Warren W. Hastings, 271 Wilmot Road, Rochester, N.Y. 14618

Filed Nov. 9, 1964, Ser. No. 409,806
4 Claims. (Cl. 172—14)



1. A garden tool comprising

(a) a rigid plate having

(1) an upper section with a straight upper edge,

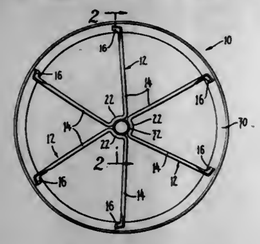
(2) a lower section having a curved, beveled lower edge, and lying in a plane parallel to but offset with reference to said upper section,

(3) an intermediate section connecting said upper and lower sections, and inclined to both sections, and extending parallel to said upper edge, and

(b) a plurality of tines secured at their inner ends to said lower section to project outwardly from said plate adjacent the lower edge thereof and arranged in a curved path, and

(c) a handle secured to and projecting upwardly from said plate.

3,344,864
PRESS WHEEL WITH SHEET METAL SPOKES
Raymond A. Beebe, Detroit, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed Feb. 18, 1966, Ser. No. 528,611
2 Claims. (Cl. 172—538)



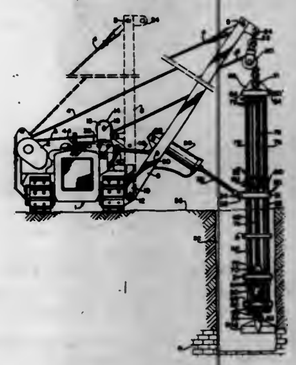
1. A press wheel assembly comprising a plurality of fabricated spokes, each pair of said spokes being the arms of one substantially V-shaped piece of sheet metal and having inwardly bent attachment projections at the outer ends thereof with each of said arms being channel-shaped in cross-section for added spoke strength, a hub firmly attached to the apex portion of each ofsaid V-shaped pieces of sheet metal and holding said V-shaped pieces together in uniformly spaced relationship, and two separate rim portions in spaced side by side relationship having peripheries in the form of truncated cones with the shorter diameter sides facing each other, said rim portions being attached to the inwardly bent attachment projections of the sheet metal spokes, thus forming a clearance intermediate said rim portions.

3,344,865
PREDETERMINED TORQUE PLUS TENSION APPLYING DEVICE
Elwyn L. Kitchen, Jr., Defiance, Ohio, and Thomas Lee, Detroit, and William E. Rise, Grosse Pointe Farms, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,474
7 Claims. (Cl. 173—12)



1. A device for applying a predetermined tension to a workpiece comprising a casing adapted to be fixed in position during use, driving means rotatably mounted in said casing and including a drive shaft, jaw clutch members, and ratchet drive means, said drive shaft extending through the casing and having one end adapted to be attached to a prime mover, one of said jaw clutch members being slidably mounted on an intermediate portion of said shaft to be rotated thereby, one other of said jaw clutch members being at the other end of said shaft and adapted to rotate said workpiece in one direction, spring means urging said one jaw clutch member into engagement with said other jaw clutch member, a screw sleeve rotatable on and coaxial with said drive shaft, said ratchet drive means comprising engageable teeth on said one jaw clutch member and on said screw sleeve for driving the latter in said one direction, second spring means resiliently connecting said casing and screw sleeve and urging the latter to rotate in the opposite direction, third spring means urging said screw sleeve toward said jaw clutch members to effect engagement of said ratchet drive means, a nut engaging said screw sleeve for movement along the latter, means retaining said casing and nut against relative rotation, and stop means limiting the range of movement of said nut with respect to said casing.

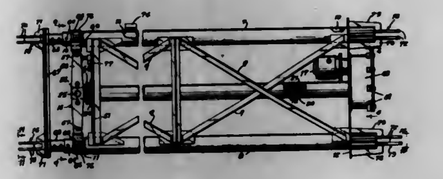
3,344,866
PORTABLE ROCK BREAKING DEVICE
Leon O. Kelley, P.O. Box 488, Stamford, Tex. 79553, and Craig E. Hatcher, 57 Carolane Trail, Houston, Tex. 77024
Filed May 14, 1965, Ser. No. 455,743
4 Claims. (Cl. 173—43)



1. A portable rock breaking device for use with a mobile prime mover, which device comprises;
(a) an outwardly extending frame pivotally mounted on and extending upwardly from a side of the prime mover,
(1) said outwardly extending frame having a sheave pulley mounted therein near the upper end thereof,
(b) hoisting means mounted on the prime mover and being connected to said outwardly extending frame to move said outwardly extending frame relative to the prime mover,
(c) a second hoisting means,
(d) a cable mounted on said second hoisting means and extending over said sheave pulley,
(e) a hammer frame, which comprises an upper section and a lower section, which frame is suspended, by the upper end thereof, from the cable, to vary the elevation thereof,
(1) a fluid cylinder mounted on the lower end of said hammer frame,
(2) a fluid actuated plunger mounted in said fluid cylinder for sequential reciprocation therein,
(3) a fluid supply means,
(4) a fluid conduit connected between an end of said fluid cylinder and said fluid supply means to supply fluid, under pressure, to said fluid cylinder to reciprocate said plunger in said fluid cylinder,
(f) a second fluid cylinder pivotally mounted on said outwardly extending frame, the plunger of which extends outward therefrom and is connected to the lower-most of said hammer frame sections, to vary the angularity thereof with respect to the vertical.

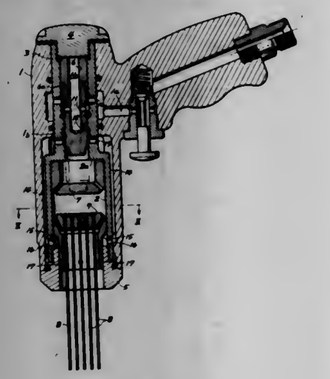
3,344,867
BOTTOM BRACE FOR PILE HAMMER LEADS
John J. Kupka, Gladstone, N.J., assignor, by mesne assignments, to KHG Associates, Merrick, N.Y., a partnership
Filed Apr. 20, 1965, Ser. No. 449,548
5 Claims. (Cl. 173—44)

1. Bottom brace for leads frames, comprising the combination of parallel, longitudinally extensible positioning struts pivotally supported at their inner ends and provided with means for connecting them with a leads frame at their outer ends,
a yoke connecting the outer ends of said positioning struts,
a longitudinally extensible power strut between and parallel with said positioning struts, pivotally supported at its inner end and pivotally connected with said yoke at its outer end,
a lead screw journalled in said power strut,



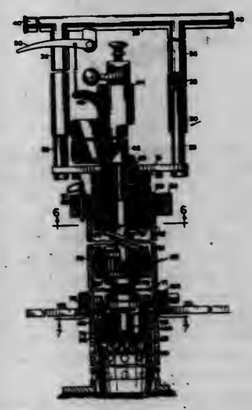
a travelling nut on said lead screw connected to effect extension and retraction of said power strut in accordance with direction of rotation of said screw,
a motor connected to drive said lead screw in opposite directions, said power strut consisting of telescopically arranged outer and inner tubes and said travelling nut being fixed on the inner end of the inner tube and the lead screw journalled on a spherical bearing in the inner end of the outer tube.

3,344,868
SURFACE WORKING MECHANICAL TOOL FOR METAL, STONE AND THE LIKE
Toshio Mikiya and Yukio Aoki, Ota-ku, Tokyo, Japan, assignors to Nitto Kohki Company Ltd., Ota-ku, Tokyo, Japan, a Japanese corporation
Filed June 15, 1965, Ser. No. 464,054
Claims priority, application Japan, June 17, 1964, 39/34,418
3 Claims. (Cl. 173—114)



1. A surface working mechanical tool for metal, stone and the like, comprising a piston having an inside cavity and adapted to reciprocate in a cylindrical member by the action of compressed air admitted into said cavity through at least a main air port provided in said piston, a pin cluster holder adapted to reciprocate in an extended cylindrical member, said pin cluster holder carrying a plurality of pins having expanded heads in such a manner that the pins are axially slidably countersunk into said pin cluster holder on the rear surface thereof, respectively, a throttle anvil interposed between said piston and said pin cluster holder in said extended cylindrical member, said pins being projected forwards by a dashing power of said piston intermediate said throttle anvil so that the tips of said pins impulsively act on a surface of work, respectively, a small air port provided in said piston in front of said main air port and adapted to pass air from said inside cavity to at least an air outlet, a frontward step provided around said pin cluster holder, and a number of flutes and second air inlets adapted to communicate said air outlet with a space in front of said step, said air outlet being adapted to be communicated with said main air port through said inside cavity and said small air port so as to admit said compressed air into said space and subsequently with said inside cavity through said main air port so as to exhaust air held inside said piston to the same space whereby said pin cluster holder carrying said pins is made to retire towards said throttle anvil.

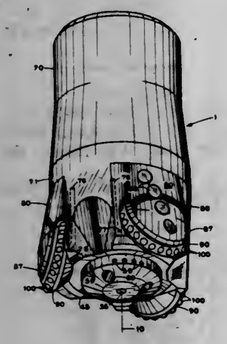
3,344,869
EARTH CORING DEVICE
Willem B. Tijmann, 197 Miller Ave., Mill Valley, Calif. 94941, and Arthur Cody, 918 Illinois St., Los Banos, Calif. 93635
Filed Sept. 3, 1965, Ser. No. 484,805
13 Claims. (Cl. 175—4)



13. A soil sampling device comprising a gun barrel, a cartridge chamber mounted in the upper portion of said gun barrel and means mounted on the upper portion of said barrel to fire cartridges carried in said cartridge chamber, a cylindrical housing adapted to be mounted over a ground area, means carrying said gun barrel coaxially in depending relation within said housing, a pair of pairs of rigid rings slidably mounted around said barrel, a resilient ring mounted between the rigid rings of each pair, spring means mounted around said barrel to spring urge the two pairs of rings in opposite relation, said resilient ring having a diameter normally making less than sealing contact with the bore of said housing and the outer wall of said barrel and operable upon compression to form gas seals against the outer wall of said barrel and the bore of said housing, a ground entry projectile having a diameter complementary with the bore of said cylindrical housing positionable below said barrel, having a diameter less than said barrel rod mounted on said projectile extending upwardly into said barrel whereby explosive gases emanating from a projectile fired from said chamber enter from between said rod and barrel

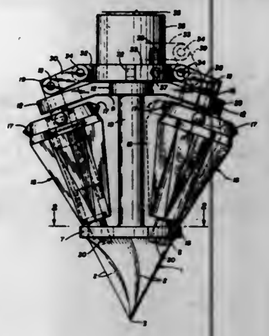
into the area between the lower of said pair of rigid rings and said projectile to cause force against said latter ring and said projectile to force the projectile out of said housing and to compress said latter ring upwardly against the respective resilient rings to cause outer expansion thereof and engagement with the bore in gas tight engagement with the bore of said cylindrical housing and the outer wall of said barrel.

3,344,870
REAMER FOR JET PIERCER
Wilford V. Morris, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,131
7 Claims. (Cl. 175—15)



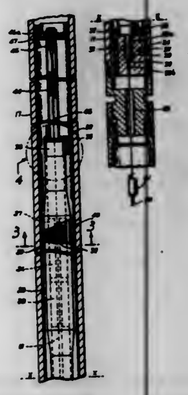
6. A jet piercer comprising a burner having a longitudinal axis of rotation and mountable with said axis in a vertical orientation so that fluid fuel and fluid oxidant are delivered to its upper end and the products of combustion are delivered through its lower end, together with a rolling cutter reamer disposed around the outer surface of said burner and having a plurality of circumferentially spaced rolling cutters mounted thereon and adapted to cut an annular portion of a borehole lying outside of the bottom area directly below said burner and adjacent the sidewall of said borehole and also to maintain the gage of said sidewall, the cutting structure of said cutters being of the type wherein compacted inserts of cemented wear resistant material are secured in holes drilled in the outer surfaces of the cutters and including at least a row disposed to rotate through a lowermost position in which they are disposed at an acute angle with respect to said sidewall while simultaneously contacting both sidewall and bottom of the hole, said burner having a number of circumferentially spaced flame ports in its lower end and a radially outwardly extending downwardly facing shoulder on its outer periphery, said reamer having a corresponding radially outwardly extending, upwardly facing shoulder on its inner periphery to engage said burner shoulder and support the burner against downward axial movement, said inner periphery of the reamer and outer periphery of the burner being provided with splines on one of them and corresponding grooves on the other receiving said splines to prevent relative rotation between burner and reamer, said splines and grooves being disposed to orient each said flame port between adjacent rolling cutters, said reamer having an upwardly extending shank adapted to form a secure connection to a sub and said reamer having an upwardly extending portion adapted to slidable and sealingly engage a header means depending from said sub inside said reamer shank to supply said fuel and oxidant.

3,344,871
EARTH BORING MACHINES AND METHOD OF SETTING POLES
Jack P. Goodman, 4000 Holland Drive, Wheatridge, Colo. 80033
Filed Feb. 17, 1965, Ser. No. 433,292
9 Claims. (Cl. 175—19)



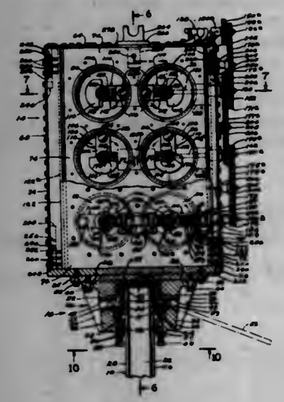
9. A method of boring a hole in compactable earth without removing earth from the hole comprising forcing a small hole in the earth by progressively displacing earth from the hole from the hole bottom upwardly and outwardly and progressively compacting the displaced earth with additional earth into the wall of the hole to form a larger hole with the earth surrounding the hole being compacted a substantial distance beyond the hole.

3,344,872
APPARATUS FOR INDICATING THE LENGTH OF CORE IN A CORE BARREL
Reuben A. Bergan, Houston, Tex., assignor, by mesne assignments, to the United States of America as represented by the National Science Foundation
Filed Oct. 22, 1965, Ser. No. 501,502
9 Claims. (Cl. 175—46)



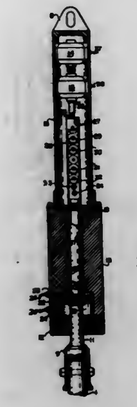
6. Apparatus for indicating at the surface the length of core in the inner barrel of a core barrel as a core is being cut from a subterranean formation comprising electrical circuit means extending from the surface to the core barrel including indicating means at the surface responsive to a changing parameter in the circuit and an adjustable element at the core barrel for changing said parameter, said adjustable element having a stationary section and a section movable relative to the stationary section to change the output signal of said adjustable means; resilient means urging the movable section in one direction, an elongated, flexible member connected to the movable section and suspended in the inner barrel to exert a force on the movable section opposing the force exerted thereon by the resilient means, and means slidably mounted in the inner barrel to be moved upwardly in the barrel by the core as it enters therein to incrementally collect the flexible member and reduce the force exerted on the movable section by an amount proportional to the distance the core has entered the barrel to permit the resilient means to move the movable section of the adjustable element and change the output signal thereof an amount proportional to the length of core in the barrel.

3,344,873
MECHANICAL HETERODYNE OSCILLATOR
Jack R. Baittinger, Scotch Plains, N.J., assignor of one-half to John J. Dougherty, Cedar Grove, N.J.
Filed Sept. 17, 1964, Ser. No. 397,210
11 Claims. (Cl. 175—55)



1. Apparatus for actuating piles comprising a housing coupled to the end of a pile, a source of alternating impulses in said housing, said source being balanced with respect to the axis of the pile and adapted to generate alternating linear impulses directed axially of the pile, a heavy metal block in said housing extending from the top to the bottom thereof, said block having pairs of spaced circular recesses in opposite sides thereof, said recesses being vertically and horizontally aligned, plate-like members rotatably mounted in said recesses, said plate-like members carrying unbalanced ball weights, closure plates securing said plate-like members in said recesses, the mounting of said plate-like members including opposed shafts journalled in the block and in the closure plates, and rotatable about axes extending perpendicular to the axis of the pile, with the members spaced at substantially the same distance from the axis of the pile on opposite sides thereof, the center of gravity of each plate-like member being eccentric to the axis of rotation thereof, and means for rotating the plate-like members about their axes in unison in opposite directions, with the center of gravity of the pair of plate like members in phase with each other.

3,344,874
LOW-IMPEDANCE ISOLATOR FOR VIBRATORY PILE DRIVER MACHINES
Albert G. Bodine, 7877 Woodley Ave., Van Nuys, Calif. 91406
Filed May 28, 1965, Ser. No. 459,754
10 Claims. (Cl. 175—56)



9. The method of isolating the vibrating system of a vibratory pile driving machine from the support mechanism therefor, comprising the steps of:
transmitting large cyclic force, low cyclic amplitude vibrations from said vibratory driving machine to said pile so as to apply vibratory force against the earth;
applying guidance force from said support mechanism to said pile and driving machine; and
directing the force transmission path of said guidance force through a change in acoustic transmission medium, which path includes a medium of substantially lower impedance than the material of said pile;
all in such manner so as to ameliorate the transmission of unwanted vibration from said pile and driving machine to said support mechanism.

3,344,875
SOIL SAMPLING DEVICE
Ross E. Briner, R.R. 1, North Manchester, Ind. 46962
Filed Feb. 23, 1965, Ser. No. 434,558
15 Claims. (Cl. 175—170)

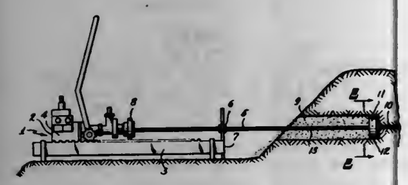
1. A soil sampling drill comprising a drill shaft having an axis and means at one end thereof for frictionally securing said shaft in a drill chuck, an earth elevator having a continuously extending helical surface generally facing said one end and extending longitudinally of said shaft from a position adjacent to said one end to a position adjacent to the opposite end of said shaft, said earth elevator having an inner and outer boundary and being coaxially secured to said shaft adjacent to said inner boundary, said surface extending laterally of said shaft between said boundaries, said outer boundary generally defining the exterior diametral drill dimension intermediate the ends of said shaft, said earth elevator having adjacent said other shaft end an end portion with a flat surface parallel to and spaced from said axis, and a drill tip having a generally prismatic shape including an apex and two generally parallel base surfaces which face in opposite directions, said tip being secured to said shaft with said flat surface adjacent to one of said base surfaces, said axis when extended passing through said apex, each of said base surfaces having a flat surface portion and

a curved surface portion, said flat surface portions being parallel and on opposite sides of said axis, respectively, said curved surface portions being concavely curved about axes of curvature which are inclined to said axis and which diverge from said apex, said curved surface portions being on opposite sides of said axis, respectively, said curved surfaces being the leading surfaces of said



drill tip when the drill is rotated and having sharpened leading edges at the boundaries thereof, the dimension of said drill tip measured laterally of said axis in one diametral direction being longer than said exterior drill dimension intermediate the ends of said shaft whereby said earth elevator is smaller than and spaced-apart from the walls of a bore made by said drill tip.

3,344,876
REAMER
Gilbert M. Turner, 806 Chowning Road, Houston, Tex. 77024
Filed Apr. 13, 1965, Ser. No. 447,806
5 Claims. (Cl. 175—401)



2. An open-type reamer useful in drilling horizontal holes comprising:

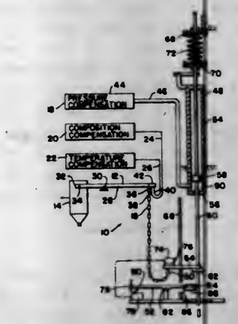
an elongated central shaft;

a plurality of support plates extending radially from said central shaft and fixedly connecting said shaft to an outer rim of generally hollow cylindrical configuration;

wherein each of said support plates has affixed thereto an arcuate blade,

said arcuate blade having therein a first row of teeth parallel to said support plate and on one edge of said arcuate blade, and a second row of teeth parallel to said support plate and on the opposite edge of said arcuate blade.

3,344,877
GRANULAR MATERIAL WEIGHER COMPENSATED FOR CHANGES IN MATERIAL PROPERTIES BESIDES WEIGHT
Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed June 10, 1966, Ser. No. 556,612
10 Claims. (Cl. 177—54)



1. Weighing apparatus for granular material or the like comprising a balance beam, means for pivotally mounting the balance beam centrally, means for receiving material to be weighed at one end of the balance beam, adjustable compensating means at the other end of the balance beam for changing the weight at which the beam balances, means for sensing any change in a property other than weight of a material and for automatically resetting said adjustable compensating means in accordance with the sensed change whereby the quantity of material being weighed necessary to balance the balance beam is varied in accordance with the property of the material.

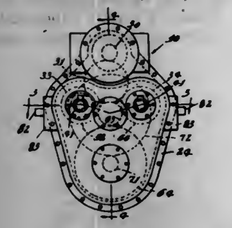
3,344,878
KNOCKDOWN WEIGHING SCALE
Raul Jimenez Gonzalez, Monte Parnaso 157, Mexico City 10, Mexico
Filed Sept. 10, 1964, Ser. No. 395,429
2 Claims. (Cl. 177—127)



1. A knockdown weighing scale package comprising a container having a bottom, side walls, and end walls, spaced guides secured to opposed faces of the end walls, a weighing beam fitted between the guides and spaced from the side walls, and a pan between the beam and a side wall, the pan having a dimension slightly greater than the distance between the beam and side wall whereby the slight distortion of the pan firmly wedges the beam and pan in the container.

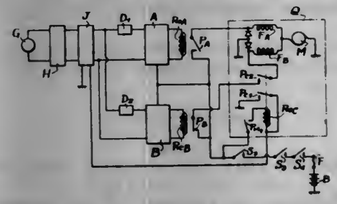
3,344,879
WHEEL DRIVE MECHANISM
Frank A. Glomb, Glenwood, and Victor Wasynczuk, Chicago, Ill., assignors to Barnes & Reinecke, Inc., a corporation of Delaware
Continuation of application Ser. No. 106,015, Apr. 27, 1961. This application Dec. 3, 1965, Ser. No. 517,141
9 Claims. (Cl. 180—55)

2. For use in a vehicle, a self-contained wheel and drive assembly comprising: a housing; means for mounting the housing on a vehicle; a motor carried by the housing for operation from a power source; a change speed gear transmission carried by the housing, said transmission having an input portion driven by said motor and an output drive shaft journalled within said housing and having a free end projecting outwardly of said housing; a wheel



including an annular hub; and means for supporting said wheel hub solely on said free end of said output drive shaft for movably supporting the vehicle, said output shaft further including a portion journalling a portion of said change speed gear transmission therein.

3,344,880
VOLTAGE OPERATED AUTOMATIC SPEED CONTROL SYSTEM FOR AUTOMOBILES
Noboru Iwashita, Okazaki-shi, and Kenji Ohno and Ikuya Kobayashi, Toyota-shi, Japan, assignors to Toyota Motor Company Limited, Toyota-shi, Japan, a corporation of Japan
Filed Nov. 24, 1964, Ser. No. 413,475
6 Claims. (Cl. 180—109)



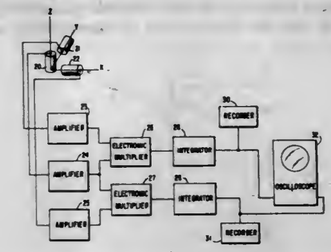
1. In an automatic speed control system for automobiles, a small alternating current generator connected to be driven by an automobile drive shaft, means for rectifying the output of said generator, voltage divider means for adjustably deriving a portion of the rectified output of said generator, a pair of Zener diodes having their inputs connected to said voltage divider means, a pair of transistor switching circuits having their inputs connected respectively to the outputs of said Zener diodes, a pair of output relays having their actuating windings connected respectively to the outputs of said transistor switching circuits, a servo motor connected to control the automobile throttle valve, a control relay having its actuating winding connected to the controlled contacts of said output relays, said control relay having a plurality of controlled contacts connected to the input of said servo motor, whereby said servo motor adjusts the throttle valve to adjust the speed of said drive shaft in desired manner.

3,344,881
SEISMIC DETECTION METHOD
James E. White, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Sept. 27, 1966, Ser. No. 582,464
23 Claims. (Cl. 181—.5)

1. A method of detecting a particle motion wave in the presence of noise waves comprising the steps of

(a) detecting coordinate components of motion of the particle motion wave,

(b) producing first and second product values solely from said components,



(c) time averaging said first and second product values, and

(d) providing an indication of said time averaged first and second valves.

3,344,882
RETRACTABLE SILENCERS AND THRUST REVERSERS FOR JET ENGINES
Jean-Claude Bellion, Paris, and René Gérard Hoch, Dammarie-les-Lys, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed June 3, 1965, Ser. No. 461,008
Claims priority, application France, June 8, 1964, 977,483
4 Claims. (Cl. 181—51)

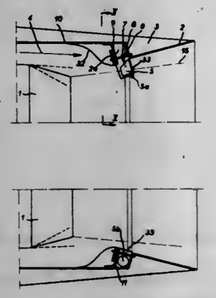


1. A device for reducing the jet noise emitted by the nozzle of a jet engine, comprising a plurality of tubes having downstream ends projecting into the jet at the rear of the nozzle and upstream ends opening out adjacent the external periphery of the nozzle, and means for swivelling said tubes about swivel axes substantially perpendicular to the longitudinal axis of the nozzle and located closer to said longitudinal axis than said tubes, whereby to fully retract the latter from the jet.

3,344,883
SILENCERS FOR JET PROPULSION ENGINES OR THE LIKE
Louis François Jumelle, Paris, Gaston Jean-Louis Ranvier, Issy-les-Moulineaux, and Gerhard Richter, Dammarie-les-Lys, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, and Office National d'Etudes et de Recherches Aerospatiales dit: O.N.E.R.A., Bagneux, Seine, France
Filed July 11, 1966, Ser. No. 564,148
Claims priority, application France, July 28, 1965, 26,391
3 Claims. (Cl. 181—51)

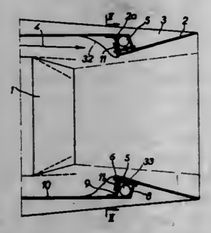
1. A silencer device for a jet having at least one inoperative position and at least one operative position for reducing the noise of the jet emitted by a nozzle, comprising (a) a plurality of conduits distributed round the jet and each having an inlet end which is subjected, at least in the operative position, to the ambient pressure adjacent the outer periphery of the nozzle, and an outlet end which,

in the operative position, is adapted to penetrate into the jet at a position spaced downstream from the nozzle, and means whereby each conduit is mounted to pivot about an axis having a general direction extending generally longitudinally of the jet, which axis is considerably offset to



the outside of the conduit, and (b) control means for pivoting the conduits about their respective pivotal axes between the inoperative position, in which the conduits are fully retracted outside the jet, and the operative position.

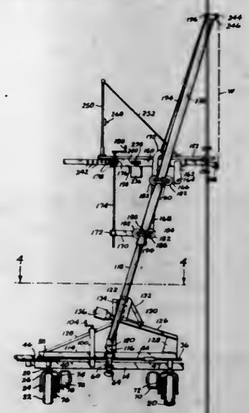
3,344,884
SILENCERS FOR JET PROPULSION ENGINES OR THE LIKE
Pierre Pascal Auguste Carriere, Malakoff, Louis François Jumelle, Paris, Gaston Jean-Louis Ranvier, Issy-les-Moulineaux, and Gerhard Richter, Dammarie-les-Lys, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, and Office National d'Etudes et de Recherches Aerospatiales dit: O.N.E.R.A., Bagneux, Seine, France
Filed July 11, 1966, Ser. No. 564,300
Claims priority, application France, July 28, 1965, 26,391
6 Claims. (Cl. 181—51)



1. A silencer device for a jet, including a plurality of elements each having a portion adapted to penetrate into a jet emitted by a nozzle, in order to reduce noise due to the jet, and further comprising thrust means for applying to each element a force tending to thrust it into the jet and, for each said element, at least one aerodynamic lift member connected thereto and adapted to co-operate with the jet to apply to said element a thrust acting in opposition to the said force, so that said portion penetrates into the jet to a substantially constant extent.

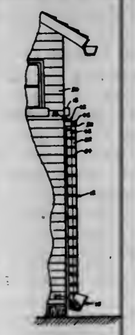
3,344,885
PERSONNEL LIFT
Edgar E. Rasmussen, 4950 SW. Barbur Blvd., Portland, Oreg. 97201
Filed May 2, 1966, Ser. No. 546,753
6 Claims. (Cl. 182—16)

1. A personnel lift comprising
(a) a frame,
(b) a turntable means mounted on the frame for rotation on a substantially vertical axis and for pivotal movement on an axis normal to said vertical axis,
(c) a pair of longitudinally adjustable, laterally spaced telescoping booms mounted at their lower ends on the turntable means for pivotal movement on an axis parallel to the plane of the turntable means,
(d) platform mounting means supported between the booms for movement longitudinally thereof and having a platform engaging section and a boom engaging section adjustable relative to each other,



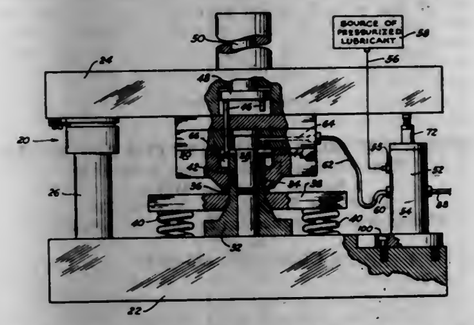
(e) adjustable leveling means interengaging the sections of the platform mounting means for adjusting the platform engaging section to horizontal position, and
(f) a platform supported on the platform engaging section and between the booms for movement transversely of the latter.

3,344,886
COMBINED FIRE ESCAPE AND FLOWER BOX AND THE LIKE
Joseph Boscarino, Jr., Flushing, N.Y. (% Combined Crafts, Inc., 473 Broadway, New York, N.Y. 10012)
Filed Apr. 8, 1965, Ser. No. 446,631
6 Claims. (Cl. 182—70)



1. In combination with the side wall of a house, a channel-shaped device secured to the outside of the wall and opening outwardly, an elongated hollow window box structure detachably mounted on said device and concealing the same, and an extensible ladder in collapsed condition inside the box structure, one end of the ladder being connected to the channel-shaped device, the other end of the ladder being attached to the box structure.

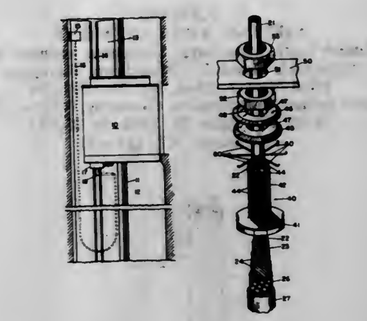
3,344,887
MACHINE TOOL LUBRICATOR
Thomas H. Lavengood, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,891
4 Claims. (Cl. 184—7)



1. Lubricating apparatus for a machine press or the like having a fixed portion and a movable portion the combination of:
a casing having a bore formed therein;
a source of pressurized lubricant;
a source of pressurized air;
a first inlet port communicating with said bore and connected to supply pressurized lubricant to said bore from said source;
a second inlet port communicating with said bore and connected to supply pressurized air to said bore from said source;
an outlet port communicating with said bore and connected to supply lubricant to a selected portion of the machine press;
a member slidably disposed in said bore and operatively connected to and actuated by the movable portion of the press;
a first cavity formed in said member and adapted to be charged with lubricant from said first inlet port with which said cavity registers at a first position of said slidable member;
said cavity charged with lubricant registering with said second inlet port and said outlet port at a second position of said slidable member whereupon said lubricant is forced out of said cavity through said outlet port to said selected portion of the machine press in response to said pressurized air; and
a second cavity formed in said member in spaced apart relationship with said first cavity and adapted to register with said second inlet port and said outlet port at a position of said member intermediate said first and second positions thereof whereby pressurized air is allowed to pass through said second cavity to clear said outlet port prior to the discharging of lubricant through said outlet port.

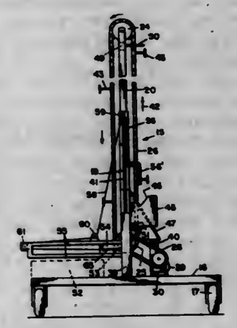
3,344,888
ELEVATOR CAR, ITS MACHINE ROOM, AND AN ELEVATOR TRAVELING CABLE INCLUDING BOTH ELECTRICAL AND FLUID CONDUCTORS CONNECTED THEREBETWEEN
Edward J. Connelly, Scarsdale, N.Y., and Robert Martin, Ridgewood, and Meredith Reese Davis, Roselle, N.J., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 4, 1965, Ser. No. 437,217
8 Claims. (Cl. 187—1)

1. In combination with an elevator car vertically movable in a hoistway, a flexible member suspended from said car so as to hang in said hoistway with a bight which is movable with vertical movement of said car, said flexible member providing both electrical and fluid connections between said car and its machine room and comprising fluid conducting means, a plurality of multi-wire strands of individually insulated electrical conductors in a lay construction proximate said fluid conducting



means, a flexible jacket encircling said conductors and a metal supporting element co-axial with said jacket extending the length of said flexible member serving as means supporting the weight of said suspended flexible member without unduly restricting the ability of said stranded electrical conductors to slide relative to one another in the movable bight formed in said member.

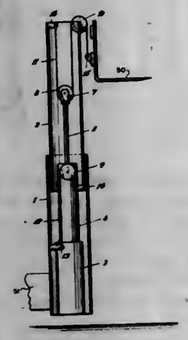
3,344,889
TOBACCO ELEVATORS
David C. Stewart, Sr., P.O. Box 193, Ellerbe, N.C. 28338
Filed Oct. 3, 1966, Ser. No. 583,899
6 Claims. (Cl. 187—9)



1. A portable elevator for tobacco sticks, comprising in combination a supporting base, an upstanding framework mounted on said base and including a pair of transversely spaced uprights, a pair of endless conveyor chains passing around sprockets at the upper and lower ends of said uprights, tobacco stick engaging prongs provided at longitudinally spaced points on said chains, means for driving said chains in one direction whereby the chains have an ascending run at one side and a descending run at the opposite side of said framework, a pair of tobacco stick holders provided on said uprights adjacent the lower end of the ascending run of said chains whereby a tobacco stick resting in said holders may be picked up by said

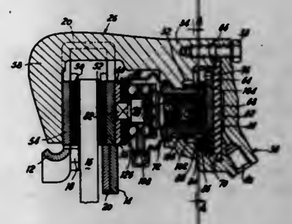
prongs and conveyed upwardly, means for automatically interrupting operation of said chain driving means when a tobacco stick approaches the upper end of the elevator, and means provided adjacent the lower end of the descending run of said chains for engaging tobacco leaves on a descending stick and translating the leaves from a vertical to a substantially horizontal position.

3,344,890
LIFTING ARRANGEMENT
Jakob Loef, Moosburg, Germany, assignor to Steinbock G.m.b.H., Moosburg, Germany
Filed Nov. 3, 1966, Ser. No. 591,898
Claims priority, application Germany, May 6, 1966, St 25,357; June 20, 1966, St 25,551
10 Claims. (Cl. 187—9)



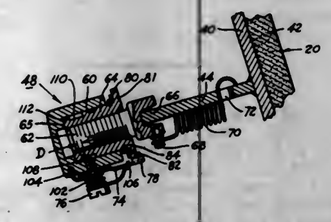
1. A lifting arrangement for a fork truck and like vehicle comprising, in combination:
(a) a support;
(b) a column having a bottom portion and a top portion elongated in a common upright direction,
(1) said bottom portion being fixedly mounted on said support, and said top portion being guided on said bottom portion for longitudinal movement toward and away from said bottom portion,
(2) whereby the length of said column may be varied between a minimum and a maximum;
(c) a pressure-fluid operated motor including a cylinder member having an upright axis and defining a cavity therein, and a plunger member axially movable inward and outward of said cavity, whereby said motor axially contracts and expands during relative axial movement of said members,
(1) one of the members of said motor being fixedly mounted on said support, and the other member moving upwardly away from said one member during the expansion of said motor;
(d) first pulley means rotatably mounted on said other member;
(e) a first, elongated, flexible tension member trained over said first pulley means and having two end portions,
(1) said end portions being respectively fastened to said bottom portion and to said top portion, and being at least in part downwardly spaced from said pulley means when said column is at said maximum length and at said minimum length thereof;
(f) second pulley means on said top portion upwardly spaced from said other member of the motor;
(g) third pulley means on said other member of said motor;
(h) a load carrier arranged for upright movement along said top member;
(i) a second, elongated, flexible tension member trained over said second and third pulley means, and having one end portion attached to said load carrier; and
(j) fastening means fastening the other end portion of said second tension member to one of said top portion and said other member for upward movement of said load carrier when said plunger member moves inward of said cylinder member.

3,344,891
AUTOMATIC BRAKE ADJUSTER FOR DISC BRAKE
Rene Thirion, Paris, France, assignor to Societe Anonyme D.B.A.
Filed July 8, 1966, Ser. No. 563,926
Claims priority, application France, July 29, 1966, 24,309
7 Claims. (Cl. 188—73)



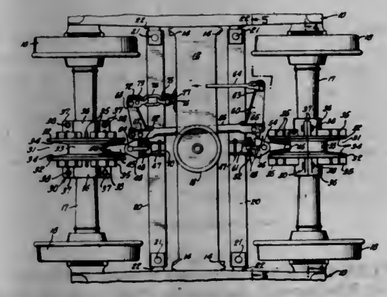
1. In a brake, a housing member, a brake applying member non-rotatably mounted in said housing member, a screw-and-nut assembly located in said housing between said brake applying member and a friction means actuated by the latter, a one-way coupling unit having a cage located in said housing member and operatively connected to said screw-and-nut assembly for unscrewing same, a one-way driving connection between said cage and said brake applying member, a torsion spring respectively anchored at its ends to said housing member and to said cage respectively, said one way driving connection being arranged to stress said spring upon application of said brake in a direction corresponding to the de-clutching of said one-way coupling unit.

3,344,892
AUTOMATIC ADJUSTER
George F. Wieger, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind.
Filed Apr. 19, 1965, Ser. No. 449,230
15 Claims. (Cl. 188—79.5)



1. In a brake: a rotatable drum, a slidable brake shoe, a stationary member having a bore therein, an adjustable assembly slidably mounted for reciprocable movement in said bore, said adjustable assembly comprising a non-rotatable member and a rotatable member threadedly connected to said non-rotatable member, actuating means separate from said adjustable assembly operably connected to said shoe for thrusting the same outwardly into engagement with said drum, means effecting outward movement of said adjustable assembly simultaneously with outward movement of said shoe, means for retracting said adjustable assembly, a pawl pivotally mounted on said stationary member, a plurality of teeth carried by said rotatable member and drivingly engaged by said pawl for rotating said rotatable member upon pivotal movement thereof in one direction, means operably connecting said pawl to said adjustable assembly for pivoting the same in said one direction upon slidable movement of said adjustable assembly in one direction, and means for pivoting said pawl in the opposite direction upon slidable movement of said adjustable assembly in the opposite direction.

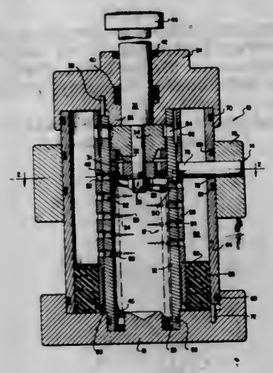
3,344,893
RAILWAY CAR DISC BRAKE MECHANISM
George A. Pelikan, Closter, N.J., assignor to Buffalo Brake Beam Company, a corporation of New York
Filed Sept. 10, 1965, Ser. No. 486,311
7 Claims. (Cl. 188—58)



1. In a railway car truck, the combination comprising a pair of coaxial car wheels, an axle rigidly connecting said wheels together for rotation in unison, a double brake disc member on said axle rigid therewith and presenting confronting brake faces facing a plane therebetween at right angles to the axis of said axle, a brake shoe between said faces, means supporting said brake shoe for movements substantially along said plane towards said axis into braking position in contact with said faces and away from said axis out of braking position, and comprising a coupling member, means pivotally supporting said coupling member for movement about a first pivot axis substantially parallel to said axle axis, and means pivotally connecting said brake shoe to said coupling member for movement relative to said coupling member about a second pivot axis substantially at right angles to said first pivot axis, and brake applying means for applying power to said brake shoe for movement into said braking position and comprising means for applying power to said coupling member causing said coupling member to swing about said first pivot axis.

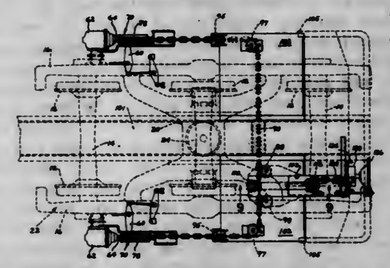
3,344,894
ADJUSTABLE HYDRAULIC SHOCK ABSORBER
Grant F. Kenworthy, Des Plaines, Ill., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 14, 1965, Ser. No. 496,051
4 Claims. (Cl. 188—96)

1. An adjustable hydraulic shock absorber comprising;
(a) a hydraulic shock absorber cylinder including a piston operably mounted therein
(b) an outer tubular cylinder rotatably positioned over the shock absorber cylinder so that at least a portion of the inner surface of the outer cylinder is contiguous to the outer surface of the shock absorber cylinder
(c) a plurality of spaced parallel annular grooves of gradually increasing width and depth in the circumferential direction extending at least partially around the circumference of one of the cylinders where said cylinders are contiguous to each other



(d) a plurality of first ports extending through the walls of the shock absorber cylinder at the position of the deepest part of said grooves
(e) a plurality of second ports extending through the outer tubular cylinder at the level of the grooves, and
(f) means for rotating one of the cylinders relative to the other to adjust the location of said second ports along the length of said grooves.

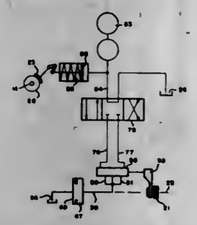
3,344,895
HAND BRAKE ARRANGEMENT
Roy J. Holden, St. Charles, and Ronald P. Bolte, St. Louis, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 2, 1966, Ser. No. 531,171
15 Claims. (Cl. 188—107)



1. A hand brake arrangement for a railway car having a supporting truck with a plurality of wheels at each side thereof, said hand brake arrangement comprising a brake cylinder mounted on each side of the truck, a piston rod extending from each brake cylinder, a cylinder lever connected to each piston rod, brake shoes operatively connected to each cylinder lever for engaging the respective adjacent wheels, a single flexible member connected between the cylinder levers and extending across the truck, guide means fixed to each side of the railway car body to guide the flexible member between the cylinder levers and to permit pulling of the piston rods in a direction longi-

tudinally of the car, a floating sheave in engagement with said flexible member at a position intermediate the sides of the truck, a handwheel adapted to be rotated for setting the brakes, and means operatively connecting the handwheel and floating sheave whereby rotation of said hand wheel in one direction moves said sheave in a direction generally longitudinally of the railway car to pull said flexible member in a direction to actuate said cylinder levers for setting of the brakes.

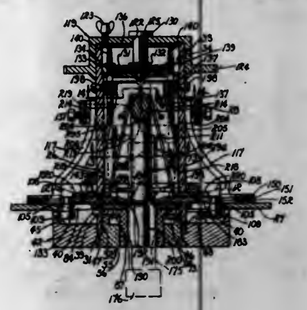
3,344,896
CLUTCH-CONTROLLED REVERSIBLE OR MULTI-SPEED POWER-TRANSMITTING MECHANISM
Norman A. Rasmussen, Mercer Island, Wash., assignor to Pacific Car and Foundry Company, a corporation of Washington
Filed May 7, 1965, Ser. No. 454,037
17 Claims. (Cl. 192—3.5)



1. In power-transmitting mechanism, a normally disengaged clutch caused to be engaged by application of hydraulic pressure, a drive to the input end of said clutch, a pinion mounted for reciprocal slide motion along a prescribed path which is endwise to its axis, a rotary shaft driven from the output end of the clutch and connected with the pinion so that the pinion turns with the shaft, two driven gears mounted so as to be meshed by the sliding pinion one at one extreme and the other at the other extreme of the pinion's slide travel, an actuator comprising a chest and a shuttling spool mounted for slide movement in the chest, said chest having a respective admission port for hydraulic fluid at each of its two ends and a fluid-emission port at the center, the spool being so formed that the pressure of admitted fluid through a selected end port moves the spool to the opposite end of its shuttle travel and uncovers the center port upon reaching said limit of travel, an operative connection from the spool to the sliding pinion acting to slide the pinion into mesh with the driven gears, selectively, one gear as the spool moves to one extreme of its shuttle travel and the other gear as the spool moves to the opposite extreme, a pressure source of hydraulic supply, means for feeding hydraulic fluid from said supply source to either end port of the chest, selectively, while dumping hydraulic fluid from the opposite end port, a connection between the center port of the chest and the clutch serving to supply pressure fluid to the clutch and responsively engage the same when the spool uncovers said center port, and means for dissipating fluid pressure from the clutch when said center port is covered.

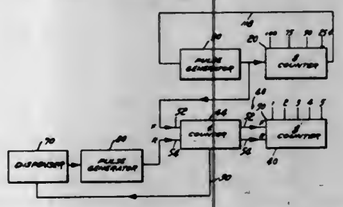
3,344,897
ACTUATION DEVICE FOR ACTUATING ARTICLE DISPENSERS
Wesley P. Kliewer, 2610 Talisman Drive, Bakersfield, Calif. 93304
Filed Dec. 6, 1965, Ser. No. 512,283
11 Claims. (Cl. 194—4)

1. An actuation device controllable by an elongated key having a predetermined cross-sectional configuration along at least a portion of its length, said portion being determinative of the control of the device by said key, comprising a housing providing an aperture adapted to accommodate the predetermined configurational portion of the key in predetermined longitudinal alignment, said housing having front and rear portions respectively; stop means disposed at the rear of said housing in alignment with the key when said key is disposed in said aperture, said stop means being disposed in spaced relation to the housing at adjustable selected distances therefrom,



and being adapted resiliently to yield to pressure from the key when disposed in the aperture; key alteration means disposed at the rear of the housing in operable association with the stop means for selected alteration of the key in response to said yielding of the stop means; and means operably associated with the alteration means for providing an actuation signal, said means for providing an actuation signal being rendered operable upon said alteration of the key.

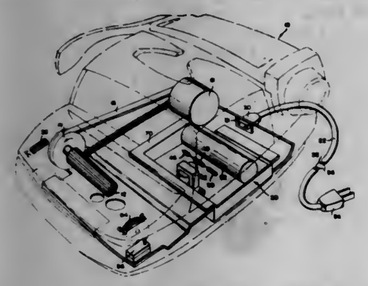
3,344,898
COIN-OPERATED DISPENSING SYSTEM
James J. Klinikowski, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 3, 1966, Ser. No. 518,232
8 Claims. (Cl. 194—9)



1. An electronic coin-operated dispensing system comprising:
- a coin receiver which comprises a multiple position circuit in which each position represents a quantity of money entered in the coin receiver, one position representing an empty coin receiver,
- a pulse generator coupled to said coin receiver,
- said one position in said coin receiver being coupled to and disabling said pulse generator before coins are deposited in said coin receiver and after total coinage has been registered by said pulse generator in an associated electronic circuit,
- said coin receiver enabling said pulse generator after coins are depositted therein, said pulse generator generating a number of pulses determined by the coins deposited in said receiver, said coin receiver disabling said pulse generator after said number of pulses have been generated,

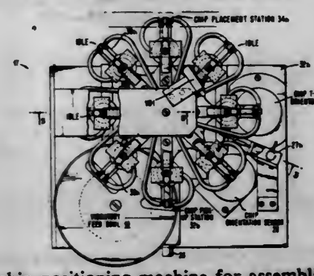
- a reversible counter adapted to count in forward and reverse directions,
- said pulse generator being coupled to said reversible counter to enter pulses therein in the forward direction representing the amount of money deposited in said coin receiver, and
- an auxiliary pulse source coupled to said reversible counter to enter counts therein in a reverse direction, said reversible counter being coupled to said auxiliary pulse source to disable it after said counter has been emptied of all of its stored counts.

3,344,899
PORTABLE DATA TRANSFERRING MACHINES OPERABLE FROM EITHER DC OR AC CURRENT
Edward D. Wang, Dryden, and Anthony N. Paone, Syracuse, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Filed Apr. 22, 1963, Ser. No. 274,494
7 Claims. (Cl. 197—12)



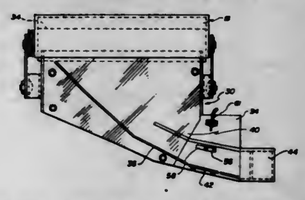
1. A portable data transferring device capable of operating from an external AC power sources and from a self-contained DC power source, comprising:
- (a) an operating mechanism;
- (b) a DC motor operatively connected to said operating mechanism;
- (c) a rechargeable battery adapted to operate said motor; and
- (d) battery charging and motor operating circuit means for selectively either connecting said motor to said battery or connecting said motor and said battery to an external AC power source, comprising:
  - (1) a transformer having a primary adapted to be connected to the external power source;
  - (2) circuit means connecting said motor across the secondary of the transformer;
  - (3) circuit means connecting the battery to said secondary and said motor;
  - (4) means for rectifying the current supplied to and the voltage applied across said battery and said motor by said transformer;
  - (5) circuit means connecting said battery in series with said motor; and
  - (6) a two-position switch means selectively operable in one position thereof to interrupt the motor-transformer secondary circuit and complete a first transformer secondary-battery circuit, whereby said battery may be charged without operation of said motor when the transformer primary is connected across the external power source to energize the transformer;
  - (7) said switch means being operable in the other position thereof to simultaneously complete the transformer secondary-motor and battery-motor circuits and a second and distinct transformer secondary-battery circuit, whereby said motor can be operated from said power source and said battery simultaneously charged when said transformer is connected to said external power source and said motor operated from said battery when there is no connection between the battery and the external power source.

3,344,900
CHIP ORIENTING CONTROL CIRCUIT FOR A CHIP POSITIONING MACHINE
Joseph G. Drop, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 27, 1965, Ser. No. 459,381
17 Claims. (Cl. 198—33)



1. In a chip positioning machine for assembling semiconductor chips to printed-circuit substrates and having vacuum needle means adapted to pick up a chip and to place said chip upon said substrate, and a rotatable chip engaging member, the improvement comprising:
- stepping motor means to drivingly rotate said chip engaging member and having a series of mutually angularly displaced windings,
- means for bringing said member and said chip into mutual engagement,
- adjustable program means for selecting as a home orientation any one of a predetermined set of orientations,
- and electrical circuit means for energizing said motor windings sequentially to rotate said member together with the chip engaged thereby to said selected home orientation.

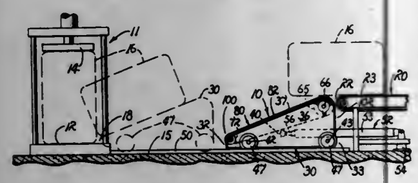
3,344,901
OVERCAP FEED AND ORIENTING DEVICE
George E. Schultz, Chicago, Ill., assignor of one-half to Arthur N. Monaco, Park Ridge, Ill.
Filed May 9, 1966, Ser. No. 548,721
10 Claims. (Cl. 198—33)



1. A feeding and orienting device for hollow bodies having one closed end comprising, in combination: conveyor means for transporting a plurality of said hollow bodies along a first path; a drop-off chute pivotally affixed at one end of said conveyor means; converging means at the upper portion of said conveyor means for aligning said hollow bodies in a confined area for a controlled flow onto said drop-off chute; rail means on said drop-off

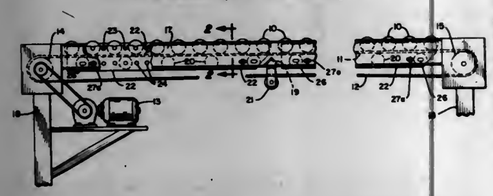
chute for supporting said hollow bodies, said rail means being angularly disposed transversely to said first path so that said hollow bodies move along said rail means to its one end; and reject means at said one end of said rail means engaged by said hollow bodies, said drop-off chute being pivoted angularly about an axis transversely disposed with respect to said first path to upset the equilibrium of said hollow bodies when engaged with said reject means to cause improperly oriented hollow objects to spill by gravity to reject the same and to permit properly oriented hollow bodies to pass.

3,344,902
LOAD TRANSFER AND ELEVATING DEVICE
Richard B. Crawford, 6067 N. Forkner Ave., Fresno, Calif. 93705
Filed June 10, 1965, Ser. No. 462,990
6 Claims. (Cl. 198—96)



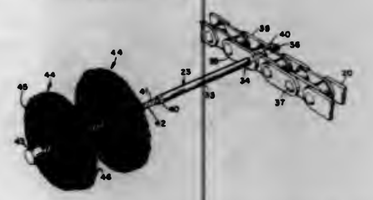
1. Apparatus including a bale transfer and elevating device adapted to convey bales between a bale press and a conveyor spaced from the press with the press and conveyor providing varied elevational bale support surfaces, comprising a carrier member; first powered means connected to said carrier member for selective reciprocal movement of the carrier member along a predetermined path of travel between the press and the conveyor; a bale support member having an inclined bale transporting surface providing a bale receiving end disposed at substantially the level of said press and an opposite bale discharging end disposed at substantially the level of the conveyor; and second powered means mounted on the carrier member and connected in driving relation to said bale support member for traveling said bale transporting surface thereof in a direction from said receiving end to said discharging end of said bale support member so as to transfer said bales from the press to the conveyor incident to movement of the carrier member toward the conveyor.

3,344,903
LIVE ROLLER CONVEYOR
Roy F. Holm, St. Paul, Minn., assignor to Standard Conveyor Company, North St. Paul, Minn., a corporation of Minnesota
Filed Apr. 27, 1964, Ser. No. 362,850
3 Claims. (Cl. 198—127)



1. In a live roller conveyor of the type wherein articles to be conveyed are carried by a multiplicity of load supporting rollers which are rotated by frictional engagement with a power driven endless belt, actuating rollers supporting the belt in driving engagement with the peripheries of said load supporting rollers, a rigid frame including first and second spaced parallel side frame members, each of said rollers having an axially disposed supporting shaft which is supported at a fixed elevation at one end of said first side frame member, the improvements which comprise an elongated flat bar disposed parallel to said second side frame member for supporting the second end of a plurality of said shafts for supporting actuator rollers of a group, said bar being formed with openings spaced therealong to receive end portions of the shafts supporting said group of actuator rollers, and means for securing said bar at a predetermined fixed elevation and spaced inwardly from said second side frame member and in variously adjusted positions longitudinally of said second side frame member whereby to adjust the angular positions of the rollers of said group relative to said second side frame member, the end portions of said axial shafts supporting said group of actuator rollers projecting from said bar toward said second side frame member.

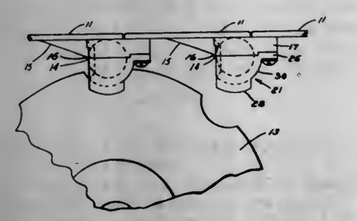
3,344,904
CAN HOLDER
Ralph B. Kocian, Chicago, and Burton L. Gamble, Hinsdale, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 18, 1966, Ser. No. 543,361
19 Claims. (Cl. 198—131)



1. In a drying oven for drying coating material applied to the exterior of light-weight tubular articles such as cans, including an endless conveyor having a plurality of tubular article-carrying devices extending therefrom and spaced apart along the length thereof; the improvement comprising said tubular metal article-carrying device having a supporting rod over which a tubular metal article is placed; a great many fine resilient metal wires supported by and extending in a direction radially outwardly from the supporting rod; at least some of the wires being angularly spaced about the rod so that their free ends describe a generally circular configuration, with some of the wires being spaced axially along the rod with respect to other of the wires and the wires being sized as to length to provide a slight interference fit between the outer ends thereof and the interior tubular wall of the metal article, said wire length and tubular walls cooperating to define means for resiliently bowing said wires to be generally convex in the direction of an applied article and retaining said wires in their bowed condition, said wire ends and article wall cooperating to define frictional means whereby a greater force is required to remove the metal article than to apply the metal article over said carrying device, resulting in the outer ends of the bowed wires pressing lightly outwardly against the interior tubular wall to retain the tubular article in place on the carrying device.

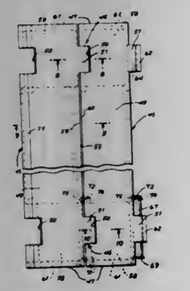
3,344,905
CHAIN
Edward L. von Hofen, 181 Vinewood, Avon Lake, Ohio 44012
Filed Oct. 17, 1966, Ser. No. 587,036
10 Claims. (Cl. 198—189)

1. In a conveyor chain,
a link having a surface for supporting an article to be conveyed, said link having a ball portion spaced from said surface and having
a socket portion having walls defining a ball-receiving cavity space from said ball portion, and
means including a ball-retaining member adapted to



be connected to said socket portion, said member having
a force-receiving outer surface adapted to be engaged by an impelling force-producing means.

3,344,906
CONVEYOR
Harry Greitzer, Port Chester, N.Y. (% Greitzer-Crouse, Inc., 295 Duffy Ave., Hicksville, N.Y. 11801)
Filed Aug. 9, 1965, Ser. No. 478,232
3 Claims. (Cl. 198—195)



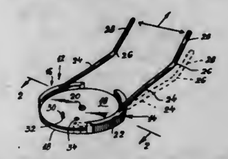
1. A conveyor adapted for use in restaurants and the like, comprising a support having an elongated at least substantially flat, generally horizontal, substantially imperforate upper surface, an endless conveyor belt having an extended upper operative run and a lower return run, said conveyor belt being composed of a plurality of hingedly connected transversely disposed slat-like members, the predominant part of the lower surface of each such member being flat, the upper surface of each of the slat-like members being flat and lying parallel to the flat main portion of the lower surface of such member, the hinged connections between successive slat-like members comprising laterally spaced knuckles on one of each successive pair of slat-like members projecting longitudinally of the conveyor belt, grooves in the confronting edge of the other member of said pair receiving said knuckles, and transversely disposed pintle pins extending through said knuckles into the portions of the slat-like member bearing said grooves, there being at least two knuckle and groove hinged connections between each pair of slat-like members, said hinged connections being disposed adjacent but spaced inwardly of opposite lateral edges of said members, the lower surfaces of the knuckles and the lower surfaces of the portions of the slat-like members bearing said grooves lying in the plane of said flat main lower surface of the respective slat-like member, said members, at the location of said hinged connections, being of reduced thickness, the upper surface of each member at the location of said hinged connections being flat and disposed in the plane of the flat upper main surface of the member, the knuckle and groove-bearing portions of the member being in the form of partially rounded bosses having lower surfaces lying in the plane of the flat main lower surface of the member, the hinged connections between successive slat-like members in the operative run of the conveyor belt lying wholly between the planes of the upper and lower surfaces of the slat-like members in such operative run, the flat lower surface of each of the slat-like members in said upper, operative run of the conveyor belt resting upon and being supported by the upper surface of the support, means for guiding said belt into its return run and from the return run into the operative run thereof, and means for driving the conveyor belt.

3,344,907
DRAPER CHAIN
Bryce F. Van Valkenburgh, Homewood, Ill., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 14, 1966, Ser. No. 586,748
3 Claims. (Cl. 198—195)



1. A conveyor comprising a series of spaced parallel rods connected at their ends by stamped bars to define a series of articulated links, each end of each of the rods having a pair of flat parallel locking surfaces formed thereon adjacent to but spaced inwardly from said end and a cylindrical bearing surface inwardly of and immediately adjacent to said flat locking surfaces, each of said bars having a flat bearing portion provided with a bore mounted for rotation on the cylindrical bearing surface of a rod and a flat outwardly offset locking portion provided with a generally keyhole shaped slot, said keyhole shaped slot having an enlarged portion adapted to pass over the outermost end of said rod and a reduced portion provided with parallel spaced apart locking surfaces in press fit engagement with said locking surfaces on said rod to prevent rotation of said rod relative to said rod about the axis of said rod but allowing pivotal movement of said bar relative to said rod about an axis transverse to the plane of said locking surfaces, and each of said bars being located on said rods with the outwardly directed surface of the flat bearing portion of each bar disposed in flat bearing engagement with the inwardly directed surface of the flat locking portion of an adjacent bar.

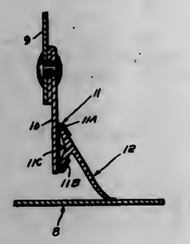
3,344,908
ADJUSTABLE NYLON PICKUP TOOTH FOR GRAIN HARVESTERS, HAY BALERS AND THE LIKE
Walter David Hofer, Brocket, Alberta, Canada, assignor of fifty percent to John C. Swinarton, Fort Macleod, Alberta, Canada
Filed Oct. 31, 1966, Ser. No. 590,746
6 Claims. (Cl. 198—198)



1. An adjustable pickup tooth assembly of the kind described comprising a sectional body composed of a pair of tooth units each unit including a circular base with a

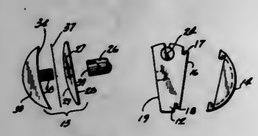
central opening therein, opposed arcuate shaped upstanding flanges along the peripheries of the bases, teeth extending from the flanges at an angle to the plane of the bases, the bases being adjustably mounted in superimposed relation to each other, with the holes therein in alignment to receive a fastening element for fastening the assembly to a belt.

3,344,909
CONVEYOR SEALS
David S. Hansen, Shirley, and Nicholas V. Basinas, Westford, Mass., assignors to C. G. Sargent's Sons Corp., Graniteville, Mass., a corporation of Massachusetts
Filed Sept. 8, 1965, Ser. No. 485,831
8 Claims. (Cl. 198—204)



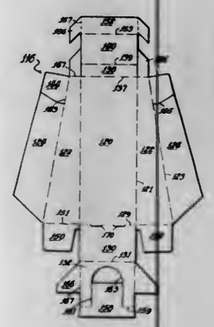
1. In apparatus for treating loose material, a treating chamber, a conveyor extending through said chamber, stock guards, one for each side of the chamber and secured thereto above said conveyor, each stock guard including a lengthwise channel having margins turned inwardly towards each other defining upper and lower portions and an intermediate lengthwise entrance, the channel entrances facing each other, and elastomeric seals, one for each channel, each seal including upper and lower, flexible retaining wing portions of substantial length, and a flexible resilient conveyor engaging and sealing portion downwardly and inwardly inclined at an acute angle with reference to a plane inclusive of the edges of said wing portions and of a length greater than that of at least the lower wing portion, the edge-to-edge distance of said wing portions being greater than the maximum width of the channels, each of said portions including a section whose width is greater than its thickness, each seal having a coefficient of friction and resistance to heat in the order of that of Teflon impregnated silicone rubber.

3,344,910
DISPOSABLE RAZOR
Harvey G. Logan, 45 Institute St., Frewsburg, N.Y. 14738
Filed Aug. 21, 1964, Ser. No. 391,127
3 Claims. (Cl. 206—16)



1. A disposable razor kit comprising a cylindrical member including separable parts essential to form a razor for shaving, a generally wedge-shaped body portion having one plane side receiving a shaving material receptacle and means removably attaching said receptacle to said portion, a part of the length of said portion being flat and having a razor head mounted thereon, said razor head mounted on the flap part of said wedge-shaped body portion, said wedge-shaped portion, said receptacle and said razor head form said cylindrical member, and the wide area of said wedge portion having a lengthwise opening, a rod-like handle mounted in said opening, said handle being joinable to said head when the essential parts of said kit have been disassembled.

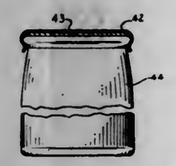
3,344,911
DISPLAY CARTON FOR AN ELONGATED ARTICLE
Richard S. Wolowicz, Chicago, Dennis Kossnar, West Chicago, and Thomas E. Oller, Evanston, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,894
10 Claims. (Cl. 206—45.14)



1. A carton for displaying an elongated article such as a flexible tube, comprising:
(a) a rear wall and opposing side walls and end walls folded forwardly from corresponding edges of the rear wall:
(b) flaps folded from the end edges of certain of the opposing walls and underlying the adjacent wall;
(c) an inner panel, hinged about a line extended across the carton through the forward edges of the side walls, folded toward the rear wall to lie at an angle relative to the rear wall;
(d) wing panels hinged from the side edges of the inner panel and folded into face-to-face relationship with the side walls;
(e) front wall side panels folded inwardly and rearwardly from forward edges of the side walls to overlie the wing panels; and
(f) means to retain the front wall side panels in place.

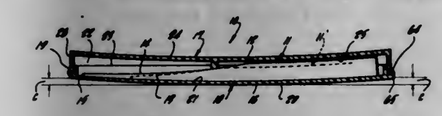
3,344,912
CLOSURES
Martin M. Sternau, Flushing, N.Y., assignor, by direct and mesne assignments, to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Continuation of application Ser. No. 653,227, Apr. 16, 1957. This application July 1, 1964, Ser. No. 381,290
16 Claims. (Cl. 206—46)

1. A closure having a central area for covering a container and a rim area for holding the closure on the container comprising a plurality of layers of closure materials, each layer forming both the central area and the rim area of said closure and being substantially coextensive with the other layers, one of said layers of closure materials being formed from oriented heat shrinkable



polymer material shrinkable throughout, and said layers of closure materials being joined solely at their respective edges in the rim area.

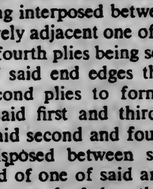
3,344,913
CONTAINER FOR MUSICAL REEDS
Melvin H. Best, Pasadena, Calif., assignor to Roy J. Maier Corporation, Sun Valley, Calif., a corporation of California
Filed May 13, 1966, Ser. No. 549,947
11 Claims. (Cl. 206—46)



1. A musical reed having a base, a substantially planar base surface and a vamp terminating in a feather edge at one end of the reed, and a merchandising container for the reed comprising mating top and bottom parts movable bodily relative to each other into and out of closure relation with each other, the parts in closure relation to each other defining an elongate fully enclosed reed receiving chamber having top and bottom surfaces, the reed being disposed in the chamber with the feather edge thereof toward one end of the chamber with the reed base surface supported on the chamber bottom surface, the chamber having a length greater than the length of the reed, the top container part carrying reed vamp engaging means extending from the chamber top surface to a termius spaced from the top surface a distance less than the distance between chamber top and bottom surfaces in said closure relation of the parts, said distance being greater than the distance between the reed base and the chamber top surface in said closure relation of the parts around the reed, the reed vamp engaging means being closer to the other end of the top part than to the one end thereof for engaging the vamp of the reed for preventing the feather edge thereof from engaging the one end of the chamber when the container parts are disposed in closure relation around the reed.

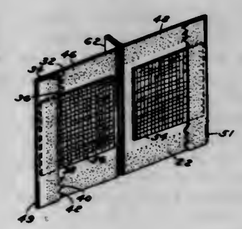
3,344,914
MIXING CAPSULE
Stefan A. Bloom, Parsippany, and Melvin Denholtz, Livingston, N.J., assignors, by mesne assignments, to Dental Design Systems, Newark, N.J., a co-partnership
Filed Oct. 19, 1965, Ser. No. 497,891
21 Claims. (Cl. 206—47)

1. A mixing capsule comprising:
a first elongated body member open at one end and closed at the other end;
a second elongated body member open at one end, closed at the other end and proportioned to receive the first body member with a gap between respective inner and outer walls of the two body members;
each of said body members being adapted to receive a quantity of material for mixing;
a cup member open at one end and closed at the other end by a frangible, transversely extending diaphragm;
said cup member receiving, at its open end, the open end of said first body member and being secured to said second body member, filling said gap, at



the open end of said second body member with said diaphragm transversely disposed therein;
the open end of said first body member being proportioned to break said diaphragm and trap the diaphragm thus broken in the gap below said cup member when said open end is moved from said cup member into said second body member thereby interiorly connecting said body members for the mixing of materials therein.

3,344,915
PACKAGE
Wallace G. Rawlings, Greenwood, S.C., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed July 22, 1965, Ser. No. 473,973
9 Claims. (Cl. 206—56)



1. A sterile sealed package comprising superimposed first, second, third and fourth plies of material each having oppositely disposed end edges and oppositely disposed side edges, said plies having about the same dimension between the respective side edges thereof, said third and fourth plies each having a shorter dimension between the respective end edges thereof than that of said first and second plies and being interposed between said first and second plies respectively adjacent one of said end edges thereof, said third and fourth plies being secured along said side edges and one of said end edges thereof respectively to said first and second plies to form respectively a first pocket between said first and third plies and a second pocket between said second and fourth plies, at least two sterile articles disposed between said first and second plies with one end of one of said articles inserted in said first pocket and one end of the other of said articles inserted in said second pocket, said other end edges of said first and second plies remote from said one end edges thereof being sealably interconnected and said side edges of first and second plies being juxtaposed and adhesively interbonded to one another except where separated by

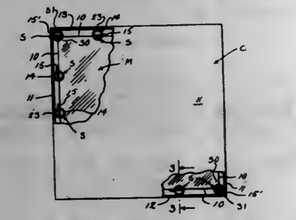
said interposed third and fourth plies, means sealably connecting said third and fourth plies along the other end edges of said third and fourth plies remote from said one end edges thereof to thereby sealably interconnect said second and first plies via said third and fourth plies, said third and fourth plies each having first and second portions of said other end edges thereof extending transversely across and overlapped by the juxtaposed side edges of said first and second plies, said first and second portions each being serrated in the plane thereof to form a plurality of projections spaced therealong and extending therefrom whereby should an airspace exist where the side edges of said first and second plies diverge from their juxtaposed interbonded relationship with one another to overlap said serrated portions of said third and fourth plies said projections form a tortuous wall along such airspace for collecting airborne bacteria inducted by air currents into such airspace.

3,344,916

TUBULAR CUSHIONING MEMBER FOR PACKAGING FRAGILE ARTICLES

Gilbert M. Brueckner, Milwaukee, Wis., assignor to Vanant Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 11, 1965, Ser. No. 494,608
1 Claim. (Cl. 206—62)



A packaging and cushioning means for fragile articles in the nature of mirrors comprising in combination a carton having vertically extending side and end walls, bottom and top walls of a size and configuration to receive the article in spaced relation with all of said walls, a series of spaced cushioning members and supports for said article, each cushioning member having a body formed as a continuous one-piece tubular wall cut to the approximate width of said carton and placed within said carton to extend from one side wall to the other, said tubular wall having a pair of spaced parallel transverse slits cut therethrough and terminating at a point adjacent the longitudinal axial center of said body, the material between the slits being pushed down to provide a transversely extending tongue having one end folded to provide a double wall portion extending beyond the outer periphery of said tubular wall, the space between said parallel slits and said transversely extending tongue providing a transverse slot defined by side supporting edges and a supporting and strengthening wall receiving the peripheral edge of the article being shipped, the outer peripheral surface of the article engaging and resting on said transversely extending tongue.

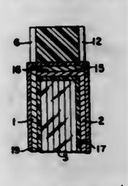
3,344,917

PACKAGING MEANS AND METHOD

Michel Raffet, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Seine, France

Filed Sept. 23, 1966, Ser. No. 581,613
Claims priority, application France, Sept. 27, 1965, 32,848
21 Claims. (Cl. 206—62)

1. An article of manufacture comprising a flat object to be packaged, first and second sheets of stiff material at like size and shape and of larger transverse dimensions than said object, said sheets being disposed with their edges substantially in registration and with said object between them, with its edges spaced inwardly from the



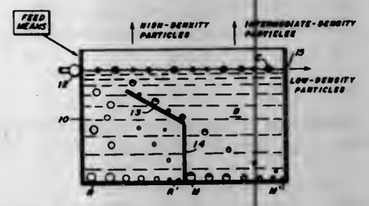
edges of the sheets, to define a channel conjointly with the edge of said object, and a self-hardening material disposed within said channel continuously therealong and adherent to the surfaces of the sheets contacted thereby.

3,344,918

HEAVY-MEDIUM METHOD AND APPARATUS

Joseph W. Leonard III, Morgantown, W. Va., assignor to United States Steel Corporation, a corporation of Delaware

Continuation of abandoned application Ser. No. 248,605, Dec. 31, 1962. This application Nov. 10, 1965, Ser. No. 520,811
10 Claims. (Cl. 209—12)



1. A heavy-medium minerals separation method comprising introducing to one end of a vessel mineral particles of a range of sizes, among which are relatively low-density particles, relatively high-density particles, and intermediate-density middling particles, separately introducing to the same end of the vessel below the mineral particles a liquid medium, said mineral particles and said medium moving in paths which have horizontal components as they enter the vessel, said medium being of a specific gravity to float the low-density particles, but in which larger high-density particles settle rapidly adjacent the end where they are introduced, smaller high-density particles and larger middling particles settle together more slowly in a region spaced from the end where they are introduced, and smaller middling particles settle still more slowly in a region still farther from the end where they are introduced, continuosly separating small high-density particles from large middling particles according to size as they settle in the same region, recovering low-density particles as a float product, recovering large and small high-density particles as a first sink product, and recovering large and small middlings as a second sink product.

3,344,919

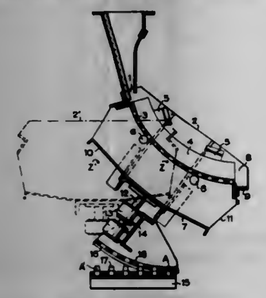
SCREENING DEVICE COMPRISING A SIEVE DECK CAPABLE OF TURNING ON A SHAFT

Jan N. J. Leeman, Heerlen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands

Filed Feb. 12, 1965, Ser. No. 432,356
Claims priority, application Netherlands, Feb. 19, 1964, 64—1,500
5 Claims. (Cl. 209—251)

1. In a screening apparatus comprising supply means, discharge means, a sieve deck extending therebetween, said sieve deck being mounted on a shaft having a center

line coinciding with the axis of symmetry of the sieve deck and said shaft being rotatably mounted in a movable support structure capable of tilting from an operative position into a position wherein the sieve deck may be rotated on said shaft into reverse relationship with respect to the supply means and discharge means, the improvement wherein the movable support structure comprises a tilting member and a supporting surface, the tilting



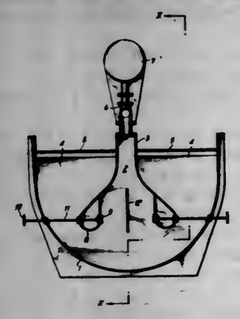
member having a curved bottom member adapted to roll over the supporting surface such that during tilting of the sieve deck, the combined center of gravity of the sieve deck, shaft and tilting member will lie substantially in a vertical plane passing through any line of contact between the curved member and the supporting surface, and such that said center of gravity will define a substantially horizontal line during tilting of the sieve deck.

3,344,920

SETTLING JIG WITH SETTLING COMPARTMENTS ON BOTH SIDES OF A COMPRESSED AIR SUPPLY

Friedrich Wilhelm Mayer and Alexander Lotz, Bochum, and Hanns Stern, Dortmund, Germany, assignors to Westfalia Dinnendahl Groppel Aktiengesellschaft, Bochum, Germany, a corporation of Germany

Filed Sept. 10, 1964, Ser. No. 395,466
8 Claims. (Cl. 209—457)



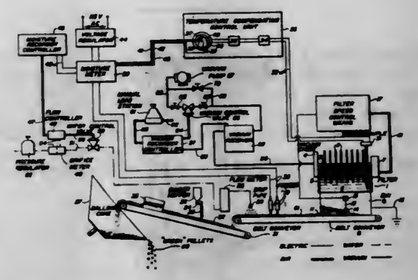
1. A settling jig comprising means for receiving material to be classified therein, means for discharging gangue and cleaned material therefrom, a tank, a compressed air chamber structure extending from above centrally into the space of said tank and being upwardly spaced from the bottom thereof, said air chamber structure dividing the tank space into two symmetrically arranged settling compartments communicating beneath said chamber structure with each other and with the air pressure chamber in said structure, said air chamber structure being formed in said tank space of an upper portion of smaller width and a lower portion of larger width, said lower portion having a bulging shape and a gradually curved contour for downwardly narrowing said settling compartments.

3,344,921

METHOD AND APPARATUS FOR MEASUREMENT AND CONTROL OF MOISTURE

Lloyd V. Fegan, Jr., Lebanon, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

Filed Dec. 16, 1964, Ser. No. 418,814
19 Claims. (Cl. 210—67)



19. The method of continuously maintaining the moisture content of a moving bed of filter cake produced by a continuous vacuum filter substantially at a fixed value, said method comprising:

(a) continuously measuring the moisture content of said moving bed of filter cake downstream of said filter,

(b) maintaining such a degree of vacuum in the filter in response to such continuous measurement of moisture content as to produce a filter cake having a moisture content less than the fixed value,

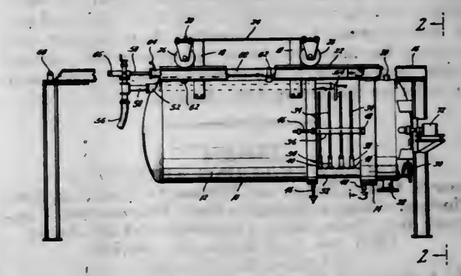
(c) continuously adding controlled amounts of water to the moving bed of filter cake downstream of the point at which the measurement of moisture content of said moving bed of filter cake is made, in response to such continuous measurement of moisture content to bring the moisture content of said moving bed of filter cake to the fixed value.

3,344,922

APPARATUS FOR USE IN FILTERING FLUIDS

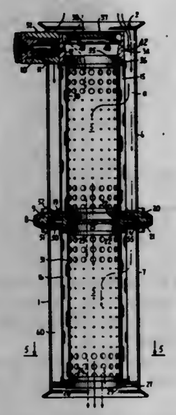
Aloysius Kracklauer, Conroe, Tex., assignor to Sparkler Mfg. Company, Montgomery, Tex., a corporation of Illinois

Filed May 11, 1964, Ser. No. 366,229
10 Claims. (Cl. 210—81)



10. A method for cleaning filter plates having cakes thereon and disposed in a parallel relationship in a filtering apparatus, which method comprises passing a cake-cutting spray from a first nozzle over said cakes to cut said cakes only along substantially a central plane perpendicular to said parallel relationship, and following said cake-cutting spray with a washing spray from a plurality of other nozzles over substantially the full faces of said plates.

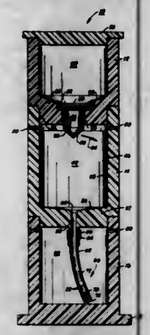
3,344,923
FILTER UNIT HAVING FILTER ELEMENTS IN SERIES AND IN RESERVE
David B. Pall, Roslyn Estates, and Bernard F. Silverwater, Plainview, N.Y., assignors to Pall Corporation, Glen Cove, N.Y.
Filed Mar. 2, 1964, Ser. No. 348,659
15 Claims. (Cl. 210—90)



1. A filter assembly comprising, in combination, a housing having an inlet and an outlet; and, disposed in the housing, a primary filter element to receive flow from the inlet; a reserve filter element adjoining the primary filter element in a consecutively endwise position with respect to the primary filter element; separating means extending from the juncture of the primary and secondary filter elements to the housing, and dividing the housing into at least two inlet flow chambers including a primary inlet flow chamber and a reserve inlet flow chamber, the primary flow chamber opening onto the upstream side of the primary filter element, and the reserve flow chamber opening onto the upstream side of the reserve filter element, said separating means normally closing off the reserve flow chamber from the inlet and thus isolating the upstream side of the reserve filter element from inlet flow; and a relief valve associated with the separating means and responsive to a predetermined pressure differential across the primary filter element to open and permit flow to proceed into the reserve flow chamber, thus to expose the upstream side of the reserve filter element to flow from the inlet, and to permit flow to continue to the outlet via the reserve filter element.

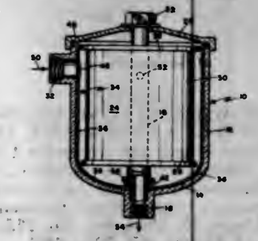
3,344,924
MERCURY FILTERING APPARATUS
Elmer S. Messer, Tulsa, and William M. Carnahan, Sand Springs, Okla., assignors to Flow Measurement Company, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Apr. 4, 1966, Ser. No. 540,038
10 Claims. (Cl. 210—202)

1. A device for filtering mercury in liquid state, comprising:
- first means for receiving the contaminated mercury and directing said mercury into a plurality of fine streams through air to increase the probability of oxidization of any metal contaminants in said mercury;
- second means for collecting said fine streams of mercury and including an absorbent filter surface in contact with said collected mercury; and
- third means for receiving said collected mercury and including a strainer element with a mercury wettable



metal filter such that the collected mercury can pass through the strainer element to the exclusion of impurities.

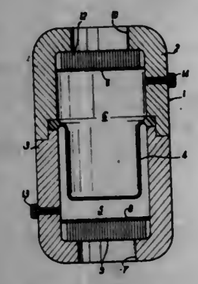
3,344,925
PLASTIC LINER FOR OIL FILTER
William A. Graham, 1385 Eckman Ave., Chula Vista, Calif. 92071
Filed Aug. 28, 1964, Ser. No. 392,827
2 Claims. (Cl. 210—312)



2. The combination of an internal combustion engine oil filter housing having a side inlet opening and an axial outlet;
- an apertured tube fixed axially of said housing and communicating with said outlet;
- a filter cartridge in said housing and supported on said tube;
- a housing liner entirely surrounding sides and bottom of said cartridge and conforming generally with the interior of said housing;
- said liner having a side inlet opening aligned with said side inlet opening of the housing; and
- said liner having an axially apertured, expansible neck tightly embracing said tube, said neck being resilient and normally self-closing, so that the neck is closed when the liner is lifted from the housing thus retaining accumulated sludge.

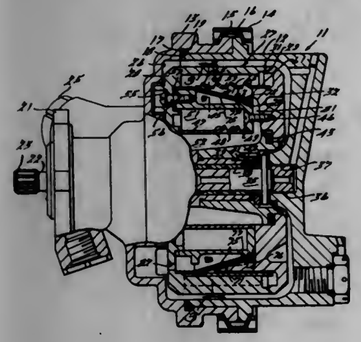
3,344,926
DEVICE FOR UTILIZING THE OSMOTIC PRESSURE OF A SOLUTION FOR THE PRODUCTION OF MECHANICAL ENERGY
Jean-Louis Barnabe, Noisy-le-Sec, Dominique Callies, Neuilly-sur-Seine, and Christian Leveque, Paris, France, assignors to Societe de Recherches Techniques et Industrielles (S.R.T.I.), Paris, France
Filed Apr. 25, 1966, Ser. No. 545,145
Claims priority, application France, May 6, 1965, 16,146; Feb. 9, 1966, 49,033
9 Claims. (Cl. 210—321)

1. A device comprising a vessel, an internal fluid tight and deformable partition in said vessel, two cavities having variable volumes formed by said partition in said vessel, a zone of communication with the exterior of said vessel for each of said cavities, at least one semi-permeable porous membrane closing each of said zones and means for filling and emptying said cavities with given



solutions, means causing osmosis across the membrane of a first one of said cavities for increasing the pressure in said first cavity to cause said deformable partition to move in the direction of a reduction in volume of the other of said cavities to produce reverse osmosis across said membrane of said other of said cavities.

3,344,927
PURIFIER
Rex C. Darnell, Dexter, Mich., assignor to Michigan Dynamics, Inc., a corporation of Michigan
Filed Aug. 19, 1965, Ser. No. 482,039
8 Claims. (Cl. 210—360)

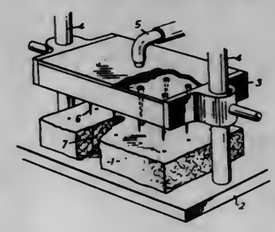


1. A centrifugal purifier for removing entrained contaminants larger than a predetermined size from a fluid in a fluid system comprising means defining a fluid cavity, fluid inlet means and fluid outlet means in communication with said fluid cavity, a rotating impeller supported within said cavity for imparting a centrifugal force to the fluid and entrained contaminants therein, a contaminant repository, said contaminant repository being defined at least in part by a member having enlarged openings for providing for fluid communication between said cavity and said contaminant repository for passage of entrained contaminants from said cavity to said contaminant repository under the influence of the centrifugal force generated by said impeller, and a perforate member having a plurality of finely spaced openings extending adjacent and across the openings in said first mentioned member and within said cavity for precluding the re-entry of the contaminants to the fluid system upon the cessation of rotation of said impeller, said openings in said perforate member being sized to exclude particles greater than said predetermined size, said perforate member being positioned between said fluid inlet means and said fluid outlet means whereby at least a portion of the fluid flowing through said cavity passes through said perforate member.

3,344,928
HUMIC ACID AS AN ADDITIVE IN A PROCESS OF FORMING A SALT-REJECTING MEMBRANE
Kurt A. Kraus, James S. Johnson, and Arthur J. Shor, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed May 9, 1966, Ser. No. 548,790
8 Claims. (Cl. 210—500)

1. In a method of making a dynamic permeable membrane capable of rejecting solutes comprising passing an aqueous phase containing a dispersible material through a porous substrate the improvement wherein said dispersible material comprises humic acid.

3,344,929
FLUID FILTERS
Peter William Stripp, Billacombe, Plymouth, Devon, England, assignor to Tecalemit (Engineering) Limited, Plymouth, Devon, England
Filed May 7, 1964, Ser. No. 365,697
Claims priority, application Great Britain, May 10, 1963, 18,591/63
9 Claims. (Cl. 210—510)

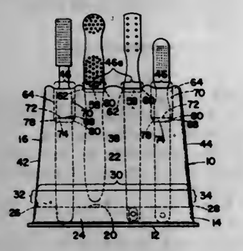


9. A fluid filter element for use as an air filter consisting essentially of at least one layer made of a filter material formed of an intermingled mass of fibres of impervious synthetic materials to which oil will not readily adhere and a series of cellulose filaments to which oil will readily adhere extending at least partially through the said mass of fibres and in a direction substantially at right angles to the thickness of said layer.

3,344,930
TOOTHBRUSH HOLDER
Ralph G. Merkel, 2629 Florida Drive, Fort Wayne, Ind. 46805
Filed June 10, 1965, Ser. No. 462,866
6 Claims. (Cl. 211—65)

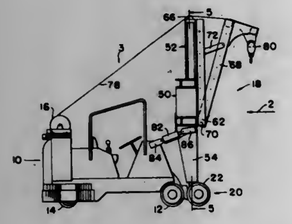
3. A disposable toothbrush holder comprising a body portion having an upwardly facing surface with a plurality of openings therein, a first group of said openings being closed by tabs hingedly and resiliently secured to said body portion at the edges of said openings and extending inwardly of said openings toward the center thereof, a second group of said openings, respectively, communicating with recesses which depend into said body portion from said body portion surface, said recesses each being open at the top and having a flat and generally horizontal bottom and upstanding sides, said recess bottoms having

openings therein, respectively, which are closed by tabs hingedly and resiliently secured to said recess sides and extending inwardly of the last-mentioned openings toward the center thereof, all of said tabs being resiliently movable



into an open position when an object is inserted through said openings, said tabs resiliently holding the object therebetween when an object is positioned in said openings.

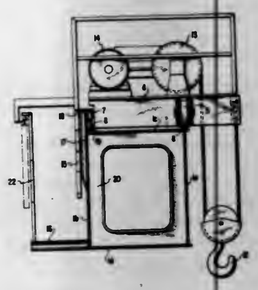
3,344,931
MOBILE CRANE
John V. M. Debona, Orchard Lake, Mich., assignor to Darin & Armstrong, Inc., Detroit, Mich., a corporation of Michigan
Filed Jan. 24, 1966, Ser. No. 522,629
8 Claims. (Cl. 212—8)



1. A mobile crane comprising a truck with at least one truck wheel at one end thereof, a crane chassis positioned at the one end of said truck adjacent said wheel, a horizontally oriented first pivot joint connecting the one end of the truck and the crane chassis, said chassis including support means located outwardly of said truck, a crane extending upwardly from chassis, a second pivot joint connecting said crane and chassis located between said support means and said first pivot joint and oriented parallel to said first pivot joint, and a crane support link having one end pivoted to said truck and the other end pivoted to said crane at a point above said chassis whereby rocking of said chassis about said first pivot point moves said crane in a generally vertical direction relative to said truck.

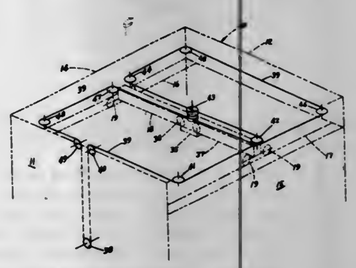
3,344,932
CRAB RUNWAY FOR AN OVERHEAD TRAVELLING CRANE
Franco De Gasperis, Turin, Italy, assignor to Società Nazionale delle Officine di Savigliano, Turin, Italy
Filed May 17, 1965, Ser. No. 456,097
1 Claim. (Cl. 212—18)

A crab runway for an overhead traveling crane, comprising a main grider, a crab frame mounted on said girder for movement therealong, a first rail attached to said girder extending along the stop of said girder at one side thereof and having its running surface facing upwardly, load suspending means carried by said crab frame disposed laterally outwards of said first rail at one side and tending to tilt said crab frame in one direction about said first rail, a second rail having a running surface facing downwardly and carried by a supporting structure comprising a plurality of standards fitted to that side wall of said girder remote from said load suspension means at points coinciding with the location of bracing partitions within said grider, the said standards extending vertically beyond said top side and having secured to the top thereof said second rail in such a manner that the latter is disposed in spaced parallel relation to the top side of the girder and is arranged to overhang the latter,



a third rail having its running surface facing upwardly directly secured to the top side of said girder beneath said second rail, at least one wheel mounted on said crab frame adapted to cooperate with said first rail and a pair of wheels mounted directly on the crab frame, adapted to cooperate with said second and third rail, respectively, the transverse dimension of the crab frame being kept within the overall dimension of the girder on the side remote from the one supporting the load suspension members.

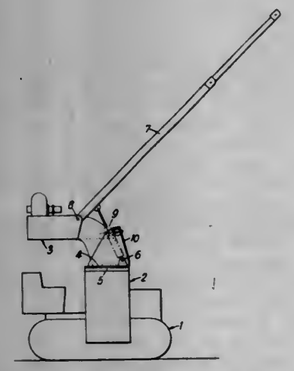
3,344,933
REMOTE CONTROL CRANE SYSTEM
Demetrius G. Jelatis and Frank G. Chesley, Red Wing, Minn., assignors to Central Research Laboratories, Inc., Red Wing, Minn., a corporation of Minnesota
Filed Apr. 8, 1966, Ser. No. 541,371
10 Claims. (Cl. 212—24)



1. A remote control crane system for operation in an enclosed area comprising:
(A) a pair of parallel spaced apart tracks extending through said area;
(B) a bridge spanning said tracks;
(C) remotely controlled drive means for moving said bridge along said tracks;

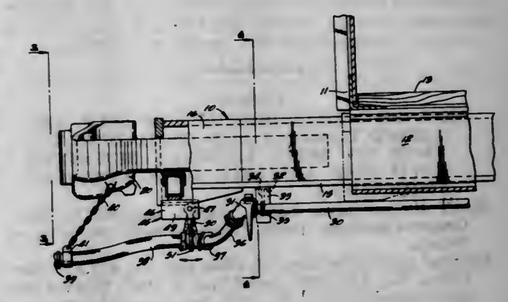
(D) a carriage supported on said bridge;
(E) remotely controlled drive means for moving said carriage along said bridge;
(F) hoist means suspended from said carriage; and
(G) remotely controlled drive means for raising said hoist means;
(H) said drive means for said carriage comprising:
(1) a rotatable actuator journalled adjacent the forward wall of said enclosed area,
(2) a free turning capstan on said carriage;
(3) a pair of idler sheaves journalled adjacent said forward wall in association with said actuator, a double grooved idler sheave journalled at one end of said bridge, a pair of single idler sheaves journalled at the other end of said bridge and an idler sheave at each forward and rear corner of said enclosed area, and
(4) a taut flexible cable extending in a loop from said actuator around one of said forward wall idlers to and around said double grooved bridge idler in one direction, in one turn about said capstan in one direction, around one of said pair of single bridge idlers to one of said rear corner idlers, to the other of said rear corner idlers, around said double grooved bridge idler in the opposite direction, in one turn about said capstan in the opposite direction, around the other of said pair of single bridge idlers to one of said forward corner idlers, and over the other of said forward wall idlers to the actuator.

3,344,934
MAXIMUM SAFE LOAD INDICATORS FOR CRANES
John H. Boughton, Amersham Common, England, assignor to T. T. Boughton & Sons Limited, Amersham, England, a British company
Filed Jan. 18, 1966, Ser. No. 521,340
3 Claims. (Cl. 212—55)



1. A slew jib crane comprising a lower base, an upper base mounted on said lower base for slewing movement relative thereto about a vertical axis, a pedestal structure pivotally mounted on said upper base for limited angular displacement relative thereto about a first horizontal axis, a jib pivotally mounted on said pedestal structure for derricking movement about an axis parallel to said first horizontal axis, a bolt attached to said pedestal structure and being spaced substantially from said first horizontal axis, an abutment forming member fixed to said upper base and having an opening through which said bolt extends, means defining a shoulder on said bolt which is movable toward said abutment upon angular displacement of said pedestal structure about said first horizontal axis by an upsetting couple resulting from loading of the crane, a pair of resilient discs mounted on said bolt between said abutment and said shoulder to yieldably resist angular displacement of the pedestal structure by said upsetting couple, and switch means responsive to deformation of said resilient discs by an upsetting couple exceeding a predetermined value.

3,344,935
AIR HOSE MOUNTING SUPPORT
Frederick G. Stewart, 3039 Macomb St. NW., Washington, D.C. 20008, and Walter W. Simpson, 3050 N. 38th St., Arlington, Va. 22207
Filed July 30, 1965, Ser. No. 476,072
4 Claims. (Cl. 213—1)

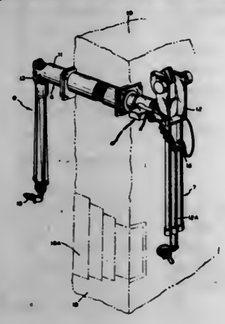


1. In a railway car having a coupler with a coupler head supported thereon for swinging movement relative to the longitudinal center line of the car, an air line supported for longitudinal and transverse movement on the car, an angle cock attached to the car frame independent of the coupler and connected to the air line, and an air hose having one end connected to the angle cock and the other connected to an angle fitting, the improvement comprising:
a supporting bracket secured to the car adjacent the coupler;
said supporting bracket including a fixed pin having a longitudinal axis extending transverse of the axis of the car;
a bolt supported on said pin for pivoting movement longitudinally of said car, said bolt having a width substantially smaller than the length of said pin so that said bolt may slide transverse to the axis of the railway car;
said bolt including a support eye through which said angle fitting is received, said support eye having an inside diameter larger than the outside diameter of said angle fitting so that said angle fitting may rotate freely in said support eye.

3,344,936
MANIPULATOR HAVING MOTORIZED GRASPER AND METHOD
Charles E. Saunders, Jr., Springdale, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 19, 1964, Ser. No. 404,810
5 Claims. (Cl. 214—1)

1. In a remote control manipulator comprising a horizontal support and a master arm and slave arm pivotally connected at opposite ends of said support and including a grasper at the free end of said slave arm, a

manual actuator at the free end of said master arm and mechanical linking means for coordinating movement between said grasper and said actuator, the improvement



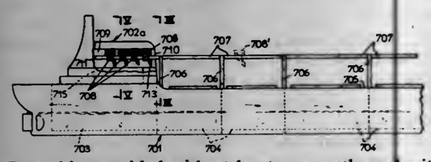
comprising a motorized means mounted on said manipulator and arranged, through the action of said motor, to move said linking means and operate said grasper.

3,344,937

SHELTER ARRANGEMENT FOR SELF-CONTAINED LOADING AND UNLOADING DEVICES ON SHIPS, VEHICLES, BUILDINGS AND LIKE MOVABLE OR STATIONARY STRUCTURES

Henri Kummerman, Paris, France, assignor to MacGregor-Comarain, Paris, France, a body corporate of France

Original application Dec. 18, 1964, Ser. No. 419,351, now Patent No. 3,317,058, dated May 2, 1967. Divided and this application Oct. 10, 1966, Ser. No. 585,360
Claims priority, application France, Dec. 19, 1963, 957,834; Oct. 2, 1964, 990,241
19 Claims. (Cl. 214—15)



1. In a ship provided with at least one castle and with at least one self contained overhead travelling crane consisting of a rolling athwartship bridge movable on and spanning substantially horizontal elevated tracks spaced from and extending outside above and longitudinally of the weather deck of said ship and supported by spaced deck-mounted posts, at least one tunnel-like shelter and stowage compartment at least the side, top and bottom walls of which are weather-proof and which is provided in a 'tweendeck space of said castle longitudinally thereof for accommodating and fully housing and covering all said cranes therein, whereby said cranes are entirely surrounded at least by the lengthwise extending walls of said compartment, said compartment opening at at least one longitudinal end towards said weather deck and having inner runways extending along said compartment in registering contiguous relationship with said elevated tracks.

3,344,938

TOBACCO BARN LOADING APPARATUS

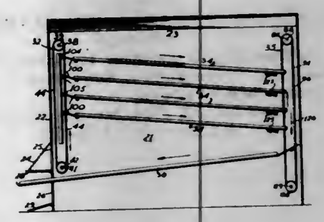
Robert H. Brooks, College Park, Ga.
(231 E. Cambridge Ave., Apt. 1, Atlanta, Ga.)

Filed July 26, 1965, Ser. No. 474,852
4 Claims. (Cl. 214—16.4)

1. In a barn of the type employed for curing leaves of tobacco mounted on poles therewithin, said barn having side walls and end walls, the combination therein of:

(A) a loading mechanism at a first end of said barn comprising:
  (1) a lower axle extending through the lower portion of said barn from one side wall to the other side wall,
  (2) lower sprockets coaxially mounted on said lower axle near said side walls,
  (3) upper axles extending inwardly from the upper portion of each of said side walls and positioned vertically above said first axle,
  (4) upper sprockets coaxially mounted on each of said upper axles and disposed vertically above said lower sprockets,
  (5) a first continuous chain disposed around one of said upper sprockets and one of said lower sprockets,
  (6) a second continuous chain disposed around the others of said upper and lower sprockets,
  (7) a plurality of hook means pivotally attached to each of said continuous chains at spaced intervals therealong and adapted to engage the ends of poles extending between said continuous chains;

(B) an unloading mechanism at a second end of said barn comprising:
  (1) a lower axle extending through the lower portion of said barn from one side wall to the other side wall,



  (2) lower sprockets coaxially mounted on said lower axle near said side walls,
  (3) upper axles extending inwardly from the upper portion of each of said side walls and positioned vertically above said first axle,
  (4) upper sprockets coaxially mounted on each of said upper axles and disposed vertically above said lower sprockets,
  (5) a first continuous chain disposed around one of said upper sprockets and one of said lower sprockets,
  (6) a second continuous chain disposed around the others of said upper and lower sprockets,
  (7) a plurality of hook means pivotally attached to each of said continuous chains at spaced intervals therealong and adapted to engage the ends of poles extending between said continuous chains;

(C) a plurality of pairs of storage racks disposed along the side walls of said barn, one storage rack of each pair of storage racks being on one side wall and the other storage rack of each pair of storage racks being on the other side wall,
  (1) said pairs of storage racks being vertically spaced from each other; and

(D) a pair of retrieving racks disposed along the side walls of said barn, one retrieving rack of said pair being on one side wall and the other retrieving rack of said pair being on the other side wall,

  (1) said pair of retrieving racks being positioned below said plurality of pairs of storage racks and sloping downwardly from said unloading mechanism toward said loading mechanism,

(E) means to reciprocally move the chains of the loading mechanism to thereby load said racks,

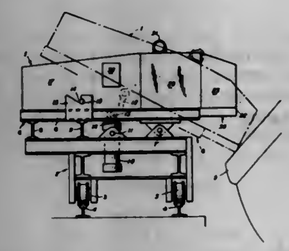
(F) means to unidirectionally move the chains of the unloading mechanism to thereby unload said racks.

3,344,939

SCRAP CHARGING BOX

Harold F. Shekels, Edgewood Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Sept. 3, 1965, Ser. No. 484,995
2 Claims. (Cl. 214—18)



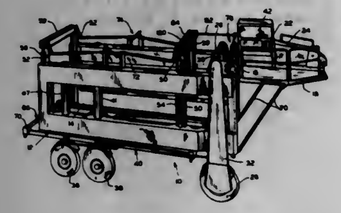
1. Scrap charging apparatus comprising a charging box, a pair of laterally spaced parallel partition walls in said box separating the space therein into three longitudinally extending compartments, each of said walls comprising a gate supported for pivotal movement about an axis spaced inwardly from one end of said box, a discharge chute arranged centrally of and projecting outwardly from said one end of said box, said chute having sides that are aligned with and form extensions of said partition walls when said gates occupy parallel positions with the central compartment of said box connected with said chute, each of said gates being swingable from its said parallel position to a second position in which it disconnects said central compartment from said discharge chute and connects an end one of the remaining compartments therewith.

3,344,940

SYNCHRONIZING MEANS FOR HYDRAULIC CYLINDERS

Glen W. Burgess and William A. Williamson, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan

Filed Dec. 28, 1964, Ser. No. 421,476
19 Claims. (Cl. 214—394)



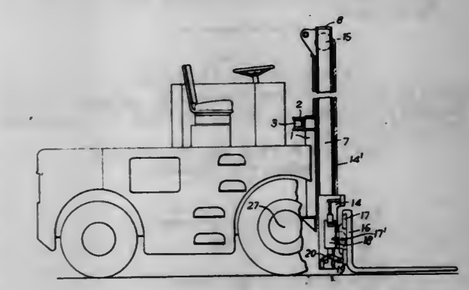
1. In a material handling vehicle having at least four upright hydraulic cylinder means mounted in space and substantially parallel relation to each other both longitudinally and transversely of the vehicle, extensible members associated with said cylinder means for elevating load-lifting means of the vehicle, means operatively connecting at least some of said extensible members to each other, said latter means including a device connected to each of said extensible members and to a portion of the vehicle intermediate each of the longitudinally spaced pairs of said cylinder means, each of said devices being movable during extension of the respective extensible members, valve means connecting adjacent ends of the respective pairs of said devices, fluid pressure supply means connected to said cylinder means for actuating said extensible members, said valve means being mounted to be actuated by said devices in pivotal movement during extension of said extensible members.

3,344,941

LIFT TRUCK WITH A LATERALLY MOVABLE MULTI-SECTION MAST ASSEMBLY

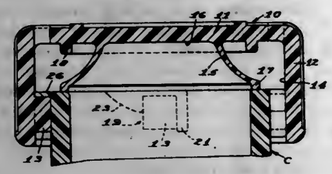
Leonard S. Mathew, Kingswood, and George W. A. Chapman, Horley, England, assignors to Matbro Limited, Horley, England, a British company

Filed Jan. 7, 1965, Ser. No. 423,983
Claims priority, application Great Britain, Jan. 10, 1964, 1,279/64
10 Claims. (Cl. 214—674)



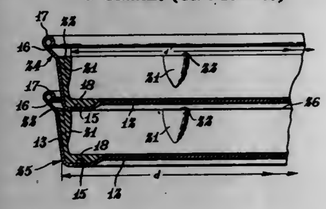
1. A lift truck having a body, front and rear wheels on which the body is carried, and a mast mounted on the body and comprising a first guide part fixed against movement in an up-and-down direction, a lift jack secured at its lower end to said first guide part and having guide means at the upper end thereof, a second guide part guided for movement along the first guide part between an upper limiting position and a lower limiting position determined by the limits of extension of said lift jack, a carrier frame guided for movement up and down the second guide part, the mast being mounted on the body for slewing relative to the body about a fixed axis to bring the carrier frame into a laterally facing position and into a forward-facing position, said lift jack having its upper end guided and movable upwardly into and downwardly out of abutting engagement with the second guide part for providing a lost motion connection between the upper end of the jack and the second guide part, flexible tie members anchored at one end to the first guide part, extending over the guide means carried by the upper end of the jack and secured at the other end to the carrier frame, and stop means on said lift truck for preventing downward movement of the second guide part beyond a predetermined level when the carrier frame is in said laterally facing position, which level is higher than said lower limiting position, whereby further lowering movement of the jack after the second guide part comes into engagement with the stop means lowers the carrier frame further by virtue of the lost motion connection.

3,344,942
SAFETY CAP AND CONTAINER
Peter Hedgewick, 2375 Windermere Road, Windsor, Ontario, Canada
Filed Apr. 5, 1966, Ser. No. 540,338
9 Claims. (Cl. 215—9)



1. An integral one-piece plastic cap having a base and a peripheral flange,
a plurality of radially inwardly extending integral lugs on the inner surface of said flange,
said lugs being adapted to engage notches on the upper end of a container,
the base of said cap having axial openings therein overlying said lugs,
the circumferential dimension and radial dimension of each said opening being substantially equal to the corresponding dimensions of the underlying lug,
an integral annular web on the inner surface of the base of said cap extending downwardly when the cap is on the container.

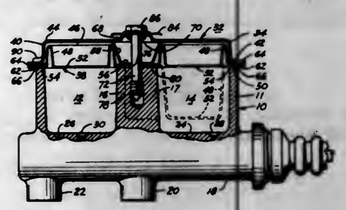
3,344,943
CONTAINER CLOSURE
Donald H. Zipper, Western Springs, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed June 9, 1965, Ser. No. 462,475
5 Claims. (Cl. 215—40)



1. A closure cap particularly adapted for press-on type application to a container, said closure cap comprising a shell having a top panel and skirt, an endless layer of gasket material received in said shell at least around the inner periphery of said skirt, said gasket material being characterized by being reformable on initial application to said container and including a plurality of reformable lobe means formed on said layer of reformable gasket material prior to application to said container, said reformable lobe means projecting radially inwardly of said layer of gasket material in said shell to prevent nesting of said caps during hoppering, and said lobes maintaining said gasket material spaced from said container finish during application to said container to prevent pumping.

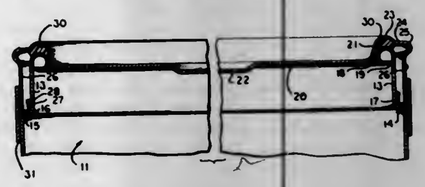
3,344,944
MASTER CYLINDER CAP
Paul B. Shutt, Lester J. Larsen, and William E. Ferrell, St. Joseph, Mich., assignors to The Bendix Corporation, St. Joseph, Mich., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,324
11 Claims. (Cl. 220—44)

1. The combination of a cap and master cylinder: said master cylinder comprising at least one reservoir chamber, wall means enclosing and defining said chamber, said wall means having an end edge, a flexible sealing member bridging said chamber and engaging said end edge of said reservoir wall means, said cap having located thereon a generally flat surface opposite said end edge of said reservoir wall means for pressing said sealing member into sealing engagement with said end edge, at least



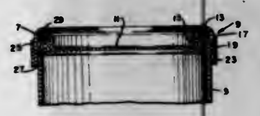
one interruption in said flat surface of said cap providing space for receiving therein a portion of said sealing member which bridges said space, said space being constructed to communicate said chamber with the exterior thereof when said sealing member portion lifts off said end edge of said wall into the confines of said space, and means connecting said cap to said master cylinder.

3,344,945
RESEALABLE CAN
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,458
9 Claims. (Cl. 220—53)



1. A can comprising a can body having an open upper end portion of a reduced diameter connected to the remainder of said can body by an intermediate shoulder, and a can end closing said can body open upper end, said can end including an end panel and a depending skirt, said skirt having the same external diameter as the remainder of said can body and an inwardly reversely turned curl at the lower edge of said skirt closely fitting said can body upper end portion and frictionally retaining said can end on said can body.

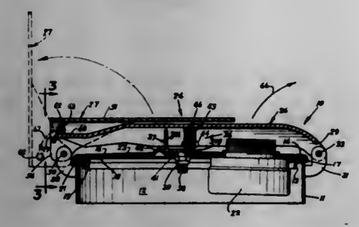
3,344,946
CAN AND CLOSURE FASTENER
John G. Sprague, Box 90–A, Whitmore, Calif 96096
Filed Oct. 22, 1965, Ser. No. 501,765
11 Claims. (Cl. 220—53)



1. A metal packaging comprising, in combination:
a can having an upper edge which, in addition to its principal functional purpose, facilitates safe handling;
a lid having a flange depending therefrom, said flange

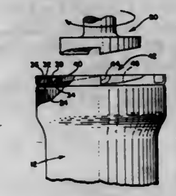
conforming to the circumferential configuration of said can and having separated upper and lower portions;
a tear-strip secured about the circumference of the outer surface of said flange and joining said upper and lower portions together, said tear-strip having an overlapping portion forming a tongue for said tear-strip; and
means for joining said lower portion of said flange to said can to form a completely closed packaging whereby the closed packaging may be opened by pulling the tongue of the tear-strip to remove said tear-strip and thus separate said upper and lower portions of said flange so that the lid may be removed to provide access to the contents of the can and then replaced on said can to provide a subsequent sealing thereof.

3,344,947
FILL CAP FASTENING MEANS
Norman G. Gallup, Minneapolis, Minn., assignor to Brown Steel Tank Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 21, 1965, Ser. No. 499,221
15 Claims. (Cl. 220—57)



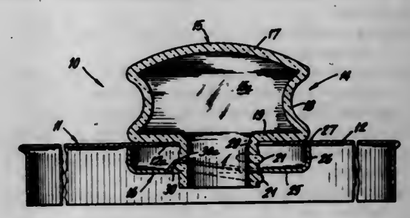
1. A cover assembly for closing an opening defined by a cylindrical collar having a reverse turned end flange comprising:
(a) a circular closure member engageable with the reversed turned end flange for closing the opening,
(b) a strong arm having an elongated member positioned diametrically over the closure member, said member having a flat end section terminating in an inwardly curved lip and side flanges secured to the sides of the elongated member and projected toward the closure member,
(c) first lug members secured to the cylindrical collar and projected upwardly adjacent the side flanges,
(d) first means pivotally connecting the first lug members and the flanges whereby the strong arm has angular movement toward and away from said collar in the plane of the strong arm,
(e) universal joint means pivotally connecting the mid-portion of the elongated member to the center of the closure member,
(f) a lock arm for holding the strong arm and closure member in a closed position relative to the opening, said lock arm having a plate and downwardly projected flanges secured to the opposite sides of one end of the plate,
(g) second lug members secured to the collar opposite the first lug members, said second lug members projected upwardly adjacent the flanges of the lock arm,
(h) second means pivotally connecting the lock arm flanges with the second lug members whereby the lock arm has angular movement toward and away from the strong arm, and
(i) an elongated roller rotatably mounted on said flanges of the lock arm on an axis parallel to and above the axis of the second pivot means, said roller means on angular movement of the lock arm toward the strong arm engages the curved lip and moves up onto the flat end section of the strong arm forcing and holding the strong arm and closure member in the closed position.

3,344,948
CLOSURE FOR SPIN SEALING AND COIN FEEDING
Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 8, 1965, Ser. No. 512,391
10 Claims. (Cl. 220—67)



1. A one-piece thermoplastic closure member for covering the open mouth of a complementary container body comprising, first and second circumferentially extending, axially spaced planar wall portions laterally outwardly offset from the closure axis and being joined to one another by a generally axially extending wall portion, a circumferential series of radially directed shoulders laterally inwardly offset from said first and second planar wall portion, each radially directed shoulder having an axial height substantially equal to the distance between said first and second planar wall portions to enable the coin feeding of said closure member from a stack of similarly configured closure members, and a circumferentially disposed connecting surface intermediate adjacent radially directed shoulders each sloping from a high point adjacent an upper end of one radially directed shoulder toward a low point in the vicinity of a lower end on a next adjacent radially directed shoulder to facilitate alignment of a complementary tool means with said radially directed shoulders for positive coacting engagement therewith in spin sealing said closure member relative to said complementary container body as an incident to rotary movement thereof.

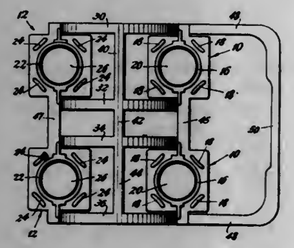
3,344,949
TOPS FOR COFFEE PERCOLATOR LIDS AND THE LIKE ARTICLES
Martin Himmel, 1 Park Lane, Mount Vernon, N.Y. 10552
Filed Oct. 22, 1965, Ser. No. 500,499
12 Claims. (Cl. 220—82.5)



1. In combination with a coffee percolator lid having a central opening, a top for said lid, said top comprising a hollow top member, said top member comprising

a top wall, an annular wall extending downwardly from the periphery of the top wall, an annular bottom wall extending inwardly from the lower end of the annular wall and forming a chamber in said top member, having a portion disposed directly above and bounded at its underside by said inwardly extending bottom wall, and a hollow stem extending downwardly from the inner periphery of said bottom wall and projecting down through said lid opening, said bottom wall contacting the upper surface of said lid, clamp engaging means on said stem, said top further comprising clamp means having means cooperable with said engaging means on said stem, to cause said clamp means to press against the underside of said lid to clamp said top member to said lid.

3,344,950
CONTAINER CARRIER
Richard W. Erickson, Westport, Conn., assignor to International Omni-Pak Corporation, New York, N.Y., a corporation of New York
Filed Sept. 19, 1961, Ser. No. 139,262
8 Claims. (Cl. 220—102)



1. A molded three-dimensional plastic container carrier for carrying in nested, interlocking relationship a plurality of containers having cylindrical chimes at both ends comprising upper and lower channeled elements, each channeled element including inner upstanding chime engaging means integrally formed with the respective channeled elements adjacent the inner sides of the chimes of the containers and outer upstanding chime-engaging means integrally formed with the respective channeled elements adjacent the outer sides of the chimes of the containers, and means integrally formed with and connecting the channeled elements.

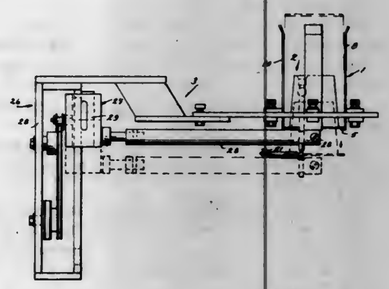
3,344,951
EJECTION PILL DISPENSER WITH INDICATING MEANS
Norman A. Gervais, Salem, Va., assignor to Creative Packaging Incorporated
Filed Apr. 18, 1966, Ser. No. 543,392
7 Claims. (Cl. 221—7)

1. A pill dispenser and indicating means comprising:
a casing,
means in said casing adapted for holding a stack of pills in a biased condition,
said stack of pills being maintained in a tube removably positioned in said casing, said tube having a longitudinal key portion along its outer surface,
said casing having a bottom defining an opening with a keyway adapted for receiving said tube and key portion,
an indicia-bearing dial rotatably mounted on said casing,
a reference means on said casing associated with said indicia-bearing dial,
an exit passage defined by said casing adjacent the topmost of said stack of pills,
a pill ejector contained in said casing, said pill ejector having a first section with a segment in ejecting contact with the topmost of said stacked pills when depressed,
said pill ejector having a second section hinged to said first section with a portion thereof exposed to the exterior, said first and second sections being resiliently positioned in said casing,



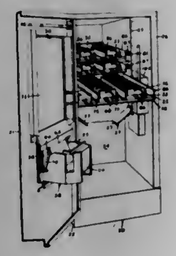
said pill ejector having a third section hinged to said second section and extending over the opening in said casing bottom,
said pill ejector having an element extending from said second section in engageable contact with said indicia-bearing dial causing advancement thereof each time said second section is depressed for pill ejection.

3,344,952
SUCTION APPARATUS AND METHOD FOR DE-NESTING CONTAINERS FROM STACKS
Richard B. Inman, Fulton County, Ga., assignor to Scientific-Atlanta, Inc., Atlanta, Ga., a corporation of Georgia
Filed Feb. 21, 1966, Ser. No. 529,133
9 Claims. (Cl. 221—41)



1. Apparatus for de-nesting a stack of cups comprising a plurality of fingers providing support for the lowermost cup in said stack at spaced points around its perimeter, so that an area of support is defined within said lowermost cup by straight lines connecting each of said fingers with the next of said fingers around said perimeter, a suction device capable of pressing against said lowermost cup and forming a vacuum between itself and said lowermost cup, and transport means operatively connected to said suction device to move said suction device past said fingers and against a portion of said cup outside said area of support and then to withdraw said cup, whereby a couple is formed by the forces of said suction device and said fingers to tilt said cup and the cup is then pulled past said fingers.

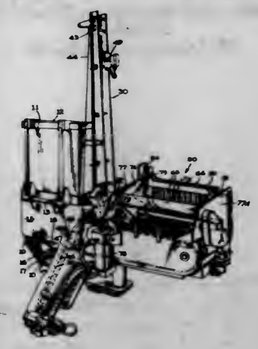
3,344,953
ARTICLE VENDING MACHINE HAVING HELICAL FEEDER COIL
Merrill Krakauer, 57 Falcon Road, Livingston, NJ. 07039, and Henry E. Verbeke, Tanners Brook Road, Chester, N.J. 07930
Filed Feb. 18, 1965, Ser. No. 433,603
18 Claims. (Cl. 221—75)



1. An article vending machine comprising, in combination, a casing including a front wall portion having a delivery opening therein, article receiving means supported by said casing adjacent said delivery opening, shelf means positioned within said casing in spaced relationship with said article receiving means, a helical feeder coil rotatably carried on said shelf means with the axis of said coil extending from front to back with respect to said casing, the articles to be vended being disposed between the convolutions of said helical feeder coil, a supply of electrical power, drive means connected to said supply for rotating said helical feeder coil in a direction to advance successive articles carried thereby toward said front wall portion, the foremost article moving from said feeder coil to said article receiving means, said drive means including an electric positive brake motor that stops substantially instantaneously after the power has been shut off, and guide means disposed within said helical feeder coil in fixed relationship with said shelf means, said guide means including a curved surface of low friction material for guiding said feeder coil as it rotates, said guide means engaging at least one of the convolutions of the rotating feeder coil at a single discrete point.

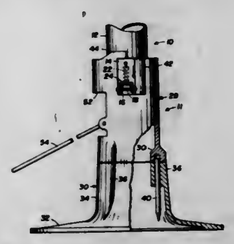
3,344,954
STICK HANDLING MACHINE
William S. Peppler, Chappaqua, N.Y., and George N. Bliss, Birmingham, and Norman A. Planck, Jr., Novi, Mich., assignors to Diamond International Corporation, York, N.Y., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,587
12 Claims. (Cl. 221—175)

1. A stick handling machine comprising
a random supply means;
conveyor means passing immediately adjacent said random supply means and picking up sticks therefrom;
discharge means for discharge of the sticks from said conveyor means located adjacent the opposite end of said conveyor means from said random supply means;
oriented supply means to supply sticks missing from said conveyor means located along the path of said conveyor means,
said oriented supply means being a single ended, reversible flow reservoir,
said oriented supply means including
guide means maintaining a stacked supply of sticks in said oriented supply means above said conveyor means,



cam means below said oriented supply means and adjacent opposite sides of said conveyor means, and finger means positioned in and out of the path of the sticks on said conveyor means by said cam means
whereby said conveyor means has a fully supply of sticks upon reaching said discharge means.

3,344,955
GROUND SUPPORT FOR DEVICE FOR STORING AND DISPENSING BALLS AND THE LIKE
Paul W. Ingham, 900 Maple Lane, Elk Grove Village, Ill. 60007
Filed Mar. 4, 1966, Ser. No. 531,975
3 Claims. (Cl. 221—282)



1. For use in connection with a portable ball storage device having storage means with a ball discharge opening at its lower end and means to control the discharge of balls from said opening, a portable supporting stand for said device, said stand comprising a base portion providing for stable support of said device, an upper portion connected to said base portion and having means at its upper end adapted for releasably connecting the lower end of said device to said supporting stand, ramp means combined with said upper portion for guiding a ball released from said device to a place selected by the user, said upper portion being separable from said base portion, and pin means interconnecting said base portion and said upper portion, said pin means being insertable into the

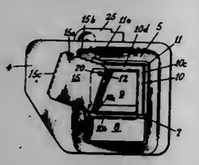
ground upon which the stand rests to provide for support of said upper portion when separated from said base portion.

3,344,956
SOLIDS HANDLING EQUIPMENT
Charles Thomson, Esher, England, assignor to Solar Thomson Engineering Company, Limited, Cobham, England
Filed Aug. 12, 1965, Ser. No. 479,162
Claims priority, application Great Britain, June 3, 1965, 23,803/65
10 Claims. (Cl. 222—56)



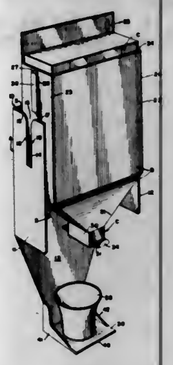
1. An apparatus for feeding material into an inlet, said apparatus comprising a closure member vertically reciprocal to open and close said inlet, feed means for supplying solids above said inlet, control means for said feed means, and driving means responsive to operation of said feed means for continuously reciprocating said closure member during operation of said feed means to permit the flow of solids through said inlet, said closure member including means for detecting the rise of the level of solids below said inlet to a predetermined height and for operating said control means to render said feed means inoperative.

3,344,957
DISPENSING MECHANISM
Thomas W. Duncan and Charles N. Perin, Connersville, Ind., assignors to Design and Manufacturing Corporation, Connersville, Ind., a corporation of Indiana.
Filed Mar. 4, 1966, Ser. No. 531,697
7 Claims. (Cl. 222—70)



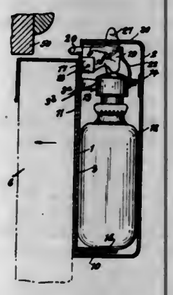
1. For use in a dishwashing machine having a timing device, a detergent dispenser, a portion at least of said dispenser being affixed to a shaft, said dispenser portion and said shaft being rotatable between a detergent retaining position and a detergent dispensing position, means for rotating said shaft, said shaft rotating means comprising a first cam and a second cam, said first cam being rotatively mounted on said shaft and having an actuated and an unactuated position corresponding respectively to said retaining and dispensing positions of said shaft and said dispenser portion, means for urging said first cam from said unactuated to said actuated position, said second cam being fixedly secured to said shaft, means on said first cam for engaging and rotating said second cam and said shaft when said first cam is rotated from said unactuated to said actuated position, releasable means for retaining said first cam in said unactuated position, means controlled by said timing device for releasing said retaining means, and additional means on said second cam for releasing said retaining means when said dispenser portion and said shaft are manually rotated from said detergent retaining position to said detergent dispensing position.

3,344,958
DRY PRODUCT DISPENSER MEANS
John Kaanehe, 1516 Kam. IV Road, Honolulu, Hawaii 96819
Filed Feb. 8, 1966, Ser. No. 525,931
4 Claims. (Cl. 222—181)



1. A combination holder and dispenser for dry product means from their original package comprising a wall bracket formed with a rear wall and spaced side walls, said side walls being flexible and formed with vertical slots, and a dispenser unit comprising a rectangular package receiving portion and a lower funnel portion, said package receiving portion having means engageable in said slots, a gate valve assembly at the mouth of the funnel portion, and a shelf below said valve assembly for a receiver cup when said dispenser is mounted in said bracket.

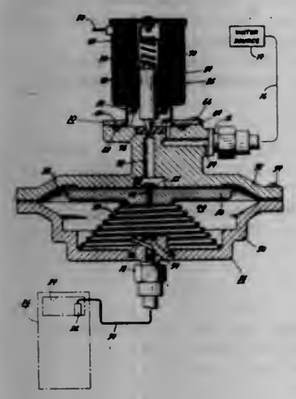
3,344,959
DOOR MOUNTED SPRAYING DEVICES
William J. Faso, 230 N. Federal Highway, Deerfield Beach, Fla. 33441
Filed July 29, 1965, Ser. No. 475,683
4 Claims. (Cl. 222—183)



3. A spraying device for mounting on a door comprising a support for a spray bottle, said bottle having a spray head capable of being depressed to cause spraying of the bottle contents, a nozzle from which the contents are expelled, a movable member on the support and

operative to depress the spray head upon the contact of said member with a door frame when the door on which the device is mounted is moved to a closed position, and a bifurcated finger straddling the nozzle and mounted on the member and movable with the same for engaging the nozzle to hold the nozzle in a definite position relative to a spray outlet opening in the support.

3,344,960
FLUID METERING DEVICE
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,769
1 Claim. (Cl. 222—335)



A fluid transfer and metering device for directing a predetermined measured amount of fluid from a pressure source to a point of use comprising housing means defining a first fluid chamber, movable diaphragm means in said first fluid chamber dividing said fluid chamber into first and second variable volume compartments, means forming an inlet to said fluid chamber on one side of said diaphragm means, means forming an outlet from said fluid chamber on the opposite side of said diaphragm means, passageway means for directing fluid across said diaphragm means between said first and second compartments, means for directing pressurized fluid from a source through said inlet and against one side of said diaphragm means, said diaphragm means responding to pressurization thereof to pump fluid from said second variable volume compartment through said outlet, spring means for biasing said diaphragm means in a direction opposite to the direction of pumping movement thereof when pressurized, said fluid passageway means through said diaphragm means defining a direct communication between said first and second variable volume compartments throughout movement in both directions of said diaphragm means within said fluid chamber, said spring means directing said diaphragm means against said housing means causing fluid transfer through said passageway means from said first variable volume compartment in communication with said inlet and into said second variable volume compartment to prime and completely fill said second compartment with fluid from said first compartment at the beginning of the pumping stroke of said diaphragm means, said diaphragm means upon having pressurized fluid directed thereagainst moving to pump fluid from said second variable volume compartment and through said outlet, fluid flow from said pressurized source filling the increasing volume of said first variable volume compartment between said diaphragm means and said housing means prior to flow of fluid to said second compartment and transfer of fluid from said second variable volume compartment.

3,344,961
AEROSOL DISPENSING DEVICES
Cecil Robert Montgomery Graham, Lagonda Ave., Killara, near Sydney, New South Wales, Australia
Filed Mar. 1, 1966, Ser. No. 530,840
Claims priority, application Australia, Mar. 2, 1965, 55,783/65
7 Claims. (Cl. 222—402.22)

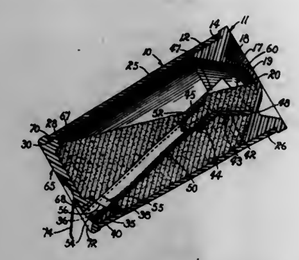


1. An aerosol container with an outlet for the aerosol contents thereof, comprising in combination: a sealing disc within the container in sealing contact with a portion of the container around said outlet, an aperture in the sealing disc, an aerosol discharge tube which has an outlet opening, the tube passing through the container outlet with clearance, being a tight fit in said aperture and being displaceable relative to the container outlet, an outer part of the discharge tube projecting through the aperture outward from, and an inner part of the tube projecting inwardly into, the aerosol container; a cupped flange disposed around the inner part of the discharge tube, said flange having a circumferential rim and defining together with said inner part an annular space; an orifice in said discharge tube which connects said annular space with the interior of the tube and with said outlet opening; a supporting member within the container at a distance from the discharge tube and a resiliently deformable element so arranged between the supporting member and the discharge tube that its resiliency causes the rim of the cupped flange to be urged towards the sealing disc so as to seal thereagainst, the resiliently deformable element being arranged and constructed so that it applies a pressure over a substantially punctiform area between the cupped flange and the supporting member at a location on the axis of the discharge tube, said resiliently deformable element being constituted by a pin made in one with said supporting member.

3,344,962
DISPENSING DEVICE
Andrew C. Popivalo, 2028 Webster St., Sanger, Calif. 93657
Filed Mar. 4, 1966, Ser. No. 531,836
5 Claims. (Cl. 222—456)

1. A dispensing device for flowable bulk material adapted successively to release a predetermined, precisely measured, quantity of such material comprising a container for a predetermined relatively large volume of such material and having a predetermined upright static position, measuring means disposed within the container to receive a predetermined measured lesser quantity of such material in the container incident to tipping of the container from said upright static position, discharge means operatively associated with said measuring means within the container for directing said lesser volume of material from the container in said tipped position while precluding the escape

and further depletion of said large volume of material while the container is tipped, and material feeding means in the container gravitationally to direct the final fractional

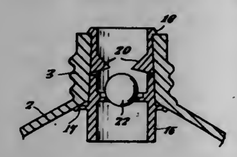


portions of material from a nearly depleted container into said measuring means when the container is in its static position to insure subsequent complete discharge of such fractional portions from the container.

3,344,963
PLASTIC TUBES FOR DISPENSING PASTY OR LIQUID SUBSTANCES

Anthony Gibson Wynes and Peter Aspin, Bristol, England, assignors to E S & A Robinson Limited, Bristol, England

Filed May 7, 1965, Ser. No. 453,919
3 Claims. (Cl. 222—495)



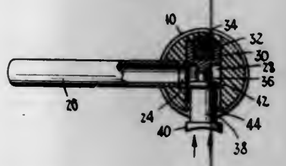
1. Flexible plastic tube having a dispensing nozzle at one end projecting from a shoulder on the tube and a non-return valve comprising a one-piece tubular valve body closely fitting within said nozzle and a displaceable valve member being provided in said valve body, said valve body having an outwardly projecting retaining rim thereon for bearing against said shoulder, a valve seat therewithin and lugs struck outwardly from the valve body and spaced from said valve seat, said lugs being flexibly connected to said body so that on insertion of the closely fitting valve body into said nozzle said struck outwardly lugs are displaced in an inward direction and within the valve body to confine freely and movably the valve member in the valve body between said lugs and said valve seat.

3,344,964
DISPENSING VALVE CONSTRUCTION

Benjamin A. Diamond, Fairfield, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware

Filed Feb. 2, 1966, Ser. No. 524,644
2 Claims. (Cl. 222—511)

1. A dispensing valve construction comprising, in combination:
(a) a valve housing having inlet and discharge passages communicating with each other, and having a bore constituting a valve seat and valve bearing,
(b) said bore being disposed at a juncture of, and communicating with both said passages,
(c) a cup-shaped resilient plastic valve member having a transverse bottom wall, said member being disposed and slidable axially in said bore between a closed position wherein it blocks and shuts off both said passages and an open position wherein it unblocks said passages and permits communication therebetween,
(d) a spring disposed in the valve member, one end of the spring engaging the transverse wall of the valve member and the other end engaging an end wall of the bore of housing,
(e) said spring urging the valve member to its closed position,
(f) a resilient plastic valve actuator plunger disposed in said bore and slidable axially therein,
(g) a stem connecting one end of the actuator plunger to the transverse wall of the valve member in spaced relation therewith, said stem being of smaller diameter than the valve member and plunger,
(h) said plunger projecting from the valve housing and having a finger-engageable outer end for effecting its manual operation,
(i) the inner end of the plunger having a coaxial annular bead projecting radially therefrom,



(j) said valve housing having an internal annular bead in the mouth of the bore and coaxial therewith,
(k) said two annular beads being cooperable with each other and constituting stops to hold the plunger captive in the valve housing and to limit outward movement of the plunger under the action of said spring to a position wherein the valve member occupies its said closed position,
(l) said internal annular bead of the valve housing having an outer bevel surface and the annular bead of the plunger having an inwardly directed bevel surface which is cooperable with the bevel surface of the valve housing to enable the plunger bead to contract, and the housing bead to spread open, whereby said plunger bead may be forced inwardly past the housing bead whereby the plunger can be assembled to the housing by temporary deformation of the parts,
(m) both of said beads being of generally tapering cross section and having narrow crown portions of rounded cross sectional shape to facilitate their yielding and temporary deformation during said assembly of the plunger.

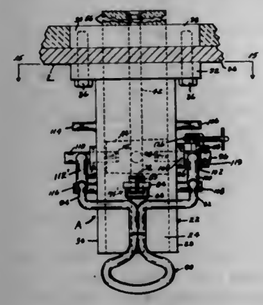
3,344,965
POURING NOZZLE FOR MOLTEN STEEL LADLE

Joseph J. Kerin, 5713 Main St., Duluth, Minn. 55807

Filed Oct. 18, 1965, Ser. No. 497,310
5 Claims. (Cl. 222—563)

1. A nozzle for a steel ladle comprising:
(a) a casing open at both ends,
(b) a core removably positioned in said casing,
(c) said core having an outlet hole extending longitudinally and internally throughout the length thereof,
(d) said core having a cylindrical opening extending therethrough intersecting and normal to said outlet hole,
(e) a cylindrical valve member mounted for rotation in said cylindrical opening,
(f) said valve member having key means formed on each end thereof,

(g) said valve member having a passageway extending therethrough normal to the longitudinal axis thereof for alignment within said outlet hole of said core,
(h) means mounted on said casing and engaging said key means of said valve member for rotating said

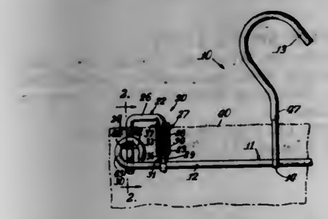


valve member to cause said passageway to align or misalign with said outlet hole, and
(i) means for mounting said casing on the bottom of a steel ladle with the upper end of said outlet hole in communication with the interior of the ladle.

3,344,966
DISPLAY HANGER

Edward E. Schaefer, River Forest, Ill., assignor to Central Specialties Co., a corporation of Illinois

Filed May 17, 1965, Ser. No. 456,216
9 Claims. (Cl. 223—96)



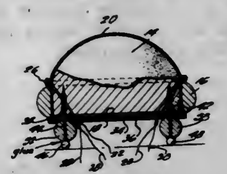
1. A display hanger for displaying fabric articles or the like, comprising a frame adapted to hang from a support, a clamp member including a pivot portion extending upwardly from said frame, a clamping portion, and a connecting portion joining said pivot and clamping portions, means pivotally mounting said pivot portion on said frame, and biasing means affixed to said pivot portion for biasing said clamping portion toward said frame for releasably retaining an article to be displayed between said clamping portion and said frame, whereby said frame is substantially concealed by an article being displayed on said hanger.

3,344,967
PIN CUSHION KIT

Florence E. Kelly, % J. W. Brusha, 821 Obispo Ave., Long Beach, Calif. 90804

Filed Sept. 15, 1965, Ser. No. 487,472
1 Claim. (Cl. 223—109)

A pin cushion kit comprising a bracelet member, a generally hemispherical foamed ball disposed to support said bracelet member from its lower periphery, a velvet layer of material overlying the hemispherical surface of said ball and retained in place by said bracelet member, a pair of bangles, one of said bangles having wiring means for maintaining the bangle in position adjacent to and above said bracelet member, the other bangle having glue means for securing the bangle in position adjacent to and beneath said bracelet member, a cardboard of circular configuration, and a felt layer underlying the cardboard layer, the cardboard and felt layers being secured in position and within the area provided by said

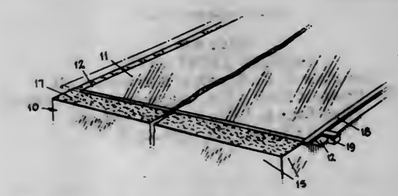


second bangle of said pair, and a multipod comprising at least four pins and a bead on each pin, said pins having rounded heads on one of the ends thereof and the other ends extending through the beads and each protruding into the base of the foamed ball, said pins extending through the cardboard and felt layers, said beads providing spacers for supporting the pin cushion, and glue on said pins for retaining the pins in place.

3,344,968
TRIMMING GLASS SHEETS

Stephen Kovacik, Rossford, and Lester W. Cramer, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Dec. 2, 1965, Ser. No. 511,096
8 Claims. (Cl. 225—2)



1. A method of trimming the marginal edges from large, thick glass sheets having a regional stress pattern in which the longitudinal edge portions are in compression and the central portion in tension, which comprises scoring the sheet along a predetermined line, removing a portion of the sheet along a second line intermediate said predetermined line and the outer edge of said sheet to redistribute the regional stresses in said sheet, and running a final cut along said scored predetermined line by heat concentrated along said line.

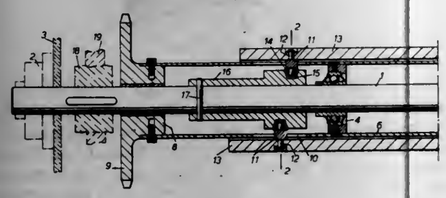
3,344,969
ROLLERS FOR USE IN THE CONVEYANCE OF ENDLESS WEBS

James Newby Collinge, Intack, Blackburn, and Raymond Victor Evans, Blackburn, England, assignors to Singer-Cobble Limited, Blackburn, England

Filed Mar. 2, 1965, Ser. No. 436,435
Claims priority, application Great Britain, Mar. 2, 1964, 8,720/64
8 Claims. (Cl. 226—190)

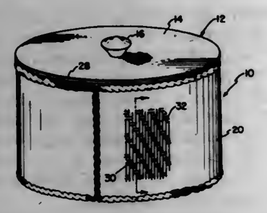
1. A web guiding apparatus comprising:
(a) a tracking roller having a plurality of elongated surface members,
(b) means mounting said surface members for shifting axially of said roller,

(c) means mounting said tracking roller for rotatable movement so that said surface members are in frictional engagement with a moving web through a predetermined arc of contact,
(d) first shifting means operative to axially shift said members in one direction as said members revolve through a first arcuate zone with said roller,
(e) second shifting means operative to axially shift said members in the opposite direction from said one direction as said members revolve through a second arcuate zone with said roller,



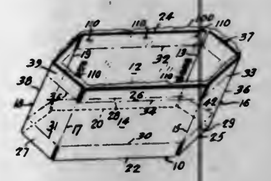
(f) means constraining said members against axial movement as said members revolve through a third arcuate zone with said roller, and
(g) control means for selectively moving said first shifting means, said second shifting means and said constraining means and their corresponding arcuate zones circumferentially and relative to said arc of contact, so that one of said arcuate zones substantially registers with said arc of contact whereby said surface members positively shift the portion of the web in the arc of contact in one direction or the other direction or constrain the web portion against axial movement.

3,344,970
BASKET CONTAINER
Guenther C. F. Brandes, Barrington, Ill.
(% The Princess Basket Co., Algonquin, Ill. 60102)
Filed June 6, 1966, Ser. No. 555,444
5 Claims. (Cl. 229—3.5)



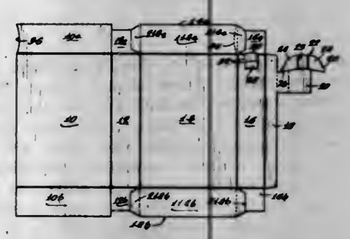
1. A container comprising a section of sheet material including a warp of heavy paper strips and a woof of heavy paper cords, said section of material having two opposite edges positioned adjacent to each other with opposite ends of the woof to heavy paper cords juxtapositioned to form a seam in a sleeve formed by a section of sheet material, a single strip of beading having its central portion fastened to both edges of the sleeve seam, a hoop positioned in one end of the sleeve, one free end of the beading encircling the end of the sleeve and the hoop and fastened to both, a bottom positioned in the other end of the sleeve, and the other end of the beading encircling that end of the sleeve and the bottom and connected to both.

3,344,971
LINED BOX
Richard William Charles Walker, Toronto, Ontario, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada., a company of Canada
Filed Dec. 6, 1965, Ser. No. 511,674
1 Claim. (Cl. 229—14)



A container comprising a box having opposed side and end walls, opposed pairs of side and end top closure flaps bendably connected to one end of said side and end wall, opposed pairs of side and end bottom closure flaps bendably connected to the opposite end of said side and end walls, a crease line bisecting each said end walls and its respective end closure flaps to provide a hexagonal box structure, a bag within said box, releasable adhesive means on said opposed pair of side top closure flaps, forming the sole connection between said bag and said pair of side top closure flaps and releasably holding said bag adjacent the mouth of said bag whereby said bag may be held in open position by said releasable adhesive means on said side top closure flaps and may be readily completely separated from said side top closure flaps to facilitate closing of said bag.

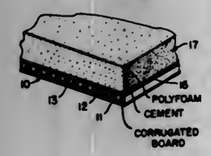
3,344,972
POUR SPOUT CARTON
Roderick K. Robinson, Wisconsin Rapids, and Allen B. Haese, Racine, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Nov. 12, 1965, Ser. No. 507,354
7 Claims. (Cl. 229—17)



1. A pour spout carton comprising a carton blank cut and scored to define a pair of side wall panels, end wall panels and a glue tab panel, dust flaps hingedly secured to said end wall panels, and first and second top closure flaps hingedly secured to said side walls and adapted to be sequentially folded over said dust flaps, a bridge panel foldably connected to and projecting laterally from the free edge of said glue tab panel, and a spout comprised of a center section spaced from said free edge and foldably connected to said bridge panel on a line transverse to said edge and a pair of ears foldably connected to the opposite sides of said center section, said panels upon relative folding thereof disposing said center section of said spout in abutting engagement with the inner surface of one of said end wall panels, said center section being

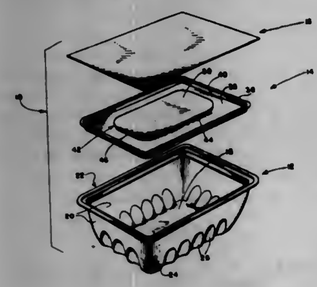
secured to said surface, said end wall panel having a spout flap delineated therein by a spaced pair of tear lines in alignment with and embracing the side edges of said center section, a tear line extending into the hingedly connected dust flap and a score line in alignment with the foldable connection of said center section to said bridge panel so said spout flap and said center section can be tilted out of said end wall panel and said ears will slide within the opening to thus form and constitute a three-sided pour spout for the carton, the second top closure flap having a Van-Buren ear hingedly connected to a lateral edge thereof and adapted to overlie the upper edge of said spout flap, said ear being additionally tearable from said top closure flap along a tear line extending thereinto, the lateral edge of the first closure flap being contoured to conform to that of the top closure flap when said Van-Buren ear is separated therefrom on its said tear line to thereupon leave a finger-nail ingress opening for ready engagement of said spout flap and its connected three-sided pour spout.

3,344,973
LINED CONTAINER
Charles E. Studen, R.D. 1, Pekin Road, Newbury, Ohio 44065
Filed Apr. 21, 1966, Ser. No. 544,235
5 Claims. (Cl. 229—37)



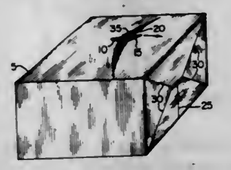
1. A box blank formed of a composite material which acts as an insulation against moisture and mechanical and thermal shock, said composite material comprising:
corrugated board;
resinous foam; and
cement attaching said corrugated board and said resinous foam;
said composite material being appropriately cut and creased in order to encourage bending along certain predetermined lines.

3,344,974
COMPOSITE CONTAINER PACKAGE
John Donald Bostrom, Niles, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 18, 1965, Ser. No. 480,655
3 Claims. (Cl. 229—43)



1. A container package for food products comprising, a container body having a peripherally continuous side wall which terminates in an open upper end, a rim area adjacent said open upper end and having laterally outwardly offset, peripherally extending upper and lower axially spaced lip portions, a replaceable closure member having a covering wall for the open upper end of said container, an upwardly extending skirt portion projecting generally axially from the outer margin of said covering wall and terminating at its upper end in a laterally outwardly projecting rim portion adapted to rest upon the lower lip portion of said container body, said closure member also being provided with at least one hollow knob means extending upwardly from the plane of said covering wall to facilitate application and removal of said closure member relative to said container body, said knob means projecting from said covering wall no further than the upper lip portion of said container body rim area to lie within the confines thereof, and a manually removable, heat sealable element initially joined to the upper lip portion of said container body in a circumferentially continuous manner to hermetically seal the container body, said element being provided with tab means facilitating grasping thereof by a user in removing said element from the container package to expose the replaceable closure member, the knob means of said replaceable closure member having an upper generally planar surface substantially aligned with the upper lip portion of said container body and being of greater transverse dimension throughout its full extent than the height thereof to provide underlying support for said manually removable, heat sealable element at a location laterally inwardly offset from the upper lip portion of said container body.

3,344,975
PACKAGE HAVING A TEAR TAB
Carl B. Stoker, Jr., Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 14, 1965, Ser. No. 495,930
5 Claims. (Cl. 229—51)

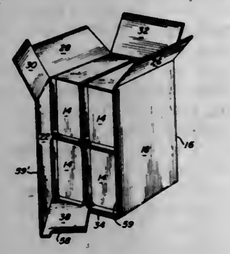


1. A package which includes a wrapper of film oriented to an extent sufficient to affect the direction in which a tear of the film is propagated, the edges of the wrapper being sealed to one another, there being a tear tab cut in the film pointed perpendicularly to the direction in which the film is oriented to serve as a starter for tearing the film to open the package.

3,344,976
PAPERBOARD CONTAINER WITH PULL-OUT SIDE
James J. Mason, Olympia Fields, Ill., assignor to Cameo Container Corp., Chicago, Ill., a corporation of Illinois
Filed Aug. 30, 1966, Ser. No. 576,020
5 Claims. (Cl. 229—51)

1. A paperboard container comprising, an open-ended sleeve of generally rectangular configuration including a front wall, a rear wall and a pair of side walls hingedly interconnected to provide the sleeve, a strip of tear-tape joining said front wall and an adjacent side wall along a line of abutment extending the length of the sleeve with said side wall hingedly connected to said rear wall along adjacent longitudinal edges thereof, end enclosure flap means hingedly connected to said walls respectively at one open end of the sleeve, said flap means including a flap member hingedly connected to one of said front and side

walls so conjoined by the tear-tape, said flap member having a notch therein adjacent said tear-tape whereby to provide clearance between said flap member and the other



wall of the tear-tape joined pair for pivoting said wall having the flap member on its fold line outwardly of said sleeve when said tear-tape is rendered, thereby exposing the contents of said container.

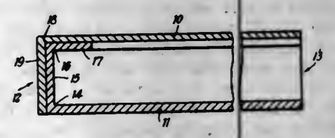
3,344,977
SINGLE HANDLE BAG CONSTRUCTION
Seymour Kamins, Oceanside, and Norman Rosenberg, Bayside, N.Y., assignors to C-Thru Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 5, 1966, Ser. No. 518,873
2 Claims. (Cl. 229—54)



1. Synthetic resinous bag construction comprising: first and second sidewall elements, each of said sidewall elements having mutually sealed side and lower edges defining an enclosure, and having upper free edges; integrally molded from a single sheet sealing means said sealing means comprising a protuberance on one sidewall adapted to snap into an aligned recess on the other sidewall and positioned along an axis parallel to and spaced below said upper edges to selectively seal said enclosure, leaving portions of said first and second wall elements unconnected above the sealing area; and handle means heat-sealed to the inner surface of one of said last-mentioned portions in the area disposed above said molded sealing means a continuously extending integrally molded portion of the sidewall not having the handle attached thereto being provided and being adapted to be grasped manually for unsealing the bag.

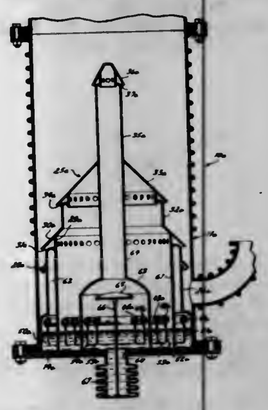
3,344,978
GRAMOPHONE RECORD SLEEVES
Norman John Garrod, 107 Westhall Road, Warlingham, Surrey, England
Filed Aug. 5, 1966, Ser. No. 574,884
6 Claims. (Cl. 229—68)

1. A gramophone record sleeve having two side members, each of said side members having a spine portion extending integrally from and along each of a pair of corresponding edges thereof opposite the sleeve opening, a first said spine portion having folds along lines parallel with said side edges to form a generally U-shaped channel portion having a U-base and a U-arm, and a second said spine portion having a portion folded to overlap and en-



gage at least one U-arm and the U-base of the channel portion of said first spine portion, said spine portions being directly secured to one another at least over said U-base.

3,344,979
DIFFUSION-PUMP CONSTRUCTION
William T. Chester, Barrington, N.J. (418 Tavistock Blvd., Haddonfield, N.J. 08033)
Filed Aug. 6, 1965, Ser. No. 477,900
4 Claims. (Cl. 230—101)

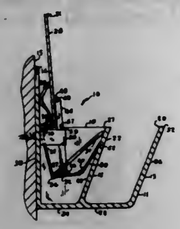


1. In a diffusion pump, the combination comprising a casing having a side wall, top and bottom and an upper inlet and a lower outlet, a sump in a lower casing region for containing liquid to be vaporized, vapor-jet means in said casing above said sump, said vapor jet means comprising a lower chimney, an upper chimney, and closure means selectively closing said upper chimney for selective pump operation without said upper chimney, said closure means comprising a closure element movable upwardly into and downwardly out of closing relation with said upper jet chimney, and closure actuating means depending from said closure through said bottom, and liquid-heating means in a lower region of said casing, said liquid-heating means comprising a heating element spaced over said sump, and a wick engaging said heating element and depending therefrom into said sump for conducting liquid from said sump into engagement with said heating element for vaporization thereby.

3,344,980
MAIL BOX
Richard A. Nagle, 1717 Arlington Ave., Orlando, Fla. 32805
Filed May 26, 1966, Ser. No. 553,094
4 Claims. (Cl. 232—33)

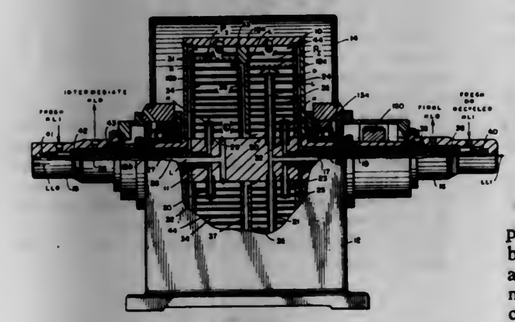
1. A mail box comprising a letter receptacle having an opening at the top thereof, a lid hinged to the receptacle and adapted to cover said opening, and a letter

lifting device linked in movement to said lid and being adapted and arranged to lift letters deposited in said receptacle toward said opening as said lid is moved to an open position therefor, said receptacle having an inclined about wall, said lifting device having means for



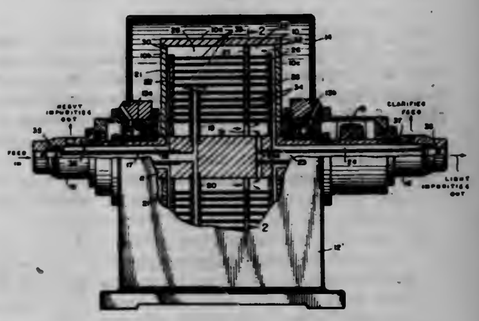
supporting letters in said receptacle and further having inclined means pivotally connected to the supporting means and resting on the interior surface of said inclined wall in front of the pivotal connection to the support means.

3,344,981
CENTRIFUGAL APPARATUS WITH AXIALLY-EXTENDED ROTOR
Walter J. Podbielniak, Chicago, and David B. Todd, Park Ridge, Ill., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,924
14 Claims. (Cl. 233—15)



1. Apparatus for countercurrently contacting and separating at least partially immiscible liquid phases of different densities, said apparatus being of the kind including a rotatably mounted, horizontally-extending shaft providing a plurality of liquid flow passages therein, liquid seals at each end of said shaft to permit liquids to be introduced into and removed from said shaft passages while said shaft is rotating, and a rotor casing mounted coaxially on said shaft and providing a pressure-retaining working space therein extending outwardly from said shaft, the combination comprising partition means mounted within said rotor casing to extend outwardly between said shaft and the outer portion of said casing, said partition means dividing said working space into two side-by-side working chambers wherein substantially different pressure conditions can be simultaneously maintained, heavy phase inlet means for supplying a heavy liquid from one of said shaft passages to a radially intermediate portion of at least a first one of said chambers, light phase inlet means for supplying a light liquid from another of said shaft passages to a radially intermediate portion of at least said first one of said chambers, the heavy phase inlet means being radially inward of the light phase inlet means, only said first of said chambers being provided with both said light and heavy phase inlet means, light phase outlet means extending from the inner portion of at least the second one of said chambers and communicating with a third one of said shaft passages, heavy phase outlet means in the outer portion of at least the second one of said chambers arranged to permit a heavy liquid to pass to at least another one of said passages, the first of said chambers having only one of said outlet means, and liquid transfer means for passing the other phase than the phase for which said outlet means in said first chamber is provided from one radial position in said first chamber to a different radial position in said second chamber, said liquid transfer means including an inlet from said first chamber, a passage extending through said partition means, and an outlet into said second chamber.

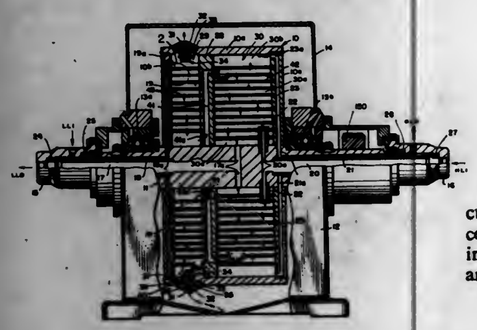
3,344,982
THREE-PHASE CLARIFIER
David B. Todd, Park Ridge, Ill., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Texas
Filed Feb. 8, 1965, Ser. No. 430,925
8 Claims. (Cl. 233—15)



1. In a centrifugal apparatus for separation of a three-phase liquid mixture into its constituent parts, the combination comprising a rotatively mounted shaft providing a plurality of liquid flow passages therein, a rotor casing mounted coaxially on said shaft and providing a hermetically-sealed, pressure-retaining working space therein extending outwardly from said shaft, partition means mounted within said rotor casing to extend outwardly between said shaft and the outer portion of said casing, said partition means dividing said working space into two side-by-side chambers, inlet means for supplying the said three-phase mixture to a first one of said chambers from a first one of said shaft passages, outlet means extending between said first chamber and a second of said shaft passages for removing one of said phases after separation from said mixture, by-pass opening means provided in said partition means for transferring the remaining mixture to said second chamber after said one phase has been separated in said first chamber, said by-pass means being located in a position radially remote from the position of said first chamber outlet means, one kind of outlet means extending between said second chamber and a third one of said shaft passages for removing a second one of said phases, and another kind of outlet means extending between said second chamber and a fourth one of said shaft passages for the remaining one of said phases, said one kind of outlet means and said other kind of outlet means being located in the inner and outer portions of said sec-

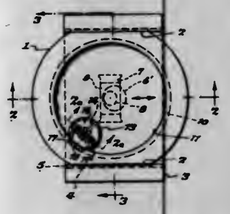
ond chamber, with said inner and outer portions of said second chamber each containing only one of said two kinds of outlet means.

3,344,983
COMBINATION CLARIFIER AND CONTACTOR
Walter J. Podbielniak, Chicago, Ill., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,926
8 Claims. (Cl. 233—15)



1. In a centrifugal contacting apparatus for processing a first liquid phase containing suspended solid material from which the solid material is desirably removed prior to contacting with a second substantially immiscible liquid phase of different density, the combination comprising:
(1) a rotatively mounted shaft providing a plurality of liquid flow passages therein;
(2) a rotor casing mounted coaxially on said shaft and providing a pressure-retaining working space therein extending outwardly from said shaft;
(3) partition means mounted within said rotor casing to extend outwardly between said shaft and the outer portion of said casing, said partition means dividing said working space into two side-by-side chambers comprising first and second chambers;
(4) inlet means for supplying said first liquid phase to the first one of said chambers from the first one of said shaft passages;
(5) opening means provided in the outer portion of said casing and extending from the outer portion of said first chamber to the exterior of said casing;
(6) solids discharge valve means mounted in the outer portion of the first chamber for cooperation with said opening means to effect the discharge of the solid material separated in said first chamber;
(7) by-pass opening means provided in said partition means for transferring said first phase after the separation of the solid material therefrom to said second chamber, said by-pass opening means communicating with said first chamber at a point inwardly of the outer portion thereof;
(8) inlet means for supplying said second phase to said second chamber from a second one of said shaft passages, the inlet from said inlet means being located in radially-spaced relation in said second chamber with respect to the inlet thereto from said by-pass means to provide a countercurrent contacting zone between said inlets;
(9) a heavy phase outlet means extending from the outer portion of said second chamber to a third one of said shaft passages; and
(10) light phase outlet means extending from the inner portion of said second chamber to a fourth one of said shaft passages.

3,344,984
SUBJECTION OF FLOWABLE MATERIALS TO HIGH LINEAR SPEEDS AND HIGH CENTRIFUGAL FORCES
John F. Kopczynski, 1026 Sweeney St., North Tonawanda, N.Y. 14120
Filed Oct. 14, 1963, Ser. No. 315,980
10 Claims. (Cl. 233—21)

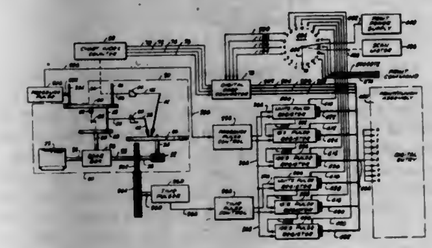


1. Apparatus for subjecting flowable materials concurrently to ultra-high linear rotary speeds and high centrifugal forces, for enabling a study of any changes in the properties of such materials due to such speed and forces, which comprises;
(a) a member,
(b) means for imparting to said member a regular, repeated cyclic movement in a plane and for preventing spinning of said member,
(c) said member having an endless, closed loop channel, a center line of which is aproximately all in one plane, facing inwardly of the path, and
(d) a rollable hollow body in which a specimen of said materials may be confined eccentrically of the axis of rolling of said body and having a rolling diameter which is only a small fraction of any distance across the loop of said channel, confined in the channel to roll freely therealong, once around for each cycle of movement of said member,
(e) whereby said specimen confined in said body will be, during such cyclic movements of said member with said rolling movement of said body along said channel, subjected to ultra-high linear speed, and ultra high and varying centrifugal forces due both to the rolling of the body along the track and also to additional centrifugal forces created by the additional rolling rotation of said body about its own axis of rotation.

3,344,985
INTEGRATING AND AVERAGING SYSTEM
Elmer S. Messer, Tulsa, Okla., assignor to Flow Measurement Company, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed June 6, 1966, Ser. No. 555,608
21 Claims. (Cl. 235—61)

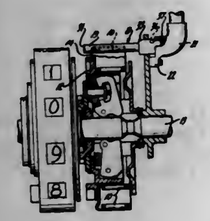
1. In a chart calculating system for interpretation of polar flow charts which indicate static and differential pressure as a function of time, and wherein the charts are integrated to provide a first rotational output proportional to chart time, a second rotational output which is the product of time and the square root of static pressure, and a third rotational output which is the product of time and the square root of differential pressure, the apparatus comprising:
first means connected to receive said first rotational output and to produce a first series of electrical pulses which are digitally representative of the chart time function during integration of said chart;
first storage means for receiving and storing a total count represented by said first series of electrical pulses;

second means connected to receive said second rotational output and to produce a second series of electrical pulses which are digitally representative of the static pressure function during integration of said chart;
second storage means for receiving and storing a total count represented by said second series of electrical pulses;
third means connected to receive said third rotational output and to produce a third electrical output which



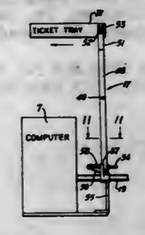
is digitally representative of the differential pressure function during integration of said chart;
third storage means for receiving and storing a total count represented by said third electrical output;
terminal storage means for receiving and storing electrical outputs representative of each of said first, second and third total counts; and
scanning means for interrogating each of said first, second and third storage means to enable respective electrical outputs digitally representative of said stored total counts for receipt and storage at said terminal storage means.

3,344,986
REGISTER DRIVEN TRANSMITTER
Stephen Stasenko and Paul T. Herbst, Erie, Pa., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Feb. 7, 1966, Ser. No. 525,473
7 Claims. (Cl. 235—94)



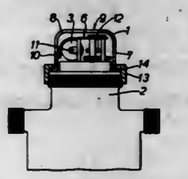
1. A dispenser mounted transmitter, comprising
a computing mechanism having a plurality of flow indicating wheels and resetting mechanism to reset the wheels to a reference position,
a plurality of magnetic members secured to a selected wheel in equicircumferentially spaced relation to each other, adjacent magnetic members being oppositely polarized, and
a magnetically responsive switch means mounted within the dispenser adjacent said selected wheel and located centrally between adjacent magnetic members with the wheel in the reference position.

3,344,987
INTERLOCK FOR A METERING AND RECORDING UNIT
Paul T. Herbst, Erie, Pa., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Mar. 2, 1966, Ser. No. 531,194
3 Claims. (Cl. 235—94)



1. In a dispensing and recording unit for liquids, a liquid dispensing unit having a resettable computer including a movable reset member, a recorder unit mounted in vertically spaced relation to the computer and adapted to provide a printed receipt of the liquid dispensed for individual transactions, said recorder unit having a ticket receiving tray structure for receiving a receipt ticket and manually operable means operating a printing means to impress a reading upon said ticket and simultaneously moving said tray structure between a first position and a second position, and interlock means having a first arm member connected to said tray structure and moved between a first position and a second position with said tray structure and a second member connected to the movable reset member, said first member in said second position being disposed in interfering relation with the second member for preventing resetting of said computer and in said first position being free and clear of the second member.

3,344,988
COUNTER-BOXES
Terence Arthur Stoten, Barton, England, assignor to George Kent Limited
Filed Nov. 12, 1965, Ser. No. 507,406
Claims priority, application Great Britain, Nov. 18, 1964, 46,966/64
4 Claims. (Cl. 235—117)



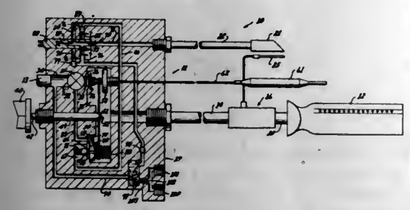
1. In a counter-box for a fluid flow meter, the combination of a counter wheel rotatable about an axis and having indicia deployed around its periphery; a casing housing said counter wheel; and an indicator part for indicating the reading position at which an indication on said counter wheel is to be read, said indicator part comprising means within said casing, adjacent to said counter wheel and between said counter wheel and a corner of said casing for delineating an area on the periphery of said counter wheel containing any one of said indicia, according to the position of said counter wheel, thereby to establish said reading position, said casing having two sides extending respectively along two lines which meet at said corner of the casing, said casing having a window which extends from said corner into said two sides, said corner of said casing and said reading position lying substantially on an imaginary

straight line which intersects said axis of rotation of said counter wheel and is substantially normal to said axis.

3,344,989
CONTROL DEVICE AND PARTS THEREFOR OR THE LIKE

James R. Willson, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Dec. 2, 1964, Ser. No. 415,265
10 Claims. (Cl. 236—99)

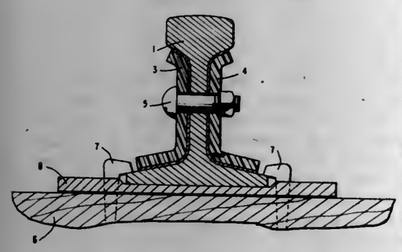


1. In a control system having a main burner means, said system having a pilot burner means and a source of fuel, said system having control means for connecting and disconnecting said source of fuel to and from said main burner means, first passage means for interconnecting said source of fuel to said pilot burner means to produce a small standby flame at said pilot burner means, second passage means for additionally interconnecting said source of fuel to said pilot burner means to produce a large heater flame at said pilot burner means, and a single adjusting means in said passage means for adjusting the flow rate therethrough to selectively control the size of said standby flame and the size of said heater flame, said control means disconnecting said source of fuel from said main burner means only when a standby flame is burning at said pilot burner means and interconnecting said source of fuel to said main burner means when a heater flame is burning at said pilot burner means.

3,344,990
ELECTRICALLY INSULATING RAIL JOINT CONNECTIONS

Waldemar Bingmann, Essen, and Erich Behr, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Sept. 28, 1964, Ser. No. 399,556
Claims priority, application Germany, Sept. 26, 1963, D 42,564
16 Claims. (Cl. 238—159)



1. A solid, unitary insulating rail joint connection consisting essentially of a plastic material selected from the group consisting of cross-linked polyolefins and copolymers thereof with other ethylenically unsaturated monomers, said plastic material containing about 10 to 60% by weight, based on the total composition, of a filler material.

3,344,991
METHOD AND APPARATUS FOR CLEARING SAND FROM IRRIGATION PIPES

Rufus J. Purtell, Brownfield, Tex., assignor to The J. B. Knight Co., Inc., Brownfield, Tex., a corporation of Texas

Filed Jan. 3, 1966, Ser. No. 518,103
11 Claims. (Cl. 239—1)



1. The method of removing dense granular particles from a stream of fluid flowing in a conduit comprising removing a portion of the particle-ladened fluid from the bottom of the conduit at a plurality of spaced points, conducting the removed fluid into passageways having a cross-sectional area many times smaller than the cross-sectional area of the conduit; thus maintaining the flow of the removed particle-ladened fluid at a greater velocity within the passageway than within the conduit, and discharging the particle-ladened fluid at a desired location.

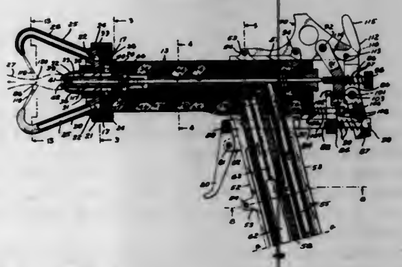
7. Structure for preventing accumulation of particles of dense material in a fluid system comprising:

(a) a horizontal pipe adapted to carry particle-ladened fluid under pressure,
(b) a plurality of discharge openings attached to the pipe,
(c) a passageway extending from each discharge opening to the bottom of the pipe,
(d) the pipe having a cross-sectional area several times greater than the cross-sectional area of each passageway,
(e) a portion of the passageway extending annularly around the bottom of the pipe,
(f) a plurality of holes from the pipe into the passageway,
(g) each of the plurality of holes from the pipe into the passageway being smaller than each of said discharge openings,
(h) a greater number of holes at the bottom of the pipe than along the sides or top of the pipe,
(j) some of the holes extending serially up the sides of the pipe, and
(k) the flow through the holes in the side of the pipe being increased upon a clogged condition in the holes at the bottom of the pipe so as to agitate the sand in the passageway adjacent the holes at the bottom.

3,344,992
SPRAY GUN

Edward O. Norris, Ledgemoor Lane, Westport, Conn. 06880

Filed Jan. 27, 1964, Ser. No. 340,466
11 Claims. (Cl. 239—8)



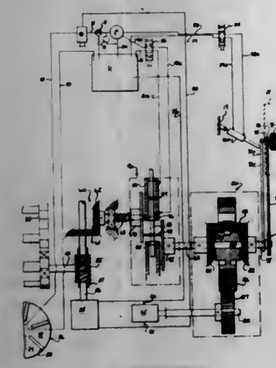
10. The method of spraying a liquid which comprises projecting said liquid and atomizing air from a nozzle in

the form of a cone of spray decreasing in size to a zone of minimum cross section and then diverging in a cone, and distorting said cone by directing opposed symmetrically disposed jets of air rearwardly and inwardly onto said cone at the zone of minimum cross section in a direction to cause the spray to form a diverging fan shape and to retard the velocity of the spray particles.

3,344,993
SPREADER APPARATUS

Burl A. Wilder, Lindenwood, Eskil W. Swenson, Cherry Valley, and Clas O. F. Fyrk, Boone County, Ill., assignors to Swenson Spreader & Mfg. Co., Lindenwood, Ill., a corporation of Illinois

Filed Jan. 21, 1966, Ser. No. 522,078
23 Claims. (Cl. 239—164)



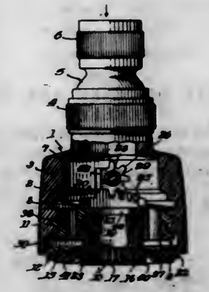
1. In a spreader apparatus for use on a vehicle the combination of:

hopper means on the vehicle for receiving material to be spread;
discharge means for discharging material from the hopper means at a rate correlative with the speed of the discharge means;
hydraulic motor means for driving the discharge means;
conduit means connected to the hydraulic motor means;
pump means connected to the conduit means to supply fluid under pressure thereto;
engine means for driving said pump means;
regulator means having an operator adjustable to different positions to increase and decrease the flow of fluid to said hydraulic motor means for regulating the speed of the hydraulic motor means and thereby controlling the amount of material discharged by the discharge means; and
control means for maintaining a preselected ratio between the speed of the discharge means and the speed of the spreader apparatus relative to the surface being spread and including:
a first sensing means responsive to the speed of the discharge means and a second sensing means responsive to the speed of the spreader apparatus relative to the surface being spread,
and a third sensing means responsive to said first and second sensing means for adjusting said operator to respectively increase or decrease the flow of fluid to said hydraulic motor means automatically according to whether the ratio of said speeds is below or above said preselected ratio to modify the speed of the hydraulic motor means which drives the discharge means until the preselected ratio is achieved whereby the quantity of material discharged by the discharge means is maintained substantially correlative to said relative speed and a generally uniform quantity of material is spread on the surface.

3,344,994
SHOWER HEAD HAVING REMOVABLE SPRAY FORMER TO PERMIT CLEANING

Robert J. Fife, Hinsdale, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois

Filed Apr. 8, 1966, Ser. No. 541,346
9 Claims. (Cl. 239—457)



1. A shower head comprising a hollow body with means for connection to a water supply pipe at one end and with an opening at the other end opposite the water supply pipe connection, said latter opening being normally closed by a spray plate, a thread gear rack having threads on its outer periphery for rotative engagement with similar threads in said hollow body, said gear rack having attached thereto a sub-assembly for spray forming purposes comprising said spray plate and means for attaching said spray plate to said gear rack, said spray plate having peripheral means for spray forming function in assembled position relative to said body, means for actuating said gear rack, the said actuating means including side disposed drive gear, said gear rack having at least a single set of arcuately extending gear teeth on an upper surface thereof for engagement with said drive gear to impart rotative and axial movement to the said thread gear rack within the similarly threaded portion of said hollow body, the said actuating means being predeterminately shiftable axially to permit the said drive gear to be selectively engaged or disengaged from the teeth of the said gear rack whereby the latter member is free to rotate within said hollow body in either direction during assembly or disassembly of the shower head.

3,344,995
METHOD AND APPARATUS FOR DISINTEGRATING CONCRETE AND LIKE MATERIALS

Ronald A. Koetters, 120 E. Mitchell Ave., Cincinnati, Ohio 45217

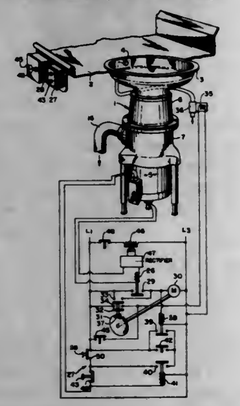
Filed July 15, 1964, Ser. No. 382,788
8 Claims. (Cl. 241—1)

1. A method of disintegrating a material thickness comprising coupling to said thickness a wave generator capable of producing a dynamic sinusoidal alternating force, generating in said wave generator a sinusoidal force having a frequency Ω in a range of frequencies

substantially equal to the frequency ω of the material thickness to be disintegrated, and maintaining substantially the equality of said frequencies $\Omega=\omega$ until said structural material thickness fails and disintegrates.



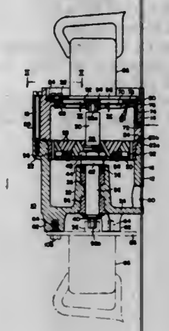
3,344,996
FOOD WASTE DISPOSER AND CONTROL THEREFOR
Theodore F. Meyers, Wadsworth, Ohio, assignor, by mesne assignments, to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed July 2, 1965, Ser. No. 469,142
20 Claims. (Cl. 241—46)



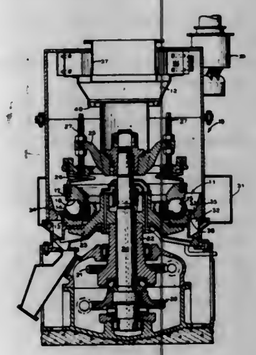
1. In combination, a food waste disposer having a housing with a feed opening for introduction of food waste thereinto and with an outlet opening from which comminuted food waste is conducted to a sewer, a comminuting element rotatable in said housing to comminute food waste therein, a valve-controlled water supply means through which water is introduced into said housing to assist in flushing comminuted waste through said outlet opening, and a driven motor for rotating said element in said housing; and control means for said disposer including food waste sensing means therein operative, in the absence of food waste in said disposer, to turn off said water supply means.

3,344,997
CONVERTIBLE WASTE DISPOSAL UNIT
William A. Johnston, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1965, Ser. No. 440,132
6 Claims. (Cl. 241—101)

1. A convertible waste disposal unit comprising: a casing having a waste inlet opening at its top and a waste outlet opening adjacent its bottom; a driven shaft supported centrally within said casing for rotation about its longitudinal axis and having a lower end projecting through the bottom of said casing; shredder means driven by said driven shaft for finely dividing waste material introduced through said waste inlet opening; a motor having a drive shaft; and coupling means at each end of said driven shaft for releasably connecting the drive shaft of said motor to either end of said driven shaft, whereby said waste disposal unit is convertible from a temporary position in a sink wherein said waste outlet opening discharges finely divided waste materials in the sink drain opening of the sink to a permanent position beneath said sink wherein waste materials are introduced through the sink drain opening and said waste inlet opening into the interior of said casing.

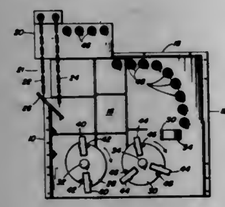


3,344,998
PULVERIZER
Neil W. Eft, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed July 27, 1964, Ser. No. 385,216
4 Claims. (Cl. 241—103)



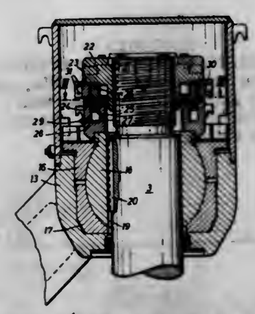
1. In a pulverizer having a housing and a grinding zone within the housing, said grinding zone including a ring having an annular grinding surface on the upper side thereof, means for rotating said ring about a vertical axis, a plurality of rolling grinding elements positioned in grinding relation to the annular grinding surface of said ring, means for introducing materials to be pulverized to the grinding zone, means for discharging pulverized material from said grinding zone and said housing, said annular grinding surface forming an inverted frustum of a cone having a base angle of approximately 25 to 45°, and means including an upper circumferential edge on said ring for maintaining a bed of material on the annular surface of said ring having an upper surface inclination of approximately 40° below the horizontal and to form a bed of material between said ring and elements having a depth of less than approximately 15% the average diameter of a rolling grinding element.

3,344,999
DOUBLE IMPELLER IMPACT BREAKER
Norman H. Kessler and Floyd A. Lillig, Cedar Rapids, Iowa, assignors to Norman H. Kessler, Cedar Rapids, Iowa, and Harriet F. Derrick, Chula Vista, Calif., tenants in common
Filed Oct. 19, 1964, Ser. No. 404,755
3 Claims. (Cl. 241—154)



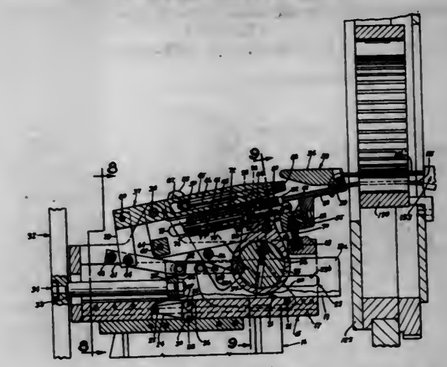
1. In an impact breaker of the double impeller type having an enclosure provided with an upper material feed inlet and a lower material discharge outlet, a primary impeller rotatable about a horizontal axis in said enclosure and having a primary hammer circle, said primary impeller being disposed below said feed inlet effective to permit material introduced therethrough to gravitate to said primary hammer circle, a secondary impeller rotable about a horizontal axis in said enclosure and having a secondary hammer circle, the axis of said secondary impeller being laterally spaced from the axis of said primary impeller so that said hammer circles thereof lie closely adjacent each other, stationary breaker means disposed in said enclosure and spaced above said secondary hammer circle and to the side thereof remote from said primary hammer circle, and driving means for rotating each of said impellers at selected speeds, the direction of rotation of each of said impellers being identical and such that material entering said feed inlet is projected by said primary impeller toward said secondary impeller and by both of said impellers toward said breaker means, the improvement comprising: one or more impact hammers mounted on and extending from the periphery of said primary impeller and describing said primary hammer circle, and two or more impact hammers mounted on and extending from the periphery of said secondary impeller and describing said secondary hammer circle, the number and spacing of said hammers on each of said impellers and the selected speed of rotation thereof in relation to the diameters of their hammer circles all being such relative to each other that material gravitating from said feed inlet may enter the hammer circle of said primary impeller and the material projected from said primary impeller may enter the hammer circle of said secondary impeller and be effectively crushed by the hammers of both of said impellers, the number of hammers on said primary impeller being less than the number of hammers on said secondary impeller.

3,345,000
SUSPENDED-SPINDLE GYRATORY CRUSHER WITH MEANS TO ADJUST THE SPINDLE
Hanns Decker, Cologne-Rath, and Helmut Stöckmann, Wesseling, near Cologne, Germany, assignors to Klöckner - Humboldt - Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany
Filed Jan. 8, 1965, Ser. No. 424,324
Claims priority, application Germany, Jan. 17, 1964, K 51,863
9 Claims. (Cl. 241—209)



1. In a suspended-spindle gyratory crusher, a substantially vertically extending crusher spindle, bearing means for said spindle, an adjusting nut mounted at the upper end of said spindle and spaced from said bearing means, hydraulic pressure means supported by said bearing means beneath said adjusting nut, and a support member located between said adjusting nut and said bearing means for supporting said adjusting nut, said hydraulic pressure means being actuable for raising said nut from said support member, said spindle being thereby movable in an upward direction relative to said bearing, said support member being removable from between said adjusting nut and said bearing means in the raised position of the nut, and the hydraulic pressure means being actuable, upon removal of said support member, for lowering the nut to a position below that at which it was supported by the support member before the removal thereof.

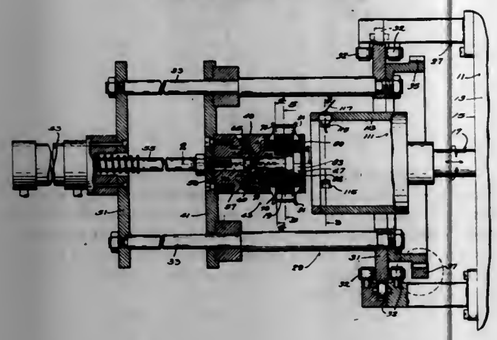
3,345,001
POCKET SHROUD FOR STATOR WINDING MACHINE
Melvin J. Straub, Hopkins, Minn., and Gerald H. Shaff, Racine, Wis., assignors to Possis Machine Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 29, 1965, Ser. No. 443,351
9 Claims. (Cl. 242—1.1)



9. A device for guiding and supporting the end of a coil wound into slots in an electrical machine core comprising a shroud assembly having a base and a skirt forming a

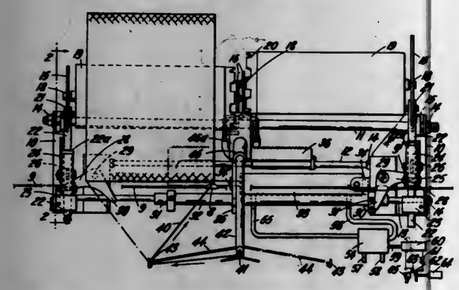
pocket for receiving the end of a coil wound on the slots of an electrical machine core; lock means separably securing the base and skirt together at their portions adjacent to the electrical machine core being wound; auxiliary support means movable to and from said shroud assembly for moving the skirt from the base and temporarily supporting the skirt; means for releasing said lock means whereby the auxiliary support means can move the skirt from the base; and means for moving the separated base and skirt from the coil that has been wound in the pocket.

3,345,002
ARMATURE WINDING MACHINE
Robert W. Peters, Menomonee Falls, Wis., assignor to Henry J. Gorski, Milwaukee, Wis.
Filed Oct. 24, 1965, Ser. No. 504,622
4 Claims. (Cl. 242—13)



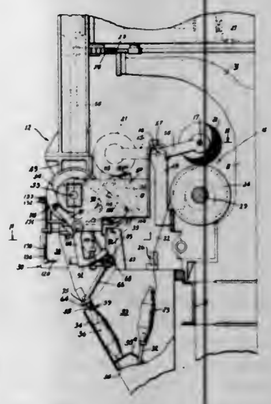
3. Apparatus for winding rotors comprising a frame, tooling for holding a rotor, means for supporting said tooling on said frame, a winding head comprising a cylindrical part and at least one radially inwardly extending needle, and means on said frame for supporting said winding head and for reciprocating and oscillating said head relative to said tooling.

3,345,003
APPARATUS FOR CONTINUOUSLY WINDING THREADS AND LIKE FILAMENTARY MATERIAL ON TO A SUCCESSION OF BOBBINS
Denis Albert Edward Mattingly and Reginald Selby Gilchrist, London, England, assignors to The Klinger Manufacturing Company Limited, London, England
Filed Apr. 29, 1964, Ser. No. 363,574
Claims priority, application Great Britain, May 6, 1963, 17,888/63
14 Claims. (Cl. 242—18)



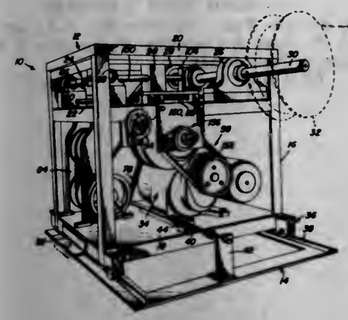
6. A winding apparatus for yarn including first and second axially spaced apart bobbins, rotating means for rotating said bobbins, yarn traversing guide means for laying the yarn backwards and forward onto the bobbins, change-over means for transferring feeding of the yarn from the first bobbin to the second bobbin, means for anchoring the yarn to the second bobbin as the feeding of the yarn is transferred from the first bobbin to the second bobbin, support means releasably supporting said first and second bobbins, actuating means for actuating the support means to move the first bobbin out of driveable relationship with the rotating means, and co-ordinating means for sequentially operating both the change-over means and the actuating means.

3,345,004
MULTIPLE WINDER WITH AUTOMATIC THREAD POSITIONING
Richard D. Livingston, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed June 14, 1965, Ser. No. 463,575
30 Claims. (Cl. 242—35.5)



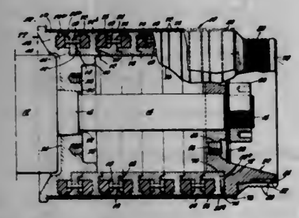
1. In a thread winding machine, the combination of, a first support having thereon a plurality of upwardly opening bobbin pockets equidistantly spaced laterally along the support and each adapted to hold a bobbin with a short unwound length of the thread thereof exposed for ready pick-up, thread grippers on said first support spaced above the respective ones of said pockets for receiving and holding an unwound length of the thread of the bobbin therein, a second support carrying a tying unit including a knotter for engaging and operating automatically on the held-up lengths of said bobbin threads, means mounting said supports for relative movement along a predetermined path to associate said tying unit with said held-up threads one by one, means for relatively moving said supports along said path, and mechanism on said second support spaced along said path in advance of said knotter and operable automatically prior to association of the knotter with each successive bobbin pocket to engage and pick up the unwound length of thread of the bobbin in the pocket, draw the thread upwardly off from the bobbin to dispose the end portion of the thread in a predetermined position above the associated thread gripper for entry therein, each of said grippers being adapted to receive the corresponding thread raised to said position, said mechanism including means operated in timed relation to the relative movement of said supports to render said grippers active and inactive successively to receive and hold each thread in said predetermined position before such thread becomes associated with said knotter.

3,345,005
RE-SPOOLING MACHINE
William Kursinczky, 118 Wedgewood Ave., Woodbridge, N.J. 07095
Filed Dec. 18, 1964, Ser. No. 419,371
10 Claims. (Cl. 242—45)



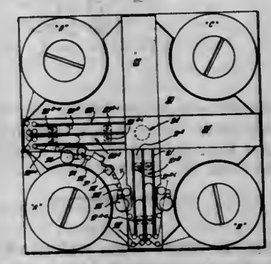
1. In a machine for respooling wire or the like on a spool, a drive mechanism for continuously rotating and cyclically reciprocating said spool to wind the wire thereon with substantially no variations in the tension of the wire comprising, a frame, an output spindle, means reciprocably mounting said spindle in said frame, a driven power shaft rotatably mounted by said frame, variable speed ratio drive means drivingly connecting said power shaft to the spindle for continuous rotation thereof, reciprocating drive means drivingly connected to said power shaft, means operatively connecting said reciprocating drive means to the spindle for reciprocation thereof, a constant source of motive power, and power controlling means operatively connecting said constant source of motive power to the driven power shaft and responsive to variations in loading imposed thereon to correspondingly vary power continuously power transmitted to the power shaft from the constant source of motive power, said power controlling means including a slip clutch through which power is transmitted and a drag brake through which power as absorbed.

3,345,006
COLLET ASSEMBLY
Cory P. Geen, Philadelphia, Pa., assignor to Industrial Devices, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 2, 1965, Ser. No. 484,613
10 Claims. (Cl. 242—46.5)



1. In a collet assembly for winding thread or fiber on cylindrical tubes and adapted for use with a selectively rotatable drive spindle, said assembly comprising annular radially expansible drive rings, annular drive ring spacers for positioning said drive rings in spaced aligned relation and means for mounting said drive ring spacers on the spindle, an improved mounting means for said drive ring spacers comprising front and rear hubs supported by the spindle, means on said front and rear hubs respectively for receiving the foremost and rearmost ones of said spacers, and stepped flanged portions on each of said spacers providing an interlocking of the spacers, and means for axially clamping said hubs to form a rigid aligned array of spacers between said hubs.

3,345,007
TAPE APPARATUS
Harry F. Rayfield, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 28, 1965, Ser. No. 459,625
17 Claims. (Cl. 242—55.12)



1. In tape apparatus the combination comprising a base, a plurality of pairs of coaxially arranged tape reels mounted in proximity to said base in spaced apart relationship, a plurality of dual vacuum columns mounted on the base adjacent said reels, each of said vacuum columns having a pair of loop-length sensors operated by the end of the tape loop passing by same, a single vacuum source coupled to each of said vacuum columns, individual transducing means mounted on the base adjacent each pair of tape reels, individual tape advancing means mounted adjacent said transducing means, individual tape guiding means mounted adjacent said reels and said transducing means for guiding tape from one of said reels of each pair of reels through one of the columns of said dual vacuum columns and past the individual transducing means for each pair of reels through one of the columns of another of said dual vacuum columns to the other reel of each pair of reels, a single tape drive means coupled to each of said individual tape advancing means, and individual reel drive means each coupled to one of said reels and connected to be responsive to the control signal from the sensors.

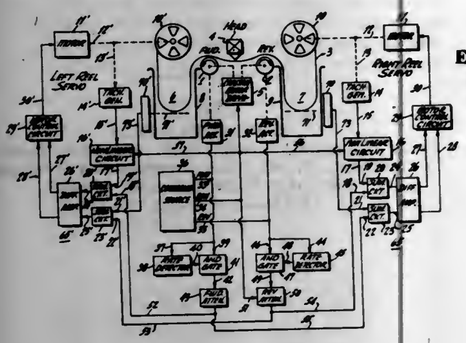
3,345,008
TAPE REEL SERVO
George V. Jacoby, Bala-Cynwyd, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,909
10 Claims. (Cl. 242—55.12)

1. A tape reel servo arrangement for a magnetic tape system which includes a source of command signal energy, tape reel means upon which a magnetic tape is wound, a reel motor means coupled to drive said reel means, a capstan means for driving said tape, said tape reel servo arrangement comprising,

a tachometer generator means coupled to said reel motor means for developing rate damping signal energy,

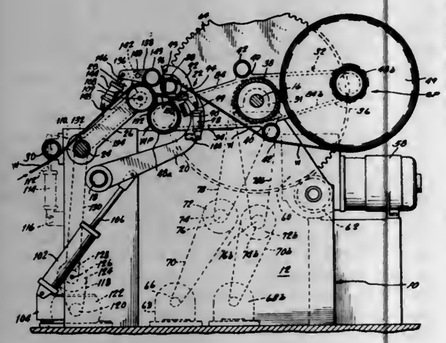
first circuit means including a nonlinear attenuator for attenuating said rate damping signal, the impedance

of the attenuator varying as a function of the rate damping signal amplitude such that the impedance decreases as the rate damping signal amplitude increases, and



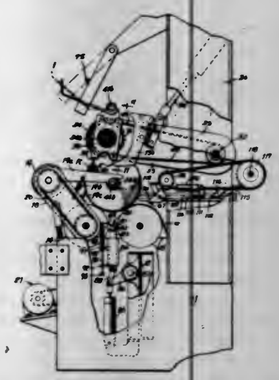
second circuit means for adding said attenuated rate damping signal energy and said command signal energy and for applying the sum thereof to said reel motor means.

3,345,009
LOW WEB-TENSION WEB-WINDING MACHINE
Leonard Rockstrom, Madison, N.J., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York
Filed Oct. 8, 1964, Ser. No. 402,452
4 Claims. (Cl. 242—56)



4. In a turret type of web-winding machine having plural pairs of angularly movable core-carrying arms with means, toward their ends, for carrying rotatable cores upon which web is to be wound at a winding station, and axial driving means coacting directly with said cores for turning the latter to wind a running web thereon; the improvement comprising a controllably driven, web-applying, pull roller, located between a related web supply and a new core located at said winding station, and yieldably in frictional driving engagement with a web on said new core to turn the latter to impart surface winding thereto supplemental to the driving effect of said axial driving means, a freely rotatable antislip roller, yieldably in engagement with a web portion on said pull roller at a circumferential point on the latter substantially removed from the point of driving engagement of the pull roller with the web on said core, and web cutting means, pivotally movable into a position adjacent to said new core, for severing web running from said winding station to a roll of web on a core at another station of the machine.

3,345,010
WINDER ROLL EJECTOR
Edward Francis Egan, Martinsville, N.J., assignor to Frank W. Egan & Company, Somerville, N.J., a corporation of New Jersey
Filed Aug. 9, 1965, Ser. No. 478,199
7 Claims. (Cl. 242—66)



1. In a web winding machine wherein a pair of spaced apart winding drums rotatably journaled on a main frame provide a cradle in which a web winder roll is supported and wound between the drums, apparatus for ejecting the winder roll from the cradle including a pusher having an elongated surface to be juxtaposed to the surface of the winder roll, means for actuating the pusher in the direction to push said winder roll out of the cradle and means including an air outlet extending along said elongated surface for producing an air cushion between the pusher and the surface of the winder roll during movement of the pusher in said direction.

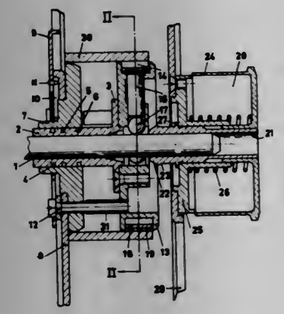
3,345,011
ROLL SUPPORT
Thomas W. Martin, Sr., Nashville, Tenn., assignor to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Apr. 29, 1966, Ser. No. 546,364
5 Claims. (Cl. 242—58.6)



1. A device for supporting a roll comprising:
(a) a frame,
(b) a pair of roll support members, each support member having a rotational axis parallel to the other rotational axis,
(c) means mounting said support members in said frame for rotatable movement about said axes,
(d) said support members being spaced apart to define a roll station in which a roll engages said support members parallel to said axes,

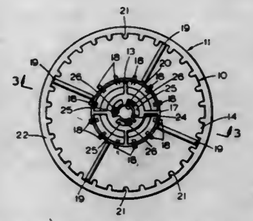
(e) at least one of said support members having a high-friction surface sufficient to rotate said roll engaging said one support member, as said one support member rotates,
(f) a platform member comprising a low-friction surface having a coefficient of friction substantially less than the coefficient of friction of said high-friction surface, to permit relative slidable movement of said roll on said low-friction surface when said platform member engages said roll,
(g) means mounting said platform member on said frame and constraining said platform member to reciprocable movement in a direction substantially normal to the plane of said rotational axes and between said support members, and
(h) means connected to said platform member to move said platform member in said direction away from said roll station to an inoperative position in which said platform member disengages said roll while said roll engages said support members in said roll station, and to move said platform member in said direction toward said roll station and to an operative position displaced from said roll station in which said low-friction surface engages said roll and said roll disengages said support members.

3,345,012
TAPE REEL HOLDER FOR TAPE REELING DEVICES
Birger Ek, Sundbyberg, Sweden, assignor to Facit AB, Atvidaberg, Sweden, a Swedish joint-stock company
Filed June 24, 1966, Ser. No. 560,251
Claims priority, application Sweden, July 22, 1965, 9,701/65
6 Claims. (Cl. 242—68.3)



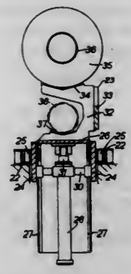
1. A holder for tape reels of the type having data processing tapes wound thereon, said holder comprising in combination, a shaft, a ring, means rigidly connecting said ring to said shaft for drive thereby, said ring serving as a hub for the reel, at least one leaf spring located at the circumference of said ring and having a radius of curvature which is greater than the radius of the outer circumference of the ring, a pin slidable in a radial bore in said ring, means securing said spring at its center to said pin, a second ring or resilient material extending about the circumference of the first ring and outside said leaf spring, said second ring maintaining said leaf spring in place and pressing the pin toward the center of said ring, a sleeve on said shaft, said sleeve terminating in a conical portion, said sleeve being axially displaceable on the shaft toward said ring, said conical termination serving as a cam to lift said pin to press the free ends of the spring aaginst the elastic ring and the latter against the inner surface of the reel.

3,345,013
TAPE SPACER DEVICE FOR AN ENDLESS TAPE REEL
Stanley W. Nick, 2506 S. 35th Ave., Omaha, Nebr. 68105
Filed Apr. 7, 1966, Ser. No. 540,959
5 Claims. (Cl. 242—71.8)



1. In an apparatus for winding a tape, a tape spacer device for providing a predetermined space between adjacent coils of the tape comprising in combination:
a tape holder including a hub having a rim and with a flange formed on the periphery of said hub, said flange adapted to be placed on a turntable and said tape holder adapted to contain a tape wound thereabout in a conventional manner; and
movable spacer means adapted to be placed relative to said hub;
said spacer means including a plate means, said plate means having a plurality of arcuately spaced projections mounted thereon operable to space the innermost coil of the tape a certain distance from said rim.

3,345,014
COIL HANDLING APPARATUS
John Underwood Shearn, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, Yorkshire, England
Filed Apr. 4, 1966, Ser. No. 549,740
Claims priority, application Great Britain, Apr. 6, 1965, 14,576/65
2 Claims. (Cl. 242—79)

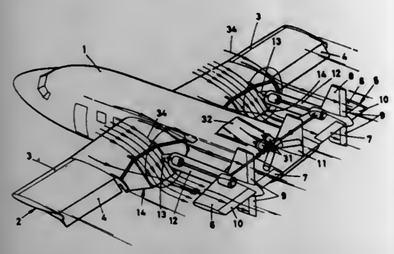


1. A coil car for conveying coils to an uncoiler or from a coiler having a mandrel for a coil wherein the car is mounted for movement in the direction of the uncoiler/coiler mandrel axis between positions for transfer of a coil and a coil spool between the car and the mandrel, and for load/unloading, and the car has a carriage with a first surface for supporting a coil/spool respectively, a second surface for supporting a spool/coil respectively, the surfaces being at different levels, and means for moving the carriage upwardly or downwardly on the car to bring either a coil/spool on the first surface into axial alignment with the mandrel for transfer therefrom or the second surface into a position for horizontal transfer of a spool/coil thereto.

3,345,015
AIRCRAFT

Olle Ljungström, Lidingo, Sweden, assignor to Saab Aktiebolag, Linkoping, Sweden, a corporation of Sweden

Filed Sept. 13, 1965, Ser. No. 486,834
3 Claims. (Cl. 244—13)



1. An aircraft of the type comprising a fuselage, a wing mounted on the fuselage a distance forwardly of the rear end thereof, flaps on the wing extendable rearwardly and downwardly therefrom and retractable partway thereinto, horizontal tail surfaces on the rear of the fuselage projecting to opposite sides thereof, a pair of vertical tail surfaces carried by the horizontal tail surfaces at opposite sides of the fuselage, and a pair of rotatably driven propellers, said aircraft being characterized by the following features of arrangement:

(A) the vertical tail surfaces being located intermediate the fuselage and the tips of the horizontal tail surfaces;

(B) each of the propellers

(1) being carried by means comprising a nacelle mounted on a horizontal tail surface,

(2) with the axis of the propeller lying substantially in the planes of its horizontal tail surface a vertical tail surface, and

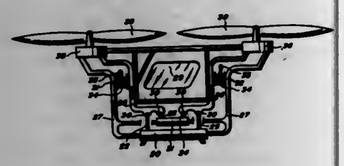
(3) with the propeller disposed between the wing and the tail surfaces so that substantially all portions of the tail surfaces are in the slipstreams from the propellers; and

(C) the flaps, in their extended position, having their trailing edges adjacent to the lower portions of the propeller disc peripheries so that the propellers draw air across the upper surfaces of the wing and flaps.

3,345,016
FLUIDBORNE VEHICLE, DRIVEN BY HYDRAULIC MOTORS AND PARTIALLY CONTROLLED BY VARIABLE BYPASS MEANS

Karl Eickmann, 2420 Isshiki, Kanagawa-ken, Hayama-machi, Japan

Filed Aug. 17, 1965, Ser. No. 480,388
11 Claims. (Cl. 244—17.23)

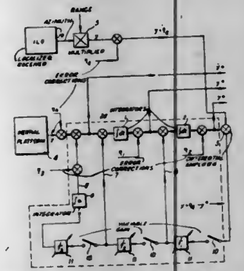


1. A fluid-borne vehicle comprising, in combination, a frame; at least two rotary propulsion elements rotatably mounted on said frame in laterally spaced relation to each other for rotation about substantially parallel axes; plural hydraulic motors on said frame each driving a respective propulsion element; a fluid flow producing means on said frame having plural fluid deliveries, the number of fluid deliveries being at least equal to the number of motors and the rates of flow of the deliveries being proportional to each other; plural fluid supply lines each connecting a respective delivery to a respective motor whereby said motors are supplied with fluid power in parallel from said fluid flow producing means with each motor being supplied at the full delivery pressure of said fluid flow producing means; and fluid return line means connected to said motors to return fluid to said fluid flow producing means; said vehicle being dirigible by selectively regulating the respective rates of flow through said motors to correspondingly selectively regulate the respective angular velocities of said propulsion elements.

3,345,017
AUTOMATIC GUIDANCE AND LANDING SYSTEM FOR AIRCRAFT

George Olah, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company

Filed Apr. 12, 1965, Ser. No. 447,380
Claims priority, application Great Britain, Apr. 14, 1964, 15,469/64
12 Claims. (Cl. 244—77)



4. In a landing system for aircraft comprising, in combination:

gyro means having an output $\dot{y}$ indicative of acceleration of the aircraft in a direction lateral with respect to a predetermined glide slope path;

integrator means for integrating the output $\dot{y}$ of said gyro means to produce a lateral position output y^* indicative of the lateral position of the aircraft with respect to the glide slope path according to the gyro means; I.L.S. receiving means for producing an output signal y indicative of lateral deviation of the aircraft with respect to the glide slope path;

comparator means connected to the outputs of said I.L.S. receiving means and said integrator means and having an output $y-y^*$ indicative of the error in the output of said gyro means;

autopilot means for controlling the aircraft according to said output y^*;

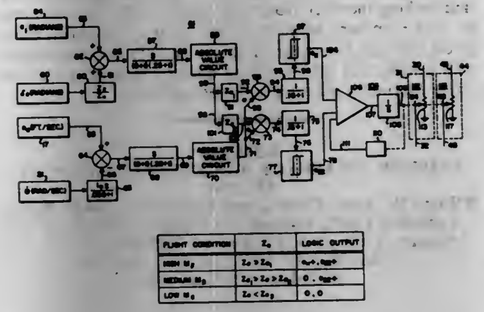
and feedback means for modifying said output y^* according to said output $y-y^*$.

3,345,018
DIRIGIBLE CRAFT CONTROL APPARATUS

Thomas S. Chanak, Minneapolis, Lester D. Edinger, White Bear Lake, and Russell C. Hendrick, Fridley, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,118
16 Claims. (Cl. 244—77)

1. In flight control apparatus for an aircraft having attitude changing means and a large airspeed and/or altitude range, in combination: first means providing a control signal to initiate change in attitude by operation of said attitude changing means; second means receiving said signal; motor means controlled by said receiving means and positioning the attitude changing means; and means responsive to the resulting changes in angle-of-attack and normal acceleration of said aircraft caused by operation of the motor means, wherein angle of attack and normal



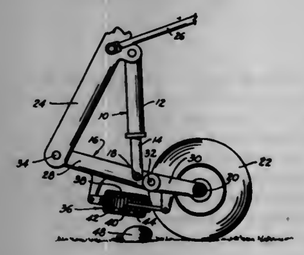
FLIGHT CONDITION	Z_0	LOGIC OUTPUT
HIGH M_2	$Z_0 > Z_{0_1}$	$\alpha_0 + \beta_0 =$
MEDIUM M_2	$Z_{0_1} > Z_0 > Z_{0_2}$	$\alpha_0 + \beta_0 =$
LOW M_2	$Z_0 < Z_{0_2}$	0

acceleration are terms in the normal force equation of the aircraft for changing the gain, e.g., ratio of output to input of said receiving means, to vary the operation of the attitude changing means to hold substantially constant the control effectiveness of said attitude changing means for the given first signal over a portion of the speed range of the craft.

3,345,019
AIRCRAFT LANDING GEAR

Raymond Joseph Black and Roy M. Palmer, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware

Filed Dec. 30, 1965, Ser. No. 517,689
1 Claim. (Cl. 244—100)

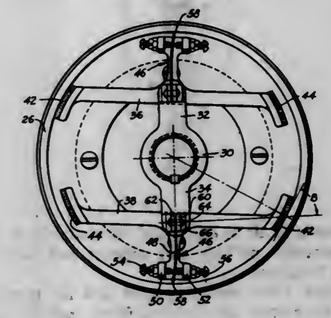


In a landing gear for an aircraft having a primary sprung mass and a primary unsprung mass, the combination therewith of linkage means for dividing said primary unsprung mass into a secondary sprung mass and a secondary unsprung mass, a primary shock absorber operatively connected between said primary sprung mass and said primary unsprung mass for damping relative movement therebetween, said primary shock absorber including a first telescopic member which is connected to and is a part of said primary sprung mass and a second telescopic member which is connected to and is a part of said primary unsprung mass during stroking of said primary shock absorber, said primary unsprung mass including a generally horizontally disposed lever pivotally connected between the ends thereof to said second telescopic member of said primary shock absorber and ground engaging wheel means rotatably mounted at one end of said lever, said other end of said lever being pivotally connected to said first telescopic member of said primary shock absorber, said horizontally disposed lever being formed of first and second links pivotally connected to each other, said pivotal connection of said first link with said second link being located between said wheel means and the pivotal connection of said lever with said second telescopic member of said primary shock absorber, and a secondary shock absorber operatively connected between said sprung masses and said secondary unsprung mass for damping relative movement therebetween, said secondary shock absorber including a first telescopic member which is connected to said first link and a second telescopic member which is connected to said second link, said second telescopic member of said primary shock absorber and said first link of said lever being a part of said secondary sprung mass during stroking of said secondary shock absorber.

3,345,020
FRICTION SHIMMY DAMPER

Franklin C. Albright, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Mar. 18, 1966, Ser. No. 535,595
8 Claims. (Cl. 244—103)



1. In an aircraft castering wheel assembly having a housing member, a wheel, and a wheel-carrying member operatively connected to said housing member for relative angular movement with respect thereto, a wheel shimmy damper mechanism comprising a brake drum operatively connected to said housing member, support means located within said brake drum and operatively connected to said wheel-carrying member for concomitant angular movement therewith, said support means including a collar having a plurality of arms radially extending therefrom, a cross beam pivotally connected at the center thereof to the end of each of said support arms, a friction pad located at each end of said cross beam for engagement with said brake drum, and means for preventing said friction pads from engaging said brake drum at angular velocities below a predetermined value but permitting said friction pads to engage said brake drum at angular velocities above said predetermined value.

3,345,021
SUPPORTING DEVICE FOR HAND TOOLS

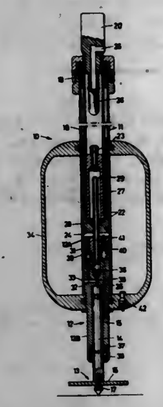
Gunnar Lennart Gransten, 10 Trollsjovagen, Lannersta, Sweden

Filed July 30, 1965, Ser. No. 475,947
Claims priority, application Sweden, Aug. 4, 1964, 9,411/64
7 Claims. (Cl. 248—13)

1. A device for resiliently supporting a hand tool on a variable level, comprising:

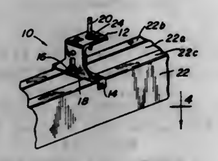
(a) a tubular barrel closed at one end by an end piece;

(b) a support rod telescopically displaceable in said barrel, one end of said support rod protruding from the other end of said barrel and having means for securing to an associated hand tool;
(c) a plunger mounted on the other end of said support rod;
(d) an air chamber defined within said barrel between said end piece and said plunger;
(e) an air inlet passage connecting said air chamber to the atmosphere;
(f) a compressed air reservoir;
(g) first and second air transfer passages communicating said air chamber with said air reservoir;
(h) first valve means in said air inlet passage to permit



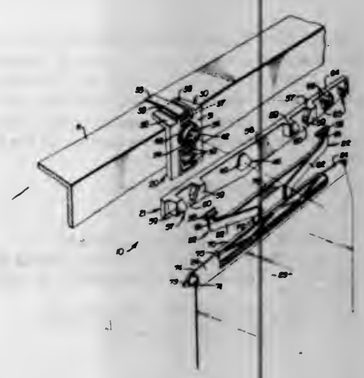
atmospheric air to enter said air chamber in response to manually pulling said support rod and plunger away from said end piece;
(i) second valve means in said first air transfer passage to permit air to pass from said air chamber into said compressed air reservoir in response to pushing said support rod and plunger towards said end piece; and
(j) third valve means in said second air transfer passage operable to open said second air transfer passage to place said compressed air reservoir and said air chamber in open communication with each other,
(k) whereby said plunger, support rod and hand tool are resiliently supported by the compressed air contained in said reservoir and said air chamber.

3,345,022
BUS DUCT HANGER
George N. Jorgensen, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,252
10 Claims. (Cl. 248—59)



1. A bus duct hanger comprising a hanger body member, a locking member, and fastening means normally maintaining said locking member in assembled relationship with said hanger body member in either of two upper and lower positions relative thereto, said hanger body member being adapted to receive a bus duct housing when said locking member is in said upper relative position, said locking member being adapted to lock a bus duct housing on said hanger body member when said locking member is in said lower relative position, said locking member being shiftable between said two relative positions upon loosening of said fastening means without disassembling said locking member from said hanger body member, one of said members being provided with a vertically elongated slot and the other of said members being provided with a hole, and said fastening means comprising a single screw extending through said slot and hole.

3,345,023
BEDSIDE DRAINAGE RECEPTACLE SUPPORT MEANS
William W. Scott, Covina, and Melvin Simmonds, Pacific Palisades, Calif., assignors to Resiflex Laboratory, Los Angeles, Calif., a corporation of California
Filed May 27, 1965, Ser. No. 459,246
8 Claims. (Cl. 248—95)



1. In a support means for a liquid drainage system to be associated with a bed frame member or the like and including: a drainage bag; a mounting plate having means for attaching said plate to a frame member; a support bar transverse to the mounting plate and having opposite end portions; means connecting said plate and bar for horizontal positioning of said bar; a bag carrier member having end extremities opposite said end portions; and interengageable means at said bar end portions and at said carrier member end extremities releasably connecting said carrier member and bag as a unit with said support bar, said carrier member having means adjacent said end extremities for releasably holding said drainage bag, said carrier member having a handle portion for transporting said bag in assembly therewith when the carrier member and bar are disconnected.

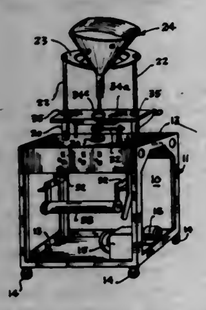
3,345,024
ADJUSTABLE FITTINGS FOR INDUSTRIAL, DOMESTIC, AND DISPLAY LAMPS
Maurice Victor, 49 St. Georges Road, Avondale, Auckland, New Zealand
Filed Jan. 24, 1966, Ser. No. 523,013
1 Claim. (Cl. 248—122)

A device for supporting a lamp or the like, comprising a base, a supporting trackway supported on said base and extending upwardly and diagonally therefrom, said trackway having spaced parallel vertically extending track portions, a post member for supporting a lamp, said post member having a slide assembly mounted on the lower end portion thereof, said slide assembly having upper and lower flange portions forming spaced bearing surfaces, said flange portions being spaced apart a distance greater than the width of said vertically extending track portions,



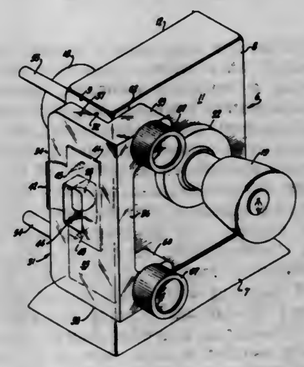
said flange portions of the slide assembly receiving said track portions therebetween, whereby the post and slide assembly may be disposed at substantially right angles to said trackway to be moved therealong and may be tilted at an angle to the trackway to cause engagement of the flange portions with the trackway to lock the post and slide assembly in place on the trackway.

3,345,025
TUBE LIFT MECHANISM
Robert W. Shawfrank, Des Plaines, Ill., assignor to The Shawfrank Engineering Corporation, Des Plaines, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 501,938
5 Claims. (Cl. 248—123)



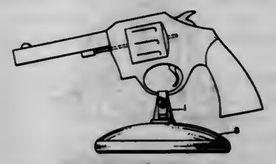
1. In a portable exhaust cart, a tube lift mechanism for locating a cathode ray tube having a weight within a predetermined range in a selected vertical position within predetermined limits, said lift mechanism including in combination:
a frame;
a pair of vertical sleeve guides mounted on said frame;
a pair of vertical support columns, each of said columns being telescopically received within an associated sleeve guide, said sleeve guides and said vertical support columns having a close-tolerance interfit therebetween;
yoke means affixed to said columns at one end thereof in tube-receiving relation to support the cathode ray tube therebetween;
lever means pivotably suspended from said frame intermediate its ends, said lever means including camming means at one end and a reference point at the opposite end, said camming means engaging said support columns at an end opposite the end at which said yoke means is affixed so as to support said vertical columns and cathode ray tube and to impart vertical movement thereto when said lever means is pivoted; and
counterweighting means, said counterweighting means being positioned at said opposite end of said lever means adjacent said reference point, said counterweighting means exerting a balancing force acting directly on said reference point at all set positions of the lift mechanism,
said close-tolerance interfit between said sleeve guides and vertical support columns providing a frictional force effective to resist movement of the lift mechanism when at rest and maintain the same at any set position notwithstanding a difference between the force exerted by said counterweighting means and that by the vertical support columns and cathode ray tube within said predetermined weight range.

3,345,026
DOOR LOCK UNIT DISPLAY MOUNT
Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company
Substituted for abandoned application Ser. No. 466,797, June 24, 1965. This application Jan. 25, 1967, Ser. No. 617,757
7 Claims. (Cl. 248—158)



1. A door lock unit display mount comprising a stand including an upright panel having a planar edge face, means formed in said panel and opening through said edge face for receiving a bolt unit, a body having a planar surface, means for mounting said body on said panel for movement of said planar surface across said planar edge faces, means formed in said panel and defining openings said planar surface for receiving a strike unit engageable with said bolt unit.

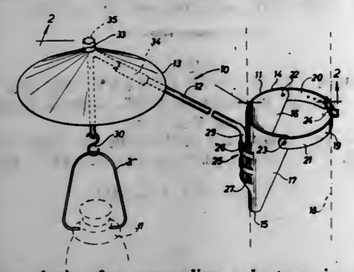
3,345,027
FIREARM DISPLAY STAND
Ray Ward Taylor, 3856 N. Glebe Road, Arlington, Va. 22207
Filed July 17, 1964, Ser. No. 383,317
2 Claims. (Cl. 248—187)



1. A firearm display stand comprising a base, a jaw attached to said base and positioned for extending upright from said base, a second jaw slideably positioned on and alongside said first jaw, but spaced therefrom, a bolt fix-

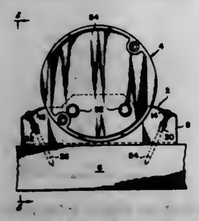
edly attached to and extending laterally of said first jaw, a slotted head nut rotatably mounted through said second jaw and in threaded engagement with said bolt, and said jaws having opposing recesses capable of receiving the finger guard of a firearm therebetween.

3,345,028
SUSPENSION DEVICE FOR LANTERNS
Robert T. Lawrie, 44 1st St. W., Elmira, Ontario, Canada
Filed Oct. 12, 1965, Ser. No. 495,115
6 Claims. (Cl. 248—231)



1. In a device for suspending a lantern, in combination, a standard, an attachment member of flexible sheet metal having a vertically elongated, generally part-tubular, conformation extending lengthwise over a portion of said standard, said attachment member having its greatest width along its top edge whereby to extend over a considerable circumferential portion of said standard and tapering downwards to a relatively narrow lower end in surface engagement with the outer surface of said attachment member and maintaining said attachment member in a vertical plane, flexible tie members secured to said attachment member at the upper top corners thereof and extending around the part of said standard remote from said attachment member and adjustably connected at their other ends to effect lateral deformation of said attaching member to cause same to be brought into wrap-around surface-to-surface gripping contact with said standard, a substantially tubular receptacle means integral with said attachment member substantially medially of the exterior surface of said attachment member in the axial plane thereof, a lantern supporting arm having one end thereof closely fitting into said receptacle, said arm having a shank extending from said one end, and a lantern suspended from said shank.

3,345,029
NAIL-UP BRACKET FOR WIRING BOXES
Lewis E. Palmer, Washington, W. Va., assignor to Union Insulating Company, Inc., Parkersburg, W. Va., a corporation of West Virginia
Filed Oct. 29, 1965, Ser. No. 505,660
7 Claims. (Cl. 248—300)



1. A nail-up bracket for fastening an electrical box to a support, comprising a unitary body member formed of sheet material and including first and second orthogonally arranged sections joined by a common first fold line, said first section being generally rectangular and including at each of the two corners thereof remote from said first fold line a corner tab portion bent along a second fold line angularly arranged relative to said first fold line, each of said corner tab portions being generally normal to said first section, said first section containing a pair of bores defining convergent nail guiding passageways which extend from said second fold lines, respectively, in the direction of said first fold line, said corner tab portions containing entrance openings each in alignment with one end of one of said passageways, respectively, and said second sections containing exit apertures each in alignment with the other end of the other of said passageways, respectively, whereby when said second section is positioned against a support, convergent nails may be driven through said openings, passageways, and apertures, respectively, into said support.

3,345,030
DOLL STAND
Samuel F. Speers, North Attleboro, Mass., assignor to Hassenfeld Bros., Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed Sept. 8, 1965, Ser. No. 485,742
4 Claims. (Cl. 248—346)



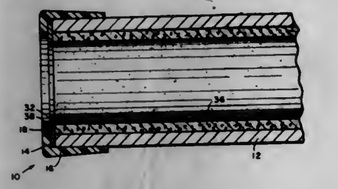
1. In a stand for a doll which includes feet having toe and heel portions, a base having a platform formed thereon, an upstanding projection joined to said platform and extending transversely thereof, said projection having at least one opening formed therein that extends above the surface of said platform to which said projection is joined, said opening receiving the toe portions of the feet of said doll therein when said doll is mounted on said stand, a slot extending transversely of said platform and spaced rearwardly with respect to said projection wherein an uninterrupted space is formed on said platform between said projection and slot for receiving the feet of said doll thereon, the heel portions of said feet being located adjacent to said slot but occupying the space between said projection and slot, and a retaining element slidably and removably received in said slot so as to be substantially vertically mounted therein, a surface of said retaining element being engageable with the heel portions of said feet for locking said feet in the openings formed in said projection, thereby mounting said doll in vertical position on said platform, the width of said slot extending for a major portion of the width defined by the opening in said projection, wherein the retaining element that occupies said slot is engageable with substantially the entire rear area of the heel portions of said feet that are located adjacent to said slot.

3,345,031
REMOVABLE FORM FOR USE IN CEMENT LINING PIPE
Morris B. Fell and Connie J. Burdick, Tulsa, Okla., assignors to The Bradford Companies, Tulsa, Okla., a partnership
Filed Sept. 3, 1964, Ser. No. 394,366
1 Claim. (Cl. 249—204)

A removable form and end protector for use to cement line a pipe, comprising:

a resilient member having a tubular portion of short axial length relative to the pipe, at least a portion

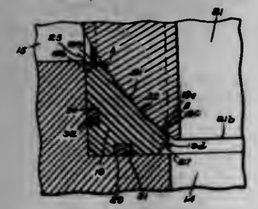
of the length of the tubular portion having a normal internal diameter smaller than the external diameter of the pipe, the tubular portion being adaptable to be pressed onto one end of the pipe, the member having an integral circumferential lip portion at one end of the tubular portion, the lip portion having an axial



opening, the diameter of the opening being less than the internal diameter of the tubular portion; and

a rigid flat relatively thin disc of external diameter substantially that of the pipe, the disc having an axial opening therein of diameter less than the internal diameter of the pipe, the disc positioned coaxially within the tubular member adjacent the lip portion to engage the end of the pipe.

3,345,032
THREE-WAY BALL VALVE
William W. Rawstron, Worcester, Mass., assignor to Jamesbury Corp., Worcester, Mass., a corporation of Massachusetts
Filed Nov. 10, 1964, Ser. No. 411,966
6 Claims. (Cl. 251—172)



1. A ball valve comprising a casing having a valve chamber and a first and a second opening communicating with said chamber at an angle to one another, a ball mounted in said chamber and having a through passage terminating in two ports, one of said ports being continually in communication with said first opening and the ball being rotatable to turn the other of said ports into and out of communication with said second opening, and a seat ring surrounding said second opening, and disposed between said first and second openings, said ring having a pair of spaced flexible lips standing free of said casing and unsupported by said casing both said lips simultaneously being in sealing engagement with the ball all around the ring, the lip nearest said second opening extending inward in the radial direction of the ring and being bendable in the axial direction and the other lip extending generally axially with respect to the ring and being bendable in the radial direction.

3,345,033
SHAFT SEAL FOR A BUTTERFLY VALVE
Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois
Filed June 15, 1965, Ser. No. 464,040
9 Claims. (Cl. 251—308)

1. A butterfly valve, comprising: a valve body having a fluid passage therethrough; a valve disc having a peripheral sealing edge and mounted in said valve body for movement between a closed position wherein the periphery of the disc is in sealing engagement with the valve body and an open position permitting fluid flow through the valve body, said valve disc having a pair of opposed stub shaft openings which interrupt the peripheral sealing edge throughout the entire thickness of the peripheral sealing edge at the place of interruption, and said openings forming a radial shoulder with said peripheral sealing edge



on either side of the opening; and a pair of stub shafts, one on either side of the housing for supporting and mounting the disc in the valve body, each stub shaft having a disc engaging end which extends through the valve body and peripheral sealing edge interruption into the stub shaft openings in sealing engagement with said radial shoulders and the opening in the valve disc.

3,345,034
GATE VALVE ASSEMBLY
Roger M. Sherman, Santa Clara, Calif., assignor to Aluminum Supply Company, Tubing Division, Inc., Spokane, Wash., a corporation of Washington
Filed Dec. 27, 1965, Ser. No. 516,232
7 Claims. (Cl. 251—326)



1. A gate valve assembly for irrigation pipe, comprising:

a first rigid member having parallel top and bottom surfaces, said first member having an aperture formed therethrough centered about an axis perpendicular to its top and bottom surfaces;

an upstanding rim formed integrally with said first member and centered about said axis, said rim being located about the periphery of the aperture formed through said first member;

outwardly directed ledges formed integrally with said first member and protruding outwardly from said rim at opposite sides thereof, said ledges having lower surfaces spaced from the top surface of said first member;

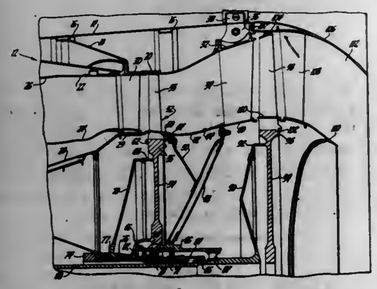
first sealing means mounted on the upper surface of said first member and protruding upwardly therefrom, said sealing means extending continuously about the aperture formed in said first member;

second sealing means mounted on the lower surface of said first member and protruding downwardly therefrom, said second sealing means extending continuously about the aperture formed in said first member;

a second rigid member secured to said first member having a central aperture formed therethrough coaxially with the aperture of said first member, said second member having an upwardly directed surface parallel to and spaced from the bottom surface of said first member and surrounding the aperture formed through said second member, the ends of said second member being open directly above said upwardly directed surface; and

rigid slide mounted between the bottom surface of said first member and the upwardly directed surface of said second member for reciprocating movement relative to said first and second members.

3,345,035
TURBINE WHEEL
Douglas Johnson and James H. Young, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,185
5 Claims. (Cl. 253—39)



1. A lightweight turbine rotor for driving a rotatably mounted load bearing shaft and which is subject to standing wave vibration, comprising:

a rotor wheel having a thin web and a widened rim, blade mounting means in said rim,

a plurality of radially extending blades mounted in said mounting means,

means to provide a circumferential node at the outer circumference of said web, said means including an annular extension at the outer circumference of said web adjacent said rim, and

an annular support attached to said extension and to said shaft to constitute the sole axial and radial support for said rotor wheel whereby said rotor wheel is adapted to drive said shaft through said web, annular extension and annular support.

3,345,036
STAPLE EXTRACTOR
Ted E. Cooke, Seattle, Wash.; Ruth M. Cooke, executrix of said Ted E. Cooke, deceased, assignor to Orville F. Jurgens, Seattle, Wash.
Filed Mar. 14, 1966, Ser. No. 534,158
3 Claims. (Cl. 254—28)

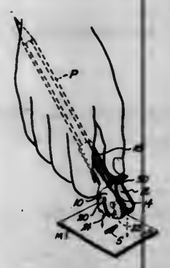
1. A staple extractor comprising:

(A) a first jaw member having an open-mouth curved slot extending arcuately inward from an edge;

(B) a second jaw member having an open-mouth curved slot extending inward from an edge and being mounted to rotate within such first jaw member;

(C) said second jaw member slot having its mouth normally coincident with the open-mouth of the curved slot of said first jaw member;

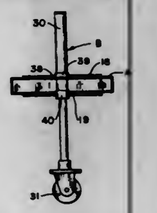
(D) the slot of said second jaw member having opposite curvature relative the slot of said first jaw member and extending inward from its open-mouth more toward the axis of rotation than the inward extension of the slot of said first jaw member, whereby said slots form an aperture disposed progressively further from their mouths as the jaw members are relatively rotated;



(E) said jaw members each including pointed means at the trailing lips of said slots to engage under opposite sides of a clinched staple; and

(F) manipulating means associated with each of said jaw members whereby relative rotary movement of the jaw members may be effected.

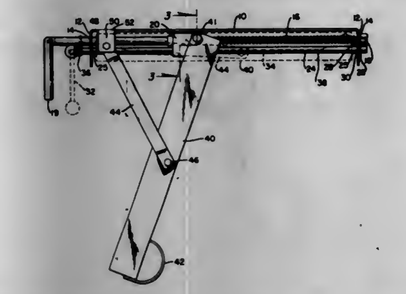
3,345,037
REMOVABLE TRAILER SUPPORT
Ernest J. Sweetland, Jr., 940 N. Fair Oaks Ave., Pasadena, Calif. 91103
Filed Sept. 28, 1965, Ser. No. 490,843
5 Claims. (Cl. 254—86)



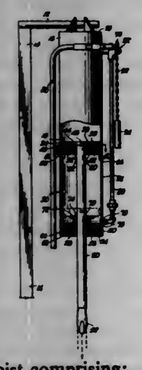
1. A device for supporting the yoke of a trailer comprising a pair of spaced-apart support plate means, means to mount said plate means on said trailer yoke in a horizontal position, said plate means formed to provide keyways disposed in vertical, axial alignment; a vertical shaft mountable in said keyways, flange means rigidly mounted on said shaft and extending outwardly therefrom in engagement with the bottom of said plate means to restrain the plate means against downward movement relative to said shaft, locking means mounted on said shaft and projecting upwardly therefrom, said shaft being freely insertable into and removable from said keyways when said plate means are in a raised position relative to said shaft, and said locking means engageable with said plate means to lock said shaft against lateral movement relative thereto when said plate means are moved to a lower position relative to said shaft.

3,345,038
TRAILER JACK
Frederick George Taylor, 21 Rose Ave., Droitwich, England
Filed Oct. 8, 1965, Ser. No. 494,099
6 Claims. (Cl. 254—86)

1. In a jack assembly for moving a base leg structure from an inoperative to an operative position having a mounting bar for securing to a vehicle, a screw rotatably journalled on said mounting bar and retained against axial displacement, a carriage positioned on said screw and adapted to slide therealong, a base leg member pivotally connected to said carriage, a pair of links pivotally connected at one end to said leg and at the other end to said mounting bar, said links adapted to support said base leg member, a freely slidable nut positioned in said carriage and adapted to slide into and out of an operative position with said screw and a device to hold the nut in said operative position with the said screw, the improvement comprising a shaft horizontally positioned beneath and parallel to said screw and rotatably journalled in said mounting bar, said shaft adapted to bear directly on said nut and force the same in a sliding movement into and out of operative engagement with said screw.



3,345,039
OVERHEAD HOIST
Joseph L. Gray, St. Joseph, Mo., assignor to Gray Manufacturing Company, Inc., Buchanan County, Mo., a corporation of Missouri
Filed July 21, 1966, Ser. No. 566,811
10 Claims. (Cl. 254—93)



1. An overhead hoist comprising:

an enclosed hollow cylinder having a transversely circular sidewall and opposed end plates;

a piston having a cylindrical side surface adapted for complemental reciprocation within the cylinder;

a cylindrical ram extending through one of said plates and slidable with respect thereto;

lift structure secured to the outer end of said ram;

a port in the cylinder; and

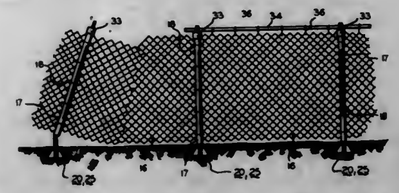
mechanism coupled to the port for forcing fluid into the cylinder and withdrawing the same therefrom to reciprocate the piston,

said piston having an axial bore therein having a diameter equal to the diameter of said ram, the piston having a transverse opening communicating within said side surface and intersecting with said bore,

said ram being received in said bore and having a transverse opening extending therethrough in alignment with the opening in said piston,

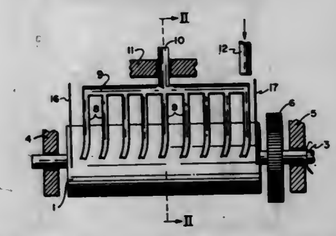
there being a pin extending through said aligned openings to connect the piston to the ram whereby when said mechanism is operated to reciprocate the piston, the ram correspondingly reciprocates to shift said lift structure.

3,345,040
CHAIN LINK FENCING
Joseph A. Rivelli, 5047 Oakton St., Skokie, Ill. 60076
Filed Aug. 26, 1965, Ser. No. 482,709
3 Claims. (Cl. 256—37)



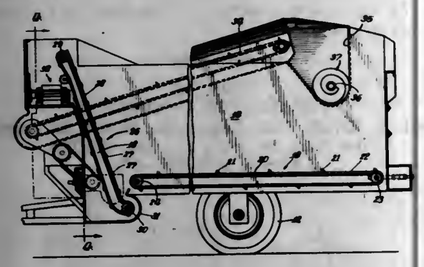
1. An improved chain link fence comprising chain link fencing material, a plurality of line posts including means for securing said line posts to said chain link fencing, said line posts being secured to said chain link fencing at equal intervals defined by a first modular distance, a plurality of ground engaging members disposed at equal intervals defined by a second modular distance which is greater than said first modular distance, each of said ground engaging members having an element engaged with a line post, said chain link fencing material being stretched an amount so that the distance between said line posts is equal to said second modular distance when said line post is engaged with said element.

3,345,041
METHOD AND APPARATUS FOR TREATING HIGHLY VISCOUS MATERIAL
Bernard Louis A. van der Schee, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 419,129
Claims priority, application Netherlands, Dec. 23, 1963, 302,442
5 Claims. (Cl. 259—6)



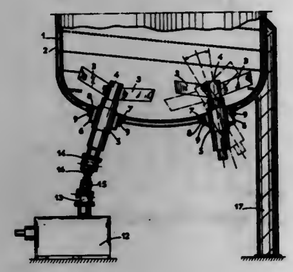
1. In an apparatus for treating highly viscous material having parallel cooperating cylindrical rollers positioned alongside each other to form a material receiving nip portion, a drive system for rotating the rollers in opposite directions, a material inlet located at one end of the rollers, the improvement comprising means extending into the nip of the rollers for increasing the surface area of the material being treated therein and which is exposed to ambient atmosphere.

3,345,042
CATTLE FEEDING DEVICE
Kelly P. Ryan, Blair, Nebr., assignor to Blair Manufacturing Co., Inc., a corporation of Nebraska
Filed Feb. 18, 1966, Ser. No. 541,870
11 Claims. (Cl. 259—7)



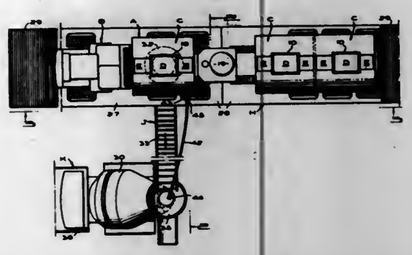
1. A vehicle for mixing and discharging animal feeds comprising a frame mounted for ground traversing movement, a container for the feed carried by the frame, means for discharging feed from the vehicle, means for moving feed in the container toward one end thereof, elevating and mixing means at said end of the container for mixing feed and elevating the same, a first conveyor extending transversely across said one end of the vehicle below the discharge end of said mixing and elevating means for receiving mixed feed therefrom, said first conveyor communicating with said discharge means, and alternatively selective means for recirculating mixed feed from said first conveyor to the other end of the container or to deliver the mixed feed to said discharge means.

3,345,043
CHAMBER CONTAINING AN INTERNAL AGITATOR SYSTEM
René Bovagne, Chalon-sur-Saone, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France, a company of France
Filed Mar. 17, 1966, Ser. No. 535,239
Claims priority, application France, Mar. 31, 1965, 11,384
2 Claims. (Cl. 259—102)



1. An autoclave chamber and an internal agitator system at the bottom of the chamber comprising at least one agitation unit, a drive shaft for said unit, a bearing for said drive shaft and a box pivotable in and mounting said bearing through the bottom of the chamber with respect to the botom of the chamber, the bearing axis forming an angle other than zero with the pivot axis of the box.

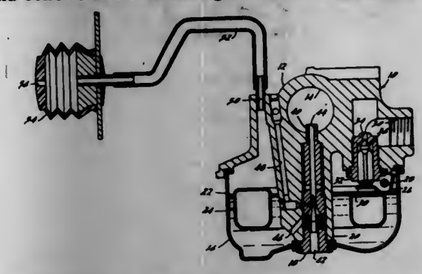
3,345,044
METHOD OF AND TRANSIT APPARATUS FOR DELIVERING CONCRETE MATERIALS
Hugh P. Paris, 1034 Colorado Ave., Palo Alto, Calif. 94303
Filed Feb. 17, 1967, Ser. No. 616,982
8 Claims. (Cl. 259—164)



3. In a transit apparatus for delivering concrete materials:
(a) a transit batchor comprising:
(1) a truck having at least one container mounted thereon for being moved thereby to the vicinity of a job site;
(2) a shell carried by the container and extending downwardly thereinto, the shell defining a compartment having dry cement stored in bulk therein;
(3) the container defining a compartment surrounding the cement-containing shell, and the container compartment having aggregate stored in bulk state therein;
(4) a flow-controlled outlet chute communicating with the container compartment, whereby aggregate may outflow downwardly through this outlet chute;
(5) the shell being provided with a flow-controlled discharge chute at its bottom that is spaced from the outlet chute of the container so that aggregate may pass therebetween, whereby dry cement from the shell may be fed into the aggregate in a descending stream;
(b) a transmit mixer comprising:
(1) a truck having a rotatable mixing drum mounted thereon into which the aggregate and cement may be transferred and transported by this truck to a job site;
(2) the capacity of the container compartment and cement-containing compartment being the same as the capacity of the transit mixing drum, whereby the batch of aggregate and cement may be transferred as a charge from the container to the drum;
(c) and a material-transfer mechanism for moving the descending aggregate and cement from the container outlet chute to the transit mixer drum.

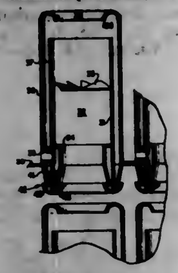
3,345,045
PRIMER FOR INTERNAL COMBUSTION ENGINES
Lloyd H. Tuggle, Maquoketa, Iowa, assignor to Clinton Engines Corporation, Maquoketa, Iowa, a corporation of Michigan
Filed Aug. 21, 1964, Ser. No. 391,117
2 Claims. (Cl. 261—34)

1. In an internal combustion engine having a carburetor for supplying the engine with a rich fuel-air mixture during priming and with a leaner mixture during normal operation, the carburetor being of the type provided with a float bowl adapted to contain a body of liquid fuel and a body of air normally under atmospheric pressure above the fuel level, the carburetor having a body with a fuel-air mixture passage and a fuel nozzle for conducting fuel from the float bowl to the mixture passage therein; a primer for aiding in starting the engine comprising a manually operable bellows having a vent opening therein, said float bowl having an air inlet above the fuel level and a tube running between said air inlet and the interior of said bellows and establishing free air flow communication



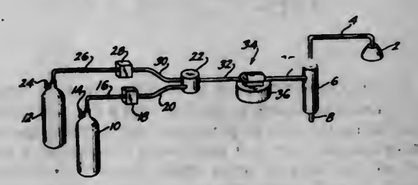
therebetween so that during normal operation of the engine said float bowl is vented to atmosphere through said tube and bellows, and said bellows being manually depressible and said vent opening therein being positioned so as to be covered by the operator as said bellows is depressed thereby increasing the pressure in the float bowl and causing fuel to flow through said nozzle into said mixture passage so as to prime the engine during starting thereof.

3,345,046
GAS-LIQUID CONTACTOR
Paulus Versluys and Willem C. van 't Sant, The Hague, and Francois A. H. Gilissen and Willem H. Manger, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,695
Claims priority, application Netherlands, Oct. 30, 1963, 299,912
6 Claims. (Cl. 261—79)



1. Apparatus for effecting contact of gas and liquid comprising:
a hollow vertical cylindrical column;
a plurality of horizontal trays mounted at vertically spaced locations within said column;
a plurality of openings in each of said trays, each opening in vertical alignment with corresponding openings in vertically adjacent trays;
an apparatus for contacting gas and liquid in each of said openings, said apparatus comprising:
a first elongated tube having a lower end terminating below said respective tray and an upper end terminating in close spatial proximity with the lower end of the vertically aligned contacting apparatus next above said first tube, said first tube upper end having a restricted discharge area;
a second elongated tube having an upper end and a lower end coaxially disposed internally of said first tube, said second tube lower end terminating at least as low as said respective tray and said second tube upper end terminating in close spatial proximity below said restricted discharge area and with greater areal opening than said restricted discharge area;
a third elongated gas conduit tube having an upper end and a lower end coaxially disposed internally of said second tube, said third tube lower end extending at least as low as said respective tray and said upper end terminating a short distance above said respective tray, the bore of said third tube in open coaxial alignment with said restricted discharge area;
contacting chamber means defined by said second tube between said second and third tube upper ends for contacting gas with liquid;
vane means mounted in said chamber means intermediate said ends for inducing a whirling motion in the fluid passing through said chamber means;
seal means between said second tube and at least the lower end of said third tube for preventing gas flow from the space encompassed by said third tube into the space between said second and third tubes;
vessel means formed between said second and third tubes above said seal means, said vessel means having aperture means for fluidly communicating said vessel means with said contacting chamber means;
fluid conduit means communicating the space surrounding said first tube above said respective tray with said vessel means for flowing fluid from said space to said vessel means;
said first and second elongated tubes defining an annular space therebetween;
annular trough means disposed generally below and spaced apart from said first tube, said annular trough means extending from and being in fluid sealing relationship with the lower end of said second tube, said annular trough means having an outer annular lip above, concentric with and of a larger diameter than said first tube lower end, said first tube lower end terminating in said trough below said outer annular lip level whereby said annular space is in fluid communication with the space below said respective tray via a fluid route under said first tube lower end and over said outer annular lip.

3,345,047
APPARATUS AND METHOD FOR ADMINISTERING HUMIDIFIED ANESTHETIC GASES
Alan L. Gooden, 1214 5th Ave., Neptune, N.J. 07753
Filed Feb. 7, 1966, Ser. No. 532,817
8 Claims. (Cl. 261—90)



1. In a self-contained system for administering a humid gaseous anesthetic having a desired predetermined humidity independent of ambient atmospheric conditions, the system including a self-contained source of anesthetic, a self-contained source of dry gaseous compressed oxygen and mixing means closed to the ambient atmosphere for receiving the anesthetic and the dry gaseous oxygen from the respective sources and mixing desired proportions of

the anesthetic and the dry gaseous oxygen to produce a dry gaseous anesthetic mixture of desired dryness, the improvement comprising:

a casing closed to the ambient atmosphere;

means for introducing the gaseous mixture of anesthetic and oxygen into said casing to establish an atmosphere of desired dryness within the casing;

support means;

a plurality of flexible bristle elements carried by said support means, each bristle element projecting from a root portion fixed in said support means to a free tip;

a source of liquid;

means for wetting the bristle elements at the tips thereof with said liquid;

means for flexing the bristle elements; and

means for imparting relative motion between the tips of said bristle elements and said means for flexing to flex and suddenly release the flexed bristle elements having wetted tips;

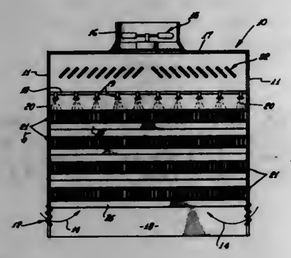
said casing, said support means, said means for wetting, said means for flexing and said means for imparting relative motion cooperating with one another and with the atmosphere of predictable dryness in the casing such that the sudden release of the wetted bristle tips will generate a multiplicity of fine liquid droplets in the dry gaseous anesthetic mixture enclosed within the casing and sufficient predetermined vaporization of the droplets will be accomplished as a result of the desired dryness of the gaseous anesthetic mixture to enable the moistening of said gaseous anesthetic mixture to said desired humidity independent of ambient atmospheric conditions.

3,345,048

COOLING TOWER DECK SLAT SPACER

Peter M. Phelps, Kentfield, Calif., assignor to The Fluor Corporation, Ltd., Los Angeles, Calif., a corporation of California

Filed July 13, 1964, Ser. No. 382,302
8 Claims. (Cl. 261—112)



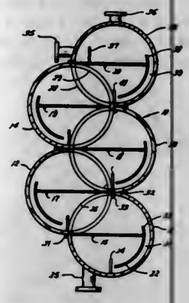
1. For combination in a cooling tower, a group of elongated slats usable as decking, and a like pair of frames positioning the slats in predetermined relation, the frames being spaced apart and each being defined by a parallel pair of slat bridging strips interconnected by cross pieces openly spaced lengthwise of said strips and in staggered succession, the cross pieces being transversely elongated and extending generally perpendicularly, with respect to the strips, said strips and cross pieces forming openings through which the slats project in generally parallel relation, and said cross pieces loosely retaining the slats for limited swinging movement as a group relative to the frame and between collapsed condition in which the slats are bundled close together for shipment, and extended condition in which the slats are mutually spaced apart for installation in the tower.

3,345,049

FLUID CONTACT APPARATUS

Raymond D. McGlothlin, 2202 Campus Court, Abilene, Tex. 79601

Filed Mar. 25, 1966, Ser. No. 537,374
10 Claims. (Cl. 261—114)



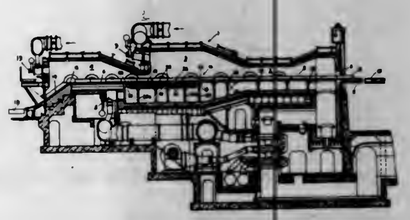
1. A fluid treating apparatus comprising a plurality of generally cylindrical casing sections with confronting side walls and disposed serially and with their axes horizontally, the confronting side wall portions of said sections having connecting apertures and being sealingly secured together to form a continuous fluid path through the apparatus and diametrically across all of said sections, tray structures diametrically traversing at least some of said sections, and feed and discharge connections in the apparatus walls for causing fluid flow progressively through the apparatus and transversely across said sections and said trays whereby the capacity of the apparatus may be increased by increase of the lengths of said sections, said tray structures, and said connecting apertures and independently of the diameter of said sections.

3,345,050

FURNACE SKID RAILS

James M. Guthrie, Crafton, Pa., assignor to Loftus Engineering Corporation, a corporation of Maryland

Filed Aug. 25, 1965, Ser. No. 482,405
13 Claims. (Cl. 263—6)



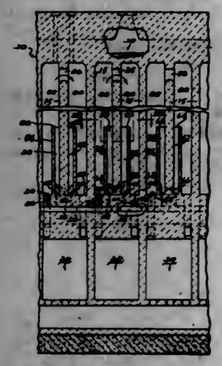
2. A skid structure for supporting metal articles to be heated in a pusher-type furnace, said skid structure comprising a substantially horizontal pair of laterally spaced parallel water-cooled pipes, two water-cooled headers severally secured to the opposite ends of said pipes, a water-cooled jack vertically supporting each header, water-cooled lateral braces extending outwardly from the opposite sides of each header, a row of closely arranged refractory blocks having load-bearing portions seated on said pair of pipes between said headers, and refractory rail elements borne by said blocks for slideably supporting the metal articles to be heated in said furnace.

3,345,051

COKE OVEN STRUCTURE AND METHOD OF HEATING

Joseph Van Ackeren, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Mar. 11, 1964, Ser. No. 351,085
5 Claims. (Cl. 263—15)



1. In a hairpin flue type horizontal coke oven battery the combination of heating elements therefor to provide uniform heating of high chambered coke ovens comprising,

a pair of adjacent flues on the same side of a coking chamber having a common vertical division wall therebetween and a base portion, said pair of flues operable alternately in "on" and "off" combustion condition,

said division wall having a passageway connecting the upper portion of said flues for conveying waste combustion gas from the "on" flue to the companion adjacent "off" flue,

a pair of spaced gas nozzles in the base portion of each of said flues, one of said pair of said gas nozzles positioned adjacent said common vertical division wall,

a source of rich fuel gas,

gas gun conduit means connecting said source of rich fuel gas with said pair of gas nozzles in each of said flues so that rich fuel gas is supplied from a common gas gun conduit to both of said gas nozzles in said "on" flue,

a vertical duct surrounding said gas nozzle in each of said flues adjacent to said division wall and extending upwardly therefrom, said duct having a top opening spaced upwardly from said flue base portion,

passageway means in said division wall adjacent said flue base portion connecting said respective vertical ducts with said adjacent flue to convey a portion of said waste gas from said adjacent flue into said vertical duct for mixing with and dilution of said rich fuel gas adjacent the base portion of said duct,

said vertical duct operable to convey the admixture of rich fuel gas and waste gas upwardly to said duct top opening, and

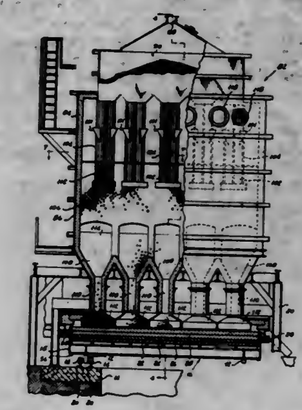
means to supply combustion air under pressure to said "on" flue adjacent said base portion for simultaneous burning of said rich fuel gas from said other nozzle at a location adjacent the base of said flue and the burning of said diluted rich fuel gas at a location adjacent said vertical duct top opening.

3,345,052

METHOD AND MEANS OF CALCINING LIMESTONE

Hubert L. Hall, Toronto, Canada, assignor, by mesne assignments, to Calcimatic International Ltd., Nassau, Bahamas, a corporation of the Bahamas

Continuation of application Ser. No. 344,012, Feb. 11, 1964. This application Oct. 14, 1966, Ser. No. 586,897
7 Claims. (Cl. 263—27)



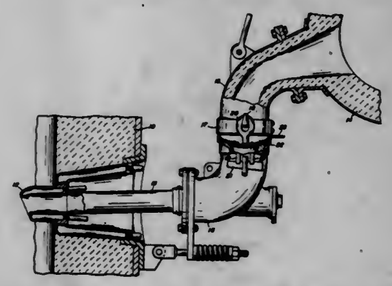
1. In a process for calcining limestone the steps of feeding a charge consisting of limestone to a calcining hearth through elongated confined zones, first preheating the charge while passing through said zones by indirect heat exchange with exhaust gases at a temperature below about 650° F. and then preheating said charge by direct heat exchange with exhaust gases at a temperature of above about 650° F., the process being such that lime having a sulphur content of less than about 0.03% by weight is produced.

3,345,053

APPARATUS FOR STOPPING AIR FLOW INTO BLAST FURNACES

Thomas E. Clair, Peters Township, Washington County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

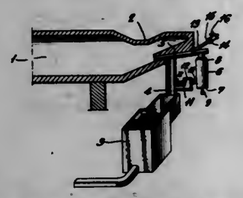
Filed Mar. 16, 1965, Ser. No. 440,167
2 Claims. (Cl. 266—30)



1. The combination, with a blast-furnace penstock which includes upper and lower separable refractory lined elbows having vertical legs which normally abut end-to-end and releasable means coupling said vertical legs together, of a safety device shutting off flow of wind through said elbows while the furnace undergoes repairs, said device comprising a circular metal dish concave on the top and convex on the bottom and being of a diameter ap-

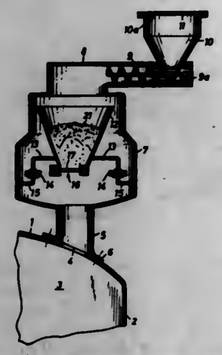
proximately equal to the diameter of said vertical legs, and an integral handle extending from one edge of said dish, said dish being removably slipped between the normally abutting ends of said vertical legs when said legs are separated and said coupling means released, and thereafter held in place by said coupling means.

3,345,054
STEEL MELTING AND MORE PARTICULARLY GAS FIRED REGENERATIVE FURNACES
Sergei Mikhailovich Andonjev, Kharkov, Petr Gerasimovich Glazkov, Donetsk, Vladimir Alexandrovich Kuchin, Kharkov, Konstantin Ivanovich Makarov, Moscow, Nickolai Ivanovich Pevny and Alexandr Markovich Pochtman, Kharkov, Pavel Alexandrovich Tesner, Moscow, and Oleg Vladimirovich Filipjev, Kharkov, U.S.S.R., assignors to Gosudarstvenny Nauchno-Issledovatelsky i Proektny Institute Metallurgicheskoi Promyshlennosti
Filed July 18, 1963, Ser. No. 295,886
8 Claims. (Cl. 266—33)



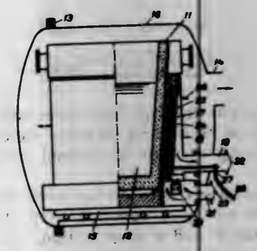
1. A regenerative furnace fired by a natural gas with a high and luminous flame, comprising a firing throat, air regenerators, conduits for feeding hot air from the regenerators to the firing throat, burner means arranged in the firing throat, means constituting a chamber for a partial combustion of a part of the natural gas accompanied by creating carbon particles, means connecting the chamber with the burner means, and means for feeding gas and oxidizer into the chamber.

3,345,055
ADDITIVE MEASURING DEVICE FOR VACUUM DEGASIFICATION VESSELS
Horst Kutscher, Dortmund-Berghofen, and Eugen Vopel, Dortmund, Germany, assignors to Dortmund-Horder Hüttenunion Aktiengesellschaft, Dortmund, Germany
Filed June 16, 1964, Ser. No. 375,447
Claims priority, application Germany, July 16, 1963, D 27,173
6 Claims. (Cl. 266—34)



1. In apparatus having a vacuum chamber for degasifying a metal melt, device for adding measured quantities of additive to the melt as the melt is being degasified, comprising a container for the additive in vacuum-tight communication with the vacuum chamber, said container having a variable opening for discharging additive contained in said container into the vacuum chamber, means for weighing the additive contained in said container, indicating means located externally of the vacuum chamber and operatively connected with said weighing means for indicating the weight of the additive measured thereby, and means located externally of the vacuum chamber and operatively connected with said additive container for infinitely varying said discharge opening between fully closed and fully opened conditions thereof so as to discharge a continuously variable quantity of the additive from said container into the vacuum chamber.

3,345,056
VACUUM DEGASSING APPARATUS
Gosta Karlsson and Kåre Folgerö, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Nov. 16, 1964, Ser. No. 411,198
Claims priority, application Sweden, Nov. 20, 1963, 12,786/63
4 Claims. (Cl. 266—34)



1. Means for degassing molten metal such as steel melts comprising a gas-tight closable, evacuable tank, a ladle positioned in said tank, means in said tank forming, close to said ladle, a space gas-tightly sealable in relation to said tank, a low frequency, multiphase, electromagnetic stirrer in said space, and exposed to fluid therein said space forming means comprising a metallic shell closed around the stirrer, and means for connecting said space with a fluid pressure higher than the vacuum in the tank.

3,345,057
EVAPORATION CHAMBER FOR A BASIC OXYGEN FURNACE
Hartman Mitchell and Roy W. Walker, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 15, 1964, Ser. No. 418,456
9 Claims. (Cl. 266—35)

1. In an evaporative chamber for treating the effluent from a basic oxygen furnace, the improvement comprising:

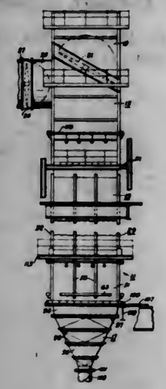
(a) a frame including spaced apart substantially vertical conduit members;

(b) means for supplying cooling fluid to said conduit members from a source of cooling fluid;

(c) downwardly and inwardly sloping panels disposed between and secured to adjacent vertical conduit members, said panels being interconnected so as to form the walls of said chamber;

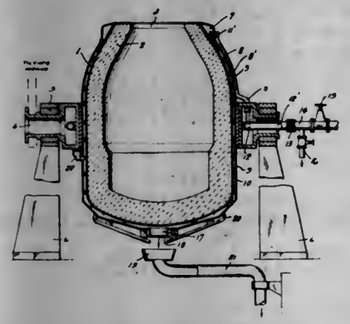
(d) a horizontal conduit communicating with each vertical conduit adjacent the upper end thereof and having a longitudinally extending aperture in its wall whereby cooling fluid flowing in said horizontal conduit discharges therefrom onto an adjacent panel and forms a fluid film thereon; and

(e) fluid receptive means mounted to said panels where-



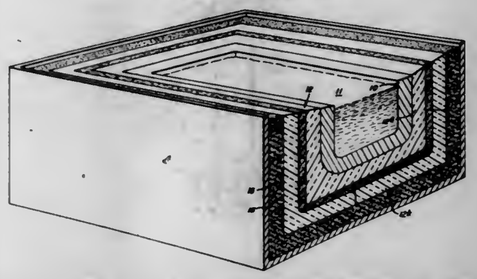
by said cooling fluid coursing down said panels is collected in said receptive means and redistributed therefrom over the surface of an adjacent lower panel.

3,345,058
COOLING MEANS FOR TILTING CONVERTER
Carlo Pere, Genoa, Italy, assignor to Siderforni S.p.A., Genoa, Italy
Filed Aug. 23, 1965, Ser. No. 481,478
Claims priority, application Italy, Mar. 8, 1963, 5,125/63
13 Claims. (Cl. 266—36)



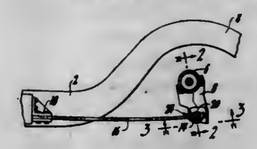
1. In an apparatus for treating molten material, a wall defining a chamber in which said molten material is treated, said chamber having a top opening; pivot means turnably supporting said wall for angular movement about a substantially horizontal axis; a source of coolant; coolant dispensing means including an annular coolant chamber arranged about said opening externally thereof for accommodating and dispensing coolant onto an outer surface of said wall; distributing means externally adjacent said wall for distributing coolant dispensed by said coolant dispensing means at least about a major part of said wall; and conduit means operatively connecting said source with said dispensing means for enabling supply of coolant to the latter, said conduit means including stationary first conduit means arranged in the region of said pivot means and communicating with said source and second conduit means communicating with said coolant chamber and said first conduit means in the region of said pivot means and being turnable with said wall relative to said first conduit means.

3,345,059
CRUCIBLE FOR HOLDING MOLTEN METAL
Joseph K. Swindt, Manhattan Beach, Calif., assignor to United States Steel Corporation, a corporation of Delaware
Filed Mar. 12, 1965, Ser. No. 439,238
1 Claim. (Cl. 266—39)



A crucible for holding molten metal comprising a metal box, a lining of thermal-insulation powder therein, an outer shell of solid thermal insulation seated in said lining, a second lining of thermal-insulation powder in said outer shell, an inner shell of solid thermal insulation seated in said second lining and a container of refractory metal seated in the said inner shell.

3,345,060
LEAF SPRING ASSEMBLY
Von D. Polhemus, Harold E. Boettger, and Manfred A. Isaacson, Pontiac, and Ming-Chih Yew, Utica, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 504,011
3 Claims. (Cl. 267—54)

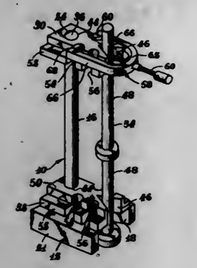


1. In combination, a longitudinally extending blade member having a deformed portion thereof defining an upwardly bowed semi-circular wall generated about a transverse axis, a saddle bracket straddling said blade in longitudinal alignment with said axis, said bracket having longitudinally spaced transverse portions abutting the upper surface of said blade member connected by parallel side wall portions extending beyond the lower surface of said blade, and means forming a downwardly bowed semi-circular wall in said side walls generated about said transverse axis.

3,345,061
MACHINING FIXTURE
Robert L. Schaefer, 6121 W. Barry, Chicago, Ill. 60634
Filed Nov. 23, 1964, Ser. No. 413,242
4 Claims. (Cl. 269—246)

1. A fixture for securely holding an elongated substantially circular object during machining operations, said fixture comprising a base, a shaft normal to said base and having a lower end fixed to said base, a first block member slidably mounted along said shaft in spaced relationship with said base, a second block member slidably mounted along said shaft and positioned intermediate said base and said first block member, a cut-out portion in each of said first and second blocks for receiving

spaced, substantially equal diameter portions of said object therein, means for aligning and fastening said blocks such that the cut out portions are substantially aligned with each other, said cut out portions being of substan-



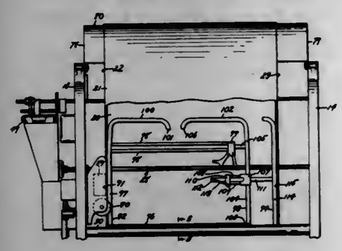
tially the same configuration, and a clamp engaging at least one of said block members and receiving said object in said one block during machining operations.

3,345,062

CLOTH LAYING MACHINE FOR TUBULAR KNIT GOODS, WITH MAGNETIC ALIGNMENT OF SPREADER FRAME

Edward M. Merrill, Sayville, N.Y., assignor to Cutting Room Appliances Corp., New York, N.Y., a corporation of New York

Filed Aug. 5, 1965, Ser. No. 477,372
3 Claims. (Cl. 270—31)



1. In a cloth laying machine for laying tubular knit piece goods upon a cloth laying table, the improvement comprising:

(a) a reciprocating carriage having a principal axis of reciprocation;

(b) means for supporting a supply of knit piece goods upon said carriage to dispense a tubular web of cloth having a principal axis parallel to said axis of reciprocation of said carriage;

(c) a pair of positively driven cooperating feed rollers in juxtaposed non-contacting relation, having axes of rotation perpendicular to said axis of reciprocation and rotating in mutually opposed constant directions about said axes of rotation in response to reciprocation of said carriage in either of two directions;

(d) a divided element having a pair of parallel edges of generally planar configuration and of width greater than the interstice existing between said feed rollers adapted to be positioned within said tubular web and supported in generally vertical position by said rollers;

(e) means for guiding said tubular web from said supply supporting means to said divider elements; and

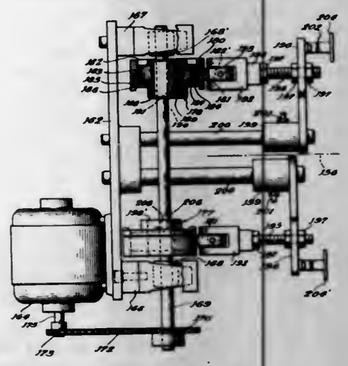
(f) magnetic means for maintaining one of said parallel pair of edges in a constant vertical plane.

3,345,063

ALTERNATING JOGGER

Kermit E. Swanson, Naperville, Ill., assignor to R. R. Donnelley & Sons Company, a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,785
5 Claims. (Cl. 271—44)



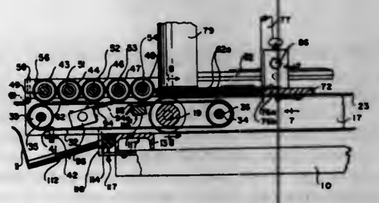
1. Jogger means for a sheet gathering machine that has a sheet supply box provided with reciprocating gripper means for removing successive sheets from the bottom of a supply in the box, and an upright front stop above said gripper means, said jogger means comprising a pair of sheet edge contacting pads equally spaced on opposite sides of a vertical plane passing through said gripper means and said front stop, and means for reciprocating said jogger means along a line generally coplanar with said sheets, said reciprocating means including means for moving said contacting pads alternately into contact with said sheets first on one side of said vertical plane and then on the other side thereof whereby at least one portion of one edge of each sheet will be aligned with a corresponding portion of one edge of all other sheets in said stack in the vicinity of said vertical plane.

3,345,064

STACKING DEVICE

Edward Vandenberg, 426 Findlay St., Cincinnati, Ohio. 45214

Filed May 13, 1966, Ser. No. 549,874
6 Claims. (Cl. 271—58)



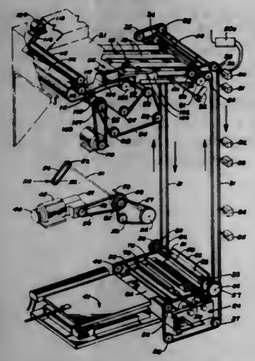
1. A device for stacking substantially flat articles which comprises a first continuous conveyor belt means, spaced roll means supporting said first conveyor belt means, a second continuous conveyor belt means, spaced roll means supporting the second conveyor belt means, said conveyor belt means having substantially parallel upper course, an upper course of the second conveyor belt means being elevated above an upper course of the first conveyor belt means, one of the roll means for supporting the second conveyor belt means being intermediate the roll means supporting the first conveyor belt means, slot means being provided in said one of the roll means, the upper course of the first conveyor belt means extending through said slot means, whereby the first and second conveyor belt means overlap, stop means adjacent the second conveyor belt means for arresting articles thereon in a stack with a trailing edge portion of each article overlying said one of the roll means and extending free of said belt means, means for holding articles down on the upper course of the first conveyor belt means as the articles approach said one of the roll means, and means for advancing the conveyor belt means in a direction to move articles from the first to the second conveyor belt means, a leading edge of each article on the first conveyor belt means being received under the trailing edge portion of the articles on the second conveyor belt means, the articles being stacked on the second conveyor belt means.

3,345,065

SHEET TRANSPORT APPARATUS

Walter V. Shearer, Longmeadow, William R. Beck, Jr., Wilbraham, and Arnold M. Wheelock, Sr., Southwick, Mass., assignors to The Plastic Coating Corporation

Filed Dec. 22, 1964, Ser. No. 420,404
8 Claims. (Cl. 271—79)



1. A sheet transport apparatus adapted to carry a flexible sheet from one location to another, which comprises in combination;

a pair of continuous conveyor chains, which are of the same length and spaced apart in vertical, parallel planes;

a plurality of pairs of sprockets, which engage the said chains and keep them taut;

an electric motor connected through a reducing gear to one of the said pairs of sprockets;

an electrically operated brake on the shaft of the said motor;

at least one sheet gripper, which is spring loaded to keep it closed and is attached at its ends to the said chains, with its length normal to the said vertical planes;

an automatic, electrical control means for stopping the electric motor, and operating the brake on its shaft to stop the movement of the conveyor chains, to position the gripper in a predetermined location, and then to release the brake and resume the operation of the electric motor;

a means for causing the said gripper to open as it is stopped at the said predetermined location, and then to permit it to close while in that location;

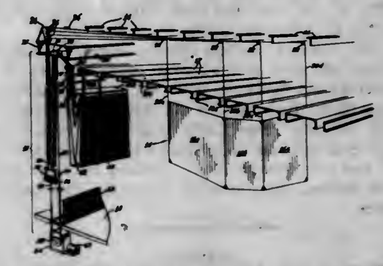
and a second means for causing the said gripper to open and then to close while the gripper is in motion, located along the course of travel of the said chains at a position remote from that of the first means for opening the gripper.

3,345,066

SCENERY HANDLING APPARATUS

George C. Izenour, 10 Alston Ave., New Haven, Conn. 06515

Filed July 22, 1964, Ser. No. 384,386
12 Claims. (Cl. 272—23)



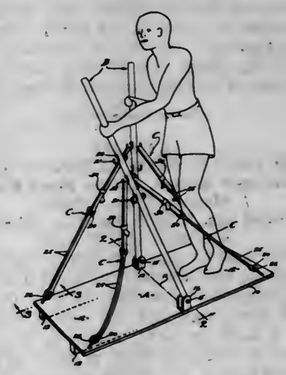
1. Scenery handling apparatus for operating a plurality of lines secured to a unit of scenery, where said lines extend vertically from the scenery unit and laterally to the handling apparatus, said apparatus including a displaceable unit having a pulley, guiding means for said lines located above said pulley and disposed along the lines between one side of said pulley and the unit of scenery, supporting and individually adjustable securing means for the portions of said lines extending from the opposite side of said pulley, and means to reversibly operate said displaceable unit for lifting and lowering the scenery unit alternately, said supporting and securing means including a stationary clamp individual to each of said lines for locking its related line in adjustment, and means, cooperable with each of said lines and operable even while each said line is tensioned by a scenery unit for adjusting the point along the length of each line that is engageable by its related clamp, the adjusting means being operable on one of said lines while the clamp related to that line is released.

3,345,067

EXERCISER WITH ELASTIC ELEMENTS CONNECTING SUPPORTING BASE AND PIVOTED POLE

Earl W. Smith, 230 W. Shields, Fresno, Calif. 93705

Filed Apr. 24, 1964, Ser. No. 362,330
4 Claims. (Cl. 272—82)



1. Exercising apparatus comprising:

(a) a flat horizontally disposed base member with opposite sides spaced substantially the same as the width of a person's shoulders, and having a transverse hinge line extending between the sides and

having opposite portions remote from said line and at least one of said portions being a standing portion;

(b) a pair of individual and entirely independently operable disposed poles, each with its lower end pivoted to the base at said hinge line and at opposite sides of the base and each aligned with a shoulder of the person respectively;

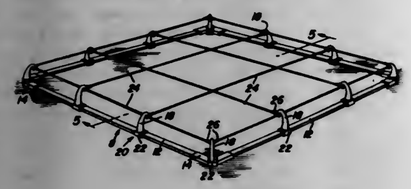
(c) and pressure exerting means comprising elastic elements and each trained from opposite sides of each individually operable pole substantially above the base respectively and to the remote positions of the base member respectively, whereby a person standing upon the base establishes a stable platform thereof and can flex his body muscles by both pushing and pulling independently upon the two individual poles.

3,345,068

HOPPING GAME APPARATUS WITH ELEVATED ELASTIC AREA SUBDIVIDING STRANDS

Hamilton M. Bowen, Spring Valley, Calif., assignor of forty percent to Josephine Anderson, La Mesa, and to Alfred Einstein, Vera Lustig, and Howard Harris, all of National City, Calif., jointly and undivided twenty percent of the entire right

Filed Oct. 27, 1964, Ser. No. 406,816
11 Claims. (Cl. 273—1)



7. A hopping game device comprising an area-enclosing peripheral horizontal frame for mounting on a supporting surface, a plurality of spaced essentially vertical supports located at substantially equally spaced points entirely about said frame and orientated into generally opposed pairs, means mounting said supports on said frame for projection vertically upward therefrom, and a plurality of elongated flexible strands each connected under tension between and directly to a selected one of the various opposed pairs of supports in vertically spaced relation above said frame and dividing said enclosed area into a plurality of smaller substantially equal subdivisions.

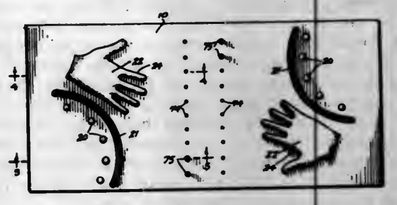
3,345,069

ELECTRIC FINGER GUESSING GAME

Matthew Kuziak, Turkey Roost Road, Monroe, Conn. 06468

Filed Jan. 7, 1965, Ser. No. 423,905
6 Claims. (Cl. 273—1)

1. A guessing game apparatus comprising a game board having opposite and reversely arranged half sections for respective independent operation by each of two players facing each other, each said half section having upon its upper side a hand simulating means having a palm portion and five outstretched finger portions directed toward the other half section, five actuating means upon its upper side arranged in substantial correspondence to the finger tips of said hand simulating means for simultaneous positioning in actuating relation of the fingers of a hand of a player disposed in corresponding position to the finger portions of said hand simulating means whereby a plurality of said actuating means may be simultaneously actuated, a visual signal means disposed in relation to the respective finger portions of said hand simulating means adapted upon actuation to visually identify the respective finger portions, and means connected between said



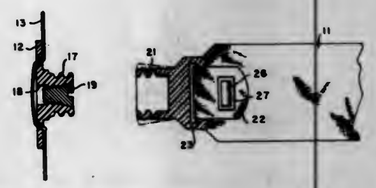
respective actuating means and the signal means of a correspondingly positioned finger portion to cause instant actuation of said respective signal means simultaneously with the finger actuation of said respective actuating means.

3,345,070

FLAG BELT DEVICE WITH A VARIABLE PULL SCREW-ON SNAP-OFF COUPLING

Porter Carol Wilson, 320 E. Elvira Road 85706, and Norman Carlyle Adams, Box 1457 85702, both of Tucson, Ariz.

Original application Sept. 9, 1963, Ser. No. 307,480, now Patent No. 3,251,109, dated May 17, 1966. Divided and this application Feb. 4, 1966, Ser. No. 536,190
4 Claims. (Cl. 273—55)



1. A flag tag device for detachably securing a flag to a belt comprising at least one mounting pad having belt slits formed therein for receiving said belt positioned on said belt; an externally threaded plug formed on and projecting from said mounting pad; said threaded plug being formed of a tough, plastic material; an internally threaded socket for threadably receiving said plug; and a flag secured to said socket, said plug including a tension set screw threaded therein and said set screw carrying means for varying the diameter of said threaded plug, thereby providing a variable pull screw-on snap-off coupling.

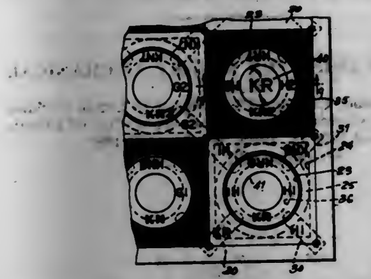
3,345,071

GAME APPARATUS INCLUDING MEANS FOR PRODUCING A PRINTED RECORD

Armas H. Nekton, 32 Sunset Road, Valley Stream, N.Y. 11580

Filed Sept. 9, 1964, Ser. No. 395,125
5 Claims. (Cl. 273—136)

4. Game board recording apparatus comprising a game board having squares marked thereon, a pocket below each square, an opening through each of said squares, a member in each pocket insertable and removable through one of the openings and having on the bottom thereof printing indicia identifying the particular location of the square with which it is associated, and at least one playing piece mountable in any one of said members and detachably connectable thereto and having on the bottom thereof printing indicia identifying the piece, the playing



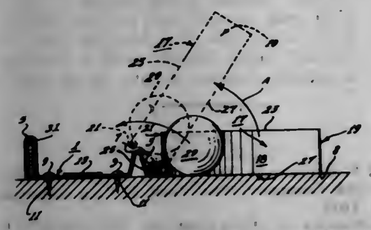
piece and removable member being so positioned with respect to each other as to permit inking of the printing indicia on the bottoms thereof.

3,345,072

GOLF PUTTING PRACTICE DEVICE

Frank V. Martin, 214 Roosevelt Blvd., Brigantine, N.J. 08203

Filed Mar. 5, 1965, Ser. No. 437,498
11 Claims. (Cl. 273—177)



1. A golf putting practice device comprising, in combination, a mounting member adapted to rest on a flat, horizontal support, a ball receiving member closed at one end and having an entrance opening at the opposite end thereof for reception along the plane of said support of a ball directed toward said ball receiving member along said plane, and means connecting said ball receiving member at its said closed end to said mounting member for movement relative thereto from a first, relatively lower position wherein said ball receiving member rests on said support in forward extension of said mounting member to a second, relatively elevated position in angular relation to said mounting member and back to said first position, said ball receiving member opening being of such size and shape and being so located that, when said ball receiving member is in its said first position, said opening rises upwardly from the level of said support whereby the ball, upon reaching said opening while moving along said support in a direction toward said opening can pass directly through said opening and into said ball receiving member free of any impediments.

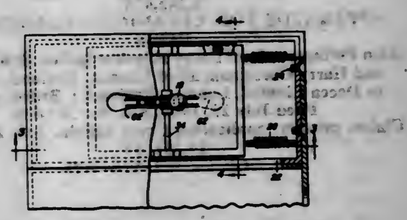
3,345,073

GOLF PRACTICE DEVICE

John D. Hoffman, 3007 Morningside NE., Albuquerque, N. Mex. 87110

Filed Oct. 21, 1964, Ser. No. 405,351
6 Claims. (Cl. 273—197)

1. A golf practice device comprising a rigid base unit, said base unit including a flat bottom, a horizontal support frame orientated in spaced relation to said base unit above said flat bottom, an elongated arm pivotally mounted at one end on said frame, a practice ball mounted on the other end of the arm, return spring means resiliently biasing said arm to a generally vertical position with the ball orientated above said frame in a tee position for engagement by a golf club, and resilient mounting spring means extending between said frame and said base unit and supporting said frame above said flat bottom for floating movement relative thereto, said mounting spring means including a plurality of expanded compression coil springs oriented vertically between and fixed to the flat bottom and the frame spaced thereabove, said base unit including front and rear walls fixed to the flat bottom and



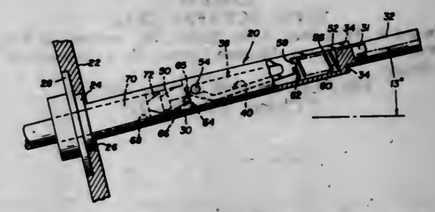
projecting vertically thereabove and spaced from the opposed ends of the frame, said mounting spring means further including tensioned springs engaged between said walls and the opposed ends of said frame, said compression springs and tensioned springs constituting the sole support means for said frame whereby a free floating movement of the frame in all directions relative to the base unit is achieved, a platform overlying said frame in spaced relation thereabove, an elongated slot in said platform, the upper portion of said arm projecting through said slot with the ball oriented above said platform, the width of said slot being sufficient to permit rotational movement of the arm and ball therethrough.

3,345,074

RECORD CHANGER SPINDLE

Michael H. Estkowski, St. Joseph, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan

Filed Sept. 3, 1965, Ser. No. 484,895
10 Claims. (Cl. 274—10)

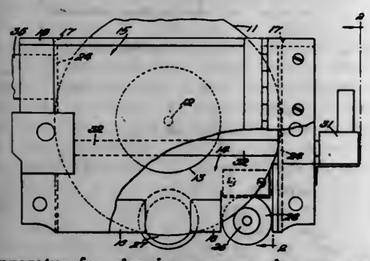


1. In a record changer spindle of the type which is fixedly secured to a turntable for rotation therewith, the improvement comprising, in combination, a spindle body, a longitudinal opening in the side of said spindle body, a record holding member having a record engaging surface thereon, said holding member being positioned within said spindle body and being movable axially and radially with respect to said spindle body in said longitudinal opening between an upper radially retracted position wherein said holding member is withdrawn into said spindle body and a lower radially extended position wherein said record engaging surface projects outwardly of said spindle body through said opening so as to overlie the centerhole edge portion of a record in playing position on said turntable, actuating means for moving said hold-

ing member upwardly away from said turntable when it is desired to release a record to the turntable for playing, means in response to the upward movement of said holding member for retracting said holding member into said spindle body, means for moving said holding member to its radially extended position and means for moving said holding member downwardly toward said turntable after the record to be played is positioned on said turntable, whereby said record engaging surface will engage against the top of said record adjacent the centerhole edge thereof and urge the same toward said turntable to provide for conjoint rotation of said record with said turntable.

3,345,075
APPARATUS FOR CLEANING GRAMOPHONE DISCS

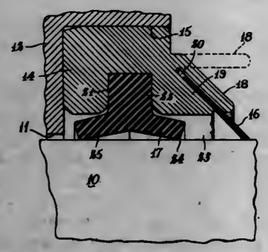
Alan Phillipson, Basil Harry Royston Spiller, Robin Smith, and Harry Cheesman, all of London, England, assignors to Decca Limited, London, England, a British company
Filed July 20, 1964, Ser. No. 383,839
Claims priority, application Great Britain, July 24, 1963, 29,381/63
7 Claims. (Cl. 274—47)



1. Apparatus for cleaning a gramophone record disc comprising means for supporting the disc in a vertical plane for rotation about its axis, means for directing jets of gas on to the disc to cause the disc to rotate so that dust particles are removed by the combined effect of centrifugal force and the gas jets, a latch for supporting the rim of the disc, said latch being withdrawable to release the disc from the apparatus, and guide means adapted to bear against the faces of the disc.

3,345,076
WIPER-SCRAPER SEAL

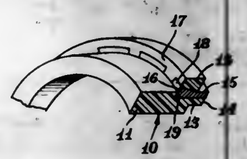
Edward A. Wheelock, Lake Zurich, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois
Filed Apr. 21, 1965, Ser. No. 449,716
5 Claims. (Cl. 277—24)



1. A sealing device for a rod passing through an opening in a housing, said device comprising a rigid single-piece annular holder for encircling said rod, said holder being press-fitted into said housing and having a conical nose section in which is formed a conical recess opening upon said rod, a sheet-metal helically wound strip loosely retained in said recess and having an internal diameter in its free state smaller than the outer diameter of said rod to bear resiliently upon and scrape said rod, and an elastomeric wiper removably retained in said holder adjacent said helically wound strip.

3,345,077
SEALING WASHER FOR ROTARY MECHANICAL SEAL

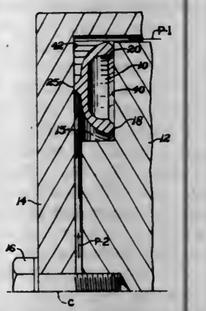
Eugene Novosad, Chicago, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois
Filed July 15, 1965, Ser. No. 472,109
5 Claims. (Cl. 277—96)



1. A sealing washer for a mechanical seal or the like, said washer comprising a main annular body of synthetic plastic material moldable under heat and pressure, a flange extending radially from the main body, an axially extending annular nose at one end of the main body, and a ring of a metallic material which remains hard under such heat and pressure forming a part of said nose, said ring extending through said flange and having radially disposed surfaces exposed to the exterior of the washer at both axial ends of said ring, said ring forming the radially outer part of said nose, and said nose having a radially disposed surface thereon which is co-planar with one of the radially disposed surfaces on the said ring.

3,345,078
SEAL ASSEMBLY

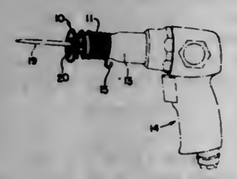
Ludwik S. Bialkowski, Troy, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 346,487, Feb. 21, 1964. This application Sept. 19, 1966, Ser. No. 580,509
2 Claims. (Cl. 277—205)



1. A seal assembly for static sealing service in fluid pressure equipment, said assembly comprising:
(a) two parts having laterally spaced, opposing, plane parallel sealing surfaces mounted for displacement relatively toward each other;
(b) an annular metallic sealing element between said sealing surfaces against which said parts are adapted to exert sealing pressure axially of said element, said element having:
(c) an annular rigid resilient metal body having a central portion extending radially of the body with radially outer and radially inner curved end portions of uniform thickness which terminate in two radially spaced extremity portions which are thicker than said curved portions, and which project axially of the body to define a generally channel-shaped cross section for said body;
(d) two annular line contact sealing edges on said body, one being on the thick radially outer extremity and the second being on the thick radially inner extremity, said sealing edges being disposed in a common plane normal to the axis of said sealing element and both being directed axially of the body and engaged with said sealing surface of one of said parts;
(e) an annular ridge projecting from said central portion of said body on the side thereof opposite said thick extremities, said ridge being radially intermediate said two curved end portions of said body;
(f) a third annular line contact sealing edge on said ridge directed axially of said sealing element opposite the aforesaid two sealing edges and engaged with said sealing surface of the other of said parts; and
(g) said metal body of said sealing element being resiliently deflectable along the curved end portions of said body in response to an axial load provided by said two parts.

3,345,079
SPRING RETAINER FOR POWER-OPERATED TOOL

John L. Wickham, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Oct. 21, 1965, Ser. No. 499,486
2 Claims. (Cl. 279—19.6)

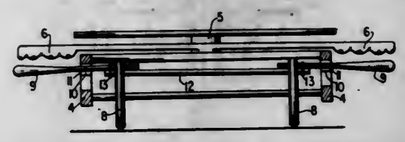


1. The combination with a power-operater tool, of a spring retainer for a tool element mounted in a barrel portion of the tool, said spring retainer having means engaging the barrel of the tool for seating said spring retainer on the tool, said spring retainer having convolutions terminating forwardly of the barrel in a loop, the loop having a portion thereof formed radially inwardly of the convolutions for normally engaging a cooperating portion of the tool element, thereby to retain the tool element against ejection out of the barrel during operation of the tool the portion of the loop engaging the tool element being movable radially away from the tool element to facilitate manual removal of the tool element from the barrel of the tool, and the end of the loop being received back underneath itself, thereby improving the resiliency of said spring retainer and the retention of the tool element.

3,345,080
WHEELED SLED WITH HAND BRAKE

Seymour A. Schneiderman, 195-03 50 Ave., Flushing, N.Y. 11365
Filed Mar. 24, 1966, Ser. No. 537,136
1 Claim. (Cl. 280—8)

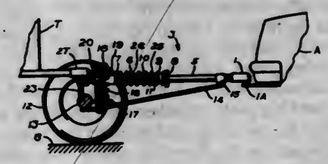
In a dual purpose wheeled sled comprising a platform for mounting a rider, runners connected to said platform, removable front and rear wheels connected to said runners between said runners, and hand steering means operable with and connected to said runners, said hand steering means mounted at the forward end of said platform and outside the runner base of said sled so that said sled may be steered by a rider in a prone position on said platform, an improved hand brake mechanism engageable with the front wheels of said sled and mounted at the forward end of said platform so that said sled may be braked by a rider in prone position on said platform, said hand brake mechanism including handles mounted below said steering means at a distance from said hand steering means such that a rider in prone position on said platform may engage said handles without removing his



hands from said hand steering means, a transverse bar running parallel to an axis passing through the center of the front wheels, said transverse bar being in direct contact with said front wheels when said hand brake means is engaged and out of contact above said front wheels when said hand brake means is disengaged, said handles being pivotably connected to said sled in parallel overlapping relationship to said transverse bar at a point outside the wheel base of said front wheels so that movement of said handles in an upward direction causes engagement of said transverse bar with said front wheels, and means connecting said handles with said transverse bar to guide said handles into contact with said transverse bar.

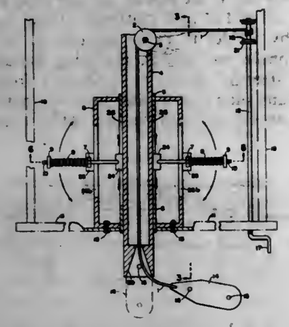
3,345,081
TRAILER DOLLY

Bernard O. Hartwig, Rte. 1, Box 33, Tomahawk, Wis. 54487
Filed Oct. 12, 1965, Ser. No. 495,147
6 Claims. (Cl. 280—476)



1. A dolly for use in towing a trailer behind a tractor comprising first and second members telscoping one within the other, a projection on the inner of said members extending through a longitudinal slot in the outer of said members, a retainer on said outer member, first resilient means interconnecting said projection and said retainer to permit limited longitudinal motion between said members, a first hitch portion rigid with said first telescoping member adapted to be connected to a mating hitch portion on said tractor, a second hitch portion rigid with the second telescoping member adapted to be connected to a mating hitch portion on the trailer, a crossbar adjacent said second member, rigid connecting means between the crossbar and said first member, second resilient means acting between the crossbar and said second member to permit limited vertical motion of said second member, a stabilizing link connecting said second member to a remote point on the crossbar to limit lateral movement of said second member, and support means attached to the crossbar to permit easy movement of said dolly over a supporting surface.

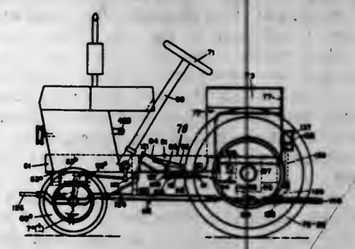
3,345,082
FLEXIBLE CABLE TOWING HITCH
William Hammond Atkins, 446 Elm St., Clarksdale, Miss. 38614
Filed Jan. 28, 1965, Ser. No. 428,620
9 Claims. (Cl. 280—477)



1. A flexible cable towing hitch of the character described comprising in combination, a housing member and a draw tube member, each having a centrally disposed lengethwise channel, said housing member being attached to the frame of a tow vehicle, means supporting said draw tube member with the same reciprocally telescoping into the channel of said housing member and projecting therefrom in forward and rearward relation thereto, a tow cable received and extending through the channel of said draw tube member from the forward end and projecting rearwardly therefrom, corresponding means on said housing member and draw tube member limiting the forward and rearward reciprocal movement of the draw tube in said housing member, means biasing the center of said draw tube in a normally centrally disposed position lengthwise of said housing member, said draw tube member having a configuratively shaped chamber in the rear end thereof provided with a centrally disposed aperture admitting the passage of said tow cable therethrough, a hitching plate member correspondingly shaped at its forward end to be received by said chamber and having attached thereto said tow cable, means on said hitching plate member for attachment of a towed object, corresponding locking means on the forward end of said hitching plate member and receiving end of said draw tubes for securing said plate to the tube, directional guiding means on the forward end of said draw tube receiving the tow cable such as to cause the same to be freely drawn therethrough, cable take-up means disposed in relation to the forward end of the draw tube and housing member and connected with said cable operable to cause said hitching plate member to be drawn by the cable taken up thereon into the shaped rear chamber of said draw tube member.

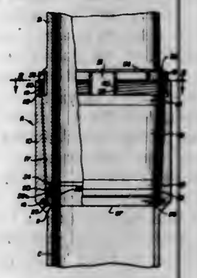
3,345,083
POWER DRIVEN VERTICALLY ADJUSTABLE TRACTOR HITCHES
Robert E. Roberson, 3520 Landwehr Ave., Northbrook, Ill. 60062
Original application Sept. 27, 1962, Ser. No. 227,125, now Patent No. 3,250,340, dated May 10, 1966. Divided and this application May 6, 1966, Ser. No. 548,084
8 Claims. (Cl. 280—490)

1. A motor vehicle for delivering traction to an implement; such motor vehicle including a frame, a front hitch element extending longitudinally of the frame beneath said frame; means to support said front hitch element to the frame comprising a horizontal transverse axial pivotal connection between said hitch element and the frame, said pivotal connection being located proximate to the central portion of the frame from front to rear and the plane which includes said front hitch element being below the frame and the transverse axial pivotal connection being above said plane; and power means to rock said front hitch element on said pivotal connection, comprising means to apply force to the rear end portion of the hitch at a level lower than said transverse pivotal connection, wherein the means to rock the front hitch element on said pivotal connection comprises a rearward extension of said hitch element beyond the pivotal connection, together



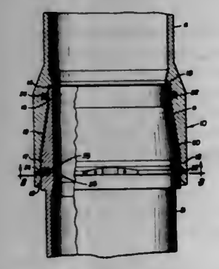
with means to apply force vertically to said rearward extension; wherein the means to apply force vertically to the rearward extension comprises a rear hitch element beneath the rear portion of the frame, a horizontal transverse pivotal connection between said rear hitch element and the frame, the rear hitch element extending forwardly beyond such rear hitch element pivotal connection to the frame, to a location proximate to the rearward extension of the front hitch element, vertical force transmitting connections between the forward portion of the rear hitch element and the rear end portion of the rearward extension of the front hitch element, and means to shift the rear portion of the rear hitch element vertically.

3,345,084
PIPE TOOL JOINTS
James W. E. Hanes and Joe H. Hynes, Ventura, Calif., assignors, by mesne assignments, to Ventura Tool Company, Ventura, Calif., a corporation of California
Filed Feb. 8, 1965, Ser. No. 430,816
9 Claims. (Cl. 285—27)



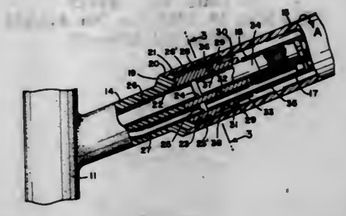
7. In a tool joint: a box member having an inner circumferential tapered sealing surface; a pin member receivable in said box member and having adjacent its end a deflectable circumferential portion engageable with said tapered sealing surface to be forced laterally inwardly thereby and provide a circumferential seal between a tapered external periphery of said circumferential portion and said sealing surface; said box member having internal threads at its outer end; said pin member having a peripheral groove; a laterally expandable and contractable lock ring rotatable in said groove but retained against axial movement by the sides of said groove and having an external thread meshable with said internal thread, the depth of said groove and the radial thickness of said ring being such that engagement of said ring will contract laterally in said groove to nonmeshing relation to said internal thread to thereby enable longitudinal and non-rotary insertion of said pin member in said box member, after which said ring expands in said groove to mesh its threads with said internal thread to secure said members to one another to maintain said circumferential seal; said ring having means thereon for enabling said ring to be rotated on said pin member with its thread in mesh with said internal thread whereby to force said pin member more fully within said box member.

3,345,085
AUTOMATICALLY ALIGNABLE AND CONNECTIBLE TOOL JOINT
James W. E. Hanes, Ventura, Calif., assignor to Huntsinger Associates, a joint venture
Filed Feb. 8, 1965, Ser. No. 430,911
12 Claims. (Cl. 285—27)



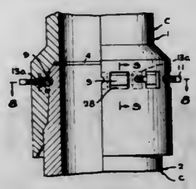
1. In a tool joint: a box member; a pin member receivable in said box member; said pin member having a first cylindrical peripheral surface at its outer end section, a second cylindrical peripheral surface of a greater diameter than said first surface spaced longitudinally therefrom, and a third peripheral tapered surface tapering from said second surface to said first surface; said box member having a first inner cylindrical surface at its inner section conforming to said first peripheral surface, a second inner cylindrical surface at its outer end section conforming to said second pheripheral surface, and a third inner tapered surface tapering from said second inner surface to said first inner surface and conforming to said third peripheral tapered surface; said tapered surfaces each being steeply inclined to the respective axes of said pin member and box member at a self-locking angle, said tapered surfaces being substantially longer than said first peripheral cylindrical surface of said pin member and substantially longer than said second inner cylindrical surface of said box member; one of said members having laterally movable lock means thereon; said other of said members having lock receiving means thereon for receiving said lock means upon full reception of said pin member in said box member to lock said members together against relative longitudinal movement with said first, second and third peripheral surfaces within said first, second and third inner surfaces, respectively, the axial length of the first inner cylindrical surface of said box member being less than the axial length of the first peripheral surface of said pin member, whereby said third peripheral surface is rendered free from wedging contact with said third inner surface.

3,345,086
QUICK DISCONNECT COUPLING FOR WELDING TORCH
Raymond Wallace, Scotia, N.Y., assignor to WDL Incorporated, Los Angeles, Calif.
Original application June 1, 1965, Ser. No. 465,821. Divided and this application Oct. 18, 1965, Ser. No. 496,780
4 Claims. (Cl. 285—38)



1. A quick disconnect coupling for connecting an extension of a welding torch to a handle, comprising: a first threaded means secured within said extension in longitudinal alignment therewith; a second threaded means press-fit into engagement with interior portions of said handle and being adapted to be threadedly engaged with said first threaded means, said second threaded means having an inturned flange forming an end thereof; a terminal connector positioned within said second threaded means and having an out-turned flange forming an end thereof in engagement with said inturned flange; and a resilient gasket means positioned between said first threaded means and said end of said terminal connector and being compressed therebetween when said first and second threaded means are in engagement, and adapted to be moved out of engagement with said first threaded means when said handle is rotated to cause said first and second threaded means to be disengaged.

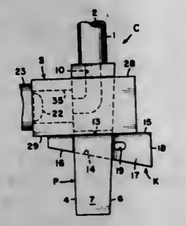
3,345,087
CONDUIT CONNECTORS
James W. E. Hanes and William F. Miller, Ventura, Calif., assignors, by mesne assignments, to Ventura Company, Ventura, Calif., a corporation of California
Filed June 18, 1964, Ser. No. 376,103
4 Claims. (Cl. 285—39)



1. A connector comprising: a hollow box having internally thereof in axially spaced relation a radially projecting resilient seal member, an annular groove, and a stop shoulder; a split resilient and contractible ring in said groove; a plurality of screw members threaded in said box projecting radially in angularly spaced relation and having inner ends projecting into said groove for engagement with said ring; a pin complemental to said box and having in axially spaced relation a radially projecting face engageable with said seal member, an annular groove for reception of the inner marginal portion of said ring, and a stop shoulder engageable with said stop shoulder in said box, wherein said groove in said box is deeper than the radial thickness of said ring, and including a cavity communicating with said groove, and a body of rubber held by said ring in stressed condition

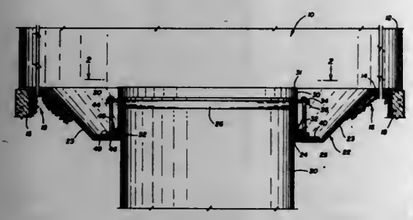
in said cavity, said body of rubber relaxing to fill the space between said ring and the base of the groove upon contraction of said ring and to embrace the respective inner ends of said screws.

3,345,088
HOSE COUPLING
Joseph L. Nagle, 4946 Tieman Ave., St. Louis, Mo. 63123
Filed Mar. 19, 1965, Ser. No. 441,058
5 Claims. (Cl. 285—39)



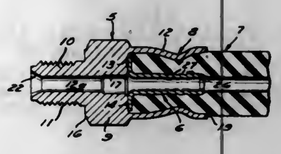
1. A hose coupling comprising a tapered integral plug on the end of a hose, said plug having a water passage therethrough connecting with and in alignment with the water passage in said hose, the water passage in said plug being parallel to the longitudinal axis of said plug and having a laterally extending portion which extends to one wall of said plug, and therethrough, a socket having a tapered opening therein complementary to said tapered plug for receiving said plug, said socket having a horizontal water passage therein sealingly connecting with the laterally extending portion of the water passage in said plug, and a tapered key mounted in a tapered opening in said plug beneath said socket for maintaining the plug and the socket in leakproof assembled relation.

3,345,089
CONNECTOR BETWEEN A PIPE AND A TANK
Fred C. Stepanich, 1106 Berkley, Pueblo, Colo. 81004
Filed Apr. 30, 1965, Ser. No. 452,311
2 Claims. (Cl. 285—189)



1. In combination with a metal bottom of a tank having at least one opening and a metal pipe extending through said opening and having an end portion positioned internally of the tanks, a flexible connector therebetween comprising a short sleeve having a flared end telescoped over the end of said pipe positioned in the tank; a radial flange mounted on and depending outwardly from said sleeve adjacent the end opposite said flared end; a ring secured to inside of the tank bottom and encircling said opening; means on said pipe end portion inside the tank for supporting a gasket; a first resilient gasket adjacent the end of said pipe mounted in gasket-supporting means and sealing the space between said pipe and said sleeve; a second resilient gasket encircling said pipe adjacent the tank bottom and spaced from said first seal for sealing against the pipe the flared end of said sleeve and the tank bottom; and bolt means mounted between and securing said flange and ring together whereby to provide relative lateral flexibility between the pipe and the wall of the opening in the bottom of the tank.

3,345,090
HOSE END FITTING
Albert J. Weatherhead, Jr., Shaker Heights, and John Nicol, Fairview Park, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 27, 1964, Ser. No. 406,726
2 Claims. (Cl. 285—256)

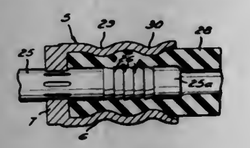


1. A hose end fitting comprising a one-piece steel body provided with an intermediate portion having a hexagonal cross section, a shank portion extending axially from one side of said intermediate portion and a tubular hose embracing skirt extending axially from the other side of said intermediate portion, said skirt having an inner diameter approximately equal to the outer diameter of the hose to which the fitting is to be attached, said shank and intermediate portion having a continuous bore therethrough, a separately formed tubular steel nipple having a radial flange at one end, means securing said flange to the side of said intermediate portion adjacent said skirt, the end of said nipple opposite said flange having an apertured rounded portion to facilitate the application of the hose to the nipple, said nipple having axially spaced re-entrant barbs along its outer surface, said re-entrant barbs having a depth substantially less than the wall thickness of said nipple, the wall of said nipple having a grain structure extending generally parallel to the axis of said nipple with the grain adjacent to the surface of said barbs uninterrupted and generally following the contour of such surface, the grain structure of the wall of said nipple being more nearly axial at progressive locations spaced inwardly from said surface of said barbs, the inner wall of said nipple having axially spaced undulations in the area of said barbs so that the wall of said nipple is substantially uniform in thickness.

3,345,091
HOSE AND METAL TUBE COUPLING
John Nicol, Fairview Park, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 8, 1964, Ser. No. 416,849
4 Claims. (Cl. 285—256)

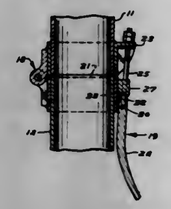
1. A hose end fitting comprising a one-piece body having a generally cylindrical tubular skirt and a head at one end thereof, said head providing a generally radial end wall extending inwardly from said skirt to define a central noncircular opening concentric with said skirt, said end wall providing a plurality of inwardly extending projections circumferentially spaced around said opening and having a radius from the axis of said skirt, and a tubular nipple in said opening and extending coaxially with said skirt for substantially the full length thereof, said nipple on both sides of said opening having

a circular outer surface having a predetermined radius greater than the radius of said projections, the portions of said nipple within said opening having a re-entrant section receiving and engaging each projection, said nipple providing an exterior surface completely around each re-entrant section which has a radius greater than the minimum radius of each associated projection whereby said projections mechanically lock said body and nipple against both rotational and axial relative movement, the exterior surface of said head having a plurality of



circumferentially spaced indentations encircling said projections, the inner wall of said skirt having a substantially circular shape throughout its length, the outer surface of said nipple within said skirt being formed with a plurality of barbs, the interior surface of said skirt being spaced from the exterior surface of said nipple so that the end of a piece of hose may be inserted therebetween, said skirt being adapted to be inwardly deformed against the end of a piece of hose to radially compress such tubing against said barbs and to grip said hose.

3,345,092
FOLD DOWN EXHAUST STACK FOR ENGINES
Coelestin F. Athman and Virgil J. Athman, Box 65, Pierz, Minn. 56364
Filed Apr. 19, 1965, Ser. No. 449,114
2 Claims. (Cl. 285—283)



1. An improved joint means for a vertical exhaust stack having upper and lower cylindrical sections, said improvement comprising a bottom sleeve member having an upper edge, said bottom sleeve member being fixedly mounted on the upper end portion of said lower section to have its upper edge at an elevation slightly below the top edge of said lower section, a top sleeve member having a bottom edge, said top sleeve member being fixedly mounted on the lower end portion of the upper section to extend to a slightly lower elevation than the bottom edge of said upper section to form an annular recess within the top sleeve member into which the top edge of said lower section is extendable to form a seal between said upper and lower sections, means for hingedly connecting said upper and lower sections and latching means including a bracket fixedly mounted on one of said sleeve members, a latch fixedly secured to the other of said sleeve members, a U-shaped member having one end secured for limited pivotal movement relative to said bracket, and a locking handle pivotally connected to the opposite end of said U-shaped member, said locking handle being adapted to be pivoted into an over-the-center locking position relative to said latch.

3,345,093
COUPLING FOR SHAFTS AND THE LIKE
Joseph J. Kimmel, Baltimore, and Kenneth K. Carman, Ellicott City, Md., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Feb. 16, 1965, Ser. No. 432,951
5 Claims. (Cl. 287—52.09)

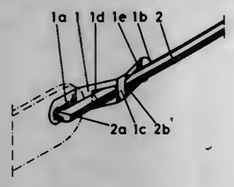


1. A coupling for a shaft having diametrically opposed flat portions adjacent its ends comprising,
a body portion having a longitudinal bore of substantially the same diameter as said shaft so that said shaft end portion fits snugly therein,
a pair of diametrically opposed longitudinal arcuate recesses formed in said bore, said arcuate recesses struck on radii shorter than the radius of said bore and on a diametrical line passing through the center of said bore, the ends of said recesses forming pairs of diametrically opposed junctures with said bore,
a longitudinal abutment means formed in each arcuate recess adjacent one of the junctures of a pair of said junctures,
wedge blocks having flat inner surfaces complementary with said shaft flat portions, an outer arcuate surface complementary with said arcuate recesses and a surface adjacent the junction of said flat inner surface and said outer arcuate surface complementary with a surface of said abutment means,
said wedge blocks arranged upon relative rotation of said shaft and said body portion in a first direction to move in said arcuate recess into wedging engagement between said shaft and said body portion,
said abutment means arranged to prevent movement of said wedge blocks into wedge engagement between said shaft and said body portion upon relative rotation of said shaft and said body portion in an opposite second direction, and
means extending around a portion of the external surface of said body portion connecting said wedge blocks to each other so that said wedge blocks remain in diametrically opposed spaced relation to each other,
said means being slidable relative to said body portion so that said wedge blocks are movable in said arcuate recesses upon rotation of said body portion relative to said shaft.

3,345,094
LINK WITH A LINK LOCK, FOR EXAMPLE FOR OFFICE MACHINES
Eric Lennart Nilsson, Karlshamn, Sweden, assignor to Facit-Halda AB, a Swedish joint-stock company
Filed Dec. 19, 1966, Ser. No. 602,831
Claims priority, application Sweden, Dec. 20, 1965, 16,464/65
2 Claims. (Cl. 287—93)

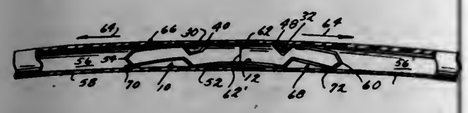
1. A link and link lock for use in office machines and the like, comprising, in combination, a rod having a right angle bend at one end thereof, a portion at one end of said bend being short and adapted to be inserted in an aperture in which said link is to be locked, a locking clip

comprising a tongue portion at one end parallel to said rod and extending perpendicularly to said short portion and having an aperture therein concentric with said rod end and receiving said short portion therethrough, a V-shaped portion extending from said tongue portion and having a flat portion at the base of said V, the legs of said V having rectangular apertures therein through which said rod extends, a flat portion on said rod, said flat portion



at the base of said V engaging with said flat rod portion to prevent said clip from rotating with respect to said rod, and an inclined portion at the other end of said clip extending from the leg of said V remote from said tongue portion and lying substantially parallel to the leg of said V adjacent said tongue portion, said clip being resilient and being held on said rod by virtue of tension exerted against said rod by the base of said V and the edges of said rectangular apertures.

3,345,095
TUBING CLIP
John H. Hohenberger, Williamstown, Mass., assignor to Norton Company, Troy, N.Y., a corporation of Massachusetts
Filed Oct. 22, 1965, Ser. No. 501,566
14 Claims. (Cl. 287—127)



1. A tubing clip comprising: a strip of stiffly resilient material having a portion adjacent at least one end thereof doubled back at a bend, toward the transverse centerline of the strip; and a short segment of said portion adjacent said end canted obliquely so that it forms an acute with the strip in the region of the strip adjacent the transverse centerline of the strip and between said bend and said centerline, and so that it projects further from said strip region in the thickness sense of the clip as said short segment proceeds toward said centerline; said strip in said region being offset in said thickness sense between said centerline and said bend, the offset being accomplished by a procession of the orientation of the strip in said region first substantially parallel to the doubled back portion, then obliquely toward the doubled back portion and then substantially parallel to the doubled back portion as said strip region proceeds from said centerline toward said bend.

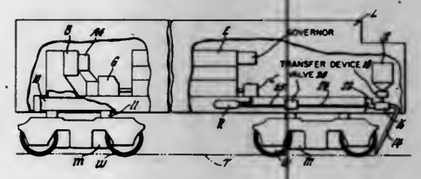
3,345,096
BUILDING COLUMN AND BEAM JOINT CONSTRUCTION
Tetsuya Takenaka, Osaka, Japan, assignor to Kubota Tekko Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Aug. 23, 1965, Ser. No. 481,755
1 Claim. (Cl. 287—189.36)

A structural column and beam assembly comprising a tubular column formed of metal, said column including a pair of spaced rings annular in form, and said rings projecting at right-angles to the axis of the column, a beam associated with the column and fitting between the rings, the end of said beam being shaped to fit the column and rings, said beam including flanges thereon, and a web connecting said flanges, said beam being welded to the column



and the rings at one end of the beam, the shaped end of the beam including flange ends having a concave shape complementary to the external surface of the rings, and a web portion extending between the rings and engaging the rings and the column.

3,345,097
LOCOMOTIVE WITH SANDING SYSTEM HAVING CONTINUOUS AIR FLOW
Harold L. Smith, La Grange, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,008
12 Claims. (Cl. 291—3)

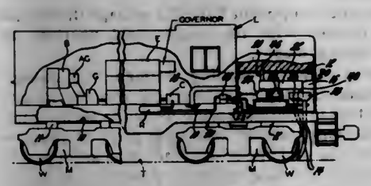


1. A railway locomotive including wheels adapted to roll along a track, wheel driving means to propel said locomotive, air plenum chamber means connected to said wheel driving means, blower means pressurizing said chamber means to cause a flow of cooling air to said driving means, and a system for supplying sand to said wheels to increase traction, said system comprising a delivery conduit, means connecting said air plenum chamber means and said delivery conduit to provide a continuous flow of air from said chamber through said conduit to maintain said conduit free of obstruction, and means actuable to cause air flow from said chamber to deliver sand through said conduit, said conduit being oriented to direct sand for delivery to the tread of at least one of said wheels.

3,345,098
FLUID TRACK SANDING SYSTEM
Harry A. Kilgore, Elmhurst, and Harold L. Smith, La Grange, Ill., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,047
9 Claims. (Cl. 291—3)

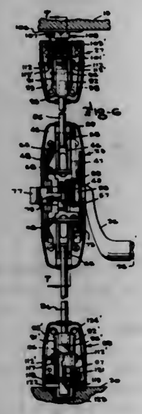
1. A railway locomotive including wheels adapted to roll along a track and a system for supplying sand to said wheels to increase traction, said system comprising a sand

trap, a delivery conduit extending from said trap, means to provide a continuous flow of air through said trap and conduit to maintain said conduit free of obstruction, and vibratory means actuable to meter and deliver sand at a



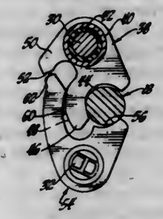
predetermined rate into the air flow through said sand trap for delivery by the air flow through said sand trap and said conduit, said conduit being oriented to direct sand for delivery to the tread of at least one of said wheels.

3,345,099
PANIC EXIT DEVICE
George D. Paul and Clarence R. Hunsinger, Rochester, N.Y., assignors to Sargent and Greenleaf, Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 14, 1965, Ser. No. 487,201
9 Claims. (Cl. 292—21)



4. A panic exit device for emergency doors to be mounted on an inwardly facing exposed surface of a conventional flush door, comprising a panic release bar disposed in horizontal relation spaced from said door surface exposing the same to be contacted and deflected toward the door by bodies approaching the door, mounting means for said bar pivotally supporting the same relative to a common pivot axis, including a first mounting unit adjacent the free edge and a second mounting unit adjacent the hinged edge of said door, said first mounting unit comprising a frame to be fixed to said door surface having a base and sides defining a vertically elongated channel opening outwardly of said door surface, a vertically elongated slide member in said channel, inter-engaging surface formations on said frame and slide member for guiding the latter along a selected vertical rectilinear axis between a normal locking position and a displaced unlocking position, a center locking bolt pivotally mounted in said frame for rotation between a projected locking position and a retracted unlocking position and having an integral actuating member projecting therefrom, said slide member having a substantially V-shaped recess at its longitudinal center opening away from said door surface defining a pair of mutually diverging inclined surfaces located symmetrically relative to a transverse horizontal reference axis at the longitudinal center of said slide member for receiving said actuating member of said center locking bolt therebetween and actuating the same to retract the center locking bolt from locking to unlocking position upon movement of said slide member from said normal position to said displaced position, upper and lower locking devices at the top and bottom edges of said door aligned vertically with said first mounting unit and having axially aligned vertically reciprocative elongated connecting rods for adjusting said locking devices from locking to unlocking condition upon upward axial movement of said rods, said slide member having upwardly and downwardly opening recesses at its upper and lower ends respectively shaped complementary to end portions of said rods and receiving the same in nested and coupled relation therein for transmitting vertical axially reciprocative movement to said connecting rods upon movement of said slide member between said normal and displaced positions and retract and project said upper and lower locking devices between locking and unlocking condition, and motion-transmitting means intercoupling said release bar and said slide member to move the latter from said normal position to said displaced position upon deflection of said release bar through a selected distance toward said surface.

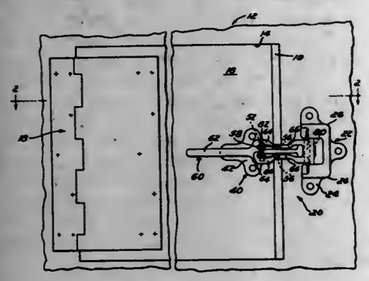
3,345,100
DOOR LOCK MECHANISM
Clarence F. Kramer, 3015 Bradway, Birmingham, Mich. 48010
Filed Oct. 20, 1965, Ser. No. 498,952
20 Claims. (Cl. 292—48)



1. A latch mechanism for a swinging door adapted to coact with a fixed keeper pin and comprising:
a plate member mounted on said door;
rotatable means mounted on said plate member for rotation into and out of latching engagement with said keeper pin;
positioning means rotatably mounted on said plate member and having first and second detent means therein, said first detent means being movable relative to said second detent means, said positioning means coacting with said rotatable means for maintaining said rotatable means in selectively engaged and disengaged position, said positioning means having primary and secondary latching positions;
pawl means engageable with said first detent means for holding said positioning means in said primary position and engageable with said second detent means upon accidental disengagement from said first detent means for holding said positioning means in said secondary position, said second detent means being moved relative to said first detent means to a non-engageable position and said pawl means bypassing said second detent means and engaging said first detent means upon closing said door;

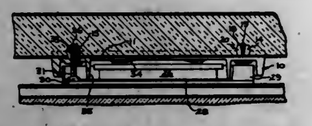
and locking means for locking said positioning means in latching position and preventing disengagement of said rotatable means from said keeper pin, said locking means being disengageable from said positioning means to permit operation thereof and rotation of said rotatable means.

3,345,101
DOOR LOCKING MEANS
Roland J. Olander, La Grange, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 2, 1965, Ser. No. 506,099
7 Claims. (Cl. 292—218)



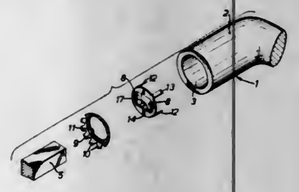
1. For use with a wall having an opening therein and a door swingable into and out of the opening, the combination of keeper means having a base portion adapted to be secured to the wall at one side of the opening therein and having laterally spaced forwardly extending recessed projections, fulcrum means having a body portion adapted to be secured to the door, a boss portion with a transverse opening therethrough, and a central forwardly extending longitudinal rib portion, handle means having a hand grip portion merging into laterally spaced leg portions each of which has a flange with a transverse opening therethrough, a wrist pin extending through said openings in said handle flanges and said fulcrum boss for pivotally mounting said handle means to said fulcrum means, and laterally extending cam fingers associated with said laterally spaced leg portions of said handle means and being engageable with said recessed projections of said keeper means for locking the door in the wall opening, said fulcrum rib portion being receivable between said handle leg portions.

3,345,102
MAGNETIC LATCH ASSEMBLY
Cooper J. Padgett, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed July 1, 1966, Ser. No. 562,235
4 Claims. (Cl. 292—251.5)



1. A magnetic latch assembly for holding a door member in closed position relative to a cabinet member comprising:
a molded plastic base including a mounting means formed integrally with said base,
said mounting means comprising a longitudinally apertured laterally yieldable anchoring means projecting from the bottom surface of said base and adapted for snap-in insertion into an aperture in one of said members for temporarily securing said base to said member,
a magnetic component having a passage therein adapted to register with the longitudinal aperture in said anchoring means,
fastening means extending through said passage and adapted upon partial insertion into the longitudinal aperture in said anchoring means to secure said magnetic component to said base prior to the assembly thereof to said one of said members and upon further insertion into said aperture after snap-in insertion of said anchoring means into said aperture to laterally expand said anchoring means and rigidly secure said base to said one of said members.

3,345,103
HANDLE ASSEMBLIES AND MEANS FOR DETACHABLY SECURING A HANDLE TO A ROD-LIKE ELEMENT
Leslie Parkin, Bobbers Hill, and Sydney Alan Andrews, Stapleford, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,182
Claims priority, application Great Britain, Jan. 21, 1965, 2,738/65
3 Claims. (Cl. 292—353)

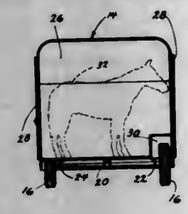


1. A handle assembly comprising a handle formed with a rod-receiving cavity and an aperture extending transversely of the wall of the cavity from the outside and opening onto the cavity, a clip secured in the cavity and comprising a base provided with inwardly directed tongues, the free ends of which define a rod-receiving aperture, the base of the clip being divided into two relatively movable sections by a transverse slot which is aligned with the aperture in the wall of the cavity, the disposition of the tongues being such that a rod inserted into the handle cavity and rod-receiving aperture in the base of the clip will be frictionally gripped by the free ends of the tongues to retain the rod in assembly with the handle, the grip of the tongues being releasable by affecting relative movement of the sections of the base by means of a tool inserted through the aperture in the wall of the cavity into the transverse slot in the base of the clip; the clip being provided with axially extending legs engageable with the inner end wall of the cavity in the handle so as to position the slotted base in alignment with the inner end of the aperture in the wall of the cavity.

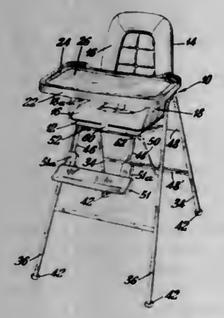
3,345,104
HORSE TRAILER
John Ulicki, Rte. 1, Fort Dodge, Iowa 50501
Filed Sept. 17, 1965, Ser. No. 488,136
7 Claims. (Cl. 296—24)

1. An animal trailer, comprising,
an elongated frame having a hitch means at one end for engagement with a leading vehicle,

a body on said frame and having a plurality of side by side transversely extending animal compartments, said body having a door for each of said compartments, and the door for adjacent compartments being on opposite sides of said body, and a plurality of support wheels mounted under said body and to said frame, and said wheels extend into adjacent compartments at the opposite ends of said compartments from said doors.

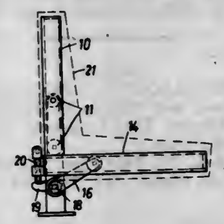


3,345,105
FOLDABLE CHAIR
Edward D. Levy, Spring Valley, N.Y., Robert W. Weeden, Scotch Plains, N.J., and E Michael Muller, Hastings on Hudson, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Mar. 3, 1966, Ser. No. 531,525
11 Claims. (Cl. 297—24)



1. Foldable chair comprising:
(A) rigid one-piece plastic seat member having resilient cushion means mounted therein;
(B) rigid one-piece plastic back member hingeably fastened to said seat member having resilient cushion means mounted therein and adapted to fold against said seat member in a closed position;
(C) said seat member having
(1) pivot support means proximate said back member;
(2) an upwardly extending rear edge adapted to engage the lower edge of said back member when said chair is in an open position;
(3) side portions extending substantially upwardly from the bottom edge of said seat member having outwardly extending top edges;
(D) said back member having pivot means proximate said seat member adapted to pivot in the pivot support means of said seat member;
(E) means to secure said pivot in said pivot support means;
(F) pair of rear legs extending downwardly from said pivot support means and pivotally mounted thereon;
(G) pair of front legs integrally formed as a continuous unit having rearwardly turned upper portions continuing to a lateral portion extending behind said back member and secured thereto;
(H) bracing means pivotally mounted to said rear legs and underriding said seat member, and
(I) means for securing said bracing means to said front legs.

3,345,106
VEHICLE SEAT
Arnold Tschursch, Vagen, and Anton Stuckenberger, Hinrichsegen, Germany, assignors to Georg Fritzmeier KG, Grosshelfendorf uber Munich, Germany
Filed Mar. 7, 1966, Ser. No. 532,236
Claims priority, application Germany, Mar. 12, 1965, F 45,509
4 Claims. (Cl. 297—308)

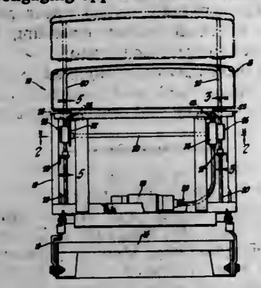


1. Seat for use in a vehicle, having an approximately L-shaped rigid angular frame consisting of a back portion and a seating portion, a supporting structure relative to which the frame is resilient and guided and which consists of
a supporting rod for support on the vehicle horizontally and at right angles to the middle vertical plane of the seat,
upright arms which are mounted at the ends of the supporting rod so as to stand up freely,
rollers in superimposed arrangement on said upright arms on which the back portion is guided, and
a suspension system consisting of
a torsion bar spring disposed in the supporting rod, said torsion bar having a swinging lever arrangement at each end,
lateral portions on said L-shaped frame forming inwardly open U-shapes, said lateral portions having upright and horizontal portions,
said rollers guided with their axes parallel to the back plane in said open U's and,
additional rollers on said swinging levers of the torsion bar spring disposed in said open U's on the horizontal portion of said frame,
said rigid frame and the lateral portions being covered by a seat cover panel which has space in the area of the back portion for receiving the supporting rod with the arms.

3,345,107
HEADREST ACTUATOR
Robert I. Homier, Farmington, and Raymond C. Posh, Livonia, Mich., assignors, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed May 13, 1966, Ser. No. 550,051
10 Claims. (Cl. 297—410)

1. A seat assembly comprising; a frame, an adjustable headrest, support means depending from said headrest and operatively connected to said frame for allowing said headrest to move relative to said frame, housing means

operatively connected to said frame, a pair of spaced wheels rotatably supported by said housing means for frictionally engaging opposite sides of said support means,



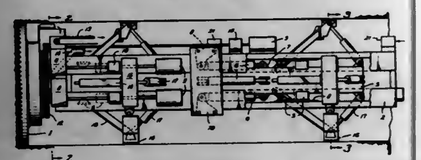
and drive means operatively connected to said wheels for rotating said wheels to move said support means relative to said frame to adjust position of said headrest.

3,345,108

TUNNELING MACHINE STEERING SYSTEM

Elmer F. Newman and William H. Parker, Dallas, Tex., assignors to Hughes Tool Company, Houston, Tex., a corporation of Texas.

Filed Sept. 22, 1965, Ser. No. 489,280
10 Claims. (Cl. 299—31)



1. In a tunneling machine, a pair of relatively longitudinally movable bodies nested one within the other, a driven digging head supported by and longitudinally aligned with one of said bodies, longitudinally spaced-apart sets of independently adjustable bearings interposed between the bodies to accommodate their relative longitudinal travel, means for independently and selectively adjusting the lateral positions of each of said sets of bearings in two different lateral direction for repositioning said one of the bodies in steering the digging operation of said digging head, and locating means for fixedly securing the other body on the tunnel wall during a digging operation, each of said sets of interposed bearings being independently adjustable to shift said one body and the digging head in a selected parallel or cocked relationship to the other body.

3,345,109

AIRPLANE DISC BRAKE AND KEY COMBINATION

Don W. Peterson, North Canton, James J. Kovac, Akron, Joseph W. Calvin, Canton, and Valentin C. Puse, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

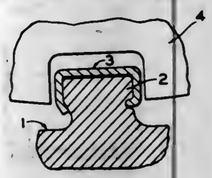
Filed Oct. 22, 1965, Ser. No. 500,521
2 Claims. (Cl. 301—6)

1. The combination of

a wheel cast of light weight metal,

a plurality of circumferentially spaced elongated key bosses, integrally formed with said wheel extending radially from the circumference of said wheel, each boss having an undercut form in cross section and having a radially directed slot cut perpendicular to its elongated length,

a plurality of sheet steel shell key stampings, substantially U-shape in cross section, each slidably received on and around a key boss, each stamping having an elongated spring clip formed as a normally flat and planar part of the top surface thereof and having an end bent substantially perpendicular to the top sur-



face snapping in the slot cut in each boss as the stamping is slid along the elongated length of the key boss so the clip remains substantially in planar to the top surface thereof, thereby locking said stamping in fixed relation to said key boss, and

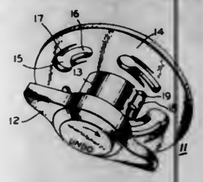
at least one steel disc splined on the shell key stampings.

3,345,110

KNOCK-OFF TYPE WHEEL RETAINERS

Joseph M. Cumberland, Muskogee, Okla.
(Box 22, Parker, Pa. 16049)

Filed Mar. 23, 1965, Ser. No. 442,213
2 Claims. (Cl. 301—9)



1. A knock-off type wheel assembly which includes a brake drum having spaced apart studs with stud nuts thereon spaced from the drum comprising, in combination a wheel having stud openings to receive the studs with stud nuts thereon; wheel retainer means comprising a disc having spaced apart arc-shaped openings; said openings characterized by an enlarged end to receive said studs with stud nuts thereon and an arcuate slotted portion of a width to accommodate the studs; said disc having inclined planes adjacent each slotted portion along opposite edges thereof to receive the stud nuts; said inclined planes rising in the direction away from said enlarged ends to and including the surface of the disc to wedge the disc to the wheel through engagement of the nuts and planes; means for locking the wheel retainer means to the wheel when said nuts are so engaged; an impact head centrally secured to the retaining means for rotating the disc relative to the studs; tapered locating sleeves on each stud adjacent the drum to fit the stud openings; and jam nuts on the projecting ends of the studs to maintain the stud nuts locked on the studs.

3,345,111

SYSTEM FOR DISPENSING MATERIALS

John L. Bies, Golden Valley, and Gene M. Larson, Hopkins, Minn., assignors to Possis Machine Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed May 25, 1966, Ser. No. 552,737
12 Claims. (Cl. 302—17)

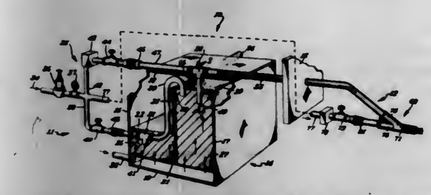
1. An apparatus for dispensing particulate material comprising:

(a) tank means having a first chamber and a second chamber, each chamber storing particulate material

means at the bottom of both the first chamber and the second chamber for introducing a gas upwardly into the particulate material thereby fluidizing said material in each chamber,

(b) first material transporting means operable to move fluidized material from the first chamber into the second chamber to maintain a selected level of fluidized material in the second chamber,

(c) means for directing fluidized material in at least one direction, and



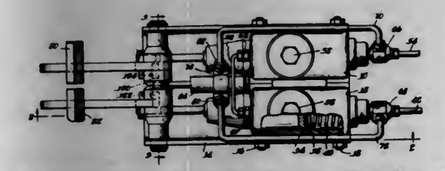
(d) second material transporting means having an inlet passage located below the level of fluidized material in the second chamber and an outlet passage above said level connected to the directing means, said second material transporting means including a pump operable to move fluidized material from the second chamber to the directing means and discharge said fluidized material from the directing means at a rate slower than the first material transporting means moves fluidized material into the second chamber.

3,345,112

BRAKE EQUALIZER VALVE

Osborn A. Kershner, St. Joseph, Mich., assignor, by mesne assignments, to Lambert Brake Corporation, St. Joseph, Mich., a corporation of Michigan

Filed Feb. 7, 1966, Ser. No. 525,429
6 Claims. (Cl. 303—6)



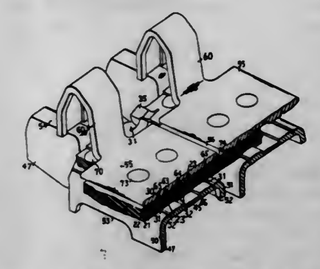
1. A brake system for a vehicle comprising first and second brake means, first master cylinder means for actuating said first brake means by fluid pressure, second master cylinder means for actuating said second brake means by fluid pressure, first chamber means within said first master cylinder means, second chamber means in said second master cylinder means, first fluid conduit means interconnecting said first brake means and said first chamber means, second fluid conduit means interconnecting said second brake means and said second chamber means, first piston means in said first chamber means to establish fluid pressure in said first fluid conduit means to actuate said first brake means, second piston means in said second chamber means to establish fluid pressure in said second fluid conduit means to actuate said second brake means, first and second independently operable actuating means respectively operatively connected with said first and second piston means, third fluid conduit means connected to said first fluid conduit means, fourth fluid conduit means connected to said second fluid conduit means, and an equalizer valve assembly connected to said third and fourth fluid conduit means, said equalizer valve assembly including a first normally closed valve for normally preventing flow of fluid from said third conduit means toward said fourth conduit means, a second normally closed valve for normally preventing flow of fluid from said fourth conduit means toward said third conduit means, and means for simultaneously opening both of said valves in response to simultaneous operation of said first and second actuating means for interconnecting said third and fourth conduit means to equalize the fluid pressure in said first and second fluid conduit means when both said first and second brake means are actuated, said first and second valves of said equalizer valve assembly including a first spring biased check valve and a second spring biased check valve, and said means for opening said valves comprises cam means for substantially simultaneously actuating said first and second check valves.

3,345,113

ENDLESS TRACKS, BELTS OR THE LIKE

Erwin-Walter Siber, Longueuil, Quebec, Canada, assignor to Go-Tract Limited, Dorval, Quebec, Canada, a Canadian company

Filed Oct. 15, 1965, Ser. No. 496,572
Claims priority, application Canada, Nov. 10, 1964, 916,119; Great Britain, Aug. 31, 1965, 37,213/65
10 Claims. (Cl. 305—14)



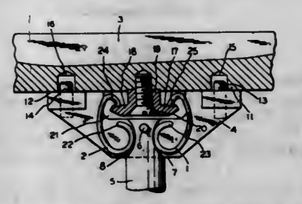
1. An endless track element comprising a sheet of resilient material, a plurality of stranded cables within and extending through said sheet and capable of relative sliding movement with respect thereto, a quantity of lubricant surrounding said cables and providing a lubricating film between said cables and the material of said sheet, said lubricating film also being between the strands of said cables, and means for maintaining the lubricant in contact with the individual strands of each cable, movement of the cables in said sheet and of the strands of each cable over each other during flexing of the said sheet being assisted and abrasion thereof being reduced by the said lubricant.

3,345,114

CLAMPING DEVICE FOR A TOOL

Antal Vass, Bromma, Sweden, assignor to Arenco Aktiebolag, Stockholm-Vallingby, Sweden

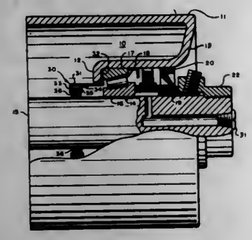
Filed July 14, 1965, Ser. No. 471,947
Claims priority, application Sweden, Sept. 25, 1964, 11,505/64
3 Claims. (Cl. 306—20)



1. A clamping device for removably mounting a tool member upon a support member, comprising locating means including at least two guide pins on one member

and holes corresponding to the pins, situated on the other member said tool member including a body, a socket in said body, said locating means being located on diametric opposite sides of said socket, shoulder means secured to one of said members at least one spring strap, which strap is centrally situated in the device and fastened with one of its ends to one of the members, the other end being bent in order to resiliently engage said shoulder means, whereby the tool is fixed to the support by means of spring action.

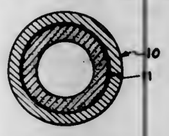
3,345,115
BACK SEAL FOR IDLER ROLLERS
Francis B. Olender, Wallington, and George A. Ward, Clifton, N.J., assignors, by mesne assignments, to Hewitt-Robins, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Oct. 27, 1964, Ser. No. 406,794
1 Claim. (Cl. 308—20)



An idler roller for troughing conveyors comprising a roller body member, a shaft having a ring member secured thereto, a roller bearing adjacent one end of said body member and the corresponding end of said shaft for rotatably supporting said body member on said shaft, means for supplying grease to said bearing, grease and dust seal means outboard of said bearing; a hollow sheet metal cylindrical member having a radially inwardly directed flange on one end and a radially outwardly extending flange on the other end, said outwardly extending flange being secured between said roller body and said bearing for supporting and positioning said cylindrical member in spaced substantially concentric relation with said shaft, an annular shell member having a flange extending inwardly and substantially parallel with the radially inwardly directed flange of said cylindrical member, said annular shell member having a press fitting relation within said cylindrical member and defining a recess with the inwardly extending flange of said cylindrical member for loosely receiving said ring member, said recess having an inside diameter greater than the outside diameter of said ring member permitting said ring member to move relative to said cylindrical member in order to thereby permit said ring member to remain secured around said shaft when said cylindrical member is slightly out of alignment with said shaft, said ring member and the flanges defining said recess being adapted and arranged to define an inboard grease seal for said idler roller.

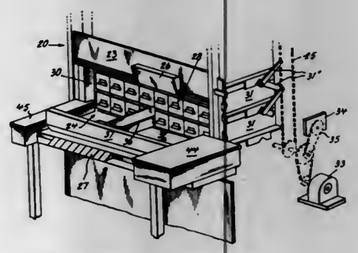
3,345,116
PILLOW BLOCK
Carl Hilton, Chicago, Ill., assignor to Masten Corporation, Chicago, Ill., a corporation of Illinois
Original application Apr. 16, 1962, Ser. No. 187,872, now Patent No. 3,192,607, dated July 6, 1965. Divided and this application June 1, 1965, Ser. No. 460,196
1 Claim. (Cl. 308—72)

A self-aligning pillow block comprising a one-piece rigid cast metal bearing block formed with a spherical bore, and a bearing composed of porous sintered powdered metal formed with a cylindrical axial bore and a substantially spherical outer surface of greater segment than that of said spherical bore snugly and pivotally disposed in and embraced by the defines of said spherical bore, said bearing being out-of-round as viewed in transverse cross-section so as to be of ellipsoidal shape, the



diametrically opposed radially outermost portions of the ellipsoidally shaped bearing being in frictional engagement with the inner surface of the spherical bore of the bearing block, whereby to retain the bearing against spinning on its axis.

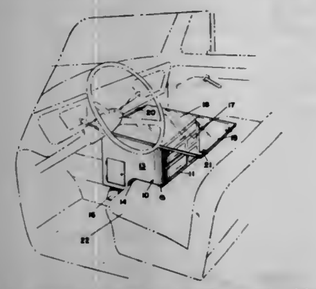
3,345,117
ARTICLE STORAGE APPARATUS
Freeland R. Goldammer and Roy E. Kanitz, Williamsville, N.Y., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 589,023
11 Claims. (Cl. 312—223)



1. Article storage apparatus comprising,
(a) a housing having an access opening therein,
(b) conveying means disposed in said housing,
(c) said conveying means having a plurality of carriers arranged for conveyance along a path of travel past said access opening,
(d) means extending outwardly from said housing adjacent said access opening,
(e) one or more article carrying containers disposed on each carrier,
(f) means for operatively positioning a selected carrier adjacent said access opening, and
(g) means for translating at least one of said article carrying containers between said selected carrier at said access opening and a work station in the vicinity of said extending means,
(h) means associated with said translating means for retaining said one container at a desirable attitude during translation thereof between said selected carrier and said work station, said retaining means operatively connecting said one container and said translating means when said container reaches an intermediate position during translation thereof from the carrier to said work station.

3,345,118
DESK FOR USE IN VEHICLES
David M. Cummings, 8 Maple Ave., Ripley, N.Y. 14775
Filed Dec. 30, 1965, Ser. No. 518,969
4 Claims. (Cl. 312—235)

1. A desk for use in a vehicle comprising,
a desk having sides, a front, and a top,
a recess formed in said front and sides adapted to receive a part of a seat cushion of said vehicle whereby said desk rests on said seat cushion,
said top being disposed above said recess an amount such that when said desk rests on said seat cushion, said top is at a convenient height for writing pur-



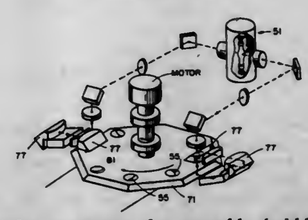
poses by a person sitting on said seat beside said desk drawers formed in said desk in the front thereof and said top overhanging said front an amount sufficient to allow said drawers to be moved to open position below said top.

3,345,119
BIN STRUCTURE
Jerry W. Saddler, North St. Paul, and John F. Morrison, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,467
8 Claims. (Cl. 312—274)



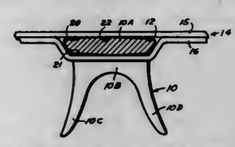
1. Structure for storing and providing for facilitated removal therefrom of loose material, comprising:
means defining a space for storing multi-unit goods and having a side wall portion provided with an access opening for providing access to said space for removal of the material therethrough, said wall portion defining a lower edge of said opening;
closure means for selectively closing said opening;
wall means defining an edge; and
means connecting said closure means to said wall means for positioning said wall means within said space across said access opening at said lower edge to maintain the loose material inwardly of said access opening when said closure means is disposed to close said opening, and for positioning said wall means to extend from adjacent said lower edge of said opening to outwardly thereof to form an apron thereat with said edge of the wall means being disposed inwardly of said opening to permit substantially free access to said space rearwardly of said lower edge of said opening while effectively precluding spillage of the material as during opening of said closure means and removal of said material from said space.

3,345,120
LIGHT SPOT APPARATUS
Robert B. Palmer, Shoreham, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 6, 1963, Ser. No. 307,273
4 Claims. (Cl. 350—6)



1. Scanning apparatus for movable bubble chamber film, comprising at least one stationary, uniform 1 mm. diameter, right circular, cylindrical glass fiber having a straight axis, at least one uniform, 1 mm. diameter, circular cross-section, cylindrical glass fiber having a curved axis, a rotatable disc having at least one plug therethrough forming jaws across an opening for supporting said curved fiber in a curve that is directed radially outwardly in a plane from the axis of rotation of said disc, said disc being rotatable in a plane and having at least one straight edge forming a mirrored face at an angle of 45° to the plane of rotation of said disc for reflecting light off said face, light source means for illuminating the movable area of intersection of the projections of said straight and curved fibers due to rotation of said disc, light from said light source means thereby shining in a beam which falls on said 45° mirrored face and is then directed down normally toward the plane of rotation of said disc and the plane of the curve of said curved fiber for transmittal through said curved and straight fibers normally to their axes in a position corresponding to the intersection of their projections to produce a 15 μm. light spot, the light spot moving in correspondence to the movement of the area of intersection of said glass fiber projections due to the rotation of said disc so as to move said spot across said film in straight line segments transverse to the direction of the film movement with a light spot movement speed corresponding to the speed of rotation of said disc, and electronic means for locating the spot coordinates and the amount of light therefrom passing through the film.

3,345,121
ADJUSTABLE NOSEPIECE FOR EYEGLASS FRAME
Armand De Angelis, Southbridge, Mass., assignor to Omnitech, Inc., Dudley, Mass., a corporation of Massachusetts
Filed Jan. 28, 1964, Ser. No. 340,695
2 Claims. (Cl. 351—130)



1. In an adjustable nosepiece for a frame, in combination, means forming an elongated aperture in the bridge portion of said frame, said aperture having substantially straight upper and lower edges, a nosepiece member in-

cluding a forwardly extending upper section and a pair of depending leg portions, pad means on said leg portions, means forming a groove extending longitudinally of the upper surface of said section, the upper edge of said aperture extending downwardly into said groove to pivotally mount said member on said front, and means forming a channel in and extending longitudinally of the lower surface of said section, said lower edge of said aperture extending upwardly into said channel, said lower edge being of a smaller size than said channel to permit movement of said nosepiece member forwardly and rearwardly with respect to said frame within a limited range, said groove and said channel slanting downwardly and upwardly respectively as they extend outwardly from the center of said forwardly extending section, whereby in addition to pivoting on the upper edge of said aperture said member is free to rock sideways in the plane of said front.

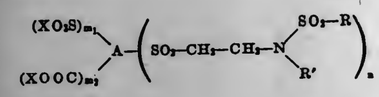
CHEMICAL

3,345,122
PROCESS FOR PREPARING DYEINGS AND PRINTS FAST TO WETTING ON CELLULOSIC MATERIALS

Fritz Meininger and Ernst Hoyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,203
Claims priority, application Germany, Aug. 20, 1963, F 40,534
4 Claims. (Cl. 8—54.2)

1. A process for preparing dyeings and prints fast to wet processing on cellulose materials, which comprises treating said cellulose materials with a dyestuff of the formula



wherein A represents the radical of an organic dyestuff molecule, R' represents a member selected from the group consisting of lower alkyl, cyclohexyl, phenyl, chlorophenylene, lower alkoxyphenylene, sulfophenylene, carboxyphenylene, benzyl and phenyl ethylene, R represents a member selected from the group consisting of lower alkyl, phenyl, lower alkylphenylene, carboxyphenylene and nitrophenylene, X represents a member selected from the group consisting of alkali metal and ammonium, n represents at least 1, and m_1 and m_2 represent numbers from 0 to 3, the sum m_1+m_2 being at least 1, in the presence of an alkaline agent at an elevated temperature.

3,345,123
DRYCLEANING PROCESS IN WHICH GARMENTS ARE INITIALLY CONTACTED WITH AN ORGANIC SOLVENT - WATER - DETERGENT CONCENTRATE

James M. Chisholm, Cincinnati, Ohio, assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

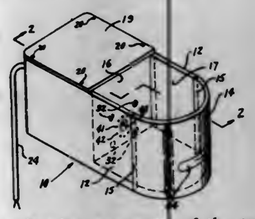
No Drawing. Continuation of application Ser. No. 179,854, Mar. 15. 1962. This application Sept. 7, 1965, Ser. No. 485,526
3 Claims. (Cl. 8—142)

1. In a drycleaning method wherein, at the start of the cleaning step, an organic solvent containing an oil-soluble detergent is pumped into a cleaning tub in which the soiled garments are being tumbled, wherein the solvent level in the tub first reaches a level sufficient to wet said garments and then an overflow level, and wherein further quantities of said solvent are pumped into the tub for substantially the balance of the cleaning step as like quantities overflow from the tub, and a small quantity of water (measured on the weight of the fabric load) is added to the solvent for each load cleaned therein, the improvement which comprises adding all of said quantity of water and a water-soluble detergent contained therein to a portion of the organic solvent initially contacting the fabric load to provide a temporarily high concentration of water and water soluble detergent in relation to the quantity of solvent.

3,345,124
APPARATUS FOR CLEANING AND STERILIZING DENTURES

Gordon B. Schapaugh, 3710 E. 39th St., Tulsa, Okla. 74135

Continuation of application Ser. No. 296,619, July 22, 1963. This application Dec. 6, 1966, Ser. No. 599,649
4 Claims. (Cl. 21—87)



2. In a denture cleaning apparatus of the type having a compartment for receiving dentures, the improvement wherein:

the denture receiving compartment is shaped in a configuration corresponding to the denture shape,

is of a size for receiving the dentures and permitting the dentures to be covered by a minimum quantity of liquid when placed in a horizontal position in the denture receiving compartment, said compartment having,

a bottom wall, upstanding side walls, an upstanding inwardly concave front wall, and an upright wall opposite the front wall intersecting the side walls,

said upright wall having a central inlet aperture therethrough, at least one outlet opening below the inlet aperture and at least one outlet opening above the inlet aperture, said outlet openings being approximately of the same size but smaller than the inlet aperture and spaced radially substantially equidistant above and below the inlet aperture,

means exterior to the denture receiving compartment forming an impeller compartment surrounding and being in communication with the inlet aperture and the outlet openings,

a fluid impeller in the impeller compartment comprising a hub substantially coaxial with and adjacent to the central inlet aperture having a transverse dimension substantially equal to that of the central inlet aperture, at least two blades extending from the hub, said blades being inclined relative to each other, for withdrawing liquid from the denture receiving compartment through the central inlet aperture, producing radial flow of liquid in the impeller compartment, inwardly from the central inlet aperture, radially along the direction of the blades, and outwardly through the upper and lower outlet openings, discharging the liquid therefrom into the denture receiving compartment for circulating the liquid from between the dentures into the impeller compartment and over and under the dentures in the denture receiving compartment,

and impeller drive means.

3,345,125
METHOD OF PURIFYING GASES

Martin Kruel, Essen, Harald Juentgen, Essen-Heisingen, and Heinrich Dratwa, Rheinhausen, Germany, assignors to Bergwerksverband G.m.b.H., Essen, Germany

No Drawing. Filed Nov. 14, 1966, Ser. No. 594,251
Claims priority, application Germany, Nov. 13, 1965, B 84,496
12 Claims. (Cl. 23—2)

1. A method of purifying a gaseous mixture including oxygen, steam and at least one sulfur oxide by removal of said sulfur oxide therefrom, comprising the steps of causing intimate contact between said gaseous mixture and a particulate solid absorbing agent consisting essentially of a carbonaceous material impregnated with a salt selected from the group consisting of water-soluble sulfates, nitrates and chlorides of at least one metal, so as to bind said sulfur oxide to said adsorbing agent in the form of SO_3 or H_2SO_4, thereby freeing said gas of said sulfur oxide and charging said adsorbing agent with a sulfur compound; heating the thus charged adsorbing agent at a temperature of between about 550° C. and 900° C. so as to desorb said sulfur compound and to reactivate said adsorbing agent; and subjecting the thus reactivated adsorbing agent to contact with additional gaseous mixture to be purified, for removal of sulfur oxide from the latter.

3,345,126
EXTRACTION AND DETERMINATION OF VANADIUM

Donald G. Blechler, Grandview, Mo., and Donald E. Jordan, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed June 17, 1963, Ser. No. 288,330
22 Claims. (Cl. 23—18)

10. A method for determining the vanadium content of a vanadium-containing material which comprises:

(a) dissolving the vanadium-containing material in an inorganic mineral acid selected from the group consisting of sulfuric acid, hydrochloric acid, nitric acid and mixtures thereof;

(b) removing any chloride ions present by volatilization;

(c) oxidizing the vanadyl ions in the solution to the pentavalent state;

(d) complexing the vanadium in the sample with phosphoric and tungstic acids;

(e) extracting the vanadium phosphotungstate complex from the acid solution in an aliphatic alcohol containing from 6 to 12 carbon atoms; and

(f) colorimetrically determining the vanadium content of the alcoholic extract.

22. In a method of removing vanadium from a vanadium-containing material by the steps of:

(a) dissolving the vanadium-containing material in an inorganic acid,

(b) oxidizing the vanadyl ions in the acid solution to to the pentavalent state,

(c) forming a vanadium phosphotungstate complex in the acid solution,

the improvement which comprises extracting the vanadium phosphotungstate complex from the acid solution in an aliphatic alcohol containing from 6 to 12 carbon atoms.

3,345,127
PROCESS FOR RECOVERING BORON VALUES FROM SCRAP MATERIALS

Allan R. Eberle and Morris W. Lerner, South Plainfield, and Louis J. Pinto, Bound Brook, N.J., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed July 6, 1964, Ser. No. 380,718
4 Claims. (Cl. 23—59)

1. A process for recovering boron values from boron containing scrap material comprising,

(a) heating the scrap material to a temperature ranging from about 750° C. to about 1100° C.;

(b) contacting the heated scrap material with steam to hydrolyze the boron contained therein to boric acid;

(c) passing steam through the boric acid and collecting a solution containing said boric acid;

(d) adding potassium hydroxide to the boric acid containing aqueous solution to convert the boric acid to potassium borate;

(e) adding hydrofluoric acid to the aqueous solution containing potassium borate to adjust the pH of the solution to a value ranging from about 5 to about 6;

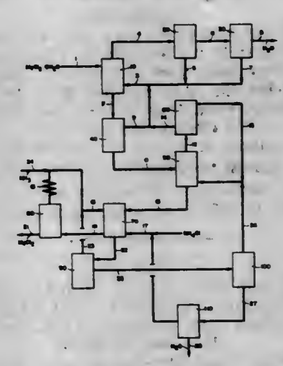
(f) adding from about 80 percent to about 120 percent by volume of ethyl alcohol, based upon the volume of the aqueous solution, to the aqueous solution whereby KBF_4 precipitates;

(g) thereafter recovering the KBF_4.

3,345,128
DEHYDRATION OF MAGNESIUM CHLORIDE UTILIZING HEAVY HYDROCARBONS

Eugene Richard Nightingale, Jr., Murray Hill, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Apr. 12, 1965, Ser. No. 447,491
8 Claims. (Cl. 23—91)



1. Process for the partial dehydration of magnesium chloride which comprises introducing a hydrated magnesium chloride solid material into the top area of a dehydration zone, introducing a relatively high boiling hot hydrocarbon liquid into the bottom of said dehydration zone and countercurrently contacting the downflowing hydrated magnesium chloride with upflowing, relatively high boiling, hot hydrocarbon liquid, maintaining the temperature in said dehydration zone below the initial boiling point of the upflowing hydrocarbon liquid, whereby partial dehydration of the magnesium chloride will occur,

removing from the top of said dehydration zone the hydrocarbon liquid and water, separating the water from the high boiling hydrocarbon liquid and recycling the hot hydrocarbon liquid to said dehydration zone, removing a hydrocarbon slurry of partially dehydrated magnesium chloride from the bottom of said dehydration zone and separating the relatively high boiling hydrocarbon liquid therefrom.

3,345,129

SELECTIVE CLEAVAGE OF MONOAMIDOTRIPHOSPHATES TO PRODUCE ORTHOPHOSPHORAMIDATES

Kenneth J. Shaver, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,784
15 Claims. (Cl. 23—101)

1. A process for manufacturing a phosphoramidate selected from the group consisting of dialkali metal orthophosphoramidates, diammonium orthophosphoramidates, and mixed monoalkali metal-monoammonium orthophosphoramidates, which process comprises subjecting an aqueous solution of a monoamidotriphosphate compound selected from the group consisting of alkali metal monoamidotriphosphates, ammonium monoamidotriphosphate and mixed alkali metal-ammonium monoamidotriphosphate to a pH above about 8.5.

3,345,130

PRODUCTION OF EXPLOSIVE AZIDES IN MOLTEN SALT MEDIA

Heinrich C. Egghart, Hollin Hills, Va., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Sept. 8, 1965, Ser. No. 485,956
9 Claims. (Cl. 23—101)

1. The process of precipitating lead azide or silver azide which comprises introducing into a molten alkali nitrate, which is maintained at a temperature in the range of between 119 and 300° C., an alkali azide and a soluble salt in said nitrate, said salt being selected from the group consisting of a lead salt and a silver salt.

3,345,131

METHODS OF PREVENTING DECOMPOSITION OF ANHYDROUS AMMONIUM THIOSULFATE

Harold E. Ingraham, East Stroudsburg, Pa., assignor to Helco, Inc., a corporation of Delaware

No Drawing. Filed May 5, 1964, Ser. No. 365,172
8 Claims. (Cl. 23—115)

7. The method of preserving anhydrous ammonium thiosulfate against decomposition which comprises compressing the ammonium thiosulfate under a pressure of about 500 to 100,000 pounds per square inch.

3,345,132

PROCESS OF PREPARING SILICIC ACID IN A TWO-DIMENSIONAL STRUCTURE

Gerhard Wulf, Grunstrasse 130, Duren, Rhineland, Germany

No Drawing. Filed June 3, 1965, Ser. No. 461,149
Claims priority, application Germany, June 3, 1964, W 36,914
8 Claims. (Cl. 23—182)

1. A process of manufacturing silicic acid into a predominantly planarly bonded two-dimensional structure as lepidoid silicic acid, comprising the steps of: preparing an aqueous solution of an alkali metal silicate, the ratio of said silicate and water being from 1:7 to 1:12; adding said solution to an aqueous, diluted sulphuric acid solution having a pH value in the range between 4.2 to 4.9; mixing both solutions; freezing the mixture within a time of up to 30 seconds; thawing the frozen mixture and recovering the remaining lepidoid silicic acid in form of a solid product having an average particle size of less than 1 micron.

3,345,133

PREPARATION OF BERYLLIUM OXIDE OF FINE PARTICLE SIZE THRU CRYSTALLIZATION AND CALCINATION

Bernard Robert Steele, St. Annes-on-the-Sea, and Frank Rigby, Blackpool, England, assignors to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,097
Claims priority, application Great Britain, Mar. 19, 1964, 11,781/64
4 Claims. (Cl. 23—186)

1. A process for the production of beryllium oxide of fine particle size comprising the steps of passing a hot saturated solution of beryllium sulphate into a chilled and continuously cooled aqueous solution of at least one organic alcohol, the organic alcohol being non-reactive with beryllium sulphate and limiting the solubility of beryllium sulphate in said solution to a low amount whereby beryllium sulphate tetrahydrate crystals in fine crystalline form are produced by precipitation from the solution, separating said beryllium sulphate tetrahydrate crystals from said solution, heating said separated crystals to drive off water of crystallization to form beryllium sulphate dihydrate crystals, and calcining said beryllium sulphate dihydrate crystals by heating in air to produce beryllium oxide of fine particle size, said organic alcohol further being capable of removal from the beryllium hydrate crystals during the heating thereof.

3,345,134

PROCESS AND APPARATUS FOR THE MANUFACTURE OF TITANIUM NITRIDE

Gero Heymer, Knapsack, near Cologne, and Heinz Harnisch, Lovenich, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Apr. 11, 1963, Ser. No. 272,333
Claims priority, application Germany, Apr. 21, 1962, K 46,551
17 Claims. (Cl. 23—191)



1. A process for manufacturing titanium nitride which comprises the steps of heating a reactant gas selected from the group consisting of ammonia and a nitrogen-hydrogen mixture in an electric arc to a temperature of at least 1000° C., rapidly and intimately mixing the reactant gas with gaseous titanium tetrachloride in a mixing zone whose walls are maintained by cooling at a temperature within the range of 136–500° C. and subsequently cooling and recovering the reaction products of said process.

3,345,135

THE CATALYTIC OXIDATION OF HYDROCARBONS IN THE PRESENCE OF HYDROGEN SULFIDE TO PRODUCE CARBON DISULFIDE AND OXIDES OF CARBON

George T. Kerr, Lawrence Township, Mercer County, and Phillip S. Landis, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 6, 1963, Ser. No. 328,513
16 Claims. (Cl. 23—206)

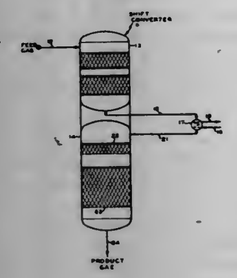
1. A process for producing carbon disulfide and oxides of carbon which comprises effecting reaction of an aliphatic hydrocarbon selected from the group consisting of saturated and unsaturated hydrocarbons containing from 1 to 20 carbon atoms, an oxidizing gas selected from the group consisting of air, oxygen, nitrogen oxides, sulfur dioxide, and mixtures thereof, and hydrogen sulfide at temperatures of about 100° to about 700° C. in the presence of a catalyst comprising an aluminosilicate having an ordered internal structure with a defined pore size of from about 4 A. to about 15 A. in diameter and being selected from the group consisting of alkali and alkaline earth metal forms, the rare earth exchanged form, the hydrogen exchanged form and the ammonium exchanged form of the aluminosilicate.

3,345,136

MULTI-STAGE SHIFT CONVERSION METHOD FOR HYDROGEN PRODUCTION

James A. Finneran, Jr., Garden City, N.Y., and Leonard C. Axelrod, Elizabeth, N.J., assignors to Pullman Incorporated, a corporation of Delaware

Filed Oct. 2, 1963, Ser. No. 313,308
5 Claims. (Cl. 23—213)



1. A process for the production by hydrogen which comprises

(a) contacting a gas containing carbon monoxide and sulfur with steam in the presence of a high temperature shift conversion catalyst at temperatures in the range of about 600 to about 850° F. to produce gas enriched in hydrogen and carbon dioxide,

(b) cooling said enriched gas to a temperature in the range of about 430 to about 530° F.,

(c) removing sulfur from said cooled gas to produce sweetened gas, and

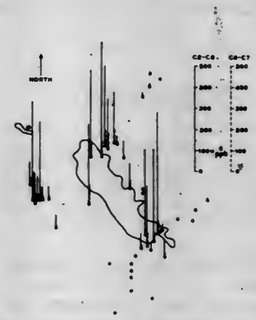
(d) contacting said sweetened gas with steam in the presence of a low temperature shift conversion catalyst at temperatures in the range of about 430 to about 550° F. to produce gas low in carbon monoxide and further enriched in hydrogen and carbon dioxide.

3,345,137

GEOCHEMICAL METHOD OF PROSPECTING FOR PETROLEUM

Clayton D. McAuliffe, Fullerton, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Sept. 24, 1965, Ser. No. 492,987
4 Claims. (Cl. 23—230)



1. A method of determining the presence of a subterranean deposit of petroleum by analyzing samples for the presence therein of minute quantities of hydrocarbons comprising collecting a plurality of water samples from laterally spaced-apart surcace and near-surface locations of the earth, analyzing each of said samples for the presence of hydrocarbons containing from two through seven carbon atoms, plotting separately on a map at a position corresponding to the location of the earth above where each sample was collected the total concentration of hydrocarbons having from two through five carbon atoms and the total concentration of hydrocarbons having six and seven carbon atoms and drilling an exploratory well at a location of the earth corresponding to a location on said map where anomalous highs in both hydrocarbons having from 2 to 5 carbon atoms and hydrocarbons having 6 and 7 carbon atoms occur.

3,345,138

METHOD FOR DETECTING PREGNANCY

John Frederick Eberhard, Frank T. Friedl, and Klyde H. Stephens, Tulsa, Okla., assignors to Eberhard-Stephens Laboratories, Inc., Tulsa, Okla., a corporation of Oklahoma

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,557
15 Claims. (Cl. 23—230)

1. A colorimetric method of testing for the state of pregnancy comprising admixing to both a urine specimen of a human female and a blank a compound taken from the group consisting of alkyl and aryl substituted phenylenediamines and their salts, a divalent metallic salt, and an oxidizing agent and comparing the time required for said urine specimen to develop a predetermined color intensity as compared with said blank.

3,345,139

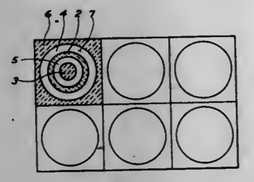
JACKETED ANNULAR REACTOR UNIT

Heinz Kühne, Kronberg, Taunus, Germany, assignor to Vickers-Zimmer Aktiengesellschaft, Planung und Bau von Industrieanlagen

Filed May 19, 1964, Ser. No. 368,540
Claims priority, application Germany, May 24, 1963, Z 10,137
6 Claims. (Cl. 23—277)

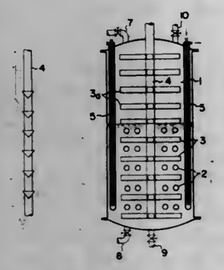
1. Apparatus for effecting endothermic reaction of gaseous reactants, which apparatus provides for contacting of such reactants at elevated temperatures for short time durations, comprising means defining an elongated

cylindrical opening, said means defining an elongated cylindrical opening being a block of molded refractory material, tube means disposed in said cylindrical opening to form between said means defining an opening and said tube means an annular heating space for flow therethrough of heating gas at elevated temperatures, cylindrical body means disposed within said tube means to form an annular reaction space between said body and said tube for flow of



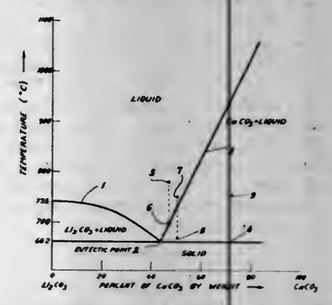
reaction gas therethrough, said tube means and said cylindrical body means consisting of a refractory material, means for supporting said tube means and said body means in uniform substantially concentric spaced-apart relationship, a first means for input of gases to be reacted into said annular reaction space, and a second means for input of heating gases into said annular heating space, whereby a uniform temperature gradient may be maintained in said annular heating space.

3,345,140
PHOTOCHEMICAL REACTOR
Shigeru Saito, Tetsuya Watanabe, and Kazuo Noguchi, Nakoso-shi, Japan, assignors to Kureha Kagaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan
Filed July 26, 1965, Ser. No. 474,808
Claims priority, application Japan, July 30, 1964, 39/43,301
2 Claims. (Cl. 23—285)



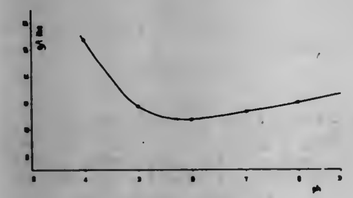
1. A photochlorination apparatus which comprises:
(a) a substantially cylindrical reaction vessel,
(b) the top of said vessel being provided with means for introducing a substance to be photochlorinated and outlet means for removing gas,
(c) the bottom of said vessel being provided with means for introducing chlorine gas and means for removing photochlorinated substance,
(d) the inner periphery of the vessel being provided with vertically arranged cooling tubes,
(e) a rotatably mounted shaft substantially centrally positioned and extending vertically from substantially the bottom of the vessel through the top of the vessel,
(f) means for rotating the said shaft,
(g) a plurality of substantially tubular light sources horizontally disposed in shelf-like arrangement within said vessel and extending through the vessel walls,
(h) a plurality of impellers attached to and positioned along the shaft between the horizontally disposed light sources and adapted to impel liquid in a downward direction, and
(i) a plurality of impellers attached to and positioned along the shaft above the said horizontally disposed light sources.

3,345,141
GROWTH OF CALCITE CRYSTALS FROM A MOLTEN FLUX BY SLOW COOLING
James F. Nester, Ridgefield, and John B. Schroeder, Weston, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Nov. 7, 1963, Ser. No. 322,143
13 Claims. (Cl. 23—300)



1. A slow cool method of growing artificial calcite comprising:
adding to a contained volume a mixture of calcium carbonate and a flux material capable of forming a eutectic mixture with calcium carbonate such that the lowest melting point of said mixture is the eutectic point, said flux being selected from the group consisting of lithium carbonate, lithium nitrate, calcium chloride and a mixture of potassium carbonate with lithium carbonate in which said potassium carbonate comprises about 35 to 85% by weight thereof;
said flux material being of such composition that some proportionate mixtures of calcium carbonate therewith have melting points below the decomposition temperature of calcium carbonate and above the solidus temperature of any intermediate phases which which may form between the flux and calcium carbonate;
said calcium carbonate being provided in said contained volume in a proportional amount in excess of that proportional mixture having the lowest melting point;
heating said contained volume to and maintaining the temperature of said contained volume at a temperature which is above said lowest melting point and below the decomposition temperature of both the calcium carbonate and the flux, so that at least some liquid containing some calcium carbonate, is present in said volume;
slowly cooling at a rate less than about 5° C. per hour a substantial part of said contained volume which includes a substantial part of said liquid to a temperature below the melting temperature but above the eutectic temperature of the particular proportional liquid mixture therein, so that said substantial part becomes slowly supersaturated with respect to calcium carbonate;
thereby causing said supersaturated calcium carbonate to crystallize out in said part to form at least one calcite crystal.

3,345,142
SELECTIVE DISSOLUTION OF SODIUM CHLORIDE FROM KAINITE MINERALS WITH WATER CONTAINING ADDED SURFACE ACTIVE AGENTS
Gerlando Marullo, Palermo, and Giovanni Perri and Giuseppe Tubiello, Novara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy
Filed Sept. 16, 1964, Ser. No. 396,951
Claims priority, application Italy, Sept. 18, 1963, 19,058/63
3 Claims. (Cl. 23—312)



1. A process for the purification of kainite from sodium chloride by washing with water, which comprises adding to the washing water a surface-active agent of the formula

$$R_1-\underset{\displaystyle Y_1}{\underset{|}{CH}}-(CH_2)_n-Z$$

wherein Z is selected from the group consisting of R_2 and Y_2; R_1 and R_2 are alkyl groups; Y_1 and Y_2 are hydrophilic groups selected from the group consisting of —OH, —COOH, —SO_3H, —SO_4H, —NH_2; and n is an integer which can be zero; the compound being from 6 to 30 carbon atoms; and preferentially leaching the sodium chloride from the kainite with said wash water.

3,345,143
PRODUCTION OF STOICHIOMETRIC URANIUM MONOCARBIDE FROM A URANIUM FLUORIDE
Earl W. Murbach, Thousand Oaks, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Oct. 2, 1964, Ser. No. 401,214
7 Claims. (Cl. 23—349)

1. A method of producing uranium monocarbide directly from a uranium fluoride, which comprises contacting the uranium fluoride, silicon dioxide, and carbon at a temperature of at least about 400° C. under an inert environment until evolution of the resulting SiF_4 gas is complete, and then increasing the temperature to at least about 1300° C. until the reaction is completed.

3,345,144
PROCESS FOR PREPARING HALOMANGANESE PENTACARBONYL
Oskar E. H. Klopfer, Bloomfield Hills, and Thomas H. Coffield, Farmington, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Mar. 29, 1961, Ser. No. 99,026
6 Claims. (Cl. 23—367)

1. Process comprising reacting a compound having the formula:

$$CXmHn$$

in which m is an integer ranging from 3 to 4, n is an integer ranging from zero to one, and X is a halogen, with manganese pentacarbonyl hydride to yield a compound having the formula:

$$XMn(CO)_5$$

3,345,145
AUXILIARY MEMBER OF A COMPOSITE FOIL FOR JOINING TWO OBJECTS OF DIFFERENT COEFFICIENTS OF THERMAL EXPANSION
Hermanus Stephanus Josephus Pijls, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,125
Claims priority, application Netherlands, Mar. 5, 1963, 289,812
4 Claims. (Cl. 29—183.5)



1. An auxiliary member for use in joining together by a thermosetting epoxy glue, two objects of different thermal coefficients of expansion, said member comprising a foil of a lead-tin alloy coated on both sides with an inner film of copper and an outer film of nickel.

ERRATUM

For Class 29—199 see:
Patent No. 3,345,156

3,345,146
COMPOSITION FOR ACCELERATED GRINDING
Emile Gardille, 6 Rue Port Mahon, Paris, France
No Drawing. Continuation of application Ser. No. 276,103, Apr. 26, 1963. This application Mar. 16, 1965, Ser. No. 440,271
Claims priority, application France, Apr. 27, 1962, 895,899, Patent 1,256,683
4 Claims. (Cl. 51—304)

1. An abrasive composition for accelerated grinding of surfaces and adapted for use with lubricating oil consisting essentially of 1 to 20 parts by weight of ferric oxide and 99 to 80 parts by weight of a mixture of sulfurous oleic acid, petroleum jelly, lead stearate and castor oil.

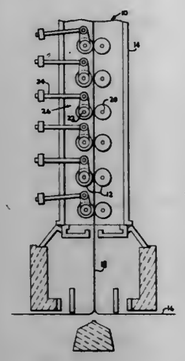
3,345,147
METHOD FOR PRODUCTION OF GLASS FIBERS
Robert G. Russell, Granville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of abandoned application Ser. No. 399,218, Sept. 25, 1964. This application Feb. 9, 1966, Ser. No. 532,829
3 Claims. (Cl. 65—3)

3. A method for producing filaments of glass comprising attenuating a plurality of molten streams of said glass from a feeder, providing a finite quantity of vaporizable liquid between groups of said streams, vaporizing said liquid under the influence of the heat of said streams, continuously evolving the vapors of said liquid into the attenuating zone atmosphere surrounding said streams, and continuously replenishing the liquid of said finite quantity at a rate matched to the rate of vaporization of the liquid therefrom.

3,345,148
METHOD OF DRAWING A GLASS SHEET, A PORTION OF ITS SURFACE BEING UNTOUCHED
Fred M. Ernsberger, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application June 27, 1963, Ser. No. 291,174. Divided and this application Feb. 9, 1967, Ser. No. 614,988
2 Claims. (Cl. 65—90)

1. A method of forming a portion of a continuous ribbon of flat glass having fire-finished surfaces which com-

prises drawing a continuous ribbon of glass from a molten bath by frictional engagement of both sides of the ribbon with a finite series of pairs of drive rolls disposed at even intervals along the length of the ribbon, disengaging at least one of the pair of drive rolls nearest the molten bath from contact with the ribbon, sequentially withdrawing at least one of each successive pair of drive rolls from the same side of the ribbon previously disengaged in timed sequence as the portion of the ribbon last engaged by both



of said pair of drive rolls nearest the molten bath reaches each said successive pair of drive rolls in said series, periodically returning both of said pair of drive rolls nearest the molten bath into engagement with the surface of the ribbon and thereafter sequentially returning both of each successive pair of drive rolls following the drive rolls nearest the molten bath in said timed sequence such that at least one side of a portion of the ribbon is continuously maintained free of contact with at least one roll of each successive pair of rolls in the series.

3,345,149

METHOD OF VARYING THE THICKNESS OF A GLASS SHEET WHILE ON A MOLTEN METAL BATH

Edmund R. Michalik, West Mifflin, and George W. Misson, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 16, 1963, Ser. No. 251,848
4 Claims. (Cl. 65—99)

1. In a process of producing glass sheet wherein the glass is deposited upon and supported on a liquid having a density greater than that of the glass and the glass when molten and allowed to flow freely on said liquid tends to naturally attain an equilibrium thickness, the improvement which comprises,

floating a layer of glass at a temperature at which it flows on said liquid,

flowing a pressurized gas from a plurality of spaced and separate pressure zones onto laterally spaced areas of the upper surface of the glass beneath said zones located above each of said areas and within the edges thereof,

flowing the gas at different pressures from different zones above each said area,

maintaining the pressure of the zones above the most closely adjacent portions of said laterally spaced areas at a first pressure which is substantially the same as the pressure between said laterally spaced areas,

maintaining the pressure of the zones above the most remote portions of said laterally spaced areas at a second pressure which is substantially the same as the pressure beyond said laterally spaced areas and above said supporting liquid, and

maintaining a gradient in the pressures provided by the laterally spaced pressure zones located between each pair of said pressure zones providing said first and second pressure,

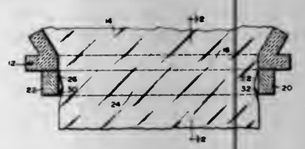
whereby to subject liquid outside and in contact with the glass to a fluid pressure of different magnitude than that of said gas between said laterally spaced areas to control the thickness of the glass within the edges thereof so as to be different from said equilibrium thickness.

3,345,150

APPARATUS FOR MANUFACTURING GLASS

Allen C. Ihrig, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Mar. 20, 1964, Ser. No. 353,505
4 Claims. (Cl. 65—184)



4. In apparatus for delivering molten sheet glass over a lip member wherein a supply of molten glass communicates with the upper end of an inclined delivery lip having bounding sidewall portions, the improvement which comprises, means projecting inwardly of said sidewall portions for impeding edge portions of the glass flow along said delivery lip, and said impeding means forming a restricted portion intermediate the ends of said lip.

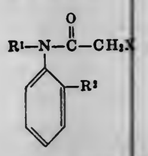
3,345,151

HERBICIDAL COMPOSITION AND METHOD

John F. Olin, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,667
10 Claims. (Cl. 71—118)

1. Composition comprising an adjuvant and a herbicidal effective amount of the formula



wherein R^1 is alkyl of not more than 6 carbon atoms, R^2 is alkoxy of not more than 4 carbon atoms and X is selected from the group consisting of chlorine and bromine.

3,345,152

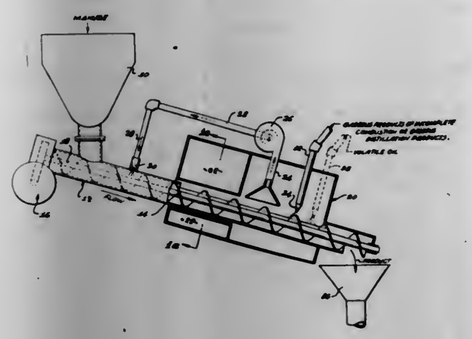
METHOD AND MEANS FOR CONVERTING ODORS IN MANURE AND HUMAN EXCRETA

Milo Don Appleman, Los Angeles, Calif., assignor to Jack J. Schroeder, Long Beach, Calif.

Filed July 6, 1964, Ser. No. 380,236
9 Claims. (Cl. 71—21)

1. A process for converting the odor of manure from excreta, which comprises the steps of:

heating manure to a temperature of at least 180° F. in the substantial absence of oxygen to produce thereby a gaseous effluent and hot manure;



contacting manure with said gaseous effluent, before said manure is heated, to produce a manure product having a permanently changed odor; and

removing said gaseous effluent after said odor change.

3,345,153

SOLUBILIZING PHOSPHATE ROCK WITH AN AMMONIUM PHOSPHATE-AMMONIUM BISULFATE MELT

John Malcolm Lee, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 25, 1964, Ser. No. 413,821
6 Claims. (Cl. 71—36)

1. The method of converting water-insoluble and citrate-insoluble phosphate values in $Ca_3(PO_4)_2$-containing rock to water-soluble and citrate-soluble phosphate values, which comprises reacting between about 1 and about 5 parts by weight of a molten mixture of NH_4HSO_4 and $NH_4H_2PO_4$, wherein the weight ratio of NH_4HSO_4 to $NH_4H_2PO_4$ is not in excess of about 0.25 with one part of particulated $Ca_3(PO_4)_2$-containing rock, at a temperature above the melting point of said mixture and below about 170° C.

3,345,154

METHOD OF PREPARING A FOLIAGE TREATMENT MATERIAL FROM ZINC OXIDE, PHOSPHORIC ACID AND CALCIUM HYDROXIDE

John R. Allison, Whittier, and Manuel J. Cereghino, Seal Beach, Calif., assignors to Leffingwell Chemical Company, Whittier, Calif., a corporation of California

No Drawing. Filed June 1, 1964, Ser. No. 371,761
4 Claims. (Cl. 71—42)

1. The method of preparing an inorganic micronutrient plant foliage treatment material of limited water solubility, that includes reacting zinc oxide with phosphoric acid at a temperature not in excess of 180° F. to produce zinc dihydrogen orthophosphate with excess phosphoric acid, adding aqueous calcium hydroxide to the resulting mixture to produce an aqueous complex of zinc phosphate and calcium orthophosphate, and drying said complex to produce same in particulate crystalline complex form, the dried complex having limited water solubility and having a pH within the range of 6 to 8 and containing between about 5.5% and 30% zinc, 10% and 40% calcium, and 5.5% and 50% phosphorous calculated as P_2O_5.

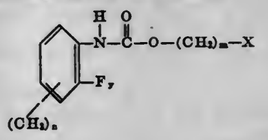
3,345,155

ESTABLISHING PERENNIAL GRASS TURF WITH CYCLOALKYL ESTERS OF A CARBANILIC ACID

Raymond W. Luckenbaugh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 10, 1966, Ser. No. 556,554
17 Claims. (Cl. 71—111)

1. Method for retarding annual grass weeds and establishing a perennial grass turf in an area by applying to the area before annual grass weed seeds have developed beyond the three-leaf stage, one-half to twenty pounds per acre of a compound of the formula:



wherein

X is selected from the group consisting of monomethyl-, dimethyl-, monohalo-, dihalo-, and monohalomonomethyl-saturated cycloalkyl where each cycloalkyl has 5 through 8 carbon atoms, monomethyl-, dimethyl-, monohalo-, dihalo-, and monohalomonomethyl-saturated bicycloalkyl where each bicycloalkyl has 7 through 8 carbon atoms, saturated cyclohexyl, saturated cycloheptyl, saturated cyclooctyl, saturated bicycloheptyl, saturated bicyclooctyl, monoethyl- and diethyl-saturated cyclohexyl, with the limitation that when X is cycloalkyl of 5, 7 and 8 carbon atoms and bicycloalkyl of 7 through 8 carbon atoms, $(CH_3)_n$ must be in the meta position; and

m, *n* and *y* are each separately selected from the group consisting of 0 and 1.

3,345,156

HIGH STRENGTH JOINED ARTICLE

George H. Eichelman, Jr., Cheshire, Conn., and Irwin Broverman, San Jose, Calif., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Original application May 25, 1965, Ser. No. 458,740, now Patent No. 3,290,182, dated Dec. 6, 1966. Divided and this application Aug. 5, 1966, Ser. No. 584,935
7 Claims. (Cl. 29—199)

1. A high strength joined article comprising at least two faying surfaces of aluminum bronze alloys containing from 9.0 to 11.8 percent aluminum and the balance essentially copper, said alloys having a metallographic structure containing from 5 to 95 percent beta phase, wherein the beta phase has a martensitic structure and the remainder alpha phase and having uniformly fine metallographic grain structure with a grain size less than 0.065 mm., said faying surfaces being joined together by filler metal having a melting point lower than the aluminum bronze alloys but above 1049° F., wherein interdiffusion of said filler metal into said aluminum bronze alloy is less than one grain diameter, said joined article having a tensile strength in excess of 100,000 p.s.i.

3,345,157

HERBICIDAL COMPOSITION AND METHOD

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 12, 1966, Ser. No. 578,478
2 Claims. (Cl. 71—111)

1. A herbicidal composition comprising an inert carrier and at least about 5% by weight a compound selected from the group consisting of 2-methoxy-3,6-dichloro-5-aminobenzoic acid, its esters in which the esterifying group is an unsubstituted alkyl group which contains from 1 to 10 carbon atoms, its alkali metal salts and

its amine salts in which the amine component contains up to 6 carbon atoms.

3,345,158
ELECTRICAL CONDUCTOR MATERIAL AND METHOD OF MAKING SAME

Murry L. Block and Arthur H. Mones, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 10, 1964, Ser. No. 388,459
1 Claim. (Cl. 75—108)

The method of forming crystallites of a noble metal conductor having a surface area of between 0.5–10 m^2/gm. comprising the steps of:

dissolving a noble metal substantially free of impurities in a nitric acid solution;

adjusting to and maintaining the solution at a pH value of approximately 1 by the addition of ammonium hydroxide;

raising the solution to and maintaining it at boiling temperature; and

precipitating the metal crystallites from the solution by the addition of formic acid in the proportion of approximately 1–2 cc. per gm. of metal to obtain crystallites having surface areas falling within the above surface area range.

3,345,159
ALUMINUM ALLOY

Laszlo Vilmos Sandor, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,515
2 Claims. (Cl. 75—146)

1. An aluminum base alloy adapted to making light-gauge wrought articles of improved mechanical properties in work hardened condition, said alloy

(a) consisting essentially of aluminum, about 1.65–2.40% magnesium by weight, about 1.50–1.85% zinc, the magnesium content of the alloy being greater than its zinc content, about 0.30–1.0% manganese, and silicon, iron and copper not exceeding about 0.20% silicon, about 0.30% iron and about 0.30% copper; and

(b) being further characterized by the following properties:

(i) in the form of cold rolled sheet at about .02" gauge, having a tensile strength of approximately 55,000 p.s.i. while retaining sufficient ductility for can-forming operations;

(ii) in work hardened condition of such sheet after a further reduction of about 62% cold work, as typically involved in making a drawn and ironed can body, having a tensile strength about 6,000 p.s.i. higher than its yield strength; and

(iii) in the form of such a can body of wall thickness about .008", having a bulge pressure sufficient to contain carbonated beverages while still retaining ductility necessary for forming operations such as flanging and seaming.

3,345,160
METHOD FOR MAKING DUCTED REFRACTORY ARTICLES

Bruno R. Miccioli, North Tonawanda, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

No Drawing. Filed July 9, 1965, Ser. No. 470,908
11 Claims. (Cl. 75—222)

1. A method of making ducted articles by powder metallurgical techniques which comprises the steps of arranging at least one combustable organic tube in a predetermined pattern, interspersing loose particles of refractory metal-containing powder around said tube, subjecting said tube and said powder to the simultaneous application of temperature and pressure, said temperature being sufficiently high to cause complete combustion of said tube and cohesion of said powder without the melting thereof and said pressure being less than that required to collapse said tube.

3,345,161
PHOTOCONDUCTIVE MATERIAL AND PROCESS FOR ITS PREPARATION

Joseph Mammino, Rochester, and Willard C. Hamm and Margaret C. Pease, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 13, 1963, Ser. No. 264,759
7 Claims. (Cl. 96—1.7)

1. A sensitized photoconductive element comprising a base sheet coated with a photoconductive material preheated in dry form with a dyestuff selected from the group consisting of acid dyes, basic dyes, anthraquinone dyes and sulfonphthalein dyes, to a temperature from 400 to 650° F. sufficiently high to oxidize the dyestuff and react with said material whereby the coloring effect and aqueous resin emulsion solubility of said dyestuff is reduced.

3,345,162
PHOTOCONDUCTIVE COMPOSITION AND ARTICLE

Samuel B. McFarlane, Jr., Summit, Daniel J. Carlick, Berkeley Heights, and John Ostock, Middletown, N.J., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

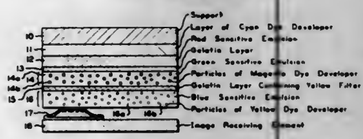
No Drawing. Filed June 17, 1963, Ser. No. 288,486
2 Claims. (Cl. 96—1.8)

1. An article of manufacture adapted for use in electrostatic printing comprising a backing sheet coated with a photoconducting composition containing photoconducting zinc oxide and a mixed resin comprising a coconut oil modified alkyd resin and a lower alkyl methacrylate polymer in the amounts of 0.2 to 5 weight parts of said methacrylate polymer per weight part of said alkyd resin and 3 to 10 weight parts of zinc oxide per weight part of said mixed resin.

3,345,163
PHOTOGRAPHIC DIFFUSION TRANSFER COLOR PROCESSES

Edwin H. Land, Cambridge, and Howard G. Rogers, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Feb. 13, 1956, Ser. No. 565,135
7 Claims. (Cl. 96—3)



1. A process of forming positive transfer images in color comprising the steps of: exposing an integral, multilayer, photosensitive monopack element comprising a support carrying a plurality of continuous, coextensive, superposed photosensitive silver halide emulsion layers, each said emulsion having associated with it a color-providing substance selected from the class consisting of an image dye and an intermediate for said image dye, each said silver halide emulsion being sensitized to different portions of the spectrum, developing each of said emulsions, immobilizing in developed areas, as a function of said development, said color-providing substance associated with each said emulsion thereby providing in undeveloped areas of each said emulsion an imagewise distribution

of nonimmobilized, diffusible color-providing substance, transferring by imbibition at least a portion of each of said imagewise distributions of nonimmobilized, diffusible color-providing substance to a single, superposed image-receiving layer to impart thereto a plurality of dye images, thereby providing a positive, multicolor image, said development and said transfer being effected by the application of a single liquid composition, wherein said color-providing substance associated with undeveloped areas of at least each inner emulsion layer of said multilayer, photosensitive element is rendered diffusible only after at least substantial development of the next outer emulsion layer has occurred.

2. A process of forming positive transfer images in color as defined in claim 1 wherein said integral, multilayer, photosensitive element comprises a blue-sensitive silver halide emulsion layer, a green-sensitive silver halide emulsion layer and a red-sensitive silver halide emulsion layer, said emulsion layers being continuous, coextensive and superposed over each other and carried on a common support, said blue-sensitive silver halide emulsion layer being positioned most distant from said support and having associated therewith a yellow dye developer, said green-sensitive silver halide emulsion layer having associated therewith a magenta dye developer, and said red-sensitive silver halide emulsion layer having associated therewith a cyan dye developer, each of said dye developers being a compound which is, respectively, a yellow dye, a magenta dye, and a cyan dye, each said compound also being a silver halide developing agent, permeating said exposed integral, multilayer, photosensitive element with a liquid alkaline composition to solubilize said dye developers and to develop each of said emulsions, oxidizing, as a function of said development, said dye developers in exposed areas of each of said emulsions to provide an imagewise distribution of unoxidized yellow dye developer in said blue-sensitive emulsion layer, an imagewise distribution of unoxidized magenta dye developer in said green-sensitive silver halide emulsion layer, and an imagewise distribution of unoxidized cyan dye developer in said red-sensitive silver halide emulsion layer, and transferring, by imbibition, at least a portion of each of said imagewise distributions of unoxidized yellow, magenta and cyan dye developers to said single image-receiving layer in superposed relationship with said exposed photosensitive element, to form said multicolor positive image.

3,345,164
SILVER IMAGE TRANSFER POLYMERIZATION PROCESS

Abraham Bernard Cohen, Springfield, and Joseph Anthony Sincius, Little Silver, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of abandoned application Ser. No. 101,074, Apr. 6, 1961. This application Apr. 4, 1966, Ser. No. 539,665
12 Claims. (Cl. 96—28)

1. A photographic image transfer-polymerization process which comprises subjecting a photographic silver halide continuous tone, halftone or line image record of a silver halide emulsion layer wherein any metal-containing image-yielding material in association with said layer is a silver containing material to the action of

(1) an aqueous solution having a pH between 5 and 8.5 of a silver halide solvent selected from the group consisting of sodium, potassium and ammonium thiosulfate and thiocyanate; sodium and potassium cyanide; ammonia, thiourea, thiosinamine, sodium chloride and potassium iodide that does not initiate

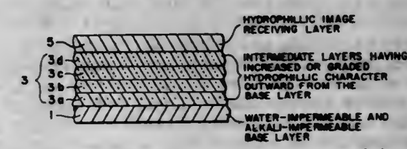
(2) a peroxygen compound,

while said record is in contiguous image transfer relationship with a stratum comprising at least one non-gaseous, addition polymerizable, ethylenically unsaturated compound containing at least one terminal ethylenic group, and maintaining the stratum in such relationship while diffusing the silver ions formed from the silver halide solvent and the silver halide record from the silver halide sites to the sites of the monomer or of polymerization until an image of addition polymer corresponding to the silver halide image is formed in said stratum.

3,345,165
PHOTOGRAPHIC PRODUCT AND PROCESS OF USING SAME

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 31, 1963, Ser. No. 298,967
13 Claims. (Cl. 96—29)



1. As a new product, a sheet-like element releasably retaining an aqueous alkaline composition and adapted to be used in processing an exposed photosensitive silver halide stratum, said element comprising:

(a) a water-impermeable and alkali-impermeable base layer,

(b) a water-permeable and alkali-permeable outer layer,

(c) a plurality of layers intermediate said base layer and said outer layer, each said intermediate layer being at least partially permeable to water and alkali,

(d) an aqueous alkaline composition contained in said outer and intermediate layers,

(e) said outer and intermediate layers being swollen by said aqueous alkaline composition, said outer layer being appreciably swollen and said intermediate layers inward from said outer layer being progressively less swollen than said outer layer,

(f) said base, outer and intermediate layers being chemically stable to said aqueous alkaline composition,

(g) the surface of said outer layer being substantially dry to the touch.

9. A diffusion transfer process comprising the steps of exposing a photosensitive silver halide element, bringing said exposed photosensitive element into contact with the liquid-impregnated outer layer of the image-receiving element defined in claim 1, said contact being effected under pressure sufficient to obtain surface-to-surface wet contact but insufficient to squeeze a major portion of said liquid out of said image-receiving element, whereby said liquid is absorbed by said photosensitive element and develops the exposed areas thereof, and an imagewise distribution of diffusible image-forming components is transferred by diffusion to said image-receiving element to form a positive transfer image.

3,345,166
PHOTOGRAPHIC PROCESS WHEREBY A FULLY DEVELOPED AND FIXED NEGATIVE IS FORMED CONCURRENTLY WITH A POSITIVE SILVER TRANSFER IMAGE

Edwin H. Land, Cambridge, Meroe M. Morse, Boston, and Elizabeth L. Yankowski, Watertown, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Mar. 9, 1961, Ser. No. 94,451
3 Claims. (Cl. 96—29)

1. A process of forming a fully developed and fixed out negative concurrently with the formation of a silver

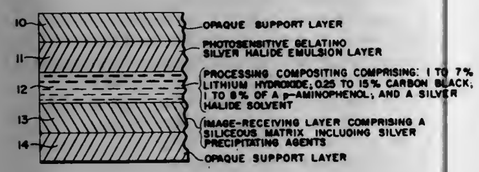
transfer image comprising developing an exposed silver halide emulsion layer, said emulsion being a silver iodobromide emulsion the grains of which have an average diameter of approximately 1 to 2μ, with a processing fluid including an alkali, a silver halide developing agent, a viscosity-increasing, film-forming reagent, said film-forming reagent being selected from the group consisting of sodium carboxymethyl cellulose and hydroxyethyl cellulose, and a silver halide solvent capable of forming water-soluble complexes with unexposed and undeveloped silver hailde, said silver halide solvent being present in a concentration, by weight, in excess of the concentration of said alkali, said silver halide solvent being present in a concentration approximately at least 4 times that concentration necessary to obtain a silver transfer image having a maximum density in excess of 1.0 in 1 minute with the same silver halide emulsion layer, forming an imagewise distribution of said soluble silver complex in undeveloped areas, transferring said soluble silver complex to a superposed image-receiving layer to form a positive silver transfer image and separating said image-receiving layer and said silver halide emulsion layer, said separated silver halide emulsion layer being insensitive to further actinic radiation and containing a fully developed and fixed out negative image, the silver of said negative and positive images having high covering power and said negative the positive images each having a maximum density in excess of 1.0.

3,345,167

PHOTOGRAPHIC COMPOSITIONS, PRODUCTS AND PROCESSES

Milton Green, Newton, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Apr. 27, 1964, Ser. No. 362,620
19 Claims. (Cl. 96—29)



1. The photographic process which comprises the steps of exposing a photosensitive gelatino silver halide emulsion; developing exposed silver halide in said photosensitive emulsion with an aqueous solution, distributed intermediate said emulsion and a superposed print-receiving layer comprising a siliceous matrix containing silver precipitating agents, comprising, in combination, about:

1 to 7%, by weight, lithium hydroxide,
0.25 to 15%, by weight, carbon black,
1 to 8%, by weight, of a p-aminophenol silver halide developing agent, and
a silver halide solvent;

contacting undeveloped silver halide with said silver halide solvent and forming thereby an imagewise distribution of a soluble silver complex in the unexposed areas of said emulsion; transferring from said emulsion, at least in part, said imagewise distribution of said soluble silver complex to said print-receiving layer; precipitating said transferred silver complex to provide thereby a reversed positive silver print; and separating said print-receiving layer from its superposed relationship with said photosensitive emulsion subsequent to positive print formation.

3,345,168

DIFFUSION TRANSFER RECEIVING SHEET CONTAINING CHINA CLAY AND AN ALIPHATIC AMINE

Hans M. Wagner and Wojciech M. Przezdziecki, London, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 19, 1963, Ser. No. 324,745
10 Claims. (Cl. 96—29)

7. A process of forming images by the diffusion transfer process which comprises developing an exposed silver halide emulsion, transferring the silver halide by diffusion from the undeveloped areas of the emulsion layer in contiguity with a silver halide solvent to an image receiving layer containing a nucleating composition, said composition comprising china clay having dispersed therein silver precipitating agents having an average diameter of about 25 A. to about 2500 A. and an aliphatic amine having 14 to 18 carbon atoms selected from the class consisting of the amine and salts thereof.

3,345,169

PHOTOGRAPHIC PROCESS

Hugh G. McGuckin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 25, 1965, Ser. No. 458,750
19 Claims. (Cl. 96—29)

1. A photographic element for use in the photographic diffusion transfer process comprising a support having thereon silver precipitating nuclei reacted with an ionic compound comprising a noble metal selected from the class consisting of palladium, platinum and gold and mixtures thereof in which the noble metal is other than any metal comprising said silver precipitating nuclei.

3. A photographic element of claim 1 in which the said nuclei are selected from the class consisting of Carey Lea silver, the sulfides of cadmium, cobalt, copper, lead, nickel, silver, and zinc, and mixtures thereof.

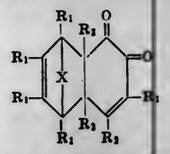
3,345,170

LIGHT SENSITIVE PHOTOGRAPHIC ELEMENTS CONTAINING DEVELOPING AGENT PRECURSORS

Francis J. Evans and John W. Gates, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

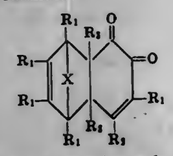
No Drawing. Filed June 5, 1964, Ser. No. 373,099
20 Claims. (Cl. 96—35)

1. A photographic element comprising a support and a photographic silver halide emulsion layer, and integral with said photographic element a water-permeable hydrophilic colloid layer containing a compound selected from the class of compounds represented by the following general formula:



wherein X represents a member selected from the class consisting of alkylene groups having 1–2 carbon atoms, R_1 represents a member selected from the class consisting of hydrogen, lower alkyl groups, an aryl group and halogen, R_2 represents a member selected from the class consisting of hydrogen, alkyl groups from 1–20 carbon atoms, an aryl group and halogen and R_3 represents a member of a class consisting of hydrogen and lower alkyl groups.

12. A process for forming a photoresist comprising exposing a substantially unhardened colloidal photographic silver halide emulsion layer containing a compound selected from the class of compounds represented by the following general formula:



wherein X represents a member selected from the class consisting of alkylene groups having 1–2 carbon atoms, R_1 represents a member selected from the class consisting of hydrogen, lower alkyl groups, an aryl group and halogen, R_2 represents a member selected from the class consisting of hydrogen, alkyl groups from 1–20 carbon atoms, an aryl group and halogen and R_3 represents a member of a class consisting of hydrogen and lower alkyl groups, developing in an alkaline bath, and removing the untanned areas in warm water.

3,345,171

PHOTOCHEMICAL INSOLUBILIZATION OF POLYMERS

Urbain Leopold Laridon, Wilrijk-Antwerp, and Gerard Albert Delzenne, Kessel-Lo, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,484
15 Claims. (Cl. 96—36)

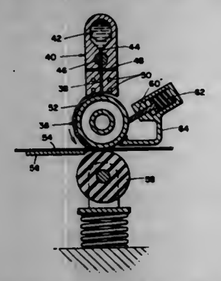
1. A photographic reproduction process, which comprises exposing to a process transparency a supported layer of a soluble, high molecular weight, light-sensitive arylazido group-containing polyester obtained by the interfacial polycondensation of at least one monomer which is a dihydroxyl compound and at least one monomer which is an acid compound, said acid compound comprising an arylazido substituent, until the exposed regions of the layer become insoluble, dissolving only the polyester in the unexposed regions of the layer, and leaving an image of insoluble polyester remaining on the support.

3,345,172

PHOTOGRAPHIC PROCESSING METHOD UTILIZING FROZEN AQUEOUS SOLUTIONS

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 1, 1964, Ser. No. 415,086
8 Claims. (Cl. 96—48)



1. The method of treating an exposed photosensitive image-recording sheet with an aqueous liquid having substantially the viscosity of water to produce a visible image in said sheet, said method comprising:

rapidly freezing a quantity of said aqueous liquid containing reagents capable of reacting with differentially exposed photosensitive image-recording material to produce a visible image, said liquid being frozen in the form of a substantially solid body having at least one dimension approximately equal to one dimension of the section of said sheet to be treated; and

while maintaining said body of frozen liquid in a substantially solid condition, supporting said body in contact with one side of said sheet over an elongated area located adjacent an edge of said section and extended to opposite edges of said section; and

simultaneously pressing said body against said sheet and moving said sheet and body relative to one another transversely of said elongated area to cause melting of said body in the region of contact with said sheet and impregnation of said sheet with said liquid resulting from said melting.

3,345,173

STABILIZED PHOTOGRAPHIC PREHARDENER COMPOSITIONS

Howard E. Munro, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 14, 1965, Ser. No. 472,048
3 Claims. (Cl. 96—59)

1. A composition comprising a dialkoxytetrahydrofuran compound, formaldehyde, an alkali metal salt of an aromatic sulfinic acid and at least 0.025% by weight, based on the tetrahydrofuran compound, of a stabilizer selected from the class consisting of butylated hydroxyanisole and butylated hydroxytoluene.

3,345,174

RAPID ACCESS PHOTOGRAPHIC PROCESS

Charles R. Dotson, Litchfield Park, and Harold M. Campbell, Phoenix, Ariz., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,765
1 Claim. (Cl. 96—61)

The process of pretreating a silver halide photographic film's emulsion prior to its exposure with a first solution that contains: 3 milliliters of concentrated sulphuric acid, 10 milliliters of ethylene glycol, 10 milliliters of formaldehyde to which are added 1 gram of sodium hexameta phosphate, 15 grams of sodium sulfite, 45 grams of sodium sulfate, 35 grams of hydroquinone, 50 grams of potassium bromide, 1 gram of ascorbic acid and 1 gram of sodium thiosulfate in sufficient water to make one liter of solution; exposing the film; applying to the film a developer activator second solution containing 15 grams of sodium sulfite, 60 grams sodium hydroxide, 50 grams sodium sulfate, 1 gram of potassium bromide in a sufficient quantity of water to make up one liter of said second solution; applying a clearing third solution to said developed and activated emulsion containing 600 milliliters of ammonium thiocyanate of 40% strength, 60 milliliters of concentrated sodium thiosulfate solution and sufficient distilled water to make up one liter of said clearing solution; and rinse-washing said emulsion with a fourth solution containing five percent by weight of ammonium thiocyanate in distilled water preparatory to drying the film.

3,345,175

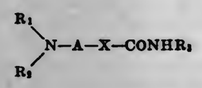
HIGH EDGE-GRADIENT PHOTOSENSITIVE MATERIAL

Yoshihide Hayakawa, Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Ashigarakami-gun, Kanagawa-ken, Japan, a corporation of Japan

No Drawing. Filed May 15, 1964, Ser. No. 367,892
Claims priority, application Japan, May 17, 1963, 38/24,400
4 Claims. (Cl. 96—76)

1. A photosensitive material comprising a support, a silver halide emulsion layer, and subsidiary layers ad-

jacent the emulsion layer, at least one of said layers containing (A) a compound selected from the group consisting of the compounds represented by the general formula:



wherein R_1 and R_2 each is an alkyl group, R_3 is a member selected from the class consisting of an alkyl group and aryl group, A is an alkylene group, and X is a member selected from the class consisting of —NH— and —O—; and the hydrohalides and sulfates thereof and (B) the condensation products of alkylene oxide with a compound selected from the group consisting of water, aliphatic alcohols, glycols, fatty acids, aliphatic amines, phenols and hexitol ring dehydration products.

3,345,176

PHOTOGRAPHIC PRODUCTS AND PROCESS

Herman E. Erikson, Winchester, and Herbert J. Frede, Framingham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Oct. 18, 1966, Ser. No. 587,397
4 Claims. (Cl. 96—79)

1. A process comprising preparing a prescreened photosensitive element by exposing a photosensitive element to X-ray radiation to which said photosensitive element is sensitive, said exposure being of a predetermined intensity and being effected through a half-tone screening means comprising macroscopic close-packed solid spheroid members, said screening means being substantially opaque to said radiation in the regions of the diameters of said spheroid members, substantially transparent to said radiation in the regions of the interstices between said spheroid members, and the remaining areas of said screening means being capable of transmitting said radiation in amounts which increase as a function of the decrease in thickness of said spheroid members, whereby a latent image is formed on said photosensitive element, said latent image when developed having a maximum density in areas exposed through said interstices between said spheroid members of said screening means, minimum intensity in areas exposed through said diameters of said spheroid members of said screening means, and intermediate density in areas exposed through the remaining portions of said screening means, said intermediate density increasing as a function of the decrease in thickness of those portions of said screening means through which it is exposed.

3,345,177

BETA-KETOETHYL ONIUM SALTS AS GELATIN HARDENERS

Burton D. Wilson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 29, 1964, Ser. No. 378,949
6 Claims. (Cl. 96—111)

1. A gelatin-silver halide photographic emulsion containing in hardening amount a compound in accordance with the following formula:

$$B^+CH_2CH_2CO(ACO)_mCH_2CH_2B^+ \cdot 2X^-$$

wherein:

+B is selected from the group consisting of nitrogen, sulfur and phosphorous onium salt residues,

m=0–1,

A is a divalent linkage selected from the group consisting of $(CR_2)_{1-10}$ per se and $(CR_2)_{1-10}$ in which at least one CR_2 unit is replaced by a replacement selected from the group consisting of —CR=CR—, —O—, —S—, arylene and cycloalkylene radicals, R being selected from the group consisting of H and alkyl groups of 1–4 carbon atoms, and

X is an acid anion.

3,345,178

PRECIPITATION OF BACITRACIN UPON AN INERT, INSOLUBLE, INORGANIC SUPPORT FOR USE IN ANIMAL FEEDS

Charles H. Monroe and George E. Ward, Newaygo, Mich., assignors to Dawe's Laboratories, Inc., Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,160
7 Claims. (Cl. 99—2)

1. A process for producing bacitracin from fermentation beers containing up to 500 units per ml. which comprises adjusting the bacitracin-containing fermentation beer to a dissolved solids content in the range of 1% to 20%, adjusting the pH to within the range of 2.0 to 7.0, adjusting the temperature to within the range of 0° to 40° C., dispersing from 0.5% to 2.0% of a finely divided, inert, insoluble, inorganic material throughout the mass as a support for the precipitation of bacitracin, saturating the mass with a salt selected from the group consisting of a chloride and sulfate of a metal selected from the group consisting of an alkali metal and alkaline earth metal and mixtures thereof, precipitating bacitracin on the finely divided inert, insoluble, inorganic material, and then separating and drying the insoluble mass to produce a solid containing bacitracin.

3,345,179

ACCELERATED BATCH PROCESS FOR THE FERMENTATION OF BREWERS WORT

James Richard Allan Pollock, Mount Merrion, Ireland, and Harold Frank Philip Webber, Chertsey, Surrey, England, assignors to Arthur Guinness Son & Company (Dublin) Limited, a company of the Irish Republic

Filed Nov. 26, 1963, Ser. No. 326,034
Claims priority, application Great Britain, Nov. 27, 1962, 44,795/62, 44,796/62; Jan. 24, 1963, 3,017/63
16 Claims. (Cl. 99—31)

1. In a batch process for the fermentation of brewers wort, in which a batch of said wort is pitched with yeast, is agitated and is fermented at traditional temperatures, the improvement wherein said wort is provided with an oxygen content within the range 3 milligrams per litre to 150 milligrams per litre; the whole batch of said wort is, at the commencement of said fermentation, brought into contact with said yeast in a fermentation zone to form a suspension of yeast in wort at an initial concentration within the range 10 grams per litre to 60 grams per litre (related to a yeast having 80% water content); said yeast suspension is controllably agitated to an extent sufficient to secure and maintain said yeast finely divided and substantially uniformly distributed throughout said wort during the greater part of the fermentation period, and said fermentation is conducted at temperatures within the range 40° F. to 75° F., whereby the period required to ferment said wort to a desired degree of attenuation is reduced.

3,345,180

COFFEE ROASTING METHOD

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

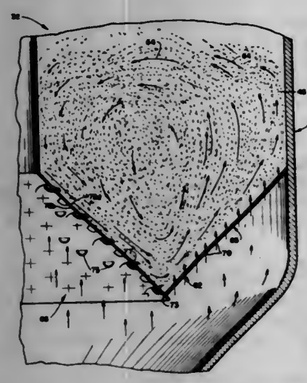
Filed Jan. 15, 1965, Ser. No. 425,702
25 Claims. (Cl. 99—68)

1. A method of roasting coffee beans and similar particulate solids in a vessel having a bed of the solids to be roasted therein, comprising the steps of:

(a) pressurizing the roasting vessel;

(b) fluidizing the bed of solids, rotating said fluidized bed, and roasting said solids by effecting a flow of heated fluid into said bed;

(c) concurrently terminating the flow of heated fluid into the bed of solids and reducing the pressure in said vessel to a pressure substantially above atmospheric before said solids are completely roasted; and



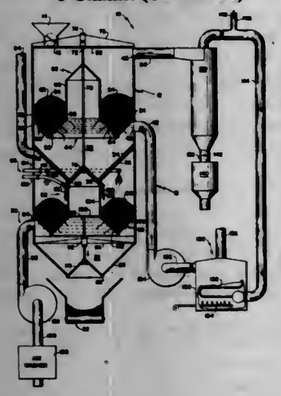
(d) thereafter repressurizing said vessel and resuming the flow of roasting fluid into said bed until the solids are roasted.

3,345,181

METHOD FOR ROASTING COFFEE BEANS AND SIMILAR PARTICULATE SOLIDS

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia

Filed Jan. 24, 1966, Ser. No. 522,691
5 Claims. (Cl. 99—68)



1. A method of roasting coffee beans and similar particulate solids in a vessel having upper and lower processing compartments therein, comprising the steps of:

(a) introducing the solids to be roasted into the upper compartment until a bed of said solids is formed therein;

(b) roasting the solids in said upper compartment by effecting a flow of a heated fluid medium into said bed, a first part of the fluid medium being directed upwardly through the outer regions of the bed, said upwardly directed part of the fluid medium having a sufficiently large vertical component to transport the particles upwardly in the outer regions of the bed, and the remainder of the fluid medium being directed into the lower inner part of the bed and toward the periphery thereof, said peripherally directed part of the fluid medium having a sufficiently high lateral flow component to cause outward movement of the particles in the lower part of the bed;

(c) transferring said roasted solids by gravity from said upper compartment to said lower compartment;

(d) cooling the roasted solids in said lower compartment by effecting a flow of a fluid medium into the bed of solids in said lower compartment, a first part of the fluid medium being directed upwardly through the outer regions of the bed, said upwardly directed part of the fluid medium having a sufficiently large vertical component to transport the particles upwardly in the outer regions of the bed, and the remainder of the fluid medium being directed into the lower inner part of the bed and toward the periphery thereof, said peripherally directed part of the fluid medium having a sufficiently high lateral flow component to cause outward movement of the particles in the lower part of the bed; and

(e) discharging the roasted and cooled solids from said lower compartment.

3,345,182

PREPARING AROMATIC SPRAY DRIED COFFEE

Arno Huste, Forest Hills, Robert J. Breza, New City, and Richard B. Kohler, Yorktown Heights, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 5, 1965, Ser. No. 493,265
3 Claims. (Cl. 99—71)

1. A process for producing soluble coffee of improved flavor and taste which comprises forming an aqueous extract of roasted coffee solids, said extract having a concentration of between 40 to 46% solids, and spray-drying said extract at a droplet size of between 100 and 250 micons, an inlet temperature of between 220° and 250° F. and an outlet temperature of between 200° and 220° F.

3,345,183

PROCESS FOR PRODUCING READY-TO-EAT OAT CEREALS

Edward F. Lilly, Dundee, and Robert R. Reinhart, Des Plaines, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed May 18, 1964, Ser. No. 368,328
5 Claims. (Cl. 99—80)

1. A process for the production of a ready-to-eat oat cereal comprising pressure-cooking oat groats until the starch is gelatinized, kneading the cooked groats at a temperature between about 150° F. and 212° F., thereby forming a plastic cooked oat dough, forming the cooked dough into flakes and flash drying the flakes by contacting the flakes with air at a temperature between about 400° F. and 800° F., thereby producing flakes having a moisture content between about 2% and about 10% by weight.

3,345,184

METHOD OF FORMULATING FROZEN DESSERT

Frank Sam Nelson, 1207 S. Industrial, Dallas, Tex. 75207

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,277
4 Claims. (Cl. 99—136)

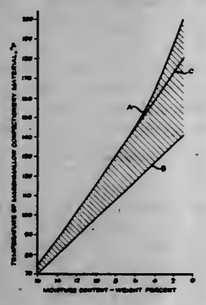
1. The method of formulating a dry frozen dessert mix of 100 parts by weight including, dry-blending flavoring and 35 to 50 parts sugar by blending them for 10–15 minutes, then adding 6 to 8 parts of a liquid unsaturated food oil and continuing the blending for at least 20 minutes, then adding 45 to 55 parts non-fat dry skimmed milk while continuing the blending, then adding 1 to 2 parts of a stabilizer while continuing the blending, and

continuing the blending for at least 20 minutes after the stabilizer has been added.

3,345,185
FROZEN DESSERT
Joseph P. Pisani, Mount Prospect, and Luther D. Hilker, Evanston, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 29, 1965, Ser. No. 475,853
5 Claims. (Cl. 99—136)

1. A low-fat frozen dessert having the characteristics of ice milk or ice cream, and having less than about 0.5 percent by weight of fat and comprising milk solids not fat, corn syrup solids, sucrose and water, said milk solids not fat being present at a level of more than about 12 percent by weight, said corn syrup solids and said sucrose being present at respective levels sufficient to provide a weight ratio of corn syrup solids to sucrose in the range of from about 1:1 to about 2:1, the total solids content of said frozen dessert being between about 34 percent and about 37 percent by weight and the body characteristics of the frozen dessert being that of ice milk and ice cream.

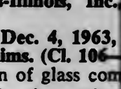
3,345,186
METHOD OF MAKING A DEHYDRATED CONFECTION
Frank P. Kania, Chicago, and Edward S. Olney, Deerfield, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,126
4 Claims. (Cl. 99—199)



1. A method for reducing the moisture content of marshmallow materials comprising drying the marshmallow materials with a stream of a drying gas, said drying being controlled so that the temperature of marshmallow material is increased as its moisture content decreases and so that the marshmallow material is maintained at temperatures and moisture contents within the shaded area of FIGURE 2 for substantially the entire drying period, and removing the resultant marshmallow product from the gas stream when a desired moisture content of less than about 12 percent has been reached, said drying occurring within about six hours after preparation of the marshmallow material.

3,345,187
CORROSION-INHIBITING TITANIUM DIOXIDE PIGMENTS
Kenneth Binnis, Stockton-on-Tees, England, assignor to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
No Drawing. Filed June 9, 1965, Ser. No. 462,744
Claims priority, application Great Britain, July 31, 1964, 30,361/64
9 Claims. (Cl. 106—14)

1. Pigmentary titanium dioxide particles coated with a compound selected from the group consisting of the titanates of alkanolamines of the general formula



wherein each of the R's are separately selected from the group consisting of divalent aliphatic radicals containing two carbon atoms and divalent aliphatic radicals containing three carbon atoms.

3,345,188
CERAMIC DIELECTRICS
Kunio Honma, Honjyo-shi, Akita-ken, Japan, assignor to TDK Electronics Co., Ltd., Tokyo, Japan
Filed May 12, 1964, Ser. No. 366,857
Claims priority, application Japan, May 18, 1963, 38/26,019
1 Claim. (Cl. 106—39)

A ceramic dielectric consisting essentially of
(a) $BaTiO_3$ in an amount of about 65 to 97.5 molar percent,
(b) $BeTiO_3$ in an amount of about 1 to 34 molar percent,
(c) $Bi_2(SnO_3)_3$ in an amount of about 1 to 20 molar percent, and
(d) La_2O_3 in an amount of about 0.2 molar percent.

3,345,189
CERAMIC DIELECTRICS
Shinobu Fujiwara, Minami-akita-gun, Akita-ken, and Takao Shiraiwa, Akita-shi, Japan, assignors to TDK Electronics Co., Ltd., Tokyo, Japan
Filed June 8, 1964, Ser. No. 373,315
Claims priority, application Japan, Oct. 30, 1963, 38/57,493
1 Claim. (Cl. 106—39)

A ceramic dielectric material prepared by admixing about 0.1% by weight $MgCO_3$, about 0.7% by weight Sb_2O_3, about 84 molar percent $BaTiO_3$, about 9 molar percent $BaSnO_3$ and about 7 molar percent $CaTiO_3$, calcining the resultant mixture at a temperature of about 1200° C., shaping the mixture as desired, and subjecting the shaped material to a sintering temperature of about 1330° C.

3,345,190
METHOD FOR CONTROLLING THE REDUCTION OF METALLIC IONS IN GLASS COMPOSITIONS
Marvin J. Albinak and Warren H. Turner, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Dec. 4, 1963, Ser. No. 328,097
20 Claims. (Cl. 106—47)

1. In the preparation of glass compositions containing metallic compounds wherein previously employed reducing agents in the molten glass compositions tend to rapidly and completely reduce the metallic ions of the said metallic compounds to the free metal state, and thereby cause a discoloration and deterioration of the glass composition, the improvement whereby the oxidation state of the metallic ions of the said metallic compounds is controlled and discoloration of the glass composition is avoided, which comprises having in the molten glass composition, as the sole additive for controlling the oxidation state of said metallic ions, a metal oxalate salt wherein the metal is a member selected from the group consisting of Group I*a* metals and Group II*a* metals of the Periodic Table, said salt being present in an amount sufficient to permit said metallic compound to produce the desired color in the base glass composition.

3,345,191
DOLOMITE SINTER AND A PROCESS OF ITS PRODUCTION
Mihály Brunner, Roslags Nasby, Sweden, assignor to Jernkontoret, The Swedish Ironmasters Association, Stockholm, Sweden
Filed Mar. 22, 1965, Ser. No. 441,537
Claims priority, application Sweden, Mar. 26, 1964, 3,830/64
2 Claims. (Cl. 106—61)

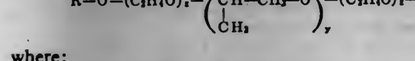
1. A process for producing dolomite sinter adapted for use in the manufacture of linings in metallurgical furnaces which comprises grinding raw dolomite to a grain size of less than 0.06 mm., burning the ground dolomite at a temperature of about 1400° C. to produce a dolomite sinter having a bulk density of about 3.15 g./cm.^{3} and a structure which is resistive against slag attacks, said structure comprising small crystals forming a stingy substantially coherent periclase crystal phase.

3,345,192
REFRACTORY MASSES
Albert Hloch and Rudolf Kohlhaas, Frankfurt am Main, and Nikolaj Medić and Helmut Neises, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed Nov. 16, 1965, Ser. No. 508,101
Claims priority, application Germany, Dec. 9, 1964, F 44,648
2 Claims. (Cl. 106—67)

1. A refractory mass consisting essentially of 60 to 80% by weight of an inert refractory filler, 15 to 20% by weight of ball clay, 1.5 to 7% by weight of alumina hydrate, 3 to 15% by weight of polyphosphoric acid containing at least 80% of P_2O_5 and 0.5 to 3.0% by weight of aluminum fluoride.

3,345,193
ASPHALT EMULSION-SULFATE LIQUOR SOIL STABILIZATION MIXTURE
Armin C. Pitchford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 29, 1965, Ser. No. 429,116
7 Claims. (Cl. 106—123)

1. A mixture of (1) an oil-in-water asphalt emulsion having a pH of at least 7.1 comprising asphalt, water and a nonionic emulsifying agent of the formula:



where:

R is selected from the group consisting of hydrogen, aryl and alkaryl radicals; and
x, *y* and *z* are integers, such that (1) when *x* is zero, *y* is also zero, *z* is in the range of 20 to 60, inclusive, and said R is one of said aryl and alkaryl radicals, and (2) when *x* and *y* are greater than zero, the sum of *x* and *z* is in the range of 50 to 350, inclusive, and *y* is in the range of 40 to 60, inclusive,

wherein, based on the total weight of the emulsion, the amount of asphalt is 50 to 75 weight percent, the amount of water is 25 to 50 weight percent, and the amount of nonionic emulsifying agent is 0.5 to 3.5 weight percent, and (2) sulfate liquor obtained from the chemical pulping of wood and containing 15 to 65 weight percent solids, said sulfate liquor being used in an amount such that the solids contributed thereby is less than 14 weight percent of the total mixture and the asphalt emulsion is at least 50 weight percent of the total mixture.

3,345,194
ORGANIC AMMONIUM SILICATE COATING COMPOSITIONS
Helmut Hans Wilhelm Weldes, Havertown, and David I. Netting, Swarthmore, Pa., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 24, 1963, Ser. No. 311,215
10 Claims. (Cl. 106—287)

1. A coating composition consisting essentially of
(a) a bodying component such as pigments, dyes, coloring materials or fillers,
(b) a settable component,
(c) said settable component consisting essential of a compound having the formula:

$$X(N_nR_p^s)_2O \cdot YSiO_2 \cdot ZH_2O$$

wherein: N represents a nitrogen atom; *n* is a small integer less than 10 and preferably less than 5; X, Y and Z represent numbers defining the relative amounts of each of the component parts of the compound, and X is 1, Y is preferably between 0.5 and 50, and Z is preferably between 0 and 99; R represents alkyl radicals containing between about 1 and 20 carbon atoms, at least one of which is an omega hydroxy alkyl group; *p* is at least 4, indicating bonds of total R groups to N; and *s* is an integer from 1 to *p*, indicating the number of different R groups, and
(d) between about 6% and 36% by weight of a setting agent selected from the group consisting of boric acid, phosphoric acid, lead oxides, lead carbonate, magnesium carbonate, zinc carbonate and silicofluorides,
(e) said bodying component being substantially insoluble and non-reactive with both the said setting agent and said settable component.

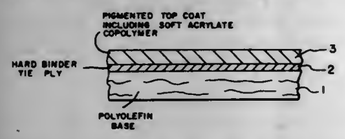
3,345,195
METHOD FOR IMPARTING A PERMANENT CREASE TO WOOL
Billy G. Simpson, Greensboro, N.C., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,301
6 Claims. (Cl. 117—10)

1. The method of imparting a permanent crease to a wool fabric which comprises applying to the fabric a water solution of an organosilicon compound selected from the group consisting of highly hydroxylated silanol and siloxanol organosilicon compounds in which there is an average per silicon atom of from 1 to 2 aliphatic hydrocarbon radicals of from 1 to 3 inclusive carbon atoms attached to the silicon through carbon-silicon bonds, there being on the average no more than 3 carbon atoms per silicon, the remaining valences of the silicon atom being satisfied by substituents selected from the group consisting of hydroxyl radicals and oxygen atoms of SiOSi linkages, there being from .1 to 10 percent by weight of said organosilicon compound based on the weight of the solution and thereafter creasing the fabric under heat and pressure.

3,345,196
COATED POLYOLEFIN SHEETS PARTICULARLY FOR BOOK COVERS AND METHOD OF PRODUCING THE SAME
Le Roy J. Goldbeck, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,420
9 Claims. (Cl. 117—11)

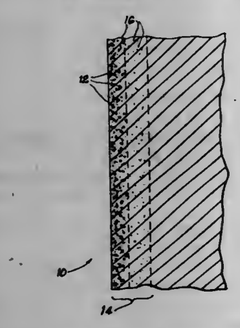
1. In a flexible, durable printable coated polyolefin sheet product which is abrasion resistant and adapted to be embossed, a binder tie ply coat adhered to the polyolefin sheet without significant penetration of the sheet

and comprising a binder selected from the group of hard acrylate polymers and including a small proportion by weight of a functional group monomer in which the functional group is a cross-linking agent whereby said tie ply coat is adhered to said sheet, and a top coat over said tie ply coat and adhered thereto, said top coat comprising at least one soft acrylate copolymer binder and exhibiting a



soft characteristic relative to said tie ply coat, at least said top coat containing an opacifying pigment and said pigment being distributed throughout the top coat and retained by said binder, the ratio by weight of pigment to total binder in the top coat and tie ply coat being 2:1 or less, said soft top coat and hard tie ply coat being irreversible as to their relative positions without material loss in abrasion resistance of the superposed coats.

3,345,197
ALUMINIZING PROCESS AND COMPOSITION
Richard W. Martini and James R. Darnell, Muskegon, Mich., assignors to Howmet Corporation, a corporation of Delaware
Filed Aug. 9, 1963, Ser. No. 301,048
6 Claims. (Cl. 117—26)



1. In the method of aluminizing parts made of alloys and high alloy steels based upon at least one of the metals cobalt, nickel, and chromium, the steps of packing the parts in a stationary bed of a powder mixture of aluminum metal and aluminum oxide in which the aluminum oxide is of a particle size less than 20 microns with the aluminum metal being present in the amount within the range of 2 to 10 percent by weight and heating the pack to elevated temperature whereby aluminum oxide particles are entrapped in the coating.

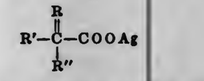
3,345,198
PROCESS FOR COLORING TEXTILE MATERIALS AND FOILS
Gerhard Pfeiffer, Kelkheim, Taunus, Kurt Stetzelberg, Frankfurt am Main, and Fritz Winkler, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Apr. 7, 1964, Ser. No. 358,054
Claims priority, application Germany, Apr. 9, 1963, F 39,438
19 Claims. (Cl. 117—38)

1. A process for the coloration and printing of a textile by coating it with a colored film, which process comprises treating the textile with an aqueous preparation consisting essentially of 0.05 to 0.5 part of a stabilized diazonium compound per part by weight of a polyvinyl acetoacetic acid ester prepared by reacting diketene with a partially hydrolyzed graft copolymer of vinyl acetate on polyvinyl pyrrolidone, said partially hydrolyzed graft copolymer having 42 to 86 percent by weight of vinyl alcohol units, 8 to 28 percent by weight of vinyl pyrrolidone units, and 6 to 30 percent by weight of vinyl acetate units, and fixing by heating the textile to a temperature from about 90° C. to about 200° C.

15. A coating composition consisting essentially of 0.05 to 0.5 part of a stabilized diazonium compound per part by weight of a polyvinyl acetoacetic acid ester prepared by reacting diketene with a partially hydrolyzed graft copolymer of vinyl acetate on polyvinyl pyrrolidone, said partially hydrolyzed graft copolymer having 42 to 86 percent by weight of vinyl alcohol units, 8 to 28 percent by weight of vinyl pyrrolidone units, and 6 to 30 percent by weight of vinyl acetate units.

3,345,199
DECORATING COMPOSITION AND METHOD FOR DECORATING THEREWITH
Howard M. Fitch, Summit, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Aug. 16, 1963, Ser. No. 302,704
8 Claims. (Cl. 117—46)

1. A decorating composition comprising a silver neocarboxylate having the formula



wherein R, R′ and R″ are alkyl radicals, said silver neocarboxylate having from 10 to 40 carbon atoms in the molecule, dissolved in an organic decorating vehicle comprising two or more solvents.

7. The method for decorating an article with a silver-containing metallic film which comprises applying to the article to be decorated the decorating composition of claim 1 and firing the applied composition to a metallic film.

3,345,200
METHOD OF PREPARING CELLULOSE FILM HAVING IMPROVED DURABILITY
John L. Justice, Wallingford, and Edward A. Wielicki, Philadelphia, Pa., and Anthony Labriola, Pennsville, N.J., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Feb. 26, 1964, Ser. No. 347,363
5 Claims. (Cl. 117—60)

1. A method of preparing durable cellulose film which comprises first displacing substantially all of the water in a water wet regenerated cellulose film with a water-soluble organic solvent in which organic plasticizers for said cellulose are soluble, then treating said film with an organic plasticizer for said cellulose dissolved in said organic solvent in an amount sufficient to plasticize said film, and removing said solvent from the film.

3,345,201
MANUFACTURE OF STRONG FIBROUS MATERIAL
Ernest M. Crowell, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
No Drawing. Filed Mar. 31, 1964, Ser. No. 356,022
8 Claims. (Cl. 117—63)

1. In a process of forming a strong fibrous material including the steps of penetrating the thickness of a mat of nonwoven intermeshed fibers with an aqueous suspension

of swollen distinct fine collagen fibers of microscopic size and removing the swelling water from said collagen to reaggregate the fibers into a larger collagen fiber structure reinforcing said intermeshed fibers against displacement, the improvement which comprises depositing a soluble binder in said mat of fibers before penetration by the collagen fiber suspension, said binder being at most slowly soluble in the aqueous suspension and being deposited in amount of from 10% to 100% by weight based on the weight of the fibers of the mat to cooperate with said fibers in resisting compaction of said mat during penetration with said collagen fiber suspension, and at least partially dissolving said binder and redistributing it in said mat at a stage in said process when collagen fibers have penetrated said mat.

3,345,202
METHOD OF MAKING RAZOR BLADES
Marie S. Kiss, Fairfield, Richard C. Hess, Stratford, and Edward G. Tajkowski, Orange, Conn., assignors to Eversharp, Inc., Milford, Conn., a corporation of Delaware
No Drawing. Filed June 10, 1963, Ser. No. 286,490
7 Claims. (Cl. 117—71)

1. A method of producing an improved razor blade which comprises applying to at least one preformed and presharpened cutting edge of a ferrous alloy, a thin plating of chromium, rehoning the plated cutting edge and thereafter applying to the cutting edge a relatively thin, adherent coating of polytetrafluoroethylene.

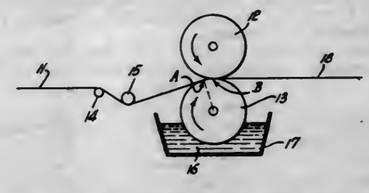
3,345,203
FINISHED TANNIN-CONTAINING SUBSTRATES
Benjamin B. Kine, Elkins Park, Michael Kalandiak, Ambler, and Peter R. Buechler, Langhorne, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,401
9 Claims. (Cl. 117—76)

1. As an article of manufacture, a solid substrate containing a tannin and having a coating thereon comprising a water-insoluble linear copolymer, having an apparent second order transition temperature in the range of −40° C. to +20° C., of 5 to 15% by weight of N-vinyl-2-pyrrolidinone and 85 to 95% by weight of at least one compound selected from the group consisting of (C_1–C_{18})-alcohol esters of acrylic acid and (C_4–C_{18})alcohol esters of methacrylic acid.

3. As an article of manufacture, a leather having a coating thereon comprising a water-insoluble linear copolymer, having an apparent second order transition temperature in the range of −40° C. to +5° C., of 5 to 15% by weight of N-vinyl-2-pyrrolidinone, at least 50% by weight of a compound selected from the group consisting of (C_1–C_{18})-alcohol esters of acrylic acid and (C_4–C_{18})-alcohol esters of methacrylic acid, and up to 5% by weight of another copolymerizable monoethylenically unsaturated monomer containing a reactive group selected from the group consisting of carboxylic acid, amino, amide, hydroxyl, glycidyl, and ureido groups.

3,345,204
PROCESS OF IMPREGNATING AN INSTANTANEOUSLY WETTABLE PAPER WITH A RUBBER LATEX
Isaac R. Dunlap, Cranbury, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 6, 1963, Ser. No. 286,065
3 Claims. (Cl. 117—102)

1. The process of impregnating a mechanically altered paper sheet which is instantaneously wettable by water with a rubbery latex so as to distribute substantially uniformly throughout the area and thickness of the sheet about 20–150 percent of the latex solids by weight of the dry fibers, which comprises exposing at least one side of said paper to an excess of latex for a period of time



of at least about 0.01 second and less than about 0.2 second, and removing the excess of latex at the end of said time period.

3,345,205
IMPREGNATED MICROPOROUS ARTICLES
Harry Raech, Jr., Torrance, Calif., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 10, 1963, Ser. No. 279,616
6 Claims. (Cl. 117—119)

1. In the method of impregnating metal and ceramic microporous articles by evacuating the pores of the article, filling the pores of the article with a catalyzed resinous impregnant and curing the resinous impregnant by heat, the improvement which comprises using a resinous impregnant consisting essentially of, by weight, 60–95 parts of diallyl phthalate monomer, 5–40 parts of diallyl phthalate prepolymer and 0.2–5% of a free-radical initiator.

3,345,206
ADHESIVE COMPOSITION CONTAINING A CARBOXYL MODIFIED ELASTOMER, ADHESIVE SHEET COATED THEREWITH, AND METHOD OF MAKING THE ADHESIVE SHEET
Ralf Korpman, East Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
No Drawing. Filed July 22, 1963, Ser. No. 296,457
19 Claims. (Cl. 117—122)

1. A normally tacky and pressure-sensitive adhesive composition comprising a carboxyl modified rubbery diene elastomer, a tackifier in an amount of from about 50 to about 500 parts by dry weight for every 100 parts by dry weight of elastomer; and an oil soluble and heat reactive aldehyde curing resin in an amount of from about 2 to about 100 parts by dry weight for every 100 parts by dry weight of elastomer said pressure sensitive adhesive composition having a curing time of no greater than about 5 minutes at a temperature of 300° F.

3,345,207
NON-WOVEN FABRIC PREPARED WITH METHYLOL AMIDES OF AN ADDUCT FORMED BETWEEN A MALEYL COMPOUND AND AN ETHYLENICALLY UNSATURATED ALIPHATIC COMPOUND
George W. Cogswell and Lester P. Hayes, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed June 20, 1963, Ser. No. 289,384
18 Claims. (Cl. 117—140)

1. A non-woven fibrous product in which the fibers are distributed in random array and bonded together by a binder wherein said binder which is cured to an insoluble condition in an uncured state comprises a water-dispersible methylol amide of an adduct formed by reaction between a maleyl compound an an ethylenically unsaturated aliphatic compound having a chain of from 10 to 24 carbon atoms containing on an average at least 2 potentially reactive carboxy groups.

3,345,208
FABRICATION OF ELECTROLYTIC CAPACITORS

Hans Keller, Neuhausen am Rheinfall, Switzerland, and Martin Mühlhäusser and Wolfgang Post, Singen, Hohentwiel, Germany, assignors to Aluminium-Walzwerke Singen G.m.b.H., Singen, Hohentwiel, Germany, a company limited of Germany

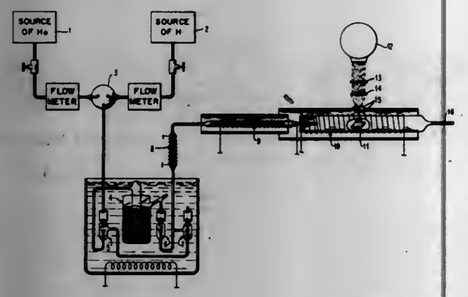
No Drawing. Filed Aug. 23, 1963, Ser. No. 304,234
Claims priority, application Switzerland, July 24, 1963, 10,091/63
4 Claims. (Cl. 117—200)

1. The method for the fabrication of solid electrolyte capacitors by forming a dielectric layer on a film-forming metal anode, coating said dielectric layer with a metal salt which is capable of being decomposed by pyrolysis to form a semiconductive superoxide layer, decomposing said metal salt by heating to form the semiconductive superoxide and coating the semiconductive layer with a layer of a conductive counter-electrode, which method is characterized in that pyrolysis is carried out with anhydrous manganese nitrate.

3,345,209
GROWTH CONTROL OF DISPROPORTIONATION PROCESS

George Cheroff, Peekskill, and Arnold Reisman, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 2, 1964, Ser. No. 356,850
14 Claims. (Cl. 117—201)



1. A process for depositing germanium epitaxially in a constant flow system at a constant total pressure which comprises:

(a) reacting hydrogen iodide with a source of germanium in presence of a carrier gas of hydrogen and an inert gas in a first temperature zone;

(b) subsequently decomposing the reaction products formed in said first zone in a second zone having a lower temperature than that of the first zone whereby germanium is freed and deposits epitaxially on a substrate in said second zone.

3,345,210
METHOD OF APPLYING AN OHMIC CONTACT TO THIN FILM PASSIVATED RESISTORS

Richard W. Wilson, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

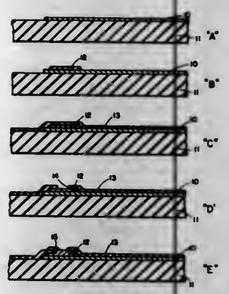
Filed Aug. 26, 1964, Ser. No. 392,136
4 Claims. (Cl. 117—212)

1. A method of passivating and making contacts to thin film resistors comprising:

metallizing a predetermined contact portion of a thin film of resistive conducting material supported by a substrate,

coating said resistor film including the metallized contact portion thereof with a protective insulating material,

etching entirely through a portion of said coating to said metallized contact portion of said resistor,



and again metallizing said resistor contact portion and also a portion of said coating so as to form a contact for said resistor extending to the surface of said coating.

3,345,211
CONTINUOUS PROCESS OF MANUFACTURING A STACK OF ELEMENTS FOR USE IN AN ELECTRIC CELL

Guy Pierre Lafon, Bordeaux, and Jean-Pierre Cailley, Ambares, France, assignors to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a French company

Filed July 16, 1964, Ser. No. 383,129
Claims priority, application France, July 17, 1963, 941,811; June 4, 1964, 977,110
9 Claims. (Cl. 136—6)

1. A continuous process of preparing a stack of elements of distinct kinds for use in an electric cell, said stack comprising a plurality of superposed elements of three distinct kinds alternated therein, comprising providing three bands each of a distinct kind, each respective band comprising a group of disc-like elements all of the same kind respectively linked together by similar linking parts of the same kind as the elements linked together thereby, the disc-like elements of a first and a second of said bands all being longitudinally aligned in the unfolded condition of such bands, and the disc-like elements of a third of said bands having their disc-like elements staggered in the unfolded condition of said third band, its said disc-like elements extending along a zig-zag line, positioning a first element on each band in its unfolded condition in stacked relationship at a common location with the first element of said staggered third band lying between the first elements of said first and second bands, then folding the linking part between the first and a second element of the staggered band so that the second element of said staggered band overlies the first element of one of the two other bands, then folding the linking part between the first and a second element of the other of said two other bands to overlie the said second element of said staggered band, then folding the linking part between the second and a third element of the staggered band to overlie the second element of said other of said two other bands and thereafter in sequence and in continuity folding linking parts between succeeding elements of said one of said other two bands, said staggered band, said second of said two other bands and said staggered band to complete a stack of elements of said bands in which the elements of said one and said second of said two other bands are disposed in alternation in the stack with an element of said staggered band between each of the adjacent elements of the said other two bands.

3,345,212
ELECTROLYTIC PROCESS FOR PREPARING IRON

Edward F. Schweitzer, Philadelphia, Pa., assignor, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware

Filed Feb. 18, 1964, Ser. No. 345,752
6 Claims. (Cl. 136—25)

1. An electrolytic process for producing iron active material for electric storage batteries which comprises:

(a) preparing an electrolyte containing ferrous ions having a pH in the range of about 5 to about 7 and an iron concentration in the range of about 20 to about 50 grams per liter, said electrolyte containing sufficient buffering agent to maintain the pH in the range of about 5 to about 7;

(b) inserting anodes and cathodes in said electrolyte, the anodes consisting essentially of iron;

(c) electroplating iron on said cathodes at a cathode current density in the range of about 25 to about 50 amp./ft.^{2} and maintaining said electrolyte at a temperature ranging from about 10° C. to about 35° C.;

(d) after completing the electroplating operation, passing the cathodes containing the electroplated iron into a water wash to remove the electrolyte therefrom;

(e) placing the washed cathodes and iron deposit in a dilute alkaline solution and cathodically electrolyzing the iron deposit therein;

(f) again washing the cathodes and iron deposit to remove the alkaline solution and salts formed therein;

(g) subjecting the cathodes containing the iron deposit to a heat treatment to convert a portion of the iron to Fe_3O_4 and in which the circulation of air is restricted in order to prevent the oxidation of the iron to red iron; and

(h) removing and grinding the converted iron deposit to the proper size by placing the cathodes containing the deposited iron in a grinding mill.

3,345,213
PROCESS OF MANUFACTURING A STORAGE CELL ELECTRODE

Robert Lincoln Lambert, Seneca Falls, N.Y., and William Richard McKelrnan, Crosby, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Original application Feb. 28, 1964, Ser. No. 348,038, now Patent No. 3,314,821, dated Apr. 18, 1967. Divided and this application Oct. 21, 1966, Ser. No. 588,587
10 Claims. (Cl. 136—75)

1. A process for providing electrodes suitable for use in a storage battery comprising the steps of:

forming a film casting by flowing a suspension onto a continuously moving support and a plurality of aligned and spaced conductors tensionally held and contiguous with said support, said suspension being in the form of a viscous mass and including sinterable metal particles homogeneously dispersed in a volatile binder, and plasticizer dissolved in a mixture of solvents,

heating said casting during the continuous movement thereof to evaporate the solvents therefrom at a rate substantially equal to the rate of solvent diffusion therethrough and provide a pliable self-supporting film.

firing said film to volatilize the binder therefrom and sinter the metal particles therein to each other and to said conductors to provide a porous and pliable self-supporting metal strip,

cutting said strip into an electrode configuration.

compacting a portion of said electrode configuration and attaching a connector thereto, and

loading the pores of the uncompacted portion of said electrode configuration with active electrode materials to provide an electrode suitable for use in an alkaline storage battery.

3,345,214
FUSED ELECTROLYTE CELL

John H. Zauner, West Orange, N.J., and Glenn F. Zellhoefer, Normal, Ill., assignors, by mesne assignments, to National Union Electric Corporation, Stamford, Conn., a corporation of Delaware

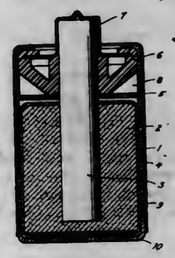
No Drawing. Filed Mar. 23, 1955, Ser. No. 496,316
6 Claims. (Cl. 136—137)

1. In a fused electrolyte cell including a cathode, electrolyte, depolarizing agent and an anode, that improvement wherein the surface of the cathode exposed to and in contact with the electrolyte of the cell consists essentially of a solid solution of B_2O_3 and V_2O_5, and wherein said B_2O_3 comprises at least about 5% by weight of the combined weight of such components.

3,345,215
SEPARATOR FOR PRIMARY CELLS

Guenther Ryhiner, deceased, late of Bad Soden, Taunus, Germany, by Anita Ryhiner, executrix, Bad Soden, Taunus, Germany, and Alfred Schmier, Frankfurt am Main, Germany, assignors to Varta Pertrix-Union Gesellschaft mit beschrankter Haftung, Ellwangen, Jagst, Germany, a corporation of Germany

Filed Mar. 13, 1964, Ser. No. 351,868
Claims priority, application Germany, Mar. 16, 1963, V 23,811
6 Claims. (Cl. 136—146)



1. A primary cell comprising a cathode with its depolarizer, and an anode separated therefrom by a separator foil of a gel of a metal salt of pectin, the metal cation being polyvalent and at least as electronegative as the negative electrode of the cell.

3,345,216
METHOD OF CONTROLLING CHANNEL FORMATION

Leo C. Rogers, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

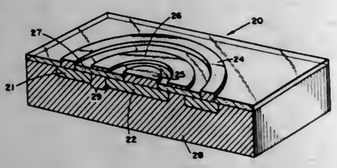
Filed Oct. 7, 1964, Ser. No. 402,182
6 Claims. (Cl. 148—1.5)

1. A method of forming N type channels at surfaces of P type semiconductor material comprising

(a) forming a layer of silicon oxide over said surfaces,

(b) depositing on said silicon oxide a film of a metal from the group consisting of aluminum and magnesium,

(c) removing said film of metal from said metallic oxide,



(d) and etching said oxide to a reduced thickness not less than approximately 200 angstroms to thereby form a channel having desired characteristics.

3,345,217

METHOD OF CLEANING AND PHOSPHATIZING COPPER CIRCUITS

Herbert R. Wollgien and Edward H. Chang, Minneapolis, Minn., assignors to Fremont Industries, Inc., Minneapolis, Minn., a corporation of Minnesota

No Drawing. Filed June 1, 1964, Ser. No. 371,789
5 Claims. (Cl. 148—6.15)

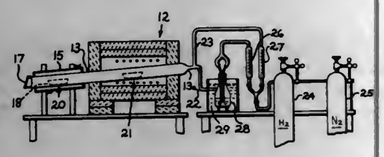
1. The method of cleaning and removing surface films from the exposed surface of copper conductors disposed on the surface of an insulating base of a printed wiring board comprising the steps of applying and wiping a free flowing powder or paste mixture of oxalic acid, an acid phosphate, together with a finely divided grit onto said exposed conductor surface, said acid phosphate in said mixture consisting essentially of an alkaline earth phosphate and phosphoric acid, the ratio of the phosphate ion to the oxalate ion in the mixture being in the range of from between about 2:1 and 1:2, said finely divided grit in said mixture consisting essentially of silica flour having a particle size generally below about 140 mesh and forming substantially 85 percent of the composition mix.

3,345,218

PREOXIDATION OF STAINLESS STEEL FOR GLASS-TO-METAL SEALING

George B. Brookover and Carl J. Hudecek, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed Apr. 2, 1964, Ser. No. 356,700
11 Claims. (Cl. 148—6.35)



1. The method of preoxidizing the surface of chrome-iron and chrome-nickel-iron alloy parts to facilitate their vacuum-tight sealing to glass comprising the steps of

subjecting the parts to a first oxidation cycle to form an oxide layer having an enriched chromium oxide content,

subjecting the oxidized parts to a reduction cycle to reduce the oxides of the chromium-enriched surface layer to the metallic state,

and subjecting the said reduced surface layer to a second oxidation cycle to convert the chromium-enriched surface layer to a firmly-bonded adherent oxide film adapted to glass sealing.

ERRATUM

For Class 148—12.1 see:
Patent No. 3,344,817

3,345,219

METHOD FOR PRODUCING MAGNETIC SHEETS OF SILICON-IRON ALLOYS

Klaus Detert, Berlin-Zehlendorf, Germany, assignor to Vacuumschmelze Aktiengesellschaft, Hanau, Germany, a corporation of Germany

No Drawing. Filed May 4, 1960, Ser. No. 26,672
15 Claims. (Cl. 148—112)

1. In the process of producing a magnetic sheet having a high percentage of cube texture grain structure, the steps comprising hot rolling to a strip of a thickness of the order of 0.1 to 0.5 inch an ingot of an alloy composed of from 2% to 5% of silicon, less than about 0.01% each of nitrogen, oxygen, sulfur and carbon, less than about 0.02% each of aluminum and titanium, not in excess of about 0.2% manganese, the balance being iron, annealing the hot rolled strip in a nonoxidizing atmosphere at a temperature of from 750° C. to 950° C., initially cold rolling the annealed strip to effect a reduction of from about 10% to 20%, annealing the resulting cold rolled strip at a temperature above 1100° C. in a reducing atmosphere for a period of time sufficient to cause grain growth such that the mean radius of the grains is at least half the thickness of the strip, cold rolling the strip at least once to effect a reduction at each cold rolling step of from 50% to 90%, applying an intermediate anneal to the resulting cold rolled sheet in the event more than one cold rolling step is applied, the intermediate anneal being at a temperature of from about 700° C. to 1000° C. in a reducing atmosphere, the final cold rolling step effecting a reduction of from 50 to 80% and producing a sheet of a final thickness of not in excess of 40 mils, and subjecting the final sheet to a final anneal at a temperature of at least 1100° C. in an atmosphere capable of reducing silica, the final anneal being for a period of time sufficient to enable substantially complete secondary recrystallization of the metal, the atmosphere at the surface of the sheet being of such low oxygen content that at the annealing temperature silica will disappear before secondary recrystallization occurs, and any refractory separator coatings on the sheet being non-oxidizing whereby the sheet surface is bright, with a major proportion of the secondary grains being doubly oriented.

3,345,220

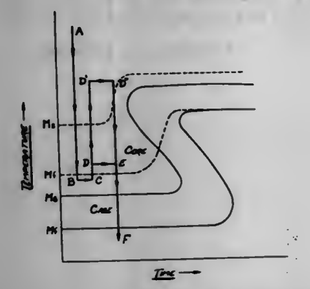
CASE HARDENING OF STEEL

Alan George Haynes, Sevenoaks, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,335
Claims priority, application Great Britain, Jan. 18, 1965, 41,077/65
4 Claims. (Cl. 148—148)

1. A process for case-hardening a carburized steel article so as to produce a case and core capable of performing elastically under high stress without sacrifice of hardness or wear resistance in the case, comprising quenching said article from a temperature within the austenitizing temperature range to a first temperature at which austenite transformation in the core is substantially complete but at which the case remains substantially austenitic, heating said article to a second temperature sufficiently high to temper said core but below

the AC_1 temperature of the core, holding at said second temperature for a period of time sufficient only to temper said core while maintaining said case substantially austenitic and thereafter cooling said article to transform said case to martensite.



3,345,221

METHOD OF MAKING A SEMICONDUCTOR DEVICE HAVING IMPROVED PN JUNCTION AVALANCHE CHARACTERISTICS

Israel Arnold Lesk, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Apr. 10, 1963, Ser. No. 271,952
5 Claims. (Cl. 148—175)

1. A method of making a rectifying junction in a semiconductor body so that avalanche breakdown of said junction tends to occur beneath the surface of said body, said method comprising, epitaxially growing on a surface of a semiconductor crystal of one conductivity type a semiconductor layer of the same conductivity type as said crystal but of higher resistivity than the underlying crystal material, and selectively diffusing an impurity of opposite conductivity type to form a semiconductor region extending through only a portion of said layer to define a rectifying junction extending from beneath said layer to form a region of opposite conductivity semiconductor material defining a rectifying junction which extends continuously within the bulk of said crystal and between said opposite conductivity region and said semiconductor crystal and through said semiconductor surface layer of higher resistivity to the surface of said body whereby the portion of said rectifying junction bounded by said underlying semiconductor crystal of said one conductivity type and by said opposite conductivity region will break down at a lower reverse voltage than the portion of said rectifying junction bounded by said semiconductor surface layer of higher resistivity.

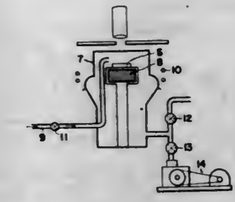
3,345,222

METHOD OF FORMING A SEMICONDUCTOR DEVICE BY ETCHING AND EPITAXIAL DEPOSITION

Masayoshi Nomura, Kodaira-shi, Takashi Tokuyama, Hoya-machi, Kitatama-gun, Tokyo-to, Shoji Tauchi, Kokubunji-machi, Kitatama-gun, Tokyo-to, and Takeshi Takagi, Musashino-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Sept. 23, 1964, Ser. No. 398,696
Claims priority, application Japan, Sept. 28, 1963, 38/51,636, 38/51,637
9 Claims. (Cl. 148—175)

1. A method for the production of a semiconductor device having a protective layer on its surface which comprises the steps of preparing a silicon semiconductor substrate of a first conductivity type and subjecting its surface to a preliminary treatment; placing said substrate in a reaction chamber; introducing therein hydrogen gas; heating said substrate to a temperature of about 1,000° C. but below its melting point; chemically etching a selected surface of said substrate by introducing a halogenated semiconductor material in vapor phase into said chamber, the mol ratio of said halogenated material being at a predetermined value relative to said hydrogen gas; causing an epitaxial layer of a conductivity opposite that of said substrate to grow on the vapor-etched surface by reducing the mol ratio of hydrogen gas to halogenated material, and adding to this gas mixture an impurity gas capable of imparting said opposite conductivity type; stopping the supply of halogenated material and impurity gas; lowering the temperature of said substrate to substantially 700° C.; stopping the supply of hydrogen; and finally forming a silicon dioxide film on said substrate and epitaxial layer by introducing an organo-oxysilane vapor into said chamber.



3,345,223

EPITAXIAL DEPOSITION OF SEMICONDUCTOR MATERIALS

Arnold Reisman and Melvin Berkenblit, Yorktown Heights, Satenik A. Papazian, New York, and George Cheroff, Peekskill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 28, 1965, Ser. No. 490,814
16 Claims. (Cl. 148—175)

1. A method for epitaxially depositing germanium by germanium halide transport which provides temperature insensitivity at a source and deposition site in an open tube disproportionation system comprising the steps of introducing a source of germanium into said tube, reacting one of the substances selected from the group consisting of the halogens and the hydrogen halides with said germanium and introducing an inert gas to perturb the equilibrium vapor phase content of germanium at said source.

3,345,224

DRY-APPEARING EXPLOSIVE COMPOSITION CONTAINING A POROUS MATERIAL CAPABLE OF RELEASING ABSORBED LIQUID AT EXTRUSION PRESSURES

George L. Griffith, Coopersburg, Pa., assignor to Trojan Powder Company, Allentown, Pa., a corporation of New York

No Drawing. Filed Oct. 2, 1964, Ser. No. 401,246
20 Claims. (Cl. 149—38)

1. An explosive composition of a dry-appearing but extrudable consistency, consisting essentially of an explosive selected from the group consisting of inorganic oxidizer salts; liquid explosives; sensitizing explosives; and mixtures of the same, in an amount within the range from about 99.95 to about 75% by weight, a fuel selected from the group consisting of metal fuels, carbonaceous fuels, and mixtures of the same, in an amount within the range from about 0 to about 30% by weight, a nonexplosive

liquid in an amount within the range of from about 5 to about 30% by weight that is wholly absorbed on the solid ingredients, whereby the composition has a dry-appearing consistency with substantially no free liquid in the spaces between the particles of the composition, and a porous particulate material that is capable of absorbing nonexplosive liquid and of releasing the absorbed liquid under pressure, in an amount within the range from about 0.05 to about 25% by weight, having absorbed thereon a sufficient amount of the nonexplosive liquid that is released at extrusion pressures of from about 10 to about 40 p.s.i. to convert the composition at such pressures to a semi-solid extrudable consistency.

3,345,225

METHOD OF CHEMICALLY POLISHING COPPER AND COPPER ALLOYS

Rodolphe Lacal, Lyautey-Caen, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,400
Claims priority, application France, Sept. 2, 1963, 946,304
3 Claims. (Cl. 156—20)

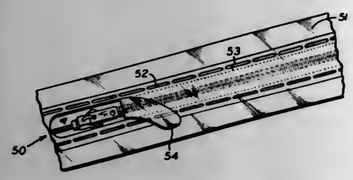
1. A method of chemically polishing an article essentially consisting of copper, said method comprising the steps, immersing said article in a first bath consisting essentially of hydrochloric acid, glycerine and hydrogen peroxide, immediately after withdrawal from said first bath immersing said article in a second bath consisting of a 33.3% by weight solution of hydrogen peroxide and then immersing said article in 0.25–0.5 N nitric acid.

3,345,226

METHOD FOR TEAR SEALING THERMOPLASTIC SHEETS TO CLOTH

Marvin A. Frenkel, Huntington Woods, and Claude H. Haney, Dearborn, Mich., assignors to Advance Glove Manufacturing Company, Detroit, Mich., a corporation of Michigan

Original application Oct. 18, 1961, Ser. No. 145,907, now Patent No. 3,147,170, dated Sept. 1, 1964. Divided and this application July 29, 1964, Ser. No. 385,842
6 Claims. (Cl. 156—66)



1. A method of attaching a slide fastener to a sheet of thermoplastic material, comprising

placing said sheet and said fastener in overlying relationship;

pressing together selected portions of said sheet and of the slide fastener extending longitudinally of and at opposite sides of said slide fastener;

applying heat to said selected portions while the latter are pressed together so as to fuse the material of said sheet at said portions to bond said sheet to said slide fastener at said portions; and simultaneously weakening a parallelly extending section of said sheet substantially co-extensive with the slide fastener intermediate of and in registry with said selected portions, whereby the opening formed in said sheet by removal of said weakened section will be in registry with said longitudinally extending selected portions at which said sheet and slide fastener are bonded together.

3,345,227

METHOD OF MAKING PLASTIC CONTAINERS

Robert H. Park, Corporation Road, Dennis, Mass. 02638

Original application Feb. 3, 1964, Ser. No. 342,032. Divided and this application Oct. 21, 1965, Ser No. 500,075
2 Claims. (Cl. 156—86)



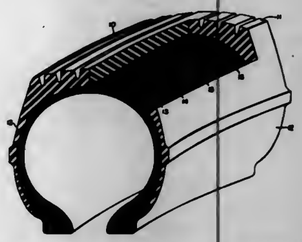
1. The method of making a plastic container which comprises first disposing a tubular neck bushing of heat shrinkable plastic material and of a wall thickness to be self-sustaining about a mandrel member of a diameter to fit relatively closely in said bushing, then heating said plastic neck bushing to shrink the same tightly about said mandrel, then placing the assembled bushing and mandrel between opposed walls of a thin-walled thermoplastic envelope adjacent to the margins of such opposed walls, then pressing the opposite sides of the envelope with opposed die members to press said wall members against the exterior of said bushing and to press portions of said wall members at opposite sides of said bushing against each other and simultaneously subjecting the wall members to heat, to heat seal the wall members to each other and to the intervening bushing.

3,345,228

METHOD OF MAKING A PNEUMATIC CORD TIRE

Frederick J. Kovac, Akron, and Grover W. Rye, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Original application Oct. 2, 1963, Ser. No. 313,382, now Patent No. 3,217,778, dated Nov. 16, 1965. Divided and this application Mar. 30, 1964, Ser. No. 360,161
3 Claims. (Cl. 156—126)



1. The method of making a pneumatic tire comprising in combination the steps of

(1) forming a filamentary reinforcement material into a yarn;

(2) crimping the yarn in an undulating pattern thereby inducing a memory in said reinforcement yarn;

(3) positioning the crimped yarns in a tire reinforcement layer so that the longitudinal axis of adjacent yarns are substantially parallel;

(4) building a tire carcass in cylindrical form and including contiguous therewith at least one reinforcement layer containing crimped yarns;

(5) expanding the cylindrical tire carcass into toroidal form wherein the crimped yarns of said reinforcement layer are elongated, thus increasing the pitch of the yarn undulations; and

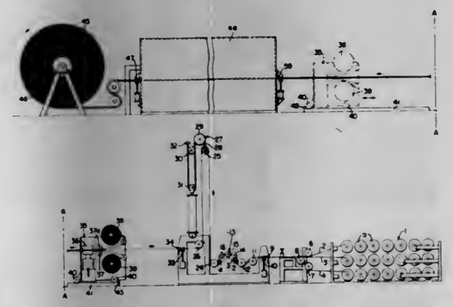
(6) curing the toroidal shaped tire so that the reinforcement material is firmly adhered to the adjacent elastomeric carcass material, thus providing a tire containing reinforcement yarns that can elongate to assume a tensile load and can withstand compressive loads by contracting in the direction of the original crimping.

3,345,229

BELT MANUFACTURING APPARATUS

Donald E. Harpfer, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Dec. 4, 1963, Ser. No. 327,975
2 Claims. (Cl. 156—166)



2. The method of manufacturing a belt structure having a carcass in which a multiplicity of parallel tension elements are embedded interiorly of the carcass of vulcanizable elastomeric material comprising the steps of holding the tension elements simultaneously in a fixed position at one point along the length thereof, aligning and uniformly tensioning each tension element along the length thereof at a point remote from said fixed position, clamping said tension elements to maintain such alignment and tension, said clamping being done at a position sufficiently remote from said fixed position to include between the fixed and clamped positions of the tensioned elements a length substantially that of the vulcanizing press and adjacent thereto, a similar length to which the carcass structure is applied, vulcanizing said first length of belt in a press after the carcass material has been applied thereto, applying the carcass of vulcanizable elastomeric material to said second length adjacent said first portion, moving said first portion out of said press when vulcanization is completed to move said second portion into said press for vulcanization and to place a further length of tension elements in position for application of the carcass thereto and repeating said steps thereafter, the predetermined tension in said tension elements being retained at all times throughout said steps in a continuous but intermittent operation whereby a belt is produced having a length greater than the length of the individual portions being subjected to any one of the steps of manufacturing.

3,345,230

METHOD AND APPARATUS FOR FORMING MULTI-PLY TAPE OF CROSSED PLIES OF PARALLEL STRANDS

William George McClean, Milwaukee, Wis., assignor to The Youngstown Sheet and Tube Company, Boardman, Ohio, a corporation of Ohio

Filed Feb. 12, 1963, Ser. No. 258,039
18 Claims. (Cl. 156—181)

1. A method of forming multi-ply tape comprising at a first station continuously pulling at a constant rate a first generally planar group of generally parallel strands in the direction of their length, at a second station preceding the first station in the direction of advance of said strands acting on said strands to alternately increase and decrease the length of the path that said strands travel in the longitudinal direction so that at a third station preceding the second station in the direction of advance of said strands the strands alternately advance and dwell, advancing a second generally planar group of generally parallel strands in the direction of their length transversely of the first group, cutting off lengths of the second group of strands approximating the transverse dimension of the first group parallel to the length of the second group and at the third station successively applying said lengths to the first group at a face of the first group progressively along the first group during dwells of the first group, and adhere said strands together to form multi-ply tape.

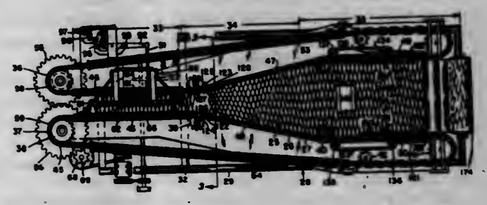


3,345,231

APPARATUS AND METHOD FOR MAKING NON-WOVEN NETTING

Lester Gidge and Valmor R. Poulin, Jr., Nashua, N.H., assignors to Union Carbide Corporation, a corporation of New York

Filed Mar. 6, 1964, Ser. No. 349,931
21 Claims. (Cl. 156—181)



14. The method for making non-woven, criss-cross strand netting of a predetermined full width on a pair of laterally, spaced apart rows of longitudinally spaced, loop-receiving elements which define a longitudinal path for said netting which comprises the steps of:

advancing said rows unidirectionally, each in a closed loop and both in a common plane through a looping zone, a spreading zone, and a stripping zone on said path;

closely spacing said rows in parallelism at a distance apart, substantially less than said full width in said looping zone on said path;

alternately looping a plurality of individual strands first around elements in one said row and then around elements in the other said row, while said rows are closely spaced in said looping zone, to form a relatively narrow criss-cross netting therebetween;

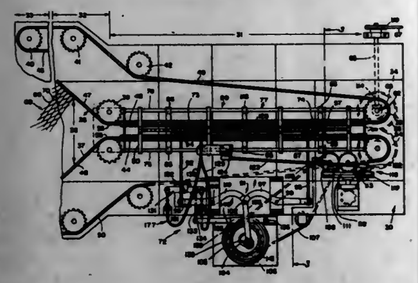
then diverging said advancing rows, in rear of said looping zone, in said spreading zone along said path, until they are spaced apart the full width of the said netting;

and then converging said advancing rows in rear of said spreading zone, in a stripping zone along said path until said rows are again in parallelism at a distance apart substantially equal to the said predetermined width of said netting.

3,345,232
METHOD AND APPARATUS FOR MAKING CRISS-CROSS MATERIAL

Lester Gidge and Valmor R. Poulin, Jr., Nashua, N.H., assignors to Union Carbide Corporation, a corporation of New York

Filed Feb. 17, 1966, Ser. No. 528,191
15 Claims. (Cl. 156—181)



11. A method for traversing a plurality of longitudinally spaced strand guides, each depending normal from a guide support and each having a flexible conduit guiding strand thereinto, across a path defined by a pair of laterally spaced, longitudinally advancing rows of upstanding pins for simultaneously drawing a plurality of strands from strand supply means and alternately looping the same on said pins to form a non-woven, criss-cross netting thereon, said method comprising the steps of

traversing said guide support and guides laterally in a stroke of predetermined width from one row of pins to the other;

advancing said guide support and guides longitudinally proximate each opposite end of said stroke with, and at substantially the same speed as, the adjacent row of pins, and retracting said guide support and pins centrally of each stroke;

moving the lower ends of said guides through the spaces between the pins of the adjacent row of pins, at each opposite end of said stroke, and moving said ends back through the next successive spaces between said pins, while said guides are advancing therewith,

said steps looping said strands in criss-cross fashion around said advancing pins and progressively drawing said strands from said strand supply means under varying tensions and,

during the simultaneous drawing of said plurality of strands from said strand supply means through said flexible conduits;

guiding said flexible conduits, at least in the vicinity of said guide support, for free oscillation thereof to avoid excessive flexural wear and fatigue thereof.

3,345,233
PROCESS FOR MAKING CIRCUMAMBIENT WALL UNIT

William B. Wilkins, Roxboro, N.C., assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Nov. 6, 1963, Ser. No. 321,892
8 Claims. (Cl. 156—189)

1. A method of making a circumambient wall unit, the steps of which comprise:

(A) providing a rotary support arranged with its peripheral surrounding an axis of rotation for the support;

(B) providing and arranging a continuous supply of thin gauge flexible wall-forming sheet material for feeding onto the support in a direction converging therewith;

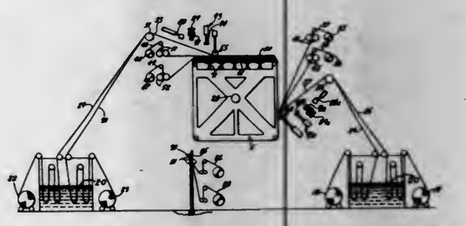
(C) attaching an end portion of the sheet material to the support;

(D) placing a first panel of laminae-spacing material along a first portion of the periphery of said support;

(E) rotating the support to wind said sheet material over the panel;

(F) placing a second panel of laminae-spacing material over the wrapped sheet material along a different portion of said periphery;

(G) continuing the rotation of the support to wrap said sheet material along the entirety of said periphery and to bind said sheet material and panels into an integral wall unit;



(H) progressively applying an adhesive to substantially all interfaces of said sheet material and panels during the foregoing steps as opposed interfaces are brought into superimposed relationship on the mandrel;

(I) severing said sheet material wrapped into said unit with respect to said supply and securing the end portion of the sheet material to the underlying lamina or other component of the unit;

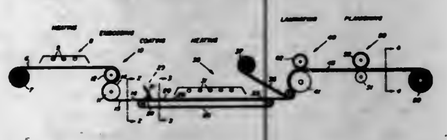
(J) bonding substantially all of the above-named components of said unit together with said adhesive; and

(K) removing said unit from the support.

3,345,234
CONTINUOUS METHOD FOR MAKING DECORATIVE FLOOR COVERING

Justin J. Jecker, Newfoundland, and Robert P. Conger, Park Ridge, N.J., assignors to Congoleum-Nairn Inc., Kearny, N.J., a corporation of New York

Filed Mar. 21, 1963, Ser. No. 266,889
5 Claims. (Cl. 156—209)



1. A continuous method of making a decorative surface covering having a transparent resinous wear layer and a fibrous backing layer, comprising:

(a) preheating a surface of the resinous wear layer,

(b) embossing on said surface a pattern having a depth of at least 0.0005 inch,

(c) applying a thermosetting resin having a contrasting color into the embossed depressions, and not leaving any substantial amount of said thermosetting resin on the surface of said wear layer which is not depressed,

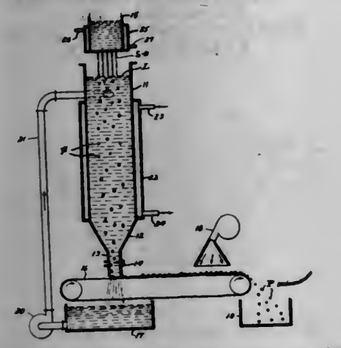
(d) heating said thermosetting resin to its curing temperature; and

(e) laminating said backing layer to said embossed resinous wear layer.

3,345,235
METHOD AND APPARATUS FOR FORMING GELLED PLASTIC PARTICLES FOR USE AS A DECORATIVE SURFACING MATERIAL

John C. Miller, Allentown, Pa., assignor, by mesne assignments, to General Aniline & Film Corporation, a corporation of Delaware

Filed Sept. 5, 1963, Ser. No. 306,953
14 Claims. (Cl. 156—298)

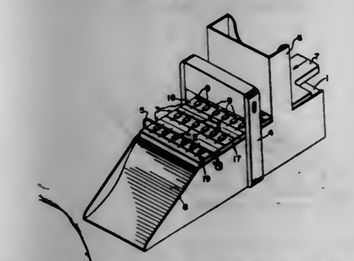


11. A method for making a vinyl type decorative surfacing material comprising heating globules of liquid heat hardenable polyvinyl chloride plastisol to a temperature between about 150° F. and 212° F. to thereby form gelled but incompletely hardened particles, incorporating said gelled particles as decoration in a surfacing sheet, and after incorporation of the particles heating the sheet with the incorporated particles to a temperature between about 300° F. and 375° F. to thereby fuse and harden the gelled particles.

3,345,236
APPARATUS FOR BONDING INTEGRATED CIRCUIT PACKAGES

Donald G. Pedrotti, Cupertino, Calif., assignor to RCK, Inc., Sunnyvale, Calif., a corporation of California

Filed Feb. 24, 1964, Ser. No. 346,607
6 Claims. (Cl. 156—498)



6. Apparatus for sequentially sealing a series of packages, each having at least two parts with a heat curable cement therebetween, and each containing a semiconductor element, which apparatus comprises:

(a) a support adapted to hold a plurality of said packages in intimate engagement therewith, thereby providing a heat sink for said packages, said support including a magnetic means for holding said packages in intimate engagement therewith;

(b) a heating element fabricated from beryllium oxide adapted to be maintained at a constant temperature between about 360° C. and 1000° C. while in use;

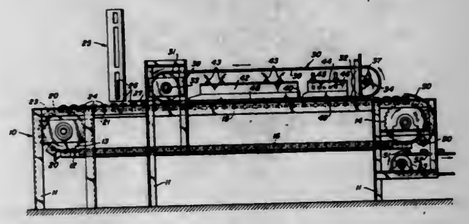
(c) a means for sequentially disposing one of said supports after the next in position to place a surface of the packages engaged therewith in contact with said heating element, thereby enabling heat to be simultaneously applied to said packages to cure said cement while dissipating the excess heat in said support, thus preventing such excess heat from damaging said semiconductor elements, said disposing means including a conveyor belt adapted to move said supports into and out of the desired position for application of heat; and

(d) means for rapidly cooling said packages after the application of heat thereto.

3,345,237
APPARATUS FOR ATTACHING A BACKING TO A FIBROUS BODY

Earl E. Browning, La Grange, and Mark J. Perkovich, Chicago, Ill., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

Original application June 16, 1960, Ser. No. 36,549, now Patent No. 3,149,013, dated Sept. 15, 1964. Divided and this application Dec. 16, 1963, Ser. No. 335,456
3 Claims. (Cl. 156—498)



1. Apparatus for attaching individual backings to a plurality of discrete fibrous bodies, each of said backings having adhered thereto a composition heat activatable to a flowable condition, comprising a first endless belt having spaced hollowed-out portions for retaining and moving a plurality of fibrous bodies continuously at a uniform speed, means for bringing said individual backings into contact with each of said moving fibrous bodies so that each backing substantially overlies only a single fibrous body and said heat-activatable composition is disposed adjacent to said body, a second endless belt composed of material which resists deterioration at increased temperatures and having a flight positioned to overlie and press against said backings on said bodies, said second endless belt moving at substantially the same surface velocity as said first endless belt, and a heating element overlying said flight and pressing against said flight and the backings and bodies therebeneath, said heating element activating said composition to a flowable condition and forcing said composition into intimate contact with the fiber portions of said fibrous bodies.

2. In the apparatus of claim 1, a cooling element overlying said flight and pressing against said flight and said backings and said bodies therebeneath at a location subsequent to said heating element, said cooling element solidifying said composition about said fiber portions while applying pressure to interlock said bodies and said backings.

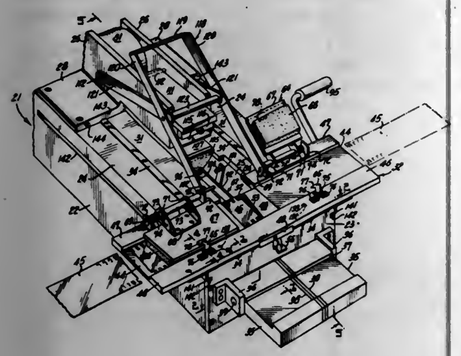
3,345,238
FILM PROCESSING SPLICER

Otto V. Vanoni, New York, N.Y., assignor, by mesne assignments, to Dupage Metal Products, Inc., Lombard, Ill., a corporation of Illinois

Filed Feb. 10, 1964, Ser. No. 343,838
6 Claims. (Cl. 156—505)

1. A film splicer capable of operation in the dark under manual control, which comprises; a base; a jig for supporting two ends of film to be spliced in splicing re-

lation with one another, said jig being mounted for translation relative to said base along a fixed path from a first to a second position; means for holding a supply of splicing tape; means manually operable in the first position of said jig for applying one end of a length of said splicing tape to one surface of the film ends transversely of the film while said length remains attached to said supply; means adapted to cooperate with said jig for wrapping the tape around one longitudinal edge of said film ends and applying the tape to the opposite surface of said ends when the jig is translated from its first to its second position; means for pressing the tape flat against



said film surfaces; means for cutting the tape along the opposite longitudinal edge of the film and thereby separating the splice from the tape supply; and actuating means operatively associated with said jig, said pressing means and said cutting means and manually operable in one motion to

(a) translate the jig with respect to the tape wrapping means,

(b) operate the pressing means, and

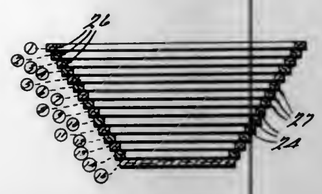
(c) operate the cutting means to wrap the tape about the film, press the tape flat and separate the splice from the tape supply, as aforesaid.

3,345,239
METHOD FOR PRODUCING DECORATIVE ARTICLES OF MANUFACTURE
Theodore George Rochow, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,692
14 Claims. (Cl. 161—1)

1. A method of producing schlieric, diffusive, light transmitting, decorative articles of manufacture which comprises (1) admixing (A) particles of a synthetic, thermoplastic, vinyl polymer with (B) particles of at least one other synthetic, vinyl, thermoplastic polymer compatible with (A), said polymers having refractive indices differing from one another by the second, third or fourth decimal place and (2) compression molding the resultant mixture under conditions of pressure, temperature and time sufficient to weld the polymer particles to one another, but insufficient to form a homogeneous system, the refractive identity of at least one of said (A) and said (B) remaining substantially optically discernible.

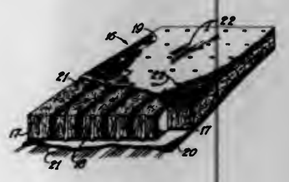
11. A schlieric, diffusive, light-transmitting article of manufacture composed of a compression molded mixture of (A) particles of a synthetic, vinyl, thermoplastic polymer and (B) particles of at least one other synthetic, vinyl thermoplastic polymer compatible with (A), said polymers having refractive indices differing from one another by the second, third or fourth decimal place, said (A)and (B), in said article being welded to one another, the refractive identity of at least one of said (A) and said (B) remaining substantially optically discernible.

3,345,240
HOBBY CRAFT DEVICE
John E. O'Herron, 6580 Garland, Detroit, Mich. 48213
Filed June 3, 1964, Ser. No. 372,229
4 Claims. (Cl. 161—36)



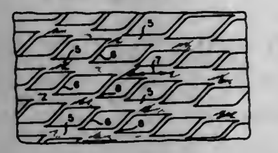
1. A hobby craft device comprising a series of hollow contoured annualr strips of predetermined width concentrically located and removable from one sheet of rigid material, a like series of hollow annular strips concentrically located and removable from a second sheet of rigid material, said strip from one sheet being of a width to have an outer peripheral edge fall between the inner and outer peripheral edge of a strip of the other sheet so that when the strips from one sheet are alternately applied to the strips of the other sheet a hollow three dimensional object is produced having similar internal and external stepped surfaces.

3,345,241
STRUCTURAL PANEL AND METHOD FOR PRODUCING SAME
Richard F. Shannon, Lancaster, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,401
8 Claims. (Cl. 161—36)



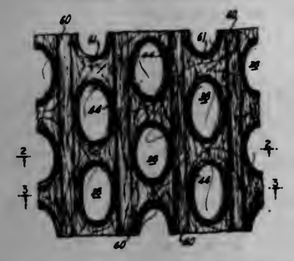
1. A lightweight high strength longitudinally extending panel comprising: a core of siliceous fibers having closely spaced major surfaces and longitudinally extending generally parallel side surfaces with the individual fibers extending generally parallel to said side surfaces, said fibers being bonded together at spaced apart points by a first binder, first and second skins on respective major surfaces, and a plurality of rigid shear resistant high strength regions of binder and fibers extending between and bonded to said first and second skins, the binder of said high strength regions also having sufficient lateral penetration of the mass of fibers to achieve a significant lateral bracing of the fibers by interconnecting binder which braces the fibers laterally to each other intermediate points bonded together by said first mentioned binder.

3,345,242
FIBER PRODUCT HAVING A BRANCHED RETICULAR OR NETLIKE STRUCTURE, AND A METHOD AND APPARATUS FOR THE PRODUCTION THEREOF
Ole-Bendt Rasmussen, Copenhagen, Denmark, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,078
Claims priority, application Denmark, Sept. 7, 1962, 3,916/62
6 Claims. (Cl. 161—109)



1. A fiber product, having a uniform, branched, netlike structure, and being produced from an oriented film of thermoplastic resin by a partial splitting, said fiber product being characterized by having comparatively long and broad stem fibers, said stem fibers being interconnected by comparatively thin and short branch fibers which have been split off from said stem fibers, said product being further characterized by having a high degree of parallelism of stems and a high degree of parallelism of branches throughout the length and width of said product.

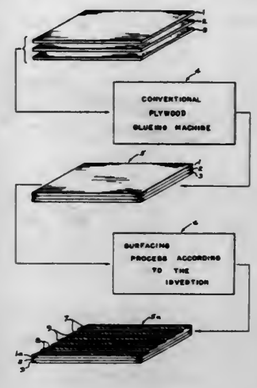
3,345,243
APERTURED NONWOVEN FABRIC WITH CHANNELS BETWEEN APERTURES
Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Original application Nov. 1, 1963, Ser. No. 320,688, now Patent No. 3,255,496, dated June 14, 1966. Divided and this application Aug. 26, 1965, Ser. No. 482,869
4 Claims. (Cl. 161—109)



1. A nonwoven fabric having a longer length than width comprising fibers arranged in a predetermined pattern to define a plurality of holes and a plurality of channels extending between adjacent holes substantially uninterruptedly longitudinally of the nonwoven fabric, said holes affecting the flow of fluids through the nonwoven fabric and said channels affecting the flow of fluids along the surface of the nonwoven fabric.

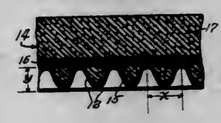
3,345,244
PLYWOOD BUILDING PANELS
Trygve Stolesen, 771 S. Spring St., Ukiah, Calif. 95482; Rolf Stolesen, 525 Jackson Drive, Palo Alto, Calif. 94303; and Edward Stolesen, Rte. 1, Box 258, Lake Port, Calif. 95453
Original application July 25, 1962, Ser. No. 212,333, now Patent No. 3,234,978, dated Feb. 15, 1966. Divided and this application Aug. 13, 1965, Ser. No. 479,513
4 Claims. (Cl. 161—116)

1. A multiply wood panel comprising a face ply having an elongated face surface, a plurality of curved grooves in said face surface, said grooves being arranged in a row extending from end to end of said panel, all of the grooves in said row being arranged side by side and all having



substantially the same shape and orientation, and each of said grooves extending continuously from side to side of said row.

3,345,245
COMPOSITE STRUCTURE HAVING SHOCK ABSORBING PROPERTIES
Helmut George Hanusa, Waukegan, Ill., assignor, by mesne assignments, to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed Sept. 26, 1960, Ser. No. 58,493
6 Claims. (Cl. 161—119)

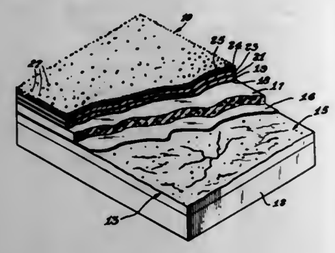


1. A composite structure having shock absorbing properties comprising: a base of a relatively non-resilient corrugated sheet having substantially its entire corrugated surface in direct, adhering interfacial contact with an integral sheet of relatively resilient foamed in place cellular polyurethane; said polyurethane having distinct, stratified layers of varying densities, the polyurethane within the valleys of the corrugated sheet being relatively low density ridges that extend from the base sheet to an uninterrupted layer of relatively high density polyurethane, which in turn extends to a layer of polyurethane having relatively intermediate density; the height of the polyurethane ridges at said interfacial contact being not more than about ¾ inch and the distance between polyurethane crests at said interfacial contact being not more than about ½ inch.

3,345,246
LEVELING BASE SHEET FOR REROOFING
James P. Sheahan, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,056
5 Claims. (Cl. 161—161)

1. An improved reroofed structure comprising a roof of unserviceable nature having an irregular surface, a layer of expanded cellular thermoplastic resinous polymer of styrene and acrylonitrile having a thickness of about ¼

to 1 inch having a heat distortion temperature of at least about 185° Fahrenheit, a compressive strength of from about 5 to about 15 pounds per square inch and a flexural strength of from about 15 to about 35 pounds per square



inch adhered to an external surface of the unserviceable roof and a plurality of layers of a roofing felt adhered together with bituminous material adhered to the surface of the expanded sheet remote from the roof.

3,345,247

PLYWOOD BONDED WITH ORGANIC PEROXY-COATED POLY-ALPHA-MONOOLEFIN FILMS AND METHOD OF MAKING THE SAME

John H. Mahar, Scotch Plains, and John W. Schick, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,736
3 Claims. (Cl. 161—247)

1. A method for producing plywood that comprises:

(1) placing between the wood plies at least one film of a solid polymer selected from the group consisting of polymers and copolymers of alpha-mono-olefins having between 2 and 8 carbon atoms and which has been surface-coated with an organic peroxy cross-linking agent; and

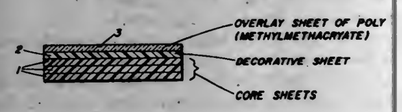
(2) heating at a temperature of between about 200° F. and about 500° F., under a pressure of between about 0 p.s.i.g. and about 1000 p.s.i.g., and for a period of time of between about one minute and about 30 minutes.

3,345,248

MULTILAYER DECORATIVE LAMINATES WITH A TOP SHEET COMPRISING A METHYL METHACRYLATE POLYMER

Lewis C. Pounds, Cheshire, and Douglas F. Smith, North Haven, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Jan. 22, 1962, Ser. No. 167,961
8 Claims. (Cl. 161—248)



1. A unitary, heat- and pressure-consolidated decorative laminated article suitable for outdoor use which comprises a superimposed assembly of:

(1) a rigidity-imparting base member comprising a plurality of fibrous sheets impregnated with a substantially completely cured phenolic resin,

(2) a decorative sheet member directly bonded to said base member comprising a fibrous sheet impregnated with a substantially completely cured aminotriazine-aldehyde resin, and

(3) a substantially non-porous sheet, of from about 5 mils to about 30 mils in thickness, of a polymer of methyl methacrylate having a molecular weight of from about 60,000 to about 250,000 selected from the group consisting of homopolymers of methyl methacrylate and copolymers of methyl methacrylate with up to about 30% by weight based on the total weight of the copolymer of a different ethylenically unsaturated monomer copolymerizable therewith directly bonded to said decorative sheet member.

3,345,249

POLYHYDROXYNAPHTHALENE CONTAINING ADHESIVE COMPOSITIONS

John Thomas Stephan, 1318 W. Kessler, Longview, Wash. 98632

No Drawing. Filed Apr. 10, 1963, Ser. No. 271,877
14 Claims. (Cl. 161—262)

1. An aqueous alkaline adhesive solution containing alkaline-catalyzed monohydric phenol-aldehyde condensate, and the reaction product of an aldehyde and a polyhydroxynaphthalene.

3,345,250

BLEACHING PULP WITHOUT DIRECT CHLORINATION BY BLEACHING WITH CHLORINE DIOXIDE

Amiel W. Brinkley, Jr., Mobile, Ala., and Jack F. Kilborn, Natchez, Miss., assignors to International Paper Company, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 285,578, June 5, 1963. This application June 30, 1966, Ser. No. 562,963
3 Claims. (Cl. 162—78)

1. In a process of preparing wood pulp by subjecting it to a sequence of bleaching and caustic extraction steps without direct chlorination, the step of bleaching the pulp first with chlorine dioxide under acid conditions produced by the addition of an acid to the pulp and then with at least one hypochlorite.

3,345,251

METHOD OF SIZING PAPER WITH CHLOROETHYL SULFIDE OR SULFONE AND PAPER THEREOF

Van R. Gaertner, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 24, 1965, Ser. No. 442,502
12 Claims. (Cl. 162—158)

7. A method of preparing a sized fibrous product of cellulose fibers which comprises applying to the cellulose fibrous product from about 0.1 to about 5 percent by weight on the dried cellulose fibers of a sizing agent which is a compound of the formula

$$R—S(O)_nCH_2CH_2Cl$$

wherein R is selected from the group consisting of alkyl groups and alkylphenyl groups having at least about 8 carbon atoms in the alkyl moieties and n is selected from an integer consisting of 0 and 2, and drying the thus treated cellulosic fibrous product.

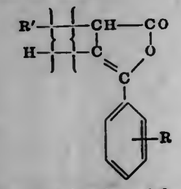
3,345,252

PROCESS OF SIZING CELLULOSIC FIBERS WITH GAMMA-LACTONES AND FIBROUS PRODUCT THEREOF

Van R. Gaertner, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 24, 1965, Ser. No. 442,503
11 Claims. (Cl. 162—158)

7. A method of preparing a sized fibrous product of cellulose fibers which comprises applying to the cellulose fibrous product from about 0.1 to about 5 percent by weight on the dried cellulose fibers of a sizing agent which is a compound of the formula



wherein R and R′ are each selected from the group consisting of hydrogen and alkyl having from 1 to about 25 carbon atoms, with at least one of R and R′ being an alkyl group having at least about 8 carbon atoms, and drying the thus treated cellulosic fibrous product.

3,345,253

PROCESS OF FORMING CELLULOSIC WEBS CONTAINING UREA-ALKYLENEIMINE CONDENSATION PRODUCTS

Herbert Bestian, Frankfurt am Main, Hans Sommer, Hofheim, Taunus, and Dieter Bergmann, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,593
Claims priority, application Germany, Aug. 30, 1963, F 40,631
4 Claims. (Cl. 162—166)

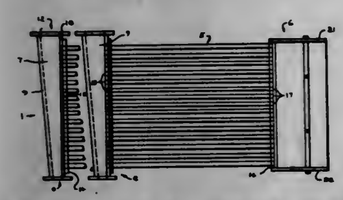
1. The process for preparing cellulosic fibrous materials having increased wet tensile strength, wherein to the fibrous material in aqueous suspension is added 0.1 to 4% on basis of the dry fibrous material a nitrogen-containing condensation product of 0.25 to 1.5 mole to 1 mole, respectively, of urea and a member selected from the group consisting of 1,2-alkyleneimines, oligomers of 1,2-alkyleneimines, and mixtures of 1,2-alkyleneimines and their oligomers, and thereafter dewatering said suspension, sheeting the fibrous material and drying the sheeted material.

3,345,254

MULTIPLE MANIFOLD HEADBOX

Joseph J. Kilian, Covington, Va., assignor, by mesne assignments, to The Black Clawson Company, New York, N.Y., a corporation of Ohio

Filed June 24, 1964, Ser. No. 377,607
7 Claims. (Cl. 162—343)



1. Headbox apparatus for delivering paper making stock simultaneously from a plurality of sources to a forming member of a paper machine, comprising:

(a) a plurality of manifolds each adapted to receive a supply of paper making stock for delivering to the forming member,

(b) a plurality of relatively small diameter tubes extending from each of said manifolds and in fluid communication therewith,

(c) a slice assembly including slice lips defining a discharge outlet slot to the forming member, and

(d) said tubes terminating at and in fluid communication with said slice assembly and being arranged in at least one row extending parallel with and of substantially the same lentgh as said outlet slot.

3,345,255

CONTROLLING FUNGI WITH 1,2-DICHLORO-VINYL HYDROXYETHYL SULFIDE

Glenn R. Price, Chicago Heights, Ill., and Malcolm B. McClellan, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 13, 1964, Ser. No. 382,379
1 Claim. (Cl. 167—22)

A method of controlling fungi which comprises contacting the fungi with a fungicidal amount of 1,2-dichloro-vinyl-hydroxyethyl sulfide.

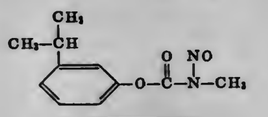
3,345,256

PESTICIDAL COMPOSITIONS OF M-ISOPROPYL-PHENYL N-METHYL-N-NITROSOCARBAMATE

Albert H. Haubein, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 8, 1965, Ser. No. 485,917
5 Claims. (Cl. 167—30)

1.



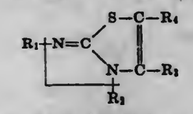
3,345,257

METHOD FOR COMBATTING MICROORGANISMS

Dieter Duerr, Basel, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Original application Dec. 31, 1962, Ser. No. 248,302. Divided and this application Jan. 20, 1964, Ser. No. 344,518
Claims priority, application Switzerland, Jan. 19, 1962, 658/62
10 Claims. (Cl. 167—33)

1. The method for combating harmful microorganisms, wherein there is applied to the areas whereon the microorganism combating effect is desired, a biocidal amount of a member selected from the group consisting of (A) a compound of the formula



wherein R_1 is a member selected from the group consisting of (a) phenyl, phenyl substituted in at most 2 places by a member selected from the group consisting of chlorine, CF_3, lower alkyl, lower alkoxy and chlorophenoxy, (b) allyl and (c) alkyl with at most 18 carbon atoms, R_2 is a member selected from the group consisting of hydrogen, lower alkyl and lower dialkylamino, R_3 is a member selected from the group consisting of hydrogen, lower alkyl and phenyl, R_4 is a member selected from the group consisting of hydrogen, and —$COOR_5$, where R_5 is lower alkyl, and (B) a salt of a compound set forth above under (A) selected from the group consisting of hydrochloride, hydrobromide and perchlorate.

3,345,258

FUNGICIDAL COMPOSITIONS AND METHODS

Harry A. Sidles, Wheaton, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,431
15 Claims. (Cl. 167—39)

1. A composition which consists substantially of methyl bromide, residual fungicide in a content of about 0.05 to 10% by weight of methyl bromide and a residual chlorinated hydrocarbon insecticide selected from the group

consisting of chlordane, heptachlor, aldrin and dieldrin in a content of about 0.05 to 10% by weight of methyl bromide.

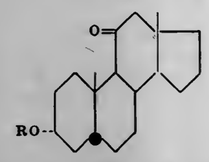
3,345,259

METHOD OF EFFECTING SEDATION, NARCOSIS AND MUSCULAR RELAXATION

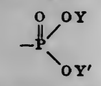
Julien Warnant, Neuilly-sur-Seine, Robert Joly, Montmorency, André Allais, Les Lilas, and Pierre Girault, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,421
Claims priority, application France, July 21, 1961, 868,569; Oct. 20, 1961, 876,603
5 Claims. (Cl. 167—52)

1. The method of effecting sedation, narcosis and muscular relaxation by administering to warm-blooded animals from about 1.5 mg. to about 250 mg. per kilogram of body weight per day of a compound of the formula



in which R represents a member selected from the group consisting of hydrogen, lower alkanoyl, the monoester of an alkanedioic acid having 2 to 8 carbon atoms, and



wherein Y and Y' are selected from the group consisting of hydrogen and alkali metals and, when taken together, divalent alkaline earth metals.

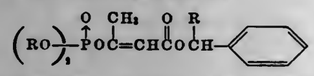
3,345,260

METHODS FOR CONTROLLING HELMINTHS IN ANIMALS USING CERTAIN ORGANOPHOSPHORUS COMPOUNDS

Stanley T. Ichikawa and Robert Young, Jr., Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,038
3 Claims. (Cl. 167—53)

1. A method for controlling helminths in domestic animals which comprises administering to helminth-infested domestic animals an effective amount of a compound represented by the following formula:



wherein each R independently represents alkyl of one to four carbon atoms.

3,345,261

PELIOMYCIN AND METHOD OF PREPARING SAME

Kenneth E. Price, Fayetteville, and Henry Schmitz, Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

Filed Sept. 25, 1963, Ser. No. 311,409
5 Claims. (Cl. 167—65)

1. A composition of matter designated as peliomycin, said composition being characterized by ready solubility in ether and ethyl acetate, slight solubility in ligroin and substantial insolubility in water, nitromethane, aqueous mineral acid and sodium hydroxide and exhibiting in the pure state colorless hexagonal plates, a melting point of 160°–164° C, a molecular weight of 858 by thermoelectric determination, an elemental analysis as follows:

64.7% carbon, 8.9% hydrogen, and 26.4% oxygen (by difference), an optical rotation of $[\alpha]_D^{25}=-74.2°$ (c.=1 in chloroform), an ultraviolet absorption spectrum in chloroform exhibiting a shoulder at 295 mμ and end absorption, an ultraviolet spectrum in concentrated sulfuric acid giving a maximum at 280 mμ with an absorptivity of 25, and an infrared absorption spectrum in potassium bromide as shown in the drawing.

3,345,262

ANTIBIOTIC CIROLEROSUS AND PROCESS FOR PRODUCING THE SAME

Curtis E. Meyer, Charleston Township, Kalamazoo County, and Bijoy K. Bhuyan, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Mar. 16, 1964, Ser. No. 352,257
10 Claims. (Cl. 167—65)

1. An antibiotic, assaying at least 2.5 mcg./mg. of cirolerosus, a compound which

(a) is effective in inhibiting the growth of gram-positive and gram-negative bacteria;
(b) is soluble in methanol, ethanol, ethyl acetate, halogenated hydrocarbons, acids, benzene, glycols; slightly soluble in ether; and relatively insoluble in paraffin hydrocarbons; and in its essentially pure form
(c) has the following elemental analysis: C, 60.90, 60.73; H, 7.08, 6.71; O, 28.46; N, 2.80;
(d) has a molecular weight of 974±30 (from eq. wt.);
(e) has a characteristic ultraviolet absorption spectrum as follows:

.01 N acid (alcoholic HCl)—
236 mμ., a=40.33
253 mμ., a=23.01 (sh.)
293 mμ.. a=8.08
465 mμ., a=10.11 (sh.)
495 mμ., a=12.15
515 mμ., a=12.63 (sh.)
525 mμ., a=12.15 (sh.)
549 mμ., a=5.97 (sh.)
564 mμ., a=5.23
242 mμ., a=42.91
.01 N base (alcoholic NaOH)—
292 mμ., a=7.74
580 mμ., a=14.32
610 mμ., a=13.58 (sh.);

and as shown in FIGURE II of the drawing; and
(f) has a characteristic infrared absorption spectrum as follows:

3520 (M)	1092 (S)
2905 (S) (oil)	1065 (S)
2770 (S)	1038 (S)
2720 (M)	1010 (S)
2660 (M)	980 (S)
1737 (S)	960 (S)
1602 (S)	940 (S)
1578 (S)	900 (M)
1560 (M)	893 (M)
1456 (S) (oil)	883 (M)
1402 (S)	870 (M)
1377 (S) (oil)	835 (M)
1367 (S)	818 (M)
1299 (S)	797 (M)
1251 (S)	771 (M)
1241 (S)	746 (M)
1224 (S)	723 (M)
1197 (S)	712 (M)
1170 (S)	703 (M)
1115 (S)	663 (W)

and as shown in FIGURE I of the accompanying drawing.

7. A process which comprises cultivating *Streptomyces bellus* var. *cirolerosus* in an aqueous nutrient medium under aerobic conditions until substantial antibiotic activity is imparted to said medium by production of cirolerosus.

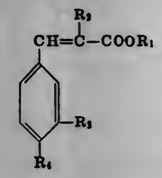
3,345,263

DIURETIC COMPOUNDS AND METHOD OF PROMOTING DIURESIS

Anangur V. Subbaratnam, Chicago, Ill., assignor to Wilson & Co., Inc., a corporation of Delaware

No Drawing. Filed June 15, 1964, Ser. No. 375,355
9 Claims. (Cl. 167—65)

1. The method of promoting diuresis in mammals which comprises administering to said mammals pharmacologically active dosages of a compound selected from the group having the formula



wherein R_1 represents a member selected from the group consisting of hydrogen, sodium and potassium; R_2 represents a member selected from the group consisting of hydrogen, an alkyl having up to 3 carbon atoms, halogen, phenyl, nitro substituted phenyl, and carboxyl; R_3 represents a member selected from the group consisting of hydrogen and halogen; R_4 represents a member selected from the group consisting of hydrogen and halogen, at least one of the substituents R_3 and R_4 always being a halogen.

3,345,264

METHODS OF SUPPRESSING ANXIETY EMPLOYING SODIUM AND IRON SALTS OF PYRROLIDONE CARBOXYLIC ACID

Gustave Marie Joseph Bocher, deceased, late of Paris, France, by Dominique Bocher, heir and attorney-in-fact, Paris, France

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,954
Claims priority, application France, June 3, 1960, 829,133
The portion of the term of the patent subsequent to Apr. 13, 1982, has been disclaimed.
4 Claims. (Cl. 167—65)

1. A method of suppressing anxiety in animals suffering therefrom which comprises the step of administering to such animals an effective amount of a compound selected from the sodium and iron salts of pyrrolidone carboxylic acid.

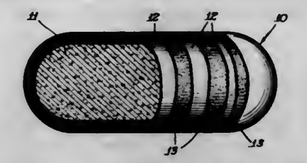
3,345,265

MULTIPLE LAYER TABLET WITH CALCIUM SALT CENTRAL CORE SEPARATED FROM SOLUBLE FLUORIDE OUTER COATING

Marcus G. Grodberg, Newton, Mass., and James R. Mellberg, North Barrington, Ill., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Oct. 9, 1963, Ser. No. 314,908
18 Claims. (Cl. 167—82)

1. A tablet consisting essentially of a central core, a substantially soluble coating surrounding and enveloping said core, said core including a non-toxic absorbable calcium salt, said coating including a non-toxic soluble fluoride in a coating material inert to said soluble fluoride, said calcium-containing core being separated from at least 90% of the fluoride in said fluoride-containing coating by at least one calcium-free layer containing not more than 10% of the total fluoride, said tablet being disintegrable by successive exposure to salivary, gastric and intestinal



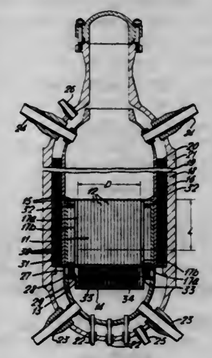
fluids to thereby successively release the soluble fluoride and the calcium salt, in order to avoid the reaction which occurs between the two in the presence of moisture.

3,345,266

FAST NUCLEAR REACTORS

John Erskine Mann, Liverpool, Allan Barker, Chester, and Maurice Arthur Perks, Stockton Heath, near Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Feb. 3, 1966, Ser. No. 524,748
Claims priority, application Great Britain, Feb. 12, 1965, 6,265/65
7 Claims. (Cl. 176—18)



1. A fast nuclear reactor cooled by supercritically pressurised aqueous coolant and comprising a fast fuel region, an encircling region having a higher proportion of fertile to fissile material, and a zone extending substantially uninterruptedly adjacent the interface of the regions which zone has a coolant volume fraction greater than either of the regions and a significant further volume fraction constituted by metal which, at least predominantly, is zirconium.

3,345,267

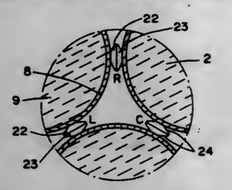
FUEL ROD STRUCTURE

Don B. Nazzer, Box 434, and John Pawliw, Box 184, both of Peterborough, Ontario, Canada

Filed July 19, 1965, Ser. No. 472,946
Claims priority, application Canada, Aug. 28, 1964, 910,529
8 Claims. (Cl. 176—78)

1. In a fuel element cluster for use in a nuclear reactor wherein the several elements forming the cluster extend in a longitudinal direction and their surfaces lie adjacent one another, the improvement which comprises, a wart attached to each element of the cluster in a region proximate to an adjacent element and a second wart attached to the adjacent element in said region, contact between the first and said adjacent elements taking place at the surface of said warts, a third wart attached to said first element in a second region proximate to a second adjacent element, a fourth wart attached to said second

adjacent element in said second region, contact between said second adjacent element and said first element taking place on the surface of said third and fourth wart, that



plane transverse to the longitudinal direction containing said third and fourth warts being spaced longitudinally from the transverse plane containing said first and second warts.

3,345,268

PROCESS OF PURIFYING A TRANSGLUCOSIDASE AND GLUCOAMYLASE-CONTAINING FUNGAL ENZYME PREPARATION

Julian Corman, Muscatine, Iowa, assignor to Grain Processing Corporation, Muscatine, Iowa, a corporation of Iowa

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,190
21 Claims. (Cl. 195—31)

20. In a process for producing dextrose from starchy materials wherein the starchy material is hydrolyzed with fungal enzymes, the improvement which consists in hydrolyzing the starchy material with a glucoamylase-containing fungal enzyme preparation which has been purified by treating said preparation in aqueous medium with an aqueous solution of a water-soluble polysaccharide having anionic functional groups at a pH of from about 1.5 to 4 for a period of time sufficient to substantially inactivate the transglucosidase enzyme.

3,345,269

PROCESS FOR THE PRODUCTION OF PROTEOLYTIC ENZYMES

Bengt Adolf von Hofsten, Uppsala, Sweden, assignor to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,049
Claims priority, application Sweden, Apr. 14, 1964, 4,562/64
8 Claims. (Cl. 195—66)

1. A process for the production of a proteolytic enzyme comprising the steps of cultivating protein degrading bacteria of the genus Arthrobacter under aerobic conditions in a water solution consisting essentially of proteinaceous substances and nutritive salts, said proteinaceous substances being selected from the group consisting of proteins and peptides, separating said bacteria from the culture medium and recovering the cell-free culture medium with the enzyme formed under cultivation.

3,345,270

DIAGNOSTIC COMPOSITION FOR ISOLATING AND IDENTIFYING YEASTS

Joseph Edward Gray, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed May 21, 1964, Ser. No. 369,281
2 Claims. (Cl. 195—100)

1. A diagnostic composition useful in the rapid and positive identification of yeast species comprising:

	Gms.
Agar	1.5
Sucrose	4.0
Proteose peptone	1.0

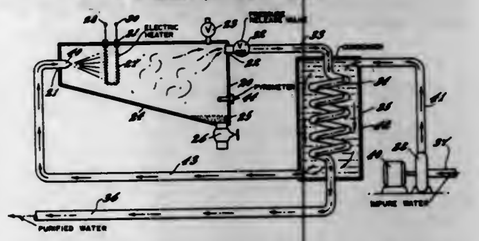
dissolved in 100 ml. of water and subjected to autoclaving, cooling, and remelting and having dispersed therein aqueous solutions consisting of (a) phosphomolybdic acid in the proportion of 50 mgs./3 ml. H_2O, (b) polyoxyethylene sorbitan monolaurate in the proportion of 1 ml./8.75 ml. H_2O; (c) yeast nitrogen base in the proportion of 6.7 gm./100 ml. H_2O and (d) an antibacterial agent in the proportion of 800 units of penicillin and 2000 mcg. of streptomycin/ml.

3,345,271

FLASH DISTILLATION BOILER FOR TREATING MINERAL WATERS INCLUDING TEMPERATURE RESPONSIVE MEANS

James H. Shay, 174 Chatham Road, Asheville, N.C. 28804, and Reuben R. Woodson, Box 36, Alexander, N.C. 28701

Filed Nov. 30, 1965, Ser. No. 510,563
2 Claims. (Cl. 202—160)



1. In a system for removing minerals from water, a flash boiler having an inlet and an outlet, blowdown means for removing minerals from the boiler, electric heating means for heating the boiler, a condenser having feed water passages and steam passages in heat transfer relationship with one another, piping connecting the steam passages of the condenser at one end with the outlet from the boiler, a feed water pump connected to one end of the feed water passages of the condenser, electric motor means for driving the feed water pump, electrical switch means in circuit with electric motor means, a spray nozzle in the boiler connected to the other end of the feed water passages of the condenser, a purified water discharge connected to the other end of the steam passages in the condenser, a pyrometer disposed in said boiler which is operatively connected with said electrical switch means to start and stop the electric motor means, said electric motor means being operatively responsive to the temperature measurement of the pyrometer to open said electrical switch means and stop the operation of the feed water pump when the temperature in the boiler is below a minimum low setting.

3,345,272

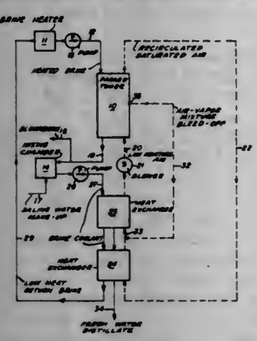
MULTIPLE EFFECT PURIFICATION OF CONTAMINATED FLUIDS BY DIRECT GASEOUS FLOW CONTACT

Richard A. Collins, Tempe, Ariz., assignor to the United States of America as represented by the Secretary of the Interior

Filed May 14, 1965, Ser. No. 456,011
8 Claims. (Cl. 203—11)

1. A method for purifying a contaminated liquid comprising the steps of heating the contaminated liquid, passing said heated liquid into an evaporator wherein it flows through a devious path, passing a stream of gas into said evaporator to flow countercurrent to the flow of said heated liquid whereby evaporation of heated liquid into the gas occurs to form a gas-vapor mixture carried along as part of the gas stream, simultaneously diverting portions of said gas stream mixture at a plurality of separated points part way along said devious path through said evaporator, to flow away from the evaporator and into channels directing said diverted portions to pass through a condenser, the remainders of said gas stream

mixture continuing to flow countercurrent to the flow of said heated liquid whereby additional vapor from the liquid is absorbed into the remainders of said gas stream, and at the end of said devious path through said evaporator directing the gas stream mixture out of said evaporator and into a channel through which said end gas stream mixture traverses the condenser, collecting the purified liquid produced by the condensation of the vapor in said gas stream mixtures passing through the condenser, directing the vapor depleted gas stream discharged from the condenser into said evaporator to flow countercurrent to the flow of said heated liquid, channeling said heated



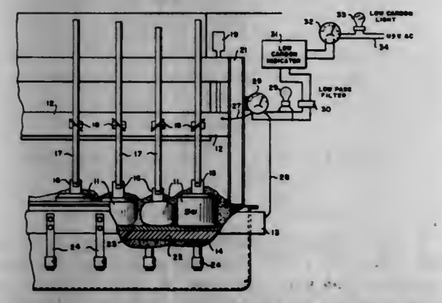
liquid passed completely through said evaporator into a chamber, channeling a fresh supply of contaminated liquid into the chamber to mix with the liquid therein from the evaporator, directing said mixed contaminated liquids to pass through said condensers so as to flow therethrough out of contact with said stream mixtures passing therein, and countercurrent thereto, whereby the mixed contaminated liquids are heated by the heat of condensation, channeling said heated contaminated liquids to a heater, and passing them through the heater to further raise their temperature whereby the contaminated heated liquids are properly conditioned to be channeled into said evaporator to flow through said devious path provided therefor.

3,345,273

METHOD OF AND APPARATUS FOR INDICATING ANODE POSITIONS

Robert V. Brown, Portland, Oreg., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Feb. 4, 1964, Ser. No. 342,505
7 Claims. (Cl. 204—1)



1. A method for determining the presence of a low carbon anode in an electrolytic reduction cell for the reduction of aluminum dissolved in a molten electrolyte the cell having multiple carbon anodes and a cathode to which DC voltage is applied, the method comprising the steps of:

electrically connecting across the anodes and cathode detection means sensitive to low frequency voltage variations in the neighborhood of 1 to 20 cycles per second superimposed on the applied DC voltage; and

utilizing said detection means to indicate the occurrence of said voltage variations caused by a low carbon.

3,345,274

METHOD OF MAKING OXIDE FILM PATTERNS

Paul F. Schmidt, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 22, 1964, Ser. No. 361,750
1 Claim. (Cl. 204—15)

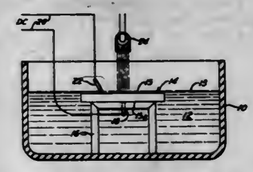
A method comprising contacting a first surface of an n-type semiconductive member with a first electrolyte that can supply oxygen for anodization of said member, contacting an opposed surface of the semiconductive member with a second electrolyte that can supply oxygen for anodization of said member, said member forming a dividing member of a two compartment electrochemical cell in which the compartments can make contact only through said member, applying a direct current power source across the two electrolytes in a zone free from uncontrolled illumination, then projecting light to the surface of said semiconductive member in contact with electrolyte having the negative side of said DC power source in electrical contact therewith to anodize the surface of the semiconductive member contacting that electrolyte, thereafter reversing the polarity of the DC power source across the electrolytes and projecting light to the surface of semiconductive member now in contact with electrolyte electrically contacting the negative side of said source to anodize the second surface of the semiconductive member.

3,345,275

ELECTROLYTE AND DIFFUSION PROCESS

Paul F. Schmidt, Pittsburgh, Pa., and Gerald D. Rose, Indianapolis, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 28, 1964, Ser. No. 363,236
8 Claims. (Cl. 204—15)



3. A method comprising immersing at least a surface of a wafer of semiconductive silicon in an electrolyte comprising a solution of pyrophosphoric acid in tetrahydrofurfuryl alcohol, and passing a direct current through the solution and the silicon whereby silicon oxide containing phosphorus is grown on the immersed surface of the silicon.

3,345,276

SURFACE TREATMENT FOR MAGNESIUM-LITHIUM ALLOYS

Robert A. Munroe, Candor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,909
2 Claims. (Cl. 204—32)

2. A method of surface treating metal articles of magnesium lithium alloys comprising the steps of:

pretreating the articles by a non-contaminating and non-deteriorating cleaning process;

exuding the lithium from those portions of the alloy closely adjacent to the outer surface of said articles

by raising and maintaining the temperature of said articles to a temperature of the range 200–255° C. for at least one hour in a non-contaminating and non-deteriorating atmosphere;

thereafter removing the lithium so exuded from the surfaces by cooling said articles to room temperature and then washing the cooled articles in a non-contaminating and non-deteriorating rinse of continuously circulating water having a temperature maintained below 150° F., the removal of said lithium exudation being maintained for approximately 5 minutes while each of said articles is immersed in said circulating water; and

thereafter treating the articles by a fluoride anodizing process, said fluoride anodizing process comprising:

immersing the articles in an aqueous solution consisting essentially of 30–45% ammonium bifluoride;

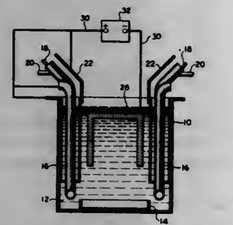
applying an alternating current voltage to the articles and solution, and progressively increasing said voltage to 110–120 v. AC; and

maintaining the articles in the solution for at least 30 minutes after the current falls to less than 5 amperes per square foot of article surface.

3,345,277
ELECTROCHEMICAL PRODUCTION OF SULFUR HEXAFLUORIDE
Paul E. Ashley, Minneapolis, James Donald La Zerte, St. Paul, and Raymond J. Seffl, East Oakdale Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Sept. 24, 1964, Ser. No. 402,681
3 Claims. (Cl. 204—59)

1. A process for electrochemically fluorinating sulfur which comprises electrolyzing a mixture of hydrogen fluoride and elemental sulfur in an electrochemical cell.

3,345,278
ANODIC PASSIVATION OF METALS
Matthew Mekjean, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Mar. 25, 1963, Ser. No. 267,436
6 Claims. (Cl. 204—147)

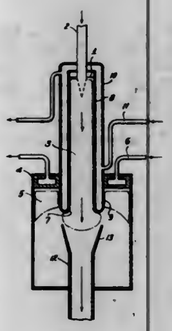


1. A method for anodically passivating a metallic element in contact with a substantially anhydrous molten composition comprising contacting a substantially anhydrous molten composition comprised of at least 55 percent alkali metal hydroxide with a corrodible metallic element to be protected selected from the group consisting of steel, nickel, silver, titanium, zirconium, hafnium and niobium, contacting said anhydrous composition with a second metallic cathode element comprised of a metal selected from the group consisting of zirconium, copper, nickel, silver and molybdenum, applying a voltage of about 0.005 to 3.7 volts between said corrodible metallic element and said cathode element, said voltage being below the decomposition voltage of the anhydrous composition and sufficient to make the corrosive metal anodic and the second metallic element cathodic, thereby passivating said corrodible metallic element to the action of said substantially anhydrous composition.

3,345,279
PRODUCTION OF HYDRAZINE
Boris Levy, Crosswicks, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed Jan. 16, 1963, Ser. No. 251,799
4 Claims. (Cl. 204—157.1)

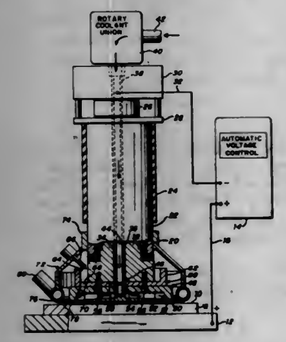
1. Method of making hydrazine continuously from ammonia gas which comprises compressing and cooling said gas to the liquid state, flowing a part of the liquid to an irradiation zone and another part to an expansion zone in heat exchange relation with said irradiation zone, expanding the liquid in the expansion zone, thereby to reduce the temperature of the liquid in the irradiation zone by heat exchange to about —70 to —77° C., irradiating the liquid in the irradiation zone with ionizing radiation at said temperature to convert at least a portion of the ammonia to liquid hydrazine, flowing the irradiated material to join the liquid ammonia stream passing to said expansion zone, said expansion step in the latter zone acting to vaporize liquid ammonia, including unreacted liquid ammonia, and gaseous irradiation products away from the liquid hydrazine, collecting the latter at the bottom of the expansion zone and rapidly removing the same, flowing said vaporized ammonia and gaseous irradiated products to said compressing and cooling steps to form liquid ammonia, bleeding off gaseous irradiation products from time to time in said cooling step, and flowing the liquid ammonia to said irradiation and expansion zone as described.

3,345,280
METHOD AND APPARATUS FOR CONTROLLING GLOW DISCHARGE PROCESSES
Bernhard Berghaus, Zurich, Switzerland, assignor to IONON G.m.b.H., Cologne, Germany
Filed Nov. 27, 1961, Ser. No. 155,210
Claims priority, application Germany, Nov. 28, 1960, J 19,075
13 Claims. (Cl. 204—164)



1. In a method of controlling the energy in the positive column of a glow discharge in a vessel, the steps of operating said glow discharge at current values above those necessary for the complete coverage of the cathode, minimizing the inherent lowering of the work function of the electrons from the cathode by withdrawing heat therefrom in an amount sufficient to maintain the work function of the electrons from the cathode substantially constantly the same as the work function with incomplete coverage of the cathode and thereby minimizing the increase of the percentage of the electron current density in the entire current density so that an increase of the cathode fall relative to the electron current density is held to a minimum, controlling the potential applied to the discharge section to such value that only a fraction of the same lies over the cathode fall, and maintaining a distance between the electrodes such that said applied potential produces a field density substantially greater than that over an electrically neutral plasma of gas ions and electrons in the positive column whereby to increase the concentration of energy in the positive column.

3,345,281
ELECTROLYTIC SHAPING APPARATUS
John J. Falls, Cincinnati, Ohio, assignor to Setco Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 3, 1963, Ser. No. 306,124
13 Claims. (Cl. 204—212)



4. An electrolytic apparatus for shaping an electrically charged workpiece, comprising in combination, a housing including bearing means, a longitudinally bored driving spindle rotatably supported by the bearing means, said spindle having a working end and a tail end, a shaping wheel fixed to the working end of the spindle for rotation therewith, said wheel having a working face operative upon the charged workpiece, means for electrically charging the shaping wheel with a current polarity opposite to that of the workpiece, means for directing electrolytic fluid to the workpiece through the longitudinal bore of the spindle, and means at that end of the bore which is adjacent to the working end of the spindle, for centrifuging electrolytic fluid from the bore outwardly toward the working face of the shaping wheel as the spindle rotates, wherein said last mentioned means comprised a disc rotatable with the spindle and having a peripheral edge in close proximity to the working face of the shaping wheel.

3,345,282
PORTABLE BARREL PLATING UNIT
Carl W. Jenks, 1131 Ostrander, La Grange Park, Ill. 60525
Filed Aug. 10, 1964, Ser. No. 388,432
10 Claims. (Cl. 204—213)

1. An electroplating barrel unit comprising:

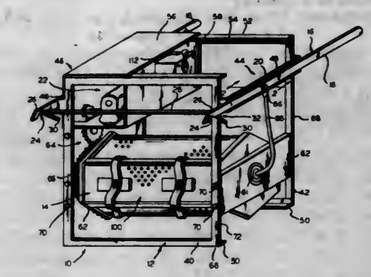
an electroplating barrel,

frame means for journalling said barrel for rotation about a substantially horizontal axis,

and a contact assembly secured to said frame means, said contact assembly comprising:

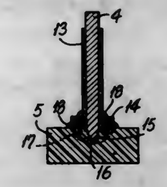
a pair of contact arms pivotally secured to said frame intermediate their respective ends on either side of said frame means for pivotal movement about a substantially horizontal axis,

said arms each having a forward electrical contact area formed thereon at like ends of each,



and a flexible member connecting said ends of said arms together.

3,345,283
PROCESS FOR PRODUCING A GRAPHITE ANODE
Hiroshi Shibata, Yasuo Yamasaki, and Kinzo Sugihara, Nakoso, Fukushima Prefecture, Japan, assignors to Kureha Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed June 5, 1963, Ser. No. 285,771
Claims priority, application Japan, July 5, 1962, 37/28,209, 37/37,061
3 Claims. (Cl. 204—294)



1. In a process for producing a graphite anode in an electrolytic cell having a mercury electrode for the electrolysis of alkaline salt solutions the steps comprising in combination, respectively,

(a) forming a tapered recess in said graphite anode,

(b) heating the recess to about 150° C. to 200° C.

(c) under pressure depositing a chlorine resistant material in the recess, said material being selected from the group consisting of chloro-naphthalene, chloroparaffin, chlorinated fish oil, chlorinated vegetable oil and mixtures thereof,

(d) maintaining the said material and recess under pressure for about 30 to 60 minutes whereby the material penetrates into the graphite anode,

(e) forcing a conductive connector pole composed of a metal having a lower electrical resistance than graphite and having a tapered end into the recess with the tapered end fitting into the tapered recess in the graphite anode, any exposed part of the pole being coated with chlorine resistant material, and

(f) applying a chlorine resistant sealing protective ring composed of a material selected from the class consisting of impervious carbon, graphite, hard gum, polyester resin and vinyl chloride, and adhesive around the connector pole at the intersection of the pole and graphite anode

to form a graphite anode with a firmly bonded connector pole.

by raising and maintaining the temperature of said articles to a temperature of the range 200–255° C. for at least one hour in a non-contaminating and non-deteriorating atmosphere;

thereafter removing the lithium so exuded from the surfaces by cooling said articles to room temperature and then washing the cooled articles in a non-contaminating and non-deteriorating rinse of continuously circulating water having a temperature maintained below 150° F., the removal of said lithium exudation being maintained for approximately 5 minutes while each of said articles is immersed in said circulating water; and

thereafter treating the articles by a fluoride anodizing process, said fluoride anodizing process comprising:

immersing the articles in an aqueous solution consisting essentially of 30–45% ammonium bifluoride;

applying an alternating current voltage to the articles and solution, and progressively increasing said voltage to 110–120 v. AC; and

maintaining the articles in the solution for at least 30 minutes after the current falls to less than 5 amperes per square foot of article surface.

3,345,277

ELECTROCHEMICAL PRODUCTION OF SULFUR HEXAFLUORIDE

Paul E. Ashley, Minneapolis, James Donald La Zerte, St. Paul, and Raymond J. Seffi, East Oakdale Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 24, 1964, Ser. No. 402,681
3 Claims. (Cl. 204—59)

1. A process for electrochemically fluorinating sulfur which comprises electrolyzing a mixture of hydrogen fluoride and elemental sulfur in an electrochemical cell.

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anodic and the second metallic element cathodic, thereby passivating said corrodible metallic element to the action of said substantially anhydrous composition.

3,345,279

PRODUCTION OF HYDRAZINE

Boris Levy, Crosswicks, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Jan. 16, 1963, Ser. No. 251,799
4 Claims. (Cl. 204—157.1)

1. Method of making hydrazine continuously from ammonia gas which comprises compressing and cooling said gas to the liquid state, flowing a part of the liquid to an irradiation zone and another part to an expansion zone in heat exchange relation with said irradiation zone, expanding the liquid in the expansion zone, thereby to reduce the temperature of the liquid in the irradiation zone by heat exchange to about —70 to —77° C., irradiating the liquid in the irradiation zone with ionizing radiation at said temperature to convert at least a portion of the ammonia to liquid hydrazine, flowing the irradiated material to join the liquid ammonia stream passing to said expansion zone, said expansion step in the latter zone acting to vaporize liquid ammonia, including unreacted liquid ammonia, and gaseous irradiation products away from the liquid hydrazine, collecting the latter at the bottom of the expansion zone and rapidly removing the same, flowing said vaporized ammonia and gaseous irradiated products to said compressing and cooling steps to form liquid ammonia, bleeding off gaseous irradiation products from time to time in said cooling step, and flowing the liquid ammonia to said irradiation and expansion zone as described.

3,345,280

METHOD AND APPARATUS FOR CONTROLLING GLOW DISCHARGE PROCESSES

Bernhard Berghaus, Zurich, Switzerland, assignor to IONON G.m.b.H., Cologne, Germany

3,345,284

CARBONACEOUS ION EXCHANGE MATERIALS

James Stephen Ogden, Ashland, Ky., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,338
5 Claims. (Cl. 208—44)

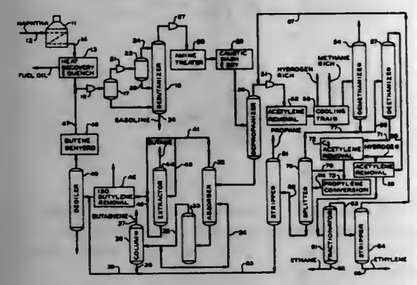
1. A method for producing carbonaceous ion exchange materials, comprising: fusing and crushing asphaltenes, obtained by the solvent precipitation of oxidized asphalt to obtain granular asphaltenes having a size of about 20 to 80 mesh; adding about 1–10 parts of 20% oleum to each part of granular asphaltenes while stirring and crushing large particles; maintaining the temperature at least equal to about 180° F. but not more than about 280° F.; when gelation and an apparent dry point is reached, crushing to a size less than about 10 mesh but greater than about 80 mesh; heating the crushed particles to a temperature of about 280° F.–350° F. while stirring; quenching the hot particles in cold water; removing excess liquid from the mixture and washing with additional cold water to remove unreacted strong acids; screening said particles through about a 12 mesh screen; washing the particles passing through said screen with boiling water until the effluent water is colorless; and drying said particles at a temperature of about 170° F. to 190° F. until said particles have a moisture content of about 20–80%.

3,345,285

ETHYLENE, BUTADIENE PRODUCTION

John F. Hutto, Rolland E. Dixon, Joseph W. Davison, Charles A. Ayres, Graham A. Renberg, and Donald K. MacQueen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 4, 1964, Ser. No. 394,581
9 Claims. (Cl. 208—67)



1. A process for the production of ethylene and butadiene from hydrocarbons, which comprises the steps of:
cracking a hydrocarbon boiling within the naphtha boiling range;
separating the cracked effluent in a first separation zone to produce a gasoline stream, a C_2 stream, a C_3 stream and a C_4 stream;
separating butadiene and isobutene from said C_4 stream and feeding said C_4 stream into a butene conversion zone;
converting butene to butadiene in said butene conversion zone and combining the effluent therefrom with said cracked effluent prior to separation thereof;
passing said C_3 stream to a disproportionation zone;
in said disproportionation zone converting propylene to ethylene and butene;
separating the effluent of said disproportionation zone into an ethylene stream, a propylene stream and a butene stream;
converting butene of said butene stream to butadiene in said butene conversion zone;
recycling said propylene stream to said disproportionation zone;
combining said ethylene stream with said C_2 stream; and
separating said C_2 stream into an ethylene stream and a product ethylene stream.

3,345,286

PROCESS FOR REMOVING NITROGEN WITH COBALT-RARE EARTH AND GROUP VI CATALYST

Stephen M. Kovach, Highland, Ind., and Edward S. Rogers, Hinsdale, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,917
11 Claims. (Cl. 208—254)

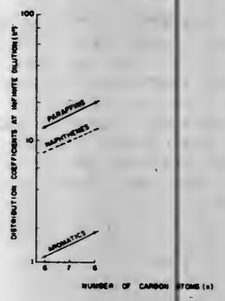
1. A process for hydroefining nitrogen-contaminated mineral hydrocarbons which consists essentially of contacting said hydrocarbons at a temperature of about 400 to 800° F. with molecular hydrogen under hydrogenation conditions in the presence of a catalyst consisting essentially of a calcined composition containing minor, catalytically effective amounts of (1) cobalt, (2) a promotor selected from the group consisting of cerium and thorium and (3) a metal selected from the group consisting of molybdenum and tungsten, on a predominantly alumina support.

3,345,287

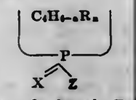
SOLVENT EXTRACTION OF AROMATICS

Heinz Voetter, Amsterdam, Netherlands, Klaus Hunger, Wood River, Ill., Ulrich Hasserodt, Menden, Germany, Eduard Sweep, Amsterdam, Netherlands, and Friedrich W. A. G. K. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,926
Claims priority, application Netherlands, Sept. 30, 1963, 298,567
6 Claims. (Cl. 208—325)



1. A process for selectively extracting aromatics from a hydrocarbon mixture of aromatics and non-aromatics which comprises the steps of:
(a) contacting said mixture with a selective solvent having the formula



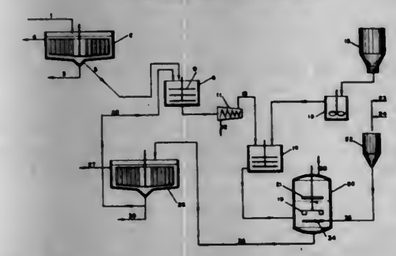
and mixtures thereof wherein R is hydrogen or lower alkyl, *n* is an integer from 0 to 2, X is oxygen or sulfur and Z is selected from the group consisting of lower alkyl, lower alkoxy, phenyl, phenoxy and N,N-dialkylamino; whereby the aromatics are selectively extracted by the solvent to form an aromatic rich fat solvent extract phase and a non-aromatic hydrocarbon raffinate phase;
(b) separating the fat solvent phase from the non-aromatic hydrocarbon raffinate phase; and
(c) separating the aromatics from the fat solvent.

3,345,288

PROCESS FOR DEWATERING ORGANIC SLUDGES FROM WASTE WATER TREATMENT

Heinrich Southeimer, Auf dem Seif 9, Falkenstein, Germany

Filed Feb. 2, 1965, Ser. No. 429,710
Claims priority, application Germany, Feb. 4, 1964, M 59,798
14 Claims. (Cl. 210—10)



1. In a process for dewatering organic sludges from the treatment of waste water wherein sludge is first thickened into a heavy sludge fraction followed by dewatering of the heavy sludge fraction on a mechanical dewatering device into a highly dewatered solids portion and a liquid containing fine and colloidal solids, the improvement comprising:
(a) adding lime to said liquid containing fine and colloidal solids;
(b) neutralizing the lime treated liquid with carbon dioxide until a pH value below 10.0 is reached;
(c) thickening for a sufficient holding time the lime and carbon dioxide treated liquid into a supernatant substantially free of suspended solids and a thickened sediment;
(d) separately withdrawing said supernatant liquid and said thickened sediment; and
(e) returning the thickened sediment from the lime and neutralized carbon dioxide treated liquid to the mechanical dewatering step to be dewatered along with the sludge fraction from the first thickening step.

3,345,289

FIRE RETARDANT COMPOSITION OF DIAMMONIUM PHOSPHATE CONTAINING METHYLVINYL ETHER-MALEIC ANHYDRIDE COPOLYMER AS THICKENER

Milton Freifeld, Easton, Pa., and Bradford Churchill, Alden, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 1, 1965, Ser. No. 505,962
5 Claims. (Cl. 252—8.1)

1. A fire retardant composition consisting essentially of an aqueous solution of diammonium phosphate containing a thickening agent selected from the class consisting of copolymers of methylvinyl ether and maleic anhydride and partial amides and partial esters thereof.

3,345,290

PROCESS FOR FORMING A LUBRICATING COMPOSITION

Alfred J. Strohmaier, Nanticoke Estates, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,039
1 Claim. (Cl. 252—18)

A process of preparing a lubricating composition comprising:
(1) mixing an alkyl-aryl silicone polymer with from about 1 to 15% by weight of the composition of a lithium soap and from about 1 to 20% by weight of the composition of boron nitride,
(2) heating said composition to about 100 to 150° C. while stirring, and
(3) cooling the said composition to room temperature while continuing said stirring.

3,345,291

PRODUCTION OF COMPLEX BASIC ALUMINUM SOAP GREASES

Theodore H. Koundakjian and John L. Dreher, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,127
5 Claims. (Cl. 252—37.7)

1. A process for producing complex basic aluminum soap greases, which comprises mixing approximately 1.5 to 2.5 molar parts of a mixture of higher fatty acids and aromatic carboxylic acids in which the mol ratio of higher fatty acid to aromatic carboxylic acid is in the range from about 0.25:1 to 4:1, approximately 1 molar part of a lower aluminum alcoholate, from 0 to 1.5 molar parts of water and a large molar excess of an oil of lubricating viscosity, heating the resultant mixture to a temperature in the range about 150° to 300° F. until reaction of the acids with the alcoholate is substantially complete, then adding a quantity of water in the range 0.05 to 10 molar parts and at least sufficient to bring the total water introduced to about 0.5 molar parts and vigorously agitating the resultant mixture at a temperature from about 200° F. to 500° F.

3,345,292

ALKYLDIARYL SULFIDES CONTAINING A STABILIZER

Alan Jeffrey Neale, Llangollen, and Terence James Rawlings, Wrexham, Wales, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,973
Claims priority, application Great Britain, Nov. 12, 1963, 44,603/63
6 Claims. (Cl. 252—47)

1. A composition comprising a major amount of an alkyl-substituted diaryl sulfide optionally further substituted with one or more members of the group consisting of hydrocarbyl and halogen and in an amount sufficient to improve the oxidation resistance of said sulfide of an antioxidant selected from the group consisting of a diaryl amine and an alkylated phenol.

3,345,293

COLORED ELECTROSTATOGRAPHIC TONERS CONTAINING ORGANIC DYE PIGMENTS

John S. Bartoszewicz, Rochester, and Michael A. Insalaco, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,345
11 Claims. (Cl. 252—62.1)

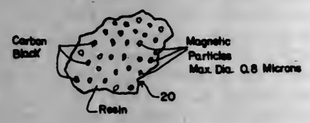
9. A novel toner to be used in combination with two other electrostatographic colored toners for the synthesis of images in full, natural color by the substractive process, one of said two other colored toners being made up of particles consisting of a substantially transparent electroscopic resin containing color stable organic dye pigments in the ratio of 1 part by weight of 3,3'-dichloro-4'-bis(2''-acetyl-2''-azo-o-acetotoluidide)biphenyl and 10 parts by weight of the resin for the yellow toner, the other of said colored toners being made up of finely divided particles consisting of a substantially transparent electroscopic resin containing color stable organic dye pigments in the ratio of about .75 part by weight of a magenta 2,9-dimethylquinacridone linear quinacridone dye pigment to about 10 parts by weight of the resin for the magenta toner and said novel toner comprising finely

divided particles consisting of a substantially transparent electroscopic resin containing color stable organic dye pigment in the ratio of about 91 parts by weight of copper phthalocyanine dye pigment, about 4 parts by weight of 3,3'-dichloro-,4'-bis(2''-acetyl-2''-azo-o-acetotoluidide) biphenyl to about 3730 parts by weight of the resin for the cyan toner.

3,345,294
DEVELOPER MIX FOR ELECTROSTATIC PRINTING

Robert N. Cooper, Chicago, Ill., assignor to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois

Filed Apr. 28, 1964, Ser. No. 363,079
7 Claims. (Cl. 252—62.1)



1. A developer mix for use in electrostatic printing to develop latent images, including charged and uncharged areas of an image-bearing sheet, said developer mix comprising the combination of separate granular magnetically attractable carrier particles and a developer powder comprising a coloring agent and a resin having a triboelectric relationship of opposite polarity with respect to said magnetically attractable granules, at least a major portion of said resin being composed of a polyamide resin having a sharp melting point within the range of about 70° C. to about 165° C. whereby developed images of substantially improved black density may be formed over extended operating periods.

3,345,295
COPPER CLEANING COMPOSITIONS

Morton Schwarcz, Watchung, N.J., and Myron Barchas, New York, N.Y., assignors to Shulton, Inc., Clifton, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,365
5 Claims. (Cl. 252—90)

1. A substantially oxyboron free aqueous copper cleaning composition containing as essential ingredients; (1) from about 5% to the solubility limit of a thiosulfate compound selected from the group consisting of alkali metal thiosulfates and ammonium thiosulfate and (2) from about 0.1% to about 10% of an n-alkyl mercaptan containing from 12 to 22 carbon atoms; all percentages being by weight based on the total weight of the composition.

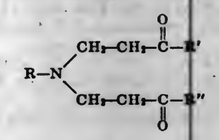
3,345,296
CORROSION INHIBITION

Charles W. Lutz, Clark, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 28, 1964, Ser. No. 348,281
20 Claims. (Cl. 252—136)

1. Aqueous phosphorus-containing solution, having a high degree of compatibility against component separation and inhibited against corrosion of mild steel, said aqueous solution having a phosphorus-containing ingredient from the group consisting of concentrated phosphoric acid and an ammonium phosphate and essentially containing as the predominating inhibitor against said corroson 0.01 to 100 p.p.m. of ethylquinolinium iodide on the weight of said solution and 0.03 to 0.20 percent by weight of the weight of said solution of a base inhibitor from the group consisting of:

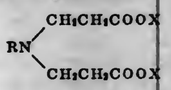
Base Inhibitor A, a mixture of 3:1 to 1:3 parts by weight respectively of (a) a di-long-chain-alkyl dimethyl ammonium chloride in which the alkyl chains have 8 to 18 carbon atoms, and (b) a rosin amine derivative having the formula



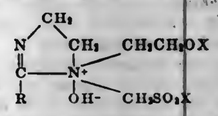
wherein R is from the group consisting of abietyl, hydroabietyl and dehydroabietyl radicals, and R' and R'' are from the group consisting of lower alkyl and phenyl radicals;

Base Inhibitor B, a mixture of about 1:3 to 3:1 parts by weight of (a) an alkyl trimethyl ammonium chloride and (b) a dialkyl dimethyl ammonium chloride, in which the alkyl groups have 8 to 18 carbon atoms;

Base Inhibitor C, a mixture of (a) a member of the group consisting of N-alkyl-β-iminodipropionic acid, the alkali metal salts and the ammonium salt thereof, having the following formula

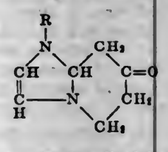


wherein R is constituted at least 70% of alkyl groups having 10 to 14 carbon atoms and the remainder of aliphatic groups having 8 to 18 carbon atoms, and X is from the group consisting of hydrogen, sodium, potassium and ammonium, together with (b) a member from the group consisting of 1,1,2-substituted sulfonated imidazolinium hydroxide, the alkali metal salts and the ammonium salt thereof, having the following formula



wherein R is constituted at least 70% of alkyl groups having 10 to 14 carbon atoms and the remainder of aliphatic groups having 8 to 18 carbon atoms, and X is from the group consisting of hydrogen, sodium, potassium and ammonium, in which the ingredients are employed in the relative proportions of 1 to 10 parts by weight of ingredient (a) to one part by weight of ingredient (b); and

Base Inhibitor D, a substituted imidazoline compound having the following formula



wherein R is an alkyl radical having 12 to 20 carbon atoms.

3,345,297
PROCESS FOR PREPARING DETERGENT GRANULES FROM TRIMETAPHOSPHATE

Larry E. Meyer and Richard D. Walker, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 6, 1965, Ser. No. 511,982
9 Claims. (Cl. 252—137)

1. A process for preparing detergent granules comprising the steps of

(1) forming a precursor slurry by mixing together, by weight, based on the final slurry, from about 20% to about 45% of water, from about 0.2% to about 12% of a water-soluble salt of nitrilotriacetic acid, 5 to 30% of a detergent selected from the group consisting of soap, anionic synthetic non-soap detergents, nonionic synthetic detergents, switterionic synthetic detergents and mixtures thereof and from about 20% to about 60% of an alkali-metal trimetaphosphate;

(2) adjusting the temperature of the precursor slurry between about 140° F. and about 212° F.;

(3) admixing into the continuously stirred precursor slurry from about 1.5 to about 3.0 moles of an alkali metal hydroxide per mole of alkali metal trimetaphosphate to form the final slurry; said alkali metal hydroxide reacting with said trimetaphosphate and converting it to an alkali metal tripolyphosphate with a resulting evolution of a substantial amount of steam from the slurry, the temperature of the slurry being maintained below about 275° F.

3,345,298
HYDROGEN EMBRITTLEMENT INHIBITION

Morton W. Leeds, Murray Hill, and George Davidowich, Bayonne, N.J., assignors, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,103
2 Claims. (Cl. 252—146)

1. A method of inhibiting hydrogen-embrittlement of ferrous metals by an aqueous sulfuric acid solution which comprises incorporating in said solution an effective inhibiting amount of a chlorinated acetylenic alcohol selected from the group consisting of 1-chloro-1-pentyn-3-ol and 1-chloro-1-hexyn-3-ol while said solution is in contact with said metals.

3,345,299
CORROSION INHIBITION WITH MORPHOLINOPROPYNE

George Davidowich, Bayonne, and Morton W. Leeds, Murray Hill, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,104
2 Claims. (Cl. 252—148)

1. A method of inhibiting the corrosion of metals by an aqueous solution of a mineral acid which comprises incorporating in said solution an effective corrosion inhibiting amount of morpholinopropyne while said solution is in contact with said metal.

3,345,300
DETERGENT COMPOSITION CONTAINING MIXED ANIONIC-CATIONIC SURFACTANTS

Henry C. Speel, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 10, 1952, Ser. No. 258,937
11 Claims. (Cl. 252—152)

1. A mixture of a cationic surface active agent having a quaternary ammonium radical and a hydrophobic hydrocarbon group and an anionic detergent consisting of a mono-alkali metal salt of a polybasic carboxylic acid mono-ester of the terminal alkylol group of a poly-oxyalkylated organic compound containing a hydrophobic hydrocarbon radical on the opposite end of the poly-oxyalkylene chain, said carboxylic acid containing from 2 to 3 carboxyl groups. the poly-oxyalklyene chain containing from about 2 to about 20 oxyalkylene units having from 2 to 3 carbon atoms per unit and said hydrophobic hydrocarbon radical contains from 8 to about 21 carbon atoms, the proportion of cationic surface active agent in said mixture being from about 5 to about 95 percent by weight.

3,345,301
POURABLE AND FREE-FLOWING DETERGENT, WETTING, AND EMULSIFYING COMPOSITIONS

Werner Stein, Erkrath-Unterbach, Herbert Weiss, Cologne-Deutz, and Otto Koch, Hilden, Rhineland, Germany, assignors to Henkel & Cie G.m.b.H., Duesseldorf, Germany, a corporation of Germany

Filed Oct. 8, 1964, Ser. No. 402,603
Claims priority, application Germany, Oct. 23, 1963, H 50,618
6 Claims. (Cl. 252—152)

1. A powder form surface-active detergent composition characterized by outstanding pouring and free-flowing properties consisting of:

(a) about 35–95 wt. percent of a surface active water soluble alkyl or cycloalkyl sulfonate, and

(b) about 5–65 wt. percent of a salt of an α-sulfo-fatty acid having 10–24 carbon atoms in its molecule, the cation of said salt being selected from the group consisting of Na, K, Mg, NH_4, mono-, di- and trialkanolamines.

3,345,302
STABLE MIXTURES

David I. Netting, Swarthmore, and Helmut H. Weldes, Havertown, Pa., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 19, 1965, Ser. No. 473,195
12 Claims. (Cl. 252—181)

1. A composition consisting essentially of an admixture of

(a) a first particulate solid acidic compound material that is capable of dissolving in water to form an aqueous acidic solution, and

(b) a second particulate material consisting essentially of a soluble silicate that is capable of dissolving in water to form an alkaline solution with a pH above 8; said first particulate material being coated with a film;

(1) that consists essentially of an alkali soluble copolymer resin of maleic anhydride and a compound selected from the group consisting of alkylvinyl ethers and olefins containing 2–4 carbon atoms, said copolymer resin being 50–75% esterified with an alkanol having between 1 and 16 carbon atoms,

(2) that is between about 1% and 10% by weight of the first particulate material, and

(3) that is substantially insoluble in aqueous solutions having a pH less than 8,

(c) the amount of the first particulate material being sufficient to neutralize the second particulate material.

3,345,303
BLEACHING COMPOSITION

Hans G. Schmid, New Providence, and Gerald R. Ferrante, Metuchen, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,895
4 Claims. (Cl. 252—186)

1. A bleaching bath solution particularly adapted for cotton bleaching consisting essentially of an aqueous solution of hydrogen peroxide of pH 6 to 9 containing about 0.05 to about 1.5% weight hydrogen peroxide together with about 0.2 to about 2.0% weight of a sodium salt of citric acid.

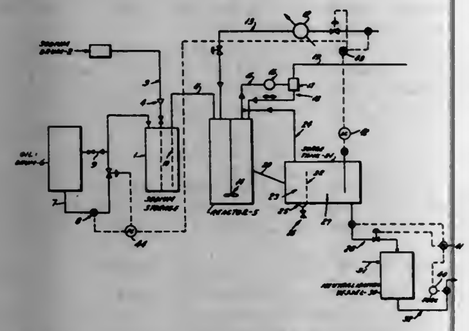
3,345,304
NEUTRALIZATION PROCESS AND APPARATUS

David Ross, Los Angeles, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Nov. 15, 1963, Ser. No. 323,930
9 Claims. (Cl. 252—193)

7. A substantially anhydrous method for continuously neutralizing a contaminated deashing liquid consisting

essentially of an aliphatic alcohol containing from 1 to 10 carbon atoms, a low molecular weight aliphatic hydrocarbon containing from 4 to 10 carbon atoms and acidic substances which comprises essentially the steps of (a) feeding a molten alkali metal and a separate stream consisting essentially of a mixture of an aliphatic alcohol containing from 1 to 10 carbon atoms and a low molecular weight aliphatic hydrocarbon containing from 4 to 10 carbon atoms to a reaction zone to produce a neutralization mixture consisting essentially of from 2 to 10% by weight of said alkali metal alkoxide and the remainder of a mixture of alcohol and low molecular weight hydrocarbon, (b) continuously passing the thus formed neutralization mixture to an intermediate storage zone, (c) continuously regulating the flow rate of said molten alkali metal and the separate stream of said alcohol and hydrocarbon to the reaction zone of step (a) in response to the level of the neutralization mixture in said intermediate storage zone of step (b), (d) continuously withdrawing the neutralization mixture in an amount of from about 0.1 to 5.0% by weight based on the deashing liquid from said intermediate storage zone of step (b) for treatment of the contaminated deashing liquid in a neutralization zone, and (e) continuously recovering a neutralized liquid mixture from the neutralization zone of step (d), and (f) continuously measuring the pH of the recovered neutralized solvent mixture, and regulating the flow of neutralization mixture from the intermediate storage zone of step (b) to the neutralization zone of step (d) to maintain a pH of about 7 to 9.



9. In combination, apparatus for neutralizing a contamniated deashing liquid containing acidic substances consisting essentially of conduit means for introducing a molten alkali metal stream and a stream of an aliphatic alcohol-aliphatic hydrocarbon mixture, said aliphatic alcohol containing from 1 to 10 carbon atoms and said aliphatic hydrocarbon containing from 4 to 10 carbon atoms, to a reaction zone, conduit means for withdrawing a neutralization mixture from said zone consisting essentially of a minor proportion of an alkali metal alkoxide of an aliphatic alcohol containing from 1 to 10 carbon atoms, and a major proportion of said alcohol-hydrocarbon mixture, conduit means for transferring said neutralization mixture to an intermediate storage zone, a flow controller for regulating the flow rates of said molten alkali metal and said alcohol-hydrocarbon stream to the reaction zone, said flow controller being responsive to a level indicator in said intermediate storage zone, conduit means for withdrawing said neutralization mixture from said intermediate storage zone to contact a contaminated deashing liquid in a neutralization zone, conduit means for withdrawing a neutralized liquid mixture from said neutralization zone, a pH controller for recording the pH of the withdrawn liquid mixture and a flow controller for regulating the flow of neutralization mixture from said intermediate storage zone to said neutralization zone in response to a predetermined pH range in said neutralized liquid mixture.

3,345,305

METHOD OF PREPARATION OF SOLUTION CONTAINING BARIUM 137

André Bonnin, Antony, and Stéphane Yardamian, Paris, France, assignors to Saint Gobain Techniques Nouvelles, a French company

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,668
Claims priority, application France, Nov. 8, 1963, 953,249; Oct. 15, 1964, 991,575
12 Claims. (Cl. 252—301.1)

1. A method of preparing an aqueous solution of barium 137 which comprises the successive steps of:
(a) contacting a solution of caesium 137 with a solid ferrocyanide of a transition element fixed on a solid support, so as to fix the caesium 137 thereon, and
(b) contacting said solid ferrocyanide having fixed thereon the caesium 137 with an eluting agent selected from the group consisting of water and an aqueous solution of an eluting salt, so as to obtain by elution an aqueous solution of barium 137.

3,345,306

TUBING FLUID CONTAINING AN AMINO ACID

Alfred Bloch, Highland Park, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,175
18 Claims. (Cl. 252—403)

1. A tubing fluid for absorbable sutures consisting essentially of a solution containing at least 0.01 percent by weight of a monocarboxylic amino acid in a solvent comprising from 75 percent to 96 percent by weight of an alcohol selected fro mthe group consisting of ethanol, propanol, and isopropanol and from 4 percent to 25 percent by weight of water.

3,345,307

PROCESS FOR STABILIZING CATALYSTS SUPPORTED BY MAGNESIA OR BY MATERIALS CONTAINING THE SAME

Claude Paul and Samuel Pupko, Toulouse, France, assignors to Office National Industriel de l'Azote, Toulouse, France, a corporation of France

No Drawing. Filed May 7, 1964, Ser. No. 365,808
Claims priority, application France, May 21, 1963, 4,883
12 Claims. (Cl. 252—455)

6. A stable catalyst for use in oxidation-reduction reactions in the presence of steam consisting essentially of a mixed oxide support obtained by mixing in the solid phase stoichiometric proportions of magnesia and at least one oxide of a metal selected from the group consisting of aluminum and titanium, and then adding magnesium silicate to the mixed oxide, said mixed oxide being impregnated by a metal selected from the group consisting of nickel, iron, platinum, and cobalt.

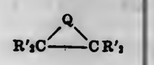
3,345,308

POLYMERIZATION OF OLEFIN OXIDES AND OLEFIN SULFIDES

Joginder Lal, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 18, 1964, Ser. No. 397,624
21 Claims. (Cl. 260—2)

1. The polymerization process which consists of:
(I) Polymerizing at least one monomer with the formula



wherein
(A) Q represents a member selected from the group consisting of oxygen and sulfur;
(B) R' represents a member selected from the group consisting of R and hydrogen;
(C) R represents a monovalent organic radical containing no element other than carbon, hydrogen, ether oxygen, and halogen, and containing up to 10 carbon atoms;
(II) in the presence of catalytic amount of a catalyst represented by the formula



wherein
(A) Z represents a member selected from the group consisting of organic radicals represented by R, OR, SR, and NR'_2;
(B) N represents nitrogen;
(C) S represents sulfur;
(D) O represents oxygen;
(E) Q' represents a member selected from the group consisting of oxygen and sulfur wherein at least one Q' must be sulfur;
(F) M represents a member selected from the group consisting of zinc, cadmium, aluminum, and iron;
(G) X represents any monovalent radical selected from the group consisting of halide, hydroxyl, hydride, alkoxy, thioalkyl, hydrocarbon radical, and



and is joined to the metal atom;
(H) *n* represents the valence of the metal M;
(I) R' and R represent the substances indicated in I (B) and (C) supra.

3,345,309

POLYURETHANES PREPARED FROM ORGANIC POLYISOCYANATES AND A HALOARYL ALKYL AMINO ALCOHOL

Rudolf Merten and Gunther Braun, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,930
Claims priority, application Germany, Feb. 15, 1963, F 39,025, Patent 1,173,649
10 Claims. (Cl. 260—2.5)

1. A polyurethane plastic prepared by a process which comprises reacting an organic polyisocyanate with a haloaryl alkyl amino alcohol having the formula

$$[X_n—Ar—R']_pR$$

wherein X is slected from the group consisting of chlorine and bromine, *n* is 2 to 5, Ar is a polyvalent aromatic radical, *p* is 1 to 3, R is a *p*-valent residue containing at least two free hydroxyl groups and at least one tertiary amino nitrogen atom obtained by removing *p* hydrogen atoms from *p* secondary amino groups of an amino alcohol having a plurality of free hydroxyl groups and *p* secondary amino groups and R' is an alkylene radical.

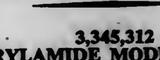
3,345,310

PHOSPHORUS-CONTAINING COMPOSITIONS AND USE THEREOF IN THE PREPARATION OF POLYURETHANE FOAMS AND COATINGS

Karl Brack, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed May 18, 1964, Ser. No. 368,420
7 Claims. (Cl. 260—2.5)

1. The process of preparing a composition useful in the preparation of flame-retardant urethane foams and coating compositions which comprises
(A) reacting
(1) a material selected from the group consisting of
(a) a substantially petroleum hydrocarbon-insoluble pine wood resin, and
(b) a hydroxyalkylated substantially petroleum hydrocarbon-insoluble pine wood resin with
(2) a material selected from the group consisting of
(a) polyphosphoric acid, and
(b) phosphoric anhydride, the ratio of material (1) to material (2) being, by weight, from about 20:1 to about 2:1, and
(B) reacting the resulting reaction product with an epoxide having the formula



wherein R is selected from the group consisting of hydrogen, alkyl, chloroalkyl, bromoalkyl, aryl, chloroaryl, and bromoaryl at temperatures of from about 80° C. to 160° C. for a period of time from about ½ hour to about 6 hours until there is produced a product that is substantially neutral.

4. The composition prepared in accordance with the process of claim 1.

7. The method of preparing a polyurethane foam which comprises reacting a mixture of (1) a blend of (a) a polyol of the group consisting of polyesters and polyethers having an average of at least two hydroxyl groups per molecule and (b) the composition of claim 4, said blend having a hydroxyl number in the range of about 40 to about 650, (2) an organic polyisocyanate in amount such that about 0.7 to about 1.1 isocyanato groups are available per reactive hydrogen in said mixture, and (3) a blowing agent.

3,345,311

CASTOR OIL, DIISOCYANATE AND HYDROXY ALIPHATIC ACID ESTER PREPOLYMERS AND ELASTOMERIC PRODUCTS PREPARED THEREFROM

Arthur Ehrlich, Brooklyn, N.Y., and Malcolm Kent Smith, Mountainside, and Temple C. Patton, Westfield, N.J., assignors to The Baker Castor Oil Company, Bayonne, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 24, 1965, Ser. No. 442,507
22 Claims. (Cl. 260—18)

1. A non-foamed prepolymer composition consisting essentially of the reaction product obtained from castor oil, an ester of a hydroxy carboxylic acid of at least 12 carbon atoms, said ester being selected from the class consisting of a glycol ester of said hydroxy carboxylic acid and a polyglycol ester of said hydroxy carboxylic acid, and an arylene diisocyanate which comprises reacting from about 2 to about 3 NCO equivalents of an arylene diisocyanate per equivalent of hydroxy group in the mixture of castor oil and ester, wherein said ester and castor oil are used in a weight proportion of about 63% to 61% of said ester to 39% to 37% of castor oil and wherein the reaction of the castor oil, ester and diisocyanate is carried out at a temperature from about 20° to 100° C.

3,345,312

ACRYLAMIDE MODIFIED OILS

Oliver I. Cline, Jr., Louisville, Ky., assignor, by mesne assignments, to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,289
17 Claims. (Cl. 260—21)

11. A heat-curable coating composition comprising, in solution, a cross-linkable condensate prepared by allylic addition, at a temperature in excess of 180° C., of

(A) from 10 to 40 weight percent, based on the total weight of said condensate, of an acrylamide monomer selected from the group consisting of acrylamide, methacrylamide, N-alkoxymethylacrylamide and N-alkoxymethylmethacrylamide, the alkoxy group in the latter two monomers having less than 10 carbon atoms,

to

(B) a drying oil which undergoes styrenation reactions, said allylic addition being carried out in the absence of a free radical polymerization catalyst so as to minimize homopolymerization of said (A).

15. A heat curable coating composition comprising a compatible mixture of the condensate solution of claim 11 and an aminoplast resin, said mixture containing 50 percent to 90 percent by weight of said condensate and 10 percent to 50 percent by weight of said copolymer, the total being 100 percent.

3,345,313

ALKYD RESINS AND THEIR PREPARATION FROM REACTION MIXTURES COMPRISING A POLYMETHYLOLALKANOIC ACID

Robert J. Ruhf and Edward J. Russell, Allentown, and Walter S. Egge, Bethlehem, Pa., assignors to Trojan Powder Company, Allentown, Pa., a corporation of New York

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,031
28 Claims. (Cl. 260—22)

7. In the preparation of alkyd resins involving heating a reaction mixture comprising polyhydric alcohol having at least three hydroxyl groups and polycarboxylic acid, the improvement comprising the step of including in said reaction mixture: (a) an unsaturated fatty acid and (b) at least one polymethylolalkanoic acid selected from the group consisting of trimethylolacetic acid and dimethylolalkanoic acids having from five to seven carbon atoms; the amount of unsaturated fatty acid in mols, being substantially equivalent to the quantity $(x-2)$ times the number of mols of polyhydric alcohol, where x is the number of hydroxyl groups in said polyhydric alcohol, and the proportions of polyhydric alcohol, polycarboxylic acid, unsaturated fatty acid and polymethylolalkanoic acid providing a resin having an acid number between about 35 and about 75, said polymethylolalkanoic acid providing at least half of such acid number.

3,345,314

WATER-SOLUBLE NONCONJUGATED OIL-MODIFIED MALEIC ALKYD RESINS AND METHOD OF PREPARING SUCH COMPOSITIONS

Edgar L. Clark, Oak Park, Ill., assignor to Commercial Solvents Chemical Corporation, a corporation of Maryland

No Drawing. Filed May 14, 1963, Ser. No. 280,447
8 Claims. (Cl. 260—22)

1. A water-soluble resinous coating composition which comprises the reaction product of an alkali metal bisulfite and a nonconjugated oil-modified maleic alkyd resin having free maleate groups.

3,345,315

CHLORINATED POLYETHYLENE CROSS-LINKED WITH A POLYAMIDE

Oliver A. Barton, Florham Park, and William R. Bingham, Wayne, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 13, 1964, Ser. No. 389,492
8 Claims. (Cl. 260—23)

1. A heat curable composition comprising (A) 100 parts by weight of chlorinated polyethylene having a chlorine content of about 20–45% by weight and an intrinsic viscosity of from about 1.0 to 6.0 in o-dichlorobenzene at 100° C., said chlorinated polyethylene being prepared by chlorinating a linear high density polyethylene having an average molecular weight of about 100,000 to 5 million; and (B) about 10 to 40 parts by weight of a polyamide condensation product of a dimerized drying oil acid and an aliphatic diamine, said polyamide containing free amine groups and having an amine value of from 50 to 250.

3,345,316

ASPHALT-RESIN-BLOCK COPOLYMER ROOFING COMPOSITIONS

Carl L. Nielsen, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 22, 1965, Ser. No. 441,891
7 Claims. (Cl. 260—28.5)

1. As a new composition of matter,

(a) 45% to about 75% by weight of an asphalt of the group consisting of straight run asphalts having a viscosity between about 350 and 450 SSF at 210° F., blown asphalts having a softening point between about 110° F. and 185° F., and mixtures thereof;

(b) 15% to about 35% by weight of chlorinated polyphenyl resin containing from about 30% to about 65% by weight of chlorine;

(c) and 10% to about 30% by weight of a block copolymer of the group consisting of copolymers having the general configuration

A—B—A

wherein each A is a polymer block of a vinyl arene and B is a polymer block of a conjugated diene; the average molecular weight of A being between about 8,000 and about 45,000, the average molecular weight of B being between about 40,000 and about 125,000; the total A content of the block copolymer being between about 23 and about 40 weight percent; and hydrogenated derivatives of the block copolymers.

3,345,317

EMULSION POLYMERIZATION OF TETRAFLUOROETHYLENE USING TRIFLUOROTRICHLOROETHANE AS EMULSION STABILIZER

Juzaemon Hoashi, Osaka-fu, Japan, assignor, by mesne assignments, to Thiokol Chemical Corporation, Trenton, N.J., a corporation of Delaware

No Drawing. Filed Mar. 31, 1964, Ser. No. 356,034
Claims priority, application Japan, Apr. 4, 1963, 38/18,288
10 Claims. (Cl. 260—29.6)

7. An aqueous emulsion of a poly(tetrafluoroethylene) consisting essentially of an aqueous dispersion of (a) from about 20 to about 65 percent by weight of a normally solid polymer of tetrafluoroethylene, (b) from about 1 to about 30 percent by weight of highly purified trifluorotrichloroethane having a degree of purity such that its infrared spectrophotometric absorption, as determined in a cell of 0.5 mm. thickness, at 5.7μ is less than 0.003 when measured from a base line drawn between shoulders which appear at 5.6μ and 5.93μ, and (c) from 0.01 to about 10 percent by weight of an emulsifying agent for said polymer of tetrafluoroethylene, all percentages except those designating the solids concentration of the polymer being based on the weight of the water contained in the aqueous emulsion.

3,345,318

VINYL ACETATE-ETHYLENE-N-METHYLOL ACRYLAMIDE INTERPOLYMER LATEX AND WOVEN FABRICS COATED THEREBY

Martin K. Lindemann, Somerville, and Rocco P. Volpe, Newark, N.J., assignors, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,375
6 Claims. (Cl. 260—29.6)

5. A latex composition effective for application to a woven fabric to form a resin coating thereon comprising an aqueous medium having colloidally suspended therein a vinyl acetate-ethylene-N-methylol acrylamide interpolymer, the ethylene in said interpolymer being, before polymerization, unsubstituted monomeric ethylene and, said interpolymer containing 5 to 40% by weight ethylene and the amount of N-methylol acrylamide being 0.5 to 10% by weight of the vinyl acetate.

3,345,319

PREPARATION OF EXTRUDED CATALYSTS AND CATALYST SUPPORTS CONTAINING POLYACRYLAMIDE

Joseph D. Colgan, Ozone Park, N.Y., and John M. Witheford, Riverside, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 6, 1965, Ser. No. 477,968
8 Claims. (Cl. 260—29.6)

1. A method for extruding a high solids content feed containing an inorganic oxide-support material selected from the group consisting of silica, alumina, magnesia and mixtures thereof, the improvement comprising (1) admixing (a) a polyacrylamide having a molecular weight from five million to six million in an amount effective to facilitate said extrusion and (b) an extrusion feed, in which the solids content exceeds about 32% solids, and (2) extruding said admixture.

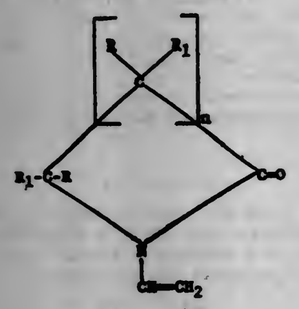
3,345,320

REMOISTENABLE HOT-MELT ADHESIVES CONTAINING PLASTICIZED COPOLYMERS OF N-VINYL LACTAMS

Melville W. Uffner, Easton, Pa., and Paul Weitz, Scotch Plains, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 25, 1964, Ser. No. 370,045
5 Claims. (Cl. 260—31.6)

1. A remoistenable hot-melt adhesive consisting essentially of (A) from 50 to 100 parts of a copolymer of an N-vinyl lactam of the formula:



wherein R is a member selected from the group consisting of hydrogen, methyl and ethyl, R_1 is a member selected from the group consisting of hydrogen, methyl and ethyl, and n is an integer of from 2 to 4 and the copolymer is prepared by reacting (i) 90 to 10% by weight of N-vinyl lactam with (ii) 10 to 90% by weight of a nonaqueous vinyl monomer selected from the group consisting of vinyl acetate, isopropenyl acetate, vinyl laurate, vinyl stearate, vinyl oleate, vinyl benzoate, vinyl chloride, 2-chloropropene, methyl vinyl ether, ethyl vinyl ether, isopropyl vinyl ether, isobutyl vinyl ether, 2-oxyethyl vinyl ether, phenyl vinyl ether, methyl acrylate, ethyl acrylate, methyl methacrylate, 2-ethylhexyl acrylate, hexyl acrylate, styrene, methoxystyrene, ethylstyrene and chlorostyrene under polymerization conditions in the presence of a free radical supplying polymerization catalyst, and (B) from 5 to 50 parts of a plasticizer (fluxing agent) selected from the group consisting of triacetin and polyols.

3,345,321

PRETREATMENT OF POLYMER SOLUTION WITH RUBBER LATICES

Friedrich Henry Herman Geurtsen, White Plains, N.Y., and James Cosmo Barone, Stamford, and Joseph Francis Terenzi, South Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 23, 1963, Ser. No. 296,945
7 Claims. (Cl. 260—34.2)

1. In a continuous method for the production of a high impact molding composition of (A) a non-rubbery resinous thermoplastic polymer and (B) a different polymer selected from the group consisting of natural rubber and organic synthetic rubbers artificially produced by devolatilizing and extruding a solution of (A) in a volatile solvent, said solution having not more than 80%, by weight, of polymer (A), and a liquid dispersion of (B) at a temperature of between about 110° C. to about 245° C. and at an absolute pressure of less than 200 millimeters of mercury in a period of less than about 5 minutes, the improvement which comprises pretreating a mixture of polymers (A) and (B), previous to said devolatilization and extrusion, at a temperature of between about 50° C. and about 110° C. and a pressure of less than 50 p.s.i. by holding said mixture at said temperature and pressure for a period of from about 1 minute to 30 minutes, while continuously subjecting said mixture to a continual subdivision and recombination effected by shearing so as to produce a uniform composition having both a microscopic and a macroscopic dispersion of said (A) and (B).

3,345,322

PLASTIC SURFACE COVERING MATERIAL CONTAINING METALLIZED PLASTIC PARTICLES

William Mayo Smith, Wilton, Conn., assignor to Escambia Chemical Corporation, Pace, Fla., a corporation of Delaware

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,548
13 Claims. (Cl. 260—41)

1. A decorative self-sustaining film that comprises a thermoplastic resin matrix and dispersed therein decorative, visible, metallic vacuum coated thermoplatic resin particles having a softening point of less than about 220° C., the resin of said particles having a greater rigidity and a softening point higher than that of the resin of said matrix, said particles being miscible with and dissolving in said matrix when said film is milled at a temperature of up to about 220° C., the metallic coating of said particles being so diffused in the resulting composition as to be substantially imperceptible; wherein the metallic vacuum coated thermoplastic resin particles shall constitute about one part by weight of each 100 to 3,000 parts or more of said matrix and said metallic coating of said metallic vacuum coated thermoplastic resin particles has a thickness of from about $\frac{1}{1,000,000}$ inch to about $\frac{3}{1,000,000}$ inch and wherein said metallic coated thermoplastic resin particles have a thickness of about 0.0002 inch to 0.3 inch.

3,345,323

RUBBER COMPOSITION AND METHOD OF PREPARATION

Herbert A. Endres, Cuyahoga Falls, and Kenneth E. Bristol, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Feb. 21, 1963, Ser. No. 260,176

4 Claims. (Cl. 260—41.5)

1. A method for producing a powdery unvulcanized rubber composition which consists essentially of the steps of

(1) controllably adding a latex having a rubbery content of at least about 35% by weight to an inorganic powdery material having a water absorbency of at least one gram per gram;

(2) mixing the powdery material in contact with the latex with more powdery material to maintain the free-flowing powdery nature throughout the mixture;

(3) continuing this controlled addition and mixing until the amount of latex absorbed on all the powdery material is sufficient to yield a loose, mealy powder containing at least 60% by weight of rubber but insufficient to yield a pasty adhering mass, and

(4) then removing the absorbed water to obtain the mixture as a dry powder containing at least 60% by weight of rubber.

3,345,324

RUBBER COMPOSITIONS AND PROCESS FOR MAKING

Kenneth E. Bristol and Jack D. Strang, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,671

10 Claims. (Cl. 260—41.5)

1. A method of preparing free-flowing unvulcanized rubber filler compositions comprising the steps of

(1) mixing an agglomerated latex having an average rubber particle size of about 50 to 300 microns with an inert filler having an average particle size of less than 20 microns;

(2) completing the coagulation of the rubber particles in contact with the inert filler particles;

(3) separating the precipitate from the aqueous phase; and

(4) drying the precipitate.

3,345,325

KAOLIN CLAY-LOADED ELASTOMERS

Kenneth Vincent Martin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 28, 1964, Ser. No. 363,271

5 Claims. (Cl. 260—41.5)

1. A compounded elastomer exhibiting increased cure rate and modulus comprising a kaolin clay-loaded sulfur-curable, chain saturated, hydrocarbon copolymer of at least one mono-olefin and at least one non-conjugated diene containing (1) an aromatic compound selected from the group consisting of 4,4-methylenedianiline, resorcinol, m-amino-phenol, orthometa- and para-phenylenediamine, 2,4- and 2,6-toluenediamine, and 4,4'-methylenebis (N-methylaniline), (2) sulfur, and (3) an organic accelerator.

3,345,326

STABILIZED CHLORINATED POLYETHYLENES CONTAINING BORON COMPOUNDS

Leo S. Chang, Madison, Richard R. Lund, Whippany, Arleen C. Pierce, Parsippany, and Edith Turi, Livingston, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,115

8 Claims. (Cl. 260—45.75)

1. A composition comprising a chlorinated polyethylene, and a stabilizing amount of about 0.5 to 10 percent by weight of the chlorinated polyethylene of an organic boron-containing member of the group consisting of 2-(2',2' - diallyloxymethylbutoxy) - 5 - allyloxymethyl - 5-ethyl-1,3,2-dioxaborinane; cadmium tetrapentyl borate; α - (3,5 - dimethyl-4-hydroxyphenyl-α'-[3,5-dimethyl-4-(o - phenylene borato)-phenyl]-2,3,5,6-tetrachloroxylene and 2 - (3',5'-di-t-butyl-4'-hydroxybenzyloxy)-4,4,6-trimethyl-1,3,2-dioxaborinane.

3,345,327

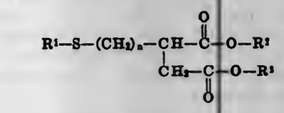
STABILIZATION OF POLYPROPYLENE

Martin Dexter, Briarcliff Manor, and Kathleen D. Schafer, Bronx, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application June 6, 1964, Ser. No. 373,078. Divided and this application May 11, 1965, Ser. No. 462,467

3 Claims. (Cl. 260—45.85)

1. A composition consisting essentially of polypropylene, a stabilizing amount of a phenolic antioxidant, and from about .005 to about 10% of a compound of the formula



I

wherein:

R^1 is alkyl of from 8 to 18;

R^2 and R^3 are each alkyl of from 12 to 20 carbon atoms; and

n is zero or 1.

3,345,328

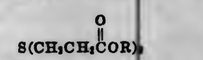
POLY-α-OLEFIN COMPOSITIONS CONTAINING DIALKYL - 3,3' - THIODIPROPIONATES AND THIOBISPHENOLS

Clarence E. Tholstrup, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

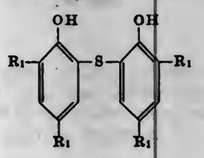
No Drawing. Filed Dec. 21, 1959, Ser. No. 860,667

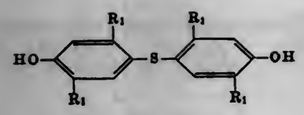
28 Claims. (Cl. 260—45.85)

1. A solid poly-α-olefin composition comprising a solid poly-α-olefin prepared from an α-monoolefinic aliphatic hydrocarbon having 2 to 10 carbon atoms containing a stabilizer combination comprising at least about .001% by weight based on said poly-α-olefin of a diester of 3,3'-thiodipropionic acid having the formula

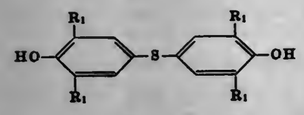


wherein R is an alkyl radical having 4 to 20 carbon atoms, and at least about .001% by weight based on said poly-α-olefin of a thiobisphenol selected from the group consisting of compounds with the formulas





and



wherein R_1 is selected from the group consisting of hydrogen atoms, straight or branched chain unsubstituted alkyl radicals having 1 to 18 carbon atoms and 1-alkylcyclohexyl radicals wherein the alkyl moieties have 1 to 18 carbon atoms, and wherein at least one R_1 on each phenol nucleus of said thiobisphenol is other than a hydrogen atom.

3,345,329

SATURATED LINEAR POLYESTERS OF 2,2 - DIMETHYLOL ENDOMETHYLENE CYCLOHEXANE

Siegfried Sommer and Ludwig Brinkmann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 11, 1963, Ser. No. 286,923

Claims priority, application Germany, June 13, 1962, F 34,049

2 Claims. (Cl. 260—47)

1. A saturated linear polyester of an aromatic dicarboxylic acid having up to two benzene nuclei, each of the carboxyl groups of said dicarboxylic acid being bound to a ring carbon atom, the two carboxyl acid groups having at least one ring carbon atom between one another, and a diol, said polyester containing at least 50 percent of 2,2-dimethylol endomethylene cyclohexane as the diol component.

3,345,330

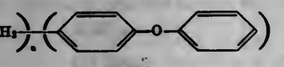
RESINS FROM POLY(HALOMETHYL)DIPHENYL OXIDE AND UREA

Lawrence F. Sounabend, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

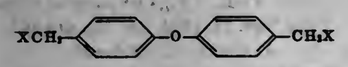
No Drawing. Filed Mar. 20, 1963, Ser. No. 266,527

12 Claims. (Cl. 260—47)

1. A composition comprising the thermal condensation adduct of urea and a poly(halomethyl)diphenyl oxide composition selected from the group consisting of compositions of the formula:



wherein X is selected from the group consisting of chlorine and bromine and *n*, which is the average halomethyl functionality of the composition has a value of from about 1.2 up to about 3.4 and a composition of the formula:



wherein X is as defined above; the moles of urea reacted with the poly(halomethyl)diphenyl oxide composition being within the range between 0.25 and 1 times the halomethyl functionality of the coreactant said thermal condensation adduct being obtained by contacting urea and the poly(halomethyl)diphenyl oxide coreactant at an elevated temperature whereby condensation of these materials is achieved.

3,345,331

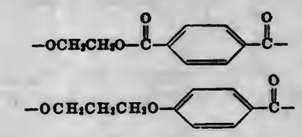
POLY[ETHYLENE TEREPHTHALATE/4-(3-OXYPROPOXY)BENZOATE]

Millard Griffin Reese, Jr., Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 18, 1963, Ser. No. 324,201

2 Claims. (Cl. 260—47)

1. The copolyester characterized as a linear polymer consisting essentially of a succession of recurring structural units represented by the formulas:



wherein the ratio of said units is within the range of 75/25 to 95/5, respectively.

3,345,332

DIPOLAR APROTIC SOLVENT SYSTEM FOR POLYMERIZATION OF BIS-(α-HALOALKYL) AROMATIC COMPOUNDS IN THE PRESENCE OF A COUPLING AGENT

John M. Hoyt and Charles E. Frank, Cincinnati, and Karl Koch, Norwood, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,928

28 Claims. (Cl. 260—47)

18. A copolymerization process which comprises reacting a solution of (I) at least one halogen-containing compound capable of copolymerization, having the formula

$$(XCR_1R_2)_n—Ar—(CR_3R_4X')_m$$

wherein:

X and X' are selected from the group consisting of chlorine, bromine, iodine, fluorine and mixtures thereof;

R_1, R_2, and R_3 and R_4 are selected from the group consisting of hydrogen, bromine, iodine, trifluoromethyl, lower alkyl group having from 1 to 6 carbon atoms, an aryl group having 6 to 10 carbon atoms, and mixtures thereof;

n and *m* are integers of at least 1;

Ar is a divalent arene radical, with a lower valent chromium salt with (II) an olefinic compound having the formula

$$R_5CH=CR_6R_7$$

wherein:

R_5 is selected from the group consisting of hydrogen, cyano radical, and an aryl group having from 6 to 10 carbon atoms;

R_6 is selected from the group consisting of hydrogen, a lower alkyl group having from 1 to 6 carbon atoms, and a COOR radical wherein R is an alkyl group having from 1 to 12 carbon atoms;

R_7 is selected from the group consisting of hydrogen, a CN radical, a NO_2 radical, a COOH radical, a lower alkyl having from 1 to 6 carbon atoms, a CH_2COOR radical and a COOR radical wherein R is a lower alkyl having from 1 to 12 carbon atoms, a $CONH_2$ radical, CONHR' and $CONR'_2$ radical wherein R' is a lower alkyl group having from 1 to 6 carbon atoms, and an aryl group having 6 to 10 carbon atoms at a temperature within the range of about 0° to 200° C. in the presence of a dipolar aprotic solvent having a dielectric constant greater than about 15 as the sole solvent in the reaction mixture, said solvent characterized by being unable to donate labile hydrogen atoms to form strong hydrogen bonds with contained solutes.

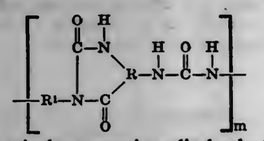
3,345,333

POLY-(1,3-DIAZOLI-2,4-DIONE/UREAS)

Rudolph J. Angelo, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 6, 1967, Ser. No. 620,590
8 Claims. (Cl. 260—47)

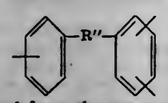
1. Poly(1,3-diazoli-2,4-dione/urea) having the structural formula



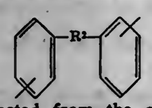
where R is a trivalent organic radical selected from the group consisting of aliphatic radicals of 2 through 8 carbon atoms,



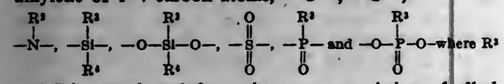
and



where R'' is selected from the group consisting of methylene, oxygen, sulfur and sulfone; the two valences extending to the left from said R being attached to adjacent carbon atoms of an aromatic ring in R when R is aromatic and being attached to the same carbon atom in R when R is aliphatic; R^1 is a divalent aromatic radical selected from the group consisting of phenylene, naphthylene, biphenylene, anthrylene, furylene, benzfurylene, fluorenylidene, and



wherein R^2 is selected from the group consisting of alkylene of 1–4 carbon atoms, —O—, —S—,



and R^4 are selected from the group consisting of alkyl and aryl, said R^1 being further selected from the group consisting of substituted aromatic R^1 radicals wherein the substituents are attached directly to an aromatic ring and are selected from the group consisting of 1 to 2 alkyl radicals of 1 to 3 carbons each, 1 to 2 alkoxy radicals of 1 to 2 carbons each, phenoxy and chloro; and *m* is an integer sufficient to provide an inherent viscosity of at least 0.1 as measured at 30° C. as a 0.5% by weight solution in sulfuric acid.

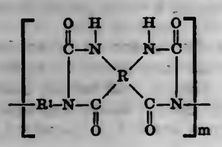
3,345,334

POLYUREAS, POLY(DIAZOLIDIONES), AND PROCESS FOR CONVERTING POLYUREAS TO POLY(DIAZOLIDIONES)

Rudolph J. Angelo, Graylyn Crest, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

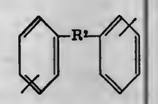
No Drawing. Filed Mar. 6, 1967, Ser. No. 620,539
17 Claims. (Cl. 260—47)

1. Poly(1,3-diazoli-2,4-dione) having the structural formula

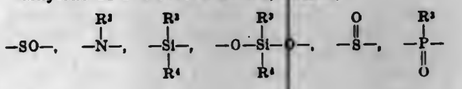


where:

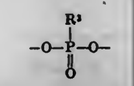
R^1 is a divalent aromatic radical selected from the group consisting of phenylene, naphthylene, biphenylene, anthrylene, furylene, benzfurylene, fluorenylidene, and



wherein R^2 is selected from the group consisting of alkylene of 1–4 carbon atoms, —O—,

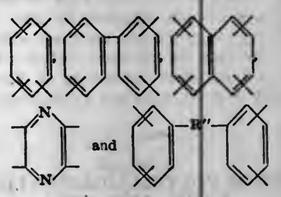


and



where R^3 and R^4 are selected from the group consisting of alkyl and aryl, said R^1 being further selected from the group consisting of substituted aromatic R^1 radicals wherein the substituents are attached directly to an aromatic ring and are selected from the group consisting of 1 to 2 alkyl radicals of 1–3 carbons each, 1 to 2 alkoxy radicals of 1–2 carbons each, phenoxy and chloro;

R is a tetravalent organic radical selected from the group consisting of aliphatic radicals of 2 through 8 carbon atoms,



where R'' is selected from the group consisting of methylene, oxygen, sulfur and sulfone; the two valences extending to the right and left from said R being attached to adjacent carbon atoms of an aromatic ring in R when R is aromatic and being attached to the same carbon atom in R when R is aliphatic; and

m is an integer sufficient to provide an inherent viscosity of at least about .05 as measured at 30° C. as an 0.5% by weight solution in sulfuric acid.

3,345,335

PHENOL-ACROLEIN RESINS AND THE PROCESS OF MAKING THEM USING A SULPHONIC ACID CATALYST

John G. Iacoviello, Somerville, and Max B. Mueller, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Nov. 13, 1964, Ser. No. 410,862
11 Claims. (Cl. 260—55)

1. A process for producing a resinous condensation product which comprises heating together, at a temperature between 135° and 180° C., a reaction mixture comprising (a) phenol or p-cresol, (b) acrolein or a mixture of acrolein and formaldehyde, and (c) a sulphonic acid, said reaction mixture comprising between about 2 mols and 4 mols of (a) per mol of (b) and between 0.01 and 1.0% by weight of (c).

3,345,336

POLYMER OF AN UNSATURATED KETONE COMPOUND CROSSLINKED WITH A HYDRAZIDE OF A POLYBASIC CARBOXYLIC ACID

Alfred Kuhlkamp, Hofheim, Taunus, and Johann Wolfgang Zimmermann and Leonhard Bütschli, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 10, 1964, Ser. No. 336,984
Claims priority, application Germany, Jan. 11, 1963, F 38,751
7 Claims. (Cl. 260—63)

1. A process for the production of cross-linked polymers which comprises reacting at a temperature within the range of 20° C. to 140° C. a hydrazide of a polybasic carboxylic acid containing at least two hydrazide groups wherein the carboxylic acid is an acid selected from the group consisting of phthalic acid, isophthalic acid, terphthalic acid, an aliphatic saturated dicarboxylic acid having from 2 to 10 carbon atoms or a polyacrylic acid; with a polymer obtained by polymerization of an olefinically unsaturated keto compound in aqueous emulsion wherein the polymer is selected from the group consisting of a homopolymer and a copolymer wherein the polymer is derived from a vinyl ester of an aliphatic monobasic acid containing a keto group, said acid having 4 to 8 carbon atoms; a vinyl ester of an aliphatic dibasic acid containing a keto group, said acid having 4 to 8 carbon atoms; an allyl ester of aliphatic monobasic acids containing a keto group, said acid having 4 to 8 carbon atoms; an allyl ester of an aliphatic dibasic acid containing a keto group, said acid having 4 to 8 carbon atoms; a vinyl substituted amide of an aliphatic acid having a keto group, said aliphatic acid having 4 to 8 carbon atoms; an allyl substituted amide of an aliphatic acid having a keto group, said aliphatic acid having 4 to 8 carbon atoms; vinylmethyl ketone, vinylethylketone and wherein the copolymer having the keto group containing monomer has as a comonomer a monomer selected from at least one member of the group consisting of a vinyl ester of an acid having from 1 to 20 carbon atoms, an ester of acrylic acid, methacrylic acid, maleic acid and fumaric acid wherein the ester is derived from a monohydric saturated aliphatic alcohol having from 1 to 10 carbon atoms, styrene, vinyl chloride, ethylene, propylene and isobutylene, the said hydrazide being present in an amount of 20% to 150%, calculated on the stoichiometric amount necessary for the reaction of all keto groups.

3,345,337

PROCESS FOR THE MANUFACTURE OF FILM- AND FIBER-FORMING POLYESTERS

Walter Koller, Herbert Becker, and Hans Hoyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 22, 1963, Ser. No. 296,465
Claims priority, application Germany, July 25, 1962, F 37,416
9 Claims. (Cl. 260—75)

1. A process for producing polymeric polyesters by an ester interchange and polycondensation of a lower alkyl ester of an aromatic dicarboxylic acid and a diol selected from the group consisting of an aliphatic diol and a cycloaliphatic diol, said process being carried out in the presence of an indium catalyst selected from the group consisting of indium metal, indium salts of inorgainc acids, indium salts of organic acids, indium (III) acetylacetonate, indium (III) acetonyl acetonate, and an indium alloy prepared by applying a thin layer of indium metal to a surface of a stainless steel and then causing the indium alloy to diffuse into said stainless steel at elevated temperatures.

3,345,338

POLYURETHANES PREPARED FROM AMINO POLYESTERS

Rudolf Merten, Cologne-Flittard, and Otto Bayer, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,184
Claims priority, application Germany, Aug. 11, 1962, F 37,572
6 Claims. (Cl. 260—75)

1. A polyurethane composition prepared by a process which comprises reacting an organic polyisocyanate with an amino ester, said amino ester having been prepared by addition of a primary or secondary amine at the point of α,β-unsaturation of a polyester having a hydroxyl number from about 30 to 1200, said polyester having been prepared by a process which comprises reacting an α,β-unsaturated carboxylic acid, an ester of an α,β-unsaturated carboxylic acid or an anhydride of an α,β-unsaturated carboxylic acid and a polyhydric alcohol.

3,345,339

NOVEL POLYESTER PROCESS

Earl E. Parker, Allison Park, and John G. Baker, Chesswick, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,286
11 Claims. (Cl. 260—75)

1. A method of preparing unsaturated polyesters comprising (1) reacting to an acid number in the range of 1 to 40, a mixture consisting essentially of a saturated polyol, and an aromatic polycarboxylic acid selected from the class consisting of isophthalic acid and terephthalic acid in the presence of an esterification catalyst which is a tin compound and (2) subsequently esterifying the reaction product mixture of stage (1) with an alpha, beta-ethylenically unsaturated polycarboxylic acid, there being utilized at least about one equivalent of polyol per equivalent of acid reactants.

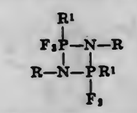
3,345,340

POLYMERIZING LACTAM TO POLYLACTAM WITH A SUBSTITUTED PHOSPHORANE COCATALYST

Harold G. Brouns, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,881
20 Claims. (Cl. 260—78)

1. In a process for the polymerization of anhydrous lactams to polyamides which comprises heating said lactam to a temperature below the melting point of the resulting polyamide in the presence of a lactam-base salt and a cocatalyst, the improvement which comprises using as a cocatalyst a substituted phosphorane selected from the group consisting of compounds defined by the structures $R^1PF_3NR_2^2$, $(R_2^2N)_2PF_3$, $(R_1PF_5)^-(R_2^2NH_2)^+$, $R_a^3PF_b$ and



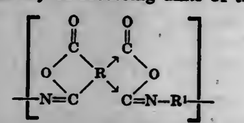
wherein R is selected from the group consisting of methyl and ethyl, R^1 is selected from the group consisting of a monovalent organic radical of up to 20 carbon atoms and fluorine, R^2 is selected from the group consisting of a monovalent aliphatic and alicyclic radical of up to 20 carbon atoms and a divalent aliphatic radical of up to 20 carbon atoms in which both valence bonds are joined to an adjacent nitrogen atom to form a cyclic structure, R^3 is a monovalent organic radical of up to 20 carbon atoms, *a* is an integer from 1 through 3 and the sum of *a* and *b* is 5.

3,345,341
SYNTHETIC POLYAMIDES POSSESSING ANTIBACTERIAL ACTIVITY
William Rhett Berry, Asheville, N.C., and Nathaniel Grier, Englewood, N.J., assignors to The American Enka Corporation, Enka, N.C., a corporation of Delaware
No Drawing. Filed Sept. 5, 1963, Ser. No. 306,704
9 Claims. (Cl. 260—78)

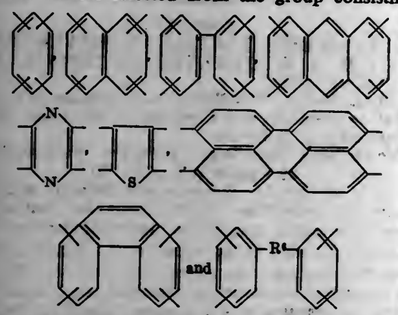
1. A polycaprolactam yarn or filament containing throughout the body thereof 0.5%–1.5%, by weight of the polymer from which the yarn is formed, of an antibacterial agent of the group consisting of aluminum pentachlorophenate, zinc pentachlorophenate, tin pentachlorophenate, lithium pentachlorophenate, cadmium pentachlorophenate, pentachlorophenyl phosphate, and pentachlorophenyl benzoate, whereby the yarn or filament will retain its antibacterial activity after it has been subjected to repeated wet processing treatments.

3,345,342
PROCESS FOR PREPARING POLYIMIDE POLYMERS
Rudolph J. Angelo, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application Nov. 21, 1963, Ser. No. 325,479, now Patent No. 3,282,898, dated Nov. 1, 1966. Divided and this application May 31, 1966, Ser. No. 553,651
4 Claims. (Cl. 260—78)

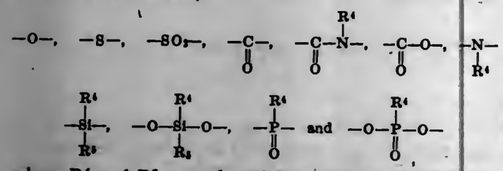
1. The process comprising heating in polyiminolactone consisting essentially of recurring units of the formula



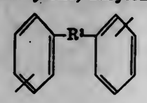
wherein the arrows denote isomerism; R is a tetravalent aromatic radical selected from the group consisting of



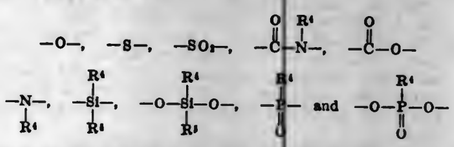
where R^6 is selected from the group consisting of alkylene of 1–3 carbon atoms;



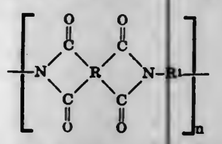
where R^4 and R^5 are selected from the group consisting of alkyl and aryl; and R^1 is a divalent aromatic radical selected from the group consisting of phenylene, naphthylene, biphenylene, anthrylene, furylene, benzfurylene and



where R^3 is selected from the group consisting of alkylene of 1–3 carbon atoms,



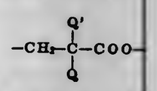
where R^4 and R^5 are selected from the group consisting of alkyl and aryl; at a temperature above about 300° C. for a time sufficient to form a polyimide consisting essentially of recurring units of the formula



where R and R^1 have the same meaning as above; and *n* is a positive integer sufficient to provide a polyimide having an inherent viscosity of at least 0.1 as measured at 30° C. on an 0.5% by weight solution in concentrated sulfuric acid.

3,345,343
POLYPIVALOLACTONE CONTAINING A NICKEL CHLOROBENZOATE
Raymond Frank Tietz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 14, 1964, Ser. No. 382,641
9 Claims. (Cl. 260—78.3)

1. A dye receptive polymeric 2,2-disubstituted propiolactone of the formula



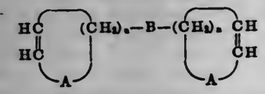
wherein Q and Q' are selected from the group consisting of alkyl and chloroalkyl radicals of up to four carbon atoms which may be joined to form an alicyclic ring, said polymer containing between about 0.05 and 0.5 wt. percent nickel in the form of a nickel salt selected from the group consisting of nickel anthranilate, nickel 3-chlorobenzoate, nickel 4-chlorobenzoate, and nickel 3,4-dichlorobenzoate.

3,345,344
PROCESS FOR CONVERSION OF AMIDOXIME POLYMERS TO POLYHYDROXAMIC ACIDS USING AQUEOUS HYDROCHLORIC ACID SOLUTIONS
Charles A. Fetscher, Short Hills, and Stanley A. Lipowski, Livingston, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 8, 1961, Ser. No. 136,748
3 Claims. (Cl. 260—78.4)

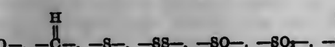
1. A process for preparing a polyhydroxamic acid comprising hydrolyzing the reaction product of hydroxylamine and a high molecular weight nitrile containing polymer selected from the group consisting of
polymers of acrylonitrile,
polymers of α-methacrylonitrile,
polymers of α-ethacrylonitrile,
polymers of fumaryl dinitrile,
polymers of vinylidene cyanide, and
cyanoethylated polyvinyl alcohol,
at temperatures not exceeding 35° C. with an aqueous solution of hydrochloric acid containing from about 15% to about 37% by weight of hydrochloric acid.

3,345,345
COMPOSITIONS CONTAINING HETEROCYCLIC COMPOUNDS AND RESINOUS PRODUCTS PREPARED THEREFROM
Roy T. Holm, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 15, 1962, Ser. No. 230,750
13 Claims. (Cl. 260—79.3)

1. A heat curable composition comprising a mixture of (1) a compound of the formula



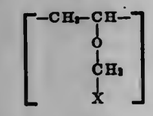
wherein A is a member of the group consisting of oxygen, sulfur and nitrogen, B is a member of the group consisting of a hydrocarbon radical and hydrocarbon radicals substituted with an ether oxygen atom



(wherein R_1 is hydrocarbon), *n* is 1 to 3, and (2) a polyamine wherein the amino nitrogen is attached to hydrogen and to an aromatic ring.

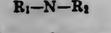
3,345,346
AMINOPOLYMER COMPOSITIONS
Delbert D. Reynolds, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 15, 1965, Ser. No. 448,264
16 Claims. (Cl. 260—79.3)

1. As a new composition, a synthetic, hydrophilic polymer containing repeating units having the general formula:



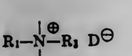
wherein X is selected from the group consisting of:

(a)



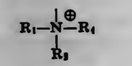
wherein R_1 and R_2 each represent a substituent selected from the group consisting of alkyl radicals having 1 to 8 carbon atoms, and an aryl group, and R_1 and R_2, taken together, represent the atoms necessary to complete a heterocyclic ring composed of 5 to 6 atoms;

(b)



wherein R_1 and R_2 have the same meaning given above; R_3 represents a substituent selected from the group consisting of alkyl groups of 1 to 6 carbon atoms, and an aralkyl group; and D represents an acid anion; and

(c)



wherein R_1 and R_2 have the same meaning given above, and R_4 is selected from the group consisting of $—CH_2CH_2CH_2SO_3^\ominus$ and $—CH_2CH_2CH_2CH_2SO_3^\ominus$.

3,345,347
PRODUCTION OF ELASTOMERS BY VULCANIZATION OF POLYALKYLENE OXIDES
Gunther Elfers, Grosse Ile, and Sidney L. Reegen, Oak Park, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Nov. 9, 1964, Ser. No. 409,982
24 Claims. (Cl. 260—79.5)

1. An elastomer comprising the reaction product produced by mixing together and reacting a polymer of an alkylene oxide free of other than aromatic unsaturation having two to twelve carbon atoms inclusive with a free radical vulcanizing agent and a sulfur-containing vulcanizing agent.

3,345,348
SULFUR TETRAFLUORIDE TREATED ELASTOMERS HAVING A LOW COEFFICIENT OF FRICTION
Gerald J. Tennenhouse, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed June 3, 1964, Ser. No. 372,403
7 Claims. (Cl. 260—83.3)

1. The process which comprises directly contacting an elastomer taken from the class consisting of natural rubber, butadiene-styrene copolymers, butadiene-acrylonitrile copolymers and polychloroprene, with sulfur tetrafluoride, thereby substantially reducing the coefficient of friction of the elastomer surface without substantial change in the physical form thereof.

3,345,349
COPOLYMERIZATION OF CONJUGATED DIOLEFINS WITH MONO-OLEFIN HYDROCARBON MATERIAL IN THE PRESENCE OF VANADYL CHLORIDE
Noboru Yamada, Keizo Shimada, and Hiroshi Ichida, Yamaguchi-ken, Japan, assignors to Teijin Limited, Nishi-ku, Osaka, Japan, a corporation of Japan
No Drawing. Filed Apr. 26, 1963, Ser. No. 276,097
Claims priority, application Japan, Apr. 30, 1962, 37/17,783; Apr. 2, 1963, 38/16,880
6 Claims. (Cl. 260—85.3)

1. A method of preparing a solid or rubbery copolymer from a conjugated acyclic diolefin and a mono-olefin hydrocarbon having 3–12 carbon atoms which comprises copolymerizing said conjugated acyclic diolefin with said mono-olefin hydrocarbon in the presence of an inert organic solvent and a catalyst consisting of $VOCl_3$ being in an amount of 0.1 to 10% based on the total weight of said conjugated acyclic diolefin, said monoolefin hydrocarbon and said inert organic solvent.

3,345,350
POLYMERIZATION OF ACRYLONITRILE
Nehemia Shavit, Rupin St., Rehovoth, Israel; Mordekhai Konigsbuch, Shikum Hapoel Hamizrachi, Kfar Saba, Israel; and Avraham Oplatka, 34 Palmach St., Givataim, Israel
No Drawing. Filed Nov. 29, 1963, Ser. No. 327,091
10 Claims. (Cl. 260—85.5)

1. A process for polmerizing acrylonitrile in bulk in the presence of an acrylonitrile polymerization initiator, which comprises mechanically agitating a mixture of acrylonitrile monomer with said polymerization initiator to distribute the initiator in the liquid monomer; terminating the agitation of the reaction mixture at least at the beginning of solidification of said mixture; and thereafter maintaining the reaction mixture free from mechanical agitation while simultaneously providing a surface layer at the interface between the polymerizing mass and the surrounding atmosphere by adding acrylonitrile monomer during the polymerization reaction, said layer containing monomeric acrylonitrile in an amount suffi-

cient to enter into the polymerization mass to prevent the development of voids therein, to thereby polymerize the acrylonitrile monomer into a solid, transparent polymeric mass.

3,345,351
PROCESS FOR PRODUCING REDUCED TRANSITION METAL HALIDES

Marvin A. McCall and Newton H. Shearer, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 20, 1963, Ser. No. 289,413
12 Claims. (Cl. 260—93.7)

8. In a catalytic process for the polymerization of an α-olefinic hydrocarbon to form solid crystalline polymer wherein a reduced transition metal halide is employed as a component of a catalyst that contains another component selected from the group consisting of (a) a metal from Groups I*a*, II and III*a* of the Periodic Table alkyl and hydride derivatives of the metals in Groups I*a*, II and III*a* of the Periodic Table and complex metal hydrides of aluminum and alkali metal; (b) organoaluminum halides having the formula R_mAlX_n and $R_3Al_2X_3$ wherein R is a hydrocarbon radical selected from the group consisting of lower alkyl, cycloalkyl, phenyl and tolyl, X is a halogen selected from the group consisting of chlorine and bromine and *m* and *n* are integers whose sum is equivalent to the valence of aluminum and (c) a polymeric reaction product of aluminum and a methylene halide, the improvement which comprises employing a catalyst containing a reduced transition metal halide prepared by reacting a halide of a transition metal selected from the group consisting of titanium, vanadium, zirconium, chromium and molybdenum, at its maximum valence with a reducing metal from Groups II and III*a* of the Periodic Table and a co-reducing compound of a metal in Groups I*a*, II and III*a* of the Periodic Table to form a halide of said reducing metal in the presence of a complexing agent that forms a complex with said halide of said reducing metal from Groups II and III*a* of the Periodic Table, said complex being substantially soluble in said complexing agent and said reduced transition metal halide being substantially insoluble in said complexing agent, the valence of transition metal in said reduced transition metal halide being one less than the maximum valence of said transition metal.

3,345,352
CATALYTIC PROCESS FOR THE THERMAL DEGRADATION OF POLYOLEFINS

Joseph J. Baron, Jr., Morris Plains, and Julius P. Rakus, Bernards Township, Somerset County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 21, 1964, Ser. No. 346,403
13 Claims. (Cl. 260—93.7)

1. The polyolefin thermal degradation process which comprises mixing a crystalline polyolefin with 0.075% to 10% by weight of a degradation catalyst from the group consisting of (1) oxides and (2) carbonates of (a) alkali metals, (b) alkaline earth metals, and (c) heavy metals from the group consisting of antimony, bismuth, cadminum, chromium, copper, iron, lead, mercury, tantalum, titanium, thallium, vanadium and zinc, and mixtures thereof; heating the resulting mixture in an atmosphere substantially free of oxygen to a temperature of from 275° to 450° C. for a minimum time period of at least 5 minutes when at the highest catalyst concentration, highest catalyst degradation activity, and most active temperature conditions, said minimum time increasing with decreasing temperature, catalyst concentration and catalyst degradation activity; and recovering a polyolefin having a molecular weight reduced by at least 45% compared to the molecular weight of the starting polyolefin.

3,345,353
METHOD OF CONTINUOUSLY RECOVERING PROTEIN FROM FATTY ANIMAL MATERIAL BY EMPLOYING DIRECTLY ADMIXED FAT AT A TEMPERATURE OF FROM 70° C.–120° C.

Ole Klublen, Copenhagen, Denmark, assignor to Thrige-Titan A/S, a company of Denmark

Filed Mar. 30, 1964, Ser. No. 355,783
Claims priority, application Denmark, Apr. 4, 1963, 1,574/63
5 Claims. (Cl. 260—112)

1. A method of continuously recovering protein and fat by low-temperature melting of animal fat containing material, comprising the steps of (1) comminuting said material to a particle size not substantially exceeding 3 mm.; (2) heating said comminuted material to a temperature above the melting point of the fat contents thereof by direct admixing fat at a temperature of about 70 to 120° C., and in such proportion and distribution that the average temperature of the mixture does not exceed the coagulation point of the protein contents of said animal material and is reached by all parts of the mixture within a period of few seconds; and (3) separating the liquid fat from the protein of the mixture.

3,345,354
INTERMEDIATE IN THE SYNTHESIS OF $\alpha^{1\text{-}24}$ ACTH

Heini Kappeler, Bettingen, and Robert Schwyzer, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,227
Claims priority, application Switzerland, May 4, 1961, 5,242/61; Nov. 24, 1961, 13,753/61; Aug 1, 1962, 9,208/62; Jan. 21, 1963, 2,208/63, 2,209/63; Jan. 10, 1964, 251/64
1 Claim. (Cl. 260—112.5)

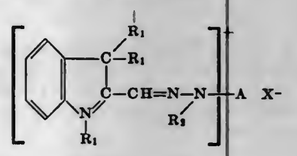
L - glutamyl - (γ-tertiary butyl ester) - L - histidyl - L-phenylalanyl - L - arginyl - L - tryptophyl - glycyl - N^t-tertiary butyloxycarbonyl - L - lysyl - L - prolyl - L - valyl-glycyl - N^t - tertiary butyloxycarbonyl - L - lysyl - N^t-tertiary butyloxycarbonyl - L - lysyl - L - arginyl - L-arginyl - L - prolyl - L - valyl - N^t - tertiary butyloxycarbonyl - L - lysyl - L - valyl - L - tyrosyl - L - proline - tertiary butylester.

3,345,355
2-METHYLENE INDOLINE AZOMETHINE GROUP-CONTAINING BASIC DYESTUFFS

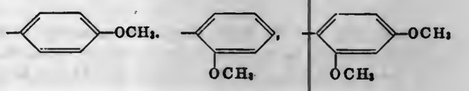
Roderich Raue, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

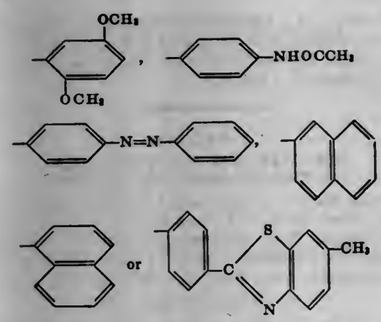
No Drawing. Continuation of application Ser. No. 144,572, Oct. 12, 1961, which is a continuation of application Ser. No. 754,525, Aug. 12, 1958. This application Apr. 13, 1966, Ser. No. 542,210
Claims priority, application Germany, Aug. 30, 1957, F 23,877
15 Claims. (Cl. 260—165)

1. A basic dyestuff of the formula



wherein R_1 stands for lower alkyl, R_2 stands for lower alkyl, A stands for one of the radicals





and X stands for an acid radical used for salt formation in basic dyestuffs.

3,345,356
PROCESS FOR PREPARING AROMATIC AZO COMPOUNDS

James E. Kmiecik, Lake Charles, La., assignor, by mesne assignments, to Columbian Carbon Company, a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,054
13 Claims. (Cl. 260—194)

1. A method for preparing an aromatic azo compound which comprises contacting at a temperature of from about 100° C. to 1,000° C. a nitroaromatic compound of the formula

$$Ar—NO_2$$

dissolved in an inert organic solvent and wherein Ar is an aryl group with carbon monoxide at a pressure of about 1,000 to 10,000 p.s.i.g. in the presence of a metal carbonyl of the formula $M_x(CO)_y$ wherein *x* and *y* are whole numbers and M is a Group VIII transition metal.

3,345,357
METHOD OF PURIFYING CELLULOSE CRYSTALLITE AGGREGATES

Mamerto M. Cruz, Jr., Newton Square, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Feb. 6, 1964, Ser. No. 343,011
7 Claims. (Cl. 260—212)

1. A method of purifying cellulose crystallite aggregates which have been formed by the controlled acid hydrolysis of cellulose comprising the steps of removing free liquids from the acid hydrolysis reaction mixture to provide a cake of aggregates washing the cake of aggregates with water containing a neutralizing constituent selected from the group consisting of ammonium hydroxide and ammonium acetate to gradually bring the cake of aggregates to an approximately neutral pH condition while simultaneously removing impurities therefrom and thereafter washing the cake of aggregates with water.

3,345,358
GEL-FORMING POLYSACCHARIDE DERIVATIVES PREPARED BY CROSS ESTERIFICATION

Petrus Adam Inklaar, Diepenveen, Netherlands, assignor to Vasco Industries Corp., New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 16, 1964, Ser. No. 338,011
Claims priority, application Germany, Jan. 23, 1963, V 23,550
20 Claims. (Cl. 260—233.5)

1. A method of preparing a gel-forming derivative of a polysaccharide selected from the group consisting of starch, amylose and amylopectin, which comprises linking together macromolecules of the polysaccharide by esterifying respective carboxyl and hydroxyl groups of such molecules through methyl ester bonds.

2. A method of preparing a gel-forming derivative of a polysaccharide selected from the group consisting of starch, amylose and amylopectin, which comprises acidifying a finely divided carboxymethyl ether of the polysaccharide in a water-miscible organic liquid medium, holding the material acidified therein until acid carboxymethyl groups in the material form ester bonds to link together macromolecules of the polysaccharide, and thereafter neutralizing acid carboxymethyl groups remaining in the material.

3,345,359
PERFLUORO-3-AMINODIAZIRIDINE AND ITS PREPARATION

William Charles Firth, Jr., Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 28, 1962, Ser. No. 207,153
10 Claims. (Cl. 260—239)

1. Perfluoro-3-aminodiaziridine.

2. The method of preparing fluorinated compounds including perfluoro-3-aminodiaziridine which comprises reacting together perfluoroguanidine and an alkali-metal fluoride.

3,345,360
PERFLUORODIAZIRIDINE AND DIMER OF PERFLUOROFORMAMIDINE AND THEIR PRODUCTION

William Charles Firth, Jr., Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 28, 1962, Ser. No. 207,155
9 Claims. (Cl. 260—239)

1. A compound selected from the group consisting of perfluorodiaziridine and the dimer of perfluoroformamidine.

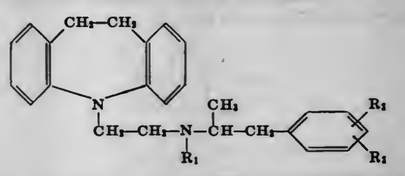
4. The method of preparing fluorinated compounds including at least one member of the group consisting of perfluorodiaziridine and the dimer of perfluoroformamidine, said method comprising reacting together perfluoroformamidine and an alkali-metal fluoride.

3,345,361
CERTAIN N,N'-SUBSTITUTED DIAMINOETHANE COMPOUNDS

Gustav Ehrhart, Bad Soden, Taunus, Ernst Lindner, Frankfurt am Main, and Heinrich Ott, Eppstein, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 25, 1964, Ser. No. 347,109
Claims priority, application Germany, Mar. 1, 1963, F 39,147
3 Claims. (Cl. 260—239)

1. Iminodibenzyl compounds of the formula



in which R_1 is hydrogen or methyl, R_2 and R_3 are identical or different and represent hydrogen or methoxy and acid addition salts of said compounds with physiologically tolerable acids.

3,345,362
NOVEL PREGNENOLONE ACETONIDES

Richard T. Rapala, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed July 27, 1961, Ser. No. 127,115
1 Claim. (Cl. 260—239.55)

16α,17α-isopropylidenedioxy-6-methylpregnenolone.

3,345,363
5α-HYDROXY-6β-AZIDOPREGNANES AND 5α-HYDROXY-6β-AMINOPREGNANES

Kanzo Sasaki, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed July 11, 1963, Ser. No. 294,259
Claims priority, application Japan, July 17, 1962, 37/30,498
6 Claims. (Cl. 260—239.55)

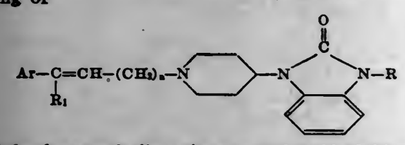
2. 5α-hydroxy-6β-aminopregnane-3,20-dione 3,20-bisethyleneketal.

3,345,364
BENZIMIDAZOLINYL PIPERIDINES

Paul Adriaan Jan Janssen, Vosselaar, near Turnhout, Belgium, assignor to Janssen Pharmaceutica N.V., a corporation of Belgium

No Drawing. Filed May 6, 1964, Ser. No. 365,501
7 Claims. (Cl. 260—240)

1. Chemical compounds selected from the group consisting of



and the therapeutically active non-toxic acid addition salts thereof wherein Ar is a member selected from the group consisting of phenyl, halophenyl, lower alkylphenyl and lower alkoxyphenyl; R is a member selected from the group consisting of hydrogen, lower alkyl, lower alkylcarbonyl, benzoyl, hydroxymethyl, halomethyl, lower alkoxymethyl, cyanomethyl and

cyano—$CH(R_2)CH(R_2)$—

said R_2 being a member selected from the group consisting of hydrogen and methyl; R_1 is a member selected from the group consisting of hydrogen and methyl; and n is an integer from 1 to 2.

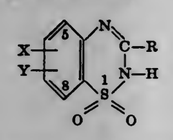
2. The compounds of claim 1 wherein said Ar is fluorophenyl.

3,345,365
NOVEL 1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDE DERIVATIVES

John G. Topliss, Bloomfield, Nathan Sperber, North Caldwell, and Alan A. Rubin, West Caldwell, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 31, 1964, Ser. No. 356,072
9 Claims. (Cl. 260—243)

1. A 1,2,4-benzothiadiazine-1,1-dioxide selected from the group consisting of the formula:



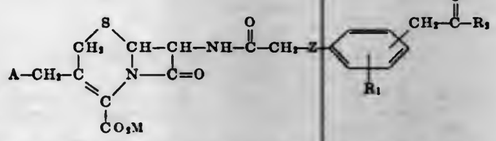
and the tautomers and non-toxic alkali metal salts thereof, wherein R is a member of the group consisting of lower alkyl, cyclopropyl, cyclobutyl and cyclopentyl; X is a member of the group consisting of halogen and trifluoromethyl located at positions of the group consisting of 6 and 7; and Y is a member of the group consisting of hydrogen, halogen, trifluoromethyl and lower alkyl located at one of the unsubstituted positions of the group consisting of positions 6, 7 and 8.

3,345,366
SUBSTITUTED 7-ACETYLAMINO CEPHALOSPORANIC ACIDS

Benjamin Arthur Lewis, Suffern, and Martin Leon Sassiver, Pearl River, N.Y., and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 15, 1967, Ser. No. 616,169
10 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of those of the formula:



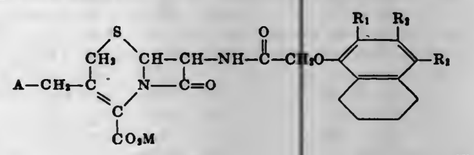
wherein R_1 is selected from the group consisting of hydrogen and chloro, R_2 is selected from the group consisting of hydroxy and amino, Z is selected from the group consistnig of oxygen and sulfur, A is selected from the group consisting of acetoxy and N-pyridinium, and M is selected from the group consisting of hydrogen, pharmaceutically acceptable non-toxic cations and an anionic charge when A is N-pyridinium; and the non-toxic pharmaceutically acceptable basic salts thereof when R_2 is hydroxy.

3,345,367
SUBSTITUTED 7-ACETYLAMINO CEPHALOSPORANIC ACIDS

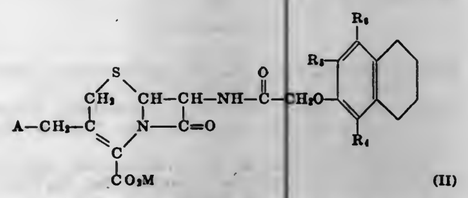
Martin Leon Sassiver, Pearl River, and Benjamin Arthur Lewis, Suffern, N.Y., and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 15, 1967, Ser. No. 616,176
10 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of those of the formulae:



(I)



(II)

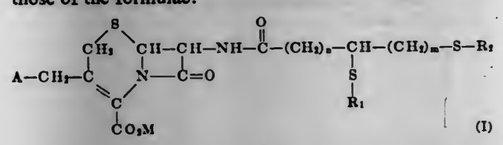
wherein R_1, R_2, R_3, R_4, R_5 and R_6 are each selected from the group consisting of hydrogen, methyl, chloro and bromo; A is selected from the group consisting of acetoxy and N-pyridinium; and M is selected from the group consisting of hydrogen, pharmaceutically acceptable non-toxic cations and an anionic charge when A is N-pyridinium.

3,345,368
SUBSTITUTED 7-ACETYLAMINO CEPHALOSPORANIC ACIDS

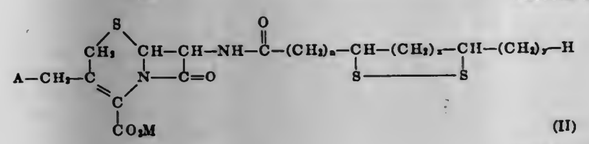
Benjamin Arthur Lewis, Suffern, and Martin Leon Sassiver, Pearl River, N.Y., and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 15, 1967, Ser. No. 616,177
10 Claims. (Cl. 260—243)

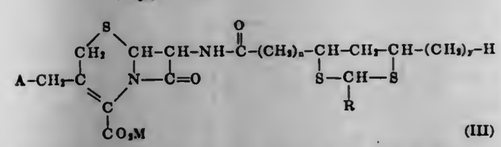
1. A compound selected from the group consisting of those of the formulae:



(I)



(II)



(III)

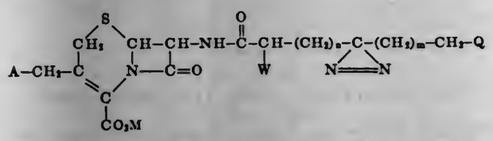
wherein R is lower alkyl, R_1 and R_2 are each selected from the group consisting of lower alkyl and phenyl lower alkyl, n has a value selected from the group consisting of 3 and 4, m has a value selected from the group consisting of 2 and 3, x has a value selected from the group consisting of 1 and 2, y has a value selected from the group consisting of 0 and 1, A is selected from the group consisting of acetoxy and N-pyridinium and M is selected from the group consisting of hydrogen, pharmaceutically acceptable non-toxic cations and an anionic charge when A is N-pyridinium.

3,345,369
NOVEL SUBSTITUTED 7-ACETYLAMINO CEPHALOSPORANIC ACIDS

Martin Leon Sassiver, Pearl River, and Benjamin Arthur Lewis, Suffern, N.Y., and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 15, 1967, Ser. No. 616,178
10 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of those of the formula:



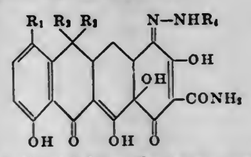
wherein m has a value selected from the group consisting of 0, 1 and 2; n has a value selected from the group consisting of 0, 1 and 2; A is selected from the group consisting of acetoxy and N-pyridinium; M is selected from the group consisting of hydrogen, pharmaceutically acceptable non-toxic cations and an anionic charge when A is N-pyridinium; Q is selected from the group consisting of hydrogen and carboxy; and W is selected from the group consisting of hydrogen and phenyl with the proviso that when W is phenyl then n must not be 0; and the non-toxic pharmaceutically acceptable basic salts thereof when Q is carboxy.

3,345,370
4-(N-MONO-SUBSTITUTED)HYDRAZONES OF 4-DEDIMETHYLAMINO-4-OXO-TETRACYCLINE

Robert Carlyle Ease, Pearl River, N.Y., and George Sieger, Montvale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,305
18 Claims. (Cl. 260—247.2)

1. A compound of the formula:



wherein R_1 is selected from the group consisting of hydrogen, chlorine and bromine; R_2 is selected from the group consisting of hydrogen and methyl; R_3 is selected from the group consisting of hydrogen and hydroxy; and R_4 is lower alkyl.

14. 2-carboxamido-N-(morpholinomethyl)-4-dedimethylamino - 4-oxo-6-demethyltetracycline - 4 - methylhydrazone.

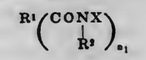
3,345,371
N - BROMINATED - N - CHLORINATED ORGANIC COMPOUNDS AND PROCESS FOR PREPARING SAME

Laurene O. Paterson, Adrian, Mich., assignor to Drug Research, Inc., Adrian, Mich., a corporation of Michigan

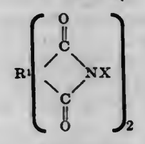
Filed Aug. 25, 1965, Ser. No. 486,589
20 Claims. (Cl. 260—192)

1. A process for preparing N-brominated-N-chlorinated organic compounds which comprises mixing a compound having at least two N-chloro radicals and a compound having at least two N-bromo radicals, said compounds being selected from the group consisting of compounds having the general formulae:

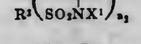
(1)



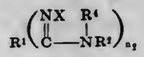
(2)



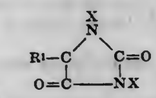
(3)



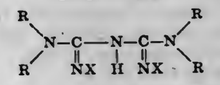
(4)



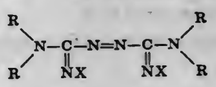
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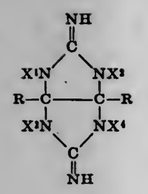
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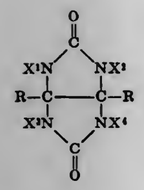
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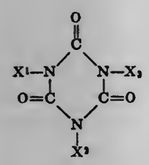
(8)



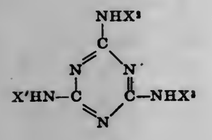
(9)



(10)



(11)



wherein:

(a) R is selected from the group consisting of hydrogen, lower alkyl and phenyl;

(b) R^1 is selected from the group consisting of lower alkyl, alkylene having up to twelve carbon atoms, saturated and aromatic monocyclic hydrocarbon radicals, and such radicals further substituted with lower alkyl, lower alkanoyl, lower alkoxy, halogen, carboxylic acid and sulfonic acid groups;

(c) R^2 is selected from the group consisting of hydrogen, lower alkyl and aromatic monocyclic hydrocarbon radicals;

(d) R^3 is selected from the group consisting of aromatic monocyclic hydrocarbon radicals having up to ten carbon atoms and such radicals further substituted with lower alkyl, lower alkanoyl, lower alkoxy, halogen, carboxylic acid and sulfonic acid groups;

(e) R^4 is selected from the group consisting of hydrogen, lower alkyl, lower alkanoyl, phenyl, bromine and chlorine;

(f) X is selected from the group consisting of bromine and chlorine;

(g) X^1, X^2, X^3 and X^4 are selected from the group consisting of hydrogen, chlorine and bromine, and at least two are bromine or chlorine;

(h) n_1 is an integer from 2 to 4;

(i) n_2 is an integer from 1 to 2;

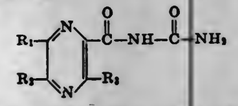
and such compounds as the salts or acid addition salts thereof.

3,345,372
SUBSTITUTED N-CARBAMYLPYRAZINE-CARBOXAMIDES

John William Hanlin, Jr., Suffern, N.Y., Rosemary Angela Capuzzi, Cliffside Park, N.J., and Elliott Cohen, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 24, 1967, Ser. No. 625,619
10 Claims. (Cl. 260—250)

1. A compound selected from the group consisting of those of the formula:



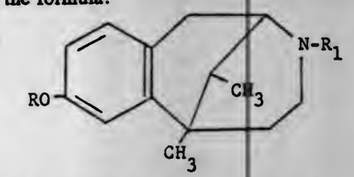
wherein R_1 is selected from the group consisting of hydrogen and halogen; R_2 is selected from the group consisting of hydrogen, amino, mono(lower alkyl)amino and di(lower alkyl)-amino and R_3 is selected from the group consisting of hydrogen, amino, mono(lower alkyl)amino and di(lower alkyl)amino; and the non-toxic pharmaceutically acceptable acid-addition salts thereof.

3,345,373
2-POLYMETHYLALLYL-5,9-DIMETHYL-6,7-BENZMORPHANS AND DERIVATIVES

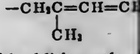
Maxwell Gordon, Elkins Park, and John J. Lafferty, Levittown, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa.,, a corporation of Pennsylvania

No Drawing. Filed May 25, 1964, Ser. No. 370,073
5 Claims. (Cl. 260—294)

1. A chemical compound of the class consisting of a free base and its nontoxic, acid addition salts, the free base having the formula:



in which R is a member selected from the group consisting of hydrogen, methyl, acetyl, carbamoyl, benzyl, hydroxyethyl, carbethoxymethyl, dimethylaminoethyl and methoxymethyl; and R_1 is a polymethylallyl group having 5 to 6 carbon atoms selected from the group consisting of $—CH_2CH=C(CH_3)_2$, $—CH_2C=C(CH_3)_2$ and



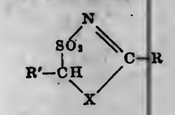
3. A nontoxic acid addition salt of 2-β,β-dimethyl-allyl-5,9-dimethyl-2'-hydroxy-6,7-benzmorphan.

3,345,374
CERTAIN OXATHIAZOLE AND DITHIAZOLE DERIVATIVES

Karlfried Dickoré and Richard Wegler, Leverkusen, and Klaus Sasse, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

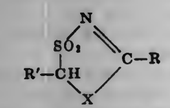
No Drawing. Filed July 26, 1963, Ser. No. 297,972
Claims priority, application Germany, Sept. 4, 1962, F 37,741
24 Claims. (Cl. 260—294.8)

1. A compound of the formula

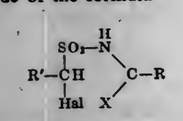


wherein X is a member selected from the group consisting of oxygen and sulfur, R' is a member selected from the group consisting of hydrogen and lower alkyl and R is a member selected from the group consisting of alkyl having up to 6 carbon atoms, phenyl, chlorophenyl, nitrophenyl, lower alkyl substituted phenyl, lower alkoxy substituted phenyl, pyridyl, furyl, amino ($—NH_2$), lower alkyl amino, di-lower alkyl amino lower alkylene, phenyl amino, nitro phenyl amino, chlorophenylamino, lower alkyl phenylamino, benzoyl amino, N-phenyl-N-carbomethoxy-amino, carbamylmethyl, alkylthio having 1 to 20 carbon atoms, phenyl-alkylthio, chlorophenyl-alkylthio, thiocarbamic acid lower alkyl esters, thiocarbamic acid phenyl esters, dithio carbamic acid lower alkyl esters, and sulfhydryl alkali metal salts.

2. Process for the production of a compound of the formula



wherein X is a member selected from the group consisting of oxygen and sulfur, R' is a member selected from the group consisting of hydrogen and lower alkyl and R is a member selected from the group consisting of alkylthio having 1 to 20 carbon atoms, hydroxy, amino, alkyl having up to 6 carbon atoms, phenyl, toluyl, benzoylamino, chlorophenyl, nitrophenyl, lower alkyl substituted phenyl, lower alkoxy substituted phenyl, and a bivalent radical selected from the group consisting of lower alkylene and phenyl, which is linked to two of the 5-membered heterocyclic radicals having the formula above set out, which comprises reacting an α-halogenalkane sulfonamide with an acylating agent selected from the group consisting of benzoyl chloride, 4-nitrobenzoylchloride, o-toluylchloride, o-chlorobenzoyl chloride, isonicotinic acid chloride, terephthalic acid dichloride, phenyliso-thiocyanate, p-phenylethyl-isothiocyanate, 3-diethylamino-propyl-isothiocyanate, 3-dimethylamino-propyl-isothiocyanate, carbon disulfide, furan-2-carboxylic acid chloride, p-toluyl chloride, 4-methoxy-benzoyl chloride, 2:5-dichlorobenzoyl chloride, 3-nitrobenzoyl chloride, isophthalyl-chloride, adipic acid chloride, 4-nitrophenyliso-cyanate, KCN, methylisocyanate, benzoyl-isothiocyanate, 2:4:6-trichlorophenyl isocyanate, phenyliso-cyanate, and methyliso-thiocyanate, and cyclizing the N-acyl-α-halogenalkane sulfonamide of the formula



wherein R, R' and X are as above defined and Hal is a member of the group consisting of chlorine, bromine, and iodine at a temperature of from 0–150° C. in an inert fluid medium in the presence of a basic compound.

3,345,375
3-LOWER ALKYL-5-(4-PYRIDYL)-ISOXAZOLE-4-CARBONYL DERIVATIVES

Richard Donovick, Bound Brook, Leon John Heuser, Princeton, and Morris Augustus Dolliver, Edison, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 25, 1963, Ser. No. 267,833, now Patent No. 3,249,601, dated Mar. 3, 1966. Divided and this application Aug. 12, 1965, Ser. No. 489,452
6 Claims. (Cl. 260—295)

1. 3-lower alkyl - 5 - (γ - pyridyl)isoxazole-4-carboxylic acid lower alkyl ester.

3,345,376
POLYHYDRO-6-METHOXY-1-(3,4,5-TRIMETHOXY-PHENYL)-9H-PYRIDO[3,4-b]INDOLES

Jackson B. Hester, Jr., Portage Township, Kalamazoo County, and Joseph Szmuszkovicz, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,806
The portion of the term of the patent subsequent to Aug. 24, 1982, has been disclaimed
6 Claims. (Cl. 260—296)

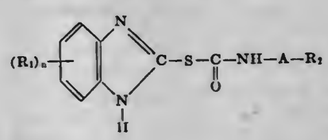
1. 3,4-dihydro - 6-methoxy-1(3,4,5-trimethoxyphenyl)-9H-pyrido[3,4-b]indole.

3,345,377
THIOCARBAMIC ACID-S-ESTERS OF BENZIMIDAZOLES

Karl Goliasch, Schildgen, and Heinrich Pelster and Hans Scheinpflug, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,813
Claims priority, application Germany, Jan. 25, 1964, F 41,834
8 Claims. (Cl. 260—309.2)

1. A compound of the formula



in which

R_1 is individually defined as a member selected from the group consisting of hydrogen, lower alkyl of 1–6 carbon atoms, lower alkoxy of 1–4 carbon atoms and halo;

A is alkylene of 1–10 carbon atoms;

R_2 is individually defined as a member selected from the group consisting of halo, alkoxy of 1–10 carbon atoms, haloalkoxy of 1–10 carbon atoms, lower alkyl cycloalkoxy of 1–10 carbon atoms and alkyl mercapto of 1–6 carbon atoms; and

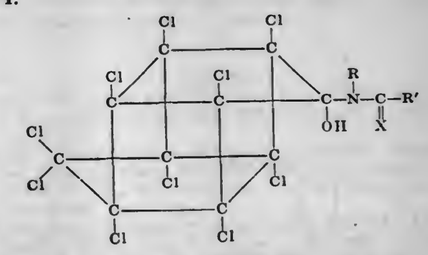
n is an integer of 1–2.

3,345,378
N - (DECACHLORO - 3 - HYDROXYPENTACYCLO (5,3,0,$0^{2,6}$.$0^{4,10}$.$0^{5,9}$)DECYL-3) AMIDES AND CARBAMATE ESTERS

Edward D. Weil, Lewiston, and Keith J. Smith, Lockport, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

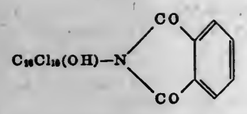
No Drawing. Filed Nov. 30, 1965, Ser. No. 510,680
10 Claims. (Cl. 260—326)

1.



wherein R is selected from the group consisting of hydrogen, lower alkyl, and phenyl; and R' is selected from the group consisting of phenyl, hydroxyphenyl, benzyl and phenoxy, and, when R is phenyl, R' is lower alkyl; and X is selected from the group consisting of oxygen and sulfur.

8.

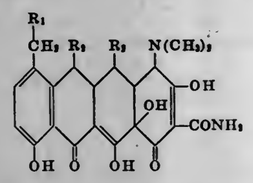


3,345,379
7-IMIDOMETHYL-6-DEMETHYL-6-DEOXYTETRACYCLINES

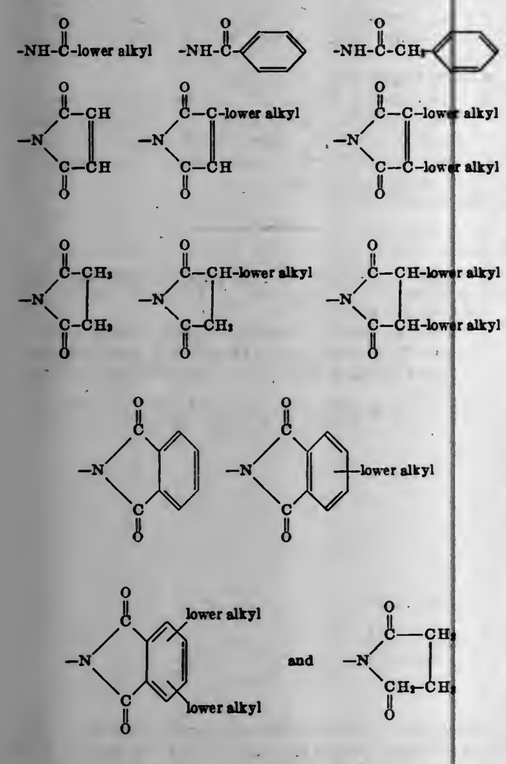
Michael Joseph Martell, Jr., Pearl River, N.Y., and Andrew Stephen Tomcufcik, Old Tappan, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,705
16 Claims. (Cl. 260—326.13)

1. A compound selected from the group consisting of those of the formula:



wherein R_2 is selected from the group consisting of hydrogen and methyl, R_3 is selected from the group consisting of hydrogen and hydroxy, and R_1 is selected from the group consisting of



with the proviso that when R_2 is hydroxy then R_2 must be methyl; and the non-toxic acid-addition salts thereof.

3,345,380
TRITHIONE PRODUCTION

Russell L. Hodgson, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,617
12 Claims. (Cl. 260—327)

1. The process of producing a trithione product by intimately contacting

(a) a hydrocarbon of from 3 to 14 carbon atoms comprising a non- to mono-ethylenically unsaturated three-carbon moiety wherein at least one terminal carbon atom of said three-carbon moiety possesses three hydrogen substituents, each carbon atom of said three-carbon moiety possesses no more than one non-hydrogen substituent with the proviso that any phenyl substituent may connect two such three-carbon moieties, said hydrocarbon containing no continuous aliphatic carbon atom chain of over three carbon atoms wherein each carbon atom possesess a hydrogen substituent; with

(b) from about 2 gram-atoms to about 12 gram-atoms of sulfur per mole of said three-carbon moiety;

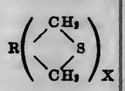
(c) in the vapor phase, at a temperature of from about 450° C. to about 575° C., and a pressure of from about 0.5 atmosphere to about 5 atmospheres, the contact time of said hydrocarbon and said sulfur being from about 0.5 second to about 8 seconds.

3,345,381
CYCLIC SULFIDE PROCESS

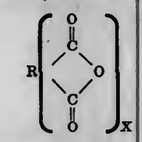
Robert W. Campbell, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,478
13 Claims. (Cl. 260—329)

1. Process for the production of cyclic sulfides of the formula

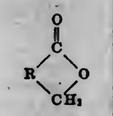


wherein R is a hydrocarbon radical having from 2 to about 18 carbon atoms, and X is a whole number less than three, which comprises reacting with hydrogen sulfide an acid anhydride of the formula



wherein R and X are as above and wherein said anhydride functionality is present in a carbon-monooxygen heterocyclic ring containing at least 4 but less than 6 carbon atoms, said reaction being carried out at a temperature in the range from about 180° C. to 325° C. in the presence of cobalt sulfide.

10. Process for the production of cyclic sulfides from lactones of the general formula



wherein R is a hydrocarbon radical having from 2 to about 18 carbon atoms and wherein said lactone functionality is present in a carbon-oxygen heterocyclic ring containing at least 4 but less than 6 carbon atoms, which comprises reacting under superatmospheric pressure said lactone with hydrogen sulfide at a temperature in the range from about 180° to 325° C. in the presence of cobalt sulfide and added hydrogen gas.

3,345,382
PREPARATION OF HYDROXYAROMATIC COMPOUNDS

Ross A. Kremer, Edison, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 13, 1965, Ser. No. 455,604
12 Claims. (Cl. 260—330.5)

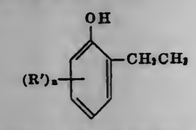
1. A process for producing a hydroxyaromatic compound that comprises contacting, in the vapor phase, a hydrogenated cycloketone reactant selected from the group consisting of cyclohexanone; 2-propylcyclohexanone; 2-cyanocyclohexanone; 2,5-dimethylcyclohexanone; tetrahydro-α-naphthalone; 5,6,7,8-tetrahydro-5-oxoquinoline; 3-cyclohexene-1-one; 4,5,6,7-tetrahydro-4-oxobenzofuran; 4,5,6,7-tetrahydro-4-oxobenzothiophene; 2,3,4,5,6,7-hexahydro-4-oxobenzothiophene, and 4,5,6,7-tetrahydro-6-methyl-4-oxobenzothiophene and water, in the absence of added hydrogen, with a catalyst consisting essentially of a metal oxide of Groups VI–B and VIII (iron subgroup) metals, using a molar proportion of water to said cycloketone reactant of about 10 to 1:1, respectively.

3,345,383
CONVERSION OF ALKYLPHENOLS TO THIAINDANES

Paul B. Venuto, Cherry Hill, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,633
4 Claims. (Cl. 260—330.5)

1. A method for producing thiaindanes and substituted derivatives thereof that comprises contacting a phenol reactant having the formula:



wherein R' is selected from the group consisting of lower alkyl (C_1–C_4), halogen, cyano, and nitro, and n is 0 to 3, and hydrogen sulfide with a catalyst comprising a crystalline aluminosilicate having a uniform pore diameter between 6 and 15 angstrom units and at least one component selected from the group consisting of sulfur, selenium, tellurium and compounds thereof.

3,345,384
HYDROGENATION OF SULFOLENES

Jan M. Oelderik and Pieter C. Aben, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 18, 1966, Ser. No. 565,932
Claims priority, application Netherlands, Jan. 6, 1966, 66—130
3 Claims. (Cl. 260—332.1)

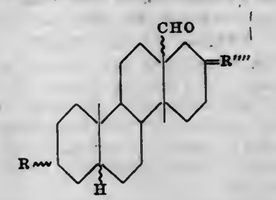
1. In a process for the preparation of sulfolanes having up to six carbon atoms to the molecule from the corresponding sulfolenes, containing only carbon and hydrogen in addition to a sulfone group, by catalytic hydrogenation of said sulfolenes in a liquid organic medium over a supported Group VIII metal hydrogenation catalyst, the improvement comprising intimately contacting said sulfolenes with a mass of particulate inert porous material selected from the group consisting of zeolite molecular sieves, non-acidic silica and silica containing up to 10% by weight of sodium, and immediately thereafter intimately contacting said sulfolenes with a mass of said particulate porous material in substantially uniform admixture with said metal hydrogenation catalyst and a substantial amount of hydrogen, to produce sulfolanes.

3,345,385
D-HOMO STEROIDS CONTAINING A —CHO GROUP IN 18-POSITION

Wataru Nagata, Hyogo Prefecture, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Original application July 27, 1961, Ser. No. 127,097, now Patent No. 3,206,472, dated Sept. 14, 1965. Divided and this application May 12, 1965, Ser. No. 464,264
Claims priority, application Japan, Apr. 4, 1960, 35/20,125; Apr. 6, 1960, 35/20,723
2 Claims. (Cl. 260—340.9)

1. A compound of the formula:



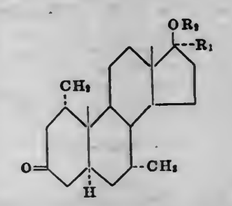
wherein R is a radical selected from the group consisting of oxo and ethylenedioxy when R is divalent, and from the group consisting of hydroxy and acetoxy when R is monovalent, R'''' is a radical selected from the group consisting of oxo and ethylenedioxy, and the ripple mark (≀) is a generic indication of the α- and β-configurations.

3,345,386
1α,7α-DIMETHYLSTEROIDS

Rudolf Wiechert, Josef Hader, and Friedmund Neumann, Berlin, Germany, assignors to Schering AG., Berlin, Germany

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,845
Claims priority, application Germany, Apr. 18, 1964, Sch 34,998
9 Claims. (Cl. 260—397.4)

1. A compound of the formula



wherein R_1 is a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, and lower alkinyl, and R_2 is a member selected from the group consisting of hydrogen, acyl, and a physiologically replaceable inorganic acid radical.

3,345,387
PROCESS FOR PRODUCING 16β-ALKYL AND 16α-ALKYL STEROIDS OF THE PREGNANE SERIES

David Taub, Metuchen, Norman L. Wendler, Summit, and Harry L. Slates, Florham Park, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 11,983, Mar. 1, 1960, which is a division of application Ser. No. 722,390, Mar. 19, 1958. This application May 25, 1964, Ser. No. 370,106
2 Claims. (Cl. 260—397.45)

1. The process which comprises reacting 3α-lower alkanoyloxy-16-lower alkyl-16-pregnene-11,20-dione with a peroxidic oxidizing agent to produce 16β-lower alkyl-

16α,17α-epoxy-3α-hydroxypregnane-11,20-dione, and reacting the latter compound with hydrogen to form 16β-lower alkyl-3α,17α-dihydroxy-pregnane-11,20-dione.

3,345,388

FATTY ACID-POLYOL PARTIAL ESTERS REACTED WITH BIS(ISOCYANATOALKYL) FUMARATES

Charles L. Milligan, South Charleston, and Kenneth L. Hoy, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,950
3 Claims. (Cl. 260—404.5)

1. A coating composition that consists essentially of the urethane-containing reaction product of:

(a) a bis(2-isocyanatoethyl) fumarate selected from the group consisting of bis(2-isocyanatoethyl) fumarate, bis(1 - methyl-2-isocyanatoethyl) fumarate, and 1-methyl-2-isocyanatoethyl 2 - isocyanatoethyl fumarate, and

(b) a partial ester of (1) an aliphatic alcohol that has at least 3 hydroxyl groups and (2) drying oil acid, the said partial ester having an average alcoholic hydroxyl functionality greater than 1, wherein the reactants (a) and (b) are reacted in proportions such that there is about one equivalent of isocyanato per equivalent of hydroxyl.

3,345,389

SEPARATION OF FATTY MATERIALS

Karl T. Zilch, Cincinnati, Ohio, assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 26, 1961, Ser. No. 140,669
10 Claims. (Cl. 260—419)

1. A process for the separation of materials selected from the group consisting of higher fatty acids and the glycerides of said acids, said materials having different degrees of unsaturation, which comprises dissolving the fatty materials in 2-nitropropane, cooling the solution to precipitate a portion of the more saturated constituents, filtering off said precipitate, and recovering the fatty materials from the precipitate by evaporation of the solvent present therein.

3,345,390

PROCESS FOR PREPARING MANGANESE CYCLOHEXADIENYL TRICARBONYLS

Geoffrey Wilkinson, London, England, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application July 21, 1961, Ser. No. 125,684, now Patent No. 3,153,073, dated Oct. 13, 1964. Divided and this application Oct. 25, 1963, Ser. No. 318,791
Claims priority, application Great Britain, Aug. 8, 1960, 27,376/60
5 Claims. (Cl. 260—429)

1. Process for the preparation of a cyclohexadienyl Group VII–B metal tricarbonyl having the formula

$$CyhMn(CO)_3$$

wherein Cyh is a cyclohexadienyl hydrocarbon radical and is selected from the class consisting of the cyclohexadienyl radical and substituted cyclohexadienyl radicals wherein the substituents are selected from the class consisting of alkyl, aryl and benzo groups, said process comprising reacting the corresponding cyclohexadiene hydrocarbon with manganese pentacarbonyl.

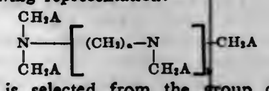
3,345,391

ORGANO METAL COMPOUNDS OF POLYAMINO POLYACETIC ACIDS

Horst G. Langer, Wayland, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 20, 1966, Ser. No. 580,609
7 Claims. (Cl. 260—429.7)

1. A new compound having a formula corresponding to the following representation:



wherein A is selected from the group consisting of —COOH, —CH_2OH and —$COOMe(R)_2$, not more than two A being —CH_2OH, and at least one of said indicated A positions being —$COOMe(R)_2$, with R selected from the group consisting of vinyl, allyl, phenyl and cycloalkyl groups; *a* having a value selected from the group consisting of 2, 3, 4; *b* having a value selected from the group consisting of 0, 1, 2, 3, 4; Me being selected from the group consisting of tin, lead and germanium.

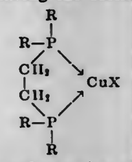
3,345,392

ORGANOPHOSPHORUS-COPPER COMPLEX COMPOUNDS

Martin Grayson and Allan Ellis Sherr, Norwalk, Conn., Helen Currier Gillham, Princeton, N.J., and Mary Esther Castellion, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Mar. 24, 1964, Ser. No. 354,433, now Patent No. 3,294,870, dated Dec. 27, 1966. Divided and this application May 5, 1966, Ser. No. 547,787
7 Claims. (Cl. 260—438.1)

1. A compound having the formula



wherein X is a monovalent anion and R is selected from the group consisting of aryl and β-cyanoethyl radicals.

3,345,393

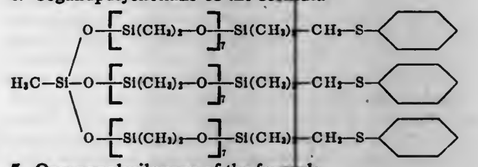
ORGANOMERCAPTOMETHYL-SILICON COMPOUNDS AND PRODUCTION

Walter Simmler, Cologne-Mulheim, and Hans Niederprüm, Monheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

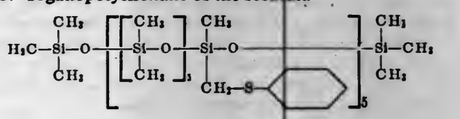
No Drawing. Filed June 11, 1963, Ser. No. 286,909
Claims priority, application Germany, June 30, 1962, F 37,208
5 Claims. (Cl. 260—448.2)

1. 1,3-di - (n - butylmercaptomethyl) - 1,1,3,3,-tetramethyldisiloxane.

4. Organopolysiloxane of the formula



5. Organopolysiloxane of the formula



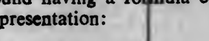
3,345,394

METHOD OF CLEAVING A THIOCARBAMIC ACID ESTER

Heinrich Pelster, Leverkusen, Ernst Muhlbauer, Cologne-Stammheim, and Detlef Delfs, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed May 6, 1963, Ser. No. 278,149
Claims priority, application Germany, May 15, 1962, F 36,805
4 Claims. (Cl. 260—453)

1. A method of cleaving a thiocarbamic acid ester having the formula



wherein R_1 is an alkyl, aryl, aralkyl, alkylene, a furfuryl or cycloalkyl radical, R_2 is a lower alkyl radical and *n* is 1 to 3 and is equal to the number of free valences of R_1, and separating the resulting organic isocyanate and mercaptan which comprises heating said thiocarbamic acid ester to a temperature of about 100 to 600° C. under reduced pressure to cleave said thiocarbamic acid ester into the corresponding isocyanate having the formula $R_1(—N{=}C{=})_n$ and mercaptan having the formula $R_2(—S—H)_n$, immediately cooling said iocyanate and mercaptan to a temperature below about 80° C. to form a liquid isocyanate and a gaseous mercaptan and withdrawing the gaseous mercaptan from the liquid isocyanate.

3,345,395

PROCESS FOR PREPARING MONOISOCYANATES

Gerhard Muller, Leverkusen, and Rudolf Merten, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,826
Claims priority, application Germany, Feb. 6, 1963, F 38,942
14 Claims. (Cl. 260—453)

1. A process for the production of organic monoisocyanates which comprises reacting an N-monosubstituted carbamic acid ester with an organic isocyanate having a boiling point above the isocyanate corresponding to said carbamic acid ester under substantially anhydrous conditions in such proportions that at least one equivalent of —NCO is present per urethane group, and separating the resulting organic monoisocyanate from the reaction mixture.

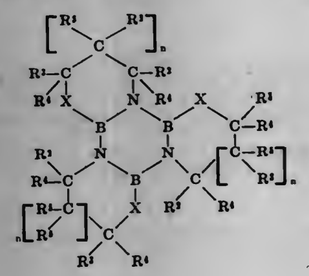
3,345,396

ORGANO-SUBSTITUTED BORAZINES

Elmar-Manfred Horn, Kurten, and Hans Niederprüm, Monheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 9, 1965, Ser. No. 438,399
Claims priority, application Germany, Mar. 14, 1964, F 42,316
19 Claims. (Cl. 260—462)

1. Process for the production of cyclic-substituted borazines having the formula:



wherein

X is a member selected from the group consisting of O, S, and NR^6;

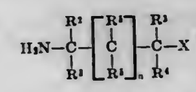
R^2, R^3, and R^4 are substituents of the group consisting of hydrogen, halogen, alkyl, cycloalkyl, aryl, alkoxy, aryloxy, and NO_2;

n is selected from the class of 0 and 1, wherein, when *n* is 0, R^2 and R^3 may be linked to form a member selected from the group consisting of phenyl, naphthyl, and substituted derivatives thereof, wherein the substituents are selected from the group consisting of halogen, alkyl, cycloalkyl, aryl, alkoxy, aryloxy, and nitro;

R^5 is a member selected from the group consisting of hydrogen, halogen, alkyl, cycloalkyl, aryl, alkoxy, aryloxy, nitro, alkyl-substituted silyl, aryl-substituted silyl, and wherein each R^5 may be dialkyl-silylmethyl linked to the other R^5 substituent on the same carbon atom via an oxygen atom to form a disiloxane;

R^6 is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl and aryl,

which comprises reacting an amine having the formula:



wherein X is a member selected from the group consisting of OH, SH and NHR^6 wherein R^2, R^3, R^4, R^5, R^6, and *n* are as defined above, with a mixture of a member selected from the group consisting of alkali metal borohydride and alkaline earth metal borohydride, and a member selected from the group consisting of boron trihalides and boron trihalide addition products with ethers, at a temperature of above 20° C.

3,345,397

PREPARATION OF METHACRYLONITRILE

Joseph H. Finley, Edison, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Dec. 10, 1963, Ser. No. 329,359
3 Claims. (Cl. 260—465.3)

1. A process for preparing methacrylonitrile which comprises reacting isobutylene with oxygen and ammonia in molar ratios of 8 to 0.5 mol of oxygen per mol of isobutylene and 15 to 0.5 mol of ammonia per mol of isobutylene in a reaction zone at a temperature between about 450° C. to 600° C. in the presence of a catalyst consisting essentially of 30 to 60 percent molybdenum oxide, 30 to 60 percent chromium oxide, and 1 to 25 percent bismuth oxide.

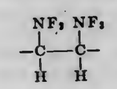
3,345,398

BIS-DIFLUORAMINOETHANE DERIVATIVES

Richard P. Rhodes, Newark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 31, 1961, Ser. No. 136,695
14 Claims. (Cl. 260—467)

1. A compound having in its structural formula the configuration:



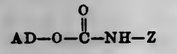
in which each of the carbon atoms is attached to the same functional group selected from the class consisting of hydroxyl, acetoxy, and nitrate.

3,345,399
CARBAMATE ESTERS OF ADAMANTANE, MONO- AND DI-METHYLADAMANTANE AND HOMO-ADAMANTANE

Koert Gerzon and Eriks Krumkalns, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,124
1 Claim. (Cl. 260—468)

An adamantyl carbamate of the formula



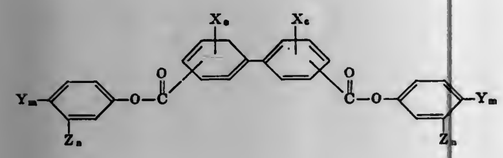
wherein AD is a member of the group consisting of adamantyl, methyladamantyl, dimethyladamantyl and homoadamantyl, and Z is a member of the group consisting of hydrogen, methyl and 1-adamantyl.

3,345,400
BIPHENYLCARBOXYLATES

Constantine Emmanuel Anagnostopoulos, St. Louis, Mo., and Aubert Yaucher Coran, Charleston, W. Va., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,917
9 Claims. (Cl. 260—469)

1. A compound of the formula,



wherein:

c is an integer from zero to two;
m and *n* are unlike integers from zero to one;
X is selected from the group consisting of alkyl and alkoxy of one to four carbon atoms;
Y is selected from the group consisting of α-cumyl

and



wherein:

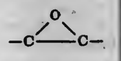
R, R_1 and R_2 are each alkyl of one to twenty-one carbon atoms, and the sum of the carbon atoms in R, R_1, and R_2 is up to twenty-three; and
Z is alkoxy of one to eighteen carbon atoms.

3,345,401
PROCESS FOR PREPARING POLYESTERS AND RESULTING PRODUCTS

Clayton A. May, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,948
11 Claims. (Cl. 260—486)

1. A one-step process for preparing acetone-soluble hydroxy-substituted polyester which comprises heating at a temperature between 40° C. and 120° C. a mixture comprising a polyhydric phenol which contains no functional groups other than the phenolic OH group, a halo-epoxy-alkane having the epoxy



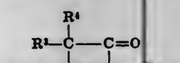
group attached to a halogen-bearing aliphatic carbon atom, an alpha, beta-ethylenically unsaturated carboxylic acid and an alkaline material in an amount varying from 1 to 1.2 moles per phenolic OH group, the mole ratio of phenol, halo-epoxy-alkane and acid varying from 1:2:2 to 1:8:8.

3,345,402
THIOCYCLOBUTANONES

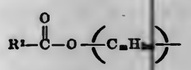
James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New York

No Drawing. Filed July 1, 1963, Ser. No. 292,126
5 Claims. (Cl. 260—488)

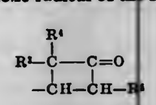
1. Thiocyclobutanones of the formula:



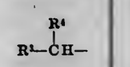
wherein R^1 is selected from the group consisting of:
(a) a mononuclear aryl radical of up to about 12 carbon atoms,
(b) a acyloxyalkylene radical of the formula:



and
(c) a cyclobutanone radical of the formula:



R^2 is selected from the group consisting of:
(a) an alkyl radical of the formula: $H\{C_nH_{2n}\}$ and
(b) a radical of the formula:

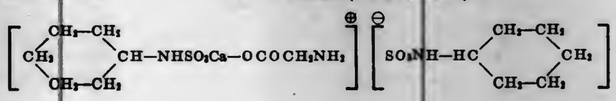


R^3 and R^4 are selected from the group consisting of:
(a) hydrogen,
(b) an alkyl radical of 1 to 8 carbon atoms,
(c) a mononuclear aryl radical of up to 12 carbon atoms and
(d) joined alkylene radicals which, together with the carbon atom to which they are attached, form a saturated carbocyclic ring of 5 to 7 carbon atoms:
R^5 is selected from the group consisting of:
(a) hydrogen and
(b) a lower alkyl radical and
each of *m* and *n* is an integer from 1 to 4.

3,345,403
COMPLEX OF CALCIUM N-CYCLOHEXYL-SULFAMATE WITH GLYCINE

Alexander Galat, 126 Buckingham Road, Yonkers, N.Y. 10701

No Drawing. Filed Aug. 20, 1964, Ser. No. 390,997
1 Claim. (Cl. 260—501)



3,345,404
CARBOXYLIC ACIDS PRODUCED BY THE REDUCTION OF TRANSANNULAR PEROXIDES

Walter H. Schuller and Ray V. Lawrence, Lake City, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,986
3 Claims. (Cl. 260—514.5)

1. The product obtained by hydrogenating a solution of a transannular peroxide-containing photosensitized oxidized pine gum in a solvent selected from the group consisting of aliphatic alcohols having up to 8 carbon atoms, aliphatic acids having up to 8 carbon atoms, and aliphatic acid esters wherein the total number of carbon atoms does not exceed 10, the hydrogenation being carried out at ambient temperature and pressure in the presence of a catalyst selected from the group consisting of platinum oxide and palladium-on-carbon until the amount of hydrogen absorbed is about from 0.5 to 1.5 moles of hydrogen per mole of transannular peroxides.

2. The conjugated, dienic, unsaturated monohydroxy alcoholic resin acid derived from the hydrogenation of levopimaric acid transannular peroxide having the following characteristics: a melting point of 163.5 to 165.5° C., $[\alpha]_D^{25}$ —152° (c. 77 in 95% ethanol); a negative peroxide test a neutralization equivalent of 320; a carbon analysis=75.2% and hydrogen analsyis=9.4% (by weight), λ (Nujol mull) 2.98μ; and the nuclear magnetic resonance values (τ) of which are (N.M.R.):

τ=6.83(2)
τ=5.83(1)
τ=5.50(1)
τ=4.28(1)
τ=1.23(3)
τ=1.11(J=7)
τ=1.0(J=7)
τ=0.79(3)

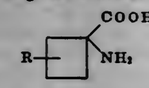
3. The unsaturated glycol 6,14-dihydroxy-$\Delta^{7(8)}$-dihydroabietic acid.

3,345,405
1-AMINO-2(AND 3)-PHENYLCYCLOBUTANE-1-CARBOXYLIC ACIDS

Alfred Burger, Charlottesville, Va., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 31, 1964, Ser. No. 356,063
8 Claims. (Cl. 260—518)

1. A compound selected from the group consisting of an amino acid and its pharmaceutically acceptable salts, said amino acid having the formula:



in which R is a member selected from the group consisting of phenyl, halophenyl, lower alkylphenyl, lower alkoxyphenyl, hydroxyphenyl, methylenedioxyphenyl, dihalophenyl, di-lower alkylphenyl, di-lower alkoxyphenyl and di-hydroxyphenyl.

3,345,406
CATALYTIC OXIDATION OF OLEFINS

Bernard Patrick Whim and Gordon Cheyne Fettis, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,754
Claims priority, application Great Britain, Mar. 15, 1963, 10,353/63
11 Claims. (Cl. 260—533)

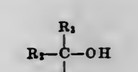
1. In a process for the manufacture of a compound selected from the group consisting of acrolein, acrylic acid and methacrolein by interacting oxygen and an olefin selected from the group consisting of propene and isobutene in the vapour phase at temperatures between about 200° to 650° C. and in the presence of a catalyst for said interaction, the improvement which comprises utilizing, as the catalyst, one consisting essentially of manganese, molybdenum, tellurium and oxygen.

3,345,407
CATALYSTS FOR THE PREPARATION OF BIS-(2,6-DIETHYLPHENYL)CARBODIIMIDE

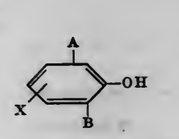
Benjamin W. Tucker, West Haven, and Henri Ulrich, Northford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,597
4 Claims. (Cl. 260—551)

1. In a process for the preparation of bis(2,6-diethylphenyl)carbodiimide by heating 2,6-diethylphenyl isocyanate above about 150° C. and below the decomposition temperature of the reaction mixture in the presence of a catalyst the improvement which consists of employing as catalyst a member selected from the class consisting of (a) an alkali metal derivative of a tertiary aliphatic alcohol having the formula:



wherein R_2, R_3, and R_4 each represent lower-alkyl and (b) an alkali metal derivative of a 2,6-(tert.-alkyl)phenol having the formula:



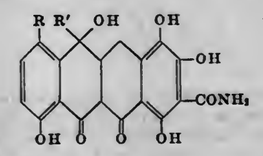
wherein A and B each represent tertiary-alkyl of from 4 to 10 carbon atoms, inclusive, and X is selected from the class consisting of hydrogen, lower-alkyl, lower-alkoxy, and halo.

3,345,408
SUBSTITUTED 4-DEDIMETHYLAMINO-4-HYDROXY-4a,12a-ANHYDROTETRACYCLINES

Joseph John Hlavka, Tuxedo, and Panayota Bitha, New York, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,888
10 Claims. (Cl. 260—559)

1. A compound of the formula:



wherein R is selected from the group consisting of hydrogen, chlorine and bromine, and R′ is selected from the group consisting of hydrogen and methyl.

3,345,409

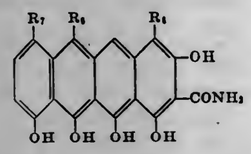
A METHOD OF PREPARING 1,3,10,11,12-PENTAHYDROXYNAPHTHACENE-2-CARBOXAMIDES

Jerry Robert Daniel McCormick, Spring Valley, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

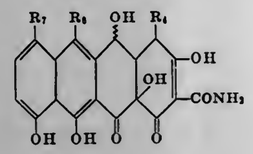
No Drawing. Filed Dec. 16, 1965, Ser. No. 514,367

10 Claims. (Cl. 260—559)

1. The method of preparing compounds of the formula:



wherein R_4 is selected from the group consisting of hydrogen and dimethylamino, R_6 is selected from the group consisting of hydrogen and methyl and R_7 is selected from the group consisting of hydrogen, fluorine, chlorine and bromine, which comprises treating a compound of the formula:



wherein R_4, R_6 and R_7 are as hereinabove defined, with hydriodic acid at a temperature of from about 80° C. to about 120° C. for a period of time of from about 1 to about 30 minutes.

3,345,410

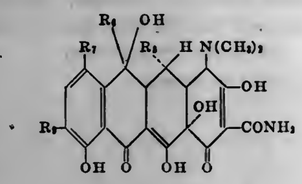
SUBSTITUTED 7- AND/OR 9-AMINO TETRACYCLINES

Robert Winterbottom, New City, Panayota Bitha, New York, and Henry Marcel Kissman, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 1, 1966, Ser. No. 598,206

10 Claims. (Cl. 260—559)

1. A compound selected from the group consisting of tetracyclines of the formula:



wherein R_5 is selected from the group consisting of hydrogen and hydroxy, R_6 is selected from the group consisting of hydrogen and methyl, and R_7 and R_9 are each selected from the group consisting of hydrogen, mono(lower alkyl)amino and di(lower alkyl)amino with the proviso that R_7 and R_9 cannot both be hydrogen; and the nontoxic pharmaceutically acceptable acid-addition salts thereof.

3,345,411

2-ALKYL-3,3-DIPHENYL-PROPEN-(2)-YL-AMINES AND SALTS THEREOF

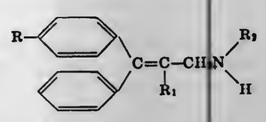
Werner Heinrich and Walter Heigel, Ludwigshafen (Rhine), Germany, assignors to Gebr. Giulini G.m.b.H., Ludwigshafen (Rhine), Germany, a corporation of Germany

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,824

Claims priority, application Germany, Nov. 23, 1962, G 36,467

23 Claims. (Cl. 260—570)

1. Compounds of the formula:



(I)

wherein:

(a) R_1 is alkyl having 2 to 8 carbon atoms;

(b) R_2 is selected from the group consisting of hydrogen, lower alkyl and cyclohexyl;

(c) R is selected from the group consiting of hydrogen, lower alkyl, lower alkoxy and chlorine;

and medicinally acceptable salts thereof.

3,345,412

4,4'-METHYLENE BIS(O-TRIFLUOROMETHYLANILINE)

Guenther Kurt Hoeschele, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,349

1 Claim. (Cl. 260—570)

4,4'-methylene-bis(o-trifluoromethylaniline).

3,345,413

PROCESS FOR PURIFYING A PHENYLENEDIAMINE

Alfred H. Pagano, Newark, Del., and Louis Spiegler, Woodbury, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 23, 1964, Ser. No. 362,181

8 Claims. (Cl. 260—582)

1. A process for purifying a phenylenediamine contaminated with from 0.01 to 1 mole percent para-phenylenediamine which process comprises intimately contacting said phenylenediamine in the liquid phase at a temperature range of from about 30° C. to 150° C. with a member selected from the group consisting of a water-soluble Group I–A metal ferricyanide and a water-soluble Group II–A metal ferricyanide in an amount from about 0.5 to 10 moles of said ferricyanide for each mole of said para-phenylenediamine impurity, and then recovering the resultant purified phenylenediamine from the mixture.

3,345,414

PREPARATION OF TETRAKIS(DIFLUOROAMINO)BUTANE

Richard P. Rhodes, Newark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 27, 1960, Ser. No. 5,071

7 Claims. (Cl. 260—583)

1. Process for making 1,2,3,4-tetrakis(difluoroamino) butane which comprises contacting bis-(difluoroamino) butene with tetrafluorohydrazine at temperatures in the range of 30° C. to 200° C., under pressures of at least 5 atmospheres for about 1 to 20 hours to form 1,2,3,4-tetrakis(difluoroamino)butene.

3,345,415

N-n-ALKYLAMINOETHANETHIOLS

Delbert D. Reynolds and Donald L. Fields, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Jan. 30, 1963, Ser. No. 255,727. Divided and this application Dec. 11, 1964, Ser. No. 441,395

4 Claims. (Cl. 260—583)

1. A compound selected from the class consisting of N-n-octylaminoethanethiol, N - n-nonylaminoethanethiol and N-n-decylaminoethanethiol.

3,345,416

PREPARATION AND REARRANGEMENT OF BETA-KETOSULFOXIDES

Glen A. Russell, % Department of Chemistry, Iowa State University, Ames, Iowa 50010, and Hans-Dieter Becker, P.O. Box 1088, Schenectady, N.Y. 12301

No Drawing. Filed Sept. 4, 1963, Ser. No. 306,604

9 Claims. (Cl. 260—590)

1. A process for the preparation of β-ketosulfoxides which comprises interreacting dimethyl sulfoxide under substantially anhydrous conditions with an aromatic ester having the formula RCO_2R^1 wherein R is phenyl, substituted phenyl, naphthyl or anthryl, the phenyl substituent being methyl, methoxy, carboxy or hydroxy, and R^1 is lower alkyl, in the presence of a strong base selected from the class consisting of alkali metal alkoxides, alkali metal hydroxides, alkali metal oxides and alkali metal hydrides.

3,345,417

NOVEL OXIDATION CATALYST COMPOSITIONS AND PROCESSES

Roger P. Cahoy, Merriam, and Donald M. Coyne, Prairie Village, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,308

3 Claims. (Cl. 260—604)

1. A process for converting isobutylene to methacrolein comprising reacting isobutylene at a temperature within the range of about 400° C. to about 600° C. in the presence of oxygen and a metal oxide composition consisting essentially of oxides of copper, selenium, phosphorus and molybdenum, said oxides being present in the ratios indicated by the empirical formula

$$Cu_{5-15}Se_{0.05-5}P_{0.5-2}Mo_{12}O_{40-70}$$

the oxygen value of said empirical formula being calculated, based on the assumption that the metal oxides are fully present in the metal oxide composition as CuO, SeO_2, P_2O_5 and MoO_3, said metal oxide composition being on the surface of porous silicon carbide aggregate.

3,345,418

CATALYTIC PROCESS FOR PREPARING ORGANOBORON COMPOUNDS FROM DIBORANE

Herbert C. Brown, 1840 Garden St., West Lafayette, Ind. 47906

No Drawing. Filed Aug. 29, 1957, Ser. No. 680,934

2 Claims. (Cl. 260—606.5)

1. In the process for preparing an organoboron compound by the reaction of diborane with an alkyne, the improvement which includes conducting said reaction in a liquid phase and in the presence of a small catalytic amount of a Lewis base catalyst capable of forming unstable complexes with diborane and selected from the group consisting of alkyl ethers, saturated cyclic ethers, aromatic ethers, alkyl esters of alkanoic acids, alkyl esters of aromatic acids, alkyl borates, alkyl silicates, alkyl sulfides, alkyl sulfones, and nitro alkyl and nitro aryl compounds.

3,345,419

HYDRATION OF BICYCLO-(2.2.1) HEPTENES AND RELATED NORTRICYCLENES

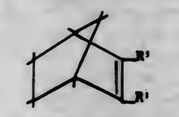
Samuel W. Tinsley, Charleston, Donald L. MacPeek, South Charleston, and Paul S. Starcher, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,340

16 Claims. (Cl. 260—617)

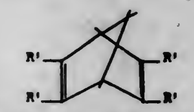
1. A process for hydrating a cyclic reactant containing at least one of the following structures:

(A)



bicyclo(2.2.1)heptene compounds

(B)



bicyclo(2.2.1)heptadiene compounds, and

(C)



Tricyclo(2.2.1.$0^{2,6}$)heptane compounds

wherein each R' individually is hydrogen or lower alkyl, which process comprises maintaining a mixture of said cyclic reactant and water in a conversion zone under hydration conditions at a temperature between 50° C. and 200° C. in the contacting presence of a synthetic sulfonated cation exchange resin catalyst consisting essentially of an aryl hydrocarbon skeleton.

3,345,420

1,1,3,3-TETRAHALO-2,2,4,4-TETRAMETHYLCYCLOBUTANES

Heinrich G. Gilch, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 13, 1963, Ser. No. 330,257

2 Claims. (Cl. 260—648)

1. 1,1,3,3-tetrachloro-2,2,4,4-tetramethylcyclobutane.
2. 1,1,3,3-tetrafluoro-2,2,4,4-tetramethylcyclobutane.

3,345,421

PREPARATION OF ETHYL CHLORIDE

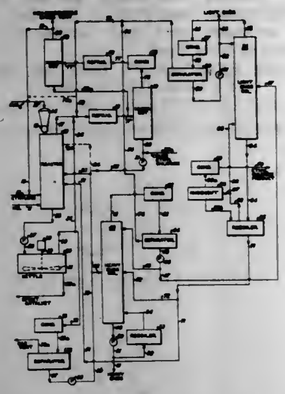
David Brown, Milbrook, Greenwich, Conn., assignor to Halcon International, Inc., a corporation of Delaware

Filed Nov. 24, 1961, Ser. No. 154,797

3 Claims. (Cl. 260—663)

1. In a process for the preparation of ethyl chloride by the reaction of ethylene and hydrogen chloride in the presence of a liquid mixture of ethyl chloride and an aluminum chloride catalyst in a reaction zone; wherein the reaction temperature is controlled by the vaporization of ethyl chloride in said reaction zone; wherein said vapors are withdrawn from said reaction zone and passed to a separator, said vapors containing non-condensible gases, unreacted material, ethyl chloride, light ends and heavy ends; wherein non-condensible gases and the bulk of said unreacted materials are withdrawn as a vapor from said separator; wherein heavy ends, light ends and product ethyl chloride along with the residual unreacted materials are withdrawn from said separator as a liquid; and wherein said liquid is distilled in a first distillation

column to separate heavy ends and a first distillate, and said first distillate passed to a second distillation column to separate light ends and product ethyl chloride; the



improvement of recycling to said separator a portion of the first distillate and recycling to said reaction zone a portion of the vapors withdrawn from said separator.

3,345,422

CONTROL OF OXYCHLORINATION REACTIONS

Loyd W. Piester and Raymond M. Vancamp, New Martinsville, W. Va., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,028
10 Claims. (Cl. 260—650)

1. In a method of chlorinating a member of the group consisting of aliphatic hydrocarbons having 1 to 2 carbon atoms, their incompletely chlorinated derivatives and benzene by passing a member of the group to be chlorinated, oxygen and a chlorinating agent selected from the group consisting of chlorine, HCl and mixtures of chlorine and HCl in the vapor phase through a fluidized bed of metal halide catalyst particles the improvement comprising condensing the product stream from said bed to recover the chlorinated organic content thereof as liquid, separating HCl and water from said liquid chlorinated organics, feeding a portion of said liquid chlorinated organics to the top of said fluidized bed to at least wet some catalyst particles and regulating the quantity and rate of feed of the portion so fed to maintain the temperature of the bed at a predetermined value.

3,345,423

META-SUBSTITUTED HALOBENZENES

William S. Tolgyesi, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,871
13 Claims. (Cl. 260—650)

1. A process for separating a meta-bromo-substituted benzene from its mixture with a least one of an ortho-bromo-substituted benzene and a para-bromo-substituted benzene, said bromo-substituted benzenes having from 1 to 2 ring substituents in addition to the bromine atom selected from the group consisting of halogen of atomic number 9–35, phenyl, phenoxy, halophenyl, and halophenoxy wherein each halo moiety is halogen of atomic number 9–35, which process comprises contacting said mixture with a Friedel-Crafts catalyst and an aromatic hydrocarbon of 6–15 carbon atoms selected from the group consisting of benzene, lower alkylbenzenes having 1–5 lower alkyl substituents, diphenyl, and naphthalene.

3,345,424

TELOMER COMPOSITIONS

Murray Hauptschein, Glenside, and Maurice Miville, Flourtown, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 12, 1965, Ser. No. 471,406
6 Claims. (Cl. 260—653.1)

1. A polymer mixture consisting essentially of at least about 90% by weight of a mixture of polymers of the structure $R—(CF_2CF_2)_nX$ wherein R contains from 1 to 4 carbon atoms and is selected from the group consisting of perfluoroalkyl and monochloroperfluoroalkyl, X is selected from the group consisting of chlorine and fluorine and n is an integer from 6 to 10, and wherein the balance of the polymer mixture comprises polymers of the above structure where n is 11 to 16.

3,345,425

PREPARATION OF CYCLOHEXENE

Charanjit Rai, Bellwood, Ill., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,455
5 Claims. (Cl. 260—666)

1. A method of producing cyclohexene consisting of heating cyclohexanol in the presence of a mixture of about equal parts of polyphosphoric and concentrated sulfuric acids to a temperature sufficient to distill off cyclohexene and water, condensing the vapors and separating condensed cyclohexene from the remaining reaction product.

3,345,426

PREPARATION OF TETRAALKYL BENZENE

Arthur W. Langer, Jr., Watchung, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 4, 1964, Ser. No. 416,152
8 Claims. (Cl. 260—671)

1. A process for selectively preparing 2,4-dialkyl-1,5-dimethyl benzene which comprises reacting a xylene feed stream comprising at least 80% meta-xylene with 3 to 20 moles per mole of said xylene feed of an alkylating agent selected from the group consisting of propylene, butene-1 and butene-2 in the presence of about 0.001 to 10 grams of an acidic alkylation catalyst per liter of xylene, said alkylation catalyst being dispersed in said xylene feed so as to form a homogeneous solution, at a first temperature stage in the range of 0° to 60° C. for a time sufficient to form a substantial portion of a monoalkylate of said xylene feed thereafter increasing the reaction temperature to a temperature higher than that employed in said first stage and in the range of 40° to 125° C., maintaining the reaction for a time sufficient to convert essentially all the xylene feed to alkylated xylene products and recovering a reaction product containing a major portion of 2,4-dialkyl-1,5-dimethyl benzene.

3,345,427

DEHYDROGENATION PROCESS AND ALUMINA-SUPPORTED NICKEL, MOLYBDENUM AND ALKALI METAL CATALYST THEREFOR

Glenn O. Michaels, South Holland, and James W. Gambell, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 4, 1963, Ser. No. 328,001
9 Claims. (Cl. 260—680)

1. A catalyst suitable for the dehydrogenation of hydrocarbons consisting essentially of about 0.5 to 10 percent NiO, about 5 to 20 percent MoO_3, and about 2 to 10 percent of an alkali metal oxide deposited on an alumina support.

3. A method for the dehydrogenation of a dehydrogenatable hydrocarbon containing 2 to 20 carbon atoms per molecule which consists essentially of contacting the hydrocarbon under dehydrogenation conditions including a temperature of about 900 to 1250° F. with a catalyst consisting essentially of alumina, about 0.5 to 10 percent NiO, about 5 to 20 percent MoO_3 and about 2 to 10 percent of an alkali metal oxide.

3,345,428

ISOMERIZATION OF N-BUTENE

Brian Patrick McGrath, Crowthorne, and Leonard Turner, Woking, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,934
Claims priority, application Great Britain, Sept. 18, 1964, 38,166/64
6 Claims. (Cl. 260—683.2)

1. A process for the isomerization of n-butenes to recover isobutene which comprises contacting the n-butene feed at elevated temperature with a catalyst, consisting essentially of a silicofluoride treated alumina containing 0.5–3.5% by wt. of the SiF_6^{2-} anion, said alumina having a reversible benzene adsorption measured at a benzene pressure of 0.11 mm. of mercury and a temperature of 190° C. of at least 2 mols of benzene per gram of alumina.

3,345,429

BLENDED POLYESTER WIRE ENAMELS AND CONDUCTORS INSULATED THEREWITH

Frank A. Sattler, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 13, 1964, Ser. No. 389,330
12 Claims. (Cl. 260—860)

1. A polyester resin insulating composition consisting essentially of a blended solution of (A) a highly functional polyester derived by heating to esterify a mixture of (1) from about 40 to 45 equivalent percent of at least one dicarboxylic material selected from the group consisting of isophthalic acid and the 1 to 4 carbon atom dialkyl esters of isophthalic and terephthalic acids and (2) from about 55 to 60 equivalent percent of a polyol component, up to 5 equivalent percent of the polyol component being a compound having two hydroxyl groups, the remainder of the polyol component being at least one compound having at least three hydroxyl groups and (B) a polyester having a substantially lower functionality than the said highly functional polyester, the lower functionality polyester being derived by heating to esterify a mixture of (1) from about 40 to 45 equivalent percent of at least one dicarboxylic material selected from the group consisting of isophthalic acid and the 1 to 4 carbon atom dialkyl esters of isophthalic and terephthalic acids and (2) from about 55 to 60 equivalent percent of a polyol component comprising (a) from about 20 to 45 equivalent percent of a compound having two hydroxyl groups and (b) from about 10 to 40 equivalent percent of at least one compound having at least three hydroxyl groups, the components (A) and (B) being blended in proportion to provide a dihydroxy compound content within the range of about 8 to 20 equivalent percent, based on the total polyester blend of components (A) and (B).

7. An insulated electrical conductor comprising, in combination, an electrically conductive metallic member coated with a cured polyester resin produced by heating a blended solution consisting essentially of (A) a highly functional polyester derived by heating to esterify a mixture of (1) from about 40 to 45 equivalent percent of at least one dicarboxylic material selected from the group consisting of isophthalic acid and the 1 to 4 carbon atom dialkyl esters of isophthalic and terephthalic acids and (2) from about 55 to 60 equivalent percent of a polyol component, up to 5 equivalent percent of the polyol component being a compound having two hydroxyl groups, the remainder of the polyol component being at least one compound having at least three hydroxyl groups and (B) a polyester having a substantially lower functionality than the said highly functional polyester, the lower functionality polyester being derived by heating to esterify a mixture of (1) from about 40 to 45 equivalent percent of at least one dicarboxylic material selected from the group consisting of isophthalic acid and the 1 to 4 carbon atom dialkyl esters of isophthalic and terephthalic acids and (2) from about 55 to 60 equivalent percent of a polyol component comprising (a) from about 20 to 45 equivalent percent of a dihydroxy compound and (b) from about 10 to 40 equivalent percent of at least one compound having at least three hydroxyl groups, the components (A) and (B) being blended in proportions to provide a dihydroxy compound content within the range of about 8 to 20 equivalent percent, based on the total polyester blend of components (A) and (B).

3,345,430

PROCESS FOR RECOVERING GRAFT COPOLYMER LATEX SOLIDS

Robert H. M. Simon and Bernd Oster, Longmeadow, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,205
9 Claims. (Cl. 260—876)

1. In a process for recovering solids from a polymeric latex, the improvement which comprises intimately mixing the polymeric latex of a water-insoluble vinylidene polymer having a heat distortion temperature above about 65° centigrade and selected from the group consisting of (*a*) graft copolymers on a conjugated diene polymer substrate of a monomer formulation consisting essentially of a vinylidene monomer of the class consisting of monovinylidene aromatic monomers, acrylic monomers and mixtures thereof, and (*b*) mixtures of said graft copolymers with water-insoluble resinous vinylidene homopolymers or interpolymers with an aqueous electrolyte solution until a homogeneous, form-sustaining paste is obtained, forming the paste into at least one shaped unit having a cross-section of about 0.05 to 5.0 inches, and heating the shaped paste in an aqueous bath maintained at a temperature at least as high as the heat distortion temperature of the polymer to harden and synerize the polymer units.

3,345,431

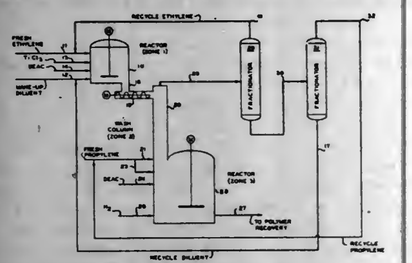
METHOD FOR PREPARING BLOCK COPOLYMERS OF MONOOLEFINS

Arthur A. Harban, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 24, 1964, Ser. No. 384,872
4 Claims. (Cl. 260—878)

1. A method of block copolymerizing two different mono-1-olefins, each in the substantial absence of the other, which comprises contacting one of said olefins in a first reaction zone with a coordinating catalyst system formed from at least two components which are a metal compound and a reducing agent under polymerization conditions in an inert liquid diluent having a boiling point substantially different from said olefins, thereby forming a slurry of first polymer in said diluent, passing said slurry to the upper portion of a vertically elongated washing zone wherein said first polymer is allowed to settle, introducing the other of said olefins in liquid phase to the lower portion of said washing zone in sufficient amount to cause upward flow of some of said other olefin, passing said first polymer, some of said other olefin and additional reducing agent catalyst component into a second reaction zone which is maintained under polymerization conditions, withdrawing from said washing zone an overhead stream containing said olefins and said diluent, fractionating said

overhead stream to separate each olefin and diluent, recycling said one olefin and said diluent to said first zone



and said other olefin to said washing zone, and withdrawing from said second zone a polymer of said olefins.

3,345,432

FLAME-RETARDANT COMPOSITIONS CONTAINING ORGANOPHOSPHONIC ACIDS

Helen Currier Gillham and Harvey Gerald Klein, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 19, 1963, Ser. No. 303,140
20 Claims. (Cl. 260—887)

1. A flame-retardant composition consisting essentially of a thermoplastic polymer produced from at least one ethylenically unsaturated monomer and from about 2% to about 35%, by weight, based on the weight of the polymer, of an organophosphonic acid.

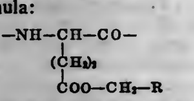
3,345,433

COMPOSITIONS OF VINYL CHLORIDE/VINYL ACETATE POLYMERS AND A POLYGLUTAMATE

David Wasserman, Springfield, John D. Garber, Allendale, and Frederick M. Meigs, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,622
20 Claims. (Cl. 260—857)

1. A composition of matter comprising a major proportion of (A) a material selected from the group consisting of (1) normally solid homopolymers of vinyl chloride, (2) normally solid homopolymers of vinyl acetate and (3) normally solid copolymers of vinyl chloride and vinyl acetate and (4) mixtures of at least two of them and a minor but sufficient amount of (B) in the range of about 0.1 to 10 parts by weight of (B) per 100 parts by weight of (A) to improve the flexibility of (A), said (B) being a material whose molecular weight is at least 5000 and selected from the group consisting of (a) polymers consisting essentially of a unit which recurs and is within the generic formula:



wherein R is a radical selected from the group consisting of phenyl and alkyl radicals of 5–21 carbon atoms, (b) copolymers of at least two differing units within said formula and (c) mixtures of at least two of them.

3,345,434

BLEND OF PARTICLES OF CROSSLINKED THERMOPLASTIC POLYMERS WITH NON-CROSSLINKED THERMOPLASTIC POLYMERS

Richard McDonald Griffith, Rowayton, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 4, 1965, Ser. No. 461,530
8 Claims. (Cl. 260—901)

7. An article of manufacture formed directly by extruding, blow molding or vacuum forming a blend of (1) particles of a cross-linked thermoplastic polymer of a monomer selected from the group consisting of (A) a methacrylate and (B) an acrylate, said polymer having been cross-linked with a polyfunctional, cross-linking monomer and (2) a non-cross-linked, thermoplastic polymer of a monomer selected from the group consisting of (*a*) an acrylate and (*b*) a methacrylate, wherein said particles have diameters ranging from about 5 microns to about a ¼ of an inch and are present in said blend in an amount ranging from about 1% to about 75%, by weight, based on the total weight of the blend, and said non-cross-linked, thermoplastic polymer was molten at least during said extrusion, blow molding or vacuum forming of the blend.

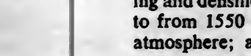
3,345,435

FLUORINE-CONTAINING PHOSPHINATES

Ralph E. De Brunner, Edward S. Blake, and George A. Richardson, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Apr. 30, 1964, Ser. No. 363,786
5 Claims. (Cl. 260—961)

1. A compound of the formula



wherein alkyl has from 1 to 8 carbon atoms, ar is an aromatic hydrocarbon radical of from 6 to 12 carbon atoms which is linked through different nuclear carbon atoms to the remainder of the molecule and *n* is a number of 1 or 2.

3,345,436

PROCESS OF MAKING URANIUM MONONITRIDE NUCLEAR FUEL

Richard A. Craig, West Hartford, Conn., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 11, 1962, Ser. No. 230,016
5 Claims. (Cl. 264—.5)

1. A process of densifying uranium nitride fuel, consisting in compacting uranium mononitride powder into the shape desired of the fuel bodies; presintering the bodies obtained in vacuum at a temperature of between 1260 and 1550° C.; introducing a nitrogn atmosphere, said nitrogen being present in a quantity to yield a pressure above the dissociation pressure of uranium mononitride at ambient temperature, and then raising the temperature to between 2050° C. and 2500° C., whereby further sintering and densification take place; cooling the sintered bodies to from 1550 to 1200° C. while maintaining the nitrogen atmosphere; and finally cooling the sintered bodies to room temperature, while maintaining a vacuum.

3,345,437

SOL-GEL MICROSPHERE FORMING PROCESS USING DISSOLVED AMMONIA IN THE DEHYDRATING SOLVENT

Herbert P. Flack, Ellicott City, Moises G. Sanchez, Severna Park, and Charles T. Lamberth, Woodbine, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Nov. 3, 1965, Ser. No. 506,231
5 Claims. (Cl. 264—.5)

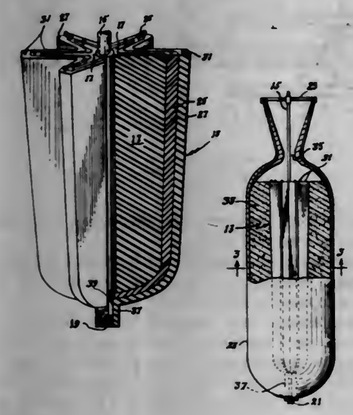
1. In a process for forming microspheres of metal oxides from an aquasol of a metal oxide selected from the group consisting of uranium dioxide, uranium trioxide, thorium dioxide, plutonium dioxide, plutonium trioxide, zirconium dioxide, beryllium oxide, yttrium oxide, and mixtures thereof, and aquasol mixtures of said metal oxide aquasol with from 0 to 5 moles of colloidal carbon per mole of metal in the mixture and wherein the aquasol in the form of droplets is introduced into a dehydrating solvent having a solubility for water of from 1 to 30 weight percent, and partially dehydrated microspheres are recovered from the dehydrating solvent; the improvement comprising introducing the aquasol into a dehydrating solvent containing dissolved ammonia.

3,345,438

MANDREL CASTING SOLID PROPELLANT ROCKET FUEL

Donald F. Carey, Brigham City, Utah, assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 25, 1966, Ser. No. 531,650
6 Claims. (Cl. 264—3)



1. In combination with a solid propellant rocket motor casing having an integrally formed aft nozzle port of substantially smaller diameter than the largest diameter of the motor casing, a mandrel for forming a shaped cavity in the solid propellant cast therein comprising a plurality of separable laminar elements fabricated of elastomeric material, each of said laminar elements being of similar shape and varying diametral dimensions so as to be insertable in the next successively larger element, said laminar elements being radially collapsible to a diametral dimension less than that of the aft nozzle port of said motor casing and self-expandable to a diametral dimension substantially greater than said aft nozzle port after being inserted therethrough, an arbor insertable through an axially oriented cylindrical opening in the central axis of the innermost of said laminar elements, and means for centering said arbor and attached mandrel concentrically within said rocket motor casing, said mandrel being removable after casting the solid propellant in the motor casing and reusable to form cavities in the process of casting other propellant charges of other motor casings.

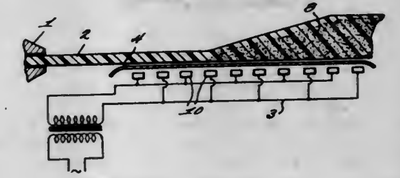
4. The method of casting a solid propellant fuel in a rocket motor casing having an integrally formed aft nozzle port substantially smaller in diameter than the diameter of the motor casing comprising the steps of radially collapsing an outer laminar element of elastomeric material having a shape corresponding to the desired configuration of a cavity to be formed in said solid propellant, inserting said collapsed outer laminar element into the aft nozzle port of said rocket motor casing, said outer laminar element expanding to a diametral dimension greater than that of the aft nozzle port after insertion therethrough, inserting a radially collapsed intermediate laminar element through the aft nozzle port, said intermediate laminar element being dimensioned to fit into said outer laminar element and expand to fit snugly therein, inserting a radially collapsed innermost laminar element through the aft nozzle port, said innermost laminar element having an axially oriented cylindrical opening through the axis thereof, inserting an arbor through the cylindrical opening in said innermost laminar element, attaching the lower end of said arbor to the forward center of said rocket motor casing, attaching a spider type orienting fixture between the upper end of said arbor and the aft edge of the aft nozzle port, casting the propellant fuel around the sides of said outer laminar element, allowing said propellant fuel to solidify, removing said spider type orienting fixture, detaching the lower end of said arbor from the forward end of said rocket motor casing, withdrawing said arbor from said innermost laminar element, withdrawing said laminar elements in radially collapsed condition through the aft nozzle port in the reverse order from the order of insertion, thereby forming a cavity in the solid propellant fuel which is larger than the diametral dimension of the aft nozzle port in the rocket motor casing.

3,345,439

RIGID THERMOPLASTIC STRUCTURES

Kenneth Boothby Everard and Terence Perry, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Aug. 5, 1963, Ser. No. 301,931
Claims priority, application Great Britain, Aug. 15, 1962, 31,321/62
12 Claims. (Cl. 264—26)



1. A process for fabricating an integral structure of simple shape derived from a rigid thermoplastic polymeric composition and comprising a core of expanded material between two skins of smooth and unexpanded material which comprises the steps of:

(a) shaping an initially rigid composition in a preselected shape of cross section, said composition comprising a thermoplastic polymeric material and a blowing agent having a decomposition temperature above the 1/10 Vicat softening point of the material in a forming operation at a temperature below the said decomposition temperature to give a simple shaped structure, said rigid composition being substantially shape-sustaining at any temperature below the decomposition temperature of the blowing agent,

(b) while maintaining by a cooling means at least two opposing walls of the said structure at a temperature below the decomposition temperature of the blowing agent and preferably below the softening point of the composition, exposing the structure to a source producing an alternating high frequency electric field to heat the body of the thermoplastic polymeric material between the walls to a temperature above the

said decomposition temperature whereby said body assumes an expanded state, said source and cooling means establishing generally one of the dimensions of the same preselected shape of cross section as the original rigid composition, and

(c) cooling the expanded structure.

3,345,440

METHOD FOR MANUFACTURING FOAM CARBON PRODUCTS

John M. Googin and John M. Napier, Oak Ridge, and Michael E. Scrivner, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 29, 1965, Ser. No. 468,168
10 Claims. (Cl. 264—29)

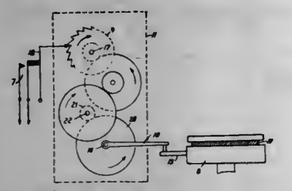
1. A method for preparing a cellular carbon product, comprising the steps of admixing partially polymerized furfuryl alcohol with urethane compounds capable of interacting to form a cellular urethane structure, forming a cellular structure by the interaction of the urethane compounds in the mixture, heating the resulting cellular structure to a temperature below the decomposition temperature of the urethane and sufficient to cure the furfuryl alcohol in the structure, and thereafter heating the cellular structure to a temperature greater than the decomposition temperature of the urethane and sufficient to carbonize the furfuryl alcohol for forming a cellular carbon product.

3,345,441

HARDBOARD PRESSING METHODS AND APPARATUS

Robert William Dibdin, Sydney, New South Wales, Australia, assignor to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of New South Wales, Australia

Filed Nov. 15, 1963, Ser. No. 324,111
Claims priority, application Australia, Nov. 19, 1962, 24,431/62
8 Claims. (Cl. 264—40)



1. A method of manufacturing hardboard sheets under heat and pressure, said method including the steps of determining the required moisture content of the sheet by measuring the thickness reduction within a predetermined time during pressing and by controlling the pressing operation depending on a predetermined rate of thickness reduction.

3,345,442

METHOD OF MOLDING SHEET MATERIAL FROM A UNIFORM MIXTURE OF PRE-EXPANDED THERMOPLASTIC PARTICLES AND A SOLID PARTICULATE ADDITIVE

Berton Oxel, New Castle, Pa., assignor to Dyfoam Corporation, New Castle, Pa., a corporation of Pennsylvania

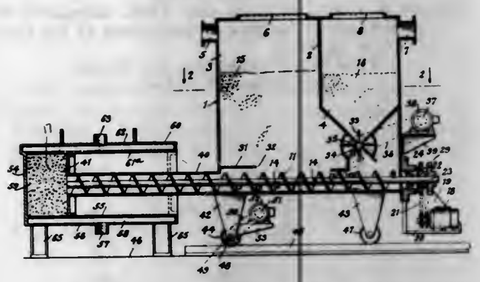
Original application Nov. 9, 1961, Ser. No. 151,368, now Patent No. 3,164,860, dated Jan. 12, 1965. Divided and this application Sept. 30, 1964, Ser. No. 400,338
4 Claims. (Cl. 264—51)

1. In the method of molding sheet material from a mixture of beads of partially pre-expanded synthetic thermoplastic material and a solid particulate additive material of different density than that of said pre-expanded material, the improvement which comprises the steps of:

(a) feeding a mass of said beads of partially pre-expanded material in a direction toward a molding zone;

(b) introducing said solid particulate additive material into the mass of said pre-expanded material while the latter is being fed toward said zone;

(c) uniformly mixing said pre-expanded material and said additive material while the same are being fed in said direction;



(d) propelling said mixture through a confined passageway into said zone;

(e) subjecting said mixture to heat and independently applied pressure in said zone to form the mixture into a foamed coherent body; and

(f) maintaining said mixture, while being propelled through said passageway toward and into said zone, under a compressive force opposed to said body-forming pressure exerted in said molding zone, said compressive force being sufficient to prevent any substantial segregation and settling of said additive material from said mixture during movement of said mixture through said passageway.

3,345,443

PROCESS FOR THE MANUFACTURE OF PHOSPHATE PELLETS

Hans-Werner Ziegler, Werner Kowalski, and Arnulf Hinz, Knapsack, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed July 7, 1964, Ser. No. 380,912
Claims priority, application Germany, July 8, 1963, K 50,157; May 6, 1964, K 52,883
8 Claims. (Cl. 264—117)

1. A process for making pellets comprising spraying finely ground crude phosphate powder on a granulating plate with a suspension consisting essentially of

(1) an aqueous phase containing about 1–2% alkali metal phosphate binder in solution, and

(2) a solids phase containing

(a) about 28–32% by weight phosphorus production off-gas electrofilter dust,

(b) bentonite clay added to obtain a suspension containing about 20–25% solid matter by weight and

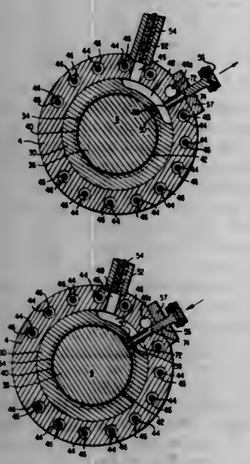
(c) fine phosphate dust as characterized by that obtained in dust removal devices in a grinding installation fo phosphate dressing, to obtain a working suspension having a total of about 40–45% by weight solid matter; shaping the sprayed crude phosphate powder into green pellets, drying, hardening and baking the pellets.

3,345,444

METHOD AND APPARATUS FOR FORMING AN INTERMITTENT PATTERN

William S. Pratt, Granville, Mass., assignor to Monsanto Company, a corporation of Delaware

Filed Dec. 16, 1963, Ser. No. 330,997
10 Claims. (Cl. 264—167)



9. A method of producing an intermittent stripe on a tubular length of thermoplastic, which extends through the wall of the tubular length, comprising passing a first molten thermoplastic material from which the main portion of the tubular length is formed through a zone, injecting a second molten thermoplastic material from which the stripe is formed into a portion of said zone through a feed opening, interrupting the injection of said second material, and simultaneously therewith, injecting said first material into said zone in place of, and through the same opening as that formerly taken by the second material, to maintain a continuous flow of thermoplastic in the stripe forming area of said zone.

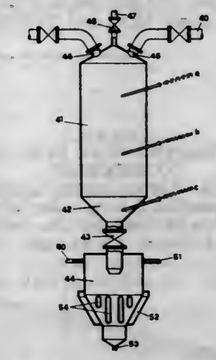
3,345,445

MELT SPINNING PROCESS OF POLYAMIDES

Francesco Siclari and Angelo Bellano, Cesano Maderno, Luigi Ciceri, Como, and Bruno D'Alò and Pierluigi Perazzoni, Palazzolo Milanese, Italy, and Piero Giacobone, deceased, late of Milan, Italy, by Emilia Manfredini widow Giacobone, administratrix, Milan, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy

Filed Mar. 16, 1964, Ser. No. 352,394
Claims priority, application Italy, Mar. 15, 1963, 5,402/63, Patent 689,700
6 Claims. (Cl. 264—176)

1. In a process for melt-spinning linear polyamides, wherein the polyamide in chip form is pre-heated from 80° C. to 120° C. and subjected to subatmospheric pressure for thorough drying thereof, and the dried chips are subsequently transferred in an inert dry gas atmosphere to a feed device for melt spinning apparatus for melt-spinning thereof, the improvement comprising cooling the chips at a temperature not over 50° C. after they have



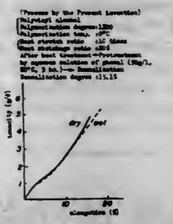
been dried and prior to their transfer to said feed device for melt spinning apparatus.

3,345,446

METHOD OF MANUFACTURING SYNTHETIC FIBERS OF POLYVINYL ALCOHOL

Hirotoshi Kurashige, Kurashiki, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki City, Japan, a corporation of Japan

Filed July 10, 1963, Ser. No. 294,047
Claims priority, application Japan, Aug. 9, 1962, 37/32,946
4 Claims. (Cl. 264—205)



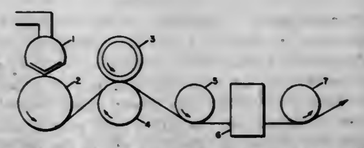
1. A method for manufacturing polyvinyl alcohol fibers which comprises: subjecting spun polyvinyl alcohol fibers to heat stretching to a stretch ratio of 5–12 relative to the as spun fiber length; thereafter, subjecting the fibers to a 5–30% heat treatment shrinkage; then in succession treating the fibers with an aqueous solution of a compound selected from the group consisting of phenol, cresol, boric acid, borax, formalin and acetaldehyde, water washing the so treated fibers and acetalizing the fibers with an aromatic aldehyde.

3,345,447

METHOD FOR FORMING POLYPROPYLENE FILM

David E. Grant, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

Filed July 8, 1964, Ser. No. 386,104
6 Claims. (Cl. 264—211)

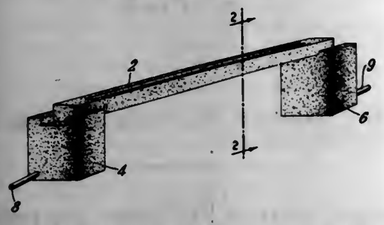


1. A process for forming transparent, substantially non-oriented film having high tensile strength and high stiffness which consists of extruding a molten mass of a

stereoregular polymer of propylene through a film-forming device, rapidly quenching the extruded film under conditions which induce said polymer to crystallize predominantly in its hexagonal form, and thereafter heating the film at a temperature ranging from about 60° C. to about 160° C. for a finite period up ot 120 minutes whereby the crystallinity of said polymer undergoes transition to its monoclinic form.

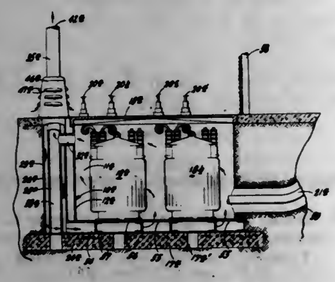
ELECTRICAL

3,345,448
HIGH TEMPERATURE ELECTRICAL CONNECTION
Edwin S. Malkin, Wilton, Conn., assignor to Union Carbide Corporation, a corporation of New York
Filed July 28, 1964, Ser. No. 385,594
2 Claims. (Cl. 13—25)



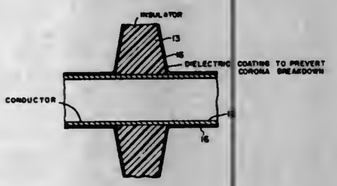
1. In a vacuum metallizing system for vapor depositing a metal on a substrate at elevated temperatures, an assembly of current carrying components comprising:
(a) a pair of current lead-in graphite connector blocks, each of said blocks having a groove at one end thereof;
(b) a vaporization boat, one end of said boat being positioned in said groove in one of said blocks and the other end of said boat being positioned in said groove in the other of said blocks; and
(c) a mass of electrically conductive resilient carbonaceous textile wedged between said boat and said blocks in each of said grooves whereby said boat is forcefully secured to said blocks.

3,345,449
SYSTEM FOR CONCEALING AND COOLING ELECTRIC TRANSFORMERS
Stanley Hiller, 1 Hiller Drive, Berkeley, Calif.
Filed July 12, 1965, Ser. No. 471,278
4 Claims. (Cl. 174—16)



3. In combination, a plurality of electric transformers, each operative to convert a primary voltage to a secondary voltage and having heat developed as a by-product of such conversion, an enclosure defining an underground vault providing a substantially closed space receiving said transformers therein, an elongated light pole adjacent said enclosure and extending upwardly above the ground level and above said space and providing a longitudinally disposed flow passage having a discharge port adjacent its upper end portion and an inlet port adjacent the lower end portion thereof in communication with said space and through which air can flow outwardly from said space and upwardly through said flow passage for escape through said discharge opening thereof, and a ventilation inlet system having an inlet opening located adjacent the lower end portion of said pole but above the ground level and an outlet opening communicating with said space, and a manifold located within said space and communiplurality of spaced-apart apertures opening into said cating with said inlet opening and being provided with a space to distribute thereabout and about the transformers therein the ambient air flowing into said space through said ventilation inlet system, the difference in elevation between said ventilation inlet opening and said discharge opening together with any elevation in temperature with respect to ambient temperature of the air within said passage being effective to induce a flow of ambient air into said space through said ventilation inlet system and outwardly from the space through said passage to thereby cool said transformer.

3,345,450
ELECTRIC POWER TRANSMISSION SYSTEM
Harvey E. Spindle, Wilkins Township, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1965, Ser. No. 474,776
7 Claims. (Cl. 174—28)

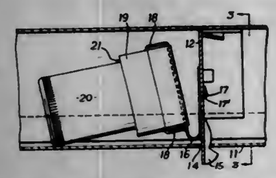


1. Electric power transmission means for voltages of the order of 345 kv. and above comprising a tubular pipe containing a gas having a higher dielectric strength than air and under a pressure greater than atmospheric, a tubular conductor disposed inside the pipe, a generally disc-shaped insulator surrounding the conductor to support it in the pipe, and a coating of dielectric material covering the joint between the insulator and the conductor.

3,345,451
MEANS FOR MOUNTING FLUORESCENT LAMP STARTER SWITCH AND COVER
Raymond Charles Kember and James G. Allison, London, England, assignors to Thorn Electrical Industries Limited, London, England
Filed Sept. 25, 1964, Ser. No. 399,139
Claims priority, application Great Britain, Sept. 27, 1963, 38,252/63
2 Claims. (Cl. 174—52)

1. A light fitting for fluorescent tubular lamps and its associated starter switch comprising a channel-section member, a cover for the open side of the channel-section member and a resilient mounting for the starter switch,

said resilient mounting resiliently biasing said starter switch outwardly of said channel into a position projecting from the open side of the channel and facilitating the removal of the starter switch, wherein the resilient mounting comprises a bracket made of resilient metal in the general form of a V, one leg of said V being secured within said channel-section member and the other leg of said V supporting said starter switch, said



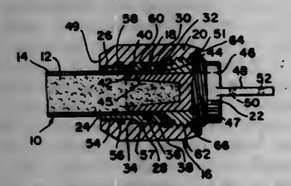
cover having two spaced apertures, said fitting further comprising two spring-biased catches, one end of each catch being mounted within said channel-section member, and the other end of each catch having a head portion extending through one of said apertures and, under the influence of said spring-bias, locking said cover to said channel section member, and with a tab securing said one leg to one of said catches.

3,345,452
SINTERED POWDERED METAL CONNECTORS
Maurus C. Logan, Elizabeth, and Howard B. Gibson, Glen Ridge, N.J., assignors to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 27, 1964, Ser. No. 347,829
15 Claims. (Cl. 174—71)



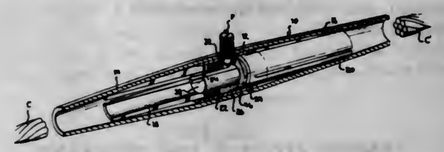
1. A connection between a conductor and a connector, being preformed of a sintered powdered metal and having an opening therein, and a conductor disposed in said opening, said connector being circumferentially compressed about said conductor to form an electrical connection therewith.

3,345,453
ALKALI METAL CONDUCTOR TERMINAL
Norman E. McNerney, Hampden, N.H., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 18, 1966, Ser. No. 528,496
2 Claims. (Cl. 174—77)



1. A terminal for an elongated conductor made of an alkali metal, an alkaline earth metal, or an alloy or mixture thereof, which conductor is encased in a tubular sheath, said terminal including a sleeve, a plug, and a coupling nut, said sleeve being positioned over said sheath adjacent an end thereof, said plug having an end portion positioned within said end of said sheath in electrical contact with said conductor, said plug further including an intermediate shouldered portion positioned adjacent said end of said sheath with said end of said sheath flared outwardly between the adjacent end of said sleeve and said shouldered portion, said coupling nut being positioned over said sleeve and plug in engagement therewith to hold said sleeve end and shouldered portion of said plug against said end of said sheath.

3,345,454
EXPLOSIVELY-OPERATED, WEDGE-TYPE ELECTRICAL CONNECTOR
James Lenhart Mixon, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Substituted for abandoned application Ser. No. 344,401, Feb. 12, 1964. This application Dec. 12, 1966, Ser. No. 600,800
5 Claims. (Cl. 174—84)



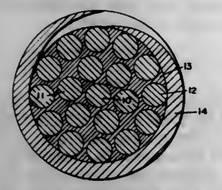
1. An electrical connector capable of being secured to a conductor including an outer shell having an internal taper, a conductor-receiving member within said shell, said conductor-receiving member comprising a plurality of longitudinally extending arcuate members which may be compressed radially to grasp a conductor therein, said arcuate members being circumferentially spaced, and means for radially compressing said arcuate members, said means comprising an explosive charge located interally in said shell, and means for detonating the charge to actuate the conductor-receiving means, whereby the conductor-receiving means is driven longitudinally and the tapered surface of the shell constricts the arcuate sections radially.

3,345,455
INSULATED BUS BAR
Robert B. Goody, Tenafly, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware
Continuation of application Ser. No. 336,330, Dec. 5, 1963, which is a division of application Ser. No. 130,797, Aug. 11, 1961. This application Nov. 15, 1965, Ser. No. 507,743
1 Claim. (Cl. 174—112)



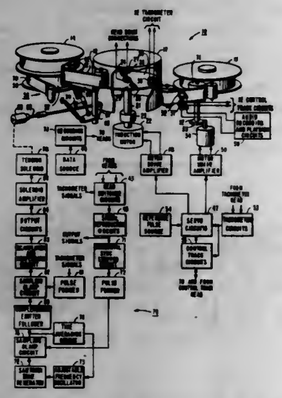
As an article of manufacture, an insulated member comprising a bus bar, a patterned array of coating of adhesive binder of a given color on said bus bar, the coating of binder having a color that contrasts with the uncoated areas of the bus bar, and a translucent insulating layer superimposed on said adhesive binder and on said uncoated areas, said patterned array being detectable therethrough to guide the removal of said insulated layer in providing access to the conductor member for contact therewith.

3,345,456
ELECTRICALLY CONDUCTIVE TENSILE CABLE
William J. Gilmore, Manitou Beach, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 6, 1965, Ser. No. 511,813
6 Claims. (Cl. 174—128)



1. A cable of high tensile strength and electrical conductivity comprising a plurality of layers of helically stranded steel load-bearing wires, and a copper matrix substantially filling all interstices between said load-bearing wires, said copper matrix being substantially more electrically conductive than said load-bearing wires.

3,345,457
TENSION CONTROL FOR WIDEBAND RECORDING SYSTEM
Donald B. MacLeod, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 15, 1964, Ser. No. 367,811
13 Claims. (Cl. 178—6.6)



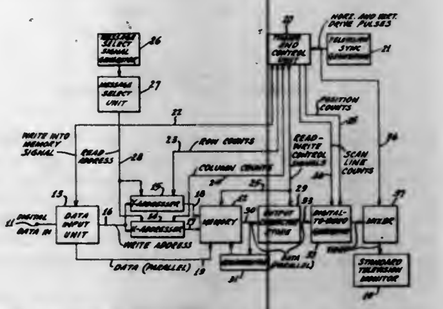
5. A system for correcting tension errors in a television signal reproducing system comprising: first means for driving a tape, second means disposed apart from the driving means for exerting a controlled variable hold-back tension on the tape, third means disposed between the first and second means for reproducing signals from the tape, and fourth means responsive to changes in the time base of the reproduced signals for operating said second means.

3,345,458
DIGITAL STORAGE AND GENERATION OF VIDEO SIGNALS
Donald A. Cole, Oahu, Hawaii, Carl R. Corson, Canoga Park, Calif., and Arthur C. Stocker, Moorestown, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 16, 1963, Ser. No. 316,581
6 Claims. (Cl. 178—6.8)

1. A display system for generating character patterns for display on a display device that exhibits a television raster scan-line pattern, each character pattern being displayed in one character space,

means responsive to a certain character code for applying to a certain selected lead an output signal having a duration substantially equal to the scanning time in said scan-line direction through one character space,

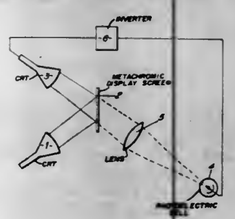
means for generating scan-line select counts in synchronism with the scan-lines of said raster, each scan-line count having a duration substantially equal to that of a raster scan-line,



means for generating position counts which occur successively during a scan along a scan-line through a character space, and

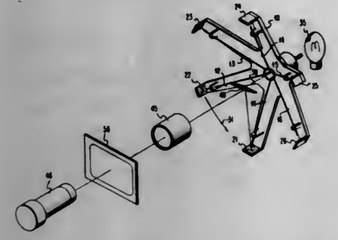
means for causing said output signal appearing on said selected lead, said scan-line counts and said position counts to supply to said display device a selected character pattern.

3,345,459
INFORMATION DISPLAY SYSTEMS UTILIZING A METACHROMIC DISPLAY SCREEN
Michael Duke Dudley, Wraysbury, Staines, Middlesex, England, assignor to Ferranti, Limited Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed May 27, 1965, Ser. No. 459,210
Claims priority, application Great Britain, May 27, 1964, 21,847/64
4 Claims. (Cl. 178—7.5)



1. An information display system, comprising a screen of short-persistence metachromic material, means for projecting an image onto said screen in the form of a symbolic display, a flying-spot scanner for repeatedly scanning the image on the screen, said flying-spot scanner comprising a cathode-ray tube arranged to emit light of wave lengths which cause said screen to become opaque and a light-responsive device located on opposite sides of the screen and capable of repeatedly scanning the image on the screen, and a control circuit having an input electrically connected to the light-responsive device and an output electrically connected to the cathode ray tube of the flying-spot scanner, said control circuit being operable to modulate light emitted by the cathode-ray tube so that the intensity of the light varies in direct proportion to opacity of the metachromic screen.

3,345,460
SCANNING APPARATUS
Peter Betts, San Jose, and John J. Lynott, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 28, 1964, Ser. No. 385,572
3 Claims. (Cl. 178—7.6)



1. An optical parallel line scanning apparatus for optically sequentially scanning an object in parallel fashion, comprising:

a rotatable support means;

a means for rotating said rotatable support means in a circular path about an axis of rotation, said circular path defining a plane which intersects and is essentially perpendicular to said axis;

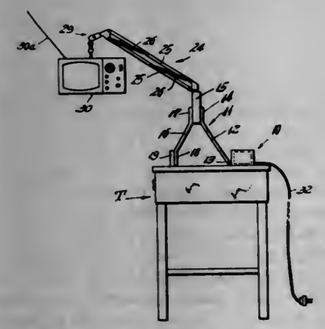
a stationary deflection means situated within said circular path; and

a plurality of light sources mounted on said rotatable support means, each of said light sources being directed inwardly toward said stationary light deflection means and said axis of rotation at a different angle with respect to said axis;

said stationary light deflection means and each said light source defining a light path when said rotatable support means is in a predetermined portion of said circular path corresponding to one of the parallel line scans of said object;

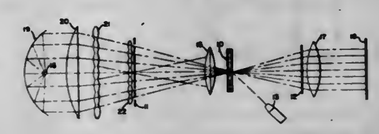
whereby several parallel line scans on the object can be scanned without incrementing said object.

3,345,461
ADJUSTABLE SUPPORT MEANS FOR A TELEVISION RECEIVER
Earl L. Bunting, 34 Bermuda Road, Westport, Conn. 06880
Filed Oct. 19, 1965, Ser. No. 497,762
4 Claims. (Cl. 178—7.81)



1. Means for supporting a television receiver in a plurality of adjustable positions comprising a horizontally disposed elongate base adapted to be mounted on a supporting surface, a bracket secured to the base to project therefrom substantially midway between the ends thereof and lie in a plane perpendicular to the longitudinal axis of the base, said bracket having a portion engaging the supporting surface at a point remote from the base to form an outboard support and a socket means having an upwardly facing socket, an adjustable counterbalanced arm having a mounting pin on one end thereof removably mounted in said socket, a television receiver, mounted by swivel means on the other end of the arm, and means for supplying operating power and television signal to said television receiver in all adjusted positions thereof.

3,345,462
LIGHT VALVE PROJECTION APPARATUS
William E. Good and Henry J. Vanderlaan, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 16, 1963, Ser. No. 316,607
5 Claims. (Cl. 178—7.87)



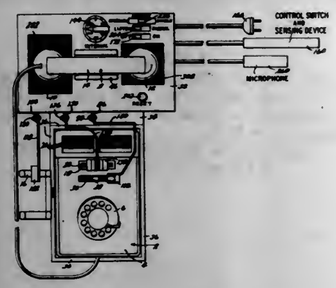
1. Apparatus for projection of images in response to electrical signals corresponding to said images comprising a pair of light mask members each including similar arrays of transparent and opaque portions, a light modulating medium deformable into light diffraction gratings by electron charge patterns thereon located between said members, means for forming said charge patterns thereon in response to said signals, an evacuated enclosure surrounding said medium and said charge pattern producing means and having an input window portion for permitting illumination of said medium by said source and an output window portion for passing light from said medium, a source of light, a first projection means for illumination of said medium from said source through the transparent portions of the input one of said members, second projection means for projecting light from the transparent portions from said one member onto corresponding opaque portions of the other of said members in the absence of any deformation of said medium, third projection means for projecting an image of said medium onto a screen, said one member being formed on the interior portion of the input window of said enclosure.

3,345,463
AUTOMATIC CARD-DIALER TELEPHONE WARNING DEVICE
Joseph E. Hynes, 3117 W. Barker Circle, Kansas City, Kans. 66104
Filed May 8, 1964, Ser. No. 365,969
12 Claims. (Cl. 179—5)

1. A telephone warning device for use in connection with a card-dialing telephone including a base and a handset, said base including a cradle normally depressed by said handset to break the operating circuits of the phone when not in use, a card chute adapted to receive therein a card pre-punched with any desired telephone number, and a start button operable when pushed after said cradle has been released to "read" said card and automatically dial the pre-punched telephone number thereof, during which dialing operation said card is partially ejected from said chute, said warning device comprising:

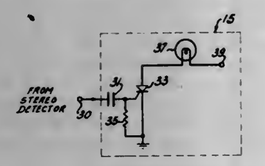
(a) an operating mechanism adapted to be disposed adjacent said telephone and including three arms

extending toward said telephone to points respectively adjacent the handset cradle, start button and card chute of said telephone, said mechanism being operable when activated to perform a series of operations in an operating cycle of predetermined length and including the steps of first releasing said cradle, then depressing said start button after a predetermined time lapse, then depressing said cradle after a still further predetermined time lapse, and finally pressing said card into said chute,



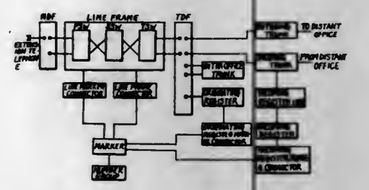
(b) electrically operable activating means for activating said operating mechanism to perform one of said operating cycles,
(c) a control switch,
(d) a sensing device operable to close said control switch in response to any condition to which said sensing device is sensitive, and
(e) an operative electric control circuit including said activating means and said control switch.

3,345,464
FM STEREO INDICATOR CIRCUITRY
Robert Lee Gillett, Smithfield, N.C., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 9, 1966, Ser. No. 593,126
6 Claims. (Cl. 179—15)



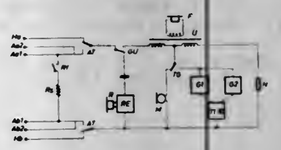
1. In stereophonic frequency modulation receivers having a detector of multiplexed stereophonic signals including a pilot signal of predetermined frequency when a stereophonic transmission is received, circuit operative to provide an indication of said pilot signals, said circuit comprising:
a latching-type semiconductor device having input, output and gate electrodes;
a source of alternating current electrical potential;
an indicating device connected between the input electrode of said latching-type semiconductor device and said source of alternating current electrical potential;
biasing means connected between the gate and output electrodes of said latching-type semiconductor device;
an input terminal adapted to receive said pilot signal of predetermined frequency; and
means connecting said input terminal to the gate electrode of said latching-type semiconductor device.

3,345,465
A COMPOSITE FRAME HAVING TWO THREE-STAGE CROSSBAR SWITCH LINK FRAMES
Kunishige Nogami and Toru Ohno, Yokohama, Japan, assignors to Hitachi Limited, Chiyoda-ku, Tokyo, Japan, a corporation of Japan
Filed Mar. 24, 1964, Ser. No. 354,363
1 Claim. (Cl. 179—22)



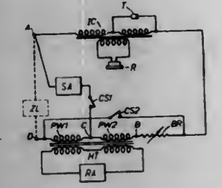
A composite line frame comprising a first and second line frame;
each of said line frames comprising primary crossbar switches, secondary crossbar switches, and tertiary crossbar switches, said secondary crossbar switches having twice as many terminals as required for said line frame when operating as an indepedent line frame, primary links connecting said primary crossbar switches with the used terminals of said secondary crossbar switches, secondary links connecting said secondary crossbar switches with said tertiary crossbar switches;
and means connecting the unused terminals of each secondary crossbar switch in one line frame with the used terminals of the respective crossbar switch in the other line frame.

3,345,466
INTERCOMMUNICATION SYSTEM
Günther Rahmig, Kornwestheim, Germany, assignor to International Standard Electric Corporation
Filed May 5, 1964, Ser. No. 365,037
Claims priority, application Germany, May 29, 1963, St 20,661
5 Claims. (Cl. 179—37)



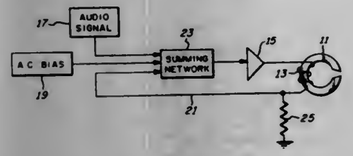
1. A voice frequency key dialing equipped trunk line connected intercommunication system having a plurality of internal substations, internal link means for interconnecting said internal substations for intercom purposes, each of said substations having voice signal receiving means and voice frequency signal transmitting means, said voice frequency signal transmitting means capable of transmitting dialing and internal call signals, hookswitch means normally connected to said voice frequency receiving means, means responsive to particular voice-frequency signal received in said receiving means for sounding a signal, means responsive to the operation of said hookswitch for disconnecting said signal receiving means, and means for selectively connecting said voice frequency transmitting means to said internal link means or to said trunk line whereby either trunk dialing or internal call signals are transmitted.

3,345,467
TELEPHONE SYSTEMS AND APPARATUS
Derek Howell, Croydon, England, assignor to Telephone Manufacturing Company Limited
Filed July 2, 1964, Ser. No. 379,986
Claims priority, application Great Britain, July 30, 1963, 30,143/63
6 Claims. (Cl. 179—81)



1. A hybrid coupling unit for coupling loudspeaking telephone apparatus to a telephone line said unit comprising a bridge network having first and second terminals for connection to the line wires as one arm of the bridge, a third terminal and a fourth terminal, hybrid means connecting said second and third terminals and said third and fourth terminals as two further arms of said bridge and a conventional telephone instrument comprising transmitter, receiver, cradle switch, and induction coil circuit having its induction coil circuit connected between said fourth and first terminals as the fourth arm of said bridge.

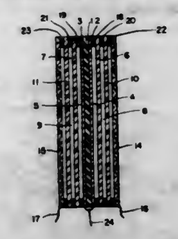
3,345,468
LOW DISTORTION MAGNETIC RECORDER
Walter J. Schlatter, West Hempstead, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,560
6 Claims. (Cl. 179—100.2)



1. In a magnetic recorder, an amplifier; a summing network connected to the input of said amplifier; a magnectic recording head connected to receive the output signals from said amplifier; negative feedback means connected to conduct a voltage proportional to the total instantaneous current through said recording head back to the input of said summing network; a constant frequency alternating current bias source connected to the input of said summing network; and a source of audio signals to be recorded also connected to said summing network.

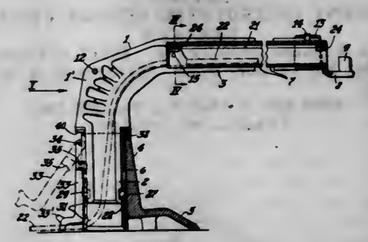
3,345,469
ELECTROSTATIC LOUDSPEAKERS
Robert L. Rod, Pacific Palisades, Calif., assignor to Rod Development Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 2, 1964, Ser. No. 348,668
7 Claims. (Cl. 179—111)

5. An electrostatic sound reproducer comprising a semi-rigid metallic wire mesh fixed electrode, a dielectric film confronting the fixed electrode, a flexible diaphragm confronting the dielectric film at one side and supported at its edges to the dielectric film and sealed whereby to



entrap a stratum of gas between the film and the diaphragm, and a flexible electrically conductive electrode affixed to the opposite side of the diaphragm.

3,345,470
SWIVEL ARM TELEPHONE MOUNTINGS
Arthur Hoffmann, 378 Norstrasse, Zurich 10/37, Switzerland
Filed May 26, 1964, Ser. No. 370,279
Claims priority, application Switzerland, Apr. 1, 1964, 4,289/64
6 Claims. (Cl. 179—150)

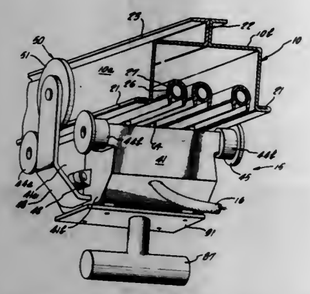


1. A swivel arm telephone mounting comprising in combination: a pedestal having a vertical socket, an angular swivel arm having a vertical leg and a horizontal leg, said vertical leg being pivotally mounted on said vertical socket, and an extension arm slidably mounted on said horizontal leg and in operation carrying at its free end a telephone apparatus, said pedestal and swivel arm and said extension arm being longitudinally divided and slotted, respectively, so as to allow the insertion of the electrical conductors to said telephone apparatus without disconnecting said conductors from either of their attachment points.

3,345,471
PORTABLE TROLLEY SYSTEM
Ronald J. Kilburg, Belmont, Calif., assignor, by mesne assignments, to Insul-8-Corp., a corporation of California
Filed Apr. 27, 1964, Ser. No. 362,730
10 Claims. (Cl. 191—45)

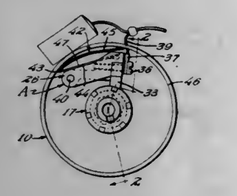
1. A portable trolley for supplying power to hand tools from overhead conductors mounted along a path defined by a pair of continuous support rails comprising, in combination,
a body;
a plurality of collector shoes carried by said body to slidably engage the ovehead conductors when the trolley is supported on said rails;
movable support arms mounted on said body;
guide wheels rotatably mounted on said arms to engage the rails to support said body adjacent the overhead conductors;
auxiliary wheels rotatably mounted on each side of said body with the guide wheels therebetween to

stabilize the body by selectively engaging the underside of said rails when the portable trolley is mounted on said rails; and



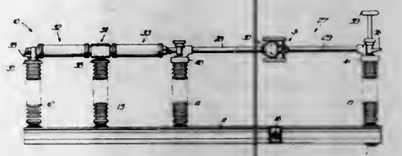
means operable to extend said arms transverse to the axis of the rails so as to mount the trolley so that the guide wheels ride on said rails.

3,345,472
CURRENT INTERRUPTER ROTARY CIRCUIT BREAKER
Albert B. Kuhlman, 2600 Rice St. 55513, and Hubert A. Garske, 623 La Bore Road 55117, both of St. Paul Minn.
Filed Apr. 5, 1965, Ser. No. 445,396
3 Claims. (Cl. 200—26)



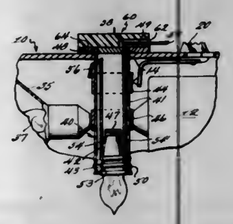
1. A rotary distributor for use with a distributor housing having a substantially cylindrical inner surface, and a coaxial shaft, comprising:
a disc of insulating material,
circumferentially spaced segments of conductive material embedded in said disc parallel to the axis thereof supported on said shaft and coaxial therewith,
a brush holder including an angular arm having a pivot aperture therethrough on an axis parallel to said disc axis,
a fixed pivot supporting said arm,
a flat surface on the other end of said angular arm, the surface of which is normally on a plane extending substantially through the axis of said disc and radial thereto,
a brush secured in face contact with said surface and projecting from said arm to engage the surface of said disc,
a pair of spaced parallel plates arranged on planes normal to said disc axis on the side of said angular arm opposite the side from which said brush projects,
and a substantially U-shaped flat spring having one end freely engageable with the cylindrical housing surface and having its other end freely engaged between said plates and held in position thereby, said spring being free of connection with said brush holder.

3,345,473
HIGH VOLTAGE GAS TYPE CIRCUIT INTERRUPTERS IN TANDEM WITH A CENTER BREAK DISCONNECTING SWITCH
Leonard V. Chabala, Maywood, and Edward J. Rogers, Chicago, Ill., assignors to S & C Electric Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,777
22 Claims. (Cl. 200—48)



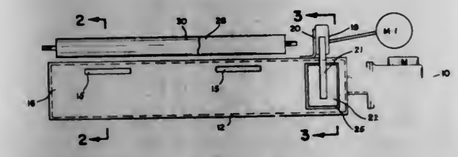
1. In a high voltage circuit interrupter:
two pairs of translatory separable contacts connected in series circuit relation,
a translatory operating member for each pair of separable contacts,
a walking beam rotatably mounted between its distal ends, link means interconnecting said operating members and said distal ends of said walking beam,
spring means biasing said walking beam to rotate it to open said pairs of separable contacts substantially simultaneously, and
latch means cooperating with said walking beam to prevent rotation thereof by said spring means to open said pairs of separable contacts.

3,345,474
ILLUMINATING MEANS
Roberto L. Bustamante, 4a C.P. No. 40, Santa Ana, El Salvador
Filed Oct. 16, 1964, Ser. No. 404,324
7 Claims. (Cl. 200—60)



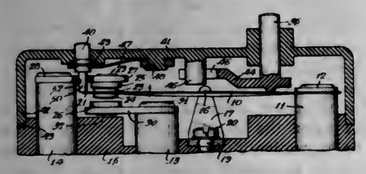
1. In an electrical contact assembly for use in a flashlight, a non-conducting sleeve and end cover portion, a first electrical conductor carried by said sleeve, said first conductor adapted to be in electrical contact with a source of electrical energy and a light-producing filament, a second electrical conductor carried within said sleeve and adapted to be in electrical contact with said light-producing filament, the improvement which comprises an electrical conducting means defining with said end cover portion an L-shaped slot, said electrical conducting means adapted to be connected to the source of electrical energy, and said second electrical conductor including an integral switch means, said switch means extending through said slot and being movable within said slot between an open position wherein the switch means is out of contact with the electrical conducting means and a closed position wherein the switch means contacts the electrical conducting means to complete the electrical circuit between the filament and source of electrical energy.

3,345,475
AIR ACTUATED SWITCH FOR INTERMITTENT SHEET CONTROL
Henry Hope, 195 Welsh Road, Huntingdon Valley, Pa. 19006
Filed Feb. 15, 1966, Ser. No. 527,689
7 Claims. (Cl. 200—61.13)



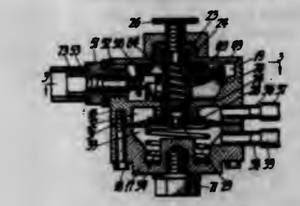
1. An air pressure operated switch for controlling a source of energy, said switch comprising:
a fixed contact,
a movable contact normally out of engagement with said fixed contact,
an electric circuit including said contacts,
a chamber,
means for delivering air under pressure into said chamber,
an opening leading from said chamber to the atmosphere,
a door for said opening,
and a switch arm secured at one end thereof to said door and secured at the other end thereof to said movable contact,
said door being so constructed and arranged that, in the absence of pressure in said chamber of a predetermined value, said door obstructs said opening and moves said arm to switch closing position and so that, when the pressure in said chamber reaches said predetermined value, said door moves to an unobstructing position and moves said arm to switch opening position,
said chamber having a second normally unobstructed opening leading to the atmosphere,
said second opening being adapted to be obstructed by a workpiece passing thereover to raise the pressure within said chamber to said predetermined value.

3,345,476
FOOL-PROOF SNAP ACTION RESET SWITCH
Grover M. Russell, Goshen, Ind., assignor to Penn Controls, Inc., a corporation of Indiana
Continuation of abandoned application Ser. No. 190,740, Apr. 27, 1962. This application Apr. 21, 1965, Ser. No. 449,751
10 Claims. (Cl. 200—72)



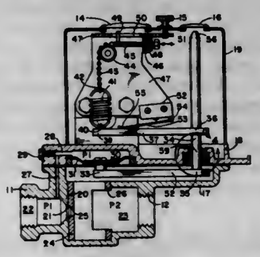
9. In combination, a snap-action type electrical switch having a pair of spaced apart stationary contacts, a cooperating movable contact selectively actuatable into switching engagement with said stationary contacts, and means operative for causing snap-action actuation of said movable contact into latched engagement with the selected one of said stationary contacts; first actuator means operable from an unactuated condition to an actuated condition for initiating operation of said snap-action means for latched engagement of said movable contact with one of said stationary contacts while preventing said latched engagement until said first actuator means is released for return to its said unactuated condition, and second actuator means operative from an unactuated condition to an actuated condition for initiating operation of said snap-action means causing snap-actuation of said movable contact into latched engagement with the other of said stationary contacts.

3,345,477
DECELERATION AND STOP LIGHT SIGNALLING EQUIPMENT FOR MOTOR VEHICLES
Ensor A. Bryant, 4 Wimmera Ave., Manifold Heights, Geelong, Victoria, Australia
Filed Sept. 1, 1965, Ser. No. 484,292
Claims priority, application Australia, Sept. 2, 1964, 48,896/64
20 Claims. (Cl. 200—81.5)



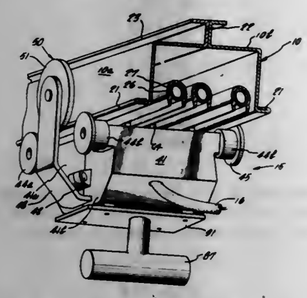
1. A switch comprising a body, an electrical contact member mounted in the body so as to be movable between first, second and third positions, first actuating means coupled to the electrical contact member so as to be actuable to move that member between the first and second positions, and second actuating means actuable to disrupt the coupling between the first actuating means and the electrical contact member and to move the electrical contact member to the third position regardless of the position of that member immediately prior to the actuation of the second actuating means.

3,345,478
FLOW RESPONSIVE SWITCH
Harold D. Hutchinson and William C. Gregge, both of 1009 Montana Ave., Santa Monica, Calif. 90403
Filed Nov. 23, 1965, Ser. No. 509,328
6 Claims. (Cl. 200—81.9)



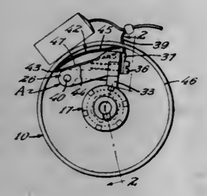
1. A flow responsive switch means for insertion in a fluid flow line comprising, in combination: a fluid enclosure having an inlet and outlet for connection into said flow line; orifice means in said enclosure dividing said enclosure into first and second chambers and defining an orifice through which said fluid passes; means in said enclosure responsive to a change in the differential pressure between said first and second chambers as a consequence of a change in the flow rate of fluid through said orifice to a given flow rate for effecting a physical move-

stabilize the body by selectively engaging the underside of said rails when the portable trolley is mounted on said rails; and



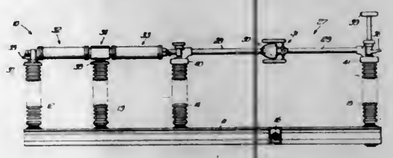
means operable to extend said arms transverse to the axis of the rails so as to mount the trolley so that the guide wheels ride on said rails.

3,345,472
CURRENT INTERRUPTER ROTARY CIRCUIT BREAKER
Albert B. Kuhlman, 2600 Rice St. 55513, and Hubert A. Garske, 623 La Bore Road 55117, both of St. Paul Minn.
Filed Apr. 5, 1965, Ser. No. 445,396
3 Claims. (Cl. 200—26)



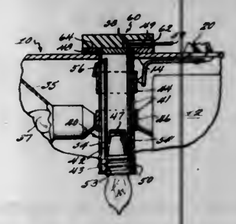
1. A rotary distributor for use with a distributor housing having a substantially cylindrical inner surface, and a coaxial shaft, comprising:
a disc of insulating material,
circumferentially spaced segments of conductive material embedded in said disc parallel to the axis thereof supported on said shaft and coaxial therewith,
a brush holder including an angular arm having a pivot aperture therethrough on an axis parallel to said disc axis,
a fixed pivot supporting said arm,
a flat surface on the other end of said angular arm, the surface of which is normally on a plane extending substantially through the axis of said disc and radial thereto,
a brush secured in face contact with said surface and projecting from said arm to engage the surface of said disc,
a pair of spaced parallel plates arranged on planes normal to said disc axis on the side of said angular arm opposite the side from which said brush projects,
and a substantially U-shaped flat spring having one end freely engageable with the cylindrical housing surface and having its other end freely engaged between said plates and held in position thereby, said spring being free of connection with said brush holder.

3,345,473
HIGH VOLTAGE GAS TYPE CIRCUIT INTERRUPTERS IN TANDEM WITH A CENTER BREAK DISCONNECTING SWITCH
Leonard V. Chabala, Maywood, and Edward J. Rogers, Chicago, Ill., assignors to S & C Electric Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,777
22 Claims. (Cl. 200—48)



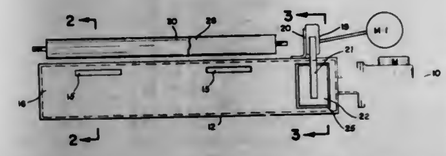
1. In a high voltage circuit interrupter:
two pairs of translatory separable contacts connected in series circuit relation,
a translatory operating member for each pair of separable contacts,
a walking beam rotatably mounted between its distal ends, link means interconnecting said operating members and said distal ends of said walking beam,
spring means biasing said walking beam to rotate it to open said pairs of separable contacts substantially simultaneously, and
latch means cooperating with said walking beam to prevent rotation thereof by said spring means to open said pairs of separable contacts.

3,345,474
ILLUMINATING MEANS
Roberto L. Bustamante, 4a C.P. No. 40, Santa Ana, El Salvador
Filed Oct. 16, 1964, Ser. No. 404,324
7 Claims. (Cl. 200—60)



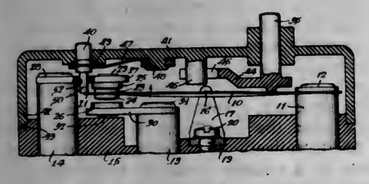
1. In an electrical contact assembly for use in a flashlight, a non-conducting sleeve and end cover portion, a first electrical conductor carried by said sleeve, said first conductor adapted to be in electrical contact with a source of electrical energy and a light-producing filament, a second electrical conductor carried within said sleeve and adapted to be in electrical contact with said light-producing filament, the improvement which comprises an electrical conducting means defining with said end cover portion an L-shaped slot, said electrical conducting means adapted to be connected to the source of electrical energy, and said second electrical conductor including an integral switch means, said switch means extending through said slot and being movable within said slot between an open position wherein the switch means is out of contact with the electrical conducting means and a closed position wherein the switch means contacts the electrical conducting means to complete the electrical circuit between the filament and source of electrical energy.

3,345,475
AIR ACTUATED SWITCH FOR INTERMITTENT SHEET CONTROL
Henry Hope, 195 Welsh Road, Huntingdon Valley, Pa. 19006
Filed Feb. 15, 1966, Ser. No. 527,689
7 Claims. (Cl. 200—61.13)



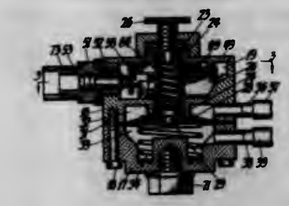
1. An air pressure operated switch for controlling a source of energy, said switch comprising:
a fixed contact,
a movable contact normally out of engagement with said fixed contact,
an electric circuit including said contacts,
a chamber,
means for delivering air under pressure into said chamber,
an opening leading from said chamber to the atmosphere,
a door for said opening,
and a switch arm secured at one end thereof to said door and secured at the other end thereof to said movable contact,
said door being so constructed and arranged that, in the absence of pressure in said chamber of a predetermined value, said door obstructs said opening and moves said arm to switch closing position and so that, when the pressure in said chamber reaches said predetermined value, said door moves to an unobstructing position and moves said arm to switch opening position,
said chamber having a second normally unobstructed opening leading to the atmosphere,
said second opening being adapted to be obstructed by a workpiece passing thereover to raise the pressure within said chamber to said predetermined value.

3,345,476
FOOL-PROOF SNAP ACTION RESET SWITCH
Grover M. Russell, Goshen, Ind., assignor to Penn Controls, Inc., a corporation of Indiana
Continuation of abandoned application Ser. No. 190,740, Apr. 27, 1962. This application Apr. 21, 1965, Ser. No. 449,751
10 Claims. (Cl. 200—72)



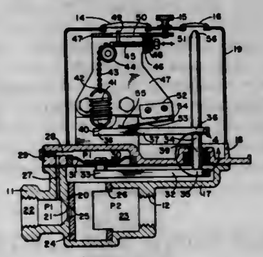
9. In combination, a snap-action type electrical switch having a pair of spaced apart stationary contacts, a cooperating movable contact selectively actuatable into switching engagement with said stationary contacts, and means operative for causing snap-action actuation of said movable contact into latched engagement with the selected one of said stationary contacts; first actuator means operable from an unactuated condition to an actuated condition for initiating operation of said snap-action means for latched engagement of said movable contact with one of said stationary contacts while preventing said latched engagement until said first actuator means is released for return to its said unactuated condition, and second actuator means operative from an unactuated condition to an actuated condition for initiating operation of said snap-action means causing snap-actuation of said movable contact into latched engagement with the other of said stationary contacts.

3,345,477
DECELERATION AND STOP LIGHT SIGNALLING EQUIPMENT FOR MOTOR VEHICLES
Ensor A. Bryant, 4 Wimmera Ave., Manifold Heights, Geelong, Victoria, Australia
Filed Sept. 1, 1965, Ser. No. 484,292
Claims priority, application Australia, Sept. 2, 1964, 48,896/64
20 Claims. (Cl. 200—81.5)



1. A switch comprising a body, an electrical contact member mounted in the body so as to be movable between first, second and third positions, first actuating means coupled to the electrical contact member so as to be actuable to move that member between the first and second positions, and second actuating means actuable to disrupt the coupling between the first actuating means and the electrical contact member and to move the electrical contact member to the third position regardless of the position of that member immediately prior to the actuation of the second actuating means.

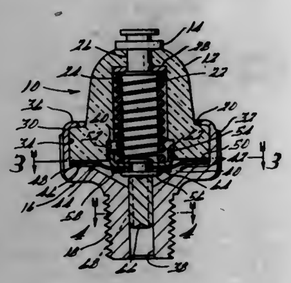
3,345,478
FLOW RESPONSIVE SWITCH
Harold D. Hutchinson and William C. Gregge, both of 1009 Montana Ave., Santa Monica, Calif. 90403
Filed Nov. 23, 1965, Ser. No. 509,328
6 Claims. (Cl. 200—81.9)



1. A flow responsive switch means for insertion in a fluid flow line comprising, in combination: a fluid enclosure having an inlet and outlet for connection into said flow line; orifice means in said enclosure dividing said enclosure into first and second chambers and defining an orifice through which said fluid passes; means in said enclosure responsive to a change in the differential pressure between said first and second chambers as a consequence of a change in the flow rate of fluid through said orifice to a given flow rate for effecting a physical move-

ment in said enclosure; a switch positioned exterior of said enclosure; and motion transmitting means including first and second arms, said first arm being within said enclosure and responsive to said physical movement and said second arm being exterior to said enclosure for operating said switch, said arms being connected together through a portion of a wall defining said enclosure for transmitting through a rocking action said physical movement to said switch to thereby actuate said switch, said rocking action taking place about a pivot point in said portion of said wall.

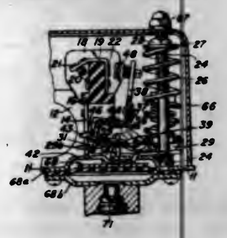
3,345,479
FLUID OPERATED ELECTRIC SWITCH
Ralph F. Schaber, Warren, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,733
3 Claims. (Cl. 200—83)



1. A fluid operated switch comprising a first housing member provided with a generally planar surface, a second housing member, a diaphragm having its periphery compressed between the planar surface of said first housing member and second housing member, a fluid chamber formed by said diaphragm and second housing member, a first contact carried by said diaphragm centrally thereof, said second housing including a second contact in engageable relationship with said first contact. a bore formed in the first housing member and extending through the generally planar surface thereof, a spring situated in said bore for continually urging said diaphragm towards said second contact, a generally cylindrical spring perch secured to said diaphragm for engaging one end of said spring and being moveably disposed in said bore with the clearance between said bore and spring perch being less than the thickness of the material forming said diaphragm, and said spring perch and diaphragm being moveable to a position where said spring perch substantially covers said bore and cooperates with said planar surface of the first housing member to provide a substantially continuous generally planar surface against which said diaphragm is urged when fluid is admitted to said fluid chamber.

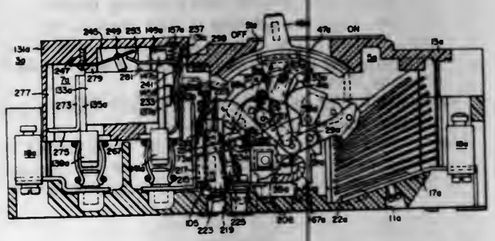
3,345,480
PRESSURE SWITCH WITH LOW-PRESSURE CUT-OFF
Josef J. Zeller, Asheville, N.C., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 501,308
6 Claims. (Cl. 200—83)

1. In a pressure switch having separable contacts and a supporting frame, an operating lever pivoted on said frame and movable in response to variations in pressure to which the switch is subjected, a mechanism operated by said operating lever for causing opening and closing of said contacts at preselected high and intermediate pressures, respectively, the improvement comprising a low-pressure release lever fulcrumed intermediate its ends on said frame and having a first end portion in the path of movement of said operating lever and a second end portion positioned to engage said mechanism upon movement of said first end portion in one direction, said operating lever under conditions of predetermined low pressure en-



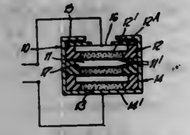
gaging said first end portion of said release lever and moving it in said one direction thereby causing said second end portion of said release lever to engage said mechanism, said engagement of said second end portion with said mechanism causing said mechanism to open said contacts.

3,345,481
CIRCUIT INTERRUPTER
John Majcher, Chippewa Township, and Robert H. Flick, Brighton Township, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1964, Ser. No. 404,414
4 Claims. (Cl. 200—114)



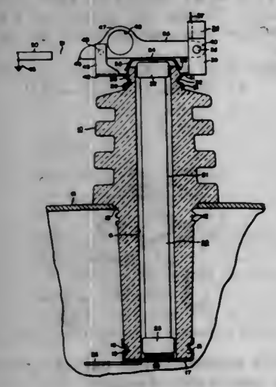
2. A multi-pole interrupting device comprising, in combination, a circuit breaker comprising a first housing, a multi-pole circuit breaker mechanism disposed generally within said first housing and comprising separable contact means for each pole, a common trip bar structure common to all of said poles and operatively movable to a tripped position to effect opening of all of said contact means, a multi-pole fuse unit comprising a second housing, fuse unit means supported on said second housing and comprising a removable fuse for each pole of said circuit breaker and a common tripping bar structure, each of said fuses comprising means operable upon the occurrence of certain current conditions to operatively move said common tripping bar structure to a tripping position, said common trip bar structure comprising a trip arm, said common tripping bar structure when operatively moved to the tripping position engaging said trip arm to operatively move said common trip bar structure to a tripped position to effect opening of all of said contact means, said fuse unit being movably mounted on said circuit breaker, said fuse unit comprising safety trip means at each pole unit thereof mounted on said second housing each of which safety trip means moves automatically to move said common tripping bar structure to the tripping position when the associated fuse is removed from said fuse unit.

3,345,482
ELECTRIC SHUNT DEVICE
Shih-Woo Lou, 395 Queen's Road E., 4th floor, P.O. Box 1076, Victoria, Hong Kong
Filed June 29, 1964, Ser. No. 379,043
10 Claims. (Cl. 200—118)



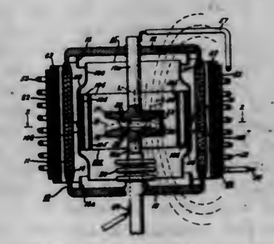
1. A shunt device for connection in parallel with the filament of an electric lamp connected in a series circuit comprising; a metal casing having a bottom wall portion, side wall portions and an inturned top edge portion defining an opening in the top of said casing; aluminum plate means having an aluminum oxide coating on opposite surfaces thereof; an uncoated metal plate; insulation means connected about the perimeter edges of said aluminum plate means and uncoated metal plate and connecting said plate and plate means in superimposed spaced relation within said metal casing insulated from said bottom wall portion, side wall portions and top edge portion thereof; said aluminum plate means connected in spaced relation adjacent said bottom wall portion and defining a first chamber therebetween; said uncoated metal plate connected adjacent said top edge portion and spaced from said aluminum plate means and defining a second chamber therebetween; electrically conductive granular material loosely packed in said first and second chambers so as to be easily movable upon vibration of said casing; said metal casing constituting one terminal and said uncoated metal plate constituting another terminal of said shunt device; electrical connections connecting said terminals in shunt with the filament of the electric lamp to form an alternative path for current flow when the resistive load of the filament is removed, and said inturned top edge portion maintaining said plate, plate means, granular material and insulation material in the respective positions in said metal casing.

3,345,483
REMOVABLE CURRENT LIMITING FUSE
Merrill G. Leonard, Brookfield Township, Fowler, Ohio, and Leonard L. Wright, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 6, 1965, Ser. No. 453,754
6 Claims. (Cl. 200—133)



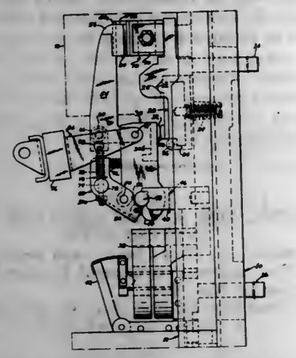
1. Releasable fuse apparatus including in combination a bushing having a bore therethrough, a collar extending from one end of the bushing, spring means at one end of the bushing disposed in the bore for pressing the fuse partially out of the bore at the other end of the bushing when the fuse is released, movable release lever means operatively connected to said other end of the bushing and adapted to maintain the fuse in the bore in the bushing against the tension of the spring means, and means cooperating with the release lever means and the bushing for substantially closing the adjacent end of the bore while the fuse is in its normal position in the bore in the bushing, said collar having an annular groove on the inside surface thereof, the fuse having a cap at each end thereof, and an O-ring composed of resilient material disposed partially in said groove and effecting a seal between the collar and the adjacent cap of the fuse.

3,345,484
SHIELDING FOR A VACUUM TYPE CIRCUIT INTERRUPTER
George Polinko, Jr., West Chester, and Joseph W. Porter, Media, Pa., assignors to General Electric Company, a corporation of New York
Filed May 10, 1965, Ser. No. 454,282
6 Claims. (Cl. 200—144)



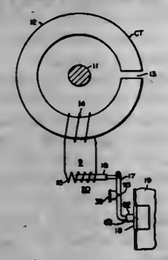
1. An alternating current circuit interrupter of the vacuum type comprising:
(a) an evacuated envelope,
(b) a pair of electrodes within said envelope having a spaced-apart position defining an arcing gap therebetween across which an alternating current arc is established,
(c) a tubular vapor-condensing shield within said evacuated envelope surrounding said arcing gap,
(d) said tubular shield comprising:
(i) an outer tubular metal member surrounding said arcing gap and having slots therein extending longitudinally thereof for substantial distances on longitudinally opposite sides of said arcing gap,
(ii) a tubular internal liner for said outer tubular member generally aligned with said arcing gap and comprising a plurality of discrete metal segments spaced-apart circumferentially of said liner to render said liner discontinuous in a circumferential direction,
(iii) fastening means for securing said segments to said outer tubular member in radially spaced-apart relationship to said outer tubular member,
(iv) said fastening means being located between each of said segments and said tubular member in a position behind the associated segment with respect to said arcing gap,
(v) said fastening means being of a material that has a high resistivity in comparison to that of said segments,
(vi) said segments covering said slots to prevent metal vapor from said arcing gap from passing radially outward through said slots.

3,345,485
CIRCUIT BREAKER HAVING IMPROVED ARCING CONTACT STRUCTURE
Edward I. Engel, Matawan, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,240
7 Claims. (Cl. 200—146)



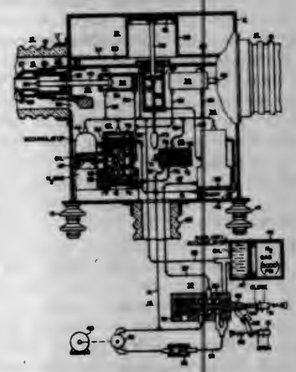
1. A circuit breaker including first and second terminal members, a movable main contact arm, a pair of relatively elongated slender resilient arcing contact arms pivotally mounted on said main contact arm, companion main contacts and a companion arcing contact electrically connected to said first terminal member, means pivotally mounting said main contact arm for movement from a closed position wherein said main contact arm abuts said companion main contacts and said arcing contact arms straddle said stationary arcing contact and are in lateral face engagement therewith to an open position, a driving link connected to said main contact arm for moving said main contact arm and said arcing contact arms between said open position and said closed position, means electrically connecting said main contact arm to said second terminal member, said resilient arcing contact arms being urged toward one another against the lateral faces of said companion arcing contact to enhance the contact pressure therebetween by electrodynamic forces due to high currents flowing through said arcing contact arms when said main contacts part.

3,345,486
BLAST-VALVE OPERATION FOR GAS-BLAST CIRCUIT BREAKERS HAVING TWO CURRENT-RESPONSIVE MEANS
Robert G. Colclaser, Jr., Franklin Township, Delmont, and Charles F. Cromer, Penn Township, Trafford, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1964, Ser. No. 407,294
10 Claims. (Cl. 200—148)



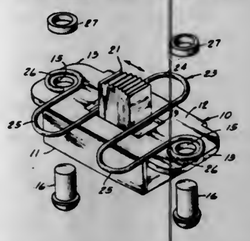
1. In a compressed gas-type of circuit breaker, in combination, first electromagnetic means responsive to the magnitude of the current flow through the breaker, means defining a high-pressure storage reservoir containing an interrupting gas under pressure, a circuit-interrupter unit, a blast valve for admitting gas under pressure from the reservoir into the interrupter unit for extinguishing purposes, mechanical means responsive to said first electromagnetic means for opening the valve at low currents, and second electromagnetic means responsive to the current flowing through the circuit breaker for opening the valve only at high currents whereby an increased time of valve opening is obtained during heavy fault current interruption.

3,345,487
HYDRAULICALLY OPERATED CIRCUIT BREAKER
Albert P. Strom, Forest Hills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1965, Ser. No. 432,983
9 Claims. (Cl. 200—148)



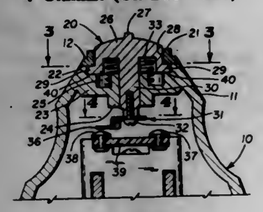
1. In a circuit breaker, in combination, a mechanism housing containing an interrupting gas, insulating means supporting the housing, a plurality of interrupting units extending from the housing, a movable contact member in each interrupting unit, a single puffer for supplying compressed gas to all interrupting units, first hydraulically operated means for actuating the puffer, second hydraulically op rated means for actuating the movable contact members, and control means for causing operation of the puffer prior to operation of the movable contact members.

3,345,488
CENTER BIAS MOMENTARY SWITCH
Burton L. Siegal, Skokie, Ill., assignor to Kenron Aluminum and Glass Corporation, Niles, Ill., a corporation of Illinois
Filed Nov. 4, 1966, Ser. No. 592,176
11 Claims. (Cl. 200—153)



1. In a three position switch having a neutral position and positions to each side of neutral,
a switch casing,
a manually operable switch trigger mounted in said switch casing, to move the contacts of the switch from a neutral position to operative positions to either side of neutral,
and means biasing said trigger to normally maintain said trigger in a neutral position and to instantaneously return said trigger from either of its positions to each side of neutral to its neutral position, as manual pressure is relieved from the trigger, comprising
a flat spring engaging said trigger intermediate its ends and anchored at its opposite ends from movement in the direction of movement of the trigger.

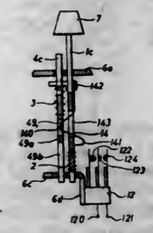
3,345,489
ELECTRIC SWITCH WITH LOCKING MEANS
Warren N. Kemnitz, Racine, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 7, 1965, Ser. No. 485,219
4 Claims. (Cl. 200—157)



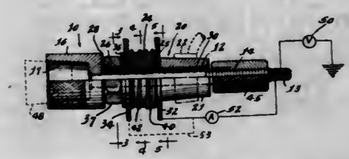
1. An electric switch of the push button type provided with locking means for preventing unintentional depression and actuation of the switch button, comprising
(a) a housing provided with an opening therein surrounded by a button retaining stationary ring, an inwardly radially extending web forming a bearing surface in the housing,
(b) a switch button rotatably mounted in the housing opening and provided on its external face with means for manually rotating the button to depressible or locked, undepressible positions,
(c) designations on the housing adjacent the opening cooperating with the manually rotating means which indicate the depressible and locked positions of the button,
(d) bearing means on the button contacted by the retaining ring and engaging the bearing surface on the web for preventing depression of the button when in locked position,
(e) the said bearing surface having a recess therein for receiving said bearing means on the button and permitting depression of the button when rotated to unlocked position,
(f) a pair of fixed contacts mounted in the housing, and
(g) a contact member mounted on the button within the housing and rotatable with the button to engage the fixed contacts when the button has been rotated to unlocked position and depressed.

3,345,490
MANUAL SWITCH ACTUATOR
Heinz Gerjets, Hans Elsner, and Siegfried Wesselhöft, Wilhelmshaven, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany
Filed July 13, 1965, Ser. No. 471,604
Claims priority, application Germany, July 14, 1964, O 10,259
31 Claims. (Cl. 200—159)

1. A manual switch actuator comprising, in combination, control means movable between an inoperative position and an operative position; a manually operable member movable between a normal position and an actuated position; means connecting said member with said control means; first biassing means connecting said manually operable member with said control means; second biassing means for urging said manually operable member to said normal position; holding means operatively connected with said manually operable member and with said control means for holding said control means in said inoperative position while releasing said manually operable member for movement to said actuated position, and for holding said manually operable member in said actuated position while releasing said control means for movement to said operative position, said holding means being controlled by said manually operable member in said actuated position so that said first biassing means moves said control means to said operative position, said holding means being operated by said control means in said operative position so that said second biassing means moves said manually operable member to said normal position whereby said control means is moved to said inoperative position; and switch means actuated at least by one of said means independently of said manually operable member.

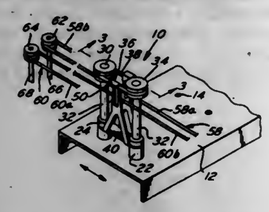


3,345,491
BATTERY TESTING ADAPTER
Robert E. Badger, Twin Lakes, and Jack L. Boone, Kenosha, Wis. (both of 8028 28th Ave., Kenosha, Wis. 53140)
Filed Nov. 9, 1962, Ser. No. 236,652
6 Claims. (Cl. 200—162)



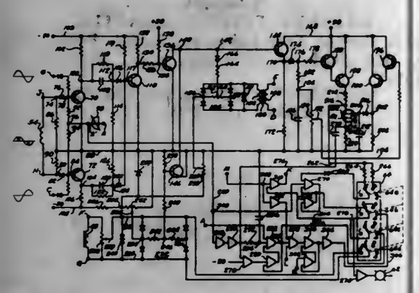
5. An in-place automobile battery testing adapter comprising:
conducting stem means for connecting a voltmeter to a battery terminal;
conducting means including said stem means and a conducting connecting means on and insulated from said stem means for connecting an ammeter in series circuit with said battery terminal and a battery cable normally connected thereto, said connecting means adapted to receive and connect electrically with said battery cable;
means selectively introducing resistance in said series circuit to simulate a charged battery; and
switch means selectively by-passing the ammeter portion of said series circuit by selectively connecting said stem means to said connecting means whereby starter current may flow in circuit with said battery terminal and said battery cable without traversing said ammeter connected therebetween.

3,345,492
SLIDEWIRE CONTACT MECHANISM
Gustave Ehrenberg, Havertown, and Frank J. McCulla, Philadelphia, Pa., assignors to Electro-Nite Engineering Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1966, Ser. No. 582,639
7 Claims. (Cl. 200—166)



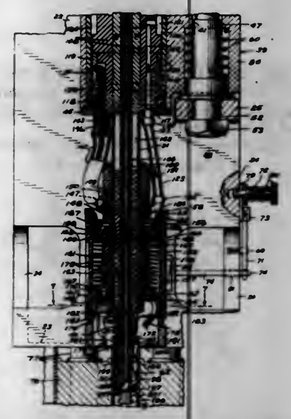
1. A slidewire contact mechanism adapted to contact slidewires comprising a support arm, a bracket mounted on and electrically isolated from said arm, said bracket having a pair of contact means electrically coupled and extending upwardly therefrom, said contact means being adapted to be in engagement with slidewires, a resilient means electircally isolated from said support arm engaging each of said contact means wherein said resilient means dampens vibrations thus substantially preventing the transmission of vibrations to said contact means.

3,345,493
MONITOR FOR DETECTING CHANGE IN RESISTANCE BETWEEN WELDED PARTS DURING WELDING CURRENT FLOW
Marvin A. Guettel and Charles F. Meyer, both of Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 21, 1965, Ser. No. 489,019
18 Claims. (Cl. 219—110)



2. In combination with a resistance welder which is arranged to pass welding current consisting of alternate half cycles of alternating current through metal parts to be welded, a control for detecting resistance changes across the parts in response to the welding current flow, comprising: a voltage detecting means arranged to provide a voltage signal representative of the voltage drop across said parts resulting from the flow of welding current, compensating means energized by the welding current for varying the voltage signal and thereby providing a compensated voltage signal in response to changes in the current through the parts, means including an air core type transformer energized by the welding current providing a signal pulse at the instants during each half cycle when the alternating current is at a maximum, and detecting means energized by the compensated voltage signal during the presence of a signal pulse for continuously comparing a maximum compensated detected voltage signal with a subsequent detected compensated voltage signal of lesser magnitude, and means arranged to provide an output signal whenever the percentage difference between the maximum signal and the subsequent signal equal a predetermined value.

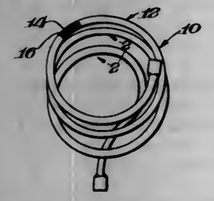
3,345,494
ROTATABLE ARC WELDING TORCH
William R. Apblett, Jr., Metuchen, and Joseph Martin, Menlo Park, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Apr. 7, 1964, Ser. No. 357,943
12 Claims. (Cl. 219—125)



5. A welding torch for welding a tubular workpiece to a plate workpiece while supplying filler wire to the weld, comprising:
a housing;
a shaft assembly means supported by said housing, said shaft assembly means including an electrically conductive sleeve means extending at one end of said shaft assembly means and being electrically isolated, said electrically conductive sleeve means having an inside end and an outside end;
drive means mounted on said housing and including an electric rotational drive motor for rotating said shaft assembly means about its longitudinal axis;
an electrode holder rigidly mounted on the outside end of said electrically conductive sleeve means;
an electrode supported by said electrode holder laterally of the longitudinal axis of the shaft assembly means, said electrode having a tip for arcing in a circumferential path as the shaft assembly means is rotated to form a weld between a tube workpiece and a plate workpiece;
a filler wire guide means including an arcuately-shaped conduit electrically isolated from but rigidly mounted on the lower end of said electrically conductive sleeve adjacent said electrode holder;
means for supplying electrical power to said electrode through said electrically conductive sleeve;
a wire storage member rigidly mounted about said electrically conductive sleeve means adjacent and above said electrode holder, said wire storage member being a cylinder of electrical insulating material and with a threaded outer surface;
a ring means having a threaded inner surface engaging the threaded outer surface of said electrically isolated cylindrical member, said ring means including at least one protrusion which extends radially therefrom, the filler wire being coiled about said wire storage member with one end connected to said ring means and with the other end within said guide means;

a cup assembly means rotatably mounted about the inside end of said electrically conductive sleeve means and including a cylindrical portion which surrounds the coiled filler wire, said cylindrical portion of said cup assembly means having at least one longitudinal groove on its inner surface, said protrusion on said ring means extending into said longitudinal groove to prevent rotation of said ring means while permitting longitudinal movement of said ring means;
a clamping assembly means adapted to engage said cup assembly means to prevent rotation of said cup assembly means during the rotation of said shaft assembly means thereby preventing the rotation of said ring means which is screwed outwardly toward the filler wire guide means by the rotation of said shaft assembly means forcing the filler wire through said filler wire guide means; and
means for conveying a shielding gas into said cup assembly means.

3,345,495
TUBULAR CUTTING ELECTRODE
Joseph F. Quaas, Island Park, and Charles E. Rogers, Bayside, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
Filed July 25, 1963, Ser. No. 297,503
4 Claims. (Cl. 219—146)



1. A tubular metallic arc electrode comprising a mild steel tube having an outside diameter ranging approximately from 3/32 to 5/16 inch and a wall thickness ranging approximately from 0.010 to 0.030 inch, a core consisting essentially of the following constituents in the indicated percentages by weight of the core:

Constituent:	Range
Ferrous carbonate	75–100
Deoxidizers	0–25
Fluxing material and binder	0–25

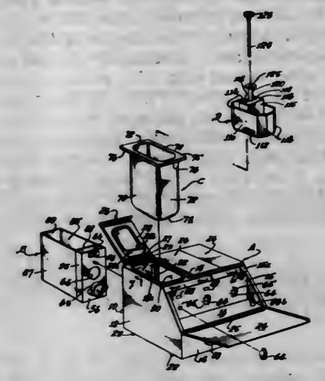
and said core ranging approximately from 27 to 30% by weight of a cross-sectional unit of said electrode.

3,345,496
CAST IRON ELECTRODE
Charles E. Rogers, Bayside, and Joseph F. Quaas, Island Park, N.Y., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,817
4 Claims. (Cl. 219—146)

1. A cast iron welding electrode consisting essentially of a mild steel tube and a filler mixture inserted within it, said filler mixture incorporating the following constituents in the indicated ranges of percentages by wieght of the overall electrode, and the balance consisting essentially of said mild steel tube.

Constituents:	Percent by weight
Carbon	2–4
High carbon iron powder	42–36
Silicon	4–3
Other graphitizing agents selected from the group consisting essentially of manganese, phosphorus, nickel and copper	2–3

3,345,497
ELECTRIC WATER BATH HEATER FOR CONDITIONING HYDROCOLLOIDS
Don D. Porteous, Los Angeles, Calif., assignor to Van R. Dental Products, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 23, 1963, Ser. No. 332,712
16 Claims. (Cl. 219—417)

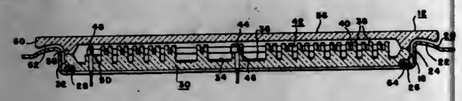


1. A hydrocolloid conditioner comprising:
a cabinet;
first electrical circuit means in the cabinet providing a plurality of similar electrical outlets each having a plurality of contacts and located one at each of a plurality of stations, said circuit means including means connecting a pair of contacts of each outlet to a source of electrical energy and a time-controlled switch at one station serially connecting a third contact of the outlet at said station to said source of electrical energy;
a plurality of substantially duplicate carriers located one at each station, each carrier being removable individually from the cabinet and interchangeable with the other carriers at any other station;
and second electrical circuit means on each carrier comprising;
a plug having a plurality of prongs engageable with the contacts of an outlet;
an electrical heating element and thermally responsive switch means connected in series with each other and with a pair of prongs on said plug engageable with said pair of contacts on a selected outlet to energize the heating element at any station;
and a conductor connected to said heating element in parallel with the thermally responsive switch means and to a third prong on said plug engageable with the third contact on said outlet to connect the heating element to the time-controlled switch means to bypass the thermally responsive switch means and energize the heating element independently thereof when the carrier is at the station having said time-controlled switch means;
each outlet not having a time-controlled switch means having a contact engageable by the third prong of a carrier plug.

3,345,498
INFRARED SURFACE HEATING UNIT
Donald C. Siegla, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,305
1 Claim. (Cl. 219—464)

In an infrared surface heating unit, the combination of an upper utensil supporting plate of infrared transmissive material, a lower reflector plate, coacting means on

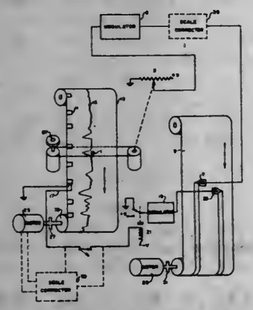
said upper plate and reflector plate for forming an open space therebetween, an infrared emissive resistance element located within said space having a ribbon shaped cross-section with a major axis and a minor axis, an input terminal carried on said reflector plate, an output terminal carried on said reflector plate, said resistance element having one end thereof electrically connected to the input terminal and an opposite end thereof electrically connected to said output terminal, said ribbon shaped element extending in a spiral form between said input and output terminals throughout substantially the full planar extent of said upper utensil supporting plate, a plurality of posts supported on said reflector plate at spaced apart locations thereon each including an upper end portion thereof located in spaced relationship below said upper utensil supporting plate and above the upper surface of said reflector plate, each of said posts including a vertically directed slot therein extending across the upper end of said post, said ribbon shaped resistance element having a segment thereof extending through each of said vertically arranged support post slots and having the major axis thereof directed vertically of said slots, said slots having a sufficient width to allow for radial movement of said resistance element upon energization thereof to compensate for heat generated expansion of said spiralled resistance element, said resistance element having only the lower edge thereof in heat transfer contact with said support posts and having the remainder of the planar extent thereof out of direct contact with both said upper utensil supporting plate and said reflector plate whereby upon said input and said output terminal being connected across a power source the electrical energy flows through said resistance element which produces self-heating of said resistance element into a visual light emitting range observable through said upper utensil supporting plate to indicate operation of the unit, said support posts being constructed of heat insulating material to prevent heat transfer from said resistance element to said reflector plate.



3,345,499
SCALE CORRECTOR

John P. Woods and Edwin B. Neitzel, Dallas, and Tom Prickett, Jr., Richardson, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Original application Oct. 20, 1960, Ser. No. 63,750, now Patent No. 3,185,994, dated May 25, 1965. Divided and this application July 1, 1963, Ser. No. 291,766
4 Claims. (Cl. 235—61.6)



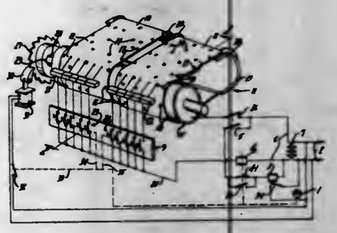
1. A scale corrector for controlling the playback speed of a record in accordance with a predetermined speed code comprising

(a) a one-shot multivibrator activated by said code,
(b) speed control means connected to said multivibrator including a plurality each of potentiometers, trim capacitors, multicontact ganged switches, and relays,
(c) an oscillator connected to said speed control means,
(d) a 90-degree phase shifting circuit connected to said multivibrator and to said oscillator, and
(e) a synchronous motor connected to said phase shifting circuit for driving said record.

3,345,500
CYCLIC CODE GENERATING MEANS

John A. Russell, Shorewood, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Mar. 1, 1963, Ser. No. 262,136
3 Claims. (Cl. 235—61.11)



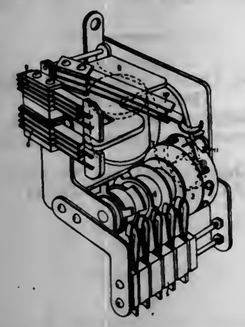
3. In a code generating assembly for controlling a load,
(a) a pair of endless belts each containing a plurality of circumferentially distributed drive openings and a plurality of code rows circumferentially spaced with the spatial density of the rows on the belts being the same and with each code row having a plurality of code areas, one of said belts being longer by the distance between code rows,
(b) a contact and drive roller having said belts mounted thereon in side-by-side relation,
(c) a guide spaced from said roller and having the belts mounted thereon to maintain the belt in firm engagement with the drive roller,
(d) drive means circumferentially distributed about said drive roller in alignment and engagement with the drive openings in said belts for simultaneously and similarly moving said belts,
(e) a plurality of code area sensing elements mounted to resiliently engage the endless belt with each element aligned with a code area,
(f) switch means interconnected with said elements to form a control circuit adapted to be connected to control said load,
(g) a step-by-step means coupled to said roller for incrementally moving the roller in accordance with the spacing between code positions, and
(h) means coupled to the load to actuate said step-by-step drive means once for each operation of the load.

3,345,501
ELECTRICAL AGGREGATING APPARATUS FOR USE IN TOTALISATORS AND LIKE SYSTEMS

Roy Ernest Wells, Seaforth, New South Wales, Australia, assignor to Electra Totalisators Pty. Limited, Lidcombe, New South Wales, Australia, a corporation of New South Wales, Australia

Filed Sept. 23, 1963, Ser. No. 310,712
6 Claims. (Cl. 235—92)

1. Electrical aggregating apparatus comprising decimal stepping counters each for recording the value of a respective digit of the summated total, input circuits for receiving individual signals representative of respective input values to be recorded and summated in the apparatus, a relay device having two off-normal positions, two groups of contacts of said relay device, one of said groups being operable between two bistable positions one of which is the home condition of said group of contacts, and the other of said groups of contacts being transiently operable with energization of said relay device, a connection to said relay device from an input circuit to operate said relay device to an off-normal position other than said home condition of said bistable groups of contacts upon receipt of a signal from said input circuit, means for

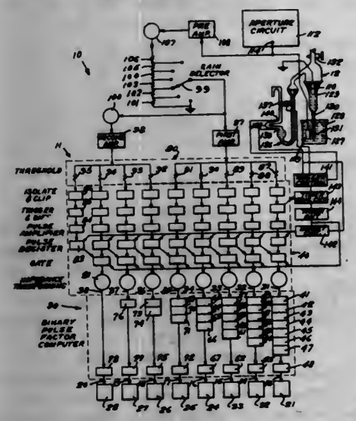


generating through a pair of said transiently operated contacts an electric pulse acknowledging receipt of said input signal, means including a pair of said transiently operated contacts and a pair of said bistable contacts to transmit an actuating pulse to one of said stepping counters, contact means on said one of said counters operable with actuation of said counter to transmit to said relay device an electric pulse to operate said relay device to the other of its said off-normal positions to disconnect said actuating pulse to said counter and return said group of bistable contacts to said home condition in readiness for receipt by said relay device of a further input signal.

3,345,502
PULSE ANALYZER COMPUTER

Robert H. Berg and Carl Arthur Youngdahl, Elmhurst, Ill., assignors, by mesne assignments, to Robert H. Berg, Elmhurst, Ill.

Filed Aug. 14, 1964, Ser. No. 389,667
4 Claims. (Cl. 235—92)

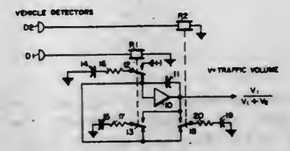


1. In a pulse data converter responding to sequential pulses each having a height proportional to a certain parameter, comprising:
a pulse height analyzer having a plurality of adjustable size level discriminators forming a progression of adjacent pulse size channels; and
an array of factoring channels for receiving the outputs of the said pulse height analyzer channels and dividing the number of pulses in the respective channels by a progression of integers;
whereby, the progression of pulse size levels and the progression of channel factors combine to produce factoring channel output signals to drive a readout device which represent the same accumulative effect in each channel with respect to said certain parameter.

3,345,503
TRAFFIC PARAMETER COMPUTER WHICH MEASURES THE RATIO OF TRAFFIC VOLUME MEASURED AT DIFFERENT LOCATIONS

John H. Auer, Jr., Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Aug. 29, 1963, Ser. No. 305,357
8 Claims. (Cl. 235—150.24)



1. A traffic parameter computer for providing a voltage analog of the ratio of traffic volumes at different locations, comprising, detecting means situated at each of said locations, an amplifier having an input and an output, a capacitor shunted between the input and output of said amplifier, first means responsive to one of said vehicle detector means for coupling a pulse of a predetermined amount of said energy to the input of said amplifier in response to each vehicle detected at a first of said locations, and second means responsive to the other of said vehicle detectors for coupling a pulse of energy having a magnitude proportional to the output of said amplifier from the output of said amplifier to the input of said amplifier in response to each vehicle detected at another of said locations, whereby the output of said amplifier is representative of the ratio of the traffic volumes at said first and second locations.

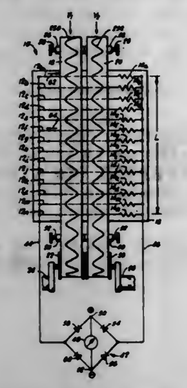
3,345,504
APPARATUS FOR DETERMINING THE DEGREE OF COHERENCE BETWEEN TWO SIGNALS

William E. N. Doty, Needham Heights, Mass., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Apr. 29, 1963, Ser. No. 276,398
13 Claims. (Cl. 235—181)

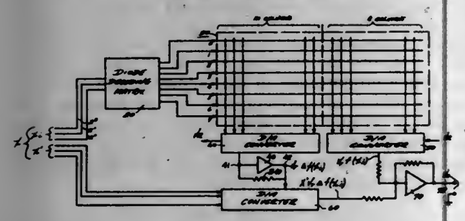
1. A device for determining the degree of coherence between first and second signals magnetically recorded on first and second magnetic record tracks, the device comprising:
means for positioning the first and second record tracks in side-by-side relationship;
at least one electrical conductor extending transversely across both of the record tracks and intersecting the magnetic fields thereof:
means for moving both record tracks relative to the electrical conductors to generate an electromotive force in each of the conductors proportional to the algebraic sum of that portion of the magnetic fields of the respective record tracks through which the conductor is passing; and,

circuit means operatively connected to the electrical conductors for producing an electrical signal proportional to the sum of the absolute values of the electromotive forces generated in the conductors while collectively traversing finite lengths of the first and second record tracks corresponding to finite time periods of the first and second signals,



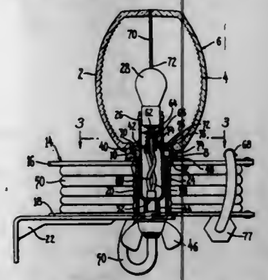
whereby the electrical signal will be representative of the degree of coherence between the finite time periods of the first and second signals collectively traversed by the conductors.

3,345,505
FUNCTION GENERATOR
Hermann Schmid, Binghamton, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Oct. 24, 1960, Ser. No. 64,428
19 Claims. (Cl. 235—197)



1. Electronic function generating apparatus for generating an output voltage which varies as a desired function of an input variable, comprising in combination: a plurality of $p+n$ input lines for receiving a first parallel digital input signal of $p+n$ digits commensurate with said input variable; a decoding switching circuit connected to a plurality p of said $p+n$ input lines of said first input signal and operative to select and energize different ones of a second plurality of 2^p conductors, depending upon the value of said p digits of said first parallel digital input signal; a matrix switching circuit having a plurality of row input conductors and first and second groups of column output conductors, said input conductors being selectively connected to various of said output conductors in accordance with said desired function of said variable to provide third and fourth parallel digital signals on said column output conductors, a first digital-to-analog converter responsive to the digital signal on said first group of column output conductors and to a reference voltage for providing a first analog voltage signal proportional to both the value of said third digital signal and to said reference voltage; a second digital-to-analog converter responsive to the digital signal on said second group of column output conductors and to a reference voltage for providing a second analog voltage signal proportional to both the value of said fourth digital signal and to said reference voltage; a third digital-to-analog converter connected to n of said $p+n$ input lines to receive n digits of said input signal and connected to said second analog voltage signal for providing a third analog voltage signal proportional to both the value of said n digits of said input signal and to said second analog voltage signal; and utilization means including summing means connected to said first and third analog voltage signals.

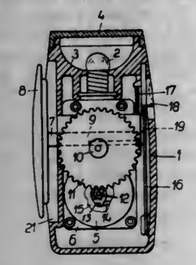
3,345,506
WARNING LIGHT FOR TRACTORS AND IMPLEMENTS
Richard W. Hautzenroeder, Detroit, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Michigan
Filed July 19, 1965, Ser. No. 472,770
4 Claims. (Cl. 240—8.18)



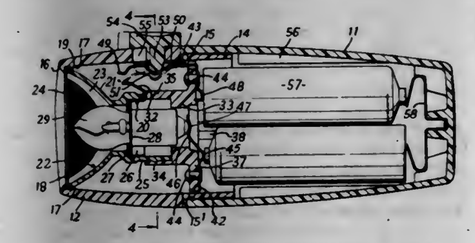
1. A vehicle warning lamp assembly, comprising: a pair of complementary, translucent lenses secured together in opposed relationship to define a hollow lamp housing having a base portion with an opening formed therein; a tubular support member received in said opening having a portion projecting into the interior of the lamp housing for supporting an incandescent lamp; a tongue on said tubular support intermediate its ends projecting radially outwardly beyond the periphery of the opening and overlying the interior surface surrounding said opening; a slot formed in the wall of said opening for receiving said tongue and permitting the tubular support to be removed from said lamp housing; a pair of spaced abutments formed on the interior surface of the lamp housing adjacent said opening and engaging opposite sides of said tongue to prevent rotation of said tongue into engagement with said slot; and adjustable clamping means on said tubular support cooperable with said tongue to prevent axial movement of said tubular support relative to said opening and disengagement of said tongue from said abutments.

3,345,507
DYNAMO OPERATED POCKET FLASHLIGHT
Werner Messinger, Frankfurt am Main, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Apr. 16, 1965, Ser. No. 448,670
Claims priority, application Germany, Apr. 29, 1964, B 57,272
4 Claims. (Cl. 240—10.5)

1. A dynamo pocket flashlight, comprising: a casing means; a dynamo means mounted within said casing means; means mounted within said casing means to utilize the electrical output of said dynamo means to produce light radiating from said casing means; a movable means movable relative to said casing and located partly outside of said casing means to transmit external mechanical motion to said dynamo means for the driving thereof, said movable means including a slidable means slidable into and out of said casing; a stop means mounted within said casing means to limit the extent to which said slidable means is slidable into said casing means to prevent the pinching approach of said movable means to said casing means; said stop means acting on said slidable means within said casing means.

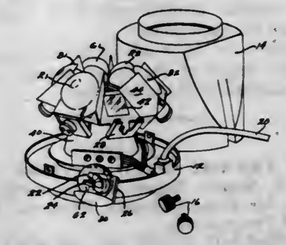


3,345,508
FLASHLIGHT FORMED OF TWO MOLDED PARTS
Sze-Yuen Chung, San Po Kong, Kowloon, Hong Kong, assignor to Sonca Industries Limited, San Po Kong, Kowloon, Hong Kong
Filed Aug. 19, 1965, Ser. No. 480,913
Claims priority, application Great Britain, July 15, 1965, 30,184/65
1 Claim. (Cl. 240—10.65)



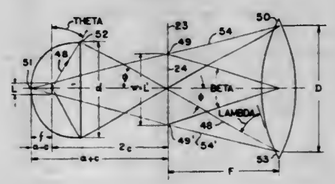
A lamp comprising:
(a) a dry cell container having an open end;
(b) a pair of batteries within the said container, each battery having a pair of terminals;
(c) a cover carried by the container at its open end;
(d) an integral reflector and socket member carried by the cover;
(e) a bulb received in the socket, which bulb has two poles;
(f) first terminal means carried by the said socket and engaging one of the bulb poles;
(g) bulb retaining means closing off the open end of the said container;
(h) a contact strip carried by the bulb retaining means engaging the other of the bulb poles to retain the latter in the socket, the said contact strip having a portion engaging one terminal of one of the said batteries;
(i) a second terminal strip having a portion which is substantially identical to the terminal engaging portion of the contact strip, engaging a terminal of the other of the said batteries, the said second terminal strip also having a part in the proximity of but resiliently spaced from a part of the said first terminal means; and
(j) manually operable switch means movable to engage one of the two terminal strips to bias the two said parts into electrical contact.

3,345,509
MULTI-COLOR LAMP
William C. Dauser, 458 Melody Lane, Muskegon, Mich. 49445
Filed Nov. 23, 1964, Ser. No. 413,231
5 Claims. (Cl. 240—20)



1. A lamphouse with controlled, balanced, even illumination comprising: a plurality of variable intensity, primary color, light sources for three primary colors, arranged radially around a central axis, and positioned to focus at a position located on said axis; at least two sources for each primary light arranged at equal intervals around said axis, opposite each other; a planar diffusor element positioned on said axis at said position to receive the focused primary color light components and combine them into a secondary light source, and to diffuse the combined light while transmitting it; and a hemispherical diffusor on said axis spaced from said diffusor element to receive light from said element and transmit it evenly to an area to be illuminated.

3,345,510
HEAD LIGHT HAVING ELLIPSOIDAL REFLECTOR
Evan P. Bone, deceased, late of Cincinnati, Ohio, by Leah M. Bone, executrix, Ashland, Ky., assignor to J. Page Hayden, Cincinnati, Ohio
Filed Dec. 28, 1964, Ser. No. 422,078
10 Claims. (Cl. 240—41.3)



1. A vehicle head lamp for projecting a natural elliptical beam pattern having a horizontal spread which is substantially greater than its vertical spread and comprising, in combination:
a substantially ellipsoidal reflector having forward and rear focal points and extending forwardly of the rear focal point,
a horizontally oriented light source in the form of a filament long relative to its width, said source being disposed perpendicular to the axis of the reflector and in the region of said rear focal point,
and a lens having a focus in the region of said forward focal point,

said reflector having such eccentricity and the light source being so positioned in relation to the reflector that the combination produces in the region of said forward focal point an image pattern having the proportions

$$\frac{w}{h}=\frac{2(1+e)^2}{1+e^2}$$

and symbolically represented by a multiplicity of groups of overlapping images of the source, the groups being angularly displaced and related in spoke-like fashion and having overall lengths functionally related to their angular displacement from a plane passing through the focal points,

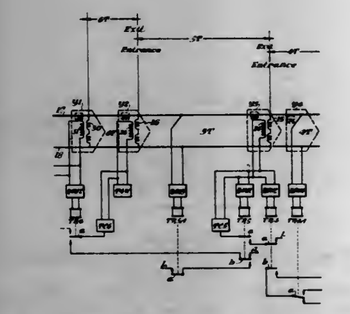
where w is the width of the image pattern, h is the height of the image pattern, and e is the eccentricity of the reflector.

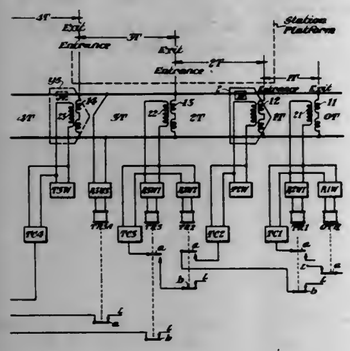
3,345,511

RAPID TRANSIT SPEED CONTROL SYSTEM

Crawford E. Staples, Edgewood, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed July 9, 1965, Ser. No. 470,713
24 Claims. (Cl. 246—34)





1. A train speed control system for use in a system having electrically continuous rails and a train thereon having speed control receiver means to receive a train speed control signal from said rails,

(a) first, second and third bonds interconnecting said rails, each bond having a train speed control transmitter means electrically coupled to said bond to provide train speed control signals to said rails, and said second bond having a wayside transmitter electrically coupled to said second bond,

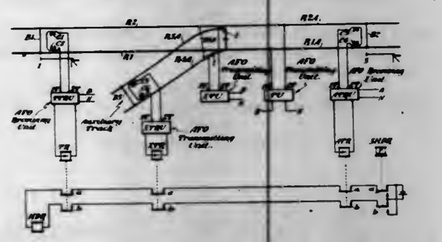
(b) said first and third bonds having wayside receivers tuned to the output of said wayside transmitter and electrically coupled thereto to control said train speed control transmitter means so that when said train passes said first bond and then said second bond, said train speed control transmitter means at said first bond and said second bond respectively cease to control said train and there is a simultaneous transfer of speed control to said train speed control transmitter means at said second bond and then said third bond to thereby provide a continuous speed control to said speed control receiver on said train.

3,345,512

AUDIO FREQUENCY OVERLAY DETECTOR TRACK CIRCUIT FOR ELECTRIC PROPULSION TERRITORY

Charles W. Fallor, Forest Hills, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed May 6, 1965, Ser. No. 453,741
3 Claims. (Cl. 246—37)



1. A track overlay signaling system for use in electrified territory where there are present spurious electric propulsion and commercial power source frequency signals as well as harmonic and beat frequencies resulting from the presence of said spurious frequency signal sources, said spurious frequency signal sources appearing in a pair of electrically continuous rails which rails carry a train having wheels thereon, said rails providing a propulsion current return path,

(a) a signal source of audio frequency energy fed to said rails at a first point,

(b) said circuit system being defined by the presence of impedance bonds between said rails at two points remote from each other and on either side of said first point, said impedance bonds balancing the propulsion return current between said rails, said impedance bonds having a high impedance to the audio frequency energy,

(c) audio frequency receivers electrically coupled to said rails at said impedance bond, each of said receivers energized by the voltage drop produced by said impedance bonds, said propulsion current balancing impedance bonds cooperating with said audio frequency energy signals to establish an overlay signaling system that has immunity from said spurious electric propulsion and commercial power source frequency signals as well as said harmonic and beat frequencies resulting from the presence of said spurious frequency signal sources, said current balancing impedance bonds and said signal source of audio frequency energy establishing a pair of complete overlay track circuits,

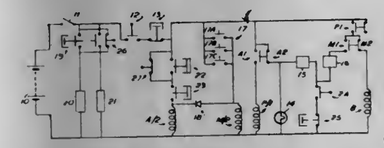
(d) a track relay controlled by each audio frequency receiver and electrically interconnected to control an indication signal.

3,345,513

ALERTING SYSTEMS FOR VEHICLE CREWS

Terence P. Dempsey, Coalfalls, Ipswich, Queensland, and Konstantin A. Shkardoon, Riverview, via Ipswich, Queensland, Australia, assignors to The Commissioner for Railways, Brisbane, Queensland, Australia, a corporation of Australia

Filed Oct. 19, 1964, Ser. No. 404,866
Claims priority, application Australia, Oct. 21, 1963, 36,687/63
3 Claims. (Cl. 246—182)



1. A vehicle crew alerting system comprising a first circuit means for energizing a first relay having contacts which close immediately on energization and which are released a predetermined interval after de-energization; an alerting circuit means actuated on release of said contacts of said first relay; an acknowledgment switch means operable by the driver of said vehicle for energizing said first relay; second circuit means for energizing a second relay having contacts which are released after a predetermined time after de-energization of said second relay; said contacts of said first relay being directly in circuit with a winding of said second relay, said second relay being energized when said contacts are closed; third relay means connected to said first circuit means and energized during closure of said acknowledgment switch, said third relay means having contacts which close after a second predetermined time of continuous energization of said third relay means; and control means to stop said vehicle, said control means being actuated by release of the contacts of said second relay or by closure of the contacts of said third relay means.

3,345,514

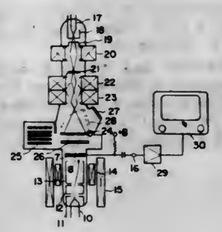
TELEVISION CAMERA COMBINED WITH AN ELECTRON MICROSCOPE AND HAVING A PLURALITY OF CATHODOCONDUCTIVE TARGETS

Tsutomu Komoda, Hachioji-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Oct. 9, 1964, Ser. No. 402,866
Claims priority, application Japan, Oct. 19, 1963, 78,775/38
1 Claim. (Cl. 250—49.5)

A cathode ray tube incorporated in an electron microscope

wherein a specimen is examined by electron beam irradiation and its electron image shown on the screen of said tube, which comprises a vidicon disposed in the electron path of said microscope in a common vacuum chamber, and a receiver; said microscope having means for emitting an electron beam; means for holding the specimen within the path of said beam; a viewing chamber between the specimen holding means and the vidicon; a fluorescent plate swingably disposed within said viewing chamber; and a plurality of cathodoconductive targets of different thicknesses and having a front and a rear surface each, slidably disposed between said viewing chamber and the screen of said vidicon; means for selectively sliding one of said targets into the electron beam path in accordance with the energy of the electron beam; the impingement of said electron beam on the front surface of said targets varying their cathodoconductivity; said vidicon further comprising a cathode, a deflection coil, a focus coil and deceleration electrodes producing a low velocity scanning beam which impinges on the rear surfaces of said targets; and means for converting the electron image produced on said targets to electrical signals appearing in said receiver.

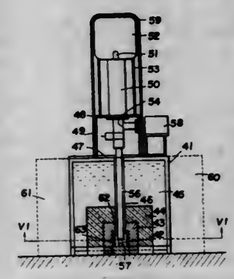


3,345,515

NEUTRON GENERATOR SHIELDING ARRANGEMENT

Takeshi Adachi, Kawasaki-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan

Filed July 15, 1964, Ser. No. 382,751
Claims priority, application Japan, July 15, 1963, 38/36,049
1 Claim. (Cl. 250—84.5)



A neutron generating apparatus comprising

a box-like support adapted to be mounted on the ground and provided with a vertical opening at the upper portion thereof;

an ion accelerating tube having an extension passing through said opening into the interior of said support;

a target located at one end of said extension;

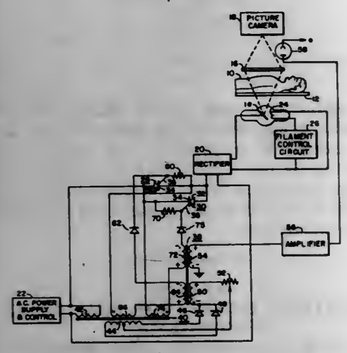
a plurality of successive insulating shielding layers contained in said support, the lowermost one of said shielding layers being formed with a cave to position said target therein;

a sample passage extending horizontally from said cave;

said shielding layers located to include the ground on which said apparatus is positioned as the bottom wall of said shielding layers;

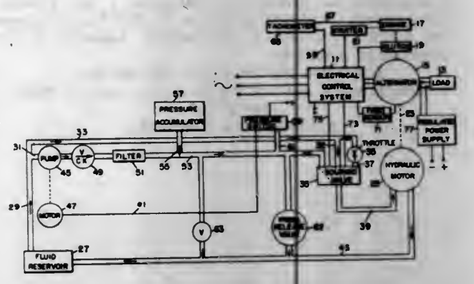
whereby such replacing of walls with the ground substantially reduces the vertical dimension of said support;
a source of electric energy for said ion accelerating tube;
and means to support said source on said ion accelerating tube.

3,345,516
X-RAY BRIGHTNESS CONTROL SYSTEM WITH MEANS TO VARY THE POWER APPLIED TO THE X-RAY SOURCE
Raymond B. Nicholson and Walter S. Richardson, Houston, Tex., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 29, 1964, Ser. No. 421,857
6 Claims. (Cl. 250—103)



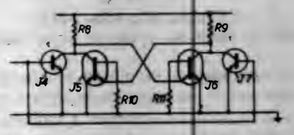
1. In an X-ray system of the type in which X-rays from an X-ray tube impinge upon a fluorescent screen to produce a visual image thereon, and wherein the X-ray tube is energized from an alternating current source through a rectifier circuit; the combination of means for maintaining the brightness of the image on the fluorescent screen at a substantially fixed level, comprising a photosensitive device for generating a control signal having a magnitude which varies as a function of the brightness of said image, means connecting said alternating current source to the rectifier including at least one semiconductive controlled rectifier having a cathode, anode and gate electrode and adapted to conduct current from the alternating current source to the rectifier circuit during a half cycle of the alternating current source, first transformer means having a primary winding connected to said alternating current source, second transformer means having a primary winding connected to said photosensitive device so as to be energized by said control signal, a current path connecting the gate electrode of said semiconductive controlled rectifier to its cathode, said current path including a secondary winding on the first transformer means in series with a secondary winding on the second transformer means, the voltages induced in said secondary windings being subtractive on one-half cycle of the alternating current source and additive on the other half cycle, and a diode in the current path connected such that it is biased to cutoff when the voltages induced in the secondary windings are additive, the diode being rendered conductive to fire said semiconductive controlled rectifier after the voltage induced in the secondary winding on the first transformer means exceeds that induced in the secondary winding on the second transformer means, the arrangement being such that the point in a half cycle at which the semiconductive controlled rectifier fires is dependent upon the magnitude of said control signal.

3,345,517
UNINTERRUPTED POWER SUPPLY
Peter Smith, Hawthorn, N.J., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Feb. 14, 1964, Ser. No. 344,979
6 Claims. (Cl. 290—4)



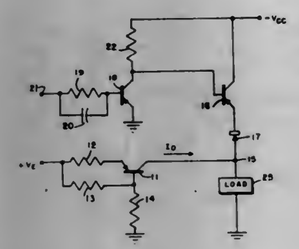
3. An auxiliary power system for temporarily supplying electrical current to a load upon unstable conditions in the normal power supply comprising,
an alternator,
a hydraulic motor coupled to said alternator,
a hydraulic reservoir,
a pressure accumulator,
pump means connected between said reservoir and said accumulator for creating fluid pressure within said accumulator,
means connecting the output of said motor with said reservoir,
a solenoid valve for alternately interconnecting said reservoir and said accumulator to the input of said hydraulic motor,
and means coupled between said alternator and said valve for actuating said valve in response to a variation in the frequency of rotation of said alternator from a predetermined standard, said valve interconnecting said reservoir with the input of said motor when in an inactuated position.

3,345,518
MULTI-EMITTER BIPOLAR TRANSISTORS UTILIZED AS BINARY COUNTER AND LOGIC GATE
Philip M. Thompson, Ottawa, Ontario, Canada, assignor to Plessey-UK Limited, Ilford, England, a British company
Filed June 5, 1964, Ser. No. 373,147
Claims priority, application Great Britain, June 18, 1963, 24,129/63; July 5, 1963, 26,718/63
10 Claims. (Cl. 307—88.5)



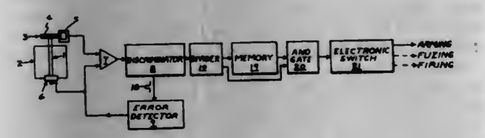
1. A circuit arrangement including a bipolar transistor having a collector electrode, a base electrode and at least two emitter electrodes, each capable of transistor co-operation with the collector and base electrodes, means for biasing, with respect to the base electrodes, at least one of said emitter electrodes for operation in a forward conduction mode, and means for reversely biasing, with respect to the base electrode, at least one other of said emitter electrodes to operate in a reverse breakdown conduction mode over at least a part of the operating range of the transistor.

3,345,519
NONLINEAR SOURCE SWITCH DRIVER
Roland J. Turner, Levittown, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 21, 1964, Ser. No. 391,347
2 Claims. (Cl. 307—88.5)



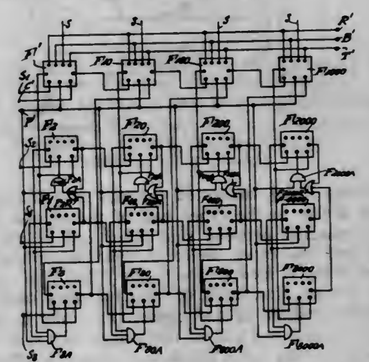
1. A switch driver comprising: An output terminal to which a load is connected; a voltage source; a first transistor having a base electrode, a collector electrode connected to said voltage source, and an emitter electrode; a diode connected between the emitter electrode of said first transistor and said output terminal; a second transistor having a base electrode, a collector electrode connected directly to the base electrode of said first transistor, and an emitter electrode connected to a point of reference potential; an input terminal connected to the base electrode of said second transistor; a third transistor having a base electrode, a collector electrode and an emitter electrode, said third transistor providing a current source, means to connect the collector electrode of said third transistor to said output terminal; a source of positive voltage; means to connect said source of positive voltage to the emitter of said third transistor and means to connect the base of said third transistor to said source of positive voltage.

3,345,520
GYRO-CHRONOMETER SYSTEM FOR GENERATING PRECISE TIME BASE ELECTRICAL SIGNALS AND MEANS RESPONSIVE THERETO FOR SEQUENCING EVENTS
William H. Browning, Mountain Lakes, and Edward D. Padgett, Morristown, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 8, 1964, Ser. No. 395,103
2 Claims. (Cl. 307—88.5)



1. A time base generator comprising, a gyroscope, a reactor mounted on the gimbal means of said gyroscope, an electromagnetic generator for generating electrical pulses mounted on said gyroscope for rotation therewith, inductive pick-up means for detecting said pulses, an electronic amplifier having its input coupled to said inductive pick-up for amplifying and shaping said pulses and its output coupled to feedback means, the output of said feedback means coupled to said reactor, said feedback means transmitting an error signal due to deviations in rotational velocity of said gyroscope to said reactor to maintain the rotational velocity of said gyroscope constant and therefore the frequency of said electromagnetic pulse generator.

3,345,521
DECIMAL CODED BINARY COUNTER WITH SEQUENTIAL DIGIT INPUT
Albert C. Leenhouts, Granby, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Feb. 17, 1966, Ser. No. 528,151
10 Claims. (Cl. 307—88.5)

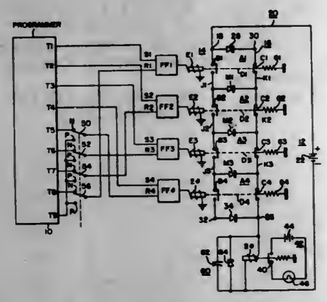


1. A logic circuit comprising a plurality of flip-flops with each flip-flop having a 0 and a 1 state, first means interconnecting at least four flip-flops to form a first binary coded decade counter for achieving a condition representative of a decimal digit, second means interconnecting at least four flip-flops to form a second binary coded decade counter for achieving a condition representative of a decimal digit, means connecting the flip-flops of the first decade to the corresponding flip-flops of the second decade to form a shift register, input shift register means connected to each of the flip-flops of the first decade, a copy command terminal connected to all of the flip-flops for applying a simultaneous signal to each, input count means connected to at least the initial flip-flop of the first decade and count command means connected to all of the flip-flops for supplying a signal simultaneously to all.

3,345,522
SYSTEM FOR PROVIDING REACTION INDICATIVE OF DEVIATION FROM A PREDETERMINED ORDER
John F. Reuther, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1964, Ser. No. 415,920
11 Claims. (Cl. 307—112)

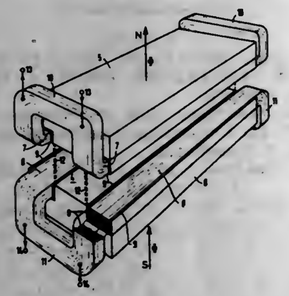
1. A switching circuit comprising a plurality of switch sets, each set including respective first and second switches interlinked to provide to the set first and second operational modes, in the first mode one switch of the set being open while the other switch of the set is closed and vice versa in the second mode, respective positive and negative direct current supply lines, first and second asymmetric devices, a plurality of asymmetric devices other than said first and second asymmetric devices, means

connecting all of said one switches in a first series string whereby said first string has a plurality of junctions in consecutive order each between a different pair of adjacent switches in that string, means connecting all said other switches in a second series string, whereby said second string has a plurality of junctions in consecutive order each between a different pair of adjacent switches in that string, one end of one of said strings being connected to one of said direct current lines, whereby said one string is identified with the polarity of said one direct current line, said one end of said one series string being connected through said first asymmetric device to one end of the second series string, the other end of the



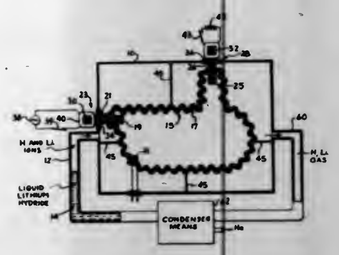
first string being connected through said second asymmetric device to the other end of the second string, a load connected between said other end of the second string and the other direct current line, whereby said second string is identified with the polarity of said other direct current line, each of said junctions occupying a particular position in said consecutive order in its string relative to said one end of the string, each said junction in the first string being connected through a different one of said plurality of asymmetric devices to the correspondingly positioned junction in the second string, all said asymmetric devices being poled in the same direction between said strings, all said asymmetric devices being poled in the forward direction relative to said polarities that the strings are identified with.

3,345,523
MAGNET FOR MAGNETOHYDRODYNAMIC GENERATORS
Erich Grünwald, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Apr. 23, 1965, Ser. No. 450,317
Claims priority, application Germany, Apr. 24, 1964, S 90,755
7 Claims. (Cl. 310—11)



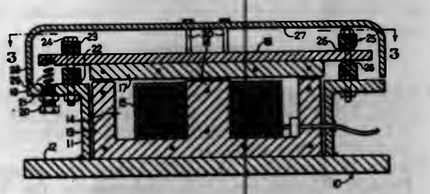
1. In an MHD generator having a plasma flow channel, an electromagnet comprising a pair of pole shoes located respectively at opposite sides of the plasma flow channel, and electrically energizable coil means for producing a magnetic field in a circuit passing through said pole shoes and said channel, said pole shoes being the only components of said circuit made of iron.

3,345,524
METHOD AND APPARATUS FOR ENERGY CONVERSION
Robert P. Kidwell, 5249 Wren, Apt. 50, El Paso, Tex. 79924
Filed Sept. 23, 1965, Ser. No. 495,011
6 Claims. (Cl. 310—11)



1. Energy conversion means comprising: first means for confining charged particles within a limited region along a first path, second means for confining charged particles within a limited region along a second helical path spiraling around said first path, and means for simultaneously accelerating charged particles along said first and second paths at the same frequency to form magnetically interacting and reinforcing streams of charged particles.

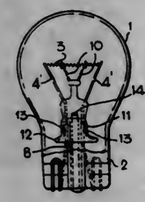
3,345,525
ADJUSTABLE ELECTRIC MAGNETIC VIBRATOR
James H. MacBlane, Indiana, Pa. (Rte. 5, Carrollton, Ohio 44615)
Filed Apr. 5, 1965, Ser. No. 445,649
6 Claims. (Cl. 310—17)



1. An electromagnetic vibrator comprising: a housing including a base, a peripheral sidewall projecting axially from said base and a radially outwardly extending flange on said sidewall near the end thereof opposite the base, said housing being constructed and arranged for securement to a hopper or the like for inducement of vibrations therein; a ferromagnetic core secured in said housing; a wire coil received on said core facing outwardly of said housing base and constructed and arranged for connection to a supply of pulsating electric current; a metal plate; an armature secured to the underside of said metal plate in the central region thereof, said metal plate extending laterally beyond said armature at least throughout a portion of the perimeter thereof; resilient means securing said metal plate, peripherally of said armature, to said housing flange for limited oscillation of the plate and

armature toward and away from the coil and core; said resilient means including at least one body of resilient material received between said metal plate and said flange; means defining an opening axially through said flange; a longitudinally advanceable-retractable element received through said opening and engaging the body of resilient material between the flange and metal plate in a sense to force the body of resilient material against the plate; adjustment means for advancing and retracting said adjustment element from exteriorly of the housing for varying the resilient force with which the body of resilient material engages the plate thereby providing tuning means for the vibrator easily operable exteriorly of the housing thereof.

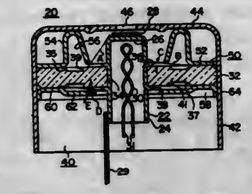
3,345,526
ELECTRIC INCANDESCENT LAMPS
John Willoughby Thomas Wright, Leicester, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Mar. 20, 1964, Ser. No. 353,421
Claims priority, application Great Britain, Apr. 4, 1963, 13,426/63
5 Claims. (Cl. 313—42)



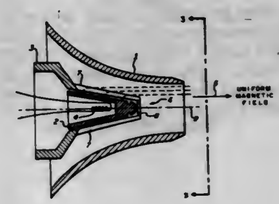
1. An electric incandescent lamp comprising an envelope of vitreous material, a flattened pinch sealing said envelope, two filaments within the envelope, two lead-in conductors to each filament, an end portion of each of said lead-in conductors extending in sealed relation through said pinch to the exterior of the envelope and forming an electrical terminal adjacent the outer surface of said pinch, a vitreous exhaust tube projecting into said envelope from said pinch, a second vitreous tube arranged in overlapped coaxial relation with said exhaust tube, the free ends of said tubes in the envelope fused together to provide an enlarged head portion projecting outwardly of the exhaust tube with each of said lead-in conductors extending in spaced relation through said head portion.

3,345,527
CATHODE-GRID ASSEMBLY WITH SHIELDING MEANS TO PREVENT DEPOSITION OF CONDUCTIVE MATERIAL ON INSULATING SUPPORT
Eros Atti, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 24, 1965, Ser. No. 466,769
7 Claims. (Cl. 313—82)

1. An electrode assembly for an electron discharge device comprising a first and second electrode, said first electrode including a support member and a source of electrons, said source and said member each having a surface of a material having the property of throwing off conductive materials at high temperatures, an insulation member for spacing said first and second electrodes apart, a discontinuity formed in at least one surface of said insulation member between said first and second electrodes, and shielding means disposed between said first electrode and said insulation member for substantially enclosing said discontinuity, the trajectories of the conductive material emitted by said source being intercepted by said shielding means and the trajectories of the conductive materials emitted by said member toward said discontinuity intersecting the surface of said insulation member only at small grazing angles.



3,345,528
MAGNETRON INJECTION GUN HAVING A VANED NEGATIVE CONTROL GRID
Furnie S. Bryant, Jr., Gainesville, Fla., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 594,103
5 Claims. (Cl. 313—82)



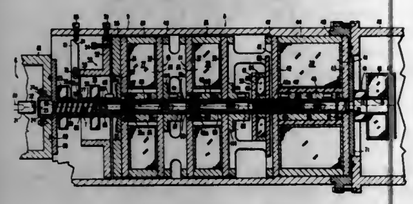
1. A magnetron injection gun comprising
a hollow conical anode,
a conical cathode,
a hollow conical focus electrode,
said electrode surrounding one end of said cathode and said anode surrounding all of said cathode, said anode, cathode and electrode being coaxial, and
a control grid structure attached at one end to said electrode and extending axially along said cathode to form a cage about said cathode,
said structure comprising a plurality of conductive vanes, each said vane extending axially along said cathode,
the narrow edge of each said vane facing said cathode.

3,345,529
ELECTRON BEAM COLUMN WITH DEMOUNTABLE FLUX-GENERATING ASSEMBLY AND BEAM-FORMING ELEMENTS
Karl H. Loeffler, San Jose, and Erik O. J. Salbu, Mount View, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,731
10 Claims. (Cl. 313—84)

1. An electron beam column comprising:
a source to produce a beam of electrons for transmission along a pre-selected axis,
a flux generating assembly including a plurality of flux transmitting cores spaced along said axis, said cores having aligned openings for the passage of said beam,

a non-magnetic tube slideably and removably fitted into said openings and being sized to fit closely adjacent said cores and having a center opening coinciding with said axis when fitted into said core openings,

a plurality of beam-forming elements formed to slide into said tube in side-by-side relationship to regulate the beam, and



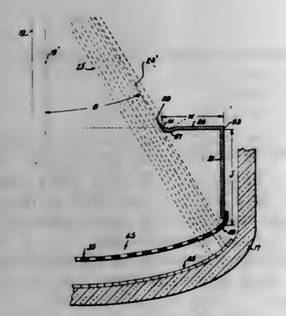
releasable clamping means for holding said tube and beam-forming elements, in a pre-determined position relative to each other and relative to said flux generating assembly whereby said tube can be removed from said flux generating assembly and said elements can be removed easily from said tube for cleaning and repair.

3,345,530

COLORED TELEVISION TUBE WITH A SHADOW MASK SUPPORTING FRAME HAVING INWARD LEDGE TO SHUT OFF BEAM OVER-SCAN

Paul Haas, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 28, 1966, Ser. No. 530,470
5 Claims. (Cl. 313—92)



1. In a color cathode ray tube mask-screen combination formed to receive energy through said mask, framing means for providing improved screen response by limiting said response to energy received directly thereon, said mask having a formed energy permeable portion spaced from said screen with a defined periphery thereabout joined to support means formed as a substantially upstanding sidewall portion of varying height having a terminal portion, said framing means comprising:

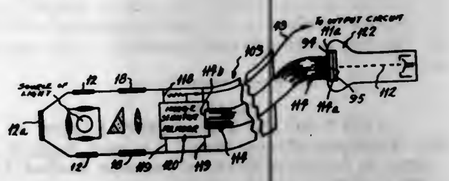
a substantially instanding ledge integral with said terminal portion and having a width varying directly with the inner sidewall dimension between said defined periphery and said ledge to provide shielding for the interior surface of said sidewall portion to prevent energy from impinging thereon and reflecting through said permeable portion to said screen.

3,345,531

DEVICES FOR LIGHT TRANSFER BY FIBER OPTIC MEMBERS

Edward Emanuel Sheldon, 30 E. 40th St., New York N.Y. 10016

Original application Oct. 21, 1965, Ser. No. 499,416. Divided and this application Aug. 31, 1966, Ser. No. 576,451
14 Claims. (Cl. 313—92)



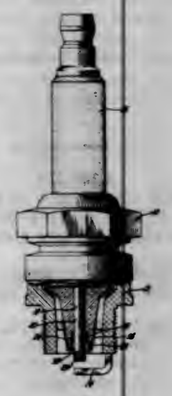
1. A device comprising in combination means producing light radiation, radiation conductor comprising a plurality of entirely solid members for conducting said radiation, said members having the property of conducting said radiation by internal reflection, said members having a core of material transparent for at least a part of said radiation and having a high index of refraction, each of said members being provided with its own individual covering means of a lower index of refraction than said transparent core mounted on said members for preventing the escape of said radiation from said members, in said device furthermore said members receiving said radiation from said means producing light radiation and conducting said radiation.

3,345,532

SPARK PLUG WITH THE INSULATOR TIP COATED WITH A LEAD OXYHALIDE

Samuel P. Mattarella, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 6, 1965, Ser. No. 445,905
5 Claims. (Cl. 313—143)



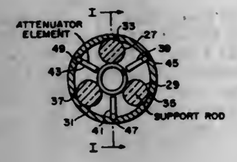
1. A spark plug operative at temperatures below 1300° F. comprising a metal having a ground electrode secured to one end thereof, a ceramic insulator secured within said shell and having an unglazed firing tip portion, said firing tip portion having a thin corrosion inhibiting coating on a lead oxyhalide material bonded thereon, said lead oxyhalide material having a melting point above 1300° F.

3,345,533

TRAVELING WAVE TUBE ATTENUATOR

Frederick L. Washburn, Jr., Round Bay, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 27, 1964, Ser. No. 362,657
14 Claims. (Cl. 315—3.6)



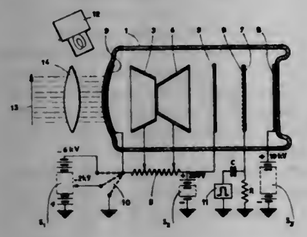
1. A traveling wave tube comprising a slow wave propagating structure for guiding electromagnetic energy for interaction with an electron beam, a vacuum envelope, a plurality of dielectric elements for supporting said propagating structure within said envelope and providing thermal transfer from said helix to said envelope, and a plurality of separate attenuator elements positioned between said slow wave propagating structure and said envelope and in the spaces provided between said dielectric elements.

3,345,534

LIGHT AMPLIFIER WITH NON-LINEAR RESPONSE TO PROVIDE IMPROVED CONTRAST CHARACTERISTICS

Daniel R. Charles, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Jan. 29, 1964, Ser. No. 340,876
Claims priority, application France, Feb. 15, 1963, 924,994, Patent 1,356,459
13 Claims. (Cl. 315—12)



1. A non-linear light amplifier tube comprising:

fine mesh storage grid means provided with an insulating layer on one side thereof and with a conductive layer on the other side thereof,

a photocathode and a luminescent screen facing said insulating and conductive layers, respectively,

focusing and accelerating electrode means positioned between said photocathode and said storage grid means,

means for projecting onto said photocathode an optical image,

means for successively energizing said photocathode with relatively high voltage and with relatively low voltage electrical energy for successively converting said optical image into a fast electron image and a slow electron image, respectively,

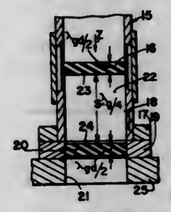
said fast electron image producing on said storage grid a charge pattern representative of said optical image while said slow electron image is amplified under the control of said charge pattern, with the resulting amplified electron image impinging on said luminescent screen thereby producing thereon an optical image with increased brilliance and contrast.

3,345,535

ARC PROTECTED HIGH FREQUENCY ELECTRON DISCHARGE DEVICES AND WAVEGUIDE WINDOW COUPLING ASSEMBLY

Floyd O. Johnson, Mountain View, and Louis Thomas Zitelli, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Aug. 26, 1964, Ser. No. 392,211
7 Claims. (Cl. 315—39)



1. A high frequency electron discharge device including electromagnetic wave transmission waveguide window coupler means wherein said coupler means is characterized by having a pair of self-resonant electromagnetic wave permeable windows disposed therein in spaced relationship along the direction of energy propagation through said coupler, wherein said spacing between said windows falls within the following limits:

$$s=\frac{2n-1}{4}\lambda_g \pm .35\lambda_g/4$$

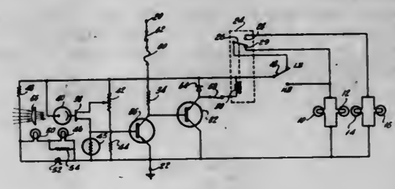
wherein s=the spacing between opposed faces of the windows, n=any positive integer, and λ_g=guide wavelength as determined at the self-resonant frequency of at least one of said pair of windows, each of said self-resonant windows being substantially $\frac{1}{2}\lambda_{gd}$ thick as determined at a frequency within the passband of said coupler means where λ_{gd}=waveguide wavelength of each window portion.

3,345,536

PHOTOELECTRIC CONTROL CIRCUIT

Carl E. Atkins, Montclair, and Robert L. Ziolkowski, South Plainfield, N.J., assignors, by mesne assignments, to Wagner Electric Corporation, a corporation of Delaware

Filed Feb. 21, 1964, Ser. No. 346,490
4 Claims. (Cl. 315—83)

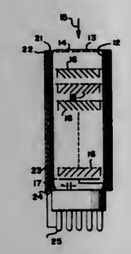


1. A headlight control circuit for an automobile which automatically dims the headlamps of the automobile at the approach of an oncoming lighted vehicle comprising; an electromagnetic relay having armature means connected to a source of direct current potential, a first contact means connected to the low beam filaments of the headlamps, a second contact means connected to the

high beam filaments of the headlamps and a coil which can be energized and de-energized to position the armature means in contact with the first or second contact means; amplifying means having an output circuit coupled to said coil to supply current thereto and an input circuit which includes a field effect transistor having a gate, a source, and a drain electrode; a photoelectric cell positioned for receiving light from the headlamps of approaching vehicles, said photoelectric cell having a cathode connected to the gate electrode of said field effect transistor so that light variations applied to said photoelectric cell produce variations from a bias level of output current of said amplifying means, and a controlled source of light which is positioned so that light therefrom is directed at said photoelectric cell to produce said bias level of output current of said amplifying means which permits energization of the high beam filaments, said variations from said level of output current causing the high beam filaments to be de-energized and the low beam filaments to be energized.

3,345,537
PHOTOELECTRIC SHIELD INCLUDING A DIELECTRIC SHEET SANDWICHED BETWEEN TWO METAL SHEETS

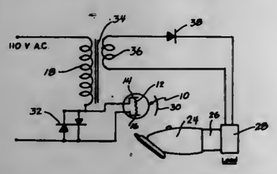
James C. Spencer, Sr., Vienna, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,150
10 Claims. (Cl. 315—85)



1. A shield for encircling the longitudinal surface of a photomultiplier tube having a photocathode disposed at one end thereof to receive light energy, said shield comprising a pair of metal sheets having sandwiched between them a layer of di-electric material, and means for electrically connecting said two metal sheets together and to said photocathode.

3,345,538
CURRENT SWITCHING ARRANGEMENT TO CUTOUT THE DEFECTIVE GAS LAMP UPON FAILURE

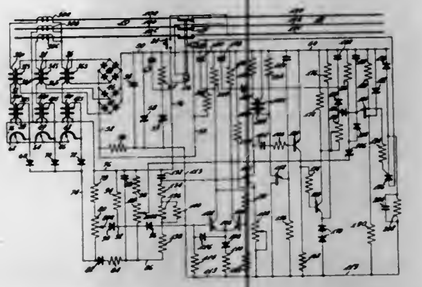
Donovan F. Peterson, Elm Grove, Clarence E. Rasmussen, Whitewater, and Roy J. T. Harris, Milton, Wis., assignors to U.S. Automatics Corporation, Pewaukee, Wis., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,026
7 Claims. (Cl. 315—125)



1. In combination, a vapor lamp producing ultraviolet energy shielded from eyesight, an inductive ballast having a first winding electrically connected in series with the lamp and a second winding inductively coupled thereto, a normally non-conducting switch means shunting said lamp responsive to electrical current changes in said first winding for conducting current through said first winding upon lamp failure, and an electrical device connected in series with said second winding.

3,345,539
STATIC OVERCURRENT TRIPPING SYSTEM HAVING PHASE-TO-PHASE AND PHASE-TO-GROUND FAULT PROTECTION

Harry B. Ashenden, Hyde Park, and Charles P. Goeller, Quincy, Mass., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 19, 1965, Ser. No. 472,893
7 Claims. (Cl. 317—33)

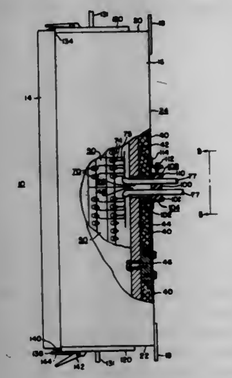


1. A control system for a circuit breaker protecting a polyphase electrical power circuit comprising:
- first means associated with each phase for providing a current output proportional to the current in each phase;
- second means responsive to the current output for providing a first signal output varying as a function of the difference in current between any of the phases and a second signal output varying as a function of current between any one of the phases and ground, said second means providing a substantially higher second signal output for a given current between a phase and ground as compared to the first signal output for the same given current output between any of the phases; and
- static relay means responsive to the signal outputs for opening the circuit breaker when one of said output signals exceeds a preselected level for a preselected time.

3,345,540
THERMAL JUNCTION REFERENCE CABINET

James F. Sutherland, Pittsburgh, Francis D. Plociennik, Willow Grove, and Stephen Schmandrak, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 23, 1966, Ser. No. 581,468
9 Claims. (Cl. 317—99)

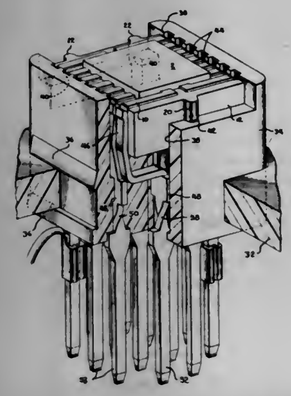
1. A thermal junction reference cabinet comprising an enclosure having a body member and a cover member, means for securing said members together, means for generally thermally insulating the space within said enclosure from the exterior, at least one thermal reference plate mounted in thermally insulated relation to said body member within said enclosure, at least one pair of thermal junction terminals, means for supporting said terminals on said plate, exit wires including wires connected to and extending from said terminals through a first side of said body member to the exterior, means for supporting said exit wires in relation to said body member and for thermally insulating the enclosure interior from the exterior across the exit region of said exit wires, entry wires including wires extending from the exterior through another side of said body member and connected to said terminals, means for supporting said entry wires in relation to said body member, said entry wire supporting



means resiliently responsive to pressure from said cover member for producing a substantial thermal seal about said entry wires and substantial thermal insulation of the enclosure interior from the exterior across the entry region of said entry wires.

3,345,541
MOUNTING AND CONNECTING MEANS FOR CIRCUIT DEVICES

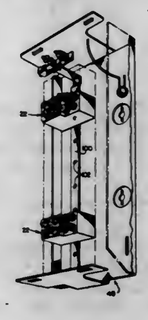
Robert Franklin Cobaugh, Hershey, and Mark Allen Shrock, Mechanicsburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 21, 1966, Ser. No. 528,998
4 Claims. (Cl. 317—101)



1. An electrical interconnection system for circuit devices comprising, a panelboard, a plurality of electrical connectors mounted on said panelboard, each of said connectors having a recess on one side thereof for reception of said circuit devices and having contacts on opposite sides of said recess, contacts extending through said connector and through the plane of said panelboard, said contacts each including post means on the opposite side of said panelboard for interconnecting conductors, said circuit devices being mounted on an insulating block with the leads extending therefrom extending around opposite sides of said block and onto the bottom face of said block, said block being mounted in said recess with said leads contacting said electrical contacts.

3,345,542
MULTIPLE STATION PROTECTOR

Alvin F. Paddock, Roselle, and Frank C. Summers, Chicago, Ill., assignors to Cook Electric Company, Morton Grove, Ill., a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,263
4 Claims. (Cl. 317—116)



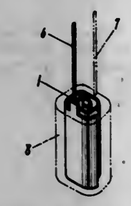
1. A communications circuit protector comprising:
- at least one self-containing integral communications circuit protector module;
- each said module having an insulative base and containing an integral communications overvoltage protection circuit on said base,
- said overvoltage protection circuit including at least one pair of overvoltage protector means, communications circuit terminal means connecting with said overvoltage protector means, and a common ground conductor on said base connecting said overvoltage protector means;
- an elongated ground conductor strap;
- each said module being independently removably mounted to said ground conductor strap,
- said base of each said module having a mounting side abutting said ground conductor strap,
- said mounting side having a set of opposing spaced projecting shoulders thereon engaging opposing sides of said ground conductor strap preventing rotation between said module and said ground conductor strap;
- and a single conductive fastening means fastened to said common ground conductor of said module and to said ground conductor strap removably holding said mounting side of said base against said ground conductor strap,
- said fastening means electrically connecting said common ground conductor on said base with said ground conductor strap,
- said fastening means and said shoulders together providing the complete rigid mechanical connection of each said module to said ground conductor strap.
- said ground conductor strap providing a complete mechanical support of each said module.

3,345,543
SOLID ELECTROLYTIC CAPACITOR WITH ANODIZED ALUMINUM ELECTRODE AND METHOD OF MAKING

Toshio Sato, 897 Chigase Oome-shi, Tokyo-to, Japan
Filed Mar. 11, 1965, Ser. No. 438,983
3 Claims. (Cl. 317—230)

3. A solid electrolytic capacitor comprising an aluminum anode, a dielectric oxide film anodized on the surface of said anode, a solid reducible manganese dioxide

electrolyte layer intimately overlying said dielectric film, said electrolyte layer being the in situ pyrolytic conversion product of a manganous salt layer including a coating of manganese carbonate hydrate on the dielectric oxide film together with a coating of manganese nitrate

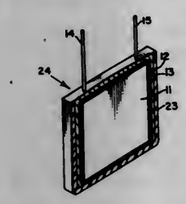


on the carbonate hydrate and both coatings being simultaneously in situ pyrolytically converted into said reducible manganese dioxide electrolyte layer, and a conductive cathode disposed in intimate contact on said solid electrolyte layer.

3,345,544
SOLID ALUMINUM CAPACITORS HAVING A PROTECTED DIELECTRIC OXIDE FILM

James E. Metcalfe, Greenfield, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed May 17, 1965, Ser. No. 456,112
28 Claims. (Cl. 317—230)



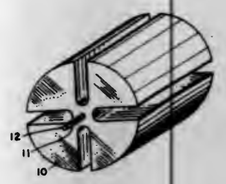
1. A solid electrolyte aluminum capacitor comprising:
(a) an etched aluminum anode having an anode lead affixed thereto, the surface of said anode characterized by intercommunicating voids;
(b) an electrolytically formed dielectric anodic film over the entire surface of said etched anode;
(c) a protective film over said anodic film, said protective film being a conversion product of inorganic phosphates applied to the anodic film for preventing damage to said anodic film;
(d) a layer of manganese dioxide in intimate contact with said protective film throughout said voids and including the exterior surface of said anode;
(e) a layer of graphite overlying said layer of manganese dioxide;
(f) a cathode coating in electrical contact with said layer of graphite, said cathode coating having a cathode lead attached thereto; and
(g) a housing for said capacitor, said anode and cathode leads extending therefrom.

3,345,545
SOLID ELECTROLYTIC CAPACITOR HAVING MINIMUM ANODE IMPEDANCE

Pierre L. Bourgault, Etobicoke, Ontario, and Joost Bateman, Toronto, Ontario, Canada, assignors to Johnson, Matthey and Mallory, Ltd., Toronto, Ontario, Canada, a corporation of Canada

Filed Nov. 27, 1964, Ser. No. 414,216
10 Claims. (Cl. 317—230)

1. An electrolytic capacitor comprising a solid porous anode of film forming metal characterized by a multiplicity of microscopic intercommunicating voids having a dielectric film formed thereof and being permeated by at least one channel reducing the quantity of metal in said anode, a first electrode for said anode, a solid electrolyte in said voids and in contact with said film, a second electrode in the form of a conducting layer on the exterior surfaces of said electrolyte including said channels and in contact with said electrolyte, and said chan-

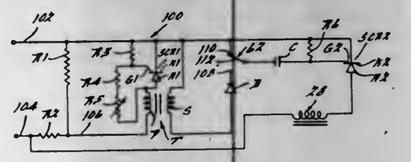


neled anode comprising means for reducing the electrical impedance thereof, at least at a single frequency, in the mean path between any point within the anode and the exterior surface of the conducting layer, to a value below the value of the impedance from said point to said surface in the anode with said channels filled with the unremoved mass of film-forming metal.

3,345,546
ELECTRIC STAPLER AND STAPLER TRIGGER CIRCUIT

Renaldo M. Beltramo, Royal Oak, Mich., assignor, by mesne assignments, to Michigan Bank, National Association, a national banking association

Filed July 20, 1964, Ser. No. 383,857
16 Claims. (Cl. 318—132)



8. An electronic circuit for providing a pulsed output comprising: first circuit means for producing an output pulse responsively to a trigger pulse, second circuit means for continuously generating said trigger pulses, switch means selectively actuable for electrically connecting said second circuit means to said first circuit means whereby said output pulse is produced, and timing means connected to said first and second circuit means and responsive to said trigger pulses for preventing actuation of said first circuit means by successive ones of said trigger pulses after a preselected time interval.

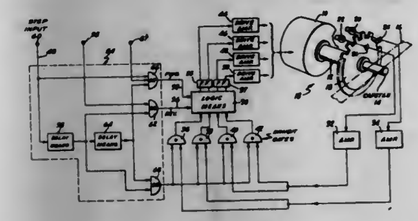
3,345,547
STEP MOTOR CONTROL SYSTEM INCLUDING A THREE STAGE ENERGIZATION FOR EACH STEP

Peter F. Dunne, San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Jan. 21, 1965, Ser. No. 426,944
8 Claims. (Cl. 318—138)

2. In a recorder system having a web-like recording member, the combination comprising:
moving means including an incremental motor for incrementally stepping the recording member in a forward direction and a reverse direction; and

means for enabling said moving means to accelerate in a forward direction, a reverse direction and a forward direction in sequence during a single stepping

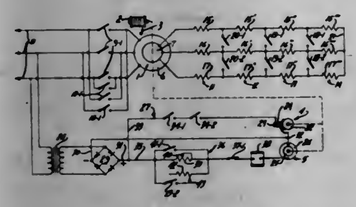


by said motor, whereby said motor steps from a first position to a second position with a minimum of terminal oscillatory movement and in a relatively short period.

3,345,548
ELECTRIC HOIST CONTROL SYSTEM

Frederick Yorke Grepe, Scarborough, Ontario, Canada, assignor, by mesne assignments, to A. O. Smith, Milwaukee, Wis., a corporation of New York

Filed May 13, 1965, Ser. No. 455,545
14 Claims. (Cl. 318—203)



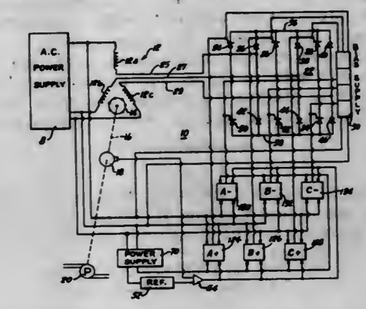
1. In an electric hoist costrol system employing a hoist drive motor in combination with an electrically controlled on-off set brake and a proportional brake having a winding, the braking force of the proportional brake being proportional to the degree of energization of the winding, a control means to control the direction and speed of the drive motor, the improvement in the circuit connection of the set brake and the proportional brake comprising,
a power circuit for said winding including electroresponsive means connected in the power circuit through said winding and controlling a switch means, and
a power circuit for said set brake including said switch means and an operating means connected in circuit by said control means for all speed and direction settings such that the proportional brake is energized before said set brake is released for all directions and speeds.

3,345,549
RECTIFIER BRIDGE ADJUSTABLE ALTERNATING CURRENT VOLTAGE CONTROL

John G. Hauser, Milwaukee, and John D. Steadman, New Berlin, Wis., assignors, by mesne assignments, to The Louis Allis Company, Milwaukee, Wis., a corporation of Delaware

Filed Mar. 9, 1965, Ser. No. 438,289
15 Claims. (Cl. 318—227)

1. An adjustable voltage control for providing a variable bipolarity polyphase voltage of any desired magnitude to a polyphase load connected between the control and a source of polyphase alternating current voltage, said load having a phase voltage conductor for each phase of said polyphase voltage extending between the source and the control, said voltage being provided by connecting the phase voltage conductors in the control so as to permit the alternating current voltage to be applied to the load, said control comprising:
a rectifier bridge including a pair of controlled rectifiers connected to each phase conductor of the load, the conduction state of said controlled rectifiers being sequentially controllable to connect the conductors to apply selected portions of the alternating current voltage of either polarity to the load to form the variable bipolarity polyphase voltage of the desired magnitude;

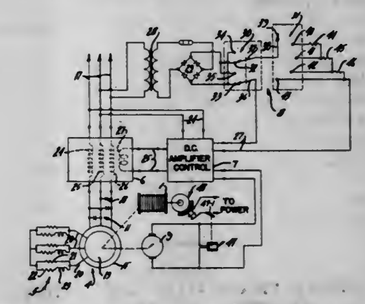


firing amplifiers connected to each of said controlled rectifiers and to a means providing a signal proportional to the desired magnitude of the bipolarity polyphase voltage, said firing amplifiers being responsive to said proportional signal to provide firing signals to the controlled rectifiers to sequentially render them conductive to connect the load phase voltage conductors and apply the selected portions of the alternating current voltage of either polarity to the load, said load serving as the series impedance to the controlled rectifiers to protect them from transient conditions in the polyphase alternating current voltage.

3,345,550
HOIST MOTOR CONTROL

Frederick Yorke Grepe, Scarborough, Ontario, Canada, assignor, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Feb. 3, 1965, Ser. No. 430,123
2 Claims. (Cl. 318—229)



1. In a hoist motor control system for a hoist and the like having a characteristic wherein the load drives the motor,
an induction wound rotor motor having fixed rotor network impedance circuits and having input power lines,
a magnetic frequency multiplier having load windings inserted in said power lines to control the power to the motor and thereby the torque versus speed char-

acteristic, said frequency multiplier means including a direct current control winding magnetically coupled to the load windings,

a speed responsive means adapted to be coupled to be driven in timed relation by the load and producing proportionate direct current signals,

a direct current source having a continuously adjustable means to establish selected output control signals related to the output of the speed responsive means, and

a comparison circuit having a pair of inputs connected to the speed responsive means and to the direct current source and having an output connected to the direct current control winding to determine the power application to the motor, and

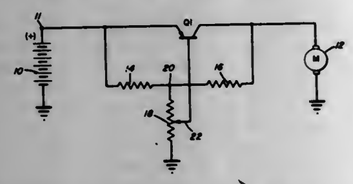
an electroresponsive safety means connected to the speed responsive means and interconnected to the motor to produce an override control in the event the motor speed increases above a selected speed.

3,345,551

VARIABLE SPEED CONTROL FOR A DC MOTOR

Michael Slavin and Grayson B. Morris, Jr., Baltimore, Md., assignors to The Bendix Corporation, a corporation of Delaware

Filed May 10, 1966, Ser. No. 548,901
3 Claims. (Cl. 318—345)



1. A control circuit for adjusting the speed of a direct current motor in a continuous manner comprising:

a first terminal;

a two pole direct current source having one pole connected to said first terminal and the other pole grounded;

a second terminal;

a motor connected between said second terminal and ground;

a transistor having collector, emitter and base electrodes, the emitter-collector path of said transistor directly connecting said first and second terminals;

a third terminal;

a first resistor connected between said first and third terminals;

a second resistor connected between said second and third terminals; thereby providing a path including said first and second resistors in parallel with the emitter-collector path of said transistor; and

variable resistance means connected between said third terminal and ground and having a connection to the base electrode of said transistor to vary the bias of said base electrode and thereby vary the current to said motor.

3,345,552

THREE PHASE HALF WAVE DIRECT CURRENT POWER SOURCE

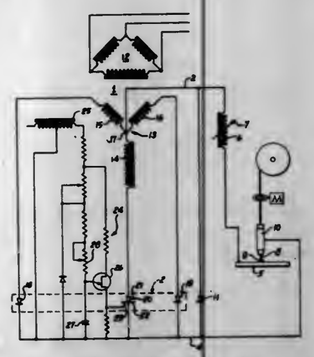
Bernard J. Aldenhoff, Oconomowoc, Wis., assignor, by mesne assignments, to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 29, 1965, Ser. No. 443,502
3 Claims. (Cl. 321—5)

1. In a three phase half wave direct current power source,

a three phase transformer having a three phase secondary having three phase windings,

a pair of uncontrolled rectifier means each being connected between a different one of two of the windings and an output lead, said rectifier means constituting the sole connection of said two windings to said output lead,



a controlled rectifier connected between the third winding and the output lead, and

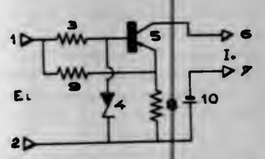
adjustable means to adjust the conduction of the controlled rectifier and thereby adjusting the output voltage impressed on said output lead.

3,345,553

STABILIZED DIRECT CURRENT SUPPLY CIRCUIT

Péter S. Schermann, Amersfoort, Netherlands, assignor to Maatschappij voor Electrische Bedrijfsautomatisering Electrofact, Amersfoort, Netherlands

Filed Apr. 27, 1964, Ser. No. 362,692
Claims priority, application Netherlands, Apr. 29, 1963, 292,116
11 Claims. (Cl. 323—4)



1. In a stabilized direct current circuit to supply direct current to a load,

a pair of input terminals (1, 2) adapted for connection to a source of input voltage (E_1) subject to variation;

a pair of output terminals (6, 7) providing a regulated current (I_o);

and a source of direct current (10) in series with said output terminals;

a voltage divider (3, 4) comprising at least one stabilizing circuit element (4) connected across said input terminals (1, 2);

and a transistor (5) having an emitter resistance (8) connected to the emitter of the transistor (5), the collector-emitter path being in series with said load terminals, and the base-emitter path being in parallel with one of said elements (4) of the voltage divider;

the improvement comprising

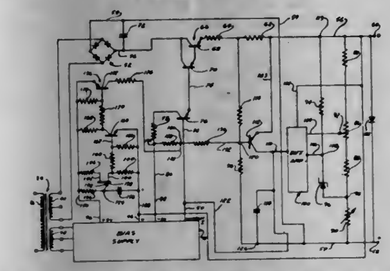
a further resistor (9) interconnecting the emitter and the other side of the other of said voltage divider elements (3), the further resistor (9) and said emitter resistance (8) forming a second voltage divider connector across said input terminals (1, 2).

3,345,554

REGULATING SYSTEM WITH PERIODICALLY INHIBITED FOLD-BACK CHARACTERISTIC

Peter J. Lupoli, Hamden, Conn., assignor to Technipower Incorporated, South Norwalk, Conn., a corporation of Connecticut

Filed Aug. 28, 1964, Ser. No. 392,773
7 Claims. (Cl. 323—4)



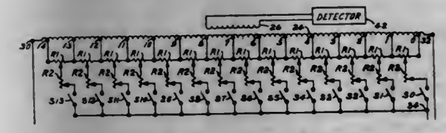
1. In a regulating system, means for limiting the current passing through said system under normal conditions of operation, fold-back means for reducing the current passing through said system below a predetermined value when the system enters an extreme overload condition, means for continuously producing a series of signals separated by intervening periods of non-signal, and means for continuously connecting said signals to said limiting and fold-back means, said signals having a magnitude such, when applied to said fold-back means, as to render the latter at least partially ineffective, the duration of said signals being at least equal to the length of time required for the regulating system to become substantially effective after being operatively energized.

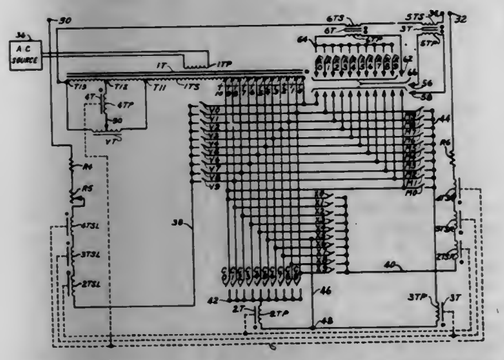
3,345,555

ENERGIZING CIRCUIT FOR POSITIONING SYSTEM TRANSDUCER

Robert E. Macherey, Mequon, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Apr. 8, 1964, Ser. No. 358,254
10 Claims. (Cl. 323—43.5)





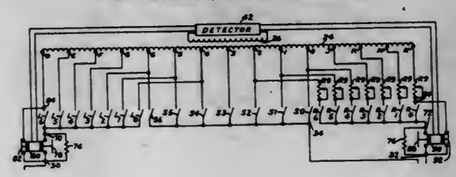
2. In an electric positioning apparatus, the combination comprising: a primary winding having a terminal at each end and at least one tap unequally spaced between the end terminals thereby dividing the primary winding into a pair of unequal sections, a single phase alternating current source having a pair of sides of opposite polarity, means including switch means connecting the tap to one of the pair of sides of the source, a pair of circuits connecting both of the end terminals of the primary winding to the side other than the said one side of the source so that each end terminal will be of like polarity and have a polarity opposite the polarity of the tap for energizing said sections with a current flow from the source, a secondary winding inductively coupled to the primary winding and movable relative thereto, said secondary winding having a null output when the secondary winding is electrically centered over a predetermined position on the primary winding and having an alternating current induced therein the potential and phase of which depends on the degree and direction of physical displacement of the secondary winding relative to the predetermined position on the primary winding, and means energized by the source included in each of the pair of circuits and providing an output voltage for increasing the current flow in one of said sections by a predetermined amount and decreasing the current flow in the other section by an amount equal to the increased current flow and thereby changing the ratio of current flow in said sections and displacing the electrical center of said secondary which ratio of current flow in said sections remains constant and independent of variations of the source.

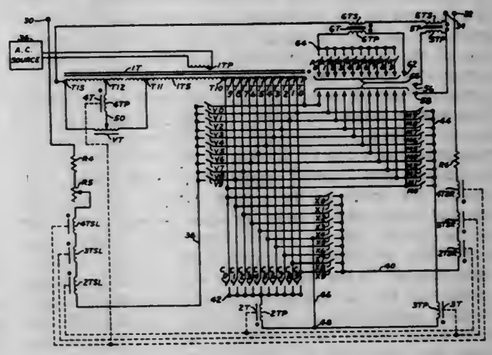
3,345,556

ENERGIZING CIRCUIT FOR POSITIONING SYSTEM TRANSDUCER

William H. Schmeling, Wauwatosa, and Robert E. Macherey, Mequon, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Apr. 8, 1964, Ser. No. 358,325
12 Claims. (Cl. 323—43.5)





8. In a positioning system, the combination comprising: an elongated primary winding having a terminal at each end and a plurality of taps spaced at equal intervals along the primary winding between the end terminals, said taps including a selected tap and a pair of taps equidistantly spaced on opposite sides of the selected tap, a single phase alternating current source having a pair of

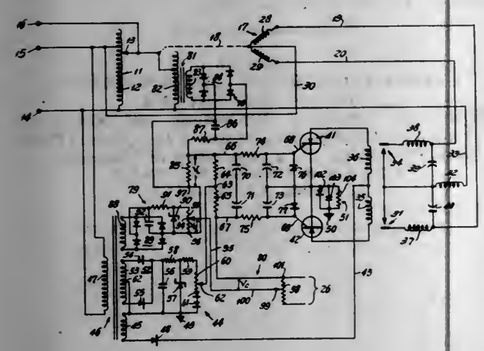
sides of opposite polarity, circuit means including an actuatable switch means for selectively connecting one side of the source to both end terminals and to both of said pairs of taps, circuit means connecting the selected tap to a side other than the said one side of the source, a secondary winding inductively coupled to the primary winding and movable relative thereto, said secondary winding having an overall length less than the primary winding and having an alternating current induced therein to provide an output signal having a potential and phase which depends on the direction and magnitude of displacement of the secondary winding relative to the selected tap on the primary winding, and means responsive to the output signal of the secondary winding for actuating the switch means and connecting the pair of taps to the said one side of the source when the magnitude of the signal is less than a predetermined value.

3,345,557

ELECTRIC POWER STABILIZING REGULATOR RESPONSIVE TO PLURAL CONDITIONS

Allen R. Perrins, Cheshire, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed June 26, 1964, Ser. No. 378,135
4 Claims. (Cl. 323—43.5)



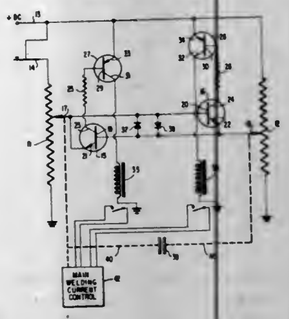
1. A stabilizing regulator connectible between a source of electrical energy and an electric load having a condition desired to be maintained substantially constant and producing an electric signal indicative of an output voltage of the regulator necessary to achieve the condition comprising input means connectible to the source of alternating current, output means connectible to the electric load and at which the output voltage appears, regulating means connected between the input and output means for regulating the value of voltage at the output means and including a first channel means which upon actuation increases the value of the output voltage and a second channel means which upon actuation decreases the value of the output voltage, means connectible to the output means for providing a unidirectional voltage having a value related to the value of the output voltage, means connectible to a source of electrical energy for providing another unidirectional voltage having a substantially constant value, means for providing a unidirectional voltage from and related to the electric signal, means interconnecting the three voltage providing means to add the three unidirectional voltages to produce an algebraic sum voltage, and means for receiving the algebraic sum voltage and causing energization of the first channel when the sum voltage is of one sense and for causing energization of the second channel when the sum voltage is of the opposite sense.

3,345,558

AUTOMATIC SLOPE CONTROL FOR ARC WELDING MACHINES

Carl F. Christian, Mystic, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 22, 1964, Ser. No. 398,207
6 Claims. (Cl. 323—75)



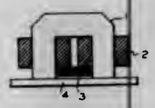
1. An automatic slope control for an arc welder comprising: a movable main welding current control means, a first and second potentiometer forming a Wheatstone bridge, the wiper arm of said first potentiometer being mechanically connected to and following the movement of the main welding current control means, an electromechanical clutch selectively mechanically connecting the wiper arms of said first and second potentiometers, said clutch being disengaged during decay operation, means responsive to an unbalance in said bridge for causing said potentiometers to be readjusted until said bridge is again in balance whereby, during decay, said wiper arm of the second potentiometer acts as a memory unit by holding its position while said wiper arm of the first potentiometer is driven to one extreme, said circuit sensing an unbalanced condition of said bridge causing said main welding current control means to be reset at its original setting.

3,345,559

METHOD OF MEASURING THE THICKNESS OF MAGNETIC METAL PLATES BY MEASURING THE VARIATION OF MAGNETIC POTENTIAL DIFFERENCE ACROSS SAID PLATES

Masakazu Takahashi, Tokyo, and Mitsuo Minamii, Yokohama, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Mar. 2, 1964, Ser. No. 348,332
2 Claims. (Cl. 324—34)



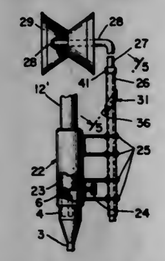
1. A method of measuring the thickness of a piece of magnetically permeable metal, comprising placing the piece of metal across the terminals of a source of magnetic flux to form a closed magnetic circuit, applying a magnetic force to said magnetic circuit for magnetizing the metal at least to magnetic saturation, measuring the magnetic potential difference between the two points at which the piece of metal is connected to the terminals of the source of magnetic flux at a first value of the applied magnetic force, measuring the magnetic potential difference between said two points at a second value of the applied magnetic force, and determining the thickness of the piece of metal by comparing the variation in said magnetic potential difference with a predetermined curve of values of variations of magnetic potential differences for various thicknesses of the metal being measured.

3,345,560

CABLE FLAW DETECTOR HAVING REMOVABLY MOUNTED SENSOR MEANS AND INCLUDING BRACKET AND WHEEL MEANS FOR MAINTAINING THE SENSOR AT A PREDETERMINED DISTANCE FROM THE CABLE

Lyman D. Perkins, Woodland Hills, Calif. (4637 Willis Ave., Apt. 304, Sherman Oaks, Calif. 91403)

Filed Nov. 27, 1964, Ser. No. 414,215
2 Claims. (Cl. 324—52)



1. In a flaw detector means for telephone and similar plural conductor cables, an elongated hollow pole through which a pair of electrical conductors extend, said pole having a receptor means at one end thereof, a microphone removably mounted in said receptor means, said microphone having an exposed audio signal receiving area, a pair of electrical contacts in said receptor means connected to one each of said conductors and positioned for engagement with complementary contact means on said microphone as an incident to insertion of said microphone into said receptor means and effecting electrically conductive connection between electrical circuit means in said microphone and said electrical conductors when said microphone is inserted in said receptor means; said electrical conductors extending beyond the opposite end of said hollow rod and terminating in means affording connection to a signal amplifying means, a bracket means detachably secured to said pole at the end thereof having said receptor means, and a freely rotatable wheel carried by said bracket means and disposed with the axis thereof extending transversely to the axial line of said pole and disposed a predetermined distance beyond the audio signal receptive area of said microphone; said wheel having a peripheral, cable engaging groove disposed substantially coincident with the center line of said receptor means and said microphone.

3,345,561

MOUNT FOR SUPPORTING DUAL BOLOMETERS AT SAME TEMPERATURE

Howard L. Martin, Safety Harbor, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Sept. 26, 1963, Ser. No. 311,690
8 Claims. (Cl. 324—95)

1. A dual element bolometer mount for coaxial line waveguide comprising,

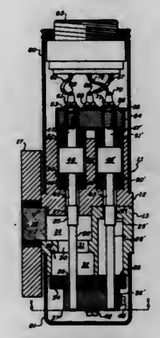
a section of coaxial line waveguide having inner and outer conductors,

a coaxial line connector at one end of said waveguide,

a first annular shaped thermal and electrical conductive member in direct thermal and electrical conductive contact with said connector and forming a portion of the outer conductor of said waveguide,

a second thermal and electrical conductive member axially spaced from said first member and adapted to terminate said waveguide,

means intermediate said two conductive members for providing electrical continuity of the outer conductor of the waveguide therebetween and for thermally insulating said two conductive members from each other,



first and second bolometer means disposed on opposite sides of said second conductive member and in thermal and electrical contact therewith,

only said first bolometer means being in the path of electromagnetic wave within said waveguide, and

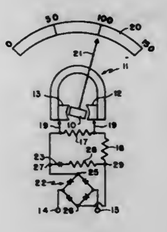
longitudinally-extending thermal conductors extending between said first and second conductive members for providing direct thermal conduction paths between said bolometer means and said first conductive members.

3,345,562

AC-DC METER

Ronald J. Rockwell, Cincinnati, Ohio, assignor to Crosley Broadcasting Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 3, 1964, Ser. No. 387,091
1 Claim. (Cl. 324—119)



A meter which produces corresponding deflections over a range of direct current and alternating current voltages, within a substantial frequency range, while utilizing a common scale and a single deflecting element comprising:

a meter device mechanically comprising said single scale and said single deflecting element and electrically constituting substantially an impedance,

a rectifier having input terminals to which voltages to be measured are applied, and coupled to said meter device, whereby direct current flowing in said impedance as the result of the application of voltages to said input terminals energizes the meter device to deflect said deflecting element,

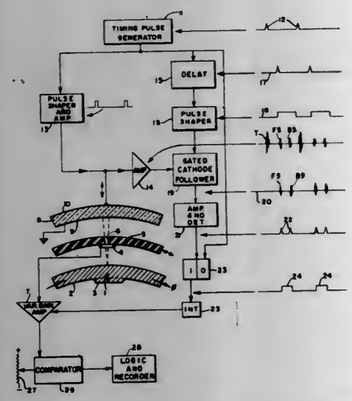
and means connected in shunt with said impedance and comprising in conjunction with the impedance a load network for the rectifier, across which network there appear, in response to the application of alternating current voltages to the input terminals, voltages equal to $1/1.414$ of the peak values of said alternating current voltages, whereby the deflections of the deflecting element are alike for direct current voltages and corresponding root mean square values of alternating current voltages, said means comprising the combination of a capacitor and a resistor in series, the magnitude of the impedance of said capacitor being small compared to that of said resistor and the values of said capacitor and resistor and the impedance constituted by said meter device being so selected as to render said load network independent of the frequency of the alternating current voltages within that frequency range.

3,345,563

METHOD AND APPARATUS FOR MEASURING TRUE DISCONTINUITIES IN MEMBERS OF VARYING THICKNESS BY COMPENSATING FOR THE EFFECT OF THICKNESS ON SUCH MEASUREMENTS

Fenton M. Wood, Sugarland, Tex., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed July 1, 1963, Ser. No. 292,028
19 Claims. (Cl. 324—37)



4. In apparatus responsive to the true magnitude of discontinuities in members being inspected, the combination of

means for establishing in said member fixed inspection conditions,

first means for magnetically inspecting a selected portion of said member to provide a detected first signal which is a function of the magnitude of discontinuities in said portion being inspected, and which is unavoidably also a function of the thickness of said portion being inspected;

second means for measuring the thickness of said portion being inspected by said first means to provide a second signal, said second signal being a function of said thickness; and

circuit means responsive to said first and second signals to provide an indication in accordance with the true discontinuity magnitude,

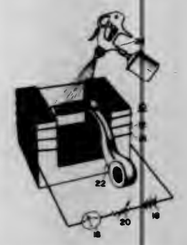
said circuit means being operative to utilize said second signal representative of thickness to compensate said first signal for the effect of thickness to thereby provide said indication in accordance with the true discontinuity magnitude.

3,345,564

METHOD FOR NON-DESTRUCTIVE DETECTION AND OBSERVATION OF DEFECTS OF FERROMAGNETIC STEELS UTILIZING AN AQUEOUS FERROMAGNETIC SOLUTION

Takayuki Makino, Okazaki, Susumu Kanbe, Hekikai-gun, and Shigeru Mori, Toyohashi, Japan, assignors to Toyota Motors Company, Limited, Toyota, Japan

Filed Sept. 30, 1963, Ser. No. 312,753
Claims priority, application Japan, Oct. 6, 1962, 37/44,400
2 Claims. (Cl. 324—38)



1. A method of precisely and visually detecting defects in a body of ferromagnetic steel material without destroying the material, said method comprising the steps of placing said body of ferromagnetic steel material within a direct current magnetic field to magnetize the body of ferromagnetic steel material to form on that surface of the body of ferromagnetic steel material in which defects are to be detected, a latent magnetic image corresponding to the type and distribution of defects in said body of steel material, and placing a detecting aqueous solution of ferromagnetic type on the said surface of said steel material to be tested to develop a defect pattern corresponding to the latent magnetic image on said surface of said steel material to be tested, said solution including, by weight, from 0.5 to 1.5% of a very finely divided colloidal magnetite (Fe_3O_4) the particles of which have an average diameter in the order of 0.02μ, from 3 to 10% of potash soap, from 5 to 10% of a solvent selected from the group consisting of ethyl alcohol and ethyl acetate, from 0.1 to 0.3% of a fixing agent selected from the group consisting of polyvinyl alcohol and gum arabic and the balance water and drying and fixing said defect pattern on said surface of said steel material.

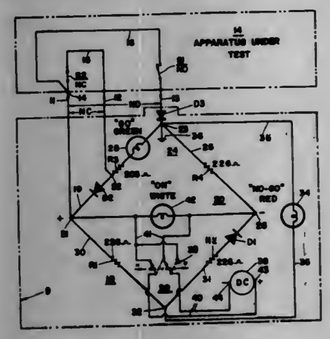
3,345,565

CONTINUITY FIELD TEST BRIDGE CIRCUIT WITH DIODE-CONTROLLED VISUAL INDICATOR MEANS

Richard W. Cotter, Minneapolis, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Aug. 27, 1965, Ser. No. 483,381
4 Claims. (Cl. 324—51)

3. A test bridge circuit for checking electrical apparatus for normal and abnormal open-circuit and closed circuit conditions, comprising in combination, an electrical bridge circuit having opposite positive and negative input supply terminals and four balanced resistance arms connected between said input terminals in two parallel branch circuits with an intermediate bridge output terminal connected therebetween in each branch and effectively at opposite diagonals with respect to the positive and negative input terminals, a diode element connected in an arm of one of said branch circuits adjacent to and directly with the positive input supply terminal and poled in a direction to prevent current flow from said terminal in said arm and branch, a current-responsive visual indicator device connected serially in said arm between said diode element and the intermediate bridge output terminal of the branch, means providing open-circuit and closed-circuit test connections respectively with said intermediate output terminal and with said resistance arm between the resistance portion therein and said diode element, said test connections having a common test circuit return connection with the positive terminal of said bridge circuit, a



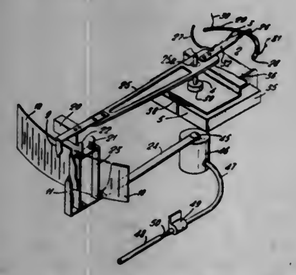
second current-responsive visual indicator device connected between the diagonally-opposite output terminals of the bridge circuit, a diode element connected serially in the opposite arm of said bridge circuit in the other of said branch circuits and poled in a direction toward the negative input supply terminal to permit current flow through said arm and branch in the direction of the negative input terminal of the bridge circuit, means providing direct-current supply connections with the positive and negative input terminals of the bridge circuit, and test switch means for reversing said supply connections with the bridge input terminals to apply operating current to check both of said indicator devices prior to operation in said bridge circuit for testing said apparatus.

3,345,566

VARIABLE RESISTANCE ASSEMBLY EMPLOYED IN A MEASURING REBALANCE APPARATUS

George N. Katselis and Alistair L. M. Robertson, Glasgow, Scotland, assignors to Honeywell Inc., a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,399
Claims priority, application Great Britain, Feb. 15, 1963, 6,341/63
10 Claims. (Cl. 324—99)



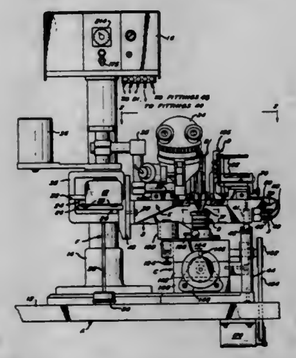
1. A variable electric resistance device of the kind specified which comprises an arcuate resistance element, a wiper arm pivoted about an axis passing through a point on the circumference of the circle of which the arc forms part, the said axis being perpendicular to the plane of the circle, and a contact member which is carried by the wiper arm and is of sufficient length to remain in contact with the element over the whole of the permitted angular range of movement of the wiper arm.

3,345,567

MULTIPOINT PROBE APPARATUS FOR ELECTRICALLY TESTING MULTIPLE SURFACE POINTS WITHIN SMALL ZONES

Roger S. Turner, Philadelphia, and Clyde O. Drauglis, Willow Grove, Pa., assignors to Kulicke and Soffa Manufacturing Company, Fort Washington, Pa., a corporation of Pennsylvania

Filed Feb. 26, 1964, Ser. No. 347,406
24 Claims. (Cl. 324—158)



1. Apparatus for use in measuring the electrical characteristics of wafer specimens having rows of repeating patterns of electrical indicia arranged at regular intervals in zones on the surface thereof, comprising: a frame, a chuck for supporting a wafer with the surface patterns exposed in substantially a horizontal plane, slider means in said frame for positioning said chuck along a horizontal axis parallel to the rows of patterns, a platen in said frame, means for slidably supporting said platen adjacent said chuck in a plane substantially parallel to the wafer surface, a plurality of probe heads, each including a probe tip and spring means resiliently suspending the tip therein, means for detachably securing said probe heads in random disposition at any desired location on said platen so that the probe tips are in registration with the respective indicia on the wafer surface and adjacently spaced therefrom, actuating means for effecting reciprocable movement of said probe tips between an engaging position in contact with the respective indicia and a released position adjacently spaced from a wafer surface, and drive means activated by the release of said probe actuating means automatically indexing said slider means one zone interval so as to move the next succeeding pattern in the row into position for testing.

3,345,568

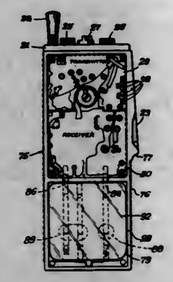
TRANSISTORIZED PORTABLE RADIO TRANSMITTER-RECEIVER STRUCTURE

Dominic Errichiello, Melrose Park, Philip J. Hansen, Chicago, and Norman P. Alexander, Elmhurst, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 13, 1964, Ser. No. 337,347
10 Claims. (Cl. 325—16)

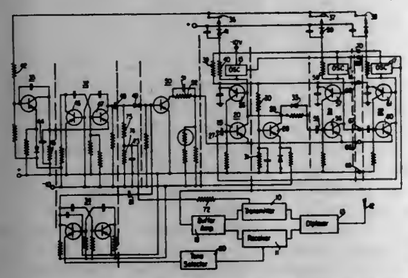
1. A radio transmitter and receiver device of the type to be carried on the person and operated from a self-contained battery power source, the transmitter and re-

ceiver device including in combination, housing means including a circuit receiving portion and a battery receiving portion, said circuit receiving portion having metal cover means, a transmitter circuit board and a receiver circuit board each having components mounted thereon, said circuit boards being placed within said circuit receiving portion, said cover means being positioned against said



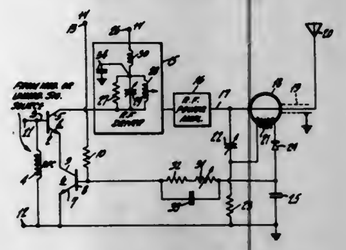
circuit boards to secure said circuit boards within said circuit receiving portion, radio frequency power generating means positioned on said transmitter circuit board, and heat conduction means coupling said radio frequency power generating means to said metal cover means whereby said cover means receives heat from said generating means to act as a heat sink therefor.

3,345,569
ELECTRONIC CONTROL CIRCUIT INCLUDING COUNTER FOR SELECTIVELY ACTUATING ONE OF A PLURALITY OF UNITS
Burnham Casterline, Des Plaines, Ronald H. Chapman, Wheaton, and Robert V. Eschbaugh, Hillside, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 6, 1964, Ser. No. 335,931
15 Claims. (Cl. 325—25)



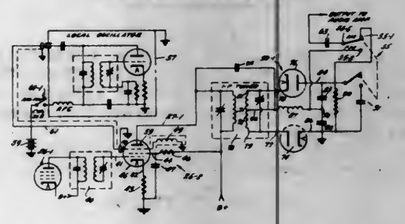
1. A system for actuating a selected one of a plurality of units including in combination, a transistorized ring counter circuit having a plurality of stages individually associated with the units, switch means having a plurality of portions individually associated with said stages, said switch means being operable to select one of said stages and the associated unit, said counter circuit including means coupling said stages thereof to each other and responsive to pulses applied thereto to cause energization of said stages in turn, each of said stages when energized operating to actuate the associated unit, starting means coupled to one of said stages for energizing said one stage when the system is first energized, pulsing means coupled to said counter circuit and operable for applying pulses thereto to cause energization of said stages and actuation of the associated units in turn, said pulsing means including a first portion providing pulses at a relatively slow rate and a second portion providing pulses at a relatively fast rate, said first portion of said pulsing means being coupled to said switch means and being disabled thereby when the stage associated with the selected unit is actuated, and means responsive to operation of the units coupled to said second portion of said pulsing means for disabling the same.

3,345,570
TRANSISTOR PROTECTION CIRCUIT FOR RADIO TRANSMITTER
Stanley J. Matyckas, Plainfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 26, 1965, Ser. No. 458,989
6 Claims. (Cl. 325—150)



1. In a circuit arrangement having transistor stages followed by a transmission line and a load, a protection circuit for said transistors comprising, means responsive to load mismatch to the transmission line to provide a D.C. output voltage that is proportional to said mismatch, a transistor amplifier located at one of said stages, a second transistor, means coupling said second transistor between said first-mentioned means and said transistor amplifier to provide degeneration of said transistor amplifier in response to said D.C. output voltage so as to limit the dissipation in said transistor amplifier under all conditions of said mismatch to a safe value which avoids damage to said transistor amplifier.

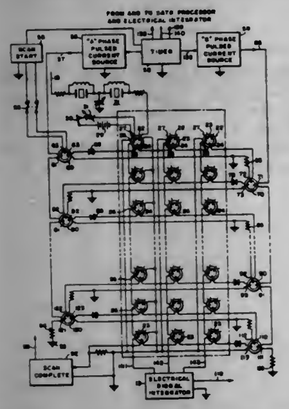
3,345,571
RECEIVER APPARATUS
Donald Selwyn, 13 Yale Way, Oakland, N.J. 07436
Filed Sept. 30, 1963, Ser. No. 312,416
10 Claims. (Cl. 325—329)



9. In a receiver apparatus for receiving incoming signals of any of a plurality of modulation types, at least some of said modulation types requiring carrier signal injection to derive intelligence therefrom; signal mixing and amplifying means and signal detection means; said signal mixing and amplifying means including stages for suitably operating upon said incoming signal to heterodyne all the incoming signal types down to the same predetermined intermediate frequency band, and amplify said intermediate frequency band; the last intermediate frequency stage being a multi-signal intermediate frequency amplifying stage; first input means tuned to the predetermined receiver intermediate frequency band for applying the received incoming signals, suitably heterodyned down to said intermediate frequency, as a first input signal to said multi-signal intermediate frequency

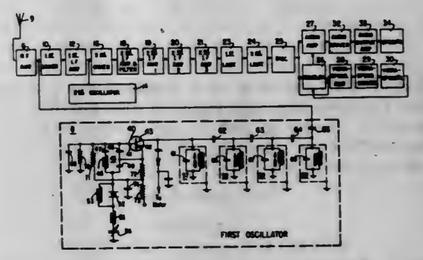
amplifier stage; second input means tuned to a frequency within said intermediate frequency band for applying a carrier insertion signal to said multi-signal amplifier as a second input singal; circuit means for biasing said multi-signal amplifier to a predetermined operating range to amplify both of said first and second input signals while continuously maintaining a fixed amplitude ratio therebetween; the absence of a signal input at said first input means serving to prevent the carrier insertion signal at said second input means from appearing at the output means of said multi-signal intermediate frequency amplifying stage; said intermediate frequency output means tuned to said intermediate frequency band for presenting said amplified first and second input signals as a composite intermediate frequency signal to said signal detection means; said signal detection means including circuit means for receiving said amplified IF signals from said last intermediate frequency stage and extracting the intelligence therefrom.

3,345,572
SIGNAL TRANSLATION SYSTEM
Irving I. Kaplan and Joseph G. Fay, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 15, 1964, Ser. No. 360,050
4 Claims. (Cl. 325—474)



1. Means for retrieving signal frequency data dispersed in a wide spectrum of frequencies including, non-coherent frequencies at random distribution and amplitude, said means comprising a plurality of signal channels adapted to be connected to a source of spectrum of frequencies including the desired signal power to be retrieved and each of said channels having selected bandwidths, the center frequency of which channels determines the center frequency of the desired signal power spectrum, said channels being substantially contiguous to embrace a desired band of frequencies having information-bearing significance, each of said channels having a magnetizable element having a plurality of stable magnetic states between two saturation stable limits of opposite polarities, first means for applying a constant magnetizing force to said element at a selected value less than the coercive force threshold of said element, second means for applying magnetizing forces to said element of sufficient magnitude to change the state of the magnetization from one limit of saturation toward the other limit of saturation by discrete pulses each being so limited in time duration that the element is magnetized from a state set by said first means to a plurality of successive stable states between said limits of saturation, and means for reversing the magnetization from that developed by the discrete pulses to the opposite saturation and means inductively associated with said magnetizable element for producing an electrical signal proportional to the state of magnetization created by said discrete pulses.

3,345,573
ELECTRONIC CIRCUIT CRYSTAL CONTROLLED TRANSISTOR OSCILLATOR MULTIPLIER CIRCUIT
Robert V. Eschbaugh, Hillside, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 6, 1964, Ser. No. 357,354
6 Claims. (Cl. 325—438)

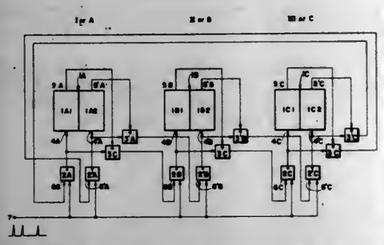


1. A single transistor oscillator-multiplier circuit including in combination, a transistor having base, emitter and collector electrodes, frequency determining means having a resonant frequency coupled between said base electrode and a reference potential, said frequency determining means having a portion coupled to said emitter electrode to provide feedback thereto, capacitor means coupled between said base electrode and said reference potential, tuned circuit means coupled between said collector electrode and said reference potential and having a low impedance at said resonant frequency so that said collector electrode is effectively connected directly to said reference potential with respect to said resonant frequency, said transistor, said frequency determining means, and said tuned circuit means forming an oscillator circuit providing an output signal containing frequencies equal to said resonant frequency and harmonics thereof, said tuned circuit means being resonant at a predetermined harmonic frequency of said resonant frequency whereby a signal having a frequency equal to said predetermined harmonic frequency is developed across said tuned circuit means, said capacitor means providing a low impedance path to said base electrode for said predetermined harmonic frequency signal.

3,345,574
RING-COUNTER EMPLOYING PLURAL AND-GATES PER STAGE THAT SIMULTANEOUSLY CONNECT ASSOCIATED AND SUBSEQUENT STAGES TO AVOID SWITCHING DELAY
Wolfgang Hilberg, Neu-Ulm (Danube), Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Apr. 10, 1964, Ser. No. 358,797
Claims priority, application Germany, Apr. 10, 1963, T 23,818
11 Claims. (Cl. 328—43)

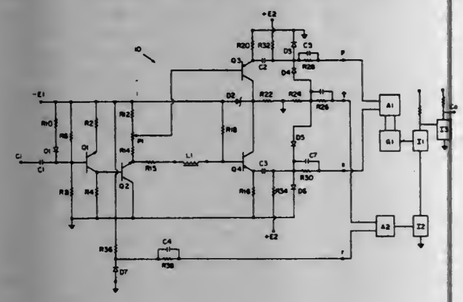
1. In a multistage counter of the type having a plurality of bistable elements each with two respective inputs which are all connected in parallel with one another. one input AND-circuit for each input having a plurality of inputs and one output, all of said parallel inputs of the bistable elements being connected to receive the counting frequency, the bistable elements each having

two complementary outputs which are connected respectively with one input of at least one input AND-circuit pertaining to a bistable element which follows in the counting direction, the improvement wherein the output



of each AND-circuit of each counter stage is connected with the corresponding input of the bistable element pertaining thereto as well as with an input of a respective AND-circuit pertaining to a bistable element which follows in the counting direction.

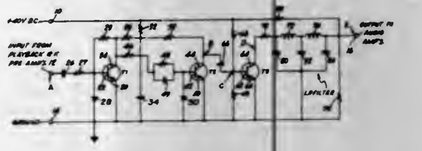
3,345,575
PULSE MIDPOINT DETECTOR
Jan H. M. van der Lans, East Patchogue, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 29, 1964, Ser. No. 364,069
4 Claims. (Cl. 328—108)



1. In a symmetrical pulse midpoint detector, the combination comprising means for producing first and second identical waves, means delaying the second wave slightly so that the midpoints of said waves are separated less than half the width of said waves, means for producing a step wave during the period the amplitude of the second wave is greater than the amplitude of the first wave, means for producing a spike wave at the beginning of said step wave locating the midpoint of said input wave displaced by half the delay introduced by said delaying means, and means to block spurious signals from producing a false output of said detector.

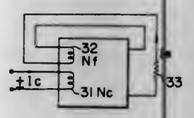
3,345,576
SIMPLIFIED PULSE COUNTER FM DEMODULATOR
Maung Gyi, South San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Oct. 9, 1964, Ser. No. 402,972
2 Claims. (Cl. 329—103)

1. An FM demodulator having a power supply terminal, an input terminal, a ground terminal, an output terminal, a differentiating capacitor coupled to the input terminal, a transistor having emitter, base, and collector, the base of the transistor being coupled to the differentiating capacitor and being coupled through a first resistor to the power supply terminal and through a second resistor to the ground terminal, the emitter of the transistor being coupled to the ground terminal, the collector of the transistor being coupled through the series combination of a third resistor and first and second inductors to the output terminal, a first capacitor connected from the junction between the third resistor and the first inductor



to the ground terminal, a second capacitor connected from the junction between the first inductor and the second inductor to the ground terminal, and a third capacitor connected from the output terminal to the ground terminal, a fourth resistor coupled between the output terminal and the power supply terminal, a fifth resistor coupled between the output terminal and the ground terminal.

3,345,577
SYMMETRICAL MAGNETIC AMPLIFIER
Chiyoji Kawaguchi, Tokai-mura, Naka-gun, Ibaraki, Japan, assignor to Nihon Genshiryoku Kenkyu Sho, Tokyo, Japan
Filed Dec. 31, 1963, Ser. No. 334,868
Claims priority, application Japan, Jan. 8, 1963, 38/86
1 Claim. (Cl. 330—8)



A magnetic amplifier for providing a unidirectional output control signal the magnitude of which is symmetrical with respect to input signals of either polarity comprising: a saturable core, a control winding having input terminals and having N_c turns wound on said core, a feedback winding having N_f turns wound on said core in a direction opposite to the direction of the control winding, output means coupled to said core for providing an output current of a single polarity having, in the absence of a negative feedback signal applied to said feedback winding, a control current-versus-output current characteristic curve with a minimum value for a given control current, for control currents to the right of said given control current a current gain αN_c, and for control currents to the left of said given control a current gain $-\alpha' N_c$, where α is greater than α', and means coupling said output current to said feedback winding, the number of control winding turns N_c, the number of feedback winding turns N_f, and the current gain $-\alpha'$ being so chosen that

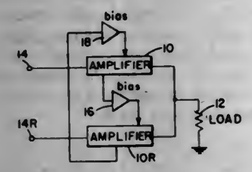
$$N_c/\alpha N_f = \alpha' N_c/(1-\alpha' N_f)$$

with

$$\alpha N_f \gg 1$$

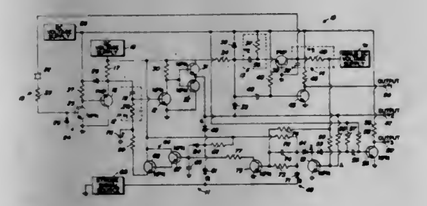
whereby equal output currents of a single polarity will be produced in response to an input current of either negative or positive polarity with the same absolute value.

3,345,578
REDUNDANT AMPLIFIER CIRCUITS
Donald G. Shuda, Clarence Center, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,405
10 Claims. (Cl. 330—22)



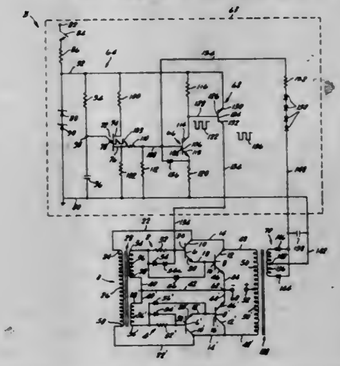
1. A standby circuit arrangement comprising first and second amplifier circuits having a common load and each having a final output coupling network connected to said common load, each of said final output coupling networks being tuned to prevent a degradation or failure in one of said amplifier circuits from having an intolerable effect upon the power output of the other, means including a third amplifier connected between an electrode of said first amplifier circuit and an electrode of said second amplifier circuit for coupling a bias feedback voltage from said first amplifier to said second amplifier, and means including a fourth amplifier connected between an electrode of said second amplifier circuit and an electrode of said first amplifier circuit for coupling a bias feedback voltage from said second amplifier to said first amplifier, said bias feedback voltages having relative values to normally cause operation of said first amplifier and to bias said second amplifier to the off condition, and upon occurrence of a failure in said first amplifier, to remove the bias holding said second amplifier in the off condition to thereby cause operation of said second amplifier and generation of a bias feedback voltage level sufficient to bias said first amplifier to the off condition.

3,345,579
PHASE LOCKED CRYSTAL CONTROLLED OSCILLATOR
George C. Wilkinson, Jr., Dallas, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 6, 1966, Ser. No. 555,345
14 Claims. (Cl. 331—8)



1. In a phase locked crystal controlled oscillator circuit, a crystal having a predetermined selected natural series resonance fresuency; circuit loop means including said crystal, and signal changing circuit means giving at least 360° signal change, with phase shifting means capable of giving at least 180° of the signal change; means for developing a pulse waveform output from said oscillator circuit at the frequency of said crystal; a subharmonic, relative to the frequency of said crystal, strobe pulse reference signal source input means to said oscillator circuit; a voltage sample storing circuit; voltage means for charging said voltage sample storing circuit; charge circuit gating action means connected to respond to simultaneous coincidence of pulse portions of said pulse waveform output and said strobe reference signal, and connected to both the voltage means and the voltage storing circuit to gate charge said voltage storing circuit throughout substantially each period of simultaneous coincidence of the pulse portions; discharge circuit means connected to said voltage sample storing circuit and including discharge action gating means; said discharge action gating means connected to said pulse waveform output means and to said strobe pulse reference signal source for activation and discharging of said voltage sample storing circuit substantially throughout each period of simultaneous coincidence of non pulse portions of the pulse waveform output and pulses of the strobe pulse reference signal; said phase shifting including a phase shift timing circuit; and circuit means interconnecting said voltage sample storing circiut and said phase shift timing circuit for the voltage level of the voltage sample stored, as applied through the interconnecting circuit means to the phase shift timing circuit, to be a phase shift controlling voltage input.

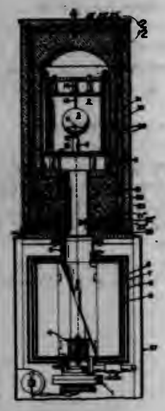
3,345,580
STARTING ARRANGEMENT FOR FLUX OSCILLATOR
Roger Tracy, Wallingford, Conn., assignor to Technipower Incorporated, South Norwalk, Conn., a corporation of Connecticut
Filed Mar. 1, 1965, Ser. No. 435,939
14 Claims. (Cl. 331—52)



1. A starting circuit for use in combination with a flux oscillator comprising a pair of circuits each comprising a transistor having electrodes one of which comprises a control electrode, a coil connected to each control electrode, the other electrodes of said transistors being connected in an output circuit, said coils being operatively connected to said output circuit so that said transistors are alternately rendered conductive, thereby to cause an alternating voltage to appear in said output circuit; said starting circuit comprising pulse generating means, means for actuating said pulse generating means, means connecting said pulse generating means to the control electrode of one of said flux oscillators transistors in a sense such that the pulse output of said generating means will bias said transistor conductive, and disabling means operatively connected between said output circuit and said pulse generating means and effective to render said pulse generating means ineffective in response to the presence of a predetermined alternating voltage in said output circuit, and a resistor in series with the control electrode of each of said flux oscillator transistors, first and second recti-

fiers bypassing each of said resistors respectively, and a third rectifier in series only with that one of said first and second rectifiers which bypasses the resistor connected to the transistor to which said pulse generating means is connected, said series-connected rectifiers together being of a magnitude such as to provide proper transistor-starting bias on said last mentioned transistor when the output from said pulse generating means is fed thereto.

3,345,581
ATOMIC RESONANCE METHOD AND APPARATUS WITH IMPROVED MAGNETIC FIELD HOMOGENEITY CONTROL
Robert Frederick Charles Vessot, Marblehead, Mass., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed May 11, 1964, Ser. No. 366,493
8 Claims. (Cl. 331—94)

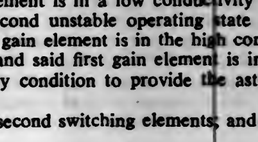


1. An atomic resonance apparatus including, means for producing an assemblage of atomic particles, means for subjecting said assemblage of aotmic particles to an alternating magnetic field for producing atomic resonance of said atomic particles, means for producing and subjecting said assemblage of atomic particles to a polarizing magnetic field for aligning said resonant atomic particles, means for shielding said assemblage of resonant atomic particles from extraneously produced magnetic fields, said shielding means including a magnetically permeable structure encompassing said assemblage of resonant atomic particles and having a pair of diametrically opposed magnetically permeable end wall portions, and said polarizing magnetic field producing means including an electrical coil wound inside of said shield means inbetween said diametrically opposed magnetically permeable end wall portions, said coil having an axial extent subtending substantially the full length of the space between said opposed end wall portions whereby undesired end effect perturbations of the polarizing magnetic field within said shield means are minimized.

3,345,582
SEMICONDUCTOR CONDITION RESPONSIVE PHASE SHIFT OSCILLATORS
Joseph T. Maupin, Deephaven Village, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 13, 1966, Ser. No. 584,300
11 Claims. (Cl. 331—108)

1. In a controllable oscillator having amplifying means including input circuit means and output circuit means, the amplifying means exhibiting an input impedance and an output impedance and generating an output signal which is applied to controllable resistance-capacitance phase shift network means, the phase shift network means providing a phase shifted signal and applying it to the amplifying means for controlling the amplifying means, the improvement comprising:

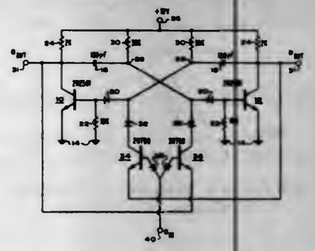
the phase shift network means including a condition responsive distributed resistance-capacitance phase shift network exhibiting a characteristic impedance having the same comparative magnitude relation to both the amplifying means input and output impedances thereby causing the phase shift network means to operate in one of a transimpedance mode and a transadmittance mode;



coupling network means exhibiting a two terminal impedance with at least one of a predetermined magnitude relation, and a substantially identical phase angle, compared to the characteristic impedance at the oscillation frequency so that the mode of operation is determined by the relation between the characteristic impedance and the amplifying means impedances; and

means connecting the coupling network means in circuit with the amplifying means to output circuit means.

3,345,583
MULTIVIBRATOR HAVING ASTABLE AND BISTABLE OPERATING MODES
Teddy G. Saunders, 860 N. Humboldt, San Mateo, Calif. 94401
Filed May 23, 1966, Ser. No. 551,974
3 Claims. (Cl. 331—113)



1. A multivibrator circuit having both astable and bistable operating modes, said multivibrator circuit comprising:

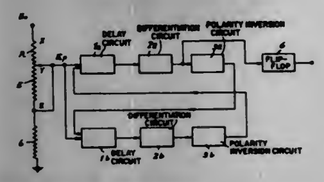
first and second gain elements, each of said gain elements having an input and an output;

means including a first feedback circuit connecting the output of said first gain element to the input of said second gain element and including a second feedback circuit connecting the output of said second gain element to the input of said first gain element for alternately operating said gain elements in a first unstable operating state in which said first gain element is in a high conductivity condition and said second gain element is in a low conductivity condition and in a second unstable operating state in which said second gain element is in the high conductivity condition and said first gain element is in the low conductivity condition to provide the astable operating mode;

first and second switching elements; and

means including said first switching element and connecting the output of said first gain element to the input of said second gain element for providing a third feedback circuit therebetween and means including said second switching element and connecting the output of said second gain element to the input of said first gain element for providing a fourth feedback circuit therebetween, each of said switching elements being responsive to a control signal during a different one of said operating states for rendering that operating state stable to provide the bistable operating mode.

3,345,584
SWEEP OSCILLATOR
Kazuo Nakagawa and Takeyoshi Ikeda, Tokyo, Japan, assignors to Nihon Denshi Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 9, 1965, Ser. No. 512,764
1 Claim. (Cl. 331—143)



A sweep oscillator comprising:

(A) a voltage source;

(B) a voltage divider network having

(a) a first and second pair of resistors, the resistors of each pair being connected in parallel, said first pair being connected to the high potential of said voltage source, one of said first pair of resistors adapted to be series connected to one of said second pair of resistors to define a first resistor circuit, the other of said first pair of resistors adapted to be series connected to the other of said second pair of resistors to define a second resistor circuit, the ratio of said resistances defining said first resistor circuit being substantially the same as the ratio of the resistances defining said second resistor circuit;

(b) a potentiometer, the output of the voltage divider network being taken from the potentiometer;

(c) a pair of switches, one of said switches being connected to the high potential terminal of said potentiometer and the other of said switches being connected to the low potential terminal of said potentiometer, each of said switches being adapted to connect alternatively one of said first and second pairs of resistors to said potentiometer, said switches being interlocked to alternatively connect through said potentiometer said first resistor circuit and said second resistor circuit;

(C) an input voltage controlled oscillator including

(a) first and second delayed pulse circuits, each circuit having in series

(i) a time delay circuit the output of said voltage divided network is connected,

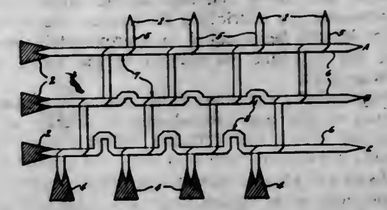
(ii) a differentiation circuit; and,

(iii) a polarity inversion circuit,

(b) the output of the first delayed pulse circuit being connected to the input of the second delayed pulse circuit and the output of the second delayed pulse circuit being connected to the input of the first delayed pulse circuit; and

(c) a flip flop circuit having its input connected to the output of the differentiation circuit of the first delayed pulse circuit, the output of the flip flop circuit constituting the output of the sweep oscillator.

3,345,585
PHASE SHIFTING STRIPLINE DIRECTIONAL COUPLING NETWORKS
Donald A. Hildebrand, Rome, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 25, 1964, Ser. No. 414,034
7 Claims. (Cl. 333—10)



1. A directional coupler network system comprising a first set of successive center conductors in the form of flat striplines occupying a first plane, said first set including preselected center conductors having bends therein for lengthening purposes to produce various phase shifts, each of said flat strips having input and load terminals, each of said input terminals being adapted to receive radio frequency energy to be coupled, a second set of successive center conductors also in the form of flat striplines, each having output and load terminals and also having a preselected portion coincident with each of said striplines of said first set, each of said portions being odd multiples of one-quarter guide wavelength long and formed by bending said stripline at 90° at two preselected points in the plane thereof, means to position said first set a predetermined distance from said second set with each of said portions being above and parallel to its associated stripline of said first set, said predetermined positioning operating to couple said radio frequency energy from said first set to said second set in a predetermined direction to provide signals at all of said output terminals with any one of said input terminals receiving said radio frequency energy and also providing a change of relative phase shift between the signals appearing at the successive output terminals by connecting the source of said radio frequency energy to a different input terminal, and a first and second ground plane with said first and second sets being interposed therebetween.

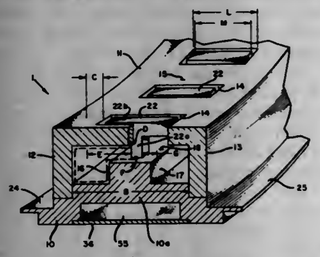
3,345,586
DELAY STRUCTURE FOR TRAVELING WAVE DEVICE
Robert R. Moats, Saratoga, Calif., and William A. Frutiger, Liberty, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,496
1 Claim. (Cl. 333—31)

A ladder delay line adapted to propagate an electromagnetic signal comprising

an elongated rectangular waveguide having an axis and having first and second narrow walls, and first and second broad walls, said first broad wall having inner and outer surfaces and having a longitudinal series of transverse rectangular slots extending therethrough, said slots being symmetrical about and equally spaced along said axis and having equal lengths defining a corresponding series of rungs having lengths equal to those of the slots, said rungs having a mutual capacitive coupling supporting a

potential difference therebetween and having a mutual inductive coupling representing the effective electrical path length therebetween, said mutual capacitance and inductance being representable as a first parallel resonant circuit, each of said rungs and the waveguide wall opposite thereto having a distributed capacitance supporting a potential difference therebetween and having a distributed inductance representing the effective electrical length therebetween, said distributed capacitance and inductance comprising a second parallel resonant circuit, said rungs having a length less than the spacing of said narrow walls for increasing the electrical path lengths between said rungs and said second broad wall for increasing the distributed inductance, the rung and slot lengths being equal to approximately one-half of the mid-band wavelength of the signal to be propagated,

a longitudinally extending ridge having a rectangular cross section and located on the interior of said second broad wall centered between said narrow walls coextensive with said slots and symmetrically of said axis for increasing the distributed capacitance, said ridge being spaced from said rungs and having a width less than the spacing of said narrow walls for increasing the distributed inductance, and



a series of T-shaped shield elements symmetrical about said axis and having uniform thickness, each of said elements comprising a shank portion and an upper arm portion, said shank portion being attached to the surface of said ridge proximate said first broad wall midway between said narrow walls and extending therefrom in a direction normal to said axis and parallel with said narrow walls for increasing the distributed capacitance, said shank having a width less than the length of said rungs for increasing the mutual inductance and less than the width of said ridge for increasing the distributed inductance, said upper arm portion being joined at its midpoint to said shank portion with the junction lying in a plane coincident with said inner surface of said first broad wall, each of said arm portions extending in a direction normal to said axis and parallel with said broad walls and terminating entirely within a slot and spaced from said first broad wall defining said slot for decreasing the mutual capacitance, said arm having a length less than a half wavelength at the upper cutoff frequency of the line, said second resonant circuit being resonant at approximately half the upper cutoff frequency of the line.

3,345,587
DISTRIBUTED CONSTANT PULSE LINE
Bruce R. Hayworth and Terence J. Gooding, San Diego, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,194
6 Claims. (Cl. 333—31)

3. A pulse line comprising:

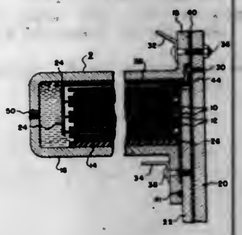
a plurality of layers of electrodes with layers of insulation therebetween being spirally wound in the form of a toroid,

said toroid having a front side and a back side,

one electrode layer of said electrode layers having a side extending beyond said insulation layers toward said back side,

another adjacent electrode layer of said electrode layers having a side extending beyond said insulation layers toward said front side,

said extended side of said another electrode layer being electrically connected to a first output conductor plate on said front side and said extended side of said one electrode layer being electrically connected to a second output conductor plate on said back side,



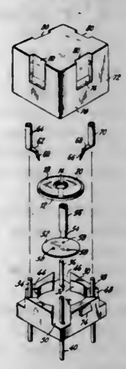
each of said layers of insulation having substantially the same thickness,

said second output conductor plate being electrically connected to a conductor shield that extends from said back to said front sides enclosing the radially outward surface of said toroid,

said conductor shield being spaced from the outermost electrode layer by only one of said layers of insulation,

and said conductor shield having a thickness substantially greater than the thickness of said electrode layer.

3,345,588
ANNULAR PIEZOELECTRIC FILTER WITH ARCUATE ELECTRODES
John Chesney, Roselle Park, N.J., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Nov. 12, 1964, Ser. No. 410,643
6 Claims. (Cl. 333—72)



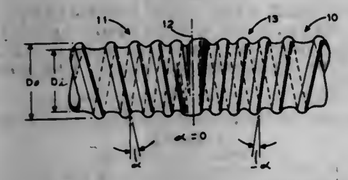
1. A piezoelectric filter comprising a piezoelectric disc having a center hole, an annular conductive electrode on one side of said disc, two opposed arcuate conductive electrodes on the other side of said disc, one of said arcuate electrodes and said annular electrode serving as an input, and the other of said arcuate electrodes and said annular electrode acting as the output, the hole and electrode diameters being so proportioned that said filter has a resonance characteristic with a broadened top approaching a double peaked top and a low skirt ratio.

3,345,589
TRANSMISSION LINE TYPE MICROWAVE FILTER
Gerald C. Di Piazza, Lake Hiawatha, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 14, 1962, Ser. No. 246,859
7 Claims. (Cl. 333—73)



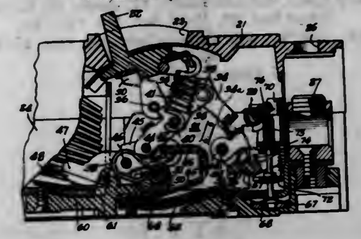
1. A filter capable of passing microwave energy over a given band of frequencies comprising, in combination, a uniform transmission line having a given characteristic admittance, a plurality of tapped transmission line stubs shunted across said line at intervals substantially equal to an odd multiple of one-quarter wavelength at the midfrequency of said given band of frequencies, each of said stubs having a length substantially equal to an odd multiple of one-quarter wavelength at said midfrequency, each of said stubs having one open-circuited and one short-circuited end, the connection between said uniform line and each of said stubs being intermediate said ends, and wherein the characteristic admittance of each of said stubs is substantially greater than that of said uniform line.

3,345,590
VARIABLE PITCH CORRUGATED WAVEGUIDE
Krank Wolfgang, 2 Leipzigerstrasse, Backnang, Wurttemberg, Germany, and Gunther Mohring, 8 Karl-Kelnerstrasse, Langenhagen, Hannover, Germany
Filed Feb. 27, 1967, Ser. No. 622,876
Claims priority, application Germany, Nov. 12, 1963, H 50,814
9 Claims. (Cl. 333—95)



1. A waveguide comprising a tubular member of arcuate cross section, the wall of said member being formed with helical corrugations along the longitudinal extent thereof, the sense of rotation of said corrugations changing at least once in said longitudinal extent thereof, wherein the pitch of the helical corrugations progressively changes along a given longitudinal section thereof from a given maximum angular value at one end of said section to an angular value of zero at the other end of said section, the point at which said angular value is zero corresponding to the point at which the sense of rotation of said corrugations changes.

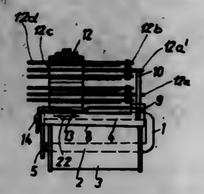
3,345,591
ELECTRIC CIRCUIT BREAKER WITH IMPROVED TRIPPING MEANS INCLUDING A HEATER STRIP IN THE THERMAL TRIPPING MEANS AND ADJUSTABLE AIR GAPS IN THE MAGNETIC TRIPPING MEANS
James H. Leonard and William H. Woods, Cedar Rapids, Iowa, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed June 29, 1966, Ser. No. 561,456
6 Claims. (Cl. 335—23)



2. A multipole electric circuit breaker comprising a molded casing having a plurality of elongated longitudinally side-by-side compartments therein, a plurality of stationary contacts disposed respectively in said compartments, a plurality of elongated contact arms pivotally mounted respectively in said compartments, a plurality of movable contacts disposed respectively in said compartments, each of said movable contacts being secured to a respective one of said contact arms and being engageable with a respective one of said stationary contacts, an elongated contact arm crossbar disposed in said casing and extending transversely of said compartments, means operatively connecting said contact arm crossbar to each of said contact arms, a releasably latchable trip lever pivotally mounted in one of said compartments and releasable from a latched position to effect separation of said movable contacts respectively from said stationary contacts, means in said one compartment operatively connecting said trip lever and said contact arm crossbar, an elongated trip bar mounted in said casing and extending transversely of said compartments, said trip bar normally being effective to maintain said trip lever in a latched position and being pivotable to effect release of said trip lever, a plurality of elongated terminal straps each having an inner end portion disposed in a respective one of said compartments and an outer end portion extending out of its respective compartment adjacent an end of said casing, a plurality of magnetizable core members disposed respectively in said compartments in electromagnetic relationship respectively with said terminal straps whereby flow of current through each of said terminal straps establishes magnetic flux in its associated core member, a plurality of armature members disposed respectively in said compartments in spaced relationship respectively to said core members, each of said armature members being biased away from its associated core member and being attractable thereto upon flow of severe overload current through its associated terminal strap, a plurality of actuating members disposed respectively in said compartments, means operatively connecting said actuating members respectively to said armature members, each of said actuating members being engageable with said trip bar upon being attracted toward its associated core member to pivot said trip bar and effect release of said trip lever, a movable elongated air-gap adjusting crossbar disposed in said casing and extending transversely of said compartments, means operatively connecting said air-gap adjusting crossbar to each of said armature members, an adjustable air-gap control member disposed in said casing, said casing having an aperture therein providing access to said control member from

outside said casing, and means operatively connecting said control member to said air-gap adjusting crossbar whereby adjustment of said control member simultaneously adjusts the spacing between each of said armature members and its associated core member.

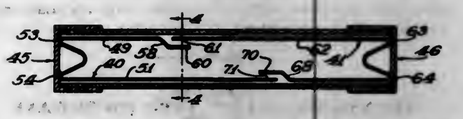
3,345,592
ELECTROMAGNETIC RELAY WITH IMPROVED ARMATURE-CORE ASSEMBLY
Rudolf Kuke, Scharfe Lanke 37, Berlin 20, Germany
Filed Oct. 20, 1965, Ser. No. 498,785
Claims priority, application Germany, Oct. 22, 1964, K 54,315
6 Claims. (Cl. 335—129)



1. An electromagnetic relay, comprising:
a magnetically permeable yoke of generally U-shaped configuration having a pair of mutually parallel shanks;
an electrically energizable magnet coil surrounding one of said shanks;
a magnetically attractable armature carried by said yoke, said armature having an arm bridging the ends of said shanks and a flange extending angularly from said arm and forming with said arm an angular junction pivotally supporting said armature upon an outer edge of the other of said shanks, said other of said shanks having a surface remote from said magnet coil and said flange overlying said surface, and at least one further arm extending along said other shank;
contact means on said other of said shanks, said contact means including a stack of contacts affixed to said yoke at an intermediate location along said surface of said other of said shanks;
contact-actuating means carried by said armature and engageable with said contact means for displacing same upon energization and de-energization of said coil, said contact-actuating means including a member extending transversely to said surface and disposed at the extremity of said further arm remote from said flange and entrainable with said further arm; and
a spring anchored to said other shank along said surface at said stack and extending around said angular junction at one side of said stack to bear upon said armature against the magnetic force generated by said coil, said spring having an integral resiliently deflectable tongue on the other side of said stack overlying said surface and extending therealong, said tongue having a free end engaging said member and resiliently biasing same.

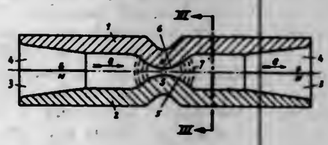
3,345,593
REED SWITCH CONTACT CONSTRUCTION
Walter M. Grengg, Madison, Wis., assignor, by mesne assignments, to Oak Electro/Netics Corp., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 545,018
14 Claims. (Cl. 335—154)

1. In combination,
an elongated hollow tube,
an electrically conductive contact member mounted within said tube bearing under spring action against the inside wall of said tube and having an end portion bent outwardly from the inside wall of the said tube to define a gap,



a resilient, electrically conductive, magnetic, elongated reed mounted such that one end thereof extends into said gap, said one end being normally held in spring tension against said inside wall of said tube, and
means for producing a magnetic field within said tube to cause said reed to flex into engagement with said contact member.

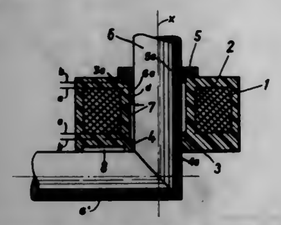
3,345,594
MAGNETIC DEVICE FOR TREATING A LIQUID
Theophile I. Vermeiren, 48 Verbovenlei, Deurne-Zuid, Belgium
Filed Oct. 25, 1965, Ser. No. 505,168
Claims priority, application Belgium, Oct. 12, 1965, 18,949, Patent 670,809
2 Claims. (Cl. 335—306)



1. Device for treating a liquid by means of lines of force of a magnetic field with at least one passage for the liquid to be treated and means producing on part of said passage a magnetic field the lines of force of which are substantially at right angle to lengthwise direction of the passageway, in which the means generating the magnetic field are comprised of two magnets that extend in parallel relationship with the lengthwise direction of the passage while being provided in the center thereof with projections facing one another and forming poles of opposite name and at both ends thereof with poles which, for one and the same magnet, are of opposite name relative to the pole of the projection of this magnet.

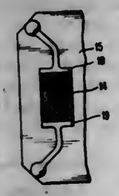
3.345.595
HIGH-VOLTAGE COIL FOR GENERATING THE HIGH VOLTAGE IN A TELEVISION RECEIVER
Heinz Röbel, Hannover, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Aug. 9, 1965, Ser. No. 478,067
Claims priority, application Germany, Aug. 8, 1964, T 26,762
5 Claims. (Cl. 336—69)

1. A high-voltage coil for generating the high voltage in a television receiver, comprising, in combination:
(a) an annular carrier having an inner wall defining a central opening and carrying a winding surrounding said opening, said winding being located between two limit planes which are at right angles to the axis of said central opening;
(b) a core passing through said central opening, therebeing, in the region of said winding, an air gap of substantial thickness between the inner wall of said carrier and the outer surface of said core, the thickness of said air gap being such that the voltage gradient produced therein by the high voltage in said coil does not exceed the dielectric strength of air, thereby preventing arc-overs from occurring between said winding and said core; and
(c) means forming a constriction at each end of said opening and holding said core in axially centered relationship with respect to said opening, said constriction means being located outside of the space between said limit planes and one of said constriction means constituting an inwardly extending shoulder of said carrier.



4. A high-voltage coil as defined in claim 1 wherein said core has two mutually perpendicular branches one of which passes through said opening, there being a further air gap of substantial thickness between the surface of said carrier and the outer surface of the other of said branches.

3,345,596
HYGROMETER AND METHOD OF FABRICATION
Ronald A. Delaney, Wappingers Falls, and Karl J. Puttlitz, Kingston, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 8, 1965, Ser. No. 506,803
5 Claims. (Cl. 338—35)



1. In the method of forming a hygrometer the steps of:
mixing cobalt oxide powder with an inert liquid vehicle into paste form;
applying said paste to a dielectric;
firing said paste on said dielectric at a temperature above 1350° C., but below the melting point of said dielectric to form a hygroscopic element thereon; and
cooling said element to room temperature.

4. A hygrometer including a dielectric having a hygroscopic material overlay thereon forming a hygroscopic element, said overlay comprising finely divided cobaltous oxide having a crystalline adsorbent surface.

3,345,597
ELECTRIC HEATING RESISTORS
Nils Gustav Schrewelius and Clas Bengt O. Magnusson, Hallstahammar, Sweden, assignors to Aktiebolaget Kanthal, Hallstahammar, Sweden, a corporation of Sweden
Filed Aug. 24, 1964, Ser. No. 391,555
Claims priority, application Sweden, Aug. 27, 1963, 9,321/63
7 Claims. (Cl. 338—302)

1. A rod-shaped electrical heating resistor composed of a generally cylindrical resistor element consisting essentially of molybdenum disilicide, said cylindrical resistor element containing a helical slot in the central portion thereof to form a helical resistor element and thereby increase said element's electrical resistance in said central portion, said helical resistor element being self-supporting at normal room temperature and being deformable by the influence of its own weight when unsupported during operation at high temperatures between 1400° C. and 1800° C.; a rod-shaped heat-resisting support inserted into said cylindrical resistor element to prevent said element's high temperature deformation, and an intermediate layer of insulating material positioned between the supporting rod and the resistor element, the outside surface of said intermediate layer being in contact with the inner surface of said cylindrical resistor element.



3,345,598
CIRCUIT ELEMENT
Georg Lutz, Nurnberg, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Apr. 26, 1965, Ser. No. 450,713
Claims priority, application Germany, Apr. 25, 1964, T 26,077
4 Claims. (Cl. 338—315)

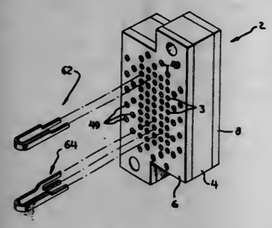


1. An electrical resistor comprising, in combination:
(a) an elongated support body of insulating material, at least one end of said support body having a non-circular and non-square cross-sectional configuration;
(b) a bifilarly disposed layer of resistance material on said support body, said layer of resistance material being disposed in a continuous resistance path whose two end portions are located on opposing sides of said support body at said one end thereof;
(c) a metallic contact layer on each of the end portions of said resistance path; and
(d) the portions of said support body which lie between the two end portions of said resistance path being laterally beveled at said one end of said support body.

3,345,599
CROSS-CONNECTING BOARD
Homer Ernst Henschen and Marvin Leo Yeager, Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 18, 1964, Ser. No. 412,002
6 Claims. (Cl. 339—18)

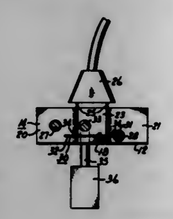
1. Means for making electrical connections among a plurality of conductors comprising a plurality of X conductors and a plurality of Y conductors, said X and Y conductors, and extending transversely of each other in accordance with an X-Y grid system, said conductors being electrically separated from each other, said X conductors being designated as X_1, X_2, etc.,

in accordance with their intersections with the X axis of said grid system and said Y conductors being designated as Y_1, Y_2, etc., in accordance with their intersection with the Y axis of said grid system, even numbered X conductors (X_2, X_4), having contacts at only even numbered ordinate positions (Y_2, Y_4), and odd numbered X conductors (X_1, X_3) having contacts at only odd numbered ordinate positions (Y_1, Y_3), even



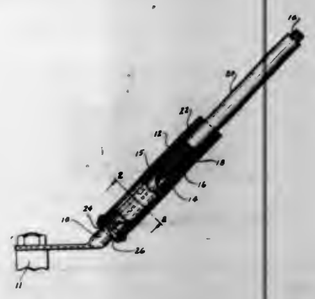
numbered Y conductors (Y_2, Y_4) having contacts at only odd numbered abscissa positions (X_1, X_3), and odd numbered Y conductors (Y_1, Y_3) having contacts at only even numbered abscissa positions (X_2, X_4) said contacts conforming to, and being engageable with contact terminal portions of jumper members whereby, any point on said grid system can be electrically connected to any other point.

3,345,600
ELECTRICAL PLUG LOCKING DEVICE
Lawrence F. Scherer, Allegheny County, Pa. (1026 Oakland Ave., Port Vue, McKeesport, Pa. 15133)
Filed Aug. 11, 1965, Ser. No. 478,879
1 Claim. (Cl. 339—37)



A locking device for electrical plugs comprising, in combination, a base and parallel side walls forming a channel, said parallel side walls intermediate the ends being spaced apart a distance greater than the distance separating the end portions thereof, whereby a compartment is formed to receive the prongs of a conventional plug, first means maintaining the spacing of said parallel side walls adjacent one end thereof, said parallel side walls defining said compartment means having oppositely disposed openings, said openings being disposed approximately midway between the base and the top of said parallel side walls, second means maintaining the spacing of said parallel side walls adjacent the opposite end thereof and spaced nearer said base than said oppositely disposed openings, a pin pivotally mounted on said second means, said pin having a length greater than the length of said compartment, whereby when the pin is passed through the openings adjacent the ends of the prongs of a conventional electrical plug, said prongs may be rotated into said compartment and retained therein against unauthorized use by passing the shackle of a conventional lock through said oppositely disposed openings.

3,345,601
QUICK-DISCONNECT BATTERY CABLE
Rudolf Horsch and Ronald G. Michael, Burlington, Iowa, assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed July 28, 1965, Ser. No. 475,463
6 Claims. (Cl. 339—110)



1. A quick-disconnect assembly for connection to a battery, said assembly including a

flexible conductor adaptable for transmission of energy,

socket means electrically and mechanically connected to said flexible conductor, said socket means having an elongated contact area, a separable contact portion and also having an enlarged portion at one end thereof,

stem means slidable in said socket means in position to engage with said contact area and with said contact portion, said stem means being attached in electrical contact therewith, and

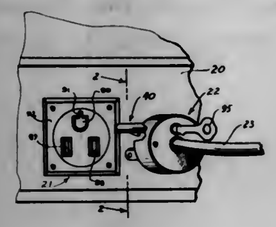
resilient insulating means on said socket means and said flexible conductor in position to urge said socket means into contact with said stem means, and said enlarged portion of said socket means retaining said insulating means in one position on said socket means.

3,345,602
BATTERY TERMINAL BOOT
Carol Howard Pontious, Rte. 2, Box 583, Sonora, Calif. 95370
Filed Apr. 11, 1966, Ser. No. 541,750
4 Claims. (Cl. 339—115)



1. A terminal boot for a storage battery having an upstanding post adapted for engagement by the terminal clamp of a current-carrying cable; the boot comprising a member adapted to provide an enclosure for the post, clamp, and the adjacent portion of the cable, the member being of pliable material and initially in the form of an elongated pad adapted to rest on top of the battery, the pad having a hole therethrough intermediate its ends to closely receive the portion of the battery post beneath the clamp, integral wings on and projecting from opposite sides of the pad in substantial alinement with said hole, the wings being adapted to be folded toward each other and over the clamp and post, a longitudinal portion of the pad beyond the wings initially extending generally opposite the cable and being adapted to be turned back over the folded wings and to thence extend to the other end of the pad, and means to releasably engage the then upper and lower end portions of the pad and squeeze the same about the adjacent portion of the cable.

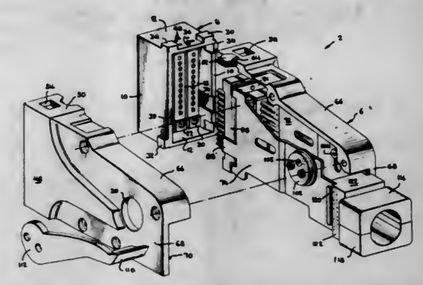
3,345,603
ELECTRICAL PLUG KEY LOCK
Stanley Alan Cohen, 34—32 Ripple Road, Baltimore, Md. 21207
Filed Sept. 2, 1965, Ser. No. 484,630
3 Claims. (Cl. 339—176)



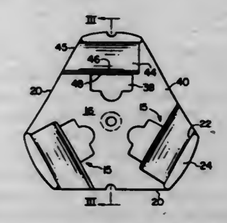
1. An electrical connector comprising a female part having a plurality of inwardly extending openings, electrical-contact means in each of said openings, an inwardly facing abutment in at least one of said openings, a male part, a plurality of prongs on said male part respectively insertable in said openings for engagement with said contact means, and a detent on at least one of said prongs for retaining engagement with said abutment upon said insertion; in combination with means mounting said one prong for selective shifting to move said detent out of engagement with said abutment, for withdrawal of said male part and prongs; said mounting means comprising a cylinder in said male part supporting said one prong for rotative shifting; said female part comprising an inner section having recesses defining the inner ends of said openings, said contact means being located in said recesses, and an outer section covering said inner section and having thru holes in respective alignment with said recesses, said outer section having an internal shoulder adjacent to one of said holes and defining said abutment, and said one hole having a cutout spaced from said abutment for passing said detent upon rotation of said one prong.

3,345,604
ELECTRICAL CONNECTOR
Homer Ernst Henschen and Marvin Leo Yeager, Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 8, 1966, Ser. No. 541,373
6 Claims. (Cl. 339—186)

6. A keying system for a multi-contact electrical connector, said connector comprising a pair of engageable shells, one of said shells having boss means on its external surface and the other one of said shells having opening means for reception of said boss means, said opening means being located inwardly from the mating end of said other shell whereby, said shells can be engaged with each other only by moving said shells relatively towards each other while they are in aligned offset relationship until said boss means is in registry with said opening means and then moving said shells laterally and into axial alignment with each other to move said boss means relatively into said opening means, and keying means comprising a projection on one of said shells and a second opening means on the other of said shells, said projection extending parallel to said boss means, said projection and said opening being selectively positionable in one of several positions on their shells whereby adjacent connectors having their openings and projections in different positions cannot be cross mated.



3,345,605
ELECTRICAL CONNECTOR CLUSTER ASSEMBLY
Arvo Looke, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 20, 1965, Ser. No. 481,255
10 Claims. (Cl. 339—192)



1. A cluster assembly for making a gang connection to a plural post terminal of the type including equilaterally spaced pins carrying equi-angularly oriented tabs thereon tangent to the radially outer side of each of the pins, said cluster assembly comprising:

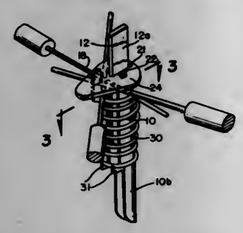
a mounting block having opposite front and rear faces;

a number of individual electrical connector terminals carried by said block in a predetermined orientation, each terminal including a relatively flat contact socket to fit on said pin-tabs, a wire-gripping ferrule, and an intermediate web;

said block including means defining a cavity to accommodate each of said terminals, said cavities being spaced radially outwardly from the central portion of said block;

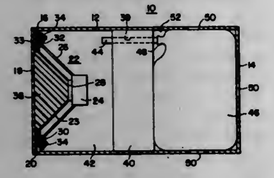
each of said cavities including a radially-inner, socket-receiving-opening extending between said opposite faces to accommodate said socket with the socket major dimension extending tangent to the circle passing through said pin-tabs, and an adjacent, radially-outer trough to accommodate said ferrule, said trough extending relatively directly to the edge of said block to provide an opening for the emergence of the wire gripped by said ferrule in the immediate vicinity of said cavity, said trough extending to said block edges in a path in which it does not pass more closely to any adjacent terminal cavity within the peripheral limits of said block than the spacing between adjacent terminals, said intermediate web being bent to form an acute angle between said ferrule and contact socket so that said ferrule occupies a level in said trough within the length of said contact socket.

3,345,606
SPRING CLIP TERMINALS
Ray R. Scoville, 5083 Commonwealth Ave., La Canada, Calif. 91011
Filed June 30, 1965, Ser. No. 468,390
16 Claims. (Cl. 339—254)



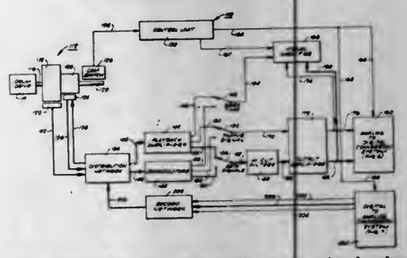
1. An electrical terminal comprising a hollow conductive post having an elongated slot in a surface thereof, a conductive plunger slidably disposed within said post, said plunger having a portion extending outwardly through said slot, said plunger including an L-shaped projection comprising a first member extending outwardly of said post from said extending portion of said plunger and a second member extending upwardly from said first member in a direction generally parallel to said slot at a position spaced outwardly of said post, further conductive projecting means extending outwardly from said post at a fixed position above said first member and extending toward said second member wherein said extending portion, said L-shaped projection and said further projecting means define a variably sized aperture disposed external of said post for receiving electrical conductors, and spring means disposed between said post and said plunger for normally urging said plunger in a direction tending to bring said first member closely adjacent said further projecting means whereby said aperture has a minimum cross-sectional area, said plunger being movable within said post against the force of said spring for moving said L-shaped projection downward relative to said further projecting means thereby to increase the cross-sectional area of said aperture.

3,345,607
UNDERWATER TRANSDUCER
Arthur Nelkin, John H. Thompson, and Frederick G. Gell, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1965, Ser. No. 489,971
2 Claims. (Cl. 340—8)



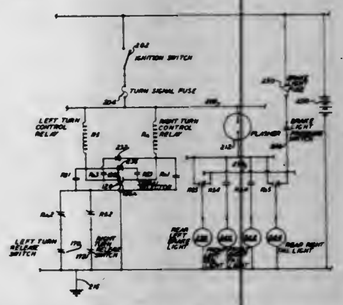
1. A loudspeaker assembly for operation beneath the surface of water comprising an acoustical-electrical transducer element having a flexible diaphragm, an enclosure surrounding said transducer element and sealing said transducer element from said water, said enclosure having an opening therein over which there is disposed a flexible member impervious to water and sealed to said enclosure to resist the ingress of said water, a member having a first surface coupled to said diaphragm for transmitting sound waves from said transducer element to a second surface of said member coupled to said flexible member, said member for transmitting being structurally rigid and having a mass per unit volume less than that of water, and a collapsible bladder connected in an air-tight relationship to said transducer element and in a pressure responsive relationship to said water for maintaining equal pressure on either side of said member for transmitting.

3,345,608
METHOD AND APPARATUS FOR ANALOG/DIGITAL SEISMIC SIGNAL PROCESSING
Graydon L. Brown, Roy E. Garten, Jr., and Bobby J. Thomas, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,912
21 Claims. (Cl. 340—15.5)



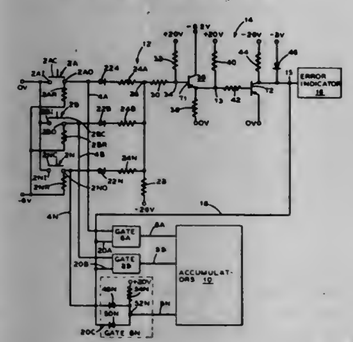
1. A method of processing multi-trace seismic signals comprising the steps of:
receiving the multiple seismic traces and multiplexing said traces to form a time sequential analog voltage;
converting said time sequential analog voltage to respective, sequential digital equivalents;
controlling said multiplexing and analog to digital conversion at a rate referenced to the real time of said seismic signals;
storing said successive digital equivalents in a manner whereby the real time of said seismic signals is recoverable from the spatial storage distribution of said digital equivalents.

3,345,609
TURN SIGNAL CONTROL SYSTEM
Baird Wallace, Grosse Ile, Mich., assignor to Ford Motor Corporation, Dearborn, Mich., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,918
6 Claims. (Cl. 340—81)



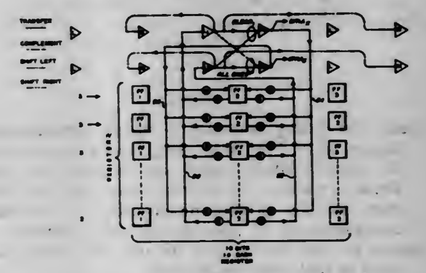
1. A directional signal system comprising, operator movable control means, pairs of normally unbridged contacts selectively bridged by said control means to energize separate circuits, holding circuit means energized upon bridging of said contacts to maintain energized the circuit associated with whichever of the said pair of contacts is bridged upon return of the said contacts to their normally unbridged condition, said holding circuit means being de-energized upon the movement of said operator control means momentarily to a position bridging the other pair of contacts to energize the other circuit and subsequently to a position wherein both pairs of said contacts are in their normally unbridged conditions.

3,345,610
SIGNAL DETECTION APPARATUS
Edgar Wolf, New Hyde Park, N.Y., assignor to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 356,143
4 Claims. (Cl. 340—146.1)



1. Apparatus for detecting the simultaneous presence of signals which swing from a first potential to a second potential from more than one of a plurality of sources, said apparatus comprising signal generating means including a plurality of inputs for receiving the equiamplitude signals from said sources wherein each input is connected to one of said sources, each of said inputs including a unidirectional conducting device and a resistor connected in series, the resistance of said resistors being substantially equal, the ends of said unidirectional conducting devices remote from said resistors being connected to said signal sources and said unidirectional conducting devices being polarized in the same direction, said direction being such that signals from said sources are transmitted to said resistors, the ends of said resistors remote from said unidirectional conducting devices being connected to a common junction, a source of potential, a common resistor for connecting said common junction to a first source of potential, the amplitude of the potential at said source of potential being greater than the potentials through which said signals swing, the resistance of said common resistor being chosen with respect to the resistance of any one said resistor and with respect to the potential of said source of potential such that when a signal having said second potential is received by only one of said inputs said common junction is at a first output potential and when signals of said second potential are received at more than one of said inputs simultaneously said common junction is at least at a second output potential, a signal threshold detection means including an input and an output, said signal threshold means transmitting an indicating signal from its output only when it receives at its input a signal at least equal to a given potential, and coupling means for connecting said common junction to the input of said signal threshold means so that when said common junction is at said first output potential the potential of the signal received at the input of said signal threshold means is at a potential less than said given potential and when said common junction is at said second output potential the signal received at the input of said signal threshold means is at a potential greater than said given potential.

3,345,611
CONTROL SIGNAL GENERATOR FOR A COMPUTER APPARATUS
Joseph J. Eachus, Cambridge, Mass., assignor to Honeywell Inc., a corporation of Delaware
Original application Sept. 30, 1959, Ser. No. 843,515, now Patent No. 3,157,862, dated Nov. 17, 1964. Divided and this application Apr. 10, 1964, Ser. No. 363,042
2 Claims. (Cl. 340—172.5)

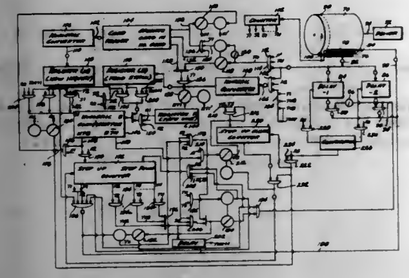


1. A sequentially programmed computer apparatus adapted to perform a plurality of separate and distinct functions in an ordered manner, said apparatus comprising a data manipulator having predetermined fixed logic included therein, said logic comprising a plurality of fixed electrical circuits each of which includes a plurality of independently connected means for selectively connecting a corresponding number of inputs thereto, said last-named means being effective when activated by unique combinatorial codes to enable the selection of one or more of said logic circuits at any one instant, and means connected to said logic to variably select combinations thereof to perform selected orders, said last named means comprising a single sequencer operable when activated to perform a plurality of sequential steps during successive operative cycles, and feedback means interconnecting said logic and said single sequencer whereby signals generated within said fixed logic of said data manipulator are effective in initiating each of said plurality of sequential steps.

3,345,612
DATA RECOVERY SYSTEM WHEREIN THE DATA FILE AND INQUIRIES ARE IN A PREARRANGED ORDER
Robert N. Goldman, Los Angeles, Calif., assignor to Telecredit, Incorporated, a corporation of California
Filed July 20, 1964, Ser. No. 383,795
6 Claims. (Cl. 340—172.5)

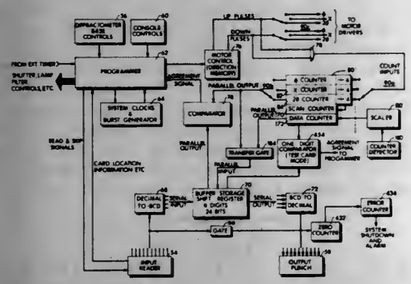
1. A filing system for providing entries therein in response to random inquiries, the random inquiries including address data, the filed entries including address data and information data, comprising:
filing record means, including a serial medium recording a plurality of individual filed entries arranged in a predetermined order of increasing sequence, from low to high, of the address data of said plurality of individual entries, and further including means to sense address signals representative of the address data for each instant entry from said medium in said predetermined order of sequence;
an inquiry memory system for containing a plurality of signals representative of a plurality of said inquiries;

means for providing inquiry signals representative of said inquiries and including address signals;
means for indexing said inquiry signals into said memory system in accordance with the address signals thereof, in said predetermined order;



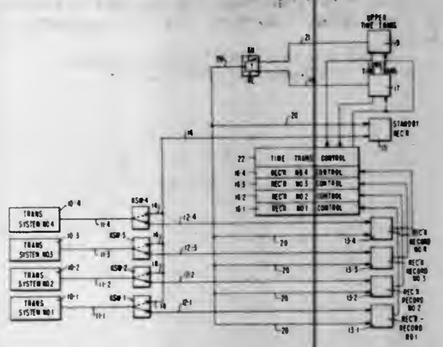
means for testing said address signals representing an instant entry from said filing record means against the lowest address signals in said memory system which are above the address signals of said instant entry in said predetermined order, to provide a coincidence signal upon determining similarity; and
means for manifesting said instant entry upon occurrence of said coincidence signal.

3,345,613
X-RAY DIFFRACTOMETER CONTROL SYSTEM
Daniel J. Bucholtz, Buffalo, Raymond G. Hartman, Lockport, Chester S. Ingraham, East Aurora, John A. Meyer, Tonawanda, and Martin V. Powers, Williamsville, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,631
22 Claims. (Cl. 340—172.5)



1. A digital control system for an X-ray diffractometer including means for positioning a specimen in a given number of planes, said system comprising: a source of multidirectional drive pulses, a transducer associated with each of said planes for positioning said specimen in the respective plane in response to actuation by drive pulses from said source, means for receiving specimen positioning instructions, means responsive to said instructions for selectively connecting said source of drive pulses to actuate one of said transducers, each of said transducers being operative in response to actuation by drive pulses representing a given direction to position said specimen in said given direction in increments of motion corresponding to said drive pulses, means for continually counting the number and controlling the direction of said increments of motion in each of said planes, means automatically responsive to a first command signal for recording in sequence the respective coordinates of the new position of said specimen in each of said planes, automatic means responsive to a second command signal for concurrently controlling the time of irradiation of said specimen, the mode of radiation detection and the accumulation of radiation intensity data, and means for recording said intensity data in accurate correlation with the recorded specimen position coordinates.

3,345,614
DATA TRANSLATION SYSTEM
John V. Neel, Pittsford, N.Y., assignor to Friden, Inc., a corporation of Delaware
Filed Jan. 12, 1965, Ser. No. 425,021
24 Claims. (Cl. 340—172.5)

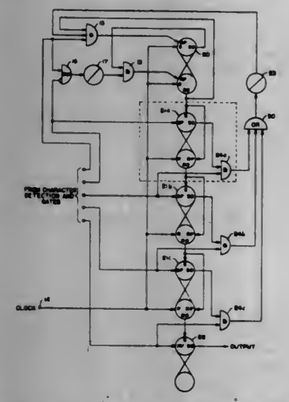


1. A data translation system comprising a pair of data receiver-recorders each having a data input channel adapted to be coupled to a data transmission channel for reception and recording of data supplied thereover during each of successive multi-character data-message transmissions,
coupling means for selectively coupling the data input channel of either of said receiver-recorders to said transmission channel,
means for detecting a preselected type of error in the data received and recorded by one of said receiver-recorders during any of said successive data-message transmissions,
and means controlled by said detecting means and responsive to successive detection of said preselected type of error in each of a preselected plural number of said successive data-message transmissions for controlling said coupling means automatically to transfer the coupling of said transmission channel from the input channel of said one receiver-recorder to the input channel of the other thereof.

3,345,615
SEQUENCE DETECTION CIRCUIT
John L. Peterson, Chicago, and John C. Tirrell, Mount Prospect, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Mar. 16, 1965, Ser. No. 440,245
7 Claims. (Cl. 340—172.5)

2. A system for detecting any predetermined sequence of signals at a signal source including:
a plurality of binary devices each having a set and a reset input and a set and a reset output, the binary devices being arranged in sequence corresponding to the sequence of signals to be detected;
means responsive to the signals at the signal source for priming the set inputs of the respective binary devices;
means for connecting the reset output of each of the binary devices to the set input of the next succeeding binary device;

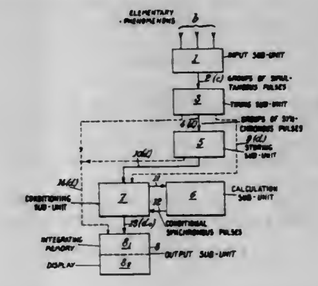
means for connecting the reset output of each of the binary devices to prime the reset input of the next succeeding binary device;
a source of clock pulses;
means for applying the clock pulses to the reset inputs of all the binary devices and to the set input of the first binary device in the sequence;
first gating means responsive to the outputs of predetermined ones of the signal responsive means combined with the set outputs of predetermined ones of the binary devices for providing an output signal whenever one of the predetermined binary devices has a set output at the time the signal responsive means is priming the set input of the next succeeding binary device;



an inverter connected to the output of the first gating means; and
second gating means responsive to the output of the inverter and the reset output of the first binary device in the sequence of binary devices for passing the priming signals from the signal responsive means to the set input of the first binary device only when the first binary device is in its reset state and no output signal is obtained from the first gating means.

3,345,616
DEVICES FOR ANALYZING PHYSICAL PHENOMENONS, AND IN PARTICULAR NUCLEAR PHENOMENONS
Michel Avril, Gif-sur-Yvette, Raymond Moreau, Yveline, and Alix Pages, Gif-sur-Yvette, France, assignors to Commissariat à l'Energie Atomique, Paris, France, a French organization
Filed Jan. 14, 1964, Ser. No. 337,690
Claims priority, application France, Jan. 15, 1963, 921,492, 921,494
8 Claims. (Cl. 340—172.5)

1. An apparatus for analyzing elementary physical phenomenons, in particular nuclear phenomenons, occurring at irregular intervals, which comprises, in combination, a plurality of removable sub-units each performing a given function for analyzing said phenomenons, to wit:
an input sub-unit for deducing from the succession of said elementary phenomenons a succession of groups of at most $n+1$ simultaneous electrical pulses, every group comprising both a number of at most n digits representing, in binary code, the elementary information corresponding to an elementary phenomenon and a reference supplementary digit associated with said number,
a timing sub-unit for distributing at regular time intervals the succession of groups of pulses that issue from said input sub-unit,
at least one sub-unit for storing, treating and conditioning groups of pulses issuing at regular intervals from said timing sub-unit,
and an output sub-unit for exploiting the elaborated informations delivered by said storing, treating and conditioning sub-units,
each of said sub-units, with the exception of the input and output sub-units, comprising, for transmitting the groups of pulses from one sub-unit to another one the following elements:
n input registers for temporarily storing the n pulses of a group representing the number designating every elementary information to be treated in the sub-unit in question, and constituting therefore information pulses,
at least one functional device capable of performing, on said n information pulses, the function corresponding to the sub-unit in question,

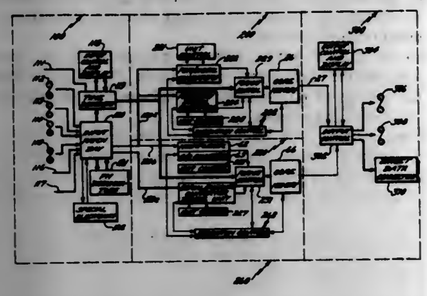


n output devices, each comprising a gate circuit and an impedance transforming circuit,
and a pilot device capable, in response to a reference pulse, which represents the reference digit and which comes thereto from the upstream sub-unit at the same time as the n associated information pulses reach the n registers from said upstream sub-unit, of controlling the operation of said at least one functional device, of releasing the gate circuit of said output devices in order to permit transmission to the downstream sub-unit of the group of information pulses, of transmitting toward this downstream sub-unit a reference pulse in synchronism with said group of pulses, and of resetting to zero the n registers at the end of the treatment, in the sub-unit in question, of the information pulses, in order to enable the last mentioned sub-unit to take into charge a new group of information pulses.

3,345,617
DIGITAL DATA PROCESSING APPARATUS
Fred B. Cox, Jr., Fullerton, and Paul O. Lindfors, Woodland Hills, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 4, 1964, Ser. No. 342,573
4 Claims. (Cl. 340—172.5)

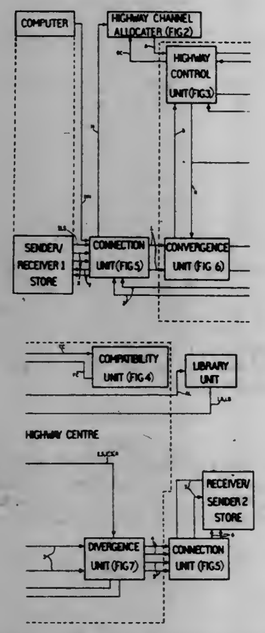
1. Apparatus for processing concurrently raw test data acquired in various formats from a plurality of input devices to suitable format for entry into a digital data output utilization device, comprising: patch bay means connected to all of said input devices, pulse duration modulated converting means connected to said patch bay means for converting pulse duration modulated data pulses in said input devices to binary words, analog-to-digital converting means connected to said patch bay means for converting analog voltage input data in said input devices to binary words, a corresponding pair of memory means connected

to each other and to each of said converting means, means for transferring sequentially a predetermined number of said binary words to said pair of memory means, and



means for transferring said words stored in said memory means to an output digital utilization device in a sequential manner.

3,345,618
PLURAL PROCESSORS-PLURAL TERMINAL DEVICES INTERCONNECTING SYSTEM
Ronald Threadgold, Liverpool, England, assignor to Automatic Telephone & Electric Company Limited, Liverpool, England, a British company
Filed May 27, 1964, Ser. No. 370,623
Claims priority, application Great Britain, May 31, 1963, 21,877/63
18 Claims. (Cl. 340—172.5)



1. A data processing system having a plurality of data processing devices and a plurality of terminal devices arranged for interconnection over a common communication path characterized in that in order to enable interconnection on a mutually exclusive basis between any one of said data processing devices and any one of the remaining devices over said path, each of said devices is identified by a discrete coded number and when one of said data processing devices requires connection to another of said devices, said one data processing device generates a demand signal which is sensed by control equipment associated with said common communication path, said demand signals being of such a form as to indicate to said control equipment the coded number and priority allocation of said demanding data processing device and said control equipment being arranged

(a) to select the highest priority demanding data processing device

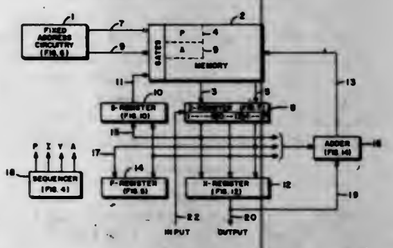
(b) to set up a temporary connection path from said demanding data processing device to said control equipment over part of said common communication path, said temporary path being used to pass coded information from said demanding data processing device to said control equipment defining the coded number to the wanted device to be used in the connection and the type of data transfer required

(c) to define the busy or free status of said wanted device and the busy or free status of said common communication path

(d) to generate selection signals to take into use said wanted device if said device and said common communication path is free

(e) to set up connections to said common communication path involving the demanding data processing device and said wanted device in accordance with the type of data transfer required.

3,345,619
DATA PROCESSING SYSTEM
Duane H. Anderson, Roseville, Royal T. McArdell, St. Paul, and Ralph W. Notto, White Bear Lake, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,443
7 Claims. (Cl. 340—172.5)



1. A computer comprising:

sequencer means capable of generating sequence enabling signals representing four distinct operational sequences,

memory means having sections adapted to store an instruction word, an instruction word address and data words at directly addressable locations therein,

instruction address retrieving means coupled to said memory and said sequencer means for retrieving and storing an instruction word address during a first of said operational sequences,

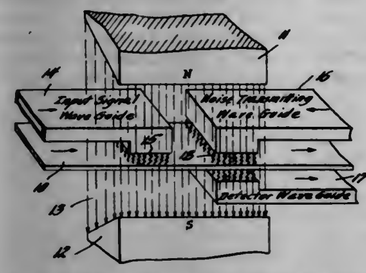
instruction retrieving means coupled to said instruction address retrieving means, said sequencer means and said memory for utilizing said address to retrieve and temporarily store an instruction word from said memory during a second of said operational sequences, said instruction word having at least a function portion, and an address portion,

first means coupled to said instruction retrieving means, said sequencer means, and said memory for utilizing the address portion of said instruction word to retrieve and store a first data word from said memory during a third of said operational sequences,

second means coupled to said memory, said sequencer means and said instruction retrieving means for effecting retrieval and storage of a second data word from said memory during a fourth of said operaitonal sequences,

and arithmetic means coupled to said first and second means for performing arithmetic operations on said first and second data words in accordance with said function portion of said instruction word during a fourth of said operational sequences, said sequencer means including control means coupled to said function portion of said instruction retrieving means for determining the order of said operational sequences in accordance with said function portion and the immediately preceding active one of said operational sequences.

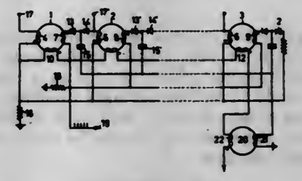
3,345,620
METHOD AND APPARATUS FOR MICROWAVE RADAR SIGNAL RECEIVING, RECORDING AND RETRANSMISSION
Harold C. Anderson, Rockville, and Kenneth E. Peltzer, Seabrook, Md., assignors to Litton Systems, Inc., College Park, Md.
Continuation of application Ser. No. 95,531, Mar. 14, 1961. This application Sept. 3, 1963, Ser. No. 306,061
15 Claims. (Cl. 340—173)



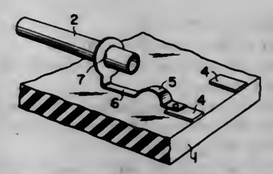
7. A spin resonant system for recording and reproducing radio beams comprising a frequency sensitive record member, means for directing a time variable radio beam to different displaced positions of said frequency sensitive record member to record a plurality of spectral frequency images of said time variable beam, means for reproducing each of said images into a substantially identical time variable radio beam, means for varying the time interval between recording and reproduction of each of said images, said means for varying the time interval comprising means for movably positioning said record member in time sequence with respect to said recording means to receive and record each said image and then movably positioning said record with respect to said reproducing means to reproduce said image as a beam, and including means for varying the time interval of movably positioning said member between said recording and reproducing means.

3,345,621
PULSE SEQUENCE PRODUCER WITH INTERFERENCE SIGNAL SUPPRESSION
Gerhard Haas, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 12, 1963, Ser. No. 294,478
Claims priority, application Germany, July 13, 1962 P 29,811
4 Claims. (Cl. 340—174)

1. A pulse sequence producer comprising a plurality of storage elements having first and second stable states, all of said storage elements having a common shift winding, means applying a shift pulse to said common shift winding, said pulse being operative to place each of said elements in said first stable state, coupling means serially interconnecting adjacent storage elements to form a row of storage elements, said coupling means including chargeable means for storing an intermediate signal when a storage element adjacent said coupling means is placed in said first stable state by said shift pulse, means responsive to the absence of said shift pulse for causing said chargeable means to discharge said intermediate signal thereby to change the state of the next successive and adjacent storage element to said second stable state, output means commonly connected to each of said storage elements for providing a signal indicative of the charging of said chargeable means, and means for preventing interference pulses from non-actuated elements, said last named means comprising, a further bistable storage element having a first winding connected between said chargeable means and a grounding point, and a second winding connected between said means applying a shift pulse and said common shift winding, said first and second windings poled in magnetic opposition with respect to each other.



3,345,622
MOUNTING DEVICE FOR MAGNETIC MEMORY DEVICES
Akira Matsushita, Tokyo-to, Japan, assignor to Toko Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Dec. 31, 1964, Ser. No. 422,826
Claims priority, application Japan, Jan. 10, 1964, 39/1,279, 39/1,280
3 Claims. (Cl. 340—174)

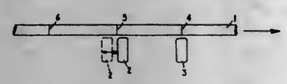


1. In a matrix type magnetic memory device mounted upon a base and including elongated conductors covered with a magnetic film, and terminals provided at the side edges of said base, said conductors being connected to said terminals; the improvement which comprises a mounting device comprising a plurality of flexible buffer wires electrically connecting each of said conductors to corresponding terminals; the flexibility of said buffer wires providing absorption of elongation, contraction and twisting of said conductors.

3,345,623
MOVABLE HEAD AND TAPE CONTROL SYSTEM
John A. Jackson, Southend-on-Sea, Essex, England, assignor to E. K. Cole Limited, Southend-on-Sea, England
Filed Nov. 13, 1963, Ser. No. 323,484
Claims priority, application Great Britain, Nov. 15, 1962, 43,160/62
9 Claims. (Cl. 340—174.1)

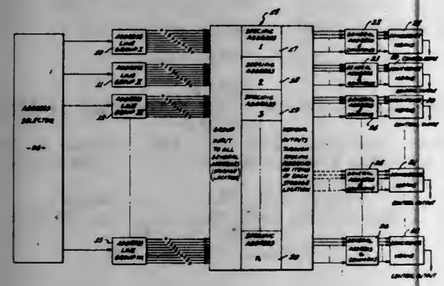
1. In a machine of the type in which the intermittent step by step forward movement of a body to a position

where an operation is to be performed thereon is adapted to be controlled by a magnetic track movable step by step in synchronism with said body, discrete programme signals recorded on said track, a magnetic head operatively positioned to react to said signals, means for moving the head in a backwards direction during each track



stopping period to increase the relative speed of movement of the track with respect to the head during the said period to cause said head to scan a predetermined length of track moved during said stopping period, and prevent loss of any signal on said track during said stopping period, and means for thereafter returning the head to its normal position.

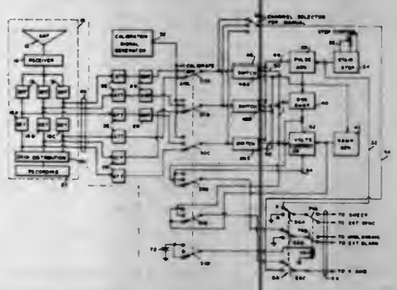
3,345,624
RANDOM ACCESS ADDRESS SELECTION APPARATUS
Marshall M. Brown, San Marino, Calif., assignor to United Data Control, Inc., South El Monte, Calif., a corporation of Washington
Filed Sept. 24, 1963, Ser. No. 310,996
13 Claims. (Cl. 340—174.1)



1. A system, comprising:
a plurality of item storage locations;
a plurality of address lines common to each of said storage locations;
means for selectively inquiring over specified combinations of said address lines in accordance with specific addresses being sought;
logic means at each of said storage locations, each of said logic means having a plurality of inputs and being adapted to produce an output only upon simultaneous activation of all of its inputs;
at least one item randomly stored among said item storage locations;
and address means embodied by each item for coupling specific ones of said address lines, in accordance with the specific address of its respective item, to the inputs of said logic means at that storage location.

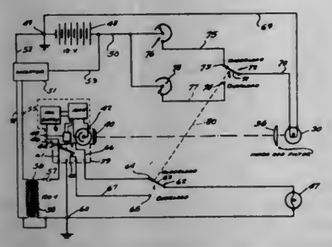
3,345,625
PLURAL CHANNEL MONITOR DISPLAYING A.C. OR D.C. INFORMATION SIGNALS AS A BAR GRAPH ON AN OSCILLOSCOPE
James E. Russell and William J. Shannahan, Tulsa, Okla., assignors to Remote Measurements, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed July 3, 1963, Ser. No. 292,624
3 Claims. (Cl. 340—212)

1. A discriminator monitor for simultaneously monitoring on an oscilloscope having a vertical deflection input a multi-channel telemetry receiver system wherein said system consists of a multiplicity of discriminator channels, each of said channels consisting of a band pass filter section and a detector section, comprising:
a stair step generator for generating a repetitive stair step voltage signal, each signal having a step for each of said channels of said telemetry system, said generator connected to sweep a beam horizontally across the face of said oscilloscope in synchronization with said stair step signal;
a pulse generator fed by said stair step signal to provide a pulse output for each step of said stair step signal;
a tumblecounter electronic switch actuated by said pulse generator, said electronic switch having a multiplicity of isolated switching channels, said tumblecounter functioning as a sequential scanning means;
a mode selector switch having a multiplicity of channels, each of the switch channels having two inputs and one output, one of the inputs of each of said mode switch channels connected to the output of the band pass filter of one of said telemetry channels and the other input of each of said mode switch channels connected to the output of the detector portion of the same telemetry channels, the output of each channel of said mode selector switch connected to the input of a channel of said electronic switch whereby in the first or BPF position of said mode switch the output of the band pass filters of said telemetry receiver are sequentially scanned by said electronic switch and in the second or detector position of said mode switch the output of the detector portion of each of said telemetry channels are sequentially scanned by said electronic switch;



a ramp voltage generator actuated by said pulse generator sequentially generating a linearly time varying voltage signal;
a voltage comparator circuit connected, when said mode switch is in the detector position, to receive and compare the output of said electronic switch with the said time varying signal output of said ramp voltage generator, said voltage comparator circuit providing an unblanking signal by the coincidence of the time varying signal and the voltage output signal of said electronic switch, said unblanking signal fed to said oscilloscope to unblank said beam in each vertical displacement thereof, the unblanked beam providing a vertical visual bar graph of the output of one of said detectors and the scope face thereby providing a composite bar graph display of the output of all of the detectors of said telemetry system receiver when said mode switch is in the detector position; and
a vertical deflection channel portion of said mode switch whereby when said mode switch is in the first or BPF position the output of said electronic switch channels are combined to form a time multiplexed signal of portions of the output of each of said band pass filters, said time multiplexed output signal connected by said vertical deflection channel portion of said mode switch to the vertical deflection input of said oscilloscope whereby as the beam of said oscilloscope moves horizontally across the face of said oscilloscope a segment of the signal output of each of said band pass filters of said telemetry system is sequentially visually displayed and whereby a composite display of the output of all of said band pass filters of said telemetry system is simultaneously displayed.

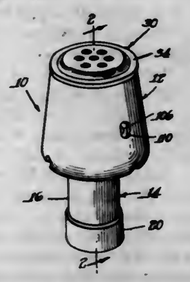
3,345,626
COMBINE PHOTOELECTRIC WARNING SYSTEM
Junior W. Thomas, Rural Free Delivery, Prescott, Wash. 99348
Filed Dec. 24, 1964, Ser. No. 420,892
3 Claims. (Cl. 340—236)



1. In combination with a harvester having a passage through which chaff material is blown by an air blast and having a chaff discharge outlet at the end of said passage, load-monitoring means comprising a light source at one side of said passage, a photo cell at the other side of said passage located to receive radiation from said light source traveling through the moving material, the intensity of the received radiation varying substantially inversely with the density of the moving material, a relay controlled by said photo cell, said relay having a pole and upper and lower contacts engageable thereby respectively responsive to energization and deenergization of said relay, a first circuit branch including said pole and the upper contact, a second circuit branch including said pole and the lower contact, a source of current, an alarm device, and means to selectively connect said alarm device to said source either through said first circuit branch or said second circuit branch, whereby the relay can operate to energize the alarm device responsive either to a predetermined increase or decrease from a normal value of the intensity of the radiation received by said photo cell.

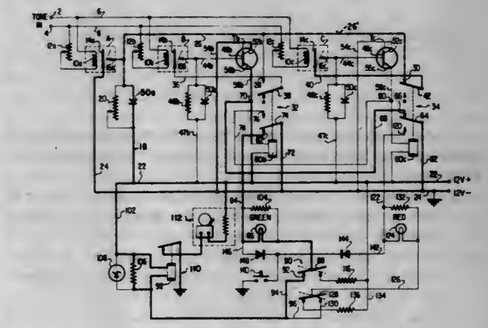
3,345,627
PROWLER ALARM
Leonard A. Herst, Marvin B. Kaplan, and Charles B. Spangenberg, Chicago, Ill., assignors, by direct and mesne assignments, of fifty percent to Leonard A. Herst, and fifty percent to George J. Goldman, both of Chicago, Ill.
Filed Feb. 1, 1965, Ser. No. 429,322
1 Claim. (Cl. 340—283)

A portable and tippable prowler alarm unit comprising a housing having an enlarged upper portion and a small base portion, said base portion having a flat surface for freely resting the alarm unit in an upright position on a substantially horizontal support surface, an audible alarm secured in the upper portion of the housing, a power source carried in the base portion of the housing, control means including a tilt switch in the upper portion of the housing for the alarm which is inoperative when the unit is in its upright position and operative when the unit is tipped over from its upright position, said control means including holding means for maintaining the alarm in an energized condition irrespective of the position of the alarm unit after it has been initially tipped over and the control means has been rendered operative, and resetting means within the upper portion of the housing including a plunger switch for de-energizing the alarm, the outer end of the plunger of said switch being spaced from the wall of the upper portion of the housing and being accessible through a hole through the



wall of the upper portion of the housing, said hole being of a size too small to permit entry of a human finger but large enough to permit entry of a pencil, said audible alarm, said control means and said resetting means being positioned in the upper portion of the housing in a manner to render the alarm unit top heavy whereby the unit is readily tippable from its normal upright position.

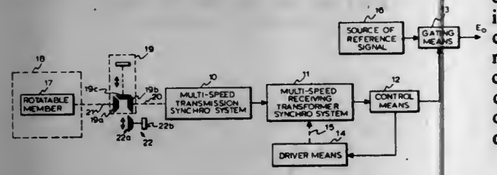
3,345,628
FLIP-FLOP ALARM SYSTEM WITH LAMP TEST CIRCUIT
Wilbur Jackson, P.O. Box 286, Chatsworth, Ga. 30705
Filed June 18, 1965, Ser. No. 464,941
5 Claims. (Cl. 340—310)



1. A multi-tone decoding and signalling device comprising, a tone signal input circuit, first, second and third resonant relays each having a control winding connected across said tone signal input circuit and each having power input and output connections and each resonant relay being responsive only to first, second and third tone signals of respectively different frequencies, a power supply circuit including two conductors of opposite polarity, a first capacitor and charging circuit therefor connected to said power supply circuit and the power output connection of the first resonant relay for charging said first capacitor upon energization of the control winding of the first resonant relay by a first tone signal, first and second switching transistors each having control elements respectively connected to the power output connections of said second and third resonant relays, first and second relay means including control windings respectively associated with said first and second transistors and having certain

contact and armature pairs which are normally closed when their windings are de-energized and certain other contact pairs which are closed when their windings are energized, a pair of power circuits across said power input conductors and running respectively through controlled elements of said first and second transistors and the control windings of the first and second relay means respectively associated therewith, said first and second relay means each including a first normally open contact and armature pair for establishing a transistor on-switching circuit from said first capacitor to the power input connections of said second and third resonant relays respectively when said first and second relay windings are de-energized and for breaking said transistor on-switching circuit when said relay windings are energized, means for normally biasing the control elements of said transistors to off switched states, a holding circuit for each relay means winding established through a normally closed contact and armature pair of the other relay means and each being opened upon energization of the other relay means winding, whereby the holding circuits of said relay means operate in flip-flop mode, first and second electrically energizable signal devices, and first and second energizing circuits respectively for the first and second signal devices running from one power conductor through normally open contact and armature pairs on the first and second relay means to the other power conductor.

3,345,629
ANALOGUE CONVERTER
Carl Stella, Bronx, N.Y., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed May 1, 1964, Ser. No. 364,146
6 Claims. (Cl. 340—347)



1. An analogue converted for converting angular displacement to a time correlated signal comprising, in combination:

a multi-speed transmission synchro system, the individual transmitters of which are preset to operate at mutually exclusive different speeds, to provide a first output signal proportional to the angular displacement to be converted; a related multi-speed receiving synchro system of the control transformer rotor type, responsive to said first output signal to provide a second output signal proportional thereto;

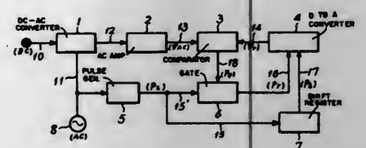
driver means for driving the respective rotors of the control transformer synchros of said multi-speed receiving synchro system including a forward drive cycle gear train having gear means to operate the individual control transformer rotors at mutually excluisve different speeds corresponding to the preset different speeds of the multi-speed transmission synchro system and a reverse drive cycle gear train having gear means to rapidly turn the individual rotors to their electrical zero position in about one turn;

control means to provide a control signal for controlling said driver means to drive said rotors to the null position of said multi-speed receiving synchro system in the presence of said second output signal and to the electrical zero position of said multi-speed receiving synchro system in the absence of said second output signal;

a source of reference signal; and

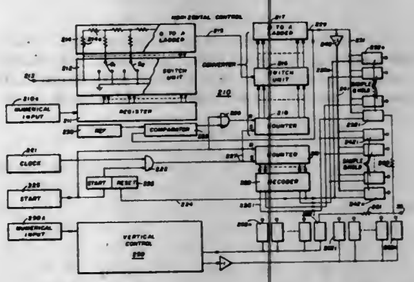
gating means coupled to said source and responsive to said control signal for selectively switching said source to provide said time correlated signal during the period said driver means drives said rotors to said null position.

3,345,630
ANALOG-TO-DIGITAL CONVERSION SYSTEM
Osamu Tada, Tokyo, Japan, assignor to Kabushikikaisha Yokogawa Denki Seisakusho (Yokogawa Electric Works Ltd.), Tokyo, Japan, a corporation of Japan
Filed May 2, 1963, Ser. No. 277,628
Claims priority, application Japan, May 14, 1962, 37/19,399
3 Claims. (Cl. 340—347)



1. An analog-to-digital conversion system comprising a shift-register circuit for successively producing set pulses upon impression of clock pulses synchronized with input alternating signals, a source of the input alternating signals, a digital-to-analog conversion circuit coupled to said shift-register circuit for successively producing direct current reference voltages in response to the weight of said set pulses, a comparator circuit coupled to said source and said conversion circuit for directly comparing said direct current reference voltage with the peak value of said input alternating signal, a gate circuit coupled to said comparator circuit and to said source to the input alternating signals to be controlled by the output signal of said comparator circuit, and means coupled between said gate circuit and said conversion circuit for re-controlling said digital-to-analog conversion circuit with the output signal of said gate circuit.

3,345,631
PHASED ARRAY RADAR ANTENNA SCAN CONTROL
Leo A. Chamberlin, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas Tex., a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,472
11 Claims. (Cl. 343—100)



4. A system for sequentially generating a plurality of suites of stair-step reference voltages which comprises:

(a) an analog voltage source of a level greater than the maximum voltage in each said suite,

(b) a counter-driven digital-to-analog converter for generating monotonic output voltage,

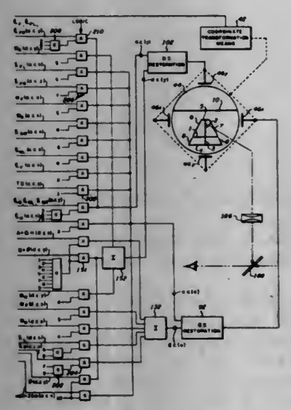
(c) a plurality of sample-and-hold circuits connected to the output of said converter,

(d) a counter driven in synchronism with said converter,

(e) means for periodically resetting said converter when said monotonic voltage exceeds said maximum voltage, and

(f) means responsive to the output of said counter for periodically actuating said sample-and-hold circuits for sampling said output voltage.

3,345,632
RUNWAY IMAGE GENERATING APPARATUS
Ralph R. Rover, Jr., Cresskill, N.J., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,717
4 Claims. (Cl. 343—108)



1. Aircraft landing aid apparatus for producing an image of a landing runway on the face of a cathode ray tube, said image comprising linear elements each having dimensions and orientations substantially colinear with corresponding elements of the actual runway as they would appear from an aircraft approaching said runway along a prescribed flight path, said apparatus comprising:

(a) a cathode ray tube having vertical and horizontal beam deflection means for producing traces on the face thereof having vertical and horizontal components corresponding respectively to the "On-Course" and "Cross-Course" directions of said prescribed flight path,

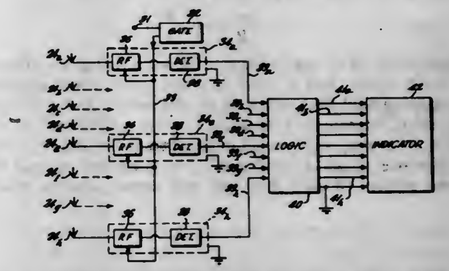
(b) means for generating a first plurality of alternating current signals having relative amplitudes proportional to apparent width elements of said runway at predetermined points along the length thereof,

(c) means for generating a second plurality of alternating current signals having relative amplitudes proportional to the apparent length elements of said runway between said width elements,

(d) means supplying said first plurality of signals to said horizontal deflection means for producing images of said runway width elements and means supplying said second plurality of signals to said vertical deflection means for producing images of the runway center line elements, and

(e) peak detector means responsive to said second plurality of signals and coupled with said vertical deflection means for controlling the relative vertical positions of said runway width image elements along said runway center line.

3,345,633
AIRCRAFT PROXIMITY WARNING SYSTEM
Thomas M. Runge, 5106 Jason, Houston, Tex. 77035
Filed Oct. 22, 1965, Ser. No. 500,716
3 Claims. (Cl. 343—112)



1. A collision avoidance system for aircraft and the like comprising in combination: a UHF transmitter system located on said aircraft including omnidirectional radiating means for radiating a pulse signal of a predetermined pulse width and repetition rate on a UHF carrier to other aircraft; a receiver system located on said aircraft being responsive to said pulse signal radiated from said other aircraft and comprising a plurality of antennas each having a substantially fan-shaped radiation pattern and located on said aircraft so as to provide an array which will be directionally responsive, a UHF receiver coupled to each of said plurality of antennas, said receiver including an RF section and a detector for demodulating said UHF pulses and providing a DC signal in accordance with the received signal strength thereof, gating means coupled to each receiver and being synchronized with said transmitter means located on the respective aircraft for rendering said receiver means inoperative during the transmission period of said UHF pulse signal and onboard said UHF transmitter system; a logic circuit coupled to each said UHF receiver for determining the magnitude of the largest DC signal and providing a pulsing output signal whose repetition rate is proportional to said largest DC signal; and a three dimensional indicator means coupled to said logic circuit, said indicator means comprising a transparent substantially hollow spherical body equally divided into a plurality of equal sectors simulating corresponding sectors in space surrounding said aircraft and a single stationary indicator light mounted at substantially the center of each of said plurality of equal sectors and operated by said pulsing output signal from said logic circuit for providing a visual indication of the location, course, and range of the nearest aircraft by the intensity and/or rate of blinking of a predetermined indicator light.

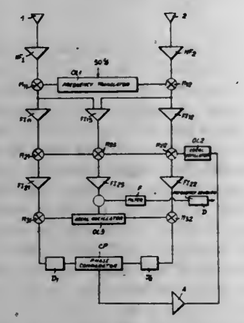
3,345,634
RADIO INTERFEROMETER
Michel Bellenger, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed June 11, 1964, Ser. No. 374,531
Claims priority, application France, June 19, 1963, 938,587
5 Claims. (Cl. 343—113)

3. A radio interferometer comprising: a first and a second aerial for collecting the signal from a remote source for measuring the phase shift φ between said signal as respectively connected by said first and said second aerial; a first and a second chain, respectively connected to said first and said second antenna, and a third chain, each of said first and said second chains comprising in series a first mixer, a first intermediate frequency amplifier, a second mixer, a second intermediate frequency amplifier, and a third mixer; a frequency translator connected to said first mixers for generating and feeding to

said first amplifiers, a first and a second wave, whose respective frequencies are the sum and the difference of the frequencies of an intermediate frequency wave and of a low frequency wave, respectively phase shifted with respect to a reference phase by

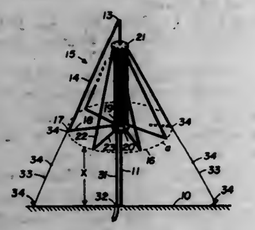
$$+\frac{\varphi}{2} \text{ and } -\frac{\varphi}{2}$$

said third chain comprising in series a mixer amplifier, a fourth mixer, and a third amplifier; said mixer amplifier receiving said first and said second waves and delivering a third intermediate frequency wave modulated at said low frequency with a $\varphi/2$ phase shift, with respect to said reference phase; a local oscillator connected to said second mixers of said first and said second chains and to



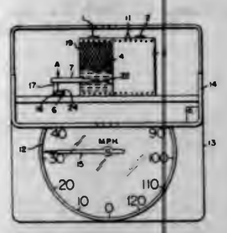
said fourth mixer for feeding to said second amplifiers of said first and second chains and said third amplifier respectively fourth, fifth and sixth waves, respectively frequency transposed from said first, second and third waves; a second local oscillator, having an output connected to said third mixers of said first and said second chains; a phase comparator and two phase shifters respectively connected to said third mixers of said first and said second chain and having respective phase shifts; a synchronous detector having two inputs respectively connected to the output of said second local oscillator and to said third amplifier and having an output; said phase comparator having an output for controlling one of said first and said second local oscillator.

3,345,635
FOLDED VERTICAL MONOPOLE ANTENNA
Richard C. Eenwick, Richardson, Tex., and Roger A. Markley, West Lafayette, Ind., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 11, 1965, Ser. No. 494,348
6 Claims. (Cl. 343—845)



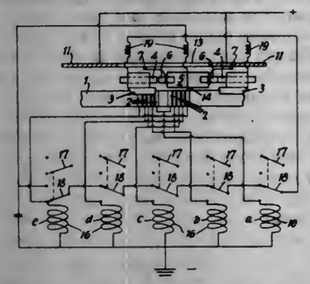
1. An antenna comprising a pair of monopole radiating elements extending in the same general direction, one of said monopoles being connected to ground and the other of said monopoles being connected to a signal source, a single continuous half wavelength transmission line section connecting the ends of the monopole radiating elements, and the half wavelength section of line wound about the surface of an imaginary cone so as to dimensionally shorten the half wavelength section and produce an antenna which requires a small space.

3,345,636
RAILROAD LOCOMOTIVE VELOCITY ALARM
Richard H. McLaren, 502 S. Idaho St., Dillon, Mont. 59725
Filed May 7, 1964, Ser. No. 365,842
2 Claims. (Cl. 346—18)



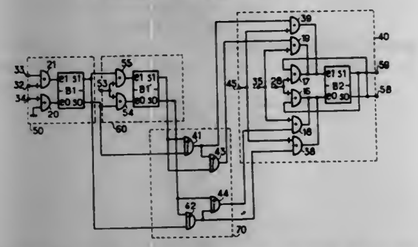
1. A velocity alarm device for a railroad locomotive, comprising
(a) a flexible tape mounted to move in one direction at a rate proportional to the velocity of the locomotive,
(b) a portion of the surface of said tape on one side thereof being electrically conductive, and the remaining portion of said surface being electrically non-conductive, and said conductive portion having an undulating edge separating said portions and extending in said one direction and indicative of the safe maximum velocity of the locomotive at any given instant,
(c) an electrically conductive marking element normally engaging said non-conductive portion of said surface, when said locomotive is travelling at a safe velocity, and reciprocable across said surface transverse to said one direction toward and away from said edge in response to increases and decreases, respectively, in the velocity of said locomotive to inscribe on said one side of said tape a line indicative of the velocity of the locomotive at any given instant, and to move into engagement with said electrically conductive portion, when the locomotive exceeds said safe maximum velocity,
(d) an electrical alarm, and
(e) means connecting said element, said electrically conductive portion of said surface and said alarm in circuit with a power supply, and operative to energize said alarm, when said element is engaged with said electrically conductive portion, and to deenergize said alarm, when said element is engaged with said non-conductive portion,
(f) said undulating edge being based upon predetermined maximum velocities at which said locomotive may safely operate at given points along its travel from one destination to another,
(g) said circuit including a pair of stationary contacts, and
(h) said means including
(1) means electrically connecting said marking element to one of said contacts for movement relative thereto, and
(2) means electrically connecting said electrically conductive portion of said surface to the other of said contacts for movement relative thereto during the travel of said tape in said one direction.

3,345,637
RECORDING APPARATUS
George Edward Stone, Darlington, and Jack Allenby, York, England, assignors to British Railways Board, London, England, a Public Authority
Filed Aug. 19, 1965, Ser. No. 481,134
5 Claims. (Cl. 346—33)



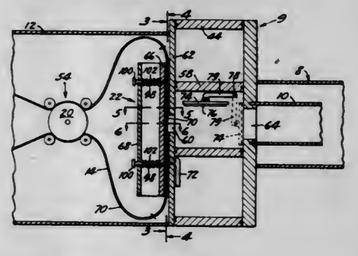
1. Apparatus for recording peaks of a motion to be investigated, comprising recording means, a contact-carrying member, a part connected to the said member for transmitting the said motion to the latter, and a shuttle-like member which is movable by and in relation to the said contact-carrying member and in relation to fixed contacts connected to the recording means and which has contacts arranged to co-act with the said fixed contacts and with contacts of the said contact-carrying member in such a manner that contact closure conditions which produce actuation of the recording means will only be obtained when there is a change of direction of the motion transmitted to the said contact-carrying member.

3,345,638
PHASE MODULATION BINARY RECORDING SYSTEM
Guy F. M. Christol, Paris, France, assignor to Compagnie des Machines Bull (Societe Anonyme), Paris, France
Filed Oct. 26, 1964, Ser. No. 406,525
Claims priority, application France, Nov. 5, 1963, 952,688, Patent 1,387,879
5 Claims. (Cl. 346—74)



1. A control circuit arrangement for writing a string of binary digits on the recording cells of a moving magnetisable medium through magnetisation inversions at the middle of each cell comprising:
a current generator for feeding the winding of a magnetic head with a current flowing in one sense or in the opposite sense under the influence of a binary control signal;
a first binary element having two states of conduction and being connected for controlling said generator, said element further having a symmetrical input and two separate inputs;
input circuit means connected for applying a first series of clock pulses to the symmetrical input of said element for inverting the state thereof at mid-time of each cell or digit period;
a first pair of logical circuits connected for transmitting to one or the other of the separate inputs of said element the pulses of a second series of clock pulses timed at the beginning of each digit period;
a second pair of logical circuits connected for transmitting to one or the other of the separate inputs of said element the pulses of a third series of clock pulses, which series is delayed with respect to said second series of clock pulses;
a second binary element;
a third binary element, the latter elements being interconnected and controlled so that at each digit period they respectively store the binary digit to be written on the next following digit period and the binary digit to be written on the second following digit period;
and a comparing device consisting of logical circuits whose inputs are connected to outputs of said second and third binary elements and whose outputs are connected to control said first pair of logical circuits and said second pair of logical circuits, whereby at each beginning of a digit period a pulse of said second series or a pulse of said third series is applied to one of the separate inputs of said first binary element according to whether the digit to be written and the following digit are identical or different.

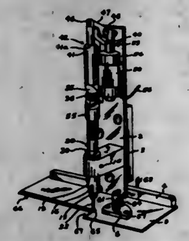
3,345,639
EVACUATABLE CHAMBER SEAL FOR ELECTRON BEAM RECORDER
Richard F. Dubbe, Richfield, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 521,318
18 Claims. (Cl. 346—110



1. In combination:
an evacuatable chamber having at one end an apertured member joined thereto, said apertured member having a single aperture formed therein, spaced aperture rails formed on one surface of said member and disposed adjacent opposite edges of said aperture, and aperture lips extending transversely between said aperture rails and disposed adjacent opposite edges of said aperture, said aperture lips having outer surfaces disposed substantially in the plane of the surfaces of said aperture rails such that said rails and said lips form a border around said aperture across which a strip material may be advanced,
a pressure shoe mating with said member and positioned in opposed relation to said member, said shoe having spaced pressure rails formed on one surface thereof and positioned in opposed relation to said aperture rails, and
means for urging said pressure rails and said aperture rails toward each other, whereby a strip material

disposed between said member and said shoe is pressed between said pressure rails and aperture rails and into proximity with said aperture lips of said member to form a seal between a said evacuatable chamber and the ambient atmosphere surrounding said one surface of said member as a said strip material is advanced across said aperture.

3,345,640
MECHANICAL PENCIL FOR AUTOMATIC DATA PLOTTING EQUIPMENT
Robert H. Sicking, 5705 Itaska St., St. Louis, Mo. 63109
Filed Mar. 30, 1966, Ser. No. 538,931
8 Claims. (Cl. 346—139)



1. A mechanical pencil for data plotting equipment comprising a lower fixed housing having a cylindrical bore therein, a marking lead holding lower plunger axially movable in said bore having a concentric marking lead holding and feeding passage therein for receiving and holding a marking lead therein, means between said housing and lower plunger for limiting upward movement of said plunger in said bore, lower spring means between said housing and said lower plunger yieldably urging said lower plunger upwardly in said housing to said upward limited position, a marking lead feeding barrel removably mounted in the upper end of said lower plunger having a marking lead advancing plunger rod concentrically positioned therein and axially movable therein for advancing engagement with a marking lead when disposed in said marking lead receiving passage in said lower plunger, manually actuated adjusting means carried by said barrel for adjusting said plunger rod downwardly in said barrel to engage and advance the marking lead in said lower plunger independent of lower plunger movement in said housing, an upper plunger movably carried by said barrel for moving said barrel downwardly to move said lower plunger downwardly in said lower fixed housing against compression of said lower spring means to advance said marking lead into contact with a marking surface including upper spring means between said upper plunger and said barrel for yieldably moving said barrel downwardly upon downward movement of said upper plunger to move said lower plunger downwardly in said housing to yieldably increase marking pressure on a marking lead when disposed in said marking lead holding and feeding passage in said lower plunger.

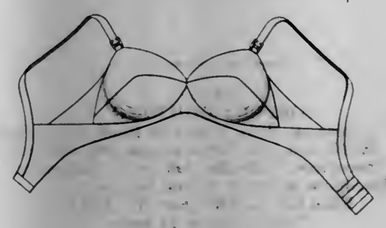
DESIGNS

OCTOBER 3, 1967

208,756
EXPANDED CEREAL FOOD PRODUCT
Robert R. Reinhart, Des Plaines, Ill., assignor to The Quaker Oats Company, a corporation of New Jersey
Filed Sept. 26, 1966, Ser. No. 4,038
Term of patent 14 years
(Cl. D1—2)



208,757
BRASSIERE
Moe Tuschman, Flushing, N.Y., assignor to Sarong, Inc., Dover, Del., a corporation of Delaware
Filed May 3, 1966, Ser. No. 2,145
Term of patent 14 years
(Cl. D2—24)



208,758
BRASSIERE
Edward Jannicelli, Ramsey, N.J., assignor to International Playtex Corporation, Dover, Del., a corporation of Delaware
Filed June 30, 1966, Ser. No. 2,883
Term of patent 14 years
(Cl. D2—24)



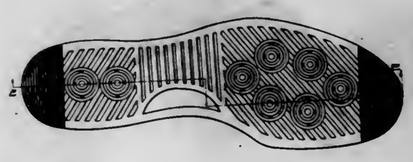
208,759
BRASSIERE
Edward Jannicelli, Ramsey, N.J., assignor to International Playtex Corporation, Dover, Del., a corporation of Delaware
Filed June 30, 1966, Ser. No. 2,884
Term of patent 14 years
(Cl. D2—24)



208,760
BRASSIERE
Edward Jannicelli, Ramsey, N.J., assignor to International Playtex Corporation, Dover, Del., a corporation of Delaware
Filed June 30, 1966, Ser. No. 2,892
Term of patent 14 years
(Cl. D2—24)



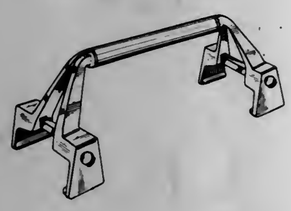
208,761
FOOTWEAR SOLE
William Gottlieb, Davenport, Iowa, assignor to The Servus Rubber Company, Rock Island, Ill., a corporation of Illinois
Filed Sept. 13, 1966, Ser. No. 3,847
Term of patent 14 years
(Cl. D2—320)



208,762
BATHROOM CERAMIC WASH BASIN OR SIMILAR ARTICLE
Antonia Campi, Laveno Mombello, Italy, assignor to Società Ceramica Italiana Richard-Ginori Società per Azioni, Milan, Italy
Filed Oct. 7, 1966, Ser. No. 4,200
Claims priority, application Italy Apr. 7, 1966
Term of patent 14 years
(Cl. D4—2)



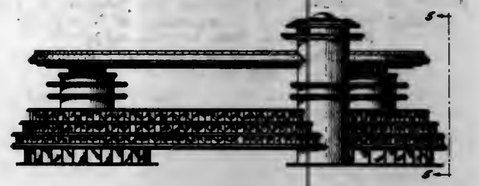
208,763
CLAMP-ON BATHTUB HAND RAIL
Vytant Aleks and John C. Brearley, Rockford, Ill., assignors to The Brearley Company, Rockford, Ill., a corporation of Illinois
Filed Sept. 14, 1966, Ser. No. 3,863
Term of patent 14 years
(Cl. D4—4)



208,764
AUTOMOBILE FLOOR MAT
Jack W. Dudley, 48 Woodland Drive, Poland, Ohio 44514
Filed June 6, 1966, Ser. No. 2,574
Term of patent 3½ years
(Cl. D9—6)



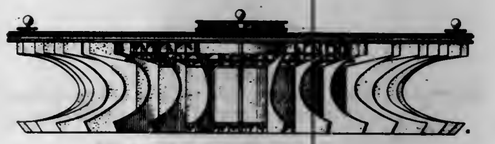
208,765
AIRPORT BUILDING
Samuel J. Solomon, 9101 Colesville Road, Silver Spring, Md. 20910, and John S. Samperton, Sumner, and William Procoplow, Bethesda, Md.; said Samperton and said Procoplow assignors to said Solomon
Filed Feb. 6, 1967, Ser. No. 5,708
Term of patent 14 years
(Cl. D13—1)



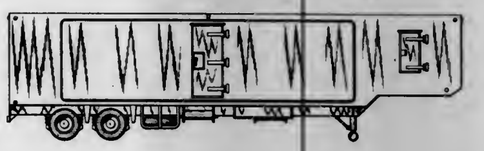
208,766
AIRPORT BUILDING
Samuel J. Solomon, 9101 Colesville Road, Silver Spring, Md. 20910, and John S. Samperton, Sumner, and William Procoplow, Bethesda, Md.; said Samperton and said Procoplow assignors to said Solomon
Filed Feb. 6, 1967, Ser. No. 5,709
Term of patent 14 years
(Cl. D13—1)



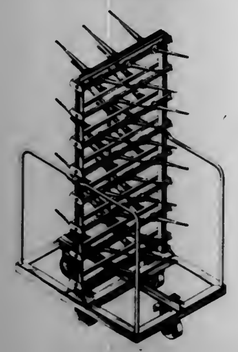
208,767
AIRPORT BUILDING
Samuel J. Solomon, 9101 Colesville Road, Silver Spring, Md. 20910, and John S. Samperton, Sumner, and William Procoplow, Bethesda, Md.; said Samperton and said Procoplow assignors to said Solomon
Filed Feb. 6, 1967, Ser. No. 5,711
Term of patent 14 years
(Cl. D13—1)



208,768
TRAILER
Heinz Brosig, Rockville, Md., assignor to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d)
Filed Apr. 15, 1965, Ser. No. 85,792
Term of patent 14 years
(Cl. D14—3)



208,769
PIRN TRUCK
Hoyt Cunningham, Jr., and William L. Schmidt, Gastonia, N.C., assignors to Cocker Machine & Foundry Company, Gastonia, N.C., a corporation of North Carolina
Filed July 15, 1966, Ser. No. 3,099
Term of patent 14 years
(Cl. D14—3)



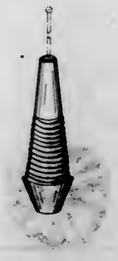
208,770
WHEELED PIPE SUPPORT
Charles G. Curtis, El Paso County, Colo. (Quarters 6602 I, Air Force Academy, Colo. 80912)
Filed Mar. 21, 1967, Ser. No. 6,322
Term of patent 14 years
(Cl. D14—3)



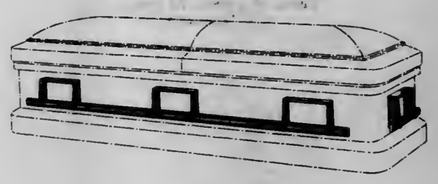
208,771
MOBILE ANTENNA MOUNT
Charles W. McVey, North Madison, Ohio, assignor to Anzac Industries, Inc., a corporation of Ohio
Filed Nov. 14, 1966, Ser. No. 4,629
Term of patent 14 years
(Cl. D14—6)



208,772
ANTENNA WHIP SPRING BASE
Charles W. McVey, North Madison, Ohio, assignor to Anzac Industries, Inc., a corporation of Ohio
Filed Nov. 14, 1966, Ser. No. 4,652
Term of patent 14 years
(Cl. D14—6)



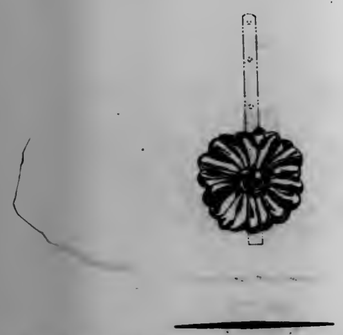
208,773
CASKET
Joseph E. Peter, Cincinnati, Ohio, assignor to The Crane & Breed Casket Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 1, 1966, Ser. No. 821
Term of patent 14 years
(Cl. 19—1)



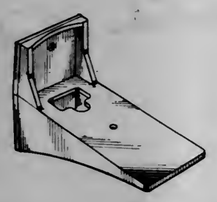
208,774
DRAPERY TIE-BACK HOLDER OR SIMILAR ARTICLE
Douglass R. Falkenberg, 20997 Westlake Road, Rocky River, Ohio 44116
Filed May 10, 1967, Ser. No. 7,061
Term of patent 14 years
(Cl. D21—1)



208,775
DRAPERY TIE-BACK HOLDER OR SIMILAR ARTICLE
Douglass R. Falkenberg, 20997 Westlake Road, Rocky River, Ohio 44116
Filed May 10, 1967, Ser. No. 7,062
Term of patent 14 years
(Cl. D21—1)



208,776
RACK FOR DENTAL HYGIENE APPLIANCES OR THE LIKE
Frederick Gordon Mackay and Allan B. Johnson, Tarzana, Calif., and John W. Mattingly, Fort Collins, Colo., assignors to Aqua-Tec Corporation, Fort Collins, Colo., a corporation of Colorado
Filed Sept. 9, 1966, Ser. No. 3,785
Term of patent 14 years
(Cl. D24—1)



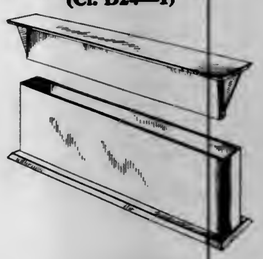
208,777
RACK FOR DENTAL NOZZLES AND THE LIKE
Allan B. Johnson, Tarzana, Calif., and John W. Mattingly, Fort Collins, Colo., assignors to Aqua-Tec Corporation, Fort Collins, Colo., a corporation of Colorado
Filed Sept. 9, 1966, Ser. No. 3,799
Term of patent 14 years
(Cl. D24—1)



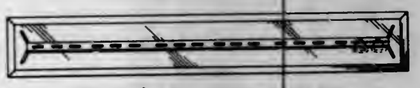
208,778
JET-PRODUCING SYRINGE FOR AN ORAL HYGIENE APPLIANCE
Samuel J. Koch, New York, N.Y.
(999 Green St., San Francisco, Calif. 94133)
Filed Nov. 8, 1966, Ser. No. 4,583
Term of patent 3½ years
(Cl. D24—1)

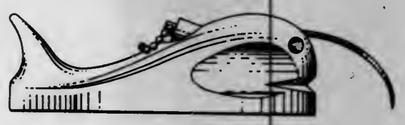


208,779
COMBINED TOOTH SHADE GUIDE AND STERILIZING TANK THEREFOR
Robert O. Faller, Buffalo, N.Y., assignor to Williams Gold Refining Company, Incorporated, Buffalo, N.Y.
Filed Feb. 2, 1967, Ser. No. 5,669
Term of patent 14 years
(Cl. D24—1)



208,780
CHART POSITION INDICATOR
Charles A. Smith, 1177 NE. 158th St., North Miami Beach, Fla. 33162
Filed Sept. 9, 1966, Ser. No. 3,791
Term of patent 14 years
(Cl. D25—1)

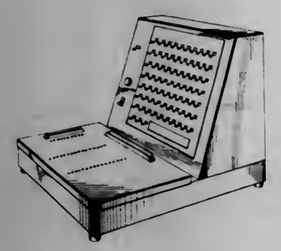




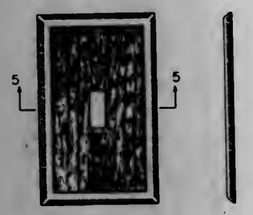
208,781
HOUSING FOR TRANSDUCERS FOR TRANSFORMING GRAPHICAL DATA INTO ELECTRICAL VOLTAGES FOR INPUT INTO A COMPUTER OR SIMILAR ARTICLE
Lincoln P. Roney, Tustin, Calif., assignor to Bolt Beranek and Newman Inc., Cambridge, Mass.
Filed Sept. 22, 1965, Ser. No. 87,109
Term of patent 14 years
(Cl. D26—5)



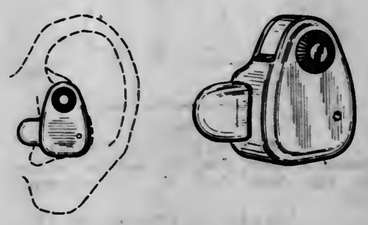
208,782
MENU ITEM TOTALIZER OR SIMILAR ARTICLE
Leo F. Lynk, Evanston, Ill., assignor to Counting Systems, Inc., Evanston, Ill., a corporation of Illinois
Filed Nov. 22, 1965, Ser. No. 88,174
Term of patent 14 years
(Cl. D26—5)



208,783
ESCUTCHEON FOR AN ELECTRICAL SWITCH
Harry L. Stillman, Chicago, Ill., assignor to Bell Electric, Chicago, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 87,667
Term of patent 14 years
(Cl. D26—13)



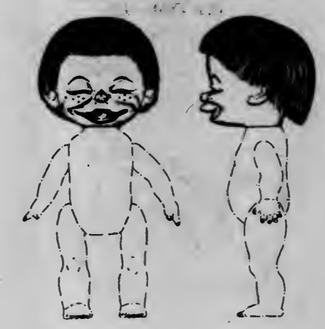
208,784
HEARING AID
William M. Saunzone, Minneapolis, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 5,107
Term of patent 14 years
(Cl. D26—14)



208,785
TABLE
Robert E. Kjer Jakobsen, Los Angeles, Calif., assignor to Schlumberger Limited, Houston, Tex., a corporation of the Netherlands Antilles
Filed Nov. 15, 1965, Ser. No. 88,087
Term of patent 14 years
(Cl. D33—14)



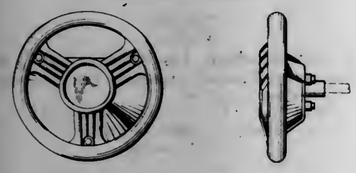
208,786
DOLL
Shigehiko Imahori, Nagoya, Japan, assignor to Parksmith Corporation, New York, N.Y., a corporation of New York
Filed Nov. 29, 1966, Ser. No. 4,851
Term of patent 14 years
(Cl. D34—4)



208,787
EXERCISER
Anne Marie Bennstrom-Prescott, 1100 N. Alta Loma Road, Los Angeles, Calif. 90064
Filed June 20, 1966, Ser. No. 2,739
Term of patent 14 years
(Cl. D34—5)



208,788
TOY STEERING WHEEL
Raymond J. Lohr, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 26, 1966, Ser. No. 775
Term of patent 14 years
(Cl. D34—15)



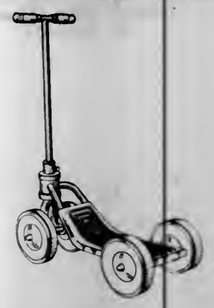
208,789
TOY BUILDING BLOCK
James O. Kuhn, Cincinnati, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 1,399
Term of patent 14 years
(Cl. D34—15)



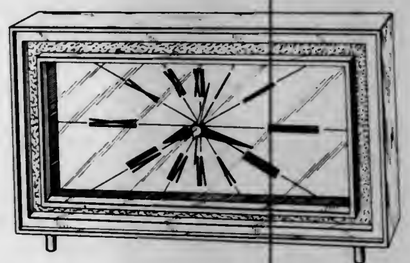
208,790
TRICYCLE OR THE LIKE
Ronald L. Reeves, 3920 Bowdoin, Des Moines, Iowa 50313
Filed Apr. 14, 1966, Ser. No. 1,887
Term of patent 14 years
(Cl. D34—15)



208,791
SCOOTER
Fred E. Purdy, Olney, Ill., assignor to American Machine and Foundry Company, a corporation of New Jersey
Filed Jan. 16, 1967, Ser. No. 5,443
Term of patent 14 years
(Cl. D34—15)



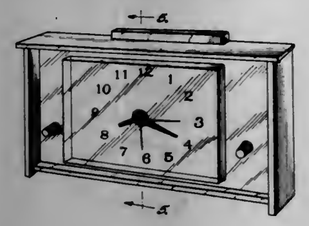
208,792
CLOCK
Ralph M. La Zar, Skokie, and Walter E. Herbst, Evanston, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 1, 1966, Ser. No. 838
Term of patent 14 years
(Cl. D42—7)



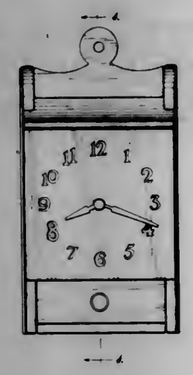
208,793
CLOCK
Charles A. McLeod, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 8, 1966, Ser. No. 3,374
Term of patent 14 years
(Cl. D42—7)



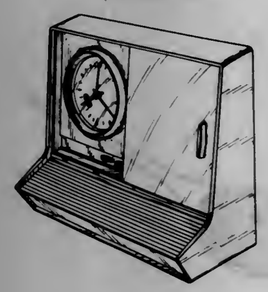
208,794
CLOCK
George H. Frost, Ashland, Ohio, assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 12, 1966, Ser. No. 3,826
Term of patent 14 years
(Cl. D42—7)



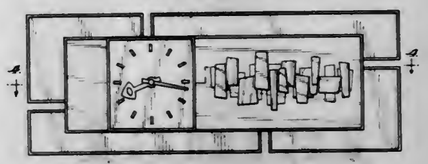
208,795
CLOCK
Harry L. Laylon, Syracuse, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 14, 1966, Ser. No. 3,856
Term of patent 14 years
(Cl. D42—7)



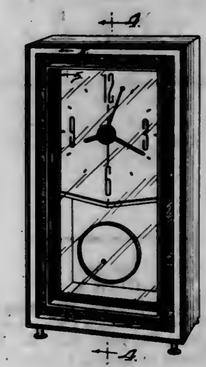
208,796
COMBINED CLOCK AND POWER TOOTHBRUSH HOUSING
Thomas H. Hayes, Roanoke, Va., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 29, 1966, Ser. No. 4,085
Term of patent 14 years
(Cl. D42—7)



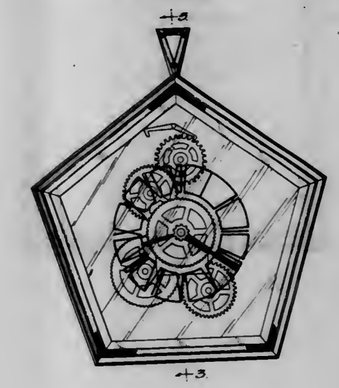
208,797
CLOCK
Donald E. Leman, Glen Ellyn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 3, 1966, Ser. No. 4,145
Term of patent 14 years
(Cl. D42—7)



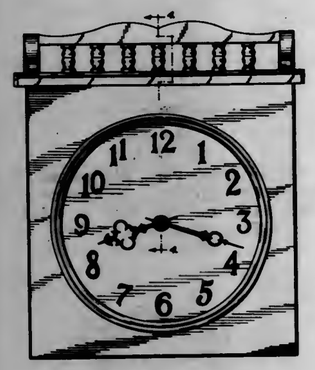
208,798
CLOCK
Charles A. McLeod, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 10, 1966, Ser. No. 4,214
Term of patent 14 years
(Cl. D42—7)



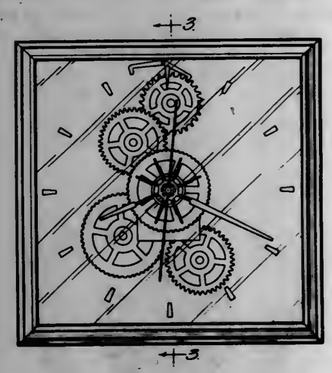
208,799
CLOCK
Charles A. McLeod, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 10, 1966, Ser. No. 4,215
Term of patent 14 years
(Cl. D42—7)



208,800
CLOCK
Harry L. Laylon, Syracuse, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1966, Ser. No. 4,332
Term of patent 14 years
(Cl. D42—7)



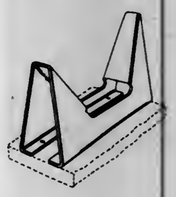
208,801
CLOCK
Charles A. McLeod, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 21, 1966, Ser. No. 4,752
Term of patent 14 years
(Cl. D42—7)



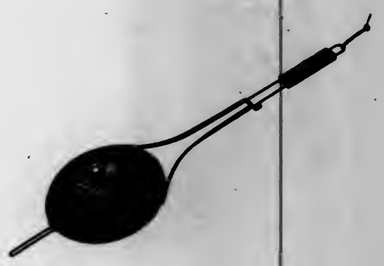
208,802
CLOCK
Harry L. Laylon, Syracuse, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 7, 1966, Ser. No. 4,956
Term of patent 14 years
(Cl. D42—7)



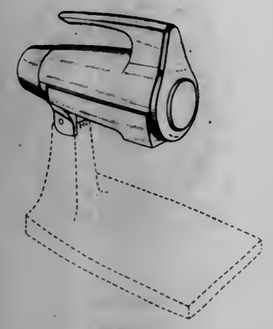
208,803
ENDLESS BELT WHEEL CLEAT
Jack V. Knowles, East Lansing, Mich., assignor to Globe Trotter Corporation, East Lansing, Mich., a corporation of Michigan
Filed May 27, 1966, Ser. No. 2,458
Term of patent 14 years
(Cl. D43—1)



208,804
CORN POPPER OR SIMILAR ARTICLE
Richard E. Henderson, Oregon, Ogle County, Ill., assignor to The Washburn Company, Rockford, Ill., a corporation of Illinois
Filed Sept. 26, 1966, Ser. No. 4,043
Term of patent 14 years
(Cl. D44—1)



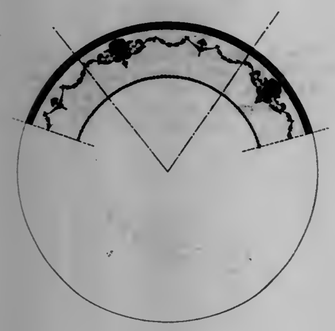
208,805
MIXER
Dominic J. De Fano, Palatine, Robert O. Ernest, Oak Park, and Robert I. Kallman, Elburn, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 1, 1967, Ser. No. 6,013
Term of patent 14 years
(Cl. D44—1)



208,806
ROTATABLE CANISTER UNIT
Beatrice Bliss, P.O. Box 47607, Los Angeles, Calif. 90047
Filed Dec. 16, 1966, Ser. No. 5,071
Term of patent 14 years
(Cl. D44—6)



208,807
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, 221 Kitayamoto-cho, Nishikasugai-gun, Japan
Filed Mar. 6, 1967, Ser. No. 6,080
Term of patent 7 years
(Cl. D44—15)



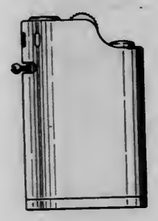
208,808
LUBRICATOR FOR LAWN MOWERS AND THE LIKE
Kenneth N. Hasenbank, Minneapolis, Minn., assignor to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 20, 1966, Ser. No. 1,956
Term of patent 14 years
(Cl. D46—1)



208,809
COMBINED LAMP AND CLOCK OR SIMILAR ARTICLE
Larry J. Buffington, Rte. 1, Box 338, Bauxite, Ark. 72011
Filed Aug. 10, 1965, Ser. No. 86,528
Term of patent 7 years
(Cl. D48—20)



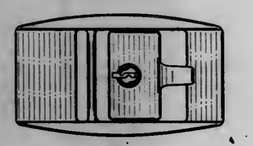
208,810
LIGHTER
Leonard S. Dexter, 29 Dewbourne, Toronto, Ontario, Canada
Filed Apr. 13, 1966, Ser. No. 1,868
Term of patent 14 years
(Cl. D48—27)



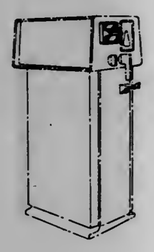
208,811
COMBINED KEY CHAIN AND PIPE TOOL
Robert Hocq, Boulogne-Billancourt, France, assignor to Societe Franco Hispano Americaine Francispam, Paris, France
Filed Aug. 1, 1966, Ser. No. 3,307
Claims priority, application France May 6, 1966
Term of patent 14 years
(Cl. D50—4)



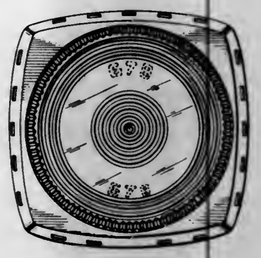
208,812
BUCKLE LOCK FOR LUGGAGE OR THE LIKE
Charles S. Gebrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Mar. 3, 1966, Ser. No. 1,265
Term of patent 14 years
(Cl. D50—7)



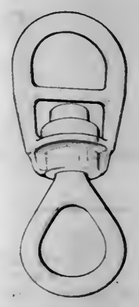
208,813
CASING FOR RECEIPT PRINTER FOR A GASOLINE DISPENSER
Robert B. Gaylor, Jr., Pittsburgh, Pa., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed July 28, 1966, Ser. No. 3,234
Term of patent 14 years
(Cl. D52—2)



208,814
THERMOSTAT CASING
Larry S. Smith, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 3,438
Term of patent 14 years
(Cl. D52—7)



208,815
LOBSTER BUOY SWIVEL
Walter G. Hubbard, Islington, Ontario, Canada, assignor to Woodbridge Moulded Products Limited, Downsview, Ontario, Canada, a corporation
Filed Feb. 18, 1966, Ser. No. 1,108
Claims priority, application Canada Oct. 2, 1965
Term of patent 14 years
(Cl. D54—1)



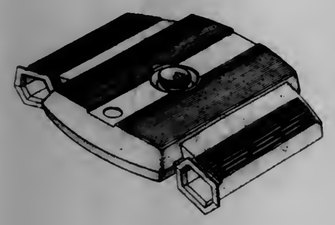
208,816
STAPLE
Altus L. Simpson, Long Beach, Calif. (309 E. Live Oak St., Apt. F, San Gabriel, Calif. 91776)
Filed Jan. 20, 1967, Ser. No. 5,507
Term of patent 14 years
(Cl. D54—9)



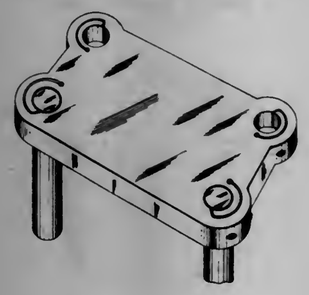
208,817
FORK OR SIMILAR ARTICLE OF FLATWARE
Robert L. Doerfler, Cheshire, and Milton Gonshorek, Meriden, Conn., assignors to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Sept. 26, 1966, Ser. No. 4,041
Term of patent 14 years
(Cl. D54—12)



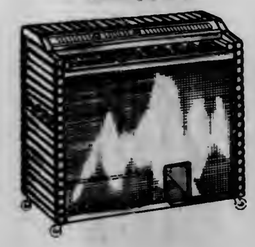
208,818
COMBINED AIR CLEANER AND SILENCER
Robert D. Hodgson, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 11, 1966, Ser. No. 4,228
Term of patent 7 years
(Cl. D55—1)



208,819
ADJUSTABLE WORK-PIECE SUPPORT
Guthrie B. Stone, Honeoye, N.Y., assignor to Stone Conveyor Company, Inc., Honeoye, N.Y.
Continuation of design application Ser. No. D–749, Jan. 24, 1966. This application Dec. 22, 1966, Ser. No. 5,154
Term of patent 14 years
(Cl. D55—1)



208,820
ELECTRONIC ORGAN
Charles A. Ross, 7th and S. Steuben, Chanute, Kans. 66720
Filed Aug. 22, 1966, Ser. No. 3,560
Term of patent 14 years
(Cl. D56—2)



208,821
GLARE SHIELD
Goldie Hoffman, 250 S. 17th St., Philadelphia, Pa. 19103
Substituted for abandoned design application Ser. No. 281, Dec. 22, 1965. This application Oct. 31, 1966, Ser. No. 5,010
Term of patent 7 years
(Cl. D57—1)



208,822
PACKAGED WATCH
Stanley Blumstein, 211 Rogers Drive, Scarsdale, N.Y. 10583, and Allen V. Tornek, 40 E. 9th St., New York, N.Y. 10003
Filed Apr. 25, 1966, Ser. No. 2,013
Term of patent 14 years
(Cl. D58—2)



208,823
JUG
Harry E. Lowe III, Martinsville, N.J., and Albert B. Mojonnier, Chicago, Ill., assignors to Albert Mojonnier, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 8, 1966, Ser. No. 3,771
Term of patent 14 years
(Cl. D58—5)



208,824
JUG
Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Nov. 28, 1966, Ser. No. 4,836
Term of patent 14 years
(Cl. D58—5)



208,825
DISPENSING BOTTLE
Fred E. Hutton, Santa Monica, Calif., assignor to James U. Stewart, La Habra, Calif.
Filed June 7, 1966, Ser. No. 2,593
Term of patent 14 years
(Cl. D58—6)



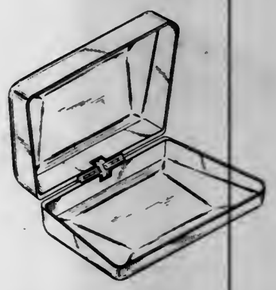
208,826
DISPENSING BOTTLE
Fred E. Hutton, Santa Monica, Calif., assignor to James U. Stewart, La Habra, Calif.
Filed June 7, 1966, Ser. No. 2,595
Term of patent 14 years
(Cl. D58—6)



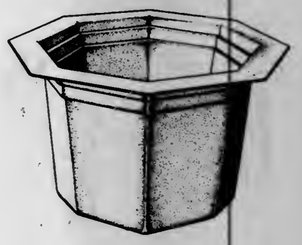
208,827
CONTAINER FOR CANDY OR THE LIKE
Kenneth E. Darr, 3944 Oxer Road, Erie, Pa. 16505
Filed Mar. 25, 1966, Ser. No. 1,644
Term of patent 14 years
(Cl. D58—9)



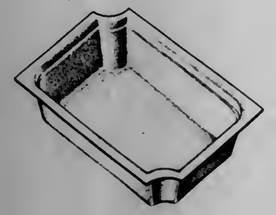
208,828
DISPLAY BOX
Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Products, Inc., Amityville, N.Y., a corporation of New York
Filed Dec. 1, 1965, Ser. No. 15
Term of patent 14 years
(Cl. D58—12)



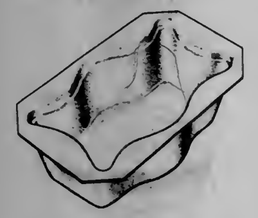
208,829
PACKAGING CONTAINER
William D. Stockdale, Arlington Heights, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 4,839
Term of patent 14 years
(Cl. D58—12)



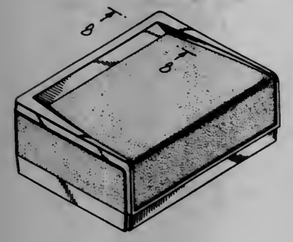
208,830
PACKAGING CONTAINER
William D. Stockdale, Arlington Heights, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 4,853
Term of patent 14 years
(Cl. D58—12)



208,831
PACKAGING CONTAINER
William D. Stockdale, Arlington Heights, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 4,854
Term of patent 14 years
(Cl. D58—12)



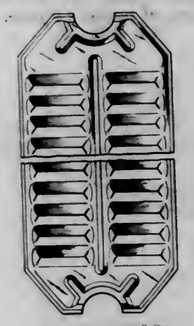
208,832
DISPLAY BOX
Samuel Braun, 75 Greenhaven Road, Rye, N.Y. 10580
Filed Oct. 7, 1966, Ser. No. 4,192
Term of patent 14 years
(Cl. D58—12.6)



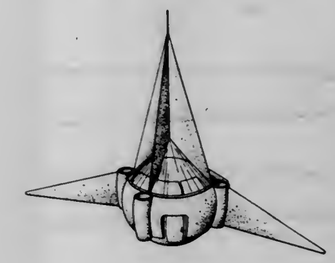
208,833
WASTE RECEPTACLE
Edward Hess Prager, 5733 Greenspring Ave., Baltimore, Md. 21209
Filed Jan. 11, 1966, Ser. No. 616
Term of patent 14 years
(Cl. D58—17)



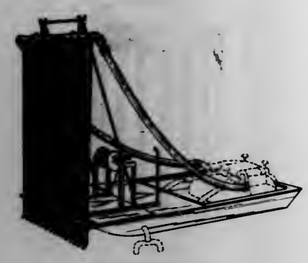
208,834
COOLING PANEL FOR A TRANSFORMER OR SIMILAR ARTICLE
Harold E. Hicks, Kirkwood, Mo., assignor to Nooter Corporation, St. Louis, Mo., a corporation of Missouri
Filed July 21, 1966, Ser. No. 3,163
Term of patent 14 years
(Cl. D81—21)



208,835
VTOL AIRCRAFT
Edward Kolodziej, Lake County, Ind. (5616 W. 5th Ave., Gary, Ind. 46406)
Filed May 25, 1966, Ser. No. 2,424
Term of patent 14 years
(Cl. D71—1)



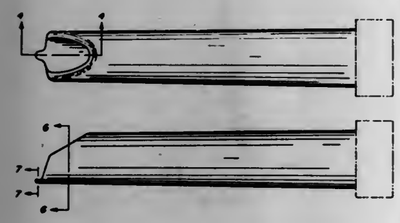
208,836
DREDGE OR THE LIKE
David R. Talbott, 224 Westwood Road, Annapolis, Md. 21401
Filed Oct. 31, 1966, Ser. No. 4,482
Term of patent 14 years
(Cl. D71—1)



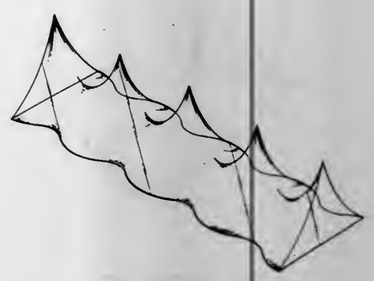
208,837
HOOD FOR FIREPLACE SCREENS
Marvin L. Stark, Anchorage, and Frank C. Lewis, Louisville, Ky., assignors to Peerless Manufacturing Division, Dover Corporation, Louisville, Ky., a corporation of Kentucky
Filed June 7, 1965, Ser. No. 85,596
Term of patent 14 years
(Cl. D81—5)



208,838
PUNCTURING SPIKE FOR MEDICAL EQUIPMENT
Elmer Felix St. Amand, North Hollywood, Calif., assignor to Don Baxter, Inc., Glendale, Calif., a corporation of Nevada
Filed Oct. 10, 1966, Ser. No. 4,209
Term of patent 14 years
(Cl. D83—1)



208,839
SOLARIUM
Mike Tecton, 115 5th St. NE., Washington, D.C. 20002
Continuation of design applications Ser. No. 86,817, Ser. No. 86,834, Ser. No. 86,845, and Ser. No. 86,848, Sept. 3, 1965. This application Dec. 19, 1966, Ser. No. 6,937
Term of patent 14 years
(Cl. D83—1)



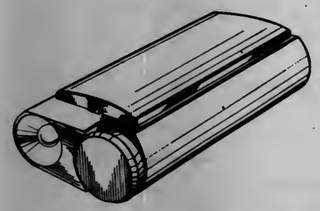
208,840
COMBINED MUSIC BOX AND CIGARETTE HOLDER
Olga Sanchez, 1940 W. Imperial Highway, Los Angeles, Calif. 90047
Filed Aug. 5, 1966, Ser. No. 3,395
Term of patent 14 years
(Cl. D85—2)



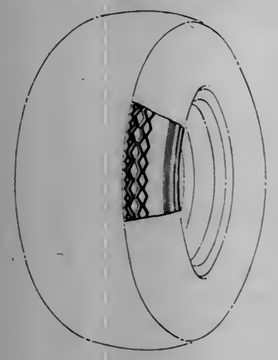
208,841
CIGAR HOLDER
Anthony N. D'Elia, 3555 Netherland Ave., Riverdale, N.Y. 10471, and Edward M. Stolarz, 30 W. 60th St., New York, N.Y. 10023
Filed Oct. 17, 1966, Ser. No. 4,301
Term of patent 14 years
(Cl. D85—8)



208,842
COMBINED COSMETIC AND FLASHLIGHT HOLDER
Norman Burkhardt, Glenhead, N.N.Y., assignor to Jarco Metal Products Corp., Westbury, N.Y., a corporation of New York
Filed Oct. 3, 1966, Ser. No. 4,150
Term of patent 14 years
(Cl. D86—10)



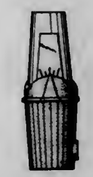
208,843
TIRE
Aristides Makris, Plainfield, N.J., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 9, 1966, Ser. No. 1,371
Term of patent 14 years
(Cl. D90—20)



208,844
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,730
Term of patent 14 years
(Cl. D90—20)

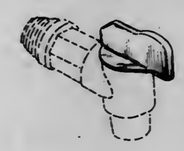


208,845
NOZZLE FOR USE ON LAWN SPRINKLERS OR SIMILAR ARTICLES
John D. Beinert, Babylon, N.Y., assignor to International Patent Research Corp., % Milton Friedman, Esq., New York, N.Y., a corporation of New York
Filed Oct. 25, 1966, Ser. No. 4,419
Term of patent 7 years
(Cl. D91—1)



208,846
WATER CONDITIONER
Robert E. Robarge, Minneapolis, Minn., assignor to The Meadowbrook Company, Miami, Fla., a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 4,906
Term of patent 14 years
(Cl. D91—1)

208,847
FAUCET
Herbert P. Senoff, East Brunswick, N.J., assignor to Allen-Stevens Drum Accessories Corp., South Plainfield, N.J., a corporation of New Jersey
Filed May 27, 1966, Ser. No. 2,448
Term of patent 14 years
(Cl. D91—3)



208,848
FLEXIBLE DRINKING STRAW
William Nardone, Revere, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed Oct. 22, 1965, Ser. No. 87,734
Term of patent 14 years
(Cl. D94—3)



208,849
SIGN
James D. Smith and Robert O. Flint, Englewood, Ohio, assignors to Flint's Incorporated, Englewood, Ohio, a corporation of Ohio
Filed July 26, 1966, Ser. No. 3,214
Term of patent 14 years
(Cl. D96—12)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Boynton, William W. System of gaseous pressure loading, useful for dynamic loading. Re. 26,279, 10–3–67, Cl. 73—12.
Doyle, James H., to General Data Corp. Analog to digital converter. Re. 26,274, 10–3–67, Cl. 340—347.
General Data Corp.: *See*—
Doyle, James H. Re. 26,274.
Hirschhorn, Max L. Cooled surgical instrument. Re. 26,276, 10–3–67, Cl. 128—303.1.
Honeywell, Inc.: *See*—
Mathias, Milton W. Re. 26,277.
Koppers Co., Inc.: *See*—
Pottenger, Carl H. Re. 26,278.
Mathias, Milton W., to Honeywell, Inc. Regulated power supply with feedback means. Re. 26,277, 10–3–67, Cl. 321—52.
Pottenger, Carl H., to Koppers Co., Inc. Storage stable expandable polymeric composition containing expandable polymeric particles and two different blowing agents and method of making same. Re. 26,278, 10–3–67, Cl. 260—2.5.
Stevens, Dorothy H.: *See*—
Stevens, William B. Re. 26,275.
Stevens, William B. ½ to D. H. Stevens. Spreading mechanism for pulverulent material. Re. 26,275, 10–3–67, Cl. 222—197.

LIST OF PLANT PATENTEES

Kerrigan, Howard. Azalea plant. 2,770, 10–3–67, Cl. 55.

LIST OF DESIGN PATENTEES

Aleks, Vytant, and J. C. Brearley, to The Brearley Co. Clamp-on bathtub hand rail. 208,763, 10–3–67, Cl. D4—4.
Allen-Stevens Drum Accessories Corp.: *See*—
Senoff, Herbert P. 208,847.
American Machine and Foundry Co.: *See*—
Purdy, Fred E. 208,791.
Ansac Industries, Inc.: *See*—
McVey, Charles W. 208,771.
McVey, Charles W. 208,772.
Aqua-Tec Corp.: *See*—
Johnson, Allan B. and Mattingly. 208,777.
Mackay, Frederick G., Johnson, and Mattingly. 208,776.
B.C.N. Design Products, Inc.: *See*—
Braun, Samuel. 208,828.
Baxter, Don, Inc.: *See*—
St. Amand, Elmer F. 208,838.
Beinert, John D., to International Patent Research Corp. Nozzle. 208,845, 10–3–67, Cl. D91—1.
Bell Electric: *See*—
Stillman, Harry L. 208,783.
Bennstrom-Prescott, Anne M. Exerciser. 208,787, 10–3–67, Cl. D34—5.
Bliss, Beatrice. Rotatable canister unit. 208,806, 10–3–67, Cl. D44—6.
Blumstein, Stanley, and A. V. Tornek. Packaged watch. 208,822, 10–3–67, Cl. D58—2.
Bolt Beranek and Newman Inc.: *See*—
Rosay, Lincoln P. 208,781.
Braun, Samuel, to B.C.N. Design Products, Inc. Display box. 208,828, 10–3–67, Cl. D58—12.
Braun, Samuel. Display box. 208,832, 10–3–67, Cl. D58—12.6.
Brearley Co., The: *See*—
Aleks, Vytant, and Brearley. 208,763.
Brearley, John C.: *See*—
Aleks, Vytant, and Brearley. 208,763.
Brosig, Heins, to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d). Trailer. 208,768, 10–3–67, Cl. D14—3.
Buffington, Larry J. Combined lamp and clock or similar article. 208,809, 10–3–67, Cl. D48—20.
Burkhardt, Norman, to Jarco Metal Products Corp. Combined cosmetic and flashlight holder. 208,842, 10–3–67, Cl. D86—10.
Campi, Antonia, to Societa Ceramica Italiana Richard-Ginori Societa. Bathroom ceramic wash basin or similar article. 208,762, 10–3–67, Cl. D4—2.
Cocker Machine & Foundry Co.: *See*—
Cunningham, Hoyt, Jr., and Schmidt. 208,769.
Counting Systems, Inc.: *See*—
Lynk, Leo F. 208,782.
Crane & Breed Casket Co., The: *See*—
Peter, Joseph E. 208,773.
Cunningham, Hoyt, Jr., and W. L. Schmidt, to Cocker Machine & Foundry Co. Pirn truck. 208,769, 10–3–67, Cl. D14—3.
Curtis, Charles G. Wheeled pipe support. 208,770, 10–3–67, Cl. D14—3.
Darr, Kenneth E. Container for candy or the like. 208,827, 10–3–67, Cl. D58—9.
De Fano, Dominic J., R. O. Ernest, and R. I. Kallam, to Sunbeam Corp. Mixer. 208,805, 10–3–67, Cl. D44—1.
D'Ella, Anthony N., and E. M. Stolars. Cigar holder. 208,841, 10–3–67, Cl. D85—8.
Dexter, Leonard S. Lighter. 208,810, 10–3–67, Cl. D48—27.
Doerfler, Robert L., and M. Gonshorek, to The International Silver Co. Fork or similar article of flatware. 208,817, 10–3–67, Cl. D54—12.
Dudley, Jack W. Automobile floor mat. 208,764, 10–3–67, Cl. D9—6.
Ernest, Robert O.: *See*—
De Fano, Dominic J., Ernest, and Kallam. 208,805.
Falkenberg, Douglass R. Drapery tie-back holder or similar article. 208,774, 10–3–67, Cl. D21—1.
Falkenberg, Douglass R. Drapery tie-back holder or similar article. 208,775, 10–3–67, Cl. D21—1.
Faller, Robert O., to Williams Gold Refining Co. Inc. Combined tooth shade guide and sterilising tank therefor. 208,779, 10–3–67, Cl. D24—1.
Flint, Robert O.: *See*—
Smith, James D., and Flint. 208,849.
Flint's Inc.: *See*—
Smith, James D., and Flint. 208,849.
Frost, George H., to Sunbeam Corp. Clock. 208,794, 10–3–67, Cl. D42—7.
Gaylor, Robert B., Jr., to Symington Wayne Corp. Casing for receipt printer for a gasoline dispenser. 208,813, 10–3–67, Cl. D62—2.
Gehrle, Charles S., to Presto Lock Co., Inc. Buckle lock for luggage. 208,812, 10–3–67, Cl. D50—7.
General Motors Corp.: *See*—
Hodgson, Robert D. 208,818.
Globe Trotter Corp.: *See*—
Knowles, Jack V. 208,803.
Gonshorek, Milton: *See*—
Doerfler, Robert L., and Gonshorek. 208,817.
Goodrich, B. F., Co., The: *See*—
Makris, Aristides. 208,843.
Wittenmyer, Glen L. 208,844.
Gottlieb, William, to The Servus Rubber Co. Footwear sole. 208,761, 10–3–67, Cl. D2—320.
Hasenbank, Kenneth N., to Toro Mfg. Corp. Lubricator for lawn mowers and the like. 208,806, 10–3–67, Cl. D46—1.
Hayes, Thomas H., to Sunbeam Corp. Combined clock and power toothbrush housing. 208,796, 10–3–67, Cl. D42—7.
Henderson, Richard E., to The Washburn Co. Corn popper or similar article. 208,804, 10–3–67, Cl. D44—1.
Herbst, Walter B.: *See*—
La Zar, Ralph M., and Herbst. 208,792.
Hicks, Harold E., to Nooter Corp. Cooling panel for a transformer or similar article. 208,834, 10–3–67, Cl. D62—21.
Hocq, Robert, to Societe Franco Hispano-Americaine Francispam. Combined key chain and pipe tool. 208,811, 10–3–67, Cl. D50—4.
Hodgson, Robert D., to General Motors Corp. Combined air cleaner and silencer. 208,818, 10–3–67, Cl. D55—1.
Hoffman, Goldie. Glare shield. 208,821, 10–3–67, Cl. D57—1.
Hoover Ball and Bearing Co.: *See*—
Platte, Richard L. 208,824.
Hubbard, Walter G., to Woodbridge Moulded Products Ltd. Lobster buoy swivel. 208,815, 10–3–67, Cl. D54—1.
Hutton, Fred E., to J. U. Stewart. Dispensing bottle. 208,825, 10–3–67, Cl. D58—6.
Hutton, Fred E., to J. U. Stewart. Dispensing bottle. 208,826, 10–3–67, Cl. D58—6.
Illinois Tool Works Inc.: *See*—
Stockdale, William D. 208,829.
Stockdale, William D. 208,830.
Stockdale, William D. 208,831.
Imahori, Shigehiko, to Parksmith Corp. Doll. 208,786, 10–3–67, Cl. D34—4.
International Patent Research Corp.: *See*—
Beinert, John D. 208,845.

International Playtex Corp.: *See*—
Jannicelli, Edward. 208,758.
Jannicelli, Edward. 208,759.
Jannicelli, Edward. 208,760.

International Silver Co., The: *See*—
Doerfler, Robert L., and Gonshorek. 208,817.

Jakobsen, Robert E., to Schlumberger Ltd. Table. 208,785, 10–3–67, Cl. D33—14.

Jannicelli, Edward, to International Playtex Corp. Brassiere. 208,758, 10–3–67, Cl. D2—24.

Jannicelli, Edward, to International Playtex Corp. Brassiere. 208,759, 10–3–67, Cl. D2—24.

Jannicelli, Edward, to International Playtex Corp. Brassiere. 208,760, 10–3–67, Cl. D2—24.

Jarco Metal Products Corp.: *See*—
Burkhardt, Norman. 208,842.

Johnson, Allan B.: *See*—
Mackay, Frederick G., Johnson, and Mattingly. 208,776.

Johnson, Allan B., and J. W. Mattingly, to Aqua-Tec Corp. Rack for dental nozzles and the like. 208,777, 10–3–67, Cl. D24—1.

Kallam, Robert J.: *See*—
De Fano, Dominic J., Ernest, and Kallam. 208,805.

Kenner Products Co.: *See*—
Kuhn, James O. 208,789.

Knowles, Jack V., to Globe Trotter Corp. Endless belt wheel cleat. 208,803, 10–3–67, Cl. D43—1.

Koch, Samuel J. Jet-producing syringe for an oral hygiene appliance. 208,778, 10–3–67, Cl. D24—1.

Kolodziej, Edward. VTOL aircraft. 208,835, 10–3–67, Cl. D71—1.

Kuhn, James O., to Kenner Products Co. Toy building block. 208,789, 10–3–67, Cl. D34—15.

Laylon, Harry L., to Sunbeam Corp. Clock. 208,795, 10–3–67, Cl. D42—7.

Laylon, Harry L., to Sunbeam Corp. Clock. 208,800, 10–3–67, Cl. D42—7.

Laylon, Harry L., to Sunbeam Corp. Clock. 208,802, 10–3–67, Cl. D42—7.

La Zar, Ralph M., and W. B. Herbst, to Sunbeam Corp. Clock. 208,792, 10–3–67, Cl. D42—7.

Leman, Donald E., to Sunbeam Corp. Clock. 208,797, 10–3–67, Cl. D42—7.

Lewis, Frank C.: *See*—
Stark, Marvin L., and Lewis. 208,837.

Lohr, Raymond J., to Louis Marx & Co., Inc. Toy steering wheel. 208,788, 10–3–67, Cl. D34—15.

Lowe, Harry E., III, and A. B. Mojonnier, to Albert Mojonnier, Inc. Jug. 208,823, 10–3–67, Cl. D58—5.

Lynk, Leo F., to Counting Systems, Inc. Combined menu selector and item totalizer or similar article. 208,782, 10–3–67, Cl. D26—5.

Mackay, Frederick G., A. B. Johnson, and J. W. Mattingly, to Aqua-Tec Corp. Rack for dental hygiene appliances or the like. 208,776, 10–3–67, Cl. D24—1.

Makris, Aristides, to The B. F. Goodrich Co. Tire. 208,843, 10–3–67, Cl. D90—20.

Marx, Louis, & Co., Inc.: *See*—
Lohr, Raymond J. 208,788.

Mattingly, John W.: *See*—
Johnson, Allan B., and Mattingly. 208,777.
Mackay, Frederick G., Johnson, and Mattingly. 208,776.

McLeod, Charles A., to Sunbeam Corp. Clock. 208,793, 10–3–67, Cl. D42—7.

McLeod, Charles A., to Sunbeam Corp. Clock. 208,798, 10–3–67, Cl. D42—7.

McLeod, Charles A., to Sunbeam Corp. Clock. 208,799, 10–3–67, Cl. D42—7.

McLeod, Charles A., to Sunbeam Corp. Clock. 208,801, 10–3–67, Cl. D42—7.

McVey, Charles W., to Anzac Industries, Inc. Mobile antenna mount. 208,771, 10–3–67, Cl. D14—6.

McVey, Charles W., to Anzac Industries, Inc. Antenna whip spring base. 208,772, 10–3–67, Cl. D14—6.

Meadowbrook Co., The: *See*—
Robarge, Robert E. 208,846.

Mojonnier, Albert, Inc.: *See*—
Lowe, Harry E., III, and Mojonnier. 208,823.

Mojonnier, Albert B.: *See*—
Lowe, Harry E., III, and Mojonnier. 208,823.

Nardone, William, to Sweetheart Plastics, Inc. Flexible drinking straw. 208,848, 10–3–67, Cl. 94—3.

National Aeronautics and Space Administration: *See*—
Brosig, Heinz. 208,768.

Nooter Corp.: *See*—
Hicks, Harold E. 208,834.

Parksmith Corp.: *See*—
Imahori, Shigehiko. 208,786.

Peerless Mfg. Division, Dover Corp.: *See*—
Stark, Marvin L., and Lewis. 208,837.

Peter, Joseph E., to The Crane & Breed Casket Co. Casket. 208,773, 10–3–67, Cl. D19—1.

Platte, Richard L., to Hoover Ball and Bearing Co. Jug. 208,824, 10–3–67, Cl. D58—5.

Prager, Edward H. Waste receptacle. 208,833, 10–3–67, Cl. D58—17.

Presto Lock Co., Inc.: *See*—
Gehrie, Charles S. 208,812.

Procopiow, William: *See*—
Solomon, Samuel J., Samperton, and Procopiow. 208,765.
Solomon, Samuel J., Samperton, and Procopiow. 208,766.
Solomon, Samuel J., Samperton, and Procopiow. 208,767.

Purdy, Fred E., to American Machine and Foundry Co. Scooter. 208,791, 10–3–67, Cl. D34—15.

Quaker Oats Co., The: *See*—
Reinhart, Robert R. 208,756.

Reeves, Ronald L. Tricycle or the like. 208,790, 10–3–67, Cl. D34—15.

Reinhart, Robert R., to The Quaker Oats Co. Expanded cereal food product. 208,756, 10–3–67, Cl. D1—2.

Robarge, Robert E., to The Meadowbrook Co. Water conditioner. 208,846, 10–3–67, Cl. D91—1.

Robertshaw Control Co.: *See*—
Smith, Larry S. 208,814.

Rosay, Lincoln F., to Bolt Beranek and Newman Inc. Housing for transducers for transforming graphical data into electrical voltages for input into a computer or similar article. 208,781, 10–3–67, Cl. D26—5.

Ross, Charles A. Electronic organ. 208,820, 10–3–67, Cl. D56—2.

St. Amand, Elmer F., to Don Baxter, Inc. Puncturing spike for medical equipment. 208,838, 10–3–67, Cl. D83—1.

Sanchez, Olga. Combined music box and cigarette holder. 208,840, 10–3–67, Cl. D85—2.

Sanzone, William M., to The Telex Corp. Hearing aid. 208,784, 10–3–67, Cl. D26—14.

Sarong Inc.: *See*—
Tuschman, Moe. 208,757.

Schlumberger Ltd.: *See*—
Jakobsen, Robert E. K. 208,785.

Schmidt, William L.: *See*—
Cunningham, Hoyt, Jr., and Schmidt. 208,769.

Senoff, Herbert P., to Allen-Stevens Drum Accessories Corp. Faucet. 208,847, 10–3–67, Cl. D91—3.

Servus Rubber Co., The: *See*—
Gottlieb, William. 208,761.

Simpson, Altus L. Staple. 208,816, 10–3–67, Cl. D34—9.

Smith, Charles A. Chart position indicator. 208,780, 10–3–67, D25—1.

Smith, James D., and R. O. Flint, to Flint's Inc. Sign. 208,849, 10–3–67, Cl. D96—12.

Smith, Larry S., to Robertshaw Controls Co. Thermostat casing. 208,814, 10–3–67, Cl. D52—7.

Societa Ceramica Italiana Richard-Ginori Societa: *See*—
Campi, Antonia. 208,762.

Societe Franco Hispano-Americaine Francispam: *See*—
Hocq, Robert. 208,811.

Solomon, Samuel J., J. S. Samperton, and W. Procopiow; said Samperton and said Procopiow assors. to said Solomon. Airport building. 208,765, 10–3–67, Cl. D13—1.

Solomon, Samuel J., J. S. Samperton, and W. Procopiow; said Samperton and said Procopiow assors. to said Soloman. Airport building. 208,766, 10–3–67, Cl. D13—1.

Solomon, Samuel J., J. S. Samperton, and W. Procopiow; said Samperton and said Procopiow assors. to said Soloman. Airport building. 208,767, 10–3–67, Cl. D13—1.

Stark, Marvin L., and F. C. Lewis, to Peerless Mfg. Division, Dover Corp. Hood for fireplace screens. 208,837, 10–3–67, Cl. D81—5.

Stewart, James U.: *See*—
Hutton, Fred E. 208,825.
Hutton, Fred E. 208,826.

Stillman, Harry L., to Bell Electric. Escutcheon for an electrical switch. 208,783, 10–3–67, Cl. D26—13.

Stockdale, William D., to Illinois Tool Works Inc. Packaging container. 208,829, 10–3–67, Cl. D58—12.

Stockdale, William D., to Illinois Tool Works Inc. Packaging container. 208,830, 10–3–67, Cl. D58—12.

Stockdale, William D., to Illinois Tool Works Inc. Packaging container. 208,831, 10–3–67, Cl. D58—12.

Stolarz, Edward M.: *See*—
D'Ella, Anthony N., and Stolarz. 208,841.

Stone Conveyor Co., Inc.: *See*—
Stone, Guthrie B. 208,819.

Stone, Guthrie B., to Stone Conveyor Co., Inc. Adjustable work-piece support. 208,819, 10–3–67, Cl. D35—1.

Sunbeam Corp.: *See*—
De Fano, Dominic J., Ernest, and Kallam. 208,805.
Frost, George H. 208,794.
Hayes, Thomas H. 208,796.
Laylon, Harry L. 208,795.
Laylon, Harry L. 208,800.
Laylon, Harry L. 208,802.
La Zar, Ralph M., and Herbst. 208,792.
Leman, Donald E. 208,797.
McLeod, Charles A. 208,793.
McLeod, Charles A. 208,798.
McLeod, Charles A. 208,799.
McLeod, Charles A. 208,801.

Sweetheart Plastics, Inc.: *See*—
Nardone, William. 208,848.

Symington Wayne Corp.: *See*—
Gaylor, Robert B., Jr. 208,813.

Takeoka, Ryotaro. Plate or similar article. 208,807, 10–3–67, Cl. D44—15.

Talbott, David R. Dredge or the like. 208,836, 10–3–67, Cl. D71—1.

Tecton, Mike. Solarium. 208,839, 10–3–67, Cl. D83—1.

Telex Corp., The: *See*—
Sanzone, William M. 208,784.

Tornek, Allen V.: *See*—
Blumstein, Stanley, and Tornek. 208,822.

Toro Mfg. Corp.: *See*—
Hasenbank, Kenneth N. 208,808.

Tuschman, Moe, to Sarong Inc. Brassiere. 208,757, 10–3–67, Cl. D2—24.

Washburn Co., The: *See*—
Henderson, Richard E. 208,804.

Williams Gold Refining Co. Inc.: *See*—
Faller, Robert O. 208,779.

Wittenmyer, Glen L., to The B. F. Goodrich Co. Tire. 208,844, 10–3–67, Cl. D90—20.

Woodbridge Moulded Products Ltd.: *See*—
Hubbard, Walter G. 208,815.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Rosenblads Patenter: *See*—
Dahlgren, Jons A. 3,344,776.

ABCOR, Inc.: *See*—
Merrill, Robert P., and Crowley. 3,344,582.

ACF Industries Inc.: *See*—
Holden, Roy J., and Bolte. 3,344,895.

AMP Inc.: *See*—
Cobaugh, Robert F., and Shrock. 3,345,541.
Henschen, Homer E., and Yeager. 3,345,599.
Henschen, Homer E., and Yeager. 3,345,604.
Mixon, James L., Jr. 3,345,454.

Aben, Pieter C.: *See*—
Oelderik, Jan M., and Aben. 3,345,384.

Abernethy, Robert B., to United Aircraft Corp. Recover bleed air turbojet. 3,344,606, 10–3–67, Cl. 60—241.

Achterberg, Arno, H. Gormar, and K.-H. Kleefisch, to Dynamit Nobel Aktiengesellschaft. Sheet extrusion dies for the extrusion of thermoplastics. 3,344,473, 10–3–67, Cl. 18—12.

Ackerman Engravers, Inc.: *See*—
Strianese, Bernard V. 3,344,545.

Adachi, Takeshi, to Tokyo Shibaura Electric Co., Ltd. Neutron generator shielding arrangement. 3,345,515, 10–3–67, Cl. 250—84.5.

Adams, Norman C.: *See*—
Wilson, Porter C., and Adams. 3,345,070.

Advance Glove Mfg. Co.: *See*—
Frenkel, Marvin A., and Haney. 3,345,226.

Aebi, Hans: *See*—
Duerr, Dieter, Aebi, and Ebner. 3,345,257.

Aeronca, Inc.: *See*—
Purdum, Cary, and Gibney. 3,344,528.

Aguirre-Batres, Francisco, P. Sole, Jr., and R. Murillo-Solis, to Instituto Centroamericano de Investigacion y Tecnologia Industrial. Individual coffee extractor with controlled extracting time. 3,344,734, 10–3–67, Cl. 99—304.

Air Reduction Co., Inc.: *See*—
Davidowich, George, and Leeds. 3,345,299.
Leeds, Morton W., and Davidowich. 3,345,298.
Lindemann, Martin K., and Volpe. 3,345,318.

Albinak, Marvin J., and W. H. Turner, to Owens-Illinois, Inc. Method for controlling the reduction of metallic ions in glass compositions. 3,345,190, 10–3–67, Cl. 106—47.

Albright, Franklin C., to The Bendix Corp. Friction shimmy damper. 3,345,020, 10–3–67, Cl. 244—103.

Aldenhoff, Bernard J., to Harnischfeger Corp. Three phase half wave direct current power source. 3,345,552, 10–3–67, Cl. 321—5.

Alexander, Norman P.: *See*—
Errichiello, Dominic, Hansen, and Alexander. 3,345,568.

Allais, Andre: *See*—
Warnant, Julien J., Allais, and Girault. 3,345,259.

Allen, Derek R., to Allen Medical Instrument Corp. Multipurpose neurological diagnostic instrument. 3,344,781, 10–3–67, Cl. 128—2.

Allen Medical Instrument Corp.: *See*—
Allen, Derek R. 3,344,781.

Allenby, Jack: *See*—
Stone, George E., and Allenby. 3,345,637.

Allied Chemical Corp.: *See*—
Baron, Joseph J., Jr., and Rakus. 3,345,352.
Barton, Oliver A., and Bingham. 3,345,315.
Chang, Leo S., Lund, Pierce, and Turi. 3,345,326.
Iacoviello, John G., and Mueller. 3,345,335.

Allis-Chalmers Mfg. Co.: *See*—
Ashenden, Harry B., and Goeller. 3,345,539.
Boyajian, Myron J. 3,344,854.
Dreisin, Alexander, and Terrell. 3,344,663.

Allis, Louis, Co., The: *See*—
Hauser, John G., and Steadman. 3,345,549.

Allison, James G.: *See*—
Kember, Raymond C., and Allison. 3,345,451.

Allison, John E., and M. J. Cereghino, to Lemungwell Chemical Co. Method of preparing a foliage treatment material from zinc oxide, phosphoric acid and calcium hydroxide. 3,345,154. 10–3–67, Cl. 71—42.

Aluminium-Walzwerke Singen G.m.b.H.: *See*—
Keller, Hans, Mühlhausser, and Post. 3,345,208.

Aluminum Co. of America: *See*—
Blessinger, John A., Molvik, and Harris. 3,344,845.

Aluminum Supply Co., tubing division, Inc.: *See*—
Sherman, Roger M. 3,345,034.

American Air Filter Co., Inc.: *See*—
Smith, Tom R. 3,344,589.
Smith, Tom R., and Boylan. 3,344,590.

American Chain & Cable Co., Inc.: *See*—
Brats, Otto J. 3,344,682.
Gilmore, William J. 3,345,456.

American Cyanamid Co.: *See*—
Andrews, Arthur Learmont, and Anghinetti. 3,344,442.
Colgan, Joseph D., and Witheford. 3,345,319.
Esse, Robert C., and Sieger. 3,345,370.
Firth, William C., Jr. 3,345,359.
Firth, William C., Jr. 3,345,360.
Geurtsen Friedrich H. H., Barone, and Terenzi. 3,345,321.

American Cyanamid Co.: *See*—Continued
Gillham, Helen C., and Klein. 3,345,432.
Grayson, Martin, Sherr, Gillham, and Castellion. 3,345,392.
Griffith, Richard M. 3,345,434.
Hanifin, John W., Jr., Capuzzi, and Cohen. 3,345,872.
Hlavka, Joseph J., and Bitha. 3,345,408.
Lewis, Benjamin A., Sassiver, and Shepherd. 3,345,366.
Lewis, Benjamin A., Sassiver, and Shepherd. 3,345,368.
Martell, Michael J., Jr., and Tomcufcik. 3,345,379.
McCormick, Jerry R. D. 3,345,409.
Pounds, Lewis C., and Smith. 3,345,248.
Rochow, Theodore G. 3,345,239.
Sassiver, Martin L., Lewis, and Shepherd. 3,345,367.
Sassiver, Martin L., Lewis, and Shepherd. 3,345,369.
Winterbottom, Robert, Bitha, and Kissman. 3,345,410.

American Enka Corp., The: *See*—
Berry, William R., and Grier. 3,345,341.
Van der Schee, Bernard L. 3,345,041.

American Machine & Foundry Co.: *See*—
Saunders, Charles E., Jr. 3,344,936.
Wood, Fenton M. 3,345,563.

American Photocopy Equipment Co.: *See*—
Cooper, Robert N. 3,345,294.

American Radiator & Standard Sanitary Corp.: *See*—
Parkison, Richard G. 3,344,600.

Ampex Corp.: *See*—
Dunne, Peter F. 3,345,547.
Gyi, Maung. 3,345,576.
MacLeod, Donald B. 3,345,457.

Anagnostopoulos, Constantine E., and A. Y. Coran, to Monsanto Co. Biphenylcarboxylates. 3,345,400, 10–3–67, Cl. 260—469.

Anderson, Andrew W., to Scandia Packaging Machinery Co. Cartoning machine. 3,344,578, 10–3–67, Cl. 53—54.

Anderson, Arvid P. Portable grill device. 3,344,780, 10–3–67, Cl. 126—30.

Anderson, Duane H., R. T. McArdell, and R. W. Notto, to Sperry Rand Corp. Data processing system. 3,345,619, 10–3–67, Cl. 340—172.5.

Anderson, Harold C., and K. E. Peltzer, to Litton Systems, Inc. Method and apparatus for microwave radar signal receiving, recording and retransmision. 3,345,620, 10–3–67, Cl. 340—108.

Anderson, Josephine: *See*—
Bowen, Hamilton M. 3,345,068.

Anderson, Philip R.: *See*—
Miles, Russel T. 3,344,563.
Miles, Russel T. 3,344,566.
Miles, Russel T., and Anderson. 3,344,562.

Anderson, Philip R., to Corinthian Cornice Systems, Inc. Assembly for use in building structures. 3,344,561, 10–3–67, Cl. 52—11.

Anderson, Richard D., to Kimberly-Clark Corp. Apparatus and method for making cellulosic products. 3,344,483, 10–3–67, Cl. 19—146.

Anderson, Richard D., to Kimberly-Clark Corp. Apparatus for the manufacture of cellulosic product. 3,344,581, 10–3–67, Cl. 53—177.

Andonjev, Sergei M., P. G. Glaskov, V. A. Kuchin, K. I. Makarov, N. I. Pevny, A. M. Pochtman, P. A. Tesner, and O. V. Filipjev, to Gosuderstvenny Nauchno-Issledovatelsky i Proektny Institute Metallurgicheskoi Promyshlennosta. Steel melting and more particularly gas fired regenerative furnaces. 3,345,054, 10–3–67, Cl. 266—33.

Andray Products, Inc.: *See*—
Langer, Sol. 3,344,440.

Andrews, Arthur L., and J. R. Anghinetti, to American Cyanamid Co. Child's crib cover. 3,344,442, 10–3–67, Cl. 5—97.

Andrews, Sydney A.: *See*—
Parkin, LesMe, and Andrews. 3,345,103.

Angelo, Rudolph J., to E. I. du Pont de Nemours and Co. Poly-(1,3-diazoli-2,4-dione/ureas). 3,345,333, 10–3–67, Cl. 260—47.

Angelo, Rudolph J., to E. I. du Pont de Nemours and Co. Poly(diazolidiones), and process for converting polyureas to poly(diazolidiones). 3,345,334, 10–3–67, Cl. 260—47.

Angelo, Rudolph J., to E. I. du Pont de Nemours and Co. Process for preparing polyimide polymers. 3,345,342, 10–3–67, Cl. 260—78.

Anghinetti, Joseph R.: *See*—
Andrews, Arthur L., and Anghinetti. 3,344,442.

Anschutz, Herbert, and N. Wayss, to Brown, Boveri & Cie, Aktiengesellschaft. Teaching apparatus. 3,344,534, 10–3–67, Cl. 35—9.

Anthony, Myron L. Instrumentation systems. 3,344,665, 10–3–67, Cl. 73—178.

Aoki, Kunio: *See*—
Morikawa, Takashi, Aoki, Nakamura, Maruyama, and Sakurai. 3,344,693.

Aoki, Yukio: *See*—
Mikiya, Toshio, and Aoki. 3,344,868.

Apblett, William R., Jr.: *See*—
Kunsagi, Laszlo, Jorgensen, and Apblett. 3,344,509.

Apblett, William R., Jr., and J. Martin. Rotatable arc welding torch. 3,345,494, 10–3–67, Cl. 219—125.

Appleman, Milo D., to J. J. Schroeder. Method and means for converting odors in manure and human excreta. 3,345,-152, 10–3–67, Cl. 71—21.

Appleton Mfg. Co.: *See*—
Harvey, Ronald B. 3,344,696.

Arenco Aktiebolag: *See*—
Vass, Antal. 3,345,114.

Arnold, Edwin W., O. L. Updike, Jr., and N. E. Zinner, to Azur Associates. Diaper with film enclosed absorbent. 3,344,789, 10–3–67, Cl. 128—287.

Artiaga, Mariano V., H. Van Eikeren, and A. Wolf, to Kitchens of Sara Lee, Inc. Apparatus for manufacturing pastry. 3,344,764, 10–3–67, Cl. 107—69.

Artzt, William W., to Kapart Inc. Infant's garment of the wrap-around type. 3,344,435, 10–3–67, Cl. 2—11.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Kameishi, Masayuki, Higuchi, and Niwatsukino. 3,344,-510.

Ashenden, Harry B., and C. P. Goeller, to Allis-Chalmers Mfg. Co. Static overcurrent tripping system having phase-to-phase and phase-to-ground fault protection. 3,345,539, 10–3–67, Cl. 317—33.

Ashland Oil & Refining Co.: *See*—
Ogden, James S. 3,345,284.
Olsen, Douglas A., and Osteraas. 3,344,670.

Ashley, Paul E., J. D. La Zerte, and R. J. Sem, to Minnesota Mining and Mfg. Co. Electrochemical production of sulfur hexafluoride. 3,345,277, 10–3–67, Cl. 204—59.

Aspin, Peter: *See*—
Wynes, Anthony G., and Aspin. 3,344,963.

Associated Electrical Industries Ltd.: *See*—
Wright, John W. T. 3,345,526.

Astra, Aktiebolaget: *See*—
Von Hofsten, Bengt A. 3,345,269.

Ateliers Roannais de Constructions Textiles: *See*—
Crouzet, Henri. 3,344,685.

Athman, Coelestin F. and V. J. Fold down exhaust stack for engines. 3,345,092, 10–3–67, Cl. 285—283.

Athman, Virgil J.: *See*—
Athman, Coelestin F. and V. J. 3,345,092.

Atkins, Carl E., and R. L. Ziolkowski, to Wagner Electric Corp. Photoelectric control circuit. 3,345,536, 10–3–67, Cl. 315—83.

Atkins, William H. Flexible cable towing hitch. 3,345,082, 10–3–67, Cl. 280—477.

Atlantic Refining Co., The: *See*—
Styring, Ralph E., Dunlap, and Rogers. 3,344,583.
Woods, John P., Neitzel, and Prickett. 3,345,499.

Auer, John H., Jr., to General Signal Corp. Traffic parameter computer which measures the ratio of traffic volume measured at different locations. 3,345,503, 10–3–67, Cl. 235—150.24.

Automatic Telephone & Electric Co. Ltd.: *See*—
Threadgold, Ronald. 3,345,618.

Avisun Corp.: *See*—
Davis, Donald M., Schreiber, and Sherman. 3,344,474.

Avril, Michel, R. Moreau, and A. Pages, to Commissariat a l'Energie Atomique. Devices for analyzing physical phenomenons, and in particular nuclear phenomenons. 3,345,-616, 10–3–67, Cl. 340—172.5.

Axelrod, Leonard C.: *See*—
Finneran, James A., Jr., and Axelrod. 3,345,136.

Ayres, Charles A.: *See*—
Hutto, John F., Dixon, Davison, Ayres, Renberg, and Queen. 3,345,285.

Azur Associates: *See*—
Arnold, Edwin W., Updike, and Zinner. 3,344,789.

Babcock & Wilcox Co., The: *See*—
Eft, Neil W. 3,344,998.

Badger, Robert E., and J. L. Boone. Battery testing adapter. 3,345,491, 10–3–67, Cl. 200—162.

Bailey, George C.: *See*—
Lawson, Gustaf R., and Bailey. 3,344,815.

Baittinger, Jack R., ½ to J. J. Dougherty. Mechanical hetrodyne oscillator. 3,344,873, 10–3–67, Cl. 175—55.

Baker Castor Oil Co., The: *See*—
Ehrlich, Arthur, Smith, and Patton. 3,345,311.

Baker, Herbert K. Overrunning clutches including differential drive devices. 3,344,686, 10–3–67, Cl. 74—650.

Baker, John G.: *See*—
Parker, Earl E., and Baker. 3,345,339.

Baker Oil Tool, Inc.: *See*—
Claycomb, Jackson R. 3,344,861.

Balazer & Droll Schnitt-V. Werkzeugbau: *See*—
Muskulus, Willi, and Muller. 3,344,760.

Baldwin, John B., to Thiokol Chemical Corp. Vacuum-attached gage for measuring strains in elastic, viscoelastic, and low-modulus plastic materials. 3,344,660, 10–3–67, Cl. 73—88.

Bankston, Weldon S., Jr., to Hi-Shear Corp. Safetied ordnance device. 3,344,744, 10–3–67, Cl. 102—28.

Barber-Colman Co.: *See*—
Livingston, Richard D. 3,345,004.

Barbu, Richard J., to Markbar Corp. Meat press. 3,344,467, 10–3–67, Cl. 17—38.

Barchas, Myron: *See*—
Schwarcz, Morton, and Barchas. 3,345,295.

Barker, Allan: *See*—
Mann, John E., Barker, and Perks. 3,345,266.

Barmabe, Jean-Louis, D. Callies, and C. Loveque, to Societe de Recherches Tecniques et Industrielles. Device for utilizing the osmotic pressure of a solution for the production of mechanical energy. 3,344,926, 10–3–67, Cl. 210—321.

Barnes & Reinecke, Inc.: *See*—
Glomb, Frank A., and Wasyncsuk. 3,344,879.

Baron, Joseph J., Jr., and J. P. Rakus, to Allied Chemical Corp. Catalytic process for the thermal degradation of polyolefins. 3,345,352, 10–3–67, Cl. 260—93.7.

Barone, James C.: *See*—
Geurtsen, Friedrich H. H., Barone, and Terenzi. 3,345,-321.

Bartlett, Philip D., H. E. Erikson, and J. F. Sadlow, to Polaroid Corp. Photographic processing apparatus. 3,344,-730, 10–3–67, Cl. 95—89.

Barton, Oliver A., and W. R. Bingham, to Allied Chemical Corp. Chlorinated polyethylene cross-linked with a polyamide. 3,345,315, 10–3–67, Cl. 260—23.

Barton, William D.: *See*—
Mawhinney, Robert C., Gould, Biehl, Mainhardt, and Barton. 3,344,711.

Bartoszewicz, John S., and M. A. Insalaco, to Xerox Corp. Colored electrostatographic toners containing organic dye pigments. 3,345,293, 10–3–67, Cl. 252—62.1.

Basinas, Nicholas V.: *See*—
Hansen, David S., and Basinas. 3,344,909.

Bass, Paul D., and R. A. Warren, to McDonnell Douglas Corp. Cargo fitting assembly. 3,344,749, 10–3–67, Cl. 105—369.

Batelaan, Joost: *See*—
Bourgault, Pierre L., and Batelaan. 3,345,545.

Bayer, Otto: *See*—
Merten, Rudolf, and Bayer. 3,345,338.

Beck, William R., Jr.: *See*—
Shearer, Walter V., Beck, and Wheelock. 3,345,065.

Becker, Hans-Dieter: *See*—
Russell, Glen A., and Becker. 3,345,416.

Becker, Herbert: *See*—
Koller, Walter, Becker, and Hoyer. 3,345,337.

Becker, Kunibert: *See*—
Dommann, Gunther, Floter, and Becker. 3,344,610.

Beckmann, Gerhard, and T. Faulhaber. Welder's shield. 3,344,-434, 10–3–67, Cl. 2—8.

Beebe, Raymond A., to Massey-Ferguson Inc. Press wheel with sheet metal spokes. 3,344,864, 10–3–67, Cl. 172—538.

Beemer, Paul K., to United Engineering and Foundry Co. Apparatus for the continuous casting of molten metal. 3,344,847, 10–3–67, Cl. 164—281.

Behr, Erich: *See*—
Bingmann, Waldemar, and Behr. 3,344,990.

Bell Telephone Laboratories, Inc.: *See*—
Di Piazza, Gerald C. 3,345,589.

Bellano, Angelo: *See*—
Siciari, Francesco, Bellano, Ciceri, D'Alo', Perazzoni, and Giacobone. 3,345,445.

Bellenger, Michel, to CSF-Compagnie Generale de Telegraphie Sans Fil. Radio interferometer. 3,345,634, 10–3–67, Cl. 343—113.

Bellion, Jean-Claude, and R. G. Hoch, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Retractable silencers and thrust reversers for jet engines. 3,344,-882, 10–3–67, Cl. 181—51.

Beltramo, Renaldo M., to Michigan Bank National Association. Electric stapler and stapler trigger circuit. 3,345,546, 10–3–67, Cl. 318—132.

Bemmann, Richard W., and W. F. Schultz, to General Motors Corp. Pump-motor assembly method. 3,344,613, 10–3–67, Cl. 29—596.

Bendix Corp., The: *See*—
Albright, Franklin C. 3,345,020.
Black, Raymond J., and Palmer. 3,345,019.
Lavengood, Thomas H. 3,344,887.
Shutt, Paul B., Larsen, and Ferrell. 3,344,944.
Wieger, George F. 3,344,892.

Benner, Russell E., to Valco Products Development, Inc. Impact tool triggering force tester. 3,344,653, 10–3–67, Cl. 73—11.

Bensinger, Wolf-Dieter, to Daimler-Benz Aktiengesellschaft. Rotary piston engine. 3,344,778, 10–3–67, Cl. 123—8.

Benson, Donald H.: *See*—
Mitchell, William A. 3,344,819.

Berg, Robert H.: *See*—
Berg, Robert H., Youngdahl, and Ellison. 3,344,786.
Berg, Robert H., and Youngdahl. 3,345,502.

Berg, Robert H., C. A. Youngdahl, and L. E. Ellison; said Youngdahl and said Ellison assors. to said Berg. Syringe structure. 3,344,786, 10–3–67, Cl. 128—215.

Berg, Robert H., and C. A. Youngdahl, to R. H. Berg. Pulse analyzer computer. 3,345,502, 10–3–67, Cl. 235—92.

Bergan, Reuben A., to United States of America, National Science Foundation. Apparatus for indicating the length of core in a core barrel. 3,344,872, 10–3–67, Cl. 175—46.

Berger, Barron D., to National Electric Welding Machines Co. Mechanical device. 3,344,647, 10–3–67, Cl. 72—354.

Berghaus, Bernhard, to IONON G.m.b.H. Method and apparatus for controlling glow discharge processes. 3,345,-280, 10–3–67, Cl. 204—164.

Bergmann, Dieter: *See*—
Bestian, Herbert, Sommer, and Bergmann. 3,345,253.

Bergson, Gustav. Gas drying apparatus. 3,344,852, 10–3–67, Cl. 165—71.

Bergwerksverband G.m.b.H.: *See*—
Kruel, Martin, Juentgen, and Dratwa. 3,345,125.

Berkenblit, Melvin: *See*—
Reisman, Arnold, Berkenblit, Papasian, and Cheroff. 3,345,223.

Berry, William R., and N. Grier, to The American Enka Corp. Synthetic polyamides possessing antibacterial activity. 3,345,341, 10–3–67, Cl. 260—78.

Bersudsky, Sid, to National Sales Incentives Ltd. Sound synchronized slide projector. 3,344,710, 10–3–67, Cl. 88—28.

Bessman, Samuel P. Gradient generator. 3,344,801, 10–3–67, Cl. 137—263.

Best, Melvin H., to Roy J. Maier Corp. Container for musical reeds. 3,344,913, 10–3–67, Cl. 206—46.

Bestian, Herbert, H. Sommer, and D. Bergmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process of forming cellulosic webs containing urea-alkyleneimine condensation products. 3,345,253, 10–3–67, Cl. 162—166.

Bethlehem Steel Corp.: *See*—
Fegan, Lloyd V., Jr. 3,344,921.
Quimby, Paul J. 3,344,452.
Weigle, Russell M. 3,344,642.

Betts, Peter, and J. J. Lynott, to International Business Machines Corp. Scanning apparatus. 3,345,460, 10–3–67, Cl. 178—7.6.

Bhuyan, Bijoy K.: *See*—
Meyer, Curtis E., and Bhuyan. 3,345,262.

Bialkowski, Ludwik S., to The B. F. Goodrich Co. Seal assembly. 3,345,078, 10–3–67, Cl. 277—205.

Biechler, Donald G., and D. E. Jordan, to Continental Oil Co. Extraction and determination of vanadium. 3,345,126, 10–3–67, Cl. 23—18.

Biehl, Arthur T.: *See*—
Mawhinney, Robert C., Gould, Biehl, Mainhardt, and Barton. 3,344,711.

Bies, John L., and G. E. Larson, to Possis Machine Corp. System for dispensing materials. 3,345,111, 10–3–67, Cl. 302—17.

Bigler, Theodore G., to Westinghouse Electric Corp. Delicate object container mounted on dryer door. 3,344,532, 10–3–67, Cl. 34—133.

Bingham, William R.: *See*—
Barton, Oliver A., and Bingham. 3,345,315.

Bingmann, Waldemar, and E. Behr, to Dynamit Nobel Aktiengesellschaft. Electrically insulating rail joint connections. 3,344,990, 10–3–67, Cl. 238—159.

Binnis, Kenneth, to British Titan Products Co. Ltd. Corrosion-inhibiting titanium dioxide pigments. 3,345,187, 10–3–67, Cl. 106—14.

Bitha, Panayota: *See*—
Hlavka, Joseph J., and Bitha. 3,345,408.
Winterbottom, Robert, Bitha, and Kissman. 3,345,410.

Black Clawson Co., The: *See*—
Kilian, Joseph J. 3,345,254.

Black and Decker Mfg. Co., The: *See*—
Wickham, John L. 3,345,079.

Black, Raymond J., and R. M. Palmer, to The Bendix Corp. Aircraft landing gear. 3,345,019, 10–3–67, Cl. 244—100.

Blair Mfg. Co., Inc.: *See*—
Ryan, Kelly P. 3,345,042.

Blake, Edward S.: *See*—
De Bruaner, Ralph E., Blake, and Richardson. 3,345,435.

Blessinger, John A., G. L. Molvik, and R. C. Harris, to Aluminum Co. of America. Horizontal continuous casting apparatus. 3,344,845, 10–3–67, Cl. 164—274.

Blickman, S., Inc.: *See*—
Kelson, Lester. 3,344,756.

Bliss, George N.: *See*—
Peppler, William S., Bliss, and Planck. 3,344,954.

Bloch, Alfred, to Ethicon, Inc. Tubing fluid containing an amino acid. 3,345,306, 10–3–67, Cl. 252—403.

Block, Murry L., and A. H. Mones, to International Business Machines Corp. Electrical conductor material and method of making same. 3,345,158, 10–3–67, Cl. 75—108.

Bloom, Stefan A., and M. Denholts, to Dental Design Systems. Mixing capsule. 3,344,914, 10–3–67, Cl. 206—47.

Bocher, Dominique: *See*—
Bocher, Gustave M. J. 3,345,264.

Bocher, Gustave M. J., deceased, by D. Bocher, heir and attorney in-fact. Methods of suppressing anxiety employing sodium and iron salts of pyrrolidone carboxylic acid. 3,345,264, 10–3–67, Cl. 167—65.

Bodenseewerk Perkin-Elmer & Co., G.m.b.H.: *See*—
Konig, Eberhard, and Rodel. 3,344,851.

Bodine, Albert G. Low-impedance isolator for vibratory pile driver machines. 3,344,874, 10–3–67, Cl. 175—56.

Boettger, Harold E.: *See*—
Polhemus, Von D., Boettger, Isaacson, and Yew. 3,345,-060.

Bolesky, Richard C., to United States Rubber Co. Method of fastening. 3,344,504, 10–3–67, Cl. 29—432.2.

Bolte, Ronald P.: *See*—
Holden, Roy J., and Bolte. 3,344,895.

Bone, Evan P., deceased (by L. M. Bone, executrix), to J. Page Hayden. Head light having ellipsoidal reflector. 3,345,-510, 10–3–67, Cl. 240—41.3.

Bone, Leah M.: *See*—
Bone, Evan P. 3,345,510.

Bonnell, Roswell W. Suspension swing-hammock, convertible chair, and suspension swing-toy. 3,344,443, 10–3–67, Cl. 5—120.

Bonnin, Andre, and S. Yardamian, to Saint Gobain Techniques Nouvelles. Method of preparation of solution containing barium 137. 3,345,305, 10–3–67, Cl. 252—301.1.

Boone, Jack L.: *See*—
Badger, Robert E., and Boone. 3,345,491.

Boscarino, Joseph, Jr. Combined fire escape and flower box and the like. 3,344,886, 10–3–67, Cl. 182—70.

Bostrom, John D., to Illinois Tool Works Inc. Composite container package. 3,344,974, 10–3–67, Cl. 229—43.

Bottum, Edward W., and F. H. Rockwell, to Refrigeration Research Inc. Method of manufacture of a suction accumulator. 3,344,506, 10–3–67, Cl. 29—407.

Boughton, John H., to T. T. Boughton & Sons Ltd. Maximum safe load indicators for cranes. 3,344,934, 10–3–67, Cl. 212—55.

Boughton, T. T., & Sons Ltd.: *See*—
Boughton, John H. 3,344,934.

Bourgault, Pierre L., and J. Batelaan, to Johnson, Matthey and Mallory, Ltd. Solid electrolytic capacitor having minimum anode impedance. 3,345,545, 10–3–67, Cl. 317—230.

Bovagne, Rene, to Societe des Forges et Ateliers du Creusot. Chamber containing an internal agitator system. 3,345,043, 10–3–67, Cl. 259—102.

Bowen, Hamilton M., 40% to J. Anderson and to A. Einstein, V. Lustig, and H. Harris, 20% to National City, Calif. Hopping game apparatus with elevated elastic area subdividing strands. 3,345,068, 10–3–67, Cl. 273—1.

Boyajian, Myron J., to Allis-Chalmers Mfg. Co. Anticlog device for engine radiators. 3,344,854, 10–3–67, Cl. 165—119.

Boylan, Robert J.: *See*—
Smith, Tom R., and Boylan. 3,344,590.

Bosek, John S., to Continental Can Co., Inc. Resealable can. 3,344,945, 10–3–67, Cl. 220—53.

Brack, Karl, to Hercules Inc. Phosphorus-containing compositions and use thereof in the preparation of polyurethane foams and coatings. 3,345,310, 10–3–67, Cl. 260—2.5.

Brackett, Ralph C., to Fruehauf Corp. Pallet container. 3,344,-831. 10–3–67, Cl. 150—.5.

Bradford Cos., The: *See*—
Fell, Morris B., and Burdick. 3,345,031.

Brake, David G., to British Aircraft Corp. (Operating) Ltd. Displacement measuring system. 3,344,700, 10–3–67, Cl. 88—14.

Brandes, Guenther C. F. Basket container. 3,344,970, 10–3–67, Cl. 229—3.5.

Brats, Otto J., to American Chain & Cable Co., Inc. Roller bearing push-pull cable. 3,344,682, 10–3–67, Cl. 74—501.

Braun Aktiengesellschaft: *See*—
Messinger, Werner. 3,345,507.

Braun, Dieter, to Fortuna-Werke Spezialmaschinenfabrik AG. Cutting device. 3,344,627, 10–3–67, Cl. 69—10.

Braun, Gunther: *See*—
Merten, Rudolf, and Braun. 3,345,309.

Breuer, Heins. Device for testing the tensile strength of chains or the like. 3,344,661, 10–3–67, Cl. 73—95.5.

Bresa, Robert J.: *See*—
Huste, Arno, Bresa, and Kohler. 3,345,182.

Briner, Ross E. Soil sampling device. 3,344,875, 10–3–67, Cl. 175—170.

Brinkley, Amiel W., Jr., and J. F. Kilborn, to International Paper Co. Bleaching pulp without direct chlorination by bleaching with chlorine dioxide. 3,345,250, 10–3–67, Cl. 162—78.

Brinkman, Thomas J.: *See*—
Fogt, Thomas H., and Brinkman. 3,344,625.

Brinkmann, Ludwig: *See*—
Sommer, Siegfried, and Brinkmann. 3,345,329.

Bristol, Kenneth E.: *See*—
Endres, Herbert A., and Bristol. 3,345,323.

Bristol, Kenneth E., and J. D. Strang, to The Goodyear Tire & Rubber Co. Rubber compositions and process for making. 3,345,324, 10–3–67, Cl. 260—41.5.

Bristol-Myers Co.: *See*—
Price, Kenneth E., and Schmitz. 3,345,261.

British Aircraft Corp (Operating) Ltd.: *See*—
Brake, David G. 3,344,700.

British Petroleum Co. Ltd., The: *See*—
McGrath, Brian P., and Turner. 3,345,428.

British Railways Board: *See*—
Stone, George E., and Allenby. 3,345,637.

British Titan Products Co. Ltd.: *See*—
Binnis, Kenneth. 3,345,187.

Brookover, George B., and C. J. Hudecek, to Owens-Illinois, Inc. Preoxidation of stainless steel for glass-to-metal sealing. 3,345,218, 10–3–67, Cl. 148—6.35.

Brooks, Robert H. Tobacco barn loading apparatus. 3,344,-938. 10–3–67, Cl. 214—164.

Brouns, Harold G., to E. I. du Pont de Nemours and Co. Polymerizing lactam to polylactam with a substituted phosphorame cocatalyst. 3,345,340, 10–3–67, Cl. 260—78.

Broverman, Irwin: *See*—
Eichelman, George H., Jr., and Broverman. 3,345,156.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Anschutz, Herbert, and Wayss. 3,344,534.

Brown, David, to Halcon International, Inc. Preparation of ethyl chloride. 3,345,421, 10–3–67, Cl. 260—663.

Brown, George E. Card checker. 3,344,529, 10–3–67, Cl. 33—174.

Brown, Graydon L., R. E. Garten, Jr., and B. J. Thomas. Method and apparatus for analog/digital seismic signal processing. 3,345,608, 10–3–67, Cl. 340—15.5.

Brown, Herbert C. Catalytic process for preparing organoboron compounds from diborane. 3,345,418, 10–3–67, Cl. 260—606.5.

Brown, Marshall M. S., to United Data Control, Inc. Random access address selection apparatus. 3,345,624, 10–3–67, Cl. 340—174.1.

Brown, Robert V., to Reynolds Metals Co. Method of and apparatus for indicating anode positions. 3,345,273, 10–3–67, Cl. 204—1.

Brown Steel Tank Co.: *See*—
Gallup, Norman G. 3,344,947.

Browning, Earl E., and M. J. Perkovich, to General Foods Corp. Apparatus for attaching a backing to a fibrous body. 3,345,237, 10–3–67, Cl. 156—498.

Browning, William H., and E. D. Padgett, to United States of America, Army. Gyro-chronometer system for generating precise time base electrical signals and means responsive thereto for sequencing events. 3,345,520, 10–3–67, Cl. 307—88.5.

Brueckner, Gilbert M., to Vanant Co., Inc. Tubular cushioning member for packaging fragile articles. 3,344,916, 10–3–67, Cl. 206—62.

Brunner, Mihály, to The Swedish Ironmasters Assn. Jernkontoret. Dolomite sinter and a process of its production. 3,345,191, 10–3–67, Cl. 106—61.

Bryant Chucking Grinder: *See*—
Lillie, Gordon E. 3,344,560.

Bryant, Ensor A. Deceleration and stop light signalling equipment for motor vehicles. 3,345,477, 10–3–67, Cl. 200—81.5.

Bryant, Furnie S., Jr., to Sperry Rand Corp. Magnetron injection gun having a vaned negative control grid. 3,345,528, 10–3–67, Cl. 313—82.

Bryan, Morris M., Jr., to The Jefferson Mills, Inc. Apparatus for cleaning fibers. 3,344,479, 10–3–67, Cl. 19—65.

Bryan, Morris M., Jr., to The Jefferson Mills, Inc. Automatic fiber processing apparatus. 3,344,480, 10–3–67, Cl. 19—65.

Bucaram, Salim M., to Sinclair Research Inc. Method of inhibiting paraffin deposition in oil wells. 3,344,859, 10–3–67, Cl. 166—40.

Bucciconc, Dario, to Bucciconi Engineering Co., Inc. Magnetic strip conveyor. 3,344,645, 10–3–67, Cl. 72—251.

Bucciconi Engineering Co., Inc.: *See*—
Buccicone, Dario, 3,344,645.

Bucholtz, Daniel J., R. G. Hartman, C. S. Ingraham, J. A. Meyer, and M. V. Powers, to Sylvania Electric Products Inc. X-ray diffractometer control system. 3,345,613, 10–3–67, Cl. 340—172.5.

Buechler, Peter R.: *See*—
Kine, Benjamin B., Kalandiak, and Buechler. 3,345,203.

Buehl, Russell C., and R. Schempp, to Crucible Steel Co. of America. Methods and apparatus for producing metal ingots. 3,344,840, 10–3–67, Cl. 164—122.

Buffalo Brake Beam Co.: *See*—
Pelikan, George A. 3,344,893.

Bullard, E. D., Co.: *See*—
Raschke, Herbert A. 3,344,489.

Bunting, Earl L. Adjustable support means for a television receiver. 3,345,461, 10–3–67, Cl. 178—7.81.

Burdick, Connie J.: *See*—
Feil, Morris B., and Burdick. 3,345,031.

Burger, Alfred, to Smith Kline & French Laboratories. 1-amino-2(and 3) - phenylcyclobutane - 1 - carboxylic acids. 3,345,405, 10–3–67, Cl. 260—518.

Burgess, Glen W., and W. A. Williamson, to Clark Equipment Co. Synchronizing means for hydraulic cylinders. 3,344,940, 10–3–67, Cl. 214—394.

Burke Flexo Products Co.: *See*—
Petrs, John K. 3,344,550.
Peters, John K., and McClellan. 3,344,549.

Burlington Industries, Inc.: *See*—
Petree, David W. 3,344,597.

Burney, Charles F., to Sylvania Electric Products Inc. Electronic lock with inductively coupled tuned key card. 3,344,629, 10–3–67, Cl. 70—280.

Burroughs Corp.: *See*—
Jennings, Ermont V. 3,344,768.
Klinikowski, James J. 3,344,898.
Rayfield, Harry F. 3,345,007.

Bush, Henry J.: *See*—
Gordy, Irving, and Bush. 3,344,671.

Bustamante, Roberto L. Illuminating means. 3,345,474, 10–3–67, Cl. 200—60.

Butschli, Leonhard: *See*—
Kuhlkamp, Alfred, Zimmermann, and Butschli. 3,345,336.

Byck, Walter. Underwater observation bell chamber. 3,344,614, 10–3–67, Cl. 61—69.

Byers, Jean: *See*—
Paganini, Valentine. 3,344,821.

Bylund, Linton D., F. B. Rethwisch, and W. P. Woosley, to Reynolds Metals Co. Apparatus for production of fire sphenical metal particles. 3,344,469, 10–3–67, Cl. 18—2.5.

C & O Industries: *See*—
Officer, Lloyd S., and Caples. 3,344,516.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Bellenger, Michel. 3,345,534.
Charles, Daniel R. 3,345,534.

Cahoy, Roger P., and D. M. Coyne, to Gulf Oil Corp. Novel oxidation catalyst compositions and processes. 3,345,417, 10–3–67, Cl. 260—604.

Cailley, Jean-Pierre: *See*—
Lafon, Guy P., and Cailley. 3,345,211.

Calcimatic International Ltd.: *See*—
Hall, Hubert L. 3,345,052.

Callies, Domijipque: *See*—
Barnabe, Jean-Louis, Callies, and Loveque. 3,344,926.

Calor Appareils Electro-Domestiques: *See*—
Trouilhet, Maurice M. A. 3,344,541.

Caloric Corp.: *See*—
Myler, George W., and Clark. 3,344,736.

Calvin, Joseph W.: *See*—
Peterson, Don W., Kovac, Calvin, and Puse. 3,345,109.

Cameo Container Corp.: *See*—
Mason, James J. 3,344,976.

Cameron, Alan F. Apparatus for forming an interproximal interlock. 3,344,842, 10–3–67, Cl. 164—236.

Cameron Machine Co.: *See*—
Rockstrom, Leonard. 3,345,009.

Cammack, William R., and V. C. Olson, to Marigold Foods, Inc. Device for making confections. 3,344,751, 10–3–67, Cl. 107—1.

Campbell, Harold M.: *See*—
Dotson, Charles R., and Campbell. 3,345,174.

Campbell, Robert W., to Chevron Research Co. Cyclic sulfide process. 3,345,381, 10–3–67, Cl. 260—329.

Candor, James T.: *See*—
Candor, Robert R. and J. T. 3,344,447.

Candor, Robert R. and J. T. Material treating machine and method. 3,344,447, 10–3–67, Cl. 8—159.

Canon Camera Kabushiki Kaisha: *See*—
Taguchi, Tatsuya. 3,344,724.

Caples, I. D.: *See*—
Officer, Lloyd S., and Caples. 3,344,516.

Capuzzi, Rosemary A.: *See*—
Hanifin, John W., Jr., Capuzzi, and Cohen. 3,345,372.

Carborundum Co., The: *See*—
Miccioli, Bruno R. 3,345,160.

Carey, Donald F., to United States of America, Air Force. Mandrel casting solid propellant rocket fuel. 3,345,438, 10–3–67, Cl. 264—3.

Carlick, Daniel J.: *See*—
McFarlane, Samuel B., Jr., Carlick, and Ostock. 3,345,162.

Carman, Kenneth K.: *See*—
Kimmel, Joseph J., and Carman. 3,345,093.

Carnahan, William M.: *See*—
Messer, Elmer S., and Carnahan. 3,344,924.

Carriere, Pierre P. A., L. F. Jumelle, G. J.-L. Ranvier, and G. Richter, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation and Office National d'Etudes et de Recherches Aerospatiales dit: O.N.E.R.A. Silencers for jet propulsion engines or the like. 3,344,881, 10–3–67, Cl. 181—51.

Cary, Francis H., to The New York Air Brake Co. Combined butterfly and check valve. 3,344,808, 10–3–67, Cl. 137—599.2.

Case, J. I., Co.: *See*—
Horsch, Rudolf, and Michael. 3,345,801.

Castellion, Mary E.: *See*—
Grayson, Martin, Sherr, Gillham, and Castellion. 3,345,392.

Casterline, Burnham, R. H. Chapman, and R. V. Eschbaugh, to Motorola, Inc. Electronic control circuit including counter for selectively actuating one of a plurality of units. 3,345,569, 10–3–67, Cl. 325—25.

Casutt, Maximilian: *See*—
Lehrer, Fritz, and Casutt. 3,344,807.

Celanese Coatings Co.: *See*—
Cline, Oliver I., Jr. 3,345,312.

Central Research Laboratories, Inc.: *See*—
Jelatis, Demetrius G., and Chesley. 3,344,933.

Central Specialties Co.: *See*—
Schaefer, Edward E. 3,344,966.

Cereghino, Manuel J.: *See*—
Allison, John R., and Cereghino. 3,345,154.

Cerow, Joseph A., Jr., to Crane Co. Actuating means adapter for quarter-turn valves. 3,344,683, 10–3–67, Cl. 74—526.

Chabala, Leonard V., and E. J. Rogers, to S & C Electric Co. High voltage gas type circuit interrupters in tandem with a center break disconnecting switch. 3,345,473, 10–3–67, Cl. 200—48.

Chamberlin, Leo A., Jr., to Texas Instruments Inc. Phased array radar antenna scan control. 3,345,631, 10–3–67, Cl. 343—100.

Chambers, Rex, ½ to H. R. Stasney. Apparatus for determining the composition of multiphase fluids. 3,344,659, 10–3–67, Cl. 73—61.1.

Chanak, Thomas S., L. D. Edinger, and R. C. Hendrick, to Honeywell Inc. Dirigible craft control apparatus. 3,345,018, 10–3–67, Cl. 244—77.

Chang, Edward H.: *See*—
Wolgien, Herbert R., and Chang. 3,345,217.

Chang, Leo S., R. B. Lund, A. C. Pierce, and E. Turi, to Allied Chemical Corp. Stabilized chlorinated polyethylenes containing boron compounds. 3,345,328, 10–3–67, Cl. 260—45.75.

Chapman, George W. A.: *See*—
Mathew, Leonard S., and Chapman. 3,344,941.

Chapman, Ronald H.: *See*—
Casterline, Burnham, Chapman, and Eschbaugh. 3,345,569.

Charles, Daniel R., to CSF-Compagnie Generale de Telegraphie Sans Fil. Light amplifier with non-linear response to provide improved contrast characteristic. 3,345,534, 10–3–67, Cl. 315—12.

Charles, Pierre, C. Prevost, and O. Testard, to Commissariat a l'Energie Atomique. Device for connecting and sealing-off between two sections of pipeline for conveying liquefied gas. 3,344,803, 10–3–67, Cl. 137—375.

Cheesman, Harry: *See*—
Phillipson, Alan, Spiller, Smith, and Cheesman. 3,345,075.

Cheroff, George: *See*—
Reisman, Arnold, Berkenblit, Papazian, and Cheroff. 3,345,223.

Cheroff, George, and A. Reisman, to International Business Machines Corp. Growth control of disproportionation process. 3,345,209, 10–3–67, Cl. 117—201.

Chesley, Frank G.: *See*—
Jelatis, Demetrius G., and Chesley. 3,344,933.

Chesney, John, to General Instrument Corp. Annular piezoelectric filter with arcuate electrodes. 3,345,588, 10–3–67, Cl. 333—72.

Chester, William T. Diffusion-pump construction. 3,344,979, 10–3–67, Cl. 230—101.

Chestnut, Billy D. Fisherman's accessory. 3,344,551, 10–3–67, Cl. 43—55.

Chetwynd, Earl G.: *See*—
Griffin, Anthony L., and Chetwynd. 3,344,543.

Chevron Research Co.: *See*—
Campbell, Robert W. 3,345,381.
Ferm, Richard L., and Schmidt. 3,344,721.
Koundakjian, Theodore H., and Dreher. 3,345,291.
McAuliffe, Clayton D. 3,345,137.

Chisholm, James M., to Emery Industries, Inc. Drycleaning process in which garments are initially contacted with an organic solvent-water-detergent concentrate. 3,345,128, 10–3–67, Cl. 8—142.

Christian, Carl F., to General Dynamics Corp. Automatic slope control for arc welding machines. 3,345,558, 10–3–67, Cl. 323—75.

Christie, David E., and K. E. Winquist, to OECO Corp. Moving carriage mechanical berry harvester with rotationally oscillative shakers. 3,344,591, 10–3–67, Cl. 56—330.

Christol, Guy F. M., to Compagnie des Machines Bull (Societe Anonyme). Phase modulation binary recording system. 3,345,638, 10–3–67, Cl. 346—74.

Chrysler Corp.: *See*—
Schaber, Ralph F. 3,345,479.

Chung, Sse-Yuen, to Sonca Industries Ltd. Flashlight formed of two molded parts. 3,345,508, 10–3–67, Cl. 240—10.65.

Churchill, Bradford: *See*—
Freifeld, Milton, and Churchill. 3,345,289.

Ciba Ltd.: *See*—
Duerr, Dieter, Aebi, and Ebner. 3,345,257.

Ciceri, Luigi: *See*—
Siclari, Francesco, Bellano, Ciceri, d'Alo, Perazzoni, and Giacobone. 3,345,445.

Clair, Thomas E., to United States Steel Corp. Apparatus for stopping air flow into blast furnaces. 3,345,053, 10–3–67, Cl. 266—30.

Clark, Edgar L., to Commercial Solvents Chemical Corp. Water-soluble nonconjugated oil-modified maleic alkyd resins and method of preparing such compositions. 3,345,314, 10–3–67, Cl. 260—22.

Clark Equipment Co.: *See*—
Burgess, Glen W., and Williamson. 3,344,940.
Frost, Barry L. 3,344,688.
Zeller, Burton S. 3,344,679.

Clark, Harold E.: *See*—
Lautsenhiser, Argyle G., and Clark. 3,344,676.

Clark, Peter J., to United Kingdom Atomic Energy Authority. Heat exchange assembly including guide vane structure therein. 3,344,855, 10–3–67, Cl. 165—159.

Clark, Robert A.: *See*—
Myler, George W., and Clark. 3,344,736.

Clary Corp.: *See*—
Cunningwell, Nathaniel. 3,344,722.

Claycomb, Jackson R., to Baker Oil Tool, Inc. Stage set well packers. 3,344,861, 10–3–67, Cl. 166—120.

Cline, Oliver I., Jr., to Celanese Coatings Co. Acrylamide modified oils. 3,345,312, 10–3–67, Cl. 260—21.

Clinton Engines Corp.: *See*—
Tuggle, Lloyd H. 3,345,045.

Cloud, Charles E., J. R. George, and L. N. Krohn, to Cloud Machine Corp. Method and apparatus for packaging. 3,344,576, 10–3–67, Cl. 53—28.

Cloud Machine Corp.: *See*—
Cloud, Charles E., George, and Krohn. 3,344,576.

Cobaugh, Robert F., and M. A. Shrock, to AMP Inc. Mounting and connecting means for circuit devices. 3,345,541, 10–3–67, Cl. 317—101.

Cody, Arthur: *See*—
Tijsmann, Willem B., and Cody. 3,344,869.

Coes, Loring, Jr., to Norton Co. Wheel size control. 3,344,657, 10–3–67, Cl. 73—37.6.

Coffey, Eugene R. Conduit burying attachment. 3,344,615, 10–3–67, Cl. 61—72.6.

Comeld, Thomas H.: *See*—
Klopfer, Oskar E. H., and Comeld. 3,345,144.

Cogswell, George W., and L. P. Hayes, to A. E. Staley Mfg. Co. Non-woven fabric prepared with methylol amides of and adduct formed between a maleyl compound and ethylenically unsaturated aliphatic compound. 3,345,207, 10–3–67, Cl. 117—140.

Cohen, Abraham B., and J. A. Sincius, to E. I. du Pont de Nemours and Co. Silver image transfer polymerization process. 3,345,164, 10–3–67, Cl. 96—28.

Cohen, Elliott: *See*—
Hanifin, John W., Jr., Capuzzi, and Cohen. 3,345,372.

Cohen, Stanley A. Electrical plug key lock. 3,345,603, 10–3–67, Cl. 339—179.

Colby, Richard H., to United States of America, Army. Spring actuated feeding mechanism for use with push-through-type cartridge links. 3,344,712, 10–3–67, Cl. 89—33.

Colclaser, Robert G., Jr., and C. F. Cromer, to Westinghouse Electric Corp. Blast-valve operation for gas-blast circuit breakers having two current-responsive means. 3,345,486, 10–3–67, Cl. 200—148.

Cole, Donald A., C. R. Corson, and A. C. Stocker, to Radio Corp. of America. Digital storage and generation of video signals. 3,345,458, 10–3–67, Cl. 178—6.8.

Cole, Douglas L.: *See*—
Martin, Gerald E., and Cole. 3,344,573.

Cole, E. K., Ltd.: *See*—
Jackson, John A. 3,345,023.

Colgan, Joseph D., and J. M. Witheford, to American Cyanamid Co. Preparation of extruded catalysts and catalyst supports containing polyacrylamide. 3,345,319, 10–3–67, Cl. 260—29.6.

Colgate-Palmolive Co.: *See*—
Spangler, William G. 3,344,626.

Collinge, James N., and R. V. Evans, to Singer-Cobble Ltd. Rollers for use in the conveyance of endless webs. 3,344,969, 10–3–67, Cl. 226—190.

Collins Radio Co.: *See*—
Fenwick, Richard C., and Markley. 3,345,635.
Wilkinson, George C., Jr. 3,345,579.

Collins, Richard A., to United States of America, Interior. Multiple effect purification of contaminated fluids by direct gaseous flow contact. 3,345,272, 10–3–67, Cl. 203—11.

Colonial Sugar Refining Co. Ltd., The: *See*—
Dibdin, Robert W. 3,345,441.

Columbian Carbon Co.: *See*—
Kmiecik, James E. 3,345,356.

Commercial Solvents Chemical Corp.: *See*—
Clark, Edgar L. 3,345,314.

Commissariat a l'Energie Atomique: *See*—
Avril, Michel, Moreau, and Pages. 3,345,616.
Charles, Pierre, Prevost, and Testard. 3,344,803.
Stohr, Jacques A. 3,344,506.

Commissioner for Railways, The: *See*—
Dempsey, Terence P. and Shkardoon. 3,345,513.

Compagnie de Saint-Gobain: *See*—
Raffet, Michel. 3,344,917.

Compagnie des Machines Bull (Societe Anonyme): *See*—
Christol, Guy F. M. 3,345,638.

Conger, Robert P.: *See*—
Jecker, Justin J., and Conger. 3,345,234.

Congoleum-Nairn Inc.: *See*—
Jecker, Justin J., and Conger. 3,345,234.

Connard, John M., to Illinois Tool Works Inc. Method of selectively hardening a corrosion resistant part and the article produced thereby. 3,344,817, 10–3–67, Cl. 148—12.1.

Connelly, Edward J., R. Martin, and M. B. Davis, to Otis Elevator Co. Elevator car, its machine room, and an elevator traveling cable including both electrical and fluid conductors connected therebetween. 3,344,888, 10–3–67, Cl. 187—1.

Conrad, Martin B. Combined tubing anchor collar locator and swivel. 3,344,862, 10–3–67, Cl. 166—216.

Consolidated Papers, Inc.: *See*—
Robinson, Roderick K., and Haese. 3,344,972.

Container Corp. of America: *See*—
Wolowicz, Richard S., Kossnar, and Oller. 3,344,911.

Continental Can Co., Inc.: *See*—
Bozek, John S. 3,344,945.
Kocian, Ralph B., and Gamble. 3,344,904.
Zipper, Donald H. 3,344,943.

Continental Oil Co.: *See*—
Biechler, Donald G., and Jordan. 3,345,126.
Doty, William E. N. 3,345,504.

Continental Transport Appliances Ltd.: *See*—
Dorey, George B. 3,344,748.

Converse, Keith C. Clamp for bearing cages. 3,344,490, 10–3–67, Cl. 24—248.

Cook Electric Co.: *See*—
Paddock, Alvin F., and Summers. 3,345,542.

Cooke, Ruth M.: *See*—
Cooke, Ted E. and R. M. 3,345,036.

Cooke, Ted E.; deceased by R. M. Cooke, executrix, to O. F. Jurgens, Staple extractor. 3,345,036, 10–3–67, Cl. 254—28.

Cooper, Robert N., to American Photocopy Equipment Co. Developer mix for electrostatic printing. 3,345,294, 10–3–67, Cl. 252—62.1.

Coran, Aubert Y.: *See*—
Anagnostopoulos, Constantine E., and Coran. 3,345,400.

Corinthian Cornice Systems, Inc.: *See*—
Anderson, Philip R. 3,344,561.
Miles, Russel T., and Anderson. 3,344,562.
Miles, Russel T., Anderson, and Reddie. 3,344,563.
Miles, Russel T., Anderson, and Reddie. 3,344,566.

Corman, Julian, to Grain Processing Corp. Process of purifying a transglucosidase and glucomylase-containing fungal enzyme preparation. 3,345,268, 10–3–67, Cl. 195—31.

Cornell Aeronautical Laboratory, Inc.: *See*—
Schneider, Clayton J., Jr. 3,344,742.

Corning Glass Works: *See*—
Ihrig, Allen C. 3,345,150.

Corry Jamestown Corp.: *See* —
Hasbrouck, Gene B. 3,344,795.

Corson, Carl R.: *See*—
Cole, Donald A., Corson, and Stocker. 3,345,458.

Cottell, Eric C. Rotating liquid whistle. 3,344,766, 10–3–67, Cl. 116—137.

Cotten, Robert L. Basement drain conduit. 3,344,569, 10–3–67, Cl. 52—287.

Cotter, Richard W., to United States of America, Army. Continuity field test bridge circuit with diode-controlled visual indicator means. 3,345,565, 10–3–67, Cl. 324—51.

Council for Scientific and Industrial Research: *See*—
Pugh, Hubert L. D. 3,344,636.

Cowan, John D., and C. C. Waldbillig, ½ to C. Jinkens. Void drain for box beams. 3,344,567, 10–3–67, Cl. 52—99.

Cowley, Clement W.: *See*—
Rinfret, Arthur P., Cowley, and Timson. 3,344,617.

Cowsert, Charles A., to Monarch Molding, Inc. Machine for crimping metal connectors. 3,344,499, 10–3–67, Cl. 29—203.

Cox, Fred B., Jr., and P. O. Lindfors, to United States of America, Air Force. Digital data processing apparatus. 3,345,617, 10–3–67, Cl. 340—172.5.

Coyne, Donald M.: *See*—
Cahoy, Roger P., and Coyne. 3,345,417.

Craig, Richard A., to United States of America, Atomic Energy Commission. Process of making uranium mononitride nuclear fuel. 3,345,436, 10–3–67, Cl. 264—.5.

Cramer, Lester W.: *See*—
Kovacik, Stephen, and Cramer. 3,344,968.

Crane, Bertram F. Electric razor with male and female polygonal cutting elements. 3,344,517, 10–3–67, Cl. 30—41.9.

Crane Co.: *See*—
Cerow, Joseph A., Jr. 3,344,683.
Fife, Robert J. 3,344,904.

Crane Packing Co.: *See*—
Novosad, Eugene. 3,345,077.
Wheelock, Edward A. 3,345,076.

Crawford, David C., to Institutional Industries, Inc. Side panel construction for stretcher-beds. 3,344,445, 10–3–67, Cl. 5—331.

Crawford, Richard B. Load transfer and elevating device. 3,344,902, 10–3–67, Cl. 198—96.

Creative Packaging Inc.: *See*—
Gervais, Norman A. 3,344,961.
Cromer, Charles F.: *See*—
Colclaser, Robert G., Jr., and Cromer. 3,345,486.
Crosley Broadcasting Corp.: *See*—
Rockwell, Ronald J. 3,345,562.
Crouzet, Henri, to Ateliers Roannais de Constructions Textiles. Cam follower. 3,344,685, 10–3–67, Cl. 74—560.
Crouzet, Valence (Drome): *See*—
Jullien-Davin, Jean. 3,344,707.
Crowell, Ernest M., to United Shoe Machinery Corp. Manufacture of strong fibrous material. 3,345,201, 10–3–67, Cl. 117—66.
Crowley, Richard P.: *See*—
Merrill, Robert F., and Crowley. 3,344,582.
Crucible Steel Co. of America: *See*—
Buehl, Russell C., and Schempp. 3,344,840.
Crum, Harry O.; 33⅓% to J. J. Kelley, Jr., and 33⅓% to W. Kehres. Vertical excavator. 3,344,539, 10–3–67, Cl. 37—103.
Cruz, Mamerto M., Jr., to FMC Corp. Method of purifying cellulose crystallite aggregates. 3,345,357, 10–3–67, Cl. 260—212.
Cumberland, Joseph M. Knock-off type wheel retainers. 3,345,110, 10–3–67, Cl. 301—9.
Cummings, David M. Desk for use in vehicle. 3,345,118, 10–3–67, Cl. 312—236.
Cunningwell, Nathaniel, to Clary Corp. Data recorder. 3,344,722, 10–3–67, Cl. 96—4.5.
Cutters Machine Co., Inc.: *See*—
Martin, Thomas W., Sr. 3,345,011.
Cutting Room Appliances Corp.: *See*—
Merrill, Edward M. 3,345,062.
Dahlgren, Jons A., to AB Rosenblads Patenter. Steam generator arrangement heated by reactor water from a nuclear reactor. 3,344,776, 10–3–67, Cl. 122—32.
Daimler-Benz Aktiengesellschaft: *See*—
Bensinger, Wolf-Dieter. 3,344,778.
Naumann, Fritz. 3,344,689.
Dai Nippon Seito Kabushiki Kaisha: *See*—
Yamaji, Goro, and Obtake. 3,344,796.
Daiwa Boseki Kabushiki Kaisha: *See*—
Morikawa, Takashi, Aoki, Nakamura, Maruyama, and Sakurai. 3,344,593.
D'Alo, Bruno: *See*—
Sicleri, Francesco, Bellano, Cicerl, D'Alo, Perazzoni, and Giacobone. 3,345,445.
Darin & Armstrong, Inc.: *See*—
Debona, John V. M. 3,344,931.
Darnell, James R.: *See*—
Martini, Richard W., and Darnell. 3,345,197.
Darnell, Rex C., to Michigan Dynamics, Inc. Purifier. 3,344,927, 10–3–67, Cl. 210—360.
Dauser, William C. Multi-color lamp. 3,345,509, 10–3–67, Cl. 240—20.
Davidowich, George: *See*—
Leeds, Morton W., and Davidowich. 3,345,298.
Davidowich, George, and M. W. Leeds, to Air Reduction Co., Inc. Corrosion inhibition with morpholinopropyne. 3,345,299, 10–3–67, Cl. 262—148.
Davies, David O., and A. Parker, to Rolls-Royce Ltd. Fuel purging system for gas turbine engines. 3,344,602, 10–3–67, Cl. 60—39.28.
Davies, Evan D. Water saving device for water closets. 3,344,439, 10–3–67, Cl. 4—40.
Davis, Donald M., A. J. Schreiber, and H. W. Sherman, to Avisun Corp. Film manufacture. 3,344,474, 10–3–67, Cl. 18—15.
Davis, Meredith R.: *See*—
Connelly, Edward J., Martin, and Davis. 3,344,888.
Davis, Richard M. Teaching apparatus. 3,344,536, 10–3–67, Cl. 35—48.
Davison, Joseph W.: *See*—
Hutto, John F., Dixon, Davison, Ayres, Renberg, and Queen. 3,345,285.
Davy and United Engineering Co. Ltd.: *See*—
Howard, David R., Stubbs, and Swallow. 3,344,643.
Shearn, John U. 3,345,014.
Dawe's Laboratories, Inc.: *See*—
Monroe, Charles H., and Ward. 3,345,178.
Day, Paul T., Jr., to Inland Steel Products Co. Building construction system and components therefor. 3,344,571, 10–3–67, Cl. 52—376.
De Angelis, Armand, to Omnitech, Inc. Adjustable nosepiece for eyeglass frame. 3,345,121, 10–3–67, Cl. 351—130.
Debona, John V. M., to Darin & Armstrong, Inc. Mobile crane. 3,344,931, 10–3–67, Cl. 212—8.
De Brunner, Ralph E., E. S. Blake, and G. A. Richardson, to Monsanto Research Corp. Fluorine-containing phosphinates. 3,345,495, 10–3–67, Cl. 260—961.
Decca Ltd.: *See*—
Phillipson, Alan. 3,344,632.
Phillipson, Alan, Spiller, Smith, and Cheesman. 3,345,075.
Decker, Hanns, and H. Stöckmann, to Klöckner-Humboldt-Deutz Aktiengesellschaft. Suspended-spindle gyratory crusher with means to adjust the spindle. 3,345,000, 10–3–67, Cl. 241—209.
Decker, Richard J., to Electrographic Corp. Universal lens mounting. 3,344,708, 10–3–67, Cl. 88—24.
De Forest, Wesley V., to Robertshaw Controls Co. Thermostatic control device. 3,344,850, 10–3–67, Cl. 165—26.
De Gasperis, Franco, to Societa Nazionale Delle Officine di Sarigliano. Crab funway for an overhead travelling crane. 3,344,932, 10–3–67, Cl. 212—18.
Deibel, Raymond A., and W. C. Riester, to Trico Products Corp. Wiper arm. 3,344,458, 10–3–67, Cl. 15—250.35.
Delaney, Ronald A., and K. J. Puttlitz, to International Business Machines Corp. Hygrometer and method of fabrication. 3,345,596, 10–3–67, Cl. 338—35.
Delfs, Detlef: *See*—
Pelster, Heinrich, Muhlbauer, and Delfs. 3,345,394.
Delsenne, Gerard A.: *See*—
Laridon, Urbain L., and Delsenne. 3,345,171.
Dempsey, Terence P., and K. A. Shkardoon, to The Commissioner for Railways. Alerting systems for vehicle crews. 3,345,513, 10–3–67, Cl. 246—182.
Demsky, Arthur H. Edger saw. 3,344,823, 10–3–67, Cl. 143—140.
Denholtz, Melvin: *See*—
Bloom, Stefan A., and Denholtz. 3,344,914.
Dental Design Systems: *See*—
Bloom, Stefan A., and Denholtz. 3,344,914.
Design and Mfg. Corp.: *See*—
Duncan, Thomas W., and Perin. 3,344,957.
Detert, Klaus, to Vacuumschmelze Aktiengesellschaft. Method for producing magnetic sheets of silicon-iron alloys. 3,345,219, 10–3–67, Cl. 148—112.
Deutsche Edelstahlwerke Aktiengesellschaft: *See*—
Rossing, Alexander V. 3,344,846.
Deutsche Erdol-Aktiengesellschaft: *See*—
Lange, Hans. 3,344,856.
Dexter, Martin, and K. D. Schafer, to Celgy Chemical Corp. Stabilisation of propylene. 3,345,327, 10–3–67, Cl. 260—45.85.
Diamant, Frederick J. Footwear. 3,344,537, 10–3–67, Cl. 36—2.5.
Diamond, Benjamin A., to Valve Corp. of America. Dispensing valve construction. 3,344,964, 10–3–67, Cl. 222—511.
Diamond International Corp.: *See*—
Peppler, William S., Bliss, and Planck. 3,344,954.
Dian, William. Optical projector with projection lens adjustment means. 3,344,706, 10–3–67, Cl. 88—24.
Dibdin, Robert W., to The Colonial Sugar Refining Co. Ltd. Hardboard pressing methods and apparatus. 3,345,441, 10–3–67, Cl. 264—40.
Dick, A. B., Co.: *See*—
Ormsbee, Ruth E. 3,344,741.
Dickoré, Karlfried, R. Wegler, and K. Sasse, to Farbenfabriken Bayer Aktiengesellschaft. Certain oxathiazole and dithiazole derivatives. 3,345,374, 10–3–67, Cl. 260—294.8.
Dietert, Harry W., Co.: *See*—
Dietert, Harry W. 3,344,877.
Dietert, Harry W., to Harry W. Dietert Co. Granular material weigher compensated for changes in material properties besides weight. 3,344,877, 10–3–67, Cl. 177—64.
Digitronics Corp.: *See*—
Wolf, Edgar. 3,345,610.
Diolot, Lucien E., to Societe Nouvelle Spidem. Equipment for starting the winding of a strip. 3,344,638, 10–3–67, Cl. 72—148.
Di Piazza, Gerald C., to Bell Telephone Laboratories Inc. Transmission line type microwave filter. 3,345,589, 10–3–67, Cl. 333—73.
Distillers Co. Ltd., The: *See*—
Scovell, Peter E. 3,344,746.
Dixon, Rolland E.: *See*—
Hutto, John F., Dixon, Davison, Ayres, Renberg, and Queen. 3,345,285.
Dollinger Corp.: *See*—
Wilber, Paul F. 3,344,814.
Dolliver, Morris A.: *See*—
Donovick, Richard, Heuser, and Dolliver. 3,345,375.
Dommann, Gunther, M. Floter, and K. Becker, to Gewerkschaft Eisenhutte Westfalia. Self-traveling propping apparatus. 3,344,610, 10–3–67, Cl. 61—45.
Domtar Ltd.: *See*—
Walker, Richard W. C. 3,344,971.
Donnelley, R. R., & Sons Co.: *See*—
Swanson, Kermit E. 3,345,063.
Donovick, Richard, L. J. Heuser, and M. A. Dolliver, to E. R. Squibb & Sons, Inc. 3-lower alkyl-5-(4-pyridyl)-isoxazole-4-carbonyl derivatives. 3,345,375, 10–3–67, Cl. 260—295.
Dorey, George B., to Continental Transport Appliances Ltd. Hopper car discharge outlet assembly. 3,344,748, 10–3–67, Cl. 105—282.
Dorner, Richard L. Surgical suturing device with auxiliary spool-brake means. 3,344,790, 10–3–67, Cl. 128—340.
Dortmund-Horder Hullenumion Aktiengesellschaft: *See*—
Kutscher, Horst, and Vopel. 3,345,035.
Dotson, Charles R., and H. M. Campbell, to United States of America, Air Force. Rapid access photographic process. 3,345,174, 10–3–67, Cl. 96—61.
Doty, William E. N., to Continental Oil Co. Apparatus for determining the degree of coherence between two signals. 3,345,504, 10–3–67, Cl. 235—181.
Dougherty, John J.: *See*—
Baittinger, Jack R. 3,344,873.
Doutt, Joseph L. Coupling for release at pre-determined load. 3,344,487, 10–3–67, Cl. 24—201.
Dow Chemical Co., The: *See*—
Langer, Horst G. 3,345,391.
Lee, John M. 3,345,153.
Palfey, Albert J. 3,344,574.
Sheahan, James P. 3,345,246.
Sonnabend, Lawrence F. 3,345,330.
Tolgyesi, William S. 3,345,423.
Van Horne, Beverley H., and Hanson. 3,344,656.
Dow Corning Corp.: *See*—
Simpson, Billy G. 3,345,195.
Dratwa, Heinrich: *See*—
Kruel, Martin, Juentgen, and Dratwa. 3,345,125.
Drauglis, Clyde O.: *See*—
Turner, Roger S., and Drauglis. 3,345,567.

Drees, Joseph M., and T. R. Sherwood, to Sylvania Electric Products Inc. Method of making grid. 3,344,495, 10–3–67, Cl. 29—25.14.
Dreher, John L.: *See*—
Koundakjian, Theodore H., and Dreher. 3,345,291.
Dreisin, Alexander, and J. Terrell, to Allis-Chalmers Mfg. Co. Stroboscopic means for timing fuel injection. 3,344,663, 10–3–67, Cl. 73—119.
Dresser Industries, Inc.: *See*—
Podbielniak, Walter J. 3,344,983.
Podbielniak, Walter J., and Todd. 3,344,981.
Todd, David B. 3,344,982.
Drillick, Jacob H., to Ohr-Tronics, Inc. Punched ticket printer. 3,344,739, 10–3–67, Cl. 101—69.
Drop, Joseph G., to International Business Machines Corp. Chip orienting control circuit for a chip positioning machine. 3,344,900, 10–3–67, Cl. 198—33.
Drug Research, Inc.: *See*—
Paterson, Laurene O. 3,345,371.
Dubbe, Richard F., to Minnesota Mining and Mfg. Co. Evacuatable chamber seal for electron beam recorder. 3,345,639, 10–3–67, Cl. 346—110.
Dudley, Michael D., to Ferranti, Ltd. Information display systems utilizing a metachromic display screen. 3,345,459, 10–3–67, Cl. 178—7.5.
Duerr, Dieter, H. Aebi, and L. Ebner, to Ciba Ltd. Method for combatting microorganisms. 3,345,257, 10–3–67, Cl. 167—33.
Duncan, Thomas W., and C. N. Perin, to Design and Mfg. Corp. Dispensing mechanism. 3,344,957, 10–3–67, Cl. 222—70.
Dunlap, Henry F.: *See*—
Styring, Ralph E., Dunlap, and Rogers. 3,344,583.
Dunlap, Isaac R., to Johnson & Johnson. Process of impregnating an instantaneously wettable paper with a rubber latex. 3,345,204, 10–3–67, Cl. 117—102.
Dunne, Peter F., to Ampex Corp. Step motor control system including a three stage energization for each step. 3,345,547, 10–3–67, Cl. 318—138.
Dupage Metal Products, Inc.: *See*—
Vanoni, Otto V. 3,345,238.
Du Pont de Nemours, E. I., and Co.: *See*—
Angelo, Rudolph J. 3,345,333.
Angelo, Rudolph J. 3,345,334.
Angelo, Rudolph J. 3,345,342.
Brouns, Harold G. 3,345,340.
Cohen, Abraham B., and Sinclus. 3,345,164.
Hoeschele, Guenther K. 3,345,412.
Luckenbaugh, Raymond W. 3,345,155.
Martin, Kenneth V. 3,345,325.
Pagano, Alfred H., and Spiegler. 3,345,413.
Reese, Millard G., Jr. 3,345,331.
Strohmaier, Alfred J. 3,345,290.
Tiets, Raymond F. 3,345,343.
Duran, Magin D. Looms with stationary weft supply. 3,344,812, 10–3–67, Cl. 139—123.
Durell Products Inc.: *See*—
Martin, Gerald E., and Cole. 3,344,573.
Dyfoam Corp.: *See*—
Oxel, Berton. 3,345,442.
Dynamics Corp. of America: *See*—
Smith, Peter. 3,345,517.
Dynamit Nobel Aktiengesellschaft.: *See*—
Achterberg, Arno, Gormar, and Kleefisch. 3,344,473.
Bingmann, Waldemar, and Behr. 3,344,990.
EBS Inc.: *See*—
Schweitzer, Edward F. 3,345,212.
Eachus, Joseph J., to Honeywell Inc. Control signal generator for a computer apparatus. 3,345,611, 10–3–67, Cl. 340—172.5.
Eaman, Edmund B., and W. R. Rickel, to Whirlpool Corp. Bi-directional flow control conduit. 3,344,623, 10–3–67, Cl. 68—12.
Eastern Fabricating Co., Inc.: *See*—
McClive, Ralph T. 3,344,494.
Eastern Products Corp.: *See*—
Pomory, Alexander M. 3,344,641.
Znamirowski, Henry 3,344,463.
Eastman Kodak Co.: *See*—
Evans, Francis J., and Gates. 3,345,170.
Martin, James C. 3,345,402.
McCall, Marvin A., and Shearer. 3,345,351.
McGuckin, Hugh G. 3,345,169.
Munro, Howard E. 3,345,173.
Reynolds, Delbert D. 3,345,346.
Reynolds, Delbert D., and Fields. 3,345,415.
Tholstrup, Clarence E. 3,345,328.
Wagner, Hans M., and Przedziecki. 3,345,168.
Wilson, Burton D. 3,345,177.
Ebbinge, Willem, to North American Philips Co. Inc. Automatic washing machine program controller. 3,344,624, 10–3–67, Cl. 68—12.
Eberhard, John F., F. T. Friedl, and K. H. Stephens, to Eberhard-Stephens Laboratories, Inc. Method for detecting pregnancy. 3,345,138, 10–3–67, Cl. 23—230.
Eberhard-Stephens Laboratories, Inc.: *See*—
Eberhard, John F., Friedl, and Stephens. 3,345,138.
Eberle, Allan R., M. W. Lerner, and L. J. Pinto, to United States of America, Atomic Energy Commission. Process for recovering boron values from scrap materials. 3,345,127, 10–3–67, Cl. 23—59.
Ebner, Ludwig: *See*—
Duerr, Dieter, Aebi, and Ebner. 3,345,257.
Eddy, Joseph J. Power plant. 3,344,600, 10–3–67, Cl. 60—1.
Edinger, Lester D.: *See*—
Chanak, Thomas S., Edinger, and Hendrick. 3,345,018.
Edwards, Bryant, to Illinois Tool Works Inc. Closure for spin sealing and coin feeding. 3,344,948, 10–3–67, Cl. 220—67.
Edwards, Edward T., to Edwards Power Door Co., Inc. Door operating device. 3,344,556, 10–3–67, Cl. 49—360.
Edwards Power Door Co., Inc.: *See*—
Edwards, Edward T. 3,344,556.
Eft, Neil W., to The Babcock & Wilcox Co. Pulverizer. 3,344,998, 10–3–67, Cl. 241—103.
Egan, Edward F., to Frank W. Egan & Co. Winder roll ejector. 3,345,010, 10–3–67, Cl. 242—68.
Egan, Frank W., & Co.: *See*—
Egan, Edward F. 3,345,010.
Egge, Walter S.: *See*—
Ruhf, Robert J., Russell, and Egge. 3,345,313.
Eggeling, Ernst, H. Neese, and H. Nickel. Plant for the fabrication of light-weight concrete members. 3,344,492, 10–3–67, Cl. 25—2.
Egghart, Heinrich C., to United States of America, Army. Production of explosive azides in molten salt media. 3,345,130, 10–3–67, Cl. 23—101.
Ehrenberg, Gustave, and F. J. McCulla, to Electro-Nite Engineering Co. Slidewire contact mechanism. 3,345,492, 10–3–67, Cl. 200—166.
Ehrhart, Gustav, E. Lindner, and H. Ott, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Certain N,N'-substituted diaminoethane compounds. 3,345,361, 10–3–67, Cl. 260—239.
Ehrlich, Arthur, M. K. Smith, and T. C. Patton, to The Baker Castor Oil Co. Castor oil, diisocyanate and hydroxy aliphatic acid ester prepolymers and elastomeric products prepared therefrom. 3,345,311, 10–3–67, Cl. 260—18.
Eichelman, George H., Jr., and I. Broverman, to Olin Mathieson Chemical Corp. High strength joined article. 3,345,156, 10–3–67, Cl. 29—199.
Eickmann, Karl. Fluidborne vehicle, driven by hydraulic motors and partially controlled by variable bypass means. 3,345,016, 10–3–67, Cl. 244—17.23.
Einstein, Alfred: *See*—
Bowen, Hamilton M. 3,345,068.
Ek, Birger, to Facit AB. Tape reel holder for tape reeling devices. 3,345,012, 10–3–67, Cl. 242—68.3.
Electra Totalisators Pty. Ltd.: *See*—
Wells, Roy E. 3,345,501.
Electrographic Corp.: *See*—
Decker, Richard J. 3,344,708.
Electro-Nite Engineering Co.: *See*—
Ehrenberg, Gustave, and McCulla. 3,345,492.
Elfers, Gunther, and S. L. Reegen, to Wyandotte Chemicals Corp. Production of elastomers by vulcanization of polyalkylene oxides. 3,345,347, 10–3–67, Cl. 260—79.5.
Ellenburg, George W., to Westinghouse Electric Corp. Sizing cylindrical sections. 3,344,634, 10–3–67, Cl. 72—34.
Elliott Bros. (London) Ltd.: *See*—
Olah, George. 3,345,017.
Rilett, John W. 3,344,666.
Ellison, Lynn E.: *See*—
Berg, Robert H., Youngdahl, and Ellison. 3,344,786.
Elsner, Hans: *See*—
Gerjets, Heins, Elsner, and Wesselhöft. 3,345,490.
Emerson, Alfred A. Measuring instrument. 3,344,531, 10–3–67, Cl. 33—88.
Emerson Electric Co.: *See*—
Lauck, William A. 3,344,630.
Emery Industries, Inc.: *See*—
Chisholm, James M. 3,345,123.
Zilch, Karl T. 3,345,389.
Endres, Herbert A., and K. E. Bristol, to The Goodyear Tire & Rubber Co. Rubber composition and method of preparation. 3,345,323, 10–3–67, Cl. 260—41.5.
Engel, Edward I., to Federal Pacific Electric Co. Circuit breaker having improved arcing contact structure. 3,345,485, 10–3–67, Cl. 200—146.
Engelhard Industries, Inc.: *See*—
Fitch, Howard M. 3,345,199.
Langley, Robert C., Lindenthal, and Pfefferle. 3,344,586.
Engstrom, William A., and M. S. Wojewodski. Flag pole painter. 3,344,773, 10–3–67, Cl. 118—307.
Erdey, Laszlo, F. Paulik, and J. Paulik, to Magyar Optikai Muvek. Heater controller for isothermic thermogravimetric analyses. 3,344,654, 10–3–67, Cl. 73—15.
Erickson, Louis A., E. R. Hogan, and B. R. Klinke, to Smith-Berger Mfg. Corp. Spar tower erecting and anchoring system. 3,344,508, 10–3–67, Cl. 52—116.
Erickson, Richard W., to International Omni-Pak Corp. Container carrier. 3,344,950, 10–3–67, Cl. 220—102.
Erikson, Herman E.: *See*—
Bartlett, Philip D., Erikson, and Sadlow. 3,344,730.
Erikson, Herman E., and H. J. Frede, to Polaroid Corp. Photographic products and process. 3,345,176, 10–3–67, Cl. 96—79.
Ernsberger, Fred M., to Pittsburgh Plate Glass Co. Method of drawing a glass sheet, a portion of its surface being untouched. 3,345,148, 10–3–67, Cl. 65—90.
Errichelello, Dominic, P. J. Hansen, and N. P. Alexander, to Motorola, Inc. Transistorised portable radio transmitter-receiver structure. 3,345,568, 10–3–67, Cl. 325—16.
Escambia Chemical Corp.: *See*—
Smith, William M. 3,345,322.
Eschbaugh, Robert V.: *See*—
Casterline, Burnham, Chapman, and Eschbaugh. 3,345,569.
Esse, Robert C., and G. Sieger, to American Cyanamid Co. 4-(N-mono-substituted)hydrasones of 4-dedimethylamino-4-oxo-tetracycline. 3,345,370, 10–3–67, Cl. 260—247.2.

Esso Research and Engineering Co.: *See*—
Hoffmann, Paul R. 3,344,811.
Langer, Arthur W., Jr. 3,345,426.
Nightingale, Eugene R., Jr. 3,345,128.
Rhodes, Richard P. 3,345,398.
Rhodes, Richard P. 3,345,414.

Estkowski, Michael H., to V-M Corp. Record changer spindle. 3,345,074, 10–3–67, Cl. 274—10.

Ethicon, Inc.: *See*—
Bloch, Alfred. 3,345,306.

Ethyl Corp.: *See*—
Klopfer, Oskar E. H., and Coffield. 3,345,144.
Wilkinson, Geoffrey. 3,345,390.

Eutectic Welding Alloys Corp.: *See*—
Quaas, Joseph F., and Rogers. 3,345,495.
Rogers, Charles E., and Quaas. 3,345,496.

Evans, Francis J., and J. W. Gates, Jr., to Eastman Kodak Co. Light sensitive photographic elements containing developing agent precursors. 3,345,170, 10–3–67, Cl. 96—35.

Evans Products Co.: *See*—
Kostrewa, John J. 3,344,750.

Evans, Raymond V.: *See*—
Collinge, James N., and Evans. 3,344,969.

Eveland, La Vere J., ½ to I. M. Golden. Buckle having a pressure member connected to slotted pivotally related frame members. 3,344,486, 10–3–67, Cl. 24—194.

Everard, Kenneth B., and T. Perry, to Imperial Chemical Industries Ltd. Rigid thermoplastic structures. 3,345,439, 10–3–67, Cl. 264—26.

Everede Tool Co.: *See*—
Prokza, Arthur J. 3,344,690.

Eversharp, Inc.: *See*—
Kiss, Marie S., Hess, and Tajkowski. 3,345,202.

Exchbaugh, Robert V., to Motorola, Inc. Electronic circuit crystal controlled transistor oscillator multiplier circuit. 3,345,573, 10–3–67, Cl. 325—438.

FMC Corp.: *See*—
Crus, Mamerto M., Jr. 3,345,357.
Justice, John L., Wielicki, and Labriola. 3,345,200.
Luts, Charles W. 3,345,296.
Raech, Harry, Jr. 3,345,205.

Facit AB: *See*—
Ek, Birger. 3,345,012.

Facit-Halda AB: *See*—
Nilsson, Eric L. 3,345,094.

Fahrenhols, Heins H., to Mannesmann-Meer Aktiengesellschaft. Pilger rolling mills. 3,344,644, 10–3–67, Cl. 72—250.

Failor, Charles W., to Westinghouse Air Brake Co. Audio frequency overlay detector track circuit for electric propulsion territory. 3,345,512, 10–3–67, Cl. 246—37.

Falls, John J., to Setco Industries, Inc. Electrolytic shaping apparatus. 3,345,281, 10–3–67, Cl. 204—212.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Dickoré, Karlfried, Wegler, and Sasse. 3,345,374.
Gollasch, Karl, Pelster, and Scheinpflug. 3,345,377.
Horn, Elmar-Manfred, and Niederprum. 3,345,396.
Merten, Rudolf, and Bayer. 3,345,338.
Merten, Rudolf, and Braun. 3,345,309.
Muller, Gerhard, and Merten. 3,345,395.
Pelster, Heinrich, Muhlbauer, and Delfs. 3,345,394.
Raue, Roderich. 3,345,355.
Simmler, Walter, and Niederprüm. 3,345,393.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Bestian, Herbert, Sommer, and Bergmann. 3,345,253.
Ehrhart, Gustav, Lindner, and Ott. 3,345,361.
Hloch, Albert, Kohlhaas, Medic, and Neises. 3,345,192.
Koller, Walter, Becker, and Hoyer. 3,345,337.
Kuhlkamp, Alfred, Zimmermann, and Bütschli. 3,345,336.
Meininger, Frits, and Hoyer. 3,345,122.
Pfeiffer, Gerhard, Stetzelberg, and Winkler. 3,345,198.
Sommer, Siegfried, and Brinkmann. 3,345,329.

Faso, William J. Door mounted spraying devices. 3,344,959, 10–3–67, Cl. 222—183.

Faulhaber, Tillo: *See*—
Beckmann, Gerhard, and Faulhaber. 3,344,434.

Fawkes, Donald G., to Henry Pratt Co. Shaft seal for a butterfly valve. 3,345,033, 10–3–67, Cl. 251—308.

Fay, Joseph G.: *See*—
Kaplan, Irving I., and Fay. 3,345,572.

Federal Pacific Electric Co.: *See*—
Engel, Edward I. 3,345,485.
Goody, Robert B. 3,345,455.

Fegan, Lloyd V., Jr., to Bethlehem Steel Corp. Method and apparatus for measurement and control of moisture. 3,344,921, 10–3–67, Cl. 210—67.

Feinman, Jerome, and D. A. Muskat, to United States Steel Corp. Apparatus for partial combustion of hydrocarbon fuels. 3,344,834, 10–3–67, Cl. 158—4.

Fell, Morris B., and C. J. Burdick, to The Bradford Companies. Removable form for use in cement lining pipe. 3,345,031, 10–3–67, Cl. 249—204.

Fenwick, Richard C., and R. A. Markley, to Collins Radio Co. Folded vertical monopole antenna. 3,345,635, 10–3–67, Cl. 343—845.

Ferguson, Richard, to The Terrell Machine Co. Index controlling means for a tubular sawing apparatus. 3,344,820, 10–3–67, Cl. 143—85.

Ferm, Richard L., and R. J. Schmidt, to Chevron Research Co. Pneumatic compaction of asphalt compositions. 3,344,721, 10–3–67, Cl. 94—22.

Ferrante, Gerald R.: *See*—
Schmid, Hans G., and Ferrante. 3,345,303.

Ferranti, Ltd.: *See*—
Dudley, Michael D. 3,345,459.

Ferrara, Richard J. Musical instrument. 3,344,698, 10–3–67, Cl. 84—267.

Ferrell, William E.: *See*—
Shutt, Paul B., Larsen, and Ferrell. 3,344,944.

Fetscher, Charles A., and S. A. Lipowski, to Nopco Chemical Co. Process for conversion of amidoxime polymers to polyhydroxamic acids using aqueous hydrochloric acid solutions. 3,345,344, 10–3–67, Cl. 260—78.4.

Fettis, Cordon C.: *See*—
Whim, Bernard P., and Fettis. 3,345,406.

Fiat Societa per Azioni: *See*—
Zucchellini, Mose. 3,344,512.

Fields, Donald L.: *See*—
Reynolds, Delbert D., and Fields. 3,345,415.

Fievet, Robert H. J., to Fromageries Bel-La Vache Qui Rit. Cheese die transfer chain for machines for packaging melted cheese into different presentation packages. 3,344,521, 10–3–67, Cl. 31—46.

Fife, Robert J., to Crane Co. Shower head having removable spray former to permit cleaning. 3,344,994, 10–3–67, Cl. 239—457.

Filipjev, Oleg V.: *See*—
Andonjev, Sergei M., Glaskov, Kuchin, Makarov, Pevny, Pochtman, Tesner, and Filipjev. 3,345,054.

Finch, Clinton S. Threading tool. 3,344,451, 10–3–67, Cl. 10—111.

Finelli, Patrick L., to Polaroid Corp. Photographic camera with battery holder. 3,344,725, 10–3–67, Cl. 95—11.

Finley, Joseph H., to Petro-Tex Chemical Corp. Preparation of methacrylonitrile. 3,345,397, 10–3–67, Cl. 260—465.3.

Finneran, James A., Jr., and L. C. Axelrod, to Pullman Inc. Multi-stage shift conversion method for hydrogen production. 3,345,136, 10–3–67, Cl. 23—213.

Firgau, Werner, and A. Gsell, to Svenska Rotor Maskiner Aktiebolag. Sealing and bearing means for rotary regenerative heat exchangers of the type having a stationary rotor. 3,344,849, 10–3–67, Cl. 165—4.

Firth, William C., Jr., to American Cyanamid Co. Perfluoro-3-aminodiaziridine and its preparation. 3,345,359, 10–3–67, Cl. 260—239.

Firth, William C., Jr., to American Cyanamid Co. Perfluorodiaziridine and dimer of perfluoroformamidine and their production. 3,345,360, 10–3–67, Cl. 260—239.

Fischer & Porter Co.: *See*—
Wapner, Joseph S. 3,344,805.

Fitch, Howard M. to Engelhard Industries, Inc. Decorating composition and method for decorating therewith. 3,345,199, 10–3–67, Cl. 117—46.

Flack, Herbert P., M. G. Sanches, and C. T. Lamberth, to W. R. Grace & Co. Sol-gel microsphere forming process using dissolved ammonia in the dehydrating solvent. 3,345,437, 10–3–67, Cl. 264—.5.

Flexnit Co., Inc.: *See*—
Weintraub, Ronald. 3,344,793.

Flick, Robert H.: *See*—
Majcher, John, and Flick. 3,345,481.

Floor, Dennis W. Contact lens handling apparatus. 3,344,461, 10–3–67, Cl. 15—512.

Floter, Manfred: *See*—
Dommann, Gunther, Floter, and Becker. 3,344,610.

Flow Measurement Co., Inc.: *See*—
Messer, Elmer S. 3,344,985.
Messer, Elmer S., and Carnahan. 3,344,924.

Fluor Corp., Ltd., The: *See*—
Phelps, Peter M. 3,345,048.

Foderick, John W. Bulbous urinary catheter with axial extension means. 3,344,791, 10–3–67, Cl. 128—349.

Fogt, Thomas H., and T. J. Brinkman, to General Motors Corp. Plural level fill system for washer apparatus. 3,344,625, 10–3–67, Cl. 68—12.

Folgero, Kare: *See*—
Karlsson, Gosta, and Folgero. 3,345,056.

Ford Motor Co.: *See*—
Searles, John J. 3,344,681.
Stockton, Thomas R. 3,344,687.
Wallace, Baird. 3,345,609.

Fortuna-Werke Spezialmaschinenfabrik AG: *See*—
Braum, Dieter. 3,344,627.

Foster Wheeler Corp.: *See*—
Gorzegno, Walter P. 3,344,777.
Kunsagi, Laszlo, Jorgensen, and Aplett. 3,344,509.

Frank, Charles E.: *See*—
Hoyt, John M., Frank, and Koch. 3,345,332.

Frede, Herbert J.: *See*—
Erikson, Herman E., and Frede. 3,345,176.

Frederick, Tulon P. Conduit coupling clamp. 3,344,491, 10–3–67, Cl. 24—249.

Freifeld, Milton, and B. Churchill, to General Aniline & Film Corp. Fire retardant composition of diammonium phosphate containing methyl vinyl ether-maleic anhydride copolymer as thickener. 3,345,289, 10–3–67, Cl. 252—8.1.

Fremont Industries, Inc.: *See*—
Wollgien, Herbert R., and Chang. 3,345,217.

Frenkel, Marvin A., and C. H. Haney, to Advance Glove Mfg. Co. Method for tear sealing thermoplastic sheets to cloth. 3,345,226, 10–3–67, Cl. 156—66.

Frey, Wiederkehr & Cie, Aktiengesellschaft: *See*—
Schneider, Willi. 3,344,697.

Friden, Inc.: *See*—
Neel, John V. 3,345,614.

Friedl, Frank T.: *See*—
Eberhard, John F., Friedl, and Stemphens. 3,345,188.

Fritzmeier, George, K.G.: *See*—
Tschursch, Arnold, and Stuckenberger. 3,345,106.

Fromageries Bel-La Vache Qui Rit: *See*—
Fievet, Robert H. J. 3,344,521.

Frost, Barry L., to Clark Equipment Co. Limited slip differential. 3,344,688, 10–3–67, Cl. 74—711.

Fruehauf Corp.: *See*—
Brackett, Ralph C. 3,344,881.

Frutiger, William A.: *See*—
Moats, Robert R., and Frutiger. 3,345,586.

Fuji Shashin Film Kabushiki Kaisha: *See*—
Hayakawa, Yoshihide. 3,345,175.

Fujii, Akira: *See*—
Inaba, Seiuemon, and Fujii. 3,344,559.

Fujiwara, Shinobu, and T. Shiraiwa, to TDK Electronics Co., Ltd. Ceramic dielectrics. 3,345,189, 10–3–67, Cl. 106—39.

Fyrk, Clas O. F.: *See*—
Wilder Burl A., Swenson, and Fyrk. 3,344,993.

Gaertner, Van R., to Monsanto Co. Method of sizing paper with chloroethyl sulfide or sulfone and paper thereof. 3,345,251, 10–3–67, Cl. 162—158.

Gaertner, Van R., to Monsanto Co. Process of sizing cellulosic fibers with gamma-lactones and fibrous product thereof. 3,345,252, 10–3–67, Cl. 162—158.

Galat, Alexander. Complex of calcium N-cyclohexylsulfamate with glycine. 3,345,403, 10–3–67, Cl. 260—501.

Gallup, Norman G., to Brown Steel Tank Co. Fill cap fastening means. 3,344,947, 10–3–67, Cl. 220—67.

Gambell, James W.: *See*—
Michaels, Glenn O., and Gambell. 3,345,427.

Gamble, Burton L.: *See*—
Kocian, Ralph B., and Gamble. 3,344,904.

Garber, John D.: *See*—
Wasserman, David, Garber, and Meigs. 3,345,433.

Garcia, Dianna E.: *See*—
McNeal, Hugh E. 3,344,444.

Gardille, Emile. Composition for accelerated grinding. 3,345,146, 10–3–67, Cl. 51—304.

Garrod, Norman J. Gramophone record sleeves. 3,344,978, 10–3–67, Cl. 229—68.

Garske, Hubert A.: *See*—
Kuhlman, Albert B., and Garske. 3,345,472.

Garten, Roy E., Jr.: *See*—
Brown, Graydon L., Garten, and Thomas. 3,345,608.

Gates, John W., Jr.: *See*—
Evans, Francis J., and Gates. 3,345,170.

Gauthier, Alfred, G.m.b.H.: *See*—
Rentschler, Waldemar T. 3,344,723.
Rentschler, Waldemar T. 3,344,727.
Weller, Erwin. 3,344,726.

Gebr. Giulini G.m.b.H.: *See*—
Heinrich, Werner, and Heigel. 3,345,411.

Geen, Gory P., to Industrial Devices, Inc. Collet assembly. 3,345,006, 10–3–67, Cl. 242—46.5.

Geigy Chemical Corp. *See*—
Dexter, Martin, and Schafer. 3,345,327.

Geil, Frederick G.: *See*—
Neikin, Arthur, Thompson, and Geil. 3,343,607.

Geisinger, Abel F., to The Goodyear Tire & Rubber Co. Wire tensioning device. 3,344,592, 10–3–67, Cl. 57—3.

General Aniline & Film Corp.: *See*—
Freifeld, Milton, and Churchill. 3,345,289.
Mammino, Joseph, Hamm, and Pease. 3,345,161.
Miller, John C. 3,345,235.
Uffner, Melville W., and Weitz. 3,345,320.

General Dynamics Corp.: *See*—
Christian, Carl F. 3,345,558.
Hayworth, Bruce R., and Gooding. 3,345,587.
Mattia, Armand D., and Harbison. 3,344,604.

General Electric Co.: *See*—
Good, William E., and Vanderlaan. 3,345,462.
Padgett, Cooper J. 3,345,102.
Polinko, George, Jr., and Porter. 3,345,484.
Polonsky, Samuel. 3 344,598.
Szabo, Louis J. 3 344,588.

General Foods Corp.: *See*—
Browning, Earl E., and Perkovich. 3,345,237.
Huste, Arno, Breza, and Kohler. 3,345,182.

General Instrument Corp.: *See*—
Chesney, John. 3,345,588.

General Motors Corp.: *See*—
Bemmann, Richard W., and Schultz. 3,344,513.
Fogt, Thomas H., and Brinkman. 3,344,625.
Hall, Harry D., Salatin, Sutherland, and Tribie. 3,344,848.
Johnson, Douglas, and Young. 3,345,035.
Kilgore, Harry A., and Smith. 3,345,098.
Kitchen, Elwyn L., Lee, and Rise. 3,344,865.
Lautzenhiser, Argyle G., and Clark. 3,344,676.
Maltby, Raymond W. 3,344,667.
Mattarella, Samuel P. 3,345,532.
Partlow, James A., Mewhinney, and Hoefling. 3,344,514.
Polhemus, Von D., Boettger, Isaacson, and Yew. 3,345,060.
Siegal, Donald C. 3,345,498.
Smith, Harold L. 3,345,097.
Tenenhoue, Gerald J. 3,345,348.

General Precision Inc.: *See*—
Hellen, James S. 3,344,544.
Hellen, James S. 3,344,675.
Stella, Carl. 3,345,629.

General Precision Systems Inc.: *See*—
Schmid, Hermann. 3,345,505.

General Signal Corp.: *See*—
Auer, John H., Jr. 3,345,503.

Gentry, Joe P., and G. R. Giannini, to The Regents of the University of California. Machine for settling fruit. 3,344,579, 10–3–67, Cl. 53—126.

George, James R.: *See*—
Cloud, Charles E., George, and Krohn. 3,344,576.

Gerdts, Gustav F., K.G.: *See*—
Lingnau, Josef S. 3,344,672.

Gerjets, Heins, H. Elsner, and S. Wesselhoft, to Olympia Werke AG. Manual switch actuator. 3,345,490, 10–3–67, Cl. 200—159.

Gervais, Norman A., to Creative Packaging Inc. Ejection pill dispenser with indicating means. 3,344,951, 10–3–67, Cl. 221—7.

Gerson, Koert, and E. Krumkalns, to Eli Lilly and Co. Carbomate esters of adamantane, mono- and dimethyladamantane and homo-adamantane. 3,345,399, 10–3–67, Cl. 260—468.

Geurtsen, Friedrich H. H., J. C. Barone, and J. F. Terenzi, to American Cyanamid Co. Pretreatment of polymer solution with rubber latices. 3,345,321, 10–3–67, Cl. 260—34.2.

Gevaert Photo-Producten N.V.: *See*—
Laridon, Urbain L., and Delzenne. 3,345,171.

Gewerkschaft Eisenhutte Westfalia: *See*—
Dommann, Gunther, Floter, and Becker. 3,344,610.

Giacobone, Piero: *See*—
Siciari, Francesco, Reliano, Cicerl, D'Alo, Perazzoni, and Giacobone. 3,345,445.

Giannini, George R.: *See*—
Gentry, Joe P., and Giannini. 3,344,579.

Gibney, Howard W.: *See*—
Purdum, Cary, and Gibney. 3,344,528.

Gibson, Howard B.: *See*—
Logan, Maurus C., and Gibson. 3,345,452.

Giddings & Lewis Machine Tool Co.: *See*—
Hosea, Everett E. 3,344,511.

Gidge, Lester, and V. R. Poulin, Jr., to Union Carbide Corp. Apparatus and method for making non-woven netting. 3,345,231, 10–3–67, Cl. 156—181.

Gidge, Lester, and V. R. Poulin, Jr., to Union Carbide Corp. Method and apparatus for making criss-cross material. 3,345,232, 10–3–67, Cl. 156—181.

Gilch, Heinrich G., to Union Carbide Corp. 1,1,3,3-tetrahalo-2,2,4,4-tetramethylcyclobutanes. 3,345,420, 10–3–67, Cl. 260—648.

Gilchrist, Alexander J.: *See*—
Lobash, Floyd, Gilchrist, and Straub. 3,344,772.

Gilchrist, Ralph E., to Phillips Petroleum Co. Fluid drive production of oil. 3,344,857, 10–3–67, Cl. 166—9.

Gilchrist, Ralph E., and R. J. Sonnenfeld, to Phillips Petroleum Co. Production of oil by aqueous drive with surfactant formed in situ. 3,344,858, 10–3–67, Cl. 166—9.

Gilchrist, Reginald S.: *See*—
Mattingly, Denis A. E., and Gilchrist. 3,345,003.

Gilchrist, Reginald S., to The Klinger Mfg. Co. Ltd. Manufacture of knitted garments. 3,344,621, 10–3–67, Cl. 66—175.

Gilford Instrument Laboratories, Inc.: *See*—
Wood, Willis A., and Gilford. 3,344,702.

Gilford, Saul R.: *See*—
Wood, Willis A., and Gilford. 3,344,702.

Glissen, Francois A. H.: *See*—
Versluys, Paulus, Van 'T Sant, Glissen, and Manger. 3,345,046.

Gillett, Robert L., to Sylvania Electric Products Inc. FM stereo indicator circuitry. 3,345,464, 10–3–67, Cl. 179—15.

Gilliam, Helen C.: *See*—
Grayson, Martin, Sherr, Gilliam, and Castellion. 3,345,392.

Gilliam, Helen C., and H. G. Klein, to American Cyanamid Co. Flame-retardant compositions containing organo-phosphonic acids. 3,345,432, 10–3–67, Cl. 260—887.

Gilmore, William J., to American Chain & Cable Co., Inc. Electrically conductive tensile cable. 3,345,456, 10–3–67, Cl. 174—128.

Gloe, Salvatore M. Apparatus for shaping materials and substances into a round ball. 3,344,475, 10–3–67, Cl. 18—16.

Girault, Pierre: *See*—
Warnant, Julien, Joly, Allais, and Girault. 3,345,259.

Glasco, William R. Bait bucket. 3,344,552, 10–3–67, Cl. 43—56.

Glaskov, Petr G.: *See*—
Andonjev, Sergei M., Glaskov, Kuchin, Makarov, Pevny, Pochtman, Tesner, and Filipjev. 3,345,054.

Global Marine Inc.: *See*—
Rininger, Paul R. 3,344,612.

Glomb, Frank A., and V. Wasynczuk, to Barnes & Reinecke, Inc. Wheel drive mechanism. 3,344,879, 10–3–67, Cl. 180—55.

Goeller, Charles P.: *See*—
Ashenden, Harry B., and Goeller. 3,345,539.

Goets, George. Boat-trailer apparatus. 3,344,448, 10–3–67, Cl. 9—1.

Goetzinger, Harold: *See*—
Schuur, Hemmo, and Goetzinger. 3,344,456.

Goldammer, Freeland R., and R. E. Kanits, to Sperry Rand Corp. Article storage apparatus. 3,345,117, 10–3–67, Cl. 312—228.

Goldbeck, Le Roy J., to Kimberly-Clark Corp. Coated polyolefin sheets particularly for book covers and method of producing the same. 3,345,196, 10–3–67, Cl. 117—11.

Golden, Irving M.: *See*—
Eveland, La Vere J. 3,344,486.

Goldman, George J.: *See*—
Herst, Leonard A. Kaplan, and Spangenberg. 3,345,627.

Goldman, Robert N., to Telecredit, Inc. Data recovery system wherein the data file and inquiries are in a prearranged order. 3,345,612, 10–3–67, Cl. 340—172.5.

Gollasch, Karl, H. Pelster, and H. Scheinpflug, to Farbenfabriken Bayer Aktiengesellschaft. Thiocarbamic acid-s-esters of benzimidoazoles. 3,345,377, 10–3–67, Cl. 260—309.2.

Gonzalez, Raul J. Knockdown weighing scale. 3,344,878, 10–3–67, Cl. 177—127.

Good, William E., and H. J. Vanderlaan, to General Electric Co. Light valve projection apparatus. 3,345,462, 10–3–67, Cl. 178—7.87.

Gooden, Alan L. Apparatus and method for administering humidified anesthetic gases. 3,345,047, 10–3–67, Cl. 261—90.

Gooding, Terence J.: *See*—
Hayworth, Bruce R., and Gooding. 3,345,587.

Goodman, Jack P. Earth boring machines and method of setting poles. 3,344,871, 10–3–67, Cl. 175—19.

Goodman, Louis N. Punch device. 3,344,519, 10–3–67, Cl. 30—362.

Goodrich, B. F. Co., The: *See*—
Bialkowski, Ludwik S. 3,345,078.

Goody, Robert B., to Federal Pacific Electric Co. Insulated bus bar. 3,345,455, 10–3–67, Cl. 174—112.

Goodyear Tire & Rubber Co., The: *See*—
Bristol, Kenneth E., and Strang. 3,345,824.
Endres, Herbert A., and Bristol. 3,345,323.
Geisinger, Abel F. 3,344,592.
Harpfer, Donald E. 3,345,229.
Johnson, William H. 3,344,595.
Kovac, Frederick J., and Rye. 3,345,228.
Lal, Joginder. 3,345,308.
Peterson, Don W., Kovac, Calvin, and Puse. 3,345,109.
Pile, William D., and Shuster. 3,344,833.
Stoker, Carl B., Jr. 3,344,975.

Googin, John M., J. M. Napier, and M. E. Scrivner, to United States of America, Atomic Energy Commission. Method for manufacturing foam carbon products. 3,345,440, 10–3–67, Cl. 264—29.

Gordon, Elias. Penumbra-avoiding shutter devices for viewers and projectors. 3,344,705, 10–3–67, Cl. 88—24.

Gordon, Maxwell, and J. J. Lafferty, to Smith Kline & French Laboratories. 2-polymethylallyl-5,9-dimethyl - 6,7 - benzmorphans and derivatives. 3,345,373, 10–3–67, Cl. 260—294.

Gordy, Irving, and H. J. Bush, to United States of America, Air Force. Time measurement as indication of temperature. 3,344,671, 10–3–67, Cl. 73—362.

Gormar, Helmut: *See*—
Achterberg, Arno, Gormar, and Kleefisch. 3,344,473.

Goraki, Henry J.: *See*—
Peters, Robert W. 3,345,002.

Gorsegno, Walter P., to Foster Wheeler Corp. Once-through vapor generator furnace buffer circuit. 3,344,777, 10–3–67, Cl. 122—406.

Gosudarstvensy Nauchno-Issledovatelsky i Proektny Institute Metallurgicheskoi Promyshlennosta: *See*—
Andonjev, Bergei M., Glaskov, Kuchin, Makarov, Pevny, Pochtman, Temer, and Filipjev. 3,345,054.

Go-Tract Ltd.: *See*—
Silber, Erwin-Walter. 3,345,118.

Gould, Bert F.: *See*—
Mawhinney, Robert C., Gould, Biehl, Mainhardt, and Barton. 3,344,711.

Gover, Russell D. Folding table. 3,344,755, 10–3–67, Cl. 108—40.

Grace, W. R., & Co.: *See*—
Flack, Herbert P., Sanches, and Lamberth. 3,345,487.
Sternau, Martin M. 3,344,912.

Graham, Cecil R. M. Aerosol dispensing devices. 3,344,961, 10–3–67, Cl. 222—402.22.

Graham, William A. Plastic liner for oil filter. 3,344,925, 10–3–67, Cl. 210—312.

Grain Processing Corp.: *See*—
Corman, Julian. 3,345,268.

Gransten, Gunnar L. Supporting device for hand tools. 3,345,021, 10–3–67, Cl. 248—13.

Gransten, Lennart, to Rederi Ab Soya. Fluid motor regulating mechanism having friction compensator. 3,344,797, 10–3–67, Cl. 137—18.

Grant, David E., to Hercules Inc. Method for forming polypropylene film. 3,345,447, 10–3–67, Cl. 264—211.

Gray, Joseph E., to Norwick Pharmacal Co. Diagnostic composition for isolating and identifying yeasts. 3,345,270, 10–3–67, Cl. 195—100.

Gray, Joseph L., to Gray Mfg. Co., Inc. Overhead hoist. 3,345,039, 10–3–67, Cl. 254—93.

Gray Mfg. Co., Inc.: *See*—
Gray, Joseph L. 3,345,039.

Gray, Richardson, to United Engineering and Foundry Co. Method and apparatus for controlling the temperature of hot strip. 3,344,648, 10–3–67, Cl. 72—364.

Grayson, Martin, A. E. Sherr, H. C. Gillham, and M. E. Castellion, to American Cyanamid Co. Organophosphorus-copper complex compounds. 3,345,392, 10–3–67, Cl. 260—438.1.

Greco, Anthony. Guide device for portable electric saws. 3,344,824, 10–3–67, Cl. 143—160.

Green, Derek, to United Kingdom Atomic Energy Authority. Hydrostatic extrusion of sheathed ceramic nuclear fuel material. 3,344,507, 10–3–67, Cl. 29—420.5.

Green, Milton, to Polaroid Corp. Photographic compositions, products and processes. 3,345,167, 10–3–67, Cl. 96—29.

Greene, Ben. Cap with removable visor stiffener. 3,344,437, 10–3–67, Cl. 2—195.

Greenlee Bros. & Co.: *See*—
Van Allen, Richard F. 3,344,635.

Gregge, William C.: *See*—
Hutchinson, Harold D., and Gregge. 3,345,478.

Greiser, Melvin R. Prevention of beach erosion and encouragement of land restoration. 3,344,609, 10–3–67, Cl. 61—38.

Greitser, Harry. Conveyor. 3,344,906, 10–3–67, Cl. 198—195.

Grengg, Walter M., to Oak Electro/Netics Corp. Reed switch contact construction. 3,345,593, 10–3–67, Cl. 335—154.

Grenko, Lena: *See*—
Paganini, Valentine. 3,344,821.

Grepe, Frederick Y., to A. O. Smith. Electric hoist control system. 3,345,548, 10–3–67, Cl. 318—203.

Grepe, Frederick Y., to A. O. Smith Corp. Hoist motor control. 3,345,550, 10–3–67, Cl. 318—229.

Grier, Nathaniel: *See*—
Berry, William R., and Grier. 3,345,341.

Griffin, Anthony L., and E. G. Chetwynd. Identification button for garments. 3,344,543, 10–3–67, Cl. 40—1.5.

Grimith, George L., to Trojan Powder Co. Method of blasting using explosive slurries made at the blasting site. 3,344,743, 10–3–67, Cl. 102—23.

Grimith, George L., to Trojan Powder Co. Dry appearing explosive composition containing a porous material capable of releasing absorbed liquid at extrusion pressures. 3,345,224, 10–3–67, Cl. 149—38.

Grimith, Richard M., to American Cyanamid Co. Blend of particles of crosslinked thermoplastic polymers with non-crosslinked thermoplastic polymers. 3,345,434, 10–3–67, Cl. 260—901.

Grilli, Chloe. Swimming device of mermaid shape. 3,344,449, 10–3–67, Cl. 9—309.

Griner, Arthur J., to National Biscuit Co. Machine for making and loading paper cups. 3,344,580, 10–3–67, Cl. 53—160.

Grobert, Jacques, to Societe Rhodiaceta. Paint-brushes. 3,344,457, 10–3–67, Cl. 15—159.

Grodberg, Marcus G., and J. R. Mellberg, to The Kendall Co. Multiple layer tablet with calcium salt central core separated from soluble fluoride outer coating. 3,345,265, 10–3–67, Cl. 167—82.

Grossman, Abraham, to ½ to T. P. Mahoney. Fenestration construction. 3,344,575, 10–3–67, Cl. 52—656.

Grover, Donald P.: *See*—
Zepell, Nathan A., and Grover. 3,344,484.

Grunwald, Erich, to Siemens-Schuckertwerke Aktiengesellschaft. Magnet for magnetohydrodynamic generators. 3,345,523, 10–3–67, Cl. 310—11.

Gsell, Albert: *See*—
Firgau, Werner, and Gsell. 3,344,849.

Guettel, Marvin A., and C. F. Meyer, to Square D. Co. Monitor for detecting change in resistance between welded parts during welding current flow. 3,345,493, 10–3–67, Cl. 219—110.

Guinness, Arthur, Son & Co. (Dublin) Ltd.: *See*—
Pollock, James R. A. and Webber. 3,345,179.

Gulf Oil Corp.: *See*—
Cahoy, Roger P., and Coyne. 3,345,417.

Guthrie, James M., to Lotus Engineering Corp. Furnace skid rails. 3,345,050, 10–3–67, Cl. 263—6.

Gyl, Maung, to Ampex Corp. Simplified pulse counter FM demodulator. 3,345,576, 10–3–67, Cl. 329—103.

Haakenson, Merrel M.: *See*—
Lommen, Alan J., and Haakenson. 3,344,485.

Haas, Gerhard, to North American Philips Co., Inc. Pulse sequence producer with interference signal suppression. 3,345,621, 10–3–67, Cl. 340—174.

Haas, Paul, to Sylvania Electric Products Inc. Colored television tube with a shadow mask supporting frame having inward ledge to shut off beam over-scan. 3,345,530, 10–3–67, Cl. 313—92.

Hack, William L., J. A. Stein, and R. G. Rohrberg, to North American Aviation, Inc. Method of joining tubular conduits to light weight bulkhead panels. 3,344,498, 10–3–67, Cl. 29—157.4.

Hader, Josef: *See*—
Wiechert, Rudolf, and Hader, and Neumann. 3,345,386.

Haese, Allen B.: *See*—
Robinson, Roderick, K., and Haese. 3,344,972.

Halcon International, Inc.: *See*—
Brown, David. 3,345,421.

Hall, Harry D., D. C. Salatin, D. E. Sutherland, and C. J. Trible, to General Motors Corp. Die casting apparatus with non-turbulent fill and dual shot plunger arrangement. 3,344,848, 10–3–67. Cl. 164—312.

Hall, Hubert L., to Calcimatic International Ltd. Method and means of calcining limestone. 3,345,052, 10–3–67, Cl. 263—27.

Hallock, Edward C. Expansion joint filler. 3,344,720, 10–3–67, Cl. 94—18.

Halsey, Davis. Multi-stage evacuating device. 3,344,523, 10–3–67, Cl. 32—33.

Hamilton, Donald A., to Pharmaseal Laboratories. Valve for exchange transfusion system. 3,344,785, 10–3–67, Cl. 128—214.

Hamm, Willard C.: *See*—
Mammino, Joseph, Hamm, and Pease. 3,345,161.

Hanes, James W. E., and J. H. Hynes, to Ventura Tool Co. Pipe tool joints. 3,345,084, 10–3–67, Cl. 285—27.

Hanes, James W. E., to Huntsinger Associates. Automatically alignable and connectible tool joint. 3,345,085, 10–3–67, Cl. 285—27.

Hanes, James W. E., and W. F. Miller, to Ventura Co. Conduit connectors. 3,345,087, 10–3–67, Cl. 285—39.

Haney, Claude H.: *See*—
Frenkel, Marvin A., and Haney. 3,345,220.

Hanlin, John W., Jr., R. A. Capuzzi, and E. Cohen, to American Cyanamid Co. Substituted N-carbamylpyrazinecarboxamides. 3,345,372, 10–3–67, Cl. 260—250.

Hansen, David S., and N. V. Basinas, to C. G. Sargent's Sons Corp. Conveyor seals. 3,344,909, 10–3–67, Cl. 198—204.

Hansen, Philip J.: *See*—
Errichelello, Dominic, Hansen, and Alexander. 3,345,568.

Hanson, Alden W.: *See*—
Van Horne, Beverley H., and Hanson. 3,345,656.

Hanusa, Helmut G., to Stauffer Chemical Co. Composite structure having shock absorbing properties. 3,345,245, 10–3–67, Cl. 161—119.

Harban, Arthur A., to Phillips Petroleum Co. Method for preparing block copolymers of monoolefins. 3,345,431, 10–3–67, Cl. 260—878.

Harbison, Robert C.: *See*—
Mattia, Armand D., and Harbison. 3,344,604.

Hardin, Inc.: *See*—
Hardin, Jerry L. 3,344,799.

Hardin, Jerry L., to Hardin, Inc. Apparatus for controlling the viscosity of a liquid. 3,344,799, 10–3–67, Cl. 137—92.

Harm, Alson R., to The Procter & Gamble Co. Apparatus and method for making packages for cylindrical objects. 3,344,577, 10–3–67, Cl. 53—39.

Harnisch, Heins: *See*—
Heymer, Gero, and Harnisch. 3,345,134.

Harnischfeger Corp.: *See*—
Aldenhoff, Bernard J. 3,345,552.

Harpfer, Donald E., to The Goodyear Tire & Rubber Co. Belt manufacturing apparatus. 3,345,229, 10–3–67, Cl. 156—166.

Harris, Howard: *See*—
Bowen, Hamilton M. 3,345,068.

Harris, Richard C.: *See*—
Blessinger, John A., Molvik, and Harris. 3,344,845.

Harris, Roy J. T.: *See*—
Peterson, Donovan F., Rasmussen, and Harris. 3,345,538.

Harris, William H. Precision dental paralleling process and apparatus. 3,344,525, 10–3–67, Cl. 32—67.

Hartman, Raymond G.: *See*—
Bucholts, Daniel J., Hartman, Ingraham, Meyer, and Powers. 3,345,613.

Hartwig, Bernard O. Trailer dolly. 3,345,081, 10–3–67, Cl. 280—476.

Harvey, Ronald B., to Appleton Mfg. Co. Transfer device. 3,344,696, 10–3–67, Cl. 82—101.

Hasbrouck, Gene B., to Corry Jamestown Corp. File drawer and compressor. 3,344,795, 10–3–67, Cl. 129—29.

Hassenfeld Bros., Inc.: *See*—
Speers, Samuel F. 3,345,030.

Hastings, Warren W. Combination edger, spade, and rake. 3,344,863, 10–3–67. Cl. 172—14.

Hatcher, Craig E.: *See*—
Kelley, Leon O., and Hatcher. 3,344,866.

Haubein, Albert H., to Hercules Inc. Pesticidal compositions of m-isopropylphenyl n-methyl-n-nitrosocarbamate. 3,345,256, 10–3–67, Cl. 167—30.

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Hauser, John G., and J. D. Steadman, to The Allis, Louis Co. Rectifier bridge adjustable alternating current voltage control. 3,345,540, 10–3–67, Cl. 318—227.

Hauser, Seymour, to Jacques Kreisler Mfg. Corp. Detachable link expansible band. 3,344,599, 10–3–67, Cl. 59—79.

Hauserman, E. F., Co., The: *See*—
Merritt, Marvin D. 3,344,503.

Hautsenroeder, Richard W., to Massey-Ferguson Inc. Warning light for tractors and implements. 3,345,506, 10–3–67, Cl. 240—8.18.

Hayakawa, Yoshihide, to Fuji Shashin Film Kabushiki Kaisha. High edge-gradient photosensitive material. 3,345,175, 10–3–67, Cl. 96—76.

Hayden, J. Page: *See*—
Bone, Evan P. 3,345,510.

Hayes, Lester P.: *See*—
Cogswell, George W., and Hayes. 3,345,207.

Haynes, Alan G., to The International Nickel Co., Inc. Case hardening of steel. 3,345,220, 10–3–67, Cl. 148—148.

Hayworth, Bruce R., and T. J. Gooding, to General Dynamics Corp. Distributed constant pulse line. 3,345,587, 10–3–67, Cl. 333—31.

Hedgewick, Peter. Safety cap and container. 3,344,942, 10–3–67, Cl. 215—9.

Heico, Inc.: *See*—
Ingraham, Harold E. 3,345,131.

Heigel, Walter: *See*—
Heinrich, Werner, and Heigel. 3,345,411.

Heinrich, Werner, and W. Heigel, to Gebr. Giulini G.m.b.H. 2-alkyl-3,3-diphenyl-propen-(2)-yl-amines and salts thereof. 3,345,411, 10–3–67, Cl. 260—570.

Heisig, Charles G., and R. L. Mitchell, to Taylor Instrument Companies. Test cell using acoustic energy. 3,344,658, 10–3–67, Cl. 73—53.

Hellen, James S., to General Precision Inc. Numeric display. 3,344,544, 10–3–67, Cl. 40—68.

Hellen James S., to General Precision Inc. Pivotal connection. 3,344,675, 10–3–67, Cl. 73—517.

Hendrick, Russell C.: *See*—
Chanak, Thomas S., Edinger, and Hendrick. 3,345,018.

Henkel & Cie G.m.b.H.: *See*—
Stein, Werner, Weiss, and Koch. 3,345,301.

Henschen, Homer E., and M. L. Yeager, to AMP Inc. Cross-connecting board. 3,345,599, 10–3–67, Cl. 339—18.

Henschen, Homer E., and M. L. Yeager, to AMP Inc. Electrical connector. 3,345,604, 10–3–67, Cl. 339—186.

Herbst, Paul T.: *See*—
Stadenko, Stephen, and Herbst. 3,344,986.

Herbst, Paul T., to A. O. Smith Corp. Interlock for a metering and recording unit. 3,344,987, 10–3–67, Cl. 235—94.

Hercules Inc.: *See*—
Brack, Karl. 3,345,310.
Grant, David E. 3,345,447.
Haubein, Albert H. 3,345,256.

Hereth, Ralph F., to Wilkins & Associates, Inc. Fluid pressure transmission system. 3,344,714, 10–3–67, Cl. 91—175.

Herrera, Juan H., to Ultramatic National Coffee Machine Inc. Coffee making machine. 3,344,733, 10–3–67, Cl. 99—302.

Herst, Leonard A.: *See*—
Herst, Leonard A., Kaplan, and Spangenberg. 3,345,627.

Herst, Leonard A., M. B. Kaplan, and C. B. Spangenberg, 50% to L. A. Herst, and 50% to G. J. Goldman. Prowler alarm. 3,345,627, 10–3–67, Cl. 340—283.

Hess, Richard C.: *See*—
Kiss, Marie S., Hess, and Tajkowski. 3,345,202.

Hester, Jackson B., Jr., and J. Szmuszkovicz, to The Upjohn Co. Polyhydro - 6-methoxy-1-(3,4,5-trimethoxyphenyl)-9H-pyrido[3,4-b]indoles. 3,345,876, 10–3–67, Cl. 260—296.

Heuser, Leon J.: *See*—
Donovick, Richard, Heuser, and Dolliver. 3,345,875.

Hewitt-Robins, Inc.: *See*—
Olender, Francis B., and Ward. 3,345,115.

Hewlett-Packard Co.: *See*—
Vessot, Robert F. C. 3,345,581.

Heymer, Gero, and H. Harnisch, to Knapsack Aktiengesellschaft. Process and apparatus for the manufacture of titanium nitride. 3,345,134, 10–3–67, Cl. 23—191.

Higuchi, Ryuichiro: *See*—
Kamelshi, Masayuki, Higuchi, and Niwatsukino. 3,344,510.

Hilberg, Wolfgang, to Telefunken Patentverwertungsgesellschaft G.m.b.H. Ring-counter employing plural and-gates per stage that simultaneously connect associated and subsequent stages to avoid switching delay. 3,345,574, 10–3–67, Cl. 328—43.

Hildebrand, Donald A., to United States of America, Air Force. Phase shifting stripline directional coupling networks. 3,345,585, 10–3–67, Cl. 333—10.

Hilker, Luther D.: *See*—
Pisani, Joseph P., and Hilker. 3,345,185.

Hill, Moore, to James Mackie & Sons Ltd. Fallers for textile machines. 3,344,481, 10–3–67, Cl. 19—129.

Hiller, Stanley. System for concealing and cooling electric transformers. 3,345,449, 10–3–67, Cl. 174—16.

Hilton, Carl, to Masten Corp. Pillow block. 3,345,116, 10–3–67, Cl. 308—72.

Hilton, Frank E., to Package Containers, Inc. Tape feeding machine with tension controlled supply spool. 3,344,740, 10–3–67, Cl. 101—228.

Himmelm, Martin. Tops for coffee percolator lids and the like articles. 3,344,940, 10–3–67, Cl. 220—82.5.

Hinge Gear Products, Inc.: *See*—
Young, John C. 3,344,837.

Hinz, Arnulf: *See*—
Ziegler, Hanerner, Kowalski, and Hinz. 3,345,443.

Hi-Shear Corp.: *See*—
Bankston, Weldon S., Jr. 3,344,744.

Hitachi Ltd.: *See*—
Nogami, Kunishige, and Ohno. 3,345,465.

Hlavka, Joseph J., and P. Bitha, to American Cyanamid Co. Substituted 4 - dedimethylamino-4-hydroxy-4a,12a-anhydrotetracyclines. 3,345,408, 10–3–67, Cl. 260—559.

Hloch, Albert, R. Kohlhaas, N. Medic, and H. Neises, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Refractory masses. 3,345,192, 10–3–67, Cl. 106—67.

Hoashi, Juzaemon, to Thiokol Chemical Corp. Emulsion polymerization of tetrafluoroethylene using trifluorotrichloroethane as emulsion stabilizer. 3,345,317, 10–3–67, Cl. 260—29.6.

Hobart Mfg. Co., The: *See*—
Meyers, Theodore F. 3,344,996.

Hoch, René G.: *See*—
Bellion, Jean-Claude, and Hoch. 3,344,882.

Hodgson, Robert A., to Maloney-Crawford Tank Corp. Pilotless automatic ignition apparatus. 3,344,835, 10–3–67, Cl. 158—125.

Hodgson, Russell L., to Shell Oil Co. Trithione production. 3,345,380, 10–3–67, Cl. 260—327.

Hoefling, Raymond C.: *See*—
Partlow, James A., Mewhinney, and Hoefling. 3,344,514.

Hoeschele, Guenther K., to E. I. du Pont de Nemours and Co. 4,4'-methylene bis (O-trifluoromethylaniline). 3,345,412, 10–3–67, Cl. 260—570.

Hofer, Walter D., 50% to J. C. Swinarton. Adjustable nylon pickup tooth for grain harvesters, hay ballers and the like. 3,344,908, 10–3–67, Cl. 198—198.

Hoffman, John D. Golf practice device. 3,345,073, 10–3–67, Cl. 273—197.

Hoffmann, Arthur. Swivel arm telephone mountings. 3,345,470, 10–3–67, Cl. 179—150.

Hoffmann, Paul R., to Esso Research and Engineering Co. Ceramic lined return bend. 3,344,811, 10–3–67, Cl. 138—95.

Hogan, Elmer R.: *See*—
Erickson, Louis A., Hogan, and Klinke. 3,344,568.

Hogel, Joseph E., to Honeywell Inc. Pressure transducer. 3,344,798, 10–3–67, Cl. 137—85.

Hohenberger, John H., to Norton Co. Tubing clip. 3,345,095, 10–3–67, Cl. 287—127.

Hohwart, George, to N. A. Woodworth Co. Floating work driver chuck. 3,344,695, 10–3–67, Cl. 82—40.

Holden, Roy J., and R. P. Bolte, to ACF Industries Inc. Hand brake arrangement. 3,344,895, 10–3–67, Cl. 188—107.

Hollister Inc.: *See*—
Marsan, Arthur E. 3,344,788.

Hollowell, Eugene G. Method for recovering ammonia from gaseous mixture. 3,344,585, 10–3–67, Cl. 55—70.

Holm, Roy F., to Standard Conveyor Co. Live roller conveyor. 3,344,903, 10–3–67, Cl. 198—127.

Holm, Roy T., to Shell Oil Co. Compositions containing heterocyclic compounds and resinous products prepared therefrom. 3,345,345, 10–3–67, Cl. 260—79.3.

Homier, Robert I., and R. C. Posh, to Lear Siegler, Inc. Headrest actuator. 3,345,107, 10–3–67, Cl. 297—410.

Honeywell Inc.: *See*—
Chanak, Thomas S., Edinger, and Hendrick. 3,345,018.
Eachus, Joseph J. 3,345,611.
Hogel, Joseph E. 3,344,798.
Katselis, George N., and Robertson. 3,345,566.
Schuck, Jack W. 3,344,668.

Honma, Kunio, to TDK Electronics Co., Ltd. Ceramic dielectrics. 3,345,188, 10–3–67, Cl. 106—39.

Hooker Chemical Corp.: *See*—
Mekjean, Matthew. 3,345,278.
Weil, Edward D., and Smith. 3,345,378.

Hoover Co., The: *See*—
Rippie, Melvin H. 3,344,829.

Hope, Henry. Air actuated switch for intermittent sheet control. 3,345,475, 10–3–67, Cl. 200—61.13.

Horn, Elmar-Manfred, and H. Niederprum, to Farbenfriken Bayer Aktiengesellschaft. Organo-substituted borazines. 3,345,296, 10–3–67, Cl. 260—462.

Horne, Alfred. Pneumatic tire. 3,344,832, 10–3–67, Cl. 152—175.

Horsch, Rudolf, and R. G. Michael, to J. I. Case Co. Quick-disconnect battery cable. 3,345,601, 10–3–67, Cl. 339—110.

Horsfield, Walter R. Diffraction grating apparatus. 3,344,526, 10–3–67, Cl. 33—19.

Hosea, Everett E., to Giddings & Lewis Machine Tool Co. Toolholder and gripping device for automatic tool changers. 3,344,511, 10–3–67, Cl. 29—568.

Howard, David R., D. Stubbs, and R. D. Swallow, to Davy and United Engineering Co. Ltd. Rolling mills. 3,344,643, 10–3–67, Cl. 72—237.

Howell, Derek, to Telephone Mfg. Co. Ltd. Telephone systems and apparatus. 3,345,467, 10–3–67, Cl. 179—81.

Howmet Corp.: *See*—
Martini, Richard W., and Darnell. 3,345,197.

Hoy, Kenneth L.: *See*—
Milligan, Charles L., and Hoy. 3,345,388.

Hoyer, Ernst: *See*—
Meininger, Frits, and Hoyer. 3,345,122.

Hoyer, Hans: *See*—
Koller, Walter, Becker, and Hoyer. 3,345,337.

Hoyt, John M., C. E. Frank, and K. Koch, to National Distillers and Chemical Corp. Dipolar aprotic solvent system for polymerization of bis-(α-haloalkyl) aromatic compounds in the presence of a coupling agent. 3,345,332, 10–3–67, Cl. 260—47.

Hudecek, Carl J.: *See*—
Brookover, George B., and Hudecek. 3,345,218.

Hufford, Richard A., to Williams, White & Co. Simultaneously closing blow molding machine. 3,344,470, 10–3–67, Cl. 18—5.

Hughes Tool Co.: *See*—
Morris, Wilford V. 3,344,870.
Newman, Elmer F., and Parker. 3,345,108.

Hugle, Gebhard. Hydraulic drive means for a swinging door or the like. 3,344,556, 10–3–67, Cl. 49—340.

Hunger, Klaus: *See*—
Voetter, Heins, Hunger, Hasserodt, Sweep, and Korte. 3,345,287.

Hunsinger, Clarence R.: *See*—
Paul, George D., and Hunsinger. 3,345,099.

Huntsinger Associates: *See*—
Hanes, James W. E. 3,345,085.

Hupp Corp.: *See*—
Smith, Horace L., Jr. 3,345,180.
Smith, Horace L., Jr. 3,345,181.

Huste, Arno, R. J. Bressa, and R. B. Kohler, to General Foods Corp. Preparing aromatic spray dried coffee. 3,345,182, 10–3–67, Cl. 99—71.

Hutchinson, Harold D., and W. C. Gregge. Flow responsive switch. 3,345,478, 10–3–67, Cl. 200—81.9.

Hutto, John F., R. E. Dixon, J. W. Davison, C. A. Ayres, G. A. Renberg, and D. K. Queen, to Phillips Petroleum Co. Ethylene, butadiene production. 3,345,285, 10–3–67, Cl. 208—67.

Hyde, Jack, to Koppers Co., Inc. Exhaust hood. 3,344,775, 10–3–67, Cl. 122—7.

Hynes, Joe H.: *See*—
Hanes, James W. E., and Hynes. 3,345,084.

Hynes, Joseph E. Automatic card-dialer telephone warning device. 3,345,463, 10–3–67, Cl. 179—5.

IONON G.m.b.H.: *See*—
Berghaus, Bernhard. 3,345,280.

Iacoviello, John G., and M. B. Mueller, to Allied Chemical Corp. Phenol-acrolein resins and the process of making them using a sulphonic acid catalyst. 3,345,336, 10–3–67, Cl. 260—55.

Ichida, Hiroshi: *See*—
Yamada, Nonoru, Shimada, and Ichida. 3,345,349.

Ichikawa, Stanley T., and R. Young, Jr., to Shell Oil Co. Methods for controlling helminths in animals using certain organophosphorus compounds. 3,345,260, 10–3–67, Cl. 167—33.

Ihrig, Allen C., to Corning Glass Works. Apparatus for manufacturing glass. 3,345,150, 10–3–67, Cl. 65—184.

Ikeda, Takeyoshi: *See*—
Nakagawa, Kazuo, and Ikeda. 3,345,584.

Ilines, Laurence J. Potato dough extruder. 3,344,752, 10–3–67, Cl. 107—14.

Illinois Tool Works Inc.: *See*—
Bostrom, John D. 3,344,974.
Connard, John M. 3,344,817.
Edwards, Bryant. 3,344,948.

Imperial Chemical Industries Ltd.: *See*—
Everard, Kenneth B., and Perry. 3,345,439.
Swindells, Geoffrey. 3,344,774.
Whim, Bernard P., and Fettis. 3,345,406.

Inaba, Seiuemon, and A. Fujii, to Toyo Kogyo Co. Ltd. Cam grinding machine by means of numerical control. 3,344,550, 10–3–67, Cl. 51—105.

Industrial Devices, Inc.: *See*—
Geen, Cory P. 3,345,006.

Ingham, Paul W. Ground support for device for storing and dispensing balls and the like. 3,344,955, 10–3–67, Cl. 221—282.

Ingraham, Chester S.: *See*—
Bucholtz, Daniel J., Hartman, Ingraham, Meyer, and Powers. 3,345,613.

Ingraham, Harold E., to Heico, Inc. Methods of preventing decomposition of anhydrous ammonium thiosulfate. 3,345,-131, 10–3–67, Cl. 23—115.

Inklaar, Petrus A., to Vasco Industries Corp. Gel-forming polysaccharide derivatives prepared by cross esterification. 3,345,358, 10–3–67, Cl. 260—233.5.

Inland Steel Products Co.: *See*—
Day, Paul T., Jr. 3,344,971.

Inman, Richard B., to Scientific Atlanta, Inc. Suction apparatus and method for de-nesting containers from stacks. 3,344,952, 10–3–67, Cl. 221—41.

Insalaco, Michael A.: *See*—
Bartossewics, John S., and Insalaco. 3,345,293.

Institutional Industries, Inc.: *See*—
Crawford, David C. 3,344,445.

Instituto Centroamericano de Investigacion y Techologia Industrial: *See*—
Aguirre-Batres, Francisco, Sole, and Murillo-Solis. 3,344,734.

Insul-8-Corp.: *See*—
Kilburg, Ronald J. 3,345,471.

International Business Machines Corp.: *See*—
Betts, Peter, and Lynott. 3,345,460.
Block, Murry L., and Mones. 3,345,158.
Cheroff, George, and Reisman. 3,345,209.
Delaney, Ronald A., and Puttlitz. 3,345,596.
Drop, Joseph G. 3,344,900.
Loeffler, Karl H., and Salbu. 3,345,529.
Munroe, Robert A. 3 345 276.
Reisman, Arnold, Berkenblit, Papastian, and Cheroff. 3,345,223.

International Nickel Co., Inc., The: *See*—
Haynes, Alan G. 3,346,220.

International Omni-Pak Corp.: *See*—
Erickson, Richard W. 3,344,950.

International Paper Co.: *See*—
Brinkley, Amiel W., Jr., and Kilborn. 3,345,250.

International Standard Electric Corp.: *See*—
Rahmig, Gunther. 3,345,466.

Isaacson Manfred A.: *See*—
Polhemus, Von D., Boettger, Isaacson, and Yew. 3,345,-060.

Isuzu Motors Ltd.: *See*—
Misaka, Yukio, and Sakashita. 3,344,564.

Itek Corp.: *See*—
Kitrosser, Samuel. 3,344,729.

Iwanciow, Bernard L., to United Aircraft Corp. Variable impulse rocket motor. 3,344,603, 10–3–67, Cl. 60—204.

Iwashita, Noboru, K. Ohno, and I. Kobayashi, to Toyota Motor Co. Ltd. Voltage operated automatic speed control system for automobiles. 3,344,880, 10–3–67, Cl. 180—109.

Izenour, George C. Scenery handling apparatus. 3,345,066, 10–3–67, Cl. 272—23.

Jackson, John A., to E. K. Cole Ltd. Movable head and tape control system. 3,345,623, 10–3–67, Cl. 340—174.1.

Jackson, Wilbur. Flip-flop alarm system with lamp test circuit. 3,345,628, 10–3–67, Cl. 340—310.

Jacobs, James W., to General Motors Corp. Fluid metering device. 3,344,960, 10–3–67, Cl. 222—334.

Jacoby, George V., to Radio Corp. of America. Tape reel servo. 3,345,008, 10–3–67, Cl. 242—55.12.

Jamesbury Corp.: *See*—
Rawstron, William W. 3,345,032.

Jankowski, Walter, to M. Spuhr & Co. Soot blower for steam boilers. 3,344,459, 10–3–67, Cl. 15—317.

Janssen, Paul A. J., to Janssen Pharmaceutica N.V. Benzimidazolinyl piperidines. 3,345,364, 10–3–67, Cl. 260—240.

Janssen Pharmaceutica N.V.: *See*—
Janssen, Paul A. J. 3,345,364.

Jecker, Justin J., and R. P. Conger, to Congoleum-Nairn Inc. Continuous method for making decorative floor covering. 3,345,234, 10–3–67. Cl. 156—209.

Jefferson Mills, Inc., The: *See*—
Bryan, Morris M., Jr. 3,344,479.
Bryan, Morris M., Jr. 3,344,480.

Jelatis, Demetrius G., and F. G. Chesley, to Central Research Laboratories, Inc. Remote control crane system. 3,344,933, 10–3–67, Cl. 212—24.

Jenkins, Jack J.: *See*—
Nordberg, Robert G., Reithoffer, and Jenkins. 3,344,655.

Jenks, Carl W. Portable barrel plating unit. 3,345,282, 10–3–67, Cl. 204—218.

Jennings, Ermont V., to Burroughs Corp. Powder evaporation apparatus. 3,344,765, 10–3–67, Cl. 118—48.

Jernkontoret, The Swedish Ironmasters Association: *See*—
Brunner, Mihaly. 3,345,191.

Jinkens, Charles: *See*—
Cowan, John D., and Waldbillig. 3,344,567.

Johnson, Douglas, and J. H. Young, to General Motors Corp. Turbine wheel. 3,345,035, 10–3–67, Cl. 253—39.

Johnson, Floyd O., and L. T. Zitelli, to Varian Associates. Arc protected high frequency electron discharge devices and waveguide window coupling assembly. 3,345,535, 10–3–67, Cl. 315—39.

Johnson, James S.: *See*—
Kraus, Kurt A., Johnson, and Shor. 3,344,928.

Johnson & Johnson: *See*—
Dunlap, Isaac R. 3,345,204.
Kalwaltes, Frank. 3,345,243.
Korpman, Ralf. 3,345,206.

Johnson, Matthey and Mallory, Ltd.: *See*—
Bourgault, Pierre L., and Batelaan. 3,345,545.

Johnson, Stewart C., to Westinghouse Electric Corp. Removable panels for ovens. 3,344,779, 10–3–67, Cl. 126—19.

Johnson, William H., to The Goodyear Tire & Rubber Co. Cord treatment. 3,344,595, 10–3–67, Cl. 57—106.

Johnston, William A., to Westinghouse Electric Corp. Convertible waste disposal unit. 3,344,997, 10–3–67, Cl. 241—101.

Joly, Robert: *See*—
Warnant, Julien, Joly, Allais, and Girault. 3,345,259.

Jordan, Donald R.: *See*—
Biechler, Donald G., and Jordan. 3,345,126.

Jorgensen, George N., to Square D Co. Bus duct hanger. 3,345,022, 10–3–67, Cl. 248—59.

Jorgensen, Svend M.: *See*—
Kunsagi, Laszlo, Jorgensen, and Apblett. 3,344,509.

Juentgen, Harald: *See*—
Kruel, Martin, Juentgen, and Dratwa. 3,345,125.

Julien-Davin, Jean, to V. Crouset (Drome). Topography indicator for aircraft. 3,344,707, 10–3–67, Cl. 88—24.

Jumelle, Louis F.: *See*—
Carriere, Pierre P. A., Jumelle, Ranvier, and Richter. 3,344,884.

Jumelle, Louis F., G. J.-L. Ranvier, and G. Richter, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, and Office National d'Etudes et de Recherches Aerospatiales dit: O.N.E.R.A. Silencers for jet propulsion engines or the like. 3,344,883, 10–3–67, Cl. 181—51.

Jurgens, Orville F.: *See*—
Cooke, Ted E. 3,345,036.

Justice, John L., E. A. Wielicki, and A. Labriola, to FMC Corp. Method of preparing cellulose film having improved durability. 3,345,200, 10–3–67, Cl. 117—60.

KHG Associates: *See*—
Kupka, John J. 3,344,867.

Kaaneche, John. Dry product dispenser means. 3,344,958, 10–3–67, Cl. 222—181.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
Komoda, Tsutomu. 3,345,514.
Nomura, Masayoshi, Tokuyama, Tauchi, and Takeshi. 3,345,222.

Kabushiki Kaisha Yokogawa Denki Seisakusko (Yokogawa Electric Works Ltd.): *See*—
Tada, Osamu. 3,345,630.

Kaiser, Martin. Method of forming a lock knot for coil springs. 3,344,613, 10–3–67, Cl. 140—101.

Kalamazoo Mfg. Co.: *See*—
Keller, Ralph E. 3,344,747.

Kalandiak, Michael: *See*—
Kine, Benjamin B., Kalandiak, and Buechler. 3,345,203.

Kalwaites, Frank, to Johnson & Johnson. Apertured nonwoven fabric with channels between apertures. 3,345,243, 10–3–67, Cl. 161—109.

Kameishi, Masayuki, R. Higuchi, and T. Niwatsukino, to Asahi Kasei Kogyo Kabushiki Kaisha. Line welding method for metals by explosives. 3,344,510, 10–3–7, Cl. 29—470.1.

Kamins, Seymour, and N. Rosenberg. Single handle bag construction. 3,344,977, 10–3–67, Cl. 229—54.

Kanbe, Susumu: *See*—
Makino, Takayuki, Kanbe, and Mori. 3,345,564.

Kania, Frank P., and E. S. Olney, to National Dairy Products Corp. Method of making a dehydrated confection. 3,345,186, 10–3–67, Cl. 99—199.

Kanits, Roy E.: *See*—
Goldammer, Freeland R., and Kanitz. 3,345,117.

Kanthal, Aktiebolaget: *See*—
Schrewelius, Nils G., and Magnusson. 3,345,597.

Kapart Inc.: *See*—
Artst, William W. 3,344,435.

Kaplan, Irving L., and J. G. Fay, to Westinghouse Electric Corp. Signal translation system. 3,345,572, 10–3–67, Cl. 325—474.

Kaplan, Marvin B.: *See*—
Herst, Leonard A., Kaplan, and Spangenberg. 3,345,627.

Karlsson, Gosta, and K. Folgero, to Alimanna Svenska Elekriska Aktieboget. Vacuum degassing apparatus. 3,345,056, 10–3–67, Cl. 266—34.

Karow, William E.: *See*—
Simpson, Lewis E., and Karow. 3,344,704.

Katselis, George N., and A. L. M. Robertson, to Honeywell Inc. Variable resistance assembly employed in a measuring rebalance apparatus. 3,345,566, 10–3–67. Cl. 324—99.

Kawaguchi, Chiyoji, to Nihon Genshiryoku Kenkyu Sho. Symmetrical magnetic amplifier. 3,345,577, 10–3–67, Cl. 330—8.

Kearney & Trecker Corp.: *See*—
Zanki, Frank. 3,344,713.

Kehoe, Edward C., and E. C. Walker, to Saline Water Conversion Corp. Method and apparatus for degassing and distilling liquid. 3,344,584, 10–3–67, Cl. 55—46.

Kehres, William: *See*—
Crum, Harry O. 3,344,539.

Keller, Hans, M. Mühlhausser, and W. Post, to Aluminium-Walswerke Singen G.m.b.H. Fabrication of electrolytic capacitors. 3,345,208, 10–3–67. Cl. 117—200.

Keller, Ralph E., to Kalamazoo Mfg. Co. Adjustable mounting and support for the flanged wheels of a convertible rail-highway vehicle. 3,344,747, 10–3–67. Cl. 105—215.

Kelley, James J., Jr.: *See*—
Crum, Harry O. 3,344,539.

Kelley, Leon O., and C. E. Hatcher. Portable rock breaking device. 3,344,866, 10–3–67, Cl. 173—43.

Kelly, Anthony J. Toilet seat disinfector. 3,344,441, 10–3–67. Cl. 4—233.

Kelly, Florence E. Pin cushion kit. 3,344,967, 10–3–67, Cl. 223—109.

Kelson, Lester, to S. Blickman, Inc. Stainless steel sheet metal storage shelving. 3,344,756, 10–3–67, Cl. 108—106.

Kember, Raymond C., and J. G. Allison, to Thorn Electrical Industries Ltd. Means for mounting fluorescent lamp starter switch and cover. 3,345,451, 10–3–67. Cl. 174—52.

Kennitz, Warren N., to Scovill Mfg. Co. Electric switch with locking means. 3,345,489, 10–3–67, Cl. 200—157.

Kendall Co., The: *See*—
Grodberg, Marcus G., and Mellberg. 3,345,265.
Spicer, Ronald F., and Marshall. 3,344,506.

Kenron Aluminum and Glass Corp.: *See*—
Siegal, Burton L. 3,345,488.

Kenron Awning and Window Corp.: *See*—
Siegal, Burton L. 3,344,564.

Kent, George, Ltd.: *See*—
Stoten, Terence A. 3,344,988.

Kenworthy, Grant F., to Rex Chainbelt Inc. Adjustable hydraulic shock absorber. 3,344,894, 10–3–67, Cl. 188—96.

Kerin, Joseph J. Pouring nozzle for molten steel ladle. 3,344,-965, 10–3–67, Cl. 222—563.

Kerr, George T., and P. S. Landis, to Mobil Oil Corp. Catalytic oxidation of hydrocarbons in the presence of hydrogen sulfide to produce carbon disulfide and oxides of carbon. 3,345,135, 10–3–67, Cl. 23—206.

Keshner, Osborn A., to Lambert Brake Corp. Brake equaliser valve. 3,345,112, 10–3–67, Cl. 303—6.

Kessler, Norman H.: *See*—
Kessler, Norman H., and Lillig. 3,344,999.

Kessler, Norman H., and F. A. Lillig, to N. H. Kessler, and H. F. Derrick, tenants in common. Double impeller impact breaker. 3,344,999, 10–3–67, Cl. 241—154.

Kidwell, Robert P. Method and apparatus for energy conversion. 3,345,524, 10–3–67, Cl. 310—11.

Kilborn, Jack F.: *See*—
Brinkley, Amiel W., Jr., and Kilborn. 3,345,250.

Kilburg, Ronald J., to Insul-8-Corp. Portable trolley system. 3,345,471. 10–3–67, Cl. 191—45.

Kilgore, Harry A., and H. L. Smith, to General Motors Corp. Fluid track sanding system. 3,345,098, 10–3–67, Cl. 291—3.

Kilian, Joseph J., to The Black Clawson Co. Multiple manifold headbox. 3,345,254, 10–3–67, Cl. 162—348.

Kilmer, James A., to Olin Mathieson Chemical Corp. Die structure. 3,344,650, 10–3–67, Cl. 72—469.

Kimberly-Clark Corp.: *See*—
Anderson, Richard D. 3,344,483.
Anderson, Richard D. 3,344,581.
Goldbeck, Le Roy J. 3,345,196.

Kimmel, Joseph J., and K. K. Carman, to Koppers Co., Inc. Coupling for shafts and the like. 3,345,093, 10–3–67, Cl. 287—52.05.

Kine, Benjamin B., M. Kalandiak, and P. B. Buechler, to Rohm & Haas Co. Finished tannin-containing substrates. 3,345,208, 10–3–67, Cl. 117—76.

Kirkland, Wyatt S. Sand blast nozzle. 3,344,558, 10–3–67, Cl. 51—11.

Kirkstall Forge Engineering Ltd.: *See*—
Wilson, Ronald H. 3,344,715.

Kirsten, Paul A. Wood cutting machine, particularly excelsior machine. 3,344,828, 10–3–67, Cl. 144—180.

Kiss, Marie S., R. C. Hess, and E. G. Tajkowski, to Eversharp, Inc. Method of making razor blades. 3,345,202, 10–3–67, Cl. 117—71.

Kissman, Henry M.: *See*—
Winterbottom, Robert, Ritha, and Kissman. 3,345,410.

Kitajima, Joichi, K. Ueno, and H. Sugimoto, to Mitsubishi Rayon Co., Ltd., and Mitsubishi Vonnel Co., Ltd. Apparatus for producing crimped fibers. 3,344,472, 10–3–67, Cl. 18—8.

Kitchen, Elwyn L., T. Lee, and W. E. Rise, to General Motors Corp. Predetermined torque plus tension applying device. 3,344,865, 10–3–67, Cl. 173—12.

Kitchens of Sara Lee, Inc.: *See*—
Artiaga, Mariano V., Van Eikeren, and Wolf. 3,344,754.

Kite, Floyd E., to McWhirter & Sons, Inc. Mold press. 3,344,-476, 10–3–67, Cl. 18—18.

Kitrosser, Samuel, to Itek Corp. Photographic sheet material processing apparatus. 3,344,729, 10–3–67, Cl. 95—89.

Kleefisch, Karl-Heins: *See*—
Achterberg, Arno, Gormar, and Kleefisch. 3,344,473.

Klein, Harvey G.: *See*—
Gilham, Helen C., and Klein. 3,345,432.

Kliewer, Wesley P. Actuation device for actuating article dispensers. 3,344,897, 10–3–67, Cl. 194—4.

Klinger Mfg. Co. Ltd., The: *See*—
Gilchrist, Reginald S. 3,344,621.
Mattingly, Denis A. E., and Gilchrist. 3,345,003.

Klinikowski, James J., to Burroughs Corp. Coin-operated dispensing system. 3,344,898, 10–3–67, Cl. 194—9.

Klinke, Bernhard R.: *See*—
Erickson, Louis A., Hogan, and Klinke. 3,344,568.

Klockner-Humboldt-Deuts Aktiengesellschaft: *See*—
Decker, Hanns, and Stockmann. 3,345,000.

Klopfer, Oskar E. H., and T. H. Coffield, to Ethyl Corp. Process for preparing halomanganese pentocarbonyl. 3,345,144, 10–3–67, Cl. 23—367.

Klubien, Ole, to Thrige-Titan A/S. Method of continuously recovering protein from fatty animal material by employing directly admixed fat at a temperature of from 70° C.-120° C. 3,345,353, 10–3–67, Cl. 260—112.

Kmiecik, James E., to Columbian Carbon Co. Process for preparing aromatic azo compounds. 3,345,356, 10–3–67, Cl. 260—194.

Knapsack Aktiengesellschaft: *See*—
Heymer, Gero, and Harnisch. 3,345,134.

Knapsack-Griesheim Aktiengesellschaft: *See*—
Ziegler, Hanerner, Kowalski, and Hinz. 3,345,443.

Knight, J. B., Co., Inc., The: *See*—
Purtell, Rufus J. 3,344,991.

Kobayashi, Ikuya: *See*—
Iwashita, Noboru, Ohno, and Kobayashi. 3,344,880.

Koch, Karl: *See*—
Hoyt, John M., Frank, and Koch. 3,345,332.
Koch, Otto: *See*—
Stein, Werner, Weiss, and Koch. 3,345,301.
Kochman, Miroslav. Combination griddle and hot plate. 3,344,735, 10–3–67, Cl. 99—340.
Kocian, Ralph B., and B. L. Gamble, to Continental Can Co., Inc. Can holder. 3,344,904, 10–3–67, Cl. 198—131.
Koetters, Ronald A. Method and apparatus for disintegrating concrete and like materials. 3,344,995, 10–3–67, Cl. 241—1.
Kohler, Richard B.: *See*—
Huste, Arno, Breza, and Kohler. 3,345,182.
Kohlhaas, Rudolf: *See*—
Hloch, Albert, Kohlhaas, Medic, and Neises. 3,345,192.
Koller, Walter, H. Becker, and H. Hoyer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of film- and fiber-forming polyesters. 3,345,337, 10–3–67, Cl. 260—75.
Komoda, Tsutomu, to Kabushiki Kaisha Hitachi Seisakusho. Television camera combined with an electron microscope and having a plurality of cathoconductive targets. 3,345,514, 10–3–67, Cl. 250—49.5.
Konig, Eberhard, and H.-E. Rodel, to Bodenseewerk Perkin-Elmer & Co., G.m.b.H. Thermostat. 3,344,851, 10–3–67, Cl. 165—39.
Konigsbuch, Mordekhai: *See*—
Shavit, Nehemia, Konigsbuch, and Oplatka. 3,345,350.
Kopczynski, John F. Revolving disc spray type evaporator. 3,344,836, 10–3–67, Cl. 159—3.
Kopczynski, John F. Subjection of flowable materials to high linear speeds and high centrifugal forces. 3,344,984, 10–3–67, Cl. 233—21.
Koppers Co., Inc.: *See*—
Hyde, Jack. 3,344,775.
Kimmel, Joseph J., and Carman. 3,345,093.
Mitchell, Hartman, and Walker. 3,345,057.
Reinfeld, Kurt, and Rokop. 3,344,844.
Rys, Frederick W. 3,344,841.
Van Ackerson, Joseph. 3,345,051.
Korpman, Ralf, to Johnson & Johnson. Adhesive composition containing a carboxyl modified elastomer, adhesive sheet coated therewith, and method of making the adhesive sheet. 3,345,206, 10–3–67, Cl. 117—122.
Kossnar, Dennis: *See*—
Wolowicz, Richard S., Kossnar, and Oller. 3,344,911.
Kostrewa, John J., to Evans Products Co. Freight bracing apparatus. 3,344,750, 10–3–67, Cl. 105—369.
Koundakjian, Theodore H., and J. L. Dreher, to Chevron Research Co. Production of complex basic aluminum soap greases. 3,345,291, 10–3–67, Cl. 252—37.7.
Kovac, Frederick J., and G. W. Rye, to The Goodyear Tire & Rubber Co. Method of making a pneumatic cord tire. 3,345,223, 10–3–67, Cl. 156—126.
Kovac, James J.: *See*—
Peterson, Don W., Kovac, Calvin, and Puse. 3,345,109.
Kovach, Stephen M., and E. S. Rogers, to Sinclair Research, Inc. Process for removing nitrogen with cobalt-rare earth and group catalyst. 3,345,286, 10–3–67, Cl. 208—254.
Kovacik, Stephen, and L. W. Cramer, to Libbey-Owens-Ford Glass Co. Trimming glass sheets. 3,344,968, 10–3–67, Cl. 225—2.
Kowalski, Werner: *See*—
Ziegler, Hanerner, Kowalski, and Hinz. 3,345,443.
Kracklauer, Aloysius, to Sparkler Mfg. Co. Apparatus for use in filtering fluids. 3,344,922, 10–3–67, Cl. 210—81.
Krakauer, Merrill, and H. E. Verbeke. Article vending machine having helical feeder coil. 3,344,953, 10–3–67, Cl. 221—75.
Kramer, Clarence F. Door lock mechanism. 3,345,100, 10–3–67, Cl. 292—48.
Kraus, Kurt A., J. S. Johnson, and A. J. Shor, to United States of America, Atomic Energy Commission. Humic acid as an additive in a process of forming a salt-rejecting membrane. 3,344,928, 10–3–67, Cl. 210—500.
Kreisler, Jacques, Mfg. Corp.: *See*—
Hauser, Seymour. 3,344,599.
Kremer, Ross A., to Mobil Oil Corp. Preparation of hydroxy-aromatic compounds. 3,345,382, 10–3–67, Cl. 260—330.5.
Krohn, Lloyd N.: *See*—
Cloud, Charles E., George, and Krohn. 3,344,576.
Kronsbein, Curt, to Maschinenfabrik Eugen Bellmann G.m.b.H. Textile dyeing device for yarns. 3,344,622, 10–3–67, Cl. 68—10.
Kruel, Martin, H. Juentgen, and H. Dratwa, to Bergwerksverband G.m.b.H. Method of purifying gases. 3,345,125, 10–3–67, Cl. 23—2.
Krumkalns, Eriks: *See*—
Gerzon, Koert, and Krumkalns. 3,345,399.
Kubota Tekko Kabushiki Kaisha: *See*—
Takenaka, Tetsuya. 3,345,096.
Kuchin, Vladimir A.: *See*—
Andonjev, Sergei M., Glaskov, Kuchin, Makarov, Pevny, Pochtman, Tesher, and Filipjev. 3,345,054.
Kuhlkamp, Alfred, J. W. Zimmerman, and L. Bütschli, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Polymer of an unsaturated ketone compound cross-linked with a hydrazide of a polybasic carboxylic acid. 3,345,336, 10–3–67, Cl. 260—63.
Kuhlman, Albert B., and H. A. Garske. Current interrupter rotary circuit breaker. 3,345,472, 10–3–67, Cl. 200—26.
Kühne, Heins, to Vickers-Zimmer Aktiengesellschaft. Jacketed annular reactor unit. 3,345,139, 10–3–67, Cl. 23—277.
Kuke, Rudolf. Electromagnetic relay with improved armature-core assembly. 3,345,592, 10–3–67, Cl. 335—129.
Kulicke and Soffa Mfg. Co.: *See*—
Turner, Roger S., and Draugiis. 3,345,567.
Kulischenko, Walter, to S. S. White Co. Apparatus for storing and delivering abrasive and non-abrasive powders. 3,344,524, 10–3–67, Cl. 32—58.
Kulser, Leonard J. Construction or repair of guide passages. 3,344,501, 10–3–67, Cl. 29—401.
Kummerman, Henri, to Mac Gregor-Comarain. Shelter arrangement for self-contained loading and unloading devices on ships, vehicles, buildings and like movable or stationary structures. 3,344,937, 10–3–67, Cl. 214—15.
Kunsagi, Laszlo, S. M. Jorgensen, and W. R. Aplett, Jr., to Foster Wheeler Corp. Method for the explosive section forming of vessels. 3,344,509, 10–3–67, Cl. 29—421.
Kupka, John J., to KHG Associates. Bottom brace for pile hammer leads. 3,344,867, 10–3–67, Cl. 173—44.
Kurashige, Hirotoshi, to Kurashiki Rayon Co. Ltd. Method of manufacturing synthetic fibers of polyvinyl alcohol. 3,345,446, 10–3–67, Cl. 264—205.
Kurashike Rayon Co. Ltd.: *See*—
Kurashige, Hirotoshi. 3,345,446.
Kureha Chemical Industry Co., Ltd.: *See*—
Shibata, Hiroshi, Yamasaki, and Sugihara. 3,345,283.
Kureha Kagaku Kabushiki Kaisha: *See*—
Saito, Shigeru, Watanabe, and Noguchi. 3,345,140.
Kureha Spinning Co., Ltd.: *See*—
Takemure, Kazuhiko, and Noguchi. 3,344,594.
Kurlovich, John. Fishing lure. 3,344,545, 10–3–67, Cl. 43—42.08.
Kursincsky, William. Re-spooling machine. 3,345,005, 10–3–67, Cl. 242—45.
Kutscher, Horst, and E. Vopel, to Dortmund-Horder Hullenumion Aktiengesellschaft. Additive measuring device for vacuum degasification vessels. 3,345,055, 10–3–67, Cl. 266—34.
Kusiak, Matthew. Electric finger guessing game. 3,345,069, 10–3–67, Cl. 273—1.
Kvalheim, Andrew M. and I. S. Routing and planing apparatus. 3,344,825, 10–3–67, Cl. 144—1.
Kvalheim, Andrew M. and I. S. Routing device. 3,344,827, 10–3–67, Cl. 144—144.
Kvalheim, Irwin S.: *See*—
Kvalheim, Andrew M. and I. S. 3,344,825.
Kvalheim, Andrew M. and I. S. 3,344,827.
Labriola, Anthony: *See*—
Justice, John L., Wielicki, and Labriola. 3,345,200.
Lacal, Rodolphe, to North American Philips Co., Inc. Method of chemically polishing copper and copper alloys. 3,345,225, 10–3–67, Cl. 156—20.
Lafferty, John J.: *See*—
Gordon, Maxwell, and Lafferty. 3,345,373.
Lafon, Guy P., and J.-P. Cailley, to Societe des Accumulateurs Fixes et de Traction Societe Anonyme. Continuous process of manufacturing a stack of elements for use in an electric cell. 3,345,211, 10–3–67, Cl. 136—6.
Laidig, Manfred R.: *See*—
Szostak, Jan, Laidig, and Zacher. 3,344,762.
Lal, Joginder, to The Goodyear Tire & Rubber Co. Polymerisation of olefin oxides and olefin sulfides. 3,345,308, 10–3–67, Cl. 260—2.
Lambert Brake Corp.: *See*—
Kershner, Osborn A. 3,345,112.
Lambert, Robert L., and W. R. McKelrnan, to Sylvania Electric Products Inc. Process of manufacturing a storage cell electrode. 3,345,213, 10–3–67, Cl. 136—75.
Lamberth, Charles T.: *See*—
Flack, Herbert P., Sanches, and Lamberth. 3,345,437.
Laming, Lionel H. G., to Societe d'Exploitation des Materiels Hispano-Suiza. Testing apparatus for space vehicles, in particular for satellites. 3,344,673, 10–3–67, Cl. 73—432.
Land, Edwin H., to Polaroid Corp. Photographic product and process of using same. 3,345,165, 10–3–67, Cl. 96—29.
Land, Edwin H., to Polaroid Corp. Photographic processing method utilising frozen aqueous solutions. 3,345,172, 10–3–67, Cl. 96—48.
Land, Edwin H., and H. G. Rogers, to Polaroid Corp. Photographic diffusion transfer color processes. 3,345,163, 10–3–67, Cl. 96—3.
Land, Edwin H., M. M. Morse, and E. L. Yankowski, to Polaroid Corp. Photographic process whereby a fully developed and fixed negative is formed concurrently with a positive silver transfer image. 3,345,166, 10–3–67, Cl. 96—29.
Landis, Phillip S.: *See*—
Kerr, George T., and Landis. 3,345,136.
Lane, Floyd A., to TRW Inc. Wheel balancer. 3,344,674, 10–3–67, Cl. 73—480.
Langan Aperture Cards, Inc.: *See*—
Langan, John F. 3,344,716.
Langan, John F., to Langan Aperture Cards, Inc. Apparatus for making aperture cards. 3,344,716, 10–3–67, Cl. 93—1.
Lange, Hans, to Deutsche Erdol-Aktiengesellschaft. Process for the extraction of liquid and solid bitumens from underground deposits. 3,344,856, 10–3–67, Cl. 166—4.
Langer, Arthur W., Jr., to Esso Research and Engineering Co. Preparation of tetraalkyl benzene. 3,345,426, 10–3–67, Cl. 260—671.
Langer, Horst G., to The Dow Chemical Co. Organo metal compounds of polyamino polyacetic acids. 3,345,391, 10–3–67, Cl. 260—429.7.
Langer, Sol, to Andray Products, Inc. Swimming pool cover. 3,344,440, 10–3–67, Cl. 4—172.
Langley, Robert C., J. W. Lindenthal, and W. C. Pfefferle, to Engelhard Industries, Inc. Gas separation apparatus. 3,344,586, 10–3–67, Cl. 55—158.
Laridon, Urbain L., and G. A. Delzenne, to Gevaert Photo-Producten N.V. Photochemical insolubilization of polymers. 3,345,171, 10–3–67, Cl. 96—86.
Larsen, Lester J.: *See*—
Shutt, Paul B., Larsen, and Ferrell. 3,344,944.

Larson, Gene M.: *See*—
Bies, John L., and Larson. 3,345,111.
La Soudure Electrique Autogene, Procedes Arcos: *See*—
Sunnen, Jean A. F. 3,344,839.
Lauck, William A., to Emerson Electric Co. Portable conduit bender. 3,344,630, 10–3–67, Cl. 72—2.
Lautsenhiser, Argyle G., and H. E. Clark, to General Motors Corp. Windingless gyro float. 3,344,676, 10–3–67, Cl. 74—5.7.
Lavengood, Thomas H., to The Bendix Corp. Machine tool lubricator. 3,344,887, 10–3–67, Cl. 184—7.
Lawrence, Ray V.: *See*—
Shuller, Walter H., and Lawrence. 3,345,404.
Lawrie, Robert T. Suspension device for lanterns. 3,345,028, 10–3–67, Cl. 248—231.
Lawson, Gustaf B., and G. C. Bailey, to The Thomas & Betts Co. Strap tightening and cutting tool. 3,344,815, 10–3–67, Cl. 140—123.6.
La Zerte, James D.: *See*—
Ashley, Paul E., La Zerte, and, Sefl. 3,345,277.
Lear Siegler, Inc.: *See*—
Homler, Robert I., and Posh. 3,345,107.
Lee, John M., to The Dow Chemical Co. Solubilizing phosphate rock with an ammonium phosphate-ammonium bisulfate melt. 3,345,153, 10–3–67, Cl. 71—36.
Lee, Thomas: *See*—
Kitchen, Elwyn L., Lee, and Rise. 3,344,865.
Leeds, Morton W.: *See*—
Davidowich, George, and Leeds. 3,345,299.
Leeds, Morton W., and G. Davidowich, to Air Reduction Co., Inc. Hydrogen embrittlement inhibition. 3,345,298, 10–3–67, Cl. 252—146.
Leeman, Jan N. J., to Stamicarbon N.V. Screening device comprising a sieve deck capable of turning on a shaft. 3,344,919, 10–3–67, Cl. 209—251.
Leenhouts, Albert C., to The Superior Electric Co. Decimal coded binary counter with sequential digit input. 3,345,521, 10–3–67, Cl. 307—88.5.
Leffingwell Chemical Co.: *See*—
Allison, John R., and Cereghino. 3,345,154.
Lehrer, Fritz, and M. Casutt. Shut-off valve. 3,344,807, 10–3–67, Cl. 137—557.
Leonard, James H., and W. H. Woods, to Square D Co. Electric circuit breaker with improved tripping means including a heater strip in the thermal tripping means and adjustable air gaps in the magnetic tripping means. 3,345,591, 10–3–67, Cl. 335—23.
Leonard, Joseph W., III, to United States Steel Corp. Heavy-medium method and apparatus. 3,344,918, 10–3–67, Cl. 209—12.
Leonard, Merrill G., and L. L. Wright, to Westinghouse Electric Corp. Removable current limiting fuse. 3,345,483, 10–3–67, Cl. 200—133.
Lerner, Morris W.: *See*—
Eberle, Allan R., Lerner, and Pinto. 3,345,127.
Leuk, Israel A., to Motorola, Inc. Method of making a semiconductor device having improved PN junction avalanche characteristics. 3,345,221, 10–3–67, Cl. 148—175.
Leveque, Christian: *See*—
Barnabe, Jean-Louis, Calles, and Leveque. 3,344,926.
Levy, Boris, to Mobil Oil Corp. Production of hydrazine. 3,345,279, 10–3–67, Cl. 204—157.1.
Levy, Edward D., R. W. Weeden, and E. M. Muller, to Union Carbide Corp. Foldable chair. 3,345,105, 10–3–67, Cl. 297—24.
Lewin, Gunnar E. W., to Aktiebolaget Overums Bruks. Window structures. 3,344,557, 10–3–67, Cl. 49—390.
Lewis, Benjamin A.: *See*—
Sassiver, Martin L., Lewis, and Shepherd. 3,345,367.
Sassiver, Martin L., Lewis, and Shepherd. 3,345,369.
Lewis, Benjamin A., M. L. Sassiver, and R. G. Shepherd, to American Cyanamid Co. Substituted 7-acetylamino cephalosporanic acids. 3,345,366, 10–3–67, Cl. 260—243.
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Libbey-Owens-Ford Glass Co.: *See*—
Kovacik, Stephen, and Cramer. 3,344,968.
Liberson, Waldimir T.: *See*—
Offner, Franklin F., and Liberson. 3,344,792.
Light's London Ltd.: *See*—
Palmer, George W. 3,344,759.
Lillie, Gordon E., to Bryant Chucking Grinder. Control device. 3,344,560, 10–3–67, Cl. 51—165.
Lillig, Floyd A.: *See*—
Kessler, Norman H., and Lillig. 3,344,999.
Lilly, Edward F., and R. R. Reinhart, to The Quaker Oats Co. Process for producing ready-to-eat oat cereals. 3,345,183, 10–3–67, Cl. 99—80.
Lilly, Eli, and Co.: *See*—
Gerson, Koert, and Krumkalns. 3,345,399.
Rapala, Richard T. 3,345,362.
Lindemann, Martin K., and R. P. Volpe, to Air Reduction Co., Inc. Vinyl acetate-ethylene-N-methylol acrylamide interpolymer latex and woven fabrics coated thereby. 3,345,318, 10–3–67, Cl. 260—29.6.
Lindenthal, John W.: *See*—
Langley, Robert C., Lindenthal, and Pfefferle. 3,344,586.
Lindfors, Paul O.: *See*—
Cox, Fred B., Jr., and Lindfors. 3,345,617.
Lindner, Ernst: *See*—
Ehrbart, Gustav, Lindner, and Ott. 3,345,861.
Lingnau, Josef S., to Gustav F. Gerdts K.G. Heat operated discharger for condensation water. 3,344,672, 10–3–67, Cl. 73—363.5.
Lipowski, Stanley A.: *See*—
Fetscher, Charles A., and Lipowski. 3,345,344.
Litton Systems, Inc.: *See*—
Anderson, Harold C., and Peltzer. 3,345,620.
Schuster, Norman J., and Wolfe. 3,344,515.
Livera, Phillip A.: *See*—
Rively, Clair M., and Livera. 3,344,505.
Livingston, Richard D., to Barber-Colman Co. Multiple winder with automatic thread positioning. 3,345,004, 10–3–67, Cl. 242—35.5.
Ljungström, Olle, to Saab Aktiebolag. Aircraft. 3,345,015, 10–3–67, Cl. 244—13.
Lobash, Floyd, A. J. Gilchrist, and M. J. Straub, to Possis Machine Corp. Spray coater. 3,344,772, 10–3–67, Cl. 118—301.
Loef, Jakob, to Steinbock. G.m.b.H. Lifting arrangement. 3,344,890, 10–3–67, Cl. 187—9.
Loehler, Karl H., and E. O. J. Salbu, to International Business Machines Corp. Electron beam column with demountable flux-generating assembly and beam-forming elements. 3,345,529, 10–3–67, Cl. 313—84.
Loftus Engineering Corp.: *See*—
Guthrie, James M. 3,345,050.
Logan, Harvey G. Disposable razor. 3,344,910, 10–3–67, Cl. 206—16.
Logan, Maurus C., and H. B. Gibson, to The Thomas & Betts Co. Sintered powdered metal connectors. 3,345,452, 10–3–67, Cl. 174—71.
Lommen, Alan J., and M. M. Haakenson. Rope clamp and clevis. 3,344,485, 10–3–67, Cl. 24—126.
Longman, Orville O. Sugar cane planter. 3,344,630, 10–3–67, Cl. 146—129.
Looke, Arvo, to Westinghouse Electric Corp. Electrical connector cluster assembly. 3,345,605, 10–3–67, Cl. 339—192.
Lotz, Alexander: *See*—
Mayer, Friedrich W., Lotz, and Stern. 3,344,920.
Lou, Shih-Woo. Electric shunt device. 3,345,482, 10–3–67, Cl. 200—118.
Loveque, Christian: *See*—
Barnabe, Jean-Louis, Callies, and Loveque. 3,344,926.
Luckenbaugh, Raymond W., to E. I. du Pont de Nemours and Co. Establishing perennial grass turf with cycloalkyl esters of a carbanilic acid. 3,345,155, 10–3–67, Cl. 71—111.
Lund, Richard B.: *See*—
Chang, Leo S., Lund, Pierce, and Turi. 3,345,326.
Lupoli, Peter J., to Technipower Inc. Regulating system with periodically inhibited fold-back characteristic. 3,345,554, 10–3–67, Cl. 323—4.
Lustig, Vera: *See*—
Bowen, Hamilton M. 3,345,068.
Lutz, Charles W., to FMC Corp. Corrosion inhibition. 3,345,296, 10–3–67, Cl. 252—136.
Lutz, Georg, to Telefunken Patentverwertungs-G.m.b.H. Circuit element. 3,345,598, 10–3–67, Cl. 338—315.
Lyman, John B., to Whirlpool Corp. Liquid level control. 3,344,804, 10–3–67, Cl. 137—406.
Lynott, John J.: *See*—
Betts, Peter, and Lynott. 3,345,460.
Maatschappij voor Electrische Bedrijfsautomatisering Electrofact: *See*—
Schermann, Peter S. 3,345,553.
MacBlane, James H. Adjustable electric magnetic vibrator. 3,345,525, 10–3–67, Cl. 310—17.
MacGregor-Comarain: *See*—
Kummerman, Henri. 3,344,937.
Macherey, Robert E.: *See*—
Schmeling, William H., and Macherey. 3,345,556.
Macherey, Robert E., to Square D Co. Energizing circuit for positioning system transducer. 3,345,555, 10–3–67, Cl. 323—43.5.
Mackie, James, & Sons Ltd.: *See*—
Hill, Moore. 3,344,481.
Maclean, Donald, to Truelove & Maclean, Inc. Hypodermic needle holders. 3,344,787, 10–3–67, Cl. 128—221.
MacLeod, Donald B., to Ampex Corp. Tension control for wideband recording system. 3,345,457, 10–3–67, Cl. 178—6.6.
MacMillan Ring-Tree Oil Co., Inc.: *See*—
McEachran, Paul R. 3,344,608.
MacPeek, Donald L.: *See*—
Tinsley, Samuel W., MacPeek, and Starcher. 3,345,419.
MacQuarrie, Allan B., and A. J. Sable, to Polaroid Corp. Photographic document copying apparatus. 3,344,728, 10–3–67, Cl. 95—75.
MacWilliams, Robert W., to Samuel Ward Mfg. Co., Inc. Display album. 3,344,794, 10–3–67, Cl. 129—20.
Magee Carpet Co., The: *See*—
Penman, Leroy M. 3,344,771.
Mageean, James V., and E. V. Rutkowski, to TRW Inc. Variable thrust rocket engine. 3,344,605, 10–3–67, Cl. 60—258.
Magnusson, Clas B. O.: *See*—
Schrewelius, Nils G., and Magnusson. 3,345,597.
Magyar Optikai Muvek: *See*—
Erdey, Laszlo, F. and J. Paulik. 3,344,654.
Mahar, John H., and J. W. Schick, to Mobil Oil Corp. Plywood bonded with organic peroxy-coated poly-alpha-monoolefin films and method of making the same. 3,345,247, 10–3–67, Cl. 161—247.
Mahoney, Thomas P.: *See*—
Grossman, Abraham. 3,344,575.
Maier, Roy J., Corp.: *See*—
Best, Melvin H. 3,344,913.
Maier, William. Method of making an electrical outlet box. 3,344,502, 10–3–67, Cl. 29—417.
Mainhardt, Robert: *See*—
Mawhinney, Robert C., Gould, Biehl, Mainhardt, and Barton. 3,344,711.
Majcher, John, and R. H. Flick, to Westinghouse Electric Corp. Circuit interrupter. 3,345,481, 10–3–67, Cl. 200—114.
Makarov, Konstantin I.: *See*—
Andonjev, Sergei M., Glaskov, Kuchin, Makarov, Pevny, Pochtman, Tesher, and Filipjev. 3,345,054.

Makino, Takayuki, S. Kanbe, and S. Mori, to Toyota Motors Co., Ltd. Method for non-destructive detection and observation of defects of ferromagnetic steels utilising an aqueous ferromagnetic solution. 3,345,564, 10–3–67, Cl. 324—38.

Malkin, Edwin S., to Union Carbide Corp. High temperature electrical connection. 3,345,448, 10–3–67, Cl. 13—25.

Mallory, P. R., & Co. Inc.: *See*—
Metcalfe, James E. 3,345,544.

Maloney-Crawford Tank Corp.: *See*—
Hodgson, Robert A. 3,344,835.

Maltby, Raymond W., to General Motors Corp. Flow monitor. 3,344,667, 10–3–67, Cl. 73—239.

Mammino, Joseph, W. C. Hamm, and M. C. Pease, to General Aniline & Film Corp. Photoconductive material and process for its preparation. 3,345,161, 10–3–67, Cl. 96—1.7.

Manger, Willem H.: *See*—
Versluys, Paulus, Van 'T Sant, Gillissen, and Manger. 3,345,046.

Mann, John E., A. Barker, and M. A. Perks, to United Kingdom Atomic Energy Authority. Fast nuclear reactors. 3,345,266, 10–3–67, Cl. 176—18.

Mann, Matthew K., and N. Rushworth, to Plastex Ltd. Faller bars for textile combing machines and other comb-like members. 3,344,482, 10–3–67, Cl. 19—129.

Mannesmann-Meer Aktiengesellschaft: *See*—
Fahrenhols, Heins H. 3,344,644.

Marathon Oil Co.: *See*—
White, James E. 3,344,881.

Marguelisch, Arthur: *See*—
Neumeister, Rolf. 3,344,465.

Marigold Foods, Inc.: *See*—
Cammack, William R., and Olson. 3,344,751.

Markbar Corp.: *See*—
Barbu, Richard J. 3,344,467.

Markley, Roger A.: *See*—
Fenwick, Richard C., and Markley. 3,345,635.

Marsan, Arthur E., to Hollister Inc. Disposable surgical drainage pouch. 3,344,788, 10–3–67, Cl. 128—283.

Marshall, Preston F.: *See*—
Spicer, Ronald F., and Marshall. 3,344,596.

Marson, Emilio. Reinforced flooring tile. 3,344,570, 10–3–67, Cl. 52—315.

Martell, Michael J., Jr., and A. S. Tomcufcik, to American Cyanamid Co. 7 - imidomethyl - 6-demethyl-6-deoxytetracyclines. 3,345,379, 10–3–67 Cl. 260—326.13.

Martelli, Nerio, to Solvay & Cie. Automatic rotary machine for blowing hollow bodies, particularly bottles, of thermoplastic material. 3,344,471, 10–3–67, Cl. 18—5.

Martin, Frank V. Golf putting practice device. 3,345,072, 10–3–67, Cl. 273—177.

Martin, Gerald E., and D. L. Cole, to Durell Products Inc. Window glazing system. 3,344,573, 10–3–67, Cl. 52—476.

Martin, Howard L., to Sperry Rand Corp. Mount for supporting dual bolometers at same temperature. 3,345,561, 10–3–67, Cl. 324—95.

Martin, James C., to Eastman Kodak Co. Thiocyclobutanones. 3,345,402, 10–3–67, Cl. 260—488.

Martin, Joseph: *See*—
Aplett, William R., Jr., and Martin. 3,345,494.

Martin, Kenneth V., to E. I. du Pont de Nemours and Co. Kaolin clay-loaded elastomers. 3,345,325, 10–3–67, Cl. 260—41.5.

Martin, Robert: *See*—
Connelly, Edward J., Martin, and Davis. 3,344,888.

Martin, Thomas W., Sr., to Cutters Machine Co., Inc. Roll support. 3,345,011, 10–3–67, Cl. 242—58.6.

Martini, Richard W., and J. R. Darnell, to Howmet Corp. Aluminising process and composition. 3,345,197, 10–3–67, Cl. 117—26.

Marullo, Gerlando, G. Perri, and G. Tubiello, to Montecatini Edison S.p.A. Selective dissolution of sodium chloride from kainite minerals with water containing added surface active agents. 3,345,142, 10–3–67, Cl. 23—312.

Maruyama, Yutaka: *See*—
Morikawa, Tashashi, Aoki, Nakamura, Maruyama, and Sakural. 3,344,593.

Maschinenfabrik Eugen Bellmann G.m.b.H.: *See*—
Kronsbein, Curt. 3,344,622.

Mason, James J., to Cameo Container Corp. Paperboard container with pull-out side. 3,344,976, 10–3–67, Cl. 229—51.

Massey-Ferguson Inc.: *See*—
Beebe, Raymond A. 3,344,864.
Hantsenroeder, Richard W. 3,345,506.

Massicotte, William. Mechanically hinged snow shoe. 3,344,538, 10–3–67, Cl. 36—4.5.

Masten Corp.: *See*—
Hilton, Carl. 3,345,116.

Matbro Ltd.: *See*—
Mathew, Leonard S., and Chapman. 3,344,941.

Materiel Industriel S.A.: *See*—
Oville, Eugene. 3,344,530.

Mathew, Leonard S., and G. W. A. Chapman, to Matbro Ltd. Lift truck with a laterally movable multi-section mast assembly. 3,344,941, 10–3–67, Cl. 214—674.

Matsushita, Akira, to Toko Kabushiki Kaisha. Mounting device for magnetic memory devices. 3,345,622, 10–3–67, Cl. 340—174.

Mattarella, Samuel P., to General Motors Corp. Spark plug with the insulator tip coated with a lead oxyhalide. 3,345,532, 10–3–67, Cl. 313—143.

Mattia, Armand D., and R. C. Harbison, to General Dynamics Corp. Apparatus for selectively reversing the thrust of front fan jet engines. 3,344,604, 10–3–67, Cl. 60—229.

Mattingly, Denis A. E., and R. S. Gilchrist, to The Klinger Mfg. Co., Ltd. Apparatus for continuously winding threads and like filamentary material on to a succession of bobbins. 3,345,003, 10–3–67, Cl. 242—18.

Matyckas, Stanley J., to Radio Corp. of America. Transistor protection circuit for radio transmitter. 3,345,570, 10–3–67, Cl. 325—150.

Maupin, Joseph T. Semiconductor condition responsive phase shift oscillators. 3,345,582, 10–3–67, Cl. 331—108.

Mawhinney, Robert C., B. F. Gould, A. T. Biehl, R. Mainhardt, and W. D. Barton. Javelin stabilized quiet round. 3,344,711, 10–3–67, Cl. 89—14.

May, Clayton A., to Shell Oil Co. Process for preparing polyesters and resulting products. 3,344,401, 10–3–67, Cl. 260—486.

Mayer, Friedrich W., A. Lotz, and H. Stern, to Westfalia Dinnendahl Groppel Aktiengesellschaft. Settling jig with settling compartments on both sides of a compressed air supply. 3,344,920, 10–3–67, Cl. 209—457.

McArdell, Royal T.: *See*—
Anderson, Duane H., McArdell, and Notto. 3,345,619.

McAuliffe, Clayton D., to Chevron Research Co. Geochemical method of prospecting for petroleum. 3,345,137, 10–3–67, Cl. 23—230.

McCall, Marvin A., and N. H. Shearer, Jr., to Eastman Kodak Co. Process for producing reduced transition metal halides. 3,345,351, 10–3–67, Cl. 260—93.7.

McClean, William G., to The Youngstown Sheet and Tube Co. Method and apparatus for forming multi-ply tape of crossed plies of parallel strands. 3,345,230, 10–3–67, Cl. 156—181.

McClellan, Bingham A.: *See*—
Peters, John K., and McClellan. 3,344,649.

McClellan, Malcolm B.: *See*—
Price, Glenn R., and McClellan. 3,345,255.

McClive, Ralph T., to Eastern Fabricating Co., Inc. Casket trim with spaced side member stiffeners. 3,344,494, 10–3–67, Cl. 27—19.

McCormick, Jerry R. D., to American Cyanamid Co. Method of preparing 1,3,10,11,12-pentahydroxynaphthacene-2-carboxamides. 3,345,409, 10–3–67, Cl. 260—559.

McCulla, Frank J.: *See*—
Ehrenberg, Gustave, and McCulla. 3,345,492.

McDonnell Douglas Corp.: *See*—
Bass, Paul D., and Warren. 3,344,749.

McEachran, Paul R., to MacMillan Ring-Free Oil Co., Inc. Method of lining ditches. 3,344,608, 10–3–67, Cl. 61—7.

McFarlane, Samuel B., Jr., D. J. Carlick, and J. Ostock, to Sun Chemical Corp. Photoconductive composition and article. 3,345,162, 10–3–67, Cl. 96—1.8.

McGeachy, Donald E., to Numatics Inc. Fluid valve. 3,344,802, 10–3–67, Cl. 137—270.

McGlothlin, Raymond D. Fluid contact apparatus. 3,345,049, 10–3–67, Cl. 261—114.

McGrath, Brian P., and L. Turner, to The British Petroleum Co. Ltd. Isomerization of N-butene. 3,345,428, 10–3–67, Cl. 260—683.2.

McGuckin, Hugh G., to Eastman Kodak Co. Photographic process. 3,345,169, 10–3–67, Cl. 96—29.

McKeirnan, William E.: *See*—
Lambert, Robert L., and McKeirnan. 3,345,218.

McLaren, Richard H. Railroad locomotive velocity alarm. 3,345,636, 10–3–67, Cl. 346—18.

McNeal, Fred M.: *See*—
McNeal, Hugh E. 3,344,444.

McNeal, Hugh E.: *See*—
McNeal, Hugh E. 3,344,444.

McNeal, Hugh E.: *See*—
McNeal, Hugh E. 3,344,444.

McNeal, Hugh E., 25% each to H. E. McNeal, C. E. Norton, D. E. Garcia, and F. M. McNeal. Bedclothes storing and dispensing apparatus. 3,344,444, 10–3–67, Cl. 5—317.

McNerney, Norman E., to Simplex Wire and Cable Co. Alkali metal conductor terminal. 3,345,453, 10–3–67, Cl. 174—77.

McWhirter & Sons, Inc.: *See*—
Kite, Floyd E. 3,344,476.

Medic, Nikola]: *See*—
Hloch, Albert, Kohlhaas, Medic, and Neises. 3,345,192.

Meigs, Frederick M.: *See*—
Wasserman, David, Gerber, and Meigs. 3,345,433.

Meininger, Fritz, and E. Hoyer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing dyeings and prints fast to wetting on cellulosic materials. 3,345,122, 10–3–67, Cl. 8—54.2.

Mekjean, Matthew, to Hooker Chemical Corp. Anodic passivation of metals. 3,345,278, 10–3–67, Cl. 204—147.

Mellberg, James R.: *See*—
Grodberg, Marcus G., and Mellberg. 3,345,265.

Melpar, Inc.: *See*—
Spencer, James C., Sr. 3,345,537.

Merck & Co., Inc.: *See*—
Taub, David, Wendler, and Slates. 3,345,387.
Wasserman, David, Garber, and Meigs. 3,345,433.

Merkel, Ralph G. Toothbrush holder. 3,344,930, 10–3–67, Cl. 211—65.

Merrill, Edward M., to Cutting Room Appliances Corp. Cloth laying machine for tubular knit goods, with magnetic alignment of spreader frame. 3,345,062, 10–3–67, Cl. 270—31.

Merrill, Robert P., and R. P. Crowley, to ABCOR, Inc. Irreversible hydrogen membrane. 3,344,582, 10–3–67, Cl. 55—16.

Merritt, Marvin D., to The E. F. Hauserman Co. Apparatus and method for manufacture of building panels. 3,344,508, 10–3–67, Cl. 29—430.

Merten, Rudolf: *See*—
Muller, Gerhard, and Merten. 3,345,395.

Merten, Rudolf, and G. Braun, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethanes prepared from organic polyisocyanates and a haloaryl alkyl amino alcohol. 3,345,309, 10–3–67, Cl. 260—2.5.

Merten, Rudolf, and O. Bayer, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethanes prepared from amino polyesters. 3,345,338, 10–3–67, Cl. 260—75.

Messer, Elmer S., and W. M. Carnahan, to Flow Measurement Co., Inc. Mercury filtering apparatus. 3,344,924, 10–3–67, Cl. 210—202.

Messer, Elmer S., to Flow Measurement Co., Inc. Integrating and averaging system. 3,344,985, 10–3–67, Cl. 235—61.

Messinger, Werner, to Braun Aktiengesellschaft. Dynamo operated pocket flashlight. 3,345,507, 10–3–67, Cl. 240—10.5.

Metcalfe, James E., to P. R. Mallory & Co., Inc. Solid aluminum capacitors having a protected dielectric oxide film. 3,345,544, 10–3–67, Cl. 317—230.

Metrol Corp.: *See*—
Smith, Horace V. 3,344,809.

Mewhinney, Albert B.: *See*—
Partlow, James A., Mewhinney, and Hoeding. 3,344,514.

Meyer, Charles F.: *See*—
Guettel, Marvin A., and Meyer. 3,345,493.

Meyer, Curtis E., and B. K. Bhuyan, to The Upjohn Co. Antibiotic cirolerosus and process for producing the same. 3,345,262, 10–3–67, Cl. 167—65.

Meyer, John A.: *See*—
Bucholtz, Daniel J., Hartman, Ingraham, Meyer, and Powers. 3,345,613.

Meyer, Larry E., and R. D. Walker, to The Procter & Gamble Co. Process for preparing detergent granules from trimetaphosphate. 3,345,297, 10–3–67 Cl. 252—137.

Meyers, Theodore F., to The Hobart Mfg. Co. Food waste disposer and control therefor. 3,344,996, 10–3–67, Cl. 241—46.

Miccioli, Bruno R., to The Carborundum Co. Method for making ducted refractory articles. 3,345,160, 10–3–67, Cl. 75—222.

Michael, Ronald G.: *See*—
Horsch, Rudolf, and Michael. 3,345,601.

Michaels, Glenn O., and J. W. Gambell, to Sinclair Research, Inc. Dehydrogenation process and alumina-supported nickel, molybdenum and alkali metal catalyst therefor. 3,345,427, 10–3–67, Cl. 260—680.

Michalik, Edmund R., and G. W. Misson, to Pittsburgh Plate Glass Co. Method of varying the thickness of a glass sheet while on a molten metal bath. 3,345,149, 10–3–67, Cl. 65—99.

Michels, Hermann, to Upsilon-Werk Wienke & Michels K. G. Method for producing sterilized elements from fibrous material and an article produced therefrom. 3,344,784, 10–3–67, Cl. 128—156.

Michigan Bank National Assn.: *See*—
Beltramo, Renaldo M. 3,345,546.

Michigan Dynamics, Inc.: *See*—
Darnell, Rex C. 3,344,927.

Midland-Ross Corp.: *See*—
Schultz, Forrest O. E. 3,344,806.
Wilkins, William B. 3,345,233.

Mieczkowski, William W., Jr., to United Aircraft Corp. Interconnection for flametubes. 3,344,601, 10–3–67, Cl. 60—39.32.

Mikalson, Severine A. Remote controlled window washer for high rise buildings. 3,344,454, 10–3–67, Cl. 15—50.

Mikiya, Toshio, and Y. Aaki, to Nitto Kohki Co. Ltd. Surface working mechanical tool for metal, stone and the like. 3,344,868, 10–3–67, Cl. 173—114.

Miles, Russel T., and P. R. Anderson, to Corinthian Cornice Systems, Inc. Cornice system. 3,344,562, 10–3–67, Cl. 52—11.

Miles, Russel T., and P. R. Anderson; deceased (by W. Beddie, executor), to Corinthian Cornice Systems, Inc. Assembly for use in building structures. 3,344,563, 10–3–67, Cl. 52—11.

Miles, Russel T., and P. R. Anderson; deceased (by W. Beddie, executor), to Corinthian Cornice Systems, Inc. Building structure. 3,344,566, 10–3–67, Cl. 52—94.

Miller, John C., to General Aniline & Film Corp. Method and apparatus for forming gelled plastic particles for use as a decorative surfacing material. 3,345,235, 10–3–67, Cl. 156—298.

Miller, Jorge. Apparatus for making wrought iron and steel plate. 3,344,843, 10–3–67, Cl. 164—259.

Miller, William F.: *See*—
Hanes, James W. E., and Miller. 3,345,087.

Milligan, Charles L., and K. L. Hoy, to Union Carbide Corp. Fatty acid-polyol partial esters reacted with bis(isocyanatoalkyl) fumarates. 3,345,338, 10–3–67. Cl. 260—404.5.

Milton, Richard D., to United States of America, Army. Laser detector. 3,344,703, 10–3–67, Cl. 88—23.

Minamii, Mitsuo: *See*—
Takahashi, Masakazu, and Minamii. 3,345,559.

Miner, W. H., Inc.: *See*—
Olander, Roland J. 3,345,101.

Minnesota Mining and Mfg. Co.: *See*—
Ashley, Paul E., La Zerte, and Seffi. 3,345,277.
Dubbe, Richard F. 3,345,639.

Misaka, Yukio, and K. Sakashita, to Isuzu Motors Ltd. Door open-and close mechanism. 3,344,554, 10–3–67, Cl. 49—280.

Misson, George W.: *See*—
Michalik, Edmund R., and Misson. 3,345,149.

Mitchell, Hartman, and R. W. Walker, to Koppers Co., Inc. Evaporation chamber for a basic oxygen furnace. 3,345,057, 10–3–67. Cl. 266—35.

Mitchell, Richard L.: *See*—
Reisig Charles G., and Mitchell. 3,344,658.

Mitchell, William A., to D. H. Benson. Table saw. 3,344,819, 10–3–67, Cl. 143—36.

Mitsubishi Rayon Co., Ltd.: *See*—
Kitajima, Joichi, Ueno, and Sugimoto. 3,344,472.

Mitsubishi Vonnel Co.: *See*—
Kitajima, Joichi, Ueno, and Sugimoto. 3 344,472.

Mitten, Leonard A., to E. E. Runnion. Production of pulp chips and stud lumber from peeler cores. 3,344,826, 10–3–67, Cl. 144—3.

Miville, Maurice: *See*—
Hauptachein, Murray, and Miville. 3,345,424.

Mixon James L., Jr., to AMP Inc. Explosively-operated, wedge-type electrical connector. 3,345,464, 10–3–67, Cl. 174—84.

Moats, Robert R., and W. A. Frutiger, to Sylvania Electric Products, Inc. Delay structure for traveling wave device. 3,345,586, 10–3–67, Cl. 333—31.

Mobil Oil Corp.: *See*—
Kerr, George T., and Landis. 3,345,135.
Kremer, Ross A. 3,345,382.
Levy, Boris. 3,345,279.
Mahar, John H., and Schick. 3,345,247.
Venuto, Paul B. 3,345,383.

Mohrin, Gunther: *See*—
Wolfgang, Krank, and Mohrin. 3,345,590.

Moller, Jens L., to Reynolds Metals Co. Method for making thin metal sheet tapered receptacles. 3,344,646, 10–3–67, Cl. 72—348.

Molvik, Gerald L.: *See*—
Blessinger, John A., Molvik, and Harris. 3,344,845.

Monaco, Arthur N.: *See*—
Schultz George E. 3,344,901.

Monarch Molding, Inc.: *See*—
Cowsert, Charles A. 3,344,499.

Mones, Arthur H.: *See*—
Block, Murry L., and Mones. 3,345,158.

Monroe, Charles H., and G. E. Ward, to Dawe's Laboratories, Inc. Precipitation of bacitracin upon an inert, insoluble, inorganic support for use in animal feeds. 3,345,178, 10–3–67, Cl. 99—2.

Monsanto Chemicals Ltd.: *See*—
Neale, Alan J., and Rawlings. 3,345,292.

Monsanto Co.: *See*—
Anagnostopoulos, Constantine E., and Coran. 3,345,400.
Gaertner, Van R. 3,345,251.
Gaertner. Van R. 3,345,252.
Olin, John F. 3,345 151.
Pratt, William S. 3,345,444.
Shaver, Kenneth J. 3,345,129.
Simon, Robert H. M., and Oster. 3,345,430.

Monsanto Research Corp.: *See*—
De Brunner, Ralph E., Blake, and Richardson. 3,345,435.

Montecatini Edison S.p.A.: *See*—
Marullo, Gerlando, Perri, and Tubiello. 3,345,142.

Moreau, Raymond: *See*—
Avril, Michel, Moreau, and Pages. 3,345,616.

Mori, Shigeru: *See*—
Makino, Takayuki, Kanbe, and Mori. 3,345,564.

Morikawa, Takashi, K. Aoki, M. Nakamura, Y. Maruyama, and K. Sakural, to Daiwa Boseki Kabushiki Kaisha and Osaka Kiko Co. Ltd. Doffing machine. 3,344,593, 10–3–67, Cl. 57—53.

Morris, Grayson B., Jr.: *See*—
Slavin, Michael, and Morris. 3,345,551.

Morris, Wilford V., to Hughes Tool Co. Reamer for jet piercer. 3.344,870, 10–3–67, Cl. 175—15.

Morrison, Dewey M. Single trigger mechanism for a double-barreled shotgun. 3,344,546, 10–3–67, Cl. 42—42.

Morrison, John F.: *See*—
Saddler, Jerry W., and Morrison. 3,345,119.

Morse, Meroe M.: *See*—
Land, Edwin H., Morse, and Yankowski. 3,345,166.

Morse, Milton. Self aligning piston for transfer molding means. 3,344,478, 10–3–67, Cl. 18—42.

Morse, Milton. Rolling link bicycle chain. 3,344,677, 10–3–67, Cl. 74—219.

Moslo, Ernest P. Centering insert for golf ball molding. 3,344,468, 10–3–67, Cl. 18—1.

Motorola, Inc.: *See*—
Casterline, Burnham, Chapman, and Eschbaugh. 3,345,569.
Errichelello, Dominic, Hansen, and Alexander. 3,345,568.
Exchbaugh, Robert V. 3,345,573.
Lesk, Israel A. 3,345,221.
Rogers, Leo C. 3,345,216.
Wilson, Richard W. 3,345,210.

Mueller, Max B.: *See*—
Iacoviello, John G., and Mueller. 3,345,335.

Muhlbauer, Ernst: *See*—
Pelster, Heinrich, Muhlbauer, and Delfs. 3,345,394.

Mühlhausser, Martin: *See*—
Keller, Hans, Mühlhausser, and Post. 3,345,208.

Muller, E. Michael: *See*—
Levy, Edward D., Weeden, and Muller. 3,345,105.

Muller, Gerhard, and R. Merten, to Farbenfabriken Bayer Aktiengesellschaft. Process for preparing monoisocyanates. 3,345,395, 10–3–67, Cl. 260—453.

Muller, Josef: *See*—
Muskulus, Willi, and Muller. 3,344,760.

Munro, Howard E., to Eastman Kodak Co. Stabilized photographic prehardener compositions. 3,345,173, 10–3–67, Cl. 96—50.

Munroe, Robert A., to International Business Machines Corp. Surface treatment for magnesium-lithium alloys. 3,345,276, 10–3–67, Cl. 204—32.

Murbach, Earl W., to United States of America, Atomic Energy Commission. Production of stoichiometric uranium monocarbide from a uranium fluoride. 3,345,143, 10–3–67, Cl. 23—349.

Murillo-Solis, Rafael: *See*—
Aguirre-Batres, Francisco, Sole, and Murillo. 3,344,734.

Murphy, Walter R., to Radio Corp. of America. Substantially linear output gage device. 3,344,527, 10–3–67, Cl. 33—172.

Musgrove, John F. Chain saw guard. 3,344,818, 10–3–67, Cl. 143—32.

Muskat, David A.: *See*—
Feinman, Jerome, and Muskat. 3,344,834.

Muskulus, Willi, and J. Muller, to Balazer & Droll Schnitt-V. Werkzeugbau. Mechanism for winding coil heads of stators. 3,344,760, 10–3–67, Cl. 112—2.

Myler, George W., and R. A. Clark, to Caloric Corp. Rotisserie. 3,344,736, 10–3–67, Cl. 99—421.

Nagata, Wataru, to Shionogi & Co., Ltd. D-homo steroids containing a —CHO group in 18-position. 3,345,385, 10–3–67, Cl. 260—340.9.

Nagle, Joseph L. Hose coupling. 3,345,088, 10–3–67, Cl. 285—39.

Nagle, Richard A. Mail box. 3,344,980, 10–3–67, Cl. 232—33.

Nakagawa, Kazuo, and T. Ikeda, to Nihon Denshi Kabushiki Kaisha. Sweep oscillator. 3,345,584, 10–3–67, Cl. 331—143.

Nakamura, Minoru: *See*—
Morikawa, Tashashi, Aoki, Nakamura, Maruyama, and Sakurai. 3,344,593.

Napier, John M.: *See*—
Googin, John M., Napier, and Scrivner. 3,345,440.

National Biscuit Co.: *See*—
Griner, Arthur J. 3,344,580.

National City, Calif.: *See*—
Bowen, Hamilton M. 3,345,068.

National Dairy Products Corp.: *See*—
Kania, Frank P., and Olney. 3,345,186.
Pisani, Joseph P., and Hilker. 3,345,185.

National Distillers and Chemical Corp.: *See*—
Hoyt, John M., Frank, and Koch. 3,345,332.

National Electric Welding Machines Co.: *See*—
Berger, Barron D. 3,344,647.

National Lock Co.: *See*—
Webster, Edward M. 3,344,462.

National Sales Incentives Ltd.: *See*—
Bersudsky, Sid. 3,344,710.

National Union Electric Corp.: *See*—
Zauner, John H., and Zellhoefer. 3,345,214.

Naumann, Fritz, to Daimler-Benz Aktiengesellschaft. Bearing structure. 3,344,689, 10–3–67, Cl. 74—801.

Nazzer, Don B., and J. Pawliw. Fuel rod structure. 3,345,287, 10–3–67, Cl. 176—78.

Neale, Alan J., and T. J. Rawlings, to Monsanto Chemicals Ltd. Alkyldiaryl sulfides containing a stabilizer. 3,345,282, 10–3–67, Cl. 252—47.

Neef, Clemens. Cleaning device for meat grinder cutting plate. 3,344,680, 10–3–67, Cl. 15—407.

Neel, John V., to Friden, Inc. Data translation system. 3,345,614, 10–3–67, Cl. 340—172.5.

Neese, Hugo: *See*—
Eggeling, Ernst, Neese, and Nickel. 3,344,492.

Neises, Helmut: *See*—
Hloch, Albert, Kohlhaas, Medic, and Neises. 3,345,192.

Neitzel, Edwin B.: *See*—
Woods, John P., Neitzel, and Prickett. 3,345,499.

Nekton, Armas H. Game apparatus including means for producing a printed record. 3,345,071, 10–3–67, Cl. 273—136.

Nelkin, Arthur, J. H. Thompson, and F. G. Geil, to Westinghouse Electric Corp. Underwater transducer. 3,345,607, 10–3–67, Cl. 340—8.

Nelson, Frank S. Method of formulating frozen dessert. 3,345,184, 10–3–67, Cl. 99—136.

Nester, James F., and J. B. Schroeder, to The Perkin-Elmer Corp. Growth of calcite crystals from a molten flux by slow cooling. 3,345,141, 10–3–67, Cl. 23—300.

Netting, David I.: *See*—
Weldes, Helmut H. W. and Netting. 3,345,194.

Netting, David I., and H. H. Weldes, to Philadelphia Quartz Co. Stable mixtures. 3,345,302, 10–3–67, Cl. 252—181.

Neumann, Friedmund: *See*—
Wiechert, Rudolf, Hader, and Neumann. 3,345,386.

Neumeister, Rolf, ⅛ to A. Marguelisch. Hinging device of a leaf on its frame. 3,344,465, 10–3–67, Cl. 16—147.

Newman, Elmer F., and W. H. Parker, to Hughes Tool Co. Tunneling machine steering system. 3,345,108, 10–3–67, Cl. 299—31.

New York Air Brake Co., The: *See*—
Cary, Francis H. 3,344,808.

Nicholson, Raymond B., and W. S. Richardson, to Westinghouse Electric Corp. X-ray brightness control system with means to vary the power applied to the X-ray source. 3,345,516, 10–3–67, Cl. 250—103.

Nick, Stanley W. Tape spacer device for an endless tape reel. 3,345,013, 10–3–67, Cl. 242—71.8.

Nickel, Heins: *See*—
Eggeling, Ernst, Neese, and Nickel. 3,344,492.

Nicol, John: *See*—
Weatherhead, Albert J., Jr., and Nicol. 3,345,090.

Nicol, John, to The Weatherhead Co. Hose and metal tube coupling. 3,345,091, 10–3–67, Cl. 285—256.

Niederprum, Hans: *See*—
Simmler, Walter, and Niederprum. 3,345,393.
Horn, Elmar-Manfred, and Niederprum. 3,345,396.

Nielsen, Carl L., to Shell Oil Co. Asphalt-resin-block copolymer roofing compositions. 3,345,816, 10–3–67, Cl. 260—28.5.

Nightingale, Eugene R., Jr., to Esso Research and Engineering Co. Dehydration of magnesium chloride utilizing heavy hydrocarbons. 3,345,128, 10–3–67, Cl. 23—91.

Nihon Denshi Kabushiki Kaisha: *See*—
Nakagawa, Kazuo, and Ikeda. 3,345,584.

Nihon Genshiryoku Kenkyu Sho: *See*—
Kawaguchi, Chiyoji. 3,345,577.

Nilsson, Eric L., to Facit-Halda AB. Link with a link lock, for example for office machines. 3,345,094, 10–3–67, Cl. 287—93.

Nitto Kohki Co. Ltd.: *See*—
Mikiya, Toshio, and Aoki. 3,344,868.

Niwatsukino, Tooru: *See*—
Kameishi, Masayuki, Higuchi, and Niwatsukino. 3,344,510.

Nogami, Kunishige, and T. Ohno, to Hitachi Ltd. Composite frame having two three-stage crossbar switch link frames. 3,345,465, 10–3–67, Cl. 179—22.

Noguchi, Tetsutaro: *See*—
Takemura, Kazuhiko, and Noguchi. 3,344,594.

Nomura, Masayoshi, T. Tokuyama, S. Tauchi, and T. Takeshi, to Kabushiki Kaisha Hitachi Seisakusho. Method of forming a semiconductor device by etching and epitaxial deposition. 3,345,222, 10–3–67, Cl. 148—175.

Nopco Chemical Co.: *See*—
Fetscher, Charles A., and Lipowski. 3,345,344.

Nordberg, Robert G., A. Reithoffer, and J. J. Jenkins. Vacuum leak detector. 3,344,655, 10–3–67, Cl. 73—27.

Nordeen, Erwin E., to Whirlpool Corp. Vacuum cleaner. 3,344,460, 10–3–67, Cl. 15—351.

Norris, Edward O. Spray gun. 3,344,992, 10–3–67, Cl. 239—8.

North American Aviation, Inc.: *See*—
Hack, William L., Stein, and Rohrberg. 3,344,498.

North American Philips Co., Inc.: *See*—
Ebbinge, Willen. 3,344,624.
Haas, Gerhard. 3,345,621.
Lacal, Rodolphe. 3,345,225.
Pijls, Hermanus S. J. 3,345,145.

Norton, Carol E.: *See*—
McNeal, Hugh E. 3,344,444.

Norton Co.: *See*—
Coes, Loring, Jr. 3,344,657.
Hohenberger, John H. 3,345,095.

Norwick Pharmacal Co.: *See*—
Gray, Joseph E. 3,345,270.

Notto, Ralph W.: *See*—
Anderson, Duane H., McArdell, and Notto. 3,345,619.

Nouveau, Henry, to Societe a Responsabilite Limitee Doittau Produits Metallurgie. Method for producing an exothermic lining for ingot and foundry molds and hot tops. 3,344,888, 10–3–67, Cl. 164—53.

Novosad, Eugene, to Crane Packing Co. Sealing washer for rotary mechanical seal. 3,345,077, 10–3–67, Cl. 277—96.

Numatics Inc: *See*—
McGeachy, Donald E. 3,344,802.

Nye, Norman H. Interlocked lightweight building structure. 3,344,565, 10–3–67, Cl. 52—81.

Nyerges, Roland S.: *See*—
Suliteanu, Menahem, and Nyerges. 3,344,681.

OECO Corp.: *See*—
Christie, David E., and Winquist. 3,344,591.

Oak Electro/Netics Corp.: *See*—
Grengg, Walter M. 3,345,593.

Oelderik, Jan M., and P. C. Aben, to Shell Oil Co. Hydrogenation of sulfolenes. 3,345,884, 10–3–67, Cl. 260—332.1.

Office National d'Etudes et de Recherches Aerospatiales dit: O.N.E.R.A.: *See*—
Carriere, Pieree P. A., Jumelle, Ranvier, and Richter. 3,344,884.
Jumelle, Louis F., Ranvier, and Richter. 3,344,883.

Office National Industriel De L'Asote: *See*—
Paul, Claude, and Pupko. 3,345,307.

Officer, Lloyd S., and I. D. Caples, to C & O Industries. Knife for removing skin from citrus fruits and the like. 3,344,516, 10–3–67, Cl. 30—24.

Offner, Franklin F., and W. T. Liberson. Method of muscular stimulation in human beings to aid in walking. 3,344,792, 10–3–67, Cl. 128—419.

Ogden, James S., to Ashland Oil & Refining Co. Carbonaceous ion exchange materials. 3,345,284, 10–3–67, Cl. 208—44.

O'Herron, John E. Hobby craft device. 3,345,240, 10–3–67, Cl. 161—36.

Ohno, Kenji: *See*—
Iwashita, Noboru, Ohno, and Kobayashi. 3,344,880.

Ohno, Masaichi. Braided strand for rug. 3,344,699, 10–3–67, Cl. 87—7.

Ohno, Toru: *See*—
Nogami, Kunishige, and Ohno. 3,345,465.

Ohr-Tronics, Inc.: *See*—
Drillick, Jacob H. 3,344,739.

Ohtake, Toshiki: *See*—
Yamaji, Goro, and Ohtake. 3,344,796.

Olah, George, to Elliott Bros. (London) Ltd. Automatic guidance and landing system for aircraft. 3,345,017, 10–3–67, Cl. 244—77.

Olander, Roland J., to W. H. Miner, Inc. Door locking means. 3,345,101, 10–3–67, Cl. 292—218.

Olender, Francis B., and G. A. Ward, to Hewitt-Robins, Inc. Back seal for idler rollers. 3,345,115, 10–3–67, Cl. 308—20.

Olin, John F., to Monsanto Co. Herbicidal composition and method. 3,345,151, 10–3–67, Cl. 71—2.74.

Olin Mathieson Chemical Corp.: *See*—
Eichelman, George H., Jr., and Broverman. 3,345,156.
Kilmer, James A. 3,344,650.
Ostrowski, Joseph B. 3,344,464.

Oller, Thomas E.: *See*—
Wolowicz, Richard S., Kossnar, and Oller. 3,344,911.

Olney, Edward S.: *See*—
Kania, Frank P., and Olney. 3,345,186.

Olsen, Douglas A., and A. J. Osteraas, to Ashland Oil & Refining Co. Time/temperature integrators. 3,344,670, 10–3–67, Cl. 73—356.

Olson, Bernard E., to Rockford Machine Tool Co. Change speed mechanism. 3,344,678, 10–3–67, Cl. 74—334.

Olson, Vernon C.: *See*—
Cammack, William R., and Olson. 3,344,751.

Olympia Werke AG: *See*—
Gerjets, Heinz, Elsner, and Wesselhoft. 3,345,490.

Omnitech, Inc.: *See*—
De Angelis, Armand. 3,345,121.

Oplatka, Avraham: *See*—
Shavit, Nehemia, Konigsbuch, and Oplatka. 3,345,350.

Ormsbee, Ruth E., to A. B. Dick Co. Receiving sheet for use as a master or copy in the DTR process. 3,344,741, 10–3–67, Cl. 101—462.

Osaka Kiko Co. Ltd.: *See*—
Morikawam, Takashi, Aoki, Nakamura, Maruyama, and Sakurai. 3,344,593.

Osborne, William A. Self-cleaning router. 3,344,497, 10–3–67, Cl. 29—103.

Oster, Bernd: *See*—
Simon, Robert H. M., and Oster. 3,345,430.

Osteraas, A. Jean: *See*—
Olsen, Douglas A., and Osteraas. 3,344,670.

Ostock, John: *See*—
McFarlane, Samuel B., Jr., Carlick, and Ostock. 3,345,162.

Ostrowski, Joseph B., to Olin Mathieson Chemical Corp. Pencil ferrule. 3,344,464, 10–3–67, Cl. 16—108.

Otis Elevator Co.: *See*—
Connelly, Edward J., Martin, and Davis. 3,344,888.

Ott, Heinrich: *See*—
Ehrhart, Gustav, Lindner, and Ott. 3,345,361.

Overums Bruks, Aktiebolaget: *See*—
Lewin, Gunnar E. W. 3,344,557.

Oville, Eugene, to Materiel Industriel S.A. Measuring equipment for the geometrical control and/or the truing of railway tracks. 3,344,530, 10–3–67, Cl. 33—174.

Owen, Margaret L. Desalinization. 3,344,616, 10–3–67, Cl. 62—58.

Owens-Corning Fiberglas Corp.: *See*—
Russell, Robert G. 3,345,147.
Shannon, Richard F. 3,345,241.

Owens-Illinois, Inc.: *See*—
Albinak, Marvin J., and Turner. 3,345,190.
Brookover, George B., and Hudecek. 3,345,218.

Oxel, Berton, to Dyfoam Corp. Method of molding sheet material from a uniform mixture of pre-expanded thermoplastic particles and a solid particulate additive. 3,345,442, 10–3–67, Cl. 264—51.

Pacific Car and Foundry Co.: *See*—
Rasmussen, Norman A. 3,344,896.

Package Containers, Inc.: *See*—
Hilton, Frank E. 3,344,740.

Paddock, Alvin F., and F. C. Summers, to Cook Electric Co. Multiple station protector. 3,345,542, 10–3–67, Cl. 317—116.

Padgett, Cooper J., to General Electric Co. Magnetic latch assembly. 3,345,102, 10–3–67, Cl. 292—251.5.

Padgett, Edward D.: *See*—
Browning, William H., and Padgett. 3,345,520.

Paganini, Valentine, by decree of distribution to L. Grenko, L. Vergo, R. Walt, A. Parent, and J. Byers. Drag saw. 3,344,821, 10–3–67, Cl. 143—135.

Pagano, Alfred H., and L. Spiegler, to E. I. du Pont de Nemours and Co. Process for purifying a phenylenediamine. 3,345,413, 10–3–67, Cl. 260—582.

Pages, Alix: *See*—
Avril, Michel, Moreau, and Pages. 3,345,616.

Palfey, Albert J., to The Dow Chemical Co. Building panel. 3,344,574, 10–3–67, Cl. 52—615.

Pall Corp.: *See*—
Pall, David B., and Silverwater. 3,344,923.

Pall, David B., and B. F. Silverwater, to Pall Corp. Filter unit having filter elements in series and in reserve. 3,344,923, 10–3–67, Cl. 210—90.

Palmer, George W., to Light's London Ltd. Workholders for use in apparatus for guiding a workholder relative to a tool. 3,344,759, 10–3–67, Cl. 112—2.

Palmer, Lewis E., to Union Insulating Co., Inc. Nail-up bracket for wiring boxes. 3,345,029, 10–3–67, Cl. 248—300.

Palmer, Robert B., to United States of America, Atomic Energy Commission. Light spot apparatus. 3,345,120, 10–3–67, Cl. 350—6.

Palmer, Roy M.: *See*—
Black, Raymond J., and Palmer. 3,345,019.

Paone, Anthony N.: *See*—
Wang, Edward D., and Paone. 3,344,899.

Papasian, Satenik A.: *See*—
Rejsman, Arnold, Berkenblit, Papasian, and Cheroff. 3,345,228.

Parent, Anita: *See*—
Paganini, Valentine. 3,344,821.

Paris, Hugh P. Method of and transit apparatus for delivering concrete materials. 3,345,044, 10–3–67, Cl. 259—164.

Park, Robert H. Method of making plastic containers. 3,345,227, 10–3–67, Cl. 156—86.

Parke, Davis & Co.: *See*—
Rawlings, Wallace G. 3,344,915.

Parker, Alan: *See*—
Davies, David O., and Parker. 3,344,602.

Parker, Earl E., and J. G. Baker, to Pittsburgh Plate Glass Co. Novel polyester process. 3,345,339, 10–3–67, Cl. 260—75.

Parker, William H.: *See*—
Newman, Elmer F., and Parker. 3,345,108.

Parkin, Leslie, and S. A. Andrews, to United-Carr Inc. Handle assemblies and means for detachably securing a handle to a rod-like element. 3,345,103, 10–3–67, Cl. 292—353.

Parkison, Richard G., to American Radiator & Standard Sanitary Corp. Closet tank fitting. 3,344,800, 10–3–67, Cl. 137—216.

Partlow, James A., A. B. Mewhinney, and R. C. Hoefling, to General Motors Corp. Method of skewing and securing stacked rotor laminations. 3,344 514, 10–3–67, Cl. 29—598.

Paterson, Laurene O., to Drug Research, Inc. N-brominated-N-chlorinated organic compounds and process for preparing same. 3,345,371, 10–3–67. Cl. 260—192.

Patkay, Stephen A. Self profiling cutter. 3,344,496, 10–3–67, Cl. 29—95.

Patton, Temple C.: *See*—
Ehrlich, Arthur, Smith, and Patton. 3,345,311.

Paul, Claude, and S. Pupko, to Office National Industriel de L'Azote. Process for stabilizing catalysts supported by magnesia or by materials containing the same. 3,345,307, 10–3–67, Cl. 252—455.

Paul, George D., and C. R. Hunsinger, to Sargent and Greenleaf, Inc. Panic exit device. 3,345,099, 10–3–67, Cl. 292—21.

Pauler, Charles J., G. A. Westergren, and E. E. Nordeen, to Whirlpool Corp. Brush attachment structure. 3,344,455, 10–3–67, Cl. 15—50.

Paulik, Ferenc: *See*—
Erdey, Laszlo, and F. and J. Paulik. 3,344,654.

Paulik, Jeno: *See*—
Erdey, Laszlo, and F. and J. Paulik. 3,344,654.

Pause, Kurt. Centrifugal press. 3,344,738, 10–3–67, Cl. 100—116.

Pawliw, John: *See*—
Nazzer, Don B., and Pawliw. 3,345,287.

Pearson, Reinhold A. Apparatus for setting up cartons. 3,344,717, 10–3–67, Cl. 93—53.

Pease, Margaret C.: *See*—
Mammino, Joseph, Hamm, and Pease. 3,345,161.

Pedone, Peter. Tool for reforming oil seal rim bead. 3,344,651, 10–3–67, Cl. 72—479.

Pedrotti, Donald G., to RCK, Inc. Apparatus for bonding integrated circuit packages. 3,345,236. 10–3–67, Cl. 156—498.

Pelikan, George A., to Buffalo Brake Beam Co. Railway car disc brake mechanism. 3,344,893, 10–3–67, Cl. 188—58.

Pelster, Heinrich: *See*—
Goliasch, Karl, Pelster, and Scheinpflug. 3,345,377.

Pelster, Heinrich, E. Muhlbauer, and D. Delfs, to Farbenfabriken Bayer Aktiengesellschaft. Method of cleaving a thiocarbamic acid ester. 3,345,394, 10–3–67, Cl. 260—453.

Peltzer, Kenneth E.: *See*—
Anderson, Harold C., and Peltzer. 3,345,620.

Penman, Leroy M., to The Magee Carpet Co. Apparatus for applying a coating to the edge of a cut piece of carpet. 3,344,771, 10–3–67, Cl. 118—200.

Penn Controls, Inc.: *See*—
Russell, Grover M. 3,345,476.

Pennsalt Chemicals Corp.: *See*—
Hauptschein, Murray, and Miville. 3,345,424.

Peppler, William S., G. N. Bliss, and N. A. Planck, Jr., to Diamond International Corp. Stick handling machine. 3,344,954, 10–3–67, Cl. 221—175.

Perazzoni, Pierluigi: *See*—
Siclari, Francesco, Bellano, Ciceri, D'Alo, Perazzoni, and Giacobone. 3,345,445.

Pere, Carlo, to Siderforni S.p.A. Cooling means for filting convertor. 3,345,058, 10–3–67, Cl. 266—36.

Perin, Charles N.: *See*—
Duncan, Thomas W., and Perin. 3,344,957.

Perkin-Elmer Corp., The: *See*—
Nester, James F., and Schroeder. 3,345,141.

Perkins, Lyman D. Cable flaw detector having removably mounted sensor means and including bracket and wheel means for maintaining the sensor at a predetermined distance from the cable. 3,345,560, 10–3–67, Cl. 324—52.

Perkovich, Mark J.: *See*—
Browning, Earl E., and Perkovich. 3,345,237.

Perks, Maurice A.: *See*—
Mann, John E., Barker, and Perks. 3,345,266.

Perri, Giovanni: *See*—
Marullo, Gerlando, Perri, and Tubiello. 3,345,142.

Perrins, Allen R., to The Superior Electric Co. Electric power stabilizing regulator responsive to plural conditions. 3,345,557, 10–3–67, Cl. 323—43.5.

Perry, Terence: *See*—
Everard, Kenneth B., and Perry. 3,345,439.

Perucco, Joseph: *See*—
Von Kleydorff, Ludwig, and Perucco. 3,344.732.

Peters, John K., and B. A. McClellan, to Burke Flexo Products Co. Fishing lures and hook harnesses therefor. 3,344,549, 10–3–67. Cl. 43—42.11.

Peters, John K., to Burke Flexo-Products Co. Fish lures. 3.344,550, 10–3–67, Cl. 43—42.14.

Peters, Robert W., to H. J. Gorski. Armature winding machine. 3.345,002, 10–3–67, Cl. 242—13.

Peterson, Alice L. Cylindrical grain dryer device. 3,344,533, 10–3–67, Cl. 34—230.

Peterson, Don W., J. J. Kovac, J. W. Calvin, and V. C. Puse, to The Goodyear Tire & Rubber Co. Airplane disc brake and key combination. 3.345,109, 10–3–67, Cl. 301—6.

Peterson, Donovan F., C. E. Rasmussen, and R. J. T. Harris, to U.S. Automatics Corp. Current switching arrangement to cutout the defective gas lamp upon failure. 3,345,538, 10–3–67. Cl. 315—125.

Peterson, John L., and J. C. Tirrell, to Teletype Corp. Sequence detection circuit. 3,345,615, 10–3–67, Cl. 340—172.5.

Petree, David W., to Burlington Industries, Inc. Method of making composite yarn. 3,344,597, 10–3–67, Cl. 57—157.

Petro-Tex Chemical Corp.: *See*—
Finley, Joseph H. 3,345,397.

Pevny, Nickolai I.: *See*—
Andonjev, Sergei M., Glaskov, Kuchin, Makarov, Pevny, Pochtman, Tesner, and Filipjev. 3,345,054.

Pfefferle, William C.: *See*—
Langley, Robert C., Lindenthal, and Pfefferle. 3,344,586.

Pfeiffer, Gerhard, K. Stetzelberg, and F. Winkler, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for coloring textile materials and foils. 3.345,198, 10–3–67, Cl. 117—38.

Pharmaseal Laboratories: *See*—
Hamilton, Donald A. 3,344,785.

Phelps, Peter M., to The Fluor Corp., Ltd. Cooling tower deck slat spacer. 3,345,048, 10–3–67, Cl. 261—112.

Philadelphia Quarts Co.: *See*—
Netting, David I., and Weldes. 3,345,302.
Weldes, Helmut H. W., and Netting. 3,345,194.

Phillips Petroleum Co.: *See*—
Gilchrist, Ralph E. 3,344,857.
Gilchrist, Ralph E., and Sonnenfeld. 3,344,858.
Harban, Arthur A. 3,345,431.
Hutto, John F., Dixon, Davison, Ayres, Renberg, and Queen. 3,345,285.
Pitchford, Armin C. 3,345,193.
Rasmussen, Ole-Bendt. 3,345,242.
Vignovich, Barney. 3,344,607.

Phillipson, Alan, to Decca Ltd. Process control apparatus. 3,344,632, 10–3–67, Cl. 72—10.

Phillipson, Alan, B. H. E. Spiller, R. Smith, and H. Cheesman, to Decca Ltd. Apparatus for cleaning gramophone discs. 3,345,075, 10–3–67, Cl. 274—47.

Philo, Kenneth W. Self-extracting mandrel for pumped-in-place-pile. 3,344,611, 10–3–67, Cl. 61—53.64.

Pierce, Arleen C.: *See*—
Chang, Leo S., Lund, Pierce, and Turi. 3,345,326.

Piester, Loyd W., and R. M. Vancamp, to Pittsburgh Plate Glass Co. Control of oxychlorination reactions. 3,345,422, 10–3–67, Cl. 260—650.

Pijls, Hermanus S., to North American Philips Co. Auxiliary member of a composite foil for joining two objects of different coefficients of thermal expansion. 3,345,145, 10–3–67, Cl. 29—183.5.

Pile, William D., and D. R. Shuster, to The Goodyear Tire & Rubber Co. Tire bead loosening tool. 3,344,833, 10–3–67, Cl. 157—1.17.

Pinto, Louis J.: *See*—
Eberle, Allan R., Lerner, and Pinto. 3,345,127.

Pisani, Joseph P., and L. D. Hilker, to National Dairy Products Corp. Frozen dessert. 3,345,185, 10–3–67, Cl. 99—136.

Pitchford, Armin C., to Phillips Petroleum Co. Asphalt emulsion-sulfate liquor soil stabilisation mixture. 3,345,193, 10–3–67, Cl. 106—123.

Pittsburgh Plate Glass Co.: *See*—
Ernsberger, Fred M. 3,345,148.
Michalik, Edmund R. and Misson. 3,345,149.
Parker, Earl E., and Baker. 3,345,339.
Piester, Loyd W., and Vancamp. 3,345,422.

Planck, Norman A., Jr.: *See*—
Peppler, William S., Bliss, and Planck. 3,344,954.

Plastex Ltd.: *See*—
Mann, Matthew K., and Rushworth. 3,344,482.

Plastic Coating Corp., The: *See*—
Shearer, Walter V., Beck, and Wheelock. 3,345,065.

Pleskac, John J. Game cleaning stand. 3,344,466, 10–3–67, Cl. 17—11.

Plessey-UK Ltd.: *See*—
Thompson, Philip M. 3,345,518.

Plociennik, Francis D.: *See*—
Sutherland, James F., Plociennik, and Schmandrak. 3,345,540.

Pneumo Dynamics Corp.: *See*—
White, Philip H. 3,344,694.

Pochtman, Alexandr M.: *See*—
Andonjev, Sergei, M., Glaskov, Kuchin, Makarov, Pevny, Pochtman, Tesner, and Filipjev. 3,345,054.

Podbielniak, Walter J., and D. B. Todd, to Dresser Industries, Inc. Centrifugal apparatus with axially-extended rotor. 3,344,981, 10–3–67, Cl. 233—15.

Podbielniak, Walter J., to Dresser Industries, Inc. Combination clarifier and contactor. 3,344,983, 10–3–67, Cl. 233—16.

Poesl, John L., to Unelco Ltd.-Unelco Limitee. Portable electrical test units. 3,344,535, 10–3–67, Cl. 35—19.

Polakowski, Natalis H. Strip rolling mill system and process. 3,344,637, 10–3–67, Cl. 72—64.

Polaroid Corp.: *See*—
Bartlett, Philip D., Erikson, and Sadlow. 3,344,730.
Erikson, Herman E., and Frede. 3,345,176.
Finelli, Patrick L. 3,344,725.
Green, Milton. 3,345,167.
Land, Edwin H. 3,345,165.
Land, Edwin H. 3,345,172.
Land, Edwin H., and Rogers. 3,345,163.
Land, Edwin H., Morse, and Yankowski. 3,345,166.
MacQuarrie, Allan B., and Sable. 3,344,728.

Polhemus, Von D., H. E. Boettger, M. A. Isaacson, and M.-C. Yew, to General Motors Corp. Leaf spring assembly. 3,345,060, 10–3–67, Cl. 267—54.

Polinko, George, Jr., and J. W. Porter, to General Electric Co. Shielding for a vacuum type circuit interrupter. 3,345,484, 10–3–67, Cl. 200—144.

Pollock, James E. A., and H. F. P. Webber, to Arthur Guinness Son & Co. (Dublin) Ltd. Accelerated batch process for the fermentation of brewers wort. 3,345,179, 10–3–67, Cl. 99—51.

Polonsky, Samuel, to General Electric Co. Alarm control mechanism. 3,344,598, 10–3–67, Cl. 58—22.5.

Pomory, Alexander M., to Eastern Products Corp. Method and apparatus for treating sheet metal strip. 3,344,641, 10–3–67, Cl. 72—177.

Pontious, Carol H. Battery terminal boot. 3,345,602, 10–3–67, Cl. 339—115.

Popivalo, Andrew C. Dispensing device. 3,344,962, 10–3–67, Cl. 222—456.

Porteous, Don D., to Van R Dental Products, Inc. Electric water bath heater for conditioning hydrocolloids. 3,345,497, 10–3–67, Cl. 219—417.

Porter, Joseph W.: *See*—
Polinko, George, Jr., and Porter. 3,345,484.

Posh, Raymond C.: *See*—
Homler, Robert I., and Posh. 3,345,107.

Possis Machine Corp.: *See*—
Bies, John L., and Larson. 3,345,111.
Lobash, Floyd, Gilchrist, and Straub. 3,344,772.
Straub, Melvin J., and Shaff. 3,345,001.

Post, Wolfgang: *See*—
Keller, Hans, Muhlhausser, and Post. 3,345,208.

Poulin, Valmor E., Jr.: *See*—
Gidge, Lester, and Poulin. 3,345,231.
Gidge, Lester, and Poulin. 3,345,232.

Pounds, Lewis C., and D. F. Smith, to American Cyanamid Co. Multilayer decorative laminates with a top sheet comprising a methyl methacrylate polymer. 3,345,248, 10–3–67, Cl. 161—248.

Powers, Martin V.: *See*—
Bucholtz, Daniel J., Hartman, Ingraham, Meyer, and Powers. 3,345,618.

Pratt, Henry, Co.: *See*—
Fawkes, Donald G. 3,345,033.

Pratt, William S., to Monsanto Co. Method and apparatus for forming an intermittent pattern. 3,345,444, 10–3–67, Cl. 264—167.

Prevost, Camilla: *See*—
Charles, Pierre, Prevost, and Testard. 3,344,803.

Price, Glenn R., and M. B. McClellan, to Stauffer Chemical Co. Controlling fungi with 1,2-dichlorovinyl hydroxyethyl sulfide. 3,345,255, 10–3–67, Cl. 167—22.

Price, Kenneth E., and H. Schmitz, to Bristol-Myers Co. Peliomycin and method of preparing same. 3,345,261, 10–3–67, Cl. 167—65.

Price, William B. Floor treating apparatus. 3,344,453, 10–3–67. Cl. 15—50.

Prickett, Tom, Jr.: *See*—
Woods, John P., Neitzel, and Prickett. 3,345,499.

Priser, Clovis F. Calibration means for an omni instrument. 3,344,652, 10–3–67, Cl. 73—1.

Procter & Gamble Co., The: *See*—
Harm, Alson R. 3,344,577.
Meyer, Larry E., and Walker. 3,345,297.

Prokaa, Arthur J., to Everede Tool Co. Boring bar assembly. 3,344,690, 10–3–67, Cl. 77—58.

Pruett, William T., to United States of America, Army. Specimen holding device for tensile test apparatus. 3,344,-662, 10–3–67, Cl. 73—103.

Przesdsiecki, Wojciech M.: *See*—
Wagner, Hans M., and Przesdsiecki. 3,345,168.

Pugh, Hubert L. D., to Council for Scientific and Industrial Research. Extrusion of metals. 3,344,636, 10–3–67, Cl. 72—60.

Pullman Inc.: *See*—
Finneran, James A., Jr., and Axelrod. 3,345,136.

Pupko, Samuel: *See*—
Paul, Claude, and Pupko. 3,345,307.

Purdum, Cary, and H. W. Gibney, to Aeronca, Inc. Article having an epoxy surface with an image impregnated therein. 3,344,528, 10–3–67, Cl. 33—174.

Purtell, Rufus J., to The J. B. Knight Co., Inc. Method and apparatus for clearing sand from irrigation pipes. 3,344,-991, 10–3–67, Cl. 239—1.

Puse, Valentin C.: *See*—
Peterson, Don W., Kovac, Calvin, and Puse. 3,345,109.

Puttlitz, Karl J.: *See*—
Delaney, Ronald A., and Puttlitz. 3,345,596.

Pyraplastic Societe a Responsabilite Limitee: *See*—
Texier, Jean P. 3,344,488.

Quaas, Joseph F.: *See*—
Rogers, Charles E., and Quaas. 3,345,496.

Quaas, Joseph F., and C. E. Rogers, to Eutectic Welding Alloys Corp. Tubular cutting electrode. 3,345,495, 10–3–67, Cl. 219—146.

Quaker Oats Co., The: *See*—
Lilly, Edward F., and Reinhart. 3,345,183.

Queen, Donald K.: *See*—
Hutto, John F., Dixon, Davison, Ayres, Renberg, and Queen. 3,345,285.

Quimby, Paul J., to Bethlehem Steel Corp. Cable anchorage. 3,344,452, 10–3–67, Cl. 14—21.

RCK, Inc.: *See*—
Pedrotti, Donald G. 3,345,236.

Radio Corp. of America: *See*—
Cole, Donald A., Corson, and Stocker. 3,345,458.
Jacoby, George V. 3,345,008.
Matyckas, Stanley J. 3,345,570.
Murphy, Walter R. 3,344,527.

Raech, Harry, Jr., to FMC Corp. Impregnated microporous articles. 3,345,205. 10–3–67, Cl. 117—119.

Raffet, Michel, to Compagnie de Saint-Gobain. Packaging means and method. 3,344,917, 10–3–67, Cl. 206—62.

Rahmig, Gunther, to International Standard Electric Corp. Intercommunication system. 3,345,466, 10–3–67, Cl. 179—37.

Rai, Charanjit, to Union Oil Co. of California. Preparation of cyclohexene. 3,345,425, 10–3–67, Cl. 260—666.

Rakus, Julius P.: *See*—
Baron, Joseph J., Jr., and Rakus. 3,345,352.

Ramsey, James E. Method for applying color to bread dough. 3,344,753, 10–3–67. Cl. 107—54.

Rantsch, Kurt, to Zeiss, Carl,-Stiftung. Interferential length measurement device. 3,344,701, 10–3–67, Cl. 88—14.

Ranvier, Gaston J.-La: *See*—
Jumelle, Louis F., Ranvier, and Richter. 3,344,883.
Carriere, Pierre P. A., Jumelle, Ranvier, and Richter. 3,344,884.

Rapala, Richard T., to Eli Lilly and Co. Novel pregnenolone acetonides. 3,345,362, 10–3–67, Cl. 260—239.55.

Raschke, Herbert A., to E. D. Bullard Co. Safety gate for hook. 3,344,489, 10–3–67, Cl. 24—241.

Rasmussen, Clarence E.: *See*—
Peterson, Donovan F., Rasmussen, and Harris. 3,345,538.

Rasmussen, Edgar E. Personnel lift. 3,344,885, 10–3–67, Cl. 182—16.

Rasmussen, Norman A., to Pacific Car and Foundry Co. Clutch-controlled reversible or multi-speed power-transmitting mechanism. 3,344,896, 10–3–67, Cl. 192—3.5.

Rasmussen, Norman A., to Pacific Car and Foundry Co. Clutch-controlled reversible or multi-speed power-transmitting mechanism. 3,344,896, 10–3–67, Cl. 192—3.5.

Rasmussen, Ole-Bendt, to Phillips Petroleum Co. Fiber product having a branched reticular or netlike structure, and a method and apparatus for the production thereof. 3,345,-242, 10–3–67, Cl. 161—109.

Raue, Roderich, to Farbenfabriken Bayer Aktiengesellschaft. 2-methylene indoline azomethine group-containing basic dyestuffs. 3,345,355, 10–3–67, Cl. 260—165.

Rawlings, Terence J.: *See*—
Neale, Alan J., and Rawlings. 3,345,292.

Rawlings, Wallace G., to Parke, Davis & Co. Package. 3,344,-915, 10–3–67, Cl. 206—56.

Rawstron, William W., to Jamesbury Corp. Three-way ball valve. 3 345,032, 10–3–67, Cl. 251—172.

Rayfield, Harry F., to Burroughs Corp. Tape apparatus. 3,345,007, 10–3–67, Cl. 242—55.12.

Reddie, William: *See*—
Miles, Russel, Anderson, and Reddie. 3,344,563.
Miles, Russel T., and Anderson. 3,344,566.

Rederi Ab Soya: *See*—
Gransten, Lennart. 3,344,797.

Reegen, Sidney L.: *See*—
Elfers, Gunther, and Reegen. 3,345,347.

Reese, Millard G., Jr., to E. I. du Pont de Nemours and Co. Poly[ethylene terephthalate/4-(3-oxypropoxy)benzoate]. 3,345,331, 10–3–67, Cl. 260—47.

Refrigeration Research Inc.: *See*—
Bottum, Edward W., and Rockwell. 3,344,506.

Regents of the University of California, The: *See*—
Gentry, Joe P., and Giannini. 3,344,579.

Reinfeld, Kurt, and J. Rokop, to Koppers Co., Inc. Apparatus for handling a curved continuous casting starting bar. 3,344,844, 10–3–67, Cl. 164—274.

Reinhart, Robert R.: *See*—
Lilly, Edward F., and Reinhart. 3,345,183.

Reisman, Arnold: *See*—
Cheroff, George, and Reisman. 3,345,209.

Reisman, Arnold, M. Berkenblit, S. A. Papazian, and G. Cheroff, to International Business Machines Corp. Epitaxial deposition of semiconductor materials. 3,345,223, 10–3–67, Cl. 148—175.

Reithoffer Alex: *See*—
Nordberg, Robert G., Reithoffer, and Jenkins. 3,344,655.

Remote Measurements, Inc.: *See*—
Russell, James E., and Shannahan. 3,345,625.

Renberg, Graham A.: *See*—
Hutto, John F., Dixon, Davison, Ayres, Renberg, and Queen. 3,345,285.

Rentschler, Waldemar T., to Alfred Gauthier, G.m.b.H. Photographic camera with automatic means for setting the diaphragm in making photoflash exposures. 3,344,723, 10–3–67, Cl. 95—10.

Rentschler, Waldemar T., to Alfred Gauthier, G.m.b.H. Photographic camera with distance and diaphragm aperture setting members. 3,344,727, 10–3–67, Cl. 95—64.

Resiflex Laboratory: *See*—
Scott, William W., and Simmonds. 3,345,023.

Rethwisch, Francis B.: *See*—
Bylund, Linton D., Rethwisch, and Woosley. 3,344,469.

Reuther John F., to Westinghouse Electric Corp. System for providing reaction indicative of deviation from a predetermined order. 3,345,522, 10–3–67, Cl. 307—112.

Rex Chainbelt Inc.: *See*—
Kenworthy, Grant F. 3,344,894.
Van Valkenburgh, Bryce F. 3,344,907.

Rexall Drug and Chemical Co.: *See*—
Ross, David. 3,345,304.

Reynolds, Delbert D., to Eastman Kodak Co. Aminopolymer compositions. 3,345,346, 10–3–67, Cl. 260—79.3.

Reynolds, Delbert D., and D. L. Fields, to Eastman Kodak Co. N-n-alkylaminoethanethiols. 3,345,415, 10–3–67, Cl. 260—583.

Reynolds Metals Co.: *See*—
Brown, Robert V. 3,345,273.
Bylund, Linton D., Rethwisch, and Woosley. 3,344,469.
Moller, Jens L. 3,344,646.
Sandor, Laszlo V. 3,345,159.

Rhodes, Richard P., to Esso Research and Engineering Co. Bis-difluoraminoethane derivatives. 3,345,398, 10–3–67, Cl. 260—467.

Rhodes, Richard P., to Esso Research and Engineering Co. Preparation of tetrakis (difluoroamino) butane. 3,345,414, 10–3–67, Cl. 260—583.

Richardson, George A.: *See*—
De Brunner, Ralph E., Blake, and Richardson. 3,345,435.

Richardson, Walter S.: *See*—
Nicholson, Raymond B., and Richardson. 3,345,516.

Richter, Gerhard: *See*—
Jumelle, Louis F., Ranvier, and Richter. 3,344,883.
Carriere, Pierre P. A., Jumelle, Ranvier, and Richter. 3,344,884.

Richter, Sidney B., to Velsicol Chemical Corp. Herbicidal composition and method. 3,345,157, 10–3–67, Cl. 71—111.

Rickel, William R.: *See*—
Eaman, Edmund B., and Rickel. 3,344,623.

Riester, William C.: *See*—
Delbel, Raymond A., and Riester. 3,344,458.

Rigby, Frank: *See*—
Steele, Bernard R., and Rigby. 3,345,183.

Rilett, John W., to Elliott Bros. (London) Ltd. Mass flowmeters. 3,344,666, 10–3–67, Cl. 73—231.

Rinfret, Arthur P., C. W. Cowley, and W. J. Timson, to Union Carbide Corp. Apparatus for the preservation of biological substances. 3,344,617, 10–3–67, Cl. 62—322.

Rininger, Paul R., to Global Marine Inc. Shallow water caisson. 3,344,612, 10–3–67, Cl. 61—63.

Ripple, Melvin H., to The Hoover Co. Gasket arrangement for blender containers. 3,344,829, 10–3–67, Cl. 146—68.

Rise, William E.: *See*—
Kitchen, Elwyn L., Lee, and Rise. 3,344,865.

Rivelli, Joseph A. Chain link fencing. 3,345,040, 10–3–67, Cl. 256—37.

Rively, Clair M., and P. A. Livera, to Westinghouse Electric Corp. Method of bonding a boron nitride body to a refractory metal. 3,344,505, 10–3–67, Cl. 29—473.1.

Robel, Heins, to Telefunken Patenverwertungegesellschaft G.m.b.H. High-voltage coil for generating the high voltage in a television receiver. 3,345,595, 10–3–67, Cl. 336—69.

Roberson, Robert E. Power driven vertically adjustable tractor hitches. 3,345,063, 10–3–67, Cl. 280—490.

Robertshaw Controls Co.: *See*—
De Forest, Wesley V. 3,344,850.
Wilson, James R. 3,344,989.

Robertson, Alistair L. M.: *See*—
Katselis, George N., and Robertson. 3,345,566.

Robinson, E. S. & A., Ltd.: *See*—
Wynes, Anthony G., and Aspino. 3,344,963.

Robinson, Roderick K., and A. B. Haese, to Consolidated Papers, Inc. Pour spout carton. 3,344,972, 10–3–67, Cl. 229—17.

Rochow, Theodore G., to American Cyanamid Co. Method for producing decorative articles of manufacture. 3,345,239, 10–3–67, Cl. 161—1.

Rockford Machine Tool Co.: *See*—
Olson, Bernard E. 3,344,678.

Rockstrom, Leonard, to Cameron Machine Co. Low web-tension web-winding machine. 3,345,009, 10–3–67, Cl. 242—56.

Rockwell, Frank H.: *See*—
Bottum, Edward W., and Rockwell. 3,344,506.

Rockwell, Ronald J., to Crosley Broadcasting Corp. AC-DC meter. 3,345,562, 10–3–67, Cl. 324—119.

Rockwell-Standard Corp.: *See*—
Young, John R. 3,344,618.

Rod Development Corp.: *See*—
Rod, Robert L. 3,345,469.

Rod, Robert L., to Rod Development Corp. Electrostatic loudspeakers. 3,345,469, 10–3–67, Cl. 179—111.

Rodel, Hans-Egon: *See*—
Konig, Eberhard, and Rodel. 3,344,851.

Roedder, Edwin W., to United States of America, Interior. Device for sensing thermal gradients. 3,344,669, 10–3–67, Cl. 73—339.

Rogers, Charles E.: *See*—
Quaas, Joseph F., and Rogers. 3,345,495.

Rogers, Charles E., and J. F. Quaas, to Eutectic Welding Alloys Corp. Cast iron electrode. 3,345,496, 10–3–67, Cl. 219—146.

Rogers, Charles L.: *See*—
Styring, Ralph E., Dunlap, and Rogers. 3,344,583.

Rogers, Edward J.: *See*—
Chabala, Leonard V., and Rogers. 3,345,473.

Rogers, Edward S.: *See*—
Kovach, Stephen M., and Rogers. 3,345,286.

Rogers, Howard G.: *See*—
Land, Edwin H., and Rogers. 3,345,163.

Rogers, Leo C., to Motorola, Inc. Method of controlling channel formation. 3,345,216, 10–3–67, Cl. 148—1.5.

Rohm & Haas Co.: *See*—
Kine, Benjamin B., Kalandiak, and Buechler. 3,345,203.

Rohrberg, Roderick G.: *See*—
Hack, William L., Stein, and Rohrberg. 3,344,498.

Rokop, Joseph: *See*—
Reinfeld, Kurt, and Rokop. 3,344,844.

Rolls-Royce Ltd.: *See*—
Davies, David O., and Parker. 3,344,602.

Ronci, Frank A.: *See*—
Russo, John I. 3,344,450.

Rose, Gerald D.: *See*—
Schmidt, Paul F., and Rose. 3,345,275.

Rosenberg, Norman: *See*—
Kamins, Seymour, and Rosenberg. 3,344,977.

Ross, David, to Rexall Drug and Chemical Co. Neutralization process and apparatus. 3,345,304, 10–3–67, Cl. 252—193.

Ross, Roger J., to The Singer Co. Screwless needle-clamps. 3,344,761, 10–3–67, Cl. 112—226.

Rossing, Alexander V., to Deutsche Edelstahlwerke Aktiengesellschaft. Apparatus for continuously horizontally casting high melting metals particularly steel. 3,344,846, 10–3–67, Cl. 164—281.

Roth, Louis C., to Tandy Leather Co. Leather tooling implement. 3,344,518, 10–3–67, Cl. 30—164.9.

Roussel-Uclaf: *See*—
Warnant, Julien, Joly, Allais, and Girault. 3,345,259.

Rover, Ralph R., Jr., to Sperry Rand Corp. Runway image generating apparatus. 3,345,632, 10–3–67, Cl. 343—106.

Rubin, Alan A.: *See*—
Topliss, John G., Sperber, and Rubin. 3,345,365.

Rucker Mfg. Co., The: *See*—
Kilburg, Ronald J. 3,345,471.

Ruhf., Robert J., E. J. Russell, and W. S. Egge, to Trojan Powder Co. Alkyd resins and their preparation from reaction mixtures comprising a polymethylolalkanoic acid. 3,345,313, 10–3–67, Cl. 260—22.

Runge, Thomas M. Aircraft proximity warning system. 3,345,-633, 10–3–67, Cl. 343—112.

Runnion, Ernest E.: *See*—
Mitten, Leonard A. 3,344,826.

Rushworth, Norman: *See*—
Mann, Matthew K., and Rushworth. 3,344,482.

Russell, Edward J.: *See*—
Ruhf, Robert J., Russell, and Egge. 3,345,313.

Russell, Glen A., and H.-D. Becker. Preparation and rearrangement of beta-ketosulfoxides. 3,345,416, 10–3–67, Cl. 260—590.

Russell, Grover M., to Penn Controls, Inc. Fool-proof snap action reset switch. 3,345,476, 10–3–67, Cl. 200—72.

Russell, James E., and W. J. Shannahan, to Remote Measurements, Inc. Plural channel monitor displaying A. C. or D. C. information signals as a bar graph on an oscilloscope. 3,345,625, 10–3–67, Cl. 340—212.

Russell, John A., to A. O. Smith Corp. Cyclic code generating means. 3,345,500, 10–3–67, Cl. 235—61.11.

Russell, John R.: *See*—
Steere, Frank W., Jr., and Russell. 3,344,684.

Russell, Robert G., to Owens-Corning Fiberglas Corp. Method for production of glass fibers. 3,345,147, 10–3–67, Cl. 65—3.

Russo, John I., ½ to F. A. Ronci. Apparatus for the automatic manufacture of pipe unions. 3,344,450, 10–3–67, Cl. 10—87.

Rutkowski, Eugene V.: *See*—
Mageean, James V., and Rutkowski. 3,344,605.

Ryan, Kelly P., to Blair Mfg. Co., Inc. Cattle feeding device. 3,345,042, 10–3–67, Cl. 259—7.

Rye, Grover W.: *See*—
Kovac, Frederick J., and Rye. 3,345,228.

Ryhiner, Anita: *See*—
Ryhiner, and Schmier. 3,345,215.

Ryhiner, Guenther; deceased (by A. Ryhiner, executrix), and A. Schmier, to Varta Pertrix-Union Gesellschaft mit beschraenkter Haftung. Separator for primary cells. 3,345,215, 10–3–67, Cl. 136—146.

Rys, Fredrick W., to Koppers Co., Inc. Control apparatus for a continuous cast billet. 3,344,841, 10–3–67, Cl. 164—150.

S & C Electric Co.: *See*—
Chabala, Leonard V., and Rogers. 3,345,473.

SCM Corp.: *See*—
Wange, Edward D., and Paone. 3,344,899.

Saab Aktiebolag: *See*—
Ljungstrom, Olle. 3,345,015.

Sable, Arthur J.: *See*—
Mac Quarrie, Allan B., and Sable. 3,344,728.

Saddler, Jerry W., and J. F. Morrison, to Whirlpool Corp. Bin structure. 3,345,119, 10–3–67, Cl. 312—274.

Sadlow, Joseph F.: *See*—
Bartlett, Philip D., Erikson, and Sadlow. 3,344,730.

Saint Gobain Techniques Nouvelles: *See*—
Bonnin, Andre, and Yardamian. 3,345,305.

St. Regis Paper Co.: *See*—
Wakeman, Alden H. 3,344,587.

Saito, Shigeru, T. Watanabe, and K. Noguchi, to Kureha Kagaku Kabushiki Kaisha. Photochemical reactor. 3,345,140, 10–3–67, Cl. 23—285.

Sakashita, Koichiro: *See*—
Misaka, Yukio, and Sakashita. 3,344,554.

Sakurai, Kazuichi: *See*—
Morikawa, Tashashi, Aoki, Nakamura, Maruyama, and Sakurai. 3,344,593.

Salatin, David C.: *See*—
Hall, Harry D., Salatin, Sutherland, and Trible. 3,344,848.

Salbu, Erik O. J.: *See*—
Loeffler, Karl H., and Salbu. 3,345,529.

Saline Water Conversion Corp.: *See*—
Kehoe, Edward C., and Walker. 3,344,584.

Samuels, Peter B.: *See*—
Wood, Ernest C. 3,344,649.

Sanchez, Moises G.: *See*—
Flack, Herbert P., Sanchez, and Lamberth. 3,345,437.

Sanders, James W. Barbecue pit. 3,344,737, 10–3–67, Cl. 99—446.

Sandor, Laszlo V., to Reynolds Metals Co. Aluminum alloy. 3,345,159, 10–3–67, Cl. 75—146.

Sargent and Greenleaf, Inc.: *See*—
Paul, George D., and Hunsinger. 3,345,099.

Sargent's, C. G., Sons Corp.: *See*—
Hansen, David S., and Basinas. 3,344,909.

Sasaki, Kanzo, to Shionogi & Co., Ltd. 5α-hydroxy-6β-azidopregnanes and 5α-hydroxy-6β-aminopregnanes. 3,345,363, 10–3–67, Cl. 260—239.55.

Sassak, Frank. Tube bending machine and mandrel assembly. 3,344,639, 10–3–67, Cl. 72—150.

Sasse, Klaus: *See*—
Dickoré, Karlfried, Wegler, and Sasse. 3,345,374.

Sassiver, Martin L.: *See*—
Lewis, Benjamin A., Sassiver, and Shepherd. 3,345,366.

Sassiver, Martin L., B. A. Lewis, and R. G. Shepherd, to American Cyanamid Co. Substituted 7-acetylamino cephalosporanic acids. 3,345,367, 10–3–67, Cl. 260—243.

Sassiver, Martin L., B. A. Lewis, and R. G. Shepherd, to American Cyanamid Co. Novel substituted 7-acetylamino cephalosporanic acids. 3,345,369, 10–3–67, Cl. 260—243.

Sassiver, Martin L.: *See*—
Lewis, Benjamin A., Sassiver, and Shepherd. 3,345,368.

Sato, Toshio. Solid electrolytic capacitor with anodized aluminum electrode and method of making. 3,345,543, 10–3–67, Cl. 317—230.

Sattler, Frank A., to Westinghouse Electric Corp. Blended polyester wire enamels and conductors insulated therewith. 3,345,429, 10–3–67, Cl. 260—860.

Saunders, Alfred P., to Wildt Mellor Bromley Ltd. Patterning mechanism for circular knitting machines. 3,344,620, 10–3–67, Cl. 66—156.

Saunders, Charles E., Jr., to American Machine & Foundry Co. Manipulator having motorized grasper and method. 3,344,936, 10–3–67, Cl. 214—1.

Saunders, Teddy G. Multivibrator having a stable and bistable operating modes. 3,345,583, 10–3–67, Cl. 331—113.

Saxl, Erwin J., to Tensitron, Inc. Tension meter. 3,344,664, 10–3–67, Cl. 73—144.

Scandia Packaging Machinery Co.: *See*—
Anderson, Andrew W. 3,344,578.

Schaber, Ralph F., to Chrysler Corp. Fluid operated electric switch. 3,345,479, 10–3–67, Cl. 200—83.

Schaefer, Edward E., to Central Specialties Co. Display hanger. 3,344,966, 10–3–67, Cl. 223—96.

Schaefer, Robert L. Machining fixture. 3,345,061, 10–3–67, Cl. 269—246.

Schaefer, Roland J. Immersion device including doctor means. 3,344,770, 10–3–67, Cl. 118—122.

Schafer, Kathleen D.: *See*—
Dexter, Martin, and Schafer. 3,345,327.

Schapaugh, Gordon B. Apparatus for cleaning and sterilizing dentures. 3,345,124, 10–3–67, Cl. 21—87.

Scheinpflug, Hans: *See*—
Gollasch, Karl, Pelster, and Scheinpflug. 3,345,377.

Schempp, Reinhold: *See*—
Buehl, Russell C., and Schempp. 3,344,840.

Scherer, Lawrence F. Electrical plug locking device. 3,345,600, 10–3–67, Cl. 339—37.

Schering AG.: *See*—
Wiechert, Rudolf, Hader, and Neumann. 3,345,386.

Schering Corp.: *See*—
Topliss, John G., Sperber, and Rubin. 3,345,365.

Schermann, Peter S., to Maatschappij voor Electrische Bedrijfsautomatisering Electrofact. Stabilized direct current supply circuit. 3,345,553, 10–3–67, Cl. 323—4.

Schick, John W.: *See*—
Mahar, John H., and Schick. 3,345,247.

Schlage, Ernest L., to Schlage Lock Co. Door lock unit display mount. 3,345,026, 10–3–67, Cl. 248—158.

Schlage Lock Co.: *See*—
Schlage, Ernest L. 3,345,026.

Schlatter, Walter J., to Sperry Rand Corp. Low distortion magnetic recorder. 3,345,468, 10–3–67, Cl. 179—100.2.

Schlumberger Well Surveying Corp.: *See*—
Voetter, Ulrich E. 3,344,860.

Schmandrak, Stephen: *See*—
Sutherland, James F., Plociennik, and Schmandrak. 3,345,540.

Schmeling, William H., and R. E. Macherey, to Square D Co. Energizing circuit for positioning system transducer. 3,345,556, 10–3–67, Cl. 323—43.5.

Schmid, Hans G., and G. R. Ferrante, to Shell Oil Co. Bleaching composition. 3,345,303, 10–3–67, Cl. 252—186.

Schmid, Hermann, to General Precision Systems, Inc. Function generator. 3,345,505, 10–3–67, Cl. 235—197.

Schmidt, Paul F., to Westinghouse Electric Corp. Method of making oxide film patterns. 3,345,274, 10–3–67, Cl. 204—15.

Schmidt, Paul F., and G. D. Rose, to Westinghouse Electric Corp. Electrolyte and diffusion process. 3,345,275, 10–3–67, Cl. 204—15.

Schmidt, Robert J.: *See*—
Ferm, Richard L., and Schmidt. 3,344,721.

Schmier, Alfred: *See*—
Ryhiner, Guenther, and Schmier. 3,345,215.

Schmitz, Henry: *See*—
Price, Kenneth E., and Schmitz. 3,345,261.

Schneider, Clayton J., Jr., to Cornell Aeronautical Laboratory, Inc. Explosive projector. 3,344,742, 10–3–67, Cl. 102—7.2.

Schneider, Willi, to Frey, Wiederkehr & Cie, Aktiengesellschaft. Process of clamping a pile of sheets during cutting thereof. 3,344,697, 10–3–67, Cl. 83—19.

Schneiderman, Seymour A. Wheeled sled with hand brake. 3,345,080, 10–3–67, Cl. 280—8.

Scholl, Jule A. Means for automatically advancing and retracting a tool holder in a boring and facing head. 3,344,693, 10–3–67, Cl. 82—1.

Schollard, Harry W. Apparatus for sizing cartons or the like. 3,344,718, 10–3–67, Cl. 93—58.

Schreiber, Anthony J.: *See*—
Davis, Donald M., Schreiber, and Sherman. 3,344,474.

Schreweius, Nils G., and C. B. O. Magnusson, to Aktiebolaget Kanthal. Electric heating resistors. 3,345,597, 10–3–67, Cl. 338—302.

Schroeder, Frederick A., and R. G. Townsend. Spinner or plug caster. 3,344,547, 10–3–67, Cl. 43—19.

Schroeder, Jack J.: *See*—
Appleman, Milo D. 3,345,152.

Schroeder, John B.: *See*—
Nester, James F., and Schroeder. 3,345,141.

Schuck, Jack W., to Honeywell Inc. Control apparatus. 3,344,668, 10–3–67, Cl. 73—304.

Schultz, George E., ½ to A. N. Monaco. Overcap feed and orienting device. 3,344,901, 10–3–67, Cl. 198—33.

Schultz, Forrest O. E., to Midland-Ross Corp. Check valve. 3,344,806, 10–3–67, Cl. 137—494.

Schultz, Werner F.: *See*—
Bemmann, Richard W., and Schultz. 3,344,513.

Schuster, Norman J., and C. H. Wolfe, to Litton Systems, Inc. Multilayer laminated wiring. 3,344,515, 10–3–67, Cl. 29—628.

Schuur, Hemmo, and H. Goetzinger. Dump vehicle. 3,344,456, 10–3–67, Cl. 15—93.

Schwarcz, Morton, and M. Barchas, to Shulton, Inc. Copper cleaning compositions. 3,345,295, 10–3–67, Cl. 252—90.

Schweitzer, Edward F., to EBS Inc. Electrolytic process for preparing iron. 3,345,212, 10–3–67, Cl. 136—25.

Scientific Atlanta, Inc.: *See*—
Inman, Richard B. 3,344,952.

Scognamillo, Frank. Multiple flow rotary machine. 3,344,745, 10–3–67, Cl. 103—4.

Scott, William W., and M. Simmonds, to Resiflex Laboratory. Bedside drainage receptacle support means. 3,345,023, 10–3–67, Cl. 248—95.

Scovell, Peter E., to The Distillers Co. Ltd. Piston operated pumps for liquid carbon dioxide. 3,344,746, 10–3–67, Cl. 103—153.

Scovill Mfg. Co.: *See*—
Kemnitz, Warren N. 3,345,489.

Scoville, Ray R. Spring clip terminals. 3,345,606, 10–3–67, Cl. 339—254.

Scrivner, Michael E.: *See*—
Googin, John M., Napier, and Scrivner. 3,345,440.

Searles, John J., to Ford Motor Co. Control valve system for an automatic power transmission mechanism. 3,344,681, 10–3–67, Cl. 74—472.

Seff, Raymond J.: *See*—
Ashley, Paul E., La Zerte, and Seff. 3,345,277.

Sell, George J., to Trusteel Corp. (Universal) Ltd. Concrete building structures with pre-laminated plaster board facing sheets. 3,344,572, 10–3–67, Cl. 52—426.

Selwyn, Donald. Receiver apparatus. 3,345,571, 10–3–67, Cl. 325—329.

Setco Industries, Inc.: *See*—
Falls, John J. 3,345,281.

Shaff, Gerald H.: *See*—
Straub, Melvin J., and Shaff. 3,345,001.

Shainmark, Elieser L. Automobile anti-theft devices. 3,344,628, 10–3–67, Cl. 70—255.

Shannahan, William J.: *See*—
Russell, James E., and Shannahan. 3,345,625.

Shannon, Richard F., to Owens-Corning Fiberglas Corp. Structural panel and method for producing same. 3,345,241, 10–3–67, Cl. 161—36.

Shaver, Kenneth J., to Monsanto Co. Selective cleavage of monoamidotriphosphatis to produce orthophosphoramidates. 3,345,129, 10–3–67, Cl. 23—101.

Shavit, Nehemia, M. Konigsbuch, and A. Opiatka. Polymerization of acrylonitrile. 3,345,350, 10–3–67, Cl. 260—85.5.

Shawfrank Engineering Corp., The: *See*—
Shawfrank, Robert W. 3,345,025.

Shawfrank, Robert W., to The Shawfrank Engineering Corp. Tube lift mechanism. 3,345,025, 10–3–67, Cl. 248—123.

Shay, James H., and R. R. Woodson. Flash distillation boiler for treating mineral waters including temperature responsive means. 3,345,271, 10–3–67, Cl. 202—160.

Sheahan, James P., to The Dow Chemical Co. Leveling base sheet for reroofing. 3,345,246, 10–3–67, Cl. 161—161.

Shearer, Newton H., Jr.: *See*—
McCall, Marvin A., and Shearer. 3,345,351.

Shearer, Walter V., W. R. Beck, Jr., and A. M. Wheelock, Sr., to The Plastic Coating Corp. Sheet transport apparatus. 3,345,065, 10–3–67, Cl. 271—79.

Shearn, John U., to Davy and United Engineering Co. Ltd. Coil handling apparatus. 3,345,014, 10–3–67, Cl. 242—79.

Shekels, Harold F., to United States Steel Corp. Scrap charging box. 3,344,939, 10–3–67, Cl. 214—18.

Sheldon, Edward E. Devices for light transfer by fiber optic members. 3,345,531, 10–3–67, Cl. 313—92.

Shell Oil Co.: *See*—
Hodgson, Russell L. 3,345,380.
Holm, Roy T. 3,345,345.
Ichikawa, Stanley T., and Young. 3,345,260.
May, Clayton A. 3,345,401.
Nielsen, Carl L. 3,345,316.
Oelderik, Jan M., and Aben. 3,345,384.
Schmid, Hans G., and Ferrante. 3,345,303.
Versluys, Paulus, Van 'T Sant, Gilissen, and Manger. 3,345,046.
Voetter, Heinz, Hunger, Hasserodt, Sweep, and Korte. 3,345,287.

Shepherd, Robert G.: *See*—
Lewis, Benjamin A., Sassiver, and Shepherd. 3,345,366.
Sassiver, Martin L., Lewis, and Shepherd. 3,345,367.
Lewis, Benjamin A., Sassiver, and Shepherd. 3,345,368.
Sassiver, Martin L., Lewis, and Shepherd. 3,345,369.

Sherman, Harry W.: *See*—
Davis, Donald M., Schreiber, and Sherman. 3,344,474.

Sherman, Roger M., to Aluminum Supply Co., tubing division, Inc. Gate valve assembly. 3,345,034, 10–3–67, Cl. 251—326.

Sherr, Allan E.: *See*—
Grayson, Martin, Sherr, Gillham, and Castellion. 3,345,392.

Sherwood, Theodore R.: *See*—
Drees, Joseph M., and Sherwood. 3,344,495.

Shibata, Hiroshi, Y. Yamasaki, and K. Sugihara, to Kureha Chemical Industry Co., Ltd. Process for producing a graphite anode. 3,345,283, 10–3–67, Cl. 204—294.

Shimada, Keizo: *See*—
Yamada, Noboru, Shimada, and Ichida. 3,345,349.

Shionogi & Co., Ltd.: *See*—
Nagata, Wataru. 3,345,385.
Sasaki, Kanzo. 3,345,363.

Shiraiwa, Tokao: *See*—
Fujiwara, Shinobu, and Shiraiwa. 3,345,189.

Shkardoon, Konstantin A.: *See*—
Dempsey, Terence P., and Shkardoon. 3,345,513.

Shor, Arthur J.: *See*—
Kraus, Kurt A., Johnson, and Shor. 3,344,928.

Shrock, Mark A.: *See*—
Cobaugh, Robert F., and Shrock. 3,345,541.

Shuda, Donald G., to Sylvania Electric Products Inc. Redundant amplifier circuits. 3,345,578, 10–3–67, Cl. 330—22.

Shuller, Walter H., and R. V. Lawrence, to United States of America, Agriculture. Carboxylic acids produced by the reductions of transannular peroxides. 3,345,404, 10–3–67, Cl. 260—514.5.

Shulton, Inc.: *See*—
Schwarcz, Morton, and Barchas. 3,345,295.

Shuster, Donald R.: *See*—
Pile, William D., and Shuster. 3,344,883.

Shutt, Paul B., L. J. Larsen, and W. E. Ferrell, to The Bendix Corp. Master cylinder cap. 3,344,944, 10–3–67, Cl. 220—44.

Siber, Erwin-Walter, to Go-Tract Ltd. Endless tracks, belts or the like. 3,345,113, 10–3–67, Cl. 305—14.

Sicking, Robert H. Mechanical pencil for automatic data plotting equipment. 3,345,640, 10–3–67, Cl. 346—139.

Siciliani, Francesco, A. Bellano, L. Ciceri, B. D'Alo', P. Perazzoni, and P. Giacobone, deceased (by E. M. Giacobone, administratrix), to Societa Nazionale Industria Applicazioni Viscosa, S.p.A., SNIA. Melt spinning process of polyamides. 3,345,445, 10–3–67, Cl. 264—176.

Siderforni S.p.A.: *See*—
Pere, Carlo. 3,345,058.

Sidles, Harry A., to Velsicol Chemical Corp. Fungicidal compositions and methods. 3,345,258, 10–3–67, Cl. 167—33.

Siegal, Burton L., to Kenron Awning and Window Corp. Canopy structure with stressed bowed panels. 3,344,664, 10–3–67, Cl. 52—11.

Siegal, Burton L., to Kenron Aluminum and Glass Corp. Center bias momentary switch. 3,345,488, 10–3–67, Cl. 200—153.

Siegal, Donald C., to General Motors Corp. Infrared surface heating unit. 3,345,498, 10–3–67, Cl. 219—464.

Sieger, George: *See*—
Esse, Robert C., and Sieger. 3,345,870.

Siemens-Schuckertwerke Aktiengesellschaft: *See*—
Grunwald, Erich. 3,345,528.

Sierra Engineering Co.: *See*—
Stapenhill, James A. 3,344,433.

Silverwater, Bernard F.: *See*—
Pall, David B., and Silverwater. 3,344,923.

Simmler, Walter, and H. Niederprüm, to Farbenfabriken Bayer Aktiengesellschaft. Organomercaptomethyl silicon compounds and production. 3,345,393, 10–3–67, Cl. 260—448.2.

Simmonds, Melvin: *See*—
Scott, William W., and Simmonds. 3,345,023.

Simmons, Bowie G.: *See*—
Thompson, William E., and Simmons. 3,344,618.

Simmons, Horace G.: *See*—
Thompson, William E., and Simmons. 3,344,618.

Simon, Robert H. M., and B. Oster, to Monsanto Co. Process for recovering graft copolymer latex solids. 3,345,430, 10–3–67, Cl. 260—876.

Simplex Wire and Cable Co.: *See*—
McNerney, Norman E. 3,345,453.

Simpson, Billy G., to Dow Corning Corp. Method for imparting a permanent crease to wool. 3,345,195, 10–3–67, Cl. 117—10.

Simpson, Lewis E., and W. E. Karow. Illumination control. 3,344,704, 10–3–67, Cl. 88—24.

Simpson, Walter W.: *See*—
Stewart, Frederick G., and Simpson. 3,344,935.

Sinclus, Joseph A.: *See*—
Cohen, Abraham B., and Sinclus. 3,345,164.

Sinclair Research, Inc.: *See*—
Bucaram, Salim M. 3,344,859.
Kovach, Stephen M., and Rogers. 3,345,286.
Michaels, Glenn O., and Gambell. 3,345,427.

Singer-Cobble Ltd.: *See*—
Collinge, James N., and Evans. 3,344,969.

Singer Co., The: *See*—
Ross, Roger J. 3,344,761.
Szostak, Jan, Laidig, and Zacher. 3,344,762.
Wittler, Bernard H. 3,344,619.

Singer, Ralph M., to United States of America, Atomic Energy Commission. Apparatus for condensing and controlling the rate of condensation of an electrically conducting liquid. 3,344,853, 10–3–67, Cl. 165—105.

Slates, Harry L.: *See*—
Taub, David, Wendler, and Slates. 3,345,387.

Slavin, Michael, and G. B. Morris, Jr. Variable speed control for a DC motor. 3,345,551, 10–3–67, Cl. 318—345.

Smith, A. O., Corp.: *See*—
Grepe, Frederick Y. 3,345,548.
Grepe, Frederick Y. 3,345,550.
Herbst, Paul T. 3,344,987.
Russell, John A. 3,345,500.
Stadenko, Stephen, and Herbst. 3,344,986.

Smith-Berger Mfg. Corp.: *See*—
Erickson, Louis A., Hogan, and Klinke. 3,344,568.

Smith, Douglas F.: *See*—
Pounds, Lewis C., and Smith. 3,345,248.

Smith, Earl W. Exerciser with elastic elements connecting supporting base and pivoted pole. 3,345,067, 10–3–67, Cl. 272—82.

Smith, Harold L., to General Motors Corp. Locomotive with sanding system having continuous air flow. 3,345,097, 10–3–67, Cl. 291—3.

Smith, Harold L.: *See*—
Kilgore, Harry A., and Smith. 3,345,098.

Smith, Horace L., Jr., to Hupp Corp. Coffee roasting method. 3,345,180, 10–3–67, Cl. 99—68.

Smith, Horace L., Jr., to Hupp Corp. Method for roasting coffee beans and similar particulate solids. 3,345,181, 10–3–67, Cl. 99—68.

Smith, Horace V., to Metrol Corp. Pressure responsive control system. 3,344,809, 10–3–67, Cl. 137—624.18.

Smith, Keith J.: *See*—
Well, Edward D., and Smith. 3,345,878.

Smith Kline & French Laboratories: *See*—
Burger, Alfred. 3,345,405.
Gordon, Maxwell, and Lafferty. 3,345,878.

Smith, Malcolm K.: *See*—
Ehrlich, Arthur, Smith, and Patton. 3,345,311.

Smith, Peter, to Dynamics Corp. of America. Uninterrupted power supply. 3,345,517, 10–3–67, Cl. 290—4.

Smith, Robin: *See*—
Phillipson, Alan, Spiller, Smith, and Cheesman. 3,345,075.

Smith, Tom E., to American Air Filter Co., Inc. Secondary system for dust collector. 3,344,589, 10–3–67, Cl. 55—294.

Smith, Tom E., and R. J. Boylan, to American Air Filter Co., Inc. Unit filter assembly. 3,344,590, 10–3–67, Cl. 55—284.

Smith, William M., to Escambia Chemical Corp. Plastic surface covering material containing metallized plastic particles. 3,345,223, 10–3–67, Cl. 260—41.

Societa Nazionale Delle Officine Di Savigliano: *See*—
De Gasperis, Franco. 3,344,982.

Societa Nazionale Industria Applicazioni Viscosa, S.p.A., SNIA: *See*—
Siciari, Francesco, Bellano, Ciceri, D'Alo', Perazzoni, and Giacobone. 3,345,445.

Societe Anonyme D.B.A.: *See*—
Thirion, Rene. 3,344,891.

Societe a Responsabilite Limitee Doittau Produits Metallurgie: *See*—
Nouveau, Henry. 3,344,838.

Societe de Recherches Tecniques et Industrielle: *See*—
Barnabe, Jean-Louis, Callies, and Loveque. 3,344,926.

Societe des Accumulateurs Fixes et de Traction Societe Anonyme: *See*—
Lafon, Guy P., and Cailley. 3,345,211.

Societe des Forges et Ateliers du Creusot: *See*—
Bovagne, Rene. 3,345,043.

Societe d'Exploitation des Materiels Hispano-Suisa: *See*—
Laming, Lionel H. G. 3,344,673.

Societe Nationale d'Etude et de Construction de Moteurs d'Aviation: *See*—
Bellion, Jean-Claude, and Hoch. 3,344,882.
Jumelle, Louis F., Hanvier, and Richter. 3,344,883.

Societe Nouvelle Spidem: *See*—
Diolot, Lucien E. 3,344,638.

Societe Rhodiaceta: *See*—
Grobert, Jacques. 3,344,457.

Solar Thomson Engineering Co. Ltd.: *See*—
Thomson, Charles. 3,344,956.

Sole, Pedro, Jr.: *See*—
Aguirre-Batres, Francisco, Sole, and Murillo-Solis. 3,344,784.

Solvay & Cie: *See*—
Martelli, Nerio. 3,344,471.

Sommer, Hans: *See*—
Bestian, Herbert, Sommer, and Bergmann. 3,345,253.

Sommer, Siegfried, and L. Brinkmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Saturated linear polyesters of 2.2-dimethylol endomethylene cyclohexane. 3,345,329, 10–3–67, Cl. 260—47.

Sonca Industries Ltd.: *See*—
Chung, Sse-Yuen. 3,345,508.

Sonnabend, Lawrence F., to The Dow Chemical Co. Resins from poly(halomethyl) diphenyl oxide and urea. 3,345,330, 10–3–67, Cl. 260—47.

Sonnenfeld, Richard J.: *See*—
Gilchrist, Ralph E., and Sonnenfeld. 3,344,858.

Sontheimer, Heinrich. Process for dewatering organic sludges from waste water treatment. 3,345,288, 10–3–67, Cl. 210—10.

Spangenberg, Charles B.: *See*—
Herst, Leonard A., Kaplan, and Spangenberg. 3,345,627.

Spangler, William G., to Colgate-Palmolive Co. Washing apparatus. 3,344,626, 10–3–67, Cl. 68—122.

Sparkler Mfg. Co.: *See*—
Kracklauer, Aloysius. 3,344,922.

Speel, Henry C., to Universal Oil Products Co. Detergent composition containing mixed anionic-cationic surfactants. 3,345,300, 10–3–67, Cl. 252—152.

Speers, Samuel F., to Hassenfeld Bros., Inc. Doll stand. 3,345,080, 10–3–67, Cl. 248—346.

Spencer, James C., Sr., to Melpar, Inc. Photoelectric shield including a dielectric sheet sandwiched between two metal sheets. 3,345,537, 10–3–67, Cl. 315—85.

Sperber, Nathan: *See*—
Topliss, John G., Sperber, and Rubin. 3,345,365.

Sperry Rand Corp.: *See*—
Anderson, Duane H., McArdell, and Notto. 3,345,619.
Bryant, Furnie S., Jr. 3,345,528.
Goldammer, Freeland R., and Kanits. 3,345,117.
Martin, Howard L. 3,345,561.
Rover, Ralph R., Jr. 3,345,632.
Schlatter, Walter J. 3,345,463.

Spicer, Ronald F., and P. F. Marshall, to The Kendall Co. Textile yarn and process therefor. 3,344,596, 10–3–67, Cl. 57—152.

Spiegler, Louis: *See*—
Pagano, Alfred H., and Spiegler. 3,345,413.

Spiller, Basil H. R.: *See*—
Phillipson, Alan, Spiller, Smith, and Cheesman. 3,345,075.

Spindle, Harvey E., to Westinghouse Electric Corp. Electric power transmission system. 3,345,450, 10–3–67, Cl. 174—28.

Sprague, John G. Can and closure fastener. 3,344,946, 10–3–67, Cl. 220—53.

Spuhr, M., & Co.: *See*—
Jankowski, Walter. 3,344,459.

Square D Co.: *See*—
Guettel, Marvin A., and Meyer. 3,345,493.
Jorgensen, George N. 3,345,022.
Leonard, James H., and Woods. 3,345,591.
Macherey, Robert E. 3,345,555.
Schmeling, William H., and Macherey. 3,345,556.
Zeller, Josef J. 3,345,480.

Squibb, E. R., & Sons, Inc.: *See*—
Donovick, Richard, Heuser, and Dolliver. 3,345,375.

Stadenko, Stephen, and P. T. Herbst, to A. O. Smith Corp. Register driven transmitter. 3,344,986, 10–3–67, Cl. 235—94.

Staggs, Jesse D. Cam operated wire stripper. 3,344,691, 10–3–67, Cl. 81—9.5.

Staley, A. E., Mfg. Co.: *See*—
Cogswell, George W., and Hayes. 3,345,207.

Stamicarbon N.V.: *See*—
Leeman, Jan N. J. 3,344,919.

Standard Conveyor Co.: *See*—
Holm, Roy F. 3,344,903.

Stapenhill, James A., to Sierra Engineering Co. Crash helmet. 3,344,433, 10–3–67, Cl. 2—3.

Staples, Crawford E., to Westinghouse Air Brake Co. Rapid transit speed control system. 3,345,511, 10–3–67, Cl. 246—34.

Starcher, Paul S.: *See*—
Tinsley, Samuel W., MacPeek, and Starcher. 3,345,419.

Stasenko, Stephen, and P. T. Herbst, to A. O. Smith Corp. Register driven transmitter. 3,344,986, 10–3–67, Cl. 235—94.

Stasney, H. R.: *See*—
Chambers, Rex. 3,344,650.

Stauffer Chemical Co.: *See*—
Hanuse, Helmut G. 3,345,245.
Price, Glenn R., and McClellan. 3,345,256.

Steadman, John D.: *See*—
Hauser, John G., and Steadman. 3,345,549.

Steele, Bernard E., and F. Rigby, to United Kingdom Atomic Energy Authority. Preparation of beryllium oxide of fine particle size thru crystallisation and calcination. 3,345,133, 10–3–67, Cl. 23—186.

Steere Enterprises Inc.: *See*—
Steere, Frank W., Jr., and Russell. 3,344,684.

Steere, Frank W., Jr., and J. R. Russell, to Steere Enterprises Inc. Grip. 3,344,684, 10–3–67, Cl. 74—551.9.

Stein, John A.: *See*—
Hack, William L., Stein, and Rohrberg. 3,344,498.

Stein, Werner, H. Weiss, and O. Koch, to Henkel & Cie G.m.b.H. Pourable and free-flowing detergent, wetting, and emulsifying compositions. 3,345,301, 10–3–67, Cl. 252—152.

Steinbock, G.m.b.H.: *See*—
Loef, Jakob. 3,344,990.

Stella, Carl, to General Precision Inc. Analogue converter. 3,345,629, 10–3–67, Cl. 340—347.

Stepanich, Fred C. Connector between a pipe and a tank. 3,345,069, 10–3–67, Cl. 285—189.

Stephan, John T. Polyhydroxynaphtalene containing adhesive compositions. 3,345,249, 10–3–67, Cl. 161—262.

Stern, Hanns: *See*—
Mayer, Friedrich W. Lotz, and Stern. 3,344,920.

Sternau, Martin M., to W. R. Grace & Co. Closures. 3,344,912, 10–3–67, Cl. 206—46.

Stetzelberg, Kurt: *See*—
Pfeiffer, Gerhard, Stetzelberg, and Winkler. 3,345,198.

Stewart, David C., Sr. Tobacco elevators. 3,344,889, 10–3–67, Cl. 187—9.

Stewart, Frederick G., and W. W. Simpson. Air hose mounting support. 3,344,935, 10–3–67, Cl. 213—1.

Stöckmann, Helmut: *See*—
Decker, Hanns, and Stöckmann. 3,345,000.

Stockton, Thomas R., to Ford Motor Co. Axle subassembly. 3,344,687, 10–3–67, Cl. 74—710.

Stoker, Carl B., Jr., to The Goodyear Tire & Rubber Co. Package having a tear tab. 3,344,975, 10–3–67, Cl. 229—51.

Stokis, Edmond. Valve for molding of plastic under pressure. 3,344,477, 10–3–67, Cl. 18—34.

Stolesen, Edward: *See*—
Stolesen, Trygve, R. and E. 3,345,244.

Stolesen, Rolf: *See*—
Stolesen, Trygve, R. and E. 3,345,244.

Stolesen, Trygve, R. and E. Plywood building panels. 3,345,244, 10–3–67, Cl. 161—116.

Stoll, Gottlieb. Beit massage machine with handle surrounding motor. 3,344,782, 10–3–67, Cl. 128—63.

Stoll, Gottlieb. Device for automatic beit massage. 3,344,783, 10–3–67, Cl. 128—63.

Stone, George E., and J. Allenby, to British Railways Board. Recording apparatus. 3,345,637, 10–3–67, Cl. 346—33.

Stoten, Terence A., to George Kent, Ltd. Counter-boxes. 3,344,988, 10–3–67, Cl. 235—117.

Strang, Jack D.: *See*—
Bristol, Kenneth E., and Strang. 3,345,824.

Straub, Melvin J.: *See*—
Lobash, Floyd, Gilchriat, and Straub. 3,344,772.

Straub, Melvin J., and G. H. Shaff, to Possis Machine Corp. Pocket shroud for stator winding machine. 3,345,001, 10–3–67, Cl. 242—1.1.

Strianese, Bernard V., to Ackerman Engravers, Inc. Panel lighting system. 3,344,545, 10–3–67, Cl. 40—130.

Stripp, Peter W., to Tecalemit (Engineering) Ltd. Fluid filters. 3,344,929, 10–3–67, Cl. 210—510.

Strohmaier, Alfred J., to E. I. du Pont de Nemours and Co. Process for forming a lubricating composition. 3,345,290, 10–3–67, Cl. 252—18.

Strom, Albert P., to Westinghouse Electric Corp. Hydraulically operated circuit breaker. 3,345,487, 10–3–67, Cl. 200—148.

Stubbs, Dennis: *See*—
Howard, David R., Stubbs, and Swallow. 3,344,643.

Stubbs, Frank F. Palm padded sports aid. 3,344,436, 10–3–67, Cl. 2—159.

Stuckenberger, Anton: *See*—
Tschursch, Arnold, and Stuckenberger. 3,345,106.

Studen, Charles E. Lined container. 3,344,973, 10–3–67, Cl. 229—37.

Styring, Ralph E., H. F. Dunlap, and C. L. Rogers, to The Atlantic Refining Co. Transporting ethane in a crude oil pipeline. 3,344,598, 10–3–67, Cl. 55—44.

Subbaratnam, Anangur V., to Wilson & Co., Inc. Diuretic compounds and method of promoting diuresis. 3,345,268, 10–3–67, Cl. 167—65.

Sugihara, Kinso: *See*—
Shibata, Hiroshi, Yamasaki, and Sugihara. 3,345,283.

Sugimoto, Haruo: *See*—
Kitajima, Joichi, Ueno, and Sugimoto. 3,344,472.

Sulliteanu, Menahem, and E. S. Nyerges, to Sylvania Electric Products Inc. Machine for shaping curved surfaces. 3,344,631, 10–3–67, Cl. 72—7.

Summers, Frank C.: *See*—
Paddock, Alvin F., and Summers. 3,345,542.

Sun Chemical Corp.: *See*—
McFarlane, Samuel B., Jr., Carlick, and Ostock. 3,345,162.

Sunnen, Jean A. F., to La Soudure Electrique Autogene, Procedes Arcos. Process for obtaining a metallic mass by fusion. 3,344,839, 10–3–67, Cl. 164—52.

Superflexit Ltd.: *See*—
Wilson, John W. 3,344,500.

Superior Electric Co., The: *See*—
Leenhouts, Albert C. 3,345,521.
Perrins, Allen R. 3,345,557.

Sutherland, Don E.: *See*—
Hall, Harry D., Salatin, Sutherland, and Trible. 3,344,848.

Sutherland, James F., F. D. Plociennik, and S. Schmandrak, to Westinghouse Electric Corp. Thermal junction reference cabinet. 3,345,540, 10–3–67, Cl. 317—99.

Svenska Rotor Maskiner Aktiebolog: *See*—
Firgau, Werner, and Geell. 3,344,949.

Swallow, Reginald D.: *See*—
Howard, David R., Stubbs, and Swallow. 3,344,643.

Swanson, Kermit E., to R. R. Donnelley & Sons Co. Alternating jogger. 3,345,063, 10–3–67, Cl. 271—44.

Swartz, Alden D.: *See*—
Zelnick, Charles, and Swartz. 3,344,640.

Sweetland, Ernest J., Jr. Removable trailer support. 3,345,037, 10–3–67, Cl. 254—86.

Swenson, Eskil W.: *See*—
Wilder, Burl A., Swenson, and Fyrk. 3,344,993.

Swenson Spreader & Mfg. Co.: *See*—
Wilder, Burl A., Swenson, and Fyrk. 3,344,993.

Swinarton, John C.: *See*—
Hofer, Walter D. 3,344,908.

Swindells, Geoffrey, to Imperial Chemical Industries Ltd. Web support. 3,344,774, 10–3–67, Cl. 118—500.

Swindt, Joseph K., to United States Steel Corp. Crucible for holding molten metal. 3,345,059, 10–3–67, Cl. 266—39.

Sylvania Electric Products Inc.: *See*—
Bucholtz, Daniel J., Hartman, Ingraham, Meyer, and Powers. 3,345,613.
Burney, Charles F. 3,344,629.
Drees, Joseph M., and Sherwood. 3,344,495.
Gillett, Robert L. 3 345,464.
Haas, Paul. 3,345,530.
Lambert, Robert L., and McKeirnan. 3,345,213.
Moats, Robert R., and Frutiger. 3,345,586.
Shuda, Donald G. 3,345,578.
Sulliteanu, Menahem, and Nyerges. 3,344,631.

Szabo, Louis J., to General Electric Co. Vacuum cleaner. 3,344,598, 10–3–67, Cl. 55—276.

Szmuszkovicz, Joseph: *See*—
Hester, Jackson B., Jr., and Szmuszkovicz. 3,345,376.

Szostak, Jan, M. R. Laidig, and N. E. Zacher, to The Singer Co. Work supporting bed for sewing machines. 3,344,762, 10–3–67, Cl. 112—260.

TDK Electronics Co., Ltd.: *See*—
Fujiwara, Shinobu, and Shiraiwa. 3,345,189.
Honma, Kunio. 3,345,188.

TRW Inc.: *See*—
Lane, Floyd A. 3,344,674.
Mageean, James V., and Rutkowski. 3,344,605.

Tada, Osamu, to Kabushikikaisha Yokogawa Denki Seisakusko (Yokogawa Electric Works Ltd.). Analog-to-digital conversion system. 3,345,630, 10–3–67, Cl. 340—347.

Taggart, Owen H. Miniature racing car. 3,344,553, 10–3–67, Cl. 46—45.

Taguchi, Tatsuya, to Canon Camera Kabushiki Kaisha. Flash circuit for photographic cameras. 3,344,724, 10–3–67, Cl. 95—10.

Tajkowski, Edward G.: *See*—
Kiss, Marie S., Hess, and Tajkowski. 3,345,202.

Takahashi, Masakazu, and M. Minamii, to Yawata Iron & Steel Co., Ltd. Method of measuring the thickness of magnetic metal plates by measuring the variation of magnetic potential difference across said plates. 3,345,559, 10–3–67, Cl. 324—34.

Takemura, Kazuhiko, and T. Noguchi, to Kureha Spinning Co., Ltd. and Toyama Machine Works, Ltd. Autodoffing apparatus. 3,344,594, 10–3–67, Cl. 57—53.

Takenaka, Tetsuya, to Kubota Tekko Kabushiki Kaisha. Building column and beam joint construction. 3,345,096, 10–3–67, Cl. 287—189.36.

Takeshi, Takagi: *See*—
Nomura, Masayoshi, Tokuyama, Tauchi, and Takeshi. 3,345,222.

Talarico, Lawrence J., to Union Camp Corp. Paste applicator. 3,344,767, 10–3–67, Cl. 118—2.

Tandy Leather Co.: *See*—
Roth, Louis C. 3,344,518.

Taub, David, N. L. Wendler, and H. L. Slates, to Merck & Co., Inc. Process for producing 16β-alkyl and 16α-alkyl steroids of the pregnane series. 3,345,387, 10–3–67, Cl. 260—397.45.

Tauchi, Shoji: *See*—
Nomura, Masayoshi, Tokuyama, Tauchi, and Takeshi. 3,345,222.

Taylor, Frederick G. Trailer jack. 3,345,038, 10–3–67, Cl. 254—86.

Taylor Instrument Companies: *See*—
Heisig, Charles G., and Mitchell. 3,344,658.

Taylor, Ray W. Firearm display stand. 3,345,027, 10–3–67, Cl. 248—187.

Taylor, Stanford E. Audio-visual instructional apparatus. 3,344,709, 10–3–67, Cl. 88—28.

Tecalemit (Engineering) Ltd.: *See*—
Stripp, Peter W. 3,344,929.

Technicolor Ltd.: *See*—
Brake, David G. 3,344,700.

Technipower Inc.: *See*—
Lupoli, Peter J. 3,345,554.
Tracy, Roger. 3,345,580.

Teijin Ltd.: *See*—
Yamada, Noboru, Shimada, and Ichida. 3,345,349.

Telecredit, Inc.: *See*—
Goldman, Robert N. 3,345,612.

Telefunken Patentverwertungs-G.m.b.H.: *See*—
Lutz, Georg. 3,345,598.

Telefunken Patentverwertungsgesellschaft G.m.b.H.: *See*—
Hildberg, Wolfgang. 3,345,574.
Robel, Heins. 3,345,595.

Telephone Mfg. Co. Ltd.: *See*—
Howell, Derek. 3,345,467.

Teletype Corp.: *See*—
Peterson, John L., and Tirrell. 3,345,615.

Telgheider, Henry B. Spreader roll. 3,344,493, 10–3–67, Cl. 26—63.

Tenenhoue, Gerald J., to General Motors Corp. Sulfur tetrafluoride treated elastomers having a low coefficient of friction. 3,345,348, 10–3–67, Cl. 260—83.3.

Tensitron, Inc.: *See*—
Sarl, Erwin J. 3,344,664.

Terenzi, Joseph F.: *See*—
Geurtsen, Friedrich H. H., Barone, and Terenzi. 3,345,821.

Terrell, John: *See*—
Dreisin, Alexander, and Terrell. 3,344,663.

Terrell Machine Co., The: *See*—
Ferguson, Richard. 3,344,820.

Tesner, Pavel A.: *See*—
Andonjev, Bergel M., Glaskov, Kuchin, Makarov, Pevay, Pochitman, Tesner, and Filipjev. 3,345,054.

Testard, Olivier: *See*—
Charles, Pierre, Prevost, and Testard. 3,344,803.

Texas Instruments Inc.: *See*—
Chamberlin, Leo A., Jr. 3,345,631.

Texier, Jean P., to Pyraplastic Societe a Responsabilite Limitee. Separable head and socket fastener elements. 3,344,488, 10–3–67, Cl. 24—221.

Thiokol Chemical Corp.: *See*—
Baldwin, John R. 3,344,660.
Hoashi, Jusaemon. 3,345,317.

Thirion, Rene, to Societe Anonyme D.B.A. Automatic brake adjuster for disc brake. 3,344,891, 10–3–67, Cl. 188—73.

Tholstrup, Clarence E., to Eastman Kodak Co. Poly-α-olefin compositions containing dialkyl-3,3'-thiodipropionates and thiobisphenols. 3,345,328, 10–3–67, Cl. 260—45.85.

Thomas & Betts Co., The: *See*—
Lawson, Gustaf R., and Bailey. 3,344,815.
Logan, Maurus C., and Gibeon. 3,345,452.

Thomas, Bobby J.: *See*—
Brown, Graydon L., Carten, and Thomas. 3,345,606.

Thomas, Junior W. Combine photoelectric warning system. 3,345,626, 10–3–67, Cl. 340—236.

Thompson, John H.: *See*—
Neikin, Arthur, Thompson, and Geil. 3,345,607.

Thompson, Philip M., to Plessey-UK Ltd. Multi-emitter bipolar transistors utilised as binary counter and logic gate. 3,345,518, 10–3–67, Cl. 307—88.5.

Thompson, William E., and B. G. Simmons, deceased (by H. G. Simmons, executor). Removable reel block. 3,344,613, 10–3–67, Cl. 61—66.

Thomson, Charles, to Solar Thomson Engineering Co. Ltd. Solids handling equipment. 3,344,956, 10–3–67, Cl. 222—56.

Thorn Electrical Industries Ltd.: *See*—
Kember, Raymond C., and Allison. 3,345,451.

Threadgold, Ronald, to Automatic Telephone & Electric Co. Ltd. Plural processors-plural terminal devices interconnecting system. 3,345,618, 10–3–67, Cl. 340—172.5.

Thrige-Titan A/S: *See*—
Klubien, Ole. 3,345,353.

Tiets, Raymond F., to E. I. du Pont de Nemours and Co. Polypivalolactone containing a nickel chlorobenzoate. 3,345,343, 10–3–67, Cl. 260—78.3.

Tijamann, Willem B., and A. Cody. Earth coring device. 3,344,869, 10–3–67, Cl. 175—4.

Timson, William J.: *See*—
Rinfret, Arthur P., Cowley, and Timson. 3,344,617.

Tinsley, Samuel W., D. L. MacPeek, and P. S. Starcher, to Union Carbide Corp. Hydration of bicyclo-(2.2.1.) heptenes and related nortricyclenes. 3,345,419, 10–3–67, Cl. 260—617.

Tintarella, S.A.: *See*—
Zelnick, Charles, and Swarts. 3,344,640.

Tirrell, John C.: *See*—
Peterson, John L., and Tirrell. 3,345,615.

Title, Jack. One piece panty design. 3,344,438, 10–3–67, Cl. 2—224.

Todd, David B.: *See*—
Podbielniak, Walter J., and Todd. 3,344,981.
Todd, David B., to Dresser Industries, Inc. Three phase clarifier. 3,344,982, 10–3–67, Cl. 233—15.
Toko Kabushiki Kaisha: *See*—
Matsushita, Akira. 3,345,622.
Tokuyama, Takashi: *See*—
Nomura, Masayoshi, Tokuyama, Tauchi, and Takashi. 3,345,222.
Tokyo Shibaura Electric Co., Ltd.: *See*—
Adachi, Takeshi. 3,345,515.
Tolgyesi, William S., to The Dow Chemical Co. Meta-substituted halobensenes. 3,345,423, 10–3–67, Cl. 260—650.
Tomcufcik, Andrew S.: *See*—
Martell, Michael J., Jr., and Tomcufcik. 3,345,379.
Topliss, John G., N. Sperber, and A. A. Rubin, to Schering Corp. Novel 1,2,4-bensothiadiasine-1,1-dioxide derivatives. 3,345,365, 10–3–67, Cl. 260—243.
Touyet, Roger. Arrangement for the safe conveyance of bills and notes. 3,344,757, 10–3–67, Cl. 109—25.
Townsend, Ralph G.: *See*—
Schroeder, Frederick A., and Townsend. 3,344,547.
Toyama Machine Works, Ltd.: *See*—
Takemura, Kasuhiko, and Noguchi. 3,344,594.
Toyo Kogyo Co. Ltd.: *See*—
Inaba, Seiuemon, and Fujii. 3,344,559.
Toyota Motor Co. Ltd.: *See*—
Iwashita, Noboru, Ohno, and Kobayashi. 3,344,880.
Makino, Takayuki, Kanbe, and Mori. 3,345,564.
Tracy, Roger, to Techipower Inc. Starting arrangement for flux oscillator. 3,345,580, 10–3–67, Cl. 331—52.
Trees, Alonso F. Seasoning apparatus. 3,344,731, 10–3–67, Cl. 99—257.
Trible, Clayton J.: *See*—
Hall, Harry D., Salatin, Southerland, and Trible. 3,344,-848.
Trico Products Corp.: *See*—
Deibel, Raymond A., and Riester. 3,344,458.
Tritt, June M. Orthopedic bed covering. 3,344,446, 10–3–67, Cl. 5—334.
Trojan Powder Co.: *See*—
Griffith, George L. 3,345,224.
Griffith, George L. 3,344,743.
Ruhf, Robert J., Russell, and Egge. 3,345,313.
Trouilhet, Maurice M. A., to Calor Appareils Electro-Domestiques. Water-spray laundry irons. 3,344,541, 10–3–67, Cl. 38—78.
Truelove & Maclean, Inc.: *See*—
Maclean, Donald. 3,344,787.
Trusteel Corp. (Universal) Ltd.: *See*—
Bell, George J. 3,344,572.
Tschursch, Arnold, and A. Stuckenberger, to George Fritsmeier K.G. Vehicle seat. 3,345,106, 10–3–67, Cl. 297—308.
Tucker, Benjamin W., and H. Ulrich, to The Upjohn Co. Catalysts for the preparation of bis-(2,6-diethylphenyl) carbodumide. 3,345,407, 10–3–67, Cl. 260—551.
Tucker, Chester D. Water amusement device simultating an animal. 3,344,765, 10–3–67, Cl. 115—34.
Tuggle, Lloyd H., to Clinton Engines Corp. Primer for internal combustion engines. 3,345,045, 10–3–67, Cl. 261—34.
Turi, Edith: *See*—
Chang, Leo S., Lund, Pierce, and Turi. 3,345,326.
Turner, Gilbert M. Reamer. 3,344,876, 10–3–67, Cl. 175—401.
Turner, Leonard: *See*—
McGrath, Brian P., and Turner. 3,345,428.
Turner, Roger S., and C. O. Drauglis, to Kulicke and Soffa Mfg. Co. Multipoint probe apparatus for electrically testing multiple surface points within small sones. 3,345,567, 10–3–67, Cl. 324—158.
Turner, Roland J., to United States of America, Army. Nonlinear source switch driver. 3,345,519, 10–3–67, Cl. 307—88.5.
Turner, Warren H.: *See*—
Albinak, Marvin J., and Turner. 3,345,190.
U.S. Automatics Corp.: *See*—
Peterson, Donovan F., Rasmussen, and Harris. 3,345,538.
Ueno, Keishiro: *See*—
Kitajima, Joichi, Ueno, and Sugimoto. 3,344,472.
Uffner, Melville W., and P. Weits, to General Aniline & Film Corp. Remoistenable hot melt adhesives containing plasticized copolymers of N-vinyl lactams. 3,345,320, 10–3–67, Cl. 260—31.6.
Ulicki, John. Horse trailer. 3,345,104, 10–3–67, Cl. 296—24.
Ulrich, Henri: *See*—
Tucker, Benjamin W., and Ulrich. 3,345,407.
Ulrich Mfg. Co.: *See*—
Ulrich, Raymond M. 3,344,540.
Ulrich, Raymond M., to Ulrich Mfg. Co. Universal load handling apparatus. 3,344,540, 10–3–67, Cl. 37—117.5.
Ultramatic National Coffee Machine Inc.: *See*—
Herrera, Juan H. 3,344,733.
Unelco Limited-Unelco Limitee: *See*—
Poesl, John L. 3,344,535.
Union Camp Corp.: *See*—
Talarico, Lawrence J. 3,344,767.
Union Carbide Corp.: *See*—
Gidge, Lester, and Poulin. 3,345,231.
Gidge, Lester, and Poulin. 3,345,232.
Glich, Heinrich G. 3.345,420.
Levy, Edward D., Weeden, and Muller. 3,345,105.
Malkin, Edwin S. 3,345,448.
Milligan, Charles L., and Hoy. 3,345,388.
Rinfret, Arthur P., Cowley, and Timson. 3,344,617.
Tinsley, Samuel W., MacPeek, and Starcher. 3,345,419.
Union Insulating Co., Inc.: *See*—
Palmer, Lewis E. 3,345,029.
Union Oil Co. of California: *See*—
Rai, Charanjit. 3,345,425.
United Aircraft Corp.: *See*—
Abernethy, Robert B. 3,344,606.
Iwanciow, Bernard L. 3,344,603.
Mieczkowski, William W., Jr. 3,344,601.
United-Carr Inc.: *See*—
Parkin, Leslie, and Andrews. 3,345,103.
United Data Control, Inc.: *See*—
Brown, Marshall M. 3,345,624.
United Engineering and Foundry Co.: *See*—
Beemer, Paul K. 3,344,847.
Gray, Richardson. 3,344,648.
United Kingdom Atomic Energy Authority: *See*—
Clark, Peter J. 3,344,855.
Green, Derek. 3,344,507.
Mann, John E., Barker, and Perks. 3,345,266.
Steele, Bernard R., and Rigby. 3,345,133.
United Shoe Machinery Corp.: *See*—
Crowell, Ernest M. 3,345,201.
United States of America
Agriculture: *See*—
Shuller, Walter H., and Lawrence. 3,345,404.
Air Force: *See*—
Carey, Donald F. 3,345,438.
Cox, Fred B., Jr., and Lindfors. 3,345,617.
Dotson, Charles R., and Campbell. 3,345,174.
Gordy, Irving, and Bush. 3,344,671.
Hildebrand, Donald A. 3,345,585.
Army: *See*—
Browning, William H., and Padgett. 3,345,520.
Colby, Richard H. 3,344,712.
Cotter, Richard W. 3,345,565.
Egghart, Heinrich C. 3,345,130.
Milton, Richard D. 3,344,703.
Pruett, William T. 3,344,662.
Turner, Roland J. 3,345,519.
Atomic Energy Commission: *See*—
Craig, Richard A. 3,345,436.
Eberle, Allan R., Lerner, and Pinto. 3,345,127.
Googin, John M., Napier, and Scrivner. 3,345,440.
Kraus, Kurt A., Johnson, and Shor. 3,344,928.
Murbach, Earl W. 3,345,143.
Palmer, Robert B. 3,345,120.
Singer, Ralph M. 3,344,653.
Van der Lans, Jan H. M. 3,345,575.
Interior: *See*—
Collins, Richard A. 3,345,272.
Roedder, Edwin W. 3,344,669.
National Science Foundation: *See*—
Bergan, Reuben A. 3,344,872.
United States Rubber Co.: *See*—
Bolesky, Richard C. 3,344,504.
United States Steel Corp.: *See*—
Clair, Thomas E. 3,345,053.
Feinman, Jerome, and Muskat. 3,344,834.
Leonard, Joseph W., III. 3,344,918.
Shekels, Harold F. 3,344,939.
Swindt, Joseph K. 3,345,059.
Universal Instruments Corp.: *See*—
Zemek, Albert W. 3,344,816.
Universal Oil Products Co.: *See*—
Speel, Henry C. 3,345,800.
Updike, Otis L., Jr.: *See*—
Arnold, Edwin W., Updike, and Zinner. 3,344,789.
Upjohn Co., The: *See*—
Hester, Jackson B., Jr., and Szmuszkovicz. 3,345,376.
Meyer, Custis E., and Bhuyan. 3,345,262.
Tucker, Benjamin W., and Ulrich. 3,345,407.
Upsilon-Werk Wienke & Michels K.G.: *See*—
Michels, Hermann. 3,344,784.
V-M Corp.: *See*—
Estkowski, Michael H. 3,345,074.
Vacuumschmelze Aktiengesellschaft: *See*—
Detert, Klaus. 3,345,219.
Valco Products Development, Inc.: *See*—
Benner, Russell E. 3,344,653.
Valve Corp. of America: *See*—
Diamond, Benjamin A. 3,344,964.
Van Ackeren, Joseph, to Koppers Co., Inc. Coke oven structure and method of heating. 3,345,051, 10–3–67, Cl. 263—15.
Van Allen, Richard F., to Greenlee Bros. & Co. Pipe benders. 3,344,635, 10–3–67, Cl. 72—34.
Vanant Co., Inc.: *See*—
Brueckner, Gilbert M. 3,344,916.
Vancamp, Raymond M.: *See*—
Piester, Loyd W., and Vancamp. 3,345,422.
Vandenberg, Edward. Stacking device. 3,345,064, 10–3–67, Cl. 271—68.
Vanderlaan, Henry J.: *See*—
Good, William E., and Vanderlaan. 3,345,462.
Van der Lans, Jan H. M., to United States of America, Atomic Energy Commission. Pulse midpoint detector. 3,345,575, 10–3–67, Cl. 328—108.
Van der Schee, Bernard L., to Americas Enka Corp. Method and apparatus for treating highly viscous material. 3,345,-041, 10–3–67, Cl. 259—6.
Van Elkeren, Hans: *See*—
Artiaga, Mariano V., Van Elkeren, and Wolf. 3,344,754.
Van Horne, Beverley H., and A. W. Hanson, to The Dow Chemical Co. Method of filling vessel completely with a liquid. 3,344,656, 10–3–67, Cl. 73—37.
Vanoni, Otto V., to Dupage Metal Products, Inc. Film processing splicer. 3,345,238, 10–3–67, Cl. 156—505.
Van R Dental Products, Inc.: *See*—
Porteous, Don D. 3,345,497.

Van 'T Sant, Willem C.: *See*—
Versluys, Paulus, Van 'T Sant, Gilissen, and Manger. 3,345,046.
Van Valkenburgh, Bryce F., to Rex Chainbelt Inc. Draper chain. 3,344,907, 10–3–67, Cl. 198—195.
Varian Associates: *See*—
Johnson, Floyd O., and Zitelli. 3,345,535.
Varta Pertrix-Union Gesellschaft mit beschraenkter Haftung: *See*—
Ryhiner, Guenther, and Schmier. 3,345,215.
Vasco Industries Corp.: *See*—
Inklaar, Petrus A. 3,345,358.
Vass, Antal, to Arenco Aktiebolag. Clamping device for a tool. 3,345,114, 10–3–67, Cl. 306—20.
Vaux, Rene L. G.: *See*—
Wood, Ernest C. 3,344,649.
Velsicol Chemical Corp.: *See*—
Richter, Sidney B. 3,345,157.
Sidles, Harry A. 3,345,258.
Ventura Tool Co.: *See*—
Hanes, James W. E., and Hynes. 3,345,084.
Hanes, James W. E. and Miller. 3,345,087.
Venuto, Paul B., to Mobil Oil Corp. Conversion of alkylphenols to thiaindanes. 3,345,383, 10–3–67, Cl. 260—330.5.
Verbeke, Henry E.: *See*—
Krakauer, Merrill, and Verbeke. 3,344,953.
Vergo, Laura: *See*—
Paganini, Valintine. 3,344,821.
Vermeiren, Theophile I. Magnetic device for treating a liquid. 3,345,594, 10–3–67, Cl. 335—306.
Versluys, Paulus, W. C. Van 'T Sant, F. A. H. Gilissen, and W. H. Manger, to Shell Oil Co. Gas-liquid contactor. 3,345,-046, 10–3–67, Cl. 261—79.
Vessot, Robert F. C., to Hewlett-Packard Co. Atomic resonance method and apparatus with improved magnetic field homogeneity control. 3,345,581, 10–3–67, Cl. 331—94.
Vickers-Zimmer Aktiengesellschaft: *See*—
Kuhne, Heinz. 3,345,189.
Victor, Maurice. Adjustable fittings for industrial, domestic, and display lamps. 3,345,024, 10–3–67, Cl. 248—122.
Vignovich, Barney, to Phillips Petroleum Co. Insulated frozen earth storage pit and method of constructing same. 3,344,-607, 10–3–67, Cl. 61—.5.
Voetter, Heinz, K. Hunger, U. Hasserodt, E. Sweep, and F. Korte, to Shell Oil Co. Solvent extraction of aromatics. 3,345,287, 10–3–67, Cl. 208—325.
Voetter, Ulrich E., to Schlumberger Well Surveying Corp. Sidewall sealing pad for borehole apparatus. 3,344,860, 10–3–67, Cl. 166—100.
Volk, David. Method and apparatus for producing aspheric contact lenses. 3,344,692, 10–3–67, Cl. 82—1.
Volpe, Rocco P.: *See*—
Lindemann, Martin K., and Volpe. 3,345,318.
Von Hofen, Edward L. Chain. 3,344,905, 10–3–67, Cl. 198—189.
Von Hofsten, Bengt A., to Aktiebolaget Astra. Process for the production of proteolytic enzymes. 3,345,269, 10–3–67, Cl. 195—66.
Von Kleydorff, Ludwig, and J. Perucco, to Zappia-Paradiso, S.A. Electric coffee maker. 3,344,732, 10–3–67, Cl. 99—292.
Vopel, Eugen: *See*—
Kutscher, Horst, and Vopel. 3,345,055.
WDL Inc.: *See*—
Wallace, Raymond. 3,345,086.
Wagner Electric Corp.: *See*—
Atkins, Carl E., and Ziolkowski. 3,345,536.
Wagner, Hans M., and W. M. Przesdziecki, to Eastman Kodak Co. Diffusion transfer receiving sheet containing china clay and an aliphatic amine. 3,345,168, 10–3–67, Cl. 96—29.
Wait, Rena: *See*—
Paganini, Valintine. 3,344,821.
Wakeman, Alden H., to St. Regis Paper Co. Apparatus for separating air from liquids. 3,344,587, 10–3–67, Cl. 55—170.
Waldbillig, Charles C.: *See*—
Cowan, John D., and Waldbillig. 3,344,567.
Walker, Elwood C.: *See*—
Kehoe, Edward C., and Walker. 3,344,584.
Walker, Richard D.: *See*—
Meyer, Larry E., and Walker. 3,345,297.
Walker, Richard W. C., to Domtar Ltd. Lined box. 3,344,971, 10–3–67, Cl. 229—14.
Walker, Roy W.: *See*—
Mitchell, Hartman, and Walker. 3,345,057.
Wallace, Baird, to Ford Motor Corp. Turn signal control system. 3,345,609, 10–3–67, Cl. 340—81.
Wallace, Raymond, to WDL Inc. Quick disconnect coupling for welding torch. 3,345,086, 10–3–67, Cl. 285—38.
Wang, Edward D., and A. N. Paone, to SCM Corp. Portable data transferring machines operable from either DC or AC current. 3,344,899, 10–3–67, Cl. 197—12.
Wapner, Joseph S., to Fischer & Porter Co. Automatic flow rate control system. 3,344,805, 10–3–67, Cl. 137—486.
Ward, George A.: *See*—
Olender, Francis B., and Ward. 3,345,115.
Ward, George E.: *See*—
Monroe, Charles H., and Ward. 3,345,178.
Ward, Samuel, Mfg. Co., Inc.: *See*—
MacWilliams, Robert W. 3,344,794.
Warnant, Julien, R. Joly, A. Allais, and P. Girault, to Rousselaclaf. Method of effective sedation, narcosis and muscular relaxation. 3,345,259, 10–3–67, Cl. 167—52.
Warren, Robert A.: *See*—
Bass, Paul D., and Warren. 3,344,749.
Washburn, Frederick L., Jr., to Westinghouse Electric Corp. Traveling wave tube attenuator. 3,345,533, 10–3–67, Cl. 315—3.6.
Wasserman, Albert. Artificial denture. 3,344,522, 10–3–67, Cl. 32—6.
Wasserman, David, J. D. Garber, and F. M. Meigs, to Merck & Co., Inc. Compositions of vinyl chloride/vinylacetate polymers and a polyglutamate. 3,345,433, 10–3–67, Cl. 260—857.
Wasyncsuk, Victor: *See*—
Glomb, Frank A., and Wasyncsuk. 3,344,879.
Watanabe, Tetsuya: *See*—
Saito, Shigeru, Watanabe, and Noguchi. 3,345,140.
Watson, Getrude C. Ironing apparatus. 3,344,542, 10–3–67, Cl. 38—101.
Wayss, Norbert: *See*—
Anschutz, Herbert, and Wayss. 3,344,534.
Weatherhead, Albert J., Jr., and J. Nicol, to The Weatherhead Co. Hose end fitting. 3,345,090, 10–3–67, Cl. 285—256.
Weatherhead Co., The: *See*—
Nicol, John. 3,345,091.
Weatherhead, Albert J., Jr., and Nicol. 3,345,090.
Webber, Harold F. P.: *See*—
Pollock, James R. A., and Webber. 3,345,179.
Webster, Edward M., to National Lock Co. Self-closing door mechanism or hinge. 3,344,462, 10–3–67, Cl. 16—80.
Weeden, Robert W.: *See*—
Levy, Edward D., Weeden, and Muller. 3,345,105.
Wegler, Richard: *See*—
Dickoré, Karlfried, Wegler, and Sasse. 3,345,374.
Weigle, Russell M., to Bethlehem Steel Corp. Rolling mill bar twisting apparatus. 3,344,642, 10–3–67, Cl. 72—231.
Weil, Edward D., and K. J. Smith, to Hooker Chemical Corp. N - (decachloro - 3 - hydroxypentacyclo(5.2.1.0^{2,6}.0^{3,9}.0^{5,8}) decyl-3) amides and carbamate. 3,345,378, 10–3–67, Cl. 260—326.
Weintraub, Ronald, to Flexnit Co., Inc. Foundation garment. 3,344,793, 10–3–67, Cl. 128—547.
Weiss, Herbert: *See*—
Stein, Werner, Weiss, and Koch. 3,345,301.
Weissbuhn, Peter. Method and apparatus for making envelopes. 3,344,719, 10–3–67, Cl. 93—63.
Weits, Paul: *See*—
Uffner, Melville W., and Weits. 3,345,320.
Weldes, Helmut H.: *See*—
Netting, David I., and Weldes. 3,345,302.
Weldes, Helmut H. W., and D. I. Netting, to Philadelphia Quartz Co. Organic ammonium silicate coating compositions. 3 345,194, 10–3–67, Cl. 106—287.
Weller, Erwin, to Alfred Gauthier G.m.b.H. Photographic camera with controlled diaphragm setting. 3,344,726, 10–3–67, Cl. 95—64.
Wells, Roy E., to Electra Totalisators Pty. Ltd. Electrical aggregating apparatus for use in totalisators and like systems. 3,345,501, 10–3–67, Cl. 235—92.
Wendler, Norman L.: *See*—
Taub, David, Wendler, and Slates. 3,345,387.
Westergren, George A.: *See*—
Pauler, Charles J., Westergren, and Nordeen. 3,344,455.
Westfalia Dinnendahl Groppel Aktiengesellschaft: *See*—
Mayer, Friedrich W., Lotz, and Stern. 3,344,920.
Westinghouse Air Brake Co.: *See*—
Fallor, Charles W. 3,345,512.
Staples, Crawford E. 3,345,511.
Westinghouse Electric Corp.: *See*—
Atti, Eros. 3,345,527.
Bigler, Theodore G. 3,344,532.
Colclasser, Robert G., Jr., and Cromer. 3,345,486.
Ellenburg, George W. 3,344,634.
Johnson, Stewart C. 3,344,779.
Johnston, William A. 3,344,997.
Kaplan, Irving I., and Fay. 3,345,572.
Leonard, Merrill G., Fowler, and Wright. 3,345,483.
Looke, Arvo. 3,345,605.
Majcher, John, and Flick. 3,345,481.
Nelkin, Arthur, Thompson, and Geil. 3,345,607.
Nicholson, Raymond B., and Richardson. 3,345,516.
Reuther, John F. 3,345,522.
Rively, Clair M., and Livera. 3,344,505.
Sattler, Frank A. 3,345,429.
Schmidt, Paul F. 3,345,274.
Schmidt, Paul F., and Rose. 3,345,275.
Spindle, Harvey E. 3,345,450.
Strom, Albert P. 3,345,487.
Sutherland, James F., Plociennik, and Schmandrak. 3,345,540.
Washburn, Frederick L., Jr. 3,345,533.
Weyss, Norbert: *See*—
Anschütz, Herbert, and Weyss. 3,344,534.
Wheelock, Arnold M., Sr.: *See*—
Shearer, Walter V., Beck, and Wheelock. 3,345,065.
Wheelock, Edward A., to Crane Packing Co. Wiper-scraper seal. 3,345,076, 10–3–67, Cl. 277—24.
Whim, Bernard P., and C. C. Fettis, to Imperial Chemical Industries Ltd. Catalytic oxidation of olefins. 3,345,406, 10–3–67, Cl. 260—533.
Whirlpool Corp.: *See*—
Eaman, Edmund B., and Rickel. 3,344,623.
Lyman, John B. 3,344,804.
Nordeen, Erwin E. 3,344,460.
Pauler, Charles J., Westergren, and Nordeen. 3,344,455.
Saddler, Jerry W., and Morrison. 3,345,119.
White, James E., to Marathon Oil Co. Seismic detection method. 3,344,881, 10–3–67, Cl. 181—.5.
White, Philip H., to Pneumo Dynamics Corp. Cross slide operating mechanism. 3,344,694, 10–3–67, Cl. 82—8.
White, S. S., Co.: *See*—
Kulischenko, Walter. 3,344,524.
Wickham, John L., to The Black and Decker Mfg. Co. Spring retainer for power-operated tool. 3,345,079, 10–3–67, Cl. 279—19.6.

LIST OF PATENTEES

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Wieger, George F., to The Bendix Corp. Automatic adjuster. 3,344,892, 10–3–67, Cl. 188—79.5.

Wielicki, Edward A.: *See*—
Justice, John L., Wielicki, and Labriola. 3,345,200.

Wilber, Paul F., to Dollinger Corp. Machine for pleating metal fabrics and the like. 3,344,814, 10–3–67, Cl. 140—107.

Wilder, Archie P. Saw blade. 3,344,822, 10–3–67, Cl. 143—140.

Wilder, Burl A., E. W. Swenson, and C. O. F. Fyrk, to Swenson Spreader & Mfg. Co. Spreader apparatus. 3,344,993, 10–3–67, Cl. 239—164.

Wildt Mellor Bromley Ltd.: *See*—
Saunders, Alfred P. 3,344,620.

Wilkins & Associates, Inc.: *See*—
Hereth, Ralph F. 3,344,714.

Wilkins, William B., to Midland-Ross Corp. Process for making circumambient wall unit. 3,345,233, 10–3–67, Cl. 156—189.

Wilkinson, Geoffrey, to Ethyl Corp. Process for preparing manganese cyclohexadienyl tricarbonyls. 3,345,390, 10–3–67, Cl. 260—429.

Wilkinson, George C., Jr., to Collins Radio Co. Phase locked crystal controlled oscillator. 3,345,579, 10–3–67, Cl. 331—8.

Williams, Charles A. Hair clipper attachment. 3,344,620, 10–3–67, Cl. 30—200.

Williams, Charles L. Apparatus for painting screw heads. 3,344,769, 10–3–67, Cl. 118—69.

Williams, White & Co.: *See*—
Huford, Richard A. 3,344,470.

Williamson, William A.: *See*—
Burgess, Glen W., and Williamson. 3,344,940.

Willson, James R., to Robertshaw Controls Co. Control device and parts therefor or the like. 3,344,989, 10–3–67, Cl. 236—99.

Wilson, Burton D., to Eastman Kodak Co. Beta-ketoethyl onium salts as gelatin hardeners. 3,345,177, 10–3–67, Cl. 96—111.

Wilson & Co., Inc.: *See*—
Subbaratnam, Anangur V. 3,345,263.

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Wilson, Porter C., and N. C. Adams. Flag belt device with a variable pull screw-on snap-off coupling. 3,345,070, 10–3–67, Cl. 272—55.

Wilson, Richard W., to Motorola, Inc. Method of applying AN ohmic contact to thin film passivatedesistors. 3,345,210, 10–3–67, Cl. 117—212.

Wilson, Ronald H., to Kirkstall Forge Engineering Ltd. Hydraulic motors. 3,344,715, 10–3–67, Cl. 91—180.

Wilson, Walter W. Automatic bending brake. 3,344,633, 10–3–67, Cl. 72—14.

Winkler, Fritz: *See*—
Pfeiffer, Gerhard, Stetzelberg, and Winkler. 3,345,198.

Winquist, Karl E.: *See*—
Christie, David E., and Winquist. 3,344,591.

Winterbottom, Robert, P. Bitha, and H. M. Kissman, to American Cyanamid Co. Substituted 7- and/or 9-amino tetracyclines. 3,345,410, 10–3–67, Cl. 260—559.

Witheford, John M.: *See*—
Colgan, Joseph D., and Witheford. 3,345,319.

Wittler, Bernard H., to The Singer Co. Knitting machines. 3,344,619, 10–3–67, Cl. 66—84.

Wojewodski, Michael S.: *See*—
Engstrom, William A., and Wojewodski. 3,344,773.

Wolf, Andrew: *See*—
Artiaga, Mariano V., Van Eikeren, and Wolf. 3,344,754.

Wolf, Edgar, to Digitronics Corp. Signal detection apparatus. 3,345,610, 10–3–67, Cl. 340—146.1.

Wolfe, Carl H.: *See*—
Schuster, Norman J., and Wolfe. 3,344,515.

Wolfgang, Krank, and G. Mohrin. Variable pitch corrugated waveguide. 3,345,590, 10–3–67, Cl. 333—95.

Wollgien, Herbert R., and E. H. Chang, to Fremont Industries, Inc. Method of cleaning and phosphatizing copper circuits. 3,345,217, 10–3–67, Cl. 148—6.15.

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Woods, John P., E. B. Neitzel, and T. Prickett, Jr., to The Atlantic Refining Co. Scale corrector. 3,345,499, 10–3–67, Cl. 235—61.6.

Woods, William H.: *See*—
Leonard, James H., and Woods. 3,345,591.

Woodson, Ruben R.: *See*—
Shay, James H., and Woodson. 3,345,271.

Woodworth, N. A., Co.: *See*—
Hohwart, George. 3,344,695.

Woosley, William P.: *See*—
Bylund, Linton D., Rethwisch, and Woosley. 3,344,469.

Wotschke, Johannes. Apparatus for the thermal decomposition of waste products. 3,344,758, 10–3–67, Cl. 110—18.

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Wyandotte Chemicals Corp.: *See*—
Elfers, Gunther, and Reegen. 3,345,347.

Wynes, Anthony G., and P. Aspin, to E. S. & A. Robinson, Ltd. Plastic tubes for sipensing pasty or liquid substances. 3,344,963, 10–3–67, Cl. 222—495.

Xerox Corp.: *See*—
Bartoszewicz, John S., and Insalaco. 3,345,293.

Yamada, Noborn K. Shimada, and H. Ichida, to Teijin Ltd. Copolymerization of conjugated diolefins with mono-olefin hydrocarbon material in the presence of vanadyl chloride. 3,345,349, 10–3–67, Cl. 260—85.3.

Yamaji, Goro, and T. Ohtake, to Dai Nippon Seito Kabushiki Kaisha. Flavored tobacco smoke filter containing higher fatty acid ester of sucrose. 3,344,796, 10–3–67, Cl. 131—267.

Yamasaki, Yasuo: *See*—
Shibata, Hiroshi, Yamasaki, and Sugihara. 3,345,283.

Yankowski, Elizabeth L.: *See*—
Land, Edwin H., Morse, and Yankowski. 3,345,166.

Yardamian, Stephane: *See*—
Bonnin, Andre, and Yardamian. 3,345,305.

Yawata Iron & Steel Co., Ltd.: *See*—
Takabashi, Masakazu, and Minamii. 3,345,559.

Yeager, Marvin L.: *See*—
Henschen, Homer E., and Yeager. 3,345,599.
Henschen, Homer E., and Yeager. 3,345,604.

Yew, Ming-Chih: *See*—
Polhemus, Von D., Boettger, Isaacson, and Yew. 3,345,060.

Young, Claude A. Can opening device. 3,344,763, 10–3–67, Cl. 113—1.

Young, James H.: *See*—
Johnson, Douglas, and Young. 3,345,035.

Young, John C., to Hinge Gear Products, Inc. Folding panel assembly. 3,344,837, 10–3–67, Cl. 160—189.

Young, John R., to Rockwell-Standard Corp. Safety shield. 3,344,618, 10–3–67, Cl. 64—3.

Young, Robert, Jr.: *See*—
Ichikawa, Stanley T., and Young. 3,345,260.

Youngdahl, Carl A.: *See*—
Berg, Robert H., and Youngdahl. 3,345,502.
Berg, Robert H., Youngdahl, and Ellison. 3,344,786.

Youngstown Sheet and Tube Co., The: *See*—
McClean, William G. 3,345,230.

Zacher, Norman E.: *See*—
Szostak, Jan, Laidig, and Zacher. 3,344,762.

Zanki, Frank, to Kearney & Trecker Corp. Drive mechanism for actuating a movable machine member. 3,344,713, 10–3–67 Cl. 90—16.

Zappia-Paradiso, S.A.: *See*—
Von Kleydorff, Ludwig, and Perucco. 3,344,732.

Zauner, John H., and G. F. Zellhoefer, to National Union Electric Corp. Fused electrolyte cell. 3,345,214, 10–3–67, Cl. 136—137.

Zausznica, Adam. Transmitting element for gauging instruments. 3,344 810, 10–3–67, Cl. 138—46.

Zeiss, Carl, -Stiftung: *See*—
Rantsch, Kurt. 3,344,701.

Zeller, Burton S., to Clark Equipment Co. Transmission control system. 3,344,679, 10–3–67, Cl. 74—360.

Zeller, Josef J., to Square D Co. Pressure switch with low-pressure cut-off. 3 345,480, 10–3–67, Cl. 200—83.

Zellhoefer, Glenn F.: *See*—
Zauner, John H., and Zellhoefer. 3,345,214.

Zelnick, Charles, and A. D. Swartz, to Tintarella, S.A. Measuring ribbon forming methods and apparatus. 3,344,640, 10–3–67, Cl. 72—168.

Zemek, Albert W., to Universal Instruments Corp. Transistor lead rippler and straightener. 3,344,816, 10–3–67, Cl. 140—147.

Zepell, Nathan A., and D. P. Grover, to Nathan A. Zepell. Writing instrument. 3,344,484, 10–3–67, Cl. 24—11.

Zepell, Nathan A.: *See*—
Zepell, Nathan A., and Grover. 3,344,484.

Ziegler, Hanerner, W. Kowalski, and A. Hinz, to Knapsack-Griesheim Aktiengesellschaft. Process for the manufacture of phosphate pellets. 3,345,443, 10–3–67. Cl. 264—117.

Ziermann, Attila. Floating body. 3,344,764, 10–3–67, Cl. 114—121.

Zilch, Karl T., to Emery Industries, Inc. Separation of fatty materials. 3,345,389, 10–3–67. Cl. 260—419.

Zimmermann, Johann W.: *See*—
Kuhlkamp, Alfred, Zimmermann, and Bütschli. 3,345,336.

Zinner, Norman R.: *See*—
Arnold, Edwin W., Updike, and Zinner. 3,344,789.

Ziolkowski, Robert L.: *See*—
Atkins, Carl E., and Ziolkowski. 3,345,536.

Zipper, Donald H., to Continental Can Co., Inc. Container closure. 3,344,943. 10–3–67, Cl. 215—40.

Zitelli, Louis T.: *See*—
Johnson, Floyd O., and Zitelli. 3,345,535.

Znamirowski, Henry, to Eastern Products Corp. Traverse rod. 3,344,463, 10–3–67, Cl. 16—94.

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CLASSIFICATION OF PATENTS

ISSUED OCTOBER 3, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,344,433	29–157.4	3,344,498	55– 70	3,344,585	73–144	3,344,664	99– 68	3,345,181	128–349	3,344,791
8	3,344,434	183.5	3,345,145	158	3,344,586	178	3,344,665	71	3,345,182	419	3,344,792
111	3,344,435	199	3,345,156	170	3,344,587	231	3,344,666	80	3,345,183	547	3,344,793
159	3,344,436	203	3,344,499	276	3,344,588	239	3,344,667	136	3,345,184	129– 20	3,344,794
195	3,344,437	235	3,344,500	294	3,344,589	304	3,344,668		3,345,185	29	3,344,795
224	3,344,438	401	3,344,501	484	3,344,590	339	3,344,669	199	3,345,186	131–267	3,344,796
4– 40	3,344,439	407	3,344,506	56–330	3,344,591	356	3,344,670	257	3,344,731	136– 6	3,345,211
172	3,344,440	417	3,344,502	57– 3	3,344,592	362	3,344,671	292	3,344,732	25	3,345,212
233	3,344,441	420.5	3,344,507	53	3,344,593	363.5	3,344,672	302	3,344,733	75	3,345,213
5– 97	3,344,442		3,344,508		3,344,594	432	3,344,673	304	3,344,734	137	3,345,214
120	3,344,443	421	3,344,509	106	3,344,595	480	3,344,674	340	3,344,735	146	3,345,215
317	3,344,444	430	3,344,503	152	3,344,596	517	3,344,675	421	3,344,736	137– 18	3,344,797
331	3,344,445	432.2	3,344,504	157	3,344,597	74– 5.7	3,344,676	446	3,344,737	85	3,344,798
334	3,344,446	470.1	3,344,510	58– 22.5	3,344,598	219	3,344,677	100–116	3,344,738	92	3,344,799
8– 54.2	3,345,122	473.1	3,344,505	59– 79	3,344,599	334	3,344,678	101– 69	3,344,739	216	3,344,800
142	3,345,123	568	3,344,511	60– 1	3,344,600	360	3,344,679	228	3,344,740	263	3,344,801
159	3,344,447		3,344,512	39.28:	3,344,602	472	3,344,681	462	3,344,741	270	3,344,802
9– 1	3,344,448	596	3,344,513	39.32:	3,344,601	501	3,344,682	102– 7.2	3,344,742	375	3,344,803
309	3,344,449	598	3,344,514	204	3,344,603	526	3,344,683	23	3,344,743	406	3,344,804
10– 87	3,344,450	628	3,344,515	229	3,344,604	551.9	3,344,684	28	3,344,744	486	3,344,805
111	3,344,451	30– 24	3,344,516	241	3,344,606	569	3,344,685	103– 4	3,344,745	494	3,344,806
13– 25	3,345,448	41.9	3,344,517	258	3,344,605	650	3,344,686	153	3,344,746	557	3,344,807
14– 21	3,344,452	164.9	3,344,518	61– .5	3,344,607	710	3,344,687	105–215	3,344,747	599.2	3,344,808
15– 50	3,344,453	200	3,344,520	7	3,344,608	711	3,344,688	282	3,344,748	624.18:	3,344,809
	3,344,454	362	3,344,519	38	3,344,609	801	3,344,689	369	3,344,749	138– 46	3,344,810
	3,344,455	31– 46	3,344,521	45	3,344,610	75–108	3,345,158		3,344,750	95	3,344,811
93	3,344,456	32– 6	3,344,522	53.64:	3,344,611	146	3,345,159	106– 14	3,345,187	139–123	3,344,812
159	3,344,457	33	3,344,523	63	3,344,612	222	3,345,160	39	3,345,188	140–101	3,344,813
250.35:	3,344,458	58	3,344,524	66	3,344,613	77– 58	3,344,690		3,345,189	107	3,344,814
317	3,344,459	67	3,344,525	69	3,344,614	81– 9.5	3,344,691	47	3,345,190	123.6	3,344,815
351	3,344,460	33– 19	3,344,526	72.6	3,344,615	82– 1	3,344,692	61	3,345,191	147	3,344,816
407	3,344,680	88	3,344,531	62– 58	3,344,616		3,344,693	67	3,345,192	143– 32	3,344,818
512	3,344,461	172	3,344,527	322	3,344,617	3	3,344,694	123	3,345,193	36	3,344,819
16– 80	3,344,462	174	3,344,528	64– 3	3,344,618	40	3,344,695	287	3,345,194	85	3,344,820
94	3,344,463		3,344,529	65– 3	3,345,147	101	3,344,696	107– 1	3,344,751	135	3,344,821
108	3,344,464		3,344,530	90	3,345,148	83– 19	3,344,697	14	3,344,752	140	3,344,822
147	3,344,465	34–133	3,344,532	99	3,345,149	84–267	3,344,698	54	3,344,753		3,344,823
17– 11	3,344,466	230	3,344,533	184	3,345,150		3,344,781	69	3,344,754	160	3,344,824
38	3,344,467	35– 9	3,344,534	66– 84	3,344,619	87– 7	3,344,699	108– 40	3,344,755	144– 1	3,344,825
18– 1	3,344,468	19	3,344,535	156	3,344,620	88– 14	3,344,700	106	3,344,756	3	3,344,826
2.5	3,344,469	48	3,344,536	175	3,344,621		3,344,701	109– 25	3,344,757	144	3,344,827
5	3,344,470	36– 2.5	3,344,537	68– 10	3,344,622		3,344,702	110– 18	3,344,758	180	3,344,828
	3,344,471	4.5	3,344,538	12	3,344,623	23	3,344,703	112– 2	3,344,759	146– 68	3,344,829
8	3,344,472	37–103	3,344,539		3,344,624	24	3,344,704		3,344,760	129	3,344,830
12	3,344,473	117.5	3,344,540		3,344,625		3,344,705	226	3,344,761	148– 1.5	3,345,216
15	3,344,474	38– 78	3,344,541	122	3,344,626		3,344,706	260	3,344,762	6.15:	3,345,217
16	3,344,475	101	3,344,542	69– 10	3,344,627		3,344,707	113– 1	3,344,763	6.35:	3,345,218
18	3,344,476	40– 1.5	3,344,543	70–255	3,344,628		3,344,708	114–121	3,344,764	12.1	3,344,817
34	3,344,477	68	3,344,544	280	3,344,629	28	3,344,709	115– 34	3,344,765	112	3,345,219
42	3,344,478	130	3,344,545	71– 21	3,345,152		3,344,710	116–137	3,344,766	148	3,345,220
19– 65	3,344,479	42– 42	3,344,546	36	3,345,153	89– 14	3,344,711	117– 10	3,345,195	175	3,345,221
	3,344,480	43– 19	3,344,547	42	3,345,154	33	3,344,712	11	3,345,196		3,345,222
129	3,344,481	42.08:	3,344,548	111	3,345,155	90– 16	3,344,713	26	3,345,197		3,345,223
	3,344,482	42.11:	3,344,549		3,345,157	91–175	3,344,714	38	3,345,198	149– 38	3,345,224
145	3,344,483	42.14:	3,344,550	118	3,345,151	180	3,344,715	46	3,345,199	150– .5	3,344,831
21– 87	3,345,124	55	3,344,551	72– 2	3,344,630	93– 1	3,344,716	60	3,345,200	152–175	3,344,832
23– 2	3,345,125	56	3,344,552	7	3,344,631	53	3,344,717	63	3,345,201	156– 20	3,345,225
18	3,345,126	46– 45	3,344,553	10	3,344,632	58	3,344,718	71	3,345,202	66	3,345,226
59	3,345,127	49–280	3,344,554	14	3,344,633	63	3,344,719	76	3,345,203	86	3,345,227
91	3,345,128	340	3,344,555	34	3,344,634	94– 18	3,344,720	102	3,345,204	126	3,345,228
101	3,345,129	360	3,344,556		3,344,635	22	3,344,721	119	3,345,205	166	3,345,229
	3,345,130	390	3,344,557	60	3,344,636	95– 4.5	3,344,722	122	3,345,206	181	3,345,230
115	3,345,131	51– 11	3,344,558	64	3,344,637	10	3,344,723	140	3,345,207		3,345,231
182	3,345,132	105	3,344,559	148	3,344,638		3,344,724	200	3,345,208		3,345,232
186	3,345,133	165	3,344,560	150	3,344,639	11	3,344,725	201	3,345,209	189	3,345,233
191	3,345,134	304	3,345,146	168	3,344,640	64	3,344,726	212	3,345,210	209	3,345,234
206	3,345,135	52– 11	3,344,561	177	3,344,641		3,344,727	118– 2	3,344,767	298	3,345,235
213	3,345,136		3,344,562	231	3,344,642	75	3,344,728	48	3,344,768	498	3,345,236
230	3,345,137		3,344,563	237	3,344,643	89	3,344,729	69	3,344,769		3,345,237
	3,345,138		3,344,564	250	3,344,644		3,344,730	122	3,344,770	505	3,345,238
277	3,345,139	81	3,344,565	251	3,344,645	96– 1.7	3,345,161	200	3,344,771	157– 1.17:	3,344,833
285	3,345,140	94	3,344,566	348	3,344,646	1.8	3,345,162	301	3,344,772	158– 4	3,344,834
300	3,345,141	99	3,344,567	354	3,344,647	3	3,345,163	307	3,344,773	125	3,344,835
312	3,345,142	116	3,344,568	364	3,344,648	28	3,345,164	500	3,344,774	159– 3	3,344,836
349	3,345,143	287	3,344,569	392	3,344,649	29	3,345,165	122– 7	3,344,775	160–189	3,344,837
367	3,345,144	315	3,344,570	469	3,344,650		3,345,166	32	3,344,776	161– 1	3,345,239
24– 11	3,344,484	376	3,344,571	479	3,344,651		3,345,167	406	3,344,777	36	3,345,240
126	3,344,485	426	3,344,572	73– 1	3,344,652		3,345,168	123– 8	3,344,778		3,345,241
194	3,344,486	476	3,344,573	11	3,344,653		3,345,169	126– 19	3,344,779	109	3,345,242
201	3,344,487	615	3,344,574	12	RE.26,279	35	3,345,170	30	3,344,780		3,345,243
221	3,344,488	656	3,344,575	15	3,344,654	36	3,345,171	128– 63	3,344,782	116	3,345,244
241	3,344,489	53– 28	3,344,576	27	3,344,655	48	3,345,172		3,344,783	119	3,345,245
248	3,344,490	39	3,344,577	37	3,344,656	50	3,345,173	156	3,344,784	161	3,345,246
249	3,344,491	54	3,344,578	37.6	3,344,657	61	3,345,174	214	3,344,785	247	3,345,247
25– 2	3,344,492	126	3,344,579	53	3,344,658	76	3,345,175	215	3,344,786	248	3,345,248
26– 63	3,344,493	160	3,344,580	61.1	3,344,659	79	3,345,176	221	3,344,787	262	3,345,249
27– 19	3,344,494	177	3,344,581	88	3,344,660	111	3,345,177	283	3,344,788	162– 78	3,345,250
29– 25.14:	3,344,495	55– 16	3,344,582	95.5	3,344,661	99– 2	3,345,178	287	3,344,789	158	3,345,251
95	3,344,496	44	3,344,583	103	3,344,662	31	3,345,179	303.1	RE.26,276		3,345,252
103	3,344,497	46	3,344,584	119	3,344,663	68	3,345,180	340	3,344,790	166	3,345,253

162–343	3,345,254	
164– 33	3,344,838	
52	3,344,839	
122	3,344,840	
150	3,344,841	
236	3,344,842	
259	3,344,843	
274	3,344,844	
	3,344,845	
281	3,344,846	
	3,344,847	
312	3,344,848	
165– 4	3,344,849	
26	3,344,850	
39	3,344,851	
71	3,344,852	
105	3,344,853	
119	3,344,854	
159	3,344,855	
166– 4	3,344,856	
9	3,344,857	
	3,344,858	
40	3,344,859	
100	3,344,860	
120	3,344,861	
216	3,344,862	
167– 22	3,345,255	
30	3,345,256	
33	3,345,257	
39	3,345,258	
52	3,345,259	
53	3,345,260	
65	3,345,261	
	3,345,262	
	3,345,263	
	3,345,264	
82	3,345,265	
172– 14	3,344,863	
538	3,344,864	
173– 12	3,344,865	
43	3,344,866	
44	3,344,867	
114	3,344,868	
174– 16	3,345,449	
28	3,345,450	
52	3,345,451	
71	3,345,452	
77	3,345,453	
84	3,345,454	
112	3,345,455	
128	3,345,456	
175– 4	3,344,869	
15	3,344,870	
19	3,344,871	
46	3,344,872	
55	3,344,873	
56	3,344,874	
170	3,344,875	
401	3,344,876	
176– 18	3,345,266	
78	3,345,267	
177– 64	3,344,877	
127	3,344,878	
178– 6.6	3,345,457	
6.8	3,345,458	
7.5	3,345,459	
7.6	3,345,460	
7.81	3,345,461	
7.87	3,345,462	
179– 5	3,345,463	
15	3,345,464	
22	3,345,465	
37	3,345,466	
81	3,345,467	
100.2	3,345,468	
111	3,345,469	
150	3,345,470	
180– 55	3,344,879	
109	3,344,880	
181– .5	3,344,881	
51	3,344,882	
	3,344,883	
	3,344,884	
182– 16	3,344,885	
70	3,344,886	
184– 7	3,344,887	
187– 1	3,344,888	
9	3,344,889	
	3,344,890	
188– 58	3,344,893	
73	3,344,891	
79.5	3,344,892	
96	3,344,894	
107	3,344,895	
191– 45	3,345,471	
192– 3.5	3,344,896	
194– 4	3,344,897	
9	3,344,898	
195– 31	3,345,268	
66	3,345,269	
100	3,345,270	
197– 12	3,344,899	
198– 33	3,344,900	
	3,344,901	
96	3,344,902	
127	3,344,903	
131	3,344,904	
189	3,344,905	
195	3,344,906	
	3,344,907	
198	3,344,908	
204	3,344,909	
200– 26	3,345,472	
48	3,345,473	
60	3,345,474	
61.13	3,345,475	
72	3,345,476	
81.5	3,345,477	
81.9	3,345,478	
83	3,345,479	
	3,345,480	
114	3,345,481	
118	3,345,482	
133	3,345,483	
144	3,345,484	
146	3,345,485	
148	3,345,486	
	3,345,487	
153	3,345,488	
157	3,345,489	
159	3,345,490	
162	3,345,491	
166	3,345,492	
202–160	3,345,271	
203– 11	3,345,272	
204– 1	3,345,273	
15	3,345,274	
	3,345,275	
32	3,345,276	
59	3,345,277	
147	3,345,278	
157.1	3,345,279	
164	3,345,280	
212	3,345,281	
213	3,345,282	
294	3,345,283	
206– 16	3,344,910	
45.14	3,344,911	
46	3,344,912	
	3,344,913	
47	3,344,914	
56	3,344,915	
62	3,344,916	
	3,344,917	
208– 44	3,345,284	
67	3,345,285	
254	3,345,286	
325	3,345,287	
209– 12	3,344,918	
251	3,344,919	
457	3,344,920	
210– 10	3,345,288	
67	3,344,921	
81	3,344,922	
90	3,344,923	
202	3,344,924	
312	3,344,925	
321	3,344,926	
360	3,344,927	
500	3,344,928	
510	3,344,929	
211– 65	3,344,930	
212– 8	3,344,931	
.18	3,344,932	
24	3,344,933	
55	3,344,934	
213– 1	3,344,935	
214– 1	3,344,936	
15	3,344,937	
16.4	3,344,938	
18	3,344,939	
394	3,344,940	
674	3,344,941	
215– 9	3,344,942	
40	3,344,943	
219–110	3,345,493	
125	3,345,494	
146	3,345,495	
	3,345,496	
417	3,345,497	
464	3,345,498	
220– 44	3,344,944	
53	3,344,945	
	3,344,946	
57	3,344,947	
67	3,344,948	
82.5	3,344,949	
102	3,344,950	
221– 7	3,344,951	
41	3,344,952	
75	3,344,953	
175	3,344,954	
221–282	3,344,955	
222– 56	3,344,956	
70	3,344,957	
181	3,344,958	
183	3,344,959	
197	Re.26,275	
335	3,344,960	
402.22	3,344,961	
456	3,344,962	
495	3,344,963	
511	3,344,964	
563	3,344,965	
223– 96	3,344,966	
109	3,344,967	
225– 2	3,344,968	
226–190	3,344,969	
229– 3.5	3,344,970	
14	3,344,971	
17	3,344,972	
37	3,344,973	
43	3,344,974	
51	3,344,975	
	3,344,976	
54	3,344,977	
68	3,344,978	
230–101	3,344,979	
232– 33	3,344,980	
233– 15	3,344,981	
	3,344,982	
	3,344,983	
21	3,344,984	
235– 61	3,344,985	
61.11	3,345,500	
61.6	3,345,499	
92	3,345,501	
	3,345,502	
94	3,344,986	
	3,344,987	
117	3,344,988	
150.24	3,345,503	
181	3,345,504	
197	3,345,505	
236– 99	3,344,989	
238–159	3,344,990	
239– 1	3,344,991	
8	3,344,992	
164	3,344,993	
457	3,344,994	
240– 8.18	3,345,506	
10.5	3,345,507	
10.65	3,345,508	
20	3,345,509	
41.3	3,345,510	
241– 1	3,344,995	
46	3,344,996	
101	3,344,997	
103	3,344,998	
154	3,344,999	
209	3,345,000	
242– 1.1	3,345,001	
13	3,345,002	
18	3,345,003	
35.5	3,345,004	
45	3,345,005	
46.5	3,345,006	
55.12	3,345,007	
	3,345,008	
56	3,345,009	
58.6	3,345,011	
66	3,345,010	
68.3	3,345,012	
71.8	3,345,013	
79	3,345,014	
244– 13	3,345,015	
17.23	3,345,016	
77	3,345,017	
	3,345,018	
100	3,345,019	
103	3,345,020	
246– 34	3,345,511	
37	3,345,512	
182	3,345,513	
248– 13	3,345,021	
59	3,345,022	
95	3,345,023	
122	3,345,024	
123	3,345,025	
158	3,345,026	
187	3,345,027	
231	3,345,028	
300	3,345,029	
346	3,345,030	
249–204	3,345,031	
250– 49.5	3,345,514	
84.5	3,345,515	
103	3,345,516	
251–172	3,345,032	
326	3,345,034	
252– 8.1	3,345,289	
18	3,345,290	
252– 37.7	3,345,291	
47	3,345,292	
62.1	3,345,293	
	3,345,294	
90	3,345,295	
136	3,345,296	
137	3,345,297	
146	3,345,298	
148	3,345,299	
152	3,345,300	
	3,345,301	
181	3,345,302	
186	3,345,303	
193	3,345,304	
301.1	3,345,305	
403	3,345,306	
455	3,345,307	
253– 39	3,345,035	
254– 28	3,345,036	
86	3,345,037	
	3,345,038	
93	3,345,039	
256– 37	3,345,040	
259– 6	3,345,041	
7	3,345,042	
102	3,345,043	
164	3,345,044	
260– 2	3,345,308	
2.5	Re.26,278	
	3,345,309	
	3,345,310	
18	3,345,311	
21	3,345,312	
22	3,345,313	
	3,345,314	
23	3,345,315	
28.5	3,345,316	
29.6	3,345,317	
	3,345,318	
	3,345,319	
31.6	3,345,320	
34.2	3,345,321	
41	3,345,322	
41.5	3,345,323	
	3,345,324	
	3,345,325	
45.75	3,345,326	
45.85	3,345,327	
	3,345,328	
47	3,345,329	
	3,345,330	
	3,345,331	
	3,345,332	
	3,345,333	
	3,345,334	
55	3,345,335	
63	3,345,336	
75	3,345,337	
	3,345,338	
	3,345,339	
78	3,345,340	
	3,345,341	
	3,345,342	
78.3	3,345,343	
78.4	3,345,344	
79.3	3,345,345	
	3,345,346	
79.5	3,345,347	
83.3	3,345,348	
85.3	3,345,349	
85.5	3,345,350	
93.7	3,345,351	
	3,345,352	
112	3,345,353	
112.5	3,345,354	
165	3,345,355	
192	3,345,371	
194	3,345,356	
212	3,345,357	
233.5	3,345,358	
239	3,345,359	
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887	3,345,432	
901	3,345,434	
961	3,345,435	
261– 34	3,345,045	
79	3,345,046	
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112	3,345,048	
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263– 6	3,345,050	
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264– .5	3,345,436	
	3,345,437	
3	3,345,438	
26	3,345,439	
29	3,345,440	
40	3,345,441	
51	3,345,442	
117	3,345,443	
167	3,345,444	
176	3,345,445	
205	3,345,446	
211	3,345,447	
266– 30	3,345,053	
33	3,345,054	
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	3,345,056	
35	3,345,057	
36	3,345,058	
39	3,345,059	
267– 54	3,345,060	
269–246	3,345,061	
270– 31	3,345,062	
271– 44	3,345,063	
68	3,345,064	
79	3,345,065	
272– 23	3,345,066	
82	3,345,067	
273– 1	3,345,068	
	3,345,069	
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136	3,345,071	
177	3,345,072	
197	3,345,073	
274– 10	3,345,074	
47	3,345,075	
277– 24	3,345,076	
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279– 19.6	3,345,079	
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285– 27	3,345,084	
	3,345,085	
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39	3,345,087	
	3,345,088	
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283	3,345,092	
287– 52.09	3,345,093	
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290– 4	3,345,517	
291– 3	3,345,097	
	3,345,098	
292– 21	3,345,099	
48	3,345,100	
218	3,345,101	
251.5	3,345,102	
353	3,345,103	
296– 24	3,345,104	
297– 24	3,345,105	
308	3,345,106	
410	3,345,107	
299– 31	3,345,108	
301– 6	3,345,109	
9	3,345,110	
302– 17	3,345,111	
303– 6	3,345,112	
305– 14	3,345,113	
306– 20	3,345,114	
307– 88.5	3,345,518	
	3,345,519	
	3,345,520	
	3,345,521	
112	3,345,522	
308– 20	3,345,115	
72	3,345,116	
310– 11	3,345,523	
	3,345,524	
17	3,345,525	
312–223	3,345,117	
235	3,345,118	
274	3,345,119	
313– 42	3,345,526	
82	3,345,527	
	3,345,528	
84	3,345,529	
92	3,345,530	
	3,345,531	
143	3,345,532	
315– 3.6	3,345,533	
12	3,345,534	
39	3,345,535	
83	3,345,536	
85	3,345,537	
125	3,345,538	
317– 33	3,345,539	
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101	3,345,541	
116	3,345,542	
230	3,345,543	
	3,345,544	
	3,345,545	
318–132	3,345,546	
138	3,345,547	
203	3,345,548	
227	3,345,549	
229	3,345,550	
345	3,345,551	
321– 5	3,345,552	
52	Re.26,277	
323– 4	3,345,553	
	3,345,554	
43.5	3,345,555	
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	3,345,557	
75	3,345,558	
324– 34	3,345,559	
37	3,345,563	
38	3,345,564	
51	3,345,565	
52	3,345,560	
95	3,345,561	
99	3,345,566	
119	3,345,562	
158	3,345,567	
325– 16	3,345,568	
25	3,345,569	
150	3,345,570	
329	3,345,571	
438	3,345,573	
474	3,345,572	
328– 43	3,345,574	
108	3,345,575	

329–103	3,345,576	
330– 8	3,345,577	
22	3,345,578	
331– 8	3,345,579	
52	3,345,580	
94	3,345,581	
108	3,345,582	
113	3,345,583	
143	3,345,584	
333– 10	3,345,585	
31	3,345,586	
	3,345,587	
333– 72	3,345,588	
73	3,345,589	
95	3,345,590	
335– 23	3,345,591	
129	3,345,592	
154	3,345,593	
306	3,345,594	
336– 69	3,345,595	
338– 35	3,345,596	
302	3,345,597	
315	3,345,598	
339– 18	3,345,599	
339– 37	3,345,600	
110	3,345,601	
115	3,345,602	
176	3,345,603	
186	3,345,604	
192	3,345,605	
254	3,345,606	
340– 8	3,345,607	
15.5	3,345,608	
81	3,345,609	
146.1	3,345,610	
340–172.5	3,345,611	
	3,345,612	
	3,345,613	
	3,345,614	
	3,345,615	
	3,345,616	
	3,345,617	
	3,345,618	
	3,345,619	
173	3,345,620	
174	3,345,621	
340–174	3,345,622	
174.1	3,345,623	
	3,345,624	
212	3,345,625	
236	3,345,626	
283	3,345,627	
310	3,345,628	
347	Re.26,274	
	3,345,629	
	3,345,630	
343–100	3,345,631	
343–108	3,345,632	
112	3,345,633	
113	3,345,634	
845	3,345,635	
346– 18	3,345,636	
33	3,345,637	
74	3,345,638	
110	3,345,639	
139	3,345,640	
350– 6	3,345,120	
351–130	3,345,121	

CLASSIFICATION OF DESIGNS

D 1– 2	208,756	
D 2– 24	208,757	
	208,758	
	208,759	
	208,760	
320	208,761	
D 4– 2	208,762	
4	208,763	
D 9– 6	208,764	
D13– 1	208,765	
	208,766	
	208,767	
D14– 3	208,768	
	208,769	
	208,770	
6	208,771	
D14– 6	208,772	
D19– 1	208,773	
D21– 1	208,774	
	208,775	
D24– 1	208,776	
	208,777	
	208,778	
	208,779	
D25– 1	208,780	
D26– 5	208,781	
	208,782	
13	208,783	
14	208,784	
D33– 14	208,785	
D34– 4	208,786	
5	208,787	
D34– 15	208,788	
	208,789	
	208,790	
	208,791	
D42– 7	208,792	
	208,793	
	208,794	
	208,795	
	208,796	
	208,797	
	208,798	
	208,799	
	208,800	
	208,801	
	208,802	
D43– 1	208,803	
D44– 1	208,804	
	208,805	
6	208,806	
15	208,807	
D46– 1	208,808	
D48– 20	208,809	
27	208,810	
D50– 4	208,811	
7	208,812	
D52– 2	208,813	
7	208,814	
D54– 1	208,815	
9	208,816	
12	208,817	
D55– 1	208,818	
	208,819	
D56– 2	208,820	
D57– 1	208,821	
D58– 2	208,822	
5	208,823	
	208,824	
6	208,825	
	208,826	
9	208,827	
12	208,828	
	208,829	
	208,830	
	208,831	
12.6	208,832	
17	208,833	
D71– 1	208,835	
D71– 1	208,836	
D81– 5	208,837	
21	208,834	
D83– 1	208,838	
	208,839	
D85– 2	208,840	
8	208,841	
D86– 10	208,842	
D90– 20	208,843	
	208,844	
D91– 1	208,845	
	208,846	
3	208,847	
D94– 3	208,848	
D96– 12	208,849	

CLASSIFICATION OF PLANTS

P. – 55	2,770

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,344,613 3,344,660 3,344,662 3,344,703 3,345,250
4 : 3,344,553 3,344,652 3,345,070 3,345,174 3,345,210 3,345,216 3,345,221 3,345,272
6 : RE.26,274 RE.26,279 3,344,433 3,344,436 3,344,439 3,344,441 3,344,444 3,344,454 3,344,476 3,344,486 3,344,489 3,344,495 3,344,496 3,344,497 3,344,498 3,344,515 3,344,518 3,344,522 3,344,547 3,344,558 3,344,575 3,344,579 3,344,582 3,344,600 3,344,603 3,344,604 3,344,605 3,344,608 3,344,611 3,344,612 3,344,614 3,344,629 3,344,631 3,344,649 3,344,651 3,344,655 3,344,674
6 : 3,344,691 3,344,704 3,344,711 3,344,721 3,344,722 3,344,744 3,344,749 3,344,768 3,344,781 3,344,785 3,344,822 3,344,825 3,344,827 3,344,831 3,344,832 3,344,847 3,344,850 3,344,862 3,344,869 3,344,874 3,344,897 3,344,902 3,344,913 3,344,925 3,344,946 3,344,962 3,344,967 3,345,007 3,345,023 3,345,026 3,345,034 3,345,037 3,345,044 3,345,048 3,345,059 3,345,067 3,345,068 3,345,084 3,345,085 3,345,087 3,345,137 3,345,143 3,345,154 3,345,205 3,345,236 3,345,244 3,345,260 3,345,291 3,345,304 3,345,316
6 : 3,345,345 3,345,359 3,345,380 3,345,381 3,345,401 3,345,436 3,345,449 3,345,457 3,345,460 3,345,469 3,345,471 3,345,478 3,345,497 3,345,529 3,345,535 3,345,547 3,345,560 3,345,576 3,345,583 3,345,586 3,345,587 3,345,602 3,345,606 3,345,612 3,345,617 3,345,624
8 : 3,344,615 3,344,871 3,344,881 3,345,089
9 : 3,344,502 3,344,601 3,344,616 3,344,732 3,344,787 3,344,936 3,344,950 3,344,964 3,344,992 3,345,058 3,345,066 3,345,069 3,345,141 3,345,156 3,345,202 3,345,239 3,345,248 3,345,322 3,345,360
9 : 3,345,392 3,345,407 3,345,421 3,345,432 3,345,434 3,345,448 3,345,461 3,345,521 3,345,554 3,345,557 3,345,558 3,345,580
10 : 3,344,474 3,345,155 3,345,256 3,345,290 3,345,310 3,345,325 3,345,333 3,345,334 3,345,342 3,345,343 3,345,412 3,345,413 3,345,447
11 : 3,344,907 3,344,935 3,344,936
12 : 3,344,606 3,344,733 3,344,959 3,344,980 3,345,152 3,345,404 3,345,528 3,345,561
13 : 3,344,479 3,344,480 3,344,595 3,344,619 3,344,716 3,344,938 3,344,952 3,345,628
15 : 3,344,958 3,345,458
17 : 3,344,453 3,344,462 3,344,464 3,344,470 3,344,484
17 : 3,344,501 3,344,529 3,344,560 3,344,564 3,344,576 3,344,635 3,344,637 3,344,650 3,344,663 3,344,665 3,344,678 3,344,683 3,344,690 3,344,741 3,344,754 3,344,763 3,344,786 3,344,788 3,344,792 3,344,798 3,344,799 3,344,817 3,344,853 3,344,854 3,344,879 3,344,894 3,344,901 3,344,904 3,344,911 3,344,943 3,344,945 3,344,948 3,344,955 3,344,966 3,344,970 3,344,974 3,344,976 3,344,981 3,344,982 3,344,983 3,344,993 3,344,994 3,345,004 3,345,025 3,345,033 3,345,040 3,345,061 3,345,063 3,345,076 3,345,077
17 : 3,345,083 3,345,097 3,345,098 3,345,101 3,345,116 3,345,157 3,345,183 3,345,185 3,345,186 3,345,207 3,345,237 3,345,245 3,345,255 3,345,258 3,345,263 3,345,282 3,345,286 3,345,294 3,345,300 3,345,314 3,345,425 3,345,427 3,345,473 3,345,488 3,345,502 3,345,542 3,345,568 3,345,569 3,345,573 3,345,615 3,345,627
18 : 3,344,504 3,344,645 3,344,737 3,344,875 3,344,887 3,344,892 3,344,930 3,344,957 3,345,019 3,345,020 3,345,035 3,345,362 3,345,399 3,345,418 3,345,476 3,345,544
19 : 3,344,539 3,344,731 3,344,999

19 : 3,345,045 3,345,104 3,345,268 3,345,416 3,345,601
20 : 3,344,490 3,344,499 3,345,417 3,345,463
21 : 3,344,520 3,344,589 3,344,590 3,344,800 3,345,022 3,345,102 3,345,284 3,345,312
22 : 3,344,519 3,344,811 3,344,830 3,345,356
23 : 3,344,442
24 : 3,344,463 3,344,561 3,344,562 3,344,563 3,344,566 3,344,571 3,344,641 3,344,669 3,344,755 3,344,801 3,345,079 3,345,093 3,345,437 3,345,533 3,345,551 3,345,572 3,345,603 3,345,620
25 : 3,344,596 3,344,598 3,344,657 3,344,664 3,344,676 3,344,712 3,344,725 3,344,728 3,344,729 3,344,730 3,344,794 3,344,909 3,345,030 3,345,032 3,345,065 3,345,095 3,345,121 3,345,163 3,345,165 3,345,166 3,345,167 3,345,172 3,345,176 3,345,201 3,345,227 3,345,265 3,345,391 3,345,430 3,345,444 3,345,504 3,345,539 3,345,581 3,345,611
26 : 3,344,506 3,344,513 3,344,527 3,344,548 3,344,549 3,344,550 3,344,574 3,344,618 3,344,623 3,344,639 3,344,640 3,344,647 3,344,656 3,344,667 3,344,679 3,344,681 3,344,682 3,344,686 3,344,687 3,344,688 3,344,695 3,344,698 3,344,702 3,344,718 3,344,747 3,344,750 3,344,773 3,344,790 3,344,802
27 : RE.26,277 3,344,455 3,344,460 3,344,516 3,344,533 3,344,569 3,344,668 3,344,670 3,344,751 3,344,772 3,344,804 3,344,903 3,344,933 3,344,947 3,344,965 3,345,001 3,345,018 3,345,092 3,345,111 3,345,119 3,345,217 3,345,277 3,345,472 3,345,565 3,345,582 3,345,619 3,345,639
28 : 3,345,082
29 : 3,344,585 3,344,895 3,345,039 3,345,126 3,345,129 3,345,151 3,345,251 3,345,252 3,345,400 3,345,640
30 : 3,344,821 3,345,088 3,345,636
31 : 3,344,466 3,345,013 3,345,042
33 : 3,344,451 3,344,523 3,344,694 3,345,231 3,345,232 3,345,453
34 : 3,344,440 3,344,443 3,344,478 3,344,505 3,344,544 3,344,578 3,344,580 3,344,584 3,344,586 3,344,599 3,344,626 3,344,675 3,344,677 3,344,720 3,344,739 3,344,745 3,344,756 3,344,761
34 : 3,344,762 3,344,767 3,344,777 3,344,815 3,344,867 3,344,873 3,344,893 3,344,898 3,344,914 3,344,958 3,344,979
35 : 3,345,005 3,345,009 3,345,010 3,345,047 3,345,072 3,345,115 3,345,127 3,345,128 3,345,135 3,345,162 3,345,164 3,345,199 3,345,204 3,345,206 3,345,214 3,345,234 3,345,243 3,345,247 3,345,279 3,345,295 3,345,296 3,345,298 3,345,299 3,345,303 3,345,306 3,345,315 3,345,318 3,345,326 3,345,335 3,345,340 3,345,344 3,345,352 3,345,365 3,345,375 3,345,379 3,345,382 3,345,383 3,345,387 3,345,397 3,345,398 3,345,414 3,345,420 3,345,426 3,345,433 3,345,452 3,345,455 3,345,485 3,345,494 3,345,510 3,345,517 3,345,520 3,345,536 3,345,570 3,345,571 3,345,588 3,345,589 3,345,632
35 : 3,345,073
36 : RE.26,276 3,344,435 3,344,437 3,344,449 3,344,458 3,344,467 3,344,475 3,344,494 3,344,509 3,344,524 3,344,537 3,344,543 3,344,545 3,344,556 3,344,617 3,344,628 3,344,658 3,344,671 3,344,693 3,344,705 3,344,706 3,344,708 3,344,709 3,344,735 3,344,742 3,344,789 3,344,793 3,344,814 3,344,816 3,344,836 3,344,863 3,344,886
36 : 3,344,888 3,344,899 3,344,900 3,344,906 3,344,910 3,344,912 3,344,923 3,344,949 3,344,954 3,344,977 3,344,984 3,345,062 3,345,071 3,345,080 3,345,086 3,345,099 3,345,105 3,345,117 3,345,118 3,345,120 3,345,136 3,345,150 3,345,158 3,345,160 3,345,161 3,345,169 3,345,170 3,345,173 3,345,177 3,345,182 3,345,209 3,345,213 3,345,223 3,345,238 3,345,261 3,345,270 3,345,276 3,345,278 3,345,293 3,345,311 3,345,319 3,345,321 3,345,327
37 : 3,344,546 3,344,551 3,344,597 3,344,820 3,344,889 3,345,195 3,345,233 3,345,271 3,345,331 3,345,341 3,345,464 3,345,480
38 : 3,344,448 3,344,485 3,344,780
39 : RE.26,275 3,344,445 3,344,447 3,344,468 3,344,503 3,344,514 3,344,528 3,344,532 3,344,536 3,344,552 3,344,565 3,344,567 3,344,577 3,344,588
39 : 3,344,592 3,344,609 3,344,625 3,344,630 3,344,684 3,344,692 3,344,779 3,344,829 3,344,833 3,344,865 3,344,905 3,344,960 3,344,968 3,344,973 3,344,975 3,344,995 3,344,996 3,344,997 3,344,998 3,345,064 3,345,078 3,345,090 3,345,091 3,345,109 3,345,123 3,345,147 3,345,190 3,345,218 3,345,228 3,345,229 3,345,241 3,345,281 3,345,297 3,345,308 3,345,323 3,345,324 3,345,332 3,345,389 3,345,435 3,345,498 3,345,562 3,345,605
40 : 3,344,491 3,344,525
41 : 3,344,591 3,344,740 3,344,818 3,344,823 3,344,885 3,345,273 3,345,585
42 : RE.26,278 3,344,452 3,344,487 3,344,493 3,344,633 3,344,634 3,344,642 3,344,648 3,344,653 3,344,736 3,344,743 3,344,753 3,344,771 3,344,775 3,344,795 3,344,805 3,344,834 3,344,837 3,344,840 3,344,841 3,344,844 3,344,852 3,344,861 3,344,866 3,344,921 3,344,939 3,344,986 3,344,987 3,344,989 3,345,006 3,345,008 3,345,050 3,345,051 3,345,053 3,345,057
42 : 3,345,131 3,345,148 3,345,149 3,345,194 3,345,200 3,345,203 3,345,212 3,345,224 3,345,235 3,345,274 3,345,275 3,345,289 3,345,302 3,345,313 3,345,320 3,345,339 3,345,357 3,345,373 3,345,424 3,345,429 3,345,442 3,345,450 3,345,454 3,345,475 3,345,481 3,345,483 3,345,484 3,345,486 3,345,487 3,345,492 3,345,511 3,345,512 3,345,519 3,345,522 3,345,525 3,345,540 3,345,541 3,345,567 3,345,599 3,345,600 3,345,604 3,345,607
44 : 3,344,450 3,344,808
45 : 3,344,915
47 : 3,344,845 3,344,928 3,345,011 3,345,328 3,345,351 3,345,402 3,345,440
48 : 3,344,542 3,344,583 3,344,659 3,344,765 3,344,769 3,344,809 3,344,819 3,344,860 3,344,870 3,344,872 3,344,876 3,344,877 3,344,922 3,344,991 3,345,049 3,345,108 3,345,153 3,345,184 3,345,499 3,345,516
49 : 3,344,461 3,345,438
50 : 3,344,560
51 : 3,344,469 3,344,646 3,344,951 3,345,027 3,345,130 3,345,159 3,345,180 3,345,181 3,345,254 3,345,405 3,345,537
53 : 3,344,456 3,344,568 3,344,573 3,344,714 3,344,717 3,344,896 3,345,036 3,345,249 3,345,626

54 : 3,344,824	55 : 3,344,483	55 : 3,344,713	55 : 3,344,972	55 : 3,345,489	55 : 3,345,549
3,345,029	3,344,511	3,344,770	3,345,002	3,345,491	3,345,552
3,345,388	3,344,517	3,344,791	3,345,081	3,345,493	3,345,555
3,345,419	3,344,581	3,344,916	3,345,196	3,345,500	3,345,556
3,345,422	3,344,587	3,344,918	3,345,230	3,345,538	3,345,593
55 : 3,344,446	3,344,696				

Design Patents

5 : 208,809	12 : 208,780	17 : 208,830	26 : 208,803	36 : 208,778	39 : 208,771
6 : 208,776	17 : 208,756	208,831	208,818	208,779	208,772
208,777	208,763	18 : 208,814	208,824	208,795	208,773
208,781	208,782	208,835	27 : 208,784	208,800	208,774
208,785	208,783	19 : 208,761	208,808	208,802	208,775
208,787	208,791	208,790	208,846	208,819	208,789
208,806	208,792	20 : 208,820	29 : 208,834	208,822	208,794
208,816	208,793	21 : 208,837	34 : 208,758	208,828	208,844
208,825	208,797	24 : 208,765	208,759	208,832	208,849
208,826	208,798	208,766	208,760	208,841	42 : 208,788
208,838	208,799	208,767	208,812	208,842	208,813
208,840	208,801	208,768	208,823	208,845	208,821
8 : 208,770	208,804	208,833	208,843	37 : 208,769	208,827
9 : 208,817	208,805	208,836	208,847	39 : 208,764	51 : 208,796
11 : 208,839	208,829	25 : 208,848	36 : 208,757		

Plant Patents

6 : 2,770					

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

October 3, 1967 Volume 843 Number 1

TRADEMARKS

NOTICES

Termination of Daylight Saving Time

Attention is called to the Notice published in 837 O.G. 341, Apr. 11, 1967, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on Oct. 29, 1967.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 432,209 (PHILHARMONIC), Philharmonic Radio Corporation, Radio-receiving apparatus, radio-television receiving apparatus, combination radio-receiving-electric phonograph apparatus, electric phonograph recording and reproducing apparatus and parts thereof; **Reg. No. 433,102**, same, filed Aug. 14, 1963, D.C., S.D.N.Y., Doc. 63–C–2447, *Philharmonic Radio & Television Corp.* v. *Fisher Radio Corp.* Stipulation and order dismissing action without prejudice, Jan. 12, 1967.

Reg. No. 433,102. (See Reg. No. 432,209.)

Reg. No. 440,662 (JACKSON'S), Jackson Furniture Company, Furniture and furnishings—namely, bedroom, dining room, wood and upholstered furniture; **Reg. No. 444,012**, same, filed Mar. 23, 1967, D.C., N.D. Calif. (San Francisco), Doc. 46777, *Pacifica Designs* v. *Porter Development Co.*

Reg. No. 444,012. (See Reg. No. 440,662.)

Reg. No. 444,294 (WASTE KING), Given Manufacturing Company, Waste disposal units adaptable to the shredding of garbage and attachable to plumbing systems; **Reg. No. 641,668**, same, Electrically operated automatic dishwashers and electric machines for grinding up garbage, filed Apr. 25, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–600–JWC, *Waste King Corp.* v. *Kitchen Maid Mfg., Inc.*

Reg. No. 519,062. (See Reg. No. 375,931.)

Reg. No. 521,843. (See Reg. No. 375,931.)

Reg. No. 522,989. (See Reg. No. 375,931.)

Reg. No. 522,990. (See Reg. No. 375,931.)

Reg. No. 553,151 (BALI), Bali Brassiere Co., Inc., Brassieres and bandeaus, filed May 10, 1967, D.C., S.D.N.Y., Doc. 67–C–1841, *The Bali Company, Inc.* v. *Raymond Sultan, doing business as Sultan Shops.*

Reg. No. 583,864 (BEMBERG 44 AND DESIGN), Beaunit Mills, Inc., Thread and yarn; **Reg. No. 634,410** (BEMBERG—PRE SHRUNK), same, Woven, knitted, netted, textile, and pile fabrics in the piece, comprised of rayon, or in substantial part of rayon combined with cotton, etc.; **Reg. No. 700,111** (SUPERTEX), Rand Rubber Company, Inc., Crib sheets, filed June 22, 1966, D.C., S.D.N.Y., Doc. 66–C–1813, *Beaunit Corporation* v. *D. Fried & Sons, Inc.* Consent judgment; defendant enjoined, Aug. 2, 1966.

Reg. No. 592,771 (EXQUISITE FORM), Exquisite Form Brassiere, Inc., Brassieres, garter belts, and girdles; **Reg. No. 642,681** (EXQUISITE), same, filed Nov. 23, 1966, D.C., S.D.N.Y., Doc. 66–C–4007, *Exquisite Form Industries, Inc.* v.

CONDITION OF TRADEMARK APPLICATIONS AS OF AUGUST 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,726
Date of oldest new application	Oct. 18, 1966
Date of oldest amended application (filing date)	July 5, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-25-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-25-66	1-14-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-18-66	7-5-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-24-66	10-30-64
Renewals (All Classes)	7-3-67	----------
Sec. 12(c) Publications (All Classes)	6-29-67	----------

Applications filed during the month of August 1967—2,513

Registrations Issued ---------- 341—No. 836,143 to No. 836,483
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Playtime Girl Originals, Inc. et ano. Stipulation and order of discontinuance with prejudice, Mar. 7, 1967.

Reg. No. 634,410. (See Reg. No. 583,864.)

Reg. No. 634,410. (See Reg. No. 308,808.)

Reg. No. 641,668. (See Reg. No. 444,294.)

Reg. No. 642,681. (See Reg. No. 592,771.)

Reg. No. 693,782. (See Reg. No. 426,477.)

Reg. No. 700,111. (See Reg. No. 583,864.)

Reg. No. 700,117. (See Reg. No. 308,808.)

Reg. No. 308,808 (BEMBERG), American Bemberg Corporation, Knitted, netted, and textile fabrics composed solely or in part of filaments of artificial origin; **Reg. No. 634,410** (BEMBERG—PRE-SHRUNK), Beaunit Mills, Inc., Woven, knitted, netted, textile, and pile fabrics in the piece, comprised of rayon, or in substantial part of rayon combined with cotton, etc.; **Reg. No. 700,117** (BEMBERG, ETC. AND DESIGN), same, Rayon yarn, filed Apr. 26, 1967, D.C., S.D.N.Y., Doc. 67–C–1653, *Beaunit Corporation* v. *The May Department Stores Company.* Same, filed May 12, 1967, Doc. 67–C–1877, *Beaunit Corporation* v. *J. W. Mays, Inc.*

Reg. No. 327,217. (See Reg. No. 375,931.)

Reg. No. 375,931 (ALADDINITE), Aladdin Radio Industries, Inc., Magnetic powder and cores for use with inductive windings for radio and allied purposes; **Reg. No. 327,217** (ALADDIN), The Mantle Lamp Company of America, Electric illuminating lamps; **Reg. No. 519,062** ("ALADDIN"), same, Electric lamp fixtures, particularly floor lamps, table lamps and bracket or pin-up lamps; **Reg. No. 521,843** (ALADDIN), Aladdin Radio Industries, Incorporated, Radio-receiving sets and parts thereof, transformers, coils and magnetic coils and core materials; **Reg. No. 522,969,** same, The Mantle Lamp Company of America, Electric illuminating lamps; **Reg. No. 523,900** same, filed Mar. 15, 1967, D.C., E.D. Mich. (Detroit), Doc. 29699, *Aladdin Industries, Inc.* v. *Edmond C. Houle, doing business as Aladin Kits Company.*

Reg. No. 426,477 (VACO), Vaco Products Company, Steel hand tools—namely, hammers, screwdrivers and sockets; **Reg. No. 693,782,** same, Insulated solderless terminals, filed Jan. 7, 1965, D.C., S.D.N.Y., Doc. 65–C–53, *Vaco Products Company* v. *Vaco Industries, Inc. et al.* Consent judgment; all defendants except Allen be permanently restrained and enjoined, Aug. 11, 1965; filed order dismissing as to remaining defendant for lack of prosecution, May 18, 1967.

Reg. No. 547,321 (AAA WITHIN A DESIGN), American Automobile Association, Services rendered to motor vehicle owners, motorists and travelers generally; **Reg. No. 668,115** (APPROVED AAA IN OVAL DESIGN), same, Serving of food and beverages in restaurants and providing lodging in motor courts and hotels, filed Apr. 11, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–511–R, *Am. Auto. Assn., Auto Club of So. Calif., and Calif. State Auto Assn.* v. *AAA Con Drivers Exchange Los Angeles, Inc., and AAA Con Drivers Exchange, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 215,022. Stauffer Chemical Company, New York, N.Y. Filed Mar. 25, 1965.



The word "Chemicals" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 503,418 and 677,195.

Class 6—Chemicals and Chemical Compositions

For Dicalcium Phosphate for Manufacturing Purposes.
First use at least as early as December 1964.

Class 10—Fertilizers

For Pelleted Fertilizers.
First use at least as early as February 1965.

Class 18—Medicines and Pharmaceutical Preparations

For Feed Supplement for Animals.
First use at least as early as Oct. 15, 1964.

Class 46—Foods and Ingredients of Foods

For Leavening Agents.
First use at least as early as Aug. 24, 1964.

SN 232,760. American Society for Metals, Novelty, Ohio, and American Society of Tool and Manufacturing Engineers, Detroit, Mich. (joint venture). Filed Nov. 16, 1965.

WESTEC

Class 101—Advertising and Business

For Conducting Expositions Featuring the Latest Products and Services in the Fields of Metals, Related Materials, Tools and Equipment.

Class 107—Education and Entertainment

For Presenting Seminars Concerning the Latest Developments in the Fields of Metals, Related Materials, Tools and Equipment.

First use Mar. 1, 1964.

SN 235,676. International Telephone and Telegraph Corporation, New York, N.Y. Filed Jan. 3, 1966.

GENERAL CONTROLS

Class 21—Electrical Apparatus, Machines, and Supplies

For Electromagnetic Valves, Transformers, Relays, Rectifiers, and Switches.

Class 26—Measuring and Scientific Appliances

For Thermostats and Thermocouple Devices.

First use about June 1931.

SN 237,706. International Telephone and Telegraph Corporation, New York, N.Y. Filed Feb. 1, 1966.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electromagnetic Valves, Transformers, Relays, Rectifiers, and Switches.

Class 26—Measuring and Scientific Appliances

For Thermostats and Thermocouple Devices.

First use about June 1931.

SN 239,296. The Munns Medical Supply Company, Inc., Topeka, Kans. Filed Feb. 21, 1966.



The drawing is lined for the color blue, but said color is not claimed as a feature of the mark.

Class 26—Measuring and Scientific Appliances

For Microscope Slides.
First use Sept. 21, 1965.

Class 37—Paper and Stationery

For Paper Toweling and Drapes, Electrocardiograph Paper, and Table Paper.
First use Nov. 30, 1965.

Class 44—Dental, Medical, and Surgical Appliances

For Medical and Surgical Appliances—Namely, Bandages and Dressings, Medicine Cups, Thermometers, Latex Tubing Used for Surgical and Laboratory Purposes, Plastic Liners Used To Line Waste and Trash Containers in Hospitals and Doctors' Offices.
First use July 20, 1965.

SN 243,512. Art Cast, Inc., Pomona, Calif. Filed Apr. 15, 1966.

ART/CAST

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Decorative Builders' Hardware—Namely, Escutcheons, Cabinet Handles, Door Pulls, and Apertured Metal Wall Plaques.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Decorative Home Accessories—Namely, Candle Holders.

First use Mar. 5, 1963.

SN 246,137. Accepted Formula Laboratories, Inc., d.b.a. Sickroom Service, Milwaukee, Wis. Filed May 20, 1966.

SICKROOM SERVICE

Applicant disclaims the words "Sickroom Service" apart from the mark as shown, without waiver of, prejudice to, or effect on its common law rights now existing or hereafter arising in said disclaimed subject matter.

Class 100—Miscellaneous

For Renting Hospital and Medical Supplies and Equipment.

Class 101—Advertising and Business

For Retail Medical Supply Store Service.

First use Oct. 15, 1965; 1962 in a different form.

SN 247,175. Ashland Oil & Refining Company, Ashland, Ky. Filed June 3, 1966.

ASHLAND

Owner of Reg. Nos. 431,784, 675,457, and others.

Class 6—Chemicals and Chemical Compositions

For Preparation for Prevention of Rust or Corrosion in Machinery and Various Metallic Surfaces; Floor Oil (Products Used on the Surfaces of Wooden Floors To Keep Dust Down and Impregnate the Fibers of the Wood in Order To Preserve It.

Class 15—Oils and Greases

For Gasoline, Kerosene, Lubricating Oils and Greases, Fuel Oil, Coal Spray Oil, Oil for Facilitating the Cutting of Metals and Other Substances, Penetrating Oils, Brick Oil (Products Used To Lubricate the Forms Which Are Used in the Manufacture of Bricks, Thereby Keeping the Brick From Sticking to the Form), Form Oil, Paraffin Oil (Products Used in the Blending of Motor Oils as Well as in Transformer Oils, and Hydraulic Oils), and Oils and Greases for Use as Pressure Mediums in Hydraulic Pressure Apparatus.

First use at least as early as Jan. 12, 1946.

SN 248,603. E.T.M. Corporation, Monrovia, Calif. Filed June 21, 1966.

ETM

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cutters, Pliers, Tweezers, Probes, Socket-Wrench Handles, and Burr Removers.

First use at least as early as Oct. 23, 1962.

Class 26—Measuring and Scientific Appliances

For Force Gauges for Measuring Orthodontic-Appliance Forces, for Measuring Compression and Tension Forces in Spring-Loaded Mechanical and Electro-Mechanical Devices, and for Testing the Strength of Joints, Fine Wire, and the Like.

First use at least as early as June 9, 1966.

SN 253,874. Harris Paint Company, Tampa, Fla. Filed Sept. 6, 1966.

RAPIDEX

Class 6—Chemicals and Chemical Compositions

For Alcohol.
First use August 1953.

Class 12—Construction Materials

For Spackling Paste.
First use June 1961.

Class 16—Protective and Decorative Coatings

For Sanding Sealer, Clear Plastic Finish, Traffic Paint, Shellac and Primer Sealer Undercoater.
First use August 1953.

SN 256,331. Howard Margolin and Raymond Roth, d.b.a. Eat 'N' Shop, Eatontown, N.J. Filed Oct. 13, 1966.



Applicant disclaims the "Pipe" apart from the mark as shown in the drawing.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Pipe Smokers' Articles—Namely, Smoking Pipes, Pipe Racks, Pipe Tools, Tobacco Jars, and Ashtrays.

Class 17—Tobacco Products

For Pipe Tobaccos.

First use August 1963.

SN 258,674. Cosan Chemical Corporation, Clifton, N.J. Filed Nov. 15, 1966.

COTHIX

Class 6—Chemicals and Chemical Compositions

For Suspending and Viscosity Control Agents for General Industrial Use.

Class 16—Protective and Decorative Coatings

For Paint Thickeners.

First use July 11, 1966.

SN 259,622. Precision Valve Corporation, Yonkers, N.Y. Filed Nov. 29, 1966.

PREVAL CARTRIDGE SPRAYER

Class 2—Receptacles

For Mounting Cups for Valves, Nozzles, and Containers Therefor.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Pressurized Dispensing Units, Including Aerosol Valves and Parts Thereof, Including Valve Operating Buttons, Eduction Tubes, Caps, Domes, Spouts and Guards Therefor.

First use Oct. 11, 1966.

SN 263,106. Northern Electric Company, Chicago, Ill. Filed Jan. 23, 1967.

NE

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus and Supplies—Namely, Portable Domestic Electrical Appliances, Switches, Heating Pads for General Use, Cord Sets, Bottle Warmers, Vaporizers of General Utility, Curling Irons, and Parts Thereof.

Class 26—Measuring and Scientific Appliances

For Electrical Devices for Controlling Operation of Portable Domestic Electrical Appliances as a Function of Temperature and/or Time.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Humidifiers.

Class 39—Clothing

For Electrically Heated Socks and Stockings.

Class 40—Fancy Goods, Furnishings, and Notions

For Electrically Heated Blankets, Sheets, and Mattress Pads.

First use at least as early as 1956; at least as early as 1941, in another display.

SN 263,502. Picker X-Ray Corporation, White Plains, N.Y. Filed Jan. 30, 1967.

PIXAMATIC

Class 6—Chemicals and Chemical Compositions

For Chemicals for Developing and Fixing X-Ray Film.
First use on or about Jan. 30, 1963.

Class 26—Measuring and Scientific Appliances

For X-Ray Film Processing Machines and Parts and Accessories Therefor.
First use May 1, 1962.

SN 265,663. Trans-Dapt of California, Long Beach, Calif. Filed Feb. 28, 1967.

"SAAPE"

Class 19—Vehicles

For Motorcycles.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Parts and Equipment—Namely, Exhaust Headers, Transmission Adapter Plates, Transmission Protector Shields, Carburetor Adapter Plates, and Exhaust Collector Pipes.

First use on or about Mar. 3, 1965.

SN 270,105. Reeves Broadcasting Corporation, New York, N.Y. Filed Apr. 27, 1967.

AIRMOBILE-VIDEO

Class 21—Electrical Apparatus, Machines, and Supplies

For Television Cameras.

Class 26—Measuring and Scientific Appliances

For Oscilloscopes and Voltmeters.

Class 36—Musical Instruments and Supplies

For Tape Recorders.

First use Mar. 25, 1967.

SN 270,187. E. C. De Witt & Co., Inc., Chicago, Ill. Filed Apr. 26, 1967.

LONDON ASSIGNMENT

Class 51—Cosmetics and Toilet Preparations

For Eau de Cologne, After Shave Lotion, and Talcum Powder.

Class 52—Detergents and Soaps

For Toilet Soap.

First use Apr. 20, 1967.

SN 270,188. E. C. De Witt & Co., Inc., Chicago, Ill. Filed Apr. 26, 1967.

KILIMANJARO

Class 51—Cosmetics and Toilet Preparations

For Eau de Cologne, After Shave Lotion, and Talcum Powder.

Class 52—Detergents and Soaps

For Toilet Soap.

First use Apr. 20, 1967.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 248,155. National Lead Company, New York, N.Y. Filed June 15, 1966.

DUTCH BOY

Owner of Reg. Nos. 351,264, 570,611, and others.
For Acrylic Plastic in Sheet and Powdered Form.
First use on or about May 15, 1966.

SN 248,156. National Lead Company, New York, N.Y. Filed June 15, 1966.

Dutch Boy
ACRYLIC PLASTIC

Applicant disclaims the exclusive right to use the words "Acrylic Plastic" apart from the mark as shown on the drawing. Owner of Reg. Nos. 351,264, 570,611, and others.
For Acrylic Plastic in Sheet and Powdered Form.
First use on or about May 15, 1966.

SN 258,520. FMC Corporation, Philadelphia, Pa. Filed Nov. 14, 1966.

FIBER 43

The word "Fiber" is disclaimed apart from the mark as shown.
For Man-Made Fibers.
First use Nov. 7, 1966.

SN 271,309. Fabric Leather Corporation, New Hyde Park, N.Y. Filed May 12, 1967.

MAGI-SKIN

For Vinyl Sheeting.
First use May 2, 1967.
Pa. Filed July 11, 1967.

NUCLON

SN 275,726. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Nov. 14, 1966.

PITTSBURGH

Owner of Reg. No. 728,189.
For Polycarbonate Resins.
First use at least as early as Oct. 11, 1960.

Class 2—Receptacles

SN 231,872. Scientific-Atlanta, Inc., Doraville, Ga. Filed Oct. 5, 1965.

VaCO$_2$

For Receptacles—Namely, Box-Like Containers and Lids Made of Plastic, Metal Foil, and Paper.
First use Sept. 27, 1965.

SN 261,965. American Hospital Supply Corporation, Evanston, Ill. Filed Jan. 5, 1967.

SOLU-SAFE

For Water-Soluble Plastic Laundry Bags.
First use on or before Aug. 11, 1966.

SN 262,472. Aimcee Wholesale Corporation, New York, N.Y. Filed Jan. 13, 1967.

AMCREST

For Garment Bags.
First use April 1965.

SN 262,879. National Can Corporation, Chicago, Ill. Filed Jan. 19, 1967.

VERSA-TAINER

For Containers, Particularly Plastic Containers, Including Covers Therefor, of a Five Pound Size, and Other Sizes.
First use Jan. 16, 1967.

SN 263,045. Floral Development Corp., Holliston, Mass. Filed Jan. 23, 1967.

BAR-QUET

For Flower Bases and Bouquet Holders, and More Particularly, Flower Bases and Holders Made of Resin Foam.
First use at least as early as Sept. 1, 1966.

SN 263,069. International Paper Company, New York, N.Y. Filed Jan. 23, 1967.

LORD BALTIMORE PRESS

Owner of Reg. Nos. 559,501, 603,778, and 608,346.
For Folding Cartons, Wrappers, and Boxes.
First use Nov. 8, 1956.

SN 263,737. Beacon Products Corp., Newton Highlands, Mass. Filed Feb. 1, 1967.

FLORALENE

For Molded Plastic Housewares—Namely, Tumblers, Bowls, Basins, Dishes, Dishpans, Wastebaskets, Mugs, Pitchers, and Pails.
First use at least as early as December 1966.

SN 271,313. St. Joe Paper Company, Jacksonville, Fla. Filed May 12, 1967.

St. Joe

For the purpose of registration, no claim is made to the exclusive right to use the representation of the box apart from the mark as shown.
For Fibreboard Boxes and Fibreboard Cartons, and Parts Thereof.
First use in or about June 1959.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 252,040. Thomas Pride Mills, Inc., Atlanta, Ga. Filed Aug. 9, 1966.

SASSYGRASS TENNIS TOTE

No claim is made to the wording "Tennis Tote," apart from the mark as shown.
For Bags Made of Synthetic Fiber for Carrying Tennis Equipment.
First use June 15, 1966.

SN 265,477. A/S Bergans Meis og Ryggsekk, Oslo, Norway. Filed Feb. 27, 1967.

BERGANS ORIGINAL

For Rucksacks.
First use Oct. 12, 1922; in commerce Mar. 10, 1923.

Class 4—Abrasives and Polishing Materials

SN 261,274. Avco Corporation, Westboro, Mass. Filed Dec. 22, 1966.

PIPELINER

For Abrasive Wheels.
First use on or about Oct. 14, 1966.

SN 261,595. Reed & Barton, Taunton, Mass. Filed Dec. 28, 1966.

SILVER MAGIC

For Silver Polish.
First use Dec. 15, 1966.

SN 262,067. James H. Rhodes & Company, Chicago, Ill. Filed Jan. 6, 1967.

EAGER BEAVER

Owner of Reg. No. 427,073.
For Steel Wool and Plastic Wool.
First use Aug. 9, 1945.

SN 262,471. Aimcee Wholesale Corporation, New York, N.Y. Filed Jan. 13, 1967.

AMCREST

For Shoe Shine Kits.
First use August 1965.

SN 273,229. S. C. Johnson & Son, Inc., Racine, Wis. Filed June 7, 1967.

PROVIDE

For Furniture Polishes With Cleaning Properties.
First use on or about Mar. 9, 1967.

SN 273,230. S. C. Johnson & Son, Inc., Racine, Wis. Filed June 7, 1967.

FAVOR

For Furniture Polishes With Cleaning Properties.
First use on or about Mar. 9, 1967.

Class 6—Chemicals and Chemical Compositions

SN 251,913. Glaxo Laboratories Limited, Greenford, England. Filed Aug. 8, 1966.

ZYDEX

Owner of British Reg. No. 832,183, dated Mar. 19, 1962.
For Fire Extinguishing Compositions and Tanning Preparations.

SN 252,335. American Hydrolan Corporation, Ballardvale, Mass. Filed Aug. 15, 1966.

LANPHOS

For Hydrogenated Lanolin Used as a Base Ingredient in Cosmetics and Pharmaceuticals.
First use Dec. 3, 1965.

SN 257,782. International Latex & Chemical Corporation, Dover, Del. Filed Nov. 2, 1966.

TYCHEM

Owner of Reg. No. 789,854.
For Synthetic Polymers for Use in the Paper, Mining, and Petroleum Industries as Flocculants, Strength Additives, Thickening Agents, Retention and Filter Aids.
First use Aug. 2, 1966.

SN 262,281. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 10, 1967.

NATATEL

For Laboratory Diagnostic Reagent To Determine Pregnancy.
First use Nov. 21, 1966.

SN 262,482. John Farrell, d.b.a. Air Purification Systems, Houston, Tex. Filed Jan. 13, 1967.

ZIPAIR

For Chemical or Chemical Composition in Liquid Form, Being a Chemical Deodorant for Air Purification Systems.
First use Dec. 20, 1966.

SN 264,142. Calgon Corporation, Pittsburgh, Pa. Filed Feb. 7, 1967.

H-212

For Microbiocides for Control of Microorganisms in Industrial Water Systems.
First use Feb. 15, 1965.

SN 264,400. Walter N. Follmer, d.b.a. The Lemonaire Co., Beaumont, Tex. Filed Feb. 10, 1967.

LEMONAIRE

For Disinfectant.
First use June 6, 1966.

SN 264,405. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 10, 1967.

PET-TOX

Owner of Reg. Nos. 786,626, 819,728, and others.
For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Jan. 16, 1967.

SN 264,406. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 10, 1967.

TOTAL-TOX

Owner of Reg. Nos. 261,556, 820,155, and others.
For Chemical Ingredient Used in the Manufacture of Insecticides.
First use Jan. 16, 1967.

SN 264,505. Bee Chemical Company, Lansing, Ill. Filed Feb. 13, 1967.

LOGOQUANT

Owner of Reg. No. 680,250 and others.
For Chemical Preparations—Namely, Chemicals Catalytically Influencing the Rate of Reactions Adjacent Metal Surfaces, for Example, in Metal Machining Operations.
First use prior to January 1946.

SN 264,513. Carolina Biological Supply Company, Burlington, N.C. Filed Feb. 13, 1967.

KLEERMOUNT

Owner of Reg. No. 718,025.
For Embedding Medium Composed of Synthetic Resin in Xylene or Toluene Solution for Mounting Biological and Physical Specimens on Microscope Slides.
First use Mar. 22, 1960.

SN 264,676. National Gypsum Company, Buffalo, N.Y. Filed Feb. 14, 1967.

STABILIME

For Hydrated Lime.
First use June 2, 1966.

SN 265,016. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors of America, Stockton, Calif. Filed Feb. 20, 1967.

Nugget

For Ammonia; Disinfectant-Deodorant; Preparation Used in Sanitizing and Disinfecting Hospitals and Sickrooms, Eating Utensils, Clothing, and for Similar Purposes; Germicidal Disinfectants; and Fly Spray.
First use Jan. 16, 1963.

SN 273,010. Tetra Kraft Werke, Melle, Germany. Filed June 5, 1967.

TETRACARE

For Aquarium Preparation—Namely, a Solution Which Creates Natural Tropical Water, Makes Fish Colorful and Induces Spawning.
First use Jan. 10, 1963; in commerce Jan. 10, 1963.

SN 276,618. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 24, 1967.

CITROSTAB

For Preparation Used To Stabilize Polymeric Substances Against Degradation Due to Manufacturing Processes or Environmental Conditions.
First use Jan. 3, 1965.

SN 277,001. Diamond Alkali Company, Cleveland, Ohio. Filed July 28, 1967.

CARBO-BRITE

Owner of Reg. No. 415,958.
For Laundry Sour.
First use July 5, 1967.

Class 7—Cordage

SN 247,401. Pennsylvania Sling Company, Pittsburgh, Pa. Filed June 6, 1966.

SAF-T-GRIP

For Flexible Webbing Slings.
First use August 1958.

SN 253,180. Twi-Ro-Pa-Mills Agency, Inc., New Orleans, La. Filed Aug. 25, 1966.

MY-T FINE

For Baler Twine.
First use Mar. 31, 1966.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 256,348. Phyllis R. Curtis, d.b.a. Curtis Enterprises, North Hollywood, Calif. Filed Oct. 13, 1966.

POISON PACK

Applicant disclaims the word "Pack" apart from the mark as shown.
For Cigarette Package Carrying Case.
First use June 13, 1966.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 239,033. Federal Cartridge Corporation, Minneapolis, Minn. Filed Feb. 17, 1966.



The mark consists of two conjointly placed parallel bands which extend diagonally from the upper left hand corner of the package or label to a point at the bottom thereof that is slightly left of center of the package or label's width. The lining on the drawing illustrates the colors red and yellow. No claim is made to a particular color as a feature of the mark.
For Ammunition—Namely, Shot Shells, Target Load Shot Shells, Center Fire Rifle Cartridges, and Rim Fire Cartridges.
First use Feb. 2, 1964.

SN 257,893. Seminole Products Co., Inc., Glendora, N.J. Filed Nov. 3, 1966.

RED-LINE DUPLEX

For Insulated Copper Wire for Detonating Explosives.
First use Sept. 11, 1964.

SN 257,894. Seminole Products Co., Inc., Glendora, N.J. Filed Nov. 3, 1966.



For Insulated Copper Wire for Detonating Explosives.
First use Apr. 6, 1964.

Class 10—Fertilizers

SN 206,531. Charles O. Finley and Company, Inc., Chicago, Ill. Filed Nov. 19, 1964.

NEW PLANT LIFE

For Liquid Fertilizers for House and Garden.
First use Oct. 1, 1914.

SN 273,009. Tetra Kraft Werke, Melle, Germany. Filed June 5, 1967.

FLORAPRIDE

For Aquarium Preparation—Namely, a Solution for Use as a Plant Fertilizer and Also for Use as a Water Softener.
First use Nov. 2, 1962; in commerce Nov. 30, 1962.

Class 12—Construction Materials

SN 239,570. Francisco Goldberger Konstandt, Lucerne, Switzerland. Filed Feb. 25, 1966.

PAPYROL

Owner of Swiss Reg. No. 207,179, dated Oct. 14, 1964.
For Wood Veneer.

SN 245,318. Kelley Manufacturing Company, Houston, Tex. Filed May 10, 1966.

SLABSAVER

For Concrete Reinforcing Supports.
First use at least as early as Jan. 1, 1957.

SN 247,300. Allied Chemical Corporation, New York, N.Y. Filed June 6, 1966.

RIGIDWALL

For Nail-Base Insulating Sheathing.
First use May 5, 1965.

SN 248,213. Clark Aluminum Co., Houston, Tex. Filed June 16, 1966.

COMBO

For Glazed or Screened Window and Door Panels.
First use January 1965.

SN 248,477. L. E. Johnson Products, Inc., Elkhart, Ind. Filed June 20, 1966.

johnson

For Door Frames.
First use Aug. 17, 1959.

SN 248,871. Western Auto Supply Company, Kansas City, Mo. Filed June 23, 1966.

WIZARD

Owner of Reg. No. 309,617 and others.
For Storm Windows, Paste Wood Filler, Roofing Cement, Caulking Compound, Asphalt Roof Coating, Roof Asbestos Coating, Plastic Roof Sealer, Window and Windshield Sealer.
First use June 1, 1953.

SN 253,436. Harris Paint Company, d.b.a. Harris Standard Paint Company, Tampa, Fla. Filed Aug. 30, 1966.

TARPOXY

For Epoxy Resinous, Multiple Component, Surfacing Material.
First use on or about Apr. 1, 1959.

SN 257,858. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Nov. 3, 1966.

OXILINE B

For Refractory Brick.
First use on or about Aug. 6, 1964.

SN 257,859. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Nov. 3, 1966.

NUCON 60

Owner of Reg. Nos. 799,388 and 812,390.
For Refractory Brick.
First use on or about May 13, 1966.

SN 259,143. Oil & Gas Supply Company, Houston, Tex. Filed Nov. 21, 1966.

DU-ALL-BASE

For Concrete Machinery Bases.
First use at least as early as Mar. 21, 1965.

SN 259,161. Reliance Floors Corporation, New York, N.Y. Filed Nov. 21, 1966.

TERRACHROME

For Pre-Cast Epoxy Terrazzo Floor Tiles.
First use May 10, 1966.

SN 259,963. Reynolds Metals Company, Richmond, Va. Filed Dec. 2, 1966.

METALLATION

For Reflective Thermal Insulating Material With a Layer of Aluminous Metal Foil.
First use August 1933.

SN 263,164. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 24, 1967.

DU PONT

For Nonstructural Building Materials—Namely, Window Sills, Thresholds, Shutters, and Wainscot.
First use Nov. 30, 1966.

SN 263,893. J. P. Barborak Mfg. Inc., Wheatland, Pa. Filed Jan. 26, 1967.



The mark comprises a fanciful house and tree.
For Metal Buildings Sold in the Knock-Down.
First use Dec. 1, 1966.

SN 264,510. Sherrill Broudy, d.b.a. Forms & Surfaces, Santa Barbara, Calif. Filed Feb. 13, 1967.

PANELCARVE

For Carved Wood Panels and Doors.
First use on or before Aug. 5, 1963.

SN 264,543. Homewood Cabinet Top Company, Homewood, Ill. Filed Feb. 13, 1967.

CABINETPAK

For Laminated Panels for Re-Surfacing Cabinets.
First use Nov. 8, 1966.

SN 269,603. International Foam Corporation, Chicago, Ill. Filed Apr. 20, 1967,

ARMOR-CLAD

For Insulation Products—Namely, Insulation Board.
First use December 1964.

SN 269,805. Timber Engineering Company, Washington, D.C. Filed Apr. 21, 1967.

FIBRE GRIP

For Fasteners for Joining Together Wood Structural Members.
First use on or about Aug. 6, 1966.

SN 273,446. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 9, 1967.

PORAL

Owner of Reg. No. 786,967.
For Porcelain Enameled Laminates in Sheet Form.
First use Sept. 9, 1966.

SN 274,302. Bislig Bay Lumber Company, Inc., Makati, Rizal, Philippines. Filed June 20, 1967.

BISLIGPLY
PHILIPPINE PRODUCT

For Plywood.
First use Apr. 21, 1967.

SN 274,386. E. L. Bruce Co. (Incorporated), d.b.a. E. L. Bruce Co., Memphis, Tenn. Filed June 21, 1967.

CEDA'LINE

For Sheets and Strips of Cedar Veneer for Linings for Closets, Chests, and the Like.
First use Feb. 4, 1921.

SN 275,983. Knox Homes Corporation, Lafayette, Ind. Filed July 14, 1967.

MOD

For Prefabricated Homes.
First use June 6, 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 234,027. Henlopen Manufacturing Co., Inc., Farmingdale, N.Y. Filed Dec. 6, 1965.

H

For Industrial Screen-Trays for Solvent Cleaning of Metal Tools and Parts, and Funnels for Hand Bottle Filling.
First use 1960.

SN 248,476. L. E. Johnson Products, Inc., Elkhart, Ind. Filed June 20, 1966.

johnson

For Sliding and Folding Door Hardware.
First use Aug. 17, 1959.

SN 249,742. Ductile Iron Company of America, Savannah, Ga. Filed July 7, 1966.

DICOA

For Pipe Fittings—Namely, Connectors and Couplings.
First use on or about Nov. 2, 1962.

SN 255,051. The Allen Manufacturing Company, Hartford, Conn. Filed Sept. 26, 1966.

SUPER • TORQ

For Screws.
First use Sept. 1, 1965.

SN 255,875. Consolidated Metal Products, Inc., Cincinnati, Ohio. Filed Oct. 6, 1966.

CMP

For Sign Erection Hardware, Anchor Bolts, Studs, U-Bolts, Special Threaded Products, Eye Bolts, J-Bolts, Fully Threaded Rods, Extender Angles, Hook Bolts, Wall Brackets, and Sign Hangers.
First use January 1966.

SN 258,327. Spotnails, Inc., Long Island City, N.Y. Filed Nov. 9, 1966.

SPOT-RIVETS

The word "Rivets" is disclaimed apart from the mark as shown, without waiver to any common-law rights. Owner of Reg. No. 431,611.
For Fasteners.
First use Aug. 16, 1966.

SN 260,721. Bird Machine Company, South Walpole, Mass. Filed Dec. 14, 1966.

INSTAMATIC

For Liquid Pipes and Fittings, Including Shower Pipes and Shower Control Systems for Cleaning Paper Machine Wires, and for Other Industrial Uses.
First use Nov. 16, 1966.

SN 261,482. Forest City Products, Inc., Cleveland, Ohio. Filed Dec. 27, 1966.

PERT

For Slide Fasteners.
First use Dec. 12, 1966.

SN 261,787. American Sun Petroleum Corporation, Los Angeles, Calif. Filed Jan. 3, 1967.

LOK-GARD

For Sliding Door and Window Holders.
First use on or about Apr. 19, 1966.

SN 261,813. Craig Enterprises Incorporated, Pinole, Calif. Filed Jan. 3, 1967.

"MYSTIC TOUCH"

For Wall Mounted Liquid Dispensers.
First use Dec. 9, 1966.

SN 263,386. The Lamson & Sessions Co., Cleveland, Ohio. Filed Jan. 26, 1967.

LT

For Threaded Fasteners—Namely, Bolts.
First use September 1954.

Class 14—Metals and Metal Castings and Forgings

SN 230,919. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

SMI

Owner of Italian Reg. No. 155,868, dated July 26, 1961.
For Semifinished Products—Namely, Bars, Sheets, Plates, and Bands Made of Copper and Copper Alloys, Nickel and Nickel Alloys; Sheets and Bands of Steel Plated With Copper and Copper Alloys, Nickel and Nickel Alloys; Sheets and Wires of Stainless Steel; Copper-Plated Steel Wire; and Steel Rods.

SN 230,922. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

MBT

Owner of Italian Reg. No. 143,525, dated May 9, 1959.
For Sheets, Wires, Bars, Bands, Strips, Made of Steel, Copper and Its Alloys, Aluminum and Its Alloys, Nickel and Its Alloys.

SN 230,925. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

Owner of Italian Reg. No. 85,172, dated Jan. 20, 1949.
For Metals in the Form of Bars, Sheets, Plates, Bands, Wires, and Scrap.

SN 230,928. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

TO

Owner of Italian Reg. No. 139,998, dated Nov. 29, 1958.
For Steel Rods.

SN 236,103. Sellon, Inc., Toledo, Ohio, assignee of Lockwood Grader Corporation, Gering, Nebr. Filed Jan. 10, 1966.

Owner of Reg. No. 781,302.
For Metal Forgings and Castings Used as Conveyor Chain Components.
First use Dec. 17, 1965.

Class 15—Oils and Greases

SN 251,331. The New England Industries, Inc., Medina, Ohio, assignee of Plasti-Kote, Inc., Medina, Ohio. Filed July 29, 1966.

SPRA-SLIK

For Silicone Spray Lubricant.
First use Nov. 15, 1965.
Subj. to Intf. with SN 261,995.

SN 259,865. Texaco Inc., New York, N.Y. Filed Dec. 1, 1966.

ICE-CHEK

For Additive Used as an Ingredient in Gasoline.
First use on or about Oct. 1, 1961.

SN 261,995. Oil Center Research, Inc., Lafayette, La. Filed Jan. 5, 1967.

SLICK SPRAY

For Spray Lubricant.
First use Nov. 23, 1964.
Subj. to Intf. with SN 251,331.

Class 16—Protective and Decorative Coatings

SN 247,940. Leo Meyer, Buhl, Baden, Germany. Filed June 13, 1966.

METALLOGAL

Owner of German Reg. No. 730,379, dated Oct. 28, 1959.
For Coating Materials, Particularly a Paste-Like Material on the Base of Zinc and Artificial Resin for Preventing Corrosion and Rust on Ferrous Metals.
First use 1958; in commerce 1959.

SN 249,768. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed July 7, 1966.

PARCOLITE

Owner of Reg. Nos. 365,390 and 574,301.
For Phosphate-Based Coatings for the Treatment of Metal Surfaces To Produce a Paint-Holding and/or Corrosion Resistant Coating Thereon.
First use May 17, 1966.

SN 252,034. The Sherwin-Williams Company, Cleveland, Ohio. Filed Aug. 9, 1966.

HI-PRO

For Interior Wall Paint.
First use July 1, 1966.

SN 253,433. Harris Paint Company, Tampa, Fla. Filed Aug. 30, 1966.

Repel-X

For Silicone Waterproofing Compound for Sealing Masonry Against Moisture.
First use on or about Dec. 19, 1951.

SN 253,553. Process Chemicals Corporation, Chicago, Ill. Filed Aug. 31, 1966.

NYLOFLEX

For Nylon-Latex Coating With Vinyl and Acrylic Elements for Use on Interior and Exterior Walls.
First use July 8, 1966.

SN 258,611. Talens & Son, Inc., Union, N.J. Filed Nov. 14, 1966.

Talens

Owner of Reg. Nos. 200,741 and 528,926.
For Artists' Colors—Namely, Water Colors, Acrylic Colors, and Oil Colors.
First use April 1966; January 1900 as to "Talens."

SN 260,236. Cabot Corporation, Boston, Mass. Filed Dec. 7, 1966.

CABOT

Owner of Reg. Nos. 613,329, 702,876, and others.
For Carbon Black Used as an Ingredient Incorporated Into Varnishes and Lacquers for Use as Decorative and Protective Coatings; Wollastonite Used as an Ingredient Incorporated Into Varnishes and Lacquers for Use as Decorative and Protective Coatings; Fumed Silicon Dioxide Used as an Ingredient Incorporated Into Varnishes and Lacquers for Use as Decorative and Protective Coatings; and Alumina Pigment Used as an Ingredient Incorporated Into Varnishes and Lacquers for Use as Decorative and Protective Coatings.
First use July 9, 1959.

Class 17—Tobacco Products

SN 249,185. H. E. Snyder Cigar Company, Scranton, Pa. Filed June 28, 1966.

77

For Tobacco Products—Namely, Cigars.
First use Jan. 5, 1965.

SN 250,185. Skandinavisk Tobakskompagni A/S, Herlev, Denmark. Filed July 13, 1966.

Party
modern mild cigarillos

No claim is made to the exclusive use of the words "Modern Mild Cigarillos" apart from the mark as a whole. Owner of Danish Reg. No. 3048/1965, dated Nov. 6, 1965.
For Cigarillos.

SN 255,246. Villiger Sohne GmbH, Tiengen, Oberrhein, Germany. Filed Sept. 27, 1966.

GELBE ROSE

The English translation of "Gelbe" is "yellow."
For Cigars and Cigarillos.
First use July 18, 1958; in commerce July 18, 1958.

Class 18—Medicines and Pharmaceutical Preparations

SN 247,767. Biorex Laboratories Limited, London, England. Filed June 10, 1966.

DUOGASTRONE

Priority claimed under Sec. 44(d) on British Reg. No. 888,303, dated Dec. 16, 1965.
For Pharmaceutical Preparations for the Treatment of Gastrointestinal Ailments.

SN 257,508. Parke, Davis & Company, Detroit, Mich. Filed Oct. 28, 1966.

AVITANA

For Vitamin Preparation.
First use on or before July 1, 1945.

SN 257,760. Don Baxter, Inc., Glendale, Calif. Filed Nov. 2, 1966.

HEMOTRATE

For Pharmaceutical Preparation for Hemodialysis.
First use Sept. 1, 1965.

SN 259,896. BJR Laboratories, Inc., Shawnee Mission, Kans. Filed Dec. 1, 1966.

BJR Orange

The word "Orange" is disclaimed apart from the mark as shown.
For Asthma Capsules.
First use July 1, 1966.

SN 264,717. American Cyanamid Company, Wayne, N.J. Filed Feb. 15, 1967.

SULMET

Owner of Reg. No. 431,929.
For Sulfamethazine Preparations for Use in Veterinary Medicine.
First use June 20, 1946.

SN 272,551. Fairfield Products, Inc., New York, N.Y. Filed May 29, 1967.

CLEARPLEX

For Ointment for the Treatment and Control of Pimples and Acne.
First use Mar. 21, 1967.

SN 274,197. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed June 19, 1967.

DEBENAL

Owner of German Reg. No. 386,827, dated Feb. 24, 1923.
For Geriatric Drug for Dogs and Cats.

SN 276,388. Parke, Davis & Company, Detroit, Mich. Filed July 20, 1967.

KETALAR

For Anaesthetic Preparation.
First use on or before July 5, 1967.

SN 276,619. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 24, 1967.

FASEDEN

For Antibiotic Preparation.
First use June 8, 1967.

SN 276,620. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 24, 1967.

BEN-GAY

Owner of Reg. Nos. 66,623, 565,477, and others.
For Analgesic Preparation.
First use Jan. 25, 1967.

Class 19—Vehicles

SN 243,794. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Apr. 19, 1966.

DEBONAIR

Owner of Japanese Reg. No. 653,499, dated Sept. 17, 1964.
For Passenger Cars, Vans, Trucks, Buses; Special Purpose Vehicles—Namely, Dump Trucks, Garbage Trucks, Tank Lorries, Truck Tractors, Wreckers, and Crane Trucks.
First use July 22, 1963; in commerce March 1965.

SN 244,518. Oshkosh Motor Truck, Inc., Oshkosh, Wis. Filed Apr. 28, 1966.

OSHKOSH

For Motor Trucks.
First use on or about Aug. 28, 1918.

SN 257,425. Water Bonnet, Inc., Orlando, Fla. Filed Oct. 27, 1966.

Water Bonnet Inc.
BOAT TOPS WINDSHIELDS

Applicant disclaims the right to the exclusive use of the words "Boat Tops" and "Windshields" apart from the mark as shown.
For Boat Windshields; Boat Tops; Boat Aft and Side Curtains; Boat Covers; and Camping Trailer Tops.
First use September 1953.

Class 20—Linoleum and Oiled Cloth

SN 239,519. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Feb. 24, 1966.

Capella

For Vinyl Flooring.
First use Dec. 14, 1961.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 241,120. Bird Electronic Corporation, Solon, Ohio. Filed Mar. 16, 1966.

SENTRILINE

For Radio Frequency Electrical Apparatus—Namely, Electrical Energy Responsive Circuits, Including Radio Frequency Power Indicators and Alarm Circuits, and Filter Couplers.
First use Jan. 14, 1966.

SN 242,348. Fedtro, Inc., Rockville Centre, N.Y. Filed Mar. 31, 1966.

TV TROUBLE TRAPPER

The exclusive right to the use of the term "TV" is disclaimed apart from the mark as shown.
For Television Interference Filters.
First use June 1960.

SN 246,462. Electronic Research Associates, Inc., Cedar Grove, N.J. Filed May 24, 1966.

POLY-PLANAR

Owner of Reg. Nos. 768,529, 768,530, and 768,895.
For Loudspeakers.
First use Sept. 28, 1965.

SN 250,096. Stratford Retreat House, White Plains, N.Y. Filed July 12, 1966.

JFD

Owner of Reg. No. 782,001.
For TV Antennas, FM Antennas, TV and FM Antenna Amplifiers, TV and FM Antenna Couplers, TV and FM Lightning Arresters, TV and FM Set Couplers, TV and FM Interference Eliminators, Masts for Antennas, Hardware for Antenna Installation, Television Picture Tubes; Capacitors, Including Trimmer Capacitors, Tuners and Tuning Capacitors, Variable and Fixed Capacitors, Delay Lines and Related and Accessory Structures and Elements.
First use Mar. 31, 1933.

SN 252,480. Stratford Retreat House, White Plains, N.Y. Filed Aug. 16, 1966.

METRO-COLOR

For Television Antennas.
First use December 1965.

SN 252,481. Stratford Retreat House, White Plains, N.Y. Filed Aug. 16, 1966.

SNOW-PLOW

For Master Antenna Television System Preamplifier and Remote Power Supply.
First use June 23, 1966.

SN 252,483. Stratford Retreat House, White Plains, N.Y. Filed Aug. 16, 1966.

S-M-O-O-T-H LINE

For Master Antenna Television Systems.
First use June 23, 1966.

SN 252,697. Universal Lamp Co., Inc., Chicago, Ill. Filed Aug. 18, 1966.

NIGHT-WATCH

For High Intensity Reading Lamps.
First use July 7, 1966.

SN 252,777. Will Scientific, Inc., Rochester, N.Y. Filed Aug. 19, 1966.

WILL DEAN

"Will Dean" is not the name of a living individual.
For Device for Removing Finish From Synthetic Textile Materials by Ultrasonic Energy.
First use Apr. 28, 1966.

SN 254,042. Fisher Radio Corporation, Long Island City, N.Y. Filed Sept. 8, 1966.

STRATAKIT

Owner of Reg. No. 773,122.
For Unassembled Parts To Be Assembled Into a Radio Receiver, Tuner, or Amplifier.
First use Nov. 13, 1961.

SN 254,043. Fisher Radio Corporation, Long Island City, N.Y. Filed Sept. 8, 1966.

STRATAPACK

Owner of Reg. No. 773,122.
For Packages of Parts To Be Assembled With Parts From Other Packages To Produce a Radio Receiver, Tuner, or Amplifier.
First use Nov. 13, 1961.

SN 255,405. Wm. J. Ashworth, d.b.a. Ashworth Research & Development Laboratory, New Albany, Miss. Filed Sept. 29, 1966.

VIBRAPHONIC

For Electrical Amplifying and Sound Reproduction Equipment for Use in Public Address Systems, Background Music Systems, and Sound Reproducing Systems for Home Entertainment.
First use June 20, 1966.

SN 257,250. Cambridge Thermionic Corporation, Cambridge, Mass. Filed Oct. 26, 1966.

TORQLINER

Owner of Reg. No. 640,945.
For Coil Forms for Electrical Windings.
First use Oct. 10, 1966.

SN 258,739. The Wickes Corporation, Saginaw, Mich. Filed Nov. 15, 1966.

WIXLIFT

For Garage Door Operators, Comprising Electric Motors and Associated Apparatus for Raising and Lowering the Doors.
First use July 20, 1966.

Class 22—Games, Toys, and Sporting Goods

SN 213,684. Kohner Bros., Inc., New York, N.Y. Filed Mar. 9, 1965.



For Toy Kit Containing Materials for Making Designs With Blocks.
First use in or about February 1965.

SN 231,641. Glendinning Companies, Inc., Westport, Conn., by merger and change of name from Glendinning Enterprises, Inc., Westport, Conn. Filed Oct. 26, 1965.



For Promotional Game Materials—Namely, Equipment Sold as Units, and Parts of Such Units for Playing Promotional or Contest Games.
First use on or about Dec. 11, 1963.

SN 237,864. Joseph J. Megal, Milwaukee, Wis. Filed Feb. 2, 1966.

REVOLV-O-TRAC

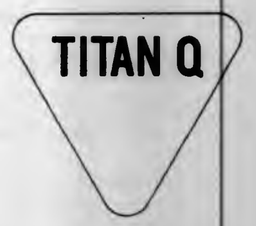
For Exercising Apparatus for Tensioning of the User's Spinal Column.
First use Jan. 27, 1966.

SN 240,204. SW Industries, Inc., Newton, Mass. Filed Mar. 4, 1966.



For Bowling Balls.
First use Feb. 4, 1966.

SN 244,505. Le Fiell Sport Products, Inc., Santa Fe Spring, Calif. Filed Apr. 28, 1966.



No claim of exclusive right is made to "Q" for billiard cues.
For Aluminum Billiard Cues.
First use Feb. 18, 1966.

SN 253,118. Jerry J. Calhoun, Sr., St. Petersburg, Fla. Filed Aug. 25, 1966.



For Equipment (or Apparatus) Sold as a Unit for Playing a Board-Type Parlor Game.
First use Nov. 13, 1965.

SN 253,668. Millmark Products, Inc., Cincinnati, Ohio. Filed Sept. 1, 1966.

TIC-TAC-GLO

For Amusement Devices of Electrical Tic Tac Toe Game Nature.
First use on or about July 25, 1966.

SN 254,699. Loral Corporation, Bronx, N.Y. Filed Sept. 19, 1966.



For Toy Construction Kits for Knitting and Sewing.
First use Aug. 23, 1966.

SN 255,425. Dri Mark Products, Inc., Mount Vernon, N.Y. Filed Sept. 29, 1966.

LAND MARK

For Playing Cards.
First use Sept. 19, 1966.

SN 256,925. Charles F. Clark, Inc., Menominee, Mich. Filed Oct. 21, 1966.



For Golf Bags, Golf Club Head Covers, Shag Bags, Belt Pouches, Golf Bag Carriers, Detachable Replacement Slings for Golf Bags; Bowling Shoe Bags, Bowling Bags, Duck Pin Bags; and Cue Cases.
First use 1959.

SN 257,279. Instructo Products Company, Philadelphia, Pa. Filed Oct. 26, 1966.

STEPPING STONES

For Equipment and/or Apparatus Comprising Simulated Stones Bearing Designs, Letters, or Other Notations, Adapted To Be Distributed Over a Play Area for Playing a Child's Game.
Frist use Mar. 15, 1966.

SN 257,814. Avalon Manufacturing Corporation, Brooklyn, N.Y. Filed Nov. 3, 1966.

BRUSH TEX

The word "Brush" is disclaimed apart from the mark as a whole.
For Numbered Oil Painting Sets, Which Include Paints, Scenes, Brush, and Instructions.
First use on or about Oct. 25, 1966.

SN 259,764. Frederick von Schlegell, d.b.a. Outdoor Associates, Los Angeles, Calif. Filed Nov. 30, 1966.

DAN BAILEY

"Dan Bailey" is the name of a living individual, whose consent is of record.
For Sporting Goods—Namely, Fishing Vests.
First use Sept. 30, 1966.

SN 260,752. Lind Climber Company, Evanston, Ill. Filed Dec. 14, 1966.



No claim is made to the word "Climber," or the representation of the goods, apart from the mark as shown.
For Play and Exercise Apparatus Sold as a Unit and Parts for Same, Including Metal or Wood Stands, Beams, Ladders and Slides Used as Physical Exercise and Development Equipment.
First use on or about Aug. 16, 1966.

SN 260,885. SW Industries, Inc., Newton, Mass. Filed Dec. 15, 1966.

PRO-LINE

For Bowling Balls and Accessory Equipment—Namely, Bowling Shoes and Bowling Ball Bags.
First use Nov. 7, 1966.

SN 260,886. SW Industries, Inc., Newton, Mass. Filed Dec. 15, 1966.

PRO-STAFF

For Bowling Balls and Accessory Equipment—Namely, Bowling Shoes and Bowling Ball Bags.
First use Nov. 7, 1966.

SN 271,104. Buddy L Corporation, East Moline, Ill. Filed May 10, 1967.

DESERT RATS

For Toys, Particularly Toy Vehicles Sold With a Related Accessory.
First use Mar. 30, 1967.

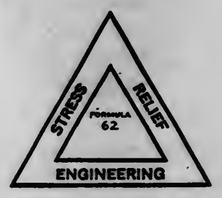
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 234,485. James E. Thomas, Jr., d.b.a. J. E. Thomas Co., Memphis, Tenn. Filed Dec. 13, 1965.



For Drywall Construction and/or Finishing Tools—Namely, Pole Sander, Hand Sander, Acoustic Scraper, Floor Scraper, Joint Knives, Stainless Steel Pan, Galvanized Pan, Galvanized Bladed Pan, Drywall Saw, Utility Saw, Joint Tape Holder, Pan and Tape Holder, Square Mud Beater, Round Mud Beater, and Material Mixer.
First use Aug. 31, 1965; 1952 as to "Jetco."

SN 237,758. Stress Relief Engineering Co., Costa Mesa, Calif. Filed Feb. 1, 1966.



No claim is made to the words "Stress," "Relief," and "Engineering."
For Stress Relieving Machinery Featuring Low Frequency Vibrators Used Upon Metals, and Metal Weldments.
First use Apr. 1, 1961.

SN 241,478. Paul H. Kuhl, d.b.a. Kuhl Poultry Equipment Co., Flemington, N.J. Filed Mar. 21, 1966.

KUHL IMPERIAL

Owner of Reg. Nos. 805,133 and 806,672.
For Egg Processing Machinery for the Washing, Candling, and Grading of Eggs.
First use May 15, 1962.

SN 247,093. Botalam, Paris, France. Filed June 2, 1966.

BOTALAM

Owner of French Reg. No. 702,586, dated Dec. 2, 1965.
For Machines Used in the Metal Industry To Convey, Separate, Sort, Count, Reassemble in Predetermined Groups, and/or Tie Together a Plurality of Elongated Elements, Such as Rods, Bars and Structural Shapes, and for Various Combinations of Said Machines and for Machines for Feeding an Elongated Element, Such as Wire Rods, to a Machine for Binding a Plurality of Elongated Elements or a Coil and for Wire-Tying Machines and for the Parts and Controls for Such Machines.

SN 249,721. Besser Company, Alpena, Mich. Filed July 7, 1966.

DYNAPAC

For Concrete Block Machines for Making Concrete Blocks, and Off-Bearing Hoists for Handling Concrete Blocks.
First use June 24, 1966.

SN 251,589. AB Bonnierforetagen, Stockholm, Sweden. Filed Aug. 3, 1966.

METRO STACKMASTER

For Newspaper Stacking Devices.
First use on or about Oct. 14, 1965; in commerce on or about Feb. 1, 1966.

SN 253,886. Jet Line Products, Inc., Matthews, N.C. Filed Sept. 6, 1966.

RETRACT-O-VAC

For Built-In Vacuum Cleaning Apparatus for Industrial, Commercial, and Residential Applications.
First use Jan. 1, 1966.

SN 254,431. Beloit Corporation, Beloit, Wis. Filed Sept. 14, 1966.

BELOIT
FLOATING ROLL

No registration rights are claimed for the word "Beloit" or the words "Floating" and "Roll" apart from the mark as shown. Owner of Reg. No. 614,351 and others.
For Paper Making Machinery and Textile Machinery—Namely, Pressure Rolls Such as Used in Calenders, Press Sections and Breaker Stacks.
First use July 13, 1966.

SN 254,979. Andis Clipper Co., Racine, Wis. Filed Sept. 23, 1966.

PowrWhisk

For Vacuum Nozzle Connection to a Hair Clipper.
First use on or about Aug. 23, 1966.

SN 255,535. M & W Gear Co. Inc., Gibson City, Ill. Filed Sept. 30, 1966.

M & W/ACRE EATER

For Fertilizer Applicator Comprising a Wheel Mounted Tank Containing Liquid Fertilizer Fed To Knives Passing Through the Ground and Discharging Fertilizer Below Ground Level.
First use Dec. 31, 1965.

SN 257,619. Grob & Co. Limited, Horgen, Zurich, Switzerland. Filed Oct. 31, 1966.

GROBTEX

Owner of U.S. Reg. No. 831,403.
For Weaving Heddles, Heddle Frames, Weaving Harnesses as Well as Drop Wires, and Electric Warp Stop Motions.
First use July 1956; in commerce Feb. 13, 1962.

SN 270,534. Commercial Capital Distributing Co., Fort Lauderdale, Fla. Filed May 3, 1967.

BAR MAID

For Power-Operated Glass Washer, and Parts Thereof for Use in Bars, Restaurants, and the Like.
First use Oct. 10, 1966.

Class 25—Locks and Safes

SN 266,025. Falcon Lock Co., South Gate, Calif. Filed Mar. 6, 1967.

SUPER DUTY

Owner of Reg. No. 733,170.
For Door Locks.
First use Oct. 28, 1960.

Class 26—Measuring and Scientific Appliances

SN 233,423. The Welch Scientific Company, Skokie, Ill. Filed Nov. 26, 1965.

DUO CONE

For Burner for Laboratory Use.
First use Apr. 7, 1965.

SN 236,810. General Aniline & Film Corporation, New York, N.Y. Filed Jan. 19, 1966.

SCANAPRINT

For Light-Sensitive Photographic Material—Namely, Light-Sensitive Photographic Paper.
First use Dec. 14, 1965.

SN 237,576. Markus-Campbell Company, Chicago, Ill. Filed Jan. 28, 1966.

EXCEL-O-READER

For Tachistoscopic Reading Machine.
First use Aug. 15, 1965.

SN 238,715. Consolidated Electrodynamics Corporation, Pasadena, Calif. Filed Feb. 14, 1966.

DATATRACE

For Heat Sensitive Oscillographic Recording Paper.
First use Jan. 15, 1966.

SN 239,218. The Budd Company, Philadelphia, Pa. Filed Feb. 21, 1966.

CYCLOGRAPH

Owner of Reg. No. 407,783.
For Eddy Current Signal Generator for Instruments for Examining Metals by Electrical Impulses.
First use at least as early as May 1964.

SN 241,410. Ammco Tools, Inc., North Chicago, Ill. Filed Mar. 21, 1966.

SAFE-GAGE

For Gauges Including Brake Cylinder Gauges.
First use Feb. 28, 1966.

SN 243,003. Eugene L. Milas, d.b.a. Lengene Typesman, Buffalo, N.Y. Filed Apr. 8, 1966.

ADDOGRAPH

For Adding and Calculating Machines and Cash Registers.
First use Apr. 5, 1965.

SN 243,336. Melandrea, Inc., New York, N.Y. Filed Apr. 13, 1966.

STOPLIGHT

For Projection Screens.
First use at least as early as May 17, 1965.

SN 243,808. Technicon Corporation, Ardsley, N.Y., by merger and change of name from Technicon Instruments Corporation, Ardsley, N.Y. Filed Apr. 19, 1966.

SOLIDPREP

For Apparatus for Automatically Preparing Samples for Automatic Chemical Analysis—Namely, Automatic Sample Supply and Mixing Apparatus.
First use June 6, 1963.

SN 244,401. Fairchild Camera and Instrument Corporation, Syosset, N.Y. Filed Apr. 27, 1966.

CADET

Owner of Reg. No. 591,646.
For Photoelectric Engraving Machine.
First use Jan. 18, 1954.

SN 246,964. Albert Tatarian, d.b.a. Vacutron Company, Winchester, Mass. Filed May 31, 1966.

VACUTRON

For Instruments and Controls—Namely, Gauges for Measuring the Thickness of Materials, Electronic Power Supplies; Electronic Timers; and Pumps, Valves, Manifolds, Gauges, and Controls for Generating, Measuring and Controlling Vacuum.
First use Feb. 28, 1963.

SN 247,415. Soiltest, Inc., Evanston, Ill. Filed June 6, 1966.

STRATA-SCOUT

Owner of Reg. No. 699,394.
For Resistivity Apparatus Used for Subsurface Exploration of Soils—Namely, Resistivity Ohmmeter.
First use Mar. 1, 1966.

SN 248,982. Kenneth C. DeGroff, d.b.a. DeGroff Orbi-Tron Co., South Bend, Ind. Filed June 27, 1966.

Orbi-Tron

For Studio Photographic Lights With Carriage and Controls for Same.
First use Apr. 19, 1966.

SN 250,138. Da-Lite Screen Company, Inc., Warsaw, Ind. Filed July 13, 1966.

White Magic

Owner of Reg. No. 575,166.
For Fabric for Motion Picture Screens.
First use Dec. 26, 1951.

SN 250,496. Logetronics Inc., Alexandria, Va. Filed July 18, 1966.

LogEtometer

For Optical Instrument Adapted To Employ Probes To Detect Variations in White Light Originating at Such Sources as Incandescent, Fluorescent or Arc Sources.
First use Oct. 6, 1964.

SN 252,924. LKB-Produkter AB, Stockholm-Bromma, Sweden. Filed Aug. 18, 1966.

ULTRORAC

For Fraction Collector—Medical Research Instrument.
First use Apr. 12, 1966; in commerce June 28, 1966.

SN 253,050. Quarzlampen Gesellschaft mit beschränkter Haftung, Hanau, Germany. Filed Aug. 24, 1966.

LINITEST

Owner of German Reg. No. 781,870, dated Dec. 23, 1963.
For Color Fastness Test Apparatus for Textiles, To Determine Wash, Dry Cleaning, and Alkaline Milling Fastness.

SN 254,367. Asahi Optical Company, Ltd., Tokyo, Japan. Filed Sept. 13, 1966.

SPECTRON

For Photographic Cameras and Photographic Lenses.
First use Aug. 7, 1966; in commerce Aug. 7, 1966.

SN 256,800. A.I.R. Corporation, Oakland, Calif. Filed Oct. 20, 1966.

SATURN

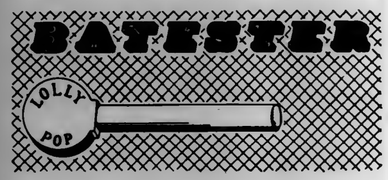
For Oxygen Dispensing System for Aircraft and the Like.
First use Oct. 3, 1966.

SN 257,454. Birns & Sawyer Cine Equipment Co., Inc., Hollywood, Calif. Filed Oct. 28, 1966.

OMNIPPON

Owner of Reg. Nos. 731,497, 731,498, and 752,492.
For Lenses for Photographic and Television Cameras, and Fitted Cases and Dust Caps Therefor.
First use Oct. 13, 1966.

SN 257,577. Batesco, Inc., Gary, Ind. Filed Oct. 31, 1966.



For Testing Equipment—Namely, Molten Metal Sampler.
First use Dec. 21, 1965; July 24, 1964, as to "Batester" per se; Aug. 3, 1964, as to "Batester and Lolly Pop."

SN 257,724. Robertson Photo-Mechanix, Inc., Des Plaines, Ill. Filed Nov. 1, 1966.

ROBERTSON BUDGETEER

Owner of Reg. No. 610,654.
For Graphic Arts Camera and Parts Thereof.
First use Oct. 24, 1966.

SN 257,774. Duncan Electronics, Inc., Costa Mesa, Calif. Filed Nov. 2, 1966.

RESOLON

For Potentiometers.
First use Sept. 16, 1966.

SN 258,828. Max W. Mawhinney, d.b.a. 3R% Calculator, Heber City, Utah. Filed Nov. 16, 1966.



For Slide-Rule Type Calculators.
First use on or about Oct. 6, 1966.

SN 260,881. Polyflo, Incorporated, San Rafael, Calif., assignee of Polyflo, Incorporated, San Rafael, Calif. Filed Dec. 15, 1966.

POLYFLO

For Slide Rule Type Flow Computer.
First use July 1, 1940.

SN 260,953. Optex, Inc., d.b.a. Southern Precision Instrument Co., San Antonio, Tex. Filed Dec. 16, 1966.

OPTEX

Owner of Reg. No. 674,158.
For Binoculars, Telescopes, Microscopes, Riflescopes, and Magnifiers.
First use on or about May 10, 1957, on binoculars.

SN 260,954. Optex, Inc., d.b.a. Southern Precision Instrument Co., San Antonio, Tex. Filed Dec. 16, 1966.

CENTRA-SET

For Riflescopes.
First use Feb. 1, 1966.

SN 261,326. Dr. Siebert & Kühn, Oberkaufungen, Kassel, Germany. Filed Dec. 22, 1966.

SIKA

Owner of German Reg. No. 501,530, dated Apr. 12, 1938.
For Industrial Thermometers.

SN 261,439. Airpax Electronics Incorporated, Cambridge, Md. Filed Dec. 27, 1966.

TACH-PAK

For Speed Measurement Devices of the Tachometer Type and Instantaneous Frequency Detectors for Telemetering and Similar Applications.
First use Aug. 6, 1958.

SN 261,505. Mid-Continent Manufacturing Co., Columbus, Ohio. Filed Dec. 27, 1966.

Tru-Temp

Owner of Reg. No. 617,820.
For Thermometers.
First use Jan. 15, 1966; July 15, 1940, in a different form.

SN 261,744. McGraw-Edison Company, Elgin, Ill. Filed Dec. 30, 1966.

TCG

For Transformer Fault Gas Detector.
First use Nov. 8, 1966.

SN 268,273. Grimes Instruments and Controls, Inc., Montclair, N.J. Filed Apr. 4, 1967.

RANGER

For Fluid Proportioners for Use in Controlling the Chemicals in the Water of a Swimming Pool, Adding Nutrients or Medicaments to the Contents of Watering Troughs for Poultry and Other Livestock, Adding Soap or Other Detergents or the Like to Wash Water as for Washing Automobiles, and the Like.
First use January 1965.

SN 273,332. Weight Watchers International, Inc., Forest Hills, N.Y. Filed June 7, 1967.

WEIGHT WATCHERS

For Scales.
First use June 8, 1965.

SN 276,384. Ehrenreich Photo-Optical Industries, Inc., Garden City, N.Y. Filed July 20, 1967.

CAPROMATIC

For Still Cameras and Movie Cameras, and Parts Thereof.
First use July 12, 1966.

Class 28—Jewelry and Precious-Metal Ware

SN 263,301. Towle Manufacturing Company, Newburyport, Mass. Filed Jan. 25, 1967.

SPANISH PROVINCIAL

Owner of Reg. Nos. 524,139 and 784,786.
For Sterling Silver Flatware.
First use Jan. 9, 1967.

SN 264,439. Oneida Ltd., Oneida, N.Y. Filed Feb. 10, 1967.

WISP

For Sterling Silver Flatware.
First use Jan. 30, 1967.

SN 264,590. Robert Rosner, Long Beach, Calif. Filed Feb. 13, 1967.



For Fine Jewelry Including Rings, Pendants, and Earrings.
First use Nov. 10, 1966.

SN 265,669. Waltham Watch Company, Chicago, Ill. Filed Feb. 28, 1967.



For Pearls.
First use Dec. 5, 1966.

SN 275,720. Rozinsky's Incorporated, Hatrford, Conn. Filed July 11, 1967.



For Jewelry—Namely, Rings, Bracelets, Pins, and the Like.
First use at least as early as November 1964.

Class 30—Crockery, Earthenware, and Porcelain

SN 272,266. Fortunoff's Shopping Center, Inc., Westbury, N.Y. Filed May 24, 1967.

WESTBROOK

For Dinnerware and Tableware Made of China and Earthenware.
First use November 1966.

Class 31—Filters and Refrigerators

SN 241,332. Everpure, Inc., Oakbrook, Ill. Filed Mar. 18, 1966.

HOMEMAKER

For Water Conditioners, Particularly for Treating Water for Home Use.
First use Mar. 17, 1961.

SN 253,383. Western Auto Supply Company, Kansas City, Mo. Filed Aug. 29, 1966.

WIZARD

Owner of Reg. Nos. 419,533, 661,667, and others.
For Air Filters; Oil Filters; Chest Freezers; Upright Freezers; and Combination Refrigerator Freezers.
First use June 1, 1952, on chest freezers.

Class 32 — Furniture and Upholstery

SN 211,651. William Intner Co., Inc., Glendale, N.Y. Filed Feb. 9, 1965.

HEIRLOOM

For Mattresses and Bed Springs.
First use June 1, 1951.

SN 263,392. Morley Furniture Corporation, Chicago, Ill. Filed Jan. 26, 1967.

PERMA-SPRING

For Furniture Springs.
First use May 1, 1964.

SN 263,549. The Englander Company, Inc., New York, N.Y. Filed Jan. 30, 1967.

DREAM GIRL

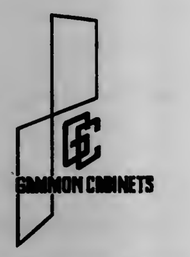
For Mattresses and Box Springs.
First use on or about Aug. 3, 1945.

SN 263,551. The Englander Company, Inc., New York, N.Y. Filed Jan. 30, 1967.

DREAM-BOY

For Mattresses and Box Springs.
First use on or about Aug. 3, 1945.

SN 273,276. W. H. Gammon Co., Lewiston, Maine. Filed June 7, 1967.



The word "Cabinets" is disclaimed apart from the mark as shown.
For Kitchen Cabinets.
First use as early as Mar. 29, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 258,541. Holiday Products, Inc., Kansas City, Mo. Filed Nov. 14, 1966.

FIREFLY

For Hand Operated Blower for Use in Starting Fires in Fireplaces, Barbecue Grills, and the Like.
First use Oct. 18, 1966.

SN 273,794. Ronson Corporation, Woodbridge, N.J. Filed June 13, 1967.

COOKETTE

For Gas-Fired Chafing Dishes.
First use Dec. 20, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 252,685. Ronthor Reiss Corporation, New York, N.Y. Filed Aug. 18, 1966.

RONTHOR

Owner of Reg. No. 728,660.
For Silicone Rubber and Urethane Rubber Tubing, Belting and Sleeving, Sheet Packing of Plastic and Synthetic Elastomer, and Gasket Material of Plastic and Synthetic Elastomer.
First use Jan. 7, 1963.

SN 258,618. United States Rubber Company, New York, N.Y. Filed Nov. 14, 1966.

FAT MAX

For Pneumatic Tires.
First use Nov. 1, 1966.

SN 261,726. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Dec. 30, 1966.

POWER PREMIUM

Applicant disclaims any rights in the word "Premium" apart from the mark as shown. Owner of Reg. Nos. 627,858 and 666,882.
For Resilient Vehicle Tires.
First use Dec. 1, 1966.

Class 36 — Musical Instruments and Supplies

SN 245,809. Certron Corporation, Los Angeles, Calif. Filed May 17, 1966.



For Magnetic Tape.
First use Feb. 15, 1966.

SN 256,487. WMI Corporation, Evanston, Ill. Filed Oct. 14, 1966.



For Guitars.
First use July 7, 1966.

Class 37 — Paper and Stationery

SN 233,265. Groveton Papers Company, Groveton, N.H. Filed Nov. 24, 1965.

REGAL PRINTS by Vanity Fair

For Toilet Tissue, Facial Tissue, and Paper Towels.
First use Sept. 10, 1964.

SN 240,596. Dustikins Products, Inc., Bronx, N.Y. Filed Mar. 10, 1966.

DUSTIKINS

Owner of Reg. No. 802,904.
For Tissue Wipers.
First use May 1960.

SN 251,225. The Parker Pen Company, Janesville, Wis. Filed July 28, 1966.

ENVOY

For Ball Point Pens and Mechanical Pencils.
First use Feb. 28, 1964.

SN 253,686. Sanford Ink Company, Bellwood, Ill. Filed Sept. 1, 1966.



For Marking Pens.
First use in or about July 1966.

SN 254,554. National Blank Book Company, Inc., Holyoke, Mass., assignee of National Blank Book Company, Holyoke, Mass. Filed Sept. 15, 1966.

NATIONAL ERASE-EASE BOND

No registration rights are claimed for the word "Bond," separate and apart from the mark as shown, and the word "Bond" is disclaimed. Owner of Reg. No. 562,314.
For Typewriter Paper.
First use Apr. 20, 1964.

SN 258,920. National Pencil Company, Shelbyville, Tenn. Filed Nov. 17, 1966.

ERAS-cil

For Wood Case Eraser Pencil With Nylon Brush.
First use June 17, 1963.

SN 274,388. The Northwest Paper Company, Cloquet, Minn. Filed June 21, 1967.

CARLTON

Owner of Reg. Nos. 597,923 and 722,241.
For Paper—Namely, Greeting Card Stock, Fruit Paper Wrappers, Tissue Paper Wrappers, and Paper Napkins for Commercial, Industrial, and Institutional Use.
First use Mar. 10, 1967.

Class 38 — Prints and Publications

SN 236,276. John James McAniff, Newport, R.I. Filed Jan. 12, 1966.

READY IN PEACE

For Greeting Cards.
First use Mar. 1, 1964.

SN 237,975. Interbook California, Inc., Gardena, Calif. Filed Feb. 3, 1966.

INTERBOOK

For Periodical Publication, Specifically a Book Consisting of Drawings of Graphic Effects To Be Used in Architectural Drawings.
First use September 1965.

SN 239,084. Standard Statistics Co., Inc., New York, N.Y. Filed Feb. 17, 1966.

COMPUSTAT

Owner of Reg. No. 802,879.
For Data Cards and Tapes Bearing Systematized Statistical and Financial Information for Retrieval by Computer.
First use Dec. 5, 1963.

SN 239,924. PAMS, Inc., Dallas, Tex. Filed Mar. 1, 1966.



"Ray Hurst's" is the name of "Ray Hurst," in the possessive form, a living individual, whose consent is of record.
For Musical Instrument Instruction Book Containing Phonograph Records as a Part Thereof.
First use Oct. 27, 1965.

SN 241,913. Messe- und Ausstellungs-Gesellschaft m.b.H. Köln, Cologne, Germany. Filed Mar. 25, 1966.

PHOTOKINA

Owner of German Reg. No. 788,001, dated May 4, 1964.
For Photographs and Printed Matter, Periodicals, Catalogs, Advertising Matter, Timetables, Maps, Labels, Posters, Menus, Illustrated Postcards, Calendars; Transparencies, Advertising Films, and Stickers.

SN 246,883. Credit Data Corporation, Detroit, Mich. Filed May 31, 1966.

CDC CREDITGRAM

For Periodical in the Nature of a Newsletter.
First use Jan. 21, 1966.

SN 249,687. Standard Oil Company of California, San Francisco, Calif. Filed July 6, 1966.

SCENICLAND, U.S.A.

For Periodical Publications in the Nature of Travel Guides.
First use June 15, 1962.

SN 250,863. Jane E. Seltzer, d.b.a. American Cultural Society, Wilmington, Del. Filed July 22, 1966.

BOOK MARK

For Periodically Issued Booklets Listing Books Sponsored or Recommended by the American Cultural Society to Its Members.
First use March 1966.

SN 252,399. Meredith Publishing Company, Des Moines, Iowa. Filed Aug. 15, 1966.



For Books.
First use Feb. 15, 1966.

SN 255,199. Priscilla Gavel, d.b.a. Timbre-Tone, Seekonk, Mass. Filed Sept. 27, 1966.

TIMBRE-TONE

For Booklets Containing Music, Literature, and Poetry, Issued From Time to Time.
First use Dec. 17, 1964.

SN 255,509. American Book Company, New York, N.Y. Filed Sept. 30, 1966.



DANDY DOG

For Printed Publications—Namely, Instruction Books and Pamphlets for School Use for Young Children.
First use Sept. 13, 1966.

SN 257,712. Interdok Corporation, White Plains, N.Y. Filed Nov. 1, 1966.

InterDok

For Periodically Issued Directories Containing Indices of the Published Proceedings of Scientific and Engineering Conferences.
First use Aug. 1, 1965.

SN 259,816. Dexter Press Inc., West Nyack, N.Y. Filed Dec. 1, 1966.



For Studio Greeting Cards.
First use 1955.

SN 260,175. Norcross, Inc., New York, N.Y. Filed Dec. 6, 1966.

ANIMAL ZINGDOM

For Greeting Cards.
First use Oct. 26, 1966.

SN 260,176. Norcross, Inc., New York, N.Y. Filed Dec. 6, 1966.

WHO'S WHO

For Greeting Cards.
First use Oct. 26, 1966.

SN 263,959. Slide-A-Song Co., Phoenix, Ariz. Filed Feb. 3, 1967.

"Slide-A-Song"

For Photographic Transparency Slide Mounts of Songs.
First use June 15, 1961.

SN 268,447. Christian Training Institute, Inc., Indianapolis, Ind. Filed Apr. 6, 1967.



For Series of Periodic Publications, Containing Motivation Materials.
First use Nov. 15, 1966.

SN 268,448. Christian Training Institute, Inc., Indianapolis, Ind. Filed Apr. 6, 1967.

FAMILY PASSPORT TO SUCCESSFUL LIVING

For Series of Periodic Publications, Including Phonograph Records, Containing Motivation Materials.
First use Nov. 15, 1966.

SN 268,454. Christian Training Institute, Inc., Indianapolis, Ind. Filed Apr. 6, 1967.



For Series of Periodic Publications Including Phonograph Records, Containing Motivation Materials.
First use Nov. 15, 1966.

SN 276,980. Roper Research Associates, Incorporated, New York, N.Y. Filed July 28, 1967.

THE PUBLIC PULSE

Owner of Reg. No. 670,953.
For House Organ.
First use March 1958.

Class 39—Clothing

SN 252,130. Lester Pincus Shoe Corporation, New York, N.Y. Filed Aug. 10, 1966.



"Jan Strass" is the name of a living individual whose consent is of record. Lester J. Pincus is the president of the corporation whose consent is of record. Owner of Reg. No. 663,501.
For Shoes, Slippers, and Boots.
First use Apr. 22, 1966.

SN 253,228. Merchandising International S.A., Geneva, Switzerland. Filed Aug. 26, 1966.



Priority claimed under Sec. 44(d) on Swiss Reg. No. 216,700, dated Mar. 5, 1966.
For Shoes and Parts of Shoes—Namely, Outer and Inner Soles, Sole Tips, Heels and Heel Pieces.

SN 268,600. Industrial & Merchandising Services S.A., Brussels, Belgium. Filed Apr. 7, 1967.



Owner of Belgian Reg. No. 93,977, dated Jan. 5, 1962.
For Soles, Heels, Tips, Heel Tips, and Inner Soles.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 247,678. Debron Carpets Limited, Kidderminster, England. Filed June 9, 1966.



Priority claimed under Sec. 44(d) on British Reg. No. 892,631, dated Mar. 30, 1966.
For Textile Carpets, Carpeting, Rugs, and Floor Coverings.

SN 256,470. PRM S.p.A., Milan, Italy. Filed Oct. 14, 1966.



The drawing is lined for orange. Owner of Italian Reg. No. 130,531, dated Dec. 12, 1956; and U.S. Reg. No. 711,894.
For Knitted Tissues for Making Into Clothing Such as Hats, Cardigans, Sweaters, and the Like.

SN 262,005. Stamina Mills, Inc., New York, N.Y. Filed Jan. 5, 1967.

FOREST KING

For Blankets.
First use December 1957.

SN 262,006. Stamina Mills, Inc., New York, N.Y. Filed Jan. 5, 1967.

FORESTDALE

For Blankets, and as a Melton Fabric for Making Into Children's, Men's, and Women's Coats, Jackets and Shirts, Women's Skirts, and as an Interlining Fabric for Clothing.
First use December 1957.

SN 262,007. Stamina Mills, Inc., New York, N.Y. Filed Jan. 5, 1967.

WARMO

For Fabrics Used in Woven Interlinings.
First use December 1949.

Class 44—Dental, Medical, and Surgical Appliances

SN 236,046. Bird Space Technology, Inc., Palm Springs, Calif. Filed Jan. 10, 1966.

bird
space technology

Applicant disclaims the words "Space Technology" apart from the mark as shown.

For Cardiopulmonary Therapy Equipment for Applying Anesthetic Agents and for Ventilating Mammals and for Topical Pulmonary Chemotherapy—Namely, Physiological Volume Limiting Ventilators, Respirators for Home Patient Use Requiring Topical Pulmonary Chemotherapy Treatments, Nebulizers for Delivery of Particulate Suspended Medications and Liquids to the Pulmonary System, Medical Respirators for Cardiopulmonary Therapy, and Automatic Leak Compensating Ventilators for Hospital Intensive Care, and Accessories and Parts Thereof.
First use Oct. 28, 1964.

SN 239,419. Kimberly-Clark Corporation, Neenah, Wis. Filed Feb. 23, 1966.

MISS DEB

For Sanitary Napkins, Sanitary Tampons, and Belts and Holders for Sanitary Napkins.
First use Nov. 22, 1962.

SN 242,173. Mennen-Greatbatch Electronics, Inc., Clarence, N.Y. Filed Mar. 30, 1966.

CARDIO SENTINEL

For Cardiac Monitoring Equipment for Measuring and Displaying Electrocardiographic Information, and Components Thereof.
First use Mar. 2, 1966.

SN 242,174. Mennen-Greatbatch Electronics, Inc., Clarence, N.Y. Filed Mar. 30, 1966.

TELE SENTINEL

For Cardiac Monitoring Telemetry System and Equipment for Measuring and Displaying Electrocardiographic Information.
First use Mar. 2, 1966.

SN 246,382. Sonotone Corporation, Elmsford, N.Y. Filed May 23, 1966.

ATP

For Telephonic Pickup Elements for Use in a Hearing Aid.
First use Apr. 29, 1966.

SN 247,693. Alfred E. Hamilton, Pittsburgh, Pa. Filed June 9, 1966.

Acme

For Physiotherapy Machines Which, Through Rocking Motion, Aid in Culminating and Rehabilitating the Muscular Members of a Person, and Parts Thereof.
First use Mar. 29, 1966.

SN 258,343. Codman & Shurtleff, Inc., Boston, Mass. Filed Nov. 10, 1966.

CODMAN

For Surgical Implants—Namely, Plates, Wire Mesh, Clips, Foil, Shunt Valves, Wires, Pins, Screws, Nails, Burr Hole Buttons, Hip Prostheses, Cranioplastic Kits, and Aneuroplastic Kits.
First use Sept. 26, 1966; at least as early as 1910 in a different form.

Class 45—Soft Drinks and Carbonated Waters

SN 277,113. Golden Crown Citrus Corporation, Evanston, Ill. Filed July 31, 1967.

GOLD RIBBON

Owner of Reg. No. 724,875.
For Bottled Fruit Juice Drinks Containing Water.
First use at least as early as 1959.

Class 46—Foods and Ingredients of Foods

SN 234,500. A. Baldec, Inc., Jersey City, N.J. Filed Dec. 13, 1965.

BUMPUP BASE

For Prepared Meat, Fish and Other Food Sandwiches.
First use Apr. 4, 1964.

SN 237,514. North American Food Service Corporation, Chicago, Ill. Filed Dec. 13, 1965.

HOST FAVORITE

For Canned Vegetables and Fruits of All Types, Jams and Jellies, Frozen Fish, Frozen Cream Substitute, Powdered Cream Substitute, Cheese, Flavored Syrups for Food Purposes, Frozen Shrimp and Oysters, Nuts, Frozen Orange Juice; Breader and Batter Mixes, White Cake Mix, Devils Food Cake Mix, Chocolate Cake Mix, Gingerbread Cake Mix, Orange Cake Mix, Pancake and Waffle Mix, Muffin Mix, Hot Roll Mix; Breadsticks, Tea, Dietetic Fruits and Vegetables, Blue Cheese Dressing, Sour Dressing, Chive Dressing, and Spices.
First use Aug. 1, 1965.

SN 241,244. Dodge & Olcott, Inc., New York, N.Y. Filed Mar. 17, 1966.

VAN-LI

For Concentrate Imitation Flavor for Food for Manufacturing and Professional Use Only.
First use Oct. 9, 1964.

SN 244,576. Dairyland Food Laboratories, Inc., Waukesha, Wis. Filed Apr. 29, 1966.

DCF

For Food Flavoring Compound Derived From a Dairy Culture.
First use Mar. 22, 1965.

SN 244,606. National Dairy Products Corporation, Chicago, Ill. Filed Apr. 29, 1966.

FACILITY

For Soup Base, Jelly, and Frozen Breaded Onion Rings.
First use Dec. 27, 1965.

SN 245,726. S. Lundy's Sons, Philadelphia, Pa. Filed May 16, 1966.

S. LUNDY'S SONS

Applicant disclaims the Star of David and the kosher designation apart from the mark as shown.
For Fresh Kosher Meats.
First use Aug. 1, 1964.

SN 246,592. The Nestle Company, Inc., White Plains, N.Y. Filed May 25, 1966.

ELDORADO

For Coffee.
First use Mar. 30, 1966.
Subj. to Intf. with SN 253,826.

SN 247,540. Syndicat du Veritable Gruyere de Comte, Poligny, Jura, France. Filed June 7, 1966. COLLECTIVE MARK.

SYNDICAT du GRUYERE de COMTE — APPELLATION d'ORIGINE

The English equivalent of the French words which appear in the drawing is "association for the gruyere (cheese) from Comte—name of origin." Applicant disclaims the words "Appellation d'Origine" apart from the mark as shown.
For Cheese.
First use 1953; in commerce 1958.

SN 250,186. Smak-Time Co., Los Angeles, Calif. Filed July 13, 1966.

Smak-time

For Nuts, Candies, and Gum Drops.
First use Feb. 10, 1966.

SN 251,919. Hag AG Bremen, Bremen, Germany. Filed Aug. 8, 1966.

CALMA

For Coffee.
First use May 11, 1966; in commerce May 11, 1966.

SN 253,485. Beatrice Foods Co., Chicago, Ill. Filed Aug. 31, 1966.

ZOOP

For Flavored Dairy Type Beverages Containing Animal Fat or Vegetable Fat or Both.
First use July 1, 1966.

SN 253,488. Beatrice Foods Co., Chicago, Ill. Filed Aug. 31, 1966.

SINGAPORE SALAD

Without waiving any of its common law rights, applicant disclaims the word "Salad" apart from the mark as shown.
For Mixture of Vegetables, Packaged Either in Tins or Glass.
First use Apr. 18, 1966.

SN 254,279. Halo-Star Corporation, Chicago, Ill. Filed Sept. 12, 1966.

HALO

Owner of Reg. Nos. 553,043 and 622,391.
For Frozen Confectionery—Namely, Pineapple or Other Fruit on a Stick Coated With Chocolate and Nuts.
First use on or about Dec. 15, 1959.

SN 255,735. Tri-Valley Growers, d.b.a. Oberti Olive Co., San Francisco, Calif. Filed Oct. 4, 1966.

BORDELAISE

The word "Bordelaise" is the French equivalent of the English term "pertaining to Bordeaux."
For Olives in Glass.
First use Mar. 17, 1930.

SN 258,908. August G. Janke, d.b.a. Ely's Potato Chip Co., Escanaba, Mich. Filed Nov. 17, 1966.

Ely's CHICKEN CHIPS

The words "Chicken Chips" are disclaimed apart from the mark as shown.
For Potato Chips.
First use Sept. 19, 1965.

SN 259,291. Abba-Fyrtornet AB., Vartan, Stockholm, Sweden. Filed Nov. 23, 1966.

FISH FLUFFIES

The word "Fish" is disclaimed apart from the mark as shown.
For Canned Fishballs.
First use Sept. 30, 1966; in commerce Sept. 30, 1966.

SN 259,563. Mother's Cake & Cookie Co., Oakland, Calif. Filed Nov. 28, 1966.

Mother's

The drawing is lined for red. Owner of Reg. Nos. 577,159 and 635,300.
For Ice Cream Sandwich.
First use Oct. 20, 1966.

SN 259,805. Ceskoslovenske Cokoladovny Oborovy Podnik, Modrany, Modrany, Czechoslovakia. Filed Dec. 1, 1966.

FIGARO

Owner of Czechoslovakian Reg. No. 156,957, dated May 6, 1966.
For Cooking, Baking and Milk Chocolate; Cocoa Powder; and Candies.

SN 261,678. Popped-Right Corn Company, Marion, Ohio. Filed Dec. 29, 1966.

BIM BAM

For Plain, Seasoned and Flavored Popped Popcorn, Raw Popcorn, Cheese Flavored Expanded Corn Meal, Caramel Coated Popped Popcorn, Fried Pork Rinds, Fried Extruded Corn Meal, and Pretzels.
First use May 20, 1966.

SN 262,863. Genest Midwest Inc., Canton, Ohio. Filed Jan. 19, 1967.

HOBO

For Barbecue Flavored Bread and Buns.
First use on or about Sept. 25, 1966.

SN 263,339. The Quaker Oats Company, Chicago, Ill. Filed Jan. 26, 1967.

CORN SKIS

Applicant disclaims the word "Corn" apart from the mark as shown.
For Snack Crackers.
First use Dec. 30, 1966.

SN 265,207. Attilio Passini, Plymouth, Wis., assignee of Passini Cheese Company, Inc., Plymouth, Wis. Filed Feb. 21, 1967.

PASSINI

For Cheese.
First use 1936.

SN 265,380. General Mills, Inc., Minneapolis, Minn. Filed Feb. 24, 1967.

WHEET CRACK O'S

The word "Wheet" is disclaimed apart from the mark as shown.
For Ready To Eat Breakfast Cereal.
First use Feb. 10, 1967.

SN 268,652. Jack-in-the-Box, Inc., San Diego, Calif. Filed Apr. 10, 1967.

JACK IN THE BOX

Owner of Reg. Nos. 722,379, 722,380, and 819,307.
For Frozen Food Products—Namely, Hamburger Patties, Tacos, Chicken, Shrimp, Onion Rings, and Apple Turnovers; and Hamburger Sauce, Shrimp Sauce, and Taco Sauce.
First use at least as early as 1960.

SN 271,406. The East Asiatic Company, Inc., d.b.a. Danfoods Co. and Danfoods Corporation, Los Angeles, Calif. Filed May 15, 1967.

DANFOODS

Owner of Reg. Nos. 708,800 and 765,219.
For Boneless Cooked Danish Ham, Pork Shoulder Picnic, and Canadian Style Bacon.
First use Aug. 23, 1966.

SN 271,577. R. D. Michie, d.b.a. R. D. Michie Co., Memphis, Tenn. Filed May 16, 1967.

PRIDE OF U.S.A.

Applicant disclaims the geographical feature "U.S.A." apart from the mark as shown.
For Canned Vegetables.
First use November 1966.

SN 274,148. Good Humor Corporation, Englewood Cliffs, N.J. Filed June 19, 1967.

WHAMMY-STRIPES

Owner of Reg. Nos. 735,447 and 786,104.
For Quiescently Frozen Confections—Namely, Frozen Confections on Sticks.
First use Apr. 25, 1967.

SN 275,203. Young's Market Company, Los Angeles, Calif. Filed July 3, 1967.

mini-shrimp "THE Youngsters"

Applicant disclaims the wording "Mini-Shrimp" apart from the association shown, without waiver of applicant's common law rights in the disclaimed matter. Owner of Reg. Nos. 786,103, 811,796, and others.
For Frozen Breaded Shrimp.
First use June 12, 1967.

SN 276,616. W. B. Camp & Sons, Inc., d.b.a. W. B. Camp & Sons, Bakersfield, Calif. Filed July 24, 1967.

MAMMY

For Potatoes in Their Natural State.
First use at least as early as May 1944.

SN 276,617. Eckel Produce Company, Salinas, Calif. Filed July 24, 1967.

GERONIMO

Owner of Reg. No. 553,507.
For Fresh Vegetables.
First use June 25, 1967.

Class 47—Wines

SN 253,935. Vernat Inc., New York, N.Y. Filed Sept. 6, 1966.

VERNAT

Owner of Reg. Nos. 391,080 and 405,043.
For Vermouth, Wine Aperitif, and Champagne.
First use May 10, 1941.

SN 260,442. Monarch Wine Company, Inc., d.b.a. Monarch Wine Company, Brooklyn, N.Y. Filed Dec. 9, 1966.



The English translation of the words appearing on the drawing is "we protect our quality."
For Champagne, Sparkling Rose Wine, and Still Wines.
First use Oct. 29, 1965.

Class 49—Distilled Alcoholic Liquors

SN 249,857. Forbes, Farquharson & Co. Ltd., Perth, Scotland. Filed July 8, 1966.

SCOTCH BROOM

Applicant disclaims the word "Scotch" apart from the mark shown, without waiving any of its common law rights thereto. Owner of U.S. Reg. No. 316,847.
For Scotch Whisky.
First use July 17, 1964; in commerce July 17, 1964.

SN 261,510. Old Boone Distillery Co., d.b.a. Rosewood Distillery Co., Louisville, Ky. Filed Dec. 27, 1966.

Rosewood

For Kentucky Straight Bourbon Whiskey.
First use Aug. 11, 1966.

SN 262,265. J. T. S. Brown's Son Company, Cincinnati, Ohio. Filed Jan. 10, 1967.

J.T.S.

Owner of Reg. No. 363,915.
For Whiskey.
First use Dec. 16, 1966.

SN 274,567. E. & J. Gallo Winery, d.b.a. The Vintners of Eden Roc, Modesto, Calif. Filed June 23, 1967.

The VINTNERS of EDEN ROC

No claim is made to the word "Vintners" apart from the mark as shown. Owner of Reg. Nos. 684,887, 731,935, and 829,220.
For Brandy.
First use June 6, 1967.

Class 50—Merchandise Not Otherwise Classified

SN 246,179. Richard D. Johnson & Co., Milwaukee, Wis. Filed May 20, 1966.

Dick Johnson Motipraser

"Dick Johnson" is a partner in the applicant firm.
For Manikin for Use in Connection With Training Programs for Employees.
First use Jan. 10, 1965.

SN 262,898. Walle-Hawk Corporation, Burlington, Vt. Filed Jan. 19, 1967.

WALLE-HAWK

For Survival Kit Comprising Fishing Hooks and Lines, Wire, Needles, Bandages, and Related Items Which May Be Carried Within and/or as a Wallet.
First use May 23, 1966.

SN 272,547. Eldon Industries, Inc., d.b.a. Danlee Company, Hawthorne, Calif. Filed May 29, 1967.

JOE PRO

For Bendable Figurine.
First use Apr. 8, 1967.

SN 272,552. Eldon Industries, Inc., d.b.a. Danlee Company, Hawthorne, Calif. Filed May 29, 1967.

FUNGO FREDDY

For Bendable Figurine.
First use Apr. 8, 1967.

SN 272,553. Eldon Industries, Inc., d.b.a. Danlee Company, Hawthorne, Calif. Filed May 29, 1967.

POSABLES

For Bendable Figurine.
First use Apr. 8, 1967.

SN 272,554. Eldon Industries, Inc., d.b.a. Danlee Company, Hawthorne, Calif. Filed May 29, 1967.

LUCK NIKS

For Bendable Figurine.
First use Apr. 8, 1967.

SN 272,555. Eldon Industries, Inc., d.b.a. Danlee Company, Hawthorne, Calif. Filed May 29, 1967.

CHARLIE CHIMP

For Bendable Figurine.
First use Apr. 8, 1967.

Class 51—Cosmetics and Toilet Preparations

SN 250,928. Bristol-Myers Company, New York, N.Y. Filed July 25, 1966.

LEFT HAND

The word "Hand" is disclaimed apart from the mark as shown.
For Hand Lotion.
First use June 17, 1966.

SN 250,929. Bristol-Myers Company, New York, N.Y. Filed July 25, 1966.

SECOND HAND

The word "Hand" is disclaimed apart from the mark as shown.
For Hand Lotion.
First use June 17, 1966.

SN 250,930. Bristol-Myers Company, New York, N.Y. Filed July 25, 1966.

RIGHT HAND

The word "Hand" is disclaimed apart from the mark as shown.
For Hand Lotion.
First use July 17, 1966.

SN 252,558. F. W. Hampshire & Co. Limited, Derby, England. Filed Aug. 17, 1966.

COSSACK

Owner of British Reg. No. 823,557, dated July 28, 1961.
For Men's Hair Dressing.

SN 256,591. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 17, 1966.

ROMNEY

Owner of Reg. No. 758,599.
For Personal Deodorants.
First use Aug. 2, 1957.

SN 258,067. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

MOONLIT BLONDE

Applicant disclaims "Blonde," apart from the mark as shown. Owner of Reg. Nos. 790,520 and 791,155.
For Hair Tinting, Dyeing, and Coloring Preparation.
First use Aug. 11, 1966.

SN 262,312. Clairol Incorporated, New York, N.Y. Filed Jan. 11, 1967.

RADIANTLY BLONDE

Applicant disclaims "Blonde" apart from the mark as shown.
For Hair Tinting, Dycing and Coloring Preparation and a Hair Lightener.
First use Sept. 26, 1966.

SN 272,548. Unilever Limited, Port Sunlight, England. Filed May 29, 1967.

SEA WITCH

Owner of British Reg. No. 870,805, dated Oct. 23, 1964.
For Hair Colorants, Hair Conditioning Agents, Hair Creams, Brilliantine, and Lotions for Waving and Setting the Hair.

SN 272,550. Fairfield Products, Inc., New York, N.Y. Filed May 29, 1967.

EMBARGO

For Anti-Perspirant and Deodorant Lotion.
First use Mar. 21, 1967.

SN 276,282. The Gillette Company, Boston, Mass. Filed July 19, 1967.

MY ISLANDS

For Cologne.
First use June 21, 1967.

SERVICE MARKS

Class 100—Miscellaneous

SN 213,188. Robert Z. Schreffler, d.b.a. Conservative National Party of the United States of America, Chester, Va. Filed Mar. 1, 1965.



The mark includes a fanciful showing of the letters "CNP." The drawing is lined for the colors red and blue.
For Promoting Government Policies Which Are Fiscally Sound and Which Encourage Private Enterprise.
First use Feb. 9, 1964.

SN 224,327. Petroiclor Construction and Finance Corp., Panama City, Panama. Filed July 27, 1965.

PETROLCLOR

For Design and Construction Services and Drawings in the Field of Industrial Plants.
First use September 1959; in commerce September 1959.

SN 228,057. Marriott-Hot Shoppes, Inc., Washington, D.C. Filed Sept. 17, 1965.

Marriott IN-FLITE SERVICES

No exclusive right is claimed in the words "In-Flite" or "Services," apart from the mark as shown, but applicant waives none of its common law rights therein, or in any feature thereof. Owner of Reg. Nos. 793,802 and 815,612.
For Airline Catering Services.
First use Apr. 7, 1965.

SN 245,217. Moore Burger, Incorporated, Austin, Tex. Filed May 9, 1966.



Applicant disclaims the words "Burger," "Shakes," and "Malts" apart from the mark as shown. Applicant also disclaims, apart from the mark as shown, the representation of a hamburger.
For Restaurant Drive-In Services.
First use April 1953.

SN 245,569. Data Retrieval Corporation of America, Milwaukee, Wis. Filed May 13, 1966.

DRCA

For Computerized Research Services for the Legal Profession.
First use on or about July 23, 1965.

SN 245,570. Data Retrieval Corporation of America, Milwaukee, Wis. Filed May 13, 1966.



For Computerized Research Services for the Legal Profession.
First use on or about July 23, 1965.

SN 245,931. Charles F. Kettering Foundation, Dayton, Ohio. Filed May 18, 1966.

IDEA

For Foundation Services—Namely, Supporting and Promoting Improved Elementary and Secondary Education.
First use on or about Aug. 16, 1965.

SN 246,662. Copter Club, Inc., New York, N.Y. Filed May 26, 1966.

'COPTER CLUB

The term "Club" is disclaimed, apart from its use as part of the composite mark "Copter Club."
For Restaurant Services.
First use Mar. 15, 1966.

SN 249,588. Smokers Anonymous, Inc., Maynard, Mass. Filed July 5, 1966.

SMOKERS ANONYMOUS

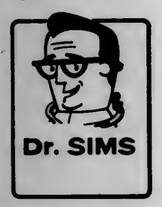
The word "Smokers" is disclaimed apart from the mark as a whole.
For Association Services—Namely, Helping People Understand and Conquer the Problem of Tobacco Addiction and Implementing Said Service Through Instruction and Consultation.
First use on or about Apr. 19, 1966.

SN 251,898. Louis Constantino, d.b.a. Professional Coffee Shoppe, Washington, D.C. Filed Aug. 8, 1966.

THE PROFESSIONAL COFFEE SHOPPE

The words "Coffee Shoppe" are disclaimed apart from the mark as shown.
For Restaurant Services.
First use Aug. 4, 1966.

SN 252,100. Illinois State Medical Society, Chicago, Ill. Filed Aug. 10, 1966.



"Sims" is a transposition of the initials of applicant's name, and neither the name nor the picture represents a particular living individual.
For Association Services—Namely, Promoting the Interests of Members and Promoting Health by Dissemination of Information to the Public Through News Media Such as Radio, TV and Newspapers and by Pamphlets, Exhibits, Records, and Personal Appearances.
First use June 1, 1964.

SN 252,112. Love Furniture, Inc., Tonawanda, N.Y. Filed Aug. 10, 1966.

LOVE

For Consultation and Advisory Services in Home Decorating and Furnishing.
First use on or about Sept. 17, 1964.

SN 256,007. Royal Inns of America, Inc., La Mesa, Calif. Filed Oct. 7, 1966.

ROYAL INNS OF AMERICA

For Motel Accommodations.
First use June 17, 1965.

SN 257,635. Kentucky Fried Chicken Corporation, Nashville, Tenn. Filed Oct. 31, 1966.

WE FIX SUNDAY DINNER SEVEN DAYS A WEEK

For Restaurant Services.
First use Oct. 21, 1966.

SN 269,960. National Football League, New York, N.Y. Filed Apr. 25, 1967.



The lining on the drawing represents a feature of the mark as used, and is not intended to represent color.
For Association Services—Namely, Promoting the Interests of Member Football Clubs, Scheduling Games, and Promoting Interest in Football.
First use June 1, 1941.

SN 270,535. Commercial Capital Distributing Co., Fort Lauderdale, Fla. Filed May 3, 1967.

BAR MAID

For Renting and/or Leasing Commercial Glass Washing Machines.
First use Dec. 22, 1966.

SN 270,957. Robee's Enterprises, Inc., Fort Wayne, Ind. Filed May 8, 1967.



For Drive-In and Carry-Out Restaurant Services.
First use Apr. 15, 1967.

Class 101—Advertising and Business

SN 228,676. General Development Corporation, Miami, Fla. Filed Sept. 27, 1965.



For Real Estate Brokerage Services.
First use July 12, 1965.

SN 232,462. K.G. Carpet Supply, Inc., Atlanta, Ga. Filed Nov. 10, 1965.



The drawing is lined for red and blue.
For Carpet Installation Supply Distributorship Services.
First use Aug. 18, 1965.

SN 233,145. Storz Broadcasting Co., Inc., Kansas City, Mo. Filed Nov. 22, 1965.

INFLUENCE THE INFLUENCIBLES

For Promoting the Sale of Radio Broadcasting Time to Advertisers.
First use May 24, 1965.

SN 238,893. Ernest Clyde Smoot, Jr., d.b.a. Trendnews, Richmond, Va. Filed Feb. 15, 1966.

MEETING PLACE HOTELS

The word "Hotels" is disclaimed apart from the mark as shown.
For Providing Advertising and Promotional Materials for Selected Independent Hotels and All Qualified Hotels and Inns.
First use Aug. 18, 1965.

SN 241,411. Vernon Appling, d.b.a. Best 6 Motel Association, Salinas, Calif. Filed Mar. 21, 1966.



No claim is made to the use of the word "Best" or the word "Approved," apart from the mark as shown. The drawing of the mark is lined for the colors red and yellow, but color is not claimed as a feature of the mark.
For Providing Promotional and Advertising Material to Associated Independent Motel Operators, Including Listing of Approved Associates, and Signs for Their Establishments.

SN 243,254. Miss Universe, Inc., New York, N.Y. Filed Apr. 12, 1966.

MISS CALIFORNIA UNIVERSE

The term "California" is disclaimed. Owner of Reg. Nos. 568,507, 763,982, and others.
For Promoting the Goods and Services of Others by Means of a Beauty Pageant.
First use June 1952.

SN 244,018. Ojibway Press, Inc., Duluth, Minn. Filed Apr. 21, 1966.



While the drawing is lined for the color orange, no claim is made to color.
For Performing Services for Publishers—Namely, Printing, Data Processing, Direct Mail Advertising, Auditing, Acquiring Subscribers, and Answering Reader Inquiries.
First use Dec. 1, 1965.

SN 244,627. Straus-Frank Company, San Antonio, Tex. Filed Apr. 29, 1966.



For Assisting Automotive Distributors in the Conduct of Their Businesses—Namely, Providing Advice and Materials Relative to Accounting, Advertising, Store Planning, Merchandising, Sales Training, Store Display, and Management.
First use Aug. 1, 1965.

SN 247,709. Management Counselors, Inc., Chicago, Ill. Filed June 9, 1966.



IMPERIAL PERSONNEL

Applicant expressly disclaims any claim to the word "Personnel."
For Employment Agency, Personnel Placement, and Employee Recruitment Services.
First use Apr. 6, 1966.

SN 250,154. Grand Central Markets, Inc., Stamford, Conn. Filed July 13, 1966.



Applicant hereby disclaims the word "Markets."
For Retail Grocery Service.
First use April 1966.

SN 250,560. Cavanaugh-Gray & Co., Inc., Jacksonville, Fla. Filed July 19, 1966.

CAVANAUGH-GRAY

For Employment Agency Services.
First use Oct. 1, 1947.

SN 252,010. Jobco, Inc., Dallas, Tex. Filed Aug. 9, 1966.

jobco

For Employment Agency Services.
First use July 9, 1962.

SN 255,623. Hughes Industries, Inc., Englewood, Colo. Filed Oct. 3, 1966.



Applicant disclaims the representation of the hand cart apart from the mark.
For Renting Hand Baggage Carts in Transportation Terminals.
First use on or about Aug. 1, 1965.

SN 256,747. Lea Associates, Inc., Ambler, Pa. Filed Oct. 19, 1966.

OMNIBUS MD

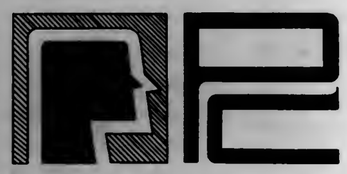
For Marketing Surveys of Physicians Performed for the Benefit of Pharmaceutical Manufacturers.
First use Oct. 6, 1964.

SN 257,067. Multiple Realty, Inc., Decatur, Ga. Filed Oct. 24, 1966.

TOTAL-LIST

For Multiple Listing Real Estate Service for Brokers and Property Owners.
First use Oct. 13, 1966.

SN 257,074. The Personnel Corporation, Seattle, Wash. Filed Oct. 24, 1966.



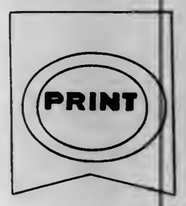
The drawing is lined for the color green.
For Personnel Evaluation.
First use August 1964.

SN 257,450. Applied Logic Corporation, Princeton, N.J. Filed Oct. 28, 1966.



The mark comprises the fanciful representation of t Greek letter "delta."
For Computer Programming and Data Processing Services Including the Rental of Use of Computers.
First use July 26, 1965.

SN 258,201. NPEA Exhibits, Inc., Cincinnati, Ohio. Filed Nov. 8, 1966.



For Organizing a Trade Show for Exhibition of Machinery, Equipment and Supplies Used in the Graphic Arts Industry.
First use Sept. 28, 1965.

SN 261,954. The Villager, Inc., Philadelphia, Pa. Filed Jan. 4, 1967.

THE VILLAGER

Owner of Reg. Nos. 702,965, 824,955, and others.
For Retail Apparel Outlet Services in a Department Store.
First use January 1962.

SN 265,869. Safeguard Business Systems Corporation, d.b.a. Safeco, Lansdale, Pa. Filed Mar. 3, 1967.

SAFECO

For General Printing Services.
First use Jan. 30, 1967.

SN 267,792. Computer Usage Company, Inc., Mount Kisco, N.Y. Filed Mar. 29, 1967.

QUIP

For Services of Data Processing.
First use December 1961.

Class 102 — Insurance and Financial

SN 250,985. R. D. Mangini, d.b.a. R. D. Mangini and Company, Chicago, Ill. Filed July 25, 1966.



Applicant disclaims the words "Credit Manager" apart from the mark as shown.
For Accounts Receivable Management and Supervision, Including Establishing and Maintaining Credit Controls, etc.
First use Dec. 1, 1965.

SN 254,380. The Fund American Companies, San Francisco, Calif. Filed Sept. 13, 1966.

FIREMAN'S FUND AMERICAN LIFE INSURANCE COMPANY

Applicant disclaims the words "Life Insurance Company" apart from the mark. Owner of Reg. Nos. 660,232, 794,199, and 794,200.
For Insurance Underwriting Services.
First use about April 1964.

SN 254,382. The Fund American Companies, San Francisco, Calif. Filed Sept. 13, 1966.



Owner of Reg. Nos. 660,232, 794,199, and 794,200.
For Underwriting Insurance.
First use about 1882.

SN 254,916. Colonial Consumer Discount Company, Charleroi, Pa. Filed Sept. 22, 1966.



For Consumer Credit Loans.
First use on or about Nov. 1, 1965.

SN 258,230. Illinois Mutual Life and Casualty Company, Peoria, Ill. Filed Nov. 8, 1966.

YOUCARE

For Underwriting Combined Life and Disability Insurance.
First use Oct. 17, 1966.

SN 258,284. Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Nov. 9, 1966.

TOWN & COUNTRY CHARGE

Applicant disclaims any rights in the word "Charge" apart from the mark as shown.
For Providing a Credit Card Service.
First use as early as Sept. 27, 1966.

SN 258,288. Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Nov. 9, 1966.

Town & Country CHARGE

Applicant disclaims any rights in the word "Charge" apart from the mark as shown.
For Providing a Credit Card Service.
First use as early as Sept. 27, 1966.

SN 260,003. American Association Old Line Life Insurance Company, Nashville, Tenn. Filed Dec. 5, 1966.

BENNY BENEFIT

The word "Benefit" is disclaimed as part of the mark as shown.
For Underwriting Employee Benefit Insurance.
First use July 12, 1966.
Subj. to Intf. with SN 255,017.

Class 103 — Construction and Repair

SN 237,603. Supercussion Drills, Inc., San Antonio, Tex. Filed Jan. 28, 1966.

SUPERCUSSION

For Leasing, Renting, and Servicing of Earth Boring Equipment.
First use Nov. 4, 1964.

SN 241,763. Crib Diaper Service, Chicago, Ill. Filed Mar. 24, 1966.

STERI-TIZED PROCESS

Applicant disclaims exclusive rights to the word "Process."
For Diaper Service.
First use Oct. 25, 1964.
Subj. to Intf. with SN 259,773.

SN 251,445. F. W. Means & Company, Chicago, Ill. Filed Aug. 1, 1966.

SCHOOL/CARE

Owner of Reg. Nos. 825,479 and 825,480.
For Linen Rental Services, Including the Supply and Laundering of Towels.
First use June 18, 1965.

SN 255,805. Liberty Petroleum Co., Inc., Mount Vernon, Ill. Filed Oct. 5, 1966.



For Servicing Automobiles—Namely, Providing Gasoline and Lubrication.
First use in or before January 1966.

SN 258,943. Uni-Roof Corporation, Marion, Ind. Filed Nov. 17, 1966.

UNI-ROOF

For Construction of Building Structures.
First use May 1963.

Class 104 — Communication

SN 259,278. The Western Union Telegraph Company, New York, N.Y. Filed Nov. 22, 1966.

Recruit-a-gram

For Telegraphic Transmission of Data of Prospective Employees To Be Computerized for Matching the Requirements of Employers.
First use on or about Sept. 1, 1966.

Class 105 — Transportation and Storage

SN 244,575. D.C. Transit System, Inc., Washington, D.C. Filed Apr. 29, 1966.

mitey-mini
SMALL BUS - BIG SERVICE

The wording "Small Bus—Big Service" is disclaimed apart from the mark as shown.
For Local Bus Transportation Service Provided in the Washington Metropolitan Area.
First use Dec. 13, 1965.

SN 250,438. Allied Van Lines, Inc., Broadview, Ill. Filed July 18, 1966.

ALLIED
1

Without waiving any of its common-law rights, applicant hereby disclaims the phrase "America's Number 1 Mover" apart from the mark as shown. Owner of Reg. Nos. 515,822, 515,823, and 604,594.
For Packing, Transportation, and Storage of Goods.
First use April 1962.

SN 250,760. Mid-American Truck Lines, Inc., Kansas City, Mo. Filed July 21, 1966.



The drawing is lined for red and blue. The mark is a fanciful representation of the letters "MA."
For Truck Transportation of the Goods of Others.
First use Feb. 1, 1964.

SN 253,673. Northwest Airlines, Inc., St. Paul, Minn. Filed Sept. 1, 1966.

NORTHWEST ORIENT

For Passenger, Freight, and Mail Transportation Services by Air.
First use July 15, 1947.

SN 254,034. Continental Air Lines, Inc., Los Angeles, Calif. Filed Sept. 8, 1966.

GOLDEN FAN JET

Applicant disclaims exclusive rights to the descriptive words "Fan Jet." Owner of Reg. Nos. 619,817 and 759,384.
For Air Transportation of Persons and Property.
First use Dec. 2, 1963.

SN 254,575. Hertz System, Inc., New York, N.Y. Filed Sept. 16, 1966.

Hertz

The drawing is lined for yellow and color is claimed as a feature of the mark. Owner of Reg. Nos. 614,123, 750,299, and others.
For Rental of Automobiles and Trucks.
First use Aug. 9, 1966; 1924 as to "Hertz."

SN 255,908. Matson Navigation Company, San Francisco, Calif. Filed Oct. 6, 1966.



Owner of Reg. No. 791,563.
For Water Transportation of Cargo and Passengers.
First use in or before 1901.

SN 260,310. Eastern Air Lines, Inc., New York, N.Y. Filed Dec. 8, 1966.

IONOSPHERE

For Providing First Class Service in the Transportation of Persons by Air.
First use Oct. 28, 1966.

Class 107 — Education and Entertainment

SN 233,578. Carling Brewing Company Incorporated, Cleveland, Ohio. Filed Nov. 30, 1965.

LADY CARLING OPEN

The term "Open" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 632,823, 777,533, and 799,276.
For Promoting, Sponsoring and Managing Golf Tournaments.
First use on or about July 1, 1962.

SN 244,754. Sports Car Racing Association of the Monterey Peninsula, d.b.a. SCRAMP, Monterey, Calif. Filed May 2, 1966.

LAGUNA SECA

The words "Laguna Seca" translated are "dry lake."
For Staging Sports Car Races.
First use November 1957.

SN 250,218. Dallas Cowboys Football Club, Inc., Dallas, Tex. Filed July 14, 1966.

DALLAS COWBOYS

Applicant disclaims the word "Dallas," apart from the mark as shown.
For Entertainment Services—Namely, Football Exhibitions Rendered Live in Stadia and Through the Media of Radio and Television Broadcasts.
First use Apr. 15, 1960.

SN 250,696. Tam Enterprises, Beverly Hills, Calif. Filed July 20, 1966.

PAUL REVERE AND THE RAIDERS

For Entertainment Services in the Form of Popular Music Performed by a Male Group (Singing and Instrumental).
First use in or about June 1959.

SN 255,842. Your Father's Mustache International, Inc., New Haven, Conn., by change of name from Warrenton Restaurant, Inc., New Haven, Conn. Filed Oct. 5, 1966.

YOUR FATHER'S MUSTACHE

For Night Club Services.
First use Aug. 15, 1964.

SN 256,550. Gulf Coast Broadcasting Company, Corpus Christi, Tex. Filed Oct. 17, 1966.



For Entertainment Services Rendered Through the Medium of Television, Including Motion Pictures, Puppets, and Living Persons.
First use May 8, 1966.

SN 256,551. Gulf Coast Broadcasting Company, Corpus Christi, Tex. Filed Oct. 17, 1966.



For Entertainment Services Rendered Through the Medium of Television, Including Motion Pictures, Puppets, and Living Persons.
First use May 8, 1966.

SN 256,553. Gulf Coast Broadcasting Company, Corpus Christi, Tex. Filed Oct. 17, 1966.



For Entertainment Services Rendered Through the Medium of Television, Including Motion Pictures, Puppets, and Living Persons.
First use Mar. 28, 1966.

SN 256,554. Gulf Coast Broadcasting Company, Corpus Christi, Tex. Filed Oct. 17, 1966.



For Entertainment Services Rendered Through the Medium of Television, Including Motion Pictures, Puppets, and Living Persons.
First use Mar. 28, 1966.

SN 275,103. St. Louis National Baseball Club, Inc., St. Louis, Mo. Filed July 3, 1967.

CARDINALS

For Entertainment Services in the Nature of Baseball Games and Exhibitions, Some of Which Services are Rendered Through the Media of Radio and Television Broadcasts.
First use in or about 1899.

CERTIFICATION MARKS

Class A — Goods

SN 266,033. Golden Guernsey, Inc., Peterborough, N.H. Filed Mar. 6, 1967.

Golden Guernsey

The certification mark is used by persons authorized by applicant in connection with the products to indicate that they are made with milk produced from herds consisting wholly of Guernsey cattle accepted as such by a representative of Golden Guernsey, Inc. Owner of Reg. Nos. 598,565, 757,929, and others.
For Ice Cream.
First use Dec. 14, 1966.

Class B — Services

SN 244,931. Sports Car Club of America, Incorporated, Westport, Conn. Filed May 4, 1966.

ARRC

The mark certifies that the sports car racing event is sanctioned by applicant as a designated category of event in accordance with rules prescribed by applicant.
For Services Involved in Organizing, Promoting, and Operating Sports Car Racing Events.
First use Nov. 12, 1964.

SN 244,932. Sports Car Club of America, Incorporated, Westport, Conn. Filed May 4, 1966.

AMERICAN ROAD RACE OF CHAMPIONS

The mark certifies that the sports car racing event is sanctioned by applicant as a designated category of event in accordance with rules prescribed by applicant.
For Services Involved in Organizing, Promoting, and Operating Sports Car Racing Events.
First use Nov. 12, 1964.

SN 246,613. Sports Car Club of America, Incorporated, Westport, Conn. Filed May 25, 1966.

TRANS-AMERICAN SEDAN CHAMPIONSHIP

The mark certifies that the sports car racing event is sanctioned by applicant as a designated category of event in accordance with rules prescribed by applicant.
For Services Involved in Organizing, Promoting, and Operating Sports Car Racing Events.
First use Mar. 25, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

836,143. CHROMEX. Chromex Societe Anonyme. SN 192,472. Pub. 7-20-65. Filed 5-1-64.

836,144. IGNILUX. Montecatini, Societa Generale per l'Industria Mineraria e Chimica. SN 248,048. Pub. 7-18-67. Filed 6-14-66.

836,145. FURSEALCO. The Fur Seal Processing Corporation. MULTIPLE CLASS (Classes 1 and 39). SN 253,026. Pub. 7-18-67. Filed 8-24-66.

836,146. G. Corn Products Company, assignee of Funk Bros. Seed Co. SN 253,473. Pub. 7-18-67. Filed 8-31-66.

836,147. FUNK'S. Corn Products Company, assignee of Funk Bros. Seed Co. SN 253,474. Pub. 7-18-67. Filed 8-31-66.

836,148. ARNITE. Algemene Kunstzijde Unie N.V. SN 255,583. Pub. 7-18-67. Filed 10-3-66.

836,149. RECCO. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company. SN 256,002. Pub. 7-18-67. Filed 10-7-66.

836,150. CORLENE. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company. SN 256,003. Pub. 7-18-67. Filed 10-7-66.

836,151. ZANOX. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company. SN 256,006. Pub. 7-18-67. Filed 10-7-66.

836,152. CLOISTER. Asgrow Seed Company. SN 257,352. Pub. 7-18-67. Filed 10-27-66.

836,153. CERCRON. Chas. Pfizer & Co., Inc. SN 264,376. Pub. 7-18-67. Filed 2-10-67.

836,154. HOME OWNERS. Excel-Mineral Company, Inc. SN 268,717. Pub. 7-18-67. Filed 4-10-67.

836,155. TYRIN. The Dow Chemical Company. SN 269,608. Pub. 7-18-67. Filed 4-20-67.

836,156. AYRCRYL. Rohm and Haas Company. SN 270,275. Pub. 7-18-67. Filed 4-28-67.

Class 2 — Receptades

836,157. ROL-A-PAK. Kaiser Aluminum & Chemical Corporation. SN 220,857. Pub. 8-2-66. Filed 6-10-65.

836,158. HILL CRAFT HOUSE AND DESIGN. Wilfred C. Sayers. SN 233,284. Pub. 7-18-67. Filed 11-24-65.

836,159. DISPOS-A-CAN. E. I. du Pont de Nemours and Company. SN 241,996. Pub. 7-18-67. Filed 3-28-66.

836,160. MULTIKINI. Deerfield Groves Company. SN 248,981. Pub. 7-18-67. Filed 6-27-66.

836,161. ARLAC CLIP BOY. Carl Fr. Brauer GmbH. SN 249,729. Pub. 7-18-67. Filed 7-7-66.

836,162. PAK-O-PLES-UR. C-Thru Products Inc. SN 249,834. Pub. 7-18-67. Filed 7-8-66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

836,163. SHORTRIP. Shortrip Leather Products Co. MULTIPLE CLASS (Classes 3 and 39). SN 193,502. Pub. 7-18-67. Filed 5-14-64.

836,164. ROCKET. Jack Smith, d.b.a. J-B Ranch Supply Manufacturing and J-B Supply Mfg. SN 248,853. Pub. 7-18-67. Filed 6-23-66.

836,165. DELTA. Sternco Industries, Inc. SN 258,848. Pub. 7-18-67. Filed 11-16-66.

836,166. IDENTIFICATION TAG (DESIGN). American Luggage Works, Inc. SN 259,048. Pub. 7-18-67. Filed 11-21-66.

836,167. PULL-O-MATIC. A. & L. Seamon, Inc. SN 260,967. Pub. 7-18-67. Filed 12-16-66.

836,168. STALLION. United Products Corporation. SN 261,691. Pub. 7-18-67. Filed 12-29-66.

Class 5 — Adhesives

836,169. SWEPCO. Southwestern Petroleum Corporation. SN 240,030. Pub. 7-18-67. Filed 3-2-66.

Class 6 — Chemicals and Chemical Compositions

836,170. TESCO CHEMICALS AND DESIGN. Tesco Chemicals, Inc. SN 211,597. Pub. 7-19-66. Filed 2-8-65.

836,171. L-10. Pennsalt Chemicals Corporation. SN 230,896. Pub. 7-18-67. Filed 10-21-65.

836,172. CLOBBER. Gulf Oil Corporation. SN 235,101. Pub. 7-18-67. Filed 12-22-65.

836,173. HESS. Hess Oil & Chemical Corporation. SN 237,963. Pub. 7-18-67. Filed 2-3-66.

836,174. CAYENOL. Rhodia, Inc. SN 255,459. Pub. 7-18-67. Filed 9-29-66.

836,175. CAYENYL ACETATE. Rhodia, Inc. SN 255,460. Pub. 7-18-67. Filed 9-29-66.

836,176. VELVIONE. Rhodia, Inc. SN 255,461. Pub. 7-18-67. Filed 9-29-66.

836,177. COMPACT. Beatrice Foods Co. SN 255,861. Pub. 7-18-67. Filed 10-6-66.

836,178. ENZECO. Enzyme Development Corporation. SN 257,948. Pub. 7-18-67. Filed 11-4-66.

836,179. UNI-COTE. Process Research, Inc. MULTIPLE CLASS (Classes 6 and 23). SN 260,904. Pub. 7-18-67. Filed 12-16-66.

836,180. LANOLUBRIC. E. F. Houghton & Co. SN 263,324. Pub. 7-18-67. Filed 1-26-67.

Class 7 — Cordage

836,181. SPLENDORETTE. Berwick Textile Products Co. Inc. MULTIPLE CLASS (Classes 7 and 40). SN 257,924. Pub. 7-18-67. Filed 11-4-66.

836,182. LUSTRE-CORD. Norcross, Inc. SN 264,088. Pub. 7-18-67. Filed 2-6-67.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

836,183. SPORTSWAYS. Sportsways, Inc. SN 246,961. Pub. 7-18-67. Filed 5-31-66.

Class 10—Fertilizers

836,184. DIAL. Armour and Company, d.b.a. Armour Agricultural Chemical Company. SN 244,455. Pub. 7–18–67. Filed 4–28–66.

836,185. OCTO SUPREME. Star Fish & Bone Fertilizer Company. SN 249,083. Pub. 7–18–67. Filed 6–27–66.

836,186. BEAUTY BLANKET. MacAndrews & Forbes Company. SN 255,712. Pub. 7–18–67. Filed 10–4–66.

836,187. LUSTRE LAWN. American Cyanamid Company. SN 258,874. Pub. 7–18–67. Filed 11–17–66.

836,188. GRO TABS AND DESIGN. Leslie-Agriform Corporation. SN 259,883. Pub. 7–18–67. Filed 12–2–66.

836,189. ZOOM. Plantabbs Corporation. SN 262,283. Pub. 7–18–67. Filed 1–10–67.

Class 11—Inks and Inking Materials

836,190. ALVCO. Lawter Chemicals, Inc. SN 245,205. Pub. 7–18–67. Filed 5–9–66.

Class 12—Construction Materials

836,191. PELLA. Rolscreen Company. SN 251,748. Pub. 7–18–67. Filed 8–4–66.

836,192. SWINGER. National Homes Corporation. SN 270,101. Pub. 7–18–67. Filed 4–27–67.

836,193. SWINGER AND DESIGN. National Homes Corporation. SN 270,102. Pub. 7–18–67. Filed 4–27–67.

836,194. SWINGER AND DESIGN OF HEART AND ARROW. National Homes Corporation. SN 270,103. Pub. 7–18–67. Filed 4–27–67.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

836,195. SPOT AND DESIGN. Spotnails, Inc. SN 210,164. Pub. 7–18–67. Filed 1–18–65.

836,196. POZ-I-TITE. Phillips Screw Company. SN 249,671. Pub. 7–18–67. Filed 7–6–66.

836,197. PERMA-CLAMP. Federal Screw Works. SN 249,967. Pub. 7–18–67. Filed 7–11–66.

836,198. MINI-OVENS. Dine-Rite Corp. SN 251,397. Pub. 7–18–67. Filed 8–1–66.

836,199. UCON. Union Carbide Corporation. SN 251,970. Pub. 7–18–67. Filed 8–8–66.

836,200. MIN-O-MAL. E. B. Wiggins, Inc. SN 251,979. Pub. 7–18–67. Filed 8–8–66.

836,201. MULTITUBE. Crescent Insulated Wire and Cable Co. SN 252,074. Pub. 7–18–67. Filed 8–10–66.

836,202. SLIDE-A-GRIP. Lavergne I. Lounsbury, d.b.a. "Buck" Lounsbury Associates. SN 252,110. Pub. 7–18–67. Filed 8–10–66.

Class 14—Metals and Metal Castings and Forgings

836,203. VALLOY. General Electric Company. SN 238,347. Pub. 7–18–67. Filed 2–8–66.

836,204. BOROFIL. Texaco Experiment Incorporated. SN 248,555. Pub. 7–18–67. Filed 6–20–66.

836,205. DURXTAL. Haveg Industries, Inc., assignee of A. O. Smith Corporation. SN 248,743. Pub. 7–18–67. Filed 6–22–66.

836,206. DURAVIT. Haveg Industries, Inc., assignee of A. O. Smith Corporation. SN 248,744. Pub. 7–18–67. Filed 6–22–66.

836,207. GEM. Union Vitamin Co. SN 248,865. Pub. 7–18–67. Filed 6–23–66.

836,208. TIBOR. Kawecki Chemical Company. SN 249,164. Pub. 7–18–67. Filed 6–28–66.

836,209. MP. Domtar Limited. SN 249,415. Pub. 7–18–67. Filed 7–1–66.

836,210. CHARGETS. Casting Materials Company, Inc. SN 250,854. Pub. 7–18–67. Filed 7–15–66.

Class 15—Oils and Greases

836,211. MISCELLANEOUS DESIGN. C. J. Webb, Inc., d.b.a. Corrosion Reaction Consultants, and Corrosion Reaction Consultants, Inc. MULTIPLE CLASS (Classes 15 and 52). SN 256,900. Pub. 7–18–67. Filed 10–21–66.

Class 17—Tobacco Products

836,212. WHITE BAND ON CONTRASTING BACKGROUND. The American Tobacco Company. SN 109,225. Pub. 5–15–62. Filed 12–6–60.

836,213. DORAL. R. J. Reynolds Tobacco Company. SN 258,248. Pub. 7–18–67. Filed 11–8–66.

836,214. TANGO. R. J. Reynolds Tobacco Company. SN 258,250. Pub. 7–18–67. Filed 11–8–66.

836,215. COLUMN. R. J. Reynolds Tobacco Company. SN 258,251. Pub. 7–18–67. Filed 11–8–66.

Class 18—Medicines and Pharmaceutical Preparations

836,216. SUPERVESS. Bristol-Myers Company. SN 168,279. Pub. 4–14–64. Filed 5–7–63.

836,217. VITA ELIXIR AND DESIGN. Vita Elixir Company, Inc. SN 223,755. Pub. 7–18–67. Filed 7–20–65.

836,218. DAYSPENSER. Mead Johnson & Company. SN 250,619. Pub. 7–18–67. Filed 7–20–66.

836,219. RHOGAM. Ortho Pharmaceutical Corporation. SN 252,998. Pub. 12–20–66. Filed 8–24–66.

836,220. HYPER-TET. Cutter Laboratories, Inc. SN 254,919. Pub. 7–18–67. Filed 9–22–66.

836,221. DRIXORAL. Schering Corporation. SN 259,028. Pub. 7–18–67. Filed 11–18–66.

836,222. PERIFOAM. Holland-Rantos Company, Inc. SN 263,868. Pub. 7–18–67. Filed 2–3–67.

836,223. MJ. Mead Johnson & Company. SN 265,014. Pub. 7–18–67. Filed 2–20–67.

836,224. MEAD JOHNSON. Mead Johnson & Company. SN 265,137. Pub. 7–18–67. Filed 2–21–67.

836,225. J (DESIGN). Mead Johnson & Company. SN 265,138. Pub. 7–18–67. Filed 2–21–67.

836,226. MJN (DESIGN). Mead Johnson & Company. SN 265,139. Pub. 7–18–67. Filed 2–21–67.

836,227. MEADJ. Mead Johnson & Company. SN 265,140. Pub. 7–18–67. Filed 2–21–67.

836,228. MJ. Mead Johnson & Company. SN 265,249. Pub. 7–18–67. Filed 2–23–67.

Class 19—Vehicles

836,229. FLEX KAR. National Mine Service Company. SN 223,254. Pub. 7–18–67. Filed 7–13–65.

836,230. COMMANDO. Kaiser Jeep Corporation. SN 233,716. Pub. 4–25–67. Filed 12–1–65.

836,231. TRANS-PAC. Marion E. Durham. SN 238,723. Pub. 7–18–67. Filed 2–14–66.

836,232. RANGER. Ford Motor Company. SN 240,287. Pub. 2–7–67. Filed 3–7–66.

836,233. DART. Stencel Aero Engineering Corporation. SN 245,864. Pub. 7–18–67. Filed 5–17–66.

836,234. LIPCO. Long Island Parts Co. MULTIPLE CLASS (Classes 19, 21, 23, 26, 31, and 35). SN 250,304. Pub. 7–18–67. Filed 7–14–66.

836,235. OWEN. Classic Manufacturing, Inc. SN 253,848. Pub. 7–18–67. Filed 9–6–66.

836,236. CLASSIC. Classic Manufacturing, Inc. SN 253,849. Pub. 7–18–67. Filed 9–6–66.

836,237. FAB-PAD. Eagle-Picher Industries, Inc. SN 254,139. Pub. 7–18–67. Filed 9–9–66.

836,238. LUND AND DESIGN. Lund Metalcraft. SN 254,171. Pub. 7–18–67. Filed 9–9–66.

836,239. GLARE-MASTER. Hans Berger. SN 254,226. Pub. 7–18–67. Filed 9–12–66.

836,240. HI-LO. Union Tank Car Company. SN 266,603. Pub. 7–18–67. Filed 3–13–67.

Class 21—Electrical Apparatus, Machines, and Supplies

836,234. (See Class 19 for this trademark.)

836,241. ELECTRO-STEAM. Hays Manufacturing Company. SN 240,737. Pub. 7–18–67. Filed 3–11–66.

836,242. FLORBOSS. Florboss Manufacturing Company. SN 244,479. Pub. 7–18–67. Filed 4–28–66.

836,243. NORELCO. North American Philips Company, Inc. SN 251,317. Pub. 7–18–67. Filed 7–29–66.

836,244. FIC AND DESIGN. Fuse Indicator Corporation. SN 251,535. Pub. 7–18–67. Filed 8–2–66.

836,245. ECCOFLO. Emerson & Cuming, Inc. SN 251,618. Pub. 7–18–67. Filed 8–3–66.

836,246. NORELCO. North American Philips Company, Inc. SN 251,646. Pub. 7–18–67. Filed 8–3–66.

836,247. DIACEL. The Stevens Paper Mills, Inc. SN 253,692. Pub. 7–18–67. Filed 9–1–66.

836,248. NORELCO. North American Philips Company, Inc. SN 259,335. Pub. 7–18–67. Filed 11–23–66.

836,249. AIR KING AND DESIGN. Berns Air King Corporation. SN 267,586. Pub. 7–18–67. Filed 3–27–67.

Class 22—Games, Toys, and Sporting Goods

836,250. SLAM. Matthew M. Finn and Carter B. Finn (joint owners). SN 240,426. Pub. 7–18–67. Filed 3–8–66.

836,251. BUZZ BUZZ BALLS. Hartz Mountain Products Corp. SN 240,736. Pub. 7–18–67. Filed 3–11–66.

836,252. TEI. Toddlers Education, Inc. SN 246,725. Pub. 7–18–67. Filed 5–26–66.

836,253. HOPE-MATH GAMES ETC. AND DESIGN. Franklin Proctor. SN 253,907. Pub. 7–18–67. Filed 9–6–66.

836,254. BRANDING IRON. Thomas A. Tanis, Richard L. Tanis, Ronald Zordan, and Andrew Baravik (joint venture), d.b.a. S & T Putter Co. SN 263,991. Pub. 7–18–67. Filed 2–6–67.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

836,179. (See Class 6 for this trademark.)

836,234. (See Class 19 for this trademark.)

836,255. G GRAY AND DESIGN. Gray Manufacturing Company. SN 217,889. Pub. 7–5–66. Filed 5–3–65.

836,256. CHIEF. Clinton Engines Corporation. SN 239,728. Pub. 7–18–67. Filed 2–28–66.

836,257. TRENCHWENCH AND DESIGN. Scott Trencher Co. SN 246,374. Pub. 7–18–67. Filed 5–23–66.

836,258. BIJUR VERIMATIC. Bijur Lubricating Corporation. SN 247,569. Pub. 7–18–67. Filed 6–8–66.

836,259. ZIP SNIP. Frank W. Earnest, Jr., d.b.a. Frank Earnest Company. SN 248,026. Pub. 7–18–67. Filed 6–14–66.

836,260. APOLLO AND DESIGN. Morse Industries, Inc. SN 250,100. Pub. 7–18–67. Filed 7–12–66.

836,261. PUTNAM. United-Greenfield Corporation. SN 250,194. Pub. 7–18–67. Filed 7–13–66.

836,262. BAIL-O-MATIC. Bail-O-Matic Machine Company, Incorporated. SN 250,340. Pub. 7–18–67. Filed 7–15–66.

836,263. BLUE MERIDIAN AND DESIGN. Blue Meridian Company, Inc. SN 250,447. Pub. 7–18–67. Filed 7–18–66.

836,264. ROLL-O-TRONIC. Omark Industries, Inc. SN 251,456. Pub. 7–18–67. Filed 8–1–66.

836,265. DUO-TRONIC. Omark Industries, Inc. SN 251,457. Pub. 7–18–67. Filed 8–1–66.

836,266. ASCOT. Perma Sharp Manufacturing Corp. SN 251,744. Pub. 7–18–67. Filed 8–4–66.

836,267. RANGER. Clark Equipment Company. SN 251,797. Pub. 7–18–67. Filed 8–5–66.

836,268. RICHARD HUDNUT. Richard Hudnut. MULTIPLE CLASS (Classes 23, 51, and 52). SN 253,192. Pub. 7–18–67. Filed 8–26–66.

836,269. TURF-TRIM. National Cooperatives, Inc. SN 253,776. Pub. 7–18–67. Filed 9–2–66.

836,270. ST REGIS. St. Regis Paper Company. SN 256,313. Pub. 7–18–67. Filed 10–12–66.

Class 24—Laundry Appliances and Machines

836,271. WONDERVAC. Southern Mills, Inc. SN 248,854. Pub. 7–18–67. Filed 6–23–66.

836,272. VHQ. Borg-Warner Corporation. SN 251,118. Pub. 7–18–67. Filed 7–27–66.

Class 26—Measuring and Scientific Appliances

836,234. (See Class 19 for this trademark.)

836,273. SILHOUETTE AND DESIGN. A. Schmied Kommanditgesellschaft. SN 230,710. Pub. 7–18–67. Filed 10–20–65.

836,274. FOTORITE AND DESIGN. Fotorite, Inc. SN 236,484. Pub. 12–27–66. Filed 1–14–66.

836,275. RUDDICATOR. Chambers & Chambers. SN 246,266. Pub. 7–18–67. Filed 5–23–66.

836,276. TASCO. Tasco Sales Inc. SN 246,401. Pub. 7–18–67. Filed 5–23–66.

836,277. PHOTOTAC. General Time Corporation, assignee of Astrosonics, Incorporated. SN 246,851. Pub. 7–18–67. Filed 5–31–66.

836,278. TOUCH-A-MATIC. The General Fireproofing Company. SN 251,127. Pub. 7–18–67. Filed 7–27–66.

836,279. FOTRON AND DESIGN. Traid Corporation. SN 251,485. Pub. 7–18–67. Filed 8–1–66.

836,280. SERVOLARM. Servo Corporation of America. SN 251,657. Pub. 7–18–67. Filed 8–3–66.

836,281. LCOKOUT. General Time Corporation. SN 251,812. Pub. 7–18–67. Filed 8–5–66.

836,282. INSTATECH. Eastman Kodak Company. SN 252,648. Pub. 7–18–67. Filed 8–18–66.

836,283. OZOMAT. Hampden Test Equipment Limited. SN 268,663. Pub. 7–18–67. Filed 3–20–67.

Class 27 — Horological Instruments

836,284. GSELL. R. Gsell & Co., Inc. SN 249,641. Pub. 7–18–67. Filed 7–6–66.

836,285. BROKEN CIRCLE (DESIGN). Vacuum Chronometer Corporation. SN 250,542. Pub. 7–18–67. Filed 7–18–66.

Class 30 — Crockery, Earthenware, and Porcelain

836,286. FANTASIA. Castleton China, Inc. SN 248,114. Pub. 7–18–67. Filed 6–15–66.

836,287. MADRIGAL. Castleton China, Inc. SN 248,115. Pub. 7–18–67. Filed 6–15–66.

836,288. FOREVER AFTER. Castleton China, Inc. SN 248,116. Pub. 7–18–67. Filed 6–15–66.

836,289. ARIA. Castleton China, Inc. SN 248,117. Pub. 7–18–67. Filed 6–15–66.

836,290. QUADRILLE. Castleton China, Inc. SN 248,119. Pub. 7–18–67. Filed 6–15–66.

Class 31 — Filters and Refrigerators

836,234. (See Class 19 for this trademark.)

836,291. ST REGIS. St. Regis Paper Company. SN 256,235. Pub. 7–18–67. Filed 10–11–66.

836,292. COLD POWER IV. PepsiCo, Inc. SN 258,348. Pub. 7–18–67. Filed 11–10–66.

Class 32 — Furniture and Upholstery

836,293. DURA-FIRM. National Mattress Company. SN 236,838. Pub. 10–4–66. Filed 1–19–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

836,294. COPPERAD. Thermal Metal Products Corporation. SN 240,364. Pub. 10–18–66. Filed 3–7–66.

836,295. INFRA-GLO. Eclipse Fuel Engineering Co. SN 252,364. Pub. 7–18–67. Filed 8–15–66.

836,296. CENTRITHERM. Westinghouse Electric Corporation. SN 252,437. Pub. 7–18–67. Filed 8–15–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

836,234. (See Class 19 for this trademark.)

836,297. AP. AP Parts Corporation. SN 252,632. Pub. 7–18–67. Filed 8–18–66.

Class 36 — Musical Instruments and Supplies

836,298. REVERSATILE. Rheem Manufacturing Company. SN 231,714. Pub. 7–18–67. Filed 10–28–65.

836,299. ROVING REPORTER. Rheem Manufacturing Company. SN 231,715. Pub. 7–18–67. Filed 10–28–65.

836,300. SWINGER. Emenee Industries, Inc. SN 232,200. Pub. 7–18–67. Filed 11–5–65.

836,301. CARPLAYS. Fletcher Smith Studios, Inc. SN 247,725. Pub. 7–18–67. Filed 6–9–66.

836,302. CARBOOKS. Fletcher Smith Studios, Inc. SN 247,726. Pub. 7–18–67. Filed 6–9–66.

836,303. KIDDY CARBOOKS. Fletcher Smith Studios, Inc. SN 247,727. Pub. 7–18–67. Filed 6–9–66.

836,304. AUTOBOOKS. Fletcher Smith Studios, Inc. SN 247,728. Pub. 7–18–67. Filed 6–9–66.

836,305. CARTOURS. Fletcher Smith Studios, Inc. SN 247,729. Pub. 7–18–67. Filed 6–9–66.

836,306. SEAWAY. Seaway Stereo Inc. SN 248,741. Pub. 7–18–67. Filed 6–22–66.

836,307. FLAMINGO. Flamingo Records, Inc. SN 249,150. Pub. 7–18–67. Filed 6–28–66.

836,308. PANTHER. Avnet, Inc., assignee of Goya Music Corporation. SN 249,427. Pub. 7–18–67. Filed 7–1–66.

836,309. DISK-GO-CASE. Charter Industries Incorporated. SN 250,241. Pub. 7–18–67. Filed 7–14–66.

836,310. IDEA. Idea Records. SN 251,219. Pub. 7–18–67. Filed 7–28–66.

Class 37 — Paper and Stationery

836,311. LI AND DESIGN. Litton Industries, Inc. SN 238,252. Pub. 7–11–67. Filed 2–7–66.

836,312. REGENCE. Imperial Wallpaper Mill, Inc. SN 246,081. Pub. 7–18–67. Filed 5–19–66.

836,313. THRIF-T. Sorg Products Co. SN 251,839. Pub. 7–18–67. Filed 8–5–66.

836,314. ART 'N CHART. Magic Marker Corporation. SN 255,907. Pub. 7–18–67. Filed 10–6–66.

836,315. PLASTICO U-BACK. Plastic Binding Corporation. SN 257,646. Pub. 7–18–67. Filed 10–31–66.

836,316. VISIGRAPH. Herbert Walter Menninger, d.b.a. Merico Printing. SN 257,789. Pub. 7–18–67. Filed 11–2–66.

836,317. PINATA. Peninsular Paper Co. SN 257,885. Pub. 7–18–67. Filed 11–3–66.

836,318. EXEC-SEC. Lindy Pen Company Incorporated. SN 258,123. Pub. 7–18–67. Filed 11–7–66.

836,319. VU-KOLOR. Ozark Pencil Company. SN 268,921. Pub. 7–18–67. Filed 4–12–67.

836,320. BUCKSKIN. Kimberly-Clark Corporation. SN 269,830. Pub. 7–18–67. Filed 4–24–67.

Class 38 — Prints and Publications

836,321. LAROUSSE. Auge, Gilion, Hollier-Larousse, Moreau and Company. SN 241,017. Pub. 7–18–67. Filed 3–15–66.

836,322. ZOOM. Denny Corporation. SN 246,891. Pub. 7–18–67. Filed 5–31–66.

836,323. TSM. The Reuben H. Donnelley Corporation. SN 247,903. Pub. 7–18–67. Filed 6–13–66.

836,324. MR. STEAMSHIP. Antonio Adelfio, d.b.a. Bethesda Travel Center. SN 250,816. Pub. 7–18–67. Filed 7–22–66.

836,325. HIGHWAY USER. National Highway Users Conference, Inc. SN 250,989. Pub. 7–18–67. Filed 7–25–66.

836,326. VISUAL COMMUNICATIONS INSTRUCTOR. Syndicate Magazines, Inc. SN 251,014. Pub. 7–18–67. Filed 7–25–66.

836,327. FAST FOOD. Fast Food Service, Inc. SN 259,237. Pub. 7–18–67. Filed 11–22–66.

Class 39 — Clothing

836,145. (See Class 1 for this trademark.)

836,163. (See Class 3 for this trademark.)

836,328. DISCOTHEQUE. Revelation Bra Co., Inc. SN 227,520. Pub. 6–21–66. Filed 9–9–65.

836,329. FOLK SONGS. Admiral Shoe Corporation, d.b.a. Mutual Shoe Sales Company. SN 241,838. Pub. 7–18–67. Filed 3–25–66.

836,330. THERMO-JAC LOW-DOWNS. The Grove Company. SN 242,592. Pub. 7–18–67. Filed 4–4–66.

836,331. LOG-MASTER. International Seaway Trading Corp. SN 244,116. Pub. 7–18–67. Filed 4–22–66.

836,332. SUNLOVERS. Consolidated International Trading Corporation. SN 244,468. Pub. 7–18–67. Filed 4–28–66.

836,333. SHOE BANK. Shoe Bank, Inc. SN 245,760. Pub. 7–18–67. Filed 5–16–66.

836,334. RIEN DE SCANDALE. La Gaine Scandale. SN 250,381. Pub. 7–18–67. Filed 7–15–66.

836,335. LORELL OF CALIFORNIA AND DESIGN. Bert R. Lorell, assignee of Al Vicks Sportswear. SN 251,760. Pub. 7–18–67. Filed 8–4–66.

836,336. MANN AND DESIGN. Mann Manufacturing, Inc. SN 252,267. Pub. 7–18–67. Filed 8–12–66.

836,337. LADY JAMES. Jamesway Corporation. SN 256,843. Pub. 7–18–67. Filed 10–20–66.

836,338. JOHN PEEL AND DESIGN. J. P. Casuals, Inc. SN 258,197. Pub. 7–18–67. Filed 11–8–66.

836,339. KEYHOLE LIMPET SHELL. Maidenform, Inc. SN 266,617. Pub. 7–18–67. Filed 3–14–67.

836,340. SWEET LIMPET SHELL. Maidenform, Inc. SN 266,618. Pub. 7–18–67. Filed 3–14–67.

836,341. DELECTABLES. Maidenform, Inc. SN 270,030. Pub. 7–18–67. Filed 4–26–67.

Class 40 — Fancy Goods, Furnishings, and Notions

836,181. (See Class 7 for this trademark.)

836,342. INSTANT ELEGANCE AND DESIGN. Reynolds-Palms Export & Import Company Incorporated. SN 257,087. Pub. 7–18–67. Filed 10–24–66.

836,343. HOLLY WIG. Miller-Rogers, Inc. SN 259,951. Pub. 7–18–67. Filed 12–2–66.

836,344. FRIVOLASH "THE UNDETECTABLES." Tourneur Salons, Inc., d.b.a. Tourneur Cosmetics. SN 262,656. Pub. 7–18–67. Filed 1–17–67.

836,345. JIFFY. Bac-A-Brand Products, Inc. SN 262,753. Pub. 7–18–67. Filed 1–18–67.

836,346. MANDARIN WIG. Chicago Trading Corp. SN 263,017. Pub. 7–18–67. Filed 1–23–67.

836,347. STEAMSET. Popeil Brothers, Inc. SN 265,239. Pub. 7–18–67. Filed 2–23–67.

836,348. WIGS BY AURORA. Fashion Tress, Inc. SN 266,711. Pub. 7–18–67. Filed 3–15–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

836,349. HONESTY TUFTING AND DESIGN. Callaway Mills Company. SN 247,326. Pub. 7–18–67. Filed 6–6–66.

836,350. SI BONNE. Crown Textile Mfg. Corp. SN 256,529. Pub. 7–18–67. Filed 10–17–66.

836,351. TOPCO. Topco Associates, Inc. SN 257,669. Pub. 7–18–67. Filed 10–31–66.

836,352. TEXTURE-PUFT. Cannon Mills Company. SN 260,818. Pub. 7–18–67. Filed 12–15–66.

836,353. CHALIDALE. J. P. Stevens & Co., Inc. SN 261,167. Pub. 7–18–67. Filed 12–20–66.

836,354. RAINGARD. Western Textile Co. Inc. SN 266,979. Pub. 7–18–67. Filed 3–17–67.

836,355. HAVERSTOCK. Deering Milliken, Inc. SN 269,034. Pub. 7–18–67. Filed 4–13–67.

Class 43 — Thread and Yarn

836,356. JEUX D'ENFANTS. Compagnie Francaise de Bonneterie. SN 249,954. Pub. 7–18–67. Filed 7–11–66.

Class 44 — Dental, Medical, and Surgical Appliances

836,357. QUARTERBACK. Baka Manufacturing Company, Inc. SN 257,687. Pub. 7–18–67. Filed 11–1–66.

836,358. VIS-A-CUP. American Hospital Supply Corporation. SN 257,749. Pub. 7–18–67. Filed 11–2–66.

836,359. RES-Q-AIRE. Machsa, Incorporated. SN 258,126. Pub. 7–18–67. Filed 11–7–66.

836,360. KWIK-TORK. S. S. White Company. SN 258,253. Pub. 7–18–67. Filed 11–8–66.

836,361. ADMIRAL. Save Way Barber & Beauty Supplies, Inc. SN 258,254. Pub. 7–18–67. Filed 11–8–66.

836,362. SOFT SHAPE. The Procter & Gamble Company. MULTIPLE CLASS (Classes 44 and 51). SN 265,862. Pub. 7–18–67. Filed 3–3–67.

836,363. DEVRO AND DESIGN. Johnson & Johnson, d.b.a. Devro. SN 266,665. Pub. 7–18–67. Filed 3–14–67.

Class 45 — Soft Drinks and Carbonated Waters

836,364. SUPER-D. Dover Chemical Corporation. SN 255,296. Pub. 7–18–67. Filed 9–28–66.

836,365. SURF RIDER. PepsiCo, Inc. SN 270,454. Pub. 7–18–67. Filed 5–2–67.

Class 46 — Foods and Ingredients of Foods

836,366. NUTRI-CAL. Con-Stan Industries, Inc., assignee of Nutritional Science Corporation. SN 223,152. Pub. 4–4–67. Filed 7–12–65.

836,367. COUNTRY SQUIRE. Floyd M. Morris. SN 224,872. Pub. 7–26–66. Filed 8–3–65.

836,368. COBBETTS. North Pacific Canners & Packers, Inc. SN 226,765. Pub. 7–18–67. Filed 8–30–65.

836,369. NIXON. Nebraska Consolidated Mills Company, by merger from Nixon & Company. SN 228,480. Pub. 2–14–67. Filed 9–23–65.

836,370. REPRESENTATION OF A MALE FIGURE. Francisco Arevalo, d.b.a. American Trade Company. SN 232,941. Pub. 7–18–67. Filed 11–17–65.

836,371. FULFIL. Mead Johnson & Company. SN 237,466. Pub. 7–18–67. Filed 1–28–66.

836,372. GOURMET FEAST. The Quaker Oats Company. SN 237,872. Pub. 7–18–67. Filed 2–2–66.

836,373. SALTETTE. International Salt Company. SN 238,742. Pub. 7-18-67. Filed 2-14-66.

836,374. PEPPERETTE. International Salt Company. SN 238,744. Pub. 7-18-67. Filed 2-14-66.

836,375. ISLAND KITCHEN. John Krauss, Incorporated. SN 240,525. Pub. 7-18-67. Filed 3-9-66.

836,376. GODIVA. Godiva S.p.r.l., assignee of Godiva. SN 241,040. Pub. 7-4-67. Filed 3-15-66.

836,377. KETCH-APP. Duffy-Mott Company, Inc. SN 241,331. Pub. 7-18-67. Filed 3-18-66.

836,378. GILLS HOTEL SPECIAL AND DESIGN. The James G. Gill Company, Inc. SN 242,003. Pub. 7-18-67. Filed 3-28-66.

836,379. TIP TOP AND DESIGN. Ward Foods, Inc. SN 242,521. Pub. 7-18-67. Filed 4-1-66.

836,380. CONTESSA. USP Corporation. SN 243,810. Pub. 7-18-67. Filed 4-19-66.

836,381. MESA SWEET AND DESIGN. Consolidated Citrus Growers. SN 244,194. Pub. 7-18-67. Filed 4-25-66.

836,382. SLIM CRINKLES. Ore-Ida Foods, Inc. SN 245,947. Pub. 7-18-67. Filed 5-18-66.

836,383. COLONIAL. Colonial Provision Company, Inc. SN 246,236. Pub. 11-8-66. Filed 5-23-66.

836,384. NANCE'S. Nance Delmarle Co., Inc. SN 247,245. Pub. 7-18-67. Filed 6-3-66.

836,385. CERATEX AND DESIGN. J. R. Short Milling Company. SN 248,642. Pub. 7-18-67. Filed 6-21-66.

836,386. SAGA. Dairy Technics, Inc. SN 248,979. Pub. 7-18-67. Filed 6-27-66.

836,387. AIRE FREEZ. General Foods Corporation. SN 249,234. Pub. 7-18-67. Filed 6-29-66.

836,388. FLAVOR TEX AND DESIGN. Food Research, Inc. SN 249,604. Pub. 7-18-67. Filed 7-5-66.

836,389. BEEF-O-GHETTI. American Home Products Corporation. SN 249,900. Pub. 7-18-67. Filed 7-7-66.

836,390. TOP TREAT. National Tea Co. SN 250,506. Pub. 7-18-67. Filed 7-18-66.

836,391. RUMENATOR. John W. Eshelman & Sons. SN 250,750. Pub. 7-18-67. Filed 7-21-66.

836,392. S-O-S. John W. Eshelman & Sons. SN 250,751. Pub. 7-18-67. Filed 7-21-66.

836,393. EQUINADER. John W. Eshelman & Sons. SN 250,752. Pub. 7-18-67. Filed 7-21-66.

836,394. SPRINT AND DESIGN. Doane Feed Products Company. SN 250,942. Pub. 7-18-67. Filed 7-25-66.

836,395. RIB-IN-THE-CRADLE. Armour and Company. SN 251,171. Pub. 7-18-67. Filed 7-28-66.

836,396. CHICKEN OF THE SEA. Ralston Purina Company. SN 251,237. Pub. 7-18-67. Filed 7-28-66.

836,397. SALADAISE. Superior Tea & Coffee Co. SN 251,249. Pub. 7-18-67. Filed 7-28-66.

836,398. MERMAID (DESIGN). Ralston Purina Company. SN 251,334. Pub. 7-18-67. Filed 7-29-66.

836,399. TOWN & COUNTRY. Sweet Candy Company. SN 251,340. Pub. 7-18-67. Filed 7-29-66.

836,400. CARE FREE AND DESIGN. Beech-Nut Life Savers, Inc., d.b.a. Beech-Nut. SN 252,242. Pub. 7-18-67. Filed 8-12-66.

836,401. JUBILEE. Tri-Valley Growers. SN 252,299. Pub. 7-18-67. Filed 8-12-66.

836,402. CAVERN AND DESIGN. American Mushroom Corporation. SN 252,451. Pub. 7-18-67. Filed 8-16-66.

836,403. W AND DESIGN. Gerber Cheese Co., Inc. SN 252,733. Pub. 7-18-67. Filed 8-19-66.

836,404. GRO-MOR. Farmers Exchange, Inc. SN 253,213. Pub. 7-18-67. Filed 8-26-66.

836,405. HOB-NOBS. The Borden Company. SN 253,277. Pub. 7-18-67. Filed 8-29-66.

836,406. PANDA. International Food Patent N.V. SN 253,315. Pub. 7-18-67. Filed 8-29-66.

836,407. ORANGE PUNCH. The Quaker Oats Company. SN 253,336. Pub. 7-18-67. Filed 8-29-66.

836,408. LEMON PUNCH. The Quaker Oats Company. SN 253,338. Pub. 7-18-67. Filed 8-29-66.

836,409. CHOCOL-ART AND DESIGN. Travelers Delight, Inc. SN 253,364. Pub. 7-18-67. Filed 8-29-66.

836,410. MALTABELLA. Hind Bros. & Company Limited. SN 260,990. Pub. 7-18-67. Filed 7-26-66.

836,411. OUR HOME GUARDED FLAVOR. Colonial Provision Company, Inc. SN 262,319. Pub. 7-18-67. Filed 1-11-67.

836,412. TASTY BREAKS. Tasty Baking Company. SN 263,326. Pub. 7-18-67. Filed 1-26-67.

836,413. ROUSH'S HONEY-GRAIN AND DESIGN. Roush Bakery Products Company, Inc. SN 263,648. Pub. 7-18-67. Filed 1-31-67.

836,414. HICKORY HEARTH. American Home Products Corporation. SN 263,721. Pub. 7-18-67. Filed 2-1-67.

836,415. PABLUM. Mead Johnson & Company. SN 263,796. Pub. 7-18-67. Filed 2-2-67.

836,416. PABLUM. Mead Johnson & Company. SN 263,797. Pub. 7-18-67. Filed 2-2-67.

836,417. MISSOURI OLD HICKORY. Missouri Hickory Barbecue Corporation. SN 267,585. Pub. 7-18-67. Filed 3-27-67.

836,418. PAT FARMS AND DESIGN. Patterson Farms, Inc. SN 269,257. Pub. 7-18-67. Filed 4-17-67.

836,419. E FOR ECKEL. Eckel Produce Company. SN 269,387. Pub. 7-18-67. Filed 4-18-67.

Class 48 — Malt Beverages and Liquors

836,420. GEORGIA PINE. Century Brewery Corporation. SN 244,883. Pub. 7-18-67. Filed 5-4-66.

836,421. STERN. Stern-Brauerei Carl Funke A.G. SN 255,476. Pub. 7-18-67. Filed 9-29-66.

836,422. DESIGN OF STAR IN COLOR. Stern-Brauerei Carl Funke A.G. SN 255,478. Pub. 7-18-67. Filed 9-29-66.

836,423. BLACK AND WHITE STAR (DESIGN). Stern-Brauerei Carl Funke A.G. SN 255,479. Pub. 7-18-67. Filed 9-29-66.

Class 49 — Distilled Alcoholic Liquors

836,424. THE BOTTLED ROMANCE OF MEXICO. Destileria de Tequila Sauza, S.A. SN 235,393. Pub. 7-18-67. Filed 12-28-65.

836,425. WILLIAM THE CONQUEROR. H. Stenham Limited, d.b.a. Glen Rankin Blending Co. SN 254,816. Pub. 7-18-67. Filed 9-20-66.

836,426. H.B.C. H. Stenham Limited, d.b.a. Highland Blending Company. SN 254,817. Pub. 7-18-67. Filed 9-20-66.

836,427. MARTIN MILLS. Heaven Hill Distilleries, Inc., d.b.a. Martin Mills Distilling Co. SN 255,089. Pub. 7-18-67. Filed 9-26-66.

Class 50 — Merchandise Not Otherwise Classified

836,428. PRENTIQUES. Joan Engelman and Barbara Palmer (partnership), d.b.a. Banjo. SN 250,467. Pub. 7-18-67. Filed 7-18-66.

836,429. OLDE TOWER. Halo Sales Corporation, d.b.a. Olde Tower Sealing Wax. SN 257,126. Pub. 7-18-67. Filed 10-25-66.

836,430. LORE. W. Goebel Porzellanfabrik Oeslau und Wilhelmsfeld. SN 257,707. Pub. 7-18-67. Filed 11-1-66.

836,431. VUE. Vue Incorporated. SN 258,624. Pub. 7-18-67. Filed 11-14-66.

836,432. SEABARTS AND DESIGN. Kenneth S. Bartlett. SN 260,515. Pub. 7-18-67. Filed 12-12-66.

836,433. INSTANT ROMANCE. Staton Lorenz. SN 261,222. Pub. 7-18-67. Filed 12-21-66.

836,434. WIFE BEATER. Quon-Quon Company. SN 267,587. Pub. 7-18-67. Filed 3-27-67.

Class 51 — Cosmetics and Toilet Preparations

836,268. (See Class 23 for this trademark.)

836,362. (See Class 44 for this trademark.)

836,435. CARNABY. Yardley of London, Inc. SN 241,113. Pub. 7-18-67. Filed 3-15-66.

836,436. THE CARNABY LOOK. Yardley of London, Inc. SN 241,114. Pub. 7-18-67. Filed 3-15-66.

836,437. BAN. Bristol-Myers Company. SN 253,006. Pub. 7-18-67. Filed 8-24-66.

836,438. FOR GALS AND DESIGN. Wayne L. Troutner. SN 253,166. Pub. 7-18-67. Filed 8-24-66.

836,439. AUDITION. Private Brands, Inc. SN 253,679. Pub. 7-18-67. Filed 9-1-66.

836,440. WHAT'S NEW. Clairol Incorporated. SN 254,115. Pub. 7-18-67. Filed 9-9-66.

836,441. SUNDRESSING. Clairol Incorporated. SN 254,121. Pub. 7-18-67. Filed 9-9-66.

836,442. SCOTLAND YARD. Helene Curtis Industries, Inc., d.b.a. Helene Curtis. SN 254,259. Pub. 7-18-67. Filed 9-12-66.

836,443. GOOD NIGHT. Yardley of London, Inc. SN 254,416. Pub. 7-18-67. Filed 9-13-66.

836,444. STEP LOVELY. Helena Rubinstein, Inc. SN 255,357. Pub. 7-18-67. Filed 9-28-66.

836,445. ATROGENE. R. H. Laird Manufacturing Company, Inc., d.b.a. Rose Laird. SN 256,944. Pub. 7-18-67. Filed 10-21-66.

836,446. SUNDRESSING. Clairol Incorporated. SN 258,056. Pub. 7-18-67. Filed 11-7-66.

836,447. PRIVATE WORLD. Pearl-Wick Corporation. MULTIPLE CLASS (Classes 51 and 52). SN 261,905. Pub. 7-18-67. Filed 1-4-67.

836,448. BAY WOOD. Eversharp, Inc. SN 267,381. Pub. 7-18-67. Filed 3-23-67.

Class 52 — Detergents and Soaps

836,211. (See Class 15 for this trademark.)

836,268. (See Class 23 for this trademark.)

836,447. (See Class 51 for this trademark.)

836,449. ALL OUT. Damon Chemical Company, Inc. SN 190,791. Pub. 11-17-64. Filed 4-10-64.

836,450. CLEARSAND. American Swimming Pools. SN 247,664. Pub. 7-18-67. Filed 6-9-66.

836,451. CRC AND DESIGN. C. J. Webb, Inc. SN 263,647. Pub. 7-18-67. Filed 1-31-67.

836,452. EYECESSORIES. The Hilsinger Corporation. SN 270,201. Pub. 7-18-67. Filed 4-28-67.

Service Marks

Class 100 — Miscellaneous

836,453. MOLECULON. Moleculon Research Corporation. SN 244,057. Pub. 7-18-67. Filed 4-22-66.

836,454. ARBAUGH'S. Arbaugh's Restaurant, Inc., d.b.a. Arbaugh's. SN 255,498. Pub. 7-18-67. Filed 9-30-66.

836,455. ASTRA. Altrusa International, Inc. SN 258,273. Pub. 7-18-67. Filed 11-9-66.

836,456. BURGER-TERIA. Satellite Systems, Inc. SN 262,199. Pub. 7-18-67. Filed 1-9-67.

836,457. CHICKEN TONY'S CHICKEN SPAGHETTI AND DESIGN. Chicken Tony's, Inc., assignee of The Dog House, Inc. SN 263,320. Pub. 7-18-67. Filed 1-26-67.

Class 101 — Advertising and Business

836,458. FOCUS. Duane C. Bowen, d.b.a. Focus National Employment Service. SN 229,750. Pub. 7-18-67. Filed 10-11-65.

836,459. EXECUTIVE. H & R Block, Inc. SN 251,817. Pub. 7-18-67. Filed 8-5-66.

836,460. BEST & CO. McCrory Corporation. SN 266,277. Pub. 7-18-67. Filed 3-9-67.

836,461. HEEL 'N TOE. Eck's Shoes, Inc. SN 269,151. Pub. 7-18-67. Filed 4-14-67.

836,462. SAFEWAY JR. Safeway Stores, Incorporated. SN 270,315. Pub. 7-18-67. Filed 5-1-67.

Class 102 — Insurance and Financial

836,463. MISCELLANEOUS DESIGN. Clayton Federal Savings and Loan Association. SN 233,206. Pub. 3-7-67. Filed 11-23-65.

836,464. CHECK-A-MATIC. Associates Investment Company. SN 251,872. Pub. 7-18-67. Filed 8-8-66.

Class 103 — Construction and Repair

836,465. SIMONIZ. Simoniz Company. SN 269,252. Pub. 7-18-67. Filed 4-17-67.

Class 104 — Communication

836,466. KAISER. Kaiser Industries Corporation. SN 248,811. Pub. 7-18-67. Filed 6-23-66.

Class 105 — Transportation and Storage

836,467. WARD ETC. AND DESIGN. Thomas H. Ward, Jr. SN 251,672. Pub. 7-18-67. Filed 8-3-66.

Class 106 — Material Treatment

836,468. ADESIFOB. Guy Mathelin. SN 233,857. Pub. 7-18-67. Filed 10-22-65.

Class 107 — Education and Entertainment

836,469. BE OUR GUEST. Avco Broadcasting Corporation. SN 248,288. Pub. 7-18-67. Filed 6-17-66.

836,470. IT'S YOUR TURN TO TALK. The Voice of Orange Empire, Inc., Ltd. SN 270,323. Pub. 7-18-67. Filed 5-1-67.

Certification Marks

Class A — Goods

836,471. TALL FESCUE AND DESIGN. Kentucky Seed Improvement Association, Inc. SN 249,475. Pub. 7-18-67. Filed 7-5-66.

836,472. TIMOTHY AND DESIGN. Kentucky Seed Improvement Association, Inc. SN 249,476. Pub. 7-18-67. Filed 7-5-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 10 — Fertilizers

836,473. William Mihelich, d.b.a. Mihelich Nursery, Warren, Mich. SN 232,842. Filed P.R. 11-17-65; Am. S.R. 8-7-67.

WOODSY LOAM

For Mulch.
First use Mar. 1, 1965.

Class 12 — Construction Materials

836,474. Basic Incorporated, Cleveland, Ohio. SN 236,455. Filed P.R. 1-14-66; Am. S.R. 8-7-67.

GUNBLEND

For Granular Refractory Materials Suitable for Furnace Lining and Repairing.
First use Nov. 19, 1965.

836,475. Herbert J. Slade, d.b.a. Window Well Cover Co., Prospect Heights, Ill. SN 247,072. Filed P.R. 6-1-66; Am. S. R. 8-4-67.

WINDO-WELL

For Covers for Basement Window Wells.
First use Mar. 10, 1966.

Class 16 — Protective and Decorative Coatings

836,476. Brame Textile Machine Co., Greensboro, N.C. SN 153,618. Filed P.R. 9-21-62; Am. S.R. 7-25-67.

BRAME MATTE FINISH

For Chromium Matte Finish Coating Forming a Component Part of Caps, Slub Catchers and Other Component Parts for Textile Spinning Machines, Looms and Other Textile Machinery and the Like.
First use January 1960.

Class 37 — Paper and Stationery

836,477. The Hensley Company, Chicago, Ill. SN 248,806. Filed P.R. 6-23-66; Am. S.R. 7-14-67.

CARDOLETTER

For Combination Envelope, Letter, and Return Cards.
First use Jan. 25, 1946.

Class 38 — Prints and Publications

836,478. Norcross, Inc., New York, N.Y. SN 189,009. Filed P.R. 3-18-64; Am. S.R. 2-21-66.

FOR YOUR PERSONAL GREETINGS

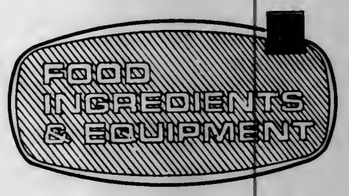
For Greeting Cards and Greeting Card Folders.
First use Aug. 7, 1963.

836,479. Gulf Publishing Company, Houston, Tex., assignee of Ivan W. Mangone, d.b.a. Ocean Industry Co., Houston, Tex. SN 251,307. Filed P.R. 7-29-66; Am. S.R. 8-2-67.

OCEAN INDUSTRY

For Monthly Magazine.
First use Feb. 1, 1966.

836,480. Putman Publishing Company, Chicago, Ill. SN 253,335. Filed P.R. 8-29-66; Am. S.R. 8-16-67.



The drawing is lined for green, but color is not an essential feature of the mark.
For Magazine.
First use July 29, 1966.

836,481. Gibson Greeting Cards, Inc., Cincinnati, Ohio. SN 257,009. Filed P.R. 10-24-66; Am. S.R. 6-2-67.



For Greeting Cards.
First use Apr. 12, 1966.

Class 46 — Foods and Ingredients of Foods

836,482. The Schwebel Baking Company, Youngstown, Ohio. SN 230,906. Filed P.R. 10-21-65; Am. S.R. 6-14-67.

Schwebel's GOLDEN

For Fresh Bread.
First use Nov. 13, 1953.

Class 48 — Malt Beverages and Liquors

836,483. Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. SN 263,464. Filed 1-27-67.

HOLLAND'S PROUD BREW

For Beer.
First use Apr. 1, 1965; in commerce Apr. 1, 1965.

TRADEMARK REGISTRATIONS RENEWED

61,962. LOG CABIN. Cl. 46. 4-9-07.
65,279. P. & B. Cl. 16. 9-17-07.
65,397. GASTRON. Cl. 18. 9-24-07.
66,420. ERICO. Cl. 21. 11-26-07.
66,854. STAR AND ANCHOR (DESIGN). Cl. 23. 12-31-07.
67,010. BAR HEAD (DESIGN). Cl. 13. 1-14-08.
146,488. INGERSOLL-RAND. Cl. 23. 9-6-21.
209,292. COPELAND. Cl. 31. 2-16-26.
227,611. ADAMS BLACK JACK CHEWING GUM AND DESIGN. Cl. 46. 5-10-27.
229,712. THE RUSSIAN INSCRIPTION OF THE WORD CATERPILLAR. Cl. 23. 7-5-27.
230,731. "JOHNSON'S" AND REPRESENTATION OF A PIECE OF SOLDER. Cl. 34. 8-2-27.
231,221. CLEAR WATER. Cl. 46. 8-16-27.
231,273. XACTO METER. Cl. 26. 8-16-27.
231,688. SUPRE-MACY. Cl. 42. 8-23-27.
232,093. INTERWOVEN TOE AND HEEL AND DESIGN. Cl. 39. 8-30-27.
232,264. TREASURE. Cl. 46. 9-6-27,
232,607. "AIR-TRED" ETC. AND DESIGN. Cl. 39. 9-13-27.
232,824. PINK BAND ENCIRCLING A PENCIL. Cl. 37. 9-20-27.
232,837. MAY POLE AND DESIGN. Cl. 46. 9-20-27.
232,876. ES BE CO. Cl. 46. 9-20-27.
233,204. AVERTIN. Cl. 18. 9-27-27.
233,637. TANA. Cl. 42. 10-4-27.
234,555. THE FURROW. Cl. 38. 11-1-27.
235,248. DINNER-TEX AND DESIGN. Cl. 39. 11-15-27.
235,744. "POINSETTIA" AND DESIGN. Cl. 46. 11-22-27.
236,220. "AIR-MAIL" AND DESIGN. Cl. 37. 12-6-27.
237,093. PATAX. Cl. 37. 1-3-28.
237,412. "CLEAN-O-LITE" AND BACKGROUND DESIGN. Cl. 52. 1-10-28.
238,022. TROWLITE. Cl. 12. 1-24-28.
238,386. CALEMONA. Cl. 45. 2-7-28.
428,795. 4C AND DESIGN. Cl. 29. 4-1-47.
429,895. SERENADE. Cl. 46. 5-20-47.
429,896. SPELLBOUND. Cl. 46. 5-20-47.
430,717. GEM. Cl. 36. 6-24-47.
431,194. F AND DESIGN. Cl. 31. 7-15-47.
431,372. CELASHAN. Cl. 42. 7-22-47.
431,608. AIREX AND DESIGN. Cl. 2. 7-29-47.
431,650. I AND DESIGN. Cl. 31. 7-29-47.
431,811. STIM ROOT. Cl. 6. 8-12-47.
431,827. FLUOROL. Cl. 51. 8-12-47.
431,858. SULFAMYLON. Cl. 18. 8-12-47.
431,864. SOOT-EX. Cl. 52. 8-12-47.
431,922. LAUREL. Cl. 6. 8-12-47.
431,958. TENAMENE. Cl. 6. 8-12-47.
432,263. COVALDA. Cl. 46. 8-26-47.
432,362. GRAND MOUQUIN. Cl. 49. 9-2-47.
432,461. TECQUINOL. Cl. 6. 9-2-47.
432,570. UCON. Cl. 6. 9-9-47.
432,868. AMBEROL. Cl. 1. 9-16-47.
432,869. ACRYLOID. Cl. 1. 9-16-47.
432,974. INTERLUX. Cl. 16. 9-23-47.
433,017. OVEN MINDER. Cl. 27. 9-23-47.
433,326. CONSOLITE. Cl. 37. 10-7-47.
433,385. SPIRE. Cl. 39. 10-14-47.
433,406. COTTON CLUB. Cl. 39. 10-14-47.
433,860. MERRILLITE AND DESIGN. Cl. 46. 11-4-47.
433,887. AIR CHIEF. Cl. 21. 11-4-47.
434,039. MIRADO. Cl. 37. 11-4-47.
434,167. BRINEMASTER. Cl. 23. 11-11-47.
434,446. EMDEE. Cl. 3. 11-18-47.
434,593. SANOWITE. Cl. 2. 11-25-47.
434,832. TORCH AND OVAL DESIGN. Cl. 15. 12-9-47.
434,955. SHADY NOOK. Cl. 1. 12-9-47.
435,072. SEALITE. Cl. 15. 12-9-47.
435,211. SAN-OVER. Cl. 52. 12-16-47.
435,348. VOTOL. Cl. 6. 12-16-47.
435,500. ALAMASK. Cl. 6. 12-30-47.
435,738. CASECO. Cl. 12. 1-6-48.
435,896. WASCO AND DESIGN. Cl. 46. 1-13-48.
436,019. ANNIE'S FAVORITE. Cl. 46. 1-20-48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Aug. 15, 1961

719,814. JUBILEE. Cl. 1.
719,815. RYAN WRAP. Cl. 2.
719,816. THE REDBIRD LINE AND BIRD DESIGN. Cl. 2.
719,819. 880. Cl. 3.
719,824. TINY TEENS. Cl. 3.
719,828. NO. 30. Cl. 6.
719,829. RUSTITE. Cl. 6.
719,843. HIO-DINE BY VOLDALE AND DESIGN. Cl. 6.
719,849. SUPER-SPAN. Cl. 9.
719,850. VULCANOL. Cl. 10.
719,851. VULCANOL SS. Cl. 10.
719,861. CREG BLOCK AND DESIGN. Cl. 12.
719,865. DINO-LITE. Cl. 12.
719,871. F.A.T. HEAD. Cl. 13.
719,875. FILOPLAST. Cl. 14.
719,876. FERMANAL. Cl. 14.
719,879. FERROLITE. Cl. 14.
719,886. FLUORVAR. Cl. 16.
719,909. POD-PAK. Cl. 19.
719,912. PAR KAR AND DESIGN. Cl. 19.
719,914. GO A BOUT AND DESIGN. Cl. 19.
719,917. OTTERCRAFT AND DESIGN. Cl. 19.
719,919. TOTA TON. Cl. 19.
719,921. REPCO. Cl. 21.
719,922. BURNERD. Cl. 21.
719,928. ROTOHMETER AND DESIGN. Cl. 21.
719,930. LA SALLE. Cl. 21.

719,933. FIRE BALL. Cl. 21.
719,934. PIG HOT PAD. Cl. 21.
719,937. ROYAL LADY. Cl. 21.
719,938. PARKWOOD. Cl. 21.
719,939. POLY-BELDTHERM. Cl. 21.
719,940. TRAVEL TAN. Cl. 21.
719,941. DIAPHLEX. Cl. 21.
719,942. JOCKEY. Cl. 22.
719,952. BEND-O-MATIC. Cl. 23.
719,958. ROCKET-WASH. Cl. 23.
719,962. ZIPAWAY. Cl. 23.
719,963. DUPLEX MULTI-SLIDE. Cl. 23.
719,972. CEROC. Cl. 26.
719,976. IT'S RINGTIME. Cl. 28.
719,980. KLEEN-PAC. Cl. 29.
719,981. TRIX-KLOTH. Cl. 29.
719,984. KODIAK. Cl. 31.
719,986. MAR-PRUF. Cl. 32.
719,988. VISCOR-TUBE. Cl. 34.
719,989. EDGEWOOD. Cl. 34.
719,999. WOBBLE-BOARD. Cl. 36.
720,000. CINECORDER. Cl. 36.
720,001. MAYA. Cl. 36.
720,002. DIMSA. Cl. 36.
720,004. VOICE OF MEDICINE. Cl. 36.
720,005. S SCARLET AND DESIGN. Cl. 36.
720,008. VENISE AND DESIGN. Cl. 36.
720,017. CANDY-CARDS. Cl. 38.
720,018. VOICE OF THE ZODIAC. Cl. 38.
720,021. THIS WEEK MAGAZINE ETC. AND DESIGN. Cl. 38.
720,023. FACT PLACK. Cl. 38.
720,024. THE METRONOME YEARBOOK. Cl. 38.
720,030. BROWNING GOLDEN INSOLE. Cl. 39.
720,031. GROTESQUE OF ALLIGATOR WITH CARRYING CASE. Cl. 39.
730,036. PIONEER. Cl. 39.
720,037. PIONEER. Cl. 39.
720,038. COLBY'S SELF-SERV. SHOE-PER. MARKET. Cl. 39.
720,040. SWIM-SKINS. Cl. 39.
720,043. FRIE-CORK. Cl. 39.
720,044. VULCAPRENE. Cl. 39.
720,046. KRIS-KROS. Cl. 39.
720,049. JACK SCHAEFER. Cl. 39.
720,050. EVERON. Cl. 39.
720,051. WATER BUGS AND DESIGN. Cl. 39.
720,053. JEZENET. Cl. 39.
720,054. DIANNE IRIS. Cl. 39.
720,055. SKATTERETTES. Cl. 40.
720,056. PALAZZO. Cl. 42.
720,058. TOURNEAU. Cl. 42.
720,061. WONDEX. Cl. 42.
720,064. TRICEL. Cl. 42.
720,067. T & G. Cl. 44.
720,068. GINJAPEP. Cl. 45.
720,069. RO-ZADE. Cl. 45.
720,073. NYBS AND DESIGN. Cl. 46.
720,075. BESCO PRODUCTS AND DESIGN. Cl. 46.
720,076. DIAL-A-CASSEROLE. Cl. 46.
720,078. CORNDY AND DESIGN. Cl. 46.
720,085. HAGEN'S BAR-B-BROIL. Cl. 46.
720,087. KING'S GARDEN. Cl. 46.
720,105. BIRD BUFFET. Cl. 50.
720,130. DESIGN OF HOUSE, CAR, ETC. Cl. 102.
720,136. GOLDEN-RIDE. Cl. 103.
720,137. WARL THE MODERN FAMILY STATION AND DESIGN. Cl. 104.
720,139. CLUB HOLIDAY. Cl. 105.
720,140. CLASSIC. Cl. 105.
720,146. WHITTLERS FELLOWSHIP AND DESIGN. Cl. 200.
720,148. PORCELAIN ENAMEL ETC. AND DESIGN. Cl. A.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

437,769. HONEYCOMB. Cl. 4. Detroit-Star Grinding Wheel Company. 3–30–48. New Cert. Sec. 7(c) to Louis Sponholtz, Grand Rapids, Mich.

510,466. GOLFING. Cl. 38. Golfing Publications, Inc. 5–31–49. New Cert. Sec. 7(c) to Universal Publishing & Distributing Corporation, New York, N.Y.

596,401. CAMBRIDGE AND DESIGN. Cl. 31. Cambridge Corporation. 10–5–54. New Cert. Sec. 7(c) to Cambridge Filter Corporation, Syracuse, N.Y.

650,055. DISPO. Cl. 23. Sheila Forshee. 8–13–57. New Cert. Sec. 7(c) to Sheila Hardy, Bartlett, Ill.

684,891. VISCOUNT OF ENGLAND. Cl. 50. Viscount of England, Inc. 9–8–59. New Cert. Sec. 7(c) to Signatronic Company, Ltd., East Elmhurst, N.Y.

701,503. WINDSOR AND DESIGN. Cl. 50. Viscount of England, Inc. 7–19–60. New Cert. Sec. 7(c) to Signatronic Company, Ltd., East Elmhurst, N.Y.

701,504. PRESSOMATIC VALET. Cl. 50. Viscount of England, Inc. 7–19–60. New Cert. Sec. 7(c) to Signatronic Company, Ltd., East Elmhurst, N.Y.

772,866. GOLFDOM THE MAGAZINE OF GOLF BUSINESS. Cl. 38. Golfdom, Inc. 7–7–64. New Cert. Sec. 7(c) to Universal Publishing & Distributing Corporation, New York, N.Y.

777,203. SCOPE AND DESIGN. Cl. 6. Chemagro Corporation. 9–22–64. New Cert. Sec. 7(c) to The Procter & Gamble Company, Cincinnati, Ohio.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

382,669. Nov. 5, 1940. The B. F. Goodrich Company, New York, N.Y., and Akron, Ohio. Pub. by Goodrich-Gulf Chemicals, Inc., Cleveland, Ohio.

AMERIPOL

For Composition of Material Composed Wholly or in Part of Synthetic Rubber-Like Materials.

Class 4—Abrasives and Polishing Materials

430,777. June 24, 1947. The Pennsylvania Salt Manufacturing Company, Philadelphia, Pa. Pub. by Pennsalt Chemicals Corporation, Philadelphia, Pa.

MC-1

For Washing Powder—Namely, a General Purpose Cleaner.

432,993. Sept. 23, 1947. Anne Bishop Ray, Raleigh, N.C. Pub. by registrant.

RAYS

For Liquid Furniture Polish.

Class 6—Chemicals and Chemical Compositions

434,485. Nov. 18, 1947. E. I. du Pont de Nemours and Company, Wilmington, Del. Pub. by registrant.

KARMEX

For Weed Killing Compound.

439,037. June 1, 1948. Nettie Essary, Big Spring, Tex. Pub. by O. H. Derington, d.b.a. Nettie's Liniment Company, Big Spring, Tex.

NETTIE'S

For Liniment.

Class 12—Construction Materials

66,533. Dec. 10, 1907. Union Portland Cement Company, Ogden, Utah. Pub. by Ideal Cement Company, Denver, Colo.

RED DEVIL

For Portland Cement.

Class 19—Vehides

429,607. May 6, 1947. Republic Aviation Corporation, Farmingdale, N.Y. Pub. by Fairchild Hiller Corporation, Hagerstown, Md.

REPUBLIC AVIATION

For Airplanes and Parts Thereof.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

232,208. Sept. 6, 1927. James Hunter Machine Company, North Adams, Mass. Pub. by Crompton & Knowles Corporation, Worcester, Mass.

Hunter

For Automatic Feeds, Card Breasts, etc.

Class 25—Locks and Safes

429,803. May 20, 1947. Stoffel Sales Company, Inc., New York, N.Y. Pub. by Stoffel Seals Corporation, Tuckahoe, N.Y.

ZIP

For Safety Seal Caps and Parts Thereof, etc.

Class 28—Jewelry and Precious-Metal Ware

431,241. July 15, 1947. The Flying Tigers (American Volunteer Group-Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.



FLYING TIGERS

For Jewelry for Personal Wear, etc.

431,246. July 15, 1947. The Flying Tigers (American Volunteer Group-Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.



For Jewelry for Personal Wear (Not Including Watches).

431,247. July 15, 1947. The Flying Tigers (American Volunteer Group-Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.

FLYING TIGERS

For Jewelry for Personal Wear (Not Including Watches), etc.

Class 36—Musical Instruments and Supplies

434,016. Nov. 4, 1947. The Vega Company, Needham Heights, Mass. Pub. by registrant.

VEGAVOX

For Banjos.

Class 38—Prints and Publications

230,262. July 19, 1927. The Troy Record Company, Troy, N.Y. Pub. by registrant.

PULSE OF THE PEOPLE

For Series of Newspaper Articles Appearing in The Troy Record.

230,263. July 19, 1927. The Troy Record Company, Troy, N.Y. Pub. by registrant.

THE TROY RECORD

For Daily Newspaper.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

435,334. Dec. 16, 1947. Dan River Mills, Incorporated, Danville, Va. Pub. by registrant.

DAN

For Piece Goods of Cotton, Rayon, or Mixtures Thereof.

435,335. Dec. 16, 1947. Dan River Mills, Incorporated, Danville, Va. Pub. by registrant.

NUGGET

For Piece Goods of Cotton, Rayon, etc.

Class 46—Foods and Ingredients of Foods

443,940. Apr. 25, 1950. Setrakians & Company, Fresno, Calif. Pub. by Mid-State Horticultural Co., San Francisco, Calif.

DELKAR

For Fresh Deciduous Fruits and Fresh Grapes.

Class 51—Cosmetics and Toilet Preparations

422,342. July 16, 1946. Wetherholt's Perfume Co., Chicago, Ill. Pub. by Franth Wetherholts, Chicago, Ill.

Majorette

For Perfume and Cologne.

428,661. Apr. 1, 1947. Alberto Caimi Garmendia, Buenos Aires, Argentina. Pub. by registrant.

LUNEL

For Nail Polish, Lipstick, Rouge, etc.

430,940. July 1, 1947. Zitomer Chemists, Inc., New York, N.Y. Pub. by Zitomer Pharmacy, Inc., New York, N.Y.

REJAY

For Emollient Cream for the Face, and Hand Cream.

434,990. Dec. 9, 1947. Belcano Company, Jersey City, N.J. Pub. by Agate Boyer, d.b.a. Belcano Company, North Hollywood, Calif.

Depth

For Make-Up Cream.

INDEX OF REGISTRANTS

OCTOBER 3, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AIC Corp.: *See*—
Friedrich, Ed, Inc.
AP Parts Corp., Toledo, Ohio. 836,297, pub. 7–18–67. Cl. 35.
Adelfio, Antonio, d.b.a. Bethesda Travel Center, Washington, D.C. 836,324, pub. 7–18–67. Cl. 38.
Admiral Shoe Corp., d.b.a. Mutual Shoe Sales Co., Manchester, N.H. 836,329, pub. 7–18–67. Cl. 39.
Agate Boyer: *See*—
Belcano Co.
Air-Tred Shoes Corp.: *See*—
Eaton, Charles A., Co.
Alco Oil and Chemical Corp., Philadelphia, Pa. 719,850–1, canc. Cl. 10.
Algemene Kunstzijde Unie N.V., Arnhem, Netherlands. 836,148, pub. 7–18–67. Cl. 1.
Alligator Co., The, St. Louis, Mo. 720,031, canc. Cl. 39.
Altrusa International, Inc., Chicago, Ill. 836,455, pub. 7–18–67. Cl. 100.
American Chicle Co., Long Island City, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 227,611, ren. 10–3–67. Cl. 46.
American Cyanamid Co., Wayne, N.J. 836,187, pub. 7–18–67. Cl. 10.
American Home Products Corp., New York, N.Y. 836,389, pub. 7–18–67. Cl. 46.
American Home Products Corp., New York, N.Y. 836,414, pub. 7–18–67. Cl. 46.
American Hospital Supply Corp., Evanston, Ill. 836,358, pub. 7–18–67. Cl. 44.
American Luggage Works, Inc., Warren, R.I. 836,166, pub. 7–18–67. Cl. 3.
American Mushroom Corp., Wilmington, Del. 836,402, pub. 7–18–67. Cl. 46.
American Oil Co., The: *See*—
Standard Oil Co.
American Swimming Pools, Seekonk, Mass. 836,450, pub. 7–18–67. Cl. 52.
American Tobacco Co., The, New York, N.Y. 836,212, pub. 5–15–62. Cl. 17.
American Trade Co.: *See*—
Arevalo, Francisco.
Apex Handbag, Inc., New York, N.Y. 719,824, canc. Cl. 3.
Arbaugh's: *See*—
Arbaugh's Restaurant, Inc.
Arbaugh's Restaurant, Inc., d.b.a. Arbaugh's, Washington, D.C. 836,454, pub. 7–18–67. Cl. 100.
Arevalo, Francisco, d.b.a. American Trade Co., West Allis, Wis. 836,370, pub. 7–18–67. Cl. 46.
Armour Agricultural Chemical Co.: *See*—
Armour & Co.
Armour & Co., d.b.a. Armour Agricultural Chemical Co., Chicago, Ill. 836,184, pub. 7–18–67. Cl. 10.
Armour and Co., Chicago, Ill. 836,395, pub. 7–18–67. Cl. 46.
Asgrow Seed Co., Orange, Conn. 836,152, pub. 7–18–67. Cl. 1.
Associated Patentees, Inc., Ampere, N.J. 719,963, canc. Cl. 23.
Associates Investment Co., South Bend, Ind. 836,464, pub. 7–18–67. Cl. 102.
Astrosonics, Inc.: *See*—
General Time Corp.
Auge, Gillon, Hollier-Larousse, Moreau and Co., Paris, France. 836,321, pub. 7–18–67. Cl. 38.
Austin, Nichols & Co., Inc., Long Island, N.Y. 432,362, ren. 10–3–67. Cl. 49.
Avco Broadcasting Corp., Cincinnati, Ohio. 836,469, pub. 7–18–67. Cl. 107.
Avnet, Inc., from Goya Music Corp., New York, N.Y. 836,308, pub. 7–18–67. Cl. 36.
Bac-A-Brand Products, Inc., New York, N.Y. 836,345, pub. 7–18–67. Cl. 40.
Bagpak, Inc., to International Paper Co., New York, N.Y. 431,608, ren. 10–3–67. Cl. 2.
Ball-O-Matic Machine Co., Inc., Fairfield, N.J. 836,262, pub. 7–18–67. Cl. 23.
Baka Mfg. Co. Inc., Plainville, Mass. 836,357, pub. 7–18–67. Cl. 44.
Banjo: *See*—
Engelman, Joan, and Barbara Palmer.
Barnes, Barry P., d.b.a. Beam Games, Arlington, Calif. 719,942, canc. Cl. 22.
Bartlett, Kenneth S., Willoughby, Ohio. 836,432, pub. 7–18–67. Cl. 50.
Basic, Inc., Cleveland, Ohio. 836,474. Cl. 12.
Beam Games: *See*—
Barnes, Barry P.
Beatrice Foods Co., Chicago, Ill. 836,177, pub. 7–18–67. Cl. 6.
Beech-Nut Life Savers, Inc., Canajoharie, N.Y. 836,400, pub. 7–18–67. Cl. 46.
Belcano Co., Jersey City, N.J., by Agate Boyer, d.b.a. Belcano Co., North Hollywood, Calif. 434,990, 12(c) pub. 10–3–67. Cl. 51.
Belden Mfg. Co., Chicago, Ill. 719,939, canc. Cl. 21.
Berger, Hans, Encino, Calif. 836,239, pub. 7–18–67. Cl. 19.
Bergman, Jack H., New York, N.Y. 430,717, ren. 10–3–67. Cl. 36.
Berns Air King Corp., Chicago, Ill. 836,249, pub. 7–18–67. Cl. 21.
Berwick Textile Products Co., Inc., New York, N.Y. 836,181, pub. 7–18–67. Multiple Class (Classes 7 and 40).
Bessire & Co., Inc., Indianapolis, Ind. 720,075, canc. Cl. 46.
Bethesda Travel Center: *See*—
Adelfio, Antonio.
Bigelow, R. C., Inc., Norwalk, Conn. 720,087, canc. Cl. 46.
Bijur Lubricating Corp., Rochelle Park, N.J. 836,258, pub. 7–18–67. Cl. 23.
Block, H & R, Inc., Kansas City, Mo. 836,459, pub. 7–18–67. Cl. 101.
Blue Meridian Co., Inc., New York, N.Y. 836,263, pub. 7–18–67. Cl. 23.
Boeing Airplane Co., Seattle, Wash. 719,909, canc. Cl. 19.
Borden Co., The, New York, N.Y. 836,405, pub. 7–18–67. Cl. 46.
Borg-Warner Corp., Chicago, Ill. 836,272, pub. 7–18–67. Cl. 24.
Bowen, Duane C., d.b.a. Focus National Employment Service, Wichita, Kans. 836,458, pub. 7–18–67. Cl. 101.
Bowser, Inc.: *See*—
Bowser, S. F., & Co., Inc.
Bowser, S. F., & Co., Inc., Fort Wayne, Ind., to Bowser, Inc., Greenville, Tenn. 231,273, ren. 10–3–67. Cl. 26.
Brame Textile Machine Co., Greensboro, N.C. 836,476. Cl. 16.
Brauer, Carl Fr., G.m.b.H., Hamburg, Germany. 836,161, pub. 7–18–67. Cl. 2.
Bristol-Myers Co., New York, N.Y. 836,216, pub. 4–14–64. Cl. 18.
Bristol-Myers Co., New York, N.Y. 836,437, pub. 7–18–67. Cl. 51.
British Celanese, Ltd., London, England. 720,064, canc. Cl. 42.
Browning, W. Wayne, Kansas City, Mo. 720,030, canc. Cl. 39.
Burnerd, F., & Co., Ltd., London, England. 719,922, canc. Cl. 21.
Burn-Strauss, Inc., Los Angeles, Calif. 719,816, canc. Cl. 2.
California Redwood End Grain Wood Block Floor Co.: *See*—
Holcomb, Jack H.
Callaway Mills Co., Lagrange, Ga. 836,349, pub. 7–18–67. Cl. 42.
Calumet & Hecla, Inc., Allen Park, Mich. 719,988, canc. Cl. 34.
Cambridge Corp., to Cambridge Filter Corp., Syracuse, N.Y. 596,401, new cert. Cl. 31.
Cannon Mills Co., Kannapolis, N.C. 836,352, pub. 7–18–67. Cl. 42.
Capewell Horse Nail Co., The, to The Capewell Mfg. Co., Hartford, Conn. 67,010, ren. 10–3–67. Cl. 13.
Capewell Mfg. Co., The: *See*—
Capewell Horse Nail Co., The.
Carbide & Carbon Chemicals Corp., to Union Carbide Corp., New York, N.Y. 432,570, ren. 10–3–67. Cl. 6.
Casben Productions, Ltd., Bankstown, Australia. 720,040, canc. Cl. 39.
Casting Materials Co., Inc., White Plains, N.Y. 836,210, pub. 7–18–67. Cl. 14.
Castleton China, Inc., New Castle, Pa. 836,286–90, pub. 7–18–67. Cl. 30.
Casuals, J. P., Inc., New York, N.Y. 836,338, pub. 7–18–67. Cl. 39.
Caterpillar Tractor Co., East Peoria, Ill. 229,712, ren. 10–3–67. Cl. 23.
Celanese Corp.: *See*—
Celanese Corp. of America.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 431,372 ren. 10–3–67. Cl. 42.
Central Ohio Paper Co., The, Columbus, Ohio. 236,220, ren. 10–3–67. Cl. 37.
Century Brewery Corp., Norfolk, Va. 836,420, pub. 7–18–67. Cl. 48.
Chambers & Chambers, Seattle, Wash. 836,275, pub. 7–18–67. Cl. 26.
Charter Industries Inc., Perth Amboy, N.J. 836,309, pub. 7–18–67. Cl. 36.
Chemagro Corp., to The Procter & Gamble Co., Cincinnati, Ohio. 777,203, new cert. Cl. 6.
Chicago Trading Corp., New York, N.Y. 836,346, pub. 7–18–67. Cl. 40.
Chicken Tony's, Inc., from The Dog House, Inc., Youngstown, Ohio. 836,457, pub. 7–18–67. Cl. 100.
Chromex Societe Anonyme, Lardy, Seine and Oise, France. 836,143, pub. 7–20–65. Cl. 1.
Clairol Inc., New York, N.Y. 836,440–1, pub. 7–18–67. Cl. 51.
Clairol, Inc., New York, N.Y. 836,446, pub. 7–18–67. Cl. 51.
Clark Equipment Co., Buchanan, Mich. 836,267, pub. 7–18–67. Cl. 23.
Classic Mfg. Inc., Sturgis, Mich. 836,235–6, pub. 7–18–67. Cl. 19.
Clayton Federal Savings & Loan Association, Clayton, Mo. 836,463, pub. 3–7–67. Cl. 102.
Clements Mfg. Co., Chicago, Ill. 719,930, canc. Cl. 21.
Clinton Engines Corp., Maquoketa, Iowa. 836,256, pub. 7–18–67. Cl. 23.
Cohen, Goldman & Co., Inc., New York, N.Y., to House of Worsted-Tex, Inc., Philadelphia, Pa. 235,248, ren. 10–3–67. Cl. 39.
Colgate-Palmolive Co.: *See*—
Rees & Chapman.

Colonial Provision Co., Inc., Boston, Mass. 836,383, pub. 11–8–66. Cl. 46.
Colonial Provision Co., Inc., Boston, Mass. 836,411, pub. 7–18–67. Cl. 46.
Compagnie Francaise de Bonneterie, Paris, France. 836,356, pub. 7–18–67. Cl. 43.
Compagnie General d'Electro-Ceramique, Paris, France. 719,972, canc. Cl. 26.
Consolidated Citrus Growers, Mesa, Ariz. 836,381, pub. 7–18–67. Cl. 46.
Consolidated International Trading Corp., New York, N.Y. 836,332, pub. 7–18–67. Cl. 39.
Consolidated Packaging Corp.: *See*—
Consolidated Paper Co.
Consolidated Paper Co., Monroe, and Detroit, Mich., and Aurora, Ill., to Consolidated Packaging Corp., Chicago, Ill. 433,326, ren. 10–3–67. Cl. 37.
Consolidated Resistance Co. of America, Inc.: *See*—
Rotohmeters, Inc.
Con-Stan Industries, Inc., from Nutritional Science Corp., El Monte, Calif. 836,366, pub. 7–18–67. Cl. 46.
Cook Electric Co., Chicago, Ill. 719,941, canc. Cl. 21.
Copeland Products, Inc., to Detroit, Mich., to Copeland Refrigeration Corp., Sidney, Ohio. 209,292, ren. 10–3–67. Cl. 31.
Copeland Refrigeration Corp.: *See*—
Copeland Products, Inc.
Corn Products Co.: *See*—
Corn Products Refining Co.
Corn Products Co., New York, N.Y., from Funk Bros. Seed Co., Bloomington, Ill. 836,146–7, pub. 7–18–67, Cl. 1.
Corn Products Refining Co., to Corn Products Co., New York, N.Y. 431,922, ren. 10–3–67. Cl. 6.
Corrosion Reaction Consultants, Inc.: *See*—
Webb, C. J., Inc.
Cotton Club Frocks, Inc., New York, N.Y. 433,406, ren. 10–3–67. Cl. 39.
Courtaulds, Ltd., London, England. 720,061, canc. Cl. 42.
Covalda Date Co., Coachella, Calif. 432,263, ren. 10–3–67. Cl. 46.
Crescent Insulated Wire & Cable Co., Trenton, N.J. 836,201, pub. 7–18–67. Cl. 13.
Crompton & Knowles Corp.: *See*—
Hunter, James, Machine Co.
Crown Textile Mfg. Corp., Philadelphia, Pa. 836,350, pub. 7–18–67. Cl. 42.
C-Thru Products, Inc., Brooklyn, N.Y. 836,162, pub. 7–18–67. Cl. 2.
Curtis, Helene: *See*—
Curtis, Helene, Industries, Inc.
Curtis, Helene, Industries, Inc., d.b.a. Helene Curtis, Chicago, Ill. 836,442, pub. 7–18–67. Cl. 51.
Cutter Laboratories, Inc., Berkeley, Calif. 836,220, pub. 7–18–67. Cl. 18.
Dairy Technics, Inc., Kalamazoo, Mich. 836,386, pub. 7–18–67. Cl. 46.
Damon Chemical Co., Inc., Alliance, Ohio. 836,449, pub. 11–17–64. Cl. 52.
Dan River Mills, Inc., Danville, Va. 435,334–5, 12(c) pub. 10–3–67. Cl. 42.
Deere & Co., to Deere & Co., Moline, Ill. 234,555, ren. 10–3–67. Cl. 38.
Deerfield Groves Co., Wabasso, Fla. 836,160, pub. 7–18–67. Cl. 2.
Deering Milliken, Inc., New York, N.Y. 836,355, pub. 7–18–67. Cl. 42.
Delamere Co., Inc., New York, N.Y. 720,055, canc. Cl. 40.
Denny Corp., Philadelphia, Pa. 836,322, pub. 7–18–67. Cl. 38.
Derington, O. H.: *See*—
Essary, Nettie.
Destileria de Tequila Sauza, S.A., Guadalajara, Jalisco, Mexico. 836,424, pub. 7–18–67. Cl. 49.
Detroit-Star Grinding Wheel Co., to Louis Sponholtz, Grand Rapids, Mich. 437,769, new cert. Cl. 4.
Devoe & Raynolds Co., Inc., Louisville, Ky. 719,886, canc. Cl. 16.
Devro: *See*—
Johnson & Johnson.
Diamond Crystal Salt Co.: *See*—
Jefferson Island Salt Co.
Dine-Rite Corp., Oakland, Calif. 836,198, pub. 7–18–67. Cl. 13.
Di-Noc Chemical Arts, Inc., Cleveland, Ohio. 719,865, canc. Cl. 12.
Di Parigi, Inc., New York, N.Y. 720,049, canc. Cl. 39.
Discos Mexicanos S.A., Mexico City, Mexico. 720,001–2, canc. Cl. 36.
Doane Feed Products Co., Joplin, Mo. 836,394, pub. 7–18–67. Cl. 46.
Dog House, Inc., The: *See*—
Chicken Tony's, Inc.
Donnelley, Reuben H., Corp., The, New York, N.Y. 836,323, pub. 7–18–67. Cl. 38.
Dotmar, Ltd., Montreal, Quebec, Canada. 836,209, pub. 7–18–67. Cl. 14.
Dover Chemical Corp., Dover, Ohio. 836,364, pub. 7–18–67. Cl. 45.
Dow Chemical Co., The, Midland, Mich. 836,155, pub. 7–18–67. Cl. 1.
Duffy-Mott Co., Inc., New York, N.Y. 836,377, pub. 7–18–67. Cl. 46.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 434,485, 12(c) pub. 10–3–67. Cl. 6.
Du Pont de Nemours, E. I., & Co., Wilmington, Del., to Rhodia, Inc., New York, N.Y. 435,500, ren. 10–3–67. Cl. 6.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 836,159, pub. 7–18–67. Cl. 2.
Durham, Marion E., Greenville, S.C. 836,231, pub. 7–18–67. Cl. 19.
Eagle Pencil Co., Danbury, Conn. 232,824, ren. 10–3–67. Cl. 37.
Eagle Pencil Co., Danbury, Conn. 434,039, ren. 10–3–67. Cl. 37.
Eagle-Picher Industries, Inc., Cincinnati, Ohio. 836,237, pub. 7–18–67. Cl. 19.
Earnest, Frank, Co.: *See*—
Earnest, Frank W., Jr.
Earnest, Frank W., Jr., d.b.a. Frank Earnest Co., Williamsport, Pa. 836,259, pub. 7–18–67. Cl. 23.
Eastman Kodak Co.: *See*—
Tennessee Eastman Corp.
Eastman Kodak Co., Rochester, N.Y. 836,282, pub. 7–18–67. Cl. 26.
Eaton, Charles A., Co., Brockton, Mass., to Air-Tred Shoes Corp., Gardiner, Maine. 232,607, ren. 10–3–67. Cl. 39.
Eckel Produce Co., Salinas, Calif. 836,419, pub. 7–18–67. Cl. 46.
Eck's Shoes, Inc., Hyattsville, Md. 836,461, pub. 7–18–67. Cl. 101.
Eclipse Fuel Engineering Co., Rockford, Ill. 836,295, pub. 7–18–67. Cl. 34.
Edgewood Mfg. Co., South El Monte, Calif. 719,989, canc. Cl. 34.
Electric Railway Improvement Co., The, to Erico Products, Inc., Cleveland, Ohio. 66,420, ren. 10–3–67. Cl. 21.
Ellerman, Harry F., d.b.a. Ellerman Mfg. Co., Chicago, Ill. 719,981, canc. Cl. 29.
Emenee Industries, Inc., New York, N.Y. 836,300, pub. 7–18–67. Cl. 36.
Emerson & Cuming, Inc., Canton, Mass. 836,245, pub. 7–18–67. Cl. 21.
Engelman, Joan, and Barbara Palmer, d.b.a. Banjo, Wichita Falls, Tex. 836,428, pub. 7–18–67. Cl. 50.
Enzyme Development Corp., New York, N.Y. 836,178, pub. 7–18–67. Cl. 6.
Erico Products, Inc.: *See*—
Electric Railway Improvement Co., The.
Eshelman, John W., & Sons, Lancaster, Pa. 836,391–3, pub. 7–18–67. Cl. 46.
Essary, Nettie, by O. H. Derington, d.b.a. Nettie's Liniment Co., Big Spring, Tex. 439,037, 12(c) pub. 10–3–67. Cl. 6.
Everon Corp., Beaver Meadows, Pa. 720,050, canc. Cl. 39.
Eversharp, Inc., Milford, Conn. 836,448, pub. 7–18–67. Cl. 51.
Excel-Mineral Co., Inc., Los Angeles, Calif. 836,154, pub. 7–18–67. Cl. 1.
Exchange Lemon Products Co., Corona, to Sunkist Growers, Inc., Los Angeles, Calif. 238,386, ren. 10–3–67. Cl. 45.
Fairchild Bros. & Foster, to Sterling Drug, Inc., New York, N.Y. 65,397, ren. 10–3–67. Cl. 18.
Fairchild Hiller Corp.: *See*—
Republic Aviation Corp.
Fairmont Foods Co., Omaha, Nebr. 720,076, canc. Cl. 46.
Farmers Exchange, Inc., Franklinton, La. 836,404, pub. 7–18–67. Cl. 46.
Fashion Tress, Inc., Miami Beach, Fla. 836,348, pub. 7–18–67. Cl. 40.
Fast Food Service, Inc., New York, N.Y. 836,327, pub. 7–18–67. Cl. 38.
Federal Screw Works, Detroit, Mich. 836,197, pub. 7–18–67. Cl. 13.
Fibreboard Corp.: *See*—
Paraffine Paint Co., The.
Fielderest Mills, Inc., Spray, N.C. 720,058, canc. Cl. 42.
Finn, Matthew M., and Carter B. Finn, Mount Vernon, N.Y. 836,250, pub. 7–18–67. Cl. 22.
Firestone Tire & Rubber Co., The, Akron, Ohio. 433,887, ren. 10–3–67. Cl. 21.
Flamingo Records, Inc., Pueblo, Colo. 836,307, pub. 7–18–67. Cl. 36.
Florboss Mfg. Co., Chicago, Ill. 836,242, pub. 7–18–67. Cl. 21.
Flying Tigers, Inc., The, (American Volunteer Group—Chinese Air Force), Los Angeles, Calif. 431,241, 12(c) pub. 10–3–67. Cl. 28.
Flying Tigers, Inc., The, (American Volunteer Group—Chinese Air Force), Los Angeles, Calif. 431,246–7, 12(c) pub. 10–3–67. Cl. 28.
Focus National Employment Service: *See*—
Bowen, Duane C.
Food Research, Inc., Fort Lauderdale, Fla. 836,388, pub. 7–18–67. Cl. 46.
Ford Motor Co., Dearborn, Mich. 836,232, pub. 2–7–67. Cl. 19.
Forsey, Harold W., to C. Watman, d.b.a. Harold W. Forsey, New York, N.Y. 428,795, ren. 10–3–67. Cl. 29.
Forshee, Sheila, to S. Hardy, Bartlett, Ill. 650,055, new cert. Cl. 23.
Fotorite, Inc., Chicago, Ill. 836,274. pub. 12–27–66. Cl. 26.
Friedrich, Ed, Inc., to AIC Corp., San Antonio, Tex. 431,194, ren. 10–3–67. Cl. 31.
Frielich Bros. Corp., New York, N.Y. 720,043, canc. Cl. 39.
Funk Bros. Seed Co.: *See*—
Corn Products Co.
Fur Seal Processing Corp., The, New York, N.Y. 836,145, pub. 7–18–67. Multiple Class (Classes 1 and 39).
Fuse Indicator Corp., Rockville, Md. 836,244, pub. 7–18–67. Cl. 21.
Garden Specialties, Inc., New Hyde Park, N.Y. 719,814, canc. Cl. 1.
Garmendia, Alberto C., Buenos Aires, Argentina. 428,661, 12(c) pub. 10–3–67. Cl. 51.
General Electric Co., San Jose, Calif. 836,203, pub. 7–18–67. Cl. 14.
General Fireproofing Co., The, Youngstown, Ohio. 836,278, pub. 7–18–67. Cl. 26.
General Foods Corp.: *See*—
Towle Syrup Co., The.
General Foods Corp., White Plains, N.Y. 836,387, pub. 7–18–67. Cl. 46.

General Motors Corp., Detroit, Mich. 431,650, ren. 10–3–67. Cl. 31.
General Time Corp., Stamford, Conn., from Astrosonics, Inc., Syosset, N.Y. 836,277, pub. 7–18–67. Cl. 26.
General Time Corp., Stamford, Conn. 836,281, pub. 7–18–67. Cl. 26.
Gerber Cheese Co., Inc., New York, N.Y. 836,403, pub. 7–18–67. Cl. 46.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 836,481. Cl. 38.
Gill, James G., Co., Inc., The, Norfolk, Va. 836,378, pub. 7–18–67. Cl. 46.
Glamour Products, Inc., Charlotte, N.C. 719,940, canc. Cl. 21.
Godiva: *See*—
Godiva S.p.r.l.
Godiva S.p.r.l., from Godiva, Brussels, Belgium. 836,376, pub. 7–18–67. Cl. 46.
Goebel, W., Porzellanfabrik Oeslau und Wilhelmsfeld, Coburg, Bavaria, Germany. 836,430, pub. 7–18–67. Cl. 50.
Golfdom, Inc., to Universal Publishing & Distributing Corp., New York, N.Y. 772,866, new cert. Cl. 38.
Golfing Publications, Inc., to Universal Publishing & Distributing Corp., New York, N.Y. 510,466, new cert. Cl. 38.
Goodrich, B. F., Co., The, New York, N.Y., and Akron, by Goodrich-Gulf Chemicals, Inc., Cleveland, Ohio. 382,669, 12(c) pub. 10–3–67. Cl. 1.
Goodrich-Gulf Chemicals, Inc.: *See*—
Goodrich, B. F., Co., The.
Goya Music Corp.: *See*—
Avent, Inc.
Grand American Furniture Corp., Chicago, Ill. 719,986, canc. Cl. 32.
Gray Mfg. Co., Inc., St. Joseph, Mo. 836,255, pub. 7–5–66. Cl. 23.
Grove Co., The, St. Louis, Mo. 836,330, pub. 7–18–67. Cl. 39.
Grunwald-Marx, to Grunwald-Marx, Inc., Los Angeles, Calif. 433,385, ren. 10–3–67. Cl. 39.
Grunwald-Marx, Inc.: *See*—
Grunwald-Marx.
Gsell, R., & Co., Inc., New York, N.Y. 836,284, pub. 7–18–67. Cl. 27.
Gulf Oil Corp., Pittsburgh, Pa. 836,172, pub. 7–18–67. Cl. 6.
Gulf Publishing Co., from Ivan W. Mangone, d.b.a. Ocean Industry Co., Houston, Tex. 836,479. Cl. 38.
Hagen, John E., d.b.a. Hagen's Hand-Pak, Seattle, Wash. 720,085, canc. Cl. 46.
Hagen's Hand-Pak: *See*—
Hagen, John E.
Halo Sales Corp., d.b.a. Olde Tower Sealing, San Francisco, Calif. 836,429, pub. 7–18–67. Cl. 50.
Hampden Test Equipment, Ltd., Northampton, England. 836,283, pub. 7–18–67. Cl. 26.
Hartmann Luggage Co., Racine, Wis. 719,819, canc. Cl. 3.
Hartz Mountain Products Corp., New York, N.Y. 836,251, pub. 7–18–67. Cl. 22.
Haveg Industries, Inc., Wilmington, Del., from A. O. Smith Corp., Milwaukee, Wis. 836,205–6, pub. 7–18–67. Cl. 14.
Hayes-Sammons Chemical Co., Mission, Tex. 719,828, canc. Cl. 6.
Hays Mfg. Co., Erie, Pa. 836,241, pub. 7–18–67. Cl. 21.
Heads & Threads, Inc.: *See*—
MSL Industries, Inc.
Hearst Corp., The, New York, N.Y. 720,023, canc. Cl. 38.
Heaven Hill Distilleries, Inc., d.b.a. Martin Mills Distilling Co., Bardstown, Ky. 836,427, pub. 7–18–67. Cl. 49.
Heineken's Brouwerijen Nederland N.V., Amsterdam, Netherlands. 836,483. Cl. 48.
Hensley Co., The, Chicago, Ill. 836,477. Cl. 37.
Hess Oil & Chemical Corp., Perth Amboy, N.J. 836,173, pub. 7–18–67. Cl. 6.
Highland Blending Co.: *See*—
Stenham, H., Ltd.
Hill, George W., & Co.: *See*—
McCullough, J. Chas., Seed Co., The.
Hillyard Chemical Co., to Hillyard Enterprises, Inc., St. Joseph, Mo. 237,412, ren. 10–3–67. Cl. 52.
Hillyard Enterprises, Inc.: *See*—
Hillyard Chemical Co.
Hilsinger Corp., The, Plainville, Mass. 836,452, pub. 7–18–67. Cl. 52.
Hind Bros. & Co., Ltd., Durban, Republic of South Africa. 836,410, pub. 7–18–67. Cl. 46.
Holcomb, Jack H., d.b.a. California Redwood End Grain Wood Block Floor Co., San Gabriel, Calif. 719,861, canc. Cl. 12.
Holland-Rantos Co., Inc., New York, N.Y. 836,222, pub. 7–18–67. Cl. 18.
Houghton, E. F., & Co., Philadelphia, Pa. 836,180, pub. 7–18–67. Cl. 6.
House of Worsted-Tex, Inc.: *See*—
Cohen, Goldman & Co., Inc.
Hudnut, Richard, Morris Plains, N.J. 836,268, pub. 7–18–67. Multiple Class (Classes 23, 51, and 52).
Humble Oil & Refining Co.: *See*—
Standard Oil Co. of New Jersey.
Hunter, James, Machine Co., North Adams, by Crompton & Knowles Corp., Worcester, Mass. 232,208, 12(c) pub. 10–3–67. Cl. 23.
I.G. Farbenindustrie Aktiengesellschaft, Frankfort-On-The-Main and Leverkusen, near Cologne-On-The Rhine, Germany, to Sterling Drug, Inc., New York, N.Y. 233,204, ren. 10–3–67. Cl. 18.
Idea Records, South Bend, Ind. 836,310, pub. 7–18–67. Cl. 36.
Ideal Cement Co.: *See*—
Union Portland Cement Co.
Imperial Wallpaper Mill, Inc., Cleveland, Ohio. 836,312, pub. 7–18–67. Cl. 37.
Ingersoll-Rand Co., New York, N.Y. 146,488, ren. 10–3–67. Cl. 23.
Inland Shoe Mfg. Co., St. Louis, Mo. 720,044, canc. Cl. 39.
International Food Patent N.V., Willemstad, Curacao. 836,406, pub. 7–18–67. Cl. 46.
International Paint Co., Inc., New York, N.Y. 432,974, ren. 10–3–67. Cl. 16.
International Paper Co.: *See*—
Bagpak, Inc.
International Salt Co., Clarks Summit, Pa. 836,373–4, pub. 7–18–67. Cl. 46.
International Seaway Trading Corp., Cleveland, Ohio. 836,331, pub. 7–18–67. Cl. 39.
Interwoven Stocking Co., New Brunswick, N.J., to Kayser-Roth Corp., New York, N.Y. 232,093, ren. 10–3–67. Cl. 39.
Iris, Dianne, Inc., New York, N.Y. 720,054, canc. Cl. 39.
J-B Ranch Supply Mfg.: *See*—
Smith, Jack.
J-B Supply Mfg.: *See*—
Smith, Jack.
Jamesway Corp., New Hartford, N.Y. 836,337, pub. 7–18–67. Cl. 39.
Jefferson Island Salt Co., assignee of Jefferson Island Salt Co., Louisville, Ky., to Diamond Crystal Salt Co., Saint Clair, Mich. 434,167, ren. 10–3–67. Cl. 23.
Johnson, Charles J., d.b.a. Johnson Mfg. Co., Chicago, Ill., to Johnson Mfg. Co., Inc., d.b.a. Johnson Mfg. Co., Princeton, Iowa. 230,731, ren. 10–3–67. Cl. 34.
Johnson & Johnson, d.b.a. Devro, New Brunswick, N.J. 836,363, pub. 7–18–67. Cl. 44.
Johnson Mfg. Co.: *See*—
Johnson, Charles J.
Johnson Mfg. Co., Inc.: *See*—
Johnson, Charles J.
K.G.M. Electronics Ltd., Richmond, Surrey, England. 720,000, canc. Cl. 36.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 836,157, pub. 8–2–66. Cl. 2.
Kaiser Industries Corp., Oakland, Calif. 836,466, pub. 7–18–67. Cl. 104.
Kaiser Jeep Corp., Toledo, Ohio. 836,230, pub. 4–25–67. Cl. 19.
Kawecki Chemical Co., New York, N.Y. 836,208. pub. 7–18–67. Cl. 14.
Kayser-Roth Corp.: *See*—
Interwoven Stocking Co.
Kentucky Seed Improvement Association, Inc., Lexington, Ky. 836,471–2, pub. 7–18–67. Cl. A.
Kimberly-Clark Corp., Neenah, Wis. 836,320, pub. 7–18–67. Cl. 37.
Krauss, John, Jamaica, N.Y. 836,375, pub. 7–18–67. Cl. 46.
La Gaine Scandale, Lyons, France. 836,334, pub. 7–18–67. Cl. 39.
Laird, R. H., Mfg. Co., Inc., d.b.a. Rose Laird, New York, N.Y. 836,445, pub. 7–18–67. Cl. 51.
Laird, Rose: *See*—
Laird, R. H., Mfg. Co., Inc.
Langley Alloys, Ltd., Langley, Slough, England. 719,876, canc. Cl. 14.
Lawter Chemicals, Inc., Chicago, Ill. 836,190, pub. 7–18–67. Cl. 11.
Leckenby, Harry N., Co., Duvall, Wash. 720,105, canc. Cl. 50.
Leslie-Agriform Corp., Union City, Calif. 836,188, pub. 7–18–67. Cl. 10.
Liberty & Co., Ltd., London, England. 233,637, ren. 10–3–67. Cl. 42.
Lindy Pen Co., Inc., North Hollywood, Calif. 836,318, pub. 7–18–67. Cl. 37.
Litton Industries, Inc., Beverly Hills, Calif. 836,311, pub. 7–11–67. Cl. 37.
Long Island Parts Co., Queens Village, N.Y. 836,234, pub. 7–18–67. Multiple Class (Classes 19, 21, 23, 26, 31, and 35).
Lorell, Bert R., Los Angeles, from Al Vicks Sportswear, Gardena, Calif. 836,335, pub. 7–18–67. Cl. 39.
Lorenz, Stanton, Plymouth, Mich. 836,433, pub. 7–18–67. Cl. 50.
Lounsbury, "Buck," Associates: *See*—
Lounsbury, Lavergne I.
Lounsbury, Lavergne I., d.b.a. "Buck" Lounsbury Associates, Chicago, Ill. 836,202, pub. 7–18–67. Cl. 13.
Lund Metalcraft, New York Mills, Minn. 836,238, pub. 7–18–67. Cl. 19.
Lutz, Walter, d.b.a. Sky Food Co., Los Angeles, Calif. 720,078, canc. Cl. 46.
Lux Clock Mfg. Co., Inc., The, Waterbury, Conn., to Robertshaw Controls Co., Richmond, Va. 433,017, ren. 10–3–67. Cl. 27.
MSL Industries, Inc., from Heads and Threads, Inc., Chicago, Ill. 719,871, canc. Cl. 13.
MacAndrews & Forbes Co., Camden, N.J. 836,186, pub. 7–18–67. Cl. 10.
Machsa, Inc., Cleveland, Ohio. 836,359, pub. 7–18–67. Cl. 44.
Macy, R. H., & Co., Inc., New York, N.Y. 231,688, ren. 10–3–67. Cl. 42.
Macy, R. H., & Co., Inc., New York, N.Y. 720,056, canc. Cl. 42.
Magic Marker Corp., Brooklyn, N.Y. 836,314, pub. 7–18–67. Cl. 37.
Maidenform, Inc., New York, N.Y. 836,339–41, pub. 7–18–67. Cl. 39.
Mangone, Ivan W.: *See*—
Gulf Publishing Co.
Mann Mfg., Inc., El Paso, Tex. 836,336, pub. 7–18–67. Cl. 39.
Mason, Au & Magenheimer Conf. Mfg. Co., Brooklyn, to Mason, Au & Magenheimer Confy. Mfg. Co., Inc., Mineola, N.Y. 429,895–6, ren. 10–3–67. Cl. 46.

Mason, Au & Magenheimer Confy. Mfg. Co., Inc.: *See*—
Mason, Au & Magenheimer Conf. Mfg. Co.
Masonite Corp., Chicago, Ill. 719,999, canc. Cl. 36.
Mathelin, Guy, Saint Gratien, France. 836,468, pub. 7–18–67. Cl. 106.
McCrory Corp., New York, N.Y. 836,460, pub. 7–18–67. Cl. 101.
McCullough, J. Chas., Seed Co., The, Cincinnati, Ohio, to George W. Hill & Co., Covington, Ky. 434,955, ren. 10–3–67. Cl. 1.
Mead Johnson & Co., Evansville, Ind. 836,218, pub. 7–18–67. Cl. 18.
Mead Johnson & Co., Evansville, Ind. 836,223–8, pub. 7–18–67. Cl. 18.
Mead Johnson & Co., Evansville, Ind. 836,371, pub. 7–18–67. Cl. 46.
Mead Johnson & Co., Evansville, Ind. 836,415–16, pub. 7–18–67. Cl. 46.
Menninger, Herbert W., d.b.a. Merico Printing, Rutherford, N.J. 836,316, pub. 7–18–67. Cl. 37.
Merico Printing: *See*—
Menninger, Herbert W.
Merrill-Candy Co., Merrill, Wis. 433,860, ren. 10–3–67. Cl. 46.
Metronome Corp., New York, N.Y. 720,024, canc. Cl. 36.
Mid-State Horticultural Co.: *See*—
Setrakians & Co.
Midwest Structural, Inc., St. Paul, Minn. 719,984, canc. Cl. 31.
Mihelich Nursery: *See*—
Mihelich, William.
Mihelich, William, d.b.a. Mihelich Nursey, Warren, Mich. 836,473. Cl. 10.
Miller-Jones Co., Columbus, Ohio. 720,038, canc. Cl. 39.
Miller-Roger, Inc., Hallandale, Fla. 836,343, pub. 7–18–67. Cl. 40.
Milliken Feed Mill: *See*—
Milliken, John N.
Milliken, John N., d.b.a. Milliken Feed Mill, Franklin, Ky. 719,934, canc. Cl. 21.
Mills, Martin, Distilling Co.: *See*—
Heaven Hill Distilleries.
Missouri Hickory Barbecue Corp., El Monte, Calif. 836,417, pub. 7–18–67. Cl. 46.
Moleculon Research Corp., Cambridge, Mass. 836,453, pub. 7–18–67. Cl. 100.
Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy. 836,144, pub. 7–18–67. Cl. 1.
Morris, Floyd M., Idaho Falls, Idaho. 836,367, pub. 7–18–67. Cl. 46.
Morse Industries, Inc., Ozone Park, N.Y. 836,260, pub. 7–18–67. Cl. 23.
Mutual Shoe Sales Co.: *See*—
Admiral Shoe Corp.
Nance Delmarle Co., Inc., Honeoye Falls, N.Y. 836,384, pub. 7–18–67. Cl. 46.
National Cooperatives, Inc., Albert Lea, Minn. 836,269, pub. 7–18–67. Cl. 23.
National Highway Users Conference, Inc., Washington, D.C. 836,325, pub. 7–18–67. Cl. 38.
National Homes Corp., Lafayette, Ind. 836,192–4, pub. 7–18–67. Cl. 12.
National Mattress Co., Huntington, W. Va. 836,293, pub. 10–4–66. Cl. 32.
National Mine Service Co., Pittsburgh, Pa. 836,229, pub. 7–18–67. Cl. 19.
National Tea Co., Chicago, Ill. 836,390, pub. 7–18–67. Cl. 46.
Naz, John A., Construction Co., Cincinnati, Ohio. 435,738, ren. 10–3–67. Cl. 12.
Nebraska Consolidated Mills Co., from Nixon & Co., Omaha, Nebr. 836,369, pub. 2–14–67. Cl. 46.
Nettie's Liniment Co.: *See*—
Essary, Nettie.
New York Banana Supply, Inc., New York, N.Y. 720,073, canc. Cl. 46.
Nixon & Co.: *See*—
Nebraska Consolidated Mills.
Noonan Motor Co.: *See*—
Noonan, P. James.
Noonan, P. James, d.b.a. Noonan Motor Co., Alexandria, Minn. 719,912, canc. Cl. 19.
Norcross, Inc., New York, N.Y. 836,182, pub. 7–18–67. Cl. 7.
Norcross, Inc., New York, N.Y. 836,478. Cl. 38.
North American Philips Co., Inc., New York, N.Y. 836,243, pub. 7–18–67. Cl. 21.
North American Philips Co., Inc., New York, N.Y. 836,246, pub. 7–18–67. Cl. 21.
North American Philips Co., Inc., New York, N.Y. 836,248, pub. 7–18–67. Cl. 21.
North Pacific Canners & Packers, Inc., Portland, Oreg. 836,368, pub. 7–18–67. Cl. 46.
Northern Virginia Broadcasters, Inc., Arlington, Va. 720,137, canc. Cl. 104.
Nu-Era Corp., Rochester, Mich. 719,952, canc. Cl. 23.
Nutritional Science Corp.: *See*—
Con-Stan Industries, Inc.
Ocean Industry Co.: *See*—
Gulf Publishing Co.
Olde Tower Sealing: *See*—
Halo Sales Corp.
Olin Mathieson Chemical Corp., East Alton, Ill. 719,849, canc. Cl. 9.
Omark Industries, Inc., Portland, Oreg. 836,264–5, pub. 7–18–67. Cl. 23.
Omega Chemical Co.: *See*—
Peters, Martin C.
Ore-Ida Foods, Inc., Ontario, Oreg. 836,382, pub. 7–18–67. Cl. 46.
Ortho Pharmaceutical Corp., Raritan, N.J. 836,219, pub. 12–20–66. Cl. 18.
Osnabrucker Kupfer- und Drahtwerk, Osnabruck, Germany. 719,875, canc. Cl. 14.
Ottercraft Boats: *See*—
Prather, John L.
Ozark Pencil Co., Lewisburg, Tenn. 836,319, pub. 7–18–67. Cl. 37.
Pangburn Co., Inc., Fort Worth, Tex. 720,017, canc. Cl. 38.
Paraffine Paint Co., The, to Fibreboard Corp., San Francisco, Calif. 65,279, ren. 10–3–67. Cl. 16.
Pardee, C. G., Co., Inc., Long Island City, N.Y. 719,829, canc. Cl. 6.
Paterson Parchment Paper Co., The, Passaic, N.J., to Paterson Parchment Paper Co., Bristol, Pa. 237,093, ren. 10–3–67. Cl. 37.
Patterson Farms, Inc., Westley, Calif. 836,418, pub. 7–18–67. Cl. 46.
Pearl-Wick Corp., Long Island City, N.Y. 836,447, pub. 7–18–67. Multiple Class (Classes 51 and 52).
Peninsular Paper Co., Ypsilanti, Mich. 836,317, pub. 7–18–67. Cl. 37.
Pennsalt Chemicals Corp.: *See*—
Pennsylvania Salt Mfg. Co., The.
Pennsalt Chemicals Corp., Philadelphia, Pa. 836,171, pub. 7–18–67. Cl. 6.
Pennsylvania Salt Mfg. Co., The, by Pennsalt Chemicals Corp., Philadelphia, Pa. 430,777, 12(c) pub. 10–3–67. Cl. 4.
PepsiCo, Inc., New York, N.Y. 836,292, pub. 7–18–67. Cl. 31.
PepsiCo, Inc., New York, N.Y. 836,365, pub. 7–18–67. Cl. 45.
Perma Sharp Mfg. Corp., New York, N.Y. 836,266, pub. 7–18–67. Cl. 23.
Peters, Martin C., d.b.a. Toledo Paint and Chemical Co., to Omega Chemical Co., Akron, Ohio. 431,864, ren. 10–3–67. Cl. 52.
Pfizer, Chas., & Co., Inc., New York, N.Y. 836,153, pub. 7–18–67. Cl. 1.
Phillips Screw Co., Natick, Mass. 836,196, pub. 7–18–67. Cl. 13.
Pioneer Industries, Inc., Darby, Pa. 720,036–7, canc. Cl. 39.
Plant Products Co., assor. to Plant Products Corp., to Plant Products Corp., Blue Point, N.Y. 431,811, ren. 10–3–67. Cl. 6.
Plant Products Corp.: *See*—
Plant Products Co.
Plantabbs Corp., Timonium, Md. 836,189, pub. 7–18–67. Cl. 10.
Plastic Binding Corp., Chicago, Ill. 836,215, pub. 7–18–67. Cl. 37.
Pond, Frank N., Port Washington, N.Y. 720,069, canc. Cl. 45.
Popeil Bros., Inc., Chicago, Ill. 836,347, pub. 7–18–67. Cl. 40.
Porcelain Enamel Institute, Inc., Washington, D.C. 720,148, canc. Cl. A.
Prather, John L., d.b.a. Ottercraft Boats, Chicago, Ill. 719,917, canc. Cl. 19.
Precision Radiation Instruments, Inc., Los Angeles, Calif. 720,008, canc. Cl. 36.
Private Brands, Inc., Grosse Pointe, Mich. 836,439, pub. 7–18–67. Cl. 51.
Process Research, Inc., Chicago, Ill. 836,179, pub. 7–18–67. Multiple Class (Classes 6 and 23).
Procter & Gamble Co., The, Cincinnati, Ohio. 836,362, pub. 7–18–67. Multiple Class (Classes 44 and 51).
Proctor, Franklin, Annandale, Va. 836,253, pub. 7–18–67. Cl. 22.
Pure Oil Co., The, Chicago, Ill. 720,136, canc. Cl. 103.
Putman Publishing Co., Chicago, Ill. 836,480. Cl. 38.
Quaker Oats Co., The, Chicago, Ill. 232,837, ren. 10–3–67. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 836,372, pub. 7–18–67. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 836,407–8, pub. 7–18–67. Cl. 46.
Quon-Quon Co., Los Angeles, Calif. 836,434, pub. 7–18–67. Cl. 50.
Ralston Purina Co.: *See*—
Van Camp Sea Food Co., Inc.
Ralston Purina Co., St. Louis, Mo. 836,396, pub. 7–18–67. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 836,398, pub. 7–18–67. Cl. 46.
Rankin, Glen, Blending Co.: *See*—
Stenham, H., Ltd.
Ray, Anne B., Raleigh, N.C. 432,993, 12(c) pub. 10–3–67. Cl. 4.
Rees & Chapman, Vancouver, British Columbia, Canada, to Colgate-Palmolive Co., New York, N.Y. 431,827, ren. 10–3–67. Cl. 51.
Renee of Hollywood: *See*—
S.D.S., Inc.
Repco, Ltd., Victoria, Australia. 719,921, canc. Cl. 21.
Republic Aviation Corp., Farmingdale, N.Y., by Fairchild Hiller Corp., Hagerstown, Md. 429,607, 12(c) pub. 10–3–67. Cl. 19.
Resinous Products & Chemical Co., The, to Rohm & Haas Co., Philadelphia, Pa. 432,868–9, ren. 10–3–67. Cl. 1.
Revelation Bra Co., Inc., Cambridge, Mass. 836,328, pub. 7–18–67. Cl. 39.
Rexall Chemical Co.: *See*—
Rexall Drug & Chemical Co.
Rexall Drug & Chemical Co., d.b.a. Rexall Chemical Co., Los Angeles, Calif. 836,149–51, pub. 7–18–67. Cl. 1.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 836,213–15, pub. 7–18–67. Cl. 17.
Reynolds-Palms Export & Import Co., Inc., Miami, Fla. 836,342, pub. 7–18–67. Cl. 40.

Rheem Mfg. Co., New York, N.Y. 836,298–9, pub. 7–18–67. Cl. 36.
Rhodia, Inc.: *See*—
Du Pont de Nemours, E. I., and Co.
Rhodia, Inc., New York, N.Y. 836,174–6, pub. 7–18–67. Cl. 6.
Ringdahl Insurance Agency, Wheaton, Minn. 720,130, canc. Cl. 102.
Robertshaw Controls Co.: *See*—
Lux Clock Mfg. Co., Inc., The.
Rohm & Haas Co.: *See*—
Resinous Products & Chemical Co., The.
Rohm & Haas Co., Philadelphia, Pa. 836,156, pub. 7–18–67. Cl. 1.
Roiscreen Co., Pella, Iowa. 836,191, pub. 7–18–67. Cl. 12.
Rotohmeters, Inc., from Consolidated Resistance Co. of America, Inc., Yonkers, N.Y. 719,928, canc. Cl. 21.
Roush Bakery Products Co., Inc., Sacramento, Calif. 836,413, pub. 7–18–67. Cl. 46.
Rubinstein, Helena, Inc., New York, N.Y. 836,444, pub. 7–18–67. Cl. 51.
Ryan Aeronautical Co., San Diego, Calif. 719,815, canc. Cl. 2.
S.D.S., Inc., d.b.a. Renee of Hollywood, Los Angeles, Calif. 720,053, canc. Cl. 39.
S & T Putter Co.: *See*—
Tanis, Thomas A., Richard L. Tanis, Ronald Zordan, and Andrew Baravik.
Safeway Stores, Inc., Oakland, Calif. 836,462, pub. 7–18–67. Cl. 101.
St. Regis Paper Co., New York, N.Y. 836,270, pub. 7–18–67. Cl. 23.
St. Regis Paper Co., New York, N.Y. 836,291, pub. 7–18–67. Cl. 31.
Sanitek Products Co., to Sanitek Products, Inc., Los Angeles, Calif. 435,211, ren. 10–3–67. Cl. 52.
Sanitek Products, Inc.: *See*—
Sanitek Products Co.
Satellite Systems, Inc., Indianapolis, Ind. 836,456, pub. 7–18–67. Cl. 100.
Save Way Barber & Beauty Supplies, Inc., North Miami Beach, Fla. 836,361, pub. 7–18–67. Cl. 44.
Sayers, Wilfred C., Camdenton, Mo. 836,158, pub. 7–18–67. Cl. 2.
Scarlet Records, Inc., Nashville, Tenn. 720,005, canc. Cl. 36.
Schell Leather Goods Co., Inc., Cincinnati, Ohio. 434,446, ren. 10–3–67. Cl. 3.
Schering Corp., Bloomfield, N.J. 836,221, pub. 7–18–67. Cl. 18.
Schmied, A., Kommanditgesellschaft, Linz, Danube, Austria. 836,273, pub. 7–18–67. Cl. 26.
Schwebel Baking Co., The, Youngstown, Ohio. 836,482. Cl. 46.
Scott Trencher Co., Minneapolis, Minn. 836,257, pub. 7–18–67. Cl. 23.
Scoville, Brown & Co., Wellsville, N.Y. 232,876, ren. 10–3–67. Cl. 46.
Seamon, A. & L., Inc., Jamaica, N.Y. 836,167, pub. 7–18–67. Cl. 3.
Seaway Stereo Inc., Pontiac, Mich. 836,306, pub. 7–18–67. Cl. 36.
Service Metal Fabricators, Inc., Chicago, Ill. 719,958, canc. Cl. 23.
Servo Corp. of America, Hicksville, N.Y. 836,280, pub. 7–18–67. Cl. 26.
Setrakians & Co., Fresno, by Mid-State Horticultural Co., San Francisco, Calif. 443,940, 12(c) pub. 10–3–67. Cl. 46.
Seufert Brothers Co., to Francis A. Seufert & Co., The Dalles, Oreg. 435,896, ren. 10–3–67. Cl. 46.
Seufert Brothers Co., to Francis A. Seufert & Co., The Dalles, Oreg. 436,019, ren. 10–3–67. Cl. 46.
Seufert, Francis A., & Co.: *See*—
Seufert Brothers Co.
7-Up Bottling Co., Inc., Augusta, Ga. 720,068, canc. Cl. 45.
Shoe Bank, Inc., Belgium, Wis. 836,333, pub. 7–18–67. Cl. 39.
Short, J. R., Milling Co., Chicago, Ill. 836,385, pub. 7–18–67. Cl. 46.
Shortrip Leather Products Co., Newark, N.J. 836,163, pub. 7–18–67. Multiple Class (Classes 3 and 39).
Simoniz Co., Chicago, Ill. 836,464, pub. 7–18–67. Cl. 103.
Sky Food Co.: *See*—
Lutz, Walter.
Slade, Herbert J., d.b.a. Window Well Cover Co., Prospect Heights, Ill. 836,475. Cl. 12.
Slocom Bros. Mfg. Co., Inc., Wilmington, Calif. 719,914, canc. Cl. 19.
Smith, A. O., Corp.: *See*—
Haveg Industries, Inc.
Smith, Fletcher, Studios, Inc., Fort Lauderdale, Fla. 836,301–5, pub. 7–18–67. Cl. 36.
Smith, Jack, d.b.a. J-B Ranch Supply Mfg. & J-B Supply Mfg., Vesta, Minn. 836,164, pub. 7–18–67. Cl. 3.
Sorg Products Co., Ligonier, Ind. 836,313, pub. 7–18–67. Cl. 37.
Southern Mills, Inc., Atlanta, Ga. 836,271, pub. 7–18–67. Cl. 24.
Southwestern Petroleum Corp., Fort Worth, Tex. 836,169, pub. 7–18–67. Cl. 5.
Sportsways, Inc., Paramount, Calif. 836,183, pub. 7–18–67. Cl. 9.
Spotnails, Inc., Rolling Meadows, Ill. 836,195, pub. 7–18–67. Cl. 13.
Standard Knitting Mills, Inc., Knoxville, Tenn. 720,046, canc. Cl. 39.
Standard Oil Co., Whiting, Ind., to The American Oil Co., Chicago, Ill. 434,832, ren. 10–3–67. Cl. 15.
Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 435,072, ren. 10–3–67. Cl. 15.
Star Fish & Bone Fertilizer Co., Bridgeton, N.J. 836,185, pub. 7–18–67. Cl. 10.
Stencel Aero Engineering Corp., Arden, N.C. 836,233, pub. 7–18–67. Cl. 19.
Stenham, H., Ltd., d.b.a. Glen Rankin Blending Co., London, England. 836,425–6, pub. 7–18–67. Cl. 49.
Sterling Drug Inc.: *See*—
Fairchild Bros. & Foster.
I.G. Farbenindustrie Aktiengesellschaft.
Winthrop Chemical Co., Inc.
Stern-Bruerel Carl Funke A.G., Essen, Germany. 836,421–3, pub. 7–18–67. Cl. 48.
Sternco Industries, Inc., Harrison, N.J. 836,165, pub. 7–18–67. Cl. 3.
Stevens, J. P., & Co., Inc., New York, N.Y. 836,353, pub. 7–18–67. Cl. 42.
Stevens Paper Mills, Inc., The, Windsor, Conn. 836,247, pub. 7–18–67. Cl. 21.
Stoffel Sales Co., Inc., New York, by Stoffel Seals Corp., Tuckahoe, N.Y. 429,803, 12(c) pub. 10–3–67. Cl. 25.
Stoffel Seals Corp.: *See*—
Stoffel Sales Co., Inc.
Sturgis Mfg. Co., Haxtun, Colo. 719,919, canc. Cl. 19.
Sunkist Growers, Inc.: *See*—
Exchange Lemon Products Co.
Sun-Maid Raisin Growers of Calif., Kingsburg, Calif. 235,744, ren. 10–3–67. Cl. 46.
Superior Tea & Coffee Co., Chicago, Ill. 836,397, pub. 7–18–67. Cl. 46.
Sweet Candy Co., Salt Lake City, Utah. 836,399, pub. 7–18–67. Cl. 46.
Syndicate Magazines, Inc., New York, N.Y. 836,326, pub. 7–18–67. Cl. 38.
Tanis, Thomas A., Richard L. Tanis, Ronald Zordan, and Andrew Baravik, d.b.a. S & T Putter Co., Olympia Fields, Ill. 836 254, pub. 7–18–67. Cl. 22.
Tasco Sales, Inc., Miami, Fla. 836,276, pub. 7–18–67. Cl. 26.
Tasty Baking Co., Philadelphia, Pa. 836,412, pub. 7–18–67. Cl. 46.
Tennessee Eastman Corp., Kingsport, Tenn., to Eastman Kodak Co., Rochester, N.Y. 431,958, ren. 10–3–67. Cl. 6.
Tennessee Eastman Corp., Kingsport, Tenn., to Eastman Kodak Co., Rochester, N.Y. 432,461, ren. 10–3–67. Cl. 6.
Tesco Chemicals, Inc., Atlanta, Ga. 836,170, pub. 7–19–66. Cl. 6.
Texaco Experiment, Inc., Richmond, Va. 836,204, pub. 7–18–67. Cl. 14.
Thermal Metal Products Corp., Baltimore, Md. 836,294, pub. 10–18–66. Cl. 34.
Thomas, Stuart K., Carmel, Calif. 232,264, ren. 10–3–67. Cl. 46.
Toddlers Education, Inc., New York, N.Y. 836,252, pub. 7–18–67. Cl. 22.
Toledo Paint & Chemical Co.: *See*—
Peters, Martin C.
Topco Associates, Inc., Skokie, Ill. 836,351, pub. 7–18–67. Cl. 42.
Tourneur Cosmetics: *See*—
Tourneur Salons, Inc.
Tourneur Salons, Inc., d.b.a. Tourneur Cosmetics, New York, N.Y. 836,344, pub. 7–18–67. Cl. 40.
Towle Syrup Co., The, St. Paul, Minn., to General Foods Corp., White Plains, N.Y. 61,962, ren. 10–3–67. Cl. 46.
Traid Corp., Glendale, Calif. 836,279, pub. 7–18–67. Cl. 26.
Transcripts, Inc., Panama City, Panama. 720,004, canc. Cl. 36.
Travelers Delight, Inc., Brockton, Mass. 836,409, pub. 7–18–67. Cl. 46.
Tri-Valley Growers, San Francisco, Calif. 836,401, pub. 7–18–67. Cl. 46.
Troutner, Wayne L., Winslow, Ariz. 836,438, pub. 7–18–67. Cl. 51.
Troy Record Co., The, Troy, N.Y. 230,262–3, 12(c) pub. 10–3–67. Cl. 38.
USP Corp., San Jose, Calif. 836,380. pub. 7–18–67. Cl. 46.
Uncas Mfg. Co., Providence, R.I. 719,976, canc. Cl. 28.
Union Bag & Paper Corp., to Union Camp Corp., New York, N.Y. 434,593 ren. 10–3–67. Cl. 2.
Union Camp Corp.: *See*—
Union Bag & Paper Corp.
Union Carbide Corp.: *See*—
Carbide & Carbon Chemicals Corp.
Union Carbide Corp., New York, N.Y. 719,933, canc. Cl. 21.
Union Carbide Corp., New York, N.Y. 836,199, pub. 7–18–67. Cl. 13.
Union Portland Cement Co., Ogden, Utah, by Ideal Cement Co., Denver, Colo. 66,533, 12(c) pub. 10–3–67. Cl. 12.
Union Tank Car Co., Chicago, Ill. 836,240, pub. 7–18–67. Cl. 19.
Union Vitamin Co., Culver City, Calif. 836,207, pub. 7–18–67. Cl. 14.
United Newspapers Magazine Corp., New York, N.Y. 720,021, canc. Cl. 38.
United Products Corp., Kansas City, Mo. 836,168, pub. 7–18–67. Cl. 3.
United States Steel Corp., Pittsburgh, Pa. 719,879, canc. Cl. 14.
United-Greenfield Corp., Northbrook, Ill. 836,261, pub. 7–18–67. Cl. 23.
University Travel Co., Cambridge, Mass. 720,139–40, canc. Cl. 105.
Vacuum Chronometer Corp., Biel, Switzerland. 836,285, pub. 7–18–67. Cl. 27.
Van Camp Sea Food Co., Inc., Terminal Island, Calif., to Ralston Purina Co., St. Louis, Mo. 231,221, ren. 10–3–67. Cl. 46.

Van Sciver Corp., The, to Warner Co., Philadelphia, Pa. 238,022, ren. 10–3–67. Cl. 12.
Vega Co., The, Needham Heights, Mass. 434,016, 12(c) pub. 10–3–67. Cl. 36.
Vicks, Al, Sportswear: *See*—
Lorell, Bert R.
Viscount of England Inc., to Signatronic Co., Ltd., East Elmhurst, N.Y. 684,891, new cert. Cl. 50.
Viscount of England, Inc., to Signatronic Co., Ltd., East Elmhurst, N.Y. 701,503–4, new cert. Cl. 50.
Vita Elixer Co., Inc., Atlanta, Ga. 836,217, pub. 7–18–67. Cl. 18.
Voice of Astrology Publishing Co., Inc., Kansas City, Mo. 720,018, canc. Cl. 38.
Voice of Orange Empire, Inc., Ltd., The, Beverly Hills, Calif. 836,470, pub. 7–18–67. Cl. 107.
Voldale, Inc., Long Island City, N.Y. 719,843, canc. Cl. 6.
Vue, Inc., Roselle, N.J. 836,431, pub. 7–18–67. Cl. 50.
Wallace Orthopedic Supply Co., Inglewood, Calif. 720,067, canc. Cl. 44.
Waltham Chemical Co., Waltham, Mass. 435,348, ren. 10–3–67. Cl. 6.
Ward Foods, Inc., New York, N.Y. 836,379, pub. 7–18–67. Cl. 46.
Ward, Thomas H., Jr., Valley Park, Mo. 836,467, pub. 7–18–67. Cl. 105.
Warner Co.: *See*—
Van Sciver Corp., The.
Warner-Lambert Pharmaceutical Co.: *See*—
American Chicle Co.
Water Bugs, Ltd., New York, N.Y. 720,051, canc. Cl. 39.
Watman, Clement: *See*—
Forsey, Harold W.
Webb, C. J., Inc., d.b.a. Corrosion Reaction Consultants, and Corrosion Reaction Consultants, Inc., Jenkintown, Pa. 836,211, pub. 7–18–67. Multiple Class (Classes 15 and 52).
Webb, C. J., Inc., Dresher, Pa. 836,451, pub. 7–18–67. Cl. 52.
Wester Bros., to H. Wester, d.b.a. Wester Bros., New York, N.Y. 66,854, ren. 10–3–67. Cl. 23.
Wester, Herbert: *See*—
Wester Bros.
Western Textile Co., Inc., Chicago, Ill. 836,354, pub. 7–18–67. Cl. 42.
Westinghouse Electric Corp., Pittsburgh, Pa. 719,937–8, canc. Cl. 21.
Westinghouse Electric Corp., Pittsburgh, Pa. 836,296, pub. 7–18–67. Cl. 34.
Wetherholts, Franth: *See*—
Wetherholt's Perfume Co.
Wetherholt's Perfume Co., by F. Wetherholts, Chicago, Ill. 422 342, 12(c) pub. 10–3–67. Cl. 51.
Whitaker, Ray, d.b.a. Whitaker Seasonings, Tulsa, Okla. 719,962, canc. Cl. 23.
Whitaker Seasonings: *See*—
Whitaker, Ray.
White, S. S., Co., Philadelphia, Pa. 836,360, pub. 7–18–67. Cl. 44.
Whiting-Adams Co., Inc., Boston, Mass. 719,980, canc. Cl. 29.
Whittlers Fellowship, Atlanta, Ga. 720,146, canc. Cl. 200.
Wiggins, E. B., Inc., Los Angeles, Calif. 836,200, pub. 7–18–67. Cl. 13.
Window Well Cover Co.: *See*—
Slade, Herbert J.
Winthrop Chemical Co., Inc., to Sterling Drug, Inc., New York, N.Y. 431,858, ren. 10–3–67. Cl. 18.
Yardley of London, Inc., Totowa, N.J. 836,435–6, pub. 7–18–67. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 836,443, pub. 7–18–67. Cl. 51.
Zitomer Chemists, Inc., by Zitomer Pharmacy, Inc., New York, N.Y. 430,940, 12(c) pub. 10–3–67. Cl. 51.
Zitomer Pharmacy, Inc.: *See*—
Zitomer Chemists, Inc.

U.S. GOVERNMENT PRINTING OFFICE: 0——1967

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
October 10, 1967 Volume 843 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of August 1967

Examiner affirmed	145
Examiner affirmed in part	17
Examiner reversed	31
Total	193

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Amendment of Claims

Sections 1.119, 1.121 and 1.126 (Patent Rules 119, 121 and 126) are revised as set forth below, said revisions to take effect November 1, 1967. The prosecution of all applications for which no amendment has been filed prior to November 1, 1967, must be in compliance with the sections as revised.

The purpose of these revisions is to effect more efficient operation in the prosecution of patent applications as well as in the clerical operations in support thereof.

The general substance of the proposed revisions was published in the Federal Register of June 24, 1967 (32 F.R. 9026). A hearing was held on July 31, 1967, and all persons, who desired to, were invited to attend and to submit their views, objections, recommendations or suggestions. Both the oral and written comments were carefully considered. The sections are being revised substantially as published with a few additional changes.

The full text of the revised sections 1.119, 1.121 and 1.126 reads as follows:

§ 1.119 *Amendment of claims.*

The claims may be amended by canceling particular claims, by presenting new claims, or by rewriting particular claims as indicated in section 1.121. The requirements of section 1.111 must be complied with by pointing out the specific distinctions believed to render the claims patentable over the references in presenting arguments in support of new claims and amendments.

§ 1.121 *Manner of making amendments.*

(a) Erasures, additions, insertions, or alterations of the Office file of papers and records must not be physically entered by the applicant. Amendments to the application (excluding the claims) are made by filing a paper (which should conform to section 1.52), directing or requesting that specified amendments be made. The exact word or words to be stricken out or inserted by said amendment must be specified and the precise point indicated where the deletion or insertion is to be made.

(b) Except as otherwise provided herein, a particular claim may be amended only by directions to cancel or by rewriting such claim with underlining below the word or words added and brackets around the word or words deleted. The rewriting of a claim in this form will be construed as directing the cancellation of the original claim; however, the original claim number followed by the parenthetical word "amended" must be used for the rewritten claim. If a previously rewritten claim is rewritten, underlining and bracketing will be applied in reference to the previously rewritten claim with the parenthetical expression "twice amended," "three times amended," etc., following the original claim number.

(c) A particular claim may be amended in the manner indicated for the application in section 1.121(a) to the extent of corrections in spelling, punctuation, and typographical errors. Additional amendments in this manner will be admitted provided the changes are limited to (1) deletions and/or (2) the addition of no more than five words in any one claim. Any amendment submitted with instructions to amend particular claims but failing to conform to the provisions of paragraphs (b) and (c) may be considered non-responsive and treated accordingly.

(d) Where underlining or brackets are intended to appear in the printed patent or are properly part of the claimed material and not intended as symbolic of changes in the particular claim, amendment by rewriting in accordance with paragraph (b) above shall be prohibited.

(e) In reissue applications, both the descriptive portion and the claims are to be amended as specified in paragraph (a) above.

§ 1.126 *Numbering of claims.*

The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When claims are added, except when presented in accordance with section 1.121(b), they must be numbered by the applicant consecutively beginning with the number next following the highest numbered claim previously presented (whether entered or not). When the application is ready for allowance, the examiner, if necessary, will renumber the claims consecutively in the order in which they appear or in such order as may have been requested by applicant.

(Sec. 1, 66 Stat. 792; 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:

JOHN F. KINCAID,
Acting Assistant Secretary for Science and Technology.
Dated: Sept. 25, 1967.

Published in 32 F.R. 13582–3, Sept. 28, 1967

New Applications Received During August 1967

Patents	7377
Designs	377
Plant Patents	5
Reissues	36
Total	7795

Issue—October 10, 1967

Patents	1234	No. 3,345,641 to No. 3,346,874, incl.
Designs	49	No. 208,850 to No. 208,898, incl.
Total	1283	

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 14, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	2-12-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	3-6-64	3-1-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	7-29-64	4-9-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	3-18-64	5-18-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-3-64	4-16-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-12-64	7-5-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	11-29-63	11-29-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1-8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	9-4-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1-14-66	8-25-65

Total number of pending applications (excluding Designs)	184, 300
Total number of Design applications pending	4, 448
Total number of applications awaiting action (excluding Designs)	135, 131
Total number of Design applications awaiting action	2, 411
Date of oldest new application awaiting action	Nov. 29, 1963
Date of oldest amended application awaiting action	Nov. 29, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during October 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents	Numbers 2,524,026 to 2,528,482, inclusive
Plant Patents	Numbers 982 to 985, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	1-3-66	9-8-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	6-10-65	2-7-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	2-15-65	1-30-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-13-66	12-2-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	10-3-65	4-29-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	8-23-65	9-13-62

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office Before the Board of Appeals

EX PARTE HENRY R. SIEBACH

Appeal No. 522—28. Decided February 16, 1967

1. PATENTABILITY—PROCESS—METHOD AND APPARATUS CLAIMS IN SAME APPLICATION.

"We stress at this point that since the claims at bar have not been rejected on prior art, they are presumed to be novel and patentable thereover. Also, that the question of double patenting between the rejected method claims and the allowed apparatus claims is not present in this appeal, since both sets of claims are in the same application. Thus, *Ex parte Sheehan*, 11 USPQ 43, cited at page 1 of the Examiner's answer, involving double patenting, is not pertinent to the issue at hand. Claims in the same application, unlike those in separate applications as in the *Sheehan* case, need not distinguish patentably from each other, in the sense of being capable of supporting different patents. They need only distinguish in scope. Further, we know of no prohibition against the allowance of both method and apparatus in the same case, particularly where, as here, there appears to be both apparatus and method concepts in the broad aspect of the disclosed invention and it is difficult to determine whether the invention can best be defined in one or the other of these statutory classes of invention. *In re Conover*, 1962 C.D. 505 (511). It is well established also that applicants should be allowed reasonable latitude in claiming their inventions, provided that they do not unduly multiply the claims and becloud the invention (*In re Chandler et al.*, 50 CCPA 1422, 1963 C.D. 642, 795 O.G. 1077, 319 F.2d 211, 138 USPQ 138 at 148) which is not, nor contended to be, the case here."

2. SAME—SAME—UNOBVIOUS USE OF MACHINE OR MANUFACTURE—35 U.S.C. 100(b).

"While patentability of process claims cannot be predicated solely on structural limitations recited therein, it may be predicated, according to 35 U.S.C. 100(b) and 101, on a new and unobvious use of a machine or manufacture in carrying out some or all of the steps of the process."

APPEAL from the Examiner (Charles A. Willmuth) of Group 470. Serial No. 314,894.

REVERSED.

C. H. Nanz, H. J. Winegar and R. P. Miller, J. J. Lipari, M. Pfeffer and J. L. Landis for appellant.

Before DRACOPOULOS, BAILEY and BREWINK, *Examiners-in-Chief*

DRACOPOULOS, *Examiner-in-Chief.*

This is an appeal from the final rejection of claims 3 and 5. The remaining claims in the case, 9, 10, 12, 13, 14 and 18, stand allowed.

No prior art has been relied upon, the sole ground of rejection of claims 3 and 5 being that they are drawn to nothing more than the obvious or inherent function of the apparatus recited in allowed claims 10 and 9, respectively.

From our analysis of method claims 3 and 5 and comparison thereof with allowed apparatus claims 10 and 9, respectively, in light of the Examiner's answer and the appellant's briefs, we have concluded that the given rejection of claims 3 and 5 is not sustainable.

[1] We stress at this point that since the claims at bar have not been rejected on prior art, they are presumed to be novel and patentable thereover. Also, that the question of double patenting between the rejected method claims and the allowed apparatus claims is not present in this appeal, since both sets of claims are in the same application. Thus, *Ex parte Sheehan*, 11 USPQ 43, cited at page 1 of the Examiner's answer, involving double patenting, is not pertinent to the issue at hand. Claims in the same application, unlike those in separate applications as in the *Sheehan* case, need not distinguish patentably from each other, in the sense of being capable of supporting different patents. They need only distinguish in scope. Further, we know of no prohibition against the allowance of both method and apparatus in the same case, particularly where, as here, there appears to be both apparatus and method concepts in the broad aspect of the disclosed invention and it is difficult to determine whether the invention can best be defined in one or the other of these statutory classes of invention. *In re Conover*, 1962 C.D. 505 (511). It is well established also that applicants should be allowed reasonable latitude in claiming their inventions, provided that they do not unduly multiply the claims and becloud the invention (*In re Chandler et al.*, 50 CCPA 1422, 1963 C.D. 642, 795 O.G. 1077, 319 F.2d 211, 138 USPQ 138 at 148) which is not, nor contended to be, the case here.

Turning to the claims 3, 5, 9, and 10, we find clear differences in scope. Claim 3 distinguishes from claim 10 by employing a "mesh" carrier and by deforming a sidewall of each corrugation to "overlie" the associated article. Claim 4 distinguishes from claim 9 by the same "overlie" and by not specifying that the means for corrugating, inserting the articles, applying tension and flattening, respectively, are "disposed along the path" of the carrier. As conceded by the Examiner at page 3 of his answer and demonstrated by the exhibits appended to the appeal brief, these steps may be carried out manually. Instrumentalities needed for effecting some of these steps may obviously be individual tools carried in a tool box.

It is argued in the Examiner's answer, under paragraph 5 at page 3,

"However, it should be noted that in each and every step the pliable ribbon is necessary and essential for the successful completion of each step individually and of the process as a whole. No known hand operation or manually-operated instrumentality has been suggested as a substitute for the most essential element of the machine or process, i.e., the pliable carrier."

and at page 2,

". . . the only means disclosed as being capable of carrying out the claimed process is a pliable or flexible ribbon or carrier and both method and apparatus claims clearly require this specific and essential structure. In fact it is the most essential part of the apparatus and likewise the method could not be performed without it. Where a single means of carrying out a process is shown and *other independent means are not obvious*, a process claim which merely states the function or effect of a machine must be held unpatentable."

We find no merit in the foregoing views of the Examiner. The flexible carrier cannot of itself carry out the claimed process. The claimed steps performed thereon and the insertion in the corrugations of the articles to be processed are essential to the claimed utility of the carrier and to the method as a whole. [2] While patentability of process claims cannot be predicated solely on structural limitations recited therein, it may be predicated, according to 35 U.S.C. 100(b) and 101, on a new and unobvious use of a machine or manufacture in carrying out some or all of the steps of the process. *Ex parte Kangas*, 125 USPQ 419, at 421.

For the foregoing reasons, we do not sustain the rejection.

The decision of the Examiner is reversed.

REVERSED.

In the United States Patent Office Before the Board of Appeals

EX PARTE HARRY W. PARKER

Appeal No. 604—25. Decided July 29, 1966

1. PATENTABILITY—DOUBLE PATENTING—DISCLAIMERS UNDER 35 U.S.C. 253.

Where appellant considers a double patenting rejection to have been overcome by the filing of a disclaimer of the patent "without disclaiming the invention therein" because said claims had been inserted in the present application for which a terminal disclaimer was filed, *Held* that "while 35 U.S.C. 253, second paragraph, provides that 'any patentee or applicant may disclaim or dedicate to the public the entire term, or any terminal part of the term, of the patent granted or to be granted,' here appellant * * * has only transferred all the patent claims to the pending application to have the same life in the form of a new patent"; that "In reality, he has not disclaimed or dedicated anything"; that "He is seeking to have precisely the same protection for the same term of the patent in a patent to issue on the application with all the claims of the patent and also additional protection for the remaining term of the patent for a species not disclosed in the patent and conceded to be a variant made obvious by the prior art"; and that "We do not believe that it was the intent of Congress to permit by the second paragraph of section 253 obtaining greater benefits than those of the disclaimed patent, or to sanction proliferation of patents for the same or for patentably indistinct invention."

2. SAME—SAME—SAME—35 U.S.C. 251 AND 253.

We point out that, if the present application should issue as a patent, it would be the second patent issued for the subject matter of appellant's patent. In other words, the patent would be reissued, but not in conformance to the provisions of 35 U.S.C. 251, 252, the reissue sections of statute. None of the limitations on the right to reissue would have been met. Appellant makes no attempt to show errors in the issuance of the patent that warrants reissue. In fact, he makes it evident that there were none. That this is the case is shown by the following facts. He does not amend specification or drawing insofar as they pertain to the subject matter of the issued patent, showing that these parts of the patent are not defective. He makes no change in patent claims, showing that he did not believe that he claimed either more or less than he had a right to claim in the patent. The only thing he has done is add disclosure that would have been refused in a reissue application as being new matter and has claimed the same. We are of the opinion that the disclaimer section of the Statute does not provide for *reissue* of a *non-defective* patent for the purpose of adding and claiming new matter when such is prohibited by the reissue sections.

3. PATENTABILITY—DOUBLE PATENTING.

"It is to be noted by reference to the above-arranged sequence of dates that the earlier application was allowed or passed to issue on September 1, 1964, that on October 2, 1964 the Examiner rejected the claims in the instant application as unpatentable over the allowed claims in the allowed application and that the patent did not issue until April 27, 1965. Thus, appellant had the opportunity and could have placed the claims of the patent in the present case while the two applications were pending in the Patent Office. Instead, he first elected to accept the patent and take his chances, so to speak, as to the allowance of the later application, and later changed his mind just prior to patent issue."

4. SAME—SAME—*In re Robeson* AND *In re Siu* CONSTRUED.

"We note * * * the court's statement in *In re Robeson*, at 141 USPQ 489, that 'Siu [105 USPQ 428] continues the basic rule of only one patent for one invention,' after quoting, at 141 USPQ 489, from their decision in *In re Siu* * * *."

5. SAME—SAME—ONE PATENT FOR ONE INVENTION.

"We point out also that the decisions in *In re Bridgeford*, 149 USPQ 55; *Sterling Varnish Co.* v. *Louis Allen Co.*, 1957 C.D. 76, 723 O.G. 431, 149 F. Supp. 826, 113 USPQ 26 and *Hays et al* v. *Brenner*, 823 O.G. 1210, involving terminal disclaimers, reiterated and followed the same doctrine of one patent for one patentable invention. More important, we refer to the reaffirmance of this basic doctrine by the U.S. Supreme Court in the recent case of *Hazeltine Research, Inc., et al.* v. *Brenner*, 382 U.S. 252, 824 O.G. 8 (at 10); 86 S. Ct. 335, 147 USPQ 429 * * *."

6. SAME—SAME—DISCLAIMERS UNDER 35 U.S.C. 253.

In our review of the authorities, we have noted the dicta in *In re Heinle*, 52 CCPA 1164, 1965 C.D. 406, 816 O.G. 1215, 342 F.2d 1001, 145 USPQ 131, at 1965 C.D. 415, pertaining to a disclaimer of a patent and a terminal disclaimer in a copending application of the same inventor. However, in view of our preceding reasons, we do not believe that such dicta should be taken as controlling here.

APPEAL from the Examiner (Charles E. O'Connell) of Group 420. Serial No. 351,432.

AFFIRMED.

Young and Quigg and *J. Frank Church* for appellant.

Before ASP, DRACOPOULOS and BAILEY, *Examiners-in-Chief*

DRACOPOULOS, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 2 to 26, all the claims in the case.

The references relied upon are:

Dixon, 2,862,558, December 2, 1958.
Habermann, 3,139,929, July 7, 1964.
Parker, 3,180,414, April 27, 1965.
Great Britain, 726,712, March 23, 1955.

As set forth on page 2 of the Examiner's answer,

"Claims 2 through 8 stand rejected on the grounds of double patenting in view of the claimed subject matter in the Parker patent taken with the teachings of various other patents while claims 9 through 26 stand finally rejected on the grounds of double patenting as being exact duplicates of the allowed claims in said patent."

The Parker patent is appellant's earlier filed copending patent, maturing from application, Serial No. 98,351, filed March 27, 1961, of which the present application is a continuation-in-part. Hereinafter the former will be referred to as the patent and the latter as the application.

The following sequence of dates are deemed pertinent to our decision:

3/27/61	Patent application filed.
3/12/64	Present application filed.
9/1/64	Patent application passed to issue.
10/2/64	First Office action in present application rejected claims as unpatentable over allowed claims in earlier application in view of certain prior art references.
4/1/65	Disclaimer filed in patent application, noting that it will issue as Patent No. 3,180,414, on April 27, 1965 and disclaiming "all the claims in the patent for the entire term thereof, without disclaiming the invention therein," further asserting that said claims had been inserted in the present application.
4/1/65	Amendment inserting said claims in present application.
4/27/65	Said Patent No. 3,180,414 issued.
6/9/65	Terminal disclaimer filed in present application disclaiming and dedicating to the public the terminal part of the patent to be granted on this application beginning on April 26, 1982. (The patent, if not disclaimed, would have expired April 27, 1982.)

Appellant does not dispute the propriety of the rejection of any one of the claims, save the availability of the Parker patent as a reference which he considers to have overcome by the filing of said disclaimers and the transfer of the patent claims to the application. He considers this to be in keeping with *In re Robeson*, 51 CCPA 1271, 1964 C.D. 561, 806 O.G. 929, 331 F.2d 610, 141 USPQ 485 and *In re Kaye*, 51 CCPA 1465, 1964 C.D. 630, 807 O.G. 15, 332 F.2d 816, 141 USPQ 829,

rather than with *Ex parte Williams*, 1917 C.D. 73, 245 O.G. 277, relied upon by the Examiner, on the basis that no termination of monopoly to the end of the statutory term of the patent was involved in *Ex parte Williams*. Thus, the sole question before us is one of law.

Upon a careful review of the authorities and the reasons relied upon by the Examiner and the appellant, as well as of other authorities known to us, we are not convinced as to reversible error in the double patenting rejection of the claims at bar.

[1] While 35 U.S.C. 253, second paragraph, provides that "any patentee or applicant may disclaim or dedicate to the public the entire term, or any terminal part of the term, of the patent granted or to be granted," here appellant, the patentee Parker, has not disclaimed or dedicated his patent or any portion thereof to the public but has only transferred all the patent claims to the pending application to have the same life in the form of a new patent. In reality, he has not disclaimed or dedicated anything. He is seeking to have precisely the same protection for the same term of the patent in a patent to issue on the application with all the claims of the patent and also additional protection for the remaining term of the patent for a species not disclosed in the patent and conceded to be a variant made obvious by the prior art. We do not believe that it was the intent of Congress to permit by the second paragraph of section 253 obtaining greater benefits than those of the disclaimed patent, or to sanction proliferation of patents for the same or for patentably indistinct inventions, noting, also, as has the Examiner, that such practice would also further add to the already heavy burdens in the administration and examination of patent application in the Patent Office.

[2] We point out that, if the present application should issue as a patent, it would be the second patent issued for the subject matter of appellant's patent. In other words, the patent would be reissued, but not in conformance to the provisions of 35 U.S.C. 251, 252, the reissue sections of statute. None of the limitations on the right to reissue would have been met. Appellant makes no attempt to show errors in the issuance of the patent that warrants reissue. In fact, he makes it evident that there were none. That this is the case is shown by the following facts. He does not amend specification or drawing insofar as they pertain to the subject matter of the issued patent, showing that these parts of the patent are not defective. He makes no change in patent claims, showing that he did not believe that he claimed either more or less than he had a right to claim in the patent. The only thing he has done is add disclosure that would have been refused in a reissue application as being new matter and has claimed the same. We are of the opinion that the disclaimer section of the statute does not provide for *reissue* of a *non-defective* patent for the purpose of adding and claiming new matter when such is prohibited by the reissue sections.

[3] It is to be noted by reference to the above-arranged sequence of dates that the earlier application was allowed or passed to issue on September 1, 1964, that on October 2, 1964 the Examiner rejected the claims in the instant application as unpatentable over the allowed claims in the allowed application and that the patent did not issue until April 27, 1965. Thus, appellant had the opportunity and could have placed the claims of the patent in the present case while the two applications were pending in the Patent Office. Instead, he first

elected to accept the patent and take his chances, so to speak, as to the allowance of the later application, and later changed his mind just prior to patent issue.

Turning now to the *Robeson* and *Kaye* decisions, supra, only a terminal disclaimer in the pending application was involved there. Thus, the facts are not apposite to those here before us. [4] We note, moreover, the court's statement in *In re Robeson*, at 141 USPQ 489, that "Siu [105 USPQ 428] continues the basic rule of only one patent for one invention," after quoting, at 141 USPQ 489, from their decision in *In re Siu* the following:

> "'However, while the disclaimer has the effect of permitting less close scrutiny of the distinctions between claims issuing to an applicant in separate patents, it was not, and could not have been the legislative intent to permit indiscriminate issuance of numerous patents directed to *mere colorable variations of the same idea*. Nothing in the statute or its legislative history suggests abandonment of the settled rule of *Underwood* v. *Gerber*, 149 U.S. 224, forbidding more than one patent for what is obviously only one invention, whether or not the grants expire on the same day.'" [Emphasis supplied.]

We again point out that it is *conceded* that the species herein not disclosed in appellant's patent is but a variant made obvious by prior art, i.e., a mere colorable variation.

[5] We point out also that the decisions in *In re Bridgeford*, 149 USPQ 55; *Sterling Varnish Co.* v. *Louis Allen Co.*, 1957 C.D. 76, 723 O.G. 431, 149 F. Supp. 826, 113 USPQ 26 and *Hays et al.* v. *Brenner*, 823 O.G. 1210, involving terminal disclaimers, reiterated and followed the same doctrine of one patent for one patentable invention. More important, we refer to the reaffirmance of this basic doctrine by the U.S. Supreme Court in the recent case of *Hazeltine Research, Inc., et al.* v. *Brenner*, 382 U.S. 252, 824 O.G. 8 (at 10); 86 S. Ct. 335, 147 USPQ 429, wherein they held:

> "To adopt the result contended for by petitioners would create an area where patents are awarded for unpatentable advances in the art. We see no reason to read into § 103 a restricted definition of 'prior art' which would lower standards of patentability to such an extent that there might exist two patents where the Congress has plainly directed that there should be only one."

The fact that the species of the instant case is an unpatentable advance over the patented species is conceded.

In the same vein with respect to 35 U.S.C. 103, the U.S. Supreme Court stated in the other recent cases of *Graham et al.* v. *Deere Co.*, *Calmar, Inc.* v. *Cook Chemical Co.*, and *Colgate-Palmolive Co.* v. *Cook Chemical Company*, at 825 O.G. 28,

> "We have concluded that the 1952 Act was intended to codify judicial precedents embracing the principle long ago announced by this Court in *Hotchkiss* v. *Greenwood*, 11 How. 248 (1850), and that, while the clear language of § 103 places emphasis on an inquiry into obviousness, the general level of innovation necessary to sustain patentability remains the same."

and at 825 O.G. 35,

> "Although we conclude here that the inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of § 103, it bears repeating that we find no change in the general strictness with which the overall test is to be applied. We have been urged to find in § 103 a relaxed standard, supposedly a congressional reaction to the 'increased standard' applied by this Court in its decisions over the last 20 or 30 years. The standard has remained invariable in this Court."

In light of the preceding we see no valid basis for allowing a second patent, whatever its term might be, based on an improvement over appellant's granted patent, which is made obvious by the prior

art under 35 U.S.C. 103, which fact, we repeat, is not denied by the appellant. Manifestly, the Supreme Court in the *Hazeltine* and their other cases noted above emphasized that, consonant with 103, different patents must be supported by *patentably distinct* inventions and not merely by different inventions, where the second is but a variant made obvious by the prior art.

[6] In our review of the authorities, we have noted the dicta in *In re Heinle*, 52 CCPA 1164, 1965 C.D. 406, 816 O.G. 1215, 342 F.2d 1001, 145 USPQ 131, at 1965 C.D. 415, pertaining to a disclaimer of a patent and a terminal disclaimer in a copending application of the same inventor. However, in view of our preceding reasons, we do not believe that such dicta should be taken as controlling here.

The decision of the Examiner is affirmed.

AFFIRMED.

In the United States Patent Office Before the Board of Appeals

EX PARTE BERTHA M. RACHLIN

Appeal No. 517—81. Decided March 29, 1966

1. PATENTABILITY—PRINTED MATTER—ADDITION OF PRINTED MATTER TO KNOWN DEVICE.

"Considering first the rejection of all of the claims as unpatentable over Rudd et al. on the basis that the mere addition of printed matter to an old structure, here a conventional ironing board cover, is unpatentable, we remain of the opinion, as in the cases of *Ex parte Gwinn*, 1957 C.D. 18, 716 O.G. 15, 112 USPQ 439 (446 to 447) and *Ex parte Dere*, which are discussed in appellant's brief, that it cannot be categorically stated that the provision of indicia cannot form a patentable combination with an old structure with which it has been newly associated."

2. SAME—SAME—SAME.

"We know of no * * * prohibition against the allowance of claims to such combination [addition of printed matter to an old structure] if they meet the established norms of patentability, namely, as to form, unobvious novelty, utility and progress in the art. *Graham et al.* v. *John Decre Company*, 148 USPQ 459."

3. SAME—SAME—SAME.

"Claim 1, calling for an ironing board cover and measuring means integral therewith, is so broad as to be met by Rudd et al., *per se*, when we consider that the width and the length of the cover as shown in FIGURE 1 of the patent are predetermined and can serve as measuring means, as broadly defined in the claim. The rejection of claim 1 is, accordingly, sustained."

4. APPEAL TO THE BOARD OF APPEALS—NEW GROUND OF REJECTION BY BOARD—RULE 196(b).

"The somewhat different reasons in affirming the rejection is not a new ground, such as contemplated under Rule 196(b). *In re Bush*, 49 CCPA 752, 1961 C.D. 609, 773 O.G. 891, 296 F.2d 491, 131 USPQ 263; *In re Krammes*, 50 CCPA 1099, 1963 C.D. 354, 794 O.G. 30, 314 F.2d 813, 137 USPQ 60."

APPEAL from the Examiner (Isaac Lisann) of Group 430. Serial No. 309,780.

AFFIRMED-IN-PART.

Joseph G. Werner, *John M. Winter* and *Richard P. Schulze* for appellant.

Before DRACOPOULOS and BREWRINK, *Examiners-in-Chief*, and BENDETT, *Acting Examiner-in-Chief*

DRACOPOULOS, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 1 to 10, all the claims in the case.

The references relied upon are:

Krank, 464,075, December 1, 1891.
Edmiston, 570,157, October 27, 1896.
Weber, 869,759, October 29, 1907.
Bukachek et al., 1,438,157, December 5, 1922.
Schmiett, 1,983,815, December 11, 1934.
Muserlian, 2,237,948, April 8, 1941.
Smith, 2,507,056, May 9, 1950.
Rudd et al., 2,850,817, September 9, 1958.
Huber, 2,932,897, April 19, 1960.

As set forth on pages 2 and 3 of the Examiner's answer, the claims stand rejected as follows:

"Claims 1–4, 8 and 9 are not considered patentable over Rudd et al. in view of either Krank, Weber, Smith, Muserlian, Schmiett or Huber. It would be considered obvious to a person having ordinary skill in this art under 35 U.S.C. 103 to place, impress, print or otherwise apply linear measuring scales on the ironing board cover of Rudd et al. as taught by either one of the secondary references. The placing of marks or scales on known devices or structure for the purpose of aiding the workman in accomplishing his work would be considered to be only a matter of choice. Such a situation was held to be unpatentable in *In re Hanson*, 1946 C.D. 61; 33 CCPA 823; 68 USPQ 188; 152 F.2d 1017; 584 O.G. 315. It would appear to follow that placing scales on the known ironing board cover for aiding the workman would likewise be considered a matter of choice and obvious.

"Claims 5–7 and 10 are similar to claims 1–4, 8, 9 but further include a scale at a right angle to the longitudinally placed main scale. These claims are not considered patentable over the references further in view of Edmiston or Bukachek who show the notorious expedient of right angularly related scales on working surfaces. It would be considered obvious to a person having ordinary skill in this art to apply such secondary indicia on the ironing board cover surface of Rudd et al.

"Claims 1–10 are also rejected as unpatentable over Rudd et al. The application of printed matter to an old and conventional article, for example the ironing board cover of Rudd et al. is considered to be unpatentable. The only structural difference between the Rudd article and that sought to be patented here is the printed matter and printed matter alone has long been considered to be unpatentable. See for example, *In re Kothny*, 496 O.G. 277; 25 CCPA 1067; 96 F.2d 289; 1938 C.D. 481."

[1] Considering first the rejection of all the claims as unpatentable over Rudd et al. on the basis that the mere addition of printed matter to an old structure, here a conventional ironing board cover, is unpatentable, we remain of the opinion, as in the cases of *Ex parte Gwinn*, 1957 C.D. 18, 716 O.G. 15, 112 USPQ 439 (446 to 447) and *Ex parte Dere*, which are discussed in appellant's brief, that it cannot be categorically stated that the provision of indicia cannot form a patentable combination with an old structure with which it has been newly associated.

[2] We know of no such prohibition against the allowance of claims to such combination if they meet the established norms of patentability, namely, as to form, unobvious novelty, utility and progress in the art. *Graham et al.* v. *John Deere Company*, 148 USPQ 459.

The question as to the statutory status of printed matter in combination with structure has been considered at length by the Board of Appeals since the enactment of the Act of 1952 in the cases of *Ex parte Gwinn* and *Ex parte Dere*, supra, wherein after a review of numerous decisions relating to printed matter, among them *In re Kothny*, supra, the Board held, in the language of the *Dere* case at 118 USPQ 542 and 543, respectively, that:

"Under our statutes a combination including printed matter associated with structure is capable of being patented (1) if there is a new physical feature although the relationship of printed matter thereto may be old, (2) a combination in which the physical features are old but there is a new relation of printed matter thereto, or (3) a combination in which there are both new physical features and a new relation of printed matter thereto. All of the other statutory requisites must, of course, be met.

"Under (2) the structural novelty may be solely in a novel interrelation of printed matter to old physical features."

* * * * * * *

"In this Board decision [*Ex parte Gwinn*, supra], there are in addition cited other cases that, in our estimation, clearly establish the law as being that . . . when printed matter is adjusted, i.e., related, to old physical structure to give a useful advantageous result, the combination is embraced by our statutes and patentability or lack thereof must be tested in the usual ways against the prior art. The rejection of the instant claims as drawn to non-statutory subject matter is reversed."

Consonant with the foregoing, the measuring means will be considered herein as an element of the claimed combination in testing the patentability of the claims as to obviousness and advantages over the prior art. In other words, the issue before us falls under condition (2) in the *Dere* case, i.e., whether or not there is a new relation of the claimed printed matter, or measuring means broadly, to the concededly conventional features of the ironing board cover.

In the absence of supporting prior art, the indicia designating lineal distance, as recited in claims 2 to 10, when considered in combination with the claimed ironing board cover of claims 2 to 7 and the ironing surface of claims 8 to 10, are novel and productive of advantages as set forth in the specification and at pages 2 to 4 of the appeal brief, not obvious from Rudd et al., *per se*. Accordingly, we do not sustain the instant rejection of claims 2 to 10.

[3] Claim 1, calling for an ironing board cover and measuring means integral therewith, is so broad as to be met by Rudd et al., *per se*, when we consider that the width and the length of the cover as shown in FIGURE 1 of the patent are predetermined and can serve as measuring means, as broadly defined in the claim. The rejection of claim 1 is, accordingly, sustained. [4] The somewhat different reasons in affirming the rejection is not a new ground, such as contemplated under Rule 196(b). *In re Bush*, 49 CCPA 752, 1961 C.D. 609, 773 O.G. 891, 296 F.2d 491, 131 USPQ 263; *In re Krammes*, 50 CCPA 1099, 1963 C.D. 354, 794 O.G. 30, 314 F.2d 813, 137 USPQ 60.

Turning now to the rejection of the claims as unpatentable over Rudd et al. in view of the other noted references, we will consider the claims in three groups.

(1) Claim 1 which is directed to an ironing board cover and measuring means integral therewith and which we have already held unpatentable over Rudd et al.

(2) Claims 2 to 7 which are dependent from claim 1 but define the measuring means as comprising at least indicia designating lineal distance impressed in the ironing board cover and,

(3) Claims 8, 9 and 10 which are directed to an ironing surface and measuring indicia impressed thereon.

With respect to group (2), claims 2 to 7, the only reference involving a lineal measure in conjunction with an ironing board cover is the Muserlian patent. However, the patentee did not appreciate the advantage of impressing the measuring means onto the ironing board cover but solved the measuring problem by placing it on a table (10*c*) on which the pressing equipment is mounted. Thus, appellant's claimed

concept and advantage of directly placing a tape onto the cover whereby it will be held taut, ready to use and will not interfere with the ironing surface, are absent in Muserlian. It is to be noted also that scale 25 in this patent is located above the surface of the table 10*c* and therefore prevents utilization of said table as an ironing surface. On the basis of the references before us, we are constrained not to sustain the rejection of claims 2 to 7 as unpatentable thereover.

Claims 8, 9 and 10, group (3), do not present anything patentable over Huber. The term "ironing surface" is met by any plane surface, such as surface 52 on the work table shown in FIGURE 2 of Huber, which is provided with lineal distance indicia and is obviously capable of being used as an ironing surface. Whether the scale is applied as a thin strip or stamped on the table surface appears to us to involve only obvious alternatives within the skill of the routineer.

As to the second angularly disposed indicia, we share the Examiner's view that such is old in working surfaces as exemplified by Bukachek et al. and Edmiston, in view of which the addition of an angular scale to the Huber surface would be quite obvious and a matter of choice on the part of the ordinary artisan.

The rejection of claims 8, 9 and 10 as unpatentable over the references is, therefore, sustained. Here, again, we do not consider our use of the references to amount to a new ground of rejection. In addition of *In re Bush* and *In re Krammes*, supra, see *In re Christensen et al.*, 35 CCPA 1000, 1948 C.D. 356, 611 O.G. 8, 166 F.2d 825, 77 USPQ 108 and *In re Cowles*, 33 CCPA 1236, 1946 C.D. 574, 591 O.G. 509, 156 F.2d 551, 70 USPQ 419, in support thereof.

The decision of the Examiner is affirmed as to claims 1, 8, 9 and 10 and reversed as to dependent claims 2 to 7, subject to claim 2 being rewritten to incorporate the subject matter of base claim 1 on which all the latter claims depend.

AFFIRMED-IN-PART.

In the United States Patent Office Before the Board of Appeals

EX PARTE ALFRED EINFALT

Appeal No. 653- 20. Decided November 28, 1966

1. DESIGN—PATENTABILITY—FOREIGN REGISTRATION—REGISTRATION HAS EFFECT OF DESIGN PATENT.

"* * * it must be pointed out that it is our understanding that in a large number of countries ornamental designs for articles of manufacture are protected by a simple registration procedure. An application is filed together with drawings or photographs or samples and registration is effected forthwith. The term 'patent' is not used in many countries with respect to the protection of these designs. The practice in the United States Patent Office has been to consider these design registrations as having the same effect as design patents in various places of the patent law where foreign applications or patents are referred to."

2. SAME—SAME—SAME—35 U.S.C. 102(d) and 172.

Upon considering the rejection of a design claim "as being barred by the provisions of 35 U.S.C. 102(d), and 35 U.S.C. 172" because the design had been registered as a German design patent application filed more than six months before the filing date of the present application, and with reference to appellant's contention that the German filing "was in sealed condition and remained so until after the filing in the United States" and therefore does not constitute a "patent" within the meaning of 35 U.S.C. 102(d), *Held* that this state of facts "would render the grant of priority dates on such design registrations largely impossible" since the statute in question does not "envision such a

result"; and that "It appears to us that where appellant has full knowledge of the content of the design registration which was acknowledged for the purposes of his benefit, he cannot be heard to complain that the "secrecy" in the foreign practice prevents the United States practice from accepting his averments and considering the German registration as a 'patent' within the meaning and purpose of 35 U.S.C. 102(d)."

APPEAL from the Examiner (Edwin H. Hunter) of Group 290. Serial No. D.82,633.

AFFIRMED.

Hane and Nydick for appellant.

Before BAILEY and BREWRINK, *Examiners-in-Chief*, and BENDETT, *Acting Examiner-in-Chief*

BREWRINK, *Examiner-in-Chief*.

This is an appeal from the final rejection of the following design claim:

The ornamental design for a roller coaster trackway, as shown.

No references are relied upon.

On December 30, 1963, appellant filed a German design patent application which was more than six months before the filing date of the instant application. The design claim here on appeal has hence been rejected as being barred by the provisions of 35 U.S.C. 102(d) and 35 U.S.C. 172 which read as follows:

"102. A person shall be entitled to a patent unless—

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States, * * *."

"172. The right of priority provided for by section 119 of this title and the time specified in section 102(d) shall be six months in the case of designs."

Section 172 merely serves to change the twelve months in section 102(d) to six months in the case of designs.

Appellant urges that the circumstances and procedures applicable to the filing in Germany as evidenced in the present record show that the article to be covered by the German filing was in sealed condition and remained so until after the filing in the United States. It is appellant's view that the sealed German design subject matter does not constitute a "patent" within the meaning of 35 U.S.C. 102 and in particular section (d) thereof. This position is based on the concept that to constitute a "patent" within the meaning of 35 U.S.C. 102(d) there must be a grant by the foreign authorities and availability to the public.

[1] Before considering the question involved, it must be pointed out that it is our understanding that in a large number of countries ornamental designs for articles of manufacture are protected by a simple registration procedure. An application is filed together with drawings or photographs or samples and registration is effected forthwith. The term "patent" is not used in many countries with respect to the protection of these designs. The practice in the United States Patent Office has been to consider these design registrations as having the same effect as design patents in various places of the patent law where foreign applications or patents are referred to.

[2] As pointed out by the Examiner at page 4 of the answer, appellant has apparently complied with German law and to require some further action to satisfy United States practices in related matters would render the grant of priority dates on such design registrations

largely impossible. We do not consider the statute in question to envision such a result. It appears to us that where appellant has full knowledge of the content of the design registration which was acknowledged for purposes of his benefit, he cannot be heard to complain that the "secrecy" in the foreign practice prevents the United States practice from accepting his averments and considering the German registration as a "patent" within the meaning and purpose of 35 U.S.C. 102(d). Decisions dealing with the meaning of "patented" in connection with establishing bars against persons not party to the foreign filed document do not appear to us to be controlling on the present case.

The decision of the Examiner is affirmed.

AFFIRMED.

In the United States Patent Office Before the Board of Appeals

EX PARTE HENRI-GEORGES DOLL

Appeal No. 613—69. Decided November 18, 1966

1. REISSUE—BROADENED CLAIMS—TWO-YEAR LIMITATION.

Upon considering appellant's contention "that since he filed a broadened reissue application within two years of the issuance of the original patent, he may later, and after the two-year period, put in claims broader than any patent claims which are wholly unrelated to the broader claims on which the reissue was originally sought," *Held* that "We are unable to agree with this broad proposition advanced by appellant."

2. SAME—SAME—SAME—35 U.S.C. 251.

"The fourth paragraph of 35 U.S.C. 251 * * * makes no direct mention of an application. Thus, it seems to us that the language could just as well mean that no reissue patent shall be granted enlarging the scope of the claims of the original patent, unless said claims are applied for within two years of the grant of the original patent."

3. SAME—SAME—SAME—SAME.

"* * * it appears that the two-year period in which to file for broadened reissue claims is granted [35 U.S.C. 251] for the purpose of enabling the patentee to discover particular deficiencies in the breadth of the claims as originally granted, and not as a period in which to decide whether or not he should spread a net to catch any broad subject matter which he may later decide should have been captured."

4. SAME—SAME—SAME.

"It * * * seems to us that appellant is entitled to present claims after the two-year period which are more limited in scope than claim 20 [an original claim in the reissue application], since this would amount to merely, in effect, amending claim 20 to make it more specific."

5. SAME—SAME—SAME.

"Claims 32 to 35, inclusive, 42 and 43 [not original reissue application claims] present a different problem. These claims are drawn essentially to the uphole mechanisms shown in FIGS. 4 and 5, and nowhere do they require the specific instrumentalities set forth in the reissue oath and the device covered by claim 20 [an original claim in the reissue application]. Therefore, these claims stand without an adequate reissue oath, and as claims broader than the patent claims for which no reissue claim was made within the two-year period allowed by the statute. Therefore, we will sustain the Examiner's rejection of these claims on these two grounds."

APPEAL from the Examiner (Gerard R. Strecker) of Group 250. Serial No. 694,700.

AFFIRMED-IN-PART.

Brumbaugh, Free, Graves and Donohue for appellant.

Before FRIEDMAN, KREEK, and KEELY, *Examiners-in-Chief*

KREEK, *Examiner-in-Chief*.

This is an appeal from the decision of the Examiner finally rejecting claims 32 to 43, inclusive. Claims 1 to 19, inclusive, 21, 22 and 25 to 31, inclusive, have been allowed.

No prior art is relied on.

In this reissue application, as originally filed, claims 20 to 31, inclusive, were presented for interference purposes. The oath accompanying the reissue application states in part:

"(1) Claim 18 of the patent, which is addressed to the embodiment shown in FIG. 4 of the patent, contains erroneous recitals for which there is no support in FIG. 4, so that it does not afford adequate coverage for this form of the invention.

"(2) None of the patent claims affords for the embodiment of FIG. 4 patent coverage of the scope possessed by claims 20–31, inclusive, which form part of the foregoing specification, nor were claims of comparable scope ever presented during the pendency of the original application on which said Letters Patent were granted.

"The above-noted inoperativeness or invalidity of said Letters Patent was caused by the applicant's error, which arose without any deceptive intention, in failing to obtain, during the pendency of the original application on which said Letters Patent were granted, claims providing adequate coverage for the form of the invention shown in FIG. 4. Deponent verily believes that this error occurred because of the failure on the part of the applicant and his attorneys to recognize that the invention disclosed in FIG. 4 was broader than the claims granted in the original patent."

None of the original reissue claims are before us on appeal.

About four and one-half years after appellant's original patent issued, claims 32 to 35, inclusive, were copied from a second patent for interference purposes, and about six and one-half years after the issuance of appellant's original patent, claims 36 to 41, inclusive, were copied from a third patent for interference purposes. Likewise, claims 42 and 43 were presented along after the issuance of appellant's original patent. No oath other than the original reissue application oath is of record herein.

Claims 32 to 43, inclusive, are conceded to be broader than any of the original patent claims. The Examiner has rejected them as being broader than the original claims, applied for more than two years after the issuance of the patent, in violation of the fourth paragraph of 35 U.S.C. 251.

Claims 32 to 43, inclusive, have also been rejected as claiming different inventions than those claimed in the original patent. However, the Examiner concedes that the claims are supported by the disclosure of the original patent and the present application.

Claims 32 to 43, inclusive, have also been "rejected as being unsupported by an oath in accordance with the provisions of Titles U.S.C. 115 and 251 or Rule 175 of the Rules of Practice."

[1] Appellant contends that since he filed a broadened reissue application within two years of the issuance of the original patent, he may later, and after the two-year period, put in claims broader than any patent claims which are wholly unrelated to the broader claims on which the reissue was originally sought.

We are unable to agree with this broad proposition advanced by appellant.

[2] The fourth paragraph of 35 U.S.C. 251, which reads as follows:

"No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent."

makes no direct mention of an application. Thus, it seems to us that the language could just as well mean that no reissue patent shall be granted enlarging the scope of the claims of the original patent, unless said claims are applied for within two years of the grant of the original patent.

Patent Office Rule 175 requires the reissue oath to particularly specify the errors relied upon, which appellant has done in this case by referring particularly to FIG. 4 in his oath, and the fact that he had failed to claim the invention in the breadth set forth in claims 20 to 31, inclusive. [3] Thus, it appears that the two-year period in which to file for broadened reissue claims is granted for the purpose of enabling the patentee to discover particular deficiencies in the breadth of the claims as originally granted, and not as a period in which to decide whether or not he should spread a net to catch any broad subject matter which he may later decide should have been captured.

An analysis of claim 20 indicates that it is broadly drawn to an apparatus for electrically logging oil wells which includes a cable and a downhole detecting means in which more than one detecting electrode can be connected alternatively to a single conductor in the cable for transmitting signals to the surface, thereby effecting an economy of cable conductors in the cable. The claim also includes conductor means whereby the switching means is operated. Therefore, it seems to us, under the circumstances of this case, that the original reissue oath is adequate to cover this portion of the FIG. 4 disclosure and all claims more specific than claim 20. [4] It also seems to us that appellant is entitled to present claims after the two-year period which are more limited in scope than claim 20, since this would amount to merely, in effect, amending claim 20 to make it more specific. In using the term "more limited in scope," we use the term in the sense that it was used in *In re Rogoff*, 46 CCPA 733, 1959 C.D. 153, 739 O.G. 808, 261 F.2d 601, 120 USPQ 185. Judged by this standard, we are of the opinion that claims 36 to 41, inclusive, are more limited in every respect than claim 20 in that they require all of the features of claim 20 plus additional features. Therefore, appellant's original reissue oath is adequate for the purpose of these claims. Therefore, we will not sustain the rejection of claims 36 to 41, inclusive, on the grounds of inadequate oath, or as violating paragraph four of 35 U.S.C. 251.

As to the question as to whether or not these claims are for the same invention as originally claimed, or intended to be claimed, the Court of Customs and Patent Appeals has spoken recently in *In re Wesseler*, 151 USPQ 339, and cases cited therein. This case points out that every claim which is different in language than the claims of the patent is technically directed to a different invention. Consequently, a rejection based on different inventions would nullify the statutory intent. We think that appellant has adequately pointed out in his brief wherein present claims 36 to 41, inclusive, are not directed to an invention different from that intended to be covered by these claims. Therefore, we will not sustain this ground of rejection as to claims 36 to 41, inclusive.

[5] Claims 32 to 35, inclusive, 42 and 43 present a different problem. These claims are drawn essentially to the uphole mechanisms shown in FIGS. 4 and 5, and nowhere do they require the specific instrumentalities set forth in the reissue oath and the device covered by claim 20. Therefore, these claims stand without an adequate reissue oath, and as claims broader than the patent claims for which no

reissue claim was made within the two-year period allowed by the statute. Therefore, we will sustain the Examiner's rejection of these claims on these two grounds.

Appellant has shown in his brief, to our satisfaction, that he had claimed, or intended to claim, this subject matter in the original application which matured into the patent. Therefore, we will not sustain the rejection of claims 32 to 35, inclusive, 42 and 43 as based on a different invention.

The decision of the Examiner is affirmed as to claims 32 to 35, inclusive, 42 and 43, and is reversed as to claims 36 to 41, inclusive.

AFFIRMED-IN-PART.

United States Court of Appeals
District of Columbia Circuit

THE GENERAL TIRE AND RUBBER COMPANY AND GILBERT H. SWART
v.
EDWARD J. BRENNER, COMMISSIONER OF PATENTS

THE GENERAL TIRE AND RUBBER COMPANY ET AL.
v.
EDWARD J. BRENNER, COMMISSIONER OF PATENTS

Nos. 20,561, 20,562. Decided June 23, 1967

[— U.S.App.D.C. —; — F.2d —; 154 USPQ 133]

1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE.

"Appellant contends that the use of a liquid polysulfide rubber without plasticizer would have been obvious to one skilled in the art as of the time his 1945 application [which did not explicitly disclose the use of a liquid polysulfide rubber without the use of a plasticizer] was filed. The trial court found 'that liquid, castable polysulfide rubbers had become publicly available at the time the [appellant's] 1945 application was filed . . . although they were not common and well known to those skilled in the art . . . .' It is elementary that in determining obviousness for purposes of patentability, information of products publicly available are presumed to have come to the attention of one skilled in the art. *Walker* v. *General Motors Corp.*, 362 F.2d 56, 60 and n. 3 (9th Cir. 1966). Here, where the evidence showed that processes for utilizing liquid polysulfide rubbers had been published prior to 1945 in several scientific journals generally available to those in the field, we think the same presumption should prevail in determining the sufficiency of disclosure. See *Loom* v. *Higgins*, 105 U.S. 580 (1881); *cf. Application of Bosy*, 360 F.2d 972 (CCPA 1966). Viewed in this light, the quoted finding of the trial court is erroneous because it rests on the belief that one skilled in the art would not be aware of publicly available information. We cannot conclude that this error was harmless and since the District Judge who heard this case has now retired, we reverse and remand for a new trial without reaching other issues presented."

APPEALS from the United States District Court for the District of Columbia.

REVERSED AND REMANDED.

Edward B. Beale, with whom *William R. Trenor* was on the brief, for appellants.

Joseph Schimmel, Solicitor, United States Patent Office, submitted on the brief, for appellee.

Before BAZELON, *Chief Judge*, DAHAHER and BURGER, *Circuit Judges*

PER CURIAM:

Appellant Swart was denied a patent as to certain claims in his applications which are a continuation in part of an application filed on November 2, 1945. The contested claims involve the use of a liquid castable polysulfide rubber in the manufacture of a solid rocket fuel. Following trial, the District Court filed findings of fact and conclusions of law and entered judgment for appellee.

Appellant did not explicitly disclose the use of a liquid castable polysulfide rubber *without the use of a plasticizer* in his 1945 application. He did, however, disclose the use of a polysulfide rubber, although his claims apparently contemplated the use of an additional liquid to reduce its viscosity. In December, 1946, one Bartley made application for a patent on a solid rocket fuel wherein he disclosed the use of a *liquid* polysulfide rubber without plasticizer by its brand name Thiokol.

[1] Appellant contends that the use of a liquid polysulfide rubber without plasticizer would have been obvious to one skilled in the art as of the time his 1945 application was filed. The trial court found "that liquid, castable polysulfide rubbers had become publicly available at the time the [appellant's] 1945 application was filed . . . although they were not common and well known to those skilled in the art . . . ." It is elementary that in determining obviousness for purposes of patentability, information or products publicly available are presumed to have come to the attention of one skilled in the art. *Walker* v. *General Motors Corp.*, 362 F.2d 56, 60 and n. 3 (9th Cir. 1966). Here, where the evidence showed that processes for utilizing liquid polysulfide rubbers had been published prior to 1945 in several scientific journals generally available to those in the field, we think the same presumption should prevail in determining the sufficiency of disclosure. See *Loom* v. *Higgins*, 105 U.S. 580 (1881); *cf. Application of Bosy*, 360 F.2d 972 (CCPA 1966). Viewed in this light, the quoted finding of the trial court is erroneous because it rests on the belief that one skilled in the art would not be aware of publicly available information. We cannot conclude that this error was harmless and since the District Judge who heard this case has now retired, we reverse and remand for a new trial without reaching other issues presented.

REVERSED AND REMANDED.

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Notices under 35 U.S.C. 290; Patent Act of 1952

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2,675,993, Smith and Mitchell, METHOD AND APPARATUS FOR THERMALLY WORKING MINERALS AND MINERAL-LIKE MATERIALS; **3,019,004**, J. F. Vasselin, METHOD AND APPARATUS FOR FLAME CUTTING MINERAL BODIES AND OTHER MATERIAL, filed Mar. 16, 1967, D.C. Vt. (Burlington), Doc. 4817, *Browning Engineering Corporation* v. *Union Carbide Corporation.*

2,853,420, H. Lowey, ETHYL CELLULOSE COATINGS FOR SHAPED MEDICINAL PREPARATIONS; **2,953,497**, H. A. Press, THERAPEUTIC TABLETS, filed Oct. 4, 1965, D.C., S.D.N.Y., Doc. 65–C–2975, *Howard Press* v. *Forest Laboratories, Inc. et al.* Plaintiff's notice of discontinuance as to one defendant only, Apr. 12, 1967.

2,862,369, E. W. Simons, AIR CONDITIONED DISPLAY COMPARTMENT AND METHOD; **3,134,243**, Hagen and Anderson, REFRIGERATED DISPLAY CASE; **3,128,609**, Beckwith and Vogel, REFRIGERATED ENCLOSURE, filed Mar. 10, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c388, *Dual Jet Refrigeration Co. and Dual Jet Corporation* v. *Emhart Corporation.*

2,889,650, C. P. Hankus, ARTIFICIAL TREE; **2,996,181**, same, PACKAGING DEVICE FOR ARTIFICIAL CHRISTMAS TREE; **3,067,797**, same, FOIL SLITTING MECHANISM; **3,069,192**, same, SEPARABLE JOINT FOR POLES; **Re. 24,774**, same, PACKAGING DEVICE, filed Dec. 3, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c2037, *Chester P. Hankus and Revlis Company* v. *Gordon Shapiro and Gordon Sales Management Corp.* Consent judgment, Apr. 3, 1967.

2,953,497. (See 2,853,420.)

2,996,181. (See 2,889,650.)

3,000,576, Levey and Harvey, SPRAY GUN; **3,018,968**, G. S. Levey, CLOSED SYSTEM RECIRCULATING ASSEMBLY, filed May 5, 1967, D.C., N.D. Tex. (Dallas), Doc. CA3–2050, *The Spee-Flo Manufacturing Corporation* v. *Braniff Airways, Incorporated and Southwest Air Equipment, Incorporated.*

3,018,968. (See 3,000,576.)

3,019,004. (See 2,675,993.)

3,029,421, R. F. Beguin, ANNUNCIATOR SYSTEM; **3,039,085,** E. A. Keller, MAGNETIC CORE ANNUNCIATOR SYSTEM; **Re. 24,031,** R. J. Hammerstone, ANNUNCIATOR SYSTEM, filed Feb. 9, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c199, *The Scam Instrument Corporation* v. *Lundell Controls, Inc.* Dismissed on stipulation, Feb. 15, 1967.

3,039,085. (See 3,029,421.)

3,040,642, Keller and Beck, PHOTOGRAPHIC APPARATUS; **3,063,622,** same, XEROGRAPHIC APPARATUS; **3,125,336,** W. Wanielista, MOVABLE VACUUM PLATEN FOR REPRODUCING APPARATUS; **3,180,239,** Shearer, Beck and Wheelock, APPARATUS FOR THE PHOTOELECTROSTATIC REPRODUCTION OF IMAGES, filed July 19, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1337, *Robertson Photo-Mechanix, Inc.* v. *Plastic Coating Corporation.* Dismissed on stipulation with prejudice, Nov. 25, 1966.

3,067,797. (See 2,889,650.)

3,069,192. (See 2,889,650.)

3,083,622. (See 3,040,642.)

3,125,336. (See 3,040,642.)

3,128,609. (See 2,862,369.)

3,132,581, Isbey and De Berard, COLD PROCESS LAMINATION MACHINE; **3,205,995,** J. J. Hill, COIN ACTUATOR FOR VENDING MACHINES; **D. 205,468,** L. D. Dunn, VENDING MACHINE, filed June 21, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1134, *Marlan Company* v. *Perma-Vend Corporation.*

3,134,243. (See 2,862,369.)

3,150,430. (See 2,526,529.)

3,155,215, R. S. Avery, EMBOSSING TOOL WITH RADIAL TAPE FEED PATH; **D. 197,817,** same, LABEL MAKING TOOL, filed Mar. 15, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67-384-S, *Avery Products Corporation* v. *Summa Industries International.*

3,180,239. (See 3,040,642.)

3,205,995. (See 3,132,581.)

Re. 24,031. (See 3,029,421.)

Re. 24,774. (See 2,889,650.)

D. 197,817. (See 3,155,215.)

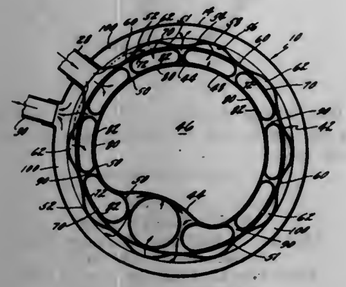
D. 205,468. (See 3,132,995.)

PATENTS

GRANTED OCTOBER 10, 1967

GENERAL AND MECHANICAL

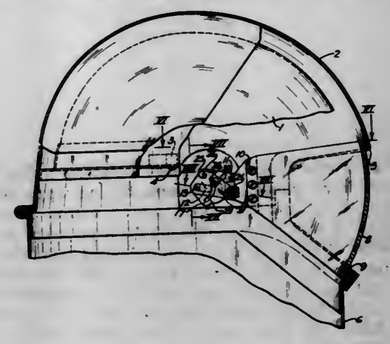
3,345,641
VENTILATED SPACE SUIT
David C. Jennings, East Hampton, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 2, 1964, Ser. No. 356,825
5 Claims. (Cl. 2—2.1)



1. A pressure suit ventilation garment comprising a porous net or open weave layer adapted to contact the body of the wearer, a flexible tension member loosely enveloping said porous layer, a plurality of parallel, distensible tubes positioned between said porous layer and said tension member and spaced so that when said tubes are inflated, said tension member is drawn taut as said tubes form an inner wall flattened out against said porous layer and an outer wall flattended out against said tension member while adjacent tubes are spaced slightly from each other, a plurality of first ports extending through said tension member and said outer wall of said tubes, a plurality of second ports extending through said inner wall of said tubes, a plurality of third ports extending through said tension member between said tubes when inflated, and means to pass pressurized fluid through said plurality of first ports to inflate said tubes and then to pass from said tubes through said plurality of second ports and then to pass through said net layer and then to pass between said tubes and through said plurality of third ports.

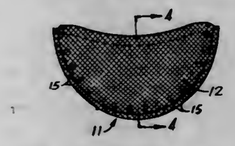
3,345,642
HEADGEAR WITH RETRACTABLE VERTICALLY MOVABLE EYE SHIELD
Edward A. Uminski, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 9, 1965, Ser. No. 512,744
7 Claims. (Cl. 2—6)

1. In protective headgear, a helmet shell for receiving the head, a horizontally curved transparent eye shield normally engaging the inside of the front of the shell and having rearwardly extending end portions, a shaft rotatably mounted in each side of the shell behind the shield, a cam plate rigidly mounted near its rear end on each shaft inside the shell, manually operable members rigidly mounted on the outer ends of the shafts for turning them to swing the front ends of the cam plates upward, a cam follower plate beside each cam plate and rigidly connected at its front end to the adjoining end of the shield, each follower plate being provided with a slot extending lengthwise thereof receiving the adjoining shaft in its rear end, a cam follower mounted on the follower plate in front of said slot, the front edges of the cam plates engaging the back of said cam followers to press the shield forward against the shell, an inwardly projecting stud rigidly mounted in each side of the shell beside said plates, each follower plate having a straight slot therein receiving one of the studs in its rear end and extending forward therefrom parallel to the adjacent shaft slot, each cam plate and adjoining follower plate being provided



with interengaging portions for retracting the follower plate on its shaft and stud as the cam plate is swung upward a predetermined distance, the front edges of the cam plates being shaped to permit said cam followers to move backward as the cam plates are swung upward to thereby allow said retraction of the follower plates, and each follower plate being provided with an arcuate slot extending downward from the front end of its stud slot, whereby the follower plates and cam plates can be swung upward together as said shafts are turned further after the follower plates and shield have been retracted.

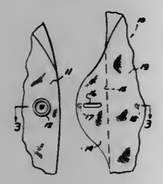
3,345,643
DISPOSABLE DRESS SHIELD
Mary A. L. Bradley, 7390 Terrebonne Ave., Montreal, Quebec, Canada
Filed Mar. 29, 1965, Ser. No. 443,488
5 Claims. (Cl. 2—53)



1. A disposable type dress shield adapted to absorb body perspiration comprising at least one inner layer of gauze like material, an outer layer of heat fusible sheet plastic material, and a plurality of perspiration absorbent layers positioned between said inner and outer layers, the said perspiration absorbent layers having a plurality of apertures located adjacent the peripheral edge thereof, the peripheral portions of said inner and outer layers extending outwardly beyond the peripheral portions of

the perspiration absorbent layers and being heat fused together around the peripheral edges of the said perspiration absorbent layers and through the apertures therein to hold the said absorbent layers tautly in position between the inner and outer layers.

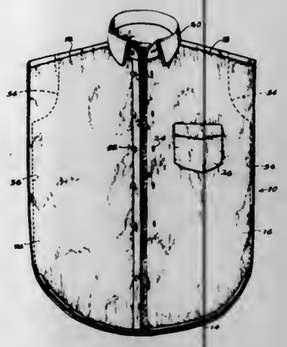
3,345,644
MEN'S SUIT TYPE JACKET WITH CONCEALABLE BUTTON FASTENER
Luigi Iannucci, 12055 Barlow, Detroit, Mich. 48205
Filed May 12, 1966, Ser. No. 549,587
3 Claims. (Cl. 2—96)



1. In a man's suit type jacket including a first and a second front panel, the panels having approximately vertical, front meeting edges, and a button secured to the first of said panels adjacent its front edge at about the waist of the jacket, the improvement comprising:
a button hole tab formed integral with the second of said panels, out of the same cloth, and extending towards the first panel from the line which normally defines the front edge of the second panel;
the tab being horizontally aligned with said button and having a button hole formed therein for receiving said button;
said tab being foldable about said line for positioning in back of the second panel, for alternatively receiving said button behind the second panel, and thereby concealing the button to simulate a buttonless fastening;
a fastener part secured to said tab adjacent to its free end, and a cooperating fastener part secured upon the back of said second panel, for holding said tab in position upon the back of the second panel.

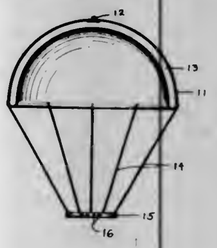
3,345,645
METHOD OF MANUFACTURE OF A CUSTOM GARMENT
Alexander N. Di Addario, 8888 The Fairways, Clarence, N.Y. 14031
Filed Feb. 3, 1964, Ser. No. 342,131
4 Claims. (Cl. 2—115)

1. The method of fabricating a custom made shirt from a supply of shirt making stock pieces including separate torso and sleeve pieces; said torso pieces each comprising a back panel and two front panels and a collar portion sewn together only at the contiguous shoulder and neck portions thereof and being over-sized girthwise and at the armhole portions thereof, said sleeve pieces having finished cuffs thereon and being over-sized in length and in width dimensions and being open along the lengthwise seam portions thereof, said method comprising:
fitting a torso stock piece to a customer and cutting the front and back panels thereof to a preferred girth and armhole dimension pattern,
sewing the front and back panels together to provide the shirt side seams,
fitting the sleeve stock pieces to the customer and cutting them girthwise and lengthwise to suit the customer,



and then sewing the sleeve side seams and then sewing the sleeves into the armhole portions of the torso stock piece.

3,345,646
PARACHUTE HAT
Charles P. McCann, Blakeley Lane, Newfoundland, N.J. 07435
Filed July 25, 1966, Ser. No. 567,559
3 Claims. (Cl. 2—199)



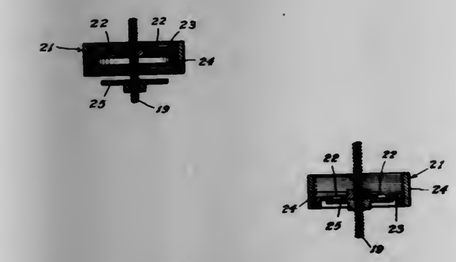
1. A parachute hat comprising
(a) a generally hemispheric hollow inflatable body having inner and outer layers of air impervious material,
(b) a plurality of flexible shrouds each attached at one end to the equatorial edge of the body,
(c) a head-strap,
(d) the other end of each shroud attached to the said head-strap,
(e) said plurality of shrouds each having a length spacing said body a substantial distance from said head-strap whereby said body will be disposed in spaced relation to a wearer's head when inflated with lighter-than-air gas.

3,345,647
MECHANICAL HAND HAVING COMPUTER-TYPE DRIVE MECHANISMS FOR PRODUCING NUMEROUS HAND ARTICULATIONS SIMILAR TO A HUMAN HAND
Joseph A. Gentiluomo, 1456 Belmont Ave., Schenectady, N.Y. 12308
Filed Oct. 7, 1963, Ser. No. 314,148
6 Claims. (Cl. 3—12.7)

1. A mechanical hand comprising, in combination, a carpus, a metacarpus pivotally connected to said carpus, a thumb and a finger pivoted with respect to said metacarpus, drivably connected "multi-input type analog computer mechanisms" functionally associated with said carpus, metacarpus, thumb and finger, and input drive means operatively associated with said computer mechanisms to effectuate hand movements.



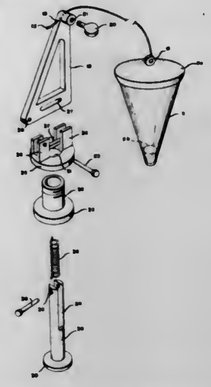
3,345,648
FLUSH-TANK OUTLET VALVE
Martin J. Rafferty, South Orange, N.J. (524 Orange St., Newark, N.J. 07107)
Filed June 15, 1965, Ser. No. 464,141
6 Claims. (Cl. 4—67)



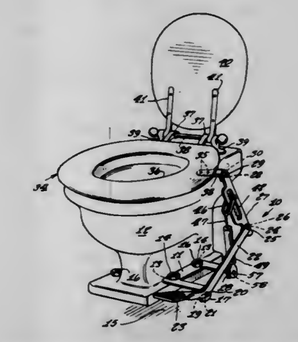
1. An adjunct to flush-tank outlet valves for regulating the depth of water discharged from a flush tank before the valve closes comprising a cup-shaped control device immersible in the water of a flush-tank, said device being upwardly open for being filled with water upon immersion, said device having drain holes at its bottom adapted to discharge the water from said device, and a regulator controlling rate of discharge of water from said device.

3,345,649
MECHANICAL CONTROL DEVICE FOR A LIQUID-CONTAINING WATER CLOSET
Jose A. Cabra, Fabrica y Oficinas Calle 10, No. 34A–07 Bogota, Colombia
Filed June 25, 1965, Ser. No. 467,023
3 Claims. (Cl. 4—67)

1. In a valve and control assembly for a liquid containing tank or the like having a discharge port in its bottom; a vertically movable valve plug concentrically engageable with said port, a flexible cord connected to the top of said plug at one end, a horizontally disposed lever arm pivotally supported in laterally offset relation to said valve plug on a vertical axis for horizontal swinging movement and operatively connected to the opposite end of said cord, stationary centering means for said cord disposed concentrically above said port and plug, an externally controlled lever actuating device, a cam slot in said lever, and means responsive to movement of said actuating device, engageable with said cam slot for rocking said lever in either direction, whereby horizontal movement of said cord in response to corresponding movement of said lever is translated to direct vertical movement of the end of said cord connected to said plug.



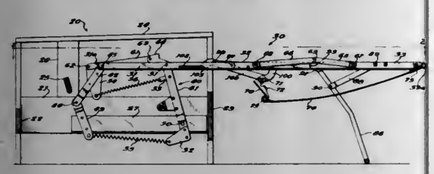
3,345,650
TOILET SEAT SANITARY LIFTING MECHANISM
Ovington E. Waters, 253 Herzl St., Brooklyn, N.Y. 11212
Filed Jan. 18, 1965, Ser. No. 426,192
3 Claims. (Cl. 4—251)



1. In a toilet seat lifting device, the combination of a means for raising a toilet seat by a person's foot, and a damping means for arresting the speed of descent of said toilet seat after having been raised, said raising means comprising a securement on a lower part of said toilet, a lever supported pivotally free on said securement, said lever having a foot pedal at one end, the opposite end of said lever being connected to one end of an arm, the opposite end of said arm being connected to a bracket mounted on the underside of said toilet seat and said arm having means for activating said damping means, said damping means comprising a longitudinal slot in said arm, one side of sid slot having a plurality of teeth, a pinion in said slot engaged on said teeth, said pinion being mounted on a shaft supported between bifurcated ends of a piston rod, said bifurcated ends being angularly inclined respective to a remainder of said piston rod to obtain an improved damping action due to a longitudinal axis of said arm being at an angle greater than a right

angle respective to a longitudinal axis of said bifurcated ends, a piston head contained within a cylinder mounted by its lower end on said securement, and a one way valve in said piston head allowing free movement of air from an upper part of said cylinder to a lower part thereof and restricted movement of said air in an opposite direction.

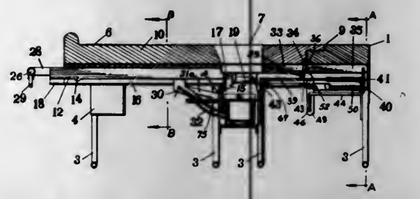
3,345,651
SOFA BED
Martin Fox, Chicago, Ill., assignor to The Seng Company, a corporation of Delaware
Filed Aug. 23, 1966, Ser. No. 574,429
11 Claims. (Cl. 5—13)



1. A sofa bed comprising, in combination: a base having end rails, a rear rail, and a front rail; a folding bed frame having an inner bed section; a mounting link fixed to each end rail; and supporting link means pivotally connected to said end rails and to said inner bed section to move the latter between a bed position above the front rail and a folded position behind and a substantial distance below a plane at the top of the front rail, said link means including a pair of rear supporting links and a pair of front supporting links, said rear links each being pivotally mounted on a mounting link, said rear links and front links in folded position extending downwardly and rearwardly, and their lengths and pivotal connections to the base and the inner bed section being so related that during a first part of their movement toward bed position the front links swing forwardly to a nearly vertical position as the rear links swing forwardly past horizontal dead center and the inner bed section assumes a steeply inclined position, while during a second part of said movement said rear links swing upwardly and rearwardly to elevate the rear of the inner bed section and the front links swing rearwardly to lower the front of said bed section, said rear and front links converging upwardly in bed position; first spring means connected between said mounting links and said front links for constantly urging said front links toward bed position; and second spring means connected between said rear links and said front links for constantly urging said rear links toward bed position, said second spring means swinging said front links rearwardly during said second part of said movement.

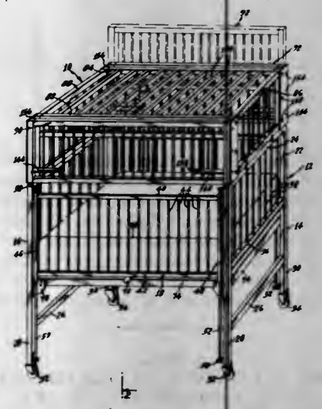
3,345,652
CLINICAL COMMODE
Sadaji Hiraga, Moriguchi, Osaka, Japan, assignor to Kazumitsu Ito, Osaka, Japan
Filed July 22, 1965, Ser. No. 474,031
Claims priority, application Japan, May 25, 1965, 40/30,993
4 Claims. (Cl. 5—90)

1. A hospital bed and commode, comprising a frame, a back-supporting platform adapted to support the upper half of the patient's body, a hip-supporting platform and a leg-supporting platform positioned adjacent each other along said frame in the recited order, said back-supporting platform being rotatably mounted on the frame at the end thereof toward the foot of the bed, said leg-supporting platform consisting of a thigh supporting part and a calf supporting part hinged to the thigh supporting part along an axis transverse of the frame, the free ends of said leg-supporting platform parts being movable along the length of the frame, said hip-supporting platform being movable from a closed position in which it forms a continuation of said back-supporting platform and said leg-supporting platform to an open position in which it leaves an opening through said frame, a commode beneath said hip-supporting platform, a cover movably mounted over said commode movable transversely to the vertical axis be-



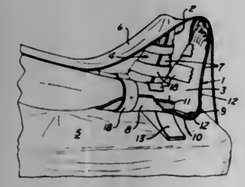
tween said commode and said hip-supporting platform, and a linkage connected between said back-supporting platform, said leg-supporting platform, said hip-supporting platform and said commode cover for raising the hinged joint between the leg-supporting platform parts, moving the hip-supporting platform from the closed to the open position and moving the commode cover laterally of the commode when the back-supporting platform is pivoted upwardly around the pivotal mounting thereof on said frame.

3,345,653
CRIB TOP
Clyde E. Mixon, Jacksonville, Fla., assignor to Pedicraft, Inc., Jacksonville, Fla., a corporation of Florida
Filed July 19, 1966, Ser. No. 566,423
10 Claims. (Cl. 5—97)



7. In an infant crib comprising in combination end members having generally horizontal upper edges, said gates extending longitudinally between said end members and having generally horizontal upper edges, said upper edges of said side gates being on a level below said upper edges of said end members, the improvement comprising a safety top for said crib providing adequate head room such that the occupant of said crib may freely walk within said crib, said safety top being detachably connected to said generally horizontal upper edges of said end members of said crib, said safety top including a generally horizontal upper wall, a pair of depending generally upright end walls each of which is fixedly connected to said upper wall at its opposite ends, said end walls of said safety top having generally horizontal lower edges which rest upon said generally horizontal upper edges of said end members of said crib, a pair of generally upright side walls having generally horizontal lower edges terminating adjacently above said spaced from said generally horizontal upper edges of said crib side gates, attaching means slideably and adjustably attaching each of said top side walls to said end walls on their opposite sides whereby said top side walls may be selectively raised to provide ready access to the occupant of said crib and lowered to prevent the occupant from falling out of the same.

3,345,654
DROP FOOT AND HEEL GUARD FOR BED PATIENTS
Ruth I. Noble, 2630 Crestwood Lane, Deerfield, Ill. 60015
Filed Mar. 21, 1966, Ser. No. 536,068
2 Claims. (Cl. 5—319)



1. A foot and heel guard for bed patients comprising an individual foot receiving member of rigid generally channel-shape having a foot portion extending from the heel to beyond the toe and an ankle receiving portion extending from the heel upwardly of the ankle generally at right angles to the foot portion, said foot and ankle receiving portions being molded integrally of a thermoplastic material and being open at the front to facilitate application of the same to the foot of a patient, means to secure a lateral support member at the back of the ankle portion to support the foot of a patient upright as when the patient is lying prone on the back, and means to removably secure the foot and ankle of a patient in said member whereby the member is carried by the patient and moves freely with the foot of the patient.

3,345,655
RELEASABLE METAL SCAFFOLDING CONNECTOR
Theodore Charles Jusulano, Oshkosh, Wis., assignor to Marvel Equipment Corporation, Oshkosh, Wis., a corporation of Wisconsin
Filed June 30, 1965, Ser. No. 468,367
2 Claims. (Cl. 5—327)

1. A connector for readily detachably securing an apertured end portion of a brace to a post, comprising:

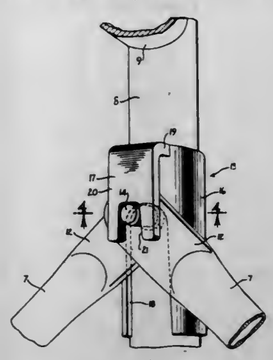
(A) a pin fixed to the side of the post and projecting substantially perpendicularly therefrom to enter and pass through the hole in the apertured end of the brace;

(B) a sleeve completely encircling the post and freely slideable axially thereon;

(C) a bifurcated arm fixed to the sleeve with its bifurcated end portion substantially parallel to the adjacent side of the post and spaced therefrom a distance to accommodate the apertured end portion of the brace when the latter is impaled upon the pin,

so that upon movement of the sleeve into a position at which the bifurcated end portion of the arm embraces the pin, the brace is secured to the post,

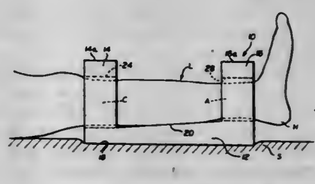
the sleeve having a longitudinally extending slot opening to one end thereof to receive the pin and thereby hold the sleeve against rotation about the post,



said slot being in line with the bifurcated end portion of the arm and the sleeve being axially longer than the bifurcated arm and having its slotted end portion projecting a substantial distance beyond the bifurcated end of said arm,

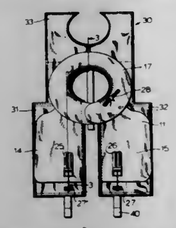
so that reception of the pin in any portion of the slot in the sleeve, properly aligns the bifurcation in the arm with the pin.

3,345,656
FOOT PROTECTIVE DEVICE
Charles Steinman, 105 Stevens Ave., Mount Vernon, N.Y. 10550
Filed Oct. 21, 1965, Ser. No. 499,208
5 Claims. (Cl. 5—327)



1. A leg-supporting device for maintaining the foot of a bedridden person above the level of a bed surface, said device comprising a unitary body structure made of a soft, flexible material and including a base having a flat bottom surface, a pair of spaced, aligned end walls upstanding from said base, each of said end walls having a through bore centrally located therein, and a slot extending from an edge of each of said end walls to said bore and communicating therewith, said bores being of varying diameter and being respectively sized to receive and retain the upper calf portion and the ankle portion of a human leg, said base having an inclined top surface extending from one end wall to the other end wall, said inclined surface being disposed to receive the calf portion of the leg resting flush thereupon between said two end walls, with the foot projecting beyond one of the end walls and suspended above the level of the base bottom surface.

3,345,657
INFLATABLE LIFE JACKET
Donald H. Peeler and William H. Payne, Raleigh, N.C., assignors to Payne & Associates, Inc., a corporation of North Carolina
Filed July 13, 1965, Ser. No. 471,634
7 Claims. (Cl. 9—316)



1. An inflatable life jacket to be worn about the body and neck of a person comprising:

(a) an expandable bladder having pneumatically connecting torso lobe portions to be positioned adjacent to and in vertical alignment with the frontal body portions of the wearer and collar portions extending in substantially the horizontal plane around the neck;

(b) a woven fabric bladder cover encompassing said bladder and conforming in shape therewith, said fabric encompassing said torso lobe bladder portion being extensible to expand in the lateral direction while having limited extensibility and expansion in the vertical direction and said fabric encompassing said collar bladder portion being extensible to expand in the vertical direction while having limited extensibility in the horizontal direction;

(c) a garment designed to be secured to the body of the user of said jacket and having a central sheet portion with integral flap portions extending therefrom, said central sheet portion having portions of said bladder cover permanently secured thereto, said flap portions being designed to fold over said central portion and provide an outer protective cover for said bladder cover;

(d) pressure releasable fastening means secured to the marginal edges of said flap portions and to respective mating edges of said central portion, said fastening means being effective to form pressure releasable seams between said flap portion edges and said central portion edges;

(e) means for inflating said bladder and establishing said pressure whereby to release said seams and thereby release said lobe and collar portions to expand in predetermined directions to the limits permitted by said bladder cover fabric; and

(f) means mounted on said garment for securing said garment to said user.

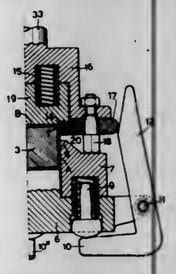
3,345,658
DEVICE FOR THE MANUFACTURE OF MOCCASINS
Fulvio Parri, Via dei Mille 14, Porto Sant'Elpidio, Italy
Filed Sept. 27, 1966, Ser. No. 582,439
Claims priority, application Italy, Sept. 30, 1965, 9,642/65
10 Claims. (Cl. 12—1)

1. An apparatus for the manufacture of moccasin shoes, comprising first, second and third component parts, two at least of which are movable relative to one another and relative to the other component part,

said first component part comprising a first main member, a first ancillary member movable on said first main member, and yieldable means for thrusting said first ancillary member towards a projecting position with respect to said first main member, said first ancillary member has a substantially U-shaped configuration in plan with the extreme edge sloping outwardly and with an inner surface whose profile has substantially the shape, in plan, of the front portion of the moccasin to be manufactured,

said second component part consisting of a rigid body having substantially the shape of the front portion of the moccasin to be manufactured and having a peripheral edge which projects with a surface facing towards the first component part shaped in a complementary fashion with respect to said inclined extreme edge of said first ancillary member,

said third component part comprising a second main member supporting a second ancillary member with respect thereto, and jaws, positioned so as to take a substantial U-shape, movable transversally with respect to the direction of movement of the second ancillary member on the second main member, and further comprising yieldable means thrusting said second ancillary member away of said main member,



means being provided for selectively moving said two movable component parts toward or away of the other component part, and means for displacing the jaws, concentrically causing them to approach,

said means for selectively moving said two movable component parts acting so that the second component part is first brought into contact with the inclined extreme edge of said first ancillary member to form an assembly, and then the third component part and the assembly formed by the first and second component parts are moved towards one another so as to bring the second ancillary member into contact with the second component part, and the second main member into contact with the first ancillary member and so that said second ancillary member and said first ancillary member may take a retracted position on the second main member and on the first main member, respectively, overcoming the bias of the respective yieldable members, said jaws being at this stage concentrically approached to one another.

3,345,659
LASTING MACHINE
Albert Weinschenk, Seulberg, Germany, assignor to Eugen G. Henkel, Neu-Isenburg, Germany, a firm of Germany
Filed May 7, 1965, Ser. No. 454,036
Claims priority, application Germany, May 14, 1964, H 52,676; Feb. 24, 1965, H 55,285
16 Claims. (Cl. 12—12)

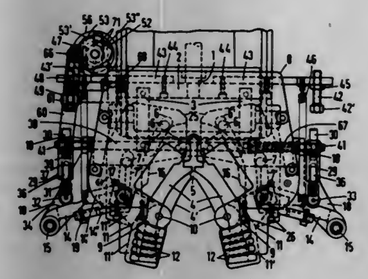
1. A lasting machine for the toe or heel portion of a shoe and comprising, in combination:

(a) a pair of wipers for lasting such shoe portion;

(b) wiper drive means operatively associated with said wipers for pivoting them inwardly toward their common median plane during a lasting operation;

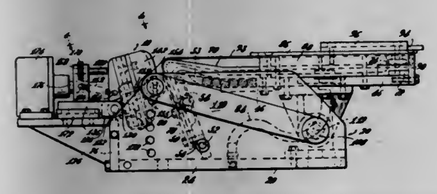
(c) a pair of wiper extensions, one for each said wiper, each pivotally connected to its respective wiper; and

(d) extension drive means operatively associated with said extensions for permitting said extensions to move in unison with their respective wipers during at least the first part of the inward pivotal movement of



said wipers and for pivoting said extensions inwardly relative to said wipers, independently of any contact between said wipers and such shoe, after said wipers have reached a predetermined, adjustable angular position.

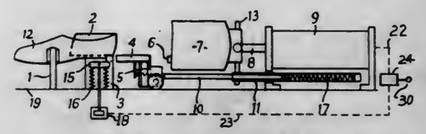
3,345,660
DEVICE FOR OPERATING ON SHOE BOTTOMS
Evald O. Peterson, Lynnfield Center, Mass., assignor to Compo Shoe Machinery Corporation, Waltham, Mass., a corporation of Delaware
Filed Feb. 11, 1966, Ser. No. 526,868
26 Claims. (Cl. 12—16.4)



1. A device for operating on the bottoms of shoes comprising a flexible pad and means supporting the pad for disposition in the approximate geometry of the bottom of the shoe to be operated on comprising angularly disposed parts adjustable relative to each other to an angular disposition such that a surface of one confronts the sole of the shoe and a surface of the other confronts the breast of the heel, means securing the pad at one end, and flexible means interconnecting the parts throughout relative movement of the parts operable to support the pad intermediate the parts in confronting engagement with the shank of the shoe resting on the pad.

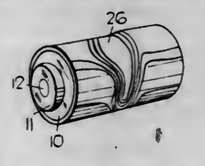
3,345,661
SHOE-HEEL UPPER FORMING APPARATUS
Horst Willsch, 46 Pittlerstrasse, 6070 Langen, near Frankfurt am Main, Germany
Filed May 10, 1966, Ser. No. 549,040
Claims priority, application Germany, Oct. 19, 1965, W 40,127
12 Claims. (Cl. 12—54.3)

1. Heel upper forming apparatus comprising a heel forming die; a pair of articulated forming arms located below said die and movable from an open position in which the arms are spread apart to a closed position below the die, in which the arms are moved towards each other; by a scissor-like wiping action below the die, the space between the arms falling within the outline of the die; a resilient heel shaping form relatively movable with respect to said die from a withdrawn position clear of said die to a heel forming position surrounding said die; and camming means associated with said heel shaping form arranged to engage said forming arms upon move-



ment of said heel shaping form from said withdrawn position to said heel forming position, said camming means engaging said arms to cause swinging thereof towards the closed position to fold a heel upper placed over said die around the bottom of the die while the upper is being formed around said die by said heel shaping form.

3,345,662
MATRICES FOR USE IN CONTOURING WORKPIECES
Frank Gordon Bailey, 74 Warkton Lane, Kettering, Northampton, England
Filed Aug. 4, 1965, Ser. No. 479,690
1 Claim. (Cl. 12—142)



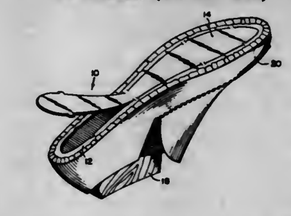
A method of producing a smoothly sloping profiled matrix for reduction of thickness of shoe soles to different extents in different locations which comprises the steps of:

(a) wrapping in superimposed relation around a cylindrical base a plurality of laminations having tinted layer junctions;

(b) preparing a plan of contour lines to define positions of junction between layers required by a particular profiling plan; and

(c) profiling said laminations to cause the tinted layer junctions between them to conform precisely to the prepared plan.

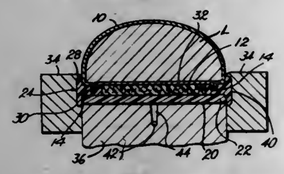
3,345,663
PROCESS FOR MAKING SHOE HAVING CROSS-LINKED RAND INSOLE
Charles F. Batchelder, Milton, and Jerome A. Rubico, Boston, Mass., assignors to Batchelder-Rubico, Inc., Boston, Mass., a corporation of Massachusetts
Filed Sept. 19, 1963, Ser. No. 310,029
10 Claims. (Cl. 12—142)



1. A process for making shoes comprising the steps of: making a cross-linked rand insole having an exterior, peripheral rand portion, a central core portion including the

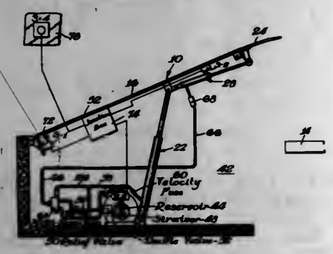
forepart and at least substantially all of the shank area of said insole and frangible means for temporarily interconnecting the said rand and core portions; applying said insole to a last; lasting an upper to said rand portion; removing said central core portion; and attaching a sole element to the lasting margin of said upper.

3,345,664
METHOD OF MAKING A SHOE WITH INJECTION MOLDED BOTTOM
Herbert Ludwig, Desmastr. 112, Usen, near Bremen, Germany
Filed Aug. 19, 1965, Ser. No. 480,863
6 Claims. (Cl. 12—142)



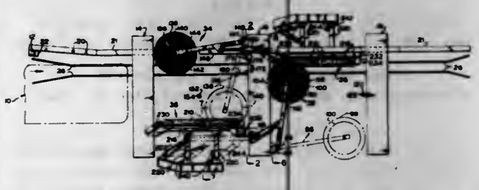
1. The method of making footwear comprising forming an edge strip of dense material by injection molding peripherally of the bottom of a lasted upper, injecting an unfoamed liquid plastic material containing a foaming agent within the edge strip, to form a bottom coextensive with the bottom of the upper within said edge strip, causing the lower surface of the injected liquid plastic to solidify prior to the activation of the foaming agent to form a dense tread surface and then allowing the foaming agent to inflate the material inwardly of the tread surface to form an inner porous cushion confronting the bottom of the upper.

3,345,665
FLUID-OPERATED RAMP HAVING AUTOMATIC LIP
John A. Anderson, Jr., Fort Wayne, Ind., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed Sept. 29, 1965, Ser. No. 491,370
11 Claims. (Cl. 14—71)



1. A fluid-operated ramp for bridging the space between a loading dock and a vehicle bed comprising a platform, coupling means connecting said platform to said loading dock for movement between externally unsupported and supported positions, fluid-operated elevating means connected to react between said platform and said loading dock for raising said platform upwardly about said coupling means to a predetermined inclined position, a lip hinged to the front of said platform, fluid-operated lip actuating means connected to react between said lip and said platform for raising said lip from a vertical retracted position to a bridging position in which it forms a continuation of said platform, a source of fluid pressure, a fluid system connecting said source of fluid pressure to said fluid-operated elevating means and said fluid-operated lip actuating means, restraining means in said elevating means whereby the pressure in said fluid system is raised to a predetermined peak operating pressure when said platform is raised to said predetermined inclined portion, restricting means in said fluid system for maintaining the pressure in said system above a predetermined lower pressure during a period when the platform moves from said unsupported to a supported position, a multi-stage valve means in said fluid system for controlling the application and draining of pressure to and from said fluid-operated lip actuating means, said valve means having a draining condition which causes pressure to be drained from said fluid-operated lip actuating means and a pressure-applying condition which causes pressure to be applied to said fluid-operated lip actuating means, said valve means including a valve section and an operating section each having draining and pressure-applying positions, said operating section having a chamber, conduit means connecting said chamber to said fluid system, a movable valve operator in said chamber having draining and pressure applying positions, biasing means urging said valve means to said draining condition, said valve operator including relatively smaller and larger pressure responsive control surfaces for controlling the movement of said operator, gate means in said chamber confining the fluid pressure in said fluid system to said relatively smaller control surface when said valve means is in said draining condition and to said relatively larger control surface when said valve means is in said pressure-applying condition, the force applied by said biasing means being greater than the opposing force on said smaller surface produced when the pressure in said fluid system is below said predetermined peak whereby said valve means is caused to remain in said draining condition while said platform is below said predetermined inclined position, the force applied by said biasing means being less than the opposing force on said smaller surface produced when the pressure in said fluid system is at said predetermined peak whereby the force on said smaller surface overcomes said biasing means and said valve means is caused to move to said pressure-applying condition when said platform is raised to said predetermined inclined position, the force applied by said biasing means being less than the force on said larger surface produced when the pressure in said fluid system is above said predetermined lower pressure whereby said valve means is caused to remain in said pressure-applying condition for a period while said platform remains externally unsupported, and the force applied by said biasing means being greater than the opposing force produced when the pressure in said fluid system drops below said predetermined lower pressure whereby said valve means is caused to move to said draining position after said platform becomes externally supported.

3,345,666
CAR WASHING APPARATUS
Daniel C. Hanna, 2020 SE. 82 Ave., Portland, Oreg. 97216, and Jack F. Ebeling, Portland, Oreg.; said Ebeling assignor to said Hanna
Filed Feb. 9, 1966, Ser. No. 526,162
2 Claims. (Cl. 15—21)



1. In a car washing apparatus,
an elongated rotary brush,
a wheeled carriage,
means mounting the rotary brush on the carriage for rotation on a horizontal axis,
means on the carriage for rotating the brush,
base means,
a pair of parallel links connected to the base means and the carriage for movement between a first position in which the brush extends into and along a predetermined path of a car advanced along said path and a second position in which the brush is at the side of the car and engages the side of a wheel of the car,
means urging the carriage toward the first position thereof,
and means carried by the carriage in the path of a wheel of the car when the frame means is in the first position thereof for moving the frame means to the second position thereof as the wheel moves abreast of the brush.

3,345,667
CLEANING APPARATUS, PARTICULARLY FOR FLOORS
Josef Blum, Solingen, Germany, assignor to Gunter Leifheit and Ingeborg Leifheit, nee Kaiser, Nassau (Lahn), Germany
Filed July 18, 1966, Ser. No. 565,812
Claims priority, application Germany, Apr. 14, 1966, B 86,667
3 Claims. (Cl. 15—119)



1. A cleaning apparatus, particularly for floors, comprising a holder carrying at its top a handle and terminating at its lower end in a pair of forks, two spaced parallel axles passing through the forks, a number of rolls rotatable about said axles, a socket extending between the rolls, a soft compressible cleaning tool held by the socket, a shackle upwardly projecting from the socket, a pull rod capable of engaging by its lower bent end in the shackle and having its upper end connected to an actuating lever for raising the pull rod and thereby squeezing out any water taken up by the cleaning tool, a U-shaped spring associated with the shackle and serving to clampingly retain the lower bent end of the pull rod in its position in the shackle, and a downwardly opening slot in one of the forks of the holder of the cleaning apparatus to form a guide for the pull rod when being operated.

3,345,668
ABRASIVE ARTICLE
John L. Forrest, Windsor, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,789
2 Claims. (Cl. 15—209)

1. A unitary pad structure of high-porosity comprising a uniform, non-woven, lofty, three-dimensional web-type structure having a plurality of randomly tri-dimensionally extending, durable, tough, resilient organic plastic ribbon strips,
said strips composed of a subbed photographic film base wherein the subbing material of said photographic film base constitutes the binder material whereby said strips are firmly bonded at their spaced points of contact; the mutual entanglement of said strips defining a labyrinth of tri-dimensionally extending intercommunicating voids,



said voids constituting at least about 50% of the total volume occupied by said pad structure, wherein said pad is additionally characterized by pronounced flexibility, elasticity and compressibility, and upon release of pressure applied thereto, said pad is capable of recovering substantially completely to its initial uncompressed form.

3,345,669
SPONGE CLEANING DEVICE
Glenn L. Starry, 132 E. Flagler St., Miami, Fla. 33131
Filed Oct. 16, 1964, Ser. No. 404,257
2 Claims. (Cl. 15—244)

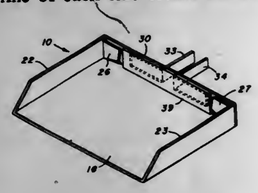


1. A cleaning and rubbing device comprising: an elongate handle of resilient plastic material and having longitudinal flutes along the outer periphery thereof for gripping it, said handle including an elongate main stem and an integral side element adjacent one end with a bend intermediate the stem and element of an included angle in the order of 110°; a plastic plate having a first flat surface and a second surface, the first surface being rigidly connected at its geometrical center to the distal end of the element with the main plane of the plate in parallel alignment with the stem, said second surface having a plurality of laterally extending crests and troughs, all of said crests being flat and in a plane parallel to the said first surface; and a synthetic sponge pad adhesively connected over said plate to only the crests of the second surface with a narrow marginal edge extending outwardly of the plate around the periphery, said sponge being of the type which is soft and pliable when damp and relatively rigid when dry.

3,345,670
DISPOSABLE DUST PAN
Lillian P. Charle, 1335 Denniston Ave., Pittsburgh, Pa. 15217
Filed Sept. 22, 1965, Ser. No. 489,108
5 Claims. (Cl. 15—257.1)

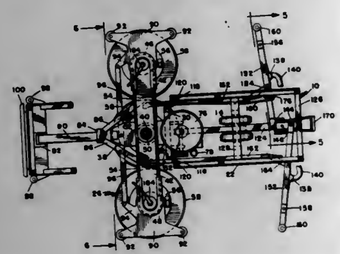
1. A one-piece paperboard panel capable of being folded into a collapsible dust pan, comprising; a generally rectangular paperboard panel having a front edge, two side edges and a rear edge and formed with a transverse crease spaced from the rear edge and extending the full width of the panel, side creases each spaced from each side edge and extending from the forward edge rear-

wardly to a juncture with the transverse crease, a crease extending from each juncture rearwardly toward the rear edge and away from the nearest side edge, and a slit along the projected line of each side crease from the junctures



to the rear edge, the rear portion of the panel lying between the transverse crease and the rear edge being slit and creased to form a pair of elongated tabs foldable out of the plane of the panel into handle forming relation.

3,345,671
FLOOR SCRUBBING AND POLISHING MACHINE
Ross D. Wilson, 4139 Swift Ave., San Diego, Calif. 92104, and George A. Deardorff, 30 Hartz Court, Danville, Calif. 94526
Filed Jan. 11, 1966, Ser. No. 524,370
8 Claims. (Cl. 15—320)



1. A floor scrubbing and polishing machine, comprising:

a frame having supporting wheels thereon;

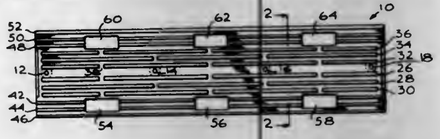
a brush unit mounted in said frame, said brush unit having a central brush and at least one outer brush on each side thereof, each supported on said unit to rotate about a substantially vertical axis;

said outer brushes having supporting arms pivotally mounted on said frame to swing about an axis substantially on the center line of the frame, between a wide position with the three brushes in substantially linear arrangement transversely of the frame and a narrow position with the brushes in generally triangular arrangement;

and a source of power on said brush unit operatively connected to rotate said brushes simultaneously.

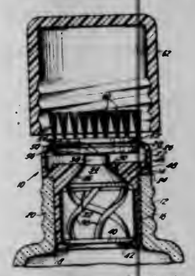
3,345,672
WINDOW CLEANING DEVICE
Herbert La Mers and Maury W. Wayne, Van Nuys, Calif., assignors to California Car Wash Systems, Inc., Sun Valley, Calif., a corporation of California
Filed Feb. 15, 1965, Ser. No. 432,459
4 Claims. (Cl. 15—322)

1. A cleaning device comprising a cleaning head, a handle for holding said cleaning head, said cleaning head having a working surface with an elongated axis, said working surface having a substantially nondeformable V-shaped cross-section in a plane at right angles to said elongated axis, with the apex of said V extending outwardly of said head, a plurality of water openings disposed along the apex of said V, a plurality of resilient parallel spaced scrubbing teeth disposed on both sides of said plurality of water openings and extending in the long direction of said rectangularly shaped working surface, a plurality of parallel spaced resilient squeegee teeth positioned adjacent said scrubbing teeth on the



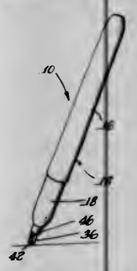
sides farthest away from said water openings, said squeegee teeth being parallel to said scrubbing teeth, and a plurality of vacuum openings in said head disposed in the region of said squeegee teeth communicating with said handle through said cleaning head.

3,345,673
BRUSH-TYPE APPLICATOR
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Oct. 19, 1965, Ser. No. 497,848
12 Claims. (Cl. 15—543)



1. An applicator comprising a body including a retainer ring having a projecting portion; said ring having an opening therein forming a valve seat, a brush head having a plurality of spaced bores therethrough, means cooperating with said valve seat to close said opening, and resilient flange means connecting said brush head to said retainer ring for movement towards and away from said retainer ring and for rotation relative to said retainer ring.

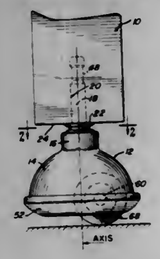
3,345,674
MARKING DEVICE
Walter J. De Groft, Glen Ellyn, Ill., assignor to Sanford Research Company, Bellwood, Ill., a corporation of Illinois
Filed Oct. 2, 1964, Ser. No. 401,059
7 Claims. (Cl. 15—563)



1. A marking device comprising a reservoir member having predetermined transverse dimensions, end means traversing one end of said reservoir member, an opposite end of said reservoir member being closed, said end

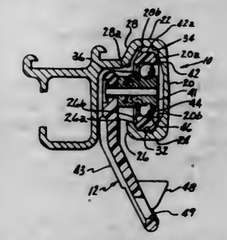
means including an inwardly extending annular end wall and an elongated tubular element extending through and connected intermediate the ends thereof at an annular junction to said wall, said tubular element including an elongated inner end portion extending axially inwardly from said junction and an outer end portion projecting from said annular junction, said reservoir member having a substantially uniform diameter cylindrical wall section, said end wall tapering from a junction with said cylindrical wall section to said annular junction, a body of absorbent marking fluid retaining material disposed in said reservoir member and having an end surface adjacent said junction between the tapering wall and the cylindrical wall section leaving an air space above said end surface, a wick-like marking element separate from and extending through and supported by said tubular element and of substantially uniform transverse cross-section substantially throughout the longitudinal extent thereof, the inner end portion of said tubular element substantially traversing the said air space with the innermost end thereof adjacent but above said end surface, gripping means adjacent the said innermost end for engaging and retaining the wick-like marking element which traverses the remaining air space to a position in transfer engagement with said body of absorbent marking fluid retaining material, and vent passageway means between the wick-like marking element and said tubular element.

3,345,675
FURNITURE CADDY CARRIER
Raymond S. Haydock, Chicago, Ill., assignor of one-half each to Raymond Haydock, Jr., and Sandra L. Haydock, both of Chicago, Ill.
Filed Jan. 13, 1966, Ser. No. 536,237
3 Claims. (Cl. 16—45)



1. In a furniture caddy carrier, the combination of a caster body having a fixed cylindrical hub, rotatably mounted upon a substantially cylindrical stem, adapted to be mounted in a socket, in a leg of an article of furniture, the said stem being rotatably mounted in said hub, by means of an upper and a lower ball bearing assembly, mounted in upper and lower races, each having a plurality of balls, the balls engaging a cylindrical portion of said stem, each race being engaged in an annular enlargement, in a cylindrical bore in said hub, the balls bearing against an annular washer, which engages a second washer, which is engaged by the riveted end of said stem, said stem having balls also at the upper end of the stem, bearing against an annular shoulder on the stem, said shoulder having an inner circular curvature fitting against the balls, the said carrier being of generally half-spherical shape on its exterior, and integrally joined to said hub, centrally located on the upper end of the carrier, and the lower end of the carrier having an outwardly projecting annular shoulder for retaining a cover, which snaps on or off the carrier, the said carrier being generally hollow, except for reinforcing ribs, two of said ribs being formed with half cylindrical bearing sockets for receiving a shaft, a single stub shaft of cylindrical form, snapping into or out of said bearings, said shaft having plane ends, engaging the inner sides of a pair of downwardly projecting ribs, to resist end thrust on said shaft, the said shaft supporting a pair of oppositely turned rollers, each roller having a hollow interior, and a cylindrical inner end portion, and a conical outer end portion, integrally mounted on a cylindrical bearing with said bearings against each other and against the inside of projecting ribs, and each bearing having a cylindrical bore for receiving said shaft, the said caster rotating around on its own axis without oscillation, and being symmetrical above its own center of gravity relative to its own axis.

3,345,676
SUPPORT FOR DRAPERIES AND THE LIKE
Joseph V. Graber and Ferdinand F. Salzmann, Madison, Wis., assignors to Graber Manufacturing Company, Inc., Middleton, Wis., a corporation of Wisconsin
Filed Aug. 6, 1965, Ser. No. 477,847
9 Claims. (Cl. 16—87.6)

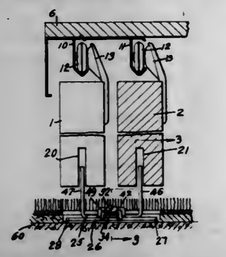


1. A support for draperies and the like comprising an elongate rod having front and rear sides and adapted for mounting generally horizontally, said rod having wall means defining a passageway and arranged to provide a rearwardly opening access to the passageway, said passageway and said access thereto extending generally the entire length of the rod, said passageway having a generally flat horizontally disposed surface adjacent the lower side thereof for defining a trackway extending generally the full length of the rod, a plurality of offset carriers mounted on the rod and each including an axle having its front end disposed in the passageway and extending through said access to a point rearward of the passageway, a wheel rotatably mounted adjacent the front end of the axle and having a generally flat tread engaged with the trackway for movement therealong, a plurality of ball bearings disposed in a single row between said axle and said wheel, said axle and said wheel each having means describing a ball race for engaging said ball bearings, a body portion mounted adjacent the rear end of the axle and extending downwardly and forwardly therefrom to a point below said passageway, said body portion having means adjacent the lower end thereof and generally vertically below the wheel for receiving a drapery support hook, said axle, ball bearings, and wheel arranged for allowing the axle and body portion to tilt a limited amount relative to the wheel in a direction generally perpendicular to the longitudinal axis of the elongate rod.

3,345,677
FLOOR GUIDE FOR BOTTOM EDGE OF SLIDING DOORS
Kenneth A. Milette, 16103 Lear Court, Valinda, Calif. 91744
Filed Oct. 23, 1965, Ser. No. 503,933
5 Claims. (Cl. 16—90)

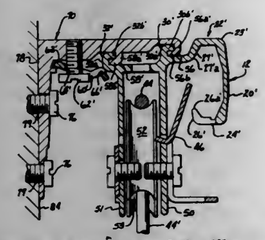
1. A guide for the grooved bottom edges of by-pass sliding doors, said guide including: a base plate adapted to be secured to flooring beneath the bottom edges of the doors and a guide plate for connection with said base plate; said guide plate provided with a pair of spaced apart

blades for reception within the grooves of said doors, said base plate formed with an intermediate transverse inverted channel portion and said guide plate formed with an intermediate inverted channel portion intermediate the



blades, the channel portion of the guide plate adapted to overlap the channel portion of the base plate and means for securing the channel portions against separation when in overlapped position.

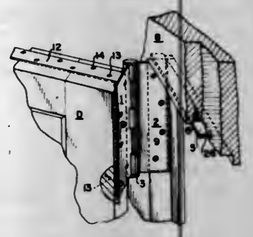
3,345,678
SUPPORT FOR DRAPERIES AND THE LIKE
Joseph V. Graber and Ferdinand F. Salzmann, Madison, Wis., assignors to Graber Manufacturing Company, Inc., Middleton, Wis., a corporation of Wisconsin
Filed Aug. 6, 1965, Ser. No. 477,848
9 Claims. (Cl. 16—94)



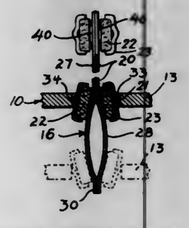
1. A support for draperies and the like comprising first and second endwise abutting rod sections having matching front faces and top walls extending rearwardly from said front faces, each rod section having spaced forward and rear rails extending substantially the full length of said top walls, each rail including an upwardly extending leg integral with the respective top wall and a forwardly extending flange adjacent the upper end thereof, splice means for holding the first and second rod sections in said abutted relationship and comprising an elongate body overlying the top walls of said first and second rod sections at the abutted ends thereof, forward and rear rail engaging means spaced a distance generally equal to the spacing of said forward and rear rails and extending generally the full length of the body, each rail engaging means including a downwardly extending leg attached to the body and a rearwardly extending flange adjacent the lower end thereof, first and second clamping means on the body engageable with the top walls adjacent the rear edges thereof for urging the respective first and second rod sections forwardly with their rails engaging the rail engaging means.

3,345,679
NON-LOOSENING HINGE
Lloyd Robert Anderson, 5400 Pooks Hill Road, Bethesda, Md. 20014
Filed Oct. 24, 1965, Ser. No. 521,226
22 Claims. (Cl. 16—128)

1. Non-loosening hinge construction comprising a hinge having a jamb leaf and a door leaf pivotally connected together, said jamb leaf and said door leaf being of the same length along the pivotal axis, a dihedral angle bracket for attachment to the hinge jamb and lintel of a door frame and having a hinge jamb plate of a length greater than the length of the jamb leaf by at least the clearance between the door and lintel for attachment of the hinge jamb to a door frame, said bracket having a lintel strap adapted to be attached to the lintel of a door frame, means to secure the dihedral angle bracket to the hinge jamb and to the lintel, means to secure the jamb leaf to the jamb plate of the dihedral angle bracket, and means to secure the door leaf to a door.

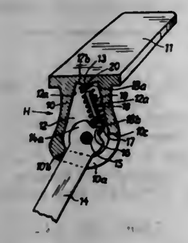


3,345,680
FRICTION TYPE AUTOMOBILE DOOR HOLD-OPEN MEANS
Robert E. Slattery, Rockford, Ill., assignor to L. W. Menzimer, trustee, Rockford, Ill.
Filed Sept. 21, 1964, Ser. No. 398,119
Claims priority, application Great Britain, Apr. 21, 1964, 16,401/64
13 Claims. (Cl. 16—140)



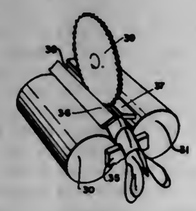
1. Door restraining means for an automobile door mounted in a door frame on hinges to swing on a substantially vertical axis to and from a closed position, the door restraining means comprising a plate fixed to the door and another plate fixed to the door frame, and a substantially horizontally disposed elongated friction strap pivotally connected at its one end on a substantially vertical axis to one of said plates and movable endwise between a pair of friction pads disposed in opposite sides of an opening provided in the other of said plates through which said strap extends, said strap being substantially flat a major portion of the length thereof from the pivoted end and having an enlarged compressible but resilient elonogated outer end portion, each pad being substantially wider than said strap to engage the full width thereof and having means whereby it is rockable to an appreciable degree with respect to the supporting plate on an axis parallel to the strap but disposed transversely with respect thereto, whereby the pads are disposed substantially parallel to one another for substantially full frictional engagement on opposite sides of said strap up to the point of engagement with the enlarged compressible end portion, when the pads swing to diverging relationship to one another in riding onto and compressing said end portion.

3,345,681
HINGE CONNECTION ASSEMBLY FOR THE SUPPORT OR STAND OF BICYCLES AND THE LIKE
Oskar Pletscher, Marthalen, Zurich, Switzerland, assignor to Gebruder Pletscher, Marthalen, Zurich, Switzerland
Filed Feb. 16, 1965, Ser. No. 433,108
Claims priority, application Austria, Feb. 18, 1964, A 1,350/64
8 Claims. (Cl. 16—182)



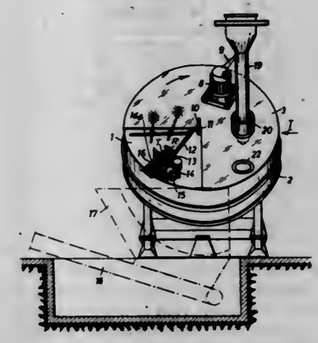
1. A hinge connection assembly for at least one pivotable support arm for a two wheel vehicle comprising, in combination; a support housing, at least one support arm pivotably mounted from said support housing, tiltable spring means cooperating with said support arm for urging the latter into two respective terminal positions, said tiltable spring means bearing at one end against said support housing and at the other end against said support arm, said support housing and said support arm being provided with respective substantially wedge-shaped edges providing countersupport means for said tiltable spring means.

3,345,682
PROCESS FOR INDIVIDUALLY TREATING HEADLESS SHRIMP
James M. Lapeyre, New Orleans, La., assignor to The Laitram Corporation, New Orleans, La., a corporation of Louisiana
Original application May 25, 1965, Ser. No. 458,645. Divided and this application Dec. 30, 1966, Ser. No. 619,105
16 Claims. (Cl. 17—45)



1. The process of treating de-headed and dorsally cut shrimp for the so-called fantail market, comprising
(a) positioning abdominal segments 1, 2, 3, 4 and 5 of the shrimp between peeling surfaces convergent to a peeling nip, so that the long axis of the shrimp lies substantially in a plane with the peeling nip, and so that the lateral sides of the said abdominal segments of the shrimp are in contact with the peeling surfaces,
(b) positioning abdominal segment 6 with connecting telson and uropods so that said segment 6 and connecting telson and uropods will remain substantially free of effective frictional peeling contact with the convergent peeling surfaces, and
(c) causing the peeling surfaces and the peeling nip to act upon the dorsally cut shell segments 1, 2, 3, 4 and 5 so that said shell segments are removed from the shrimp meat, leaving abdominal shell segment 6 with its connecting uropods and telson substantially intact and attached to the de-shelled shrimp meat.

3,345,683
INCLINED-DISH GRANULATOR AND SEPARATOR
Wilhelm Eirich, Bahnhofstrasse 19, and Gustav Eirich, Walldurnerstr. 40, both of Hardheim, Nordbaden, Germany
Filed Oct. 23, 1964, Ser. No. 406,092
11 Claims. (Cl. 18—1)

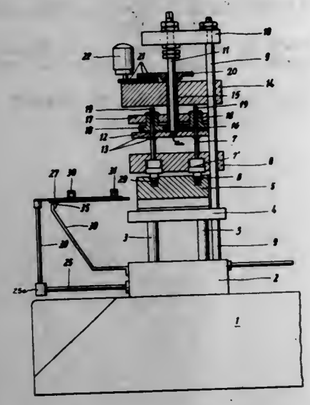


11. Apparatus comprising a rotatable dish including a bottom and a side wall thereon, a stationary cover on said dish defining a chamber therewith and having an opening through which material contained in said chamber can be discharged, adjustment means for adjustably tilting said dish, means to rotate said dish on an axis of rotation, and discharge means in said chamber to impel material from the chamber through said opening; said discharge means comprising an arm supported on said cover and extending essentially in a radial direction in the range of said opening in the cover, drive means on said arm defining an axis of rotation which is non-coincident with that of said dish, a shaft rotated by said drive means, and rows of radially extending elastic teeth spaced around said shaft, said teeth being spaced in each row to propel from the chamber particles of greater than a predetermined size.

3,345,684
APPARATUS FOR FULLY AUTOMATIC MOLDING PRESSES
Donat Scherrer-Wirz, Buch, Switzerland, assignor to Maschinenfabrik Fahr AG., Gottmadingen, Kreis Konstanz, Germany
Filed Nov. 12, 1964, Ser. No. 410,435
Claims priority, application Germany, Nov. 18, 1963, M 58,960
11 Claims. (Cl. 18—2)

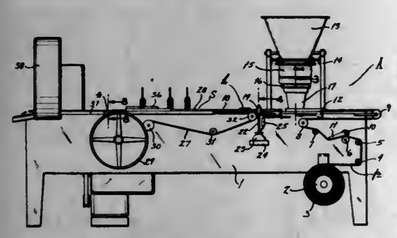
1. Apparatus for fully automatic presses, particularly plastic molding presses, for separating a pressed article provided with internal threading from a pressing tool, comprising an ejector plate, at least one press ram mounted to be non-displaceable yet rotatable at said ejector plate, a punch plate through which said press ram piercingly extends, said press ram including shoulder means bearing against said punch plate during the pressing operation, rotary drive means for driving said press ram when the press is opened, said apparatus including a hollow guide sleeve of given diameter carried by said punch plate, said press ram being provided with a larger diameter ram section slidable within said hollow guide sleeve, means to move said press ram longitudinally of said hol-

low guide sleeve, only a small portion of said larger diameter ram section substantially corresponding in diameter to said given diameter of said hollow guide sleeve, whereby the aforesaid small portion of said ram section slidably contacts the internal walls of said hollow sleeve



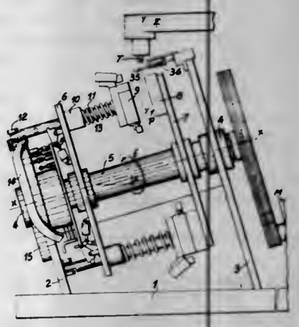
during a pressing operation, the longitudinal extent of said small portion of said ram section being of a length such that when said press ram is moved longitudinally of the hollow sleeve, said small portion is displaced completely out of engagement with said sleeve.

3,345,685
MATCH MAKING MACHINE
John Burton Tigrett and Voorhis F. Wigal, both of Jackson, Tenn.; said Tigrett assignor to Tintarella, S.A., Glarus, Switzerland, a corporation of Switzerland
Filed Aug. 30, 1965, Ser. No. 483,507
5 Claims. (Cl. 18—4)



1. A machine for producing solid rod units from powdered material comprising:
a conveyor fabricated of disposable material,
means for transversely arcuating said conveyor to define an upwardly opening trough,
means located upwardly of said arcuating means for dispensing powdered filler material onto said transversely arcuated conveyor,
tubular-forming means for receiving the transversely arcuated conveyor,
means within said tubular-forming means for discharging a cohesion-producing agent onto the powdered filler material received within said arcuated conveyor,
means for applying heat to the exterior of said tubular-forming means for maintaining the plasticity of the materials within said conveyor,
an endless belt in underlying relationship to said conveyor for receiving same after traverse of the latter through said tubular means,
drive means for said endless belt,
guide means for directing said belt into an upwardly concave configuration for disposition about said arcuated conveyor,
garniture means for receiving said conveyor and said belt for directing the latter into enclosing relationship about the former,
means for disengaging said belt from wrapped disposition about said conveyor,
and means for severing said conveyor with the contained material into units of predetermined length.

3,345,686
MACHINE FOR MANUFACTURING PLASTIC CONTAINERS
Antoine di Settembrini, 42 Residence du Petit Val, Sucy-en-Brie, France
Filed Oct. 6, 1964, Ser. No. 401,824
Claims priority, application France, Nov. 21, 1963, 954,541, Patent 1,392,517; first addition July 10, 1964, 981,455
1 Claim. (Cl. 18—5)

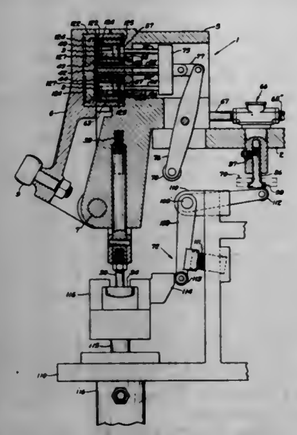


In a machine for molding bottles of thermoplastic material by extrusion and blowing, which comprises a support rotatably movable about an axis, means for rotatably driving said support continuously, a plurality of molds mounted on said support at regular angular intervals about its axis of rotation, each mold being divided into two portions by a joint plane and comprising a fixed half-mold carried by said support through means permitting its movement in a direction parallel to said axis of rotation, an extruder producing a continuous tubular parison of thermoplastic material along a vertical extrusion axis contained in the vertical plane extending radially from the axis of rotation of said mold support, means for causing said molds to move continuously under said extruder, and blowing means associated with each mold, the improvement consisting in that the axis of rotation of said mold support is inclined to the horizontal whereby the joint plane of the fixed half-molds has the same inclination with respect to the extrusion axis of said parison, in a direction such that the end of each fixed half-mold which is nearest to said extruder, when the corresponding mold registers with the extruder, is nearer to the parison than the opposite end of said half-mold.

3,345,687
INJECTION MOLDING APPARATUS
Arthur J. Marx, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 10, 1964, Ser. No. 374,005
5 Claims. (Cl. 18—5)

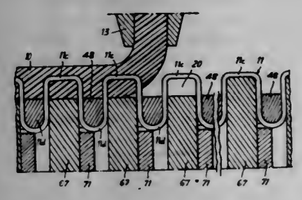
1. An injection molding apparatus for hollow articles comprising a separable mold defining a cavity of the shape of the desired article, means for injecting hot organic

plastic molding material subject to shrinkage on cooling into the mold cavity in an amount sufficient to fill the cavity completely to form a blank, means for applying to the inner surface of the blank fluid pressure of sufficient



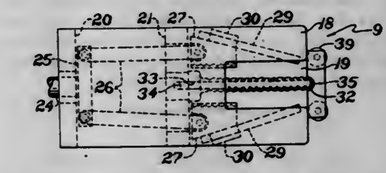
strength to overcome the tendency of the blank to contract on shrinkage of the molding material while cooling and means for maintaining the fluid pressure on the inner surface of the blank for a predetermined time sufficient for the molding material to solidify.

3,345,688
MACHINE FOR PRODUCING SEPARABLE FASTENING ELEMENTS
Jean Billarant, 2 Ave. Odette, Nogent-sur-Marne, France
Original application Dec. 17, 1962, Ser. No. 245,247, now Patent No. 3,277,547, dated Oct. 11, 1966. Divided and this application Feb. 7, 1966, Ser. No. 545,181
36 Claims. (Cl. 18—5)



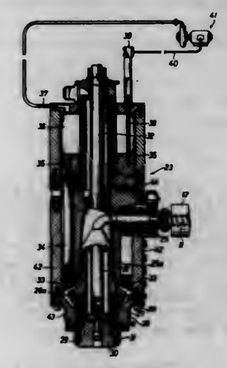
1. A machine for producing yielding strips in which are anchored thread-like loop-shaped elements, comprising a body, a first endless chain fitted in said body and including a number of parallel transverse shaping bars, a second endless chain including a number of parallel transverse counter-bars and a strand of which extends in said body in parallelism with a strand of the first chain, means driving the two chains to make said parallel strands progress longitudinally, the intervals spacing the shaping bars and the counter-bars being substantially equal to the breadth of the counter-bars and of the shaping bars respectively and facing said counter-bars and shaping bars respectively, means for guiding a sheet of threads between the two chains to lay it over the alternating surfaces of the shaping bars and counter-bars, means urging in succession the counter-bars and the sections of the sheet of threads extending over said counter-bars into the intervals between the cooperating shaping bars, means adapted to lay, over the continuous surface formed by the alternating sequence of surfaces of bars and of counter-bars carrying corresponding sections of the sheet of threads, a layer of a viscous yielding plastic material to embed in the latter said sheet sections carried by the counter-bars, means for shifting the counter-bars away from the bars carrying the loops of threads formed by the remaining intermediate sections of the sheet of threads, and means for separating the shaping bars from the plastic solidified layer in which the loops of threads are anchored through the first-mentioned sections of said sheet.

3,345,689
HOSE CURING UNIT
Paul J. Lister, Akron, Ohio, and Alexander Krynytzky, Buffalo, N.Y., assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Original application Mar. 2, 1964, Ser. No. 348,629, now Patent No. 3,241,181, dated Mar. 22, 1966. Divided and this application Dec. 1, 1965, Ser. No. 510,912
5 Claims. (Cl. 18—6)



1. A holding device for use in vulcanizing hose comprising a support, said support having an elongated projection having a longitudinal center line, at least a pair of guide means on said support converging toward one end of said support, work engaging means slidably mounted on each of said guide means for reciprocable movement thereon, and means mounted on said support operatively connected to said work engaging means for moving said work engaging means into work clamping engagement in cooperation with said projection.

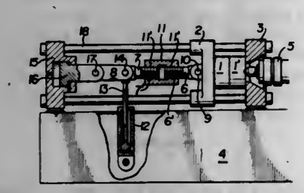
3,345,690
APPARATUS FOR EXTRUDING THERMOPLASTIC TUBES
Reinold Hagen, Hangelar uber Siegburg, Rhineland, Germany
Filed Oct. 21, 1965, Ser. No. 499,738
Claims priority, application Germany, Feb. 14, 1963 K 48,942; Oct. 21, 1964, K 54,311
5 Claims. (Cl. 18—14)



1. An apparatus for producing tubular bodies of synthetic plastic material, comprising plasticizer means having an outlet for discharging a first stream of plasticized

material; a tubular housing member having a lateral inlet for receiving material from said outlet; a mandrel member received in and defining with said housing member an annular chamber spaced from said inlet and a pair of mirror symmetrical recesses each communicating with said inlet and each diverging circumferentially of said mandrel member in a direction toward said chamber so that the material entering said recesses forms two secondary streams which expand laterally and merge in said chamber to form a single annular stream, said recesses being mirror symmetrical with reference to a plane which includes the axis of said mandrel member and halves said inlet; an extrusion die connected with said members and defining an annular extrusion orifice in communication with said chamber so that the material of the annular stream issuing from said orifice forms tubular parisons, said housing member comprising a first sleeve which surrounds said chamber and a second sleeve spacedly surrounding said first sleeve and defining therewith an annular compartment which communicates with the discharge end of said chamber and with the intake end of said orifice so that the material issuing from said chamber enters said orifice via said compartment; and ejector means for intermittently expelling plasticized material from said compartment into and through said orifice.

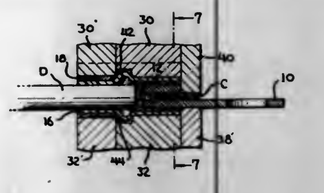
3,345,691
INJECTION MOLDING MACHINE
Katashi Aoki, No. 6037 Oaza Nanjyo, Nagano-ken, Sakaki-machi, Hanishina-gun, Japan
Filed Dec. 2, 1964, Ser. No. 415,321
4 Claims. (Cl. 18—30)



1. A mold clamping device for injection molding apparatus comprising a bed, a stationary injection mold platen supported on the bed, a mold press platen, a toggle unit including of a plurality of interlocking levers and connected at one end thereof to the press platen, a first hydraulic means journalled in said bed and connected to a terminal intermediate the ends of said toggle unit, said first hydraulic means extending said levers co-linearly and breaking said levers non-linearly to reciprocate said mold press platen toward and away from said injection mold platen, a second hydraulic means adapted to reciprocate said toggle unit only when the levers are in extended co-linear condition.

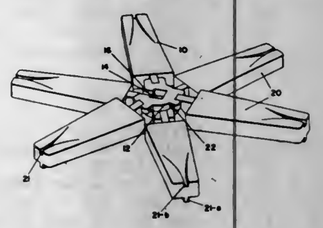
3,345,692
DIES FOR APPLYING INSULATION TO AN ELECTRICAL CONNECTOR
Robert F. Cobaugh, Hershey, Donald H. May, Linglestown, and George T. Ritter, Jr., Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Application Apr. 2, 1965, Ser. No. 445,163, now Patent No. 3,241,098, dated Mar. 15, 1966, which is a continuation of application Ser. No. 122,564, July 7, 1961. Divided and this application Sept. 22, 1965, Ser. No. 489,261
2 Claims. (Cl. 18—36)

1. A pair of dies for crimping a connector having an outer plastic sleeve, a conductor comprising a first die having substantially a U-shaped die surface, a second die disposed to fit within the first die and having an arcuate die surface which is at the same radius but at the reverse curvature to the first die surface, said dies having a length equal to the length of the connector to be crimped, each of said dies having means at one end



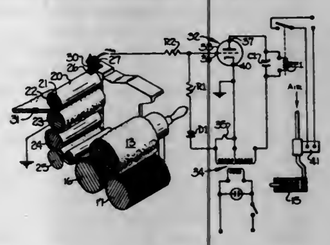
thereof to prevent longitudinal extrusion of the plastic sleeves on the connector each of said die surfaces having recessed portions located intermediate the ends thereof.

3,345,693
APPARATUS FOR FORMING IGNITION SURFACES IN SOLID PROPELLANT MOTORS
Edward E. McCullough, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,466
14 Claims. (Cl. 18—45)



1. A core piece for forming a cavity in a solid propellant rocket motor charge comprising, a channeled post positioned fore and aft in said rocket motor, a plurality of substantially similar laminar components comprising flexible star points longitudinally positioned on said post, means on said laminar components for raising and lowering thereof, and means for fixing said post to said rocket motor prior to positioning said laminar components thereon.

3,345,694
PICKER STOP MECHANISM
David M. Pittman, Fayetteville, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed May 10, 1965, Ser. No. 454,350
5 Claims. (Cl. 19—.2)



1. In combination with a picker machine delivering a lap of textile material and having a frame and a controllable drive, an apparatus for stopping the picker on

detection of a foreign electrically conductive body in the lap, the apparatus comprising:

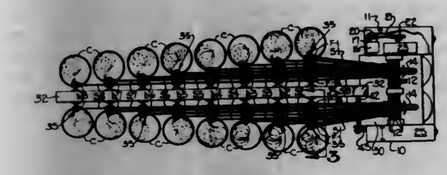
a first calender roll having an electrically conductive roll surface electrically insulated from the frame,

a second calender roll in electrically conductive relation to the frame and normally out of contact with the roll surface of the first roll,

high input impedance electrical circuit means electrically connected to the roll surface of the first roll for maintaining the roll surface of the first roll at a low electrical potential relative to the frame, and

means operatively associated with the circuit means and machine drive for disengaging the machine drive in response to a foreign electrically conductive body electrically connecting the roll surface of the first roll and the second roll.

3,345,695
DOUBLE STOP MOTION FOR A CREEL
James Arthur F. Rayfield, Stanley, and Joe R. Whitehurst, Bessemer City, N.C., assignors to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed Apr. 27, 1964, Ser. No. 362,788
7 Claims. (Cl. 19—.25)



1. In a textile strand processing machine having fiber drafting means, the combination of

(a) an elongate creel having a forward end disposed adjacent said fiber drafting means and a rearward end remote therefrom, said creel including

(1) a series of transversely disposed strand lifter guides successively arranged from the rearward end of the creel to the forward end thereof,

(2) each of said strand lifter guides having at least one primary passageway therein for guiding a strand from a supply source positioned therebelow toward said drafting means,

(3) at least the forwardmost strand lifter guide having secondary passageways through which the strands are adapted to pass from said preceding primary passageways in a predetermined path of travel toward said drafting means,

(4) at least some of said preceding lifter guides also having secondary passageways therein to aid in guiding the strands from said primary passageways to said secondary passageways of said forwardmost lifter guide, and

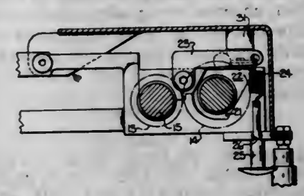
(b) strand actuated stop motion means comprising

1) first strand detecting means operatively associated with said primary passageways in said strand lifter guides for detecting the absence of a strand in any one of said primary passageways and being actuated thereby,

(2) second strand detecting means operatively associated with each of said secondary passageways in said forwardmost strand lifter guide for detecting the absence of a strand in any one of said corresponding secondary passageways and for also detecting departure of a strand from its predetermined path of travel passing through any one of said corresponding secondary passageways and being actuated thereby, said second strand detecting means including a detector finger for each of said secondary passageways, and supports mounting said detector fingers in operative association with said secondary passageways each support and detector finger carried thereby being spaced from the adjacent support and detector finger and defining therewith a strand access passageway into said secondary passageway to facilitate threading of strands thereinto, and

(3) means operatively associated with said first and second strand detecting means and said drafting means for interrupting the operation of said drafting means in response to actuation of either of said first and second strand detecting means.

3,345,696
CALENDER ROLL LOADING AND KNOCK-OFF
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed June 7, 1965, Ser. No. 462,003
9 Claims. (Cl. 19—.26)



1. In a textile machine having a frame supporting a coiler and a pair of calender rolls for directing textile sliver thereto and wherein one of the calender rolls has its opposite ends mounted in substantially vertically movable floating bearings for permitting the same to move upwardly away from the other roll upon a lap-up of sliver occurring around either of the rolls; the combination therewith of

lever means pivotally connected to fixed parts of the machine and overlying and engaging the respective floating bearings of the one calender roll,

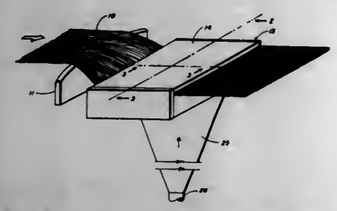
yieldable means operably connected to said lever means for normally applying a resilient downward force to said lever means and in turn to the floating bearings to yieldably urge said one calender roll toward the other calender roll, and

electrical means including contact means overlying at least one floating bearing and responsive to a predetermined displacement of the same as when a lap-up condition occurs for stopping the operation of the machine.

3,345,697
APPARATUS FOR BANDING FILAMENTARY TOW
William L. Aspy, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 27, 1964, Ser. No. 385,105
1 Claim. (Cl. 19—66)

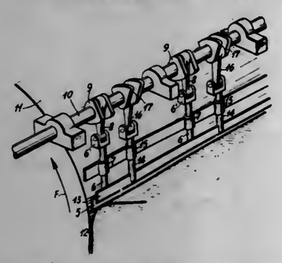
A rectangular hollow box-like jet having a top cover, a bottom portion, opposite parallel end walls, a back and a front, a thin slot extending substantially the full length and width of the interior of said jet and through which tow is moved, said slot being bound by said top cover, bottom portion, end walls, back and front, said end walls closing the opposite side edges of said slot, said back having formed therein a tow entrance aperture in registry with said slot, said front having formed therein a tow exit aperture in registry with said slot, said apertures ex-

tending between said end walls so as to have a width substantially equal to that of said slot, said jet containing a fluid plenum chamber, said bottom portion forming the upper boundary of said plenum chamber, said bottom portion having formed therein fluid openings of a width at least 0.028 inch at the exit ends thereof into said plenum chamber, whereby fluid under low pressure may be supplied to said tow in said slot in a unidirectional perpen-



dicular manner, thereby banding said tow, and means for introducing fluid to said plenum chamber comprising an annular channel leading into the central portion of a flattened funnel-like passage adapted to introduce air to said plenum chamber along substantially its entire width, said hollow box-like jet being constructed as an integral substantially one-piece unit, the said construction permitting reduced air pressure as low as about 1 p.s.i.g. for effective banding.

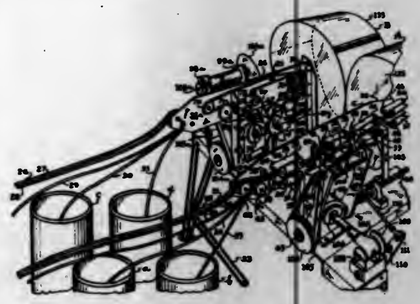
3,345,698
WEB DOFFING DEVICE FOR CARDING MACHINES, WITH BLADES OR WIRES MOVING IN PLANES TANGENT TO THE DOFFER
Carlo Degli Antoni, Via del Follatoio 8, Trieste, Italy
Filed Dec. 4, 1964, Ser. No. 416,004
Claims priority, application Italy, Jan. 10, 1964, 42,775/64; Oct. 7, 1964, 52,038/64, 52,039/64
12 Claims. (Cl. 19—106)



1. Web doffing device for carding machines which have a doffing drum and a doffer comb, supports for said comb and means for reciprocating said comb in a plane which is substantially tangent to said doffing drum, wherein the supports for said comb are in the form of straight rods, fixed bearings, ball bearings for said rods, each rod being slidably mounted with respect to said fixed bearings and said ball bearings mounted between each rod and its fixed bearings.

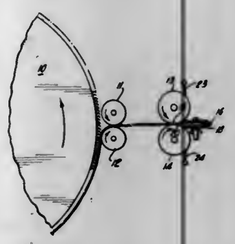
3,345,699
APPARATUS FOR MAKING PLEDGETS
William H. Burger, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,247
3 Claims. (Cl. 19—145)

2. In a machine for making fluid absorbent pledgets, the combination of a conveying mechanism for drawing sliver made from fluid absorbent closely associated fibers from a source of supply of such sliver, said conveying mechanism comprising two pairs of oppositely disposed rollers between which the sliver is passed, means for rotating said two pairs of rollers in timed relationship with each other, a swingably mounted cutter disc movable between said roller pairs, means for driving said disc, means for swinging the disc between said pairs of rollers so as to sever the sliver into segments, knitting mechanism for knitting a jacket of thread about said sliver segments as



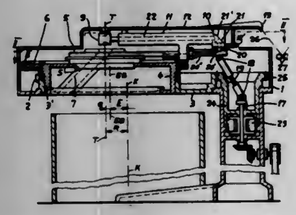
they continue their movement after being cut, said conveying mechanism including also a conveyor at the terminal end of the machine for receiving the sliver segments as wrapped by the jacket of thread, and a cutter for cutting the jacket between said segments so as to produce the individual pledgets.

3,345,700
APPARATUS FOR PRODUCING SLIVERS
Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Mar. 22, 1965, Ser. No. 441,612
2 Claims. (Cl. 19—150)



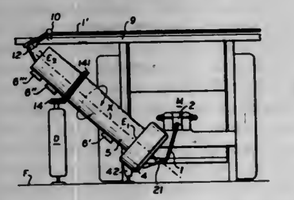
1. Apparatus for producing a sliver of textile fibers comprising: a first rotatable surface for forming a fibrous web, doffing means for removing said fibrous web from said first rotatable surface, a pair of rotatable rolls cooperating to form a nip through which the fibrous web is passed, a narrow belt, having a run thereof adjacent the nip and within the area defined by the exterior surfaces of said rotatable rolls to form a restraining cavity therebetween, said belt moving at substantially right angles to the direction of the fibrous material, as it is passed through said nip and said belt moving at a surface linear speed at least equal to the speed of said fibrous material as it passes through said nip to continuously convey the entire leading edge of said fibrous web at substantially right angles to the direction it is moving when passing through said nip, whereby the web is continuously converted into a uniform sliver of textile fibers while maintaining the fibers under positive uniform control.

3,345,701
APPARATUS FOR DEPOSITING SLIVER IN A STATIONARY CAN
Hansulrich Eichenberger, Werner Naegeli, and Peter Schwengeler, Winterthur, Switzerland, assignors to Rieter Machine Works Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Sept. 18, 1964, Ser. No. 397,484
Claims priority, application Switzerland, Sept. 20, 1963, 11,661/63
9 Claims. (Cl. 19—159)



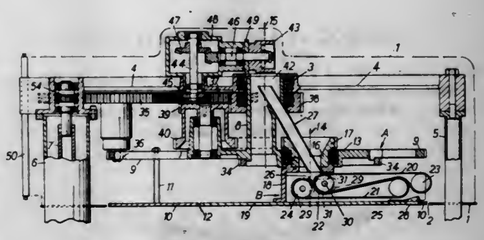
1. An apparatus for depositing sliver into stationary cans, comprising:
a stationary frame,
a wheel rotatable in said frame around a stationary axis,
a bushing eccentrically mounted on said wheel and being adjustably fixidly secured thereto for movement therewith,
a turn plate eccentrically and rotatably placed in said bushing and having a rotation axis for moving circularly and translatorily about the axis of said wheel upon rotation of said wheel,
means for rotating said wheel and turn plate,
a pair of calender rollers placed above said turn plate coincidently of the axis of said turn plate,
a channel in said turn plate for receiving sliver from said calender rollers and passing the sliver toward a can,
drive means for said calendar rollers, and
support means for said drive means and said calender rollers,
said support means being mounted on said bushing and permitting movement of said calender rollers and drive means in a circular, translatory movement corresponding to the circular, translatory movement of said rotation axis of said turn plate.

3,345,702
SLIVER BAND STORAGE APPARATUS
Hermann Miedler and Hans Meinke, Ingolstadt, Germany, assignors to Deutscher Spinnereimaschinenbau Ingolstadt, Ingolstadt (Danube), Germany, a corporation of Germany
Filed July 23, 1965, Ser. No. 474,374
Claims priority, application Germany, July 30, 1964, D 45,074
22 Claims. (Cl. 19—159)



1. A sliver band storage apparatus, which comprises a container means for transitory storage of a sliver band, said container means having a lower inlet portion disposed for receiving successive lengthwise portions of a sliver band and an upper outlet portion disposed for discharging successive lengthwise portions of sliver band therefrom, said inlet portion being disposed at a predetermined inclination to the vertical to correspondingly reduce the effective weight component of stored sliver band acting in the direction of said inlet portion, and sliver band infeed means operatively connected to the inlet portion of said container means for supplying successive lengthwise sliver band portions thereto for transitory storage within said container means.

3,345,703
TEXTILE SLIVER COILING MEANS
John Maximilian Jules Varga, Toronto, Ontario, Canada, assignor to Carding Specialists (Canada) Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Jan. 30, 1967, Ser. No. 612,436
Claims priority, application Great Britain, Feb. 4, 1966, 4,959/66
6 Claims. (Cl. 19—159)



1. Textile sliver planetary coiling mechanism of the depositing type, comprising mounting means, a first rotary member mounted by means of a hollow hub in a standard free running bearing carried by said mounting means, a second rotary member mounted by means of a hollow hub in a standard free running bearing carried by the first member, the rotary axis of said second member being off-set from the axis of the first member, gear means for driving the first member from a driving shaft and a train of gears between said gear means and the hollow hub of the second member, a hollow sliver feed element leading from the interior of the first member hub to the interior of the second member hub, a pair of endless sliver feed belts forming part of the second member and extending radially from the off-set axis of the second member to a sliver delivery opening, gearing to drive said belts from said first member, and a pair of calender rollers mounted in a stationary position above the sliver inlet to the hollow feed element, said gearing being arranged to cause slow rotation of both the first and second members about the first axis and a faster rotation of the second member about the off-set axis.

3,345,704
SKI BOOT FASTENING
Kenneth W. Binding, Winchester, Mass., assignor to Market Forge Company, Everett, Mass., a corporation of Massachusetts
Filed June 30, 1966, Ser. No. 561,782
7 Claims. (Cl. 24—70)

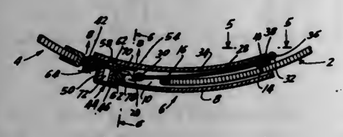
1. A toggle assembly for use with a ski boot, said boot having spaced lace-holding means for drawing the boot tight on the foot, comprising two parts to be anchored to the lace-holding means, one of said parts having connected thereto a loop and the other of said parts having connected thereto a toggle means operable by interengagement with said loop to shorten the distance be-

tween the lace-holding means; wherein each of said parts is independently secured to a pair of adjacent lace-holding means by a pair of jaws designed therefor, and a screw bolt interconnecting the jaws operable to draw the



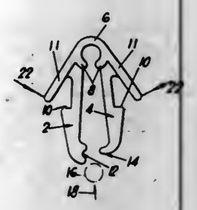
jaws into clamping engagement with said lace-holding means, said screw bolt being situated substantially midway between the pair of lace-holding means to which the jaws are clamped.

3,345,705
FOLDING CLASP FOR BRACELETS AND THE LIKE
Kurt Gaupp, Short Hills, N.J., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed May 23, 1966, Ser. No. 552,042
21 Claims. (Cl. 24—71)



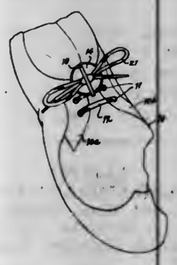
1. In a bracelet comprising a plurality of sections some of which are foldably related to adjacent sections and are adapted to be folded and unfolded between open and closed positions respectively, said bracelet including means for releasably retaining said sections in folded closed position; the improvement which comprises said retaining means comprising first and second parts operatively connected to first and second bracelet sections respectively and brought into opposition when said sections are in folded closed position, one of said parts having a projecting element and the other of said parts having a recess into which said element is received when said sections are folded closed, said recess including a retention portion and an escape portion in laterally spaced relationship, said one of said parts being movable relative to the bracelet section on which it is mounted between first and second positions in which said element is in registration with said retention and escape recess portions respectively, and resilient means urging said one of said parts to its first position, said one of said parts being accessible from the exterior of said bracelet for manual movement to said second position, said bracelet being retained in closed position when said element is received in said retention recess portion and said bracelet being movable between closed and open positions when said element is in said escape recess portion, said element being articulately mounted on said one of said parts, and additional resilient means active on said element to urge it outwardly relative to said one of said parts, said element having cam means thereon engageable by the other of said parts as said sections are folded to closed condition and effective to move said element inwardly relative to said one of said parts against the action of said additional resilient means.

3,345,706
CLIPS FOR MOUNTING RODS AND THE LIKE ON PANELS
John B. Stokes, Will Aston, Nantwich, England, assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,569
Claims priority, application Great Britain, Oct. 22, 1965, 44,848/65
8 Claims. (Cl. 24—73)



1. A clip for mounting an elongated member adjacent to the face of an apertured panel including two arms joined at one end by a neck, means positioned internally of said arms adjacent said neck and adapted to accept said elongated member, flange means extending outwardly in the direction of said arms from the region of the juncture of said arms with said neck, shoulder means on each arm spaced from and facing said neck, means at the extremities of said arms opposite said neck adapted to permit said arms to abut when squeezed together and also to permit relative hinging between said arms at said extremities.

3,345,707
DECORATIVE SHOE LACE KEEPER
Albert M. Rita, 120 2nd Ave., Altoona, Pa. 16601
Filed Nov. 16, 1964, Ser. No. 411,239
2 Claims. (Cl. 24—120)



2. A keeper for shoe laces comprising a bottom member which is provided with a bottom wall and a bounding edge disposed at an angle thereto which is adapted to fit on and into the said bottom member, said bottom member being provided with lace receiving openings in its bottom wall and a top member having lace receiving slots in the top wall thereof which extend into the bounding edge thereof so as to permit the laces to be extended through said bottom member and tied in a holding knot above the top member, said top member having a spring latching arm pivoted thereto, the said arm being adapted to extend over and against the said laces when tied with said holding knot, and said top member being further provided with a keeper element to hold said pivoted latch in pressure relation to the tied laces when said latching arm is swung thereagainst.

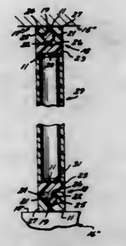
3,345,708
DUAL CLOTHESPIN
Lucy Escapa, 276 Henry St., Brooklyn, N.Y. 11201
Filed Sept. 30, 1965, Ser. No. 491,788
6 Claims. (Cl. 24—137)



1. A clothespin comprising an elongated plate having hook means at at least one end capable of being detachably connected whenever necessary or desird to support means such as, for example, a suspended clothesline, said plate having a lengthwise keyhole slot at said one end, a button-type garment clasp embodying a stud adapted to be cooperatively lined up with and fitted into the restricted end portion of said slot, said stud provided at a free outer end with an enlarged stud-positioning and retaining head which is adapted to be passed freely through the usual enlarged end portion of said keyhole slot and retained releasably in place by said restricted end portion, and a flexible adapter strap having a portion anchored on a median part of said plate and a readily attachable and detachable free ended tab portion manually movable toward and from said slot, said stud being fixedly joined to and carried by said tap portion, said hook means being positioned closely adjacent the restricted end portion of an associated slot so that an associated stud when in garment engaging position is opposite the free end portion of said hook means and normally restricts the opening of the hook means to prevent inadvertent release of the hook means from an associated support means.

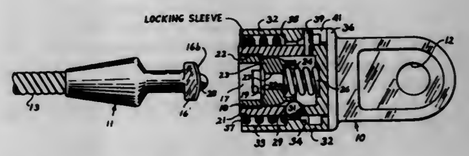
3,345,709
SELECTIVELY ENGAGEABLE AND DISENGAGEABLE FASTENER MEANS
Sumner D. Bearman, Los Angeles, Calif., assignor to Space Ad Company, Los Angeles, Calif., a corporation of California
Filed Jan. 12, 1966, Ser. No. 532,025
9 Claims. (Cl. 24—208)

1. A selectively engageable and disengageable fastener means comprising: a pair of adhesive surface fastening means, each cooperable for adhesive fastening with respect to a surface portion of a corresponding different one of two auxiliary members which are adapted to be mounted in a desired relationship with respect to each other; and selectively engageable and disengageable intermediate resilient engagement means positioned between said pair of adhesive surface fastening means and comprising a mating pair of selectively and resiliently separable engagement elements, each firmly connected, respectively, relative to a different one of the pair of adhesive surface fastening means and being inwardly directed toward the other of said mating engagement elements when in said engaged relationship with respect to each other; wherein one of said inwardly directed engagement elements comprises an inwardly, forwardly extending laterally elongated projection member having an enlarged retaining bead portion carried at the inward, forward edge thereof and laterally elongated along the lateral length thereof and having a reduced-size interconnecting web portion extending outwardly from said bead portion and provided at the outer extreme thereof with a first laterally elongated base portion bearing one of said adhesive surface fastening means of said pair thereof along the outer surface of said first base portion, the other of said inwardly directed engagement elements comprising an inwardly, forwardly directed laterally elongated receiving



member having and defining therein an enlarged laterally elongated receiving recess and having positioned immediately forward, inward thereof a reduced-size resiliently enlargeable laterally elongated slot normally facing said bead portion for the forcible resilient reception thereof through said slot into said recess and positioned outward adjacent to said slot whereby to firmly and resiliently lock said projection member and said receiving member together until forcibly disengaged, said receiving member being provided outwardly of said receiving recess with a second laterally elongated base portion bearing the other one of said adhesive surface fastening means of said pair thereof along the outer surface of said second base portion.

3,345,710
LOCKING DISCONNECT COUPLING
Robert M. Bush, Goleta, Calif., assignor to Hydranautics, Santa Barbara, Calif., a corporation of California
Filed Feb. 26, 1965, Ser. No. 435,493
6 Claims. (Cl. 24—221)

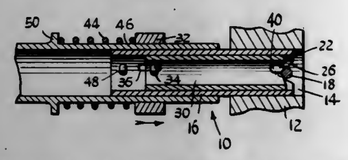


1. A locking disconnect coupling comprising:
(a) a T head;
(b) a receiver having an aperture slot through which the T head can pass and having an inner end with a transverse slot in which the T head may seat;
(c) a follower carried by the receiver disposed at said inner end of the receiver to be engaged by the T head when it passes through the aperture slot and moveable to a locking position when the T head is seated;
(d) a ball carried by the receiver adjacent to the follower locking position and moveable toward the follower to engage it to lock in locking position, and away from the interior of the receiver to release the follower;
(e) an external sleeve slidably mounted on the receiver and having an inner surface; and

(f) a frusto conical incline on the inner surface of the sleeve adjacent to the ball,

whereby sliding movement of the sleeve will cause the incline to engage the ball and move it inwardly of the receiver or permit it to move outwardly of the receiver.

3,345,711
RELEASABLE MECHANICAL COUPLING
John J. McCarthy, Weston, Conn., assignor to Norco Incorporated, Ridgefield, Conn., a corporation of Connecticut
Filed Aug. 19, 1964, Ser. No. 390,617
1 Claim. (Cl. 24—230)



A releasable mechanical coupling comprising, in combination:

(a) a receiver part having a socket and a projection in the socket,

(b) a plug part having a foremost end which is insertable and turnable in the socket of the receiver part and having a notch in said end, said notch being adapted to receive said projection and extending obliquely whereby it requires turning of the plug part in the socket as said part is advanced therein, and

(c) an elongate locking and release member longitudinally movable on the plug part between advanced locking and retracted releasing positions,

(d) keying means on the plug part and the locking and release member, preventing relative turning therebetween,

(e) lock means on the release member, including an end portion and a slot therein engageable with the said projection and operative at the time that the member is in locking position to prevent turning of the plug part when the latter is in said socket with the projection fully received in said notch, thereby to lock the plug part in the receiver part,

(f) spring means biasing the locking and release member to the advanced locking position,

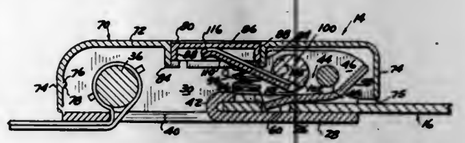
(g) said notch having divergent edges at its mouth which define a V-shaped entrance for the projection,

(h) said plug part having divergent transverse end walls disposed at the mouth of the notch, one of said walls being positioned to require its engagement by the projection when the latter is being guided by and engaged with either of said divergent edges of the notch in preparation for entry of the projection fully into said notch,

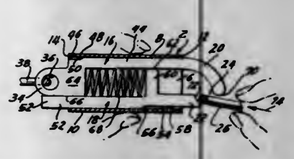
(i) said engagement of the said one transverse end wall by the projection guiding the latter into thte slot of the locking and release member and enabling the projection to effect a retracting longitudinal movement of said locking and release member against the action of said spring means.

3,345,712
BUCKLE FOR SEAT BELTS
Lawrence H. Smith, Bloomfield Hills, and Gerald J. Partridge, Detroit, Mich., assignors to Jim Robbins Seat Belt Co., Royal Oak, Mich.
Filed Feb. 21, 1966, Ser. No. 528,876
10 Claims. (Cl. 24—230)

1. A seat belt buckle of the type described, comprising: a base having a planar surface; a latch member pivotably supported with respect to the base for rotation about an axis extending parallel to and transversely across the base; a locking section on the latch member adapted to extend adjacent to the base at one extreme rotation of the latch member; spring means biasing said latch member toward said extreme rotation; a pushbutton supported with respect to the base for motion toward and away from said planar surface; a cam having an eccentric section rotatably supported with respect to the base, said eccentric section movably engaging said latch member in such a manner as to pivot the latch member against the bias of the spring means so as to move the locking section away from the base, at such time as the cam is rotated; and means, disposed between the pushbutton and the cam and movable with respect to said pushbutton, operative to cause the cam to rotate as the pushbutton is moved toward the base.



3,345,713
SNAP CATCH
Kurt Gaupp, Short Hills, N.J., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Apr. 11, 1966, Ser. No. 541,651
18 Claims. (Cl. 24—239)



1. A catch comprising a housing, first and second elements slidably received in said housing and having parts extending therefrom in a given direction, resilient means acting on said first element to urge said part thereof into said housing and resilient means acting on said second element to urge said part thereof out from said housing, said element parts defining an openable loop external of said housing, means operative on said first element for limiting its movement into said housing, and means operative on said second element for limiting its movement out of said housing.

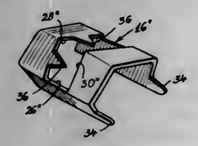
3,345,714
CLIP FASTENER
Henry Finkel, Westmount, Quebec, Canada, and Lewis Waxman, 810 101st Ave., Laval, Quebec, Canada, said Finkel assignor to said Waxman
Filed Feb. 1, 1966, Ser. No. 524,218
1 Claim. (Cl. 24—246)



A one piece clip for a garment comprising an elongated frame surrounding an aperture having substantially parallel elongated sides joined by a rounded bottom of

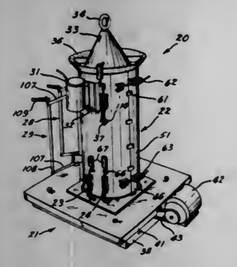
substantially arcuate configuration consisting of a plastic wall surrounded by an internal and an external bead, an internal substantially arcuate protuberance on each side of the long side of the frame opposite each other, aligned with each other and projecting towards each other a resilient tab integrally connected to the frame and extending therefrom, the said tab having a width substantially matching but slightly less than the width of the aperture and adapted to be snapped past the protuberances to grip a portion of a garment therebetween and there being a slot centrally located between the frame and the tab for engagement by a strap on the garment to suspend the clip therefrom.

3,345,715
CLAMPS FOR PICTURE FRAMES
Alfred Lambert, Brooklyn, N.Y., assignor to Lambert Frame and Picture Company, Inc., a corporation of New York
Filed Aug. 31, 1965, Ser. No. 483,968
4 Claims. (Cl. 24—259)



1. A clamp of the kind described for joining together contacting edges of the rails of a picture frame, said rails having spactd grooves therein and upon opposite sides of said edges, said clamp comprising an inverted channel-shaped plate body having inwardly slanting side walls adapted to be slidably mounted in said grooves and adapted to clamp against the walls of said grooves for drawing the edges together, said inverted channel-shaped plate body having a transverse cutout portion midway its ends, one edge wall of said cutout portion being pointed midway its ends for coacting with the material of the rails to prevent displacement of the clamp.

3,345,716
CONCRETE PIPE MOLD APPARATUS
Rupert H. Uden, Juniata, Nebr. 68955
Filed Dec. 21, 1964, Ser. No. 419,842
4 Claims. (Cl. 25—34)



1. Apparatus for forming a length of concrete pipe having apertures therein, comprising in combination:

vibratory base means;

an elongated, hollow, circular core having a lifting hook at an upper end thereof;

an elongated, hollow, circular form embracing said core and concentric therewith whereby an annular chamber is formed between said core and the form;

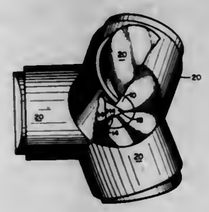
said form including a pair of hingedly connected sections one of which has a plurality of openings formed therein;

means releasably latching said form means to said base means;

aperture forming means secured to said form and including a plurality of members reciprocally movable each through an opening from a position extended completely across said annular chamber to a position withdrawn therefrom but closing a respective opening; and

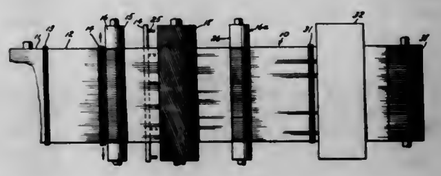
means releasably clamped to the top of said form for directing concrete into said chamber, and including another lifting hook centrally thereof whereby said core and said form can be lifted off said base means.

3,345,717
HIGH PRESSURE GENERATING ANVILS
Richard D. Potter, Fort Worth, Tex., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 439,036
1 Claim. (Cl. 25—102)



An anvil for the application of pressures of up to about 100 kilobars to a workpiece to be compacted comprising a heat treatable, high-speed tool steel bonded carbide material, said carbide being in the form of substantially individual ultra-hard grains encapsulated by a steel matrix, having a fracture resistance substantially higher than said carbide, said mixture being less brittle than said carbide and operative to substantially limit crack propagation to said encapsulated carbide grain so that unbalanced compressive stresses on said anvil exceed the fracture point of only one material and thus are not critical and said anvil is usable without prestressing support means.

3,345,718
PROCESS AND APPARATUS FOR TEXTURIZING TEXTILE MATERIAL
John Phillip Hollihan, Wyckoff, N.J., Alfred Joseph Reed, Wallace, N.C., and Walter Turton, Stamford, Conn., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Original application Dec. 24, 1964, Ser. No. 421,055, now Patent No. 3,325,987, dated June 20, 1967. Divided and this application Jan. 21, 1966, Ser. No. 555,944
13 Claims. (Cl. 28—1)



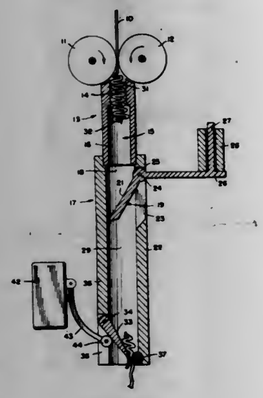
1. A process for preparing a textile product comprising introducing textile material in a substantially tensionless state between a set of opposed surfaces each having alternately depressed and raised areas while said surfaces

are in contact under an applied pressure whereby the textile material traverses laterally just prior to being deformed, at least one of said surfaces being resilient and substantially permanently grooved by the remaining surfaces which are substantially non-resilient, deforming said textile material between said surfaces, removing said textile material from between said surfaces while maintaining said textile material under controlled tension and recovering a textile product having a substantial proportion of the deformation imparted thereto retained therein substantially permanently.

3,345,719
APPARATUS FOR CONTINUOUS PRODUCTION OF CRIMPED FILAMENTS

Günther Schatz and Hermann Gemeinhardt, Elsenfeld, and Hans Brücher and Otto Jurisch, Klingenberg, Germany, assignors to Vereinigte Glanzstoff-Fabriken A.G., Wuppertal-Elberfeld, Germany

Filed June 22, 1964, Ser. No. 378,488
Claims priority, application Germany, June 24, 1963, V 24,218
7 Claims. (Cl. 28—1)



1. Apparatus for crimping tow or yarn comprising a pair of juxtapositioned feed rolls adapted to feed said tow or yarn therebetween, a hollow member with an axial passage therein, said axial passage defining an upper short, compression throat adjacent said rolls and a lower, compression chamber having a cross-sectional area which is about 1.2 to 2 times the cross-sectional area of said throat, and having a length about 2.5 to 7 times the length of said throat, a pivotable shutter at the lower end of said compression chamber by which the lower end of said compression chamber is opened and closed, means biasing said shutter toward closed position, a hollow member with an axial passage communicating with the lower end of said compression chamber and defining a buffer space below sad compression chamber, and a pivotable second shutter at the lower end of said buffer space adapted to pivot between open and closed position.

3,345,720
METHOD OF FURNITURE CONSTRUCTION

David T. Armstrong, Canton, Miss. 39046

Original application Feb. 20, 1964, Ser. No. 346,308, now Patent No. 3,256,041, dated June 14, 1966. Divided and this application Apr. 11, 1966, Ser. No. 568,075
6 Claims. (Cl. 29—91.1)

1. The method of making an upholstered furniture comprising the steps of:

making a first form corresponding in configuration to the furniture structure to be made;

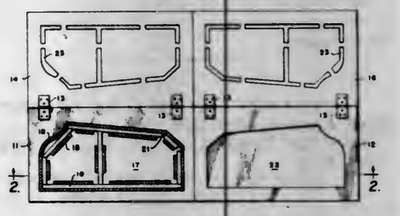
placing interior frame members in said form;

applying adhesive to said interior frame members;

placing an exterior skin over said interior frame members;

placing a stencil over said exterior skin, said stencil having cut-out portions corresponding to the position of said interior frame members under said skin;

fastening said exterior skin to said interior frame members through said cut-out portions in said stencil;



inverting and positioning said assembly in a second form corresponding in configuration to said first form, exterior skin side down;

applying adhesive to the exposed edges of said interior frame members;

placing a second exterior skin over said interior frame members;

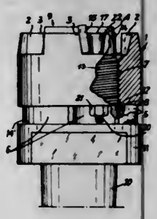
placing a stencil over said second skin, said stencil including cut-out portions corresponding to the position of said interior frame members; and

fastening said second skin to said interior frame members through said cut-out portions in said stencil.

3,345,721
CUTTING BLADE MOUNTING HEADS

Henri Garih, 35–37 Blvd. Exelmans, Paris, France

Filed Feb. 16, 1965, Ser. No. 433,018
Claims priority, application France, Feb. 21, 1964, 964,589, Patent 1,416,351; Oct. 23, 1964, 992,420, Patent 86,666
4 Claims. (Cl. 29—105)



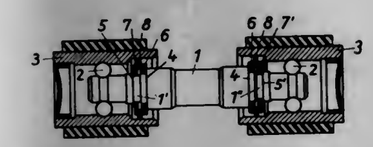
1. A cutter head comprising a tool shaft which is releasably connectable to a cutting machine, an annular member coaxially screw-threaded on the tool shaft and having a plurality of pockets spaced about its periphery for the reception of cutter bits, a screw-threaded clamping member in each pocket for releasably securing a cutter bit in the pocket, the axes of the clamping members being parallel to each other and to the axis of the annular member, the clamping members extending through the annular member and having tapered heads disposed in said pockets, the side walls of the tapered heads converging in a direction toward the other end of the clamping members, said other ends of the clamping members having a nut thereon that acts against the annular member to draw said tapered head toward the bottom of its associated recess, said tool shaft having an end that is tapered in a direction opposite the direction of taper of said heads

and that extends along and closes the radially inner side of said pockets and against which the radially inner portions of the cutter bits bear.

3,345,722
TWIN PRESSURE ROLLERS FOR SPINNING OR TWISTING MACHINES

Hans Stahlecker, Sussen, Wurttemberg, Germany, assignor to Spindelfabrik Süssen Schurr, Stahlecker & Grill G.m.b.H., Sussen, Wurttemberg, Germany

Filed Sept. 24, 1965, Ser. No. 489,812
Claims priority, application Germany, Oct. 5, 1964, S 93,627
10 Claims. (Cl. 29—116)

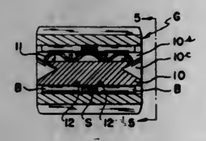


1. Twin pressure rollers, for a spinning or twisting machine, comprising: a common shaft forming one member; anti-friction bearing means on said shaft; a pair of roller bodies rotatably mounted on said bearing means and each forming another member; seal means for sealing the space between said shaft and each roller body including at least one gasket spaced a substantial distance from one of said members for substantial radial bodily movement toward and away ffrom said one member, said gasket having such a size that only a relatively small sealing gap is formed between said gasket and the other of said members, and guide means mounted on said one member and on each side of said gasket for radially guiding and axially retaining said gasket for sealing the space between said gasket and said one member for all radial displacement positions of said gasket relative to said one member.

3,345,723
DUMMY PIN MEANS AND METHOD FOR ASSEMBLING NEEDLE BEARINGS

John E. Stilla, North Royalton, and William H. Greenwald, Strongsville, Ohio, assignors to Stellar Industrial Products Co., Cleveland, Ohio, a partnership

Filed July 28, 1965, Ser. No. 475,456
15 Claims. (Cl. 29—148.4)



1. A dummy pin device for retaining a set of roller bearings or the like within a cylindrical bore of a part during handling of the part subsequent to, and to aid, assembly of said bearings into the bore, comprising:

A cylindrical pin body having a longitudinal slot,

means providing a resilient spring arm disposed in said slot with a roller wedging crest portion on said arm adapted to project from said slot into wedging engagement between a pair of adjacent said rollers,

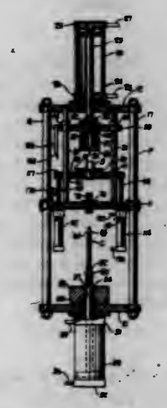
and means for maintaining said arm in said slot with a portion of said crest projecting from the slot for bearing roller wedging purposes.

13. A method of assembling a set of roller bearing rollers into a cylindrical bore of a part as a sub-assembly which will be brought into an assembled relation with a shaft-like element supported by said rollers in said bore, comprising the steps of providing a dummy pin with cylindrical body, a longitudinal body slot, and a resilient arm secured in the slot having a crest portion biased outwardly from said slot, said crest portion having a transverse dimension less than the diameter of a said roller; surrounding said pin body with a set of said rollers in an ordered circumferential series and inserting said pin with the ordered roller set into said bore; transporting the part as a sub-assembly with said pin and set to a point of further assembly; and then displacing said pin axially from the sub-assembly and inserting said shaft-like element into said bearing set retained in order in said part bore.

3,345,724
METHOD AND APPARATUS FOR MANUFACTURING RESILIENT BUSHINGS

Keith W. Miller, Roanoke, and Harry D. Shriver, Clifton Forge, Va., assignors to H. O. Canfield Company, Clifton Forge, Va., a corporation of Virginia

Filed Mar. 24, 1965, Ser. No. 442,253
10 Claims. (Cl. 29—149.5)



1. A machine for assembling stressed rubber bushings having an outer sleeve, an inner sleeve and a rubber insert compressively held between said sleeves comprising:

a frame;

platform means movably mounted relative to said frame for supporting said outer sleeve and said rubber insert;

a carrier movably mounted on said frame for clamping said sleeve against said platform means and having an aperture therein formed by a funnel surface for funneling said rubber insert into said sleeve during assembly;

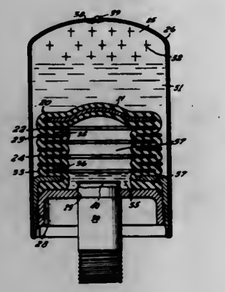
first ram means for pushing said rubber insert through said funnel surface and into said sleeve;

second ram means for moving a tapered pilot and said inner sleeve into the rubber insert, whereby said second ram means moves through the platform while the outer sleeve is clamped between said platform and the carrier and whereby the rubber insert is forced into the sleeve and is held therein against displacement by first ram means;

means for moving said second ram through said platform while said outer sleeve is clamped between said platform and said carrier; and

means for forcing said rubber insert into said outer sleeve, said first ram means holding said sleeve against displacement.

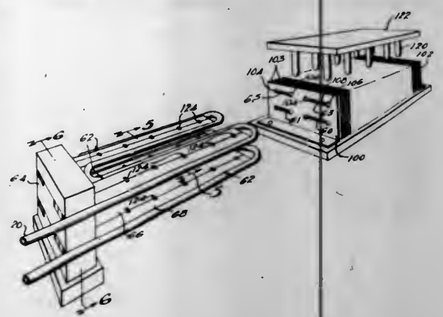
3,345,725
METHOD OF EXTENDING THE USEFUL LIFE OF SURGE ATTENUATING DEVICES
Melville F. Peters, 29 N. Ridge Road, Livingston, N.J. 07039
Original application June 13, 1962, Ser. No. 202,274, now Patent No. 3,162,213, dated Dec. 22, 1964. Divided and this application Sept. 17, 1964, Ser. No. 397,262
7 Claims. (Cl. 29—157)



1. The method of maintaining a cup-shaped elastomer bellows having a plurality of transverse corrugations which has been molded in an extended form, under compression at all times within a surge chamber housing which comprises the steps of compressing the bellows longitudinally to flatten the walls of the transverse corrugations, inserting said compressed bellows into a cup-shaped surge suppressor housing, to form a chamber between said housing and the bellows, securing the open end of said compressed bellows across the open end of said surge suppressor housing and at least partially filling the chamber with a fluid under pressure to maintain the bellows under compression at all times.

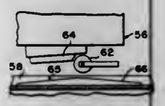
3,345,726
METHOD AND APPARATUS FOR MAKING FINNED TUBING
Charles E. Hickman, Adrian, Mich., Ann Arbor Trust Company, Ann Arbor, Mich., and Kathryn Goldsmith, coexecutors of Charles E. Hickman, deceased; and Allen L. Goldsmith, Adrian, Mich., assignors to Brazeway, Inc., Adrian, Mich., a corporation of Michigan
Filed Dec. 17, 1963, Ser. No. 331,231
8 Claims. (Cl. 29—157.3)

1. That method of assembling a finned tube heat exchanger which includes the steps of forming a plurality of fins each with a like series of elongated slots having enlarged ends, positioning said fins in a bank with corresponding slots in alignment, forming a single length of tubing into serpentine form so as to provide a series of parallel runs with adjacent runs forming a pair and connected by a return bend, flattening said runs and the return bends at one end thereof so that the major cross sectional diameter of the flattened tubing of the runs of each pair lies in the same plane as that of the return bend interconnecting such runs and so that the cross sectional diameter transverse thereof will pass through the intermediate portion of said slots, telescoping the serpentine tubing and bank of fins so as to pass the flattened return bends at one end of the formed tubing through the intermediate portions of the slots in the fins and to position the flattened tubing runs in the enlarged portions at the ends of such slots, and simultaneously applying to the opposing surfaces of the runs of each said pair of runs metal deforming forces directed toward the enlarged portions of the slot in which such runs are located whereby the fins are placed in tension and utilized as an anvil against which said forces are applied through the tubing runs to force said runs into intimate metal-to-metal engagement with the edges of the fins defining the enlarged portions of said slots thereby to secure said fins in spaced relation on said tubing runs and lock said tubing runs in the enlarged portions of said slots.



6. Apparatus for assembling a finned tube heat exchanger comprising a fixture for supporting a bank of slotted fins, a tube carrier including a plurality of expansible mandrels each adapted to be disposed between and to support adjacent runs of a serpentine coil of tubing, said mandrels and the tubing supported thereby being insertable through the slots in said bank of fins while the latter is supported on said fixture, and means for expanding said mandrels in the plane of said tubing runs while the tubing is inserted in said slotted fins so as to force said tubing runs against the ends of the slots in the fins and thereby reshape the cross section of the tubing runs and interlock said fins and tubing.

3,345,727
METHOD OF MAKING TAPER LEAF SPRINGS
Rostislaw S. Komarnitsky, Bloomfield Hills, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,585
17 Claims. (Cl. 29—173)

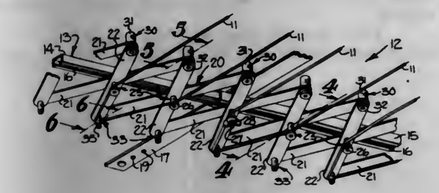


1. In the method of making a tapered leaf spring wherein a blank is taper rolled, heat treated, and then strain peened on the side which is the tension surface in the finished spring, the step of grinding said tension surface and the adjacent longitudinal side edge areas prior to strain peening.

3,345,728
APPARATUS FOR MOUNTING WIRING OR THE LIKE
Lawson R. Upchurch, Jr., Box 308, Hamlet, N.C. 28345
Filed Jan. 26, 1965, Ser. No. 428,085
5 Claims. (Cl. 29—203)

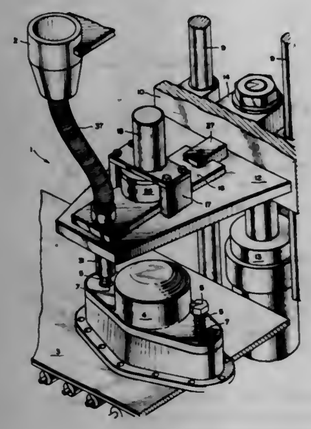
1. Apparatus for mounting spaced apart wiring or the like on a surface comprising a pair of track members

adapted to be removably secured to the surface, a lazy tong device adapted to expand and contract associated with each of said track members and having members extending therefrom in the direction of said track members for cooperation with said track members to slidably support said lozy tong devices on said track members, and mounting members carried by and extending from said lazy tong devices in a direction opposite from said track



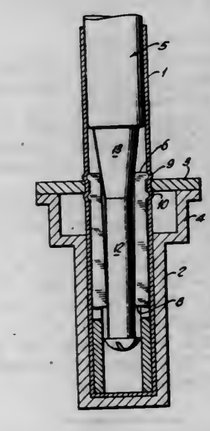
members and spaced from each other equal predetermined distances determined by the amount of expansion or contraction of said lazy tong devices, said mounting members being adapted to receive the wiring therearound extending between said pair of lazy tong devices to form parallel lines of wiring spaced apart equal predetermined distances.

3,345,729
FASTENER POSITIONER
John P. Law, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 4, 1965, Ser. No. 492,463
8 Claims. (Cl. 29—211)



1. A device for feeding, inserting and positioning elongated fasteners in pre-formed holes, comprising:
a frame adapted to be mounted over a workpiece containing a fastener receiving hole;
a carriage movably mounted on said frame for oscillatory horizontal movement over the workpiece;
motor means mounted on said frame and connected to said carriage for oscillating said carriage in a generally rotary path;
anchor means mounted on said frame and connected to said carriage for limiting its movement to an oscillatory path;
a fastener positioning tube mounted on said carriage to oscillate with it and having its lower end located over the fastener receiving hole in the workpiece; and
fastener feeding means connected to the upper end of said tube for selectively and individually dispensing a fastener into said tube where it is vibrated into place in the hole in the workpiece by the oscillation of the tube about the workpiece hole.

3,345,730
APPARATUS FOR AFFIXING A FLANGE TO A TUBE
Martin J. Laverty, Jericho, N.Y., assignor to Murray Manufacturing Corporation, a corporation of New York
Original application Oct. 16, 1963, Ser. No. 316,613. Divided and this application Aug. 10, 1966, Ser. No. 590,124
2 Claims. (Cl. 29—243.52)

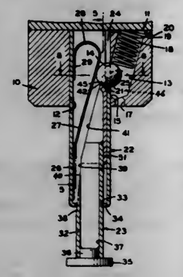


1. Apparatus for affixing an external flange to a metal tube, comprising an expansible punch having an external diameter slightly less than the inside diameter of said tube, whereby the punch may be inserted into said tube, one end of said punch being in the form of a die and having axially spaced projections, the axial separation between said projections being approximately equal to the thickness of said flange, said punch being in the form of a tube, the upper portion of which is longitudinally slotted to provide radial expansibility, tubular means having means associated therewith for engaging said punch and said tube end, for locating said flange around said tube a given distance from the end of the tube and for limiting the movement of said punch during the expansion thereof, the flange fitting snugly around said tube, and punch expanding means attached to said punch capable of expanding said die to cause said projections to deform the tube metal outwardly and thereby staking said flange, said punch expanding means comprising a rod, a first portion of said rod being located inside the slotted portion of said punch when said punch is in the unexpanded condition, a second portion of said rod being tapered to produce the desired expansion when the tapered portion is inserted into said punch, and means coupling an end of said rod to said punch with freedom of axial movement of said rod in the punch expanding direction, but engaging said punch when it is desired to remove said punch from the tube.

3,345,731
TOOL FOR INSERTING LOCKING BALL IN RETAINER BLOCK

James E. Parker, 18230 Valade, Wyandotte, Mich. 48192

Filed June 21, 1965, Ser. No. 465,397
6 Claims. (Cl. 29—270)



2. In a ball lock insertion tool for inserting a ball lock in a ball locking means bore which intersects a tool bore at an acute angle in a tool retainer block, the combination comprising:

(a) an elongated tubular body;

(b) said tubular body having a ball lock ejection opening formed through the outer side wall thereof at the front end of the tubular body;

(c) ball lock guide means in said tubular body for initially retaining a ball lock in the tubular body and for guiding the ball lock to said opening for ejection through said opening;

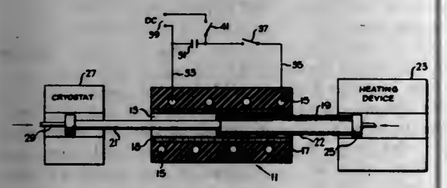
(d) biasing means in said tubular body for biasing said ball lock guide means against a ball lock in the tubular body; and,

(e) pusher means slidably mounted in said tubular body for forward movement into engagement with the ball lock initially retained in the tubular body for moving said ball lock forwardly over said opening for coaction with said ball lock guide means to eject the ball lock sidewardly through said opening into the ball locking means bore in a tool retainer block.

3,345,732
METHOD OF SHRINK FITTING AND APPARATUS THEREFOR

David F. Brower, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed June 11, 1964, Ser. No. 374,456
15 Claims. (Cl. 29—421)

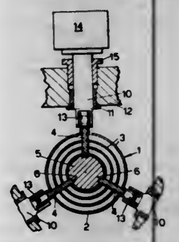


1. A method of joining members which method comprises providing a first member and a second member loosely fitted within the first member, varying the temperature of at least one of the members from the normal temperature of the members to an abnormal temperature in a direction such that the adjacent surfaces of the two members move relatively towards each other on return to its normal temperature, establishing a time varying magnetic field which interacts with an induced current in either of said members when said one member is at said abnormal temperature causing the member in which the current is induced to move rapidly into firm contact with the other member before any appreciable change in temperature occurs in the members, and returning the members to the normal temperature.

3,345,733
NUCLEAR REACTOR FUEL ELEMENTS

John Harold Weaver, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Oct. 23, 1964, Ser. No. 406,083
Claims priority, application Great Britain, Nov. 7, 1963, 44,061/63
6 Claims. (Cl. 29—455)



1. A method of constructing a nuclear reactor fuel element of the type comprising a plurality of part annular plates bearing fissile material and supported at their longitudinal edges by radial support members so as to define a series of spaced coaxial tubes, said method comprising the steps of assembling the fuel plates with their longitudinal edges loosely supported in grooves in the radial support members, mounting the assembly on a mandrel, and passing the assembly between radially disposed deforming members whereby radially inward pressure is exerted on the edges of the radial support members so as to close up the grooves by deforming material of the radial support members so that the groove walls grip the edges of the fuel plates.

3,345,734
METHOD OF MAKING A SHAPED WEAR-RESISTANT COMPOSITE

John J. Sowko, Pittsburgh, Pa., assignor to Firth Sterling, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 13, 1965, Ser. No. 425,145
17 Claims. (Cl. 29—471.1)

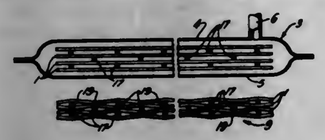


1. A method of bonding wear-resistant hard metal pieces such as carbide metal pieces together to provide a unitary metal construction having a wear-resistant surface which comprises, providinng a temperature-resistant unitary piece of ferrous metal screen of a size at least corresponding in direction to the desired dimension of the metal member construction to be produced, providing a plurality of substantially flat relatively brittle carbide metal pieces and placing them in an edge-abutting surface-aligned relation with each other on an exposed surface of said screen, and metal brazing the carbide metal pieces along their undersides in their supported relation to the screen while flowing the brazing metal into and filling up the joints between the carbide metal pieces.

3,345,735
HONEYCOMB CORE CONSTRUCTION THROUGH THE APPLICATION OF HEAT AND PRESSURE

Augustus H. Nicholls, 1170 Longfellow Drive, Manhattan Beach, Calif. 90266

Filed Feb. 25, 1963, Ser. No. 260,799
9 Claims. (Cl. 29—470.9)



4. In the method of fabricating honeycomb core material, the steps of

assembling in a superimposed relationship a quantity of metal foil laminations,

interposing betwen adjacent laminations a plurality of spaced filament of relatively inert material with at least some of said filaments being arranged generally in columnar relationship through said superimposed laminations,

said filaments being integrally attached together to define a continuous element,

said continuous element being extended repeatedly across said laminations to define said spaced filaments,

then subjecting the assembled laminations and filaments simultaneously to heat and to a compressive force exerted from opposite sides

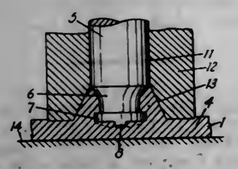
so that said laminations are deformed over said filaments and said filaments act as pressure-concentrating elements forcing adjacent portions of said laminations together when said assembly is subjected to said compressive force for effecting diffusion bonding at said adjacent portions,

and then cooling said assembly and removing the force therefrom.

3,345,736
METHOD OF ASSEMBLING A BODY MEMBER AND A STUD TO PRODUCE A UNITARY STRUCTURE

Gerald V. Jakeway, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich.

Filed Feb. 24, 1964, Ser. No. 346,842
11 Claims. (Cl. 29—509)



7. The method of assembling a body member of metal which is moldably conformable when subjected to pressure without heating, and a stud of relatively non-conformable metal and having a lug on its inner end,

the method comprising the steps of forming a cavity in one side of the body member of such size as to receive the inner end of the stud,

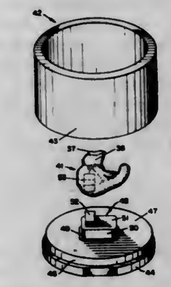
positioning the stud in a die member having an opening therein dimensioned to receive and guide at least an inner end portion of the stud,

the die member having a conical recess at one end of its said stud-receiving opening dimensioned so that the wall of the recess surrounds and is spaced from said inner end portion of the stud and is open to said one side of said body member, and actuating said die member relative to said body member so that a portion of the body member is moldingly upset into embedding engagement with the lug on the inner end of the stud and into surrounding embedding clamping engagement with said inner end portion of the stud.

3,345,737
METHOD OF PRODUCING FITTED HEARING AID WITH SOUND AMPLIFIER INCORPORATED THEREIN

Adolf Gordon, Shrub Oak, N.Y., assignor to Otoacustica Electronics, Ltd., New York, N.Y., a corporation of New York

Filed Dec. 17, 1963, Ser. No. 331,301
7 Claims. (Cl. 29—527)



1. The method of producing an ear cavity supported hearing aid comprising forming an impression of an ear cavity including at least parts of the auditory canal and the outer ear, positioning a housing-defining pattern on the face of said impression and forming a mold of said impression and said pattern, positioning a well-delineating core in the cavity of said mold with the peripheral face of said core being spaced from the housing-defining face of said mold cavity, producing a casting in said mold of an ear plug having sections which substantially mate with adjacent parts of the auditory canal and outer ear of said ear, and having a well located in the outer face of said casting, forming an axial bore through said auditory canal section communicating with said well, and nesting a sound amplifier in said well having a sound output element communicating with said bore.

3,345,738
METHOD OF PRODUCING STEEL STRIP OF UNIFORM THICKNESS BY DIRECT CASTING

Eugene A. Mizikar, Witold M. Wojcik, and Kun Li, Pittsburgh, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 10, 1964, Ser. No. 410,066
9 Claims. (Cl. 29—528)



1. In the process of producing directly cast metal strip by bringing molten metal into contact with a chill so as to cause rapid solidification of a skin of metal against the chill surface, thereafter withdrawing the solidified steel from the chill and subsequently rolling the steel to reduce its thickness, the improvement comprising impressing on that skin as it is formed a pattern of indenta-

tions defining a regular network finer in mesh than a random hill and hollow network which the skin would solidify into in the absence of the impressed indentations.

3,345,739
METHOD OF PRODUCING Nb-Zr WIRE BY DOUBLE VACUUM MELTING AND HEAT-TREATING

George D. Kneip, Jr., Concord, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

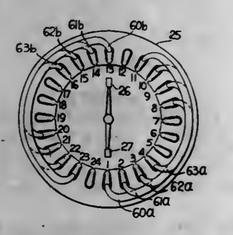
No Drawing. Filed Feb. 18, 1965, Ser. No. 433,770
1 Claim. (Cl. 29—528)

A method for forming superconducting wire from an alloy of niobium and zirconium comprising, by weight, from about 20 to about 50% zirconium, the sum total of oxygen, nitrogen, carbon and hydrogen not exceeding about 0.05% of which at least 50% is oxygen, and the balance niobium, the method comprising the steps of double vacuum melting a consumable electrode of said alloy of niobium and zirconium comprising, by weight, cold mold vacuum furnace, hot-topping the resultant ingot by slowly reducing the arc power at the end of the second melting operation and thereafter allowing said ingot to cool for a few minutes under vacuum to between 800° C. and 900° C. then rapidly cooling the ingot by backfilling the vacuum furnace with an appreciable partial pressure of an inert gas to provide increased conductive heat transfer to the cold mold, thereby forming an ingot having a predominant body-centered cubic phase having a grain size between about 3 and about 6 square millimeters with about 1% to 3% of a second phase distributed along the grain boundaries of the first phase, cutting the ingot into bars and swaging and cold drawing the niobium-zirconium alloy to fine wire.

3,345,740
METHOD OF WINDING DYNAMOELECTRIC CORES BY USING TWO WINDING HEADS

Henry T. Murdock and Stanley M. Ringel, Cincinnati, Ohio, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Apr. 30, 1965, Ser. No. 452,233
2 Claims. (Cl. 29—596)

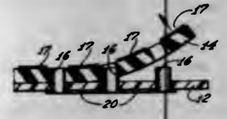


1. The method of winding a three phase, two pole winding in the core of a dynamoelectric machine having twenty-four winding slots opening to the bore of the core comprising the steps of: (a) placing two winding heads 180° apart adjacent winding slots in said core; (b) winding two coils simultaneously with both sides of each coil in the bottom of the slots; (c) indexing said core one step by rotating said core clockwise through an angle equal to the angle between the center lines of adjacent winding slots to position said heads opposite the next winding slots; (d) winding two more coils simultaneously with both sides of the coils positioned in the bottom of the slots; repeating steps (c) and (d) two more times; (f) applying phase insulation to the portion of the coils extending beyond the ends of the core; (g) indexing said core clockwise one step; (h) winding two coils simultaneously with both sides of each coil in the bottom of the slots; (i) indexing the core clockwise one step; (j) winding two coils simultaneously with one side of each coil in the bottom of each slot and the other side in the top of a slot positioned over one of said previously wound coils; (k) repeating steps (i) and (j) one time; (l) indexing the core clockwise one step; (m) winding two coils simultaneously with both sides of each coil in the top of a slot over a previously wound coil to form a second group of coils; (n) insulating the portions of the coils in said second group extending beyond the ends of said core; (o) indexing said core one step; (p) winding two coils simultaneously with both sides of the coils in the top of a slot over a previously wound coil; (q) repeating steps (o) and (p) three more times to form a third group of coils; (r) insulating the portions of the coils in said third group that extend beyond the ends of the core; (s) interconnecting the coils electrically to provide an electrically balanced three phase, two pole winding.

3,345,741
WELDABLE PRINTED CIRCUIT BOARD TECHNIQUES

William G. Reimann, Sherman Oaks, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.

Filed Mar. 14, 1963, Ser. No. 265,178
10 Claims. (Cl. 29—626)



2. A method for making a weldable printed circuit board comprising the steps of:
- securing one side of an insulating base sheet to a body of removable material;
- forming holes extending through the base sheet and into the removable material;
- plating conductive material through the holes in the base sheet and onto the walls of the holes in the removable material to form tubes protruding from said base sheet by a distance at least equal to the radius of the tubes, and plating selected areas of the other side of said base sheet adjacent said holes to form part of a printed circuit pattern; and
- separating and removing the removable material from the base sheet and from said extending tubes to produce tubelets which protrude freely from the base sheet.

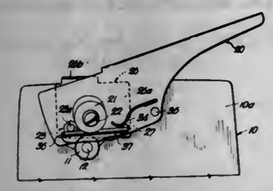
3,345,742
POWER OPERATED CAN OPENER WITH POWER PIERCE AND CUTLERY GRINDING MEANS

Robert E. McLean, Raytown, Mo., assignor to Rival Manufacturing Company, a corporation of Missouri

Filed Apr. 6, 1966, Ser. No. 540,605
10 Claims. (Cl. 30—4)

1. In an electrically powered can opener having an upright frame, a rotary feed wheel and an electric motor drivingly connected with said feed wheel, the combination therewith of
- a hand lever pivotally attached to the frame of said can opener, said hand lever being pivotable about an axis substantially parallel to the axis of the feed wheel, and at the same time said lever being swingable in a direction substantially transverse with respect to the axis of the feed wheel,
- a cutting element mounted on said lever and movable into and out of overlapping cutting relationship with said feed wheel,

- a normally open switch mounted on said frame and controlling the energization of said motor, and

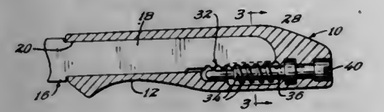


- switch operating means mounted between said lever and said switch operable to close said switch in response to the bringing of said cutting element into pressure contact with the end of the can to be opened and the rocking of said lever in said transverse direction.

3,345,743
BLADE HANDLE

Harold E. Paulson, 842 W. Nebraska, St. Paul, Minn. 55108, and Alfred R. Paulson, 1315 W. Lakeshore Drive, Round Lake, Ill. 60073

Continuation of application Ser. No. 421,983, Dec. 29, 1964. This application Dec. 6, 1966, Ser. No. 606,497
4 Claims. (Cl. 30—337)



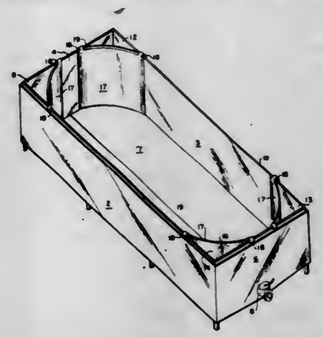
1. A knife blade handle in combination with a knife blade having a tang detachably secured in said handle comprising:
- a pair of opposed substantially similar body portions joined along their corresponding faces to provide an elongated unitary handle body,
- said body portions having similar elongated axially extending registered sockets to provide a socket in said body extending from one end of said body and terminating short of the other end of said body,
- said one end defining a socket opening,
- a knife blade having a tang positioned in said socket,
- the length of said socket defining the length of said tang in said socket,
- a shaft recess in said body communicating with said socket.
- a cylindrical shaft rotatably supported in said shaft recess,
- said blade tang having a series of spaced notches along an edge of the tang,
- said shaft having an inner end having lug means engaging at least one notched portion of said tang,
- said shaft having an externally accessible outer end disposed in said body whereby rotation of said shaft moves said tang in and out of said socket,
- means intermediate said shaft inner and outer ends holding said shaft non-removably in said body.

3,345,744
VAT FOR SETTING AND AGITATING COTTAGE CHEESE

Lowell J. Collins, Piedmont, Calif. (936 61st Ave., Oakland, Calif. 94621); Rose Helen Collins, executrix of said Lowell J. Collins, deceased

Filed Jan. 11, 1966, Ser. No. 519,867
10 Claims. (Cl. 31—47)

10. A baffle for converting a square-ended vat equipped with rotary mechanical agitation means for rotation about a vertical axis to a round-ended vat comprising, a curved face plate having a radius of curvature correlated to the radius of rotation of the rotary mechanical agitation means, and means on the baffle to detachably lock the

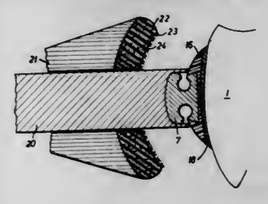


baffle in position within the vat, the curved face plate of the baffle when so locked within the vat standing substantially parallel to the vertical axis of rotation of the mechanical agitation means.

3,345,745
ORTHODONTIC FASTENING MEANS AND METHOD OF APPLYING THE SAME

Gerhard Müller, Schumannstrasse 55, Bonn, Germany

Filed Jan. 26, 1965, Ser. No. 428,153
Claims priority, application Germany, Feb. 20, 1964, M 59,999
16 Claims. (Cl. 32—14)



1. A method for adhering a holding bracket to a tooth, comprising the steps of fixing onto one end of a substantially rigid holding bracket a plug of plastic material having an end face adapted to be directed, when the bracket is attached to a tooth, towards the tooth; conforming said end face to the configuration of a tooth surface to which said bracket is to be attached; and cementing said end face of said plug to said surface of said tooth.

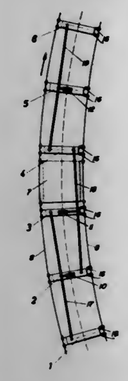
3,345,746
APPARATUS FOR THE CONTINUOUSLY PROGRESSING LATERAL ALIGNMENT OF A CURVED TRACK SECTION

Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria

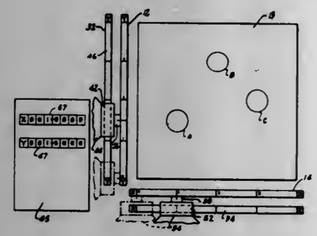
Filed Aug. 5, 1963, Ser. No. 299,820
Claims priority, application Austria, Aug. 6, 1962, A 6,352/62
3 Claims. (Cl. 33—1)

1. An apparatus for the continuously progressing lateral alignment of a curved track section, comprising a mobile track aligning machine mounted for movement along the track section, a plurality of cars coupled forwardly and rearwardly to the machine for movement along the track section with the machine, rigid chordal elements extend-

ing between alternate ones of said cars, each chord element bridging one of said cars between the alternate cars, means for pivotally connecting the ends of the chordal elements to said alternate cars, the distance between adjacent ones of said cars being half the length of said chordal elements and said chordal elements being of equal length, and means mounted on said cars between the alternate cars and midway between the chordal element ends for measuring the ordinate of the respective chordal element.

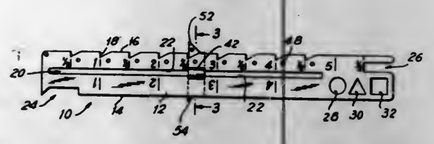


3,345,747
MECHANICAL COORDINATING DEVICE
Robert Irwin Sattler, St. Clair Shores, Mich., assignor to La Salle Machine Tool, Inc., Warren, Mich.
Filed Mar. 9, 1964, Ser. No. 350,288
2 Claims. (Cl. 33—1)



1. In a machine tool positioning system, locating apparatus comprising a first scale extending along a first axis and having a grating pattern, a second graduated scale spaced from and parallel to said first scale, a first means for sensing positions along said first scale and including an index alignable with the graduations on said graduated second scale for obtaining corresponding readings from said first and second scales, a first visible screen readout for indicating the position of said first sensing means relating to said first scale, a third scale extending along a second axis and having a grating pattern, a fourth graduated scale spaced from and parallel to said third scale, a second means for sensing positions along said third scale and including an index alignable with the graduations on said graduated fourth scale for obtaining corresponding readings from said third and fourth scales, a second visible screen readout for indicating the position of said second sensing means relative to said third scale, each of said scales having a zero reference point and being adustable to locate the position of the zero reference point thereon relative to a fixed point.

3,345,748
SEWING GAUGE
Benjamin L. Snyder, Brookline, Mass., assignor to Pentapco, Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Mar. 25, 1965, Ser. No. 442,762
2 Claims. (Cl. 33—2)

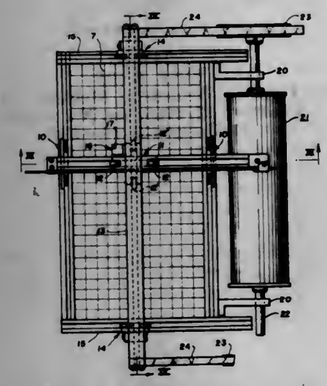


1. A measuring device comprising an elongated strip carrying measuring indicia on one of its faces and having a pair of opposed side edges between which said strip is formed with a longitudinal slot defined between parallel slot edges of said strip which are situated between said side edges thereof, an elongated springy slide member having a pair of lateral portions engaging one face of said strip and respectively extending in opposite directions from said slot thereof, said lateral portions being integral with a neck of said slide member which extends through said slot and which is defined by a pair of wall portions of said slide member and said neck of said slide member being integral with a cylindrical portion of said slide member which is on the side of said strip opposite from said lateral portions of said slide member and which has a diameter greater than the width of said slot, said wall portions of said slide member which define said neck each having a pair of spaced outwardly extending rounded protuberances and said pairs of rounded protuberances slidably engaging said slot edges to reduce the frictional resistance to movement of said slot member along said strip, detent means for releasably maintaining said slide member at a selected one of a plurality of positions along said strip, and detent means including a plurality of openings formed in said strip and distributed longitudinally therealong and a projection carried by one of said lateral portions of said slide member and capable of being selectively received in one of said openings, said laterally projecting portions of said slide member being springy and urging said projection into a selected one of said openings for releasably maintaining said slide member at a selected position.

3,345,749
ROTARY DIE LAYOUT MACHINE
Harry J. Devon, Pittsburgh, Pa., assignor to Jas. H. Matthews & Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 13, 1965, Ser. No. 479,559
7 Claims. (Cl. 33—22)

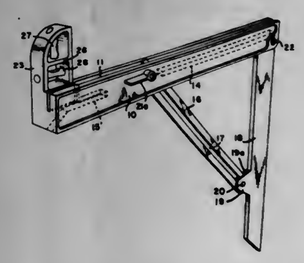
1. Layout apparatus of the class described comprising:
(a) a table adapted to receive a flat pattern to be traced,
(b) a cylinder rotatably supported at the front of the table on which the pattern is to be reproduced,
(c) a bridge extending over the table and movable from side to side in a direction parallel with the axis of the cylinder,
(d) a marking stylus on the end of said bridge bearing on the surface of the cylinder in a direction radial to the axis of the cylinder and arranged to trace a line on the cylinder,
(e) a cross bar extending over the table parallel with the axis of the cylinder and crossing the bridge at right angles, the cross bar being movable in a direction toward and away from the cylinder,

(f) a carriage at the intersection of the cross bar and bridge and movable along each but engaged with each in such manner that movement of the carriage along the bridge toward and away from the roll effects a corresponding movement of the cross bar and movement of the carriage along the cross bar effects a sidewise travel of the bridge to thereby move the marking stylus along the surface of the cylinder in the direction of its length,



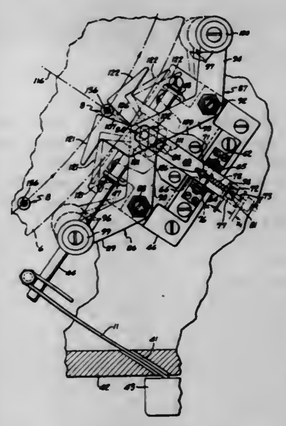
(g) a tracing stylus fixed on the carriage for following the contour of a pattern on the table,
(h) and a driving connection between the cross bar and the cylinder for rotating the cylinder upon movement of the cross bar, said driving means including a wheel fixed to rotate with the cylinder of an effective diameter different from the diameter of the cylinder through which said driving means is effective whereby the mark made by the marking stylus on the rotating cylinder is of a length different from the length of the arc through which the wheel is rotated.

3,345,750
ADJUSTABLE CARPENTER'S SQUARE
James H. Hill, 15381 Stratford Drive, San Jose, Calif. 95124
Filed Feb. 14, 1966, Ser. No. 527,330
2 Claims. (Cl. 33—75)



1. In an adjustable tool which may be used for marking and laying out structural members, the combination of a body member having a pair of longitudinally extending substantially parallel slots separated by rib means which is provided with an opening connecting said slots, said slots being open on opposite sides of said body member and one of said slots extending substantially from end to end of said body member, a blade pivotally attached to one end portion of said body member in alignment with said one of said slots so that said blade may be folded into and out of said one slot, an arm having a longitudinally extending slot, means pivotally attaching said arm to said blade, said pivoting means including a projection extending from said blade, said projection being adapted to enter said opening in said rib means and extend into the other of said slots when said blade is folded into said one slot, a pivot pin attaching said arm to said projection of said blade, adjustable means attached to said body member extending through the slot in said arm clamping said arm to said body member for holding said blade at any one of a plurality of selected angles with respect to said body member, said arm being slidable through said opening in said rib means and through said slots so that said arm is adapted to be folded into the other of said slots when said blade is folded into said one slot and said projection extends into said other slot.

3,345,751
DRAFTING TABLE APPARATUS
Veri N. Barzee, 708 Knickerbocker Drive 94087, and Joseph J. Harapat, 1105 W. Iowa Ave. 94086, both of Sunnyvale, Calif.
Filed Nov. 15, 1965, Ser. No. 507,939
10 Claims. (Cl. 33—78)

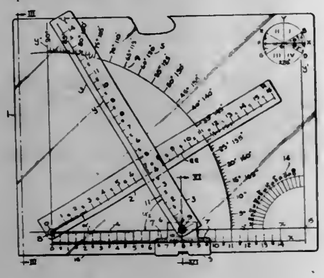


1. A drafting table apparatus comprising:
a member mounted for rotation upon a support having a planar drafting surface, and a plurality of preselected angularly related indexing stations; and
first means for selectively engaging one of said indexing stations;
second means for engaging and locking said member at infinitely variable angular positions; and
manually operable control means on said support having three operative positions, the first of which for permitting free rotation of the member, the second of which for operating said second means, and the third position for actuating said first means.

3,345,752
PRECISION TRIANGLE SOLVER, COMPUTER AND CLASSROOM DEMONSTRATOR
Edwin Z. Gabriel, 91 Mount Tabor Way, Ocean Grove, N.J. 07756
Filed Aug. 30, 1965, Ser. No. 492,961
6 Claims. (Cl. 33—97)

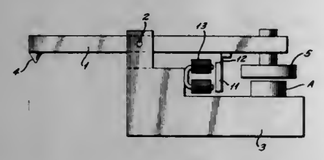
1. A computer for solving triangles, comprising a flat sheet-like basal plate having an arcuate graduated scale of at least 90° thereon described about a center on said basal plate, said basal plate having straight horizontal and ver-

tical side edges and an *x*-line with an *x*-scale extending across the same passing through said center at its zero reading and graduated to read from left to right and providing a straight edge margin, parallel with the bottom edge of said plate, movable arm means solely pivotally fixed to said basal plate at said center and having a free end part extending across said arcuate scale, said arm means including a longitudinally extending graduated scale, a rider having a foot comprising a folded-over part in the form of a guide channel engaging against and over said bottom edge of said basal plate with air space between said folded-over part and said plate, said folded-over part providing longitudinal guiding engagement with said bottom edge of said basal plate, and providing manu-



ally slidable gripping engagement with said basal plate proximate to said bottom edge, a swingable and translational *y*-scale member pivotally mounted on said rider at same distance from said bottom edge as said *x*-line of *x*-scale and in normal position projecting over the face of said rider across said solely pivoted arm means, said *y*-scale member having a longitudinally extending scale thereon and a vertical *y*-hairline, said *y*-hairline passing through said center and being perpendicular to said *x*-line when the pivotal connection of the rider and *y*-arm is directly positioned over the pivotal connection of the arm means to the basal plate, wherein the portion of said plate beneath said bottom edge has a resilient strip lengthwise thereof to retain and slidably grip said rider against said straight edge.

3,345,753
MEASURING INSTRUMENT FOR MEASURING DISCONTINUOUS SURFACES AND TRANSDUCER THEREFOR
Loris Giardino, Via G. Rossi 4, Bologna, Italy
Continuation of application Ser. No. 363,391, Apr. 29, 1964. This application Nov. 8, 1966, Ser. No. 592,950
11 Claims. (Cl. 33—172)



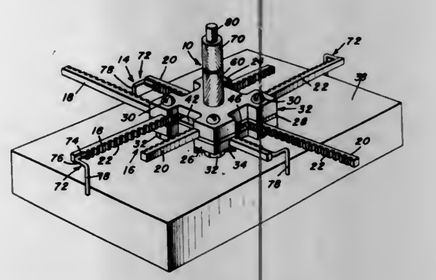
1. In a measuring instrument of the direct feeling type for taking a measurement of portions of a moving surface, and which includes: a feeler means movable in opposed directions towards and away from said portions and for remaining in contact against said portions as they move past said feeler means, said means normally tending to move in a one of said directions towards said portions, and which further includes a means to prevent said feeler means from bouncing in a direction away from said surface portions, the improvement comprising the fact that the bouncing preventing means comprises: an energy dissipating means for absorbing and dissipating any bouncing forces induced in said feeler means by the movement of said surface, the improvement further comprising the fact that said energy dissipating means only absorbs and dissipates energy without exerting any return forces upon said feeler means.

3,345,754
SINE BARS
Morton S. Lipkins, 3 Nemeth St., Malverne, N.Y. 11565
Filed Oct. 22, 1965, Ser. No. 501,737
11 Claims. (Cl. 33—174)



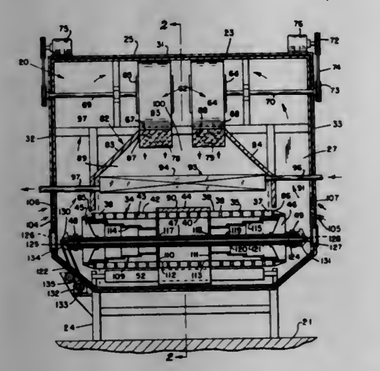
1. A sine bar for use with a companion flat surface plate and gage blocks for establishing precise angles between the surface plate and the top of the sine bar, said sine bar including a member having true top and bottom flat accurately related faces, and three hard spheres of equal diameter in tangential contact with one of said flat faces and united thereto by cement in a triangular pattern, two of said spheres being spaced apart and the centers of the two spheres defining a base line of the triangular pattern, and the third of said spheres being spaced substantially from both of said two spheres, the distance between the center of the third sphere and the base line constituting an accurately established altitude of the triangular pattern to be used in calculations of angles between said top face and the surface plate.

3,345,755
MECHANICAL CENTERING DEVICE
Roy H. Ferebee, Rte. 3, Charlotte, Tenn. 37036
Filed Nov. 12, 1965, Ser. No. 507,363
10 Claims. (Cl. 33—191)



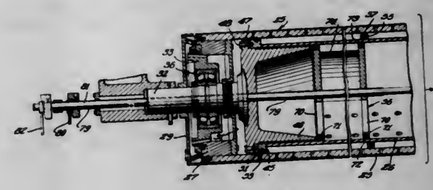
1. In a centering device including a central hub assembly, a first pair of parallel elongate arms slidably mounted in said central hub and extensible laterally therefrom, a second pair of parallel elongate arms slidably mounted in said central hub and extensible laterally therefrom, said second pair of arms being perpendicular to said first pair of arms, the improvement comprising, means in said central hub assembly for moving said first pair of arms, and means in said central hub assembly for moving said second pair of arms, said first and second named moving means being separately controllable whereby each pair of arms may be moved without the other pair being moved, said central hub assembly comprising upper and lower mounting plates, a spacer plate positioned between said upper and lower mounting plates, and means for releasably connecting said upper and lower mounting plates and said spacer plate in assembled condition, said upper and lower mounting plates each including a substantially centrally located recess portion and an aperture opening into said recess portion, said spacer plate including an aperture therein, the apertures in said upper and lower mounting plates and said spacer plate being substantially aligned when assembled by said connecting means, said first named moving means comprising first gear means in the recess portion in said upper mounting plate, said first gear means mounted on a first shaft means extending through the aperture in said upper mounting plate, said second named moving means comprising second gear means in the recess portion of said lower mounting plate, said second gear means mounted on a second shaft means extending through the apertures in said lower mounting plate, said spacer plate, and said upper mounting plate.

3,345,756
METHOD AND APPARATUS FOR DRYING A WET WEB
Edward T. Bryand, South Portland, and Edward G. Peabody, Gorham, Maine, assignors to Metal-Tech Inc., Biddeford, Maine, a corporation of Maine
Filed Oct. 23, 1965, Ser. No. 509,676
4 Claims. (Cl. 34—23)



1. The method of pre-drying a wet web of textile fabric to remove free moisture therefrom by the use of a hollow, honeycomb-surfaced, cylinder rotatably mounted below a blower within an enclosure, said method comprising the steps of:
advancing said web progressively through said enclosure with a stretch thereof trained around about 350° of the honeycombed surface of said cylinder while maintaining said stretch in intimate contact therewith under predetermined tension; automatically reducing the effective width of said honeycombed surface within the interior thereof from the exterior thereof to conform with the width of said web, while said roll is rotating;
continuously discharging air downwardly from said blower through said fabric stretch and through said honeycombed surface, into the interior of said cylinder;
continuously heating the said air discharged from said blower, to a temperature of about 300° F. in advance of said fabric stretch to laden the air within said cylinder with free moisture;
continuously withdrawing said moisture laden air from said cylinder and recirculating a predetermined percentage of the volume thereof to the intake of said blower;
and continuously discharging a predetermined remaining percentage of the volume of said moisture laden air, under pressure from the pressure side of said blower, into an atmosphere remote from said enclosure.

3,345,757
DRYER VENTILATING ROLL
Robert A. Daane, Rockford, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Oct. 14, 1965, Ser. No. 495,859
7 Claims. (Cl. 34—111)

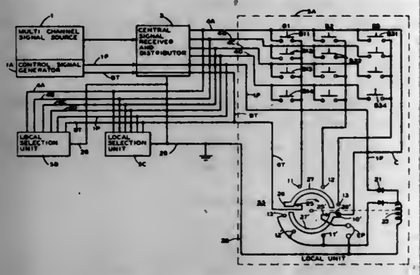


1. In a felt roller for paper machine dryers comprising:
a cylindrical roll shell mounted for free rotation about a horizontal axis and having a plurality of air passageways leading through the periphery thereof from the hollow interior thereof for passing heated air therethrough,
a hollow non-rotatably cylindrical air distributor shell spaced radially inwardly of the inner periphery of said roll shell and extending therealong and having a perforate area having air distributor passageways leading therethrough for supplying heated air to said air passageways leading through the periphery of said roll shell,
circumferentially and axially spaced sealing means sealing said area of the interior of said roll shell.
and modulator valve means rotatably mounted at each end of said distributor shell for adjustable movement about the inner periphery of said distributor shell,
said modulator valve means having circumferentially and axially spaced seals having sealing engagement with the interior of said distributor shell and being movable to seal off the opposite end portions of the passageways leading through said distributor shell and to vary the flow through said passageways,
and adjustment means connected with each modulator valve means for adjustably moving said modulator valve means independently of each other.

3,345,758
EDUCATIONAL DEVICE
Charles A. Morchand, 288 Lexington Ave., New York, N.Y. 10016
Filed Feb. 15, 1966, Ser. No. 527,437
8 Claims. (Cl. 35—9)

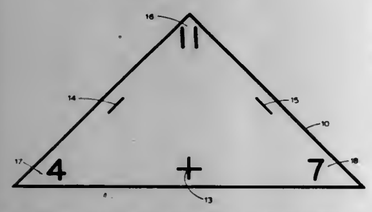
1. In an educational device a local unit comprising a plurality of banks of selection switches, like ordered ones of switches in the several banks being interconnected to one of a plurality of question-answer signal providing input lines, stepping switch means having at least one com-

mon contact and a plurality of selectable contacts, each in a group of selectable contacts being connected to the several contacts of a selection switch bank associated with such selectable contact, and presentation means connected to a common contact, whereby questions and answers may



be transmitted to a student, the student selecting what he regards to be the correct answer by operating one of said selection switches and receiving "correct" or "incorrect" answers, depending upon his selection of the selection switch and hence selection of the particular signal providing input line.

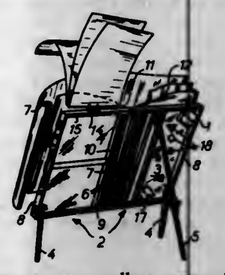
3,345,759
TYPE OF FLASH CARD
Thaddeus William Harris, 3 W. Geneva Drive, Tempe, Ariz. 85281
Filed Feb. 5, 1965, Ser. No. 430,662
8 Claims. (Cl. 35—31)



1. An arithmetical teaching aid comprising:
a triangular flash card having three numbers displayed on one of the faces of said card;
each of said numbers being located adjacent to one of the angles of said triangular card;
any two of said numbers being combinable to present an arithmetical problem with the remaining number being the answer thereto;
a mathematical symbol displayed along each of the three legs of the triangular sides of said card, each symbol being located between two of the numbers;
said symbol representing an arithmetical operation to be performed in combining the two adjacent numbers;
whereby any two of the numbers and the symbol therebetween may be displayed to present an arithmetical problem while the remaining number may be obscured until it is desired to display the answer.

3,345,760
PORTABLE INSTRUCTION AND DEMONSTRATION UNIT WITH VARIOUS EQUIPMENT
Øystein Myhr, Malm, Nord-Trondelag, Norway
Filed Oct. 19, 1964, Ser. No. 404,644
3 Claims. (Cl. 35—60)

1. A portable instruction demonstration unit comprising a suitcase-type carrying case containing instruction and demonstration equipment, said case comprising two sections hinged together in such a manner that when the sections swing open 180° from closed position, the exterior sides of the two sections form a continuous surface, at least one of said exterior sides comprising a magnetizable material, the bottom of the case where the two half sections are hinged together being pulled up a short



distance to form recesses, rollers removably mounted in said recesses, curtains rolled on said rollers and adapted to be pulled over the bottom edge of each section between the sections and across said exterior sides, and means for releasably securing the ends of the curtains to the upper edges of the sections.

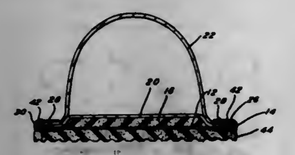
3,345,761
SKI BOOT
Rudolf Stöhr, Tuttlingen, Germany, assignor to Rieker & Co., Tuttlingen, Germany
Filed Mar. 12, 1965, Ser. No. 439,417
Claims priority, application Germany, Aug. 20, 1964, R 29,004
5 Claims. (Cl. 36—2.5)



1. In a ski boot having an upper with an outer sole molded thereon and a beaded projection extending upwardly from said sole at the rear part thereof and secured to and enveloping the heel part of said upper so as to form a protective cover therefor, and to secure the sole more firmly to the upper, said sole having a groovelike recess extending substantially from the base of said projection at the apex of the heel for a certain distance in a substantially horizontal direction toward both sides and then sloping downwardly at an angle toward the bottom of the sole, the lower edge of said recess being substantially flat and adapted to support a tension cable or the like of a ski binding and having a height from the bottom of the sole at the apex of the heel at least equal to the height of a normal heel without said beaded projection, the uninterrupted heel part underneath said edge being adapted to form a solid support for the heel connecting means of a ski binding of a different type.

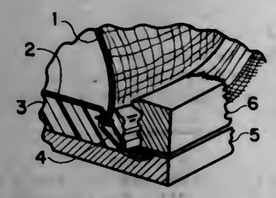
3,345,762
SLIPPER DEVICE
Robert J. Fisher and William S. Fisher, both of Highway 73 and Cushman Ave., Berlin, N.J. 08009
Filed July 9, 1965, Ser. No. 470,773
5 Claims. (Cl. 36—9)

1. A slipper device comprising a form element providing an inner sole, a sponge rubber layer positioned over said element, cloth means covering said sponge rubber layer and providing foot engaging and securing means, binding strip means secured with said element and cloth means by stitching about the edge of said element and cloth means, an outer sole member positioned along the



bottom of said element, a heel unit positioned between said inner and outer soles, and stitch means securing together said element, cloth means, binding strip means, outer sole member and heel unit.

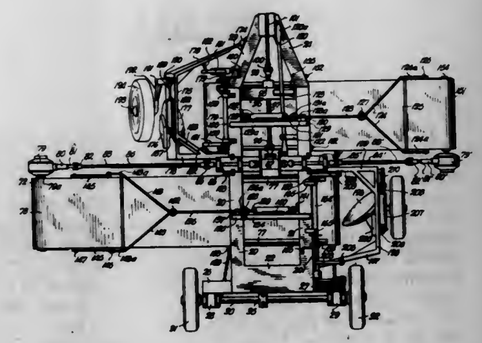
3,345,763
MOLDED-SOLE FOOTWEAR
Ernest E. Rollman, Waynesville, N.C., assignor to Ro-Search, Incorporated, Waynesville, N.C.
Filed Oct. 3, 1962, Ser. No. 228,150
3 Claims. (Cl. 36—14)



1. Footwear comprising an upper, a perforated strip of material secured to the bottom portion of the upper and extending outwardly and downwardly therefrom, and an elastomeric sole bonded to said upper and extending through the perforations in said strip, said strip extending to the bottom of said sole.

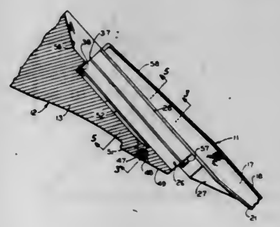
3,345,764
TWO-WAY TERRACING DEVICE
Albert C. Malsam, 425 9th St., Wakeeney, Kans. 67672
Continuation of application Ser. No. 283,364, May 27, 1963. This application June 13, 1966, Ser. No. 562,419
6 Claims. (Cl. 37—110)

1. A grading device comprising;
a wheeled frame,
a first endless conveyor having receiving and discharging ends mounted on said frame, disposed transversely thereof and having the discharge end thereof extending outwardly beyond one side of said frame,
a first plow mounted on the other side of said frame from the discharge end of said first conveyor and positionable so as to excavate earth and pass it laterally onto the receiving end of said first conveyor,
frame means mounting said first plow on said frame in such manner as to permit vertical adjustment of said plow into and out of ground engaging relationship,
a second endless conveyor having receiving and discharging end mounted on said frame longitudinally rearwardly of said first conveyor, disposed transversely thereof and having the discharge end thereof extending in an opposite direction from the said first conveyor outwardly beyond the other side of said frame,
a second plow mounted on the other side of the frame from the discharge end of the second conveyor and positionable so as to excavate earth and discharge it onto the receiving end of said second conveyor,



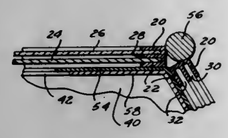
frame means supporting said second plow in such manner as to permit vertical adjustment thereof into and out of ground engaging relationship,
and a power drive connection mounted on said frame between said conveyors adapted to be connected to a tractor power drive and power engaging and disengaging transmission means also mounted on said wheeled frame between said conveyors for separately and sequentially connecting said power drive to one of said first and second conveyors.

3,345,765
REVERSELY BENT RESILIENT RETAINER FOR DIGGING IMPLEMENT BLADES
Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.
Filed May 5, 1965, Ser. No. 453,422
8 Claims. (Cl. 37—142)



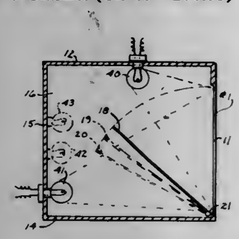
4. In earth digging equipment a blade holder having a forward opening recess shaped as an inverted T in cross-section and having a bottom wall formed with a pair of apertures extending from the exterior of said holder into said recess, said recess having a rear shoulder, a blade having at least one cutting end and a downward protruding extension remote from said end and having a rearward abutment abutting said shoulder, said extension substantially complementary to said recess, and a resilient insert bent over exteriorly of said holder and having its ends extending through said apertures into said recess and compressed between said extension and said holder to restrain withdrawal of said extension from said recess.

3,345,766
DISPLAY DEVICES
George A. Timlin, Flushing, N.Y., assignor to Acme Bulletin & Directory Board Corp., New York, N.Y.
Filed May 17, 1965, Ser. No. 456,438
6 Claims. (Cl. 40—77)



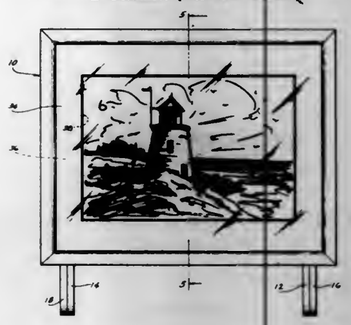
1. A display device comprising a stationary support means, a carrier supported by said support means for rotation about a substantially vertical axis when the device is used, said carrier having in a sectional plane normal to said axis the configuration of a polygon and said polygon having a plurality of sides each of which defines a section of said carrier, said carrier sections each extending longitudinally in the direction of the axis of rotation of said carrier and each section including a pair of frame means one of which is situated behind the other closer to said axis than said other frame means, said one frame means defining an elongated groove for receiving end portions of a plurality of display strips arranged one above the other along each section with the end portions of said strips received in said groove of said one frame means, and the other frame means of each of said sections also defining an elongated groove, said groove of said other frame means of each section of said carrier being adapted to receive peripheral edge portions of a transparent sheet which thus becomes situated in front of said strips between the latter and an observer of said strips, whereby the positions of said strips will not be disturbed by movement of said transparent sheet with respect to said other frame means.

3,345,767
DISPLAY DEVICE
Elmer H. Lusebrink, Morton Grove, and Alvin H. Meyer, Highland Park, Ill., assignors to Ace Finishing Co., Inc., Chicago, Ill.
Filed Oct. 11, 1965, Ser. No. 494,705
8 Claims. (Cl. 40—106.53)



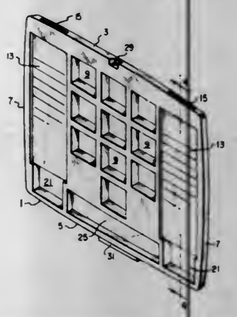
1. A display apparatus comprising in combination a casing, a front window in said casing, a panel mounted adjacent said window and pivotally movable away from said front window in said casing, a source of illumination within said casing, said window provided with display information on the exterior surface of said window, said panel being transparent and provided with a matte surface toward the interior of said casing and further display information on the surface of said panel facing said window, means for pivotally moving said panel into abutting relationship with said window to provide a composite picture through said window, means for pivotally moving said panel away from said window to diffuse and eliminate a portion of said composite picture.

3,345,768
DISPLAY MEANS FOR WORKS OF ART
Kenneth H. Schulz, Racine, Wis.
(P.O. Box 396, Gatlinburg, Tenn. 37738)
Filed Sept. 29, 1965, Ser. No. 491,155
2 Claims. (Cl. 40—152.1)



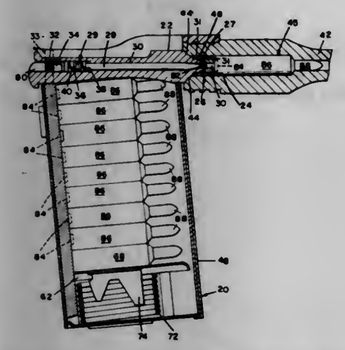
1. A display means for exhibiting a work of art, comprising in combination a frame having a display opening defined by a lower horizontal edge, upwardly-extending legs secured rearwardly to said frame and transversely embracing said opening, a panel intermediate said legs and adapted to secure said work of art in said opening and hinged to said frame adjacent said lower horizontal edge, a horizontal, rearwardly-extending portfolio-supporting means secured intermediate said legs, and adjacent said horizontal edge, second legs pivotally secured to said first legs, and an upwardly-positioned transverse member secured to said second legs to support said portfolio in a reclining position.

3,345,769
TELEPHONE CARD INDEX FOR A PUSH BUTTON DIAL TELEPHONE
Gerd Nathan, Springfield, Va., assignor to Nathan Industries, Inc., Springfield, Va.
Filed Oct. 24, 1965, Ser. No. 504,456
15 Claims. (Cl. 40—336)



1. A combination cover plate and telephone index card holder for a telephone having a push button dial comprising: a telephone cover plate with a front and back face and having fenestrations therein registering with positions of the dial push buttons, thereby permitting the same to extend through the plate when it is operatively seated and forms an integral part of the telephone, said plate having slots therein spaced from said apertures, index cards sized to be received in the slots, index card locking means positioned adjacent the slots to receive in friction-locking engagement projecting portions of the index cards, and index card gripping means on the front of the plate adjacent the slots to permit the index cards therein to be readily lifted from the slot.

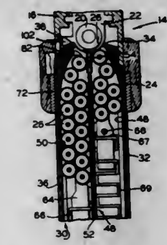
3,345,770
AUTOMATIC RIFLE FOR FIRING CASELESS AMMUNITION
John J. Scanlon, Jr., Willingboro, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 7, 1966, Ser. No. 586,004
7 Claims. (Cl. 42—18)



1. In an automatic rifle for firing caseless ammunition including the combination of a magazine having a plurality of rounds therein; a chamber for receiving said rounds; and a bolt for transferring said rounds from said magazine to said chamber, the improvement wherein said bolt comprises
means for sealing said chamber, said bolt having a passageway through the center thereof,
a firing pin slidable within said passageway, and
means on a rear portion of said firing pin for sealing said passageway;
wherein said chamber comprises
a feed ramp for guiding said caseless ammunition therein; and
a sealing area adjacent said feed ramp for preventing gases from escaping therepast;
and wherein said magazine comprises a front wall, a back wall, side walls and a base plate,
a lock means provided on said back wall,
a resilient means secured to said base plate at one end,
a follower plate slidably mounted in said magazine,
a spring guide integral with said follower plate securing said resilient means at its other end,
said follower plate having a slot in the rear thereof,
a bar passing through said slot the full distance of said magazine adjacent said back wall,
a block secured to the top of said follower plate,
a bolt stop secured rearward to said follower plate,
said bolt stop being so constructed and arranged so as to keep the bolt opened after the last round of ammunition has been fed and fired.

3,345,771
HIGH CAPACITY MAGAZINE AND COOPERATING FIREARM STRUCTURE
Stanley D. Silsby, Granby, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 7, 1966, Ser. No. 519,398
6 Claims. (Cl. 42—18)

1. In a firearm having a receiver and a bolt with an operating rod reciprocal between a forward battery position and a rearward recoil position, a magazine unit for cartridges, said magazine including a case having a pair of sides, a partition dividing said case to form a primary magazine between said partition and one of said sides and a reserve magazine between said partition and the opposite one of said sides, each said primary and reserve magazines being adapted to hold a double stack of the cartridges in staggered arrangement, a mouth for receiving the cartridges from said primary and reserve magazines in position for longitudinal extraction by the bolt during travel to the battery position, a pair of lips respectively formed in said pair of sides at said mouth, said lips being spaced a distance greater than the diameter of the cartridges, a



divider section of said partition arranged in cooperation with said lips for positioning a leading one of the cartridges from one of said primary and reserve magazines at said mouth for extraction by the bolt, and means for displaceably mounting said divider so as to permit radial insertion of the cartridges between said divider and each of said lips into said primary and reserve magazines.

3,345,772
BODILY ATTACHED HOOP TOY
George Sam, 1350 N. Broadway, Salem, Ill. 62881
Filed Jan. 4, 1965, Ser. No. 423,262
2 Claims. (Cl. 46—51)



1. A hoop support and actuator comprising a unitary member consisting of a first frusto-conical portion having a large open end having edge means adapted to engage the front midsection of the body of a user and a second frusto-conical portion having a small end joining the outer end of said first portion and a second large end at the outer extremity of said member, said portions providing a continuously curving surface having a substantially smaller diameter intermediate the ends of said member and attaching means including a pair of oppositely disposed strap slots and a strap secured adjacent the edge means of said first frusto-conical portion and a hoop, said hoop and surface comprising means adapted to produce parallel movement of said hoop with respect to the body of the user.

3,345,773
MULCH
John B. Sturgess, Altadena, and Carleton B. Scott, Los Alamitos, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Apr. 18, 1966, Ser. No. 543,019
8 Claims. (Cl. 47—9)

1. A method to promote germination of seeds and growth of plants in soil which comprises sowing said

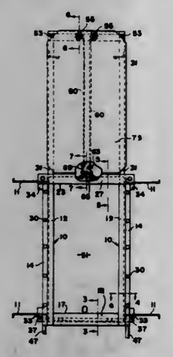
seeds in said soil and applying particulate carbon solids having diameters between about 0.08 and 0.50 inch on the soil to provide said carbon solids in a layer above said seeds having a thickness from about ⅛ inch to about 1½ inches.

3,345,774
PLANT WATERING AND FEEDING DEVICE
Rene G. Delbuguet, 1209 Guy St., Montreal, Quebec, Canada
Filed Dec. 8, 1965, Ser. No. 512,481
4 Claims. (Cl. 47—48.5)



1. A plant feeding and watering device comprising a vertical hollow tube having an outer wall with a plurality of holes extending therethrough, said holes being adapted to receive plant tying means, a screw cap removably secured to the top end of said tube, a tapered tip having a downwardly pointing apex and an upper end adapted to be removably secured to the bottom end of said tube, said tip having a reservoir and a plurality of hollow channels extending between said reservoir and the exterior surface of said tip, and means including a needle valve interconnecting the interior of said tube to said reservoir.

3,345,775
FIRE DOOR
Peter F. Crosby, Cazenovia, N.Y., assignor, by mesne assignments, to Diebold Incorporated, Canton, Ohio, a corporation of Ohio
Filed Aug. 25, 1965, Ser. No. 482,437
1 Claim. (Cl. 49—4)



A fire door structure comprising a frame having vertically disposed spaced apart guide members, a door mounted for sliding movement in said guide members, a pair of constant force coiled band springs mounted in the upper portion of said frame, the free end of one of said springs being fixed to said door, the free end of the other spring of said pair being connected to said door by a fusible link, the springs of said pair exerting a combined force sufficient only to counterbalance said door to maintain the same against sliding movement in said guide members by gravity.

3,345,776
VERTICAL OPENING SASH
Laurence F. Carson, London, Ontario, Canada, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa.
Filed Oct. 23, 1965, Ser. No. 503,931
Claims priority, application Canada, Apr. 28, 1965, 929,272
17 Claims. (Cl. 49—246)

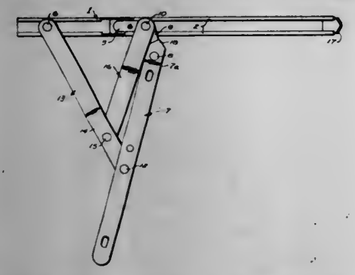


1. A window assembly comprising a window frame having a spaced lower and upper pair of members interconnected by a pair of spaced side members to define a window opening, a window unit and means for mounting said window unit to said frame selectively to open and close the opening, said window unit, in an open position, being removed from the plane of the window opening, said mounting means comprising an elongated torsion spring having an arm secured thereto and projecting therefrom to be disposed at an angle corresponding to the angle between the lower member of the frame and an associated adjacent side member, means securing said torsion spring to the lower member including restraining means and journal means disposed in spaced relation along the length of said torsion spring, said journal means preventing relative movement of said lower member and torsion spring except about the longitudinal axis of the torsion spring and means pivotally securing the free end of the arm to the window unit adjacent a marginal edge thereof to pivot only about an axis parallel to the longitudinal axis of the torsion spring.

3,345,777
SUPPORTING BRACKET FOR WINDOWS
Axel W. Anderberg, Los Angeles, and George A. Taylor, Glendale, Calif., assignors to A. W. Anderberg Manufacturing Co., Los Angeles, Calif., a corporation of California
Filed Dec. 16, 1965, Ser. No. 514,290
2 Claims. (Cl. 49—248)

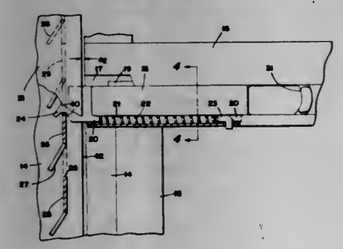
1. A supporting bracket, comprising:
(a) a track;
(b) a slide movable along said track;
(c) a strut pivotally connected to said track in spaced relation to said slide;
(d) a brace pivotally connected to said slide and said strut for movement of said strut between a position superposed on said track and an angular position;
(e) a link pivotally connected to said slide at the same pivotal axis as the connection of said brace with said slide for movement thereabout;
(f) and a bar pivotally connected to said link and said strut to define, with the pivotal connections of said bar and link, a four-sided figure so proportioned

that upon movement of said bar to a predetermined angular position with respect to said track, the side



of said bar engages the side of said brace to limit further angular movement of said bar.

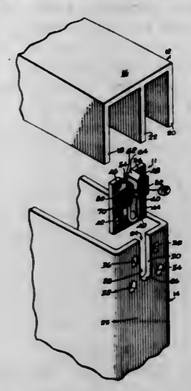
3,345,778
SLIDING SASH STORM WINDOW
Eugene L. Brand, Clinton, Ohio, assignor to Alsco, Inc., Akron, Ohio, a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 435,907
3 Claims. (Cl. 49—450)



1. A sliding sash window comprising a fixed window frame having jamb tracks, a sliding sash received in said tracks and adapted to react in tension as well as in compression to support the jambs of said window frame against outward as well as against inward lateral deflection, locking-bolt means on said sash for holding said sash in elevated positions and for transmitting to said jambs the tension reactions of said sash, detent means in said tracks for interlocking with said locking-bolt means, said locking-bolt means being retractable from their fully extended positions for release from interference with said detent means, the intererence between each detent means and its associated locking-bolt means at said fully extended position obtaining throughout a range of outward lateral deflection of said fixed window frame, each detent means and associated locking-bolt means being slidably interengageable within said range, said sliding interengagement including at least one oblique detent engaging lower surface on each bolt means to provide a slope along at least a portion of said range to wedge the detent means and its associated jamb laterally inwardly, under the weight of said sliding sash, toward a condition of zero lateral deflection of the jamb.

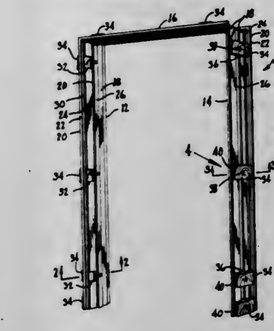
3,345,779
CLIP-TYPE SHIELD
Rupert L. Evans, Hollywood, Fla., assignor to Crossly Window Corp., Dade, Fla.
Filed Apr. 27, 1965, Ser. No. 451,156
6 Claims. (Cl. 49—501)

2. An integral, clip-type guide shield of tough, resilient, synthetic, plastic material for snug seating in a U-shaped slot at the end of a stile to receive a guide rail therein depending from the web of a header comprising; a congruent liner sized for insertion in overlaying relation to the walls of the U-shaped slot, and resilient holding means to maintain the shield liner in the slot, said holding means comprising a flanged lip of plate form on one side of the liner to overlay a portion of one surface of the stile around the liner and a first and a second coplanar flanged tab on the other side of the liner,



each tab to overlay a portion of the stile in diametrical opposition of the center line of the opening of the liner, a tine on each tab confronting the lip, the distance between the confronting surfaces of the tabs and the lip being substantially equal to the thickness of the stile and the line of connection between the tabs and the liner being flexible so that the distal end of the tabs are adapted to be resiliently expanded to normally contract and trap the tines in recesses in the stile.

3,345,780
MOLDED JAMB-FRAME COMBINATION AND METHOD OF MANUFACTURE
Thomas B. McGhee, 2125 Overland Ave., Los Angeles, Calif. 94125
Filed Jan. 7, 1966, Ser. No. 519,307
7 Claims. (Cl. 49—504)



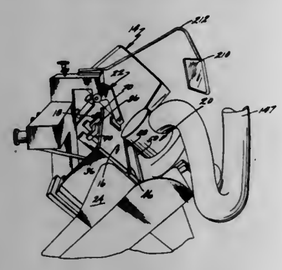
1. Prefabricated molded unitary frame for a closure structure to frame an opening in the wall of a building in which said wall is of the general character to include wall framing members having a width parallel to the thickness of the wall and to include a wall surfacing material thereover, the unitary frame comprising:
rectangular arch frame body having at least two elongate substantially parallel and coextensive side members and a top member formed integrally at right angles therewith in a manner bridging the upper ends of said side members together to form the rectangular arch;

said side and top members each being formed to include a jamb portion having a channel configuration adapted to be disposed toward said wall framing members and away from said opening, said channel having a reference and mortising block receiving width in the direction parallel to said wall thickness which is substantially equal to that of said wall framing members,

said side and top members each being further formed to include wall surfacing material receiving, retaining, and trimming lip portions which extend outwardly substantially parallel to said wall thickness for approximately the thickness of said wall surfacing material and then return at substantially right angles thereto away from said opening for receiving, trimming, and retaining the edge of said wall surfacing material; and

wooden mortise receiving and backing blocks affixed rigidly within said channel portions and having a thickness extending away from said opening whereby the blocks form a wall surface material reference shoulder which, in cooperation with said lip portion, retains said edge of said surfacing material.

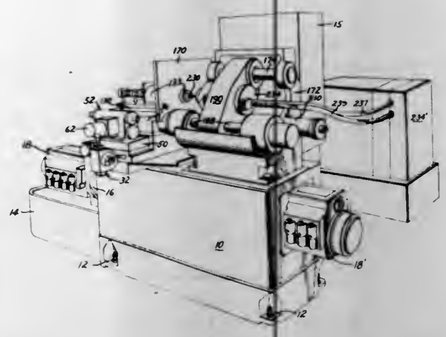
3,345,781
SOLE SANDING MACHINE
John A. Harrington and Kitchener B. Tassell, Grand Rapids, and Aiden V. Hardick, Muskegon, Mich., assignors to Wolverine World Wide, Inc., a corporation of Michigan
Filed Jan. 28, 1965, Ser. No. 428,679
11 Claims. (Cl. 51—34)



2. A shoe sole abrading apparatus comprising: an elongated platform, vertically slanted from front to back transverse to its elongated dimension; a shoe sole hopper at one end of said platform, and a discharge area at the other end thereof; a clamping device shiftable toward and away from said platform between said hopper and said discharge area; a sole retention means along said slanted platform at the lower edge thereof to guide a sole shifted to said clamp; a revolving sole abrading cylinder extending over a portion of said platform with its axis parallel thereto and movable along said platform in reciprocal fashion back and forth adjacent said clamping device to abrade the heel area of a sole clamped to said surface; and means to feed soles to said clamp from said hopper, and from said clamp to said discharge area.

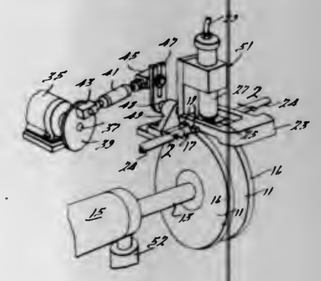
3,345,782
INTERNAL GRINDING MACHINE
Earl A. Thompson, Bloomfield Hills, Mich., assignor to Earl A. Thompson Manufacturing Co., a corporation of Michigan
Continuation of application Ser. No. 253,022, Jan. 14, 1963. This application Aug. 30, 1965, Ser. No. 487,964
31 Claims. (Cl. 51—50)

1. A machine comprising a frame fixed on the machine, a pair of bars supported in parallel spaced relation on the frame, a carriage supported by the two bars for to-and-fro motion relative to the frame, anti-friction bearing means connected to one bar for movably supporting the carriage and positioned in a plane parallel to the plane in which



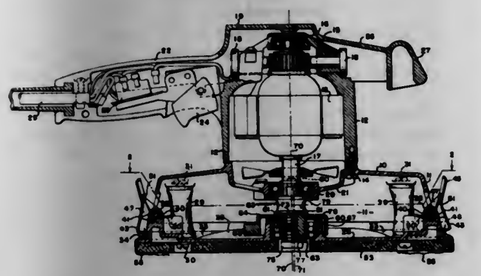
the axes of the two bars lie and extending normal to the projection on said plane of the axes of the bars, yieldable means continually biasing the bearing means toward the one bar, and supporting means connected to the other bar which permits longitudinal reciprocation of the carriage relative to the frame.

3,345,783
CENTERLESS HONING APPARATUS
Robert W. Militzer, Huntington Woods, Mich., assignor to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 14, 1964, Ser. No. 345,005
6 Claims. (Cl. 51—58)



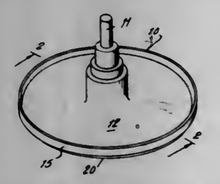
1. A device for honing a surface of revolution of a round cross-sectional workpiece comprising a drive wheel rotatable about a central axis and engageable with a peripheral surface of the workpiece for rotating the workpiece about its longitudinal axis, first and second pairs of fixed locating shoes, said pairs of locating shoes being spaced from each other along the central axis of said drive wheel, each shoe of each pair of shoes having a segmented cylindrical surface adapted to engage the adjacent peripheral surface of the workpiece, said segmented cylindrical surfaces of the respective shoes of each pair being disposed substantially equidistant from a plane including the area of engagement of said drive wheel with the workpiece and the axis of rotation of said drive wheel, and a honing stone engageable with tthe workpiece at the surface of revolution, said honing stone being supported on the same side of the workpiece as said shoes.

3,345,784
ORBITAL FINISHING SANDER
Charles R. Stelljes, Fayetteville, and Hugh K. Leach, Syracuse, N.Y., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 29, 1964, Ser. No. 421,929
4 Claims. (Cl. 51—170)



1. A portable orbital motion finishing sander comprising a frame, a motor fixedly mounted in centered relation on said frame with its output shaft protruding from one face of said frame and forming with said frame a stationary mass of determinable value; a pad assembly connected to said frame at points symmetrically related to the output shaft axis by flexible connectors to form a movable mass of determinable value adapted to be orbitally driven by said output shaft; and a flexible drive connection interconnecting said output shaft and said pad assembly characterized by an elastomeric intermediate member having its opposite ends directly fixedly connected to the said output shaft and to an eccentrically weighted rotor member carried by a journal bearing mounted in coaxially fixed relation to the center of said pad assembly, the center of mass of said pad assembly being located in a plane normal to the axis and midway between the ends of said bearing, said motor having an operating speed to assure an operation speed of said rotor member is excess of the critical vibration speed of the orbiting pad assembly.

3,345,785
SANDING DISC ASSEMBLY
Warren N. Riker, 138 E. Clinton Ave., Tenafly, N.J. 07670
Filed Dec. 7, 1964, Ser. No. 416,515
3 Claims. (Cl. 51—362)



1. A disc sanding device comprising a resilient disc-shaped support member, a cylindrical shank axially carried by the support member and normal thereto, a concave face on the support member opposite the shank, a circular member having a substantially planar outer face and a peripheral flange thereabout, said member being detachably mounted upon the support member and overlying the concave face with the flange in driving frictional contact with the outer periphery of the support member and a sheet of abrasive material secured to the outer face of the circular member.

3,345,786
VENTED METAL UMBRELLA
Robert W. Buzzella and Howard O. Biggers, Miami, Fla. (Both of 1060 E. 33rd St., Hialeah, Fla. 33013)
Filed Apr. 16, 1965, Ser. No. 448,756
6 Claims. (Cl. 52—73)



1. An umbrella comprising, in combination, a vertical support structure, a support arm adjustably secured at one end to the upper end of said vertical support structure, an umbrella support disc secured to the other end of said support arm, a plurality of umbrella sections, each substantially in the shape of a sector of a circle having its apex end truncated along an arc concentric with its origin, means securing said umbrella sections in side-by-side depending relation about said support disc with their apex ends secured to said support disc, a cone member of greater diameter than said support disc secured over said support disc and inner end portions of said umbrella sections, and brace mechanism supporting inside portions of said umbrella sections with respect to lower end portions of said support arm, said brace mechanism comprising plurality of tubular radial arms, a cylindrical collar member provided at the lower end of said support arm, said collar member having in its upper end a plurality of peripherally arranged arcuate recesses, one for each of said radial arms, said radial arms each having at one end down-turned end portions seated one each in said arcuate recesses, and means securing the other end of said radial arms to radial mid-portions of said umbrella sections.

3,345,787
POST STRUCTURE FOR A PARTITION SYSTEM
Justin Busscher, 435 N. Division, Holland, Mich. 49423
Filed Mar. 11, 1965, Ser. No. 438,956
2 Claims. (Cl. 52—242)

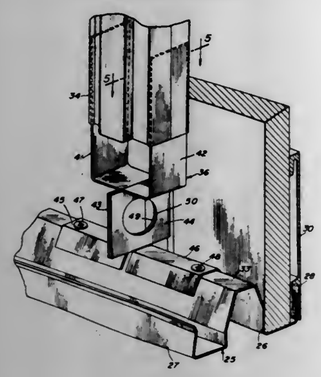
1. In combination with a partition structure including upper and lower rails normally secured to a ceiling and floor, respectively, in predetermined spaced relationship, said rails each having an axial ridge tapering to reduce width and interposed between spaced panel-receiving channels, a post assembly normally interconnecting said rails and comprising:

an elongated normally vertical member;

means normally securing one extremity of said elongated member to one of said rails;

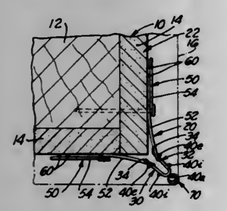
a connecting member axially slidably engaging the opposite extremity of said member, said elongated member having spaced guideways receiving portions of said connecting member, said connecting member including opposite sections each having a saddle portion, a transverse panel, and a portion engaging one of said spaced guideways, said sections being inter-

connected at said transverse panels, said saddle portions being engageable exclusively with the tapering ridge of the other of said rails to center said connecting member between said channels; and



means normally securing said connecting member to said other rail.

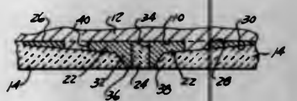
3,345,788
PLASTER OR STUCCO BEAD
Henry T. Holsman, 1045 Alston Road, Santa Barbara, Calif. 93103
Filed Oct. 8, 1965, Ser. No. 494,064
8 Claims. (Cl. 52—254)



1. In a reinforcing bead for materials such as plaster and stucco, the combination of:
(a) a longitudinal rib of open construction and of generally U-shaped cross section;
(b) longitudinal wires secured directly to one side of said rib;
(c) said longitudinal wires providing said one side of said rib with a substantially continuous contour while permitting the introduction of such materials as plaster and stucco into the interior of said rib between said longitudinal wires;
(d) a longitudinal flange of open construction projecting laterally from said one side of said rib; and
(e) said flange being secured solely to the longitudinal wire on said one side of said rib which is nearest the corresponding edge thereof.

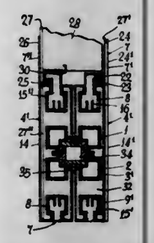
3,345,789
PLASTER EDGE STRIPS
Roy E. Tatum, Detroit, Mich., assignor to Blakely Products Company, Warren, Mich., a corporation of Michigan
Filed Jan. 4, 1967, Ser. No. 607,284
2 Claims. (Cl. 52—367)

2. A pair of identical extruded aluminum edge strips, each comprising a long, uniform, solid cross-section for edging a joint in a relatively thick coating of plaster-like material applied upon a wall surface, comprising in cross-section;
a thin, narrow strip portion having a flat wall surface contacting inner first face and an opposite flat outer second face, shorter in length than said first face and arranged in a plane converging toward said inner face so that said strip portion is tapered in cross-section with one narrow edge where said first and second faces intersect and an opposite wide edge;
a continuous, narrow, flange portion integrally joined with said strip portion at said wide edge, said flange portion comprising a third flat end face, projecting perpendicularly outwardly beyond a projection of said second face from said strip inner first face at said wide edge, a narrow fourth flat outer face parallel to said first face and extending generally toward said strip portion narrow edge from the outer end of said third face, and a fifth flat face interconnecting each of said second and fourth faces at an obtuse angle;



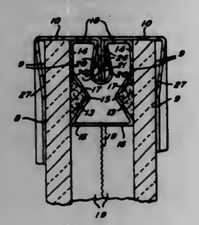
wherein said strip portion may be applied to a wall surface and thereafter covered by said coating with said third face edging said coating and said fourth face gauging the thickness of said coating;
said strips being each applied to an unfinished wall surface so as to be parallel to each other, and oriented so that said flange portions of said first and second strips are adjacent but spaced slightly from each other thereby to establish a gap between the strips defined by said third end faces of each of said two strips, said gap to be filled with caulking material to simulate a conventional caulked joint.

3,345,790
MODULAR CONSTRUCTION SYSTEM
Arnold J. Cornelissen, 1022 Monroe Ave., Port Vue, McKeesport, Pa. 15133
Original application Nov. 7, 1960, Ser. No. 67,530, now Patent No. 3,251,169, dated May 17, 1966. Divided and this application June 8, 1965, Ser. No. 462,372
10 Claims. (Cl. 52—476)



1. In a building structure, a panel comprising a pair of frame portions in spaced substantially parallel planes extending about the periphery of said panel and adapted for connection to adjacent structural members, respective body portions carried by each of said frame portions, one of said body portions providing one side face of said panel, the other of said body portions providing an opposite side face of said panel, means releasably securing said one of said body portions to one of said frame portions and means releasably securing said other of said body portions to the other of said frame portions whereby each of said body portions can be removed from and replaced in its respective frame portion, at least one of said body portions being removable from its frame portion independently of the other body portion, wherein the means releasably securing said one body portion to its frame portion is within said panel and accessible to release said one body portion from its frame portions only after releasing said other of said body portions from its frame portion.

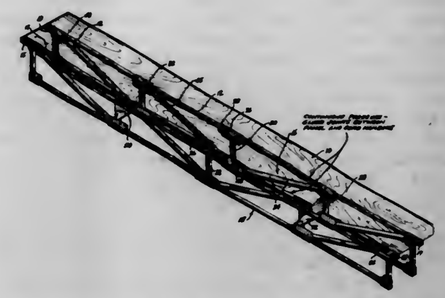
3,345,791
MULTIPLE PANE WINDOW UNITS
David Shinefeld, Oreland, Pa., assignor to Multipane Inc. U.S.A., a corporation of Pennsylvania
Filed Nov. 17, 1965, Ser. No. 508,284
9 Claims. (Cl. 52—616)



1. A multiple pane window unit comprising
a plurality of sheets of glass,
means for spacing said glass sheets and for sealing the spaces between said glass sheets,
said means consisting of tubular members extending between the outer edge portions of the glass sheets,
said tubular members each having outer wall portions,
opposite side wall portions integral with and extending from said outer wall portion with inwardly disposed portions spaced from said outer wall portions and providing pockets for sealing material,
said outer wall portions having walls united in providing a socket therealong accessible along said outer wall portions and isolated from the interior of said tubular member, and
inner wall portions integral with said side wall portions and closing the interior of said tubular members, and
sealing material in said pockets in engagement with contiguous sheets of glass and said tubular member.

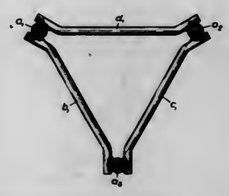
3,345,792
WOOD DECK STRUCTURE
Benson Chandler, Medina, Wash., assignor to Holdsworth & Company, Inc., Medina, Wash., a corporation of Washington
Filed Aug. 30, 1965, Ser. No. 483,577
10 Claims. (Cl. 52—648)

10. A deck structure comprising in combination a horizontal orthotropic plate consisting of a continuous elongated plywood panel and at least one continuous wood upper cord member glued thereto in a continuous joint along its length, and an open-web wood truss coupled with said upper cord member, said truss comprising a plurality of sections each including a single vertical post member, said post member having its upper end portion joined to said upper cord member, a diagonal tension member having end portions joined respectively to the lower end portion of said post member and to said upper cord member at a point spaced from said post member to converge with said upper cord member substantially toward the nearer end thereof, a continuous lower cord member interconnecting the lower ends of said post and diagonal members, vertical end post members joined to said upper cord member adjacent to the point of joinder therewith of diagonals of the endmost sections and having lower portions thereof joined to said lower cord member, the two sections nearest the center of said truss having said post member in common and having their diagonal members respectively converging with said cord member toward opposite ends thereof, and wood plate



means integral with said diagonal members glued to and overlapping opposite faces of each of the cord and post members at the joinder locations therebetween to form glued joints at such locations, said truss having support points for said structure on said cord members substantially coincident with the respective intersections of the center lines of the endmost diagonal members with the center of gravity of the orthotropic plate, whereby stresses in said structure in response to vertical loads thereon are represented in direct stress loading in said orthotropic plate in the direction of its length.

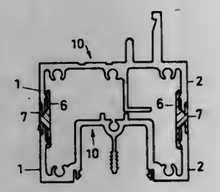
3,345,793
THREE-DIMENSIONAL LOAD-SUPPORTING STRUCTURES AND METHODS OF PRODUCING SUCH STRUCTURES
Ernst Cvikl, 23/12 Wickenburggasse, Vienna VIII, Austria
Filed July 6, 1964, Ser. No. 380,494
Claims priority, application Austria, July 10, 1963, A 5,509/63
12 Claims. (Cl. 52—655)



1. A rod assembly comprising a plurality of interconnected rods surrounding an elongated space of uniform polygonal cross section defined by a plurality of longitudinal planes which intersect each other along straight lines which define corners of said space, said plurality of interconnected rods including a plurality of longitudinal corner rods respectively having axes coinciding with said straight lines at the intersections of said longitudinal planes, so that each plane contains the axes of two of said longitudinal corner rods, and said plurality of interconnected rods including a plurality of groups of trans-

verse rods each transverse rod of which consists of an intermediate main longitudinal portion and a pair of opposed free end portions, said groups respectively having the axes of said intermediate main longitudinal portions of the rods thereof situated in said longitudinal planes, and each transverse rod extending transversely between and having its opposed free end portions respectively extending perpendicularly across and directly fused to the two longitudinal rods whose axes are contained by the plane which contains the axis of the intermediate main portion of the transverse rod, said longitudinal rods extending between said free end portions of said transverse rods and said free end portions of each transverse rod extending angularly with respect to its intermediate main portion outwardly away from said space without passing through any of said longitudinal planes, at least some of the group of transverse rods in at least one of said longitudinal planes being longitudinally aligned with at least some of the group of transverse rods in a longitudinal plane intersecting said one longitudinal plane to form pairs of aligned transverse rods which respectively have adjoining pairs of free end portions separated by and fused to the longitudinal corner rod whose axis coincides with the intersection between the latter two planes, and all of the free end portions of all of the transverse rods extending perpendicularly across the longitudinal rods with each of said adjoining pairs of free end portions located in a common plane perpendicular to said longitudinal planes.

3,345,794
CONSTRUCTION AND ERECTION OF FRAMING MEMBERS
Norman Thomas Proud, Newtown, New South Wales, Australia, assignor to Paul Segaert Pty. Limited, Newtown, New South Wales, Australia, a company of New South Wales
Filed Apr. 26, 1965, Ser. No. 450,624
Claims priority, application Australia, Apr. 29, 1964, 43,873/64
7 Claims. (Cl. 52—731)



1. A construction of framing members for the manufacture of window frames, door frames, partitions and the like in buildings comprising extrusions of primary sections and secondary sections, wherein the primary sections each include two wall parts in parallel spaced relationship,

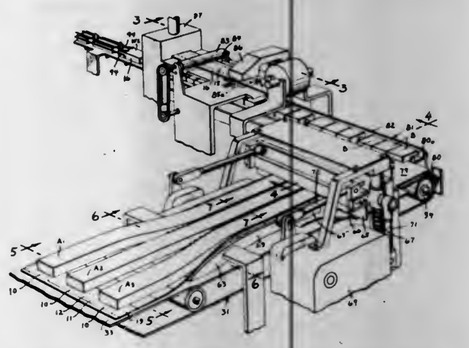
a tongue on each wall part, said tongues longitudinally aligned in parallel spaced relationship, said tongues being formed by making a step in the outer surface of each wall part,

a bead on each said wall part projecting from its inner surface in parallel relationship to and in spaced relationship from the tongues,

each secondary section including pairs of inside and outside wall parts having oppositely disposed grooves between them, the inside wall parts being wider than the outside wall parts and each including a bead formed on the longitudinal edge thereof,

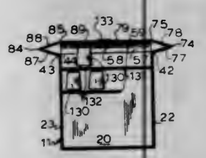
said grooves having the tongues of the primary section engaged therein and the beads on the secondary sections being engaged with the beads on two primary sections to interlock said primary and secondary sections together, the outside wall parts of the secondary sections providing flush surfaces with the conjoined primary sections.

3,345,795
METHOD AND APPARATUS FOR PACKAGING BARS OF PLASTIC MATERIAL
Ralph F. Anderson, 332 Calvin Park Blvd., Rockford, Ill. 61107
Filed May 18, 1964, Ser. No. 368,020
16 Claims. (Cl. 53—23)



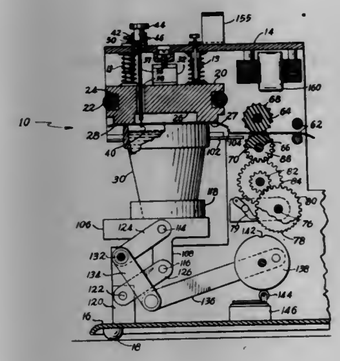
5. The method of juxtaposing and wrapping bars of a plastic material including the steps of laterally spacing a plurality of portions of plastic material on a wrapper inwardly of the lateral side edges of a wrapper whereby an intermediate section of the wrapper extends between adjacent portions and an outer section of the wrapper extends laterally from the outermost portions, folding the intermediate section upwardly at a midpoint between the adjacent portions while moving the portions laterally toward each other into close adjacency whereby the intercent side faces of the adjacent portions, and thereafter applying a wrapper piece over the top of the bars to span laterally adjacent bars after they have been moved into close adjacency.

3,345,796
METHOD OF PACKAGING A COMPRESSIBLE MATERIAL IN A COMPRESSIBLE CARTON
Samuel P. Belsinger, Atlanta, Ga., assignor to Belsinger, Inc., Atlanta, Ga., a corporation of Georgia
Filed Oct. 21, 1963, Ser. No. 317,573
1 Claim. (Cl. 53—24)



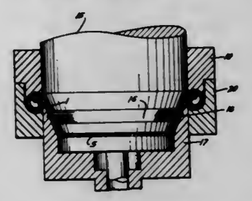
In a method of packaging compressible material in a compressed condition in a container having a pair of opposed side panels, a front panel and a rear panel connected together to form a tumbler member closed at one end, said container including top flaps at the other end of said tubular member, a plurality of pairs of intermediate flaps of approximately the same width, each pair of intermediate flaps being joined to each other along a common edge and disposed between each top flap and its associated panel, one of said intermediate flaps being joined to the upper edge of its associated panel along a panel score line, the other of said intermediate flaps being connected along a top flap score line to an edge of its associated top flap, said top flaps being foldable along the flap score lines over the upper end of said container for forming the top of said container, the improvement which comprises inserting said compressible material within said container to a level above the panel score lines of said panels and to a height no greater than the distance to said top flap score lines when said intermediate flaps are extended in the planes of their associated panels, closing said top flaps along said top flap score lines over the upper end of said compressible material, securing at least some of said top flaps in their closed condition, applying a force downwardly on said top to compress said compressible material within said container while simultaneously urging the common edge of said intermediate flaps outwardly of the direction of the applied force for causing said intermediate flaps to pivot along said common edge toward each other, the intermediate flaps adjacent said panels pivoting outwardly about said panel score lines, the intermediate flaps adjacent said top flaps pivoting outwardly about said top flap score lines, continuing the application of said force on said top until said flap score lines are respectively brought into approximate coincidence with said panel score lines, thereafter folding said intermediate flaps along the panel score lines and top flap score lines into positions outwardly adjacent said panels and thereafter securing said intermediate flaps in their positions adjacent said panels.

3,345,797
HEAT SEALING METHOD AND APPARATUS
Walter George Von Stoeser, Lake Villa, Ill., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,152
14 Claims. (Cl. 53—39)



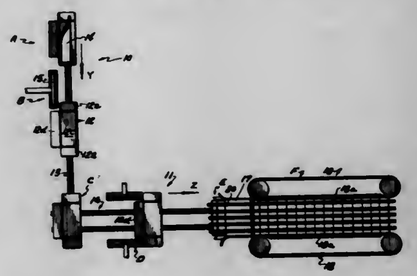
1. A method of closing the open end of a plastic container with a heat sealable plastic film comprising the steps of, drawing a strip of plastic film from a roll and positioning a given portion of the strip in spaced parallel relation to a flat heated platen, positioning a plastic container having an opening with the periphery thereof in spaced parallel relation to the platen, moving the container so that the edge of the opening is brought into engagement with the film, continuing said movement so that the film is forced into firm engagement with the heated platen to effect a heat seal of the film to the container, forming a small opening in the film and within the confines of the peripheral edge of the opening as the film is forced into firm engagement with the heated platen, cutting off said given portion of the strip from the roll, and removing the container with attached film from engagement with the heated platen.

3,345,798
METHOD AND APPARATUS FOR MAKING AND APPLYING CLOSURES
Martin M. Sternau, Flushing, N.Y., assignor, by mesne assignments, to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed Mar. 26, 1962, Ser. No. 182,505
5 Claims. (Cl. 53—41)



2. The method of making a closure to be used for capping and sealing a flexible metal container comprising the steps of forcing a moldable material into a female die by a male die, simultaneously forming a peripheral crease in the closure flange about midway of its height by pressing a resilient ring on said male member into a groove in said female member, also simultaneously forming a beaded edge on the rim of said closure, and subsequently snapping the beaded edge of the closure over the mouth of a container.

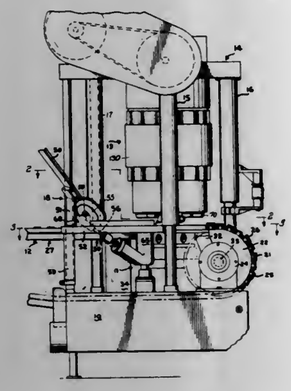
3,345,799
APPARATUS FOR TRANSFERRING PACKAGES
Robert J. Hickin, Seville, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,540
14 Claims. (Cl. 53—47)



14. A method for folding a side flap and end flaps connected to a cover against the respective side wall and end walls of a tray of a folding carton subsequent to the carton cover foldably connected to a second side wall of the tray being folded into a closed position with respect to the open top of said tray, said method comprising placing the closed carton on a plane with the bottom of the carton resting on said plane, moving in a linear direction the carton along said plane whereby the tray side to which said cover is connected is the leading side of said carton and is disposed substantially transverse with respect to said linear direction, pivoting said moving carton about the lower edge of said leading sside to an upright position whereby said leading side is resting on said plane, engaging and folding at least one cover flap

against a side of said carton tray simultaneously with the pivoting of said carton, and exerting sealing pressure on said folded flap as said upright carton continues to be moved in said linear direction.

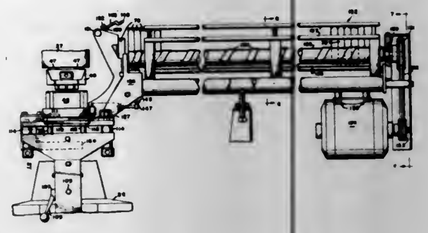
3,345,800
ROTARY JAR CAPPING MACHINE
Herbert W. Volker, Naperville, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 19, 1965, Ser. No. 449,232
10 Claims. (Cl. 53—303)



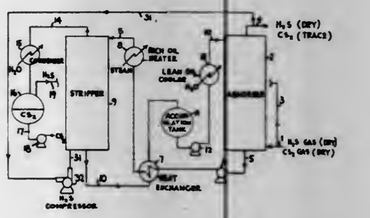
1. A machine for applying caps to jar-like containers, comprising feed conveyor means for advancing successive containers to be capped to a container and cap assembly station, cap feeding and transfer means for advancing successive caps to said assembly station in timed relation to the advance of the containers, a turret disposed at one side of said container feed conveyor and carrying a plurality of container supporting platforms in a path which intersects the path of the feed conveyor so that containers are delivered to the supporting platforms on the turret while they are advanced by the feed conveyor, means for gripping and holding the containers on the platforms, a capping head mounted for rotation above said turret, said capping head having a plurality of rotatably mounted, vertically reciprocating spindle assemblies spaced around the periphery thereof in vertical alignment with the container supporting platforms for placing a cap on each successive container, each said spindle assembly having a member on the lower end positioned to pick up a cap delivered to said assembly station and to releasably hold the cap while it is lowered and rapidly turned onto the mouth of a container, and a friction drag device mounted adjacent said cap assembly station for engagement by each successive cap at a point where the cap is normally already spun down on a container so as to cause any cap not fully spun down on a container to rotate in the direction to turn it on the container.

3,345,801
AUXILIARY UNIT FOR PACKAGING MACHINE
John B. West, Pikesville, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland
Filed Jan. 4, 1965, Ser. No. 423,112
3 Claims. (Cl. 53—311)

2. A machine for applying lids to containers comprising a container supported at a defined station, a holder for a group of container lids, means for selectively feeding the lids one by one from the holder, a platform overlying the container support for receiving lids fed from the holder by said means, a lid retaining plate overlying the platen on the side opposite the holder to slidably engage the top of lids as they are received by the platform, a reciprocatable platen overlying said platform, said platform having an opening for the discharge of lids received by the platform, means for reciprocating the platen to move the lids on the platform over said opening, detents adjacent the opening to contact the edges of the lids in said opening and restrain them frictionally from passing therethrough under the force of gravity alone, a reciprocating pedestal for engaging and elevating on its upward stroke the container relative to the wheel, a reciprocating pressure pad above the pedestal for engaging on its downward stroke the lid in its position above the container and means for actuating and for synchronizing the reciprocating movements of the pedestal and pad so that the pad moves downward when the pedestal moves upward to effect an engagement of the container with the lid, said means for reciprocating the platen being in synchronization with the movements of the pedestal and pad to cyclically position a lid in the opening of the platform.

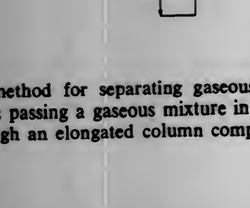


3,345,802
RECOVERY OF CS_2 FROM ABSORBING OIL
Howard F. Wyatt, New Martinsville, W. Va., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1966, Ser. No. 599,827
9 Claims. (Cl. 55—50)



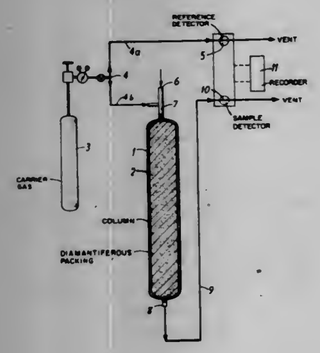
1. The method of recovering CS_2 from a gaseous CS_2-H_2S mixture produced by reacting a sulfur source with hydrocarbon which comprises contacting said mixture in an absorbing zone with oil at an initial temperature below about 120° F. thereby absorbing CS_2 in the oil to the substantial exclusion of H_2S, maintaining the temperature of the oil-CS_2 mixture in said absorbing zone below about 180° F., heating said oil-CS_2 mixture to reduce its capacity to absorb CS_2 and contacting said heated oil with sufficient H_2S to strip substantially all of the CS_2 from the oil thereby obtaining a gaseous CS_2-H_2S mixture substantially richer with respect to CS_2 than the first-named CS_2-H_2S mixture.

3,345,803
METHOD AND APPARATUS FOR DEGASSING VISCOSE
Frederick R. Smith, Wilmington, Del., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 423,947
4 Claims. (Cl. 55—55)



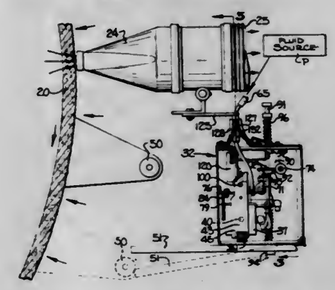
1. A method of degassing a viscous liquid which includes the steps of establishing along a confined path a laminar flow of a viscous liquid having bubbles of gas contained therein so that a shear gradient is imposed upon such liquid between the central and outermost portions thereof, to cause bubbles of contained gas in the outermost portion to migrate toward the central portion of the liquid flow concomitantly as the liquid travels along the confined path, separating the outermost portion of the liquid flow from the remainder thereof and collecting the separated portion of the liquid.

3,345,804
SEPARATION OF GASES BY GAS-SOLID CHROMATOGRAPHY IN A SYNTHETIC DIAMOND COLUMN
Thomas L. Mariani, 145 Allwood Place, Clifton, N.J. 07012; Robert P. Hirschmann, 2 Glen Cove Road, Parsippany-Troy Hills, N.J. 07054; Dennis Cupolo, 59 Arlington Ave., Newark, N.J. 07104; and Charles J. Peterman, 200 Baldwin Road, Parsippany, N.J. 07054
Filed Mar. 4, 1966, Ser. No. 531,678
12 Claims. (Cl. 55—67)



1. A method for separating gaseous mixtures which comprises passing a gaseous mixture in a stream of inert gas through an elongated column comprising a synthetic diamantiferous material composed of polycrystalline aggregates of individual diamond particles, said aggregates having an average diameter less than about 0.15 micron, and a surface area between about 40 and 400 square meters per gram, said diamantiferous material having at least 10% of its surface area covered with oxygen-containing functional groups, at temperatures between about 20° C. and about 350° C. whereby at least one of the components of said gaseous mixture is separated from the remaining components.

3,345,805
APPARATUS FOR CLEANING FILTERS
James W. Sherrill, Stanley, N.C., assignor to Microtron Corporation, Charlotte, N.C., a corporation of North Carolina
Filed Sept. 1, 1966, Ser. No. 576,640
12 Claims. (Cl. 55—271)



1. The combination with an air filter of an apparatus for cleaning the filter comprising

a suction cleaning nozzle positioned closely adjacent one face of the filter and connected to a source of suction for applying a suction cleaning force to the filter,

means for propelling said nozzle across the filter comprising elongate guide means extending across the filter,

first and second interconnected relatively movable members guided for movement along said guide means,

means mounting said nozzle on one of said members,

power means for applying simultaneously directionally opposite relative force to the respective members in a direction substantially parallel to said guide means such that each member tends to move in the opposite direction from the other member,

control means for controlling said power means so said force acts against said first member in one longitudinal direction,

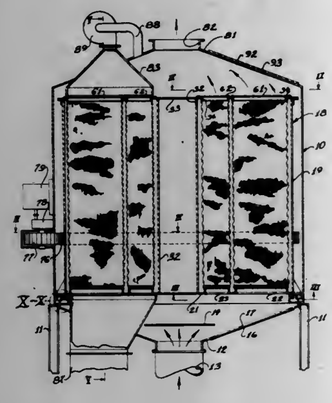
restraining means spaced longitudinally of said guide means for successively restraining said second member against movement in a direction opposite from said one direction relative to said guide means so that said first member is advanced a step in said one direction along said guide means and relative to said second member under impetus of the applied directionally opposite relative force,

means applying a yieldable restraining force to said first member relative to said guide means and independently of said second member,

means responsive to predetermined advancing movement of said first member relative to said second member for operating said control means to reverse the direction in which the force applied by said power means is acting against said first member so as to advance said second member along said guide means in said one direction and relative to said first member under the impetus of the applied directionally opposite relative force, and

said first-named restraining means being located so as to again restrain said second member upon predetermined advancing movement of said second member along said guide means.

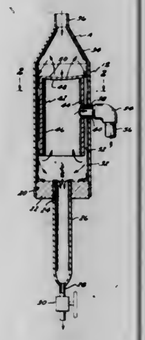
3,345,806
BAG TYPE DUST COLLECTOR
Ellis W. Bullock and William E. Driver, Birmingham, Ala., assignors to The Fly Ash Arrestor Corporation, a corporation of Alabama
Filed Aug. 19, 1965, Ser. No. 481,036
4 Claims. (Cl. 55—293)



1. In a bag filter,
(a) an outer cylinder-like housing having an inlet at its lower end for dust bearing gas,
(b) a cylinder-like bag carrier mounted inside the outer housing for rotation about its longitudinal axis and having a lower wall,
(c) a plurality of spaced-apart generally radially disposed bag supporting members at the top of the bag carrier,
(d) there being a plurality of openings in the lower wall of the bag carrier,
(e) a plurality of filter bags open at their lower ends in communication with the openings in said lower wall, said bags being closed at their upper ends and affixed to the bag supporting members,
(f) a blowback hood disposed to blow gas downwardly around the outer sides of adjacent pairs of said bags, whereby dust collected therein is blown downwardly and passes beneath the lower wall of the bag carrier,
(g) a dust collecting conduit in alignment with the lower ends of the bags receiving said blowback gas,
(h) means to rotate the bag carrier, thereby to bring the spaces between adjacent bags successively under the blowback hood, and
(i) means to maintain a gas tight seal between the outer housing and the bag carrier.

3,345,807
AIR AND LIQUID SEPARATING DEVICE
Ray J. von Felden, 13319 Flatbush, Norwalk, Calif. 90650
Filed May 10, 1965, Ser. No. 454,482
1 Claim. (Cl. 55—433)

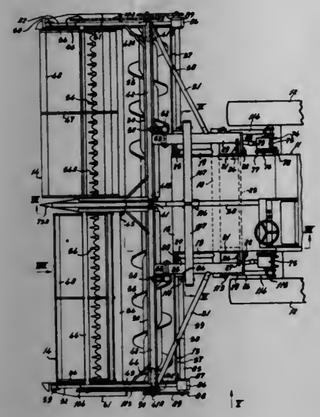
A device for removing droplets of water from air under pressure with which it is entrained, including:
(a) a vertically disposed housing defined by a first cylindrical side wall, a top wall in which an inlet opening is formed and through which said air and entrained droplets of water are introduced into the housing, and a bottom wall having a centrally disposed opening formed therein;
(b) an elongate reservoir depending from said bottom and in communication with said opening formed therein;
(c) normally closed valve means on the lower end of said reservoir which can be opened during operation of said device to discharge water from said reservoir that has accumulated therein;
(d) an inverted cup vertically disposed within said housing below said inlet, with the upper closed end of said cup defining a concave exterior surface from which a second cylindrical side wall extends downwardly, and with the transverse cross section of said cup being such that the exterior surface thereof and the interior surface of said housing cooperatively define a vertical annulus-shaped space therebetween; and



(e) a tubular air outlet supported by said housing and extending through said first cylindrical wall to the interior of said cup, whereby air and entrained droplets, upon entering said housing, impinge upon said concave surface and thereafter said droplets are displaced from said concave surface by said air as it moves through said housing to flow downwardly on said surfaces defining said annulus-shaped space to said opening and reservoir, with said air, free of said droplets, passing downwardly through said annulus-shaped space to the bottom of said side wall where its direction of flow is reversed and thereafter flows upwardly through said cup to pass outwardly therefrom through said tubular air outlet.

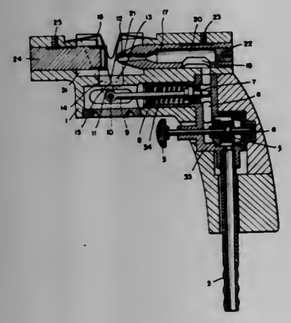
3,345,808
HARVESTING MACHINES
Cornelis van der Lely, Zug, Switzerland, assignor to Texas Industries Inc., Willemstad, Curacao, Netherlands, Antilles, a limited-liability company of the Netherlands Antilles
Filed Feb. 15, 1965, Ser. No. 432,461
Claims priority, application Netherlands, Feb. 26, 1964, 64—1,807
27 Claims. (Cl. 56—20)

1. A harvesting machine having a mowing table divided into at least two portions, an outlet in said table, at least one portion being pivotable about a substantially horizontal axis extending in the general direction of travel of the harvester, a hydraulic circuit including hydropneumatic cushion support means for moving each of said portions, a partition located near the center of said mowing table, said partition being a crop divider, wherein the bottom side of the partition is provided with a feeler member,



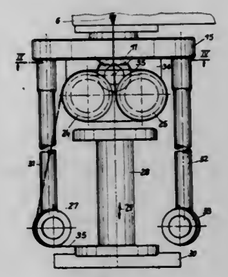
said feeler member being hydraulically associated with an adjusting mechanism for the automatic adaptation of the portions located on each side of the partition to the unevennesses of the ground surface.

3,345,809
DEVICE FOR JOINING THREAD ENDS
Hermann Gemeinhardt, Elsenfeld, and Richard Münzner, Obernburg, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany
Filed July 28, 1966, Ser. No. 568,654
Claims priority, application Germany, July 29, 1965, V 17,869; Sept. 17, 1965, V 29,347
4 Claims. (Cl. 57—22)



1. A device for the knotless connection of thread ends which comprises: a housing for said device; conveying means for conveying gas under pressure to said device; an air nozzle within said device; a resonating surface opposite said nozzle; a valve mounted within said device for controlling the flow of air to said nozzle; a piston acting against a spring and a piston rod mounted within a cylinder, said cylinder being connected to said conveying means at a point between said valve and said nozzle; thread holding means operatively associated with said piston and piston rod; and control means for actuating said thread holding means prior to the build-up of working pressure in said nozzle.

3,345,810
METHOD AND DEVICE FOR THE PRODUCTION OF A WIRE ROPE
Ernst Wiesnagrotzki, Max Bigiel, and Hans Müller, Memmingen, Germany, assignors to Maschinenfabrik Memmingen Ingenieur Theodor Otto, a corporation of Germany
Filed Feb. 24, 1965, Ser. No. 435,012
Claims priority, application Germany, Mar. 14, 1964, M 60,294
3 Claims. (Cl. 57—68)

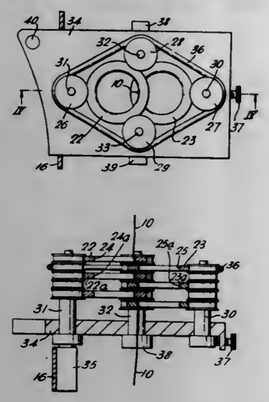


2. An apparatus for forming a wire rope from a plurality of individual wire strands each having diameters of from about 0.15 mm. to 0.4 mm., including means for guiding such plurality of strands to form a cluster of such strands, a rotatable quill through which said cluster passes, gear means for directly rotating such quill, such quill having an outlet end, a gear on such outlet end, further gears disposed in laterally spaced relation and each meshing with said first mentioned gear, rollers driven by said further gears for rotation about axes perpendicular to the axis of said quill, such rollers having grooves therein, a cage carrying such rollers, means for rotating such cage about the axis of such quill, said cage including columns in laterally spaced relation, roller means on each column, and all said roller means having diameters sufficiently large so that when said strands are pulled through the quill responsive to rotation of said first mentioned roller means and twisted by reason of the rotation of such cage such wire rope in passing over all said roller means is maintained within the limits of elastic deformation thereof whereby permanent kinks are not established in such rope.

3,345,811
APPARATUS FOR FALSE TWISTING YARN
Reginald Selby Gilchrist, London, England, assignor to The Klinger Manufacturing Company, Limited, London, England, a British company
Filed Dec. 1, 1964, Ser. No. 414,957
Claims priority, application Great Britain, Nov. 29, 1963, 47,321/63
11 Claims. (Cl. 57—77.45)

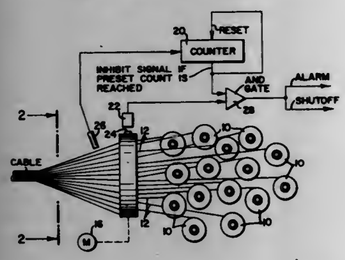
1. Apparatus for imparting a twist to a length of travelling yarn, said apparatus comprising a first endless track having an inner yarn engaging surface moving in a first plane substantially at right angles to the general direction of yarn travel, a second endless track having an inner yarn engaging surface moving in a second plane displaced from and substantially parallel to said first plane, drive means arranged to support and move said first and second endless tracks, said first and second endless tracks being so disposed that the yarn is diverted

by said first and second inner yarn engaging surfaces of said first and second tracks in opposite directions and



twist is imparted to the yarn by contact with said first and second inner yarn engaging surfaces.

3,345,812
STRAND BREAK DETECTOR
Norman C. Pickering, Sag Harbor, N.Y., assignor, by mesne assignments, to General Time Corporation, Stamford, Conn.
Filed Nov. 23, 1966, Ser. No. 596,555
6 Claims. (Cl. 57—81)



1. Apparatus for use with a winding machine having a rotating winding head, said apparatus being adapted to detect a broken strand in a multistranded cable, said apparatus comprising in combination:

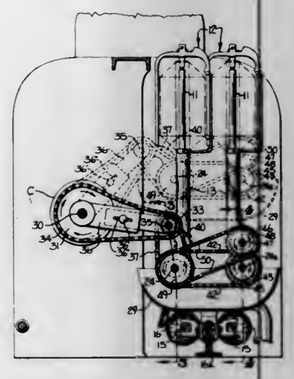
(a) sensing means to detect the presence of and to emit a pulse for each individual strand passing said sensing means;

(b) timing means to indicate one complete revolution of the winding head;

(c) counting means responsive to said sensing means and arranged to add the pulses emitted by said sensing means, said counting means having a preset upper limit of pulses equal to the number of strands in the cable and means to emit a control pulse when said preset upper limit is reached and means to reset itself to zero after each revolution of the winding head; and

(d) control means coupled to said timing means and said counting means, for receiving said control pulse, said control means being arranged to complete the circuit to a utilization device when, after one revolution of the winding head, the number of pulses in said counting means is less than the preset upper limit of pulses.

3,345,813
BOBBIN DRIVE MECHANISM FOR ROVING FRAMES
John R. Long, Hickory, N.C., assignor to Shuford Mills, Inc., Hickory, N.C., a corporation of North Carolina
Filed Feb. 15, 1966, Ser. No. 527,445
10 Claims. (Cl. 57—96)



1. Apparatus for driving the vertically reciprocating bobbins and corresponding horizontal front and rear bobbin drive shafts of a roving frame having a main drive shaft mounted on a fixed axis spaced rearwardly of said bobbin drive shafts, a compound mounted on said main drive shaft and said compound including a driven rotatable output member, said apparatus comprising

a first freely rotatable means spaced above said rear bobbin drive shaft,

a second freely rotatable means adjacent said rear bobbin drive shaft,

means supporting said first rotatable means for swinging movement about and at fixed radial distances from the axes of the output member and the second freely rotatable means,

first and second endless pliable elements drivingly connecting said output member to said first freely rotatable means and interconnecting said first and second freely rotatable means, respectively,

means transmitting common directional rotation from said second freely rotatable means to said front bobbin drive shaft,

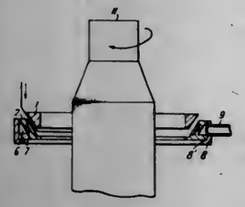
first and second intermeshing gears spaced from said rear bobbin drive shaft, said first gear being fixed on said front bobbin drive shaft,

a pair of drive elements mounted in fixed axial relation to said second gear and on said rear bobbin shaft, respectively, and

another endless pliable element drivingly interconnecting said drive elements to drive said rear bobbin drive shaft.

3,345,814
DEVICE FOR WINDING YARN ONTO A SPOOL BY MEANS OF A RING
Daniel Gruet, Ecully, France, assignor to Societe Rhodiaceta, Paris, France, a corporation of France
Filed Oct. 18, 1965, Ser. No. 497,249
Claims priority, application France, Nov. 26, 1964, 996,416
3 Claims. (Cl. 57—124)

1. In a textile machine, a device for winding yarn onto a spool, said device comprising: a circular ring; means defining a downwardly convergent frusto-conical lateral surface to said ring; an annular ring carrier; an inner surface to said ring carrier of corresponding and cooperating frusto-conical form to the frusto-conical surface of said circular ring; and means for connecting the inner surface of said ring carrier to a source of gas, whereby



the lateral surface of said ring may be lifted out of contact with the inner surface of said ring carrier by the gas, said yarn passing through the gap between the lateral surface of said ring and the inner surface of said ring carrier.

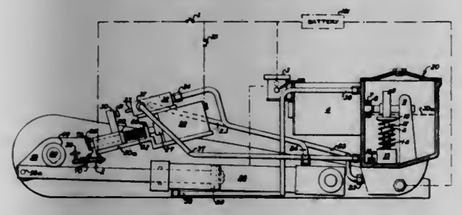
3,345,815
CRIMPED YARN
David Starkie and Marcus William Astle-Fletcher, Somercotes, England, assignors to English Rose Limited
Original application Apr. 7, 1958, Ser. No. 726,928, now Patent No. 3,226,792, dated Jan. 4, 1966. Divided and this application Aug. 29, 1962, Ser. No. 220,331
Claims priority, application Great Britain, Apr. 16, 1957, 12,436/57
2 Claims. (Cl. 57—140)



1. A crimped thermoplastic yarn, comprising a plurality of crimped, continuous, thermoplastic filaments, each of which is of generally helical configuration, has a higher molecular orientation at the outside of the helix than at the inside thereof, and under applied heat, exhibits a greater capacity for shrinkage at the inside of the helix than at the outside thereof.

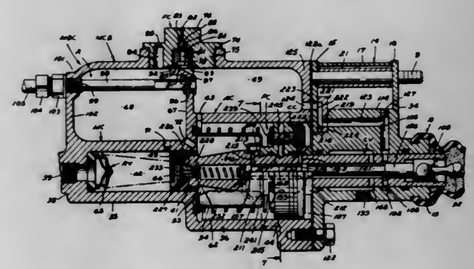
2. A crimped thermoplastic yarn according to claim 1, wherein the outside of the helix has a flattened configuration.

3,345,816
HYDRAULIC PUMP AND CIRCUIT SYSTEM
Charles C. Renfroe, 709 N. Jefferson St., Albany, Ga. 31705
Filed Aug. 6, 1965, Ser. No. 477,881
7 Claims. (Cl. 60—52)



1. A hydraulic pump and circuit system, including check valve means, a pump connected to said circuit, said pump including a reciprocating piston in a sleeve, said sleeve having a bleeding port in the side thereof to the piston chamber, said pump being at least partly immersed in oil whereby said port is below the oil level and in communication with said chamber during the suction stroke, said port being sealed and closed by said piston during compression stroke, means for reciprocating said piston to circulate hydraulic oil through said check valve means to a cylinder and a hydraulic ram in said cylinder displaceable responsive to the fluid pressure in said cylinder, wherein said hydraulic ram is linked to an axle through plate means whereby movement of said ram moves said plate means and rotates said axle.

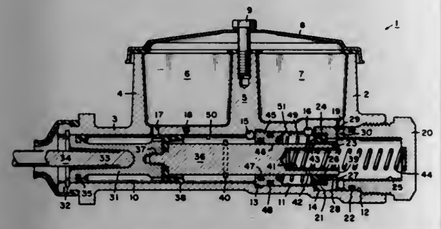
3,345,817
HYDRAULIC POWER-ASSISTED MASTER BRAKE CYLINDER
Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn, P.O. Box 275, Mountain Lake Park, Md. 21550
Filed July 15, 1965, Ser. No. 472,161
26 Claims. (Cl. 60—54.6)



1. A hydraulic pressure-producing device in which physical operating force is supplemented by hydraulic operating force, and having a pressure differential power cylinder characterized by a hydraulic chamber closed at one end and open at the other, a hydraulic cylinder mounted coaxially on the closed end of said hydraulic chamber and having a fluid pressurizing chamber provided with a discharge port, a pressure-responsive wall having a normal released position and movably disposed in said hydraulic chamber and dividing the same into a variable pressure receiving control chamber and a variable static hydraulic chamber, a source of pressurized fluid, a pressure-transmitting member acted on by one side of said wall, comprising an axially-bored outer valve member projecting from the opposite side of said wall and movable as a unit therewith; a piston-like member formed on said pressure-transmitting member and projecting into said pressurizing chamber to pressurize the fluid therein; an operator-operated valve control member slidably disposed in the axial bore of said outer valve member; a fluid connection between said control chamber and a portion of said valve control member to relay to the latter member a diminutive hydraulic reaction proportional to the effective pressure in said control chamber; a valve return spring compressed between said outer valve member and said valve control member to bias the latter member toward its normal relative position; a pair of abutment-engaging elements carried by said valve members, respectively, in normally spaced relationship defining the relative operating movement of said valve members; a fluid supply reservoir; an intake port between said reservoir and static hydraulic chamber; a compensating port normally open between said pressurizing chamber and said reservoir when said pressure-transmitting member is in fully retracted normal position; a control passage between said control chamber and the axial bore in said outer valve member; an annular valve chamber between said valve members and which is adapted for selective connection to said control passage and

to said reservoir, to admit pressurized fluid into said control chamber to move said wall to effect unitary movement of said pressure-transmitting member to pressurize the fluid in said pressurizing chamber and to displace the same through said discharge port, and to block pressurized fluid from entering said control chamber via said control passage and relieve the same for return flow via said control passage into said static hydraulic chamber, respectively; and another spring compressed between the closed end of said static hydraulic chamber and said wall to bias the latter toward normal position.

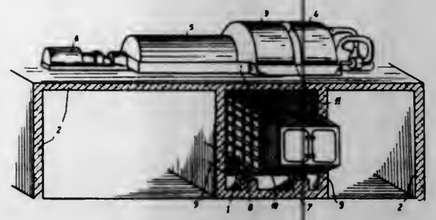
3,345,818
TANDEM MASTER CYLINDER
Arthur N. Milster, Richmond Heights, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,545
8 Claims. (Cl. 60—54.6)



1. A tandem master cylinder comprising a housing having a pair of pressure fluid reservoirs therein, a pair of fluid pressure chambers in said housing, passage means in said housing normally connecting one of said chambers in pressure fluid communication with one of said reservoirs, first piston means movable in said housing between said chambers, second piston means movable in said housing controlling said passage means and including extension means extending through said first piston means and said chambers, and means in said housing including said extension means defining other passage means normally connecting the other of said chambers in pressure fluid communication with the other of said reservoirs, said second piston means and said extension means being movable in response to an applied force toward a position closing said first named and other passage means to interrupt pressure fluid communication between said chambers and said reservoirs and establish fluid pressure in said one chamber, and said first piston means being movable in response to the established fluid pressure in said one chamber toward a position establishing fluid pressure in said other chamber in a predetermined ratio with that established in said one chamber.

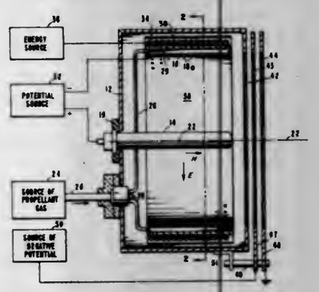
3,345,819
FOUNDATION STRUCTURE FOR TURBO-ELECTRIC POWER PLANTS
Alexandre J. Maurin, 16 Rue de Varize, Paris 16eme, France, and Philippe Demonsablon, 66 Rue Denfert Rochereau, Boulogne, France
Filed May 26, 1965, Ser. No. 458,963
Claims priority, application France, May 28, 1964, 976,269
2 Claims. (Cl. 60—95)

1. A shell-foundation in combination with a turbo-generator assembly having an axle and including a low pressure cylinder, an intermediate pressure cylinder and a generator, comprising a poured concrete framework of reinforced concrete including a plurality of frame members including frames extending transverse of said axle and including beams extending normal to and interconnecting said frames, said turbo-generator assembly having bearings, said turbo-generator assembly being disposed entirely on said frames with said frames forming supports for said bearings and supporting the entire weight of said turbo-generator assembly, reinforced concrete wall means interconnecting said frame members and forming with said frame members, a condenser shell so that said frame members serve both to support said assembly and as a part of the condenser shell, said shell having an inner metallic lining, said shell having an open upper



part, means at said open upper part for admitting steam flowing from said low pressure cylinder, cooling water circuit means for circulating a coolant for cooling said shell and including cooling water tubes on said shell, tube plates secured to said shell for mounting said tubes, a plurality of intermediary members disposed transverse to said axle for supporting said tubes and said tube plates, and expansion joints provided respectively between said framework, said tube plates, and said intermediate members.

3,345,820
ELECTRON BOMBARDMENT ION ENGINE
Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Tommy D. Masek, La Crescenta, Calif.
Filed Oct. 19, 1965, Ser. No. 498,168
8 Claims. (Cl. 60—202)

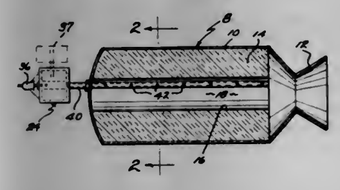


1. An ion engine comprising:
a housing having an open end;
anode means centrally mounted within said housing and extending toward said open end;
cathode means coaxially mounted in said housing about said anode means to define a chamber therebetween;
means for connecting said anode means and cathode means to a potential source for establishing a radial electrical field in said chamber with the anode means at a positive potential with respect to the cathode means, whereby electrons from said cathode means are attracted by said anode means;
source means for supplying a propellant gas into said chamber through said cathode means, whereby atoms of said gas are ionized by electrons from said cathode means, to form ions in said chamber; and
means disposed adjacent said open end for attracting the ions produced in said chamber and for focusing said ions into an ion beam.

3,345,821
STORABLE LIQUID ROCKET PROPELLANTS CONTAINING TETRANITROMETHANE WITH DIFLUORAMINO COMPOUNDS AND METHOD OF USE
Ellington M. Magee, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 21, 1961, Ser. No. 135,402
12 Claims. (Cl. 60—214)

10. A method of developing thrust by combustion of bi-propellant oxidizer and fuel components in a combustion chamber which comprises injecting into the combustion chamber a liquid stream of liquid $C(NO_2)_4$ mixed in a 0.2 to 1.4 mole proportion with a 1 mole proportion of liquid C_2 to C_7 para-alkane containing at least 1 NF_2 group per 2 hydrogen atoms in the molecule and simultaneously injecting into the combustion chamber a stream of liquid borohydride as fuel.

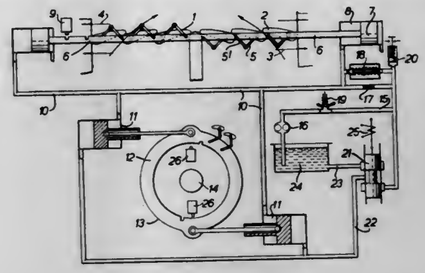
3,345,822
BURNING RATE CONTROL OF SOLID PROPELLANTS
Louis A. Povinelli, Middleburg Heights, and Marcus F. Heidmann, Rocky River, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 17, 1966, Ser. No. 529,593
7 Claims. (Cl. 60—251)



1. A solid propellant rocket motor comprising, a casing having an exhaust nozzle, a combustible solid propellant charge disposed in said casing and having a longitudinal bore forming a combustion chamber contiguous with the nozzle, said propellant charge adapted to produce combustion products in said combustion chamber which discharge through the nozzle to produce thrust, and means for injecting pressurized hot gases into said combustion chamber tangentially around the longitudinal wall of the bore in a direction transverse to the longitudinal axis of the bore to control the rate of combustion of the propellant charge by the establishment of a vortex flow field within the combustion chamber, said means including a gas generator, and at least one elongated gas injection tube operatively connected to the generator and extending longitudinally into the bore, said tube having a plurality of spaced discharge ports for injecting the hot gases transversely tangentially around the longitudinal wall of the bore to control the rate of combustion of the propellant charge.

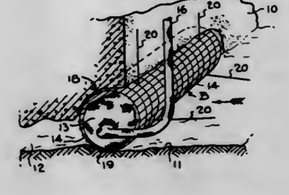
3,345,823
SLUICE GATE
Savo Rakcevic, Ljubljana, Yugoslavia, assignor to Titovi Zovodi Litostroj, Ljubljana, Yugoslavia, a Yugoslav company
Filed Mar. 20, 1964, Ser. No. 353,377
Claims priority, application Yugoslavia, Mar. 29, 1963, 3,992-P-372/63
8 Claims. (Cl. 61—24)

1. A sluice gate for preventing waving in liquid at a high flow rate, the gate comprising a plurality of parallel flaps, a frame, the flaps being pivoted on the frame and having their axes in the same plane, the flaps being movable simultaneously between a gate-open and gate-closed position, pairs of levers, a regulating rod, each pair of levers having a common free pivot, the ends remote from the free pivot being connected one to the flap adjacent its axis and the other to the regulating rod, and a control means, the regulating rod being axially movable



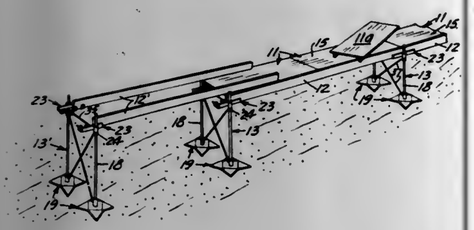
in response to movement of the control means to cause the flaps of one part of the sluice gate to open in one direction and those of another part to do likewise simultaneously in the opposite direction and be thus adapted to direct liquid in different directions which partially intersect.

3,345,824
METHOD AND MEANS FOR BRACING OR BOLSTERING SUBAQUEOUS STRUCTURES
Lee A. Turzillo, Bath, Ohio
(2078 Glengary Road, Akron, Ohio 44313)
Filed May 6, 1964, Ser. No. 365,431
17 Claims. (Cl. 61—35)



1. A method of providing a subaqueous or other bracing structure in situ, comprising: placing closed expandible and generally porous walled bag means in relatively unexpanded condition at the situs in cooperation with a self-supportingly rigid openwork frame means adapted to engage opposing portions of the structure to be braced to have the unexpanded bag means loosely confined at the situs by the framework means; injecting a flowable grout under hydraulic pressure into said bag means to expand the porous walls thereof against opposing surface areas of the situs and continuing the injection of the flowable grout under pressure into the bag and through openwork frame means until a small fraction only of the flowable grout oozes out through the pores of the bag means and the expanded bag means conforms itself in shape to the opposing surface areas contacting the expanded bag means according to the strengths, weakness and voids of the surface areas; and permitting the flowable grout which has passed through the porous walls and the flowable grout within the bag means to solidify in pressure contact with said opposing surface areas of the situs, whereby the solidified grouting between the bag means and the pressure contacted surface areas by extension through the porous walls creates a bonding effect between the solidified grout mass within the bag means and the pressure contacted surface areas.

3,345,825
PORTABLE DOCK
Louis F. Parker, 3844 Xerxes Ave. S., Minneapolis, Minn. 55410
Filed Jan. 18, 1965, Ser. No. 426,255
4 Claims. (Cl. 61—48)



1. A portable dock-type structure which may be supported as from the bottom of a natural body of water, comprising a plurality of elongate, wooden stringers having opposite imperforate end portions, said stringers being arranged in pairs, the stringers in each of said pairs being disposed opposite each other and in parallel and spaced relation, each of said stringers being disposed in endwise adjoining relation with another of said stringers,
a plurality of end-to-end deck sections removably supported on said stringers and having longitudinally extending frame elements depending therefrom and lying flush against the sides of said stringers,
a plurality of supporting standards each disposed at a respective end of a pair of said stringers and having a pair of upright support posts adjacent opposite stringers, each of said standards also including a pair of rigid stringer-supporting brackets each on a respective post, each of said standards having rigid means maintaining said brackets in predetermined relation with each other, each of said brackets having an elongate rigid stringer-supporting shelf extending along and carrying adjoining stringers with the terminal ends of the stringers disposed intermediate the ends of the shelf, each of said brackets having releasable clamping means gripping the imperforate end portion of each stringer at two locations spaced from each other longitudinally along the shelf and thereby fix the end portions of the stringers against endwise tilting relative to the brackets and thereby minimize downward deflection of the stringers intermediate the ends thereof.

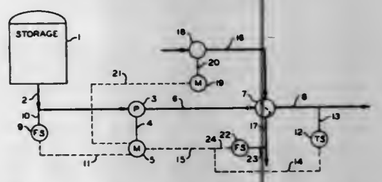
3,345,826
REMOVABLE CASING CONSTRUCTION
Walter Hignite, Milwaukee, Wis., assignor to Wisconsin Caisson, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 29, 1965, Ser. No. 475,762
4 Claims. (Cl. 61—53)

1. The combination in a string of casing of a plurality of casing joints each having a skirt at its upper end receiving the lower end of the adjacent joint, a bayonet connection between adjacent joints comprising at least one inwardly extending peg in the skirt and an inverted L-shaped slot in the end of the adjacent joint and receiving the corresponding peg, the horizontal portions of all of said inverted L-shaped slots extending in the same circumferential direction from the vertical portions thereof, and a driver cap for manipulating the string of casing and for successively adding joints thereto and removing joints therefrom, said driver cap having a skirt simulating the lower end of a joint and adapted to enter the skirt on the upper end of any joint and to removably interlock therewith both rotationally and vertically, said cap skirt having a T-shaped slot therein for receiving each



corresponding peg in said joint skirt to maintain the vertical interlock therewith for either direction of rotation of the driver cap.

3,345,827
METHOD AND APPARATUS FOR CONTROLLING THE TEMPERATURE OF A FLUID REMOVED FROM A SOURCE THEREOF
Joseph T. Karbosky, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation of application Ser. No. 454,279, May 10, 1965. This application Aug. 19, 1966, Ser. No. 573,719
10 Claims. (Cl. 62—55)

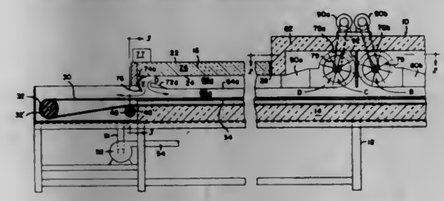


1. A method for controlling the temperature of a fluid removed from a source thereof comprising removing said fluid from said source by and through a pumping zone, passing said fluid from said pumping zone through a heat exchange zone, sensing the temperature of said fluid after passing same through said heat exchange zone, at least reducing the rate of removal of said fluid from said source in response to a sensed temperature below a predetermined minimum value, sensing the rate of flow of said fluid from said source at at least one of upstream and downstream points of said pumping zone, and at least reducing the rate of removal of said fluid from said source in response to a sensed flow rate below a predetermined minimum value.

3,345,828
PARALLEL FLOW CRYOGENIC FREEZER
David J. Klee, Emmaus, and Raymond L. Berreth, Allentown, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,196
13 Claims. (Cl. 62—63)

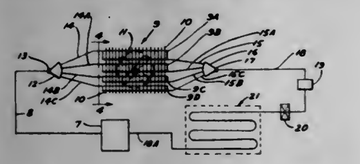
1. A method for ultra-fast freezing of products with a cryogenic refrigerant including the steps of:
(a) continuously moving said product to be frozen through an insulated tunnel along a predetermined path;

(b) continuously contacting said product with a cryogenic liquid in said tunnel to freeze the product while vaporizing the cryogenic liquid to form a cold gas;
(c) continuously collecting said cold gas resulting from said vaporization in a portion of said tunnel;
(d) continuously recirculating the major portion of said collected gas through a substantially closed path at least one-half of which closed path is parallel to and coincident with said predetermined path along a substantial extent thereof;
(e) continuously adding cold gas resulting from newly vaporized cryogenic liquid to said recirculation path;
(f) continuously removing some of said recirculated gas from said closed path in an amount which is substantially equal to the amount of cold gas continuously added to said recirculation path;



(g) maintaining the velocity of said recirculated gas in said closed path sufficient to cause turbulent flow of the gas in contact with said food product;
(h) collecting a minor portion of said cold gas in a reservoir immediately adjacent the outlet of said tunnel;
(i) detecting the level of said cold gas in said reservoir; and
(j) regulating the amount of recirculated gas which is removed from said substantially closed path as a function of said detected level.

3,345,829
METHOD AND MEANS FOR CONTROLLING THE CONDENSATION OF VAPORS UNDER A VARYING AMBIENT
Henry J. Hall, 2521 Circle Drive, Southfield, Mich. 48075
Filed Apr. 20, 1966, Ser. No. 545,219
7 Claims. (Cl. 62—93)



1. The method of condensing a gas in the presence of a variable ambient, which consists of passing the gas through a device made up of a plurality of spaced conduits, each having a different diameter and each having a different condensing capacity, and each being directly and commonly exposed to said ambient at any given period of time.

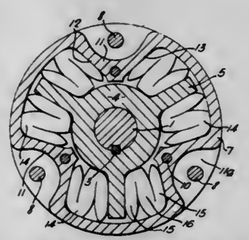
3,345,830
SELF-PIERCING EAR WIRE
Ludger A. Fontaine, North Attleboro, Mass., assignor to Barrows Industries, Inc., Providence, R.I., a corporation of Rhode Island
Filed Mar. 8, 1965, Ser. No. 437,940
4 Claims. (Cl. 63—13)

1. A self-piercing ear wire consisting of a substantially circular but disconnected loop of noncorrosive metallic wire having an eye member extending outwardly from one end of said wire, the other end of said wire terminating in a tapered sharp point normally extending through said eye, said wire including means whereby when said ends are spread apart and said loop is placed over a wearer's lobe with the eye on one side of the lobe and



the pointed end on the other side, said pointed end will automatically penetrate through the lobe and through the said eye until the loop ends regain their original and normal relative position, said means residing in the tempered condition of said wire.

3,345,831
FLEXIBLE COUPLINGS
Reginald Edward George Boole, Harpenden, England, assignor to The Wellman Bibby Company Limited, London, England, a British company
Filed July 2, 1965, Ser. No. 469,204
Claims priority, application Great Britain, Aug. 7, 1964, 32,310/64
15 Claims. (Cl. 64—14)



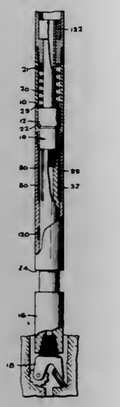
1. A flexible coupling comprising a driving member and a driven member concentric therewith said driving and driven members each having a plurality of generally radially extending blades with one blade on one member extending between a pair of blades on the other members so as to form a cell between each pair of adjacent blades and parts of the concentric members, and an integral non-metallic resilient coupling element in each cell each coupling element having at least two limbs and a connecting portion, the limbs engaging opposite walls of the cell and the limbs and connecting portion being so shaped that upon the application of torque to the coupling the limbs, in at least one of said cells, are initially deflected by bending with respect to the connecting portion so as progressively to increase the area of surface contact between the limbs and the connecting portion, whereby the limbs and the connecting portion are subjected to an increasing rate of compression and a decreasing rate of bending deflection as the applied torque increases.

3,345,832
ROTARY DRIVING MECHANISM
Clifford C. Bottoms, 403 Orange Grove, San Fernando, Calif. 91340
Filed Aug. 20, 1965, Ser. No. 481,261
7 Claims. (Cl. 64—23)

1. A well tool having a percussion sub comprising:
an outer barrel, adapted to be rotated, having a plurality of circumferentially distributed substantially axial channels positioned in a region of the inner surface thereof, adapted to receive rolling means;

an inner barrel, including a percussion sub and a driver sub, having a plurality of substantially axial channels, equal in number to the above said channels and in register with the above said channels, upon the outer surface of a portion of said inner barrel;

a plurality of rollings means, positioned in said two sets of channels to transmit torque from said outer barrel to said inner barrel to rotate said inner barrel while allowing relative axial translation between said barrels;



shoulders on the inner surface of said outer barrel and the outer surface of said inner barrel;

resilient means positioned between said shoulders to bias said inner barrel toward its extended position;

a lubricant surrounding said rolling means; and

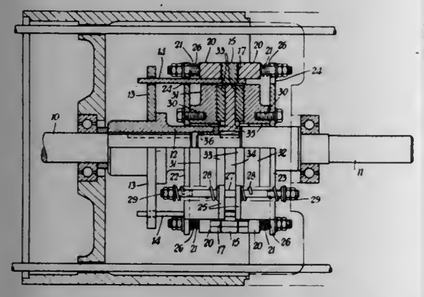
means for retaining said lubricant.

3,345,833

DRIVE TRANSMITTING MECHANISMS

Arthur Thomas Charles Burrows, Stevenage, England, assignor to Geo. W. King Limited, Stevenage, England, a company of Great Britain

Filed Sept. 17, 1965, Ser. No. 488,081
5 Claims. (Cl. 64—30)



1. A drive transmission mechanism interposed between aligned driving and driven shafts comprising:

a disc operatively secured to one of the shafts for rotation therewith;

friction gripping members juxtaposed each of the opposed faces of the disc and operatively carried by cage elements;

a pair of cage elements, each operatively attached to one of the friction gripping members, and being operatively slidably connected to and rotatably keyed to the other shaft so as to be rotated thereby while being capable of relative axial movement with respect to the shafts and each other;

resilient means bearing against the cage elements and urging the cage elements towards each other so that the friction gripping members will be maintained in frictional engagement with the disc; and

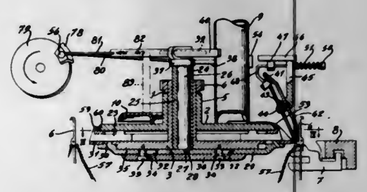
camming means interposed between the cage elements for exerting a force on the cage elements opposed to that exerted by the resilient means whereby the degree of frictional engagement between the friction gripping members and the disc will be lessened to allow slippage when the torque between the driving and driven shafts exceeds a predetermined value so that smooth acceleration and retardation of the driven shaft will be obtained upon starting and stopping of the driving shaft.

3,345,834

DEVICE FOR SEVERING OR CUTTING AWAY SUPERFLUOUS THREAD ENDS BY REMOVING THE SAME IN CIRCULAR KNITTING OF KNITTED GOODS SUCH AS STOCKINGS OR THE LIKE HOSIERY GOODS

Richard Parthum, Nojsombedsvej 43, Copenhagen-Orholm, Denmark

Filed Sept. 24, 1964, Ser. No. 398,882
Claims priority, application Denmark, Sept. 26, 1963, 4,527/63
4 Claims. (Cl. 66—145)



1. A yarn severing device for a circular knitting machine including a dial plate and a supporting member for said dial plate beneath said dial plate, a rotatable needle cylinder carrying a plurality of needles and liftable guides for yarn fed to the needles, said device comprising: first and second rotary members having cooperating circular parts provided with surfaces engaging one another to sever yarn extending between said yarn guides and said needles, said rotary members being rotatable in intersecting planes, the second of said rotary members comprising a cup-shaped disc the plane of rotation of which is inclined in relation to the plane of rotation of the first of said rotary members, the first of said rotary members being arranged between said dial plate and said supporting member and being displaceably mounted between said dial plate and said carrying member to move away from and in abutment with the second of said rotary members in the vicinity of the needle cylinder and a fabric on the needles.

3,345,835

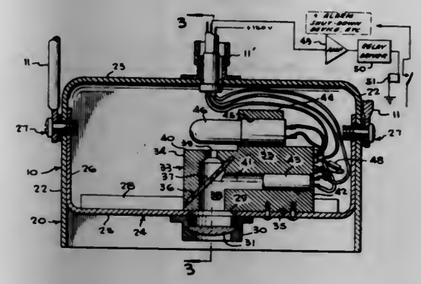
RETRO-REFLECTIVE STOP MOTION SYSTEM

Lawrence Creigh Nickell, Ronceverte, and Raymond Baines Fertig, Saint Albans, W. Va., assignors to Appalachian Electronic Instruments, Inc., Ronceverte, W. Va., a corporation of West Virginia

Filed Dec. 11, 1964, Ser. No. 417,697
12 Claims. (Cl. 66—166)

1. Fabric flaw detecting apparatus for detecting holes and like selected aperture conditions in knit fabric while the fabric is moving relative to a fabric handling machine

and producing defect signals upon occurrence of such aperture defects comprising a detector head including a substantially point source of light, optical lens means for concurrently directing light rays from said source along a plurality of selected diverse incident ray paths to collectively and simultaneously form an elongated image of light at the fabric to be inspected, retro-reflective means disposed on the opposite side of said fabric from said detector head positioned to receive light from said source



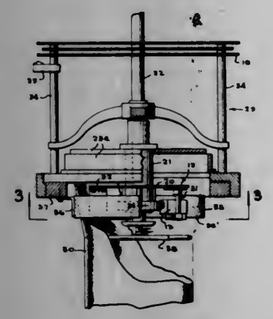
along said incident ray paths intercepted by said selected aperture conditions in the fabric in retro-reflect the same back along its incident ray path, photocell means in said detector head, a semi-transparent mirror between said lens means and light source to transmit light from said source toward said lens means and to reflect any of said retro-reflected light rays to said photocell means, and means responsive to a selected level of light activation of said photocell means to generate a signal indicative of detection of the selected aperture conditions.

3,345,836

SCANNING SYSTEM FOR REVOLVING CREEL TYPE CIRCULAR KNITTING MACHINES

Raymond Baines Fertig, St. Albans, and Lawrence Creigh Nickell, Ronceverte, W. Va., assignors to Appalachian Electronic Instruments, Incorporated, Ronceverte, W. Va., a corporation of West Virginia

Filed Jan. 26, 1966, Ser. No. 523,133
12 Claims. (Cl. 66—166)



1. Fabric flaw detecting apparatus for inspecting a tubular knit fabric produced at a needle station of a circular knitting machine of the rotary creel type as the fabric moves downwardly from the needle station without rotation substantially centered about a vertical reference axis to detect runs, holes, and similar aperture flaws in the fabric tube, comprising a first subassembly including a detector head and associated circuit means positioned in fixed relation to each other and disposed below said needle station within said fabric tube, said detector head including light source means for directing light rays along a selected light ray axis in a confined beam toward fabric tube portions lying outwardly of said first subassembly and a photocell to receive light returned from the fabric portion intercepting said beam, said associated circuit means including means for amplifying output signals produced by said photocell, means supporting said detector head and circuit means of said subassembly for rotation as a unit about said reference axis at an angular velocity relative to the rate of movement of said fabric tube downwardly from said needle station to cause said beam to scan circumferentially around the fabric tube and intercept all portions of the fabric tube, a surface of reflective material disposed outwardly of the fabric tube in the path of said beam to return toward the detector head light passing through aperture flaws in the fabric, and a second subassembly supported at a stationary position with respect to which the first subassembly rotates electrically coupled with said first subassembly including circuit means intercoupled with said associated circuit means of said first subassembly for producing a signal indicative of flaw detection responsive to a selected level of light activation of said photocell.

3,345,837

PADLOCK

Lawrence M. Barnes, 24201 Beverly Ave., Oak Park, Mich. 48237

Filed July 12, 1965, Ser. No. 471,373
1 Claim. (Cl. 70—52)



A padlock comprising:

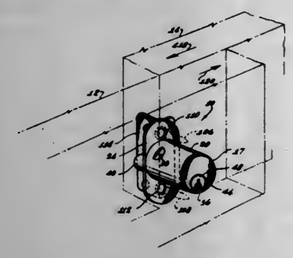
an L-shaped casing comprising a vertical leg and a horizontal leg, said legs being provided with first and second vertically disposed pasages, respectively;

an inverted U-shaped shackle comprising a horizontal head and first and second depending parallel legs and movable between a fastened condition and a released condition, said first shackle leg being mounted within said first passage of said vertical casing leg for pivotal and axial movement therein;

in the released condition of the padlock said shackle being lifted upward relative to said casing whereby said second shackle leg is removed from said second passage of said horizontal casing leg;

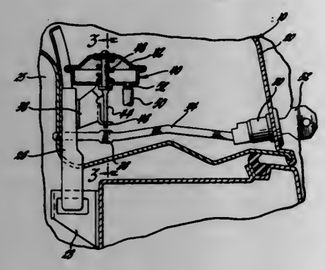
in the fastened condition of the padlock said shackle being lowered until said second shackle leg is engaged within said second passage within said horizontal casing leg, the lower face of said shackle head abutting the upper face of said casing vertical leg, so that said casing and shackle head together create a C-shaped configuration, whereby a gap remains between the lower face of said shackle head and the upper face of said casing horizontal leg adjacent and surrounding said second shackle leg, said shackle head and casing both being fabricated of a plurality of horizontally disposed plates, whereby the joint between said shackle head and said casing in the fastened condition is indistinguishible from the joints between each of said plates.

3,345,838
DOUBLE SLIDING DOOR LOCK
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, Richard L. Armstrong, Santa Fe Springs, and Harold W. Falk, Los Angeles, Calif., said Armstrong and Falk assignors to said Russell
Filed June 28, 1965, Ser. No. 467,624
14 Claims. (Cl. 70—100)



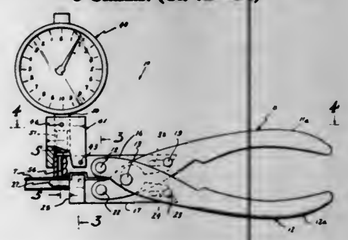
13. In a lock, apparatus comprising:
a housing;
a plunger member mounted for axial sliding movement between a first axial position and a second axial position in said housing;
means preventing rotational movement of said plunger member;
releasable catch means automatically actuatable when said plunger member is moved to said first axial position, for locking said plunger member at said first axial position;
a key-controlled lock member mounted in said plunger member and movable relative to said plunger member by means of a key, said catch means operating independently of the lock member to lock the plunger member;
means responsive to such movement of said lock member and independent of the key except for moving the lock member for releasing said catch means to unlock said plunger member for axial movement from said first axial position to said second axial position;
and means biasing said lock member for return movement to its original position after movement by the key, when the key is released.

3,345,839
LATCH LOCKING ARRANGEMENT
Lawrence P. Brissette, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,772
3 Claims. (Cl. 70—240)



1. In a vehicle body including a closure movable between open and closed positions and a latch for holding the closure in closed position, the combination comprising, a key rotatable actuating cylinder lock mounted on said body adjacent said latch, a transmission shaft operatively interconnecting said cylinder lock and said latch for transmitting actuating rotation of said cylinder lock for release of said latch, abutment means on said shaft, a forked blocking member movable relative to said shaft between a blocking position straddling said abutment means to prevent rotation of said shaft and a non-blocking position, power operated means for moving said blocking member between said positions thereof, and remote means for controlling said power operated means.

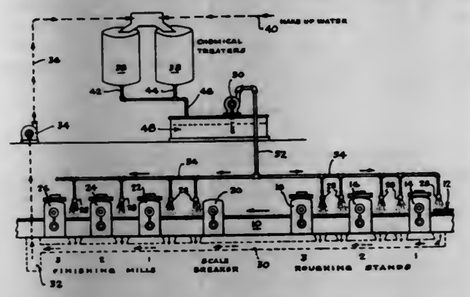
3,345,840
TUBE DIMPLING TOOL
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Charles S. Beuyukian, Gardena, and Robert M. Heisman, Palos Verdes, Peninsula, Calif.
Filed Dec. 27, 1966, Ser. No. 605,100
6 Claims. (Cl. 72—34)



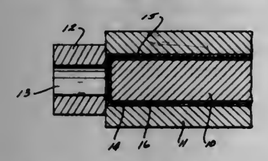
1. In a tool of the type having first and second lever arms which are pivotally connected intermediate their ends to provide opposed handles on one side of the pivot axis and are operatively connected to first and second jaw members, respectively, for relative opening and closing movement of the jaw members on corresponding movement of the handles, the combination comprising:
a mandrel carried by said first jaw member;
nipple forming means in the nature of a projection on the surface of said mandrel, said second jaw member having a clamping surface in registry with said mandrel and said projection, whereby a tube sleeved over said mandrel is adapted to be clamped and compressed between said mandrel and said clamping surface by closing pivotal movement of said handles and jaw members to thereby form a dimple on the inner surface of said tube and a corresponding nipple on the outer surface of said tube by said nipple forming means; and
gauge means carried on said second jaw member for measuring and indicating the height of a nipple formed on said tube by said nipple forming means.

3,345,841
HOT STRIP ROLLING MILL
John E. Phelan, Euclid, Ohio, and John T. Burke, La Grange, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,579
8 Claims. (Cl. 72—39)

1. A method for improving the operational efficiency of a hot strip steel rolling mill of the type having at least one roughing scale breaker, at least one roughing stand, and a plurality of finishing stands, said hot strip rolling mill also having a plurality of high pressure hydraulic spray nozzles associated with one or more of the above described pieces of equipment for removing scale from the steel workpiece being rolled therethrough by means of high pressure water being forcibly directed at the scale formed on the surfaces of the steel workpiece and collecting means for removing the scale contaminated water from the situs of the rolling operation for purposes of reuse in the operation of the high pressure hydraulic spray nozzles, the improvement which comprises continually maintaining the nozzle pressure in the high pressure hydraulic spray nozzles by the expedient of removing foreign scale particles from the water prior to its re-use in said nozzles by means of a polymeric water-soluble chemical whereby the turbidity of said water does not exceed 20 p.p.m. with the largest average particle size of said turbidity being not greater than 10 microns.



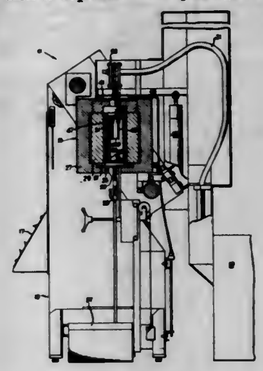
3,345,842
FLUID FILM LUBRICATION FOR EXTRUSION OF METAL
Raymond S. Richards, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 26, 1965, Ser. No. 509,798
14 Claims. (Cl. 72—42)



1. In a method wherein a metal billet or workpiece is extruded from an extrusion chamber and through a die positioned at an end of said chamber while the billet is at a higher temperature than the extrusion chamber wall and the die wall, the improvement which comprises having interposed between said billet and said chamber walls and between said billet and said die walls, during the extrusion process, a plurality of contiguous layers of glass having different viscosity characteristics, the glass of the layer next to and in contact with said billet having the highest fiber softening point, and succeeding layers of glass having progressively lower fiber softening points, each layer of glass being molten and of a viscosity effective to wet and coat the surfaces in contact therewith during extrusion of said billet, whereby the force required to accomplish said extrusion is less than in the absence of said layer of molten glass.

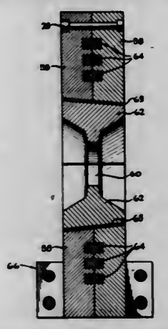
3,345,843
FORMING APPARATUS
Martin P. Golden, Del Mar, and Paul Wildi, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 21, 1964, Ser. No. 397,961
5 Claims. (Cl. 72—56)

1. In an electrohydraulic forming apparatus that includes means defining a die cavity adapted for the expansion forming of a tubular workpiece which cavity has an opening at one end thereof, the improvement comprising a die head having an opening therein which is circular in cross section and has two portions of different diameters forming a ledge in said die head opening which ledge faces said die cavity, a pair of interchangeable electrode assemblies for insertion into the cavity through the opening, each assembly including a first electrode, a second electrode coaxial with said first electrode and disposed in surrounding relation thereto and spaced uniformly therefrom, high voltage insulation disposed between said coaxial electrodes, casting means generally surrounding said coaxial electrodes which casting means is shaped to fit into said die head opening and to have a shoulder which seats against said die opening ledge, and positioning means for insertion into one end of a tubular workpiece in the die cavity and to form a liquid-tight seal at said end, said assembly including a liquid inlet passageway and a separate vent passageway, one of said



interchangeble assemblies having a first elongated extension electrically connected to said first electrode, a second elongated extension electrically connected to said second coaxial electrode, said second extension being parallel to and spaced from said first extension, and thin wire means extending between said electrode extensions near the free ends thereof, and the other of said interchangeable assemblies having said coaxial electrodes extending beyond said liquid-tight seal into the interior of a tubular workpiece supported in the die cavity, and means in said die head for engagement with either of said interchangeable assemblies for locking said selected assembly in place within said die head opening with said shoulder engaging said ledge.

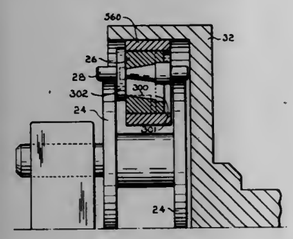
3,345,844
COIL FOR MAGNETIC FORMING
Hansjorg Jansen and Paul Wildi, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,724
8 Claims. (Cl. 72—56)



1. A coil assembly for use in an electromagnetic forming apparatus, said coil assembly comprising a dis-

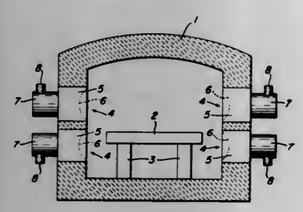
continuous coil body formed of a conductive material and having an opening of sufficient size to accommodate a workpiece to be formed, said coil body including an internal bore of essentially flat spiral configuration commencing adjacent a surface of said opening and terminating adjacent an edge of the body, an elongated conductor disposed within said bore of said coil body and extending between the ends thereof, and means insulating the conductor from said coil body.

3,345,845
PROFILING METHODS AND MACHINES
Isaac Marcovitch, Johannesburg, Transvaal, Republic of South Africa, and Jacob Marcovitch, 31 Bitcon Road, Village Deep, Johannesburg, Transvaal, Republic of South Africa; said Isaac Marcovitch assignor to said Jacob Marcovitch
Filed Aug. 10, 1964, Ser. No. 388,587
Claims priority, application Republic of South Africa, Aug. 12, 1963, 63/3,621; Jan. 22, 1964, 64/299; Mar. 20, 1964, 64/1,323
5 Claims. (Cl. 72—91)



1. A machine for profiling annular workpieces comprising juxtaposed rollers defining between them a profiling space of diminishing extent, means to rotate at least one of the rollers, a cylindrical core loosely positioned through an annular workpiece to project each side of it, the projecting ends rolling on at least one of the rollers, and means to control the axial spread, in at least one direction, of a workpiece surrounding the core and passing through the profiling space.

3,345,846
METAL HEATING
Frederic O. Hess, Redwood Cottage, Skytop, Pa., assignor to Selas Corporation of America, a corporation of Pennsylvania
Filed Aug. 1, 1966, Ser. No. 569,340
7 Claims. (Cl. 72—200)



3. The method of heating without scaling a material that oxidizes at elevated temperatures which comprises placing the material in the combustion zone of a direct fired furnace having burners in the wall thereof, supplying fuel gas and air to the burners, regulating said supplies to substantially stoichiometric proportions, burning the fuel and air to heat the material to a temperature where surface oxidation will begin to take place, changing the fuel-air ratio to the burners so that there is at least a 40% deficiency of air, thereby creating a reducing atmosphere, and continuing to heat the material in said reducing atmosphere until the material has reached the final desired temperature.

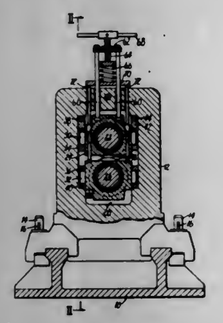
3,345,847
ROLL-STRAIGHTENING MACHINE
Paul Schmitt, Saarbrucken, and Gerd Dittgen, Kutzhof, Germany, assignors to Mannesmann-Meer Aktiengesellschaft, a corporation of Germany
Filed Dec. 14, 1965, Ser. No. 513,716
2 Claims. (Cl. 72—224)



1. In a roll-straightening machine, for use in straightening sections including tubular and billet sections of rectangular including square outline, adjustable roll-straightening tools comprising four cylindrical rolls, each rotatable about its axis of rotation, the axes of adjoining rolls forming right angles with each other, said axes thus completing a rectangle and being disposed in one plane perpendicular to the feeding direction of said sections through the machine, the rolls defining a passage for the section to be straightened, each roll being adapted to work on a side of the section to be straightened, an axle journalling each roll for rotation about its axis, one of said rolls being positioned immovably save for rotation, the other three rolls being shiftable with their axles, the axles for said three shiftable rolls being shiftable, means operable for shifting the shiftable axles comprising a first bearing for the first shiftable axle of the roll opposite said immovable roll, said first bearing being shiftable in opposite directions at right angle to the axis of said immovable roll, and a second bearing journalling the second shiftable axle of another of said shiftable rolls, said second bearing being shiftable in opposite directions parallel to the axis of said immovable roll, said second shiftable axle being connected to said first shiftable axle so that when the said second bearing is shifted only the first and second shiftable axles will together be shifted in a direction parallel to the axis of the immovable roll, said second shiftable axle being connected to the third shiftable axle of the third shiftable roll so that when said first bearing is shifted only the second and third axles will together be shifted in a direction at right angle to the axis of said immovable roll.

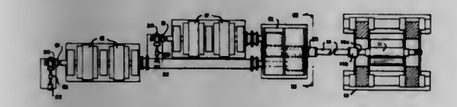
3,345,848
ROLLING MILL, IN PARTICULAR FOR RODS AND BARS
Erhard R. Henschker, Parkstone, Dorset, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain
Filed Apr. 20, 1965, Ser. No. 449,582
Claims priority, application Great Britain, Apr. 21, 1964, 16,465/64; June 23, 1964, 26,010/64
3 Claims. (Cl. 72—237)

1. A rolling mill having housings, working rolls, means for mounting said working rolls in said housings, said housings having windows comprising longer sides and shorter sides with recesses at their longer sides, said recesses being bordered by shoulders, means for urging said roll-mounting means towards said shoulders, and roll-



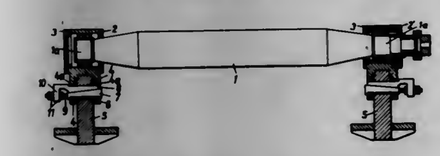
adjustment means acting on the mounting means of one roll and being arranged inside the recesses.

3,345,849
ROLLING MILL ROLL DRIVES
Paul M. Lowy, Pittsburgh, Pa., assignor to Mesta Machine Company, a corporation of Pennsylvania
Filed Sept. 10, 1964, Ser. No. 395,455
4 Claims. (Cl. 72—249)



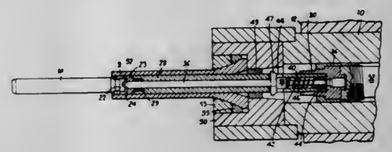
1. In a rolling mill having a driven roll, a main drive motor having a driven shaft and a half coupling operatively connected to the drive motor shaft receiving an interfitting half coupling on the driven roll, the improvement comprising inching drive means, clutch means selectively connecting the inching drive means and the main drive motor, a source of power for said drive means, a first switch means contacted by means driven by the drive motor shaft and moving with the said half coupling at a position adjacent and spaced from a selected load position, a circuit capable of providing timed power impulses from said source of power for said inching drive means actuated by the first switch means, a second switch means at the load position adapted to disconnect the power source from said inching drive means.

3,345,850
ROLL TABLES
Ernst Theodor Sack, Hosel, and Ernst Becker, Dusseldorf-Rath, Germany, assignors to Maschinenfabrik Sack G.m.b.H., Dusseldorf-Rath, Germany
Filed July 9, 1965, Ser. No. 470,715
3 Claims. (Cl. 72—251)



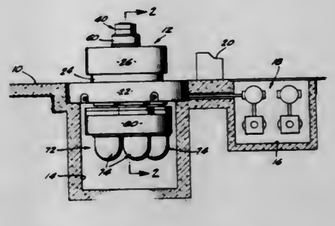
1. A roll table comprising a supporting frame and a number of casings holding bearings in which the rolls rotate, wherein each bearing casing has a pair of parallel lugs which are perpendicular to the bearing axis and which straddle the top edge of a longitudinally extending wall forming part of the frame, the lugs having apertures which register with an aperture in the wall and the lugs being clamped tightly to the wall by wedges which are tightened against one another and extend through the apertures in the lugs and through the aperture in the wall.

3,345,851
MANDREL ATTACHMENTS FOR METAL TUBE EXTRUSION PRESSES
Peter Singleton, West Moors, Dorset, England, assignor to The Loewy Engineering Company, Limited, Bournemouth, England, a company of Great Britain
Filed Jan. 6, 1965, Ser. No. 423,773
Claims priority, application Great Britain, Jan. 10, 1964, 1,156/64
13 Claims. (Cl. 72—253)



1. A metal tube extrusion press having a separate mandrel unit comprising a mandrel with an enlarged head, a mandrel-holder formed at its forward end as a coupling for said mandrel and having at that end a cavity into which the mandrel head can be entered by moving the mandrel radially with respect to the mandrel-holder axis, and means for urging said mandrel head into endwise engagement with a part on the coupling which projects into the cavity in front of the mandrel head.

3,345,852
EXTRUSION PRESS
Ralph W. Hilton, Torrance, Calif., assignor to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Filed Oct. 18, 1965, Ser. No. 496,972
9 Claims. (Cl. 72—253)



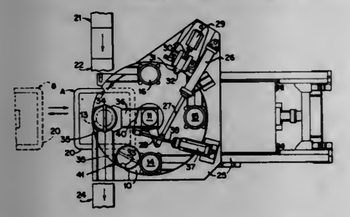
1. An extrusion press comprising:
an extrusion die having a cavity open at one end and closed at its opposite end by an end wall,
extrusion means axially movable in said cavity,
said cavity being adapted to receive between said cavity end wall and said extrusion means a billet of extrusible material,
there being an extrusion opening axially of said extrusion means through which said material is extruded by axial movement of said extrusion means toward said cavity end wall,
pull rod means extending axially of said cavity,

means securing said extrusion means to one end of said pull rod means,

the other end of said pull rod means extending beyond the closed end of said cavity, whereby axial movement of said pull rod means in the direction of said other end thereof is effective to axially move said extrusion means in said cavity toward said cavity end wall, and

drive means operatively connected between said extrusion die and said other end of said pull rod means for driving said rod means in said axial direction by exerting a pulling force on said rod means, whereby the axial stress in said pull rod means during extrusion of said billet is a tensile stress.

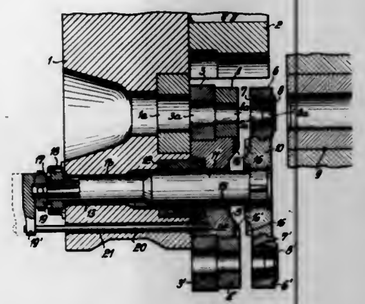
3,345,853
WORK FEEDING METHOD AND APPARATUS FOR PIERCING PRESS
David A. Edgecombe, Patterson Heights, and Alfred Wudski, Beaver Falls, Pa., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New York
Filed Mar. 23, 1965, Ser. No. 442,092
6 Claims. (Cl. 72—263)



1. In combination with a billet piercing apparatus comprising a billet piercing press, a container, a billet receiving and discharging position transversely spaced from said piercing press, means for moving said container between said billet piercing press and said billet receiving and discharge position, an indexing table rotatable about an upright axis spaced from said billet receiving and discharge position, said indexing table having a plurality of circumferentially equally spaced openings positioned adjacent the periphery of and extending therethrough, means for supporting a liner ring in each of said openings, means for rotating said indexing table to align an opening and the liner ring therein with said container when the latter is in a billet receiving position, and means for inserting said liner ring in said container before inserting the billet.

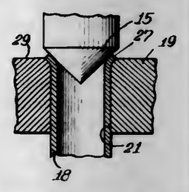
3,345,854
EXTRUDER HAVING MEANS FOR EXCHANGING PRESSURE PLATES AND DIES
Johann Gross, Duisburg, Germany, assignor to Hydraulik G.m.b.H., Duisburg, Germany
Filed Nov. 2, 1965, Ser. No. 506,039
Claims priority, application Germany, Nov. 7, 1964, H 54,245
5 Claims. (Cl. 72—263)

1. An extruder comprising an extruder body having an opening through which material is extruded, a rotatable shaft adjacent said extruder body, a first axially movable carrier arm freely rotatable on said shaft and having a plurality of exchangeable intermediate pressure pieces thereon arranged in circumferentially spaced relationship, a second carrier arm affixed to said shaft for rotation thereby and disposed alongside said first movable carrier arm and having a plurality of exchangeable pressure dies thereon arranged in circumferentially spaced relationship, interengageable coupling means defined on said first and second carrier arms engageable when said first and second carrier arms are substantially abutting and disengageable when they are separated by relative axial movement of said first carrier arm in respect to said shaft, and locking and releasing means for holding said first carrier in a stationary position at which it is spaced axially from said second carrier to prevent its rotation



with said shaft and for displacing said first carrier toward said second carrier to interengage said first carrier with said second carrier and to release said first carrier to permit rotation of said first carrier with said second carrier and said shaft.

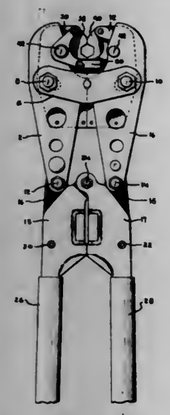
3,345,855
TUBE CLAMP FOR FLARING TOOL
George E. Franck, Morton Grove, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Jan. 7, 1965, Ser. No. 424,026
6 Claims. (Cl. 72—317)



1. In a flaring tool provided with a flaring cone and means for moving the cone axially inwardly for flaring the end of a tube, means for holding the tube end coaxially of the cone during a flaring operation, comprising support bar means formed of bar stock metal and having a cylindrical bore for holding the tube end, said bore having an outer flared end opening through an outer surface of the bar, said bore end being defined by a frustoconical outer end surface narrowing axially inwardly and an annular inner end surface of arcuate cross-section tangent to said outer end surface and said cylindrical bore whereby the tube end is pressed by the flaring cone against said flared end surfaces over the entire length thereof.

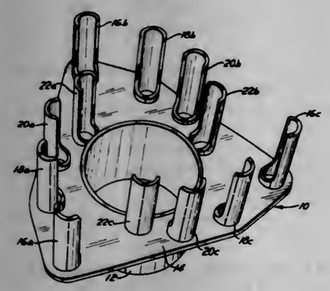
3,345,856
TOOL FOR CRIMPING ELECTRICAL CONNECTORS
Walter Myers Werner, Downingtown, and Kenneth Scott Hays, Exton, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 23, 1964, Ser. No. 420,586
7 Claims. (Cl. 72—410)

1. In a tool for crimping or compressing electrical connector elements onto electrical conductor means, handle means pivotally connected together at a pivot point, jaw plate means pivotally connected to said handle means, tie plate means pivotally connected to said jaw plate means, carrier plate means carried by said jaw plate means, guide means on said carrier plate means, rotatable crimping die means carried by said carrier plate means, locking pin assembly means for locking said die means



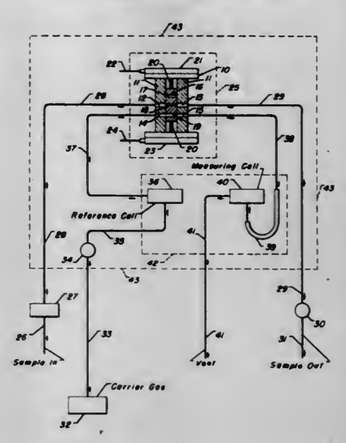
in a crimping position for crimping an electrical connector element onto electrical conductor means when the die means are moved in a straight line path via said guide means and said handle means, and locator means on said locking pin assembly means adjacent said crimping die means for locating a connector element between said crimping die means.

3,345,857
CALIBRATION GAUGE FOR USE WITH BOREHOLE CALIPERS
Emmett B. Shutes, Turtle Creek, and Carl A. Gustavson, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,586
7 Claims. (Cl. 73—1)



1. A gauge for use in calibrating a borehole caliper tool of the feeler arm type comprising a central hub formed with an opening adapted to slidingly fit snugly over the body of the tool, a plurality of sets of gauging members, means to support said gauging members in fixed relation to said central hub, each of said sets of members comprising a number of members equal to the number of feeler arms on said tool, all of the members of each set of members having gauging means at the same radial distance from the centerline of said hub opening, and the radial distance from the centerline of said opening to each set being different.

3,345,858
CONTINUOUS CHROMATOGRAPHIC ANALYSIS
Ellsworth R. Fenske, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,640
19 Claims. (Cl. 73—23.1)

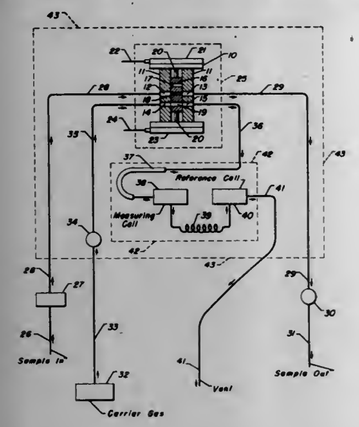


1. A method for analyzing a mixture of fluid components at least one of which is selectively sorbed by contact with a solid sorbent and at least one other component is relatively less sorbed by the sorbent, which comprises pretreating a mass of said sorbent by contact with said selectively sorbed component until the sorbent is substantially saturated with respect to the selectively sorbed component, passing a carrier gas stream through a separation zone containing the pretreating sorbent, introducing fixed volume samples of said mixture at periodic intervals into the carrier gas stream at a point upstream from the separation zone, passing the effluent from said zone to a measuring cell, and developing from said cell a substantially continuous elevated baseline signal, the magnitude of which is proportional to the concentration of selectively sorbed component in said sampled mixture and which responds to changes in said concentration as between a plurality of the resulting series of samples.

3,345,859
CHROMATOGRAPHIC ANALYSIS WITH AUTOMATIC BASELINE COMPENSATION
Ellsworth R. Fenske, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 28, 1964, Ser. No. 340,641
20 Claims. (Cl. 73—23.1)

11. A method for analyzing a mixture of fluid components, at least one of which is selectively sorbed by contact with a solid sorbent and at least one other component is relatively less sorbed by the sorbent, which comprises pretreating a mass of said sorbent by contact with said selectively sorbed component until the sorbent is substantially saturated with respect to the selectively sorbed component; passing a sample of said mixture together with a carrier gas stream through a separation zone containing the pretreated sorbent; continuously eluting selectively sorbed component and discontinuously eluting less sorbed component from said zone; passing the effluent from said zone first through a measuring cell and then after a predetermined time delay to a reference cell to develop measuring and reference signals each responsive to concentration of selectively sorbed component alone when less

sorbed component is absent from the respective cell and to total concentration of selectively sorbed component and less sorbed component when the latter is present in

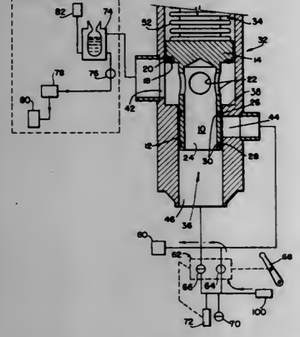


the respective cell, said time delay being of sufficient duration that the reference and measuring signals corresponding to less sorbed component are displaced in time.

3,345,860
VACUUM SYSTEM INLET VALVE

Walton E. Briggs, Lynnfield, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Feb. 16, 1965, Ser. No. 433,093
8 Claims. (Cl. 73—40)



6. In vacuum apparatus, the combination of means for providing a rough vacuum connected to a volume to be evacuated through a first vacuum line, means for producing a fine vacuum connected to said volume through a second vacuum line, means for selectively controlling communication from said volume through said first and second lines, and inlet valve apparatus for controlling gas flow in said second vacuum line, inlet valve apparatus comprising,

(a) a hollow valving member which has an axially extending wall and a lateral shoulder, with first vacuum seal means extending from said shoulder,

(b) first and second spaced opening means along the wall of the hollow valving member providing access to its interior and second vacuum seal means mounted on the wall,

(c) a valve body providing a plenum space with a seat for said lateral shoulder and said first vacuum seal means and providing a tunnel communicating with said plenum, the tunnel accommodating the valving member so that a narrow passage is formed therebetween, which passage is sealed by said second vacuum seal means,

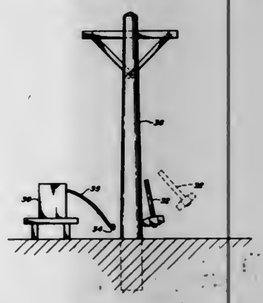
(d) a first body port connecting said plenum to the means for producing fine vacuum, a second body port connecting the tunnel to a bypass extension of the first vacuum line and a third port connected to said tunnel and also connected to the system to be evacuated by said first line,

(e) means for actuating the valving member to move within the tunnel and plenum.

3,345,861
ACOUSTICAL TESTING METHOD AND APPARATUS

Charles A. Heath, 67799 Forest, Richmond, Mich. 48062

Continuation of application Ser. No. 372,203, June 3, 1964. This application Feb. 24, 1967, Ser. No. 618,546
2 Claims. (Cl. 73—67.2)



2. In a method for testing an elongated wood, nonhomogeneous utility pole, which is in a position with one end mounted rigidly in the ground, the steps comprising:

(a) applying an impact on one surface of said pole at the ground level to generate acoustical energy by a a shock that is dissipated in a broad band of frequencies;

(b) receiving the acoustical energy transmitted transversely through said pole;

(c) producing a visible image as a function of frequency representative of the transmitted energy; and,

(d) comparing said image with an image produced by employing the previous steps on other known poles of the same type wood.

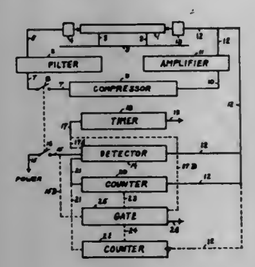
3,345,862
RESONANCE VIBRATION APPARATUS FOR TESTING ARTICLES

Robert G. Rowe, Niagara Falls, N.Y. (P.O. Box 112, Grand Island, N.Y. 14072)

Filed Jan. 21, 1964, Ser. No. 339,183
8 Claims. (Cl. 73—67.2)

1. An apparatus for testing articles comprising means to self-excite oscillations in said articles at natural frequencies of resonance vibration thereof, means to detect oscillations of said articles, means to signal passage of a predetermined time, means for actuating said self-exciting means and said time-signalling means, means to measure the frequency of oscillation of said articles, said frequency-measuring means and said time-signalling means being connected to detector, and oscillation-detecting means disconnecting said time-signalling means and connecting said frequency-measuring means provided said oscillations exceed a predetermined amplitude.

8. An apparatus responsive to electric signal frequencies comprising first and second predetermined digital counting channels, said channels each including inputs and outputs, a series of decade counters, means to time the counting period and means to preset different predetermined frequencies above which respective channels produce an output signal, a gate accommodating three input signals and having two output terminals, a source of power connected to a first input of said gate, said gate connecting the source of power to one of said two output terminals upon pres-

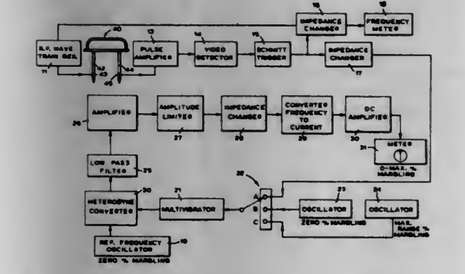


ence of a signal at only one of the second and third of said gate inputs and connecting the source of power to the other of said two output terminals upon simultaneous presence or absence of signals at the second and third of said gate inputs, said counting channel inputs both connected to a source of said electric signal frequencies and said outputs thereof each connected respectively to said second and third of said gate inputs whereby power at said first output terminal of said gate corresponds to said frequencies falling between said high and low frequency limits and power at said second output terminal of said gate corresponds to said frequencies falling outside said limits.

3,345,863
METHOD AND APPARATUS FOR DETERMINING THE MARBLING IN THE MUSCLE OF A LIVE ANIMAL BY ULTRASONICS

Elliott A. Henry, Newtown, and Henry G. Biagini, Stamford, Conn., assignors, by mesne assignments, to Branson Instruments Incorporated, Stamford, Conn., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,106
7 Claims. (Cl. 73—67.5)



1. A method for determining the percentage of marbling in a muscle of a live animal comprising the steps of:

inserting a pair of fixedly spaced probes into the muscle of the live animal;

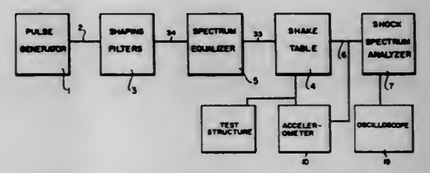
propagating pulses of sonic energy through the muscle across the space spanned by said probes, and

indicating a value commensurate with the transit time of said pulses across said space, whereby said value is a measure of the marbling.

3,345,864
TRANSIENT SYNTHESIS METHOD AND APPARATUS

Giles W. Painter, Granada Hills, and Hugh J. Parry, North Hollywood, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed July 14, 1964, Ser. No. 382,493
8 Claims. (Cl. 73—71.6)



2. The method of producing an electrical oscillatory transient having a given spectrum envelope, comprising the steps of:

generating a pulse which is sufficiently short to have a Fourier spectrum which is substantially flat over a given range of frequencies;

applying said pulse simultaneously to a plurality of filters, each of which has a successively wider bandwidth to cause said filters to ring;

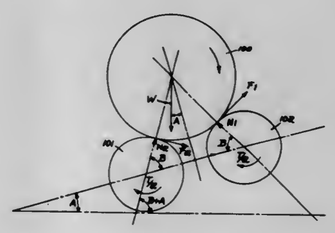
combining the outputs of said plurality of filters to provide a complex waveform; and

sequentially adjusting the amplitude of the output of each of said filters, beginning with the filter having the narrowest bandwidth, to modify said complex waveform and thereby produce said given spectrum envelope.

3,345,865
VEHICLE TESTING DEVICE

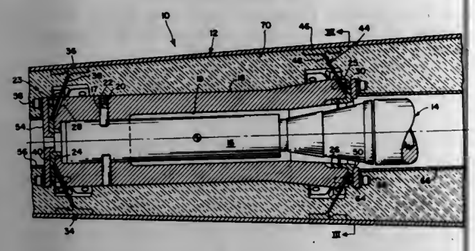
Robert F. Ostrander, New Haven, Conn., assignor to Ostradyne, Inc., New Haven, Conn., a corporation of Connecticut

Filed Aug. 11, 1966, Ser. No. 584,287
15 Claims. (Cl. 73—117)



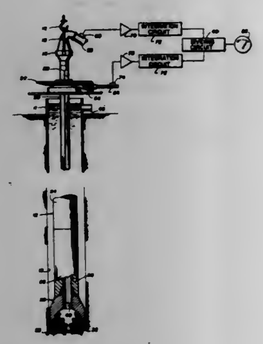
13. A dynamometer testing system for determining the power output of vehicles having ground engaging drive members, comprising first and second rolls, means for rotatably supporting said first roll, means for rotatably supporting said second roll at an elevation above said first roll position, said first and second rolls positioned to engage one of the drive members in torque-transmitting relationship and be driven thereby, and torque-absorbing means coupled to each of the rolls.

3,345,866
MULTILEGGED SUPPORT SYSTEM
Weymouth B. Crumpler, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 29, 1964, Ser. No. 422,097
10 Claims. (Cl. 73—147)



1. A support system for wind tunnel test models and the like comprising: sting means; balance means supported by said sting means; support means carried by said balance means having the lengthwise axis thereof positioned essentially normal to the line of absolute dimensional change motion of a test model structure under test conditions; and a test model fixed to said support means.

3,345,867
METHOD AND APPARATUS FOR MEASURING ROCK BIT WEAR WHILE DRILLING
Jan J. Arps, Dallas, Tex., assignor to Arps Corporation, Dallas, Tex., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,125
10 Claims. (Cl. 73—151)



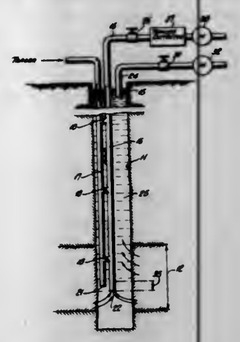
1. The method for determining wear of the rotary cutting cone of a rotary bit cutting a borehole which comprises:

detecting the rate of rotation of said bit,

detecting the rate of rotation of said cone during the cutting operation independently of the rate of rotation of the bit, transmitting a signal representative of said rate to a comparing station, and

comparing at said station the rate of rotation of the bit and the rate of rotation of the cone to determine the diameter of the cone, and comparing the determined diameter with a reference diameter.

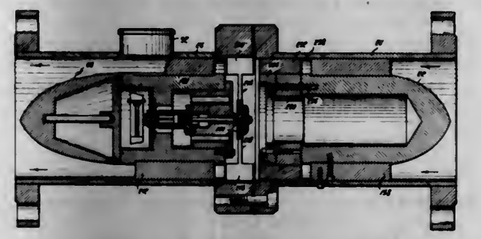
3,345,868
PRODUCTIVITY LOGGING APPARATUS
Karl C. ten Brink, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed May 22, 1964, Ser. No. 372,135
4 Claims. (Cl. 73—155)



1. In a gas producing well having a producing zone therein with a limited vertical extent, the combination comprising a vertically movable conduit extending down hole with the open end thereof located vertically between the extremities of said producing zone, a pipe fixedly attached to the exterior of said conduit for vertical movement therewith at all times and extending down beside the conduit, said pipe having an open end located adjacent to but displaced a relatively short vertical distance from said conduit open end, means for sealing said well at the top thereof around said conduit and pipe, means for connecting the annulus of the well around said conduit for passing one stream of said gas therethrough, another stream of said gas flowing through said conduit, means connected to one of said conduit and said annulus connecting means and located at the surface adjacent to said well for detecting the presence of a tracer material that is introduced down hole through said pipe, and means for regulating the relative rate of flow of said two streams of gas in order that the location of the interface between said two streams may be shifted until the presence of tracer material is no longer detected.

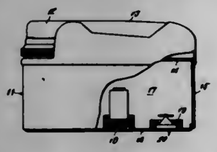
3,345,869
FLUID FLOW METER
Henning Karlby and Winston F. Z. Lee, Pittsburgh, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Feb. 26, 1959, Ser. No. 795,755, now Patent No. 3,248,945, dated May 3, 1966. Divided and this application Nov. 24, 1965, Ser. No. 558,151
6 Claims. (Cl. 73—231)

1. An axial flow impulse turbine meter comprising a housing, a bladed turbine metering rotor rotatably mounted in said housing for driving a registering mechanism, means for guiding motive fluid through said housing in a solid annular, axially flowing stream extending parallel to the axis of rotation of said rotor, said rotor having a plurality of zero blade angle radial blades extending in the path of said annular stream and being contained in planes which extend radially from the rotor rotational axis, and a circumferential row of equiangularly spaced apart fixed blades mounted in said housing in the path of said stream and at a predetermined distance upstream from said rotor blades, said fixed blades having outlet portions extending at an acute angle with respect to the rotor rotational axis to provide the axially flowing stream entering said rotor with a tangential velocity component for driving said rotor, said stream leaving said fixed blades and entering said rotor being oriented relative to said zero angle blades to effect the translation of substantially the



entire magnitude of the fluid frictional force acting on said rotor into an axial thrust.

3,345,870
FUEL LEVEL INDICATOR
Masajiro Yoshinaga, Tokyo, Japan, assignor to Yoshinaga Prince Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 24, 1964, Ser. No. 413,452
Claims priority, application Japan, Nov. 26, 1963, 38/88,404
2 Claims. (Cl. 73—327)



1. In combination, a vessel adapted to contain fuel, an opening in the exterior of said vessel for receiving an optical fuel level indicator therein, such indicator comprising:

a transparent member adapted to refract light rays impinging thereupon, said member including:

an enlarged annular portion, and

a body portion having a plurality of inclined peripheral surfaces extending inwardly from said annular portion and converging at a tip segment, said body portion forming a hexagon when viewed in a plane parallel to said annular portion,

mounting means for securing said transparent member in operative position within the opening in said vessel, said mounting means including:

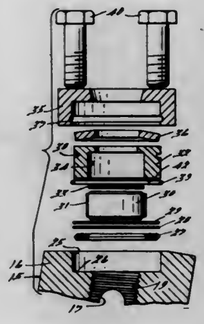
socket means for engaging the annular portion of said transparent member, and

a housing extending inwardly from said socket means, said housing having apertures to permit fuel to pass therethrough, and

a full colored indicator plate secured to a wall of said housing at a point spaced from the tip of said transparent member, whereby the amount of color reflected from the indicator plate is directly related to the level of fuel contained within the vessel.

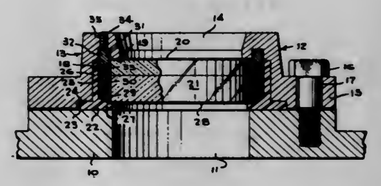
3,345,871
LIQUID LEVEL GAUGE
Christo Andrea, North Branch, N.J., assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Continuation of application Ser. No. 237,882, Nov. 15, 1962. This application July 24, 1964, Ser. No. 387,266
4 Claims. (Cl. 73—331)

1. In a liquid level gauge having a body provided with a water chamber, an observation port extending through the body from the exterior thereof and intersecting said water chamber, an observation window element for closing said port, a sealing gasket surrounding said port and having a radially projecting portion of greater diameter than the window element, such projecting portion overlying a portion of the body radially beyond the margins of said window element, a cover plate for securing said window element in closing position over said port, and means for rigidly securing the cover plate to the body, that improvement which comprises an axially rigid thrust



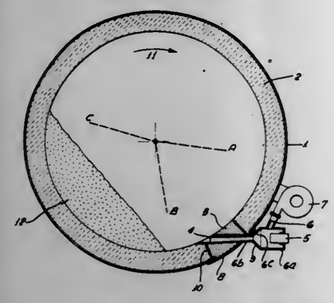
frame surrounding the periphery of the window element and interposed between said cover plate and said projecting portion of the gasket, said thrust frame being of an axial depth such that its end toward the water chamber is substantially coplanar with the window element and being axially movable independently of the cover plate, and a spring member interposed between the cover plate and the thrust frame and compressively loaded to urge the thrust frame against the gasket and the gasket against the body independently of the window element.

3,345,872
SIGHT GLASS ASSEMBLY
Charles E. Meginnis, 429½ Nancy St., Charleston, W. Va. 25311
Filed Apr. 29, 1964, Ser. No. 363,389
8 Claims. (Cl. 73—334)



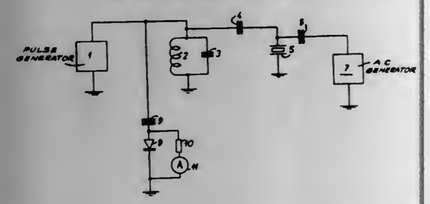
1. A sight glass assembly comprising a housing structure having a circular opening therethrough, said opening having an enlarged section providing an annular shoulder, a circular sight glass mounted on said annular shoulder, annular sealing means consisting of a resilient material disposed about the periphery of said sight glass, an annular insert consisting of a corrosive resistant material interposed between said sealing means and said housing structure including an inwardly extending annular flange portion interposed between said sealing means and said housing structure, and said opening and means engageable with said sealing means for compressing said sealing means against said sight glass and said insert.

3,345,873
ROTARY KILN TEMPERATURE MEASUREMENT
Otto G. Lellep, 3990 4th St., Riverside, Calif. 92501
Filed Mar. 23, 1965, Ser. No. 442,128
Claims priority, application Germany, June 5, 1964, P 34,424
14 Claims. (Cl. 73—351)



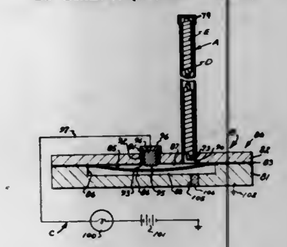
1. The combination comprising a rotary kiln through which a gravitating material passes while being heated to elevated temperature, means forming a passage through the wall of the kiln, the pasasge located to periodically sweep directly under said material to be exposed to penetration by the material, a pyrometer mounted to the outside of the kiln for rotation therewith and aligned with said passage to receive radiation from the kiln interior through the passage, and means operating to project an air stream through said passage into the kiln and with sufficient air velocity in said passage to displace toward the kiln interior the material tending to enter said passage as the passage sweeps under the material whereby the passage is maintained substantially free of said material throughout passage rotation.

3,345,874
CIRCUIT ARRANGEMENT FOR ACCURATE MEASUREMENT OF TEMPERATURES OR SMALL TEMPERATURE CHANGES
Bohdan Carniol, Prague, and Zdeněk Malý, Kolovraty, Czechoslovakia, assignors to Tesla, národní podnik, Prague, Czechoslovakia
Filed Jan. 13, 1965, Ser. No. 425,300
Claims priority, application Czechoslovakia, Jan. 17, 1964, 293/64
8 Claims. (Cl. 73—362)



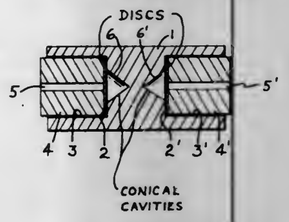
1. A measuring arrangement comprising, in combination:
(a) a tuned LC circuit having a resonant frequency f_o;
(b) pulse generating means for generating pulses at a pulse repetition frequency f_{imp}, f_{imp} being sufficiently smaller than f_o so that a plurality of cycles of oscillations at frequency f_o be included in the interval between any two successive pulses at repetition frequency f_{imp}, said pulse generating means being connected to said circuit for initiating oscillations in the same;
(c) a ferroelectric element, said element being a capacitor using a ferroelectric dielectric;
(d) first conductive means connecting said element to said circuit for damping said oscillations in response to the power loss in said element;
(e) a measuring instrument; and
(f) second conductive means connecting said measuring instrument to said circuit for indication of a value by the instrument in response to the amplitude of the oscillations in said circuit.

3,345,875
HEAT DETECTING SENSOR
John E. Lindberg, Jr., 1211 Upper Happy Valley Road, Lafayette, Calif. 94549
Filed Nov. 1, 1965, Ser. No. 518,498
13 Claims. (Cl. 73—368.3)



13. A temperature-sensing transducer comprising a filamentary tube containing a gas and a solid material disposed along substantially its full length that, when heated, takes in said gas in multiples of its own volume, means providing continuous passage for said gas along said full length, and a pressure switch connected to said tube.

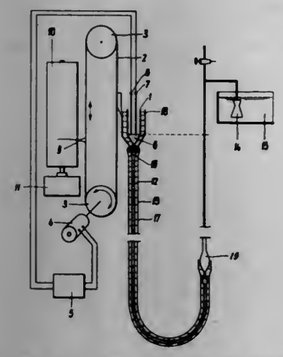
3,345,876
HIGH PRESSURE INDICATOR
Nathan D. Smith, Darlington, Md. 21034
Filed Sept. 3, 1965, Ser. No. 485,132
4 Claims. (Cl. 73—388)



1. Pressure indicating apparatus comprising a body member, a bore in said body member, a recess at the end of said bore, and a disc member in said bore and covering said recess, said disc member comprising material which is permanently deformed when subjected to pressure, and securing means in said bore admitting pressure to said disc and securing said disc in place adjacent to said recess.

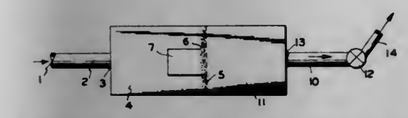
3,345,877
APPARATUS FOR MEASURING SMALL VARIATIONS IN GAS PRESSURE
Otto Koelle, Melsungen, Germany, assignor to B. Braun, Melsungen, Germany
Filed June 17, 1965, Ser. No. 464,609
Claims priority, application Germany, June 19, 1964, B 77,322
10 Claims. (Cl. 73—401)

1. Apparatus for measuring small variations in gas pressure, comprising
pressure measuring means including a measuring space for accommodating gas the pressure variations of which are to be measured;
a first flexible semi-permeable tube extending at one end from said pressure measuring space;
sealing liquid containing salt additives in said first flexible semi-permeable tube for sealing said pressure measuring space;



a second flexible tube surrounding said first flexible tube;
replacement liquid containing less salt than said sealing liquid in said second flexible semi-permeable tube; and
control means for maintaining the level of said sealing liquid at the other end of said first flexible semi-permeable tube at a determined level.

3,345,878
CARD ASSEMBLY SAMPLER
James N. Grant, Edith A. Honold, Frederick R. Andrews, and Roger S. Brown, New Orleans, and Charles L. Shepard, Chalmette, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Dec. 2, 1964, Ser. No. 415,552
5 Claims. (Cl. 73—421)



1. An apparatus for collecting samples of partially disoriented staple fibers from rapidly moving machinery which comprises:
(a) a compartmentized container having a forward compartment and a rear compartment, said compartments being separated by a perforated membrane;
(b) means for securing the perforated membrane between the two compartments;
(c) the wall of said forward compartment having two external openings, the first opening consisting of a transparent window-door combination situated adjacent to and anterior to the perforated membrane, the second opening opposite the perforated membrane, said second opening including means for the attachment of a first flexible conduit thereto;
(d) a first flexible conduit attached to said means, the anterior end of said first flexible conduit containing a demountable orifice, the inner walls of said demountable orifice, said first flexible conduit and said second-opening attachment forming a smooth, continuous surface;
(e) the wall of said rear compartment having an external opening situated opposite the perforated membrane and including means for the attachment of a second flexible conduit;
(f) a second flexible conduit attached to said means, the posterior end of said second flexible conduit including means for attachment to a source of suction air, whereby an air stream may be passed from the orifice into and through the perforated membrane.

3,345,879
APPARATUS FOR EXTRACTING SAMPLES FROM THE BED OF A BODY OF WATER
Noriyuki Nasu, Tokyo, Hiroshi Yamazaki, Yokohama, and Hiroshi Shinozaki and Tadasu Yonekura, Oita-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, and Tsurumi-Seiki Kosakusho Co., Ltd., Yokohama, Japan, both corporations of Japan
Filed Sept. 23, 1964, Ser. No. 398,679
Claims priority, application Japan, Sept. 27, 1963, 38/50,816
3 Claims. (Cl. 73—425.2)



1. A sample recovering device comprising a core receiving tube, means for driving said core tube including a rocket attached directly to said tube at the top thereof and concentric therewith, said rocket having nozzles facing generally upwardly so that when the rocker is ignited the tube is driven downwardly and enters a body from which a sample is to be removed, said nozzles being inclined with respect to the axis of the tube to produce rotation of the tube when it is driven downwardly, means for igniting said rocket, support means slidably receiving the core tube at the lower end thereof and engaging the rocket after the same has been ignited and the core tube has been lowered, and means for recovering the entire sampler assembly.

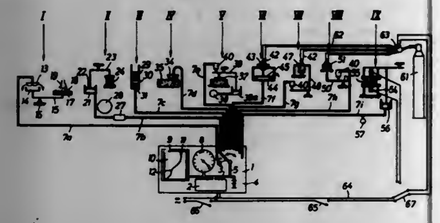
3,345,880
APPARATUS FOR MEASUREMENT OF PHYSICAL CHARACTERISTICS OF SOLID BODIES
Dietmar Boenisch, Haselsteig 11, Aachen, Germany
Filed June 3, 1964, Ser. No. 372,418
Claims priority, application Germany, June 7, 1963, B 72,203
1 Claim. (Cl. 73—432)

Testing apparatus for measurement of physical characteristics of refractory materials, particularly molding sands, comprising
a continuously operable electrically driven air pump having an air discharge pneumatic line, a manometer on said line, an air pressure recorder responsive to air pressure having a continual paper-advancing electric drive and connected on said line to record the air pressure therein, a plurality of air-line connectors, and an air-switching means for selective supply of air

from said pump through said pneumatic line to a selected one of said connectors;

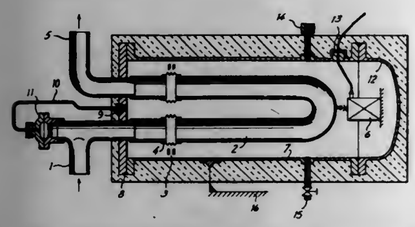
said recorder, pump, manometer, switching means and connectors comprising a testing control unit; and

a plurality of diverse molding-sand specimen testing devices each for its operation utilizing a continuously flowing stream of air and connected to a respective air-line connector for a pressurized air supply selectably from said pneumatic line and affecting the air pressure in said line responsively for a specimen characteristic being therein tested whereby the recorder provides a curve for the operation of each said device;



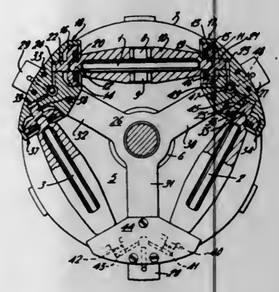
at least one of said testing devices additionally to utilization of air from said pneumatic line further having means for heating a specimen being tested therein; and switch means included in said control unit for starting the recorder drive simultaneously with said heating means.

3,345,881
METHOD AND MEANS FOR MEASURING FLUID DENSITY
Ioan Nicolau and Leon Dogaru, Campina, Constantin Evgheníde, Bucharest, Arion Ionascut and Nicolae Tihon, Campina, and Valeriu Motorolu, Comuna Poiana, Rumania, assignors to Ministerul Petrolului, Bucharest, Rumania
Filed Aug. 24, 1964, Ser. No. 391,680
Claims priority, application Rumania, Aug. 22, 1963, 46,829
7 Claims. (Cl. 73—434)



1. An apparatus of the character described for automatically measuring fluid density, comprising in combination, sealed pressure vessel means for storing a first reference fluid therein; detector means operatively mounted in said sealed pressure vessel means so as to float therein, said floating detector means having an inlet and an outlet and being adapted to have a second fluid, the fluid density of which is to be measured by said apparatus, continuously flow therethrough; an electric weight transducer mounted in said sealed pressure vessel means and operatively connected to said floating detector means, and pressure equalization means operatively connecting said floating detector means and said sealed pressure vessel means for equalizing the pressures of said first reference fluid and said second fluid, whereby when said electric weight transducer measures the buoyancy of said floating detector means in said sealed pressure vessel means the fluid density of said second fluid is accordingly determined.

3,345,882
TORIC RACE TRANSMISSION UNITS
John Noel Armstrong, Caterham, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Apr. 28, 1965, Ser. No. 451,421
Claims priority, application Great Britain, May 1, 1964, 18,306/64
10 Claims. (Cl. 74—200)

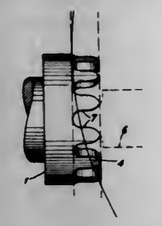


1. A transmission unit of the type in which rollers provide a driving connection between facing toroidal surfaces of two discs mounted for rotation about a common main axis, namely an input disc and an output disc and in which the rollers are mounted with freedom of movement of a first character permitting the diameters of the discs, with which the rollers make driving contact, to be varied so as to vary the transmission ratio of the transmission unit and with freedom of motion also of a second character whereby the rotational axes of the rollers depart from the stable equilibrium attitude where the said roller axes intersect the main axis, so that the rollers steer themselves from one ratio attitude to another ratio attitude and with viscous damping means comprising a first element coupled to one roller and a second element coupled to another roller, the first element and the second element cooperating to define boundaries of a fluid-filled space and to change the volume of that space when the roller coupled to the first element executes a motion of the second character in the absence of a motion of the second character, in the same sense and to the same degree, on the part of the roller coupled to the second element but to leave the volume of the fluid-filled space unaltered when both of the said rollers execute motions of the second character which are the same in sense and degree, the fluid-filled space being provided with a restrictor orifice through which fluid is forced at least when the fluid-filled space is reduced in volume.

3,345,883
GEARING AND PROCESS AND APPARATUS FOR MANUFACTURING THE SAME
Paul Leo Glocker, Jurastrasse 74, Grenchen, Solothurn, Switzerland
Filed Aug. 20, 1964, Ser. No. 390,932
Claims priority, application Switzerland, Aug. 23, 1963, 10,395/63, 10,396/63
9 Claims. (Cl. 74—462)

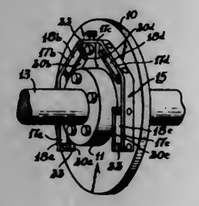
1. A first gear adapted to mesh with a second gear whose axis is at an angle to the axis of said first gear, said first gear having teeth and the flanks of each tooth of said first gear comprise two active surface portions which form

each a part of a convex surface for revolution, said active surface portions of each tooth intersecting each other



along an edge line located in a plane which contains the axis of said first gear, and said line extending obliquely inclined with respect to said first gear axis.

3,345,884
GRINDING DEVICE
Ronald A. Kuderko, North Chicago, Ill., assignor to Ammco Tools, Inc., North Chicago, Ill., a corporation of Illinois
Filed Sept. 18, 1964, Ser. No. 397,431
9 Claims. (Cl. 74—574)



9. A device for dampening vibration in a rotatable member formed of magnetic material, comprising

a rigid frame member,

at least three magnet means rigidly and fixedly secured to said frame member in spaced-apart and non-aligned relationship,

said magnet means each having at least one planar surface defining a magnetic pole, and

said magnet means being arranged on said frame member with said planar surfaces lying in a common plane for simultaneous engagement with said rotatable member,

whereby said device may be attached to said rotatable member solely by magnetic attraction between said magnet means and said rotatable member.

3,345,885
TRANSMISSION APPARATUS
Carl A. Tschanz, 9954 Springboro Pike, Miamisburg, Ohio 45342
Filed Feb. 3, 1965, Ser. No. 430,030
3 Claims. (Cl. 74—687)

1. Transmission apparatus comprising:

a first rotary shaft,

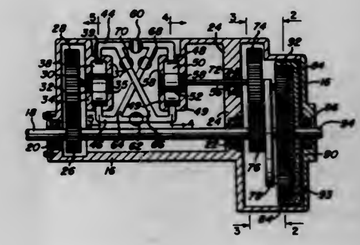
a second rotary shaft,

rotary fluid pump means,

means connecting the first rotary shaft to the rotary fluid pump means for rotary operation of the rotary fluid pump means at a constant rate with respect to the rate of rotation of the first rotary shaft,

rotary fluid motor means,

conduit means connecting the rotary fluid pump means to the rotary fluid motor means for operation of the rotary fluid motor means with operation of the rotary fluid pump means, the conduit means including direct connecting conduit means between the rotary fluid pump means and the rotary fluid motor means and independently operable valve means therein for adjusting the rate of operation of the rotary fluid motor means in the forward direction of rotation with respect to the direction of rotation of the rotary fluid pump means, the conduit means also including interconnecting conduit means between the direct connecting conduit means and independently adjustable valve means therein for adjusting the rate of operation of the rotary fluid motor means in the reverse direction of rotation with respect to the direction of rotation of the rotary fluid pump means,



first gear means, the first gear means being operably connected to the first rotary shaft for rotation therewith,

gear support means rotatably disposed adjacent the first gear means,

means connecting the rotary fluid motor means to the gear support means for rotation thereof,

second gear means carried by the gear support means and in meshed relationship with the first gear means,

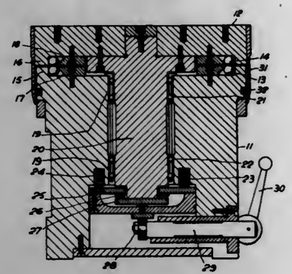
annular gear means operably connected to the second rotary shaft for rotation therewith,

the second gear means being in meshed relationship with the annular gear means, the second rotary shaft thus being operable in either direction of rotative movement at an infinite number of rates between zero speed and maximum speed.

3,345,886
INDEXING DEVICES
William Orpin Jennings and Gilbert Robinson, Teddington, England, William Frederick Atkins, deceased, late of Teddington, England, by Doris I. Atkins, administratrix, Bexhill-on-Sea, England, and Geoffrey Nelson Partridge, Teddington, England, assignors to National Research Development Corporation, London, England
Filed May 25, 1965, Ser. No. 458,788
Claims priority, application Great Britain, May 27, 1964, 21,983/64
4 Claims. (Cl. 74—826)

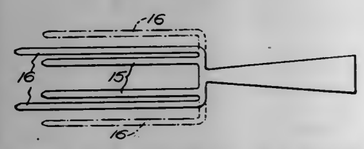
1. An indexing device comprising first and second relatively displaceable members each carrying at least one row of contiguous but discrete index members received in an annular groove and presenting a uniform series of part spherical surfaces facing outwardly of such groove, the grooves in the two displaceable members being formed in confronting surfaces of these members and in alignment so that the spherical surfaces of the two rows of index members intermesh, the first said displaceable member including a shaft rigidly connected thereto and extending through a bore in the second said displaceable member, the shaft and bore being coaxial with said annular grooves and extending to one side of the planes containing the annular grooves, a flange member connected

to the end of the shaft remote from the said planes of the grooves, spring means acting through bearings between the second displaceable member and the flange member for urging the two grooves towards each other, and a release means including a control shaft and an eccentrically mounted element on said control shaft in op-



erative engagement with the side of the flange member opposite from that side on which the said spring means acts, whereby rotation of the control shaft causes the eccentrically mounted element to oppose the said spring means to allow limited separation of the two displaceable members relative to each other.

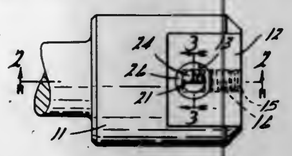
3,345,887
FORKS FOR AGRICULTURAL, HORTICULTURAL AND LIKE PURPOSES
Edmund Harry Mills, Sheffield, Yorkshire, England, assignor to William Mills & Co. (Sheffield) Limited, a company of Great Britain and Northern Ireland
Filed Dec. 28, 1964, Ser. No. 421,262
Claims priority, application Great Britain, Dec. 31, 1963, 51,262/63
3 Claims. (Cl. 76—111)



1. A method of forming prongs of a multi-pronged fork for agricultural and horticultural purposes consisting essentially of partially blanking a stainless steel sheet so as to leave prongs at least in pairs in integral mass formations, heating said fork to working temperature, rolling said formations to produce the desired dimensional taper, heating said formations to working temperature, finally blanking said formations to form individual prongs having final desired dimensions from each of said formations, each of said formations consists of the combined width of the pair of prongs and a narrow strip between them, said formations constituting heat retaining masses whereby intermediate rolling operations can be performed without reheating.

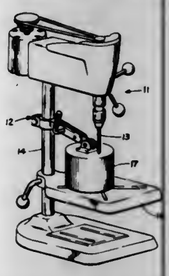
3,345,888
CUTTING TOOL
John E. Gustkey, Detroit, Mich., assignor to Cogsdill Tool Products, Inc.
Filed July 21, 1965, Ser. No. 473,641
6 Claims. (Cl. 77—58)

1. In a cutting tool assembly, a cartridge having a body containing a square aperture and a forward cylindrical aperture in continuation thereof, a tool bit having a body containing a square section and a forward cylindrical portion supporting a cutting nib, the inner end of the cylindrical portion of the body engaging the corners of the ends of the square section for limiting the movement of the tool bit out of the cartridge body, a threaded aperture in the rear portion of the cartridge body, a spring in



said aperture engaging the end of the tool bit, and a screw in said aperture for tensioning the spring to regulate the force on the cutting nib.

3,345,889
SLIDE AND GRIP QUICK-ACTION CAM-LOCK CLAMP
Fred W. Yunt, Torrance, and H. Keats Baker, Fullerton, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed May 18, 1965, Ser. No. 456,661
3 Claims. (Cl. 77—63)

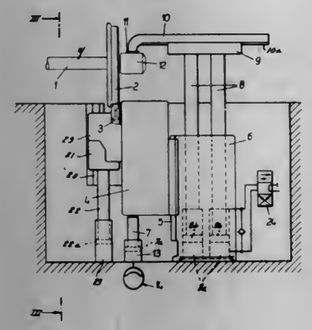


1. A clamping device usable in connection with a machine tool having a vertically disposed column member and a horizontally disposed work table, the combination comprising: an elongated member having inboard and outboard end portions; said inboard end portion defining a passageway adapted to be slidably mounted on said column member with the latter received in said passageway and said outboard end portion extending generally normal to said column member; finger means pivotally mounted in and extending beyond said outboard end portion; cam means mounted in said member and finger means whereby the latter may be urged either in upward or downward directions with respect to said member in response to action of said cam means; slot means formed in said finger means and having a plurality of depressions formed therein; pin means mounted in said member and passing through said slot means; and spring means mounted in said slot means functioning to allow said pin means to be positioned in any one of said plurality of depressions whereby the overall length of said member and finger means may be increased or decreased.

3,345,890
MACHINE FOR TREATING WHEELS OF RAILROAD VEHICLES
Theodor Dombrowski, Erkelenz, Rhineland, Germany, assignor to Wilhelm Hegenscheidt Kommanditgesellschaft, Erkelenz, Rhineland, Germany
Filed Feb. 7, 1966, Ser. No. 525,527
Claims priority, application Germany, Feb. 12, 1965, H 55,142
14 Claims. (Cl. 82—8)

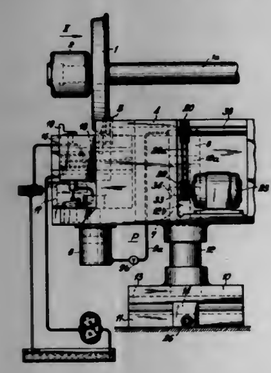
1. A pit-mounted machine for treating the wheels of wheel assemblies on railroad vehicles, comprising a pair of supports, one for each wheel of a wheel assembly;

two sets of driving rollers each mounted on one of said supports; first displacing means for moving said supports up and down so that the rollers may engage the respective wheels from below when the supports are moved upwardly; a pair of ground-supported clamping units, one



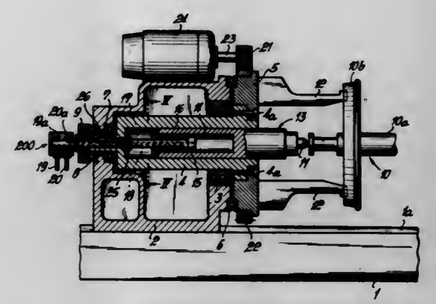
for each of said wheels; and second displacing means for moving said clamping units up and down so that, while moving downwardly, each of said units may engage the wheel assembly in the region of the respective wheel to press the wheels against the corresponding sets of rollers.

3,345,891
MACHINE FOR TREATING WHEELS OF RAILROAD VEHICLES
Theodor Dombrowski, Erkelenz, Germany, assignor to Wilhelm Hegenscheidt Kommanditgesellschaft, Erkelenz, Rhineland, Germany
Filed Feb. 23, 1966, Ser. No. 529,336
Claims priority, application Germany, Mar. 1, 1965, H 55,342
14 Claims. (Cl. 82—8)



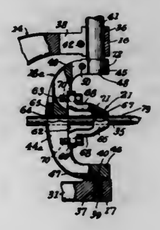
1. In a pit-mounted machine for treating multiple-wear wheels of wheel assemblies in railroad vehicles, a housing; two sets of driving rollers mounted on said housing, each of said rollers being rotatable about a horizontal axis and each of said sets being arranged to drive one wheel of a wheel assembly; drive means supported by said housing and operatively connected with said driving rollers; and supporting means for supporting said housing for rotation about a substantially vertical axis.

3,345,892
WHEEL TURNING LATHE
Theodor Dombrowski, Erkelenz, Rhineland, Germany, assignor to Wilhelm Hegenscheidt Kommanditgesellschaft, Erkelenz, Rhineland, Germany
Filed Feb. 21, 1967, Ser. No. 617,605
Claims priority, application Germany, Mar. 5, 1966, H 58,712
14 Claims (Cl. 82—8)



1. In a heavy-duty lathe, particularly in a wheel turning lathe, the combination comprising a support; a face plate rotatable with reference to said support about a fixed axis and having a peripheral portion remote from said axis; a thrust bearing interposed between said face plate and said support adjacent to said peripheral portion; and biasing means for urging said face plate against said thrust bearing.

3,345,893
RADII CUTTER
Warren B. Holdridge, Los Angeles, Calif. (116 W. 154th St., Gardena, Calif. 90247)
Filed June 14, 1965, Ser. No. 463,780
1 Claim. (Cl. 82—12)

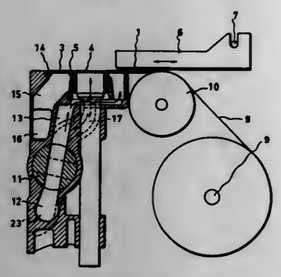


In a radii cutter having a member with a transverse hole through which a bit is adapted to extend and manually movable about an axis so the cutting end of the bit describes an arcuate cutting path according to the distance of said end from said axis,

(a) a support member affixed to the bit mounting member and having a hole aligned with the latter member and through which the bit is adapted to extend, and

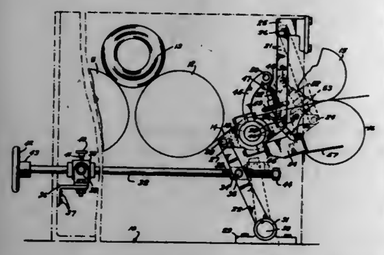
(b) two set screws to replaceably affix said bit, one set screw being carried by the bit mounting member and bisecting the hole therein and adapted to engage one end of the bit, and the other set screw being carried by the support member and bisecting the hole therein and adapted to engage a longitudinally spaced portion of the bit.

3,345,894
DEVICE IN CIGAR MACHINES FOR REMOVING TOBACCO WASTE
Arne Carlson, Norrviken, and Ivar O. Sandberg, Bromma, Sweden, assignors to Arenco Aktiebolag, Stockholm-Nallingby, Sweden
Filed June 10, 1965, Ser. No. 462,888
Claims priority, application Sweden, July 13, 1964, 8,536/64
5 Claims. (Cl. 83—100)



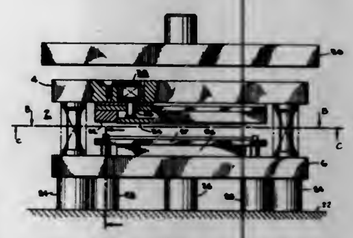
1. A device in cigar machines for removing tobacco waste occurring at the end portion of a strip of tobacco web material when cutting wrappers or binders from said strip, comprising a cutting bed, a cutting die in said cutting bed, a reciprocating strip carrier above said cutting bed adapted to feed the end portion of said strip to said cutting die after each cutting, a pivotable plate adjacent an edge of said cutting die, means for pivoting said plate, a stationary suction chamber under said plate, a suction pipe connected to said chamber, said plate substantially closing said chamber when in a noninclined position lying substantially in the same plane as said cutting bed and when in inclined position forms, with its edge facing said cutting die, a slot through which portions of the tobacco strip projecting over the cutting die during the feeding motion of the strip are drawn by suction into said suction chamber from which they are automatically removed, subsequent to the cutting of said strip, through said suction pipe.

3,345,895
SPREADER ROLL ADJUSTMENT MECHANISM
Henry R. Patterson, Jr., West Chester, Pa., assignor to Beloit Eastern Corporation, Downington, Pa., a corporation of Delaware
Filed Nov. 3, 1965, Ser. No. 506,155
15 Claims. (Cl. 83—105)



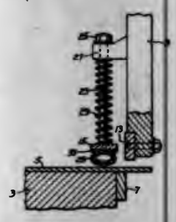
1. A spreader roll adjustment mechanism comprising:
a roll bracket for supporting a spreader roll on a paper winding machine,
a support block fixedly positioned relative to an associated winding machine,
an adjustment arm extending from said support block to said roll bracket and being pivotally connected therebetween,
an adjustment rod connected to said roll bracket for varying the positioning thereof relative to an associated winding machine,
means for holding said roll bracket in any selectable position.

3,345,896
PUNCHING DIE SET
Edward D. Bennett, Union County, N.J., assignor to Minnie Punch & Die Company, Inc., Union County, N.J.
Filed Nov. 2, 1964, Ser. No. 408,003
9 Claims. (Cl. 83—128)



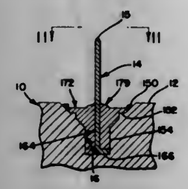
2. A punching die set for use on a base and to be actuated by a ram comprising a substantially flat magnesium punch plate, a substantially flat magnesium die plate, mounting means for mounting the punch plate and die plate in parallel for movement toward and away from each other the mounting means including interchangeable guide pins having annular slots around their periphery, preloaded springs mounted to tend to separate the punch and die plates and first guide pin retaining rings placed in the guide pin annular slots so as to secure the guide pins to the punch plate and second guide pin retaining rings placed in the guide pin annular slots so as to allow a portion of the guide pin to move through the die plate during the punching operation but to limit the return travel of the punch plate under the urging of the preloaded springs, to the normal open position of the die set whereby the guide pins maintain alignment between the punch and die plates when the die set is compressed between the ram and the base.

3,345,897
HOLD-DOWN MEANS FOR A SHEAR MACHINE OR THE LIKE
Eugene W. Pearson, Orinda, Calif., assignor to Pacific Press & Shear Corp., a corporation of Illinois
Filed June 8, 1964, Ser. No. 373,152
7 Claims. (Cl. 83—369)



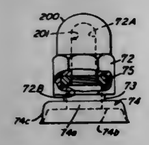
1. In a shear or like machine, having a tool carrying ram for performing an operation on work,
a work supporting table for holding work to be operated on,
a back-up member extending across said table, substantially parallel to but out of the plane of said ram,
a cushion strip,
means supporting said cushion strip along said back-up member,
and means for altering the distance between said cushion strip and said table to engage such work and resist lateral drag thereon as said tool carrying ram performs an operation on such work.

3,345,898
ROTARY KNIFE
Norman E. Dovey, 1922 Indiana Ave., Anderson, Ind. 46012
Original application July 31, 1962, Ser. No. 213,802. Divided and this application July 19, 1965, Ser. No. 487,346
3 Claims. (Cl. 83—663)



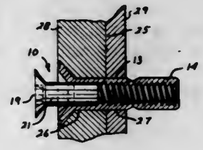
1. In the combination of a rotary knife support with an outer cylindrical surface, said knife support having a knife mounting groove defined by side walls spaced a given distance apart and a bottom wall extending between said side walls; and a thin rule knife formed from a single piece of sheet metal having a thickness substantially less than said distance, said knife being mounted in said groove and having an upstanding body portion, an upper cutting edge, and a lower support end, the improvement comprising: notches aixally spaced along and terminating at said lower support end of said knife; said notches defining sheet metal tabs spaced along said lower end of said knife; said tabs having terminal portions bent to extend transversely of said knife and form a plurality of spaced sheet metal lugs with outboard locating edges generally parallel to said cutting edge of said knife; and each of said locating edge abutting one of said side walls to locate said body portion in a selected position in said groove.

3,345,899
SYNTHETIC RESIN FASTENERS
Theodore E. Fiddler, 1200 Cedar Drive, Birmingham, Mich. 48009
Filed Nov. 4, 1964, Ser. No. 408,995
2 Claims. (Cl. 85—32)



2. A nut for use with a stud having a predetermined major diameter, said nut comprising a body of plastic material, a dome on one end of said body covering an interior bore extending longitudinally and centrally through the interior of said body to an open end at the opposite end of the body, a radially enlarged, central portion on said body integrally connected to said dome and extending toward the opposite end of the body and having a plurality of flats on its exterior surface for engagement with a tool, a base extending radially outwardly from said central portion of said body having the flats and extending longitudinally from the latter toward the opposite end of the body, a flat surface on the bottom of said base extending radially outward from said bore and being normal to the axis of said bore, a thin walled skirt extending downwardly from said base and tapered outwardly for sealing against a member secured between said base and the head of the stud, an interior cylindrical wall in said base forming a portion of said bore and having a diameter larger than said major diameter and adapted to guide said stud upwardly through said base and into said bore, a metal member embedded in the central portion of the nut body, a thread engaging part in said metal member projecting generally towards the axis of the bore, said metal member having axially extending grooves in said metal member interrupting the thread engaging part, an interior annular wall in said dome of a diameter less than the major diameter of the stud to jam on a stud threaded through said metal member and into said dome, and a thin walled web defining the minimum cross-sectional area of said body and formed integrally between said base and said central portion of the body carrying said metal member for rupturing to disconnected said base from this portion whereby said base and skirt function as a washer for the relatively rotatable central portion of the nut containing the metal member.

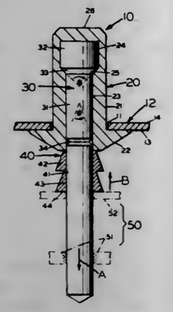
3,345,900
BLIND FASTENER
Joseph P. Villo, Rydal, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1964, Ser. No. 403,977
3 Claims. (Cl. 85—72)



1. A blind bolt assembly including:
a sleeve member having integral head, shank and nut portions;
the shank and nut portions being of substantially uniform external diameter;
a V-shaped external circumferential groove thinning the sleeve wall intermediate said nut and shank portions to its smallest cross-sectional area, said groove being positioned on the sleeve so that when installed in a blind application the groove will project beyond the blind face of the workpiece, the surface of the groove that is integral with the nut being provided with axially extending knurls and the sides of the groove forming divergently opposed included angles of about 30° with the longitudinal axis of the fastener;
a bore extending axially through said head and shank portions and into the nut portion;
the bore having a slight coaxial counterbore in the region of said head and shank portions and being internally threaded in the region of said nut portion;
said assembly having means for restraining rotation of the sleeve about the axis of the sleeve bore;
a core bolt having a head, said head having a tool receiving driving surface for the application of torquing forces thereto, said bolt having an elongated shank dimensioned for insertion into the bore of said sleeve member from the head end thereof and having an externally threaded end portion for engagement with

the threads in the nut portion of the sleeve, said assembly being adapted to effect separation and swaging of said nut portion from and over the shank of said sleeve member upon the transmission of torquing forces to the nut from the core bolt.

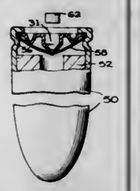
3,345,901
BLIND RIVET ASSEMBLY
Fritz V. Brosseit, Kansas City, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y. a corporation of New York
Filed Oct. 19, 1965, Ser. No. 497,939
5 Claims. (Cl. 85—77)



1. A blind rivet assembly, comprising:
(a) a hollow rivet of ductile material including a tubular barrel with a head at one end, the rivet having an axial bore extending through the head and being of such size that the barrel may be inserted into an aperture in a workpiece with the head abutting an exterior surface of the workpiece said bore having an enlarged section to provide a shoulder;
(b) a clinching mandrel including a shaft with an enlarged portion at one end, the enlarged portion being received within the rivet barrel near the unheaded end and engaging said shoulder, and the shaft extending through the bore to a position beyond the rivet head where it can be gripped and pulled away from the rivet head, to compress the barrel and force it to bulb outward and form a second head on the rivet abutting the interior surface of the workpiece; and
(c) an axially bored plug slidably received on the mandrel shaft in engagement with the exterior surface of the rivet head, the exterior dimensions of the plug being such that it can be forced into the rivet bore from the head end as the mandrel is pulled, the plug having an outwardly tapered exterior portion which forces the material of the rivet to expand outward into sealing engagement with the walls of the aperture in the workpiece as the plug is forced into the rivet, the expansion caused by the plug cooperating with the bulbing caused by the mandrel to form a tight seal between the rivet and the workpiece.

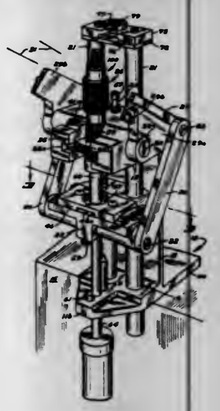
3,345,902
METHOD OF MANUFACTURING A MINIATURE ROCKET
Arthur T. Biehl and Robert Mainhardt, Diablo, Calif., assignors to MB Associates, a corporation of California
Filed Apr. 4, 1966, Ser. No. 541,919
4 Claims. (Cl. 86—1)

1. The method of manufacturing and assembling a miniature rocket comprising, supporting a disc of metal having parallel walls in a perforated die member, punching one wall of the disc axially and longitudinally thereof to provide an offstanding primer chamber integral therewith extending from the opposite wall of said disc, perforating the chamber through the axis thereof, upsetting predetermined portions of the said one wall of said disc radially adjacent to and surrounding said chamber to form a plurality of substantially equidistantly disposed coextensive generally conical projections extending therefrom, each of said projections distorting said wall and fracturing at a common side in a plane generally parallel and adjacent to the other wall of said disc and disposed



tangentially with respect to the perimeter of said chamber but radially spaced therefrom to provide exhaust gas outlets through the fractured areas of said nozzle, positioning a longitudinally apertured propeliant within an elongated cylindrical metallic casing open at one end, assembling a thin aluminum wafer over the chamber and nozzle projections, inserting the said assembly into the rear of said casing and flanging the rear extremity of said casing annularly around the assembly to produce the rocket.

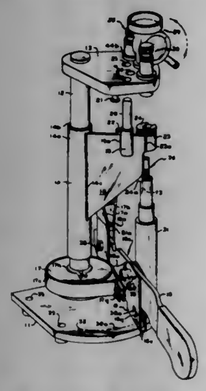
3,345,903
LOADING PRESS
Clarence E. Purdie, Box 246, Faribault, Minn. 55021
Filed June 15, 1965, Ser. No. 464,100
18 Claims. (Cl. 86—23)



1. For performing a work operation on a cartridge case through the use of a suitable die, a loading press comprising a frame having a base portion, a head and a frame portion for connecting the base portion to the head and mounting the head at least in part in overhanging relationship to said base portion and substantially vertically spaced therefrom, a pair of elongated, transversely spaced, vertical guide rods slidably extended through said base portion and said head, a carrier mounted on an intermediate portion of said guide rods for movement therewith and located vertically between said head and said base portion, a handle having a bifurcated leg portion extending on either transverse side of said head, first means for pivotally connecting said legs to said head to pivot about a horizontally axis, a pair of links each

having a first end portion and a second end portion, second pivot means for pivotally connecting the first end portions of the links to opposite transverse sides of said carrier to pivot about a second horizontal pivot axis, third pivot means for pivotally connecting the second end portions to said legs to through pivotal movement of said handle move said links and thereby the carrier between a first position adjacent said base portion and a second position adjacent said head, and means mounted on the carrier for holding a cartridge case to extend vertically thereabove, said head having means for mounting the die vertically aligned with a cartridge case held by the cartridge case holding means whereby as the carrier is moved to its second position, a work operation is performed on the cartridge case by the die.

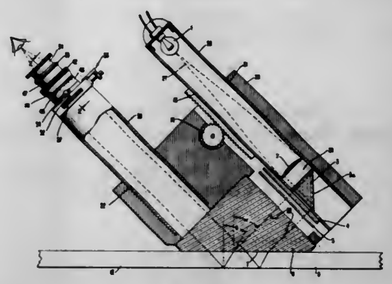
3,345,904
APPARATUS FOR LOADING SHELLS FOR SMALL ARMS
Louis D. Kleiss, 310 Gardner St., Borger, Tex. 79007
Filed Oct. 5, 1964, Ser. No. 401,297
14 Claims. (Cl. 86—25)



1. A shell case loading apparatus comprising, in operable combination, a base, an upright shaft affixed thereto, a tool head affixed to said shaft at a spaced distance from said base, a shell case carrier assembly mounted slidably on said shaft, means to raise and lower and to rotate said carrier assembly on said shaft, a plurality of openings in said tool head the axes of which are parallel to and equidistant from said shaft, a guide pin affixed to said shell case carrier assembly in such a manner as to mate with each opening of said plurality of openings, a pair of reloading dies and a combination powder measure, case neck expanding and case mouth belling tool in said head, a shell case holder supported by said carrier assembly, a primer assembly supported by said base, the axes of said shell case holder, said primer assembly, said dies and said combination powder measure, case neck expanding and case mouth belling tool being equidistant from and parallel to said upright shaft.

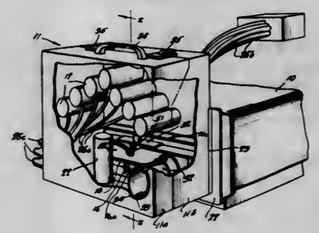
3,345,905
APPARATUS FOR MEASURING PHASE DIFFERENCES IN POLARIZED LIGHT
Paul Henri Acloque, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Dec. 26, 1961, Ser. No. 162,145
Claims priority, application France, Dec. 27, 1960, 848,054
4 Claims. (Cl. 88—14)

1. In an optical instrument for measuring path differences introduced in polarized light by a substantially planar surfaced specimen, means including a plane polarizer operable to project plane polarized light into a specimen with its plane of polarization inclined at an angle to the plane of the surface of the specimen, whereby the resulting light rays emerging from the specimen are elliptically polarized, a fringe compensator, an analyzer, an ocular, means mounting said compensator and analyzer in the path of said emerging light rays, to be traversed thereby in the order mentioned, a quarter-wave plate positioned in the path of the rays, between said fringe compensator and said analyzer, the two principal axes of said quarter-wave plate being, respectively, parallel with and at 90° to the direction of polarization of said plane polarizer, said mounting means enabling rotation



of said analyzer only about the axis of the rays traversing the same, first scale means cooperating with said mounting means to measure the degree of rotation thereof, and the second scale means fixed with said fringe compensator and visible in the field of view of said ocular, in superposed relation with and having linearly-spaced graduations parallel with the fringes produced by said compensator in the field of view, the spacing of the graduations of said second scale means having a known relation to the spacing of the graduations of said first scale means so that the fringes and graduations of the second scale means may be superimopsed and the position of the fringes determined by the relative angular position of the analyzer and the compensator graduations.

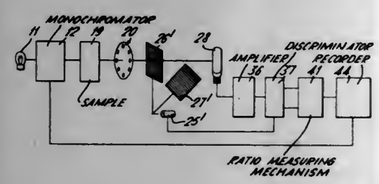
3,345,906
SPECTRAL LINE PROFILE ANALYZER
Franklin R. Scott, La Jolla, and Samuel P. Cunningham, Los Angeles, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,142
4 Claims. (Cl. 88—14)



1. Apparatus for determining the profile of a spectral region which passes through an elongated exit slit assembly of a monochromator comprising a light-tight housing adapted to be secured to the monochromator so as to en-

compass the exit slit assembly and having an aperture in one wall thereof at a location which allows optical communication with the exit slit assembly when the housing is secured to the monochromator, a cylindrical lens having its axis extending in the direction of the elongation of the slit secured to the exit slit assembly, so that the focal plane of the monochromator passes through said lens whereby the spectral region which passes through the exit slit of the monochromator is substantially dispersed, and a plurality of light-sensitive devices mounted in a generally wedge-shaped array within said housing, the positions of said lens and said array being such that said array of light-sensitive devices span the dispersed spectral region with each of said light-sensitive devices intercepting a generally different but equal wave length portion of said region whereby the profile of the dispersed spectral region can be determined.

3,345,907
DICHROISM SPECTROSCOPES
Akiyoshi Wada, 66 Shinsaka-cho, Akasaka, Minato-ku, Tokyo, Japan
Filed June 17, 1963, Ser. No. 288,403
1 Claim. (Cl. 88—14)



A dichroism spectroscope along a straight line optical path comprising a monochromatic light source at one end of said optical path, photoelectric light receiving means at the opposite end of said optical path adapted to convert light into electrical signals representing variable intensity and variable polarization a sample cell, a linear polarizer in said optical path intermediate said sample cell and said light receiving means, means for continuously rotating said polarizer about the optical axis coincident with said optical path so that the plane of polarization varies continuously in directions including two mutually perpendicular directions in which a dichroic sample exhibits the maximum dichroic intensity, and means coupled to said light receiving means for measuring the ratio of the output of said photoelectric light receiving means by comparing the intensities of the polarized light in one of said two directions to that according to the polarized light in the other direction.

3,345,908
PRINT CHARACTERISTICS DISPLAYER
Roy A. Jensen, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 16, 1963, Ser. No. 302,516
3 Claims. (Cl. 88—14)

3. An apparatus for producing a curve containing information relating to the print characteristics of an image comprising:

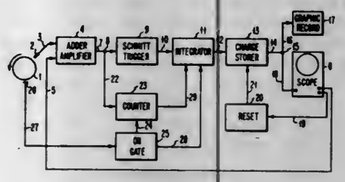
optoelectronic means for scanning said image, said optoelectronic means providing an output during each crossing of a segment of said image,

means for generating a ramp voltage,

adding means, receiving said ramp voltage and said output from said optoelectronic means, producing a third signal which is the sum of said output from said optoelectronic means and said ramp voltage,

bistable gating means receiving said third signal and producing an output when said third signal from said adding means exceeds a predetermined level,

integrating means, coupled to said bistable gating means, producing a signal proportional to the time which said bistable gating means produces a signal,

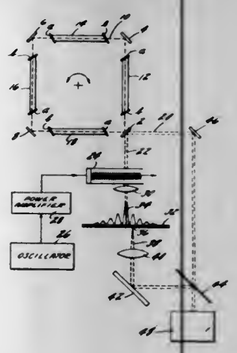


counting means, connected to both said integrating means and said adding means, controlling the number of pulses said integrating means integrates,

storing means, coupled to said integrating means, recording the signal produced by said integrating means,

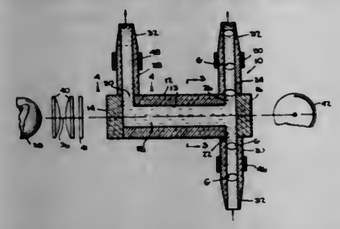
display means, coupled to said storing means, displaying said stored signal against the amplitude of said ramp voltage producing a record representative of the print characteristics of the image.

3,345,909
DIRECTION SENSOR FOR LASER GYRO
Anthony J. De Maria, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,981
8 Claims. (Cl. 88—14)



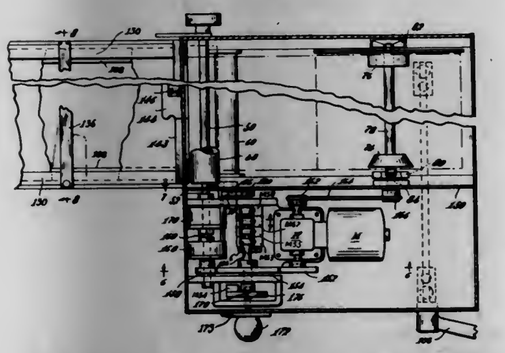
1. A rotation rate and direction sensor including a mirror system having a plurality of mirrors in fixed spaced relation to each other, said mirrors being positioned to define a path of light travel, at least one means between two of said mirrors in fixed relation with said mirrors for generating two coherent beams of light for travel along said path in opposite directions, said generating means and said mirror system being rotatable as a unit, means for extracting said light beams from said mirror system, said extracted beams differing in frequencies in an amount commensurate with the rate of rotation of said mirror system, an ultrasonic cell in the path of one of said extracted beams for imposing a frequency bias on said one extracted beam, and means for combining said biased beam with the other of said beams to obtain a signal commensurate with said bias frequency and said difference between the frequencies of said extracted beams, said signal being indicative of the rate and direction of rotation of said mirror system.

3,345,910
COLORIMETER FLOW CELL
Seymour Rosin, Massapequa Park, and William J. Smythe, Rye, N.Y., assignors to Technicon Corporation, a corporation of New York
Continuation of application Ser. No. 192,149, May 3, 1962. This application Apr. 11, 1966, Ser. No. 549,091
1 Claim. (Cl. 88—14)



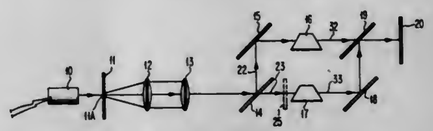
An analysis system comprising a light source and a light detector having a beam of light therebetween whose path is more horizontal than vertical; a flow cell; said flow cell having an elongated sight passageway portion disposed in said light path with a light permeable subportion at each end thereof for the respective entrance and exit of said measuring beam of light, a first elongated portion opening into the bottom of said sight passageway portion immediately adjacent one of said ends thereof, a second elongated portion opening into the top of said sight passageway portion immediately adjacent said one of said ends thereof, and a third elongated portion opening into the top of said sight passageway portion immediately adjacent the other of said ends thereof; means for supplying liquid coupled to said first portion, for the entrance of a stream of liquid into said sight passageway portion at a predetermined volumetric rate; first means for withdrawing liquid coupled to said second elongated portion, for the exit of a portion of the stream of liquid including any gas carried therein at a predetermined volumetric rate; second means for withdrawing liquid coupled to said third elongated portion, for the exit of the remaining portion of the stream of liquid after it has passed through the length of said sight passageway portion.

3,345,911
PAPER TRANSPORT
Richard G. Lee, Weston, Mass., assignor, by mesne assignments, to Alves Photo Service, Inc., Braintree, Mass., a corporation of Massachusetts
Filed Sept. 22, 1964, Ser. No. 398,246
27 Claims. (Cl. 88—24)



1. For use with an enlarger, a sensitive paper transport comprising a mobile base, a housing at each end of the base, that portion of the base between the housings constituting a flat supporting surface adapted to be placed in the focal plane of the enlarger, means in one of the housings supporting a roll of sensitive paper, means in the other housing for taking up the exposed paper, and means movable between the housings, parallel to the base, to conceal the entire area of the paper resting on the supporting surface until an exposure is to be made, said means being operative, according to the size of the exposure to be made, to expose only an area of such size.

3,345,912
ROTARY SHEARING INTERFEROMETER
Adolf W. Lohmann, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 10, 1964, Ser. No. 350,822
6 Claims. (Cl. 88—56)



1. A device for detecting comatic aberration in a lens:

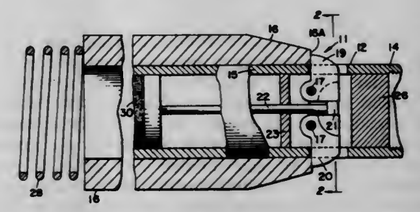
means for passing two coherent optical wavefronts through said lens;

means for rotating said wavefronts by substantially 180 degrees relative to each other; and

means cooperating with said lens for focussing and interacting said wavefronts thereby forming an interference pattern,

whereby the comatic aberration of said lens can be detected.

3,345,913
DETENT ASSEMBLY
Floyd J. Milanowski, Stanhope, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 6, 1966, Ser. No. 519,167
3 Claims. (Cl. 89—1)



1. A detent assembly comprising

a tubular member having a sidewall portion containing diametrically opposed apertures positioned intermediate forward and rearward tubular portions of said member,

a telescoping sleeve surrounding said tubular rearward portion,

means biasing said sleeve forwardly toward said tubular forward portion,

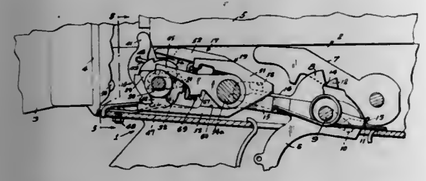
a pair of detents each pivotally mounted within said tubular member, each detent having a first flat surface normally extending through a corresponding one of said apertures and in the path of said sleeve, each detent having a second flat surface substantially perpendicular to its corresponding first flat surface,

a solid member having substantially parallel flat sidewalls normally positioned against respective ones of said detent second flat surfaces in opposition to said biasing means, and

ballistic means connected to said solid member for moving said solid member away and clear from said detents,

so constructed and arranged that upon ignition of said ballistic means said detents will be positively moved by said sleeve out of the path of said sleeve.

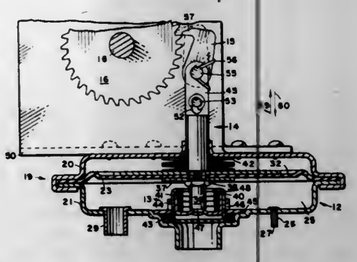
3,345,914
TWO ROUND BURST MECHANISM MECHANICAL AUTOMATIC RIFLE
Fred N. Newcomb, Kingsville, and Edsel A. Spellman, Abingdon, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 31, 1966, Ser. No. 540,156
9 Claims. (Cl. 89—129)



1. In combination with a rifle having conventional automatic and semiautomatic firing modes, said rifle including a receiver, a bolt carrier slidable on said receiver, a hammer actuated by said bolt carrier, a disconnector for releasable engagement with said hammer, a trigger for releasable engagement with said hammer and a first selector means for preventing engagement of said disconnector with said hammer during the automatic firing mode; a two round burst mechanism for providing a two round burst firing cycle in said rifle and housed in said receiver, said mechanism comprising a two burst lever assembly mounted in said receiver and normally having its forward end in contact with said disconnector, there being first and second contact surfaces at its rearward end, a second selector means transversely journaled in said receiver and adapted to engage said first contact surface and prevent said two burst lever from contacting said disconnector whereby said rifle may optionally retain its original firing modes, a spring loaded pawl rotatably mounted on said second selector means, an actuating cam rotatable on said second selector means, and normally in engagement with said pawl, said pawl being rotated in a counterclockwise manner by recoil of said bolt carrier to rotate said cam to engage a said second contact surface on said two burst lever whereby said lever will disengage said disconnector from said hammer and permit firing of two rounds of ammunition in said rifle per single pull of said trigger, and means in said receiver to limit clockwise rotation of said pawl and said actuating cam.

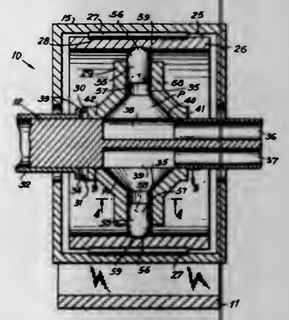
3,345,915
SNAP ACTION FLUID ESCAPEMENT FOR OBTAINING INTERMITTENT ROTARY MOTION
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,051
16 Claims. (Cl. 91—50)

1. A fluid actuated escapement comprising: a housing; a diaphragm mounted in said housing and extending thereacross so as to define a first chamber on a first side of said diaphragm and to define a second chamber on a second side of said diaphragm; at least one aperture in said housing to said first chamber; said aperture communicating with a fluid flow; a second aperture in said housing to said second chamber; a follower means extending through said second aperture into said first chamber, said follower means fixedly coupled to said diaphragm, said follower means displaced from an initial position by said diaphragm as said diaphragm responds to said fluid flowing into said first chamber; bias means retained between said housing and said diaphragm and compressed therebetween storing energy therein as said diaphragm is displaced; and a valve means coupled to said follower means, said valve means comprising a hollow cylinder means, a cup means slidably



interfitting with said cylinder means, said cup means fixedly coupled to said follower means, a spring bias means biasing said cup, said cup displaced with said follower means, said cup engaging said cylinder means after said cup is displaced a predetermined distance to thereafter displace said cylinder from an initial closed position with said first chamber to an open position, said fluid thereafter discharging from said first chamber through said open valve means releasing said energy stored by said bias means allowing said follower means to snap back to said initial position thereby closing said valve means, said follower means actuating a ratchet wheel through a predetermined arcuate displacement in accordance with said snap back motion of said follower means.

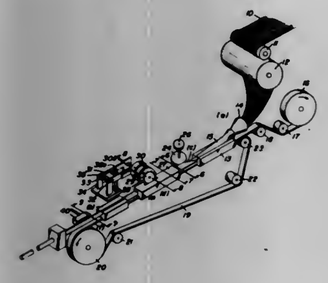
3,345,916
HIGH EFFICIENCY HYDRAULIC APPARATUS
Jaromir Tobias, Box 141, R.D. 2, Rhinebeck, N.Y. 12572
Filed Nov. 17, 1965, Ser. No. 508,249
11 Claims. (Cl. 92—58)



1. In a rotary hydraulic device such as a pump or motor, a generally cylindrical pintle shaft having an axially elongated, recessed circumference portion defining a fluid supply area, a cylinder block having a central bearing aperture rotatably received on said shaft, the axial dimension of said aperture being in excess of the

length of said recessed portion, said aperture being disposed in registry with said area, a plurality of radially extending cylinder bores formed in said block, and axially elongated fluid passages extending between said bores and said aperture, the axial dimension of said passages at said aperture being greater than the diameter of said bores, the transverse dimension of said passages at said bores being greater than the transverse dimension of said passages at said aperture.

3,345,917
MACHINE AND METHOD FOR CONTROLLING THE CIRCUMFERENCE OF PAPER WRAPPED CIGARETTE FILTER RODS
Albert H. Agett and Paul Gallagher, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 28, 1964, Ser. No. 421,276
7 Claims. (Cl. 93—1)



1. In a cigarette filter rod making machine, in combination,

(1) means for conveying a continuous filamentary filter tow in a linear path,

(2) means for conveying a continuous paper wrap into contact with the tow and along a linear path parallel to the path of the tow,

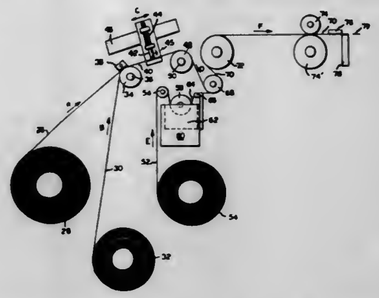
(3) means for shaping the tow into the form of a continuous substantially cylindrical rod,

(4) means for encasing the filter rod in the paper wrap to form an overlapped seam, and

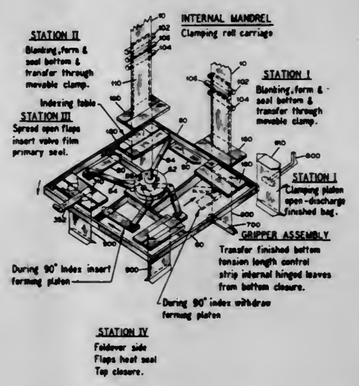
(5) means for continuously punching out but not completely severing small portions of both overlying and underlying layers of the paper making up the seam to form a plurality of perforated interlocks along the length of the seam, whereby circumference uniformity of the paper wrapped filter rod is maintained.

3,345,918
TEAR-STRIP WRAPPER PROCESSING APPARATUS
Mario J. Simeone, Flushing, N.Y., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Mar. 26, 1965, Ser. No. 443,032
6 Claims. (Cl. 93—1)

4. An automatic tear-strip wrapper processing apparatus which comprises, continuous wrapper material supply means, continuous tear-strip material supply means, hole punch means for sequentially punching holes in said wrapper material from said wrapper material supply means, tead-strip securing means for adhesively fixing said tear-strip material to the area of said punched holes, and severing means for severing individual wrappers from the continuous supply of wrapper material having the tear-strip adhesively secured thereto, said severing means consisting of the combination of a stationary horizontally disposed cutting blade, a vertically disposed cutting blade mounted for reciprocating movement for severing said wrapper material; and a tear-strip cutting blade for separately severing said tear-strip whereby individual wrappers are prepared having a tear-strip protruding from one end from about ⅛ inch to about ½ inch beyond the border of the wrapper.



3,345,919
CONTINUOUS BAG MAKING MACHINE
Howard E. Kasting, Pluckemin, N.J., and John P. Sachs, Stamford, Conn., assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 18, 1965, Ser. No. 433,742
27 Claims. (Cl. 93—8)



1. An apparatus for continuously making industrial shipping bags having lapped, heat-sealed end closures which comprises, in combination:

(a) a feed mechanism for supplying a continuous web of flattened, tubular thermoplastic film;

(b) means for disposing an internal mandrel workpiece within said flattened tubular film;

(c) means for fixedly securing the internal mandrel within the flattened tubular film;

(d) means for severing the tubular film simultaneously blanking a top closure and bottom closure;

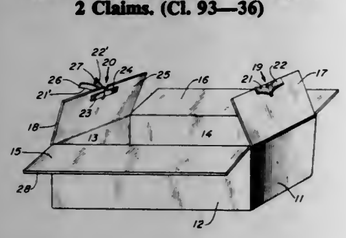
(e) means for infolding a pair of opposed end tabs in the blanked end of the tubular film;

(f) means for rotating the blanked tubular film together with the internal mandrel through a predetermined arc;

(g) means for infolding a pair of opposed side flaps in the blanked end of the tubular film during its rotation;

(h) means for sealing a first rectangular closure in the blanked end of the tubular film at the extremity of the rotational arc;
(i) means for counter-rotating the tubular film together with the internal mandrel;
(j) means for displacing the thusly blanked tubular film relative to the internal mandrel along the longitudinal axis of said blanked tubular film;
(k) means for securing the displaced blanked tubular film in a conveying means;
(l) means for outfolding a pair of opposed side flaps and infolding a pair of opposed end tabs and temporarily retaining said flaps in this position in the conveying means;
(m) means for disposing a flat forming platen in the blanked end of the thusly secured tubular film;
(n) means for infolding a pair of opposed side flaps in the thusly blanked end of the tubular film;
(o) means for sealing a second rectangular closure in said thusly blanked end of the tubular film;
(p) means for withdrawing the flat forming platen from the second sealed rectangular closure; and
(q) means for removing the completed shipping bag from the conveying means.

3,345,920
PROCESS FOR CLOSING CONTAINERS
Clarence A. Jordan, Madison, Wis., assignor to the United States of America as represented by the Secretary of Agriculture
Filed Oct. 26, 1964, Ser. No. 406,628
2 Claims. (Cl. 93—36)



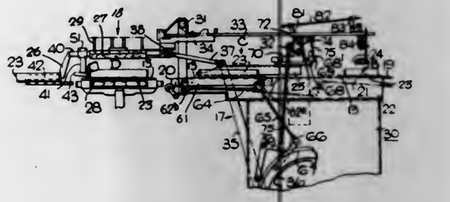
1. In containers having their inner and outer flaps, a process for fastening the flaps in a closed position which comprises providing slots through inner flaps in alignment with the concourse of outer flaps, attaching one end of adhesive coated strips to the innermost surface of said flaps, extending the free ends of said adhesive coated strips through said slots and said concourse during the closure of said flaps, and affixing said free ends to the outermost surface of said flaps.

3,345,921
METHOD OF MAKING A BOX
Orlando W. Foss, % General Box Company, P.O. Box 772, 710 Haines Ave., Waycross, Ga. 31501
Filed Apr. 19, 1965, Ser. No. 448,938
6 Claims. (Cl. 93—36)



1. The method of making a box comprising the steps of forming a pair of blanks, each blank being formed by feeding a web, scoring the web longitudinally along a plurality of lines to form a set of pleats adjacent each edge thereof separated by a central portion, folding the pleats upon one another to form a pair of side portions each having a plurality of plies, and severing the web transversely,
placing the blanks one upon the other so that their side portions form a quadrilateral, and
erecting the sides to form the box.

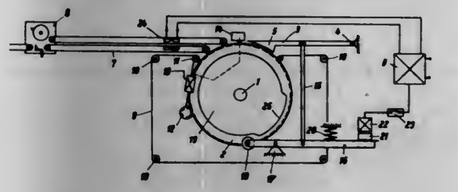
3,345,922
METHOD AND APPARATUS FOR WRAPPING CONTAINERS
Albert Henry Williams, Stanton-on-the-Wolds, Nottinghamshire, Reinhards Vitols, New Basford, Nottingham, and Laurence William Taylor, Woodthorpe, Nottingham, England, assignors to Caledex Machine Co. Limited
Filed Apr. 2, 1964, Ser. No. 356,905
Claims priority, application Great Britain, Apr. 6, 1963, 13,771/63; May 29, 1963, 21,383/63
13 Claims. (Cl. 93—54)



8. In a box wrapping machine having a foraminous conveyor with a suction box therebelow and means for applying a suction thereto; said conveyor adapted to carry successive sheets of wrapping material, said material having an upwardly facing adhesive surface for receiving boxes thereon with marginal edge portions of said material projecting outwardly therefrom; transfer means for moving said box and wrapping material from said conveyor to a wrapping station, said transfer means comprising: a body having at least one jet block extending outwardly from said body towards said wrapping station and connected to said body, said block including an undersurface, facing said conveyor, said surface being forwardly and upwardly sloped and adapted to overlie at least one marginal edge portion of said material projecting from said box; a plurality of jet orifices in said undersurface, means to direct air emitting from said orifices in an outwardly direction and in flat streams along said forwardly and upwardly sloped undersurface whereby said marginal edge portion of said sheet material, adjacent said surface, is attracted to said surface and held in substantially spaced relation; and gripper means associated with said body for engaging a wall of said box, and means for reciprocating said body and said gripper means between said conveyor and said wrapping station.

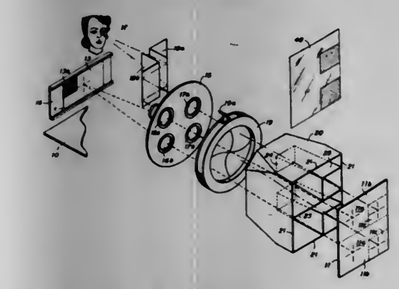
3,345,923
SHEET COLLECTING MECHANISM
Amir Erk, 84 Mittelweg, Braunschweig, Germany
Filed Apr. 25, 1963, Ser. No. 275,654
Claims priority, application Germany, Apr. 27, 1962, E 22,787
10 Claims. (Cl. 93—93)

1. Apparatus for gathering sheets into packs of a predetermined number of sheets and advancing them to stackers, comprising a gathering cylinder having a periphery which is larger than the length of the sheets to be collected, means to feed the sheets onto the cylinder to form packs thereon covering part of the cylinder periphery and leaving part thereof uncovered, sling bands cooperating with and partially encircling said cylinder, means to drive said sling bands, means to control the speed of said bands so as to compensate for slippage of said sheets and to ensure that said part of the cylinder periphery remains uncovered by sheets, a deflector-stripper adapted to operate in a raised or lowered position being positioned above the cylinder and adjacent to the outlet of said feed means, said deflector-stripper in the raised position adapted to deflect said sheets to a position between the sling bands and the cylinder, and in the lowered position to strip said packs from the cylinder, and means to control the deflector-stripper to position it in either the raised or lowered



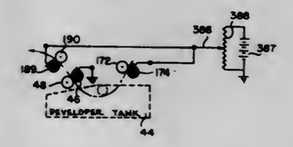
position, said control means comprising, in cooperation, (a) an adjustable counting mechanism and a first switching device which is operated by said counting mechanism and releases the deflector-stripper into stripping position after a predetermined number of pack-forming sheets has been collected on the cylinder and counted, and (b) an adjustable control device and a second switching device which is operated by said control device and allows actuation of said stripper-deflector by said first switching device only when the stripper-deflector registers with said uncovered part of the cylinder.

3,345,924
IDENTIFICATION CARD CAMERA
Samuel Kitrosser, Lexington, Mass., assignor to Avant Incorporated, Lincoln, Mass., a corporation of Massachusetts
Filed Sept. 17, 1965, Ser. No. 490,775
3 Claims. (Cl. 95—1.1)



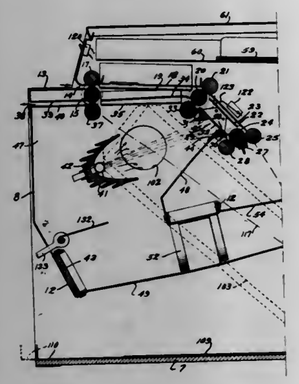
1. A camera for providing, with a single exposure, a plurality of identical identification cards containing a photograph of a subject and data relating thereto on a unitary sheet of photographic material disposed in said camera focal plane, said camera comprising:
a housing having a light tight compartment therein;
baffle means within said light tight compartment, said baffle means having edges disposed substantially in said focal plane for dividing said unitary sheet of photographic material into at least four discrete areas;
a plurality of optical means within said housing, each of said means having a first focal length substantially focusing said data through one of said baffle means onto said image receiving material for providing a plurality of images of said data;
a plurality of second optical means coupled to said housing having a second focal length and substantially focusing a subject disposed remotely from said housing through second ones of said baffle means, onto said image receiving material to provide a plurality of images of said subject;
unitary shutter means coupling said optical means and said photographic material for providing simultaneous exposure of said image receiving material;
data sheet support means coupled to said housing for supporting a data sheet in spaced parallel relationship to said focal plane, said support means having a plurality of surfaces with data sheet holding means coupled thereto, said surfaces being rotatable about a central axis whereby an additional data sheet may be coupled thereto when a first data sheet is in position to be photographed through said second optical means;
means for transporting and storing an image receiving material within said light tight compartment in said camera focal plane, including means for processing said photographic material, whereby a single exposure through said shutter provides a plurality of identification cards in the form of a plurality of photographs of said data and subject on said unitary sheet of photographic material.

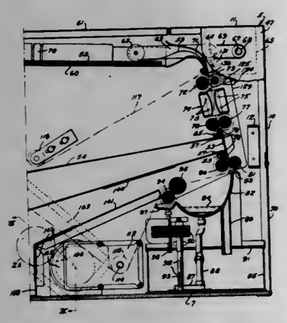
3,345,925
ELECTROSTATIC PRINTING AND DEVELOPING APPARATUS
Ralph G. Ostensen, Morton Grove, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Original application Jan. 3, 1963, Ser. No. 249,248. Divided and this application Aug. 17, 1964, Ser. No. 390,151
10 Claims. (Cl. 95—1.7)



1. In an apparatus for developing a latent image formed on a surface of an electrically chargeable member by a partially dissipated, electrostatic charge, a developer station and means (a) for advancing said chargeable member through said station along a predetermined path, (b) for applying developer particles to said surface as said chargeable member is advanced through said station to develop the latent image on said surface, and (c) for applying a biasing potential to said surface with the developer particles thereon to repel said developer particles from the non-image areas of said surface, said last-mentioned means comprising a source of D.C. voltage providing said biasing potential, first and second means spaced apart along said path to successively engage said chargeable member leaving said developer station and being electrically connected to separate terminals of different polarities of said voltage source, and third means spaced apart from said first and second means for engaging said chargeable member entering said developer station and being electrically connected to one of said terminals, said first, second, and third means being arranged sufficiently close together that they all engage said chargeable member before said chargeable member disengages from said third means during its advancement through said developer station, whereby the potential provided by said voltage source is imparted to said chargeable member.

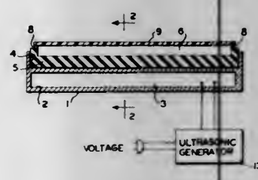
3,345,926
ELECTROPHOTOGRAPHIC COPYING MACHINE
Emil Tiger, Highland Park, Erskine G. Corman, Forest Park, and Kenneth R. Reick, Downers Grove, Ill., assignors to Formfoto Manufacturing Company, Villa Park, Ill., a corporation of Illinois
Filed Nov. 12, 1964, Ser. No. 410,549
13 Claims. (Cl. 95—1.7)





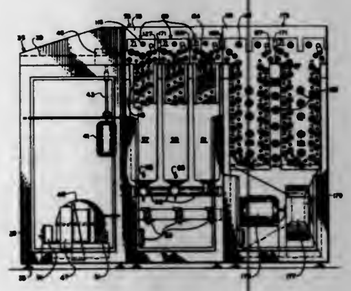
1. An electrophotographic machine comprising a housing having an upper front entry opening receptive of a document to be copied,
a document exit opening immediately below said entry opening,
means defining a document path from said entry opening to said exit opening and including document transporting means and a document scanning aperture,
an exposure lamp and reflector mounted in the housing adjacently below said exit opening and trained toward said scanning aperture,
a reflecting mirror below said reflector and lamp and scanning each document traversing said scanning aperture,
a projection tunnel having projection optics therein and leading from said mirror generally upwardly and rearwardly and terminating in an exposure aperture,
a copy paper supply magazine in the top of said housing,
a paper charging corona discharge device between said magazine and said exposure aperture,
means operative to feed paper from the magazine through the corona discharge device and then through said exposure aperture,
a liquid toner receptacle below said exposure aperture receptive of the exposed paper after it leaves the exposure aperture,
squeeze rollers engageable with the developed copy paper on leaving the bath,
a copy receptacle accessible from the front of the housing and located below said mirror,
and means defining a copy discharge chute leading forwardly from said squeeze rollers to said copy receptacle and including overlying downwardly facing shield means along the bottom of the light tunnel defining the upper side of the chute.

3,345,927
APPARATUS FOR RAPID DEVELOPMENT OF PHOTOGRAPHIC FILM
Zoltan Takats, Vestal, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed June 26, 1964, Ser. No. 378,313
3 Claims. (Cl. 95—89)



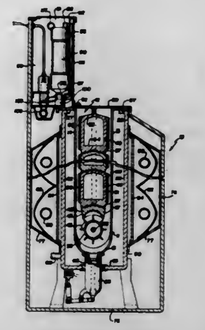
1. In an apparatus for applying liquid to a moving photographic film or the like utilizing a trough of resilient material for containing said liquid, said trough having vertically extending lips adapted to contact and remove excess liquid from said film and seal the area overlying said trough, that improvement comprising means for applying ultrasonic agitation to said lips of said trough thereby to prevent deposition of dirt on said lips and simultaneously reduce the frictional resistance between said moving film and said lips.

3,345,928
FLEXIBLE MATERIAL TRANSPORT MECHANISM
Vivian D. Krehbiel, P.O. Box 2099, Wichita, Kans. 67201
Filed June 8, 1965, Ser. No. 462,297
8 Claims. (Cl. 95—94)



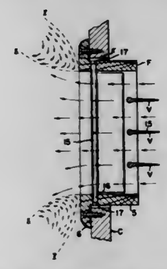
7. A machine for processing exposed gelatin-coated film or photographic paper comprising a plurality of modular units operatively interchangeably and detachably connected in series and having a feed modular unit having a motor drivingly connected to shaft and gear means, at least one tank modular unit having tanks for processing photographic film or paper operatively mounted in series, each of said tanks having a removably mounted photographic film or transport mechanism mounted therein, said mechanism having two end plates supporting a plurality of horizontally disposed shafts mounted between and projecting through said end plates, a plurality of spaced rollers concentrically mounted on each of said shafts to turn therewith, outside shafts with rollers positioned generally in an elongated symmetrical U-shaped pattern in said end plates, with said rollers of each shaft in spaced interlocking relation with the rollers of each adjoining shaft, an inside vertical row of like shafts with rollers centered and in staggered relation to said shafts with rollers of the legs of the said U-shaped pattern, the face of each roller on said inside shafts being in close proximity with the face of the roller of an outside shaft, said rollers on the said inside shafts spaced in interlocking position with the rollers on each adjoining shaft on said inside row, two spaced directing shafts with rollers interlockingly and opposedly mounted in the top portion of said end plates, opposed feed shafts with rollers interlockingly mounted on the sides of said end plate near the top thereof and two opposed ejection shafts interlockingly mounted near the top of the other side portion of said end plate, sprocket means mounted on said shafts, chain means drivingly mounted on said sprocket means, gearing mounted on said tank unit, at least one drive shaft mounted between said end plates, coupling means connecting said drive shaft to said gearing, said gearing drivingly connected to said gear means to rotate all the shafts, the shafts of the inside vertical rows rotating in operation in opposite directions from the rotation of the shafts of the said U-shaped pattern, said tanks with said transport mechanism mounted therein positioned immediately adjacent to each other in said modular unit, outside ejection shaft rollers interlocking with outside feed shaft rollers of adjacent transport mechanism, a crossover shaft having rollers mounted thereon removably mounted between adjacent end plates of transport mechanisms and interlocking with adjacent feed and ejection rollers of adjacent transport mechanisms, and drier means mounted adjacent to said tank unit, said drier means receiving wet processed film from said film transport mechanism of said adjacent tank unit, and drying same.

lism with the side walls, fluid circulatory means in the tank below the lower edge of the hanger for circulating the



fluid through the passages and hence over the photographic elements, and means to discharge the fluid from said tank.

3,345,930
AIR GRILL INCLUDING A WOODEN FRAME
Walter D. Ammons, 1165 N. Rio Vista Blvd., Fort Lauderdale, Fla. 33301
Continuation of application Ser. No. 454,422, May 10, 1965. This application Nov. 7, 1966, Ser. No. 600,325
5 Claims. (Cl. 98—114)



3. In combination, a body means having a supply opening from which a stream of cooled air is discharged into a surrounding room thereby creating at the point of air discharge, immediately adjacent the supply opening, a low pressure area into which the relatively warm room air is drawn laterally from all sides, means for cooling the air within the body means, blower means for discharging the air within the body means through said supply opening, a grill comprising a frame defining an opening wherein is a set of thin spaced vanes arranged crosswise of the frame and supported thereby, the frame including a plurality of interconnected strips each including a wall and an out-turned flange whose inner surface defines a facing adapted to overlie the adjacent surface of the body means and being spaced therefrom to define a narrow insulating air space extending around the frame between the facing and the adjacent portions of the body means, said frame walls being spaced from the adjacent portions of the supply opening to provide communication between the air space and the interior of the body means from which cooled air is discharged outwardly through said opening whereby to substantially immunize the rear side of the facing from any chilling effects, the frame and its facing being formed of fibrous wood material and having a low thermal conduction value whereby to remain substantially unaffected temperaturewise from cooled air driven

3,345,929
PHOTO DEVELOPING APPARATUS
Anatole Oksakovsky, 262 W. 13th St., North Vancouver, British Columbia, Canada, and Heinz Pirnke, 2775 Westworth Ave., West Vancouver, British Columbia, Canada
Filed Jan. 11, 1965, Ser. No. 424,791
5 Claims. (Cl. 95—96)

1. Photo developing apparatus comprising a photo processing tank for holding photo processing fluid and having a pair of opposed vertically extending substantially parallel side walls, a hanger member slidably insertable into the tank in a vertically disposed position located centrally between and spacedly parallel to said side wall, said hanger member being formed of a plurality of vertically stacked and separable components, each component having sealing means engageable with the component adjacent so that said hanger members extend as a continuous wall parallel to said side walls thereby forming a pair of vertically extending passages and being located so that its lower edge is spaced above the bottom of the tank and its upper edge below the level of the fluid in the tank, gripping means on the hanger member for holding photographic elements in said passages and in planar parallel-

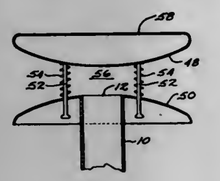
through the grill and incapable of chilling the relatively warm room air in contact with the frame while advancing into the low pressure area adjacent the grill.

3,345,931
VENTURI EJECTOR INCLUDING AUTOMATICALLY MOVABLE DISC MEMBERS

Bruce R. Walsh, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Original application Dec. 3, 1964, Ser. No. 415,713. Divided and this application Sept. 12, 1966, Ser. No. 578,869

13 Claims. (Cl. 98—78)



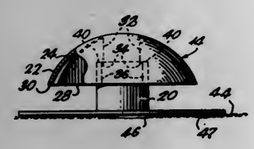
1. An apparatus comprising a pair of convex members, means for maintaining said members in spaced-apart relationship with the convex surfaces facing each other, means for permitting automatic lineal movement of at least one of said members relative to the other responsive to the movement of the surrounding atmosphere, the convex central regions of said members facing each other in spaced-apart relationship to form a circular venturi-like throat therebetween and one of said members having opening means at the central region thereof.

3,345,932
VENTILATING DEVICE FOR FABRIC BODIES

Fred William Sauer, R.D. 2, Carmel, N.Y. 10512

Filed Nov. 1, 1965, Ser. No. 505,799

5 Claims. (Cl. 98—83)



1. A ventilating device comprising a base portion consisting of a substantially flat plate having an opening therein and carrying an upstanding tube, the lower end of which tube defines said opening and the tube having an open top end, and a top portion consisting of a chordal section of a sphere, with means within the concave side thereof for engaging the open top end of said tube and supporting the said section open-side down over and vertically spaced from the top of said plate, the said means engaging the tube at spaced locations therearound whereby a free circulation of air between the plate and through the tube is permitted, said means comprising web members disposed radially of said sphere section and secured thereto, and each having upper and lower inner edge portions, the upper inner edge portion being offset inwardly from the lower inner edge portion to provide a supporting shoulder contacting the top end of said tube, and the lower inner edge portion making substantial line contact with the side of said tube and holding said section in position on said tube.

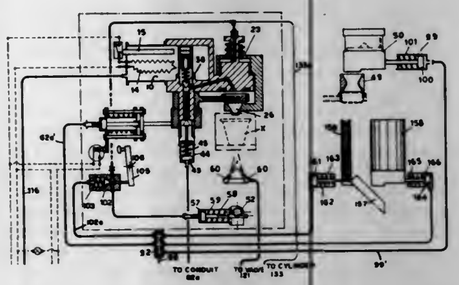
3,345,933
COIN OPERATED AUTOMATIC VENDING MACHINE, TO BREW AND DISTRIBUTE HOT COFFEE IN CUPS

Carlo Ernesto Valente, Via G. Ventura 5, Milan, Italy

Filed Apr. 8, 1964, Ser. No. 358,169

Claims priority, application Italy, Dec. 4, 1963, 33,938/63

13 Claims. (Cl. 99—283)



9. A coin operated automatic vending machine including a housing having therein a shelf-like horizontal plate upon which is mounted a composite device for the brewing of coffee, there being above the shelf a coin receiving mechanism to which coins pass along a chute, a dispenser of spatula-stirrers adapted to release one stirrer each time the machine is operated, there being below the shelf, a motor, first and second pumps operable by said motor, a first reservoir for purified water and a second reservoir for fluid which has been emulsified with silicones and a bucket to receive used coffee powder; and the interior face of a hinged front part of the housing mounting a device to dispense individual lumps of sugar with each drink and a device for the distribution of cups which are arranged to fall into a niche located below a spout from which the coffee is adapted to be dispensed; a composite device in the form of a rotating hub moving intermittently in a determined direction by steps of 90° through four operating stations, said hub carrying four arms set at right angles to each other, each arm carrying a strainer of a capacity sufficient to hold a requisite quantity of powdered coffee, said four operating stations for the strainers including a grinder-doser station, a brewing station including a water spray for supplying water to the coffee, connected with a pressurized hot water tank by way of a normally closed valve, a rinsing station including nozzles for the washing of both sides of used strainers and a ready station to hold a clean strainer for transfer to the doser station, a normally closed first hydraulic circuit including hydraulic servomotors, controlled by said first pump, a second hydraulic circuit fed with drinking water and controlled by a second pump actuated simultaneously with the actuation of the first pump and arranged to supply water at the required pressure to the hot water tank for brewing the coffee, a valve normally closed adapted to be actuated to allow water to pass to the used strainers for washing same, a first valve group located in a closed circuit of the first pump, a first spring loaded lever adapted to maintain the valves in a discharge position to supply said silicon emulsified fluid to the hydraulic cylinders of the servomotors, a hook-like pivoted member adapted to retain the lever in position to release it to reverse the valves, an electric circuit for said electric motor, including a switch closed on deposit of a coin in the machine and said electric motor adapted to operate to direct a supply of said fluid to said valves and to a second valve group associated with said closed fluids circuit for the servomotors, a spring loaded lever arranged to maintain a valve in a normally closed position on the outflow circuit and to maintain a further valve in a normally open position in

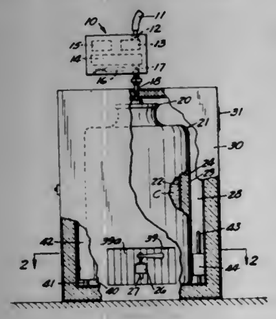
the inflow, a second hook-like member arranged normally to hold said valves in their normal positions, a hydraulic cylinder including a piston, one chamber of the cylinder being connected with the outflow of the second pump to supply the water for brewing the beverage, the other chamber being connected with the discharge, or with the outflow of the pump of the closed circuit of the servomotor cylinders, there being also provided a cylinder having a piston having with a piston rod extending from the cylinder and combined therewith, a servomotor cylinder which controls the pressure applied to hold a strainer in position to receive purified water for infusing the coffee to brew same, the piston rod serving also to control the sequence of operation of the valves.

3,345,934
COFFEE BREWING AND SERVING APPARATUS

Robert T. Steiner and George E. Woodis, Minneapolis, Minn., assignors to Griswold Coffee Company, Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 27, 1964, Ser. No. 406,756

3 Claims. (Cl. 99—290)



1. Coffee serving apparatus,
comprising means brewing a multiple cup quantity of heated coffee and having an outlet discharging brewed coffee at a first temperature well in excess of the minimum temperature at which brewed coffee may be served,
a closed top insulated container having means in fluid flow communication with said outlet to receive coffee therefrom substantially at said first temperature, discharge means connected with said container for serving brewed coffee and including a valve,
an enclosure defining a chamber confining said container and also confining a heated air envelope surrounding said container,
and means heating and maintaining said air envelope at a second temperature less than said first temperature, but in excess of room temperature,
whereby to facilitate production of a large quantity of coffee and dispensing of the coffee over a substantial period of time without reheating the coffee and thereby maintain the maximum desired original flavor of the brewed coffee.

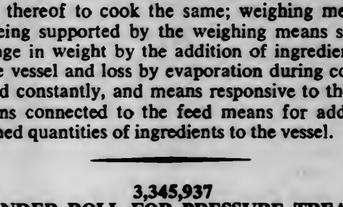
3,345,935
MULTISECTIONED DISPOSABLE COFFEE BREWING BAG AND BASKET

Clifford M. Waline, 3344 Rubin Drive, Oakland, Calif. 94602

Filed Dec. 28, 1964, Ser. No. 421,190

3 Claims. (Cl. 99—295)

1. A coffee brewing bag comprising:
(a) a flexible bottom layer impervious to water;
(b) a top layer of filter material formed into a plurality of coffee-holding compartments, the sides of said compartments being connected to said bottom layer;
(c) said bottom layer having at least one filter-covered opening communicating with the central portion of each compartment for permitting brewed coffee to pass therethrough but preventing the passage of coffee grounds; and



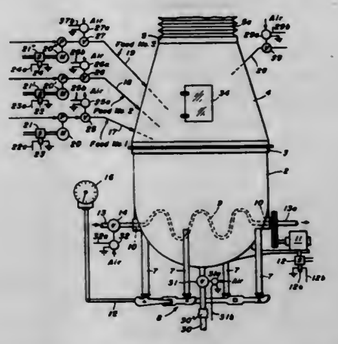
(d) said bottom layer extending beyond said compartments for forming an upstanding flexible border that surrounds said compartments to form a hot water holding reservoir that will cause the water to uniformly cover all of the compartments at the start of the coffee brewing period.

3,345,936
BATCH COOKING PROCESS

Foster Crocker, Glenshaw, and James A. Theys, Osborne, Pa., assignors to H. J. Heinz Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1963, Ser. No. 317,660

8 Claims. (Cl. 99—334)



1. Apparatus for batch cooking comprising a kettle; feed means for supplying ingredients selectively into the vessel; means associated with the vessel for heating the contents thereof to cook the same; weighing means; the vessel being supported by the weighing means such that the change in weight by the addition of ingredients to or from the vessel and loss by evaporation during cooking is measured constantly, and means responsive to the weighing means connected to the feed means for adding predetermined quantities of ingredients to the vessel.

3,345,937
CALENDER ROLL FOR PRESSURE TREATING MATERIALS

Eduard Küsters, 457 Gladbacher Strasse, 415 Krefeld, Germany, and Kurt Quoos, Krefeld, Germany; said Quoos assignor to said Küsters

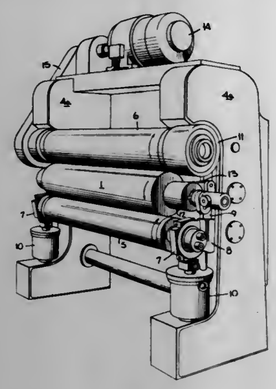
Filed Apr. 26, 1966, Ser. No. 545,507

Claims priority, application Germany, Feb. 16, 1961, T 19,683

3 Claims. (Cl. 100—155)

1. A calender for webs of paper or textile material comprising a polyamide roller and at least two substan-

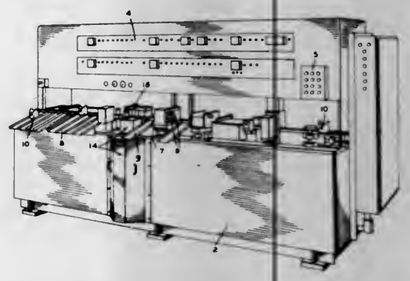
tially rigid rollers substantially on opposite sides of said polyamide roller, said polyamide roller consisting entirely of solid synthetic polyamide material throughout substantially the entire diameter of the roller and being free of



a supporting shaft at the core, said polyamide roller having a diameter of at least 200 mm. and a modulus of elasticity of 8,000 to 36,000 kg./cm.² at room temperature whereby deformation of the polyamide roller at the core at calendering pressure is avoided.

3,345,938
AUTOMATIC STAMPING MECHANISM
Albin S. Czubak and Gerald A. Hubble, Detroit, Mich., assignors to Micromatic Hone Corporation
Filed July 7, 1965, Ser. No. 470,166
1 Claim. (Cl. 101—43)

A piston head stamping mechanism comprising:
(a) a support means;
(b) motor means mounted on said support means;
(c) shaft means mounted on said support means;
(d) slip clutch means connected between one end of said shaft and said motor means adapted for intermittent rotation of said shaft;
(e) a stamping plate connected to the opposite end of said shaft and adapted to rotate therewith;
(f) said stamping plate including a plurality of bores circumferentially spaced;
(g) a stamp means comprising;
  (1) a shaft having a numbered face on one end and a spring and retaining washer on the other end providing a bias means, said stamp means adapted to be retained in said bores in said stamping plate;
(h) a cylinder mounted on said support means beneath said stamp means having a hammer means on the end thereof and adapted to hammer one of said stamp means when said stamping plate is stationary and one of said stamp means is in line with said hammer means;
(i) an index plate mounted on said shaft beneath said stamping plate and said support means and having a cam secured to the undersurface said index plate including a plurality of teeth on the circumference thereof;
(j) a switch mounting plate mounted on said shaft beneath said index plate and having a plurality of microswitches mounted thereon, each of said microswitches having arms with rollers connected thereto, said rollers adapted to selectively contact said cam mounted on said undersurface of said index plate;
(k) locking means mounted on said support means and having a stop arm adapted to selectively engage one of said plurality of teeth on said circumference of said index plate;
(l) position sensing means comprising:
  (1) relay means adapted to be energized as a result of a piston being selectively gaged;
  (2) circuit means interconnecting said relay means to said locking means whereby when one of said microswitches is energized when its roller contacts said cam on said index plate, said index plate is locked by said locking means thereby stopping rotation of said stamping plate and providing alignment of the selected number on said stamping plate directly in line with said piston head; and



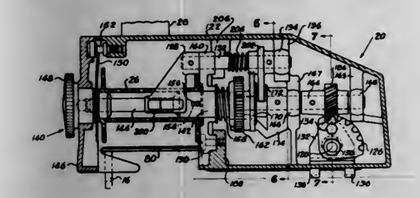
(m) piston head holding means adapted to hold said piston head in proper alignment when said piston is being stamped by said hammer and stamp assembly means.

3,345,939
METHODS OF PREPARING A GRAPHIC MULTICOLOR REPRODUCTION
Anton Wilhelm Jemseby, Allfarvagen 29, Taby, Sweden
No Drawing. Filed May 6, 1965, Ser. No. 453,830
Claims priority, application Sweden, May 12, 1964, 5,773/64; Feb. 20, 1965, 2,229/65
4 Claims. (Cl. 101—211)

1. Method of preparing a graphic multicolor reproduction of a painting having an irregular surface, comprising the steps of making a multicolor print of the painting on a support, making on a silk screen a pattern of openings corresponding to the elevated portions in the surface of the painting, and performing by means of this silk screen with transparent uncolored printing ink a print on top of and in registration with the multicolor print on the support to imitate the original surface of the painting.

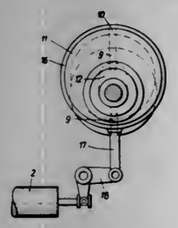
3,345,940
RIBBON FEED MECHANISM
Ralph B. Porter, Willoughby, and John A. Maul, Lyndhurst, Ohio, assignors to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,495
12 Claims. (Cl. 101—336)

1. In a ribbon mechanism for a data recorder of the kind having a printing head pivotally mounted on a base and movable between a printing position and an inactive position, in which said printing head includes a platen, the combination comprising:
means including a takeup spool mounted on the printing head for supporting a transfer ribbon for advancement across the printing head;
advancing means of the positive drive type actuated by the movement of the printing head from printing position to inactive position to wind the ribbon on the takeup spool;



means to detect the diameter of the ribbon wound on the spool; and means controlled by said detection means for so conditioning the advancing means as to provide for the advancement of the ribbon in substantially uniform increments at each movement of the printing head from printing position to inactive position.

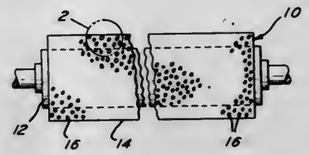
3,345,941
ADJUSTABLE VIBRATING ROLLER IN THE INKING MECHANISM OF A PRINTING MACHINE
Werner Koch, Offenbach am Main, and Friedrich Preuss, Neu-Isenburg, Germany, assignors to Roland Offsetmaschinenfabrik Faber & Schleicher A.G., Offenbach am Main, Germany, a firm of Germany
Filed Feb. 3, 1965, Ser. No. 430,051
Claims priority, application Germany, Feb. 19, 1964, R 37,248
2 Claims. (Cl. 101—350)



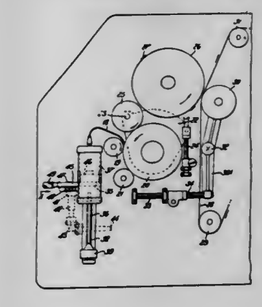
1. In an inking device for a printing press in combination; a rotatable form cylinder; a rubbing roller rotatable about an axis parallel to the rotational axis of the form cylinder and axially displaceable in reference thereto; a reciprocating drive means for axially reciprocating said rubbing roller, said drive means including a rotary shaft rotated at a synchronous speed with said form cylinder, and transmission means transmitting the rotation of said shaft as a lengthwise reciprocating movement to said rubbing roller; a first adjustable means for varying the length of said reciprocating movement; and a second adjustable means independently operable from the first adjustable means for varying the beginning of said reciprocating movement in reference to the angular position of the rubbing roller while leaving unchanged the length of the reciprocating movement.

3,345,942
RUBBER COVERED ROLLER
Robert R. Meltz, Philadelphia, Pa., assignor to The Moreland Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed June 14, 1966, Ser. No. 564,710
9 Claims. (Cl. 101—348)

5. In an inking system comprising a fountain, ink transferring rollers for transferring ink from said fountain to a plate and at least one form roller for depositing ink on said plate, said form roller being in contact with at least one of said ink transferring rollers, the improvement comprising a covering on said form roller comprising rubber having polytetrafluoroethylene particles uniformly dispersed therein.



3,345,943
INKING DEVICES FOR PRINTERS
Jan Antoni Rakowicz and Geoffrey Arnold Wark, London, England, assignors to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Aug. 17, 1965, Ser. No. 480,302
Claims priority, application Great Britain, Sept. 1, 1964, 35,783/64
3 Claims. (Cl. 101—366)

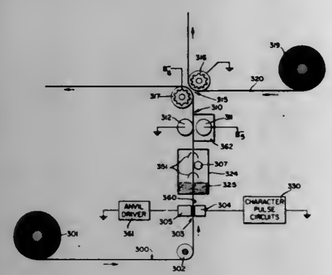


1. An inking device for a letterpress printer comprising a pair of inking rollers mounted for running in contact with each other, a piston-cylinder arrangement for containing and feeding an ink supply, a fine nozzle arranged to fit in the nip of the two rollers, conduit means connecting said cylinder with said nozzle, and power driven means operatively connected to said piston to move said piston through said cylinder for feeding ink at a metered rate from said cylinder through said nozzle to maintain a small wedge of ink in said nip, said power driven means comprising a crank device operatively connected to and driven by said letterpress printer, a rod secured to said piston, an axially fixed screw having a nut thereon which presses against said rod whereby rotation of said screw causes said nut, rod and piston to move, a sprag clutch secured to said screw, a lever for driving said clutch and a connecting rod secured to said lever and operatively connected to said letterpress printer whereby said screw is intermittently rotatable.

3,345,944
DUPLICATION OF ELECTROSTATIC PRINTING
Charles A. Simmons, Malvern, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 30, 1961, Ser. No. 121,247
7 Claims. (Cl. 101—426)

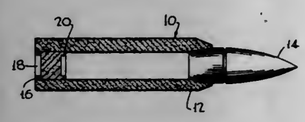
1. A method of making copies corresponding to input information provided by an electrostatic recording process comprising, electrostatically charging areas corresponding to a message on a dielectric-coated, conductive

backing master medium, applying neutral conductive dry ink particles to said charges, then on completion of said ink applying step, positioning said master inked upon surface in facing slightly separated relationship to a first electrode of an aligned pair of electrodes with the medium side opposite the inked side disposed contiguous to the second electrode of the pair and simultaneously applying an electric field of a voltage of the order of 700 to 1500 volts approximately to said master medium in a direction to erase ink clinging to said master medium due to background noise charges and to erase ink accumulated due to charges induced on the fringe of said information boundaries while retaining said message ink on



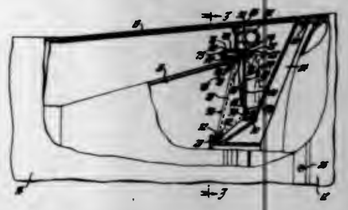
said master, said noise comprising, ink disposed on areas of said master medium which areas are charged oppositely to said message charges, collecting said noise ink, positioning said master medium in closely spaced opposed facing message relationship to a copy message receiving medium, applying a second voltage of the order of 700 to 1500 volts approximately in a direction to cause transfer of the ink from said charged message on said master medium toward said copy medium, said application of second transfer voltage being of duration to cause ink transfer to a desirable amount for visibility of said message on said copy, said copy message representation being a mirror image of the charged and inked message representation on said master.

3,345,945
UNIFORMED DENSITY CASELESS CARTRIDGE
Joseph B. Quinlan, Philadelphia, Pa., and John J. Scanlon, Jr., Willingboro, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 3, 1965, Ser. No. 477,044
5 Claims. (Cl. 102—38)



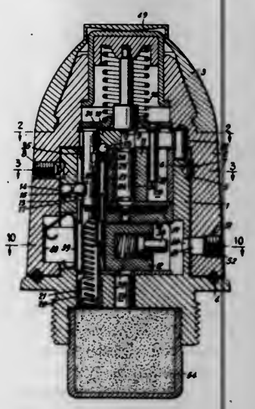
1. A uniform density molded caseless cartridge comprising a tubular molded propellant having a tapered external neck portion at a forward end and a base portion at a rearward end,
a projectile secured in said cartridge at said neck portion,
a combustible primer plug secured within said cartridge at said base portion, said primer plug having end portions,
a pocket in each of said end portions,
and a charge in each of said pockets.

3,345,946
ROCKET STAGE SEPARATOR
Marvin W. Johnson, Indianapolis, Ind., and Raymond M. Park, Cincinnati, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 2, 1960, Ser. No. 66,834
8 Claims. (Cl. 102—49.4)



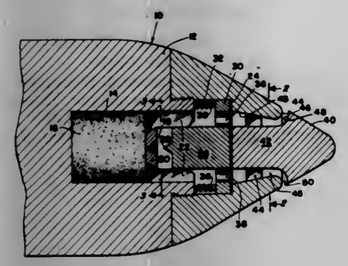
8. A separable connection for stages of a multistage launch vehicle comprising: stages of a vehicle in juxtaposition; antifriction bearing means carried by one of said stages providing for relative rotational movement therebetween when in assembled position; a frangible member disposed between said stages; inner-engaging mechanism between said frangible member, one of said stages and said bearing means to form a unit; and means to rupture said frangible member thereby disengaging said inner-engaging mechanism to allow separation of said stages.

3,345,947
PROJECTILE FUZE WITH ANTI-SABOTAGE MEANS
André Combourieux, Geneva, Switzerland, assignor to Industrial Holding Establishment, Vaduz, Liechtenstein
Filed Mar. 16, 1966, Ser. No. 534,900
Claims priority, application Switzerland, Mar. 18, 1965, 3,821/65
1 Claim. (Cl. 102—76)



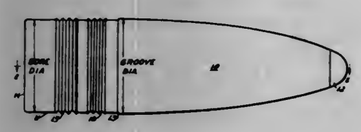
Projectile fuze with anti-sabotage device operating upon impact comprising a body, a hood rotatably mounted on said body, trajectory safety means comprising a balance-bar, a spring for actuating said balance-bar, a primer-holder rack cooperating with said spring to control the arming of the fuze, locking means to prevent the operation of said balance-bar before firing, manually operated fire conditioning means including a primer-holder movable between a safety position and at least one operative position, said fire conditioning means controlling said locking means and a locking member controlled by said primer-holder rack to immobilize said body relative to said hood if said rack assumes the operative position while said hood and said body are still in a relative safety position.

3,345,948
PROJECTILE
John W. Sarvis, P.O. Box 1325, Springfield, Mass. 01101
Filed Aug. 3, 1965, Ser. No. 477,045
3 Claims. (Cl. 102—87)



1. A projectile comprising a body having an outer surface of revolution with a tapered forward end and a nose portion secured to said projectile forward end,
cavity means within said projectile aligned with a longitudinal axis thereof,
a gas producing charge within said cavity,
passage means for directing gases emitted from said charge rearwardly from said tapered forward end and radially outwardly from said longitudinal axis, said means including a circumferential surface on a rearward end of said nose portion and a second circumferential surface on said tapered body forward end, said circumferential surfaces structurally correlated to define a nozzle at said outer surface of revolution, and
ignition means responsive to a prescribed inertial force resulting from an initial acceleration of said projectile, said ignition means being located in said cavity forwardly of said charge.

3,345,949
BULLET
John A. Nosler, Bend, Oreg., assignor to Nosler Partition Bullet Company, Bend, Oreg.
Filed Sept. 27, 1965, Ser. No. 490,331
5 Claims. (Cl. 102—92.2)



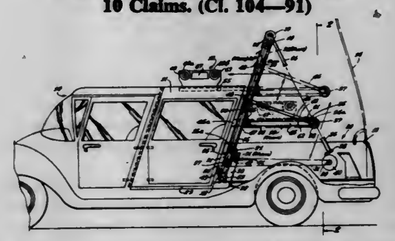
1. An improvement in a bullet for firing in a rifled barrel having an inside groove diameter and reduced bore diameter, wherein the bullet is formed with an exterior jacket of ductile metal alloy, said jacket comprising:
a nose section of forwardly tapered outside diameter;
a mid-sectional area joining said nose section having an outside diameter equal to the groove diameter;
and a shank joining said mid-sectional area and extending to the rear end of the bullet, said shank having an outside diameter equal to the bore diameter and having formed thereon a series of raised annular grooves and ridges having a maximum diameter equal to the groove diameter and a minimum diameter less than the bore diameter, said grooves and ridges being longitudinally spaced from said mid-sectional area and being each oriented perpendicular to the bullet axis.

3,345,950
DEEP WELL PUMPING APPARATUS
Emil A. Bender, P.O. Box 52, Bakersfield, Calif. 93302
Filed Apr. 29, 1966, Ser. No. 546,356
8 Claims. (Cl. 103—206)



1. Pumping apparatus for an oil well of the like having a pump comprising a vertically reciporcating rod string actuated by reciprocating motive means, said pump mounted upon a tower having generally a greater height than the stroke of the reciprocating rod string of the pump and located above the oil well; a yoke receiving in coupling engagement the upper end of the pump rod string; a motor included in said motive means mounted at the top of the tower; a shaft also at the top of the tower driven by said motor; a wheel mounted outwardly on each end of said shaft; a flexible drive element trained over each of said wheels in positive driving relationship thereto and having one set of the companion ends of said elements being fixed to the yoke; a counterweight hung on the other set of companion ends of the drive element, and means for driving and braking said motor.

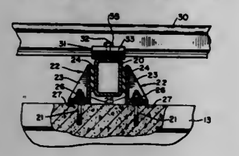
3,345,951
AUTOMOTIVE-MONORAIL TRANSPORTATION SYSTEM
Scott C. Rethorst, 1661 Lombardy Road, Pasadena, Calif. 91106
Filed Jan. 4, 1965, Ser. No. 423,065
10 Claims. (Cl. 104—91)



1. A transportation system comprising rail means for transporting vehicles and including transmission means for transmitting energy to any point along the rail means; an automotive vehicle adapted to be operated independently of, and apart from any rail means; a portion of said vehicle being further constructed to carry a load and including means to operate said portion on and in conjunc-

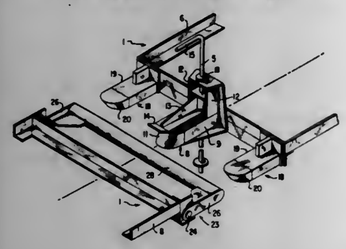
tion with said rail means, said automotive vehicle being operable as self-propelled vehicle with and without attachment of said portion, said portion and the said means each having a means complementing each other for propelling the portion of the vehicle, means so that the said portion may be operated alternatively on said rail system, or be placed on said automotive vehicle.

3,345,952
GUIDEWAY FOR HIGH-SPEED MASS TRANSPORTATION SYSTEMS
Sidney H. Bingham, 109 E. 35th St., New York, N.Y. 10016
Filed June 20, 1966, Ser. No. 558,752
5 Claims. (Cl. 104—124)



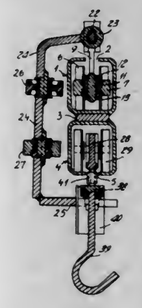
1. A high-speed mass transportation guideway comprising, in combination, a plurality of longitudinally extending beams arranged in pairs transversely spaced apart, a plurality of cross ties, means comprising rubber members subject to vertical and lateral shear stress for mounting each cross tie in position across said beams, and rails fixedly mounted upon said cross ties and extending longitudinally of said beams; said means for mounting each cross tie including at least one pair of brackets adjustably supported on one said beam for limited movement relative to said guideway, said pair of brackets being spaced and having a cross tie positioned between them, said rubber members being between the facing surfaces of said cross tie and said brackets and being bonded thereto.

3,345,953
FLOOR TRUCK FOR TOW LINE SYSTEM
Edward W. Schmidt, Chicago, Ill., assignor to Link-Belt Company, a corporation of Illinois
Filed Nov. 19, 1965, Ser. No. 508,780
5 Claims. (Cl. 104—170)



1. A material handling floor truck for use with a tow truck system comprising a vehicle body having a rear bumper extending across a substantial portion of the width of said body,
- a driving pin connected to said vehicle body vertically movable from an operative to an inoperative position, said driving pin in said operative position being disposed to engage a tow line to propel said truck, said driving pin in said inoperative position being located so as to be out of engagement with the tow line,
- disengaging means for moving said driving pin from said operative to said inoperative position, said disengaging means being generally centrally located at the front of said vehicle body so as to be activated to move said driving pin to said inoperative position when said truck strikes the rear bumper of a preceding material handling truck,
- preventing means at the front of said truck spaced laterally at each side of said disengaging means engageable with the rear bumper of a preceding truck to retain said bumper against moving into engagement with said disengaging means and prevent said bumper from operating said disengaging means when the angle between the longitudinal centerlines of two succeeding trucks exceeds a predetermined angle.

3,345,954
CHAIN-CONVEYOR
Morton Valentin-Hjorth, Copenhagen, Denmark, assignor to Hjort-Conveyor A/S, Copenhagen, Denmark
Filed Feb. 1, 1965, Ser. No. 429,450
Claims priority, application Denmark, Mar. 9, 1964, 1,181/64
13 Claims. (Cl. 104—172)



1. Conveyor apparatus comprising:
- upper and lower interconnected profile rails, said upper rail having an upward opening longitudinal slit, and said lower rail having a downward opening longitudinal slit;
- a circulating driving chain mounted within said upper rail;
- a plurality of load carrying trolleys mounted in said lower rail; and
- a plurality of dragging members mounted on said chain, extended through the slit in the upper rail, and adapted for connection to said trolleys.

3,345,955
WALL FILLERS
John W. Erickson, Huntington Beach, Calif., assignor to Preco Incorporated, Los Angeles, Calif., a corporation of California
Filed Jan. 10, 1966, Ser. No. 519,555
15 Claims. (Cl. 105—369)

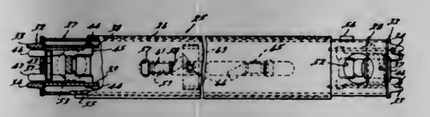
4. A cargo engaging wall filler for a walled cargo carrier, comprising, in combination with a carrier structure including a wall,
- a generally plane and essentially rigid frame,
- structure mounting the frame on the carrier wall for movement relative thereto along a predetermined path that is generally inclined with respect to a line perpendicular to the wall, between a position adjacent the wall and a plurality of positions spaced from the wall by respective different distances, the plane of the frame being essentially parallel to the wall in all of said positions,
- a cargo engaging panel member, means mounting the panel member on the frame for movement relative thereto in the plane of the frame,

means interconnecting the panel member and the carrier structure for constraining the panel member to follow a path less inclined to said perpendicular line than said frame path in response to said frame movement,



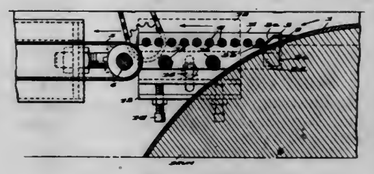
and latch means actuable to releasably latch the frame against movement along its said path toward the carrier wall.

3,345,956
FREIGHT BRACING APPARATUS
Richard G. Dunlop, Livonia, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,470
2 Claims. (Cl. 105—369)



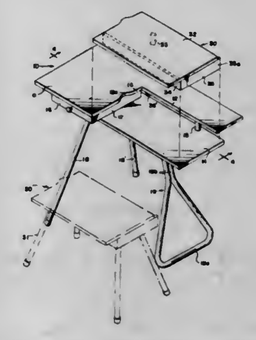
1. An end fitting for securing a freight bracing crossbar to a support member having a plurality of spaced pairs of apertures therein comprising a pair of locating projections adapted to extend into each aperture of one of the pairs, and locking means comprising jaw members supported by said end fitting for pivotal movement from a disengaged to an engaged position for fixing said end fitting with respect to the support member, each of said jaw members being adapted to extend into one of the apertures of the one pair and having a portion thereof extending behind the surface of the support member when said jaw members are in their engaged position for precluding detachment of said end fitting from the support member, each of the locating projections having a surface thereof extending substantially in a plane parallel to the planes of pivotal movement of said jaw members, said surfaces being laterally displaced from the respective said jaw members and adapted to engage the adjacent surface of the support member to limit lateral movement of the end fitting with respect to the support member, said engagement being effective to protect said jaw members from damage upon said lateral movement, said locating projections being formed to allow pivotal movement of said jaw members between their engaged and disengaged positions.

3,345,957
STRIPPING MECHANISM FOR BAKING COOKIES
John G. Welch, Thunderwood Farm, Lewisville, N.C. 27023
Filed Mar. 15, 1965, Ser. No. 439,856
10 Claims. (Cl. 107—57)



1. In combination with an endless baking conveyor for supporting bakery products from the moment of application to the conveyor to completion of the cooking stage, a means for stripping the cooked product from the conveyor and holding the cooked product while being cooled comprising a knife extending transversely to said conveyor and in engagement with said conveyor surface, a series of driven rollers arranged in a row side by side and spaced from each other and extending parallel to said knife and adapted to receive and pass along bakery products stripped from said conveyor by said knife, and a section of metallic steel mesh in the form of a power driven endless belt lying next adjacent the last of said series of rollers to receive the bakery products and on which the said products are cooled, said belt having a width substantially the same as the length of said rollers and the mesh of said belt being sufficiently open to permit cooling air to pass therethrough.

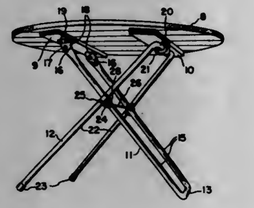
3,345,958
MULTIPLE USE TABLE
Kenneth A. Blevins, Missoula, Mont., assignor to Sirco Manufacturing, Inc., Missoula, Mont., a corporation of Washington
Filed July 19, 1966, Ser. No. 566,422
10 Claims. (Cl. 108—13)



1. In combination, an upper work surface interrupted by a cutout, equipment support means spaced below the level of said work surface a predetermined distance and located directly beneath said cutout, connecting means between said work surface and equipment support means to maintain said distance, bottom support means for said work surface depending below the level of said equipment support means and providing leg room beneath said cutout below the level of said equipment support means,

and removable insert means presenting an insert surface shaped to fill said cutout, said insert means being adapted to seat on said equipment support means and have its said insert surface fill said cutout to provide an uninterrupted working surface when use of the equipment support means is not required and being adapted to be bodily removed whereby equipment may be seated on said equipment support means and extend upwardly through said cutout.

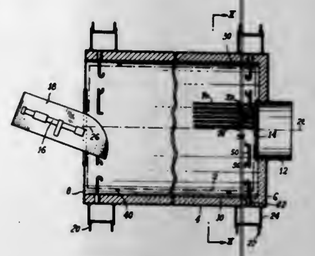
3,345,959
PORTABLE FOLDABLE TABLE
Robert S. Linstead, Rockford, Ill., assignor to Structo Division, King-Seeley Thermos Co., Freeport, Ill., a corporation of Michigan
Filed Aug. 11, 1966, Ser. No. 571,861
6 Claims. (Cl. 108—119)



1. A foldable portable table comprising a top and a foldable X-frame thereunder for support thereof in its horizontal operative position, said X-frame comprising two generally U-shaped legs, the first of which has the upper ends of the arms thereof pivotally connected to the under side of said top on one side of its center while the substantially horizontal cross-portion of the U at the lower end of this leg rests on the ground or floor, the second leg being of inverted U-form pivotally connected intermediate the ends of the arms thereof to the respective arms of the first leg intermediate the ends thereof, the lower ends of the arms of the second leg providing support of the top on the ground or floor while the substantially horizontal crossportion of this U at the upper end is detachably engaged in a substantially vertical hook provided on the under side of the top on the other side of its center and facing the pivotal connection of the first leg with the top, the X-frame upon disconnection of said hook from the cross-portion of said second leg being foldable to substantially flat form into compact substantially parallel relation to the top so that the cross-portion of one of said legs serves as a handle for portability of the folded table while the hook is detachably engaged over a substantially horizontal projection provided on one of said legs.

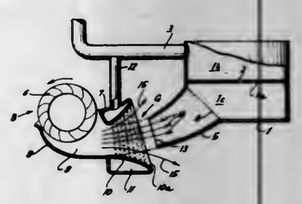
3,345,960
ORGANIC MATERIALS DESTRUCTOR
Pierre Maurice, Paris, Pierre Girard, Talence, and Pierre Fenaille, Pont-Sainte-Maxence, France, assignors to La Soudure Autogene Francaise
Filed July 12, 1965, Ser. No. 471,062
Claims priority, application France, July 17, 1964, 982,088, Patent 1,412,454
5 Claims. (Cl. 110—8)

1. An incinerator for the destruction of organic materials by combustion promoted by placing these materials in contact with very hot gases, comprising a metal casing, a metal basket within said metal casing, the basket and casing together turning about a generally common horizontal axis, the casing having the general shape of a cylinder of revolution generally around said axis and terminating in annular ends, the opening in one of said ends adapted for the introduction into the basket of materials to be consumed by incineration and for the admission of hot gases into the space inside the basket to provide said incineration, the opening in the other end adapted



for the escape of the fumes resulting from said incineration, and the basket presenting the shape of a polygonal cylindrical surface with side wall components generally parallel to said horizontal axis.

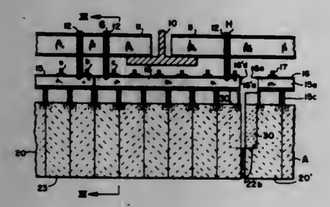
3,345,961
FLUID CONVEYING APPARATUS
Nikolaus Laing, Aldingen, near Stuttgart, Germany, assignor to Laing Vortex, Inc.
Original application Apr. 26, 1960, Ser. No. 24,791. Divided and this application May 4, 1966, Ser. No. 547,570
Claims priority, application Germany, Mar. 12, 1960, L 35,595
4 Claims. (Cl. 110—72)



1. A fluid conveying apparatus, comprising a conduit having an inlet portion, an outlet portion and an intermediate section located between said inlet and outlet portions said conduit further comprising a first diffuser provided with said inlet portion and a second diffuser provided with said outlet portion, said diffusers having adjacent but spaced portions together constituting said intermediate section and defining between themselves a gap wherein the fluid stream flowing from said first diffuser toward said second diffuser remains unconfined; an obstruction connected with one of said portions and arranged to offer a constant resistance to the flow of fluid therethrough; fluid supplying means for directing a stream of fluid into said inlet portion; means for varying the pressure of said fluid at the downstream side of said obstruction; and regulating means responsive to changes in said pressure for withdrawing from said intermediate section such quantities of fluid that the rate of fluid flow through said outlet portion remains constant, said obstruction being connected with said outlet portion and wherein said means for varying the fluid pressure comprises a pipe arranged to draw a variable amount of fluid from said first diffuser whereby such fluid enters via said gap, said regulating means comprising a compartment outwardly adjacent to said first diffuser and communicating with said pipe, and apertures provided in said first diffuser to constitute passages for the flow of fluid from the interior

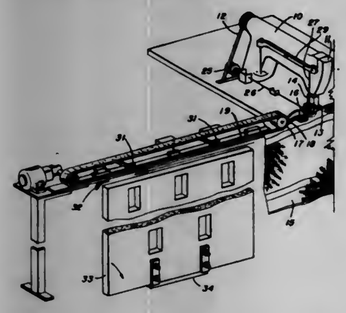
of said first diffuser into said compartment whereby the quantity of fluid flowing from said first diffuser into said compartment is a function of the pressure prevailing in said pipe and the combined amount of fluid entering said second diffuser from said first diffuser and via said gap remains constant.

3,345,962
LINK AND YOKE SUSPENDED ROOF
Levi S. Longenecker, 61 Mayfair Drive, Pittsburgh, Pa. 15228
Filed Dec. 27, 1965, Ser. No. 516,436
23 Claims. (Cl. 110—99)



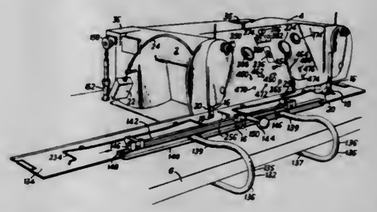
1. In a furnace roof employing spaced-apart support beams, a group of cross beams carried by the support beams and endwise liftable with respect thereto, and metal loop hangers insertable endwise on the cross beams to project downwardly therefrom, an improved suspension construction wherein, each loop hanger has shelf means adjacent its lower end, primary metal hangers are provided having a top flange therealong adapted to slidably-enter an associated loop hanger and rest in a suspended relation on said shelf means thereof, and each primary hanger has downwardly-projecting and spaced-apart leg and latching foot portions therealong.

3,345,963
GARMENT SEVERING AND STACKING APPARATUS
Floyd R. Shoaf, 674 S. Union St., Concord, N.C. 28025
Filed Dec. 31, 1964, Ser. No. 422,694
18 Claims. (Cl. 112—2)



16. An apparatus for continuously sewing, handling and stacking textile articles comprising, in combination: a sewing machine; an article conveying apparatus and a stacking device arranged in juxtaposition with each other, said sewing machine having a presser foot, a chain stitch severing means behind said presser foot and aligned therewith; means for guiding a chain of stitches between successive sewn articles into said stitch severing means; means for extending and guiding a chain of stitches in rectilinear alignment with said presser foot and stitch severing means; means for releasably supporting sewn articles and conveying them along a directed path of travel to a predetermined position in a horizontal plane while permitting the sewn article to be draped in a vertical plane; means for receiving and transporting an article from said article supporting and conveying means out of the path of travel of succeeding sewn articles; and means for stacking the conveyed articles on top of each other.

3,345,964
APPARATUS FOR GUIDING A WORKHOLDER RELATIVE TO A TOOL
George William Palmer, London, England, assignor to Light's London Limited, London, England, a British company
Filed Mar. 1, 1965, Ser. No. 435,849
Claims priority, application Great Britain, Mar. 9, 1964, 9,939/64; July 30, 1964, 30,203/64
8 Claims. (Cl. 112—2)



1. In a machine having a seam producing tool operable at a fixed station, for fastening together flatwise superimposed plies of material while they are secured in a workholder having a plate-like element that overlies the topmost ply and which element has a slot in the shape of a seam to be made:

(A) a subcarriage on the machine constrained to movement in opposite directions along a first axis;

(B) a carriage so connected with the subcarriage as to be constrained to movement therewith along said first axis but to be movable relative to the subcarriage in opposite directions along a second axis transverse to the first, said carriage being adapted to have a workholder detachably fixed thereto for motion with the carriage in directions edgewise of its plate-like element;

(C) a first reversible fluid motor connected between the subcarriage and a fixed part of the machine for actuating the subcarriage along the first axis;

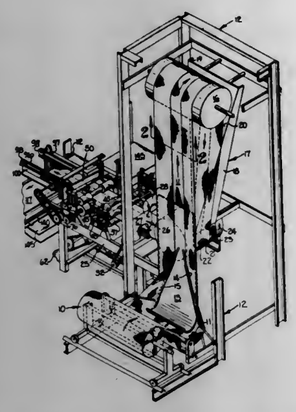
(D) a second reversible fluid motor connected between the subcarriage and the carriage, for actuating the carriage along said second axis;

(E) a probe fixed on the machine with its axis substantially perpendicular to said axes and engageable in said slot in the plate-like element, engagement of the probe against the edges of the slot imposing reaction forces upon the fluid motors through the carriage whereby the fluid motors are constrained to actuation of the carriage at relative rates along each of said first and second axes such that the carriage moves along a path corresponding to the shape of said slot;

(F) means for delivering pressure fluid from a source thereof to each fluid motor at a substantially constant pressure but at a rate controlled by the reaction force which the probe, in cooperation with the edges of the slot, imposes upon the motor; and

(G) a pair of flow reversing valves, one for each of said reversible fluid motors, each connected between its motor and the pressure fluid delivering means therefor, for controlling the direction of operation of the motor.

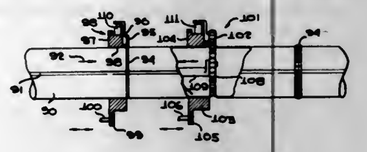
3,345,965
APPARATUS FOR PRODUCING PREFOLDED DIAPERS
Graves T. Gore, Ware Shoals, S.C., assignor to Riegel Textile Corporation, a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,614
6 Claims. (Cl. 112—2)



1. Apparatus for automatically producing prefolded and secured diapers from a continuous web of textile material comprising:
(a) supply means adapted to suply a continuous web of material;
(b) driven feeding means adapted to feed the continuous web of material from said supply means in an elongate path of travel through said apparatus;
(c) folding means disposed adjacent said supply means and adapted to fold the continuous web of material with a triple reverse fold to form a center panel comprised of four folded-over layers of material and two side panels extending transversely outwardly from each side of the center panel comprised of two folded-over layers of material;
(d) securing means disposed adjacent said folding means and adapted to receive the folded continuous web of material and permanently secure the web in the folded condition;
(e) cutting means disposed adjacent said securing means for transversely cutting the folded and secured continuous web of material into individual diapers of a predetermined length; and
(f) means for interrupting operation of at least a part of said feeding means during the operation of said cutting means whereby the feeding of the folded and secured web of material will be stopped in the area of said cutting means to insure an even cut thereof, said means for interrupting the operation of said feeding means comprising spring clutch means operatively associated with said cutting means and adapted to be disengaged upon actuation of said cutting means.

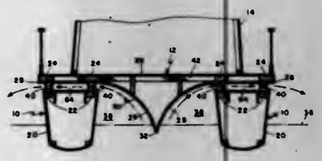
3,345,966
METHOD OF FLANGING CAN BODIES HAVING PRESTRETCHED CIRCUMFERENTIAL EDGES
Edmond J. Obidowski, Redessan, France, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application May 27, 1963, Ser. No. 283,332, now Patent No. 3,285,212, dated Nov. 15, 1966. Divided and this application Sept. 30, 1966, Ser. No. 583,395
5 Claims. (Cl. 113—120)

1. The method of forming can bodies comprising the steps of providing a strip of material for forming can bodies, forming a tubular member from said strip of material, circumferentially coining and scoring the tubular



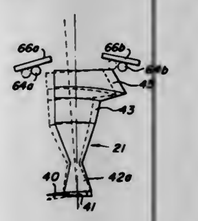
member at intervals corresponding to the height of a finished can body, and breaking the tubular member along the scoring for providing a plurality of can bodies.

3,345,967
MULTIPLE HULLED BOAT
Theodore R. Sweet, 3120 Keats St., San Diego, Calif. 92106
Filed May 2, 1966, Ser. No. 547,035
6 Claims. (Cl. 114—61)



1. A multiple hulled boat, comprising:
a pair of spaced, parallel, buoyant hulls;
a deck structure;
a plurality of mountings securing said deck structure on top of said hulls in vertically spaced relation thereto, and providing substantially transversely extending slots between the hulls and deck structure and opening laterally of said hulls;
a central hull depending from said deck structure between said buoyant hulls, said central hull having side walls extending from substantially the water line to the lower portion of the deck structure adjacent said slots, whereby water rising between said hulls is deflected outwardly through the slots.

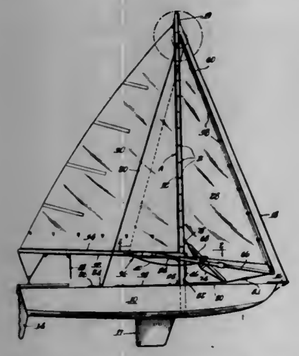
3,345,968
HYDROFOIL
David Z. Bailey, Warwick, R.I. (P.O. Box 69, East Greenwich, R.I. 02818)
Filed Apr. 29, 1966, Ser. No. 546,243
5 Claims. (Cl. 114—66.5)



1. In combination:
(a) a watercraft,
(b) a hydrofoil structure including
(i) hydrofoil having a hydrodynamic centerline and
(ii) strut means having said hydrofoil secured rigidly thereto, and

(c) mounting means on said watercraft supporting said strut means with said hydrofoil in a fully submerged position to provide a lifting component along said hydrodynamic centerline when said craft has forward velocity across the surface of a body of water, said mounting means including
(i) means for oscillating said hydrofoil structure relative to said craft about a fixed transverse axis in the vicinity of said hydrodynamic centerline.

3,345,969
SAILING RIG
Minton Grier Purvis, 1947 Greenwood Ave., Wilmette, Ill. 60091
Filed Apr. 8, 1966, Ser. No. 541,320
11 Claims. (Cl. 114—102)



1. A sailing rig including a mast, a mainsail, a jib, a mainsail halyard, means associated with the upper portion of said mast for receiving and guiding the mainsail halyard, a jib halyard, means for guiding the jib halyard, a substantially horizontal mainsail boom, said boom being swivelly coupled with the lower portion of said mast, a section comprising a forward extension of the boom which is fixedly secured to the boom, jib tack accommodating means laterally shiftable as an incident to the movement of said forward extension, means operable independently of said boom and forward extension for securing said jib tack accommodating means against unauthorized upward displacement, jib sheet means connected at one extremity with the clew of said jib, means for securing the free extremity of a jib sheet in a fixed position to maintain the setting of the jib, and a mainsail sheet connected with the main boom.

3,345,970
BOAT AND BARGE COMBINATION
Louis H. De Long, 1 Crabapple Court, Olivette, Mo. 63132
Filed Mar. 28, 1966, Ser. No. 538,046
1 Claim. (Cl. 114—235)



A boat and barge combination which can be rigidly connected together as a single unit for moving from place to place and which can be separated into multiple independent units when desired, comprising a boat having a hull with a stem portion and midship portion and stern portion, said hull having a predetermined configuration, a keel projecting outwardly from at least said stem portion and said midship portion, a first pair of fluid operated pin means mounted in said stem portion adjacent to said keel, means operable from a remote position for extending and retracting said first pin means relative to said stem portion, at least a second pair of fluid operated pin means mounted in said midship portion and spaced from said first pin means, means operable from a remote position for extending and retracting said second pair of pin means relative to said midship portion, a barge having a stern portion with a recess therein, said recess being complementary to the configuration of the stem and midship portions of said boat, a central member disposed in said recess along the longitudinal center line of said barge, said central member having a groove extending substantially the full length thereof, a first pair of sockets mounted in said barge adjacent to said recess for receiving said first pin means, at least a second pair of sockets mounted in said barge adjacent to said recess for receiving said second pin means, said barge being trimmed about a point rearwardly of said recess, whereby said boat can be moved into said recess with the keel of the boat located within the groove of said central member and said first and second pin means are extended into said sockets from a remote position ot rigidly connect said boat to said barge so that said barge can be moved to a point of unloading and thereafter said pin means are retracted from said sockets and said boat and barge are separated.

3,345,971
SHIP MANEUVERING METHOD
Tad Stanwick, Washington, D.C., assignor to The Stanwick Corporation, Washington, D.C., a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,670
4 Claims. (Cl. 114—235)

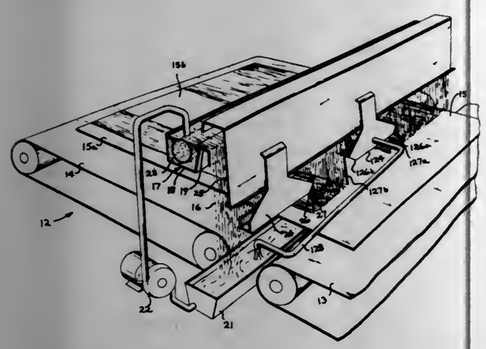


1. Method for maneuvering a first vessel with respect to a second vessel, comprising the steps of:
(A) differentiating pressure by suction action between an integral suction portion of said second vessel which is in contact with said first vessel and ambient so as to secure said integral portion of said first vessel;
(B) limiting movement of said integral portion of said second vessel with respect to said first vessel, so that movements of said second vessel are translated to said first vessel; and
(C) flowing re-supplied materials from said second ship through said suction portion and into said first ship.

3,345,972
MEANS TO ADJUST EFFECTIVE WIDTH OF CURTAIN COATER
Leonard J. Masulis, Riverdale, Ill., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed May 20, 1965, Ser. No. 457,265
9 Claims. (Cl. 118—301)

1. Apparatus for applying a coating of a liquid material to a portion of the upper surface of a planar object comprising: conveyor means for conveying the planar object

in a substantially horizontally oriented position along a substantially horizontally extending path of travel; curtain-forming means for establishing a thin vertically falling curtain of said liquid material extending across said path beyond the lateral extremities of the planar object; trough means disposed beneath the path of travel for catching falling liquid material that falls beyond the lateral extremities of the planar object; means for preventing a portion of the upper surface of the planar object extending parallel to its path of travel from being coated with liquid, said means comprising a channel-shaped member disposed at an elevation above the upper surface of the planar object and at a location in vertical alignment with said curtain-forming means and having a closed end dis-

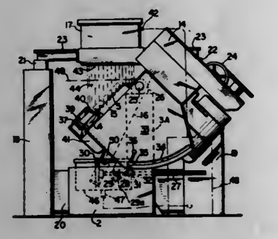


posed above the path of travel of the planar object, said channel-shaped member serving to intercept a portion of the falling curtain; said closed end comprising a member extending downwardly from its upper limit at an angle inclined toward the other end and wherein the other end of the channel-shaped member is spaced horizontally exteriorly of the path of travel of the planar object and is disposed vertically above the trough means, whereby the intercepted portion of the curtain is diverted to the trough means as a free falling stream; and curtain guide means comprising a narrow elongate member extending downwardly from the closed end of the channel-shaped member to a position closely adjacent the upper surface of the planar object.

3,345,973
COATING APPARATUS WITH TILTING CONVEYOR

Bernhard Glaus, Saint Gall, Switzerland, assignor to Ulrich Steinemann A.G., Ltd., Saint Gall-Winkeln, Switzerland, a corporation of Switzerland

Filed Feb. 11, 1964, Ser. No. 344,121
8 Claims. (Cl. 118—324)

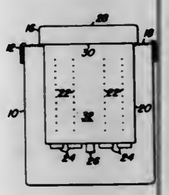


1. In a curtain coating apparatus for coating a workpiece having a configurated surface, a fluid coating material discharging vessel comprising means to support said vessel, feeding means including a belt conveyor operable to feed a workpiece underneath said discharging vessel comprising supporting means independent of said vessel support means, wherein said discharge vessel and the supports thereof are independent of said feeding means and the supports thereof, means for tilting said conveyor belt feeding means and selectively varying the tilting angle thereof and the angle of the belt in a direction transverse to the feeding movement of said feeding means and also for securing said feeding means in a tilted position, infinitely variable drive means mounted on the tilting means and movable therewith for varying the speed of the conveyor belt when in either tilted or horizontal position and guiding means adjacent said feeding means moving in synchrony therewith and supported thereby for supporting a workpiece in position on said feeding means in a tilted position.

3,345,974
ARTHROPOD FEEDING DEVICE

William G. Phillips, Frederick, and John W. E. Brown, Thurmont, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed Mar. 7, 1966, Ser. No. 534,571
3 Claims. (Cl. 119—51)



1. An arthropod feeding device comprising a container having a perforated portion, a removable cap therefor, a reservoir means located adjacent the top of the container, integral loading and conduit means extending in a downward direction from the reservoir means, said conduit means including orifices extending laterally from the interior to the exterior along a substantial portion of the length thereof, and said conduit means being encompassed within the container.

3,345,975
REHEATER AND SUPERHEATER CIRCUIT ARRANGEMENT

William D. Stevens, North Caldwell, and Walter P. Gorzegno, Florham Park, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Oct. 22, 1965, Ser. No. 501,169
9 Claims. (Cl. 122—406)

1. A forced flow once-through boiler for use with a turbine complex including high pressure and low pressure turbines, comprising

a boiler circuitry including water wall tubes defining an upright furnace section;

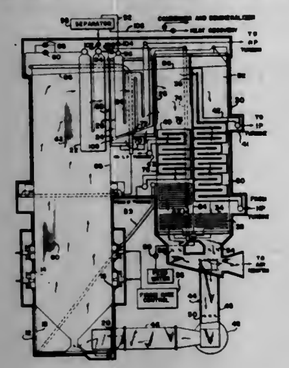
burner means in the lower portion of the furnace section, the furnace section including an upper exit for gas flow remote from the burner means;

a convection area in gas flow communication with the furnace upper exit;

the boiler circuitry further including a pendant superheater circuit disposed in the furnace section adjacent the furnace upper exit;

a finishing superheater circuit disposed in the convection area in series fluid flow relationship and downstream with respect to the direction of fluid flow of the pendant superheater circuit, the pendant and finishing superheater circuits being adapted to supply high pressure flow from the water wall tubes to the high pressure turbine;

further fluid flow circuitry including a start-up bypass line connected to the boiler circuitry intermediate the pendant superheater and finishing superheater wherein during start-up the fluid flow is diverted from the finishing superheater and high pressure turbine;

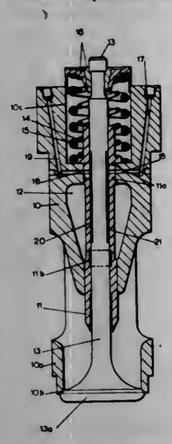


the pendant superheater comprising sufficient tubes adjacent the furnace upper exit to cool the flue gas at a given burner firing rate below the temperature at which damage to the finishing superheater could occur, thereby permitting maximum start-up burner input.

3,345,976
POPPET VALVES FOR INTERNAL COMBUSTION ENGINES

Joseph Albert Pope, Bramhall, and Stefan Krzyzewski, Cheadle Hulme, England, assignors to Mirrlees National Limited, a corporation of Great Britain, Northern Ireland, and the Isle of Man

Filed June 15, 1965, Ser. No. 464,032
Claims priority, application Great Britain, June 16, 1964, 24,814/64
4 Claims. (Cl. 123—188)

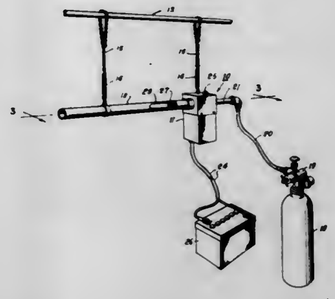


2. A poppet valve assembly comprising a cage, a valve guide mounted in said cage, a valve stem movable axially in said guide, at least two separate longitudinal flats in said valve stem, an inlet for pressurized lubricant in said guide communicating with one of said flats, an outlet for lubricant in said guide located for simultaneous communication with another of said flats, an annular groove in said guide spaced from the ends of said flats when said valve is closed but communicating therewith when said valve is open, said inlet and outlet being within the length of said flats in all positions of said valve.

3,345,977
SUSPENDED PRESSURIZED GAS OPERATED PAPER CONE PROJECTOR

Lester F. Hall, 5907 Sherry Lane, Dallas, Tex. 75225

Filed Jan. 3, 1967, Ser. No. 606,856
4 Claims. (Cl. 124—11)



1. Apparatus for projecting paper cones or the like from within a moving vehicle comprising: an elongated barrel, an electrically operated solenoid valve assembly connected to one end of the barrel with an input to the valve being connected by a flexible conduit to a supply of pressurized gas, means including a pushbutton electrical switch associated with said assembly for releasing a charge of pressurized gas into said barrel at a rate which is predetermined and repeatable regardless of the manner in which the pushbutton switch is operated, a nozzle means extending from said valve assembly into the barrel and shaped for receiving said paper cones in a fixed position thereon, said nozzle means being larger at its base end than at its other end in accordance with the size and shape of the paper cone, whereby the base of the paper cone bears upon and is supported by the larger base end of the nozzle means, the nozzle means extends into the paper cone a substantial distance, the paper cone being supported by the nozzle means, wherein the base of the cone rests against the base of the nozzle means to hold said cone in a fixed position, an access hole being defined in the side wall of the barrel near the breach of the barrel for permitting insertion of a paper cone over said nozzle means, the length of the access hole extending beyond the end of the nozzle means to facilitate insertion of the paper cones, and means for suspending the barrel and valve assembly from the overhead of the vehicle, said means permitting both vertical and horizontal movements of said barrel and said valve assembly, and said barrel and valve assembly supporting means being movable independently of the pressurized gas supply.

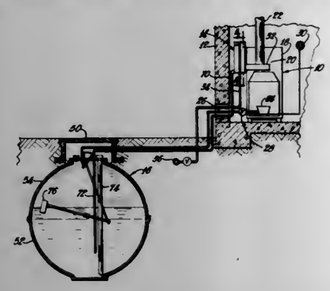
3,345,978
LIQUID FUEL FEEDING SYSTEM

John W. Yates, 6005 6th St., Tampa, Fla. 33611

Filed Aug. 26, 1965, Ser. No. 482,692
11 Claims. (Cl. 126—94)

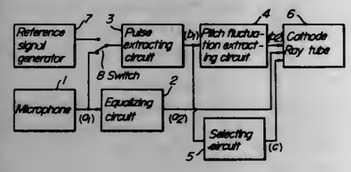
1. A heating system for a building comprising a liquid fuel oil stove in a space within the building to be heated, a combustion chamber within said stove, a liquid fuel oil burner in a lower portion of said combustion chamber, said burner having a liquid fuel inlet, a humidifier pan attached to said stove above said burner, means for supplying water to said pan, a valve in said water supply

means, a float in said pan operating said valve for maintaining a constant level of water in said pan, said pan having a water outlet, an oil tank assembly for storing fuel oil and for feeding the oil under constant pressure to the stove, said assembly comprising an underground tank having an oil outlet at the top thereof, an oil inlet at the top thereof, a water inlet at the top thereof, a water outlet at the top thereof, a discharge conduit connecting said water outlet with a lower portion of the interior of said tank, a water line connected between said pan water outlet and said tank water inlet for said liquid fuel storage tank, a liquid fuel line connected between said liquid fuel outlet of said tank and said burner inlet, a lever float arm pivotally attached to said water discharge conduit at an intermediate point in said tank, an adjustable weight affixed to said arm, a float at the outer end



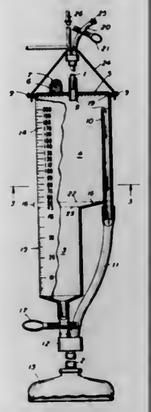
of said arm, a connecting link pivotally attached to said arm on the side of the conduit pivot opposite said float, a gauge pointer arm for indicating the quantity of fuel in said tank, a gauge housing on said tank top associated with said pointer arm, means pivotally supporting an intermediate point of said pointer arm from the top of said tank, said connecting link being connected to said pointer arm above said intermediate point, a valve seat associated with said oil outlet opening, a valve pivotally connected to said pointer arm below said intermediate point, said connecting link, said pointer arm, and said oil outlet valve being of such lengths that when said tank is substantially full of water, said float will be at the upper portion thereof, said pointer will indicate empty on said gauge, and said oil discharge valve will seat on said oil discharge valve seat and prevent water from flowing through said oil outlet opening.

3,345,979
APPARATUS FOR OBSERVING VOCAL CORD WAVE
Tanetoshi Miura, Tokyo, and Tsuneji Koshikawa, Tokorozawa-shi, Japan, assignors to Hitachi, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan
Filed Mar. 3, 1964, Ser. No. 349,059
4 Claims. (Cl. 128—2)



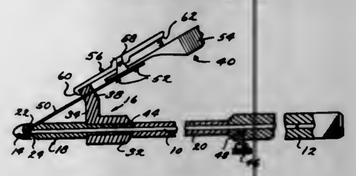
1. An apparatus for observing vocal cord waves comprising: microphone means for extracting electrical vocal cord waves including pitch fluctuation features of vocal cord vibrations from body wall vibrations at the trachea, filter means operatively coupled to the output from said microphone means for compensating for loss characteristics of the wall of the trachea to said vocal cord waves, and time base display means operatively coupled to the output from said filter means for displaying said vocal cord waves including the pitch fluctuation features on an expanded time base scale for observation purposes.

3,345,980
UROMETER
George Coanda, North Hollywood, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Apr. 20, 1964, Ser. No. 361,050
13 Claims. (Cl. 128—2)



1. A urometer comprising:
(a) a conduit means for connecting to a patient and to a reservoir;
(b) a first chamber of larger cross-sectional area than said conduit means located along and connected in series with said conduit means;
(c) a second chamber located along and connected in series with said conduit means above said first chamber, said second chamber having a larger cross-sectional area than said first chamber;
(d) overflow means associated with an upper portion of said second chamber for carrying excess liquid away from the second chamber; and
(e) a reservoir connected to said overflow means for receiving said excess liquid.

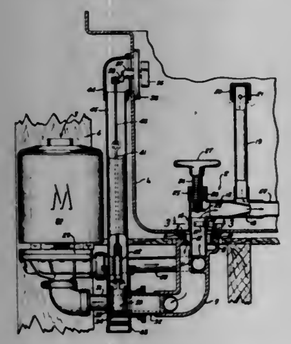
3,345,981
CONING TOOL FOR CERVICAL SURGERY
Earnest S. Hodges, Nashville, Tenn., assignor to J.M.P. Corp., Nashville, Tenn., a corporation of Tennessee
Filed Jan. 29, 1965, Ser. No. 429,096
9 Claims. (Cl. 128—2)



1. A surgical instrument for obtaining a circumferential specimen of tissue from a body cavity comprising:
a stem having a tip at its one end and a handle at its opposite end, said tip having a groove for receiving an end of a cutting blade;

a blade guide mounted on said stem at a fixed distance from the tip of the stem, and said blade guide having a body portion extending laterally from the stem said blade guide being mounted for rotation about the longitudinal axis of the stem;
a slot through the body portion of said blade guide for carrying a cutting blade, said slot being formed at a predetermined angle towards the longitudinal axis of the stem and in alignment with said groove in the tip of the stem; and
a cutting blade positioned in said slot of the blade guide, and extending from said slot to the tip of the stem, the end of said cutting blade being received and guided by said groove in the tip, whereby said cutting blade is held in the instrument at a predetermined angle to the stem of the instrument.

3,345,982
DRAIN MOUNTED HYDROTHERAPEUTIC APPARATUS FOR BATHTUB
Robert L. Guller, Delavan, Wis., assignor to Sta-Rite Products, Inc., Delavan, Wis., a corporation of Wisconsin
Filed Sept. 16, 1964, Ser. No. 396,911
5 Claims. (Cl. 128—66)



4. In a hydrotherapeutic apparatus, a tub to contain liquid and having a drain opening in the bottom thereof, a riser extending upwardly through the drain opening into the tub and serving to introduce liquid to said tub, return conduit means communicating with said drain opening for withdrawing liquid from said tub, a nozzle assembly having an inlet tube slidably connected to the riser, said nozzle assembly including a discharge nozzle and having means for mixing air with the liquid being discharged by said discharge nozzle, and means for mounting the nozzle assembly for movement in a horizontal plane relative to said riser.

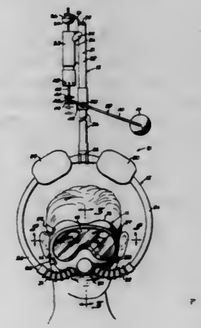
3,345,983
CLOTHING SUPPORT FOR SURGICAL PATIENTS
Harry A. Denney, Jr., 5967 Crittenden Drive, Cincinnati, Ohio 45244
Filed Sept. 30, 1965, Ser. No. 491,526
9 Claims. (Cl. 128—82)

5. A one-piece garment holding collar for post operative use formed from an essentially rigid yet deformable wire-like material, said collar comprising a frame having a curved neck member, a pair of arm members projecting forwardly and downwardly from opposite ends of said neck member, a pair of outwardly projecting garment holding members at the ends of said arms, said garment holding members being in the nature of bails, a pair of shoulder engaging members projecting rearwardly from said garment holding members, said shoulder engaging members being of curved configuration so as to overlie the wearer's shoulders, and a back member inter-



connecting the rearmost ends of said shoulder engaging members, said back member being curved to conform to the wearer's back.

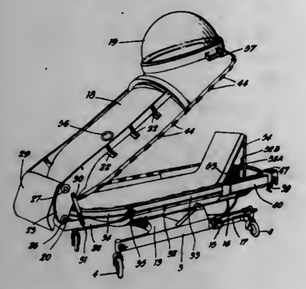
3,345,984
DIVING MASK WITH SNORKEL
George Katehis, 2270 SW. 26th Lane, Miami, Fla. 33133
Filed Mar. 19, 1965, Ser. No. 441,074
6 Claims. (Cl. 128—145)



1. An underwater breathing apparatus comprising, in combination, a generally concave face mask member having a flexible peripherial edge of such contour as to fit against the seal off a face area extending laterally between the cheeks and longitudinally between the forehead and a zone between the lower part of the nose and the upper lip of the wearer, a lateral partition within said face mask and having a flexible outer edge of such position and form as to fit against the face below the eyes and over the bridge of the nose to divide the interior of said mask into two separate chambers, one for the eyes and one for the nose, a wrap-around window in the front of the eye chamber portion of said mask permitting vision to the sides as well as to the front of the wearer, strap means for securing the mask against the face of the wearer, elongated breathing tube means having one end in communication with the nose chamber of said mask for supplying fresh air to the wearer, means supporting the other end of said breathing tube means above the surface of a body of water, said supporting means comprising valve means for automatically closing off the other end of said breathing tube means to prevent the entrance of water, said breathing tube means at one end thereof comprising a pair of arcuate tube portions flexibly joined at one end to said nose chamber and extending outwardly to each side of said mask, a T-fitting, the other ends of said arcuate tube portions being fixed to and in communication with the opposed arms of said T-fitting, float means for buoying up said other ends of said arcuate tube portions

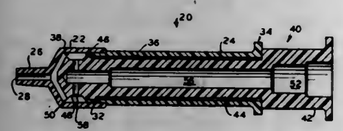
when said mask is worn under water, and a tube connected at one end to and communicating with the remaining arm of said T-fitting.

3,345,985
HOSPITAL BED WITH PRESSURE CHAMBER
Leonard Fisher, Farnborough, England, assignor to Vickers Limited, London, England, a British company
Filed June 10, 1964, Ser. No. 373,984
Claims priority, application Great Britain, June 17, 1963, 24,114/63
3 Claims. (Cl. 128—204)



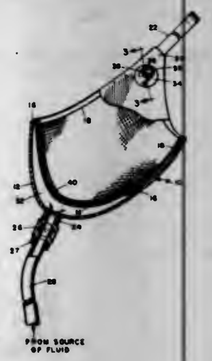
1. In a hospital bed for treatment of patients at pressures other than atmospheric, the bed comprising a rigid lower part, a rigid upper part co-operating with the lower part to form therewith a closed chamber for totally enclosing a patient who can receive treatment therein at pressures up to three atmospheres, means for sealing and holding the two parts together, said sealing means including a strap around the peripheral portion of one of said parts and co-operating with the peripheral portion of the other part to permit the latter to be brought into closed relationship with said one part in a first position of the strap and to clamp said parts in a second position of the strap, means on the other of said parts co-operating with the strap means in its second position, means for shifting said strap around the periphery of said one part from one position to the other and vice versa, a transparent domed portion in the upper part for enabling a patient sealed in the bed to sit up and see out, and an inlet in one of said parts for the introduction of gas into said chamber.

3,345,986
INTRAVENOUS SYRINGE APPARATUS
Ralph R. Roberts, Glen Rock, N.J. (48 Winding Way, Upper Saddle River, N.J. 07458), and Boris Schwartz, 400 Park Ave., Paterson, N.J. 07504
Filed Aug. 5, 1964, Ser. No. 387,607
8 Claims. (Cl. 128—214)



1. An intravenous syringe apparatus having an outer housing and a plunger movable therein and comprising; (1) a forward housing member of generally cylindrical construction having a predetermined diameter bore portion thence a reduced diameter portion providing a partially closed end; (2) means on said partially closed end for mounting a hypodermic needle; (3) a rear housing member of generally cylindrical construction the bore of which is of generally the same diameter; (4) a shoulder portion formed on one end of the rear housing member, said shouldered portion being a pressure tight fit with the predetermined diameter bore portion of the forward housing member and of a lesser extent than the bore portion; (5) a plunger of generally tubular configuration having a piston portion slidable in the bore of the rear housing member and with the end of the tubular plunger adjacent the piston portion closed and with a fluid passageway from the piston portion of the plunger to the inner passageway of the plunger; and (6) means formed in the other end of the plunger for the removable retention of the distal end of an infusion transmitting means.

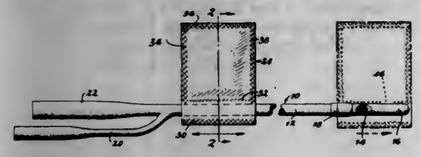
3,345,987
PRESSURIZED FACE MASK
Eric H. Edlin, La Mesa, Calif. (2936 McGraw St., San Diego, Calif. 92117)
Filed Apr. 13, 1964, Ser. No. 359,230
1 Claim. (Cl. 128—254)



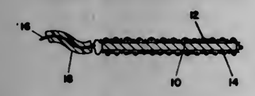
A pressurized face mask comprising:
- a substantially inextensible, flexible outer cup shaped imperforate member to conform generally to the lower portion of a man's face;
- means to hold said outer member in place on the user's head;
- an inner deformable cup shaped imperforate member peripherally sealed to said outer member to provide a space therebetween, said inner member being conformable to the contours of the lower portion of a man's face;
- means to admit heated fluid under pressure to the space between said outer and inner members, whereby said inner member is pressed inwardly to conform to the features of the user;
- inlet and manually controlled relief valve means in said outer cup shaped member positioned in widely spaced relationship to assure fluid circulation within said space;
- an absorbent pad secured on the inner side of said inner deformable member.

3,345,988
CATHETER LUBRICATING SAC
John P. Vitello, Williamsville, N.Y., assignor to Sterilon Corporation, Buffalo, N.Y.
Filed May 27, 1965, Ser. No. 459,158
5 Claims. (Cl. 128—349)

1. In combination with a catheter device having an elongate body terminating in a drainage tip,
a lubricating device including a collapsible reservoir containing a quantity of lubricant, and a chamber enclosing and slidably receiving a portion of said body of the catheter, said chamber and said reservoir having a common, rupturable wall portion whereby lubricant may be expressed into said chamber as said reservoir is collapsed.

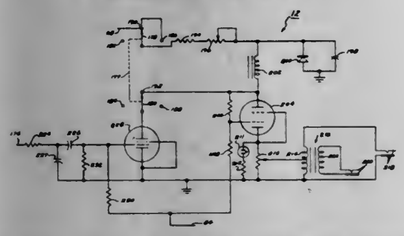


3,345,989
IMPLANTABLE POWER SOURCE EMPLOYING A BODY FLUID AS AN ELECTROLYTE
Luther W. Reynolds, Philadelphia, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 5, 1963, Ser. No. 321,643
2 Claims. (Cl. 128—419)



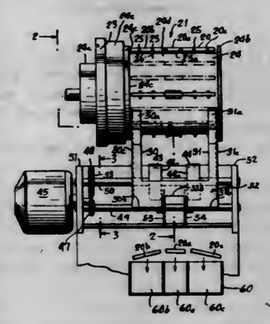
1. A source of electrical energy for an electrically powered device adapted to be implanted within the body of an animal comprising:
a first electrode adapted to be implanted subcutaneously in said body,
said first electrode being a platinum screen,
a second electrode adapted to be implanted within the abdominal cavity of said body,
said second electrode comprising a film of platinum black enclosed by a platinum screen,
said first electrode being characterized by it yielding electrons to the second electrode through the fluid of the body, and
leads adapted to be implanted in the body for connecting said first and second electrodes to said electrically powered device.

3,345,990
HEART-BEAT PACING APPARATUS
Barouh V. Berkovitz, Tonawanda, N.Y., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed June 19, 1964, Ser. No. 376,489
9 Claims. (Cl. 128—419)



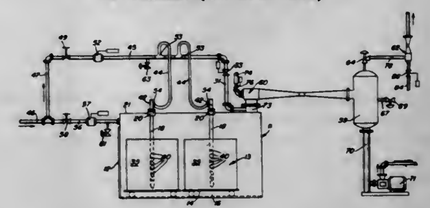
3. A heart pacing apparatus comprising electrode means for connection to a patient, pulse generating means normally operative to continuously supply electrical pulses to said electrode means, each pulse separated from the preceding pulse by a predetermined time interval, means for connection to said patient for monitoring the beating action of said patient's heart, and means responsive to the detection of a heartbeat by said monitoring means for inhibiting the generation of only the next electrical pulse otherwise generated by said pulse generating means, said pulse generating means being operative to generate subsequent electrical pulses in time step with said detected heartbeat following the inhibiting of the generation of said only next otherwise generated pulse.

3,345,991
DISASSEMBLING APPARATUS FOR CIGARETTE AND FILTER ASSEMBLIES
Jesse R. Pinkham, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed June 4, 1965, Ser. No. 461,478
7 Claims. (Cl. 131—20)



1. Apparatus for accepting from a source, double cigarette and filter assemblies each consisting of two cigarette sections, one at each end of the assembly and a double length filter section between them, and disassembling and segregating the cigarette sections and the filter sections comprising, a generally downwardly extending ramp for guiding and supporting said assemblies during descent thereof; a pair of spaced generally circular knives for severing said assemblies just outside the ends of the filter section, said ramp and knives being arranged so that at least a portion of each of said knives penetrates the outline of said ramp; and a driven member cooperating with the surface of said ramp to intercept and drive each of said assemblies into said pair of knives.

3,345,992
METHOD FOR CONDITIONING TOBACCO
Arthur N. Lederman, Flossmoor, and Fred H. Lindstrom, Olympia Fields, Ill., assignors to Vacudyne Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 4, 1965, Ser. No. 477,252
10 Claims. (Cl. 131—140)



4. The method of conditioning a mass of tobacco contained in a bale or hogshead in a vacuum chamber to provide a uniformly humidified product and comprising the steps of:
inserting a perforated probe axially into said tobacco mass in substantially the center thereof for substantially the full depth of said mass;

evacuating said chamber through a bounding wall thereof and concurrently evacuating through said probe to remove substantially all of the air from said chamber and substantially all of the air and other volatile gases from said mass of tobacco;

introducing steam directly into said chamber to enter said mass of tobacco from outer surfaces thereof inwardly while simultaneously introducing steam through said probe to permeate said tobacco radially outwardly from said probe;

reevacuating through a bounding wall of said chamber to reverse the flow of steam through said tobacco; and

resteaming said tobacco mass through said chamber and through said probe to provide uniformly humidified tobacco.

3,345,993

POLYURETHANE FOAM END WRAP AND PERMANENT WAVING PROCESS EMPLOYING SAME

John W. Haefele, Mount Healthy, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 13, 1964, Ser. No. 389,479
9 Claims. (Cl. 132—7)

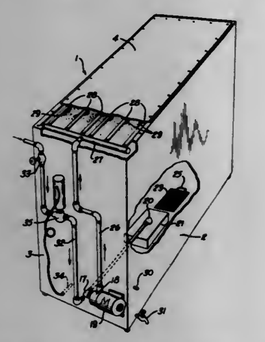
5. The process of imparting a uniform wave to hair which comprises the steps of forming the hair into tresses, wrapping about each tress a permeable, flexible wafer of polyurethane foam having a thickness within the range from about 1/16 inch to about 1/64 inch, winding each tress upon a cylindrical body, saturating each wound stress with a keratin-reducing composition and thereafter neutralizing the action on the hair of said keratin-reducing composition.

3,345,994

APPARATUS FOR CLEANING ARTICLES

Leslie N. Felton, Loyal, Wis., assignor to Grassland Dairy Products, Inc., Greenwood, Wis., a corporation of Wisconsin

Filed Sept. 20, 1965, Ser. No. 488,509
2 Claims. (Cl. 134—111)



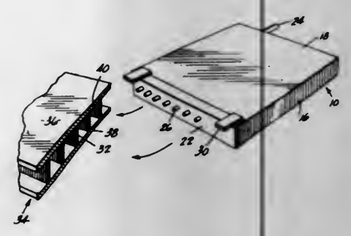
1. An apparatus for cleaning articles, comprising a cabinet with the lower portion of the cabinet defining a sump adapted to contain a cleaning liquid, means located in the cabinet above the sump for supporting the articles to be cleaned, a series of discharge nozzles located within the upper portion of the cabinet, a box located in the sump and spaced above the bottom surface of the cabinet and having a closed top and an open bottom, pumping means, suction conduit means connecting the suction side of the pumping means to the box, discharge conduit means connecting the discharge side of the pumping means to the nozzles, straining means removably covering the bottom of the box for straining the liquid being drawn into said suction conduit means.

3,345,995

CHEMICAL METAL REMOVAL DEVICE

Richard T. Pfaffenberger, Manhattan Beach, and Leonard R. Van Horik, Long Beach, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif.

Filed Oct. 24, 1965, Ser. No. 504,341
1 Claim. (Cl. 134—167)



A chemical metal removal device for removing filler material embedded between ribs interconnecting spaced face sheets, wherein said filler material is of a metal other than that of said ribs and sheets, said device comprising:

a manifold for receiving chemical solutions,

means supplying chemical solutions thereto under pressure, said solutions reacting upon said filler material but not upon said ribs and sheets,

said manifold having a face plate adapted to abut against said ribs, filler material and face sheets,

said face plate having openings in alignment with said filler material between said ribs,

said openings having tubes telescopically mounted therein,

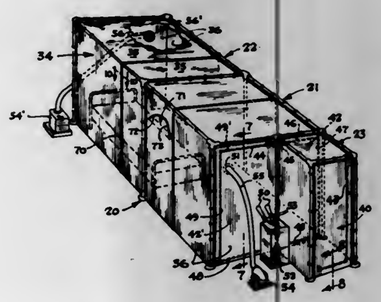
said tubes being urged outwardly against said filler material by said solution.

3,345,996

PORTABLE ISOLATION ROOMETTE

Max S. Sadove, Oak Park, and Steve J. Skowronski, Des Plaines, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,839
3 Claims. (Cl. 135—1)



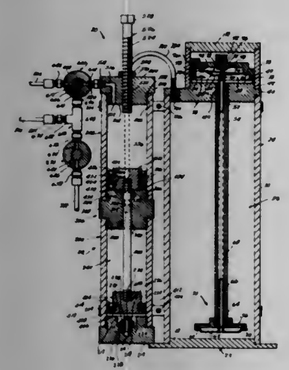
1. A portable isolation roomette, comprising: a frame having four uprights to form its corners and structural members to interconnect the upper ends of said uprights, a first envelope having walls, a ceiling and a floor joined to seal off the inside from the outside of said first envelope, at least the upper portion of said envelope being composed of transparent plastic film material, means for suspending said envelope within said frame to provide a generally box-like chamber, said frame and envelope being sufficiently large to accommodate a hospital bed to permit an adult attendant to walk around inside said envelope, one wall of said envelope having an access door, said access door being sufficiently large so that a hospital bed can be rolled into said envelope, a second relatively small envelope appended to said first envelope, a first portion of said access door being positioned adjacent the second envelope to close off the inside from the outside of the first envelope, said first portion forming a common wall between the first and second envelopes and being separately movable for access between the first and second envelopes, said second envelope being large enough to accommodate an adult attendant, a door in a wall portion of said second envelope, and means for sealably connecting each door to its respective first and second envelopes.

3,345,997

CHEMICAL PROPORTIONING DEVICE AND THE LIKE

Roy E. Miller, 1301 Stuart Drive, and Earl R. Mowery, 109 E. Locust St., both of Mechanicsburg, Pa. 17055

Filed Sept. 16, 1966, Ser. No. 579,941
9 Claims. (Cl. 137—99)



1. Means for admixing fluids in predetermined volumetric proportions relative to one another and comprising independent pump means for, respectively, each of said fluids, first means connecting each of said pump means with a separate fluid source and with the inlet port of its respective pump means, said first means including actuating means for each of said pump means, a mixing chamber, and second means connecting said mixing chamber with an outlet port of each of said pumps, and fluid pressure-responsive control means disposed in said mixing chamber operably-connected with said actuating means to control the latter in response to fluid pressure within said mixing chamber, wherein one of said fluids is under pressure and each of said pump means is simultaneously operated in response to the pressure exerted by said one fluid on its associated pump means.

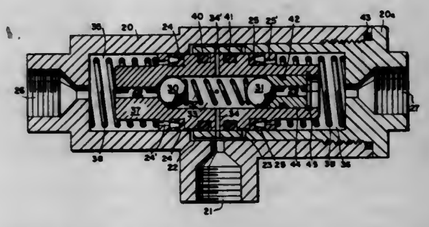
3,345,998

SAFETY CHECK VALVE

Gianni A. Dotto, 3005 Claar Ave., Dayton, Ohio 45429

Filed Feb. 19, 1965, Ser. No. 433,912
6 Claims. (Cl. 137—118)

1. A safety device for a brake system of a vehicle located between master cylinder means and front and rear brake lines comprising housing means including a bore terminating in outlet ports, one of said outlet ports adapted to communicate with a front brake line and another of said outlet ports adapted to communicate with a rear brake line, an inlet port defined by said housing, said inlet port connected to master cylinder means, valve means including a passageway terminating in ports slidably inter-fitting with said bore and adapted to define subchambers communicating with said outlet ports when said valve means is in a normal position, said valve means including first one-way valve means permitting fluid flow from said inlet port to said outlet ports through said subchambers as pressure is increased in said inlet port and second one-way valve means in said passageway



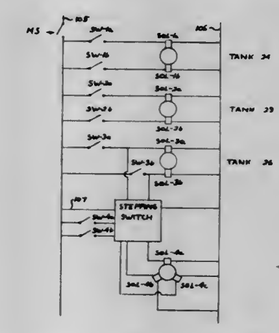
normally allowing fluid flow from said subchambers into said passageway of said valve means upon reduction of pressure in said inlet port, said valve means slidably displaced into engagement with one of said outlet ports thereby terminating fluid flow therethrough upon failure of said brake line cooperatively associated therewith, displacement of said valve means storing energy so that repair of said defective brake line releases said stored energy slidably displacing said valve means to said normal position in said bore allowing fluid to flow from said inlet port to said outlet ports as pressure is increased in said inlet port.

3,345,999

SYSTEM FOR PREPARING AND DELIVERING LIQUID RESIN

LeRoy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware

Filed Aug. 4, 1964, Ser. No. 387,357
4 Claims. (Cl. 137—205)

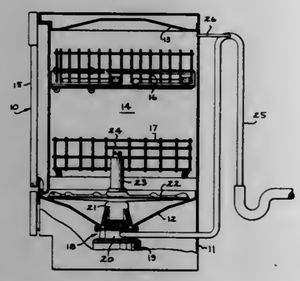


1. A resin delivery system in combination with a machine for forming articles from heat hardenable liquid resin, said machine having a resin input point and a discharge for excess resin, a local feed tank adjacent the machine, means for effecting flow of resin from the local feed tank to the machine input and for returning excess resin from the machine discharge to the local feed tank, said local feed tank having an inlet and liquid level responsive means for closing said inlet upon a predeter-

mined filling of the local feed tank, said delivery system comprising:

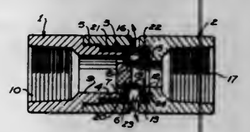
(a) a blending vessel positioned below the machine for final blending of resin therein;
(b) conduit means connected to the bottom of said blending vessel and extending to a location above said machine;
(c) a plurality of vacuum tanks connected to said conduit means at spaced points above the blending vessel;
(d) a source of vacuum;
(e) a valve means for each vacuum tank responsive to the liquid level in its associated tank for connecting the tank to said source of vacuum when the tank is substantially empty and to the atmosphere when the tank is substantially full;
(f) check valves in said conduit means below the connection of each vacuum tank with the conduit means for preventing reverse flow from each tank back to the blending vessel;
(g) a pair of storage tanks located above the level of the machine;
(h) means for supplying resin from said conduit means to each of said storage tanks;
(i) means for delivering resin from each of said storage tanks to a resin feed line;
(j) control valve means associated with each storage tank for alternately applying said vacuum source and atmosphere to each storage tank;
(k) additional valve means between the conduit means and each storage tank and between each storage tank and the resin feed line, said control valve means and an additional valve means being operative to supply said resin feed line from one storage tank while the other storage tank is being filled and to supply said resin feed line from the other storage tank while said one tank is being filled;
(l) means for recycling resin from said resin feed line back to said blending vessel;
(m) means for delivering resin from said resin feed line to the inlet of said local feed tank; and
(n) means for delivering resin from said resin feed line to additional machines.

3,346,000
ANTI-SIPHON DEVICE FOR AN AUTOMATIC WASHER
Donald S. Cushing, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 26, 1963, Ser. No. 311,837
3 Claims. (Cl. 137—216)



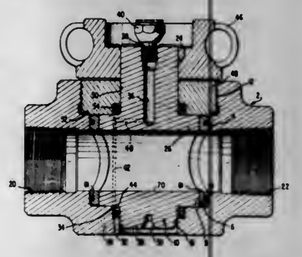
1. A washing machine comprising:
(a) a wash chamber adapted to receive and contain articles to be washed therein,
(b) means disposed adjacent the bottom of said wash chamber to discharge fluid from said wash chamber,
(c) an unrestricted constantly-open valveless imperforate discharge conduit to conduct the fluid from said means,
(d) said discharge conduit having an inverted U bend therein adjacent the top of said wash chamber with each leg of the U extending downwardly substantially to the level of said means,
(e) a vent conduit extending from said wash chamber to said discharge conduit near the upper extremity of said inverted U bend to prevent siphoning of fluids through said discharge conduit.

3,346,001
BACKFLOW PREVENTING VALVE
Alfred L. Camp, Brea, Calif., assignor to Irving Terry, Los Angeles, Calif.
Filed May 4, 1965, Ser. No. 453,042
4 Claims. (Cl. 137—218)



1. A backflow preventing valve, comprising:
(a) a housing means defining an inlet having an inlet seat, a cylindrical valve chamber having lateral ports communicating said chamber with the atmosphere and an outlet;
(b) and a tubular valve element extending between said inlet and said outlet; said valve element including ports communicating between said outlet and said lateral ports for backflowing fluid, a cylindrical seal means slidable along the cylindrical wall of said chamber, and an annular sealing surface on said cylindrical seal means engageable with said inlet seat in response to pressure of said backflowing fluid;
(c) said valve element being axially compressible in response to fluid pressure at said inlet to establish communication from said inlet to said outlet and to cause said slidable seal means to close said lateral ports.

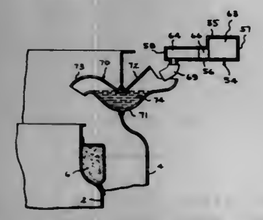
3,346,002
ROTARY VALVE WITH EXPANDABLE LINER
William S. Thompson, Jr., Bruce J. Frazier, and O. L. Morrisett, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,189
8 Claims. (Cl. 137—246.22)



3. A rotary plug valve comprising a valve body having inlet and outlet passageways and a cylindrical bore transversely disposed with respect to said passageways, a cylindrical elastically deformable, split, radially expandable liner fixedly positioned within said bore, means fixedly positioning said liner against rotation relative to said valve body, said liner having inlet and outlet passageways in fluid communication with said inlet and outlet passageways in said valve body and a cylindrical bore transversely disposed with respect to said passageways, a cylindrical valve rotatably positioned within said bore of said liner, said valve having a bore adapted to be aligned with said passageways, the corresponding dimensions of said cylindrical valve and said cylindrical bore in said cylindrical liner being such that said liner is held in a radially outwardly, elastically deformed condition by said valve independent of any constraining action of said valve body.

5. A rotary plug valve according to claim 3 wherein said valve includes passageways for applying lubricant between said valve and said liner and between said valve and said valve body.

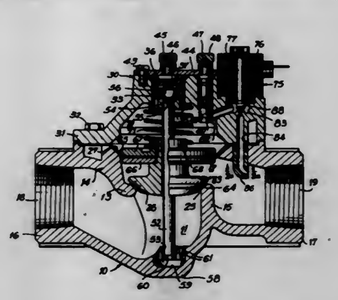
3,346,003
WATER SUPPLY MECHANISM FOR WASHING MACHINES
Daniel N. Toma, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed July 8, 1964, Ser. No. 381,085
7 Claims (Cl. 137—247.25)



1. In a clothes washing machine including a container to receive water and clothes to be washed in the water, a water supply mechanism for providing water to the container including:
(a) a water inlet member, said inlet member including a first portion forming a water storage chamber and a second portion forming an outlet conduit,
(b) means for selectively providing a stream of water to said inlet member,
(c) means for directing said stream of water through said inlet member first to fill said storage chamber and thereafter to flow out of said inlet member through said conduit,
(d) a water trap adapted to connect said conduit and the container to transfer to the container said stream of water emitted from said conduit,
(e) means connecting said storage chamber to said conduit and effective upon the discontinuance of said stream of water to cause the water stored in said storage chamber to flow out of said inlet member through said conduit and thereby fill said trap.

3,346,004
DIAPHRAGM CONTROL VALVE WITH HOLLOW GUIDE STEM
Milton Costello, 1400 Wantagh Ave., Wantagh, N.Y. 11794
Filed Nov. 18, 1965, Ser. No. 508,494
9 Claims. (Cl. 137—271)

1. A valve construction comprising a valve body having internally thereof a pair of inlet and outlet chambers and a pair of spaced inlet and outlet openings communicating with respective inlet and outlet chambers, said body having an intermediate opening spaced between said inlet and outlet openings and communicating with the interior of said outlet chamber, said body being formed with an internal port communicating between said inlet and outlet chambers and in substantial alignment with said intermediate opening, a cover removably secured over said intermediate opening, a guide stem extending through said port and intermediate opening and having its opposite ends mounted in said body and cover, a valve element in said outlet chamber and mounted for movement along said guide stem toward and away from closing engagement with said port, and flexible diaphragm means connected to said valve element and extending in closing relation across said

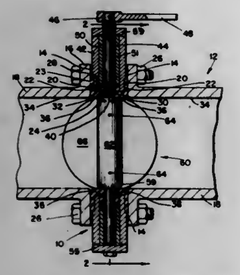


intermediate opening to define an expansile and contractile control chamber betwen said cover and diaphragm, said cover being provided with control-fluid passageway means for the passage of control fluid between said control and outlet chambers, said guide stem being provided with a large through unrestricted open areaway having its opposite ends communicating with said inlet and control chambers, for passing relatively high-pressure fluid to said control chamber.

3,346,005
LINED BUTTERFLY VALVES
Albert J. Hanssen, Glenside Gardens, Pa., assignor to Conoflow Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1964, Ser. No. 407,296
14 Claims. (Cl. 137—375)

1. A lined butterfly valve comprising:
(I) a body which:
(A) is formed of a rigid material,
(B) has an interior wall surface,
(C) has an exterior wall surface spaced from said interior wall surface,
(D) has an interior cavity which:
(1) is defined by said interior wall surface,
(E) has a stem opening which:
(1) extends between said wall surfaces,
(2) communicates with said interior cavity,
(3) has an axis,
(II) a liner which:
(A) is formed of resilient material,
(B) has an outer surface which:
(1) engages said body interior surface,
(2) covers said body interior surface,
(C) has an inner surface which:
(1) is spaced inwardly with respect to said outer liner surface,
(2) forms a generally cylindrical flow passage,
(3) has a seating region which:
(a) is generally defined by intersection of said liner inner surface and a first plane which:
(i) includes said stem opening axis,
(ii) lies across said flow passage,
(b) has first portions which:
(i) are remote from said stem opening axis,
(ii) follow a curve,

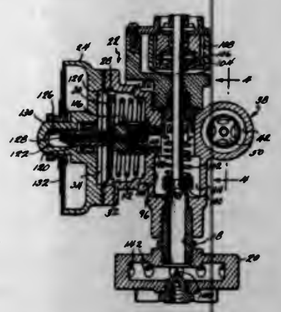
(c) has second portions which:
(i) are located at said stem opening axis,
(ii) join said first liner portions to form corners which:
(o) are on opposite sides of said stem opening axis,
(oo) are each spaced a selected distance from said stem opening axis,



(III) a disc which:
(A) is formed of rigid material,
(B) is located in said flow passage,
(C) has a thickness substantially less than the width of said flow passage measured at right angles to said stem opening axis,
(D) has an edge which:
(1) lies in a second plane including said stem opening axis,
(2) has first portions which:
(a) are remote from said stem opening axis,
(b) are curved to correspond to the first portions of the liner seating region,
(3) has second portions which:
(a) are located at said stem opening axis,
(b) are shaped to correspond to the second portions of said liner seating region,
(c) join said first disc edge portions to form shoulders which, when said disc is in a closed position:
(i) are on opposite sides of said stem opening axis,
(ii) are spaced from said stem opening axis a distance which is not greater than said selected distance,
(IV) a stem which:
(A) is located in said stem opening,
(B) is connected to said disc,
(V) means for rotating said disc about said stem opening axis with respect to said body and liner.

3,346,006
FLUID METERING DEVICE
Donelson B. Horton, Madison, Ala., assignor to John Blue Company, Inc., Huntsville, Ala., a corporation of Alabama
Filed Mar. 12, 1965, Ser. No. 439,271
6 Claims. (Cl. 137—501)

1. A flow regulator for metering a fluid from a pressure source to the soil at a constant rate of application per unit area from a traveling distributor, comprising: casing means having an inlet and an outlet for fluid flow therethrough; means associated with said casing means for adjusting the rate of fluid flow through said casing in accordance with predetermined conditions, said conditions including the rate of travel of said distributor; means associated with said casing means to compensate for potential variations in said rate of fluid flow caused by fluctuations in the pressure at said pressure source; means associated with said casing to compensate for potential variations in said rate of fluid flow caused by



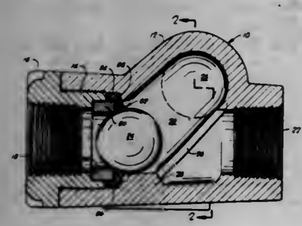
pressure fluctuations due to resistance of the soil to the application of fluid from said traveling distributor; last said means also being responsive to the magnitude of the pressure at said pressure source so as to compensate for potential variations in said rate of fluid flow due to the gradual change in the magnitude of the pressure at said source.

3,346,007
GAS FLOW CONTROL LOUVRES
Shmuel Agnon, Haifa, Israel, assignor to The State of Israel, Ministry of Defence, Hakirya, Tel Aviv, Israel
Filed Aug. 15, 1963, Ser. No. 302,325
Claims priority, application Israel, Aug. 22, 1962, 17,838
2 Claims. (Cl. 137—512.1)



1. A gas flow control louvre comprising a flange having a plurality of openings, the periphery of each of said openings defining a seat, a plurality of pivotal slats adapted to pivot into an open position with respect to said openings under the pressure of through flowing gas and to return to a closed position when the pressure of the gas falls below a predetermined minimum level, each of said slats being pivotable about an axis parallel to the longitudinal axis of the slats and displaced from the position occupied by the slats when closed, the edges of each slat being respectively associated with seatings against which they bear tightly when closed, each of said slats having an actuating lever associated therewith, each of said levers having an arm secured at one end to an associated slat and extending outwardly therefrom forming an acute angle with respect thereto, said lever having a second arm secured at one end to said first arm and extending outwardly therefrom in direction at right angles to the associated slat when the latter is closed, the free end of said second arm being pivotally mounted to the frame to define the pivotal mount for the associated slat, a control rod extending parallel to the frame, the free end of each of said first arms of said lever being pivotally connected to said control rod at spaced positions along its length and a displaceable abutment member in the path of movement of one end of said control rod to limit the movement of the latter.

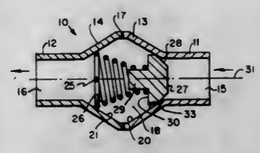
3,346,008
BALL CHECK VALVE
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Mar. 16, 1964, Ser. No. 352,227
6 Claims. (Cl. 137—516.29)



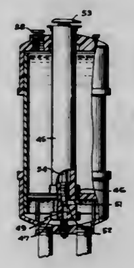
1. A ball check valve comprising:
a valve body having an inlet and an outlet passageway communicating with a ball receiving chamber located therein;
valve seat means in said valve body encircling said inlet passageway;
a valve ball located in said chamber and movable therein toward and away from said seat means; and,
an annular seal mounted in said valve body having:
an outer peripheral portion sealingly secured to said valve body in a fixed position,
an inner peripheral portion in the ball receiving chamber spaced from said valve seat and sized to sealingly engage said valve ball prior to the engagement of said valve ball with said valve seat, and
a resilient connecting portion extending between said peripheral portions, whereby said inner peripheral portion moves with said valve ball toward, and guides said valve ball onto said seat.

3,346,009
CHECK VALVE WITH SELF-CENTERING POPPET
Herman Lindeboom, Warwick, R.I., assignor to Sealol, Inc., Warwick, R.I., a corporation of Delaware
Filed Aug. 9, 1963, Ser. No. 301,161
3 Claims. (Cl. 137—543.17)

1. A check valve consisting of a housing comprising two identical half sections, the first half section consisting of a first enlarged portion, providing a first conically shaped chamber wall, and a first pipe member, the second half section consisting of a second enlarged portion, providing a second conically shaped chamber wall, and a second pipe member, means fastening said first enlarged portion to said second enlarged portion to form a chamber having a first conically shaped chamber wall and a second conically shaped chamber wall, an inlet passageway to said chamber located in said first pipe member, an outlet passageway from said chamber located in said second pipe member, a poppet comprising a head having a beveled face, a stem and a shoulder, located in said chamber, a tapered coil spring having a small convolution on one end and a large convolution on the opposite end, located in said chamber with said large convolution engaging said second conically shaped chamber wall and said small convolution surrounding said stem and engaging said shoulder to yieldingly hold said beveled face against said first conically shaped chamber wall, the tension in said tapered coil spring and said first and second conically shaped walls combining to axially align said head in relation to said first conically shaped chamber wall.

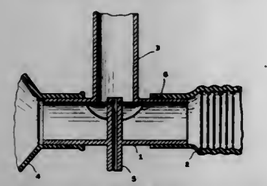


3,346,010
ANTISIPHON FLUID DISPENSING AND DISTRIBUTING SYSTEM
Sanford S. Shapiro, 7009 Rival Road, Canoga Park, Calif. 91304
Filed Aug. 20, 1965, Ser. No. 481,328
9 Claims. (Cl. 137—564.5)



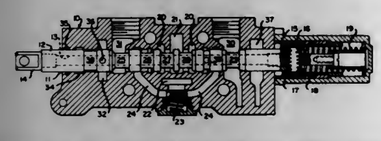
7. A fluid tight dispenser comprising:
a fluid tight container having an opening in its upper end;
a piston adapted to reciprocate freely in said container and having an opening therethrough, said piston dividing said container into a fluid tight storage chamber and a mixing chamber;
intake and discharge ports in said mixing chamber, said intake portion being connectable to a source of fluid under pressure;
an elongated plunger projecting through the opening in said container and adapted to reciprocate freely through said opening and the opening in said piston in response to fluid pressure within said mixing chamber;
means associated with said plunger limiting its travel through said piston between an upper and a lower position;
a passage in said plunger adapted to communicate between said storage chamber and said mixing chamber only when the plunger is in its said upper position; and
means adapted to return said plunger to its said lower position when the flow of fluid into said mixing chamber is interrupted.

3,346,011
VALVE ARRANGEMENT FOR BREATHING APPARATUS
Dag Olof Alfred Johannisson, Lidingo, Sweden, assignor to AGA Aktiebolag, a corporation of Sweden
Filed May 11, 1964, Ser. No. 366,247
Claims priority, application Sweden, June 7, 1963, 6,335/63
3 Claims. (Cl. 137—604)



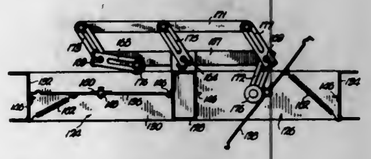
1. A valve arrangement for breathing apparatus comprising: a tubular member adapted for supplying breathing gas, said tubular member having a cylindrical interior wall portion and having a branch tube transversely connected thereto terminating in an aperture on said cylindrical wall portion, a valve member in the form of a flexible disc seated in its inoperative position on said cylindrical wall portion and following the contour thereof so as to close said aperture, and a dosage tube extending transversely through said tubular member and communicating with said branch tube for supplying a narcotic, said dosage tube having said disc supported adjacent the end of the dosage tube and at the midpoint of the disc.

3,346,012
FLUID CONTROL VALVES WITH FLOAT POSITION
Arthur J. Williams, Hubbard, Ohio, assignor to Commercial Shearing & Stamping Company, a corporation of Ohio
Filed Oct. 11, 1963, Ser. No. 315,556
6 Claims. (Cl. 137—625.69)



1. In a control valve, a housing having a bore extending therethrough and open at each end to receive an elongated spool valve element, a fluid inlet in said housing extending transverse to said bore and intersecting the bore intermediate its ends, a fluid outlet in said housing extending transversely of said bore and intersecting the bore at a point adjacent to but spaced from the intersection of the inlet passage, a parallel fluid inlet in the housing spaced from the fluid inlet and extending transversely of the bore in a plane spaced from the bore and adapted with the fluid inlet to receive high pressure fluid from a source of fluid under pressure to conduct said fluid through the housing by-passing the bore, a valve element slidable in said bore, said valve element being hollow along its axis from a point adjacent one end to a point adjacent the opposite end and having spaced grooves and lands on the periphery thereof, said lands sealingly engaging the bore, a pair of high pressure outlets intersecting the bore one on either side of the said fluid inlet and outlet, a pair of exhaust outlets in the housing intersecting the bore on either side of the fluid inlet and outlet and passage means spaced from the bore communicating between the parallel fluid inlet and the bore adjacent each of the high pressure outlets, a pair of spaced ports in lands on said valve element, said ports communicating with the hollow interior of the valve element, and being spaced on the valve element so that they are effectively sealed by said bore against high pressure fluid transmission in any power position of the valve element, said valve element having a neutral position in which fluid passes directly through the fluid inlet and the bore into the fluid outlet, a power position for each high pressure outlet which directs fluid from the parallel fluid inlet through the said passage means to one high pressure outlet while directing fluid from the other high pressure outlet to an exhaust outlet and a float position in which the two high pressure outlets are connected through the ports in the valve element and the hollow axis of the valve element, said valve element having a bleeder means communicating between an exhaust outlet and said hollow axis and high pressure outlets permitting excess fluid in the system to be exhausted during the float position.

3,346,013
DAMPER CONTROL AND LINKAGE THEREFOR
William A. Relchow, Kansas City, Mo., assignor to Ruskin Manufacturing Company, Grandview, Mo., a corporation of Missouri
Filed Nov. 4, 1964, Ser. No. 408,808
6 Claims. (Cl. 137—625)

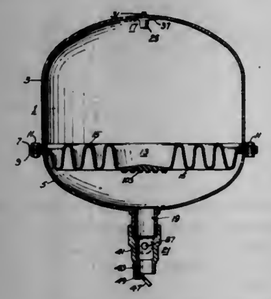


6. Air flow control apparatus comprising:
conduit structure having wall means defining a pair of side-by-side fluid passages;
a damper blade unit for each passage respectively, each unit having a shaft journalled in said wall means for rotation in opposed directions relative thereto, said units being movable into and out of at least partially blocking relationship to respective passages as said shafts rotate in said directions;
means interconnecting the shafts of said units for rotating said shafts together in one direction through a preselected arc only after one of the shafts has been rotated in said direction through a predetermined distance;
structure maintaining said shafts interconnected together until the same have rotated through said arc in the opposite direction;
said interconnecting means including a slotted arm rigid to and extending outwardly from said other shaft, and lever means pivotally coupling said one shaft to said arm, said maintaining structure including a projection on said lever means, said projection being disposed in said slot as said shafts rotate in said opposite direction through said arc, and means for shifting the projection out of the slot as said shafts approach the end of said arc rotating in said opposite direction; and
means coupled with said one shaft for rotating the same.

3,346,014
PRESSURE TANK ASSEMBLY FOR WATER PRESSURE SYSTEM
Candido Jacuzzi, Lafayette, Calif., assignor to Jacuzzi Bros., Incorporated, a corporation of California
Filed Apr. 21, 1965, Ser. No. 449,820
2 Claims. (Cl. 138—30)

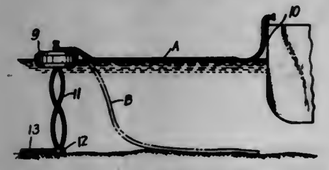
1. A pressure tank assembly for a water pressure system or the like, comprising
a pressure storage tank, including

a pair of tank sections having matching open ends bounded by matching flanges,
a corrugated diaphragm of flexible material adapted in its normal state to span the open end of each said section,
means joining said tank sections at their matching flanges with said diaphragm clamped therebetween along the rim of said diaphragm,
a self-sealing type valve in a wall of one of said tank sections to one side of said diaphragm,
an intake-discharge passageway in a wall of the other of said tank sections to the other side of said diaphragm,
and a pressure responsive valve assembly at said intake-discharge passageway, adapted to permit flow of a liquid into and out of said tank, but with greater resistance to flow into said tank,



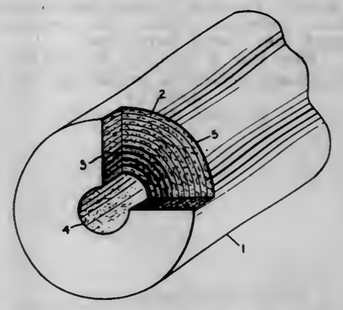
said pressure responsive valve assembly including
a hollow valve body secured at one end to said intake-discharge passageway, and terminating in a free externally threaded end,
a valve in said body of a specific gravity less than that of such liquid and adapted for movement between two positions, said valve, in one of said positions, providing for discharge of liquid from said tank and in its other position providing for intake of liquid into said tank but with greater resistance to flow, said latter position being a normal position during quiescent conditions of said pressure tank assembly.

3,346,015
SUBMERGED FLOATABLE HOSES FOR TRANSPORTING OIL AND OTHER LIQUIDS ON THE SEA
Ryosuke Kikukawa, Totsuka-ku, Yokohama, Japan, assignor to Bridgestone Tire Company Limited, Tokyo, Japan, a corporation of Japan
Filed Feb. 6, 1964, Ser. No. 342,900
Claims priority, application Japan, Feb. 13, 1963 (utility models) 38/9,045, 38/9,046
2 Claims. (Cl. 138—114)



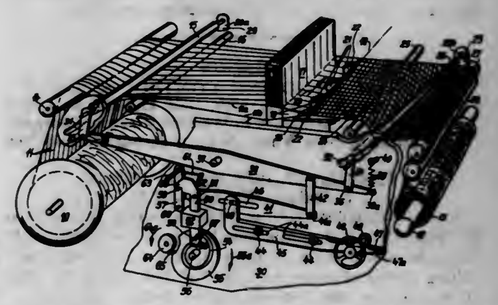
1. A method of conveying oil or other liquid over an expanse of water with the aid of a hose pipe consisting of at least two substantially coaxial tubes assembled to provide an interspace between them, which method comprises, when the liquid is to be conveyed, filling the interspace with a gaseous medium so as to cause the hose to float and then passing the liquid through the inner pipe, and when conveyance of the liquid is no longer needed, replacing the gaseous medium with liquid in order to cause the hose pipe to be submerged.

3,346,016
HIGH TEMPERATURE THERMAL INSULATION
Theodore N. Blau and Edward J. Davis, Middlesex, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,420
12 Claims. (Cl. 138—138)



1. A high temperature, low density, composite organic bonded fibrous thermal insulation of at least about two inches thickness constructed of a multiplicity of superimposed layers of inorganic fiber of fine diameter with an organic binder having incombustible inorganic sheets impervious to gases and flame substantially conterminously interleaved between and separated by the superimposed layers of inorganic fiber and organic binder, said incombustible inorganic sheets being interleaved between layers of inorganic fiber and organic binder adjacent to the hot side of the insulation to provide at least 2 up to about 15 inorganic sheets impervious to gases and flame per inch of composite insulation thickness and thus extending from the hot side towards the cold side of the insulation to at least an intermediate point about one-quarter therethrough and where the internal temperature of the insulation does not exceed about 400 to 600° F.

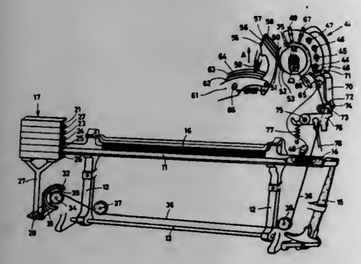
3,346,017
METHOD AND APPARATUS FOR RESUMING WEAVING
Heinrich Fend, Uster, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding AG, Zurich, Switzerland
Filed Apr. 7, 1965, Ser. No. 446,265
Claims priority, application Switzerland, Apr. 14, 1964, 4,805/64
33 Claims. (Cl. 139—12)



1. A method for resuming weaving of a fabric on a wave weaving loom after interruption of weaving due to a weft defect, the steps: while the loom is shut down

bringing the weft thread last inserted before the weft defect into coincidence with a beat-up line; starting up the loom, and while the next weft thread is being inserted forming an angular spacing between said beat-up line and said weft thread last inserted such that each subsequently inserted weft thread is beaten up parallel to the previously inserted weft thread.

3,346,018
ARRANGEMENT FOR AUTOMATIC AND MANUAL BOBBIN CHANGING
Lothar Kohler, Tann-Ruti, Zurich, Switzerland, assignor to Ruti Machinery Works Ltd., formerly Caspar Honegger, Ruti, Zurich, Switzerland
Filed Mar. 3, 1966, Ser. No. 531,615
Claims priority, application Switzerland, Apr. 2, 1965, 4,598/65
9 Claims. (Cl. 139—232)

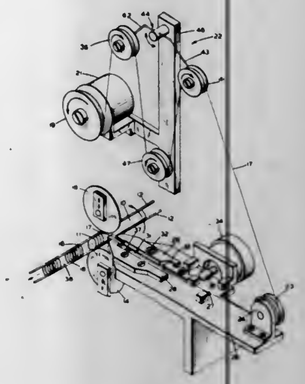


1. In a bobbin changing arrangement on a weaving loom having an adjustable shuttle box with a plurality of box compartments for shuttles carrying different yarns and a control device having a plurality of first elements for the automatic control of the bobbin-changing operation of a group of compartments in accordance with data supplied by a yarn monitoring means indicating the necessity for a bobbin change, each compartment of the group being associated with one of said first elements in such manner that in operation only compartments and elements associated with each other are simultaneously in their working positions, the improvement which comprises additional second elements positioned on both sides of said first elements for effecting shut down of the weaving loom, the number of the said second elements on each side being equal to the difference obtained from the total number of box compartments in the shuttle box minus the number of box compartments corresponding to those in the group having an automatic bobbin changing operation, and the association of the box compartments with said elements being capable of being varied to permit variation in the selection of the box compartments which are in the group having an automatic bobbin-changing operation.

3,346,019
MATERIAL HANDLING CONTROL SYSTEMS
Fritz V. Brosseit, Kansas City, and Donald B. Orrell, Raytown, Mo., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 27, 1965, Ser. No. 459,408
8 Claims. (Cl. 140—71.5)

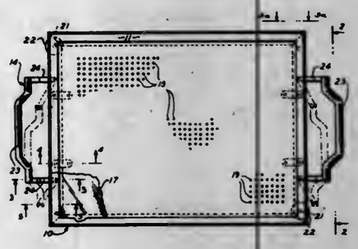
1. In combination with material handling apparatus of the type wherein a continuous length of elongated material is advanced from a braked supply of the same by a pulling device; a control system for dampening the effect of momentary acceleration forces, which comprises:

a plurality of spaced, rotatable pulleys positioned so that the material passes about a portion of the periphery of each pulley as it advances from the supply to the pulling device; the pulleys being further positioned so that the material extending between the supply and the pulling device follows a tortuous path around the pulleys of a length L; and



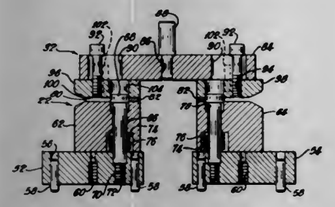
means mounting two of the pulleys for rotation in the same direction and for synchronous shifting movement relative to a third intervening pulley rotating in an opposite direction, said shifting movement being dictated by the tension in the material at any time, the movable pulleys being so arranged with respect to each other that, upon application of a momentary acceleration force to the material, the movable pulleys first shift to positions which shorten the length L thus providing excess material between the supply and the pulling device to dampen the effect of the force, and then return to positions re-establishing the length L.

3,346,020
WIRE HARNESS DEVICE
George H. Geisinger, Elizabeth, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed June 2, 1965, Ser. No. 460,668
16 Claims. (Cl. 140—92.1)



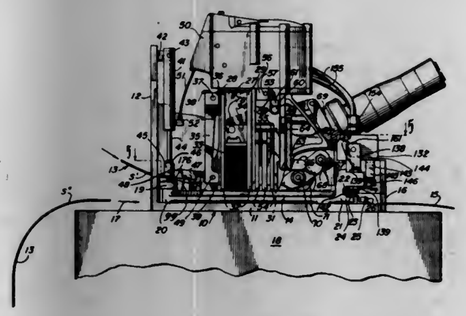
1. A wire harness device, comprising a first board perforated substantially throughout its area, a second board spaced from the first board, a plurality of pins, less in number than said perforations, positioned through selected perforations in the first board and detachably engaged with the second board to define the outline of a harness to be formed with a plurality of wires intermediate the pins and repositionable to define the outlines of another harness.

3,346,021
APPARATUS FOR WINDING ARMATURE COILS
Albert I. Ross, 425 E. Grant Road, Tucson, Ariz. 85705
Filed Mar. 5, 1965, Ser. No. 437,512
8 Claims. (Cl. 140—92.2)



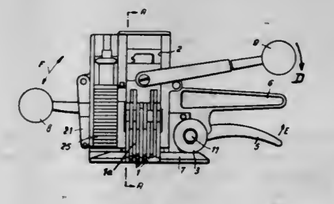
3. Apparatus for winding a coil of wire for an armature or the like, said apparatus comprising adaptor plate means, means for fastening said plate means to a drive plate, winding block means having a plurality of passages therethrough, a winding peg extending through each of said block passages and affixed to the adaptor plate means, each of said pegs having a head projecting beyond said winding block means when in one position adjacent said adaptor plate means, and said block means extending at least to said peg heads when said block means are in a second position spaced from said adaptor plate means, said pegs also having means to prevent movement of said adaptor plate means beyond the second position, resilient means between said adaptor plate means and said winding block means, a chucking plug to be rotatably supported, a hold down block centrally affixed to said chucking plug, a pair of clamping plates fastened to said hold down block, said clamping plates having openings aligned with said winding pegs to receive said heads of said pegs, and spacer plates positioned between said clamping plates and said winding block means to limit movement of said clamping plates and winding block means toward one another whereby said winding block means can move from their second positions to their first positions and overcome the force of said resilient means when said winding block means and said clamping plates are moved together.

3,346,022
STRAPPING TOOL CONSTRUCTION
Neil A. Polit, Cary, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,624
7 Claims. (Cl. 140—93.4)



1. In a strapping tool for connecting the lead end portion and the source end portion of a strap from a strapping supply source in binding relationship about an article, said tool having a frame, means for disposing in said frame in overlapped relation the lead end portion and the source end portion of a strap disposed about an article to be bound and connected to a strapping supply source, gripping means for holding the lead end portion of the strap against the pull of thereto applied slack removal and tensioning force, means for connecting together the lead end and the source end portions of the strap, and means for severing the source end portion of the strap from the strapping supply source, the improvement characterized by said frame including a pair of elongated spaced apart frame members defining an opening through which the strap is removable from said tool, a reciprocative base releasably retaining the strap therein and pivotally connected to one of said frame members to be rockable into said opening, said base providing a floor against which the lead end portion of the strap is held by said gripping means, and reciprocating means for rocking said base into said opening to move away from the lead end portion of the strap to enable removal of the strap with connected together end portions from the tool.

3,346,023
APPARATUS FOR TIGHTENING AND CLOSING OF BAND-LIKE CLOSURE HOOPS
Xaver Kuoni, Zurich, Switzerland, assignor to Borbé-Wanner AG., Zurich, Switzerland, a corporation of Switzerland
Filed May 9, 1966, Ser. No. 548,654
Claims priority, application Switzerland, May 14, 1965, 6,767/65
3 Claims. (Cl. 140—93.4)

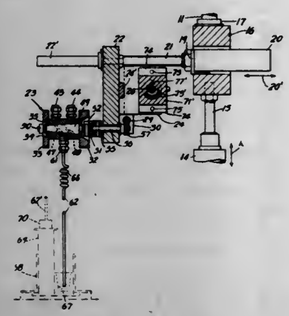


1. Apparatus for tightening and closing band-like closure hoops wherein the ends of the band are arranged in overlapping fashion, comprising an elevationally displaceable clamp unit means for clamping a closure sleeve about the overlapping band ends, a supply means for supplying closure sleeves, said clamp unit means in its rest and clamping position engaging with one of said closure sleeves to position the latter in straddling fashion with respect to the overlapping band ends in order to positively prevent any lateral shifting of said overlapping band ends during tensioning of said overlapping band ends, whereby said overlapping band ends are effectively retained in precise overlapping relationship until such time as the straddling closure sleeve is fixedly applied by said clamp unit means to the thus aligned and retained overlapping band ends, and adjusting means for raising said clamp unit means in order to enable insertion of the band.

3,346,024
FLUID PICKUP AND DELIVERY HEAD
Sanford Berman, Scotch Plains, and Edward L. Wright, Plainfield, N.J., assignors to Customline Control Products, Inc., Linden, N.J., a corporation of New Jersey
Filed July 9, 1965, Ser. No. 470,867
20 Claims. (Cl. 141—25)

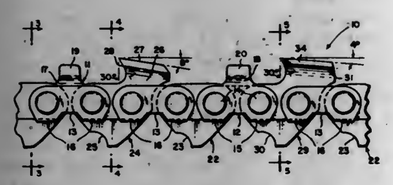
1. A fluid pickup and delivery head comprising a valve and pipetting tube unit having a plurality of tubes and valves controlling pickup and discharge of liquid with

respect to said tubes, the valves of said unit being arranged in independent valve bodies, means detachably supporting said valve bodies all in common predetermined position in the unit, common drive means for simultaneously rotating all of said valves, means supporting said last named means and said unit, means coupled with and in operative engagement with said third named means for movement of said unit vertically and horizontally in



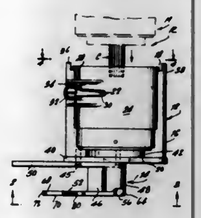
straight line paths into several positions, means for mounting the last named means in connection with a suitable support, a pipetting tube being coupled with each of said valve bodies, each of said valve bodies having means exposing the valve to vacuum and pressure sources of supply, and means comprising a dual air cylinder for controlling operation of the second named means in rotation of all of the valves of said unit for periodic exposure to the vacuum and pressure sources of supply.

3,346,025
SAW CHAIN
Roy H. Anderson and Douglas J. Lemery, Victoria, British Columbia, Canada, assignors to Globe Industries, Ltd., British Columbia, Canada, a corporation
Filed July 1, 1966, Ser. No. 562,272
21 Claims. (Cl. 143—135)



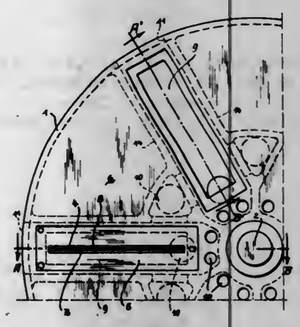
1. A saw chain comprising a plurality of pivotally joined links, means pivotally joining said links, said links being assembled in link sequences and each sequence including a plurality of side links and a plurality of center links, each of said links including a body portion, said center links including sprocket engaging root portions extending from the body portion thereof, some of said center links including a raker tooth extending from the body portion in a direction opposite said root portion, some of said center links including bifurcated cutter teeth presenting spaced side cutter elements, said teeth extending from the body portion in a direction opposite said root portion, a depth gauge formed on a side link immediately forward of each raker tooth and each cutter tooth and said depth gauge being positioned along the longitudinal center line of the chain.

3,346,026
ROUTER GUIDE ATTACHMENT
Anthony Piuchino, P.O. Box 496, Pine Bush, N.Y. 12555
Filed July 12, 1965, Ser. No. 471,352
7 Claims. (Cl. 144—144)



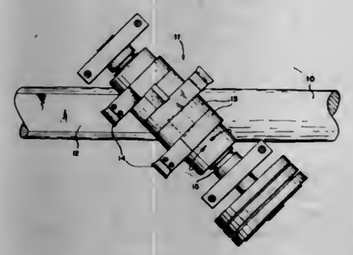
1. A guide attachment for use with a power operated router adapted to work a substantially flat cutting-surface along the outer periphery of a raised template which is placed in a position coextensive with said cutting surface, said router including a base for removably mounting said motor, and clamping means on said base for detachably securing said motor in a vertical orientation with respect to said cutting surface, said guide attachment comprising a sectored plate bounded by two radii edges extending radially from a center point and an included circular arc edge, means for maintaining said sectored plate in a spaced-apart and confronting position with respect to said base, and said sectored plate being formed with a through bore to provide operating clearance for said cutting tool, whereby said sectored plate is capable of being slid along said cutting surface to bring said cutting tool in close proximity to the outer peripheral edge of said raised template.

3,346,027
KNIFE DISC WOOD CUTTING MACHINE
Paul Arthur Kirsten, Ernst-Moritz-Arndt-Strasse 6, 5302 Beuel, near Bonn, Germany
Filed Aug. 19, 1965, Ser. No. 480,941
9 Claims. (Cl. 144—176)



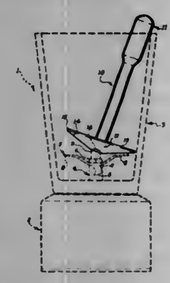
1. In a wood cutting machine having a rotatably mounted cutting head and means for rotating said head in one direction, said cutting head comprising spaced front and rear disks, means between said disks providing channels having discharge openings adjacent the circumference of said head, and means comprising cutting knives and providing slots respectively opening into said channels for delivery thereto of the cuttings from said knives, said cutting head having at the central area thereof means for admitting air to said channels for outward flow therethrough for discharge of said air and cuttings through said discharge openings.

3,346,028
PROFILING OF A LOG BY USE OF CUTTER HEADS, AND IMPROVED PULP CHIP PRODUCED THEREBY
Leonard A. Mitten, Vancouver, British Columbia, Canada, assignor to Ernest E. Runnion, Shelton, Wash.
Filed Aug. 8, 1966, Ser. No. 571,062
10 Claims. (Cl. 144—326)



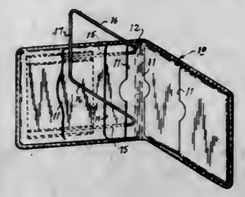
7. In the profiling of a log, the method of employing a rotary cutter head to remove in the form of chips a segmental portion of the log and leave a flat face thereon, comprising conveying the log endwise to its length along a linear travel path through a cutting station, and mounting the rotary cutter head at said station to have the head turn in a climb-cut direction about an axis biased from the axis of the log and in each revolution removing from the log as the latter traverses said station a curved slice of said segmental portion, which slice, by horizontal and vertical shear occurring along the grain of the wood, breaks up into multiple chips rhombohedral in shape, the flat face progressively developing upon the log as the product of a succession of said slicing revolutions.

3,346,029
SAFETY SPATULA FOR FOOD BLENDER
William B. Harris, Jr., 1218 W. T. Waggoner Bldg., Fort Worth, Tex. 76102
Filed Dec. 6, 1965, Ser. No. 511,611
2 Claims. (Cl. 146—68)



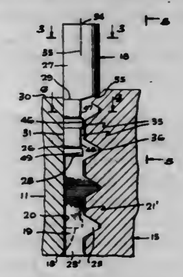
1. In a tamping and stirring device for use with an electrically driven blender having an electric motor and having a food receptacle, open at the top, supported above the motor, the shaft of the motor being arranged vertically and extending upwardly through the bottom of said receptacle, and having a blade unit on its upper end, the combination of a substantially rigid, unitary structure including an elongated handle and an enlarged integral end portion extending laterally outwardly from the handle, said device in use being receivable in said receptacle with said handle positioned uppermost and said enlarged end portion being engageable with the upper end of said motor shaft, whereby said device is adapted to be supported in its lowermost position, above said blade unit, said enlarged end-portion having a rounded depression in its under side, centrally thereof, for abutting engagement by the upper end of said shaft, and the inclination of the under side of said enlarged end portion being such that, in the lowermost position of said device, and in a tilted position, in which the upper end of said handle rests against the rim of said receptacle, the under side of said enlarged end portion is spaced apart from said blade unit.

3,346,030
THEFT-PROOFING DEVICE FOR BILLFOLD
George Woolf, 501 Waller St., San Francisco, Calif. 94117
Filed May 9, 1966, Ser. No. 548,589
3 Claims. (Cl. 150—47)



1. A theft-preventing device for pocketbooks of the billfold type having oppositely disposed pockets at each side of a central fold, a combination of a plate member having dimensions permitting its insertion into a pocket at one side of the fold line of the pocketbook, and a member of spring wire having spaced parallel ends mounted along the sides of said plate and extending upwardly at an angle from the plane of said plate member with a connecting portion extending parallel with the fold line of the billfold, adapted and arranged to bias the sides of the pocketbook into an open position when removed from the pocket of a wearer.

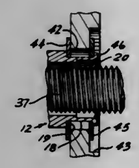
3,346,031
THREADED ELEMENTS AND LOCKING KEYS THEREFOR
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif. 90210
Filed Sept. 21, 1965, Ser. No. 488,931
9 Claims. (Cl. 151—23)



1. The combination comprising an element having external threads adapted to be screwed into a recess in a carrier part, said element having a groove extending generally axially through at least a portion of said external threads, and a locking key received in said groove and adapted to be driven axially therein relative to the element to a locking position in which the key locks the element in said carrier part, said key having a first portion which is confined within the groove and guided thereby for generally axial sliding movement and which is thin enough radially to enable the element to be screwed into the

carrier part without excessive interference by said first portion, said key having a second portion located axially outwardly of said first portion and projecting radially outwardly farther than said first portion to cut axially through the material of the carrier part in locking relation upon said generally axial driven movement of the key, said first portion of the key having a first substantially flat region near its axially outer end, a second substantially flat region axially inwardly of the first region, a third substantially flat region axially inwardly beyond said second region, and a fourth substantially flat region axially inwardly of said third region, said four regions extending substantially transversely across the width of the key, said second and fourth regions, though substantially thinner than said second portion, being slightly thicker radially, across the entire width of said first portion of the key, but not over about .003 of an inch thicker, than are said first and third regions, said key being in direct contact with the wall of said groove at said first and third regions of said first portion, said key being wider at said first and third regions than at said second and fourth regions.

3,346,032
FLOATING CAPTIVE SCREW
Bulent Gulistan, Malibu, Calif., assignor to Deutsch Fastener Corp., Los Angeles, Calif., a corporation of California
Filed Jan. 18, 1966, Ser. No. 521,265
5 Claims. (Cl. 151—69)



5. In combination with a workpiece having an opening therethrough from a first surface to a second surface thereof, a captive screw device comprising

a first sleeve, said first sleeve having a radially outwardly extending flange at one end thereof, a cylindrical portion extending inwardly from said one end, a second cylindrical portion of reduced external diameter extending inwardly from the opposite end of said first sleeve, said second cylindrical portion being of smaller diameter than said opening and extending therethrough, and a radially directed shoulder intermediate said first and second cylindrical portions,

a first generally flat washer having circumferentially continuous inner and outer peripheries circumscribing said first sleeve adjacent said shoulder and being of greater external diameter than said shoulder, said sleeve at said opposite end being bent outwardly to provide a flange on said opposite end of said sleeve,

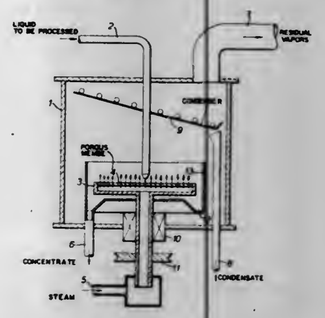
a second generally flat washer having circumferentially continuous inner and outer peripheries circumscribing said first sleeve adjacent said flange and being of greater external diameter than said flange, said first and second washers overlapping said first and second surfaces of said workpiece, respectively, at the ends of said opening for cooperating with said shoulder and flange to provide an attachment for said first sleeve to said workpiece while permitting limited lateral floating movement of said first sleeve relative to said workpiece,

a second sleeve, said second sleeve having a radially inwardly extending flange at one end thereof and slidably receiving said first sleeve, said radially extending flanges of said first and second sleeves being interengageable for limiting the relative axial movement of said first and second sleeves in one direction,

a stud, said stud having a shank having threads thereon, said shank extending axially through said sleeves, said stud having a head, said second sleeve at the opposite end thereof being connected to said head of said stud, said head having a driving recess therein for receiving a driving tool,

and a spring interposed between said one end of said first sleeve and said head for biasing said stud and with it said second sleeve in said one direction to bring said radially extending flanges of said first and second sleeves into interengagement.

3,346,033
APPARATUS FOR STRIPPING LIQUIDS
Jerzy Stanislaw Olejniczak, Gossops Green, Crawley, Sussex, England, assignor to Edwards High Vacuum International Limited, Crawley, Sussex, England, a British company
Filed Feb. 21, 1966, Ser. No. 528,909
Claims priority, application Great Britain, Feb. 23, 1965, 7,812/65
8 Claims. (Cl. 159—4)



1. Apparatus for continuously stripping a liquid by conveying said liquid to a stripping surface from which it subsequently drains, comprising an evacuable chamber having mounted therein a hollow evaporator assembly rotatable about an axis and comprising a vapor permeable porous member impervious in use to said liquid and said member having a first surface, an opposite surface, and said evaporator assembly having a vapor inlet situated in the region of said opposite surface, said apparatus further being provided with:

(a) a liquid introduction duct constructed and adapted to convey said liquid to said first surface which constitutes the stripping surface,

(b) a liquid outlet duct from said chamber located in intercepting relationship with stripped liquid draining from said first surface, and

(c) an outlet duct from said chamber for the removal of gases and vapors arising due to the stripping of said liquid.

3,346,034
THIN FILM PROCESSING APPARATUS
James Donovan, Cambridge, and Max Mendelsohn, Mattapan, Mass., assignors to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Dec. 21, 1966, Ser. No. 603,580
7 Claims. (Cl. 159—6)

1. An improved fluid processing apparatus of a rotary, horizontal or inclined thin-film type which comprises in combination:

(a) a closed chamber characterized by an interior wall defining a surface of revolution,

(b) a rotor within a portion of the chamber;

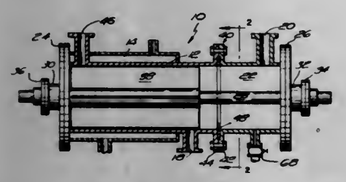
(c) means to rotate the rotor;

(d) rotor blades secured to the rotor for rotation therewith, the blades generally, radially and axially arranged from the rotor and extending into a close relationship with the interior walls;

(e) an inlet in the chamber for the introduction of feed material to be processed;

(f) a product outlet in the rotor containing portion of the chamber spaced apart from the inlet for removal of processed material from the chamber;

(g) a vapor chamber in the closed chamber and adjacent one end of the rotor containing portion of the chamber;

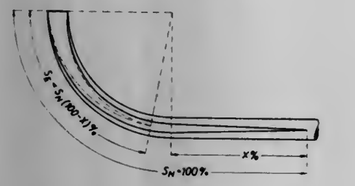


(h) a vapor outlet in the vapor chamber for the removal of vapors;

(i) a liquid outlet in the vapor chamber for the removal of liquids;

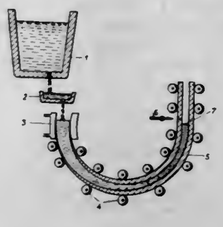
(j) a damming means secured to the wall of the chamber between the rotor containing chamber and the vapor chamber which means comprise a non-annular segmental dam element positioned at least in part in the lower 180 degree portion of the vapor flow path between the closed chamber and the vapor chamber, the height and shape so selected as to prevent, in part, processed material from entering the vapor chamber and to minimize the pressure drop.

3,346,035
PREVENTING THE OVERFLOW OF LIQUID METAL FROM AN END CASTING HEAD DISCHARGED IN A CURVED CONTINUOUS CASTING PATH TOWARDS THE HORIZONTAL PLANE
Karl-Georg Speith, Duisburg, and Adolf Bungeroth, Duisberg-Huckingen, Germany, assignors to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany
Filed Feb. 18, 1965, Ser. No. 433,752
Claims priority, application Germany, Feb. 20, 1964, M 59,992
3 Claims. (Cl. 164—82)



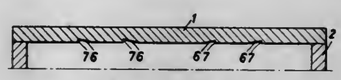
1. In a method of preventing the overflow of liquid metal from an end casting head of a casting discharged in a curved continuous discharge path towards the horizontal plane during the terminal period of the casting operation, the steps comprising, reducing the casting speed at least shortly before the end of the steel delivery to the mold to reduce the length of the sump and continuing withdrawal at a reduced casting speed so that thereafter the leading point of the sump is maintained above the horizontal.

3,346,036
PROCESS FOR THE CONTINUOUS CASTING OF TUBULAR PRODUCTS
Bruno Tarmann, Kapfenberg, Austria, assignor to Gebr. Bohler & Co., Aktiengesellschaft, Vienna, Austria
Filed Jan 8, 1965, Ser. No. 424,297
Claims priority, application Austria, Jan. 16, 1964, A 282/64
17 Claims. (Cl. 164—85)



1. A process for the continuous casting of hollow metal products, which comprises pouring molten metal into the top end of a generally downwardly extending open-ended mold of a desired internal configuration to continuously form the outer surface of the metal as it is poured into a casting in conformity with the internal configuration of the mold, withdrawing such casting having a solidified skin and a liquid core from the other end of the mold, moving said withdrawn casting from the mold in an arcuate path along an initially descending and a subsequently ascending, curved path extending upwardly to a level barometrically equivalent to the level of the molten metal in the mold, and establishing a barometric equilibrium between the surface of the molten metal in the mold and the molten metal in the core in the ascending path to provide a liquid-gas interface at the top of said liquid core in said casting in the ascending portion of said path, the casting fed beyond said interface being hollow.

3,346,037
GROOVED CONTINUOUS CASTING MOLD FOR SLABS
Adolf Bungeroth, Duisburg-Huckingen, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany
Filed Aug. 3, 1965, Ser. No. 476,851
Claims priority, application Germany, Aug. 11, 1964, M 62,071
8 Claims. (Cl. 164—273)



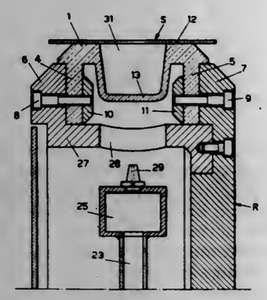
1. In a water-cooled continuous casting mold, open on top and bottom, for use in the continuous casting of slabs, an inner mold wall comprising two end sections and two wide connecting sections, said wide connecting sections having a greater width in the horizontal direction than said end sections, and each wide connecting section having an internal surface adapted to be in contact with a wide surface of a slab being cast, a series of upright grooves recessed in the internal surface of each wide connecting section, each upright groove comprising two intersecting upright faces, one of said faces forming a smaller angle of inclination with said internal surface than the other face, said one face being coordinated with the upright central axis of said wide connect-

ing section, said other face being coordinated with its respective end section, said grooves converging downwardly with respect to said central axis at a predetermined taper, said taper being adapted to be in accordance with the shrinkage downward contraction of said slab.

3,346,038
CONTINUOUS CASTING WHEEL, WITH IMPROVED COOLING DEVICE

Ilario Properzi, Via Cosimo del Fante, 10, Milan, Italy

Filed July 2, 1964, Ser. No. 379,853
Claims priority, application Italy, July 13, 1963, 14,686/63
7 Claims. (Cl. 164—278)



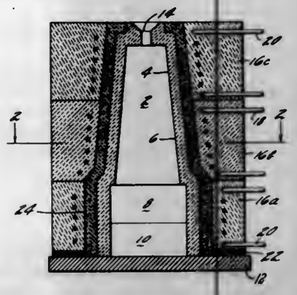
1. A continuous casing arrangement comprising, in combination, a circular rotatable casting wheel having a circumferential wall and an outwardly directed circumferential edge face thereon; a circumferential groove provided in said edge face and having a bottom wall of a predetermined thickness and thermal conductivity; a metal tape extending partly around said edge face and covering said groove over a portion of arc, defining therewith a casting cavity adapted to receive a molten metal, said metal tape having a thickness so related to said predetermined thickness as to afford said metal tape a thermal conductivity substantially equal to that of said bottom wall; and cooling means, comprising first means for directly cooling said tape in the region of said portion of arc, and individually adjustable second means cooperating with said bottom wall for directly cooling the same, said second means comprising a plurality of angularly displaced discrete chambers provided in said circumferential wall inwardly of said bottom wall and each adapted to receive a cooling fluid, and separate conduit means connected to each of said plurality of angularly displaced discrete chambers for admitting to each of said chambers cooling fluid.

3,346,039
MOLD HEATER

Edward J. Lyons, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 16, 1965, Ser. No. 472,552
5 Claims. (Cl. 164—338)

1. A heater for a unitary shell-type mold, the latter having a length substantially greater than its transverse dimension, said heater including a plurality of rings of ceramic material in end-to-end engagement with one another, the cooperating faces of adjacent rings abutting one another, and together forming a cavity for the mold with the assemblage of rings surrounding and spaced from the mold and with the longitudinal dimension of the mold substantially parallel to the axis of the rings, each ring having its inner periphery closely spaced from the periphery of the mold in the area surrounded by the ring to provide a space for granular material therein, and each ring having at least one heating coil embedded therein adjacent to the inner periphery of the ring, each heating coil having individual connections accessible at the outer

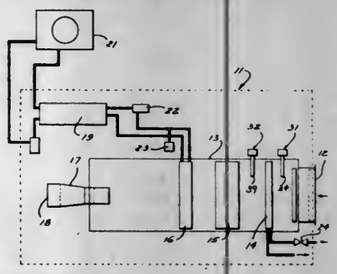


periphery of the ring in which it is embedded and a chill plate at the bottom of the plurality of rings on which the rings are stacked and on which the mold within the stack is supported.

3,346,040
AIR CONDITIONING SYSTEM INCLUDING HUMIDITY CONTROL SENSING MEANS

Theodore Cohen, 55 Ruxton Road, Great Neck, N.Y. 11023

Filed Sept. 7, 1965, Ser. No. 485,325
2 Claims. (Cl. 165—21)

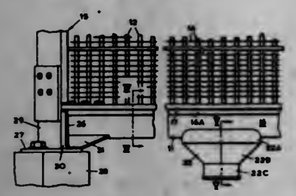


1. An air conditioning system of the fresh air intake type comprising a fresh air intake, a blower to draw air through said intake and discharge the same after it has been conditioned, cooling means between the intake and the blower, heating means between the intake and the cooling means, sensing means to vary the temperature of the air passing the heating unit before flow of such air through the cooling means, said sensing means comprising a humidity sensing device, an adjustable temperature sensing device having an adjustable control point, said temperature sensing device being positioned between said heating means and said cooling means, said humidity sensing device being controlled by variations in the relative humidity of the air entering the air intake, said humidity sensing device and said temperature sensing device being of the pneumatic type each having an air pressure inlet to provide a control pressure, said humidity sensing device having a pressure outlet, said temperature sensing device having a control pressure inlet connected to said pressure outlet and also having a control pressure outlet controlling the temperature of said heating means, whereby variations in the humidity sensed by said humidity sensing device will cause corresponding pressure variations applied to the pressure inlet of the temperature sensing device to change the control point of said temperature sensing device for corresponding variations in the control pressure outlet to correspondingly change the temperature of the heating means.

3,346,041
HEAT EXCHANGERS

John Harold Daltry, Rugby, England, assignor to The English Electric Company Limited, London, England, a British company

Filed Mar. 12, 1965, Ser. No. 439,254
Claims priority, application Great Britain, Mar. 25, 1964, 12,592/64
4 Claims. (Cl. 165—47)

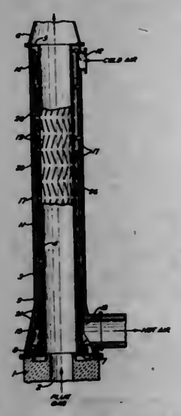


1. In a cooling tower comprising at least one heat exchanger for cooling water by indirect heat exchange with air, said heat exchanger having an inlet header, a heat exchange matrix and an outlet header integrally connected together, and through which the water passes in sequence; said cooling tower also comprising a plurality of spaced-apart pillar means fixed in the ground and a spaced-apart pair of structural feet, each said structural foot being secured to and supported by one of said pillar means; the improvement which comprises a hollow structural beam which forms at least one said header, said hollow structural beam extending between and being supported by said spaced-apart pair of structural feet, said hollow structural beam being of sufficient strength to support, and supporting the entire weight of said heat exchanger over the span of said spaced-apart pair of structural feet, when said heat exchanger is full of water.

3,346,042
RADIATION RECUPERATOR

Jobst W. Seehausen, Upper St. Clair Township, Pa., assignor to General Ionics Corporation, Bridgeville, Pa., a corporation of Pennsylvania

Filed Oct. 13, 1965, Ser. No. 495,424
14 Claims. (Cl. 165—154)

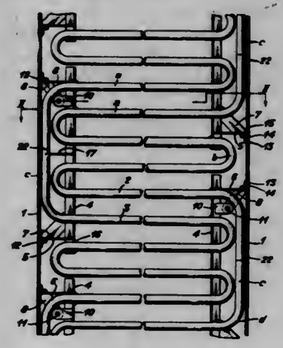


1. A radiation recuperator comprising a vertical metal cylinder open at top and bottom for flow of hot flue gases therethrough, a metal shell encircling the cylinder and spaced therefrom, means connecting the upper end portions of the cylinder and shell to suspend the cylinder in the shell, means closing the space between the lower ends of the cylinder and the shell, an insulating lining for the shell spaced from said cylinder to form a vertical air passage around the cylinder, the shell being provided at its one end with a lateral air inlet into said passage and provided at its other end with a lateral air outlet from the passage, and vertically spaced metal rings secured to the inside of the shell and extending radially into said lining for supporting it and interrupting any flow of air vertically between the lining and shell.

3,346,043
HEAT EXCHANGER PIPE COIL WITH SUPPORT MEANS

Ernst Thurnauer, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland

Filed Aug. 26, 1965, Ser. No. 482,705
Claims priority, application Switzerland, Sept. 3, 1964, 11,472/64
8 Claims. (Cl. 165—162)



1. A heat exchanger comprising at least a pair of opposite side walls having spaced mounts thereon; at least one pipe coil disposed transversely between said side walls, said pipe coils having a plurality of spaced straight portions and a plurality of bends interconnecting said straight portions; and bearer members spaced from each of said side walls, said bearer members mounting said pipe coil therein and having means to form a wall spaced from each of said side walls, each of said bearer members including a pair of arms fixed thereto and directed toward an adjacent side wall adjacent respective one of said mounts, and means mounting said pair of arms on adjacent mounts to fix said bearer members and pipe coil in place on said mounts.

3,346,044
METHOD AND STRUCTURE FOR RETORTING OIL SHALE IN SITU BY CYCLING FLUID FLOWS

Marion L. Slusser, Arlington, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Sept. 8, 1965, Ser. No. 485,810
12 Claims. (Cl. 166—2)

1. A retorting method employing in situ combustion of a subterranean deposit of oil shale having interconnected fractures, which fractures are oriented predominantly vertically and aligned with interconnection into a fracture system having permeability to fluids in at least one direction by which fluids can flow through such oil shale, comprising the steps of:

(a) providing well means for conveying fluids between the earth's surface and the oil shale with said means penetrating the oil shale into fluid communication with interconnected fractures in the fracture system and remote from any atmospheric vent through which fracture-contained pressurized fluids suffer appreciable leakage and substantial loss,

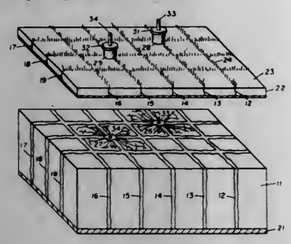
(b) supplying a heating gas through the well means into the interconnected fractures in fluid communication therewith and initiating combustion in the oil shale adjacent the well means with the heating gas in maintaining combustion in the oil shale introduced at a first pressure in the fractures greater than atmospheric pressure and less than the pressure at which induced fracturing of the oil shale occurs,

(c) terminating the supply of said heating gas into the well means only when the inflow of said heating gas is substantially reduced in rate at said first pressure upon a peripheral pressure seal being formed in the fractures in fluid communication with the well means, thereafter,

(d) venting the pressurized fluids contained by the peripheral seal in the oil shale through the well means and recovering hydrocarbons from said fluids until the outflow of said fluids is substantially reduced in rate at a second pressure less than said first pressure,

(e) injecting the heating gas through the well means into the oil shale to promote in situ combustion at a third pressure greater than the second pressure and not greater than about the first pressure until the inflow of said heating gas substantially ceases at said third pressure, and, thereafter,

(f) repeating step (d).



10. A structure for producing hydrocarbonous shale oil comprising:

(a) an oil shale having interconnected fractures, which fractures are aligned into a fracture system having a fluid permeability at least in one direction through which fluids can flow through the oil shale,

(b) well means for conveying fluids positioned in the oil shale in fluid communication with said fractures and remote from any atmospheric vent through which fracture-contained pressurized fluids suffer appreciable leakage and substantial loss,

(c) a peripheral pressure seal surrounding said well means in the oil shale comprising a blockage of said fractures with products of the in situ combustion reaction of a heating gas and the hydrocarbonous materials in the oil shale under continued injection flow conditions at the well means,

(d) means connected with the well means for supplying a heating gas into the fractures in fluid communition therewith, and

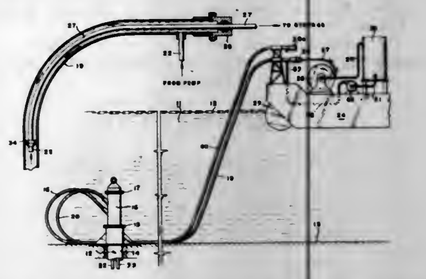
(e) means connected with the well means for recovering hydrocarbons from pressurized fluids in the oil shale as said fluids are vented from the well means.

3,346,045
OPERATION IN A SUBMARINE WELL

Richard P. Knapp and Jerome D. Goodrich, Jr., New Orleans, La., assignors, by direct and mesne assignments, to Esso Production Research Company, a corporation of Delaware

Filed May 20, 1965, Ser. No. 457,310
20 Claims. (Cl. 166—.5)

1. A method for conducting operations in a well having a conduit forming a passageway extending into said well, which comprises inserting into said conduit from a reel a continuous pipe string having a free end and a length sufficient to reach from said reel to a selected



point in said conduit, and then propelling said pipe string through said conduit by fluid pressure exerted against said free end.

3,346,046
SECONDARY RECOVERY OF OIL BY PARTIALLY MISCIBLE PHASE DISPLACEMENT

William G. Boston, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,677
8 Claims. (Cl. 166—9)

1. In a method of secondary recovery of oil from a formation having at least one injection well and at least one production well wherein there is injected into said formation through said injection well for pistonlike displacement of said oil to said production well a displacing fluid which at the conditions within said formation is gaseous and is only partially miscible with said oil but wherein said formation is in a state of free gas saturation whereby said displacing fluid does not effect pistonlike displacement of said oil to said production well but tends rather to flow through the passages in said formation occupied by free gas and bypass and mix with rather than displace said oil and adversely affects the total recovery of said oil, the steps which comprise:

(a) introducing into said formation through said injection well a hydrocarbon material, said hydrocarbon material being undersaturated relative to said free gas in said formation and which under the conditions prevailing within the formation is liquid, in a quantity only to prevent flow of said displacing fluid through the passages in said formation occupied by said free gas and thereby prevent bypassing and mixing with rather than displacing of said oil and less than the quantity which will pass entirely through said formation to said production well,

(b) thereafter introducing into said formation through said injection well said displacing fluid which is gaseous and only partially miscible with said oil in said formation at the conditions within said formation in a quantity to form a slug which will pass entirely through said formation and effect displacement of said oil between said injection well and said production well, and

(c) driving said slug of displacing fluid through said formation to said production well to displace said oil from said formation through said production well.

3,346,047
MULTISTAGE WATERFLOOD

Harold L. Townsend, Dallas, and James M. McMillen, Arlington, Tex., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,088
6 Claims. (Cl. 166—9)

1. In a method of recovering oil from an oil-containing subterranean formation wherein a fluid is injected into an injection means and into said formation, and oil is produced therefrom through a production means, the improvement comprising the steps of:

(a) injecting through said injection means a first slug of from 0.01 to 10 percent pore volume of an aqueous nonsaline solution containing a first concentration of a surfactant which is partially water soluble and preferentially oil soluble;

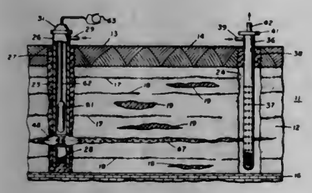
(b) injecting through said injection means a second slug of from 0.01 to 10 percent pore volume of an aqueous saline solution containing a second concentration lower than said first concentration of said surfactant, said first concentration being at least as high as the saturation concentration for said surfactant in said saline solution; and

(c) injecting through said injection means a third slug of at least 5.0 percent pore volume of brine to drive said nonsaline solution, said saline solution, and said oil toward said production means.

3,346,048
THERMAL RECOVERY METHOD FOR OIL SANDS

Lloyd K. Strange, Grand Prairie, and James E. Marberry and David S. Koons, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Dec. 17, 1964, Ser. No. 419,035
13 Claims. (Cl. 166—11)



13. A method for creating a fracture at about a desired depth in a deposit of oil sands residing in a subterranean formation from a borehole subject to thermal expansion, said oil sands having thin interbeds of clay and silt, shale sections and siltstone lenses, comprising the steps:

(a) providing in the formation to extend into the oil sands a borehole and therein surroundingly cementing a conduit for conveying fluids between the oil sands and the earth's surface,

(b) removing from the conduit and surrounding cement a transverse circumferential segment producing a window therein having a vertical dimension at least equal to the longitudinal dimensional increase of the conduit and surrounding cement resulting from subsequent thermal expansion, said window positioned at about the depth in the oil sands at which a fracture is to be initiated,

(c) forming into the oil sands at the window a continuous circumferential V-shaped notch with such notch oriented in a substantially horizontal plane,

(d) introducing a fluid under pressure into the oil sands via the window to initiate a fracture,

(e) determining the depth in the oil sands at which the fracture is initiated,

(f) sealing each initiated fracture at a depth in the oil sands other than the desired depth,

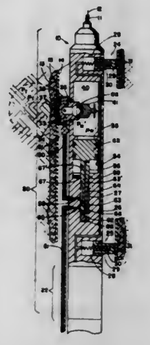
(g) repeating steps (d), (e), and (f) until a fracture is initiated in the oil sands at the desired depth, and

(h) continuing the introduction of a fluid under pressure to extend the fracture at the desired depth from the borehole into the oil sands.

3,346,049
METHOD OF TREATING FORMATION WITH PRIOR REMOVAL OF DETRITUS

Timothy D. Brown, Houston, Tex., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Original application Apr. 7, 1964, Ser. No. 358,036, now Patent No. 3,318,393, dated May 9, 1967. Divided and this application Nov. 10, 1966, Ser. No. 593,544
8 Claims. (Cl. 166—13)



5. The method of treating the permeable space of a permeable formation zone containing formation fluid under pressure and traversed by a cased borehole comprising the steps of providing a volume of gas at a pressure less than formation fluid pressure within said casing; perforating said casing from therewithin a first direction along an axis to breach the casing wall and establish fluid communication with the permeable space of the formation therebeyond to induce a concomitant pulse flow of formation fluid along said axis opposite said first direction by communicating said formation fluid with said volume of gas, said axis defining a first path; and injecting a treating fluid into said permeable space via a path which is exclusive of said volume.

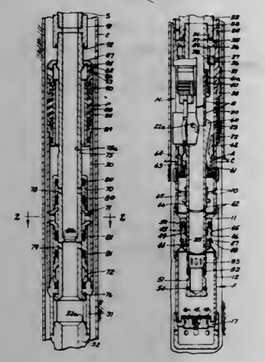
3,346,050
CROSSOVER CEMENTING APPARATUS

Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex. 77024

Filed Oct. 22, 1965, Ser. No. 500,929
3 Claims. (Cl. 166—128)

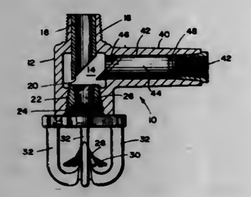
1. Apparatus for use in cementing well liners, comprising in combination with a well liner and a liner hanger for anchoring the liner to a surrounding well casing, a tubular housing, anchor means carried by said housing for releasably securing the same to the well liner, an annular packer means carried by the housing expansible by endwise compression to seal with said well casing, a crossover body having an axial bore mounted in said housing, radially extending conduits communicating said axial bore with the exterior of said housing below said packer means, by-pass ports through the wall of said crossover body below said conduits communicating said axial bore with the interior of said housing, passage means communicating the interior of the housing with the exterior thereof above said packer means, a tubular mandrel connectible to an operating pipe string and extending axially through said housing and said axial bore and longitudinally movable therein by longitudinal movement of said pipe string, longitudinally spaced upper and lower ports through the wall of said mandrel positioned to be moved into and out of communication respectively with said conduits and said by-pass ports in response to prede-

termined axial movement of the mandrel relative to the housing, and abutment means carried by the mandrel operable to apply endwise compression to said packer



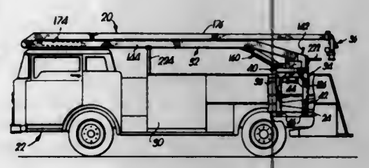
means coincident with said predetermined axial movement of said mandrel to the port communicating position.

3,346,051
PILOT OPERATED FIRE PROTECTION DEVICE
Philip H. Merdinyan, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,581
7 Claims. (Cl. 169—20)



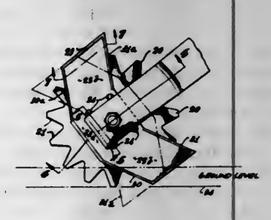
1. A discharge outlet and valve for a fire protection system comprising:
(a) a hollow body containing an unobstructed junction chamber therein,
(b) an inlet passageway extending through a wall of said body and terminating at a seating lip defined by the end of the wall of said inlet passageway within said junction chamber,
(c) an outlet passageway colinearly oriented with respect to said inlet passageway, and spaced therefrom, extending from said junction chamber through an opposite second wall of said body,
(d) a pilot passageway extending from said junction chamber through a third wall of said body intermediate said inlet and outlet passageways, said pilot passageway:
(i) being oriented laterally to said inlet and outlet passageways,
(ii) containing a reciprocably slidable fluid pressure actuated piston sealingly engaging the walls of said pilot passageway, said piston:
(A) having a seating face at its end extending toward said junction chamber, adapted to sealingly engage said seating lip,
(e) at least one of said seating lip and said seating face being angled substantially less than 90° and substantially more than 0° to the axis of its related passageway.

3,346,052
FOLDING BOOM AERIAL WATER DELIVERY APPARATUS FOR MOBILE FIRE FIGHTING EQUIPMENT
Arthur D. Moore and Kenneth H. Davidson, St. Joseph, Mo., assignors to Snorkel Fire Equipment Company, St. Joseph, Mo., a corporation of Missouri
Filed June 9, 1965, Ser. No. 462,699
14 Claims. (Cl. 169—25)



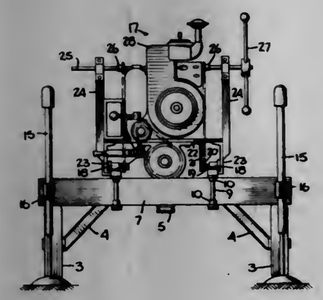
11. In fire-fighting apparatus:
a support;
an articulated, self-supporting boom having a pair of ends;
means mounting one of said ends of said support for movement of the boom with respect to the support,
said boom including a plurality of elongated, hollow boom sections each defining a fluid passage therethrough extending longitudinally thereof, and means pivotally interconnecting said sections end-to-end for movement between folded and unfolded positions and intercommunicating said passages to provide a continuous path for flow of a fluid under pressure through the boom; and
a delivery nozzle on one of said sections communicating with the passage therein.

3,346,053
LAWN EDGER
Albert J. Allegretti, 4644 Halbrent Ave., Sherman Oaks, Calif. 91403
Filed Feb. 12, 1965, Ser. No. 432,366
2 Claims. (Cl. 172—16)



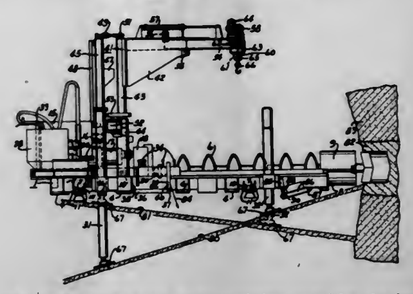
1. A lawn edger comprising:
an elongated handle;
a ground-engageable wheel mounted on a lower end of said handle;
a rotary cutter drivably engaged by said wheel and having teeth extending beyond the periphery of said wheel to penetrate below the surface on which said wheel is supported;
and a blade detachably connected to said edger in a fixed position contiguous to one side of said rotary cutter, said blade having a pair of spaced cutting edges either of which is optionally usable by adjustment of said detachable blade to a first and a second position relative to said cutter, said blade being disposed on said edger to be positionable, by movement of said handle to a driving position, to penetrate the ground to a depth below the surface on which said wheel is supported, said blade in said first position and when said handle is in said driving position, having a first one of said edges disposed to penetrate the ground to approximately the same depth as the teeth of said cutter, said blade, in said second position and when said handle is in said driving position, having a second one of said edges disposed to penetrate the ground to a depth greater than the depth to which said teeth of said rotary cuttter penetrate the ground, both of said cutting edges of said blade having a portion within the radius of action of said teeth of said cutter to be disposed in shearing relationship with said teeth of said cutter, both of said cutting edges of said blade having another portion extending beyond the radius of action of said teeth of said cutter to sever material skipped by said teeth of said cutter.

3,346,054
PRECISION CASING BORING MACHINE
James E. Oliver, William H. Miller, and Romey A. Taylor, Titusville, Fla., assignors to Mamba Engineering Company Inc., Titusville, Fla., a corporation of Florida
Filed Aug. 9, 1965, Ser. No. 478,308
7 Claims. (Cl. 173—23)



1. A horizontal boring machine for installing a casing having an enlarged cutter head mounted thereon in a precise position comprising
a frame having a pair of parallel spaced cross members and a pair of parallel frame members adjustably mounted on said cross members;
vertically adjustable means mounted in said cross members for vertically supporting said frame;
carriage means mounted on said frame members for mounting the casing for rotation on an axis parallel to the longitudinal axis of said frame;
means for moving said carriage means longitudinally of said frame members including a plurality of rotatable means secured to the base of said carriage means and mounted on said frame members, a rotatable shaft means mounted in said carriage means above said rotatable means, a first toothed sprocket gear mounted on each of said rotatable means, a plurality of second toothed sprocket gears mounted on said rotatable shaft means, a plurality of chains each operably connecting one of said first sprocket gears to one of said second sprocket gears to operably connect said shaft means to said plurality of rotatable means, and means mounted on said shaft for rotation of said shaft; and
means for moving said frame members longitudinally of said cross members.

3,346,055
AUGERING MACHINE FOR MINING UPWARDLY AND DOWNWARDLY AT STEEP ANGLES
William G. Young, Salem, Ohio, assignor to The Salem Tool Company, Salem, Ohio, a corporation of Ohio
Filed July 23, 1964, Ser. No. 384,608
3 Claims. (Cl. 173—37)

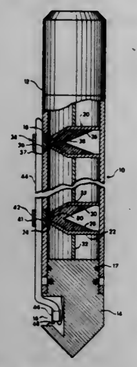


1. A freely supported auger mining machine including a frame having quadrangularly positioned front and rear lift jacks and spaced guides for a carriage supporting a rotary auger motor means and reciprocated on the guides by a motor means connected between the frame and the carriage to reciprocate an elongated rotary auger mining assembly supported on the frame and rotatably driven by the rotary auger motor means while the frame is supported on said front and rear lift jacks, said lift jacks being extensible selectively to their full length to dispose said frame and carriage at a longitudinal mining angle greater than three degrees, characterized by a hydraulic control system to control the reciprocation by said motor means of said carriage on said frame, said motor means consisting of two double-acting fluid cylinder and piston motors hydraulically tied together at one end, the other ends of said motors hydraulically connected to independent extension cylinders, said motors and extension cylinders carried on a second carriage with the piston of one of said motors connected to said frame and the piston of the second of said motors connected to the first mentioned carriage, pump means to supply fluid to and from said extension cylinders to said motors through supply lines, counterbalance valves in each of said supply lines to counterbalance the fluid pressure on each of said motors to hold said first mentioned carriage from drifting along said frame when said frame is at a longitudinal mining angle relative to the horizontal.

3,346,056
HOLLOW CARRIER GUN
F O. Bohn, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,222
3 Claims. (Cl. 175—4.6)

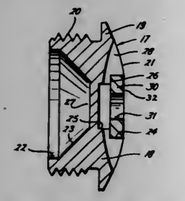
1. A hollow carrier gun for lined shaped charges for use in perforating small diameter tubing, said gun comprising:
a gun body formed of a length of hollow, open-ended tubing having counterbore apertures spaced apart along its length, a closure sealingly engaged with each end of the tubing; a shaped charge carrier strip inside said body, said carrier strip having apertures aligned with said apertures in said body, a plurality of shaped charges in said apertures of said carrier strip, each shaped charge formed of a generally cup-shaped case designed to fit inside of the gun body and having an axial aperture aligned with the opposing aperture in said gun body; a block of high explosive in said case having a lined cavity in its front face; a plurality of booster caps, one for each shaped charge, each booster cap formed of a round, stepped end sealingly engaged with the counterbore aperture

in the body and engaging the axial aperture in the case of the shaped charge; a booster in the end of said booster cap contacting the block of explosive of the shaped charge, an annular extension extending



from the round stepped end; a Primacord passing through the annular extension of each booster cap, and ignition means attached to the end of the Primacord.

3,346,057
WELL BORE PERFORATING APPARATUS
William T. Bell, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 10, 1966, Ser. No. 601,248
21 Claims. (Cl. 175—4.52)



1. Apparatus for providing a uniform burr-free opening in a well casing comprising: perforating means including a shaped charge for developing, upon its detonation, a perforating jet directed along a predetermined axis to perforate an adjacent surface of a well casing and produce an entry hole therein of an expected diameter; means for confining the adjacent casing surface including a rigid member spaced forwardly from said shaped charge and having a circular aperture therethrough of a diameter no greater than said expected entry hole diameter and circumscribing said perforating axis, the outer face of said rigid member having a transverse curvature that is substantially complementary to the adjacent casing surface; and positioning means for urging said outer face of said rigid member into complementary contact with the adjacent casing surface.

3,346,058
ACOUSTIC APPARATUS
John V. Bouyoucos, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed May 29, 1964, Ser. No. 371,202
11 Claims. (Cl. 175—56)

7. Apparatus for drilling a bore hole in an earth formation with the aid of a source of pressurized fluid and a drill bit disposed in a bit cavity at the bottom of said hole, said apparatus comprising

(a) an acoustic vibration generator coupled to said source for delivering fluid to and substantially modulating the pressure of the fluid at said bit cavity, said generator including
  (i) a housing having passage means for conducting the flow of fluid from said source through said generator to said bit cavity and from said bit cavity through a return channel formed between said housing and said earth formation,
  (ii) a valve mechanism supported in said housing and including a valve member disposed adjacent a stator port and adapted to move in relation to said stator port between an open first position and a fluid flow throttling second position,



(b) said passage means comprising a transmission line between said bit cavity and said stator port and communicating said stator port with said bit cavity for modulating the pressure in said bit cavity,
(c) isolating means in said housing communicating with said return channel for confining the pressure modulation within said bit cavity, and
(d) said passage means, said valve mechanism, and said isolation means being configured to define an acoustic circuit for supporting self-excited oscillatory movement of said valve between said positions.

3,346,059
RETRACTABLE WIRE LINE CORE BARREL
Walter W. Svendsen, Gaastra, Mich., assignor to Odgers Drilling Inc., Iron River, Mich., a corporation of Michigan
Filed Mar. 31, 1965, Ser. No. 444,113
10 Claims. (Cl. 175—246)

1. In a core barrel, the combination comprising:
(a) an outer drill tube having a drill bit at its lower end and adapted to be rotatably driven at its upper end,
(b) said drill tube having an internal groove disposed above its lower end and forming lower and upper shoulders,
(c) said drill tube also having a portion of reduced diameter forming a rigid valve surface,
(d) and an inner tube assembly having substantially parallel walls throughout its length and adapted to be disposed within said drill tube near the bottom thereof,
(e) said inner tube assembly being of lesser outside diameter throughout than the inside diameter of said drill tube to provide a space for fluid flow therebetween, with said assembly comprising:
  (1) a latch body having a tubular wall,

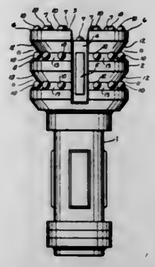
  (2) radially movable latch means mounted to said latch body and extending through the wall thereof,
  (3) means disposed within said latch body to bias said latch means radially outwardly against the inner wall of said drill tube so that said latch means will enter said groove and hang said assembly from said lower shoulder,
  (4) means counteracting said biasing means for retracting said latch means from said groove to permit withdrawal of said assembly upwardly in said drill tube,
  (5) a valve member having a rigid valve surface normally spaced from said first-named valve surface when said latch means is disposed in said groove,



  (6) both said surfaces providing an area of restriction therebetween for the flow of fluid through said space,
  (7) and resilient means disposed between said valve member and said latch body, said resilient means being compressible to permit said valve member to approach the said portion of reduced diameter of said drill tube so that said area of restriction is reduced,
(f) the construction being such that upward pressure on said inner tube assembly will initially cause said latch means to lock against the upper shoulder of said groove, and subsequently cause said resilient means to be compressed to thereby reduce the fluid restrictive space between said surfaces.

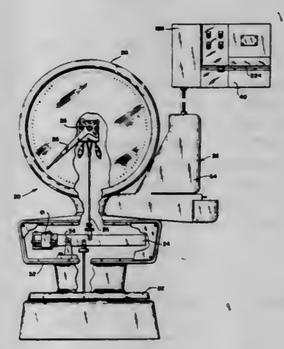
3,346,060
ROTARY-AIR-PERCUSSION, STABILIZER AND REAMER DRILL BIT OF ITS OWN TRUE GAUGE
Leaman Rex Beyer, Newton County, Diamond, Mo. 64840
Filed Dec. 23, 1965, Ser. No. 517,183
8 Claims. (Cl. 175—410)

1. A rotary percussion bit having a body portion having a flat bottom face, inserts of hard, wear resistant material mounted in said body portion and projecting downwardly from said flat bottom face, said body portion having a convexly curved side wall having outwardly opening grooves therein extending lengthwise thereof said grooves extending through said flat bottom face, said side walls having outwardly opening grooves extending circumferentially thereof between said lengthwise extending grooves and connected therewith, said lengthwise extending grooves having fluid inlets leading into the same, said lengthwise and circumferentially extending grooves defining convexly curved side wall portions spaced lengthwise of said bit, and inserts of hard, wear resistant material



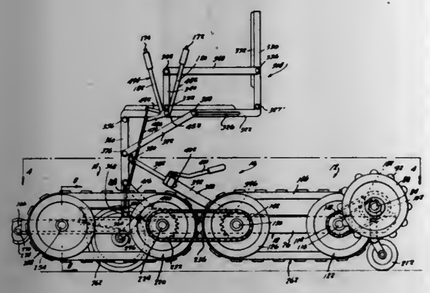
mounted in and projecting from the walls of said circumferentially extending grooves with the ends thereof in substantial alignment with said curved side wall portions.

3,346,061
WEIGHT RECORDING SYSTEM
George F. Johnston, Wayne, N.J., and Gordon Eugene Duncan, Southgate, Calif., assignors to Howe Richardson Scale Company, Clifton, N.J., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,358
5 Claims. (Cl. 177—2)



1. In a weighing system having a scale including a displaceable load-supporting part, a circuit having a series of electrically actuatable, bi-stable devices arranged in parallel current paths to respectively represent a series of digits in each of a plurality of orders of a multi-digit number, means responsive to displacement of said load-supporting part by a load applied thereto for actuating a pre-selected one of said bi-stable devices in each order for representing and retaining the weight of said load, means including a plurality of movable elements for scanning the condition of said series of bi-stable devices in respective ones of said orders, a plurality of indexable type carriers each connected to one of said elements for coordinated movement therewith, type on said carriers for printing out selected digits in the order associated with the ones of said element to which the carriers are connected, motor means energizable to move each element and to simultaneously index the carrier connected thereto, and means responsive to the detection of an actuated bi-stable device in each order by scanning said devices in the various orders with said elements for deenergizing said motor means to cease indexing of said carriers at printing positions corresponding to the weight of said load.

3,346,062
POWER-OPERATED WHEELCHAIR
Eugene M. Richison and Ethel M. Richison, Kinta, Okla., assignors to H. T. Conklin, Stigler, Okla.
Filed Feb. 4, 1966, Ser. No. 525,164
9 Claims. (Cl. 180—6.7)



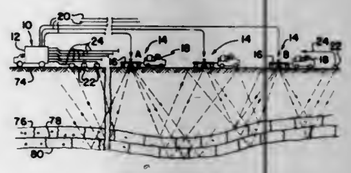
1. A power-driven conveyance comprising a pair of units each having a chassis including juxtaposed and remotely-disposed ends, endless traction belt means at a pair of opposed sides of said chassis supporting each said chassis in elevated position relative to a horizontal plane, means pivotally-connecting said juxtaposed chassis ends, releasable lock means holding said units against pivotal movement relative to one another, ground-engaging wheel means at one end of each of said units normally supporting, respectively, each of said units and their respective traction belts above said ground, means pivotally-connecting said ground-engaging wheel means with their respective units for retraction and expansion toward and away from their respective unit, selectively-operable means to effect said retraction and extension of said ground-engaging wheels whereby said endless traction belts may be moved into ground-engaging relation with the ground-engaging wheels retracted thereabove and vice versa, and selectively-operable power means connected in driving relation with said endless traction belts and said ground-engaging wheels.

3,346,063
GASEOUS CUSHION SUSTAINED VEHICLE AND THE LIKE
Jean H. Bertin, Neuilly-sur-Seine, France, assignor to Societe Bertin & Cie, Paris, France, a company of France
Original application Jan. 11, 1962, Ser. No. 165,634, now Patent No. 3,263,764, dated Aug. 2, 1966. Divided and this application Oct. 20, 1965, Ser. No. 498,295
Claims priority, application France, June 30, 1961, 866,604 (1st addition 80,047 to Patent 1,310,483)
11 Claims. (Cl. 180—7)



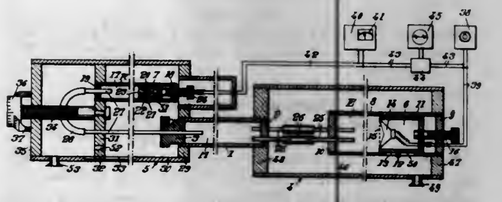
4. A ground effect machine designed to be movable along a surface and comprising: a plurality of separate inner pressure fluid cushion systems disposed alongside each other and each comprising a first closed end spaced from said bearing surface and defining endwise an inner cushion space, first wall means projecting from said first closed end toward said surface and defining sidewise said inner cushion space, said wall means forming a first partition separating said inner cushion space from an outer space extending outside said inner cushion space and said wall means further defining with said surface a first leakage gap connecting said inner cushion space with said outer space, and means for supplying said inner cushion space with pressure fluid which leaks out therefrom into said outer space through said leakage gap; and, an outer pressure fluid cushion system which comprises a second closed end connected with said first closed ends, spaced from said surface and defining endwise said outer space, and second wall means projecting from said second closed end toward said surface and extending around said first wall means, said first and second wall means defining therebetween said outer space and said second wall means forming a second partition enclosing said outer space and further defining with said surface a second leakage gap for said outer space, whereby said outer space extends in the path of said fluid leaking out from said inner cushion spaces.

3,346,064
METHOD AND APPARATUS USING HIGH VELOCITY IMPACT IN THE EXPLORATION OF SUBSURFACE EARTH FORMATIONS
James E. Hawkins, Broken Arrow, Okla., assignor to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware
Filed Jan 31, 1963, Ser. No. 255,309
25 Claims. (Cl. 181—0.5)



1. A method for exploration of subsurface earth formations comprising the steps of striking the earth's surface with a high-density medium at an impact velocity of at least 67 feet per second to create seismic waves, and detecting said seismic waves at a point oriented at a predetermined location relative to the striking point after reflection of said waves from subsurface earth formations.

3,346,065
MEASUREMENT APPARATUS FOR STUDYING THE PHYSICAL PROPERTIES OF A MEDIUM
Fernand Eugene Gabriel Bourquard, 13 Rue Cantin, Courbevoie, France
Filed Oct. 4, 1965, Ser. No. 492,658
Claims priority, application France, Oct. 7, 1964, 990,660
20 Claims. (Cl. 181—.5)



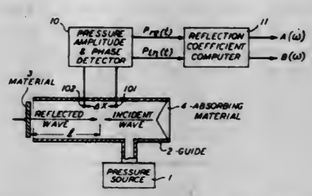
1. A measurement apparatus which comprises, in combination:
an acoustically insulated sample forming a measurement acoustic resonator,
an acoustic transmitter device,
means for controlling the frequency of the waves supplied by said transmitter device,
means for connecting said acoustic transmitter device with one part of said measurement resonator,
an acoustic receiver device,
means for connecting said acoustic receiver device with another part of said measurement resonator,
at least one of said devices comprising a resonator,
the means for connecting said last mentioned resonator with said measurement resonator consisting of weak coupling means between said two resonators, and
means for reading the strength of the signals received by said acoustic receiver.

3,346,066
METHOD OF AND APPARATUS FOR GENERATING SEISMIC WAVES
Park H. Miller, Jr., Del Mar, Dwight C. Pound, Solana Beach, and Herschel R. Snodgrass, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,304
The portion of the term of the patent subsequent to Nov. 1, 1983, has been disclaimed
3 Claims. (Cl. 181—.5)



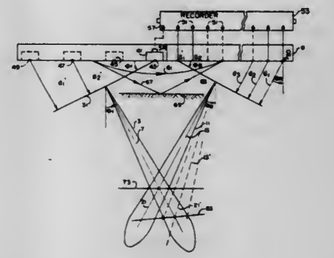
1. An apparatus for generating seismic waves comprising an anchor adapted to be placed in a hole in the earth and to be immovably secured therein, a plate having an opening extending therethrough, said plate being disposed with the axis of said opening generally co-axial with the axis of the hole and being positioned with one of its flat surfaces in face-to-face contact with the surface of the earth surrounding the hole, and means supported on said plate connecting said plate with said anchor through said opening in said plate and effective to repeatedly exert closely spaced successive forces causing said anchor and said plate to be moved in the direction of one another so as to place the earth beneath said plate repetitively in compression, said means comprising a hydraulic cylinder supported by said plate and having a piston connected to said anchor through said opening, a servo valve controlling the flow of fluid under pressure to said hydraulic cylinder, a servo pilot for controlling the operation of said servo valve, said servo pilot being responsive to a signal supplied thereto to cause a series of closely spaced consecutive actuations of said servo valve at the frequency of the signal, a motor driven pump adapted to place fluid in the system under pressure, a high pressure accumulator, means providing fluid communication between the discharge of said pump and said high pressure accumulator and said servo valve, and means providing communication between the exhaust port of said hydraulic cylinder and the inlet of said pump.

3,346,067
SYSTEM FOR DETERMINING ACOUSTIC REFLECTION COEFFICIENTS
Manfred R. Schroeder, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 16, 1966, Ser. No. 534,790
13 Claims. (Cl. 181—.5)



1. Apparatus which comprises
means for directing a pressure wave to be incident upon a reflecting material;
means for simultaneously measuring the instantaneous amplitudes of said incident pressure wave and the pressure wave reflected from said material; and
means for deriving from said measured amplitudes the real and imaginary parts of the complex reflection coefficient of said reflecting material at a selected frequency.

3,346,068
FOCUSING AND SCANNING EITHER OR BOTH OF A PLURALITY OF SEISMIC SOURCES AND SEISMOMETERS TO PRODUCE AN IMPROVED SEISMIC RECORD
John P. Woods, Emmet D. Riggs, and Clifford D. Dransfield, Dallas, Tex., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 297,399, July 24, 1963. This application Oct. 20, 1966, Ser. No. 596,369
26 Claims. (Cl. 181—.5)



7. An improved geophysical method using a receiving system located at a given position and containing a plurality of seismometers and a means for generating seismic disturbances at a plurality of generating points displaced from said receiving system comprising the steps of
(a) generating seismic energy at each of the generating points displaced from the receiving system,
(b) developing at the plurality of seismometers output signals created by the receipt of said generated seismic energy,
(c) focusing said generated seismic energies into a directional beam of seismic energy and focusing the receiving system's response pattern into a directional beam intersecting said beam of seismic energy wherein the signal-to-noise ratio of seismic en-

ergy reflected from an interface in the portion of the subsurface located at the intersection of said beams is increased and said receiver system is made relatively insensitive to other seismic energy and noise from outside said intersection,

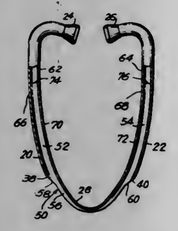
(d) presenting as a function of travel time a dominant event indicative of said energy received from said interface located at said intersection of said beams, and

(e) scanning a larger portion of said subsurface by moving at least one of said beams through a subsurface sector whereby the beams intersect and reflections from interfaces within the new intersection are presented as newly appearing dominant events in accordance with the movement of said beams and the location of said interfaces.

3,346,069
ONE-PIECE BINAURAL ASSEMBLIES FOR STETHOSCOPE

Irving A. Speelman, Roslyn Heights, N.Y., assignor to Propper Manufacturing Co., Inc., Long Island City, N.Y., a corporation of New York

Filed Feb. 6, 1967, Ser. No. 614,224
10 Claims. (Cl. 181—24)



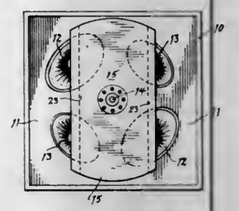
1. For incorporation in a binaural stethoscope, a one-piece unitary binaural assembly comprising a pair of rigid longitudinal binaural tubes and a leaf spring extending between said tubes and interconnecting the same in predetermined orientation, said tubes each having an upper end adapted to be received in the ear of the user and a lower end distant therefrom, said spring being integrally formed with the lower end of said tubes and being of substantially U-shaped configuration with said tubes forming laterally spaced extensions of the ends thereof, the median portion of said spring forming the bight portion of said U-shaped configuration, the ends of said spring and the lower end of said tubes defining a zone of transition from a tubular configuration to a substantially flat configuration.

3,346,070
ELECTRONIC ORGAN SPEAKER SYSTEM

Harold H. Hare, 3865 Acapulco Drive, Campbell, Calif. 95008

Filed Dec. 16, 1966, Ser. No. 602,405
2 Claims. (Cl. 181—31)

1. In a sound reproducing system for electronic organs, the combination of a sound reverberating cabinet having an open end, a vertically disposed speaker supporting baffle mounted within said cabinet inwardly from the open end thereof, a plurality of electrodynamic sound reproducing speakers mounted in a circle upon said supporting baffle with their axes in line with the open end of said cabinet, an elongated sound wave interrupting member of non-resonant material mounted in outwardly spaced relation at the front of said speakers having a total width corresponding substantially with the effective diameter of said speakers and of a length sufficient to cover at least two diametrically opposite speakers in said circle, said sound wave interrupting member having a central portion extending transverse to the axes of said speakers and flaring side portions extending outwardly

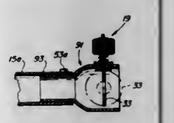


therefrom at an angle of substantially 45 degrees, and means including a motor driven supporting shaft for turning said sound interrupting member when said speakers are in operation, whereby a roving stereophonic and tremolo effect will be produced in the sound waves emanating at the open end of said chamber.

3,346,071
MUFFLER CONSTRUCTION FOR MOTORCYCLES

Allan N. Lader, 750 NW. 5th St., Gresham, Oreg. 97030

Filed Nov. 5, 1964, Ser. No. 409,170
7 Claims. (Cl. 181—56)



1. In a muffler construction for the internal combustion engine of a vehicle such as a motorcycle,

exhaust pipe means,

sound muffling means in said exhaust pipe means,

and means mounting said sound muffling means for movement from a sound muffling position to an unobstructed, non-muffling position,

said sound muffling means comprising a butterfly member,

said butterfly member including a ring shaped portion disposed in a portion of the exhaust pipe means which is of circular cross section,

said mounting means mounting said butterfly member for movement from a position where said ring shaped portion is in concentric relation to the exhaust pipe means, to a position where the plane of the ring shaped portion is parallel to the axis of said exhaust pipe means,

said ring shaped portion having an outer diameter less than the internal diameter of said exhaust pipe portion by an amount such that the annular area between the ring shaped portion and said pipe means portion when such portions are in concentric relation, is at least one-half the area of the opening of the ring shaped member.

3,346,072
LUBRICATING DEVICE

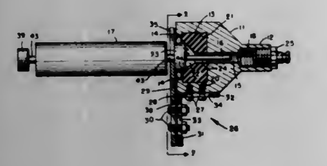
John Erdos, P.O. Box 4, Allenwood, Wall Township, Monmouth County, N.J. 08720

Filed Dec. 18, 1964, Ser. No. 420,252
2 Claims. (Cl. 184—1)

1. A device for lubricating a bearing mounted on the shaft of a rotatable element which has been removed from the equipment in which it is normally mounted without removing said bearing from said shaft comprising:

(a) a body member having an open end frusto-conical cavity therein defined by a generally frusto-conical interior surface capable of engaging the peripheral edge of one side of a bearing in lubricant sealing relation, said body member having an opening therein extending from the inner end of said frusto-conical cavity and concentric therewith for receiving the free end of the shaft upon which said bearing is mounted, means for supplying lubricant under pressure to the inner end of said cavity and first releasable fastening means mounted on the exterior thereof,

(b) a generally L-shaped bracket having an elongated slot in one leg thereof for cooperation with said first releasable fastening means for mounting said bracket on said body member for adjustment longitudinally with respect to the axis of said frusto-conical cavity in said body member,



(c) an elongated clamping member having a bifurcated portion on one end thereof, said bifurcated portion being capable of straddling the shaft on which said bearing is mounted and engaging the other side of said bearing while permitting observation of at least a portion of said other side of said bearing, the inner edges of said bifurcated portion diverging to define an open ended slot of gradually increasing width from the inner to the outer end thereof, and

(d) means for releasably and adjustably fastening the other end of said elongated clamping member to the other leg of said L-shaped bracket, said means comprising second releasable fastening means carried by one of the parts to be fastened and the other part having an elongated slot therein for cooperation with said second releasable fastening means for adjustment of said clamping member radially with respect to the axis of said frusto-conical cavity in said body member,

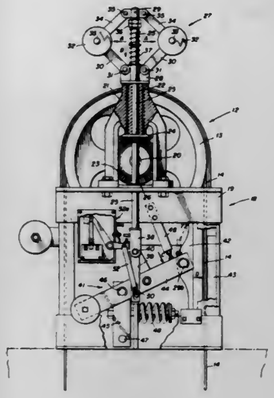
whereby said one side of a bearing to be lubricated may be releasably supported in lubricant sealing relation with said frusto-conical interior surface in said body member.

3,346,073
SAFETY BRAKE TRIPPING SYSTEM FOR ELEVATORS

Richard F. Martin, Rock Island, Ill., assignor to Montgomery Elevator Company, a corporation of Delaware

Filed May 6, 1966, Ser. No. 548,222
6 Claims. (Cl. 187—90)

1. In a safety brake system for elevator cars, brake tripping means comprising, in combination: a frame; a shaft journalled on said frame; means for rotating said shaft at a speed which is directly proportional to the speed of descent of the elevator car; accelerometer means on said shaft for detecting a rate of acceleration of said shaft in excess of a predetermined maximum rate, said accelerometer means having a plurality of relatively movable members which move relative to one another only when said maximum rate of acceleration is exceeded; and means carried on the shaft and movable relative to the shaft, said

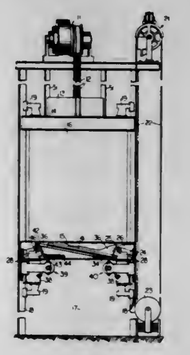


last named means being activated by relative movement of said members for tripping a safety brake on said elevator car.

3,346,074
FLEXIBLE GUIDE CLAMP SAFETY

Joseph H. Borden and Robert O. Bradley, Toledo, Ohio, and Carl Panter, Evansville, Ind., assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio

Filed Feb. 7, 1966, Ser. No. 525,571
9 Claims. (Cl. 187—91)

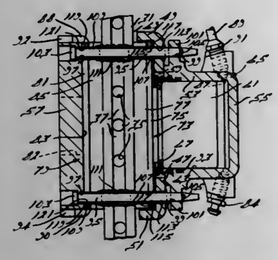


1. A flexible guide clamp safety comprising a pair of jaws, a column perpendicular to the plane of motion of said jaws and having an upper and lower pedestal integral therewith, said column being positioned between said jaws, said upper and lower pedestal being located above and below said jaws respectively, axially aligned gudgeons in each pedestal to define a common pivot axis for said jaws, a pintle pivotally mounting said jaws and fitting within said gudgeons, shoes for engaging a guide rail mounted on opposed inner faces of said jaws on one side of said pintle, and a braking coil spring having its axis transverse of said jaws and engaging said jaws near their ends on the side of said pintle opposite said shoes, said column being between said pintle and said spring.

3,346,075
GUIDE MEANS FOR A CALIPER OF A DISC BRAKE

Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Mar. 24, 1966, Ser. No. 537,219
3 Claims. (Cl. 188—73)

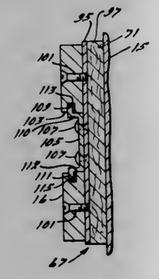


1. A disk brake comprising a stationary torque member, a caliper housing having spaced legs lying on opposite sides of a rotor that is rotatable about a central axis, first and second brake shoes associated with the respective of said legs, actuating means for moving said brake shoes into frictional engagement with the rotor, means for transmitting braking torque from at least one of said shoes to said caliper housing, and means for transmitting at least a portion of the braking torque from said caliper housing to said torque member and for slidably supporting said caliper housing upon said torque member for movement in a generally axial direction with respect to the rotor, said last named means comprising a first sleeve member affixed to said torque member adjacent one of said legs and extending toward the other of said legs, a second sleeve member affixed to said other leg of said caliper housing coaxial with and extending toward said first sleeve member, a substantially rigid pin extending through said sleeve members and a flexible seal affixed to the adjacent ends of said sleeve members and extending therebetween around the adjacent portion of said pin.

3,346,076
DISC BRAKE WITH REINFORCED SHOE

Edward J. Hayes, Livonia, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Feb. 28, 1966, Ser. No. 530,498
3 Claims. (Cl. 188—73)

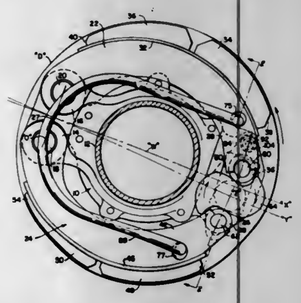


1. A disc brake assembly comprising a caliper housing having at least one leg positioned in spaced confronting relationship to an arcuate portion of a rotor secured for rotation with a wheel, fluid motor means associated with said caliper, a first brake shoe associated with said fluid motor means, a second brake shoe associated with said one leg, said fluid motor means being adapted to move said first brake shoe into frictional engagement with one face of the rotor and to move said caliper housing to bring said second brake shoe into frictional engagement with the opposite face of the rotor, said leg having laterally spaced portions defining an intermediate opening, said second brake shoe having a backing plate operatively engaged by said spaced portions and extending at least in part across said intermediate opening, and reinforcing means for said second brake shoe secured to the portion of said backing plate contiguous to said opening and associated with said leg for transmitting forces from said leg to said backing plate.

3,346,077
FLOATING CAM BRAKE

James C. Cumming, Pleasant Ridge, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed June 24, 1966, Ser. No. 560,192
4 Claims. (Cl. 188—78)



1. In a vehicle wheel brake assembly of the type having an axle mounted support on which primary and secondary brake shoes having linings thereon are mounted at adjacent ends on fixed axis pivots, the brake lining on said primary shoe being initially substantially thicker than the brake lining on said secondary shoe, a rotatable actuator cam disposed between the other ends of said shoes, a return spring urging said other ends of said shoes against said cam, an actuator shaft carrying said cam, said rotatable actuator cam and actuator shaft initially being positioned offset from a brake centerline, which includes the axis of the axle and a point midway the fixed pivots, means supporting said shaft for lateral displacement in a direction towards said brake centerline and towards said primary shoe, said shaft being automatically displaced in said direction by brake application forces as brake lining wear on said primary shoe progresses, and means surrounding said shaft and acting directly on said shaft to hold said shaft in its displaced position.

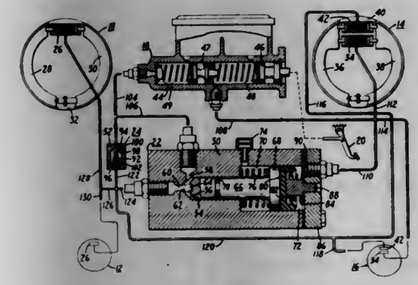
3,346,078
VEHICLE BRAKE SYSTEM AND METHOD

John A. Dobb, Walled Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,302
10 Claims. (Cl. 188—152)

1. A vehicle brake system for a vehicle, said system comprising in combination:
- a front wheel brake assembly and a rear wheel brake assembly,
- a brake master cylinder having a first fluid pressurizing chamber and a second fluid pressurizing chamber,
- a first wheel cylinder for actuating one of said wheel brake assemblies,

- a second wheel cylinder for actuating the other of said wheel brake assemblies,
- a third wheel cylinder and pressurizing chamber assembly in said other wheel brake assembly,
- first normally open fluid pressure closed valve means having a fluid pressure valve closing chamber and a valve inlet and a valve outlet,
- second normally closed fluid pressure differential opened valve means having a valve inlet and a valve outlet,
- a first fluid pressurizing circuit comprising said first fluid pressurizing chamber and said second wheel cylinder and said fluid pressure valve closing chamber and fluid conduit means fluid connecting the same,
- a second fluid pressurizing circuit comprising said second fluid pressurizing chamber and said first valve means valve inlet and said second valve means valve inlet and fluid conduit means connecting the same,



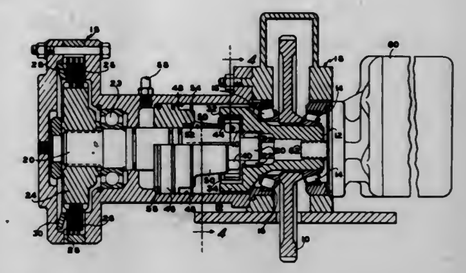
- and a third fluid pressurizing circuit comprising said first wheel cylinder and said third wheel cylinder and pressurizing chamber assembly and said first valve means valve outlet and said second valve means valve outlet and fluid conduit means connecting the same,
- said third wheel cylinder and pressurizing chamber assembly pressurizing fluid in said third fluid pressurizing circuit by brake reaction forces generated by braking action of said other brake assembly in one brake operational mode with said first and second valve means being closed,
- said second fluid pressurizing chamber pressurizing said second circuit and cooperating with fluid pressure in said third circuit to selectively open said second valve means and pressurize said third circuit in another brake operational mode to apply said one brake and to apply braking force to said other brake through said third wheel cylinder and pressurizing chamber assembly.

3,346,079
SPRING APPLIED EMERGENCY BRAKE DEVICE

Leo W. Davis, East Peoria, and William T. Mounts, Washington, Ill., assignors to Westinghouse Air Brake Company, a corporation of Pennsylvania

Filed Oct. 26, 1964, Ser. No. 406,391
12 Claims. (Cl. 188—170)

1. An emergency brake device for a vehicle having a plurality of ground engaging wheels and an operational braking system actuated by air pressure, comprising:
- an adaptor hub rotatably mounted on the vehicle and positively connected to at least one of said wheels,
- a shaft rotatably mounted on the vehicle and having one end in close proximity to said hub,
- a first braking member attached to the shaft,
- a second braking member non-rotatably mounted on the vehicle,
- resilient means urging said braking members into frictional engagement whereby said braking members are adapted to remain in frictional contact during vehicle movement,

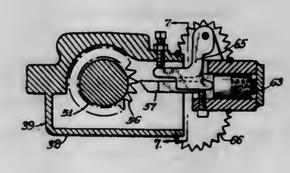


- and means responsive to loss of said air pressure for operatively connecting said hub to the shaft.

3,346,080
SLACK ADJUSTER

Walter R. Polanin, Hazelcrest, Ill., assignor to AMSTED Industries Incorporated, Chicago, Ill.

Filed Aug. 10, 1966, Ser. No. 571,476
3 Claims. (Cl. 188—196)



1. In slack adjuster for a railway car brake, a housing, an internally threaded nut journaled for rotational and non-axial movement in said housing, an adjusting screw in threaded engagement with said nut, a ratchet member journaled in said housing and provided with ratchet teeth, gear means interconnecting the nut and ratchet member for common rotational movement, a pawl support bracket, a pawl mounted in said bracket for reciprocative movement into and out of contact with said ratchet teeth to rotate said ratchet member responsive to movement of said housing transversely of the line of travel of the pawl, a pawl actuating arm pivotally mounted on said bracket, and an abutment screw on said housing operative responsive to movement to the housing in one direction to engage said arm to move the pawl out of contact with said teeth.

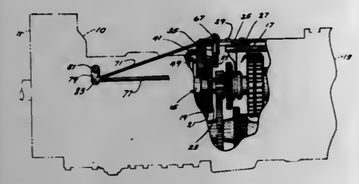
3,346,081
MEANS FOR STOPPING THE TRACTOR TRANSMISSION GEAR TRAIN UPON DISENGAGEMENT OF THE CLUTCH

Dean M. Rowse, Ewing, Nebr. 68735

Filed Nov. 19, 1965, Ser. No. 508,730
3 Claims. (Cl. 192—3.5)

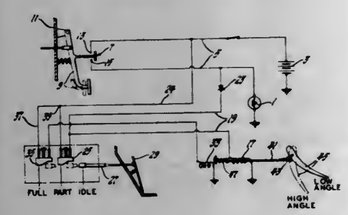
1. In an attachment for a tractor having a transmission including rotatable gears operatively mounted therein and a clutch means actuated by a clutch pedal adapted to disengage and engage the transmission at times, said transmission including an access opening at the upper end thereof,

a cover element detachably mounted on said transmission closing said access opening,
a hollow bearing means secured to and extending through said cover element and having inner and outer ends,
a first shaft rotatably mounted in said bearing means and having its inner end protruding from the inner end of said bearing means and its outer end protruding from the outer end of said bearing means,



a second shaft secured to the inner end of first shaft at one side thereof so that the longitudinal axis thereof is off-set from the longitudinal axis of said first shaft,
a brake shoe rotatably mounted on said second shaft,
an arm member operatively secured to the outer end of said first shaft, and
a linkage means interconnecting said arm member and said clutch pedal whereby said brake shoe will be moved into frictional engagement with one of the gears in the transmission upon the clutch pedal being depressed thereby stopping the rotation of the gears in the transmission.

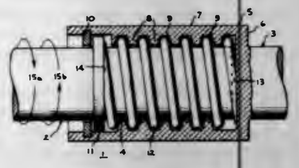
3,346,082
POWER TRANSMISSION CONTROLS
Ralph Dean, Jr., Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 15, 1965, Ser. No. 487,519
12 Claims. (Cl. 192—4)



1. In a control for a torque converter having variable pitch rotor blades, a source of energy, first means energizable by said source, means energizable by said source for varying the pitch of said rotor blades, first and second actuator means, means responsive to operation of said first actuator means for operatively connecting first and second-mentioned means to said source, and means responsive to operation of said second actuator means for operatively coupling only said second-mentioned means to said source.

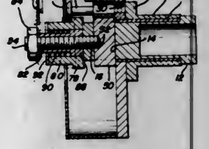
3,346,083
SPRING CLUTCH
John Bochan, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 1, 1965, Ser. No. 510,793
6 Claims. (Cl. 192—81)

1. In a spring clutch:
(a) a rotary input member,
(b) a rotary output member including a hollow, cylindrical portion mounted around said input member, said cylindrical portion being internally threaded;
(c) a thrust bearing mounted on one of said members and a shoulder formed on the other of said members, said shoulder and said bearing being adapted selectively for engagement;
(d) and an open-coil helical spring mounted on said input member and received within the thread of said output member;



(e) rotation of said input member in a first direction tending to cause said spring to expand radially so that said input member slips within said spring, while rotation of said input member in the other direction causes said spring to contract radially so as to firmly engage and rotate with said input member, said spring then engaging said thread to cause relative movement between said input member and said output member so as to cause engagement between said shoulder and said thrust bearing.

3,346,084
TORQUE TRANSMITTER WITH OVERLOAD RELEASE
Marshall B. Heizer, Jr., Rte. 1, Box 12, Rawlings, Va. 23876
Filed Aug. 18, 1965, Ser. No. 480,602
9 Claims. (Cl. 192—150)



1. A torque transmitter with overload release means, said transmitter comprising first and second relatively rotatable members, cam means carried by a first of said members, torque transmitting means movably mounted on the second of said members on an axis generally paralleling the axis of rotation of said members shifting between active and inactive positions and disposed for engagement by said cam means when in said operative position thereof and out of the path of movement of said cam means when in said inactive position, respectively during rotation of said members relative to each other, stop means operatively associated with said torque transmitting means and said second member and limiting shifting movement of said torque transmitting means toward said inactive position, and means connected between said torque transmitting means and said second member yieldingly urging said torque transmitting means toward said active position, said second member and said torque transmitting means including means reversibly mounting said torque transmitting means from said second member and said stop means and said means yieldingly urging said torque transmitting means being reversibly supported from said second member whereby said overload release may be rendered operative in each direction of rotation of said first member relative to said second member.

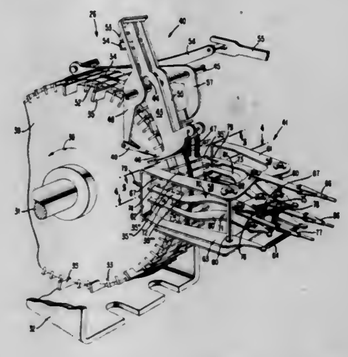
3,346,085
CONCRETE DEFLECTOR
Bernard E. Petrich, 733 Splitlog Ave., Kansas City, Kans. 66101
Filed Apr. 22, 1966, Ser. No. 544,588
3 Claims. (Cl. 193—14)



1. A deflector attachment for directing the flow of material emanating from one end of a transversely U-shaped chute presenting a pair of opposed sides having upper margins, said attachment comprising:
an elongated, generally transversely U-shaped body presenting a pair of spaced, upwardly extending side portions;
an adjustable clamp adapted to engage said chute including arm structure extending toward the end of the latter; and
hinge means pivotally securing the body to the arm structure to permit swinging movement of the body through an arc extending into the path of travel of said material emanating from the end of the chute, said clamp including a pair of spaced, relatively shiftable members adapted for releasably, frictionally engaging respective sides of the chute adjacent the margins thereof, and yieldable biasing means coupled with said members for urging the same toward said sides and into said frictional engagement therewith.

3,346,086
PROPORTIONAL ESCAPEMENT APPARATUS FOR A SINGLE ELEMENT TYPEWRITER
Walter O. Cralle, Jr., George A. Holt, Edwin J. Lenney, Douglas E. Sederholm, and Neil D. Walton, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 25, 1963, Ser. No. 311,373
28 Claims. (Cl. 197—84)

1. Escapement apparatus for use in a typewriter comprising:
a typewriter frame and a typewriter carrier;
a single print element having characters thereon removably mounted on said carrier;
character selection means for moving said print element to bring a selected character into printing position;
means to rock said print element to move said print element in a direction to effect printing of a character in said printing position;
an elongated lead screw supported in said frame and having a driving connection with said carrier to control movement of said carrier and said print element with respect to said frame;
drive means operatively connected to and located adjacent one end of said lead screw tending to rotate the same in one direction;
a generally circular disc shaped pin wheel carrying a plurality of pins located adjacent the other end of said lead screw;
a plurality of selectable gear means each operative when selected to drivingly interconnect said lead screw and said pin wheel;
each of said pins being movable to at least two positions defining at least two states and the distance between adjacent pins defining a basic escapement unit;
a plurality of character keylevers each associated with at least one of the characters to be printed;
a pin setting assembly located adjacent said pin wheel for moving and maintaining the pins adjacent said pin setting assembly in selected states;
an escapement assembly comprising an escapement pawl mounted for pivotal and limited longitudinal movement for engaging those of said pins in one of said states to hold said pin wheel against rotation by said drive means;

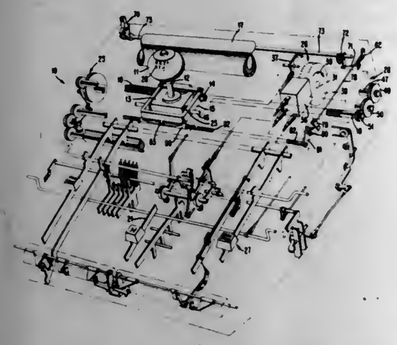


means to pivot and remove said escapement pawl from engagement with said pins in said one state and then position said escapement pawl in the path of travel of said pins in said one state to permit rotation of said pin wheel and lead screw by said drive means to advance said carrier and said print element until the next adjacent pin in said one state engages said escapement pawl; and
character escapement selection apparatus interconnecting said character keylevers, said pin setting assembly and said escapement assembly to actuate said pin setting assembly and said means to remove in the order stated after rocking of said print element to permit rotation of said pin wheel and corresponding movement of said carrier and said print element equal to the number of basic escapement units associated with a selected character.

3,346,087
PITCH CHANGING APPARATUS FOR PROPORTIONAL ESCAPEMENT TYPEWRITER
Giannino Colombo, Milan, Italy, and George A. Holt, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 25, 1963, Ser. No. 311,377
Claims priority, application Italy, Oct. 1, 1962, 27,656/62
13 Claims. (Cl. 197—84)

1. Pitch changing apparatus for changing the printing pitch of a typewriter having escapement control apparatus and a movable carrier comprising:
a plurality of selectively engageable drive means for drivingly interconnecting said escapement control apparatus and said movable carrier;
each of said drive means corresponding to a printing pitch;
a scale means comprising an elongated scale member having a plurality of reference scales formed on and extending axially of said member at spaced points about the periphery thereof;

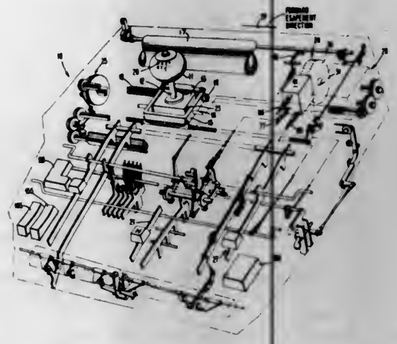
a pointer mounted from and movable with said carrier disposed in cooperating relation with said scale member;
an indicator having longitudinally spaced pairs of reference marks thereon defining areas of various lengths disposed about the periphery of said indicator;
means mounting said indicator for independent longitudinal movement with respect to and rotary movement with said scale member;



a projection mounted from and movable with said carrier adapted to engage said indicator for movement with said carrier;
a typist controlled pitch selection means; and
means interconnecting said pitch selection means, said drive means and said scale member for engaging a selected one of said drive means and rotating said scale member to present a selected one of said scales and a selected one of said spaced pairs of reference marks to the typist when said pitch selection means is actuated.

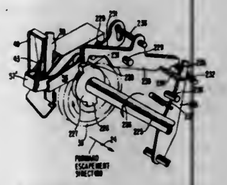
3,346,088
CARRIER MECHANISM FOR PROPORTIONAL ESCAPEMENT TYPEWRITER
Walter O. Cralle, Jr., Georgetown, and George A. Holt and Edwin J. Lenney, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,369
13 Claims. (Cl. 197—84)

1. Carrier mechanism for a proportional escapement typewriter comprising:
a typewriter frame and a carrier;
a single print element having characters formed thereon movably mounted on said carrier;
character selection apparatus for moving said print element to bring a selected character into printing position;
an elongated lead screw rotatably supported in said frame;
a follower mounted on said carrier and engaging said lead screw;
a generally circular disc shaped pin wheel carrying a plurality of spaced pins located adjacent one end of said lead screw;
means drivingly interconnecting said lead screw and said pin wheel;
each of said pins being movable to at least two positions defining at least two states;
drive means operatively coupled to and located adjacent the other end of said lead screw tending to rotate the same in one direction;
an escapement assembly comprising pawl means for engaging said pins to hold said pin wheel and said lead screw against rotation by said drive means;
means to set selected ones of said pins and operate said escapement assembly in response to actuation of said character selection apparatus to permit said lead screw to rotate and said carrier to advance by distances corresponding to the widths of selected characters;
means to initiate a function operation;
means to remove said follower from engagement with said lead screw in response to initiation of said function operation;
means to move said carrier when said follower is out of engagement with said lead screw;



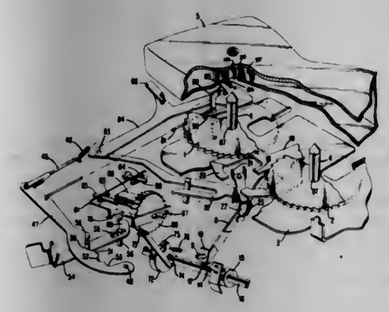
a homing assembly for removing said pawl means from engagement with said pin wheel until said lead screw is rotated by said drive means to a predetermined rotational home position;
means to actuate said homing assembly in response to initiation of said function operation; and
means to prevent movement of said carrier and said print element by said means to move until said lead screw has reached said predetermined rotational home position during said function operation.

3,346,089
CARRIER MECHANISM FOR PROPORTIONAL ESCAPEMENT TYPEWRITER
Walter O. Cralle, Jr., Georgetown, and Edwin J. Lenney, Kenneth A. Lennon, and Neil D. Walton, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,391
4 Claims. (Cl. 197—90)



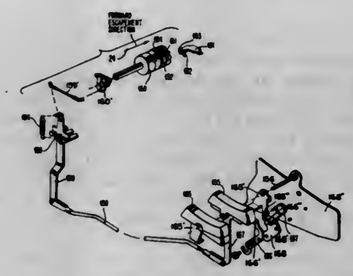
1. Carrier mechanism for a typewriter comprising:
a typewriter frame and a carrier;
a lead screw having a thread thereon rotatably supported in said frame;
a follower engaging said lead screw;
means mounting said follower on said carrier for pivotal movement relative to said mounting means in one rotational direction;
stop means on said mounting means for preventing pivotal movement of said follower in the other rotational direction relative to said mounting means to cause said follower, said mounting means and said carrier to move in one longitudinal direction as said lead screw rotates relative to said follower in a direction to pivot said follower in said other rotational direction;
said follower having an elongated surface;
means to apply a force to said carrier for moving the same in a second longitudinal direction opposite to said one longitudinal direction to pivot said follow in said one rotational direction; and
said elongated surface engaging and spanning at least two turns of said thread on said lead screw when said carrier moves in said second longitudinal direction.

3,346,090
RIBBON FEED MECHANISM
Willie Goff, Jr., and John O. Schaefer, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation of application Ser. No. 448,199, Mar. 12, 1965, which is a continuation of application Ser. No. 284,520, May 31, 1963. This application Feb. 11, 1966, Ser. No. 537,588
19 Claims. (Cl. 197—158)



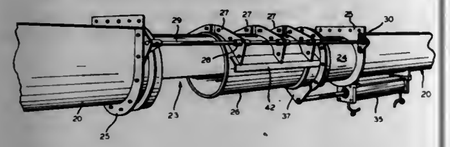
1. A mechanism for feeding an inked ribbon both longitudinally and transversely relative to a point of contact between a printing element and a platen comprising, in combination:
a pair of spindles on which spools containing said ribbon may be mounted;
a first pawl movable selectively to positions for driving one or the other of said spindles;
means operating on each printing operation for actuating said first pawl;
means including a second pawl movable between an ineffective position and a position in which it is effective to drive a first of said spindles;
means normally holding said second pawl in its effective position and holding said first pawl in a position to drive a second of said spindles;
guiding means for said ribbon;
means acting on said guiding means for shifting said ribbon transversely to different positions on each printing operation, said means acting on said guiding mean operating to increase progressively the amount of ribbon lift from a minimum to a maximum during a predetermined number of printing operations and then to repeat; and
means connecting said second pawl to said means acting on said guiding means to actuate said second pawl once during said predetermined number of printing operations.

3,346,091
TABULATION APPARATUS FOR TYPEWRITER
Walter O. Cralle, Jr., Georgetown, and Kenneth A. Lennon and Neil D. Walton, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,353
12 Claims. (Cl. 197—176)



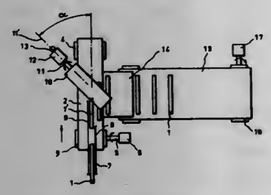
1. Tabulation apparatus for use with a proportional escapement typewriter comprising:
a typewriter frame and a carrier;
a single print element having characters formed thereon movably mounted on said carrier;
character selection apparatus for moving said print element to bring a selected character into printing position;
an elongated lead screw rotatably supported in said frame;
drive means for rotating said lead screw to advance said carrier and said print element in a forward escapement direction by a distance corresponding to the width of a selected character in response to actuation of said character selection apparatus;
a follower engaging said lead screw;
means to remove said follower from engagement with said lead screw;
means to advance said carrier in said forward escapement direction when said follower is out of engagement with said screw;
a tabulation assembly comprising a tabulation rack extending in generally parallel relation with said lead screw;
a plurality of spaced tabulation stops individually movably mounted on said tabulation rack;
first typist controlled means for moving any selected tabulation stop between set and clear states;
a tabulation sensor mounted on said carrier and movable between extended and retracted positions;
said tabulation sensor when in said extended position normally engaging only those of said tabulation stops which are in said set state upon advancement of said carrier in said forward escapement direction;
second typist controlled means for moving said tabulation rack; and
stop means operative upon actuation of said second typist controlled means to limit movement of said tabulation rack to a position where said tabulation sensor engages all of said tabulation stops irrespective of the states thereof when said tabulation sensor is in said extended position upon advancement of said carrier in said forward escapement direction.

3,346,092
DISCHARGE ASSEMBLIES FOR SCREW CONVEYORS
Donald W. Bowden, Arlington Heights, and Jon E. Johnson, Chicago, Ill., assignors to Materials Handling Equipment Co.
Filed Jan. 6, 1965, Ser. No. 423,879
5 Claims. (Cl. 198—1)



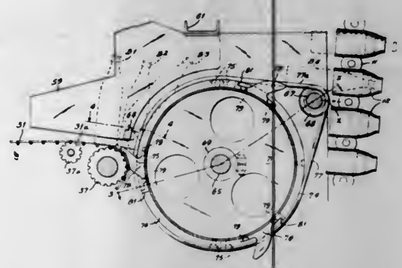
1. In a discharge system for material carrying tubes, an elongated material carrying tube having a discharge opening formed in one portion thereof, a closure tube mounted in surrounding relation to said carrying tube and completely enclosing the portion of the carrying tube positioned within said closure tube, means for reciprocating said closure tube with relation to said carrying tube to and from one position overlying and closing said opening and a position spaced therefrom to allow discharge from said opening, first seal means on one side of said opening and second seal means positioned on said other side of said opening, both of said seal means being spaced longitudinally from opposite boundary edges of said opening to thereby provide a space between the opposite boundary edges of said opening and each seal means, said first seal means being carried by said closure tube and having a sliding, sealing engagement with the exterior wall of said carrying tube completely around said carrying tube to form a fluid tight seal with said tube, said second seal means being positioned on the other side of said opening and comprising a resilient sealing ring surrounding one of said tubes and fixed thereto, an annular surface carried by the other of said tubes and opposed to said ring and cooperable therewith to seal said opening in fluid tight relation when said closure tube is in said overlying position, and means for supporting said closure tube on said carrying tube including a plurality of elongated rods and guides on said closure tube in slidable engagement with said rods, said rods being supported by bracket means on said carrying tube at points spaced longitudinally of said opening and said closure tube.

3,346,093
DEVICE FOR LATERALLY TRANSFERRING CIGARS OR THE LIKE FROM ONE CONVEYING MEANS TO ANOTHER
Goran R. Sjöberg, Jakobsberg, Sweden, assignor to Arenco Aktiebolag, Stockholm-Vallingby, Sweden
Filed Oct. 7, 1966, Ser. No. 585,198
Claims priority, application Sweden, Apr. 21, 1966, 5,456/66
1 Claim. (Cl. 198—22)



A device for laterally transferring cigars or cigarettes from a conveyor surface on which the cigars are transported in their longitudinal direction, comprising a driven roller arranged above and substantially parallel with said conveying surface, the shortest distance of said roller from said conveying surface being less than the diameter of the cigars and the axis of rotation of said roller being inclined relative to said longitudinal direction, driving means for driving the roller in such a direction that a cigar conveyed up to and in contact with the roller is engaged by said roller and imparted a rotary movement at the same time as it is transferred laterally and longitudinally, and means for adjusting the angle between said axis of rotation of the roller and said longitudinal direction.

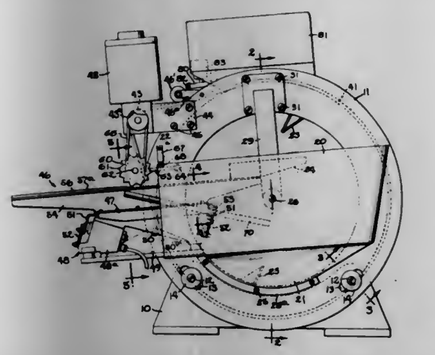
3,346,094
CONTAINER LOADER APPARATUS FOR WASHERS
Michael Vamyakas, Rocky River, Ohio, assignor to Barry-Wehmiller Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 10, 1966, Ser. No. 533,184
10 Claims. (Cl. 198—25)



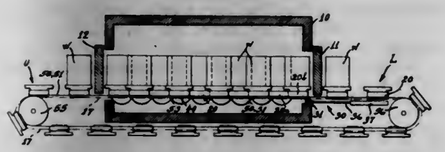
1. In a container loader mechanism for feeding a container take-away pocketed conveyor system, the combination comprising: a rotary member spaced from the pocketed conveyor, an idler member spaced to one side of said rotary member and positioned adjacent said pocketed conveyor, friction belt means trained over said rotary and idler members and having a delivery pass forming a path of movement for containers to be delivered to the pocketed conveyor, a container supply means adjacent said rotary member on the side opposite from the pocketed conveyor, elements on said rotary member spaced about the periphery and projecting past said belt means in positions to pick up successive containers and move the containers onto said friction belt means, said elements causing the containers to move into the delivery pass of said belt means, means driving said rotary member to effect movement of said belt means to transport the container past the position of said idler member and into the pocketed conveyor, and stop means adjacent said container supply means in position to hold each container out of contact with said friction belt means until said elements on said rotary member pick up the containers from said container supply means.

3,346,095
VIBRATORY FEEDING MECHANISM
Paul H. Dixon, Rockford, Ill., assignor to Dixon Automatic Tool Inc., Rockford, Ill., a corporation of Illinois
Filed June 9, 1965, Ser. No. 462,558
2 Claims. (Cl. 198—33)

1. A vibratory feeding mechanism for delivering workpieces to a predetermined operating station, said feeding mechanism comprising the combination of a track assembly for receiving workpieces at one end and delivering the same to a discharge end aligned with the desired operating station, said track assembly including means for orienting workpieces deposited on the track, a vibratory drive unit connected to said track assembly for vibrating the latter, workpiece supply means for supplying workpieces to the receiving end of the vibratory track assembly, clearing means for removing unoriented workpieces from the vibratory track, a pair of return chutes mounted on opposite sides of the vibratory track assembly for receiving the unoriented workpieces removed from the vibratory track and returning the same to the workpiece supply means, and means operatively connecting said return chutes to the same vibratory drive unit for vibrating said track assembly whereby said chutes are vibrated to assist the return movement of the unoriented workpieces.

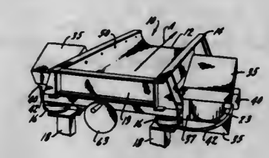


3,346,096
GROUPING CONVEYORS
Fred I. Johnson, 369 Montrose Ave., Elmhurst, Ill. 60126
Filed Mar. 23, 1966, Ser. No. 536,832
7 Claims. (Cl. 198—34)



1. A grouping conveyor for handling of material in minimum space while maintaining controlled spacing at all times comprising, a plurality of material supporting members movable along a path with part of said path extending through a process station with minimum spacing between the members and another part of the path being external to said station with maximum spacing between members, spacer means on each of said members engageable with an adjacent one of said spacer means for establishing a minimum spacing between said members in said process station, flexible chain-like connecting means with a section thereof connected between each of said members and each section having a length acting solely in tension to determine the maximum spacing between members and hanging slack to be inoperative when adjacent members are at said minimum spacing, and means for advancing successive members into the entry end of said station with the advanced member pushing preceding members along the station and pulling succeeding members along the path including removal of a member from the exit end of the station by pulling on and tensioning said flexible connecting means.

3,346,097
ADJUSTABLE STROKE VIBRATORY FEEDER
Robert M. Carrier, Jr., 3100 Upper River Road, Louisville, Ky. 40207; Louisville Trust Co., Elizabeth D. Carrier, Patrick H. Mitchell, and A. D. Stevens, executors and trustees of said Robert M. Carrier, Jr., deceased
Filed Oct. 20, 1965, Ser. No. 498,937
8 Claims. (Cl. 198—220)



1. In combination with an elongated vibrating feeder having a pan open at one end thereof, means for imparting controlled vibration to said pan for feeding the contents thereof to said open end at a selectable rate, including electric motors each having a rotatable armature shaft disposed on either side of said pan, and connected thereto in force transmitting relation, a rigid member connecting said motors so that the armature shafts thereof are parallel, pairs of equal weights eccentrically mounted on the armature shafts of said motors, said armature shafts being driven in opposite directions, said motors being phased together so that vibrating forces developed by said rotating weights in a direction transverse to the longitudinal axis of said pan are vectorally zero, and control means connected with said rigid member for rotating the same to thereby vary the axial position of said shafts with respect to said pan and to vary the angle of attack of the vibrating forces developed by said rotating weights with respect to said pan.

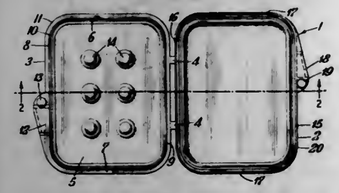
3,346,098
PALLET ADAPTOR AND SHIELD THEREFOR
William N. de Sherbinin, 836 SW. 4th Court, Fort Lauderdale, Fla. 33312
Filed July 22, 1964, Ser. No. 384,325
3 Claims. (Cl. 206—1.7)



1. Apparatus for use by artists that comprises an adaptor for detachable connection to a marginal edge of a pallet and to form a surface upon which oil paints are to be mixed, and an elongated shield that is co-extensive with the adaptor; said shield being opened at its opposite ends and having a flat top and flexible outwardly angled marginal side walls, the side walls being additionally curved intermediate their length and then bent inwardly and with the inwardly bent portions terminating in upwardly angled flanges, the curved portions of the side walls forming grooves for receiving the opposite marginal edges of the adaptor, the adaptor being a flat rectangular sheet having a pair of flat springs secured upon its bottom one adjacent each end for yieldable clipping engagement with the pallet; the adaptor being positioned within the shield with the edges of said adaptor frictionally engaged within the grooves at each side to hold the adaptor against accidental displacement, the shield being open upon its bottom for its major width, the curved portions of the

side walls disposing the adaptor at an elevation above the flanges to form a clearance for the springs, the adaptor being disposed within the shield with its top surface uppermost and whereby the paints are disposed within the shield and in spaced relation to the top of the shield.

3,346,099
MOISTURE-PROOF CONTAINER
Ralph H. Thomas, Clark, and Lewis J. Marlatt, Pompton Plains, N.J., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1966, Ser. No. 531,501
10 Claims. (Cl. 206—42)



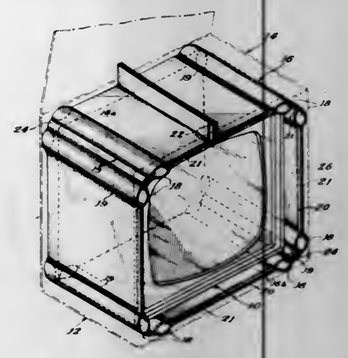
1. A container comprising top and bottom members hingedly secured to each other on one side and engaging each other in the closed position in a tongue and groove seal, said tongue and groove being made of resilient material and extending substantially around the circumference of said top and bottom members, the maximum outside diameter of said tongue as measured from one side of the container to a point diametrically opposite it being greater than the maximum corresponding outside diameter of said groove whereby on seating said tongue into said groove the tongue is bent inwardly toward the center of said container; said tongue also being oversized with respect to said groove whereby on seating said tongue in said groove, said groove is stretched to accommodate said tongue.

3,346,100
PACKAGING OF BALLPOINT PEN WRITING UNITS
Arthur Bruce Carlson, Fort Madison, Iowa, assignor to Textron, Incorporated, Providence, R.I., a corporation of Rhode Island
Filed Mar. 17, 1966, Ser. No. 535,059
9 Claims. (Cl. 206—46)



1. In combination with a ball point assembly having a tip and a reservoir containing an ink having volatile constituents, a disposable sealed container completely enveloping said assembly and defining a barrier which is substantially impervious to said volatile constituents and providing an atmosphere within said container substantially saturated with vapors of said volatile constituents, said atmosphere preventing harmful evaporation loss of volatile constituents from said ink and crusting of said ink within said tip, and a tip cover removably encapsulating said tip, said cover maintaining said ink against loss from said tip but being permeable by said vapors.

3,346,101
INFLATABLE PACKING INSERT
John A. Pestka, Park Ridge, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,821
9 Claims. (Cl. 206—46)



1. A packing insert for protecting an article having intersecting surfaces defining edges within a packing carton, comprising: a generally flat, elongate member having a width and a longitudinal extent, said member including a plurality of spaced fluid pockets arranged in spaced pairs at spaced intervals along the extent of the member, thereby being constructed and arranged to lie adjacent the corners of an article about which the member is to be wrapped in a sleeve-like fashion; and fluid passage means in said member in communication with said pockets and with the exterior of the member for providing an access means for inflating said pockets so that an article wrapped within said member may be held suspended interiorly thereof in a shock-absorbing manner.

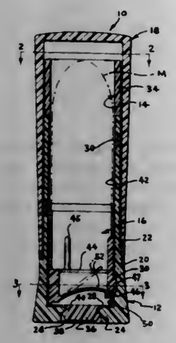
3,346,102
GRAPHITE-CATALYST CHARGE ELEMENT FOR THE PREPARATION OF DIAMOND
Herbert M. Strong, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 31, 1964, Ser. No. 386,636
7 Claims. (Cl. 206—47)

1. In a graphite-catalyst charge element arrangement for insertion in high pressure apparatus for the conversion of graphite to diamond by application thereto of high pressures and high temperatures above the graphite-to-diamond equilibrium line on the phase diagram of carbon wherein a seed diamond crystal is enveloped in a quantity of graphite which in turn is enclosed in a pressure-transmitting layer for preventing contamination of the charge, the improvement which comprises:

(a) a mass of metal forming a catalyst reservoir located in said quantity of graphite at a distance of at least about ½ millimeter from the seed diamond being separated therefrom by graphite,
  (1) said metal being a catalyst for the graphite-to-diamond conversion characterized by not forming a solid carbide under graphite-to-diamond conversion conditions of pressure and temperature, and

(b) a layer of a catalyst metal as described herein connecting said catalyst reservoir with the surface of said seed diamond,
  (1) said layer having a small volume per unit area relative to the volume per unit of area of said catalyst reservoir.

3,346,103
LIPSTICK HOLDER
Roy S. Swenson, Danbury, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Aug. 26, 1965, Ser. No. 482,767
6 Claims. (Cl. 206—56)



1. A holder for movably supporting a cosmetic mass between a position exposing it for use at one end of the holder and a retracted position within the holder when not in use, which comprises

(a) a first hollow cylindrical shell open at one end and having a bottom wall at its other end,

(b) a second hollow cylindrical shell likewise open at one end and having a bottom wall at its other end, said second shell having external flange means adjacent its open end and being telescopingly received within said first shell with said flange means overlying the rim of said first shell at its open end and said bottom walls positioned relatively adjacent each other, one of said bottom walls having an axial opening and the other an axial projection extending into and engaging the margin of said opening to resist axial separation of said shells while permitting relative rotational movement between them;

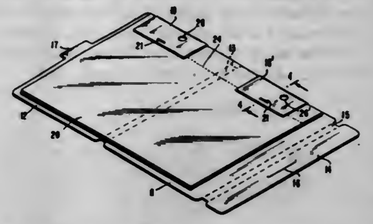
(c) an axially reciprocable cosmetic carrier slidably received in said second shell for movement toward and away from the open end thereof, said carrier including a radially bendable wall portion and an outwardly projecting cam lug follower on said bendable wall portion,

(d) means for wedging said bendable wall portion radially outwardly and comprising a member spanning said carrier and adapted to be brought into wedging relation between said bendable wall portion and the opposite wall of the carrier after the carrier is assembled in said second shell, and

(e) propel-repel cam means on each of said cylindrical members co-acting with said cam lug to displace said carrier axially of said cylindrical shells upon relative rotational movement thereof.

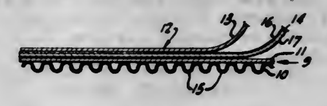
3,346,104
BAG PACKAGE
John R. Marsh, Newark, N.Y., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 17, 1964, Ser. No. 418,980
2 Claims. (Cl. 206—57)

1. A package of bags comprising a superposed stack of thermoplastic bags, each of said bags having a transverse line of perforations extending across the top portion thereof; a continuous protective cover enclosing said stack of bags, said cover comprising a backing sheet and a cover sheet hinged together along a side edge and upon which the bags are stacked, a pair of bag retaining flaps extending transversely across the upper edge of said backing sheet and said cover sheet respectively, and folded over the top portion of said bag stack and fastened thereto; said pair of bag retaining flaps being further characterized in that they are spaced apart whereby a central



portion of said perforate line is exposed when said package is in an open condition; a backing sheet locking lip hinged along the side edge of said backing sheet, said lip containing a centrally located slit, a locking tab extending along the side edge of said cover sheet and adapted for insertion into said slit when said package of bags is closed by folding said cover sheet over said backing sheet.

3,346,105
PACKING MATERIAL
William T. Nye, San Mateo, Calif., and Keith S. Burrell, Columbus, Ohio, assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed June 18, 1962, Ser. No. 203,041
2 Claims. (Cl. 206—59)



1. A continuous strip of pressure sensitive packing material in cylindrical roll form having a continuous liner and a corrugated medium permanently secured to one side thereof with flute tips extending opposite to said secured side, said liner and corrugating medium being coextensive in width, the exposed liner facing having pressure sensitive adhesive thereon, said adhesive extending continuously the length of the rolled strip, the strip material retained in roll form by the adherence of said flute tips to said pressure sensitive adhesive and capable of separation for removal of a determined length of the strip packing material with the adhesive substantially unimpaired.

3,346,106
CONTAINER CARRIER
Elwyn R. Gooding, Ann Arbor, Mich., assignor to Ex-Cell-O Corporation
Filed May 3, 1965, Ser. No. 452,770
3 Claims. (Cl. 206—65)

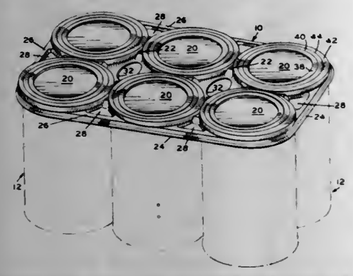
1. A package of a plurality of cylindrical cans or the like, said package comprising in combination:

(a) a plurality of cans aligned in side by side relation and each having an upwardly and laterally projecting bead at its upper end;

(b) a can securing carrier of non-elastic sheet plastic material having a plurality of integrally formed upwardly displaced discs and downwardly displaced recesses;

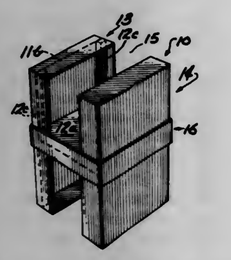
(c) said downwardly displaced recesses being intermittently spaced around the periphery of each of the cans on centers that are removed from each other by substantially ninety degrees;

(d) said downwardly displaced recesses each having inwardly extending arcuate edges conforming to the can beads and subtending a radial angle of ninety degrees or less to thereby underlie and engage portions of the underside of each can bead;
(e) each of said discs having a peripheral measurement greater than the beads of the cans, and wherein the diametrically opposed arcuate edges underlying the bead of each can are spaced a distance greater than the outer diameter of the can body and less than the outer diameter of the can bead; and



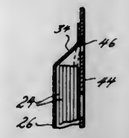
(f) said discs positioned to overlie the upper ends of the cans so that the distance measured between centers adjacent discs being substantially equal to the distance measured between centers of adjacent cans, wherein each can bead is in direct abutting relation with a minimum of two adjacent beads allowing the cans to be retained in static interlocked package.

3,346,107
SHIPPING OR STORAGE PACKAGE
Terrill L. Nederveld, Neffsville, Pa., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,621
3 Claims. (Cl. 206—65)



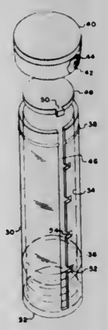
1. A shipping package comprising a pair of articles, each article having a substantially horizontal seat portion and pairs of legs substantially symmetrically arranged about the margin of said seat portion and depending therefrom, the pair of articles arranged in inverted stacked relation with the seat portions thereof in abutting face-to-face contact and the legs thereof extending upwardly and downwardly; a pair of elongated traylike members arranged in upright substantially encompassing relation with respect to opposed sides of said stacked articles, each side being formed by pairs of said upwardly and downwardly extending legs, the open sides of said traylike members being arranged in opposed spaced relation, the spacing between said traylike member open sides being interrupted only by the abutting seat portions, and a foldable bandlike element slidable endwise of the traylike members and accommodated stacked articles into snug encompassing relation therewith, said bandlike element being disposed in registered relation with respect to the periphery of said abutting seat portions.

3,346,108
DISPENSING PACKAGE
Morris Wizelman, Cheltenham, Pa. (% Globe Industries, Inc., 1317–29 Brown St., Philadelphia, Pa. 19123)
Filed Feb. 21, 1966, Ser. No. 528,995
6 Claims. (Cl. 206—78)



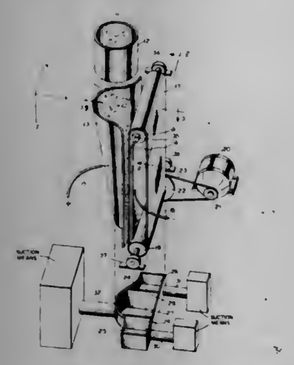
1. A package comprising a flat sheet of material having copy space thereon, perforations in said flat sheet, said perforations cooperating with a portion of two edges of said flat sheet to form a breakaway section of said flat sheet comprising a generally rectangular configuration, said breakaway section having a layer of plastic material sealed thereto on one side thereof, said plastic material having a sloping wall integral therewith, said breakaway section of said sheet having perforations thereon, said perforations defining a disposable pull tab, said breakaway section of said sheet having a slot in cooperative alignment with said sloping wall of said plastic material wherein articles may be contained between said layer of plastic and said breakaway section to which the plastic is sealed, the breakaway section, pull tab, slot, plastic material and sloping wall being constructed and arranged so that the pull tab may be removed from the breakaway section and articles contained between said layer of plastic and said breakaway section may be cammed against the sloping wall by a finger of a user and dispensed through the slot.

3,346,109
CLEAR VIEW COIN PACK
Peter J. Duran, 4201 S. 20th St., Abilene, Tex. 79605
Filed June 23, 1966, Ser. No. 559,900
5 Claims. (Cl. 206—.82)



1. A coin holder comprising:
(a) a rigid transparent cylindrical tube with
(b) one end being closed at right angles to the axis of the tube and
(c) the other end of the tube being open,
(d) a plurality of coins of the same denomination in the tube,
(e) the coins co-axial with the tube,
(f) the inside diameter of the tube slightly larger than the diameter of the coins so that the coins fit nicely into the tube,
(g) a slot extending from the open end of the tube for at least four-fifths of the length of the tube,
(h) a plurality of notches along the side of the slot,
(j) the bottom of the notch adjacent the closed end being one-fifth of the effective length of the tube from the closed end,
(k) the bottom of each subsequent notch being one-fifth of the effective length of the tube from the bottom of the next adjacent notch,
(m) a follower having a diameter substantially equal to the diameter of the coins,
(n) said follower being co-axial with the tube and
(o) said follower having a tab extending radially therefrom,
(p) the tab fitted within one of the side notches,
(q) thus locking a plurality of coins between the follower and the closed end of the tube, and
(r) a cap closing the open end of the tube,
(s) said cap having a cylindrical flange thereon encircling the top of the tube, thus
(t) binding the slotted open end of the tube together,
(u) the length of the tube measured from the closed end to the bottom of the cap being some multiple of five times the thickness of the coins plus the thickness of the follower.

3,346,110
FIBER FRACTIONATING APPARATUS AND PROCESS
Joseph J. Lafranca, Jr., Metairie, Mayer Mayer, Jr., New Orleans, and Heber W. Weller, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Oct. 22, 1965, Ser. No. 502,747
5 Claims. (Cl. 209—2)



1. Apparatus for fractionating loose masses of disoriented textile fibers into different length groups comprising:
(a) an elongated, substantially flat first electrode and an elongated, multicurved, second electrode opposed to and substantially coextensive therewith, said electrodes together defining a fiber fractionating zone having an input end and an output end, the opposing longitudinal edges of said electrodes being parallel and equidistant from each other and spaced not less than the average length of the longest textile fibers to be fractionated, said second electrode having longitudinally extending convex surfaces near the edges and a longitudinally extending concave surface centrally positioned between said convex surfaces, the perpendicular distance between the centerline of said concave surface and the substantially flat electrode surface decreasing in the direction from the input to the output end;
(b) means connected to the electrodes for energizing said electrodes to produce an electrostatic field of nonuniform potential gradient therebetween in the aforesaid fiber fractionating zone, said potential gradient being lowest between the central concave portion of the multicurved electrode and the flat electrode and increasing both nonuniformly outward toward the edges of said electrodes and uniformly in the direction from the input end to the output end of the fiber fractionating zone defined by said electrodes;
(c) endless, nonconducting transport means positioned between the electrodes within the fiber fractionating zone;
(d) means adjacent the input end of the fiber fractionating zone for continuously feeding a mass of disoriented fibers of nonuniform length onto said transport means;
(e) means connected to said transport means for continuously moving it in a longitudinal direction through the fiber fractionating zone;
(f) compartmented fiber receiving means adjacent the output end of the fractionating zone positioned in a lateral, contiguous relation to the transport means; and
(g) means for removing fractionated fibers of different lengths from said transport means and for depositing said fibers in said receiving means.

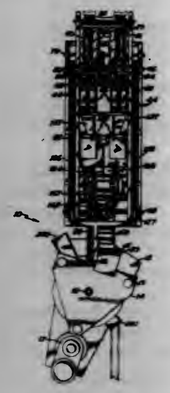
3,346,111
METHOD OF RENDERING ASBESTOS ORE PARTICLES DIFFERENTIALLY FLUORESCENT
Richard L. Thompson, Killarney Heights, New South Wales, and Francis B. Dwyer, Marrickville, New South Wales, Australia, assignors to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of Australia
No Drawing. Filed Nov. 10, 1965, Ser. No. 507,225
Claims priority, application Australia, Nov. 24, 1964, 52,007/64
10 Claims. (Cl. 209—9)

1. In the separation of pieces of rock at least some of which contain asbestos into a first portion comprising pieces containing asbestos in quantities which are economically recoverable and a second portion comprising pieces which contain no asbestos or quantities of asbestos which are not sufficient to permit economical separation of the asbestos from the rock associated therewith, the improvement which comprises:
(a) contacting all of the pieces of rock of both said first portion and said second portion with a liquid dispersion of a precipitated fluorescent dye dispersed in a dispersing liquid, whereby at least some of said precipitated fluorescent dye is sorbed by said pieces; and
(b) removing non-sorbed material from said pieces whereby the pieces of rock in said first portion are rendered differentially fluorescent in relation to the pieces of rock in said second portion.

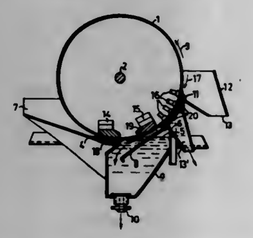
3,346,112
PROCESS AND APPARATUS FOR INSPECTING CONTAINERS
Frank M. Brown and Jean A. Burton, Austin, James L. Farmer and Howard F. Irmen, Minneapolis, Minn., assignors to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,702
10 Claims. (Cl. 209—75)

1. The method of inspecting symmetrically shaped containers having at least one continuous peripheral bead thereon to detect damage or deformation to the bead, said method comprising, moving a container to be inspected

in a predetermined path of travel through a first inspection zone, and during travel through said first inspection zone, preventing rotation of a container while simultaneously engaging different parts of a continuous surface portion of the bead with mechanical sensing media to detect any deformation thereto, continuing movement of the container in said predetermined path of travel through a second inspection zone, and during travel through said second inspection zone preventing rotation of said container while simultaneously engaging different parts of other continuous surface portions of the bead of the container with mechanical sensing media to detect any deformation thereto, continuing movement of the container in said predetermine path of travel and automatically impelling any defective receptacle from said path of travel at a point spaced from said inspection zones, in response to a determination of deformation to the bead of the container.

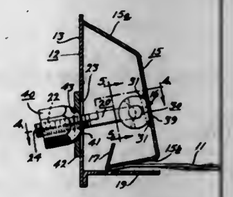


3,346,113
DEVICE FOR RECOVERING FEEBLY MAGNETIC MATERIAL IN WET SEPARATORS
Werner Nickolaus Lundmark, Sala, Sweden, assignor to Sala Maskingfabriks AB
Filed Jan. 10, 1966, Ser. No. 519,621
Claims priority, application Sweden, Jan. 14, 1965, 462/65
3 Claims. (Cl. 209—223)



1. A magnetic wet separator for granular or powered ore and similar material to be separated, comprising a drum rotatable about a horizontal shaft and having a non-magnetic circumferential wall, a trough disposed below the drum and means defining a water level in said trough, part of the circumference of the drum submerging below said water level stationary magnet banks disposed within said drum, the magnetic poles of one bank being located along that part of the circumference of the drum that submerges below the water level in said trough, whereas the poles of another bank are located along a subsequent part of the circumference of the drum which subsequent part is positioned above the water level, the poles of the last named bank being successively of opposite polarity and creating a weaker magnetic field than the magnets of the first named bank and being more closely spaced than the poles of the first named bank, the trough having an outlet for so-called semi-grain below the more closely spaced magnets, and means provided for washing material that travels with the drum and is lifted out of the water, whereby to wash semi-grain away from the concentrate and to discharge it through said outlet.

3,346,114
TENSIONING APPARATUS FOR VIBRATOR SCREENS
Firman G. Hoyt, Lancaster, Pa., assignor to Hoyt Wire Cloth Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1966, Ser. No. 518,949
8 Claims. (Cl. 209—403)

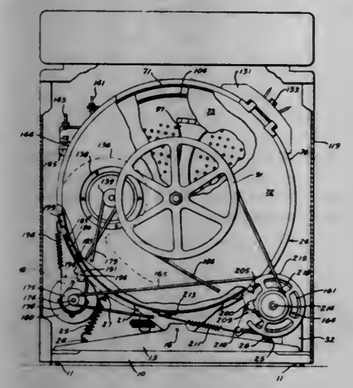


1. In a vibrator having spaced upstanding and longitudinally extending side panels, longitudinally extending skirt boards positioned inwardly of said panels, each of said skirt boards comprising a panel including at least a pair of legs, one of said legs pivotably abutting the interior side of said panel, the other of said legs adapted to grasp the edge of a wire cloth screen, and means for tensioning said board relative to said side panel; said tensioning means comprising: a bolt including a shaft having one threaded end portion fittable through an aperture in said panel and projecting externally thereof, and a second end portion of said shaft having a T-shaped head thereon, said head having a transverse width at its widest part greater than the width of said aperture; and a connector adapted to be fixedly mounted on the outboard side of said shirt board intermediate said board and said side panel, said connector having a pair of spaced upstanding side walls defining a slot adapted to receive therebetween said T-shaped head, an aperture transverse to said slot through said side walls thereof, said aperture having radial termini in said side walls radially spaced one from the other and on opposite sides of said aperture, and means connecting said aperture with said slot whereby upon insertion of said head into said slot and rotation thereof into said aperture, said termini act as a stop for said head; a threaded nut having a hemispherical nose for seating against the aperture in said side panel and connecting said threaded portion of said shaft projecting through said aperture in said side panel.

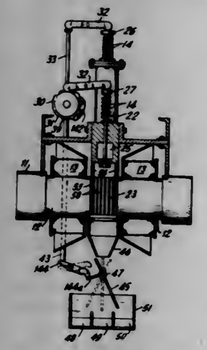
3,346,115
METHOD AND APPARATUS FOR CENTRIFUGAL EXTRACTION
John C. Mellinger, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,035
4 Claims. (Cl. 210—78)

1. The method of centrifugal extraction of fluids from materials in a container revoluble about a non-vertical axis and having a foraminous wall member comprising

the steps of effecting a period of acceleration of said container toward an intermediate extraction speed for effecting preliminary extraction of fluids from said materials to substantially prevent adhesion of said materials to said container wall during said period of acceleration and during subsequent high speed extraction; stopping said container in a first position for allowing a portion of the materials in said container to fall free from the upper region thereof by gravity; rotating said container for a short period of time at a speed not exceeding a fabric distribution speed for advancing said container to and stopping said container at at least a second position at which additional portions of said materials are allowed to fall free from the upper regions of said container by gravity; and rotating said container at a relatively high extraction speed for removing additional fluid from said materials.

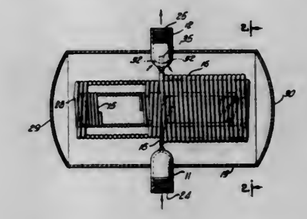


3,346,116
MAGNETIC SEPARATORS
George Henry Jones, Hayle, Cornwall, England, assignor to Quebec Smelting & Refining Limited (No Personal Liability), Montreal, Quebec, Canada, a body corporate of Canada
Filed May 20, 1963, Ser. No. 281,529
Claims priority, application Great Britain, May 22, 1962, 19,562/62
1 Claim. (Cl. 210—222)



A magnetic separator comprising, in combination, a box; plural plates arranged in closely spaced parallel relation in said box to define narrow gaps between adjacent plates, each plate being formed of a non-magnetic compound; magnetizable particles imbedded within each plate; a pair of electro-magnet means arranged on opposite sides of said box; means for energizing said electro-magnetic means to create a strong magnetic field in a direction substantially perpendicular to the surfaces of said plates; inlet means for admitting fluid, containing magnetic and non-magnetic particles, into said box to flow through said gaps; outlet means for discharging the fluid from said box after the magnetic particles have been separated therefrom; said magnetizable particles being aligned in the direction of the magnetic field to form a series of chains of particles extending from one surface of each plate to the other surface of each plate; and strands of fiberglass embedded in each plate to reinforce the same.

3,346,117
DE-EMULSIFYING APPARATUS
Charles B. Page, Jr., Marrero, La., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,655
3 Claims. (Cl. 210—304)



1. Apparatus for de-emulsifying a mixture of fluids having different specific gravities, said fluids being subjected to a relatively high pressure at the inlet and delivered at a relatively low pressure at the outlet, comprising in combination

a first elongated relatively small cross-section conduit connected to said inlet for reducing the pressure applied to said fluids,

said conduit including a large plurality of full circle turns having a relatively short radius of curvature therein for applying centrifugal force to the fluids flowing therethrough,

said first conduit turns forming a cylindrical unit having a substantially horizontal axis,

a second elongated relatively enlarged cross-section conduit connected to the outlet of said first conduit,

said second conduit including a large plurality of full circle turns having curvature for continuing the application of centrifugal force to said fluids after leaving said first conduit and means for withdrawing the higher specific gravity fluid therefrom,

said second conduit turns forming a cylindrical unit surrounding said first conduit unit and being substantially coaxial therewith, and

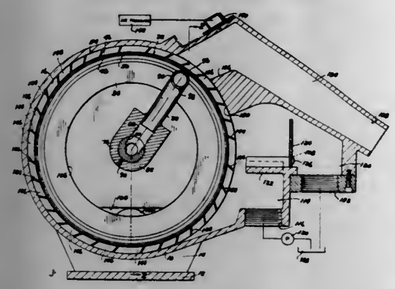
means for connecting said second conduit to said low pressure outlet.

3,346,118
CONTINUOUS FILTER SYSTEM
Nils O. Rosaen, Bloomfield Hills, Mich., assignor of one-third to Oscar E. Rosaen, Grosse Pointe, and one-third to Borje O. Rosaen, Ann Arbor, Mich.
Filed May 17, 1965, Ser. No. 456,401
5 Claims. (Cl. 210—391)

1. A continuous filter device for filtering solids from liquids, said device comprising:

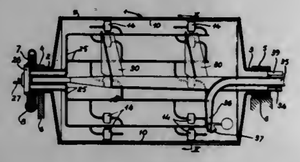
(a) a filter housing having an inner wall defining a substantially cylindrical and substantially closed filter chamber and said housing having an inlet and an outlet open to said filter chamber,

(b) a substantially cylindrical filter element disposed in said filter chamber intermediate said inlet and said outlet,
(c) means directing fluid from said inlet radially inwardly through said filter element and axially through said filter element to said outlet,
(d) means rotating said filter element on a horizontal axis,
(e) means disposed within said filter element for directing a second flow of fluid from the interior thereof radially outwardly through said filter element,
(f) means limiting the level of fluid within said filter chamber to a level below a portion of said filter element and above said inlet and said outlet,



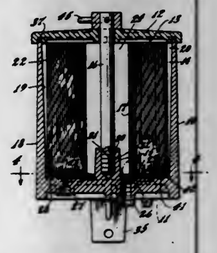
(g) said second mentioned fluid directing means being disposed to direct fluid through a portion of said filter element disposed above the level of fluid in said filter chamber,
(h) a vane assembly secured to the exterior surface of said filter element and comprising a plurality of annularly spaced axially extending vane elements, said vane elements sealingly engaging said inner wall at each side of said second flow directing means to define a plurality of separated compartments sealed from each other and against said inner wall except in an area adjacent said inlet and adjacent said second fluid flow directing means and thereby constructed to convey the separated solid to the area of said second flow directing means.

3,346,119
ROTARY DRUM FILTER
Marc Vernay, 19 Rue Louis Ducroize, Villeurbanne, Rhone, France
Filed Mar. 30, 1964, Ser. No. 355,598
Claims priority, application France, Apr. 8, 1963, 43,530, Patent 1,361,505
2 Claims. (Cl. 210—404)



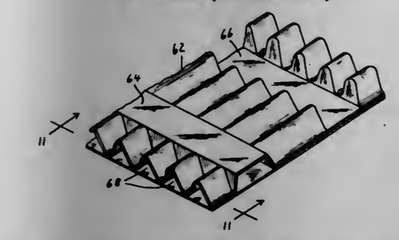
1. In a rotary drum filter, the combination of: a rotary hollow drum having inner peripheral vacuum compartments, each of said compartments being separated from the adjacent compartments by radial walls extending on the whole length of the said drum; two series of openings provided on the internal cylindrical bottom of each compartment, each of said series of openings being located adjacent one of the two radial walls defining each compartment; double-valves fixed on the inner face of said internal cylindrical bottom of said compartments, each double-valve being connected at one end to a couple of openings, one in each of two series of openings located on both sides of said radial walls; the other end of each double valve being connected to a single outlet pipe which in turn is in free communication with the interior of said drum, compressed air pipes connected at one end to the said double-valves inside the rotary drum and, on the other end, to a rotary distributor located outside the drum, in alignment with a hollow trunnion carrying the said rotary drum; each of said double-valves comprising means responsive to compressed air supplied thru said compressed air pipes to control communication between the couple of openings at said one end and said single outlet pipe; vacuum means connected to the interior of the filter; single outlet pipes for said double valves in free communication with said interior; and a plurality of bucket means and outlets therefor constructed and arranged to receive effluent from the valves in different angular locations thereof whereby to allow selection of filtrates of different compositions.

3,346,120
OIL CLEANER
Joseph J. Russo and Michael S. La Monica, Jr., both of 9191 Torresdale Ave., Philadelphia, Pa. 19114
Filed Nov. 16, 1964, Ser. No. 411,211
3 Claims. (Cl. 210—439)



1. In an oil cleaner, the combination of a generally cylindrical hollow main body,
said body having a closed bottom and an open top,
said bottom being milled to provide a pair of concentric grooves;
an axially aligned interior threaded spindle,
said spindle rising from said bottom inside of the said grooves,
said spindle having a relatively small diameter in comparison with the diameter of the said main body;
a hollow, cylindrical support tube removably resting upon the body bottom,
the said tube removably covering the threaded spindle,
and a portion of the tube standing within the innermost of said concentric grooves;
a circular plate carried by the bottom of the support tube,
said plate being provided with a plurality of holes, each of said holes overlying a portion of the outermost of said concentric grooves; a screen carried by the said plate, said screen having a diameter slightly less than the diameter of the said plate;
an oil cleaning cartridge surrounding the support tube and contained within the main body,
the said cartridge having its bottom in contact with the screen;
a gasketed top cover closing and sealing the said open top of the main body,
the cover being secured in place by a rod threadedly engaged within said spindle,
and a portion of said cover contacting said cartridge;
oil inlet means provided in the bottom of the main body;
oil outlet means provided in the bottom of the main body;
and oil passage means provided within the main body whereby untreated oil may flow into the bottom of the main body, and the cleaned oil flows out of the oil outlet in the bottom of the main body.

3,346,121
FILTER AND METHOD FOR ITS PRODUCTION
Alexander O. Bally, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 13, 1965, Ser. No. 479,561
5 Claims. (Cl. 210—493)

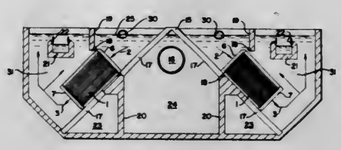


2. The method for making a filter body which comprises the steps of forming a sheet of corrugated material having ridges and grooves therein, forming in the vicinity of one edge of said corrugated material a raised portion having a surface corresponding to the maximum heights of said ridges and in the vicinity of an opposed edge of said sheet a lowered portion having a surface corresponding in height to the minimum height of said grooves, forming a body comprising alternate layers of said corrugated material and a generally smooth spacer material with said ridges and grooves of said sheets of corrugated material generally parallel to one another to form with said spacer material a plurality of channels extending between opposed surfaces of said body, at least one of said corrugated material and said spacer material being porous, said raised and lowered portions of said corrugated material forming barriers within said channels.

5. A filter element useful in the manufacture of filter bodies, which element comprises a corrugated sheet of filter material having generally parallel ridges and grooves, a raised generally smooth surface portion in the vicinity of a first edge of said sheet extending in a direction generally perpendicular to said ridges and grooves and having a height substantially corresponding to the maximum heights of said ridges, and in the vicinity of a second edge of said sheet opposed to said first edge a lowered portion extending in a direction generally parallel to said raised portion and having a generally smooth surface having a height substantially corresponding to the minimum heights of said grooves.

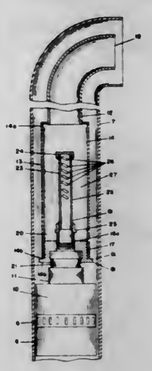
3,346,122
PLATE SEPARATOR WITH DRAINAGE GUTTER
Jan Cornelissen, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1966, Ser. No. 575,115
5 Claims. (Cl. 210—522)

1. An apparatus for separating the composite components of a heterogeneous mixture of substances, one of said substances being a carrier liquid, on the basis of specific gravity differential, said apparatus comprising:
a conduit for flowing said mixture; and
a plate assembly disposed within said conduit, said plate assembly comprising:
a plurality of corrugated plates, a major plane of each plate being substantially parallel to the major plane of the remainder of said plates and separated from the other plates in a direction normal to said parallel planes, the top and valleys of the corrugations being in substantial alignment in the normal direction and with the axis of said corrugations extending substantially parallel with the mixture flow direction; and



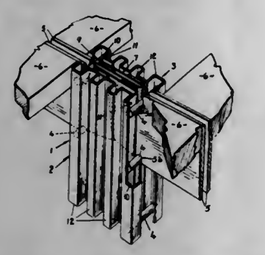
gutter means constituting flow channel means having a flow direction normal to said mixture flow interconnecting normally adjacent corrugations on at least one end of said plates, said flow channel means increasing in cross-sectional area in the direction of said channel flow, said gutter means comprising U-shaped channel members, the edge of the walls of said channel members opposite the bight portion thereof being secured to said one end of said plate assembly.

3,346,123
SCALE TRAPS FOR A PIPE
Merlin L. Witt, 1005 W. 3rd Ave., Brodhead, Wis. 53520; Dorothy Witt, executrix of said Merlin L. Witt, deceased
Filed Oct. 15, 1963, Ser. No. 316,476
4 Claims. (Cl. 210—532)



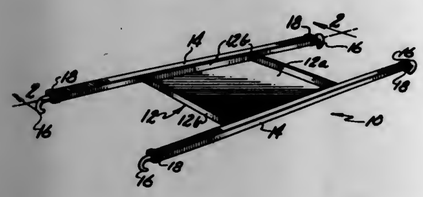
1. A scale trap comprising a cylinder with a lower end and an upper end. said lower end being open for the entry of fluid and said upper end being closed by a cap, said cylinder having a plurality of slots spaced axially along a substantial axial portion of said upper end, and a substantial axial portion of said lower end being impervious, said slots being adapted to allow the passage of fluid from the inside of said cylinder to the outside of said cylinder, means at the lower end of said cylinder to mount said cylinder in a pipe larger than said cylinder whereby an annular space is defined between said cylinder and said pipe, said mounting means closing said annular space at said lower end of said cylinder.

3,346,124
MODULAR KNOCKDOWN SHELVING CONSTRUCTION
Sydney Murray Sobel, Toronto, Ontario, Canada, assignor to Ontario Store Fixture Co., Limited, a corporation of Canada
Filed Jan. 6, 1966, Ser. No. 519,070
10 Claims. (Cl. 211—148)



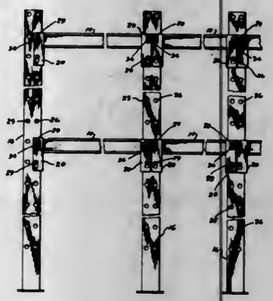
5. In a modular, knockdown shelving support unit, a post structure consisting essentially of a pair of vertically extending, spaced and opposed post members, each post member being castellated in cross-section to provide a plurality of outwardly opening parallel channels extending longitudinally of the sides of each post member; vertically spaced pins rigidly interconnecting said post members at front and rear edges thereof to provide mounting means for shelf brackets; bracket spacing and locating means within the post structure and comprising an elongate element, sinuous in cross-section to define a plurality of recesses opening outwardly of each of said front and rear edges.

3,346,125
TRAY
Jeanne M. Miller, Chicago, Freddie Marcus, Niles, and Charles J. Cretors, Highland Park, Ill., assignors to C. Cretors & Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 504,666
1 Claim. (Cl. 211—126)



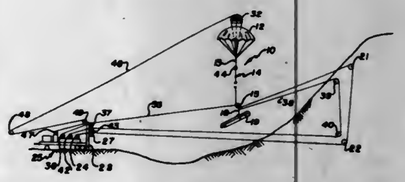
In a reversible tray adapted to be mounted between a pair of spaced rails or the like, the combination which comprises a pair of extended support members disposed in spaced relationship, a main body portion mounted on the support members, the main body portion being in the form of a rectangular parallelepiped having one open face which defines a flat surface when the tray is mounted in one position and defines a surface with raised edges when the tray is mounted in the reverse position, means extending outwardly of the ends of the support members and adapted to link the support members and the main body portion to the rails, and means for resiliently connecting together linking means on opposite ends of the support members through the support members so that the linking means may be moved outwardly away from the support members against the force of the resilient means into linking relationship with the rails and so that the linking means are urged inwardly toward the support members.

3,346,126
ADJUSTABLE RACK SHELVING
Milton Bloom, 38—29 Grant St., Fair Lawn, N.J. 07410, and Rubin Blum, 312 E. 24th St., Paterson, N.J. 07514
Filed June 28, 1965, Ser. No. 467,527
5 Claims. (Cl. 211—176)



1. Connecting means for connecting a cross supporting beam to an upright beam, comprising: a locking plate affixed to said crossbeam, said locking plate having slot means formed therein; a backing plate having stud means mounted theeron, said stud means adapted to be simultaneously aligned with spaced apertures formed in said upright beam and said slot means of said locking plate, whereby said backing plate is brought into locking engagement with said upright beam; and safety means preventing accidental disengagement of said backing plate from said locking plate, said safety means comprising a spacer member having a thin plate member with a head portion extending therefrom, said head portion being inserted into said slot means after said stud means has been brought into locking engagement therewith, said thin plate member being positioned between said locking plate and said upright beam, said head portion preventing said stud means from being disengaged from said locking plate.

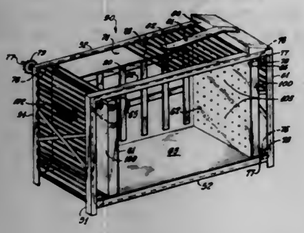
3,346,127
DRAG UTILIZING TRANSPORTING APPARATUS
Thomas E. Pelton, 12138 York Ave., and Norman R. Pelton, 12127 York Ave., both of Haney, British Columbia, Canada
Filed Mar. 14, 1966, Ser. No. 533,934
13 Claims. (Cl. 212—71)



1. Apparatus for lifting and transporting loads by the utilization of drag force, comprising drag means adapted to create drag when drawn through the air proportional to the speed of movement thereof through the air, securing means adapted to be connected to a load, a block element, a skyline cable element threaded through the block element, one of said elements being connected to said drag means and the other of said elements being connected to said securing means, power means connected to the skyline cable element to haul in and pay out said skyline element, balloon means connected to said drag means and having sufficient left to raise the drag means, said drag means when the cable element is hauled

in being drawn through the air and creating sufficient drag at least partially to lift a load connected to said securing means, and control means connected to said securing means for controlling the movement of the securing means.

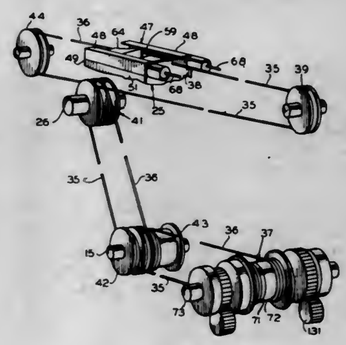
3,346,128
APPARATUS FOR MATERIALS HANDLING
William B. Hullhorst, Granville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,749
3 Claims. (Cl. 214—6)



1. Apparatus for handling and stacking mats or sheets of material or the like comprising a bin means having an open top, at least two opposed walls and a bottom means; means for successively feeding mats to said bin so that they fall into the open top thereof; means for providing an air film bearing surface on the interior of each of said opposed walls to engage the edges of and to aid in assisting the proper fall and alignment of said mats in a stack in said bin and to reduce friction between said stack and said walls of said bin to prevent misalignment of said stack on removal from said bin; means for removing a completed stack of mats from an open side of said bin, said feeding means includes conveyor means adapted to move across the open top of said bin, said conveyor having a plurality of platforms to carry a like plurality of mats, said platforms being separated by openings formed in said conveyor, stop means disposed above said conveyor and said bin and operative to arrest movement of mats carried by said platforms, said platforms moving out from under said mats allowing successive mats to fall into said bin, and hold-down means extending above said mats back along said conveyor from said stop means to prevent said mats from tipping upward as said platforms move out from under same.

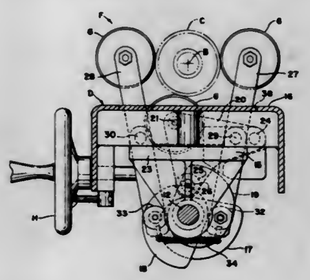
3,346,129
POWER SHOVEL
Robert M. Carter, and George L. Petrik, Cedar Rapids, Iowa, assignors to Link-Belt Company, a corporation of Illinois
Filed Oct. 18, 1965, Ser. No. 497,231
11 Claims. (Cl. 214—135)

1. In a power shovel having a dipper stick supported for reciprocating longitudinal movement, and flexible means extending in opposite directions from the position at which the dipper stick is supported and operatively connected to longitudinally spaced points on said dipper stick so that tension alternately applied to the ends of the flexible means remote from the operative connections to the dipper stick will effect reciprocating movements of the dipper stick, the improvement comprising:
drum means rotatably mounted on said power shovel and providing separate reels,
the ends of said flexible means remote from the operative connections to the dipper stick being wound around said separate reels and secured thereto so that rotation of both reels in one direction will apply tension to one associated end of said flexible means while simultaneously releasing the other associated end of the flexible means, and rotation of both reels in the opposite direction will release said one associated end of the flexible means and will apply tension to said other associated end of the flexible means,
said reels being operatively connected to each other in a manner to positively prevent rotation of either reel relative to the other in a direction to simultaneously release the tension in the associated ends of said flexible means,



means for rotating said reels as a unit alternately in opposite directions to effect reciprocating movement of said dipper stick, and
means for selectively temporarily holding one of said reels stationary while said rotating means rotates the other said reel relative thereto in a direction to increase the tension in said flexible means.

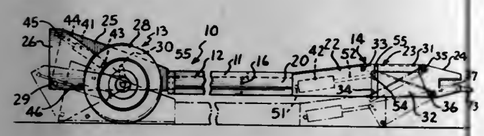
3,346,130
TUBE CENTERING CONVEYOR
Joseph Thomas Wloszek, Seven Hills, Ohio (9200 George Ave., Cleveland, Ohio 44105)
Filed Sept. 8, 1965, Ser. No. 485,864
13 Claims. (Cl. 214—339)



1. A work centering device comprising:
a plurality of manipulator members one positioned on each side of a symmetrical workpiece rotatably engaging its exterior surface at a point below its midplane so as to cradle the workpiece centrally therebetween and
an adjusting means connectable to the manipulator members for moving each in unison toward or away from a predetermined work center so as to raise or lower the workpiece until its axis of symmetry coincides with such work center including:
a rotatable shaft extending parallel to the work-

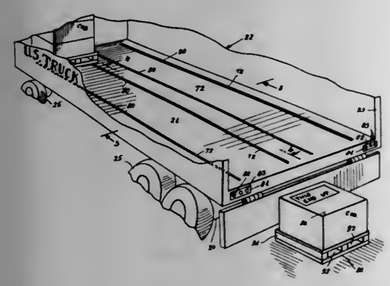
piece axis of symmetry and work center,
camming means rotatable by the shaft for controlling movement of each manipulator member toward and away from said work center, and
cam follower means connected to each manipulator member for transmitting movement of the camming means.

3,346,131
HYDRAULIC TRANSPORTER TRAILER
Vernon J. Lundell, Cherokee, Iowa 51012
Filed Aug. 4, 1965, Ser. No. 477,137
10 Claims. (Cl. 214—506)



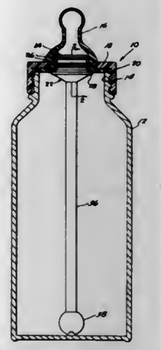
1. A transport trailer comprising, in combination, a supporting frame, means defining a substantially rigid bed secured to said frame, an extension projecting forwardly from said frame, a coupling element secured to said extension, two pairs of laterally spaced support plates pivotally mounted on the rear edge of said frame for horizontal swinging movement between trailing and transversely oriented positions, means for securing said pairs of support plates in said trailing position, a pair of carrier plates pivotally mounted on each pair of said support plates for vertically swinging movement, a wheel and axle assembly carried by each pair of said carrier plates, and means for vertically swinging said carrier plates so as to raise and lower said frame and bed between transport and loading positions.

3,346,132
LOAD SHIFTING MECHANISM
Stephen Duszka, 503 McCarter Highway, Newark, N.J. 07102
Filed Sept. 28, 1965, Ser. No. 490,948
7 Claims. (Cl. 214—516)



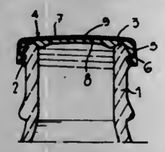
1. In a truck loading device the combination with a truck body of a floor on said body, openings through said floor communicating with a plurality of loading units below said floor, each of said units including means that may be lifted upwardly through said openings in said floor for engaging the underside of a pallet bearing freight and means for moving said pallet from one area of said truck body to another area thereof, wherein each of said openings in said floor comprises a longitudinal slot extending between an area adjacent a doorway on said truck body and a remote area therefrom, and said liftable means is slidable within each of said slots to deliver said pallet bearing freight from said doorway to said remote area during loading operation, and from said remote area to said doorway during unloading operation, wherein each of said loading units comprises a pair of chains carried over a pair of gears at each end of said truck body, each of said chains being connected at its opposite ends to said liftable means, drive means for providing power to move said liftable means along said slots, and tension means to selectively raise said liftable means.

3,346,133
DISPENSING DEVICE FOR USE WITH NURSING BOTTLE ASSEMBLY
Charles W. Herdman, 35 Royal Palm Drive, Fort Lauderdale, Fla. 33301
Original application Nov. 30, 1965, Ser. No. 510,613. Divided and this application Nov. 28, 1966, Ser. No. 604,107
2 Claims. (Cl. 215—11)



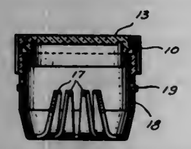
1. In a device for dispensing feeding liquid from a nursing bottle to a nipple in seated engagement therewith, said device comprising
a plug member adapted to extend into sealing engagement with the interior of the nipple and having an axial passageway therethrough,
a tube having one end depending from and in communication with the lower end of said passageway and an opposite free end adapted to extend into and be spaced from the bottom of the bottle, thereby providing communication between the bottle and the interior of the nipple,
the improvement comprising:
discharge control means including
a groove formed in and opening out of the upper end of said plug member, said groove being in communication with the upper end of said axial passageway,
a pair of opposed horizontal pins provided in the wall of said groove,
and valve means for alternately opening and closing said passageway to communication between the bottle and the interior of the nipple in response to the application and cessation of suction, said valve means including a flap valve having pairs of vertical pegs rising from an upper surface thereof housed within said groove and bridging the upper end of said passageway,
each pair of vertical pins on said flap valve receiving a horizontal pin in the wall of said groove for forming a hinged connection between said flap valve and the wall of said groove.

3,346,134
CROWN CLOSURE
Johannes Leemann, Geneva, Switzerland, assignor to Crown Cork Company (Belgium) S.A., Merxem, Antwerp, Belgium, a corporation of Belgium
Filed Dec. 6, 1965, Ser. No. 511,798
Claims priority, application Belgium, Dec. 8, 1964, 6,372, Patent 656,829; Jan. 27, 1965, 8,262, Patent 658,911; Feb. 3, 1965, 8,522, Patent 659,213; Feb. 14, 1965, 16,715, Patent 668,331
7 Claims. (Cl. 215—39)



1. In combination a bottle having a neck with at least one external lateral screw-thread in the vicinity of its rim and a crown closure closing said bottle, said crown closure comprising a sealing disc applied onto said rim of said neck, a metallic disc applied onto said sealing disc, a base applied onto said metallic disc, the central part of said base presenting an elongated opening, a closure skirt depending from said base onto said external lateral screw-thread of said neck and deformed about said screw-thread to form a corresponding screw thread in said skirt, said elongated opening of said base being adapted to receive means which by pressing on its longitudinal edges makes it possible to apply to the crown closure an unscrewing couple or a rescrewing couple to thereby effect unsealing and resealing of said bottle.

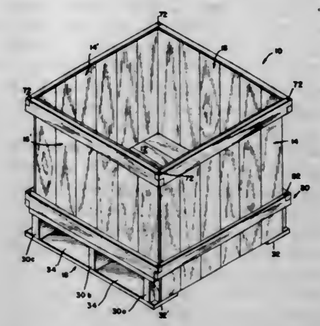
3,346,135
DUAL FUNCTION STOPPER
Edward P. Haitsch, Danbury, Conn., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 10, 1964, Ser. No. 388,531
3 Claims. (Cl. 215—48)



1. A two-piece stopper of molded resilient thermoplastic material comprising a tubular section adapted to be pressed into the neck of a bottle, said tubular section having a top section of greater diameter providing a shoulder to engage the edge of a neck of a bottle into which the lower end of the tubular section may be inserted, said top section having on its inner surface an annular groove, a cap portion inserted in the tubular top section closing the same, said cap having a circumferential bead fitted into the annular groove of the said top section, the lower tubular section of said stopper having a plurality of thin resilient fingers extending downwardly, then curving inwardly and upwardly into the tubular section of the stopper providing means for holding an object.

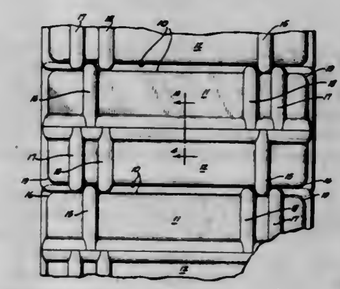
3,346,136
KNOCKDOWN CONTAINER
Albert J. Osborn, Shawano, Wis., assignor to Hotz Manufacturing Company, Shawano, Wis., a partnership
Filed July 21, 1966, Ser. No. 566,919
3 Claims. (Cl. 217—12)

1. A knock down, reuseable, container comprising a bottom wall and two pairs of side walls, said bottom wall including parallel longitudinal grooves extending the length of a pair of opposed edges of the bottom wall and spaced inwardly from their respective side edges, the other pair of side edges of the bottom wall each having a depending skirt member secured thereto, the bottom edge of each skirt member being beveled inwardly and upwardly, each side wall of one pair of side walls including a planar panel, the thickness of said panels being selected to snugly fit into the longitudinal grooves in said bottom wall, and a cross strip secured adjacent the top and bottom edges of said planar panel, the bottom edge strip of each of said one pair of side walls being spaced inwardly of its panel to provide a portion



of said panel adapted to be received in the corresponding longitudinal grooves in the bottom wall, each side wall of the other pair of side walls including a planar panel and a cross strip secured adjacent to the top and bottom edges of the panel, and a further cross strip secured on the inner face of the panel adjacent the bottom edge of each panel, the upper edge of each of said further cross strips being beveled downwardly and outwardly and complementary to the bevel on the corresponding bottom wall skirt, each of said side walls cross strips joining at adjacent edges of the container in a lapping configuration and removable pin means through each of the cross strip lap joints.

3,346,137
RECEPTACLE
Fausto M. Ricci, 1090 Carolyn Way, Beverly Hills, Calif. 90210
Filed Apr. 9, 1965, Ser. No. 446,874
7 Claims. (Cl. 220—23.6)



1. A receptacle of the class described including a base, side walls extending vertically from said base and joined integrally thereto, end walls extending vertically from said base and joined integrally thereto and to said side walls forming vertical corners between each side wall and each end wall and forming a continuous edge with

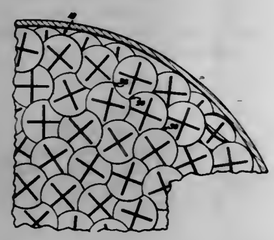
said side walls expanded outwardly to enlarge the width thereof into a flat horizontal surface having an inside margin, raised ribs integrally affixed to said inside margin and alternating with depressions in said inside margin, an L-shaped ridge integrally joined to one side wall, an L-shaped ridge integrally joined to an end wall, such ridges being equidistant from a corner formed by said side wall and said end wall and extending vertically downwardly from the continuous edge under said base and joined integrally to said base and to each other at substantially right angle at the ends of the short leg of said L-shaped ridges, an L-shaped ridge integrally joined to the other side wall, an L-shaped ridge integrally joined to the other end wall, such ridges being equidistant from a corner disposed diagonally from the first named corner, and extending vertically downwardly from the continuous edge under said base and joined integrally to said base and to each other at substantially right angle at the ends of the short leg of said L-shaped ridges, two L-shaped ridges spaced parallel to each other a predetermined distance apart integrally joined to a side wall, two L-shaped ridges spaced parallel to each other a predetermined distance apart integrally joined to an end wall, each set of parallel ridges being equidistant from each vertical corner adjacent to the vertical corners hereinabove described and extending vertically downwardly from the continuous edge under the base and integrally joined to the base, the L-shaped ridges nearest such corner being joined to the other ridge nearest said corner at substantially right angle at the ends of the short legs of said ridges and the ridges parallel thereto being joined at substantially right angle to each other on said base at the ends of the short legs of said ridges.

3,346,138

GAS-LIQUID SEPARATION

Howard A. Tubbs, 406 S. Elizabeth St., Whitewater, Wis. 53190

Filed Dec. 9, 1964, Ser. No. 417,084
11 Claims. (Cl. 220—26)



1. In a pressurized water storage tank wherein a portion of the area within the tank is occupied by water and another portion of such area is occupied by air which exerts pressure on the water surface at the interface between the water and air, apparatus for retarding the rate of absorption of the air by the water, said apparatus comprising:

(a) a multiclplicity of interengaging floats physically unattached to each other and collectively disposed at the surface of the water to provide a substantially single layer membrane for substantially separating the interface between the water and the air,

(b) said floats being buoyant in water and being formed of material which substantially resists absorption of air or water,

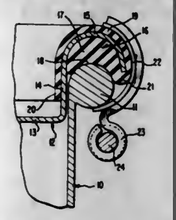
(c) said floats being provided with rims at said interface which overlap approximately in the plane of said interface to thereby substantially separate the air and water.

3,346,139

GASKET MOUNTABLE UPON DRUM HEAD BEAD

Claud C. Armstrong, Jr., Rte. 4, Cely Road, Easley, S.C. 29640

Filed June 25, 1965, Ser. No. 466,969
1 Claim. (Cl. 220—46)



A drum closure for a drum having an annular marginal bead at its mouth, said bead being arcuate in cross section at least on its upper side, a drum closure head for the mouth of the drum having a marginal continuous annular flange which is arcuate in cross section and downwardly concave so as to fit over said bead, said flange cross-sectional arc extending substantially for 180° so that the downwardly concave flange is approximately semi-circular at all points on its circumference, a compressible drum sealing gasket including a thick body portion snugly engaged within the concave flange and being annular and extending for the entire circumference of the flange, said thick body portion disposed directly opposite said annular bead for compressive engagement against the latter and said thick body portion substantially filling the concave interior of the flange while in a relaxed condition, a relatively thin integral flap extension on the outer margin of the thick body portion and being of uniform thickness and extending around and completely covering the free marginal edge of said flange and extending over the entire exterior arcuate surface of the flange to the interior side thereof, said flap extension pre-tensioned to cling to said flange but being peelable therefrom when desired, said flap extension preventing separation of said gasket from said flange during normal handling of the closure head, and an exterior clamping ring engaging the flap extension and said drum bead for firmly securing the closure head to the drum with said thick body portion substantially compressed against the bead.

3,346,140

DEODORANT HOLDER FOR A DIAPER HAMPER

Sidney C. Mele, Mountainside, N.J., assignor to Associated Baby Services, Inc., Bound Brook, N.J.

Filed Nov. 22, 1965, Ser. No. 509,027
2 Claims. (Cl. 220—87)



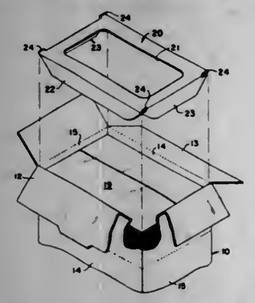
1. In combination, a cover for a diaper hamper, a deodorant holder having a bottom wall, said bottom wall being integrally formed with said cover and having perforations extending through the top cover to permit vapor exchange therethrough, a vertically extending cylindrically shaped holder side wall encircling said perforations, said bottom wall being provided with a plurality of slots out through said cover adjacent the interior surface of said encircling holder side wall and spaced closely adjacent each other at regular intervals along the interior of said vertically extending holder side wall, a cap, said cap being provided with a top wall and a downwardly extending cap side wall dimensioned to be insertable within the vertically extending holder side wall in telescoping relationship therewith, at least two latch members extending downwardly from said cap side wall, each of said latch members having a resilient portion and a hook member formed at the end of said resilient portion, said latch members being dimensioned to be inserted within respective slots of said container bottom wall and to pass therethrough as said cap is inserted in telescoping relationship to said container so that the hook members at the end thereof engage said cover in latched relationship therewith.

3,346,141

PACKAGE

Perry O. Pherson, West Suffield, Conn., and Alfred A. Slater, Weston, Ontario, and Karl Engel, Toronto, Ontario, Canada, assignors, by mesne assignments to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada

Filed Mar. 24, 1965, Ser. No. 442,462
2 Claims. (Cl. 221—48)



1. In a package of facial tissues, in combination, a rectangular box having top, bottom, and side walls;

a stack of a plurality of facial tissues disposed in the box; and,

a dispenser board having a rectangular top wall, a first pair of downwardly depending flaps each connected to a respective end edge of said dispenser board top wall, a second pair of downwardly depending flaps each connected to a respective side edge of said dispenser board top wall, the length of each of said flaps being substantially equal to the length of the corresponding dispenser board top wall edge, and a plurality of tabs projecting upwardly from said dispenser board top wall, each of said tabs being located adjacent a respective outer corner of said dispenser board top wall and having a length representing a small fraction of the length of said respective dispenser board top wall edges, said dispenser board top wall having a tissue withdrawal opening therein and said dispenser board being disposed in the box to overlie the stack with said flaps disposed between the box walls and the stack and with said tabs disposed for frictional engagement with the box walls.

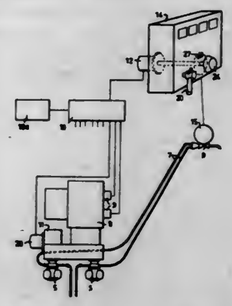
3,346,142

LIQUID DISPENSING SYSTEMS

Hans Erik Eklund, Malmo, Sweden, assignor to Aktiebolaget Ljungmans Verkstader, Malmo, Sweden

Filed Aug. 5, 1966, Ser. No. 570,639
Claims priority, application Sweden, Aug. 17, 1965, 10,724/65
9 Claims. (Cl. 222—20)

1. A system for dispensing a liquid product comprising a throughflow type meter having means for generating electrical pulses in accordance with the volume of the liquid product flowing through the meter, means for generating electrical pulses in accordance with the price of the liquid flowing through the meter, switch means switchable into two positions, first digit read-out means connectible to said volume pulse generating means with said switch means in one of said two positions, and to said price pulse



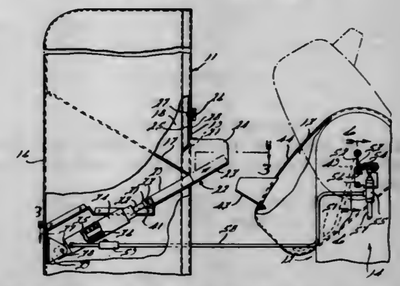
generating means with said switch means in the other of said two positions, and a second digit read-out means connectible to said price pulses generating means with said switch means in said one of said two positions and to said volume pulses generating means with said switch means in said other of said two positions.

3,346,143

PARTS FEEDING DEVICE WITH DISCHARGING-RECEIVER CONTROLLED DELIVERY FROM SOURCE

Alfred H. Haberstump, 15125 Piedmont Ave., Detroit, Mich. 48223

Filed June 9, 1966, Ser. No. 556,465
6 Claims. (Cl. 222—56)



1. In a device for feeding articles into a receptacle which oscillates in a path between a position adjacent to the device, at which position articles discharged from the device will be received by the receptacle, and a position remote from the device, means in said receptacle for sensing the need for articles, and means actuated by said sensing means when articles are required, for activating said feeding device in timed relation to the arrival of the receptacle at said adjacent position.

3,346,144

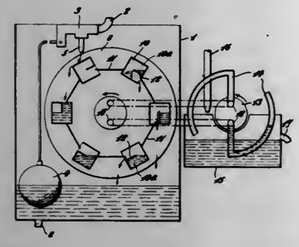
APPARATUS FOR DISPENSING AND MIXING LIQUIDS IN PREDETERMINED RELATIVE PROPORTIONS

David C. Hings, Woodford Green, England, assignor to Whitmoyer-Reed Limited, Barking, Essex, England, a British company

Filed Oct. 26, 1965, Ser. No. 505,286
Claims priority, application Great Britain, Nov. 28, 1964, 43,905/64; May 11, 1965, 19,769/65
4 Claims. (Cl. 222—57)

3. An apparatus for dispensing and mixing liquids which comprises:

(a) a first reservoir having an outlet and first and second inlets;
(b) a metering device positioned and adapted for feeding a predetermined amount of first liquid from the first inlet into said first reservoir;
(c) means for maintaining a substantially constant level of mixed liquids in said first reservoir;
(d) a second reservoir being connected to said first reservoir by conduit means which terminate in the second inlet in said first reservoir;



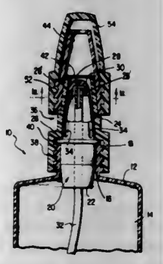
(e) a scoop device which operates in response to said metering device wherein said scoop device comprises a plurality of substantially arcuate hollow chambers open at both ends and being connected at one of said ends to said conduit means wherein said conduit means is being carried in a rotatable hub positioned and adapted in said second reservoir so that said hollow arcuate chambers are effective in collecting from said second reservoir a predetermined amount of said second liquid, which amount of liquid is directly proportional to the amount of said first liquid fed into said first reservoir, and conveying said second liquid into said conduit means; and
(f) means for maintaining a substantially constant level of said second liquid in said second reservoir.

3,346,145
DISPENSING DEVICE
Michael N. Sessa, 86 Horton St. 06902, and Fred Di Stefano, 36 Vanech Drive 06905, both of Stamford, Conn.
Filed Apr. 13, 1966, Ser. No. 542,346
1 Claim. (Cl. 222—162)



A rapid-acting, impactable, dispensing device especially adapted for applying powdered exterminator material to a weed comprising:
(A) a material-holding container movable down and up relative to a supporting member and having a discharge opening at the bottom thereof with a valve seat at said opening,
(B) a first (upper) elongated element to which said container is connected,
(C) a second (lower) elongated element having a valve plug fixed thereon normally biased closed against the said valve seat,
said first elongated element being movable relative to the said second elongated element and having its upper end portion thereof functioning as a handle for the said device, and
said first and second elongated elements having facing ends that are spaced apart a distance sufficient to permit the limited downward movement of the facing end of the first elongated element to impact the facing end of the second elongated element and also sufficient to permit the said container to move downward to displace the said valve seat from the said valve plug,
(D) a spring against which the said container is movably adapted to return the container to its original position after down movement of the same,
(E) an elongated tubular member that encloses the adjacent end portions of the aforesaid elements of (B) and (C),
said tubular member being connected to and moving with the said container, and also slidably receiving the said second elongated element,
said spring surrounding the said second elongated element with one end on the top of the said valve plug and the other end against the bottom of the said tubular member, and
(F) contact means on the device adapted to make contact with a weed,
said device being adapted to be thrust against a weed so that said contact means makes impact with the same, whereby said container by virtue of its inertia moves relative to the said second elongated member and against the action of the said spring, causing displacement of the said valve seat from the said valve plug and allowing powdered material to fall on the weed, said container being returnable to its original position by the action of the said spring, and said device also being operable by placing the contact means on a weed and pressing down on the handle, whereby the first elongated member and the container move downwardly against the spring, causing displacement of the said valve seat from the said valve plug, the extent of said last-mentioned movement being limited by the aforesaid distance between the facing ends of the said first and second elongated elements.

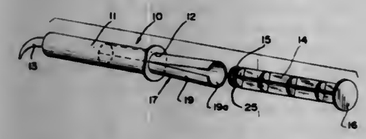
3,346,146
COMBINATION DISPENSER
Robert E. Thompson, Maplewood, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
Filed Feb. 25, 1966, Ser. No. 530,220
4 Claims. (Cl. 222—189)



1. a combination dispenser comprising a container having an outlet opening and a formulation supply zone, an outlet orifice member releasably carried over the outlet opening, a dip tube depending from said outlet orifice for directing liquid from the supply zone to the outlet orifice when the contents of the container are pressurized,

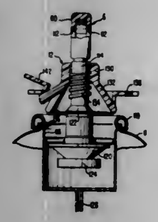
a tubular foamer fitment releasably and coaxially carried by said outlet orifice member, said fitment having an opening of substantially larger diameter than said outlet opening therethrough, a porous element mounted in said fitment across the said opening and in spaced relation to said outlet orifice, and closure means for said dispenser.

3,346,147
DENTAL COMPOUND SYRINGE
John L. Higgins, Daytona Beach, Fla., and Richard W. Gilson, St. Louis, Mo., assignors to Brunswick Corporation, a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,317
7 Claims. (Cl. 222—326)



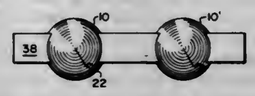
1. In a syringe having a tubular barrel provided with an open end and an opposite outlet, and a plunger movable through said open end to expel material from said barrel through said outlet, a charge of a mixture composition installed in the open end of the barrel of the syringe to permit the plunger to be urged inwardly therethrough to expel said composition through said outlet, said charge being formed by the steps of: laying out a flexible sheet to present an upper mixing surface; placing on said surface ingredient materials of said composition;
mixing said materials on said surface to form said composition; and
forming said sheet into a generally tubular open-ended configuration with said composition retained therein.

3,346,148
DISPENSING SHOWER HEAD
Wilfred W. Weese, Tucson, Ariz., assignor to Harry Swartz, New York, N.Y.
Original application Jan. 4, 1965, Ser. No. 422,946. Divided and this application Feb. 24, 1967, Ser. No. 618,426
11 Claims. (Cl. 222—402.11)



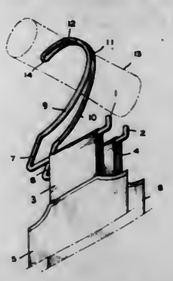
1. In a coupling comprising a first portion having first surface means extending at least in part about an axis, with said first surface means defining a recess disposed interiorly thereof and having an open end, the improvement comprising:
a second portion, said second portion comprising:
second surface means extending in part about said axis, received within the recess of said first portion, and facing outwardly toward said first surface means, and
a pair of lips connected with said second surface means, said lips being spaced circumferentially with reference to said axis; and
abutment means disposed between said spaced lips;
said abutment means engaging said lips so as to impede circumferential contraction of said second surface means and hold said second surface means in compressed engagement with said first surface means.

3,346,149
GARMENT SHAPING BUST FORM
Irving David Tiss, Springfield, N.J.
(970 Springfield Ave., Irvington, N.J. 07111)
Filed Nov. 16, 1966, Ser. No. 594,762
4 Claims. (Cl. 223—66)



1. A garment shaping bust form comprising a pair of substantially circular discs each resiliently deformable along its axis into a cone-like configuration, each disc having a radial first slot therein extending from its periphery to its axis, one edge of the first slot having a tongue member extending therefrom in the direction of the other edge of the first slot, a key means on the tongue member, a second slot spaced from the said other edge in the direction of the extending tongue, the key means of the tongue member being lockably engageable with the second slot, a pair of substantially diametrically opposed slots each adjacent the peripheral edge of the disc, and a strip means insertable through the pair of diametrically opposed slots in each disc, the discs being slidably adjustable relative to each other along the said strip means.

3,346,150
SKI PANTS HANGER
James W. Clopton, P.O. Box 8061, Salt Lake City, Utah 84108
Filed Sept. 8, 1964, Ser. No. 394,711
1 Claim. (Cl. 223—95)



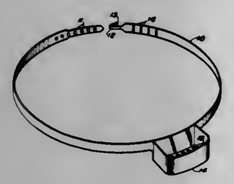
A ski pants hanger consisting of a single elongated piece of rigid relatively thin wire, said wire being centrally folded upon itself, a C-shaped hook member formed at the folded end of said wire, the lower portion of said hook member having gradually diverging portions terminating in spaced apart, horizontally disposed and parallel supporting members, each of said supporting members being provided with angularly upturned ends and extending on the opposite sides of the hook member so that a plane which bisects the hook member bisects spacing between said supporting members, said supporting members being of a length such that a vertical line extending through the center of said supporting members bisects the center of said supporting hook with the lateral extent of said supporting members being substantially the same as the lateral extent of the hook member.

3,346,151
SEWING AWL
H. Cameron Porter, Miami, Fla., assignor of fifty percent to Verdon A. Porter, Monterey Park, Calif.
Filed June 3, 1965, Ser. No. 461,142
1 Claim. (Cl. 223—104)



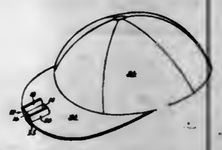
A sewing instrument of the type used for sewing meat and poultry products comprising; a cylindrical shaft having an enlarged piercing member at one end, said piercing member having a slender pyramidic shape with a rhombic shape in cross-section and having four converging edges forming a point at the forward end of said instrument including a first pair of sharp longitudinal opposed edges spaced further apart than a second pair of opposed edges, an eye of elliptical shape extending through said piercing member and lying between said first pair of edges intermediate the length of said piercing member with the major diameter of said eye co-axial with the main center line of the shaft and said piercing member, an ellipsoidal, guiding depression formed symmetrically about each mouth of said eye, a transverse slot formed in one of said first pair of edges and said eye to seat a thread thereon, a forward-facing and a rearward facing hooked portion lying on either side of said slot for retaining a thread in said eye during reciprocal movement of said instrument; and a tear-shaped operating handle connected to the other end of said shaft, said handle including a slender portion connected to said shaft, a ferrule extending over the connecting portion of said handle and secured thereto, a flat resting surface on said handle lying parallel to the main center line of the shaft.

3,346,152
SHOWER SAFETY SOAP BELTS
Annette D. Geisendorff, 917 Little St., Apt. 1, Marietta, Ga. 30060
Filed Oct. 1, 1965, Ser. No. 491,944
2 Claims. (Cl. 224—5)



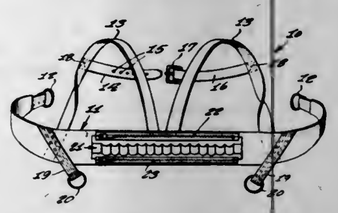
1. An article of manufacture comprising:
(a) a belt adapted to fit around the waist of a human being;
(b) closing means secured at one end of said belt, the other end of said belt having a series of spaced perforations adapted to receive said closure means, said one end of said belt defining a series of spaced slits adapted to receive the other end of said belt when said closure means is inserted in one of said series of spaced perforations on the other end of said belt; and,
(c) receptacle means integral with said belt, said receptacle being enclosed on the bottom and sides thereof except for a plurality of perforations in said bottom, said receptacle being of such dimensions as to easily receive a conventional cake of soap and permit ready removal thereof, said article being entirely constructed of rust-proof material.

3,346,153
PUTTY HOLDER ATTACHMENT
Louis Galasso, 255 SW. 60th Ave., Miami, Fla. 33144
Filed Aug. 15, 1966, Ser. No. 572,368
3 Claims. (Cl. 224—5)



1. A putty holder for detachable engagement on the edge of a cap visor or alternatively over a user's belt edge comprising: a receptacle having a floor including bordering side and rear walls extending from one surface of said floor, said receptacle side walls having free terminal edges forming an opening flanking a free edge portion of said floor for permitting ready access to putty contained in said receptacle, and spring clip means below the other surface of the floor, said clip means comprising a reverse-bend portion depending from said receptacle opening and extending substantially the length of said floor defining an elongated tongue forming an open slot opening toward said rear wall, said clip means having a second reverse-bend portion depending beneath said open slot and extending substantially the length of said tongue and defining a leg forming with said tongue a second slot opening toward said receptacle opening whereby said first slot permits the putty holder to be suspended from a user's belt and said second slot permits said putty holder to be supported on the edge of the visor of a cap.

3,346,154
DEER DRAGGING HARNESS KIT
Richard M. Bishop, P.O. Box 54, Sprague ville, N.Y. 13669
Filed May 13, 1966, Ser. No. 550,000
5 Claims. (Cl. 224—5)



1. In a deer dragging harness kit, the combination of a harness including a breast strap, said breast strap having an end ring at each opposite end thereof, said breast strap having each end of each of a pair of shoulder straps secured thereto, said shoulder straps supporting a back strap and said breast strap supporting a pair of diagonally downwardly extending side straps carrying side rings, said breast strap and rings and said side strap side rings in use being drawn together and secured to one end of a drag rope for having a deer carcass towed at the other end thereof.

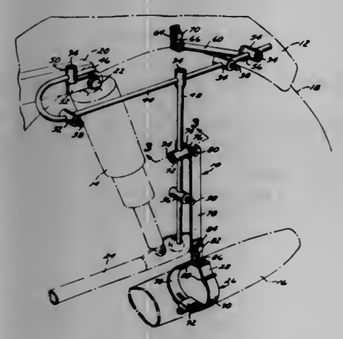
3,346,155
CARRIER FOR BOOKS AND SMALL ARTICLES
Carl F. Oechsle, 102 Farmington Ave., Longmeadow, Mass. 01106
Filed Dec. 3, 1965, Ser. No. 511,411
4 Claims. (Cl. 224—9)

1. Means for the convenient and safe transportation by bearer of books and small articles comprising a container and two carrying straps,
a first single means fixed to said container for attaching both ends of one strap to the container at one load-bearing point, at least one of the ends being releasably secured to said first means,
a second single means fixed to said container for attaching both ends of the second strap to the container at a load-bearing point spaced from said first means, whereby the straps form two spaced shoulder-engaging loops by which the weight of the container may be transferred to both shoulders of the wearer,



said second means including means formed to receive said one strap at a point intermediate its ends at least equal to the distance between said first and second means, thereby forming a carrying handle as an alternate to utilizing both straps as shoulder-engaging loops.

3,346,156
MOTORCYCLE BAG MOUNTING APPARATUS
Paul R. Jones, Norwalk, Calif., assignor to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Filed Oct. 31, 1966, Ser. No. 590,631
8 Claims. (Cl. 224—32)



1. A motorcycle bag mounting apparatus comprising:
lower, forward and rearward bag mounts adapted for attachment to a motorcycle bag, said forward and rearward bag mounts being longitudinally spaced apart;
an elongated, substantially horizontal support member mounting said forward and rearward bag mounts;
an elongated, substantially vertical support member, the upper extremity of said vertical support member being carried by and horizontally adjustably movable upon said horizontal support member;
forward, rearward, and lower bracket mounts, said forward and rearward bracket mounts being carried at opposite extremities of and horizontally adjustably movable upon said horizontal support member, said lower bracket mount being carried by and vertically adjustably movable upon said vertical support member; and
forward, rearward, and lower support means adapted for attachment to a motorcycle and connected, respectively, to said forward, rearward, and lower bracket mounts for mounting a saddle bag upon the motorcycle, whereby the fore-and-aft location of the saddle bag is adjustable by relative movement between said forward and rearward bracket mounts and said forward and rearward bag mounts, and the vertical location of the saddle bag is adjustable by relative movement between said lower bracket mount and said lower bag mount.

3,346,157
CARRYING DEVICE
Paul O. Haney, Star Rte. 2, Box 109, Lebanon, Oreg. 97355
Filed May 23, 1966, Ser. No. 552,113
1 Claim. (Cl. 224—49)

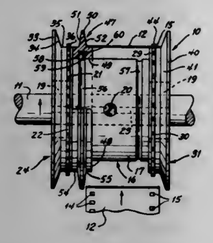


A device for carrying horizontally stacked cordwood, said device comprising two identical substantially U-shaped bottom frames each having two parallel leg members converging upwardly from a bottom cross member, then upwardly into parallel relation to each other,
a unitary top frame member comprising two vertically disposed parallel leg members,
means permanently rigidly securing the bottom ends of said top frame leg members to said upwardly extending parallel top ends of the bottom frame members, and
cross members formed integral with said leg members of said bottom frames near the bottom end thereof whereby a load supported upon said cross members will be elevated from the ground to maintain a supported load in a dry condition.

3,346,158
SPROCKET DEVICE
Everett L. Hanson, Los Angeles, and Jack P. Hall, Granada Hills, Calif., assignors to De Luxe Laboratories, Inc., New York, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 516,972
8 Claims. (Cl. 226—79)

1. A sprocket device adapted for selectively handling at least two different flexible strip materials, each of said two different strip materials having a row of sprocket tooth-receiving holes disposed longitudinally thereof, the character of the holes in one of said strip materials being different from that of the holes in the other of said strip materials, said sprocket device comprising a body in the form of a hub, a first flange fixedly mounted on the hub, a second flange fixedly mounted on the hub at a position axially spaced from the first flange, a third flange mounted on the hub between the first and second flanges for sliding axially thereof from a first position, spaced from the

first flange, wherein it cooperates with the first flange in guiding a first strip of material therebetween in a first path of travel over the sprocket device, to a second position wherein it cooperates with the second flange in guiding a second strip of material therebetween in a second path of travel over the sprocket device, the said first and second paths of travel being spaced from each other axially of the hub, and two sprockets spaced axially of



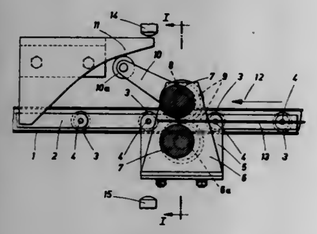
the hub and secured for rotation with the hub, a first one of the sprockets being positioned and having teeth interfitting with the row of sprocket receiving holes in said first one of said two strip materials in its path of travel over the sprocket device, and the second of said sprockets being positioned and having teeth interfitting with the row of sprocket-receiving holes in the second one of said two strip materials in its path of travel over the sprocket device.

3,346,159

APPARATUS FOR THREADING A WEB INTO A PLANT FOR PROCESSING SAID WEB

Karl Winkler, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria

Filed Oct. 1, 1965, Ser. No. 492,017
Claims priority, application Austria, Oct. 12, 1964, A 8,648/64
8 Claims. (Cl. 226—92)



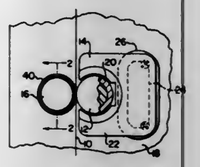
1. Apparatus for threading a web into a plant, for moving said web in a predetermined direction along a predetermined path and for processing said web during such movement, said apparatus comprising two chain tracks extending on opposite sides of said path in the longitudinal direction thereof, two chains movable along said path in the direction of movement of said web, each of said chains being guided by one of said tracks, two bearing brackets, each of said bearing brackets being secured to one of said chains, two superimposed clamping rolls having opposite ends mounted in said bearing brackets, one of said rolls being eccentrically mounted and carrying a radial projection, said chains being stopped after a predetermined movement of said rolls along said path, a stationary run-up cam mounted in the path of said radial projection for engagement thereby so as to move said eccentrically mounted roll against the other roll, and starting means for automatically starting movement of said chains in response to the passage of the leading end of said web between said rolls.

3,346,160

ROLLER FOR STRIP FEEDING MEANS

Roger D. Toft, Kettering, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Dec. 6, 1965, Ser. No. 511,879
12 Claims. (Cl. 226—191)



1. In a strip feeding device, a feed roll comprising, in combination,

a central hub member;

a rigid outer annular member surrounding the hub member;

coupling means for coupling the outer annular member to the hub member for unitary rotational movement in such manner that the outer annular member can be shifted radially with respect to the axis of rotation of the hub member; and

centering means for yieldably maintaining the outer annular member in concentric relation to the hub member during rotation of the feed roll in the absence of an external shifting force, and capable of returning the outer annular member to such concentric relation after a shifting force has been terminated, including a plurality of rigid centering elements associated with the hub member and capable of limited movement to engage adjacent areas of the inner surface of the outer annular member under the influence of centrifugal force, the areas of engagement being determined by the position of the outer annular member with respect to the hub member.

3,346,161

TAPE MAGAZINE HAVING LOOP BLOCKING MEANS

Donald S. Ironside, King of Prussia, Pa., and Wayne A. Watts, Camden, N.J., assignors, by mesne assignments, to DASA Corporation, Andover, Mass., a corporation of Massachusetts

Filed Dec. 29, 1965, Ser. No. 517,382
10 Claims. (Cl. 226—196)



1. A tape storage device comprising in combination:

a storage area having a floor and a ceiling and adapted to store a tape on an edge on the floor in a configuration of loops;

and an access means adjacent the storage area having a floor and a ceiling and adapted to permit the removal of tape, the floor of the access means being elevated with respect to the floor of the storage area to form a ledge;

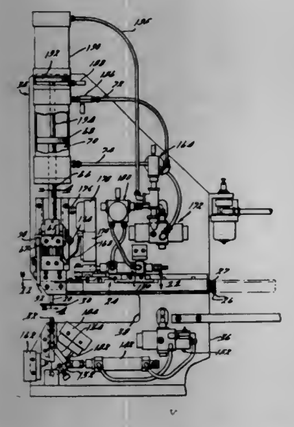
whereby unwanted tape loops are blocked from entering the access means by the ledge.

3,346,162

METHOD OF AND APPARATUS FOR APPLYING TERMINAL PINS TO PRINTED CIRCUIT BOARDS

George T. De Shong, Camp Hill, Pa., assignor to Berg Electronics, Inc., New Cumberland, Pa., a corporation of Pennsylvania

Original application May 25, 1964, Ser. No. 369,789, now Patent No. 3,307,244, dated Mar. 7, 1967. Divided and this application Aug. 29, 1966, Ser. No. 606,472
9 Claims. (Cl. 227—95)



1. Apparatus for securing a current conducting terminal pin to a circuit board which comprises jaws for holding and supporting a terminal pin for movement lengthwise of the pin, feed mechanism for feeding terminal pins, one by one, between said jaws so as to position a pin therein in a first position, a punch associated with said jaws and operable for moving the pin lengthwise so that the lead end of said pin projects from said jaws, a backup anvil disposed opposite to and in line with said jaws and operable to apply pressure in the direction of said jaws against a circuit board disposed transversely between said anvil and jaws so as to force said board onto the lead end of said pin, and means for operating said punch so as to cause it to drive said pin into said board to a predetermined extent so as to accurately position said pin on said board.

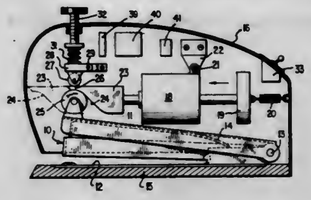
3,346,163

AUTOMATIC ELECTRIC STAPLER

George F. Manganaro, Cedar Grove, N.J., assignor to Federal Tool Engineering Co., Cedar Grove, N.J., a corporation of New Jersey

Filed Oct. 22, 1965, Ser. No. 500,539
3 Claims. (Cl. 227—131)

1. A stapler comprising a base plate including a stapler anvil, a stapler head pivoted to the base plate and anvil and adapted to be depressed for delivering staples to work resting on the anvil, an actuating roller mounted upon the stapler head near the forward end thereof, a reciprocatory cam above the stapler head having an inclined cam face engaging the actuator roller shiftable in one direction to depress the stapler head and allowing elevation of the stapler head when retracted in the opposite direction, automatic power means connected with said reciprocatory cam to operate the same for cycling the stapler, and adjustable yielding means arranged opposite the actuator roller and engaging said cam and permitting limited overload movement of the cam laterally due to excessive thickness of work introduced into the stapler.

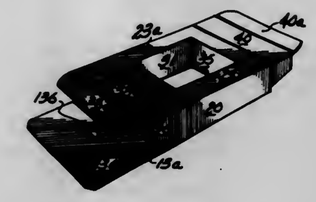


3,346,164

FOLDING CARTON AND BLANK THEREFOR

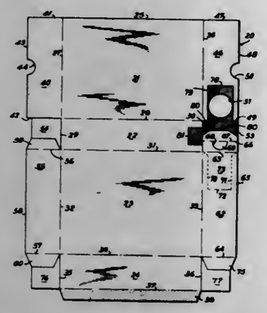
Charles R. Zeitter, Grand Rapids, Mich., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,557
9 Claims. (Cl. 229—16)



1. A blank of sheet material for use in forming a foldable carton having front and back panels provided with aligned enlarged openings, said blank having a plurality of foldlines and slits cooperating with one another to form a back panel having an enlarged opening formed therein, at least one inner side flap, foldably connected to a peripheral segment of said opening, outer side panels foldably connected to opposite peripheral portions of said back panel, a front panel foldably connected to a peripheral portion of one of said outer side panels opposite the peripheral portion to which said back panel is connected, said front panel being provided with an enlarged opening, a second inner side flap foldably connected to a peripheral segment of the front panel opening, said second inner side flap being adapted to be adhesively secured to said one inner side flap when said blank is set up to form said carton, a bridging panel foldably connected to a peripheral portion of the other of said outer side panels opposite the peripheral portion to which said back panel is connected, a third inner side flap foldably connected to a peripheral portion of said bridging panel opposite to that connected to said other outer side panel; said third inner side flap being adapted to span the interval between the front and back panels and comprise a border portion defining said central openings in said front and back panels when said blank is set up to form said carton, the foldline connection between said bridging panel and said other outer side panel being of greater extent than the foldline connection between said bridging panel and said third inner flap, and closure flaps foldably connected to opposite ends of said outer side panels and said front panel.

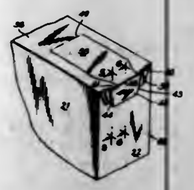
3,346,165
RECLOSABLE DISPENSING CONTAINER WITH BUCKLE LOCK
Stanley R. Koolnis, New York, N.Y., assignor to Lee Drechsler, Palisades, and Fred Zandell, New York, N.Y.
Filed Oct. 12, 1965, Ser. No. 495,272
5 Claims. (Cl. 229—17)



1. A box construction comprising front, back and side walls hingedly connected together; a bottom wall extending between the lower ends of said front, back and side walls, and a top wall extending between the upper ends of said front, back and side walls; said top wall comprising an inner panel extending from one toward the other of said front and back walls; said inner panel having an opening adjacent to one side wall; an outer panel extending from the other wall toward said one of said front and back walls and overlying said inner panel in closing relation with said opening; and adhesive means firmly securing said inner and outer panels together except in a region adjacent to said opening; said outer panel being formed with a severable portion over said opening and said region for movement of said portion away from and exposing said opening; detachable adhesive means detachably securing said severable portion to said region; a pull flap extending from said severable portion beyond said one side wall; an extension on one side of said inner panel depending along said one side wall, additional adhesive means securing spaced portions of said extension to said one side wall to leave an intermediate portion of said extension free of said side wall, said pull flap being bendable downwardly to overlie said extension, and an inwardly extending catch tab on said pull flap removably engageable between said intermediate extension portion and said one side wall.

3,346,166
RECLOSABLE DISPENSING CONTAINER WITH LOCKING FLAP
Stanley R. Koolnis, New York, N.Y., assignor to Lee Derchsler, Palisades, and Fred Zandell, New York, N.Y.
Filed Feb. 27, 1967, Ser. No. 618,956
18 Claims. (Cl. 229—17)

1. A reclosable container comprising a bottom wall, a plurality of side walls upstanding from said bottom wall extending about the periphery thereof, an inner top wall across the upper ends of said side walls, an outer top wall adhesively secured on the exterior of said inner top wall, a pair of spaced retainers projecting from said outer top wall generally coplanar therewith beyond the adjacent side wall, a tab extending from said outer top wall between said retainers and hingedly connected to said top wall for swinging movement through the space between said retainers, said top wall being formed with severance lines extending inwardly from opposite sides of said tab, the top wall portion between said severance lines defining a closure openable upon severance of said



severance lines for swinging out of the plane of said top wall, said tab being movable with said closure, and wings on said tab for movement therewith into and out of retaining engagement beneath said retainers.

3,346,167
INSULATED RECLOSABLE BEER CARTON
Trueman L. Schmidt, Olympia, Wash., assignor to Olympia Brewing Company, Olympia, Wash., a corporation of Washington
Filed May 28, 1965, Ser. No. 459,788
4 Claims. (Cl. 229—20)

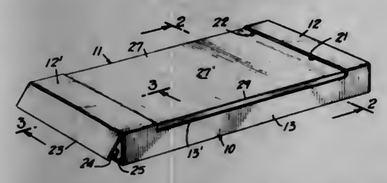


1. A reclosable insulated carton for cooled filled beer cans or the like, said carton comprising
a carrying member in the form of a sleeve of rectangular cross section,
a handle on the exterior of said sleeve by which said sleeve may be carried,
a container member of parallelopipedon form slidably receivable within said sleeve and having opposed side walls,
at least one of said side walls having a portion that can be opened to facilitate removal of a beer can and can be subsequently closed to again enclose said cans,
said portion being covered by said sleeve but being exposed when said container member is moved a predetermined extent relative to said sleeve,
and interegaging latch means on said container member and carrying member for releasably holding the two members against relative sliding movement, said interengaging latch means being separate and distinct from said handle.

3,346,168
CONTAINER WITH INDEPENDENT DISPLAY AND IDENTIFICATION CLOSURE
Henry N. Rouder, New York, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 21, 1966, Ser. No. 528,991
8 Claims. (Cl. 229—23)

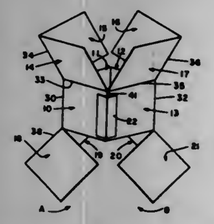
1. A container of the character defined comprising a box part and a closure part mounted in and constituting part of the box part, said box part being defined by bottom, side and end walls and top wall parts including foldable flaps, said box part being closed at one end by

end walls on said bottom wall and one of said top wall parts, including end flaps on side walls of the box part, the bottom wall including a side wall part adapted to be secured to one of the first named side walls in forming assemblage of the bottom and side walls and said top wall parts, the flaps of said top wall parts being arranged on and secured to inner surfaces of said top wall parts in forming on the top of the container a large opening intermediate said top wall parts, the end wall at the other end of the box part including a foldable retainer flap,



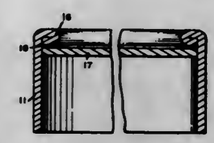
which, in combination with closure flaps at the corresponding end of said side walls, forms a removable closure at the other end of the box part, said closure part comprising a top wall and foldable depending side walls adapted to be arranged in the box part, said top wall of the closure part having, at one end, a foldable retainer flap adapted to be secured between the first named end walls of the box part in retaining the closure part against displacement from said box part, and said top wall of the closure part fitting in and forming a closure for the opening of the box part intermediate said top wall parts.

3,346,169
CONTAINER
Robert A. Palle, Sr., Alice F. Palle, and Robert A. Palle, Jr., all of 4500 Tapscott Road, Pikesville, Md. 21208
Filed Apr. 25, 1966, Ser. No. 544,888
3 Claims. (Cl. 229—37)



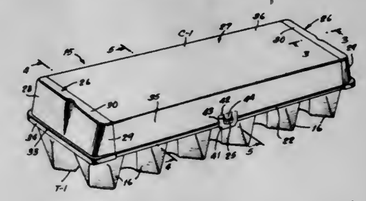
1. A container comprising a set of four rectangular panels each connected to its adjacent panels on two opposite parallel edges and forming a rectangular tube with open ends, two side panels of said tube having a first pair of rectangular panels hinged thereto on edges at right angles to the first mentioned edges, and at one end of the tube and folded to lie in face to face contact with each other and close one open end of the tube, a second pair of rectangular panels hinged to the first pair on edges at right angles to the first mentioned hinge edges of the first pair and folded to overlie two panels of said tube, a third pair of rectangular panels hinged to the other two side panels of said tube on edges of said panels at the opposite end of the tube from said first pair and folded to lie in face to face contact with each other and close the opposite open end of said tube, and a fourth pair of rectangular panels hinged to the third pair on edges at right angles to the first mentioned hinge edges of the third pair and folded to overlie the remaining two side panels of said tube; and means to fasten all panels in said positions.

3,346,170
LID CONSTRUCTION
Paul H. Carter, Baltimore, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland
Filed May 26, 1966, Ser. No. 553,129
1 Claim. (Cl. 229—43)



In a lid construction comprising a tubular member having an annular wall, a rim bead at one end and a disc secured to the bead, the improvement consisting of restricting the bead to a form in which an outer marginal edge is folded completely under an adjacent portion of the bead at right angles to the wall of the tubular member, said disc being restricted to a flat flangeless form, said disc being attached at its marginal edge to the said outer marginal edge of the bead with an adhesive material, thereby reducing the amount of materials of which the lid is made and reducing also the overall height of the lid while retaining all of its essential functional characteristics.

3,346,171
COMBINED PAPERBOARD AND PLASTIC EGG CARTON
Theodore C. Baker, 1179 Ponus Ridge, New Canaan, Conn. 06840
Continuation of application Ser. No. 485,298, Sept. 7, 1965. This application Dec. 1, 1966, Ser. No. 598,516
16 Claims. (Cl. 229—44)

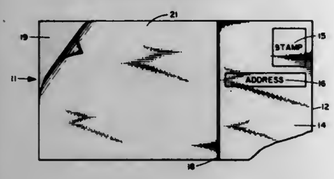


1. A carton comprising a tray unit and a cover unit, the tray unit comprising bottom, front, rear and side walls, the cover unit being hollow and open at the bottom and comprising a pair of spaced end parts which are made of a plastic composition and an intermediate part which is made of paperboard and which is secured at each end to a corresponding end part, said end and intermediate parts forming top, front, rear and side walls of the cover unit, said intermediate part including a panel which is hinged to the rear wall of the cover unit and is secured to the rear portion of the tray unit.

3,346,172
POSTAL CARD HAVING PROTECTABLE ADHESIVELY COATED AREA
Billy J. Tucker, 2715 Hemple St., Chesapeake, Va. 23506
Filed Mar. 22, 1967, Ser. No. 625,158
3 Claims. (Cl. 229—92.8)

1. A pictorially individualizable postal card having a first planar surface coextensive with the length and breadth of said card adapted to receive written messages, said postal card including a first rectangularly shaped end section and an adjoining second rectangularly shaped end

section, the effective thickness of said first end section being greater than the thickness of said second end section, the outer surface of said first end section opposed to said first planar surface being adapted to carry postage and the name and mailing address of the recipient of said

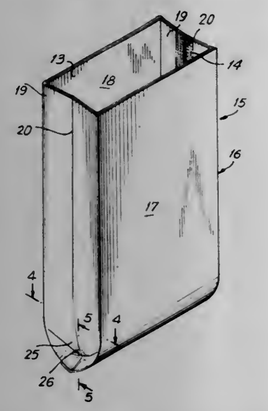


postal card, the outer surface of said second end section opposed to said first planar surface carrying a coating of contact adhesive, said contact adhesive being covered prior to use by a protective sheet of overlying material readily removeably secured thereto.

3,346,173
GUSSETED MULTI-WALL WATERPROOF PAPER BAG

Willard O. Smith, Kingsland, and Kenneth L. Weaver, St. Marys, Ga., and Arnold C. Harmsen, Closter, N.J., assignors to Gilman Paper Company, New York, N.Y., a corporation of New Hampshire

Filed Dec. 15, 1965, Ser. No. 513,938
3 Claims. (Cl. 229—55)

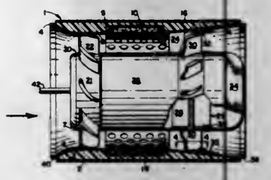


1. A gusseted multi-wall waterproof paper bag comprising a tube having facing front and back walls and side walls extending between said front and back walls, a coating of thermoplastic material on the entire inner surface of said tube, there being an inwardly projecting gusset fold in each side wall spaced intermediate said front and back walls for collapse and extension of said side walls between said front and back walls, an additional thickness of coating of thermoplastic material on the inner surface of each side wall defining a zone extending along its central gusset-fold, one adjacent pair of ends of said front and back walls having collapsed side walls interposed therebetween being folded upon itself extending across said tube to provide a bag bottom, said side walls adjacent to said bag bottom defining expansile gussets having said additional coating to resist leakage and rupture, said folded ends being heat-sealed together by said thermoplastic material.

3,346,174
COMPACT AXIAL FLOW FAN

Ronald J. Lievens, La Crosse, and Albert Raitzer, Coon Valley, Wis., James R. Davis, Bloomfield, Mich., and William A. Klug, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed July 5, 1966, Ser. No. 562,749
10 Claims. (Cl. 230—120)

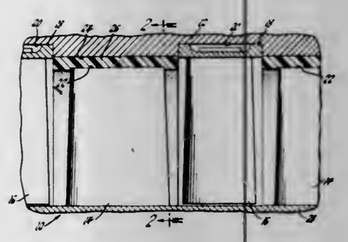


1. Air handling apparatus comprising: a first lightweight, substantially cylindrical casing, a second lightweight casing spaced inwardly from said first casing and concentric therewith so as to form an annular space therebetween; a fan wheel having a plurality of blades positioned within said second casing with its axis of rotation being coextensive with the longitudinal axis of said first and second casings; said second casing being formed to include a bell-shaped air inlet section upstream of said fan wheel, a cylindrical portion enclosing said fan blades, a recessed portion containing sound absorbing material downstream from said fan blades, and a diffuser section.

3,346,175
PLASTIC COATING FOR COMPRESSORS

Frank M. Wiles, Brownsburg, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 1, 1966, Ser. No. 539,383
3 Claims. (Cl. 230—120)

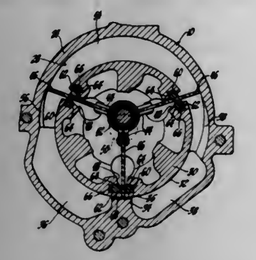


1. An axial flow compressor comprised of an annular housing, a rotor inside said housing and aligned coaxially therewith, and at least one circumferential row of blades attached to said rotor and extending outwardly therefrom, said housing being comprised of an annular metal member and a synthetic thermosetting abradable resin coating on the inner surface of said housing, said coating being of sufficient thickness that said rotor blades abrade a path therein during the rotation of said rotor, said coating being formed of the composition cured from a mixture comprising by weight 22 to 26 parts of an epichlorohydrin-bisphenol-A type epoxy resin having a viscosity at 25° C. in the range of 11,000 to 14,000 cps. and an epoxide equivalent weight of about 187–193; 160 to 194 parts of an epichlorohydrin-bisphenol-A type epoxy resin having a viscosity at 65.6° C. of about 300–500 cps. and an epoxide equivalent weight of about 235–255; 60–72 parts hexahydrophthalic anhydride; 225 to 275 parts of 325 mesh alumina; and 1.25 to 1.55 parts diethylaminoethanol.

3,346,176
ROTARY MECHANISM INCLUDING ABRADABLE LUBRICATING AND SEALING MEANS

L. Eugene Ezop, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,356
8 Claims. (Cl. 230—157)

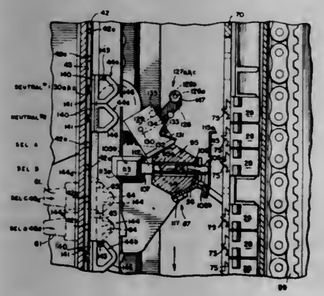


1. In a rotary mechanism, a hollow outer body having an internal peripheral wall; an internal body positioned within said outer body and having an external peripheral wall, portions of which are radially spaced from said internal peripheral wall to form a working chamber, said inner and outer bodies each having a pair of axially spaced end walls respectively connected by said external and internal peripheral walls, said end walls cooperating to enclose each end of said working chamber, said inner and outer bodies being relatively rotatable and including means to vary the pressure in said working chamber upon relative rotation; the axially extending portion of said internal peripheral wall most closely adjacent said internal body having an arcuate surface slidingly and sealingly engageable by said internal body to form a stripping land; and an abradable coating material strongly adhering to said stripping land comprised of 70% to 90% by weight molybdenum disulfide, 0% to 28% polyethylene, and 2% to 30% of the chlorinated polyether formed by polymerizing 3,3-bis-(chloromethyl) oxetane and having a molecular weight in the range of about 250,000 to 400,000.

3,346,177
VOTING MACHINE

Edward J. Crossland, Tulsa, Okla., assignor to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware

Filed Dec. 16, 1966, Ser. No. 602,336
8 Claims. (Cl. 235—54)

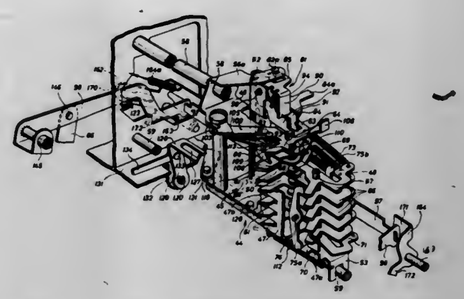


1. In a voting machine, the combination of means including a plurality of columns each having a number of stops thereon defining at least one office group and each office group containing a number of selecting positions; manually operable selectors, at least one for each office group, mounted upon the columns and slidable longitudinally thereof between a neutral position adjacent one of said stops to one of several selecting positions whereby the voter makes his selections; a scanning device, means for moving said scanning device along said columns in one direction for simultaneously scanning all of said columns to determine which of said selectors have been moved to a selecting position and for moving said scanning device along said columns in a reverse direction, a plurality of restoring means on said scanning device positioned for engagement with said selectors to restore them to their neutral positions during the movement in said reverse direction, said stops including cam means for moving each of said restoring means to permit it to pass each of the selectors after the latter have been returned to a neutral position.

3,346,178
APPARATUS FOR CARRYING OUT SHORTENED MULTIPLICATIONS IN CALCULATORS

Paul Thevis, Oberndorf, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany

Filed Apr. 29, 1965, Ser. No. 452,026
Claims priority, application Germany, Oct. 24, 1964, O 10,465
37 Claims. (Cl. 235—60)



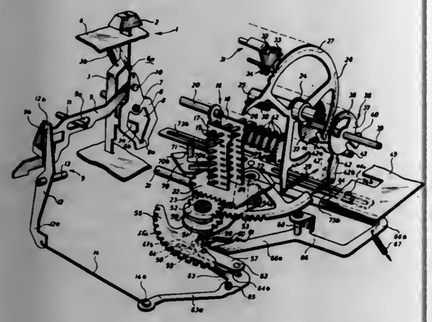
1. In a calculator, in combination apparatus for carrying out shortened multiplications, comprising a set of spaced counter elements movable along parallel paths between a plurality of ordinal positions; a multiplier register including an ordinal series of register elements having abutment portions of a width equal to the distance between the paths of the first and last counter elements of a selected number of counter elements, said selected number being the maximum number of additive or subtractive operations to be carried out during a shortened multiplication, said register elements being movable between digital positions in which said abutment portions are located in said paths of said counter elements so that counter elements in whose paths an abutment portion is located abut the same in said ordinal positions, the number of abutting counter elements representing real digits lower than said selected number or complements of other digits which are equal to or higher than said selected number; a result register; sensing means for sensing the digital positions of said register elements and controlling said result register to perform additive operations or subtractive operations, respectively, when sensing digital positions corresponding to said lower digits and said other digits, respectively; and counter means for counting in each ordinal position of said counter elements the number of abutting counter elements for causing a corresponding number of additive or subtractive operations of said result register.

3,346,179

APPARATUS FOR PREVENTING CALCULATIONS WITH NUMERICAL VALUES HAVING A NUMBER OF ORDERS GREATER THAN THE CAPACITY OF A CALCULATOR

Paul Thevis, Oberndorf, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany

Filed Apr. 29, 1965, Ser. No. 452,029
Claims priority, application Germany, Oct. 24, 1964, O 10,466
14 Claims. (Cl. 235—60)



1. In a calculator, in combination, apparatus for preventing operations with numerical values having a number of orders greater than the capacity of the calculator, comprising, operating means for effecting with two numerical values a calculating operation having a result; first storing means having a plurality of ordinal storing elements operable between a position of rest and storing positions for storing the orders of a first numerical value; first sensing means for sensing the number of first ordinal storing elements in said storing positions; second storing means having a plurality of second ordinal storing elements operable between a position of rest and storing positions for storing the orders of a second numerical value; second sensing means for sensing the number of second ordinal storing elements in said storing positions; third storing means having a selected number of third ordinal storing elements for storing the orders of the result of said calculating operation; and a locking device for locking said operating means, and being controlled by said first and second sensing means to lock said operating means when the number of said storing elements of at least one of said first and second storing means in said storing positions, corresponding to the number of orders of a numerical value stored therein, exceeds a selected number of orders, and when the number of said storing elements of said first and second storing means in said storing positions determines a number of orders of the result of said calculating operation exceeding said selected number of third ordinal storing elements.

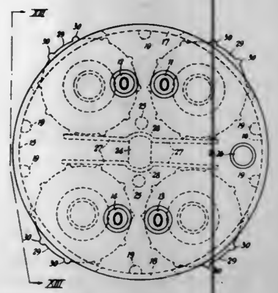
3,346,180

RECORDING DEVICES

Stanley William Furness, 79 Beresford Road, Chingford, E. 4, London, and Lionel Ernest Hard, 28 Cheyne Close, Ware, England

Filed July 22, 1966, Ser. No. 567,145
Claims priority, application Great Britain, Sept. 3, 1965, 37,737/65
4 Claims. (Cl. 235—74)

1. A score recording device, comprising in combination a base member defining a substantially planar base surface, a plurality of pairs of bearing posts formed integrally with said base member and upstanding from said base surface, a corresponding plurality of pairs of adjacent annular score symbol carrying elements mounted for rotation on said bearing posts, the periphery of each score symbol carrying element of each pair projecting beyond the periphery of the base member and having equi-angularly spaced projections thereon, a corresponding plurality of corrosion resistant leaf springs each mounted in bridging relation between the peripheries of a pair of score symbol carrying elements, spring reaction means mounted on said base member and biasing said leaf springs



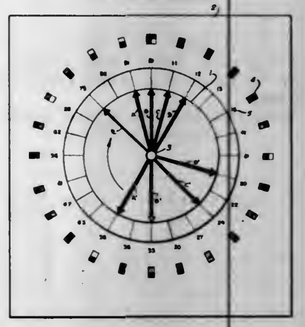
towards said corresponding pairs of score symbol carrying elements for stabilising said elements in positions in which two of said projections on each element engage with said leaf spring, and a cover member overlying said score symbol carrying elements and secured to said base member, said cover member being apertured to define pairs of adjacent windows overlying the paths of movement of the score symbols on a corresponding pair of score symbol carrying elements.

3,346,181

PARALLEL RESISTORS CALCULATOR

Aloysius K. Quinn, 206 Bridlemere Ave., Interlaken, N.J. 07712

Filed Aug. 25, 1966, Ser. No. 575,499
4 Claims. (Cl. 235—84)



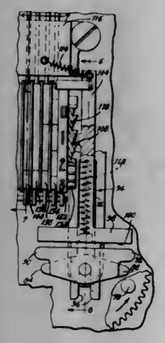
1. A calculating device for determining the values of parallel pairs of resistor equivalents comprising:
(a) a base member bearing indicia of known resistor values, said indicia being logarithmically spaced circumferentially on said base, the circle thus formed comprising one order of magnitude of the logarithmic scale; and
(b) a disk rotatably mounted on said base member having a first set of radially disposed opposed registration markers, said markers constituting an upper arm and a lower arm, a radially disposed reference marker positioned 45 degrees to the left of said upper arm whereby when said reference marker is in registry with one of said circumferentially spaced resistor values said first set of markers register with values of resistors when parallelly arranged are equal to the value in registry with said reference marker.

3,346,182

REVERSIBLE DRIVE

Anthony Michael Dell'Orfano, Watertown, Roger Williams Hood, North Attleboro, Stanley Wayne Rollins, Brockton, and Robert Raymond Siders, Medfield, Mass., assignors to Hersey-Sparling Meter Company, Dedham, Mass., a corporation of Massachusetts

Filed Feb. 16, 1966, Ser. No. 527,852
13 Claims. (Cl. 235—91)



1. A quick index device which comprises
a drive element mounted for mechanical movement in either of two directions responsive continuously to a parameter being measured,
an index mounted for mechanical movement responsive stepwise to an interval of change of said parameter,
an energy storage unit responsive to said drive element to accumulate energy during the movement of said drive element corresponding to accumulated change of said parameter less than said interval and to substantially instantaneously discharge said accumulated energy to said index upon movement of said drive element corresponding to change of said parameter equal to said interval,
an actuating member having a cam surface and being mounted for linear movement to transmit said accumulated energy to said index to advance said index substantially instantaneously upon change of said parameter equal to said interval, and
an actuator rotatably mounted adjacent said cam surface in the path of said drive element, said member being actuated by said drive element through said actuator independently of the direction of movement of said element.

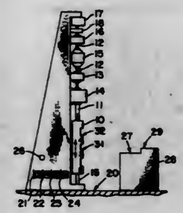
3,346,183

NUMERICAL CONTROL SYSTEM

Albert R. Ludwig, Timberlake, Ohio, assignor to Zagar, Inc., Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 393,999, Sept. 2, 1964. This application Jan. 17, 1966, Ser. No. 532,029
4 Claims. (Cl. 235—91)

1. In a numerical control system for rotatably positioning a shaft, rotary drive means drivingly connected through linkage means to said shaft, count comparison control means for positioning said shaft at a selected numerically identified angular displacement from datum position, said displacement being identified as the number of whole discrete increments of rotative angular displacement of said drive means from datum position in a given rotative direction, said count comparison control means including: input switch means for selecting said numerical identification, feedback switch means operable by movement of said rotary drive means registering the angular displacement of said rotary drive means from datum position, said input switch means and said feedback switch means each including a tens count switch and a units count switch, each of the discontinuity transfer type, said feedback tens count switch being phased in advance of the actual tens count of said increments of said feedback units count switch by a phase distance corresponding to not less than one and not more than nine units to provide a spurious tens count, said feedback units count



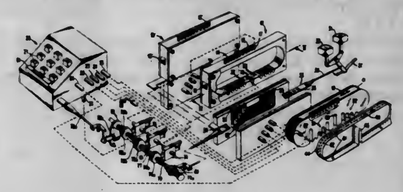
switch registering the actual units count of said increments, means responsive to coincidence between the tens count called for by the setting of said input switch means and the spurious corresponding tens count of the tens count switch of said feedback switch means to initially signal when said shaft is at a position corresponding to said spurious tens count at a predetermined units count that is determined by but different than the actual units count called for by the setting of said input switch means, said predetermined units count being, for every units count setting of said input switch means, phased ahead of the called-for units count, and count completion means operative upon said initial signalling to finally angularly displace said shaft toward said selected numerically identified angular displacement and stop said shaft upon coincidence of the units count in said feedback switch means with the units count called for by the setting of said input switch means.

3,346,184

PNEUMATIC ACCUMULATOR

John O. Schaefer, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 21, 1966, Ser. No. 544,197
11 Claims. (Cl. 235—201)



1. An accumulator comprising:
a strip of flexible tape having position indicia thereon,
means supporting said strip for movement along a path,
a readout station located adjacent said path for cooperative alignment with said position indicia,

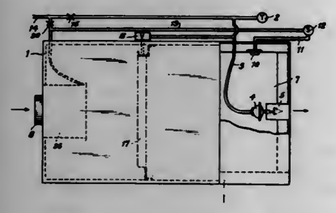
first actuating means positioned on one side of said readout station and comprising first depression means of predetermined extent formed in said path, and first selectively operable means for forcing said strip into said first depression means,

second actuating means positioned beyond said first actuating means along said path and comprising second depression means in said path of an extent at least equal to said first depression means and second selectively operable means for forcing said strip into said second depression means,

first brake means for preventing strip movement between said first and second depression means during operation of said first selectively operable means, and

second brake means for preventing strip movement between said readout station and said first depression means during operation of said second selectively operable means.

3,346,185
MODULATED VOLUME UNIT AND METHOD OF CONTROLLING THE VOLUME OF AIR FLOW FOR AIR CONDITIONING APPARATUS
Elbert Gordon Stocks, Jr., and Thomas L. Day, Brookfield, Conn., assignors to Connor Engineering Corporation, Danbury, Conn., a corporation of New York
Filed Mar. 20, 1967, Ser. No. 624,383
9 Claims. (Cl. 236—49)



1. In an air conditioning apparatus, a housing constituting a plenum having an air inlet and an air outlet, an air-pressure controlled damper at the inlet and at the outlet, a pneumatic thermostat arranged in a line leading from a source of air under pressure, said thermostat being operatively coupled to the damper at the outlet to thereby control the opening or closing of the same, regulating means in the plenum, said regulating means being connected to the damper at the inlet and effective to throttle the said damper to hereby reduce the air volume entering the plenum through the inlet.

3,346,186
EXTENSIBLE ROCKET NOZZLE COMPRISED OF A COATED FLEXIBLE MESH SUBSEQUENTLY DEPLOYED AND HEATED TO BECOME IMPERMEABLE
Donald L. Fulton, Canoga Park, Richard S. Reel, Tarzana, James L. Reeve, and John A. Stahmann, Van Nuys, and Joseph G. Vehige, Woodland Hills, Calif., assignors to North American Aviation, Inc.
Filed Oct. 5, 1964, Ser. No. 401,428
10 Claims. (Cl. 239—11)

1. A method of forming a nozzle extension on a rocket engine or the like comprising;

providing a flexible mesh having a coating thereon in a position adjacent the outer periphery of the normal exhaust nozzle of the rocket engine in a deployed condition, said coating being adapted to melt when heated,

deploying said flexible mesh and coating to a nozzle forming position, and

heating said mesh and coating, whereby said coating will melt and fill the interstices of said mesh to render said mesh substantially impermeable to gas.

3. The method of forming a relatively impermeable structure from an initially permeable foldable sheet material which comprises;

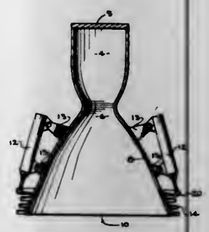
providing a mesh structure having interstices therein and coated with a coating containing a substantially solid material,

storing said mesh structure in a minimum volume in an undeployed condition,

deploying said coated mesh structure so as to encompass a maximum volume,

heating said mesh until said solid material becomes viscous,

whereby said viscous material will flow and fill said interstices to render said mesh substantially impermeable.



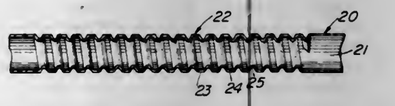
10. A gas generator comprising,

a rigid chamber connected at one end to fluid inlet means,

a flexible nozzle fixed to the downstream end of the rigid chamber, said nozzle being constructed of mesh material coated with a meltable coating,

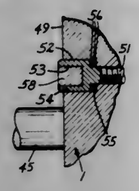
means for storing the nozzle in a retracted position and means for extending the nozzle in a downstream direction to form an extension on the chamber, and means for heating the nozzle in its extended positions sufficient to cause the coating to melt and fill the interstices of the mesh material with a result that that the nozzle is made gas impermeable.

3,346,187
FLEXIBLE DRINKING STRAWS
Martin Mueller, Chicago, Ill., assignor to Flexible Plastic Straw Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 28, 1966, Ser. No. 537,985
3 Claims. (Cl. 239—33)



1. A flexible tubular thermoplastic resinous drinking straw member comprising a relatively stiff or rigid tubular body composed of flexible thermoplastic resinous material having integrally formed therein a flexible area defined by a series of spaced corrugations having radially outer crests and said corrugations being separated by intervening valleys; each of the said valleys being defined by a radially inner wall portion and angularly extending interconnecting web portions extending between and interconnecting the said radially outer crests of the said corrugations and the said radially inner wall portions of the said valleys the thickness of the said corrugations at their radially outer crests being substantially equal to the thickness of the wall of the said tubular body of the said flexible thermoplastic resinous drinking straw member; and the thickness of the radially inner wall portions of the said valleys being substantially less than the thickness of the said corrugations at their radially outer crests.

3,346,188
CALIBRATION STOP FOR FUEL INJECTORS AND THE LIKE
George D. Nusbaum, % Diesel Service Co., 2509 E. Lake St., Minneapolis, Minn. 55406
Filed June 24, 1965, Ser. No. 466,683
5 Claims. (Cl. 239—90)



1. A fuel injector for internal combustion engines including body means having a fuel feeding and metering device therein and a reciprocatory member operatively coupled to said device for regulating the quantity of fuel discharged from the injector by said feeding and metering device, characterized by calibrating means for said reciprocatory member, said calibrating means comprising, a gauging member mounted in said body for movements in opposite directions parallel to the direction of reciprocatory movement of said reciprocatory member and having an outer end portion projecting slightly outwardly of an adjacent surface portion of said body, stop means between said body and a portion of said gauging member positively limiting movement of the gauging member in one direction, said outer end of the gauging member having an adjustment tool-receiving portion, and a removable tool barrier element on said tool-receiving portion.

3,346,189
ELECTROMECHANICAL ATOMIZER APPARATUS
Bernard J. Eisenkraft, 1043 E. 81st St., Brooklyn, N.Y. 11236
Filed Oct. 5, 1964, Ser. No. 401,503
11 Claims. (Cl. 239—102)



1. Atomizing apparatus to disperse a liquid into fine droplets, comprising:

(a) a pot magnet having:

a central pole,

an annular outer pole surrounding said central pole in concentric relation therewith,

an annular gap between said central pole and said annular outer pole,

(b) electrically conductive means interposed in said annular gap and adapted to react with the magnetic field of said pot magnet,

(c) a source of alternating electric current in electrically operative relation with said electrically conductive means,

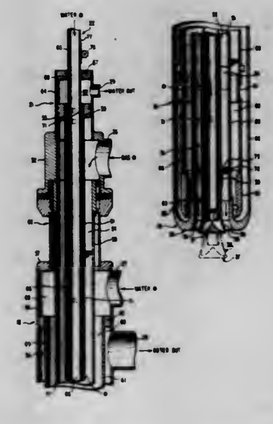
(d) atomizing means connected to said electrically conductive means and adapted to be vibrated thereby,

(e) means to deliver liquid to be atomized to a face of said atomizing means,

(f) pickup means adjacent said atomizing means and adapted to have impressed thereon an electrical value responsive to the vibrative state of said atomizing means,

(g) phase shifting means placing the electrical value impressed on said pickup means in modulating relationship with said source of alternating electric current to maintain said atomizing means vibrating at a resonant flexural mode.

3,346,190
APPARATUS AND METHOD FOR SUPPLYING GAS TO A HIGH-TEMPERATURE PROCESS
William E. Shepherd, Allen Park, Mich., assignor to National Steel Corporation, a corporation of Delaware
Filed July 23, 1964, Ser. No. 384,679
1 Claim. (Cl. 239—132.3)



Apparatus for supplying gas to a region of high temperature comprising

an elongated structure having an outer shell and a gas inlet end and a gas discharge end,

the elongated structure including passageway forming means located within the outer shell in spaced relation therewith and defining a centrally disposed elongated passageway extending between the gas inlet end and the gas discharge end,

annular closure means at the discharge end joined between the outer shell and the passageway forming means for closing the space between the outer shell and the passageway forming means,

the closure means including an internal conical surface forming an extension of the centrally disposed elongated passageway,

the internal conical surface being inclined outwardly relative to the central longitudinal axis of the elongated passageway,

an elongated hollow member centrally disposed within the elongated passageway,

the elongated hollow member having a cross-sectional area less than the cross-sectional area of the elongated passageway to provide an annular space between the passageway forming means and the elongated hollow member,

the elongated hollow member including a terminating closed end portion at the discharge end,

the terminating end portion including an external conical surface inclined outwardly relative to the central longitudinal axis of the elongated passageway,

said internal surface and said external surface being complementary and spaced from each other and together defining an annular discharge nozzle communicating with the annular space,

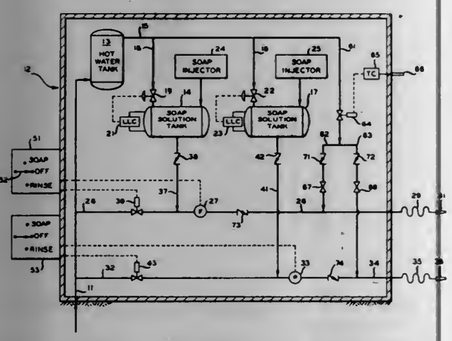
means at the gas inlet end for feeding gas to the annular space,

means for adjusting the relative positions of the internal and external surfaces along the central longitudinal axis,

the last-named means including means at the gas inlet end for moving the elongated member relative to the passageway forming means between a first position in which said external surface faces said internal surface and a second position in which the external surface is located beyond the closure means,

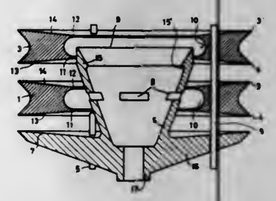
and means for circulating coolant fluid within the elongated hollow member and into contact with the internal surface of the terminating end portion of the elongated member.

3,346,191
ANTIFREEZE SYSTEM FOR FLUID LINES
Homer E. Roach, East of City, Bartlesville, Okla. 74003
Filed Apr. 15, 1965, Ser. No. 448,354
8 Claims. (Cl. 239—135)



1. Apparatus for preventing the freezing of a fluid within a wash system comprising a supply conduit having its inlet end in fluid communication with a source of water, water heating means having a fluid inlet in fluid communication with an outlet of said supply conduit, a plurality of pumps, means for selectively actuating said pumps, a plurality of first conduit means connected in fluid communication between said supply conduit and the fluid inlet of the respective pump, a plurality of second conduit means having the downstream portions thereof subject to being exposed to freezing conditions and having the inlet end connected to the fluid outlet of the respective one of said plurality of pumps, a plurality of spray nozzles each of which is connected on the outlet end of a respective one of said second conduit means, a plurality of soap solution tanks, a plurality of third conduit means having the inlet ends thereof connected in fluid communication with a hot fluid outlet of said heating means and the outlet ends connected to the respective soap solution tank, first valve means operatively positioned in each of said third conduit means to regulate the flow rate of water therethrough responsive to the liquid level in the respective soap solution tank, a plurality of fourth conduit means connected in fluid communication between the respective soap solution tank and the fluid inlet of the respective pump, second valve means operatively positioned in each of said first conduit means, means for selectively actuating said second valve means, check valve means connected in each of said fourth conduit means to permit flow of soap solution from the respective tank through the fourth conduit means and to prevent flow of water from the fourth conduit means into the respective tank, each of said check valve means being spring biased to maintain the check valve shut when either the respective pump is off or the respective second valve means is open and to open the check valve when both the respective pump is actuated and the respective second valve means is closed, a fifth conduit means having its inlet end in fluid communication with at hot water outlet of said heating means, a plurality of branch conduit means connected in fluid communication between said fifth conduit means and a respective one of said plurality of second conduit means at a point upstream of the portion subject to exposure to freezing conditions, check valve means located in each of said branch conduit means to permit the flow of hot water from said fifth conduit means into the respective one of said plurality of second conduit means and to prevent fluid flow in the opposite direction, set valve means located in each of said branch conduit means for the adjustment of the flow rate of water therethrough, on-off solenoid valve means located in said fifth conduit means, means for sensing the temperature to which the downstream portions of said second conduit means are subjected, and means connected to said means for sensing and said solenoid valve means for actuating said solenoid valve means responsive to the thus sensed temperature to open said solenoid valve when the sensed temperature drops below a predetermined value and to close said solenoid valve when the sensed temperature is above a predetermined value.

3,346,192
ATOMIZING APPARATUS
Hermann Hege, Thalhauserstrasse 40, Freising, Germany
Original application Dec. 18, 1963, Ser. No. 331,504, now Patent No. 3,250,473, dated May 10, 1966. Divided and this application May 6, 1966, Ser. No. 560,934
Claims priority, application Germany, Dec. 18, 1962, H 47,726
10 Claims. (Cl. 239—223)



1. A device for atomizing a liquid comprising, in combination:

(a) a rotor body having an axis and being formed with a cavity, said body having an annular face about said axis in said cavity, said face including edge means exposed in a radially outward direction;

(b) means for rotating said body about said axis; and

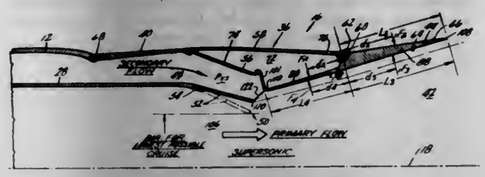
(c) a plurality of atomizer bodies mounted on said rotor body,

(1) each atomizer body having a receiving face, an overflow edge, a film forming face, and an atomizing edge,

(2) said receiving face being radially aligned with said edge means, and

(3) said overflow edge and said film forming face defining a path of liquid flow from said receiving face to said atomizing edge in a radially outward direction, said overflow edge connecting the receiving and film forming faces, and said film forming face extending between said overflow edge and said atomizing edge.

3,346,193
SUPERSONIC EJECTOR TYPE EXHAUST NOZZLE
Thomas F. Tumicki, Yantic, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,779
10 Claims. (Cl. 239—265.17)



1. In an ejector type exhaust nozzle, a variable area primary exhaust nozzle movable between minimum area and maximum area positions, a fixed member positioned externally of said primary nozzle and cooperating therewith to define a secondary flow passage, a plurality of flaps attached to said fixed member for pivot action with respect thereto, said flaps extending rearwardly from the area of attachment to said fixed member and also extending forwardly from the area of attachment to said fixed member to define a forward end adjacent and external of said primary nozzle and an after end rearward of said fixed member, said flaps being movable to a closed or subsonic position wherein said flaps cooperate with said fixed member to define a smooth aerodynamic surface constituting an extension of said secondary flow passage and to an open or supersonic position wherein said flaps cooperate with said primary nozzle to constrict the outlet of said secondary flow passage and further wherein said flaps present divergent expansion surfaces rearward of said primary nozzle and wherein said fixed member and said flap forward extension cooperate to define a pressurizable chamber to move said flaps.

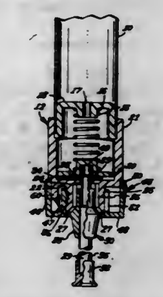
3,346,194
LIQUID DISPENSER
Paul A. Enblom, Eden Prairie, Minn., assignor to Judd Ringer Corporation, St. Louis Park, Minn., a corporation of Minnesota
Filed Oct. 6, 1965, Ser. No. 493,518
8 Claims. (Cl. 239—333)

6. A liquid dispenser for dispensing a liquid over a limited area of a surface, said dispenser comprising:

a discharge member having angularly directed discharge passage means diverging outwardly to produce a conical spray,

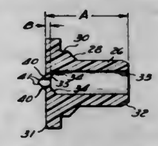
and a cylindrical deflector member threadedly secured to said discharge member and having a cylindrical portion adapted to be disposed in the path of the conical spray issuing from said passage means to confine said spray and hence to concentrate said spray to a smaller area of the surface,

said deflector member and said discharge member having coacting threaded portions one of which is yieldable to enable said deflector member to be forced onto said discharge member to cause said threaded portions to threadedly engage with each other to enable said deflector member to be adjustable as to the extent to which it is disposed in the path of the liquid,



and said deflector member and said discharge member carrying stop members adapted to abut to limit the relative rotative movement of said deflector and discharge members when said latter members are threadedly secured together.

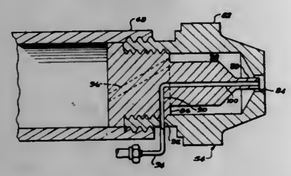
3,346,195
AEROSOL SPRAY DEVICE
Vernon C. Groth, Mentor, Ohio, assignor, by mesne assignments, to Sprayon Products, Inc., Bedford Heights, Ohio, a corporation of Ohio
Filed Oct. 22, 1964, Ser. No. 405,723
5 Claims. (Cl. 239—337)



3. A nozzle for aerosol cans of the type embodying a discharge valve and an actuator for opening the valve, the actuator having a cylindrical passageway through which the material in the can is discharged, the nozzle comprising a member having a stem fitting within the passageway with a light press fit, a rectangular end flange adjacent the outer end of the stem and disposed in a plane normal to the axis of the bore, the end flange overlying the surface of the actuator adjacent the passageway, the member being rotatable within the passageway by grasping the rectangular flange, the stem having a bore that opens into the passageway in the actuator at the inner end of the stem and terminates adjacent the outer end of the stem in an end wall, the member having a circular discharge orifice extending from said bore through the end wall and the end flange and the outer surface of the end flange having a V-shaped rib projecting therefrom and extending at right angles to the major axis of the rectangular end flange, the orifice extending through the rib, the rib having sloping side walls that are disposed substantially at right angles to each other and the width of the base of the rib adjacent the orifice being greater than the diameter of the orifice so that the orifice intersects the sloping side walls of the rib, thereby giving the outer edge of the orifice the general shape of two semi-ellipses that lie in planes at right angles to each other, the end

wall of the bore having two oppositely sloping planar surface portions located on opposite sides of said orifice, the planes of said surface portions having an angle of intersection bisected by the axis of said bore and said angle being of a size that said surface portions deflect material passing through the orifice in directions toward opposite sides of the rib, whereby when material is discharged from the can the discharge is in the form of a fan-shaped spray with the major axis of the spray parallel to the major axis of the rectangular end flange, the major axis of the spray being adjustable with respect to the actuator by rotating the member by means of the rectangular flange.

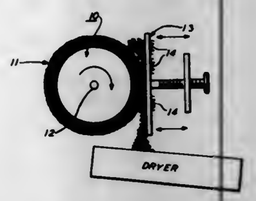
3,346,196
APPARATUS FOR ATOMIZING OIL
Albert Biber, Verona, and Bruce R. Walsh, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,720
5 Claims. (Cl. 239—404)



1. An apparatus for the combustion of fuel oil comprising an air blast tube having an air inlet end and an air discharge end, air blower means for blowing atmospheric air through said air blast tube from the inlet end to the discharge end thereof, air choke means having air swirl vanes disposed at the discharge end of said air blast tube, compressed air delivery means near the periphery of said air blast tube upstream from said air choke means, said compressed air delivery means adapted to discharge compressed air toward said air swirl vanes, an aspirating nozzle axially disposed in said air blast tube in the vicinity of said air choke means, fuel oil supply means for supplying fuel oil under substantially atmospheric pressure to said aspirating nozzle, air compressor means for supplying pressurized air to said aspirating nozzle and to said compressed air delivery means, air swirl means in said aspirating nozzle for swirling the pressurized air supplied to said aspirating nozzle, said aspirating nozzle adapted so that the swirling motion of pressurized air passing therethrough aspirates said fuel oil and discharges a swirling mixture of pressurized air and atomized oil, said air compressor means supplying a sufficient volume of compressed air to said compressed air delivery means so that substantially complete combustion of the aspirated oil is achieved with only substantially a stoichiometric quantity of air being supplied to said apparatus by said air blower means and said air compressor means.

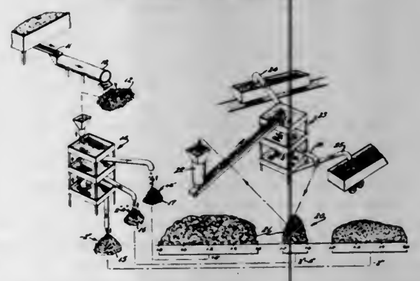
3,346,197
METHOD FOR GRANULATING MATERIAL OF PLASTIC CONSISTENCY AND SYSTEM THEREFOR
Lester R. Sagar, Tallahassee, Fla., assignor to Minerals & Chemicals Philipp Corporation, Woodbridge, N.J., a corporation of Maryland
Filed Jan. 8, 1965, Ser. No. 424,285
15 Claims. (Cl. 241—23)

3. A method for producing nonplastic granules from moist, plastic finely divided mineral matter which comprises extruding said material into uniformly sized pellets, while the pellets are still moist and plastic, charging them between the gap formed by a cylindrical rotating roll provided with radially extending bristles and a solid surface spaced a fixed distance from the rotating element, rotating said roll at high speed relative to said surface, whereby



the pellets are impaled on the bristles as they pass through the gap and are then disengaged centrifugally from the bristles, thereby forming a multiplicity of granules, and drying the granules.

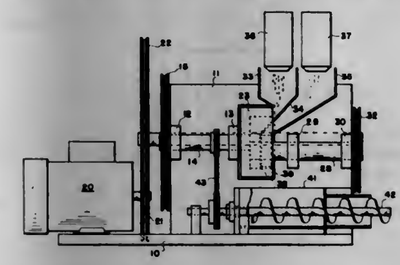
3,346,198
UNIFORM LIGHTWEIGHT AGGREGATE
John W. Roberts, Albert F. Old, and Richard F. Gibson, Richmond, Willard F. Foster, New Canton, and Thomas L. Purvis and John C. Wycoff, Richmond, Va., assignors to Solite Corporation, Richmond, Va.
Filed Mar. 29, 1965, Ser. No. 443,430
4 Claims. (Cl. 241—23)



1. The method of producing crushed lightweight aggregate of predetermined size and specific gravity from raw material in the class comprising clay, shale, or slate, comprising mining the raw material, crushing and heat treating the raw material to provide an expanded product of discrete particles having an outer skin and an inner air-pocketed framework, depositing the expanded product on a discharge pile, permitting the expanded product to cool, continually classifying by size the expanded product received from the kiln, sampling the batches to determine their specific gravity, depositing the batches in a location indicative of the specific gravity of each, selecting the product of a particular specific gravity from the location having such product, crushing the product of the selected specific gravity, selecting the product of the desired size from the classifier, and returning any unselected portion of the crushed product to a location indicative of its specific gravity.

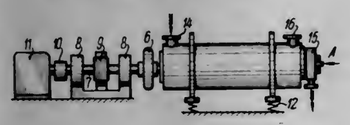
3,346,199
FEED BLENDER AND CRUSHER
Gordon H. Strite, 805 Primrose Drive, Belleville, Ill. 62221
Filed June 12, 1964, Ser. No. 374,792
4 Claims. (Cl. 241—144)

3. Apparatus for preparing animal feeds comprising a base, an upstanding supporting plate rigidly mounted on said base, a first horizontal shaft journaled on said plate and mounting on its inner end a cup-shaped hub which is open at its free end, a countershaft journaled on said plate on the opposite side thereof from said first shaft, a motor mounted on said base for driving said countershaft, a second shaft journaled on said plate in parallel but offset relation to said first shaft, a roll mounted on the inner end of said second shaft and received within said hub to form with the internal surface of said hub a rolling pass to crush grains and the like conveyed into said hub, said roll being comprised of equally adjacent sections of



different diameters, means to drive said second shaft from said countershaft, a crescent shaped divider plate fitting about said roll at the point of diameter change to separate the converging interstice between said hub and larger section from the converging interstice between said cylinder and smaller section, and means to feed small grain to one of said interstices and means to feed larger grain to the other of said interstices.

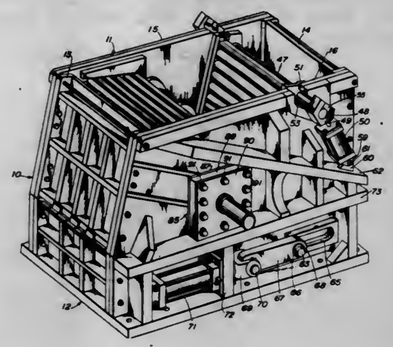
3,346,200
VIBRATING MILL
Abram Davidovich Lesin and Leonid Meerovich Leibman, Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky Institute Stroitelnykh Materialov, Moscow, U.S.S.R.
Filed June 8, 1965, Ser. No. 462,308
6 Claims. (Cl. 241—171)



1. A vibrating mill comprising in combination at least two chambers with charging hatches, said chambers resting on elastic supports; at least one vibrator mounted in bearings on a drive shaft between said chambers; a discharging hatch built in each of the said chambers and composed of internal and external boxes inserted one into the other, the side walls and the bottom of said boxes forming a space for directing the material for discharging; an outlet branch pipe provided in the external box; windows provided at least in one of the side walls of the said internal box; at least one window provided in the bottom of the said internal box and means for adjusting the size of the windows in the said side walls and bottom of the internal box.

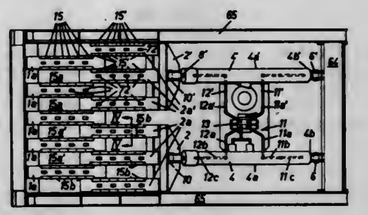
3,346,201
AGGREGATE MANUFACTURING MACHINE
Donald F. Butler, Sr., Box 295, Franklin Grove, Ill. 61031
Filed Feb. 3, 1964, Ser. No. 342,095
8 Claims. (Cl. 241—189)

1. In an aggregate maker,
a housing having opposite end walls and parallel spaced side walls connecting said end walls together, characterized by a rotor structure rotatably journalled within said side walls and extending therebetween,
a breaker bar assembly within said housing for cooperation with the rotor structure and having a pair of outer plates extending from a postiion disposed at the top of said housing downwardly therealong converging to and extending beneath the rotor structure and having breaker bars extending thereacross,
a pair of horizontally aligned slots in the upper end portions of said side walls having upper ends opening through the tops of said side walls, and having lower ends horizontally misaligned with respect to said upper ends, in a direction away from the rotor,
a transverse shaft mounted in said outer plates and extending beyond opposite sides thereof,



means mounting said shaft in said slots to suspend said breaker bar assembly therefrom,
means abutting the opposite side of said breaker bar assembly from the rotor, and adjustable to bring the breaker bar assembly into preselected spacing with the rotor,
said breaker bar assembly being free to move vertically with respect to said abutment means, and
power means engaging opposite ends of said shaft for moving said shaft along said slots into position to be lifted from the top of said housing.

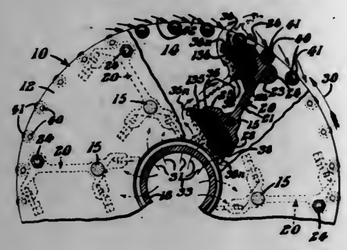
3,346,202
APPARATUS FOR THE SIZE REDUCTION OF REFUSE
Fritz Wüthrich, Zollikerberg, Switzerland, assignor to Von Roll AG, Gerlafingen, Switzerland, a corporation of Switzerland
Filed Nov. 15, 1965, Ser. No. 507,862
10 Claims. (Cl. 241—262)



1. Apparatus for the size reduction of refuse, particularly for refuse to be destroyed by combustion, comprising at least two cooperating frame members, means mounting at least one of said frame members for pivotable movement, drive means for pivoting the pivotably mounted frame member towards the other frame member, shearing means provided for both of said frame members, said shearing means of each frame member incorporating spaced, substantially straight shearing elements

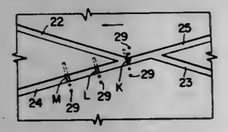
providing a recess between each two neighboring confronting shearing elements, said recess extending throughout the thickness and substantially throughout the length of the corresponding frame member, said shearing means of any one frame member being offset with respect to said shearing means of the other frame member, to enable comb-like interengagement of said shearing means of both frame members throughout substantially the full longitudinal extent of said frame members in one extreme position of said pivotably mounted frame member.

3,346,203
IMPELLER FOR CENTRIFUGAL PULVERIZER
Ostap Danyluke, Newtown Square, Pa., assignor to Bath Iron Works Corporation, Bath, Maine, a corporation of Maine
Filed July 12, 1965, Ser. No. 471,149
7 Claims. (Cl. 241—275)



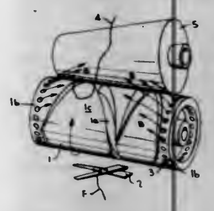
1. In a centrifugal pulverizer for reducing the size of particles of material, an impeller assembly adapted to be rotated at high speed, said impeller assembly including: upper and lower horizontally disposed impeller discs; a plurality of radially disposed impeller vanes vertically secured between said discs, each of said impeller vanes having a generally radial main portion and at least one inwardly cupped arm extending generally circumferentially forward therefrom in the direction of rotation of said impeller assembly forming a pocket for trapping said particles, the extremity of said arm having a lateral notch for passage therethrough of said particles; and a ring of spaced-apart vertical pins between said upper and lower impeller discs and so disposed about the periphery of said impeller that the particles of material moving outwardly through the notch of said cupped arm pass between adjacent pins, said pins being sufficiently closely spaced to prevent particles of material which rebound towards said impeller from passing through said ring, thereby to protect said impeller vanes from impact wear.

3,346,204
TRAVERSING ROLL
Shingo Hagihara, Yasutake Kobayashi, Katsumi Hasegawa, and Shinzo Osumi, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 2, 1964, Ser. No. 408,424
Claims priority, application Japan, Nov. 8, 1963, 38/59,565
4 Claims. (Cl. 242—43.2)



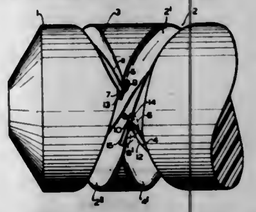
1. A traversing roll having a cylindrical outer shell and a cylindrical inner shell concentric therewith, said outer shell having a slot therein guiding yarn or thread in one traversing direction parallel to the axis of the shells and then in the opposite traversing direction, said slot having two portions, one for each traversing direction which portions intersect at least once intermediate their ends, said roll having at each intersection of the portions of the slot at least one pin which extends slantingly across the slot from one edge toward the other edge and inwardly from the outer shell toward the inner shell and a bracket on the other edge of the intersection of the slot portions for guiding the yarn so that it continues to traverse in the same direction across each intersection.

3,346,205
YARN GUIDE MECHANISM FOR A WINDING LOCATION
Rudolf Jenny, Thalwil, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland, a corporation of Switzerland
Filed June 14, 1965, Ser. No. 463,732
Claims priority, application Switzerland, June 22, 1964, 8,123/64
7 Claims. (Cl. 242—43.2)



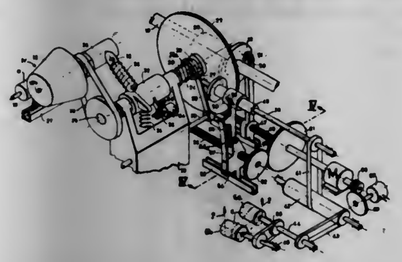
1. The combination with a winding location incorporating a windup bobbin and a grooved drum cooperating with said windup bobbin, of a yarn guide mechanism which comprises means provided at both ends of said grooved drum for generating from both ends of said grooved drum towards its center air currents at least at the surface region of said grooved drum disposed between the run-on location of the yarn onto said grooved drum and said windup bobbin.

3,346,206
YARN GUIDING DRUM
Helmut Fossen, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Sept. 29, 1965, Ser. No. 491,127
Claims priority, application Germany, Oct. 3, 1964, R 29,245
6 Claims. (Cl. 242—43.2)



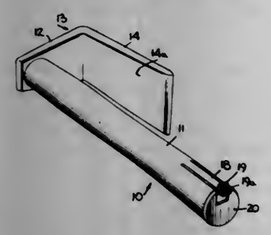
1. In a yarn guiding drum formed with a yarn guiding groove having a relatively flat groove portion intersected by a relatively deep groove portion, the improvement which comprises a plate-shaped insert of material resistant to abrasion by yarn guided in the groove, said insert being embedded in the relatively flat groove portion at the intersection thereof by the relatively deep groove portion so as to form a reinforcement for the drum at said flat groove portion.

3,346,207
PRECISION CROSS-WINDING APPARATUS
Rudolf Jenny, Thalwil, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland, a corporation of Switzerland
Filed July 19, 1965, Ser. No. 472,906
Claims priority, application Switzerland, July 21, 1964, 9,524/64; July 9, 1965, 9,687/65
15 Claims. (Cl. 242—45)



1. Precision cross-winding apparatus, particularly for winding stretchable and elastic yarns, comprising at least one winding station for winding yarn into a yarn package, a yarn delivery device for feeding yarn to said winding station, an infinitely variable drive including adjustment means provided for said winding station to effect winding of the delivered yarn into said yarn package, means for checking the diameter of the yarn package cooperating with said infinitely variable drive for influencing the rotational speed of said yarn package as a function of the increase of its diameter, a further infinitely variable drive including adjustment means operatively connected with said infinitely variable drive for said yarn package and coacting with said yarn delivery device, and means for forcibly conjointly actuating in a predetermined relationship said adjustment means of both of said infinitely variable drives.

3,346,208
TOWEL HOLDER
Louis Simon Hoffman, Morris Township, Morris County, and Lewis James Marlatt, Pompton Plains, N.J., assignors to Dillon-Beck Manufacturing Company, Hillside, N.J., a corporation of New Jersey
Filed Sept. 20, 1965, Ser. No. 488,414
2 Claims. (Cl. 242—55.2)



1. A holder for flexible material wound upon a core having an opening extending along the length thereof comprising a stationary spindle adapted to substantially mate with and rotatably support the core for relative motion therewith when said spindle is inserted into the opening of the core, at least a portion of the transverse cross-section of said spindle having a width which is a major fraction of the width of the opening in the core, said spindle being gradually curved along its length so that its outer surface engages the inner surface of the core at a plurality of positions disposed along its length, a resilient supporting finger formed integrally with and extending along the length of said spindle adjacent one end thereof, and a lug attached to said finger and extending outwardly beyond the outer surface of said spindle, said lug being adapted to engage and retain the core axially with respect to said spindle, whereby the engegement of said gradually curved spindle with the core controls the relative motion therebetween.

3,346,209
WINDER
Dennis C. Cronin, Rockton, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Sept. 17, 1965, Ser. No. 488,091
8 Claims. (Cl. 242—66)



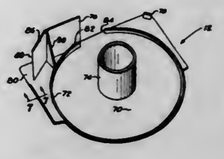
1. The method of controlling the compactness of a roll forming at least one nip with a winding drum, comprising the steps of

(a) applying a fluid pressure force by direct contact between the fluid and the roll to maintain a constant pressure in the nip,

(b) changing the amount of the force applied as the size of the roll changes to maintain the constant pressure in the nip, and

(c) changing the direction of the force applied as the size of the roll increases to and beyond a size which will sustain the pressure in the nip at the constant pressure.

3,346,210
CARTRIDGE FOR LIGHT-SENSITIVE STRIP
William H. Carstensen, Short Hills, and Charles G. Ott, West Caldwell, N.J., and John J. Van Acker, Chesterland, Ohio, assignors to Varityper Corporation, Newark, N.J., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,110
8 Claims. (Cl. 242—71.1)



1. A cartridge of flat box configuration for holding large rolls of light sensitive strip material consisting essentially of:

an integrally molded plastic female section comprising a side wall and narrow peripheral edge walls having a combined length to be substantially coextensive with the margin of the side walls;

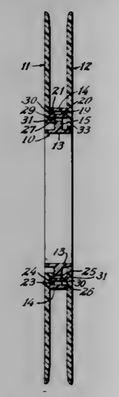
an integrally molded plastic male section including a side wall, a short center post and a cantilevered guide member projecting from the male section side wall a distance substantially equal to the width of the peripheral edge walls; and

said two sections being assemblable by placing the male section within the female section in a direction axially of said post, and sealing solely the edges of the peripheral edge walls to the male section side wall in the plane of said male section side wall, the parts being thus asembled and the edges being thus sealed;

one end of said guide member and the adjacent end of the proximate peripheral edge wall having cooperating interfitting parts so arranged as to mesh in an axial sliding relationship during the assembly of the sections whereby to form a light-excluding relationship therebetween; and

said guide member having one portion positioned so as to be in a position face-to-face with, parallel to, and slightly spaced from a peripheral edge wall when the parts are assembled to thereby provide a narrow elongate exit or entry duct for the strip.

3,346,211
COMPUTER REELS
Francis E. Gruber, St. Paul, Minn., assignor to Northwest Plastics, Inc., Dakota County, Minn., a corporation of Minnesota
Filed July 5, 1966, Ser. No. 562,614
8 Claims. (Cl. 242—71.8)



1. A computer reel including:

a hub in the shape of an I-beam in cross-section with the inner and outer flanges of the I-beam describing inner and outer cylinders connected by a web,

said web having a series of angularly spaced apertures therethrough,

angular fingers connected alternately to opposite end edges of said outer flange and extending through said apertures to terminate substantially flush with opposite end edges of said outer flange, and

a pair of side flanges of ring-shaped form in contacting relation with opposite ends of said outer flange and secured to the ends of said fingers.

3,346,212
FISHING REEL
Michel Rouanet, 27 Rue des Girondins, Saint-Cloud, France
Filed May 7, 1965, Ser. No. 467,799
14 Claims. (Cl. 242—84.21)

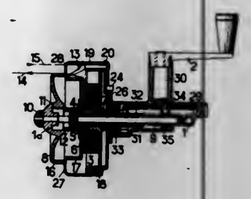
14. A fishing reel comprising:

(a) a flyer having a cylindrical forwardly projecting flange forming an open face,

(b) a spool having an axis of rotation rotatably mounted within said flyer for free delivery of line from one side of said spool,

(c) a front rotary cover having a diameter at least as large as the diameter of said spool and immediately adjacent said open face, cooperating with said projecting flange to close said open face at all times,

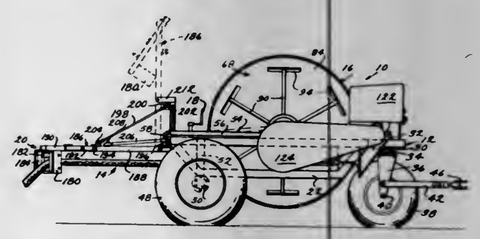
(d) a line pick-up mounted on said flyer and movable from a reeling-in position to a casting position, the distance from the distal extremity of said pick-up in said reeling-in position to said axis of rotation of said spool being greater than the radius of the delivery side of said spool and lesser than the radius of said cover,



(e) brake means adapted to engage and hold said spool against rotation,

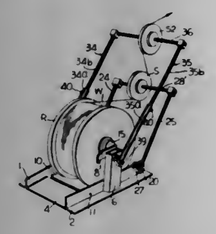
(f) means operatively connecting said cover to said brake means to actuate said brake means upon rotation of said cover.

3,346,213
HOSE REEL ASSEMBLY
Barton R. Nelson, Peoria, Ill., assignor to L. R. Nelson Mfg. Co., Inc., Peoria, Ill., a corporation of Illinois
Filed Dec. 20, 1965, Ser. No. 514,870
9 Claims. (Cl. 242—86.2)



1. Apparatus of the type described comprising a length of hose of an extent and diameter size sufficient for use in agricultural field irrigation, said hose being flexible and collapsible when free of water into a substantially flat condition, a rigid annular hose fitting on each end of said hose, a frame adapted to be moved along an agricultural field, a reel mounted on said frame for movement about an axis of rotation, said reel including a hub structure and a pair of annular side structures extending radially outwardly of said hub structure, said side structures being spaced apart axially a distance of the order of the width of said collapsed hose, a power driven shaft carried by said frame for power driven rotation in one direction, means for selectively drivingly connecting said reel with said power driven shaft to rotate said reel in one direction about its axis and for permitting a braked rotational movement of said reel in the opposite direction about its axis, a rigid annular cooperating fitting fixedly secured to the hub structure of said reel for detachable engagement with one of said hose fittings in secured relation thereto, said annular cooperating fitting having an axis fixed with respect to said reel and extending in perpendicular spaced relation to the axis of rotation of said reel, said hub structure providing an arcuate surface extending generally tangentially to the axis of said cooperating fitting and to the axis of said one hose fitting when secured thereto for engaging a portion of said hose adjacent said one hose fitting in response to an initial rotational movement of said reel in said one direction so that the tensile forces in said hose are transmitted to said one hose fitting generally uniformly, and surface means disposed in an annular plane surrounding the axis of said reel, said arcuate surface and said cooperating fitting for engaging the next adjacent portion of said hose in response to continued rotational movement of said reel in said one direction so as to form an inner loop in the next adjacent portion of said hose upon which the remainder of said hose is subsequently wound into a single roll in response to continued rotational movement of said reel in said one direction, and means carried by said frame in spaced relation to said reel for progressively collapsing said hose into a flat condition to expel any water contained therein as the latter is wound on said reel.

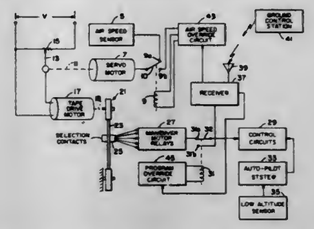
3,346,214
REEL PAY-OFF STAND
John P. Berkeley, Mequon, Wis., assignor to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 15, 1965, Ser. No. 507,739
4 Claims. (Cl. 242—156.1)



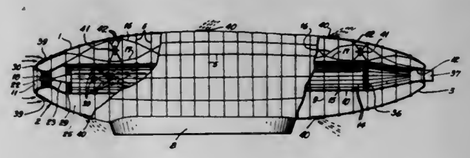
1. A reel pay-off stand for a wire reel comprising a base having a pair of upwardly extending members located generally centrally of said base, said members each having a bearing support at its upper end for rotatably mounting said reel, said base also having a pivoted ramp located between said upright members and pivoted at one of its ends, said reel adapted to be rolled onto said pivoted ramp for being elevated by the latter and into supporting position on said bearing supports, bell crank mechanism pivoted on said base for forceably swinging said pivoted ramp upwardly and consequently the reel located thereon, said mechanism including a pair of outwardly extending arms and a sheave mounted between the outer ends of said arms whereby downward swinging movement of said arms causes said pivoted ramp to be urged upwardly against said reel and thereby elevating said reel into position in said bearing supports, the wire from said reel adapted to pass around said sheave whereby when the tension in the wire is decreased below a predetermined amount, said arms will swing downwardly and urge said pivoted ramp into braking engagement with said reel.

3,346,215
PERFORATED TAPE CONTROL SYSTEM FOR LOW ALTITUDE TARGETS AND TARGET MISSILES
George J. Pailloz, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 12, 1965, Ser. No. 495,360
8 Claims. (Cl. 244—3.15)

1. A control system for targets and target missiles comprising: an air speed sensing means for supplying signals responsive to the speed of said missile; motor control means connected to an output of said air speed sensing means for providing a variable supply voltage output responsive to said air speed sensing means; motor means connected to said variable supply voltage output having variable speeds responsive to said variable supply; program means connected to said motor means for providing flight control of said missile at a rate responsive to said motor means; maneuver control means connected to said program means for providing control signals responsive to said program means; and control means connected to said maneuver control means for providing control of the flight path of said target missile.



3,346,216
AIRSHIP
Paul Desmarteau, 711 Le Laboureur Ave., Boucherville, Quebec, Canada
Filed July 20, 1965, Ser. No. 473,432
Claims priority, application Canada, July 23, 1964, 907,907
13 Claims. (Cl. 244—30)



1. An airship comprising a gas-tight flexible envelope forming, when in inflated condition, an elongated balloon, a flexible tubular duct mounted longitudinally within said envelope, a restricted rigid inlet throat at the front end of said balloon, communicating with one end of said duct, a restricted discharge nozzle at the back of said balloon in communication with the other end of said duct, air moving and hot gas producing means mounted entirely in said throat of said duct and producing high velocity gases moving into and expanding within the remaining part of said duct and discharging at increased speed through said nozzle to propel said airship, said hot gases being in heat exchange relationship with the gases contained in an annular zone surrounding said duct and delimited by said envelope to heat said last-named gases, whereby said heated last-named gases cause said airship to become air-borne.

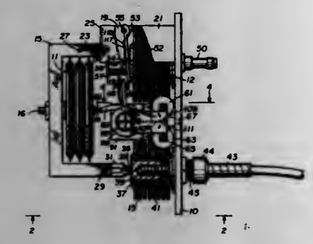
3,346,217
ALTITUDE HOLD WITH AIR SPEED LIMIT
James R. Younkin, Mineral Wells, Tex., assignor, by mesne assignments, to Thurman & Younkin, Inc., a corporation of Texas
Filed Mar. 11, 1966, Ser. No. 533,592
6 Claims. (Cl. 244—78)

1. An altitude hold unit for an aircraft having a pitch axis control which comprises:

(a) a pickoff unit adapted to be connected to actuate said control and having a movable member,

(b) structure including resilient means supporting said member normally to unbalance said pickoff unit to produce a condition for said control to cause said aircraft to descend,

(c) barometer coupled to said structure for varying the position of said member and to actuate said pickoff unit in response to increased barometric pressures for producing a condition for said control to cause said aircraft to climb, and



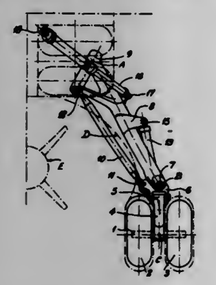
(d) air speed responsive means additionally coupled to said structure for overriding the effect of said barometer on said member in response to air speeds outside of a predetermined range to attenuate the rate at which said aircraft responds to changes in said pickoff unit applied through said barometer.

3,346,218

RETRACTION OF FUSELAGE UNDER-CARRIAGES WITH WHEELS ARRANGED IN DIABOLO MOUNTING

Rene Lucien, Neuilly-sur-Seine, France, assignor to Recherches Etudes Production R.E.P., Paris, France

Filed Jan. 10, 1966, Ser. No. 519,751
Claims priority, application France, Mar. 15, 1965, 9,313
8 Claims. (Cl. 244—102)



1. A lifting system for a fuselage under-carriage with wheels arranged in tandem, said system comprising a common axle supporting said wheels, an under-carriage leg casing, a lifting hinge secured with said leg casing and articulated to said fuselage for pivotal movement about an axis, said lifting hinge being housed inside the fuselage and inclined with respect to the plane of symmetry of the fuselage, a rocking lever carrying the axle of said wheels, a cardan joint connecting said casing and said rocking lever, a rigid rod having one end hingeably attached to said cardan joint and an opposite end connected to the fuselage for pivotal movement about an axis which is nonaligned with the axis of pivotal movement of the lifting hinge, and a bracing jack connected to the fuselage and the casing for pivotably moving the casing about the axis of said hinge.

3,346,219

MAT STRUCTURE

Ival O. Salyer and James L. Schwendeman, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Apr. 15, 1966, Ser. No. 542,777
10 Claims. (Cl. 244—114)



1. A compactable, self-deployable mat structure consisting essentially of

(1) a shaped, flexible composite comprising a heat-curable resin in the mobile state as the matrix and an inorganic reinforcing agent therefor;

(2) a spring member integrally united with the composite for recovery of substantially the original shape of the composite after distortion;

(3) a flexible layer of a sheeted pyrotechnic composition adapted to provide heat to the composite and separated from the composite by a flexible, refractory, heat-conducting material which may be said spring member, and

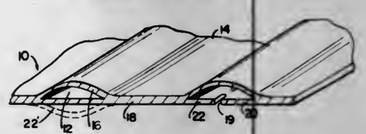
(4) a pliant nontacky sheeting covering any exposed surface of said composite to permit compacting of the mat without adhesion.

3,346,220

DUCTED PANELLING AND ARTICLES

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Filed Jan. 8, 1965, Ser. No. 432,924
5 Claims. (Cl. 244—117)



1. An aircraft flight component such as an aircraft wing or body having a surface which is exposed to airflow when said aircraft is flying and is subject to aerodynamic heating, said component including an assembly having an inner body of monocoque construction, a sheet of metal having a fluid conduit formed therein, one wall of said conduit projecting from a first surface of said sheet, the other surface of said sheet being void of irregularities in the area of said conduit formation, said first surface of said sheet abutting outwardly facing surface portions of said inner body, and a channel formation in the abutted surface of said inner body shaped to accommodate and support said bulging walls of said conduit formation in said sheet of metal.

3,346,221

CRITICALLY DAMPED VIBRATION SYSTEM

Everett Walter Farmer, Reeds Ferry, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Feb. 4, 1965, Ser. No. 430,312
19 Claims. (Cl. 248—24)

6. A vibration isolating system comprising

(A) a part to be isolated from vibrations,

(B) a housing,

(C) at least a portion of said part being disposed within said housing,

(D) an isolating medium

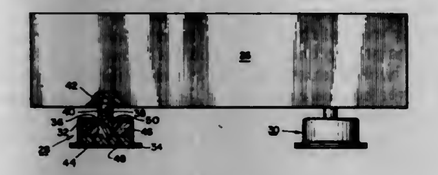
(1) disposed within said housing, and

(2) mechanically coupling said part to said housing,

(E) said isolating medium comprising

(1) a body of open-cell foam material,

(2) a damping material lining the walls of the cells of said body,



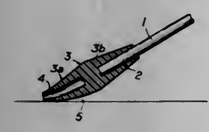
(F) said system having its spring constant and damping such as to provide substantially critical damping of shock and vibration.

3,346,222

RESILIENT SUPPORT

Karl Cech, Moedling, near Wien, Austria, assignor to Akustische u. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria

Filed June 22, 1965, Ser. No. 466,005
Claims priority, application Austria, July 8, 1964, A 5,873/64
8 Claims. (Cl. 248—24)



1. A supporting device comprising an integral member having a first end surface and a second opposite end surface, said member having at least two bendable portions each of the shape of a solid of revolution and each tapered outwardly from the center toward each end surface, said member having a bore extending inwardly from said first and second surfaces, the axes of said bores being aligned and the bores being terminated at their axially inner ends by a common portion of said member which is sufficiently rigid to prevent buckling, said member being slender and of a length at least three times the exterior diameter measured at said first and second end surfaces and having a wall thickness increasing from said first end surface towards said common portion.

3,346,223

COLLAPSIBLE FIFTH WHEEL STAND FOR PIGGY BACK TRAILERS

Keith W. Broling, Homewood, Ill., assignor to Brandon Equipment Company Inc., Chicago, Ill., a corporation of Illinois

Filed Oct. 23, 1965, Ser. No. 503,066
18 Claims. (Cl. 248—119)

1. A collapsible stand for a fifth wheel adapted for use on a railway car comprising:

a support leg transversely pivoted at one end to the car for upward movement into a vertical extended position and for lowering movement into a collapsed position,

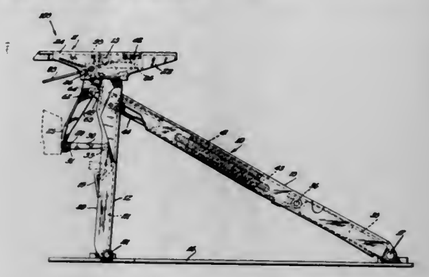
a bolster having a king pin receiving slot therein transversely pivoted to the opposite end of said leg,

a snubber link transversely pivoted at one end for folding movement along said leg upon downward movement of said leg along the deck of the railway car,

said snubber link having releasable engagement with the upper end portion of said leg and being telescopic and having oppositely acting snubber means extending therealong to take the buff and draw forces thereon,

a trip lever transversely pivoted to said bolster in spaced relation with respect to the pivotal mounting of said bolster on said leg,

releasable means retaining said trip lever in position to hold said bolster into a generally horizontal king pin receiving position,



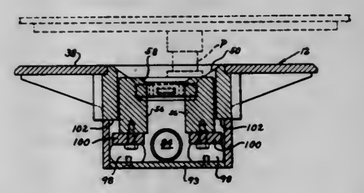
and an operative connection between said trip lever and said link operable upon release of said holding means, for releasing said link from said leg upon inward pushing movement on said trip lever, to fold said leg along the deck of the railway car and accommodate said link to be folded over said leg.

3,346,224

COLLAPSIBLE HITCH

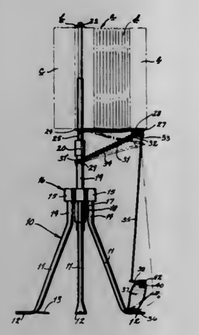
Dallas W. Rollins, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Dec. 9, 1965, Ser. No. 512,643
9 Claims. (Cl. 248—119)



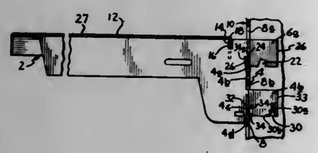
1. A hitch adapted to be mounted on a railway car for engaging and securing the kingpin of a trailer or the like, said hitch comprising a supporting plate structure having an upper support plate with a generally central opening adapted to receive the kingpin, said support plate having a generally frusto-conical surface defining the central opening and forming a guide surface for centering the kingpin over the central opening for latching, a sleeve mounted within said central opening in vertical alignment therewith to receive the kingpin, means biasing the sleeve upwardly with the upper surface thereof generally adjacent the upper surface of the upper support plate whereby upon contact with a kingpin said sleeve is depressed against the bias of said biasing means until said kingpin is properly centered with respect to the central opening and the sleeve, said sleeve then returning to its original position about the kingpin under the bias of said biasing means with the upper surface of the sleeve generally adjacent the upper surface of the support plate whereby forces are transmitted between the kingpin and the sleeve, and means to latch the kingpin when properly seated within the sleeve.

3,346,225
ACCORDION SUPPORT STAND
Herman A. Smith and Bessie L. Smith, both of R.R. 2, Box 19, Edwardsville, Ill. 62025
Filed June 16, 1966, Ser. No. 558,059
4 Claims. (Cl. 248—125)



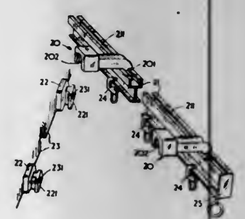
1. A piano accordion support stand having
a base support means,
a vertical standard supported thereby,
means adjacent to the upper portion of said standard and complementary means spaced therebeneath to support such a piano accordion therebetween,
a laterally-extending arm projecting from a horizontal hinge secured to the standard adjacent to said complementary support means,
said arm having a soft-surfaced upper portion,
means to draw the arm downwardly about said hinge,
whereby to remove same from the path in which the accordion is extended when being played
and spring means to urge said arm about said hinge upwardly to substantially horizontal position,
whereby said arm may support the bellows and extensible portion of the accordion when not being played.

3,346,226
ADJUSTABLE ANGLE BRACKET
Irving W. Shell, 442 W. Wellington, Chicago, Ill. 60657
Filed Aug. 9, 1965, Ser. No. 478,281
3 Claims. (Cl. 248—242)



1. In combination, an upright having a front wall having at least one pair of vertically spaced slots therein; and a bracket having only one pair of vertically spaced, downwardly hooked extensions projecting from the rear edge of the bracket and insertable into said pair of slots in the front upright wall and having inner edges spaced from and confronting the rear bracket edge to define therewith first and second vertically spaced notches for receiving the front wall of the upright below said upright slots, the upper hooked bracket extension having a notch opening onto the bottom thereof at a point between the inner and outer edges thereof, the lower hooked extension having a notch opening onto the bottom thereof at a point between the inner and outer edges thereof and said bracket being engageable with said front upright wall below said slots thereof in at least three different angular positions where the upright wall below said slots is engaged by the defining walls of three different pairs of said notches, each pair comprising one of the notches formed in or by the upper hooked extension and a notch formed in or by the lower hooked extension of the bracket, in each one of said angular positions of the bracket said front upright wall being engaged on both of the opposite faces thereof by edge portions of the bracket.

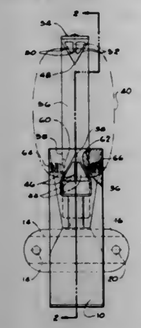
3,346,227
CURTAIN SUSPENSION DEVICES
Robert William Hankin, Streetly, England, assignor to Swish Products Limited, Tamworth, England, a corporation of Great Britain and Northern Ireland
Continuation of application Ser. No. 306,945, Sept. 5, 1963. This application Oct. 4, 1966, Ser. No. 584,245
1 Claim. (Cl. 248—262)



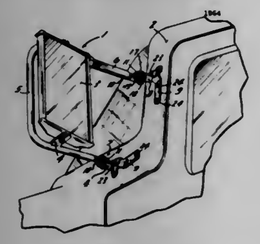
A curtain suspension device adapted to provide for "lift on" and "lift off" mounting and demounting of a complete curtain rail assembly without the use of tools, comprising a unitary elongated rail having parallel guideways, arranged one above the other and opening on one face of the rail, running the length thereof, a plurality of curtain supporting gliders mounted in and suspending from the lower guideway and slideable therealong, a plurality of independent self-contained attachment blocks secured to a wall at fixed horizontally spaced locations, and rail supporting brackets each mounted at one end on one of said attachment blocks and having at the other end a resilient shoe received within the upper guideway and frictionally engaged therewith to prevent free longitudinal motion of said brackets with respect to said rail, whereby said brackets may be positioned independently of the attachment blocks and held fast on said rail at spaced intervals corresponding to the fixed locations of said attachment blocks, said rail suporting brackets and said attachment blocks having complementary interengaging members separable by a vertical lifting off of the bracket from the block, whereby the assembled rail and brackets may be mounted to the attachment blocks by a lifting on and lowering motion.

3,346,228
SOAP CAKE HOLDER
Richard F. Thorman, 3646 N. 37th St., Phoenix, Ariz. 85018
Filed Mar. 1, 1965, Ser. No. 435,951
4 Claims. (Cl. 248—316)

1. In a soap cake holder the combination of: a frame; a pair of substantially vertically aligned opposed pointed soap cake holders disposed in spaced relationship to each other and supported on said frame; and resilient means tending to urge one of said pointed holders directly toward the other pointed holder, said points being vertically aligned to permit drainage from a soap cake held between said vertically aligned points.



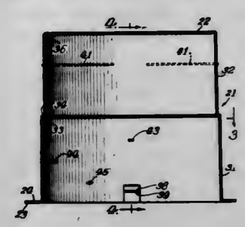
3,346,229
VEHICLE MIRROR ASSEMBLY
William Waller Carson, Jr., Wauwatosa, Wis., assignor to Velvac, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed June 17, 1964, Ser. No. 375,806
9 Claims. (Cl. 248—477)



2. A mirror assembly, comprising a frame, a mirror mounted on the frame, a connecting member adapted to be attached to an object, clutch means interconnecting the frame and the connecting member, said clutch means including a pair of clutch members with one of said clutch members being fixed to the frame and the other of the clutch members being fixed to the connecting member, said clutch members having meshing teeth capable of being deformed as one of said clutch members is rotated with respect to the other of said clutch members, and means for positively securing the clutch members with said teeth in meshing engagement and preventing axial movement between the clutch members.

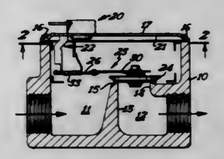
3,346,230
PIPE SLEEVE
Carl O. Tolf, Jr., Park Ridge, Ill., assignor, by mesne assignments, to Construction Accessories Mfg. Corp., Rosemont, Ill.
Filed July 15, 1964, Ser. No. 382,719
4 Claims. (Cl. 249—177)

1. A pipe sleeve comprising a one-piece tubular member of deflectable plastic material having a pair of axially aligned cylindrical sections one of which has a slightly larger diameter than the other, attaching means at the outermost end of said one section, closure means at the outermost end of said other section, said sections having an external shoulder therebetween, means defining a plurality of circumferentially spaced pads at the interior of said one section adjacent said outermost end thereof, said pads having recesses therein, and a plurality of circumferentially spaced projections at the exterior of said other section adjacent said outermost end thereof, said projections being complementary to said recesses, whereby a pair of said sleeves can be fitted together endwise with the pads of one sleeve frictionally engaging the exterior surface of the smaller diameter section of the other



sleeve for frictionally retaining the sleeves in desired adjusted position, the recesses of the pads on said one sleeve and the projections on said other sleeve being engageable when the same are axially aligned for interlocking the sleeves in one adjusted position, and the sleeves being movable to a more compact nested position with the pads of said one sleeve abutting the shoulder of said other sleeve when the pads on said one sleeve are axially aligned with the spaces between the projections on the other sleeve.

3,346,231
AMBIENT COMPENSATED BIMETAL ACTUATED VALVE
Lamar J. Wall, Norwalk, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,803
2 Claims. (Cl. 251—11)



1. A full control valve comprising:
a valve body having an inlet chamber and an outlet chamber separated by a wall therebetween, a port through said wall, and a valve seat associated with said port;
a cover member removably secured to said body and having an inner surface adjacent said inlet chamber;
a mounting bracket depending from the inner surface of said cover member and extending into said inlet chamber;
an actuating bimetal member disposed in said inlet chamber in the path of fuel flow, said actuating member having one end fixed to said mounting bracket and having a free end adapted to move in a first direction in response to an increase in temperature;
an ambient compensating bimetal member having one end fixed to the free end of said actuating member and having a free end extending therefrom, said compensating member being arranged with respect to said actuating member so that upon a change

in ambient temperature the direction of movement of the free end of said compensating member is opposite to the direction of movement of said actuating member and having an effective length such that relative movement of said actuating and compensating members upon a change in ambient temperature substantially offset each other and result in substantially no movement of the free end of said compensating bimetal;

an electrically energizable heater associated with said actuating member and adapted, when energized, to heat said actuating member without substantially affecting the temperature of said compensating member;

said actuating member being formed of a bimetallic material having a relatively low-temperature deflection constant and maximum temperature sensitivity at relatively low temperatures in a range including the temperatures experienced by said actuating member when said heater is energized and a portion of the heat generated thereby is dissipated by fuel flowing over said actuating member, said actuating member being capable of withstanding, for prolonged periods without damage, relatively higher temperatures experienced thereby when said heater is energized but no fuel is flowing over said actuating member to dissipate a portion of the heat;

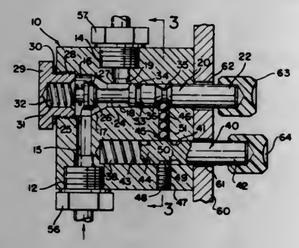
said compensating member being formed of a bimetallic material of a different composition and having a deflection constant substantially greater than said actuating member so that upon a change in ambient temperature the deflection per unit length of said compensating member is substantially greater than the deflection per unit length of said actuating member, so that the effective length thereof is substantially less than would be necessary to provide ambient compensation if the actuating and compensating members were constructed of the same material, and said compensating member having a maximum temperature sensitivity at relatively low temperatures including temperatures in the range of ambient temperatures to which it is normally subjected; and

means operably connecting the free end of said compensating member of the closure member.

3,346,232
PUSH BUTTON FLUID VALVE

Edward J. Cator, Rochester, N.Y., assignor to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 24, 1964, Ser. No. 346,944
15 Claims. (Cl. 251—66)



13. A push button valve comprising:

a housing having an inlet port and an outlet port communicated by a flow passage;

a first bore having at least one open end in said housing intersecting said flow passage defining in common therewith a valve seat having a first side and a second side;

an elongated valve core slidably and sealingly mounted in said first bore for limited axial movement with an end projecting from said bore end;

means closing the end of said first bore opposite the projecting end of said valve core;

a second bore in said housing adjacent the projecting end of said valve core;

an elongated member slidably mounted for limited axial movement in said second bore with an end projecting from said housing;

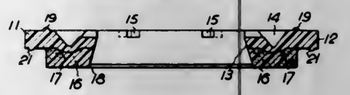
a third bore communicating said first bore with said second bore;

detent means movably mounted within said third bore such that when said valve core projects the maximum amount its limited axial movement permits it to project the locking member projects the minimum amount its limited axial movement permits it to project and when said valve core projects the minimum amount its limited axial movement permits it to project said locking member projects the maximum amount its limited axial movement permits.

3,346,233
SEATING RING FOR VALVES FOR THE CONTROL OF FLUIDS

Frederick William Billson, Cwmbran, England, assignor to Saunders Valve Company Limited, Cwmbran, England, a British company

Filed June 5, 1964, Ser. No. 372,758
Claims priority, application Great Britain, June 10, 1963, 23,073/63
6 Claims. (Cl. 251—172)



1. A seating ring for producing a joint by sliding contact with the obturating member of a fluid controlling valve, comprising a moulding of a nonmetallic material which in unreinforced condition is slightly flexible, said moulding being of substantially L section with one limb directed radially outwardly from the bore of the ring whereby the ring is adapted to be clamped between the surfaces of two parts of the valve casing and thereby be sealed directly to the casing, and with the other limb parallel with the bore of the ring and adapted to make surface contact with the obturating member over a narrow zone characterised in that said radially directed limb right from the bore of the ring to its outermost boundary is unreinforced whereby the flexibility of the material of the ring is unimpaired while the remaining part of the ring is reinforced right up to the surface which contacts the obturating member with a particulate material in a proportion substantially to increase the wearing qualities at that surface.

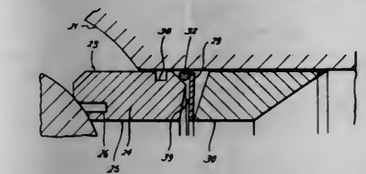
3,346,234
VALVE

Herbert Allen, Houston, Tex., assignor to Cameron Iron Works, Inc., a corporation of Texas

Filed June 29, 1964, Ser. No. 378,842
1 Claim. (Cl. 251—174)

A valve, comprising a valve body having a flowway therethrough, a valve member movable within the valve body for opening and closing the flowway, an annular seat axially slidable within the flowway and having an annular groove about its inner end, a first nonmetallic ring protruding from the groove for engaging at its inner end with one side of the valve member, an outwardly facing, conical shoulder about the outer end of the seat

and opposite a cylindrical surface of the flowway to form a triangularly shaped recess therebetween a second nonmetallic ring in the recess, a metallic ring disposed on the outer side of the second metallic ring and out of engagement with said seat, said metallic ring being circular in cross-section and separated about its circumference, and spring means urging the metallic ring inwardly against the second nonmetallic ring to urge the second nonmetallic

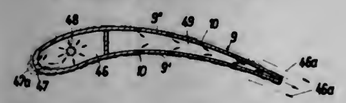


ring into sealing engagement with said shoulder and cylindrical flowway surface and the first nonmetallic ring into sealing engagement with said valve member, each of said valve body, valve member, seat, and spring means being more resistant to destruction than each of the nonmetallic rings, and the inner end of said seat being movable into engagement with the valve member and the metallic ring being movable into engagement with the shoulder on the seat and said cylindrical surface of the flowway, respectively, upon destruction of the nonmetallic rings and continued urging of the spring means, so as to at least substantially close the annular space between the seat and flowway.

3,346,235
BOUNDARY LAYER CONTROL

Hermann Papst, St. Georgen, Black Forest, Germany

Original application Dec. 23, 1963, Ser. No. 332,619. Divided and this application Mar. 16, 1966, Ser. No. 534,889
Claims priority, application Germany, Dec. 24, 1962, P 30,859
6 Claims. (Cl. 253—39.15)



1. In a fluid-displacing machine, a plurality of hollow blades rotatable about a fixed axis and each having two curved opposed walls, a leading side wall and a trailing side wall means, and end wall means provided at one end of the blade, said curved opposed walls each having an outer and an inner side and at least one of said curved walls being provided with a plurality of narrow slots extending transversely of the direction of movement of the fluid streams and tapering in width from said inner to said outer side, said slots having at said outer side a constant cross-section and being bounded by mutually inclined opposite faces extending between said inner and said outer side; and fluid outlet means diverging in the direction of fluid flow and provided in said trailing side wall means communicating with the interior of the respective blade so that fluid entering such blades through said slots may escape by centrifugal force when said blades rotate.

3,346,236
LIVE LINE TENSION TOOL ASSEMBLY

David C. Hubbard and James K. Harper, Centralia, and Robert L. Lynch, Harrisburg, Mo., and Robert B. Boehmer, Wheaton, Ill., assignors to A. B. Chance Company, Centralia, Mo., a corporation of Missouri

Filed Sept. 13, 1965, Ser. No. 486,675
11 Claims. (Cl. 254—67)

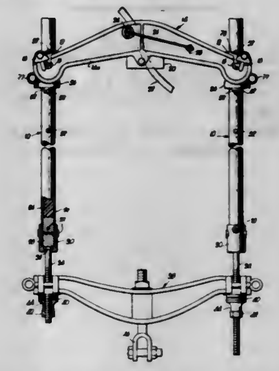
1. In a live line tool assembly:

an insulated pole;

a slide mounted on said pole for relative movement of the slide and the pole and provided with means for coupling the slide with a tool;

a series of aligned studs extending laterally from said pole and spaced longitudinally thereof,

said studs defining a plurality of locations for attachment of the slide to the pole; and



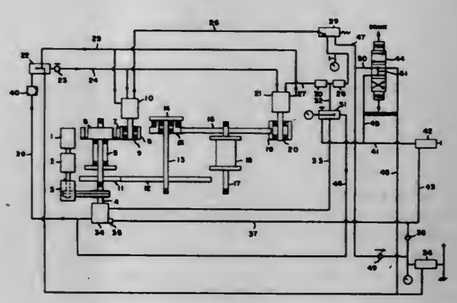
shiftable lock means carried by said slide for holding the latter against movement relative to the pole when the slide is at any of said locations,

said lock means being disposed for engagement with the stud associated with a selected location upon relative movement of the slide and the pole to dispose the slide at said selected location, whereby operation of the lock means maintains the slide at the selected location and, upon release thereof, permits selective positioning of the slide on the pole.

3,346,237
POWER BRAKING AND REGENERATIVE SYSTEM

Louis A. Erickson, Bernhard R. Klinke, and Robert I. Karr, Seattle, Wash., assignors to Smith-Berger Manufacturing Corporation, Seattle, Wash., a corporation of Washington

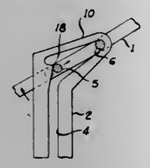
Filed Mar. 25, 1966, Ser. No. 537,413
10 Claims. (Cl. 254—185)



1. A power regenerative braking system for converting the energy produced by braking a first moving element into power for supplementing the driving force for driving a

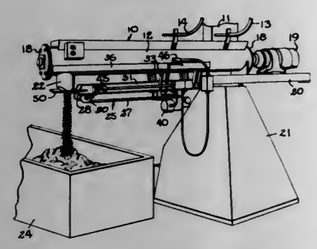
second moving element comprising in combination; fluid pump means connected to be driven by said first element, fluid motor means drivingly connected to supplement the driving force for said second member, conduit means for delivering pressure fluid from said pump means to said motor means, and means in said system for selectively controlling the output of said motor.

3,346,238
COMBINED WALL AND AWNING STRUCTURE
John C. Dashio, Pittsburgh, Pa., assignor of thirty-three and one-third percent to William B. Jaspert, Pittsburgh, Pa.
Filed Dec. 1, 1965, Ser. No. 526,921
4 Claims. (Cl. 256—24)



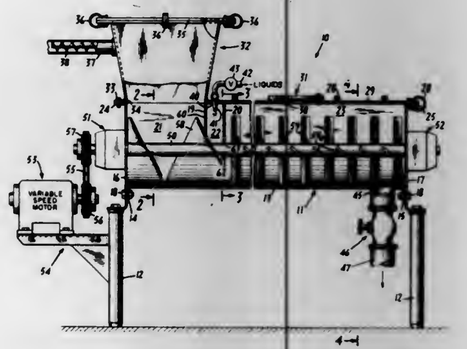
1. A structure for slidably mounting panel type wall and awning units, comprising a pair of rollers mounted at opposite sides of said panels and movable relative to each other, spring means for biasing said rollers away from each other, and spaced uprights having guideways receiving said rollers, at least one of said guideways being formed with a cam track having spaced notches at least one of which is laterally spaced from the plane of said guideway, said notches being spaced a distance less than the spacing of the associated pair of rollers when in their fully extended position whereby said rollers are biased by said spring means into said notches for releasably retaining said panel in its awning position.

3,346,239
COMBINED MATERIAL MIXER AND DISTRIBUTOR
Lowell A. Larson, P.O. Box 59, Clintonville, Wis. 54929
Filed Jan. 4, 1966, Ser. No. 518,686
6 Claims. (Cl. 259—9)



1. A combined material mixer and distributor for mixing materials and discharging the mixture at various discharge points having, in combination, an elongated trough for receiving materials to be mixed near its upstream end and having an outlet near its downstream end, a power actuated screw within said trough operable to mix and advance the materials along the trough to said outlet, a pedestal mounting said trough cantilever fashion for swinging movement about an upright axis to position said outlet along an arcuate path spaced radially from said axis, an elongated, upwardly opening auxiliary conveyor disposed below and extending along said trough, and means on said trough supporting and guiding said conveyor for endwise movement outwardly and inwardly to present different areas along its length for receiving the material discharged from said outlet and carrying such material outwardly for discharge off from the outer end of the conveyor whereby to adapt said outer discharge end for swinging in a multiplicity of arcs concentric with said path and of length corresponding to the range of swinging of said trough about said axis.

3,346,240
MIXING APPARATUS
William A. Lavelle, Flourtown, and Thomas W. Lavelle, Philadelphia, Pa., assignors to Ready T' Pour, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,766
4 Claims. (Cl. 259—26)

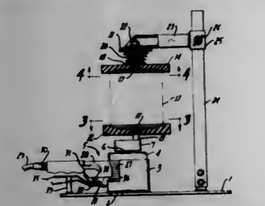


1. Mixing apparatus comprising means forming a first chamber, a second chamber and a mixing chamber, the second chamber being between and communicating with the first chamber and the mixing chamber, first baffle means between the first and second chambers, second baffle means between the second chamber and the mixing chamber, at least one inlet port in the first chamber, at least one inlet port in the second chamber, a discharge port in the mixing chamber, a shaft rotatable relative to and extending through the first and second chambers and the mixing chamber, conveyor means in the first and second chambers coupled to the shaft, mixing means in the mixing chamber coupled to the shaft, means for introducing only dry materials through each inlet port to the first chamber, and means for introducing liquids through each inlet port to the second chamber, the conveyor means including helical feed screw means mounted on the shaft, the mixing means including a plurality of radially extending paddles mounted on the shaft, the shaft being substantially horizontal, and the first baffle means forming a barrier to prevent any flow of dry materials and liquids between the first and second chambers above the space occupied by the shaft and the helical feed screw means, the lower edge of the first baffle means including a curvilinear portion which makes a close-clearance running fit with the helical feed screw means.

3,346,241
MIXING APPARATUS
Harry A. Schubert, Waterford, Wis., assignor to Schubert Auto-Body Tools, Inc., Union Grove, Wis., a corporation of Wisconsin
Filed Aug. 15, 1966, Ser. No. 572,400
9 Claims. (Cl. 259—72)

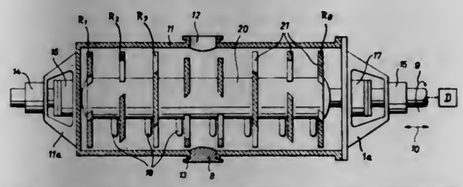
1. In an apparatus for mixing a material, a base, a mounting member connected to the base, a portable fluid drive unit removably supported in said mounting member and including a fluid-operated motor and a motor drive

shaft, said drive unit also having a passage for the flow of fluid and having a trigger-actuated valve to control the flow of fluid through said passage, a first shoe disposed to support a container of the material to be mixed, means for eccentrically connecting the first shoe to the



motor drive shaft, a second shoe disposed in alignment with the first shoe and disposed to engage the upper end of said container, support means connected to the base, and resilient means for resiliently connecting the support means to said second shoe.

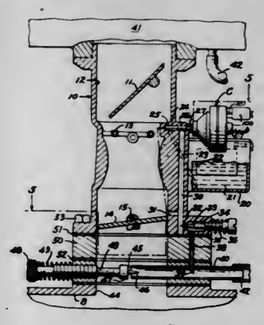
3,346,242
MIXING MACHINE
Heinz List, St. Jakobstrasse 43, Pratteln, Switzerland
Filed Aug. 9, 1966, Ser. No. 571,207
Claims priority, application Switzerland, Aug. 14, 1965, 11,570/65
10 Claims. (Cl. 259—111)



1. A mixing machine for mixing material comprising:
an external housing;
at least one carrier means within said housing provided with a plurality of mixing elements, said mixing elements comprising segmented disc-shaped parts of a plurality of interrupted discs which are bodies of rotation, the radial axes of the segmented parts of each individual interrupted disc lying substantially in the same plane, said mixing elements including end faces;
said interrupted discs being arranged in spaced relationship upon said carrier means;
said mixing elements of one interrupted disc being arranged in circumferential offset to said mixing elements of the neighboring interrupted disc, the end faces of said mixing elements being oriented substantially along at least one helical line;
kneading teeth means projecting internally of said housing; and
drive means for imparting a relative rotational movement between said carrier means and said housing as well as an axially oscillating movement between said kneading teeth means and said mixing elements.

3,346,243
FUEL FEEDING DEVICE
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Filed Jan. 25, 1965, Ser. No. 427,649
4 Claims. (Cl. 261—41)

1. A carburetor for an internal combustion engine having an intake manifold, a throttle means and engine-speed sensing means, comprising means providing a main passage for fuel and air through said carburetor, a throttle valve in said main passage operated by said throttle means, means providing a by-pass for rich air and fuel to idle around said throttle valve and entering said main passage on the intake manifold side of said throttle valve, a rich-air-and-fuel control valve in said bypass passage for stopping the flow of rich fuel and air therethrough, a motor for actuating said valve, a first combination suction-flow-control and bleed-control valve, a second combination suction-flow-control and bleed-control valve, said combination valves acting together to control said motor, by being connected in series to control flow from said intake manifold to said motor, said first combination valve being actuated by said throttle means to open its suction-flow-control valve and close its bleed valve, said second combination valve being controlled by said engine-speed sensing means to open its suction flow control valve and close its bleed valve when said engine speed is above a predetermined speed, whereby said rich-air-and-fuel control valve will substantially stop the flow of rich air and fuel through said bypass passage when said engine is operating at high speeds with the throttle closed, suction from said intake manifold being controlled by said combination valves to said motor to accomplish this operation.

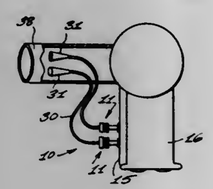


2. A carburetor for an internal combustion engine, said carburetor having a main fuel and air passage therethrough, a throttle valve in said passage, a rich fuel and air passage in said carburetor conducting rich fuel and air around said throttle valve, a conduit to supply air to idle said engine, means in said carburetor for mixing said air to idle with said rich fuel and air and delivering said mixed fuel and air in a desirable ratio for idling into said main passage on the engine side of said throttle valve, said mixed fuel and air to idle being delivered to said main passage through a tube extending radially thereunto and having a third control valve, said third valve controlling the rate of flow of said air and fuel to idle and therefore the engine speed at idle, said third control valve extending into said main passage from the diametrically opposite side of said main passage from said tube and extending partly into said tube, whereby said mixed air and fuel to idle enters from one side of said main passage and said control valve is operated from the opposite side of said main passage to provide an exterior adjustment from the outside of said carburetor to adjust the engine idle speed while said throttle valve is essentially closed.

3,346,244
JET AIR IDLE SCREW
Cornelius G. Bess, Bangor, Maine
(1108 2nd Ave., Honolulu, Hawaii 96816)
Filed Sept. 28, 1965, Ser. No. 490,861
4 Claims. (Cl. 261—41)

1. In a carburetor system, the combination of a carburetor, a pair of jet air idle screws, said jet air idle screws being secured to said carburetor and ex-

tending into said carburetor idle system, a hose secured to each end on the outer end of each of said jet air idle screws, the opposite ends of each of said hoses being secured to a funnel cup for receiving air therewithin to be delivered through said hose into said jet air idle screws and into said carburetor, each of said jet air idle screws comprising a sleeve element and a needle element, said needle element being adjustably secured within said sleeve element for adjusting the quantity of air to be delivered through said jet air idle screw, said sleeve comprising an elongated tubular member having a central opening extending therethrough, a central portion of said opening being screw threaded, said sleeve having an external thread at one end for securement to said carburetor,



an enlarged knurled head at the opposite end and said opening through said sleeve being flaired at the end adjacent said enlarged head, said needle comprising an elongated member having an enlarged head at one end, an intermediate portion adjacent said head being externally threaded for engagement with said threaded opening of said sleeve, a pair of parallel, spaced apart openings extending longitudinally through said needle head, through a major portion of said needle and communicating with a pair of transverse grooves near the opposite end of said needle, each of said grooves communicating with one of said openings in said needle and said central opening in said sleeve, and the opposite end of said needle having a tapered point for adjustable alignment with a constricted portion of said central opening of said sleeve.

3,346,245
CARBURETORS FOR INTERNAL COMBUSTION ENGINES

André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets et d'Etudes S.I.B.E., Neuilly-sur-Seine, France, a society of France

Filed Oct. 22, 1965, Ser. No. 501,759
Claims priority, application France, Nov. 16, 1964, 995,092
4 Claims. (Cl. 261—61)

1. For use in connection with an internal combustion engine, a carburetor which comprises, in combination,

an induction pipe,

a main throttle valve to be controlled by the driver, located in said induction pipe,

a venturi located in said main pipe upstream of said main throttle valve,

a fuel constant level chamber mounted in fixed position with respect to said induction pipe,

means for feeding a jet of fuel from said constant level chamber into said venturi,

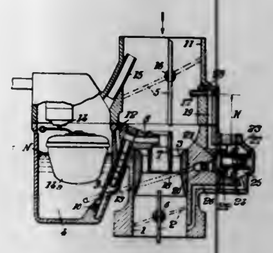
a choke valve located in said main pipe upstream of said venturi adapted to be closed more and more as the engine is colder, and

a device for enriching in fuel the air and fuel mixture supplied by said carburetor, said device including,

a fuel injection orifice opening into said induction pipe upstream of the output therein of said means for feeding a jet of fuel and downstream of said choke valve in the closed position thereof,

a fuel circuit extending from said fuel constant level chamber to said fuel injection orifice,

fuel stopping means in said fuel circuit responsive to the suction existing in said induction pipe downstream of said main throttle valve, said stopping means including means to cut off the fuel flow through said fuel circuit when said suction is greater, in absolute value, than a given limit, and

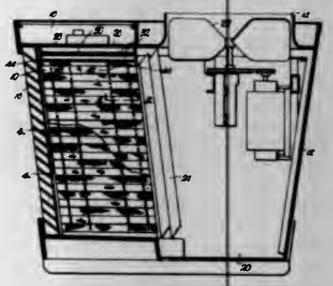


conduit means extending between said fuel circuit and the portion of said induction pipe immediately downstream of said choke valve.

3,346,246
COOLING TOWER FILL ASSEMBLY OF FORAMINOUS SHEET MATERIAL

Charles E. Loetel, Overland Park, and Howard A. Shryock, Mission, Kans., assignors to The Marley Company, Kansas City, Mo., a corporation of Delaware

Filed Jan. 25, 1965, Ser. No. 427,751
10 Claims. (Cl. 261—103)



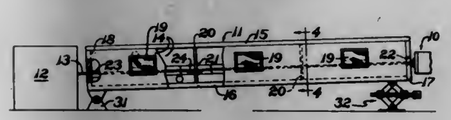
1. In a crossflow cooling tower having a casing provided with an air inlet and an air outlet spaced therefrom for flow of air along a generally horizontal path therebetween, a water collection basin underlying the casing and hot water distribution structure above the basin whereby water from the structure gravitates through the airstream in intersecting relationship thereto and is collected in the basin, the combination with said casing, distribution structure and basin of:

a water diffusion unit located within the casing in said path of air and between the basin and said distribution structure for receiving hot water from the latter for gravitation therethrough, said unit including a plurality of upright, foraminous panels having opposed major surface areas located in substantially parallel relationship to the air flowing through the unit and serving to increase the surface area of the water exposed to said airstream as the water gravitates therethrough, said panels each having a plurality of upright rows of elongated, horizontal, transversely upright, foraminous segments in substantially coplanar relationship and a plurality of vertically spaced, horizontal, foraminous sections disposed in bridging relationship to the segments of adjacent upright rows thereof to maintain the latter in horizontally spaced relationship, the transverse width of each section being less than one-half of the corresponding transverse vertical height of each of the segments between vertically spaced sections.

3,346,247
HEATING APPARATUS FOR RUBBER OR RUBBER-LIKE STRIP MATERIAL

Leon Talalay, Woodbridge, Herbert H. Borsvold, Orange, and Joseph P. Queenan, Bridgeport, Conn., assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed July 27, 1965, Ser. No. 475,219
5 Claims. (Cl. 263—3)

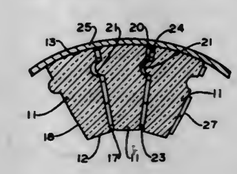


1. Apparatus useful for the manufacture of rubber or rubber-like strip material which comprises a heating chamber through which the strip material advances and in which the strip material is heated, said heating chamber being separated into an upper section and a lower section by a plenum plate extending transversely between the side walls of the heating chamber and extending longitudinally from the front wall of the heating chamber to the back wall of the heating chamber, said front wall of said heating chamber being provided with an opening positioned adjacent one end of said plenum plate for allowing the strip material to be fed into the zone immediately above the upper surface of said plenum plate, said back wall of said heating chamber being provided with an opening positioned adjacent the other end of said plenum plate through which the strip material can be discharged from the heating chamber, the central longitudinally-extending zone of the said plenum plate being concaved downwardly and having closely-spaced perforations therein spaced in a uniform pattern extending throughout its length and through which air under pressure can escape from said lower section in said heating chamber into the said upper section in said heating chamber, means for continuously introducing air into the said lower section of the heating chamber under a pressure sufficiently greater than the pressure of the air in the said upper section of the heating chamber that the velocity of the air passing continuously through the said perforations in the said plenum plate from the said lower section to the said upper section of the heating chamber is sufficient to suspend the strip material above the said perforations in the said plenum plate and out of contact with the said plenum plate, means for heating the air introduced into the said lower section of the heating chamber, said heating chamber being canted with respect to the horizontal so that the heating chamber and plenum plate slope downwardly from the forward end of the heating chamber into which the strip material is fed toward the rear end of the heating chamber from which the strip material is discharged whereby the strip material will flow naturally when suspended on the cushion of air emitted through the said perforations in the plenum plate toward the discharge end of the heating chamber.

3,346,248
REFRACTORY STRUCTURE FOR A ROTARY KILN

Jacques R. Martinet, San Jose, and James C. Hicks, Los Altos, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed May 19, 1965, Ser. No. 457,111
14 Claims. (Cl. 263—33)

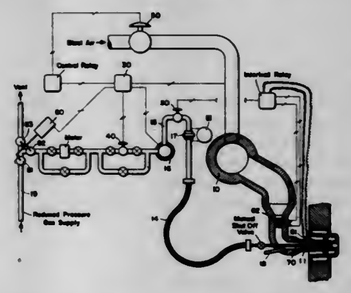


1. A rotary kiln comprising a cylindrical metal shell and a refractory lining within said shell, said lining including: refractory blocks having an inner end, an outer end, and two opposed pairs of side faces, the first opposed pair being substantially parallel and the second opposed pair converging toward said inner end, one side face of said second pair having a recess and the other side face of said second pair having a protuberance, said protuberance being of complementary form and location to said recess, whereby the protuberance of one block is disposed within the recess of an adjacent block; thermal expansion allowance means located between the converging side faces of adjacent blocks adjacent the inner ends thereof and terminating short of said recesses and protuberances; and spacers, adapted to withstand a temperature of about 1000° F. without decomposition, disposed between said converging faces of adjacent refractory blocks adjacent their outer ends and terminating short of said recesses and protuberances.

3,346,249
GASEOUS FUEL CONTROL SYSTEM AND APPARATUS FOR FURNACES

Erwin H. Manny, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Original application Dec. 1, 1960, Ser. No. 73,000, now Patent No. 3,210,181, dated Oct. 5, 1965. Divided and this application Dec. 17, 1964, Ser. No. 418,993
3 Claims. (Cl. 266—29)



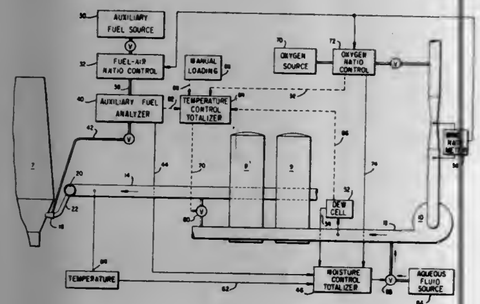
1. An apparatus for the control of the gaseous fuel-blast air flow in a furnace provided with a bustle pipe and a tuyere located on the side of the furnace so as to permit heated blast gases to flow through the bustle pipe and into the tuyere for injection into the furnace, which apparatus comprises in combination: a fuel source; a gas ring manifold fed by the fuel source; a fuel injection pipe communicating with the ring manifold whereby gaseous fuel is allowed to flow from the ring manifold into said injection

pipe; means to measure the blast air temperature; a blast air flow recorder-controller; a fuel flow recorder-controller; a differential pressure recorder-controller, which controller monitors the pressure differential between the air blast of the bustle pipe and the fuel in the ring manifold; a control relay which is interlocked with the blast air, fuel flow and differential pressure recorder-controllers and the temperature measuring means; means to monitor the recordings of the recorder-controllers and temperature measuring means to the control relay; means whereby said control relay actuates the fuel controller and stops fuel flow when one of the following functions occurs: (a) upon reduction in the blast air temperature to any predetermined value; (b) upon reduction of the blast air flow to any predetermined value; and (c) upon reduction of the gas pressure in the ring manifold to any predetermined positive pressure differential from that of the blast air in the bustle pipe.

3,346,250
BLAST FURNACE AUTOMATIC CONTROL APPARATUS

Julius H. Strassburger, Steubenville, Ohio, assignor to National Steel Corporation, a corporation of Delaware

Filed Oct. 25, 1962, Ser. No. 232,932
7 Claims. (Cl. 266—30)



1. Blast furnace control apparatus for adding auxiliary fuel and controlling aqueous additions to a blast furnace system which includes a blast furnace with tuyere means for introducing a blast gas, stove means for heating the blast gas, and a hot blast main connected between the stove means and the tuyere means, comprising

means for adding auxiliary fuel to the blast furnace contiguous with the blast gas,

means for measuring auxiliary fuel additions and generating a signal in response to such measurement,

means for adding aqueous fluid to the blast gas, and

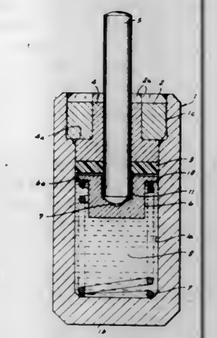
means for controlling aqueous fluid additions to the blast gas to compensate for endothermic requirements of the auxiliary fuel additions.

3,346,251
LIQUID SPRING

Karl Bittel, Markkleeberg, near Leipzig, Germany, assignor to Veb Zentrale Entwicklung und Konstruktion Zek Hydraulik, Leipzig, Germany

Filed May 28, 1965, Ser. No. 459,668
10 Claims. (Cl. 267—1)

1. A liquid spring, comprising a cylinder having an open end and a closed end, said cylinder defining a chamber bounded by an inner circumferential surface and containing a body of compressible liquid; an annular sealing assembly received in the open end of said cylinder and having a front face facing said chamber; a compound piston, including a head reciprocably received in said chamber with clearance from said surface and having a rear face juxtaposed with said front face, and a removable rod extending through the aperture of said annular sealing assembly and having a portion abutting

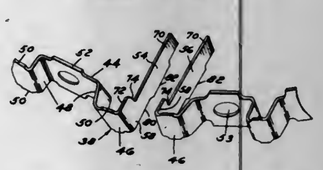


said head; and resilient means provided in said chamber and arranged to normally sealingly bias said rear face of said head against said front face of said sealing assembly whereby, when said rod is received from said aperture, escape of fluid from said chamber is prevented by the sealing engagement of said faces.

3,346,252
NARROW WIDTH PISTON RING AND EXPANDER-SPACER

Lee H. Saylor, Muskegon, Mich., assignor to Sealed Power Corporation, Muskegon, Mich., a corporation of Michigan

Filed June 17, 1963, Ser. No. 288,293
3 Claims. (Cl. 267—1.5)



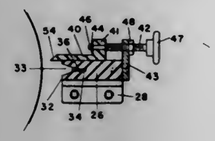
1. An expander-spacer for a narrow axial width oil ring assembly comprising a generally circular, parted resilient member having circumferentially abutting ends when said expander-spacer is compressed to operating diameter and radial corrugations intermediate said ends, said corrugations comprising an alternating series of generally circumferentially extending inner and outer crowns and generally radial flexing portions interconnecting said crowns, said inner crowns each having a centrally disposed oil drainage hole therethrough, said corrugations except for said holes being imperforate, said outer crowns and said radial flexing portions having an axial width only slightly less than the maximum axial width of said expander-spacer.

3,346,253
ELECTROSTATIC SHEET CONTROL MEANS

Frank R. Paschke, 2931 Mayfair Ave., Westchester, Ill. 60153

Filed Mar. 31, 1965, Ser. No. 444,275
4 Claims. (Cl. 271—36)

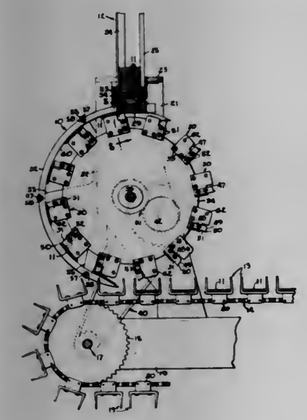
1. In a machine for processing webs or sheets of paper or other dielectric material, the combination comprising, a support for said material, a conductor arranged parallel with but spaced from said support whereby a gap exists between the elements, means for establishing a high potential between the conductor and the support whereby a force field is created and an electrostatic charge is induced on said material as it passes through the gap between the conductor and the support to attract the material to the support, and charge control means including an element mounted adjacent said conductor for adjustment relative thereto toward and away from said support in a direction substantially parallel to the longitudinal axis of said force field for varying the intensity of the charge induced on said material.



3,346,254
APPARATUS FOR REMOVING PACKETS FROM A STACK

Carl J. Beert, Rockford, Ill., assignor to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware

Filed July 8, 1965, Ser. No. 470,484
11 Claims. (Cl. 271—41)

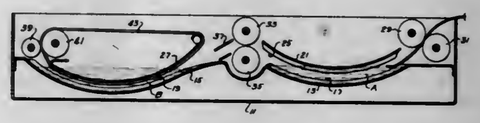


11. Apparatus for removing packets one by one from a stack having, in combination, a magazine for supporting the stack of packets in side-by-side relation and having a gate on one side of one end of the stack for edgewise removal of successive packers from said stack, an annular series of carriers, means supporting said carriers to revolve along an annular path past said one end moving toward said gate, a pick-off member on each carrier for engaging the terminal packet in said stack and shifting the terminal packet edgewise through said gate, a guide spaced radially outwardly from and following the path of said carriers away from said magazine, a presser mounted on each carrier for movement thereon from a retracted position outwardly to an extended position, and means for holding each presser in the retracted position as the associated carrier passes said magazine and shifts a packet through said gate and then moving said presser outwardly to press the packet against said guide as the carrier moves away from the magazine.

3,346,255
LIQUID TREATMENT OF SHEETS

David L. Greenwood, New York, N.Y., assignor to Varityper Corporation, Newark, N.J., a corporation of Delaware

Filed June 1, 1966, Ser. No. 559,037
6 Claims. (Cl. 271—45)



1. Apparatus for conveying a web through a liquid treatment supported face down from the back surface thereof free of face surface contact, which liquid treatment renders the web progressively more limp as it proceeds from an entrance end of the apparatus to an exit end of the apparatus, said apparatus comprising:

a tank for holding process liquid;

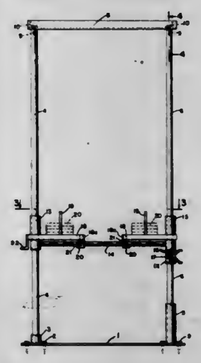
a curved bottom guide having a receiving portion and a terminal portion, with an intermediate portion extending downwardly into said tank;

a moving belt means and means for guiding said belt means in spaced relationship to said bottom guide within said tank to define a substantially uninterrupted moving top wall extending across the operating width of the tank and serving as the top wall of a channel in which said guide is a stationary bottom configuration, said belt means and guide being spaced throughout to provide an unobstructed open channel, said channel having a greater depth than the thickness of the web of material being processed, but less than sufficient to allow the web of material to fold without first contacting said moving belt means.

3,346,256
GUIDEDLY MOUNTED LIFT BAR HAVING ADJUSTABLE WEIGHT MEANS

James R. White, 2110 Lindell, San Angelo, Tex. 76901

Filed Feb. 16, 1965, Ser. No. 432,992
16 Claims. (Cl. 272—81)



1. An exercising device comprising a pair of spaced parallel uprights; a base strip connecting the lower ends of the uprights and adapted to be anchored to a floor; a top bar connecting the upper ends of the uprights; means for connecting the top bar to a fixed wall to rigidly main-

tain the uprights in spaced relation to said wall; guide sleeves slidably mounted on said uprights respectively; a horizontal lifting bar having its ends anchored in said sleeves; weight racks having their outermost ends anchored in said sleeves respectively above said lifting bar and their innermost ends directly connected to the lifting bar; said racks being respectively of less length than half the length of the lifting bar thereby providing a gap between the inner ends of the racks; upstanding guide rods on said racks respectively adapted to center a desired number of weights on the said racks; and a vertically adjustable clamp on one of said uprights below the related sleeve adapted to limit the lowering of the racks and lifting bar.

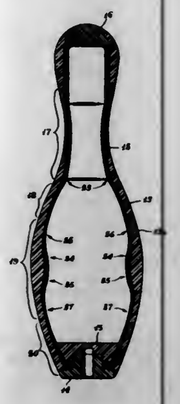
3,346,257
CLUB SWING TRAINING DEVICE
James W. Whitney, 581 Brookhaven Court, Kirkwood, Mo. 63122
Filed Mar. 8, 1965, Ser. No. 437,883
3 Claims. (Cl. 273—26)



1. A device for indicating errors in the swing of an athletic club by a person, the device comprising:
a first contact member for engaging the back of the person's head to prevent substantial backward movement of the head,
a second contact member for engaging the lower portion of the person's back,
a substantially rigid connecting member supporting said first and second contact members in spaced relation to each other, said connecting member being adapted to be positioned along the person's back, said contact members being so enlarged that they extend significantly forward of said connecting member when said connecting member is positioned along the person's back,
and securing means for attaching the device to the back of a person, said securing means comprising first strap means at the upper portion of said connecting member adapted to extend over both shoulders across the pectoral muscles under the arms and be attached to the central portion of the connecting member for exerting pressure on the pectoral muscles during twisting movements of the body, the securing means further comprising second strap means at the lower portion of said connecting member adapted to be positioned around the lower portion of the person's torso from one side of the torso to the other side thereof for attaching the device to the person.

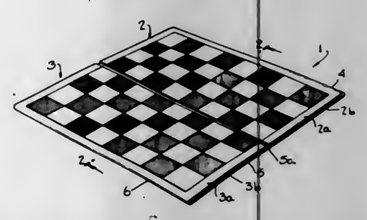
3,346,258
BOWLING PIN WITH FLEXIBLE BELLY
William H. Schimanski, Woodland Hills, Calif., and Michael G. Gautraud, Muskegon, and Fred E. Satchell, Grand Haven, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,084
2 Claims. (Cl. 273—82)

2. A bowling pin comprising a hollow, generally rigid, resilient core extending from an impact belly region into a lower base region and an upper shoulder region and including a relatively weakened, flexible and resilient portion of said core in the belly region on either side of a bowling ball impact plane contiguous with the remainder of said core, said weakened portions being resilient and sufficiently weakened to increase the amount of flexing of the belly area and thereby increase the ball impact contact



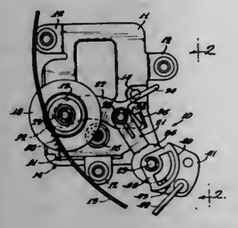
time of a ball impacting at said plane, and a resilient coating on the exterior of said core, each of said weakened portions having a wall thickness less than the wall thickness of the adjacent portions of the core in the base and shoulder regions.

3,346,259
LAMINATED GAME BOARD
Rudolph A. Froehlig, Little Neck, N.Y., assignor to Modern Album and Finishing, Inc., College Point, N.Y., a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,626
2 Claims. (Cl. 273—136)



1. A game board comprising a substantially rectangular hinge sheet having upper and lower faces a central hinge area and opposed end edges, a pair of substantially rectangular panel-forming sheets, each panel-forming sheet being substantially equal in size to each other and to said hinge sheet, each of said panel-forming sheets being folded in half to form a pair of face panels having terminal edges, the face panels of each panel-forming sheet straddling an end edge of the hinge sheet so that the area of the hinge sheet on each side of the central hinge area is interposed between said face panels, the face panels being adhered to said hinge sheet, the terminal edges of the face panels of each of said panel-forming sheets being adjacent said central hinge area and spaced from each other, whereby said game board may be folded along said central hinge area, each said face panel on one side of said hinge sheet having means including game board indicia thereon.

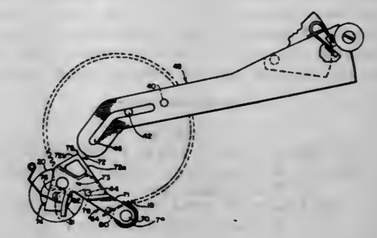
3,346,260
SPEED CHANGE MECHANISM
Martin C. Reed, Roselle, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,941
10 Claims. (Cl. 274—9)



1. In a record changer having a turntable, means for rotating said turntable at a plurality of speeds and for changing the speed of said turntable comprising: a motor having a rotatable shaft; means on said shaft defining steps of different diameter, each step corresponding to a different speed of said turntable; drive transmission means engageable with said steps and with the turntable for rotating the latter; and means for moving said drive transmission means between said steps to change the speed of said turntable including, a support having an abutment, a link pivotally mounted on said support and having a cam follower at one end thereof, an arm pivotally mounted on said link and rotatably supporting said drive transmission means, said arm having a portion engageable with said abutment upon pivotal movement of said link in one direction to pivot said arm relative to said link and shift said drive transmission means to a clearance position where said drive transmission means can be moved from small diameter steps to large diameter steps, a cam pivotally mounted on said support and having cam portions corresponding with each of said turntable speeds, means for pivoting said cam in a first direction whereby said cam portions cooperate with the cam follower on said link to shift said drive transmission means from the larger steps to smaller steps, and means for pivoting said cam in a second direction whereby said link is pivoted in said one direction to pivot said arm relative to said link and move said arm portion into engagement with said abutment so that said drive transmission means is shifted into the aforementioned clearance position, and whereby said cam portions cooperate with the cam follower on said link to shift said drive transmission means from smaller steps to larger steps.

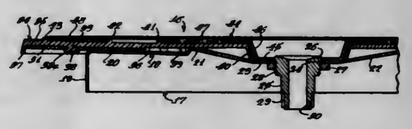
3,346,261
PHONOGRAPH SPINDLE ACTUATION LEVER
George Kolomayets, Chicago, and Allen J. Bury, Prospect Heights, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,904
5 Claims. (Cl. 274—10)

4. In an automatic record changing phonograph, the combination of: a pan; a spindle secured to said pan for aligning a stack of records each defining a record spindle aperture said spindle, including a hollow lower portion interconnected with a slotted upper portion and a shelf for supporting said stack of records; a free-floating ejector rockably mounted within said spindle and having a nose at the top thereof engageable with the lowermost record spindle aperture; means biasing said free-floating ejector to a normally inactive position; slider means on said spindle co-operating with said stack of records for horizontally restraining all except the lowermost record of said stack; a motor driven turntable including a geared hub rotatably mounted on said pan co-axial with said spindle; means initiating a record changing cycle; a normally stationary gear rotatably mounted on said pan adapted for driving engagement with said geared hub responsive to initiation of said record changing cycle; said gear including a driving stud and a detent stud projecting from the surface thereof; an actuation lever pivotably mounted on said pan having a first cam surface, a second cam surface, and a detent groove; said driving stud co-operating with said first cam surface for imparting pivotal motion to said actuation lever responsive to rotation of said gear; said second cam surface upwardly urging said free-floating ejector to a position whereby said nose is



intermediate said shelf and said slider and partially within the lowermost record spindle aperture during a first portion of said pivotal motion; an ejector pushoff surface adjacent said second cam surface rocking said free-floating ejector from said inactive position during a second portion of said pivotal motion; said nose moving laterally and engaging said lowermost record to laterally displace it off said shelf to a position co-axial with said spindle thereby gravity supplying said lowermost record to said turntable; said biasing means returning said free-floating ejector to said inactive position during a third portion of said pivotal motion; said detent stud co-operating with said detent groove for terminating rotation of said gear.

3,346,262
RECORD CHANGER TURNTABLE COVER
Martin C. Reed, Roselle, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,942
11 Claims. (Cl. 274—39)



6. A turntable for use with a record changer comprising: a first turntable member having a generally circular base with a flange extending downwardly from the periphery thereof; a rigid circular second turntable member having a central opening and a generally planar upper surface, said second turntable member being larger in diameter than said first turntable member, a first annular rib on said upper surface concentrically outwardly of said central opening, a second annular rib on said upper surface concentrically outwardly of said first rib, and a third annular rib on said upper surface concentrically outwardly of asid second rib; a resilient first turntable mat seated within said central opening and having a flat portion on said upper surface and extending outwardly

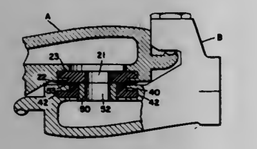
from said central opening to said first rib; and annular resilient second turntable mat on said upper surface between said second and third ribs; and means on the undersurface of said second turntable member for securing the same to said first turntable member.

8. A turntable for use with a record changer comprising: a first turntable member having a generally circular base with a skirt extending downwardly from the periphery thereof; an annular disc generally coplanar with said base and having an inner diameter less than the diameter of said base and an outer diameter greater than the diameter of said base; means securing said disc to said base between the inner diameter of said disc and the outer diameter of said base; a circular turntable cover formed of plastic and having a downwardly extending flange at the periphery thereof embracing the outer diameter of said disc; and means on the undersurface of said cover for securing the same to said disc between the outer diameter of said base and the outer diameter of said disc.

3,346,263
AIR BRAKE COUPLING COMPONENTS

Harold B. Newcomer, 4200 Aldine St., Philadelphia, Pa. 19136

Filed Nov. 16, 1964, Ser. No. 411,319
8 Claims. (Cl. 277—81)



1. Air brake coupling sealing components for sealing the junction between cooperating coupling members having circular air outlets comprising

(A) a first grommet engageable within one of said coupling members,

(1) said grommet being fabricated of hard, resilient material,

(2) said grommet having a generally flat, cylindrical body,

(3) said grommet being provided with a concentric cylindrical air passage,

(a) said air passage communicating with the said coupling air outlet,

(4) said grommet having a seating flange at one end thereof and a sealing flange at the other end thereof,

(a) said flanges extending radially from the said grommet body,

(b) the said seating flange including a pair of diametrically opposed arcuate engaging tongues, and

(c) the said seating flange including a pair of parallel, straight engaging lips,

(1) said lips and said tongues being respectively peripherally connected,

(2) said lips and said tongues contacting the interior of the said coupling air outlets,

(B) a second grommet engageable within the second of said coupling members,

(1) said grommet being fabricated of hard, resilient material,

(2) said grommet including a hollow cylindrical body defining an air passage therethrough,

(a) said air passage communicating with the air outlet of the said second coupling member,

(b) said body having relatively thick, stiff walls,

(1) said body walls terminating at one end thereof in a radially extending seating flange,

(a) said flange including a pair of diametrically opposed arcuate engaging tongues,

(b) said flange including a pair of of parallel, straight engaging lips,

(1) said lips and said tongues being respectively peripherally connected,

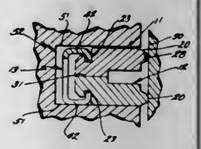
(2) said lips and said tongues contacting the interior of the said coupling air outlet,

(C) non-resilient air sealing means interposed between the first and second grommets, said sealing means including second grommet stiffening means.

3,346,264
OIL RINGS

Douglas W. Hamm, Muskegon, Mich., assignor to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan

Filed Jan 18, 1965, Ser. No. 426,023
2 Claims. (Cl. 277—141)



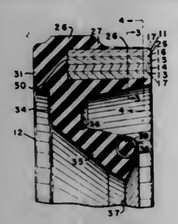
1. A combination oil ring having a main body portion and a circumferentially compressible, parted expander; said body portion having a pair of parted cast sections each forming a significant part of the body portion and adapted to seat against each other in side-to-side sections and each having a cylinder engaging crown on its radially outer face and an axially extending channel in its exterior side adjacent its radially inner face; said expander being of U-shaped cross section having a web portion and a pair of legs with said legs extending radially outwardly; the ends of said legs having opposed flanges seating in said channels, one in the channel of each section and locking said sections together in alignment and against subsequent separation axially of the ring while permitting circumferential movement of one section with relation to the other; said web portion being spaced radially inwardly from the radially inner faces of said sections; said expander when the part therein is closed and compressed exerting radially outwardly acting pressure on said sections; said channels being wider than the thickness of said flanges and each of said sections having limited freedom of radial movement independent of the other of said sections.

3,346,265
ELASTOMERIC OIL SEAL HAVING A LAMINATED METAL REINFORCING MEMBER

George D. Rhoads, Redwood City, and Robert N. Haynie, Los Altos, Calif., assignors to Federal-Mogul Corporation, a corporation of Michigan

Filed June 8, 1964, Ser. No. 373,212
9 Claims. (Cl. 277—152)

1. A radial-lip rotary shaft seal of the type having a generally cylindrical metal reinforcing member and an elastomeric member bonded to said reinforcing member at a body portion and providing a sealing lip joined to said body portion by a flexible neck, characterized by said metal reinforcing member having a plurality of radially successive laminations having recesses extending axially of said seal and spaced apart longitudinally therein with elastomer of said sealing member filling said recesses between successive laminations and rigidifying the structure, the radial thickness of said metal reinforcing member com-

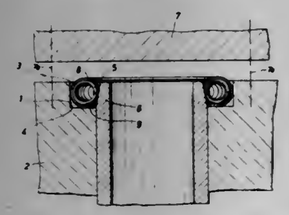


prising successive alternate layers of metal and elastomer, whereby thin metal stock in each lamination combines with alternate layers of elastomer to build up a total radial thickness more rigid than the total metal thickness involved.

3,346,266
SEALING MEANS FOR FLANGES, ESPECIALLY FOR CYLINDER HEADS

Fritz Bondrolt, Burscheid, Germany, assignor to Goetzewerke Friedrich Goetze A.-G., Dusseldorf, Germany

Filed June 15, 1964, Ser. No. 375,110
Claims priority, application Germany, Aug. 16, 1963, G 38,480
1 Claim. (Cl. 277—153)

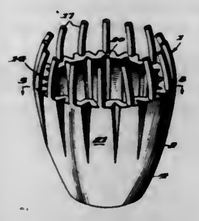


In combination, cylinder block means having a cylinder bore therein, an annular channel in the cylinder block means opening toward the upper end of said cylinder bore, a cylinder liner in said cylinder bore extending over said channel and forming an inner confining wall therefor, a sealing member mounted in said channel and projecting upwardly beyond the top of said channel, said sealing member comprising an annular metal coil spring having convolutions in direct face-to-face engagement with each other and an annular metal strip U-shaped in cross-section, said strip softer than said spring so that said convolutions become embedded in said strip and are thereby prevented from tilting laterally, said strip fitted closely about the outer periphery of said spring and extending radially inwardly toward the center of the cylinder bore at the top and bottom of the spring, said metal strip having an outer diameter substantially equal to the diameter of said channel, and a cylinder head adapted for being bolted to said cylinder block close to the upper end of said cylinder bore and being operable when bolted on the cylinder block for engaging the projecting portion of said sealing member and for deforming said sealing member in said channel so that the sealing member substantially fills the channel and contacts said cylinder liner while said strip is in sealing engagement with the bottom of the channel and the bottom of the cylinder head and forms a substantially U-shaped member opening toward the cylinder bore.

3,346,267
CUP FOR MULTI-SIZE PIPE STRING

David L. Farley, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Sept. 30, 1964, Ser. No. 400,536
4 Claims. (Cl. 277—212)

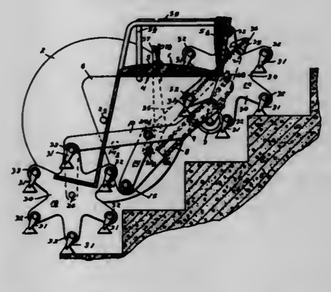


1. An expandable seal for use in a well pipe string, said seal comprising a flexible cup-like body having major and minor diameters, a portion adjacent said major diameter being free for movement in a radial direction, said body having a longitudinally extending bore therein, a plurality of circumferentially spaced, longitudinally extending reinforcing members connected to and extending above said body, said body including a plurality of longitudinally extending outside grooves circumferentially spaced on the outside periphery of said body adjacent each of said members, and a plurality of longitudinally extending inside grooves on the inside periphery of said body defining said bore, each of said inside grooves positioned diametrically inwardly of one of said members, said inside and outside grooves extending to said portion adjacent said major diameter and terminating in spaced relation to a portion adjacent the minor diameter.

3,346,268
VEHICLE WITH CLIMBING WHEELS

Robert W. Richman, P.O. Box 143, Moscow, Idaho 83843

Filed Aug. 27, 1965, Sr. No. 483,078
6 Claims. (Cl. 280—5.26)



1. A vehicle with climbing wheels for going up and down terraced inclines, which comprises in combination;

a cab frame having upstanding spaced side frame members provided with supporting wheels;

a chassis frame member alongside each side frame member and extending forwardly and rearwardly therebeyond;

climbing wheels journalled on the front and rear ends of each chassis frame member and provided with step engaging feet;

means interconnecting the said chassis frame members with the cab frame operable to raise and lower said

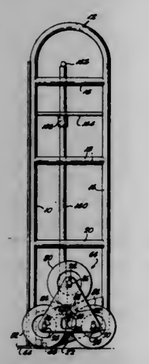
chassis frame members with respect to the cab frame to bring either the supporting wheels or the climbing wheels into position to support said cab frame;

said interconnecting means including an upright link extending from each side frame member to the corresponding chassis frame member and pivoted to both of them;

a roller on each chassis frame member spaced endwise thereof from the point where the link is pivoted thereto; and

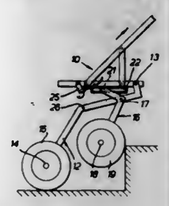
a channelled rail on each cab frame member inclined upward away from the pivotal connection of the link to the cab frame member in which said roller rides.

3,346,269
STAIR CLIMBING HAND TRUCK
Dario T. Soto, Gardena, Calif., assignor to Soto Manufacturing and Welding Company, Gardena, Calif., a partnership
Filed Jan. 12, 1966, Ser. No. 520,284
4 Claims. (Cl. 280—5.26)



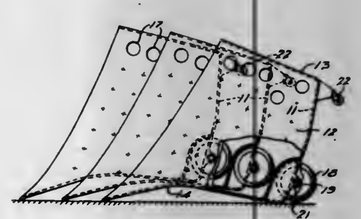
1. A hand truck comprising a framework, handle means at one end thereof, load support portions on said framework at the other end thereof, transverse axle means supported by said framework at said other end, wheel means including a pair of spaced wheel assemblies, said wheel assemblies being journalled at opposite end portions of said transverse axle means, each of said assemblies including support means freely rotatable about the associated end portion of said support means, said three wheels being spaced from one another such that the axis of rotation of each wheel is equally spaced from the axes of rotation of the other wheels, said support means of each of said wheel assemblies including an inner plate having a plurality of holes at least three in number formed therein, each of said holes being equally spaced from other holes, operating means including a pair of lock members carried by said framework, each of said lock members being adapted to fit within the holes of one said wheel assemblies for securing the wheel assemblies to said framework, said lock members being properly aligned with the holes in said wheel assemblies when the framework is in a predetermined position, and manually operable control means for controlling the movement of said lock members into and out of said holes, said last named means comprising a rotatable shaft journaled in said frame and extending medially and longitudinally thereof from a point adjacent said handles to a point adjacent said lock members, a rotatable cam carried by said shaft and engaging the inner ends of said lock members and controlling the movement thereof, and means adjacent said handles for operating said shaft.

3,346,270
STEP CLIMBING WHEEL CARRIAGE
Jan Adamczyk, Hucknall, England, assignor to Firth Cleveland Limited, London, England, a British company
Filed Sept. 13, 1965, Ser. No. 486,887
Claims priority, application Great Britain, Sept. 17, 1964, 37,952/64
4 Claims. (Cl. 280—5.28)



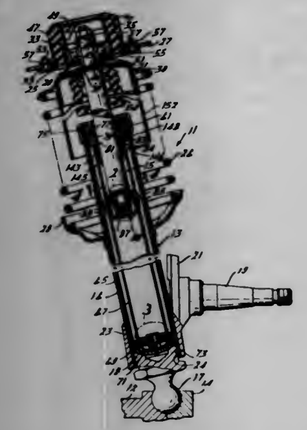
1. A wheeled carriage comprising a carriage body and, on each of two opposite sides thereof, a forward wheel, a first leg supporting said forward wheel, a first connection between said first leg and the carriage body, a rearward wheel, a second leg supporting said rearward wheel, and having an intersection with said first leg, a second connection between said second leg and the carriage body, a third connection between the first and second legs at said intersection, the three said connections constraining the forward wheel to drop relative to said body and the rear wheel to rise relative to the forward wheel while the carriage is pulled rearwardly over an upstanding obstacle with the carriage body held level in the fore and aft direction, and wherein one of said connections is a roller and slot connection and the other two said connections are pivot connections.

3,346,271
NESTABLE CART OF MOLDED MATERIAL
Fred E. Parsons, 1656 Keller Lane, Bloomfield Hills, Mich. 48013
Filed July 6, 1965, Ser. No. 469,691
10 Claims. (Cl. 280—33.99)



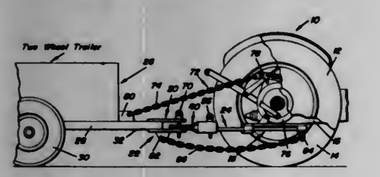
1. In a cart, a molded one-piece body comprising a bottom and upright side and front and rear end wall portions sloping outwardly toward the top, said sloped walls being smooth to permit one body to nest completely within another body of the same construction, said rear wall portion being provided with an opening forming a handhold whereby the cart may be moved and guided, a pair of wheels mounted on said bottom adjacent said rear wall portion, and a ground engaging member on said bottom adjacent to said front wall portion which together with said wheels provides a support for said body in an upright position.

3,346,272
VEHICLE SUSPENSION DEVICE
Charles J. Smith, Monroe, Mich., assignor to Monroe Auto Equipment Company, Monroe, Mich., a corporation of Michigan
Filed Oct. 14, 1965, Ser. No. 496,045
7 Claims. (Cl. 280—96.2)



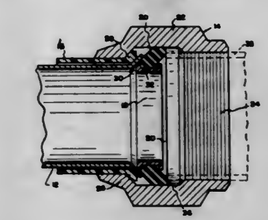
1. In an independent wheel suspension device for an automotive vehicle, said suspension device comprising a hydraulic tubular shock absorber having a pair of relatively movable telescopic parts, detachable means on one of said telescopic parts connectable to a body portion of said vehicle, a tube removably supporting the other of said telescopic parts, said tube being connectable to a wheel spindle and having a removable end portion whereby said shock absorber is removable and replaceable through the end of said tube having said removable end portion upon detaching said detachable means.

3,346,273
TRACTION HITCH
Henry Folkerts, Prosser, Wash. (Rte. 1, Outlook, Wash. 98938)
Filed Aug. 10, 1965, Ser. No. 478,647
8 Claims. (Cl. 280—457)



1. In combination, a farm tractor including rear driving wheels journaled for rotation about horizontal transverse axes, a trailer including a forwardly projecting steering and towing tongue, and a traction hitch assembly connected between said tractor and said trailer defining a pivot connection between said tongue and said tractor for relative angular displacement of said tractor and trailer about an upstanding axis adjacent the forward end of said tongue and disposed rearward of the rearmost extremities of the rear wheels, a thrust connection between said trailer tongue and a point on said tractor disposed appreciably above a horizontal plane containing said axes, and a lost motion supplemental thrust connection between a lower forward portion of said trailer tongue and a point on said tractor below said plane inoperative to transfer thrust from said tractor to said trailer when said tractor and trailer are in horizontally disposed positions but operative to transfer thrust from said tractor to said trailer in lieu of the first mentioned thrust connection upon predetermined displacement of said tractor relative to said trailer tongue about said axes from said horizontally disposed position in a direction raising the front of said tractor.

3,346,274
INSULATED UNION COUPLING
Alfred M. Baron, Los Angeles, Calif., assignor to Brass Craft Manufacturing Company, Wayne County, Mich.
Filed June 1, 1966, Ser. No. 554,515
1 Claim. (Cl. 285—52)



In a pre-assembled flexible connector characterized by a length of flexible metallic tubing having a union at each of its respective ends, each of the unions comprising:

a hexagonal nut having a hollow bore passing therethrough, the first end of said bore being provided with internal threads adapted to receive the externally threaded end of an element to be joined to the connector, the portion of said bore intermediate said internally threaded portion and the second end of said bore having an internal diameter greater than that of said threaded portion or that of said second end of said bore, whereby an internal shoulder is formed between said intermediate portion and said second end of said bore;

a dielectric sleeve having a flared end, said sleeve protruding from said second end of said bore, and said flared end abutting said bore shoulder to prevent the withdrawal of said sleeve from said nut through said second end of said bore, said sleeve so positioned within said nut as to prevent metal to metal contact between said nut and said flexible metallic tubing entering said nut from said second end of said bore;

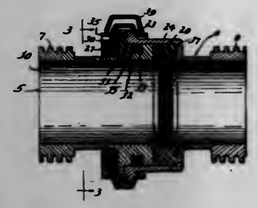
the end of said flexible metallic tubing entering said second end of said bore being flared outwardly after insertion into said nut, said flared end of said flexible metallic tubing abutting the inner periphery of said flared end of said dielectric sleeve;

an annular dielectric bushing having an external groove extending around its outer circumference;

an annular dielectric washer having an internal diameter adapted to seat within said bushing groove and an outside diameter greater than the internal diameter of said nut internal threads, said dielectric washer being sufficiently flexible to permit the insertion of said bushing and washer assembly through said first end of said bore and into said intermediate portion of said bore;

said flared end of said flexible metallic tubing being retained within said nut between said flared end of said dielectric sleeve and said dielectric washer, and said dielectric washer being compressably retained between said intermediate portion of said bore and said bushing, whereby metal to metal contact between the ends of said flexible metallic tubing and the element joined to said threaded end of said nut is prevented by said bushing and washer assembly.

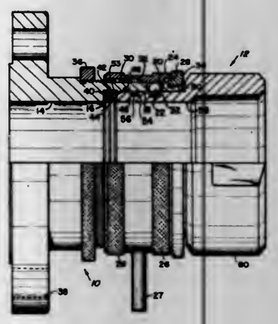
3,346,275
SWIVEL PIPE JOINT
Pharon J. Des Jardins, Kenosha, Wis., assignor to Fitting Specialties Corp., Zion, Ill., a corporation of Illinois
Filed Mar. 11, 1964, Ser. No. 351,070
7 Claims. (Cl. 285—98)



1. A swivel pipe joint comprising:
a male ferrule having a forward portion of increased outer diameter, said forward portion having an external annular recess and a rearward external annular flange;
a first resilient sealing ring in said annular recess;
a female ferrule having a forward portion of increased inner and outer diameters providing an interior annular shoulder, said forward portion having an external annular flange adjacent the forward end;
a second resilient sealing ring in said female ferrule engaging said shoulder;
the forward portion of said male ferrule telescoping said forward portion of said female ferrule, the sealing rings of each portion engaging the other portion, said external annular flange of said male ferrule adjacent said forward portion of said female ferrule;
a collar of low friction material on said male ferrule having an internal radial surface engaging the rearward radial surface of said external annular flange of said male ferrule and an axially extending portion overlying the outer cylindrical portion of said external annular flange of said male ferrule and engaging the forward radial portion of said external annular flange of said female ferrule;
a collar cap embracing said collar; and
a detachable over-center annular clamp embracing said collar cap and said annular flange of said female ferrule.

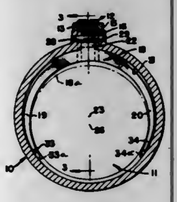
3,346,276
SEALING ARRANGEMENT FOR FLUID TIGHT COUPLING
Clifford H. Snyder, Jr., 173 Rosemont Drive, Coraopolis, Pa. 15108
Filed July 2, 1965, Ser. No. 469,252
8 Claims. (Cl. 285—110)

1. In a fluid tight coupling comprising a housing having a cylindrical interal surface adapted to receive a nipple having a cylindrical external surface terminating in an annular end wall, said housing and said nipple cylindrical surfaces being contiguous when said coupling is in the assembled position, and means associated with said housing and said nipple to releasably secure said nipple within said housing at a predetermined axial position, the improvement comprising:
(a) a first O-ring of circular cross section sealingly retained on said nipple cylindrical external surface and having an outer diameter greater than the diameter of said housing cylindrical internal surface whereby a fluid seal is formed between said first O-ring and said housing when said nipple is releasably secured within said housing;
(b) a second O-ring of circular cross section sealingly retained within said housing cylindrical internal surface and having an inner diameter smaller than the diameter of said nipple cylindrical external surface whereby a fluid seal is formed between said second O-ring and said nipple when said nipple is releasably secured within said housing; and
(c) a ring seal of generally square cross section having a V-shaped groove formed in the cylindrical internal surface of said ring seal, said ring seal being sealingly retained within said housing and being so located that said nipple annular end wall sealingly abuts said ring seal when said nipple is releasably secured within said housing, said V-shaped groove in said ring seal being exposed to the line pressure of fluid passing through said coupling;



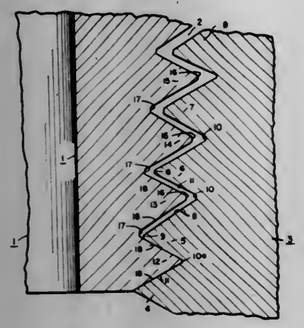
(d) said first and second O-rings being located in a position to stop fluid which may leak past said ring seal, and said first and second O-rings cooperating under a wide range of temperature conditions to maintain a seal between said nipple and said housing whereby when the coupling is subjected to extreme heat said first O-ring expands and maintains a fluid tight seal against said cylindrical internal surface of the housing and when the coupling is subjected to extreme cold temperatures said second O-ring contracts and maintains a fluid tight seal against said cylindrical external surface of the nipple.

3,346,277
LOCKING DEVICE
Walter D. Ludwig, Bloomfield Township, Oakland County, Mich., assignor to Mac Valves, Inc., Oak Park, Mich., a corporation of Michigan
Filed July 15, 1964, Ser. No. 382,759
5 Claims. (Cl. 285—308)



1. A locking device for a pair of concentric cylindrical members including a first outer cylindrical member and a second inner cylindrical member, the combination comprising: a crescent ring slidably mounted in a slot on the inner surface of said first cylindrical member; means for applying a radial force to said crescent ring; and, said means for applying a radial force to said cresent ring including means for applying a bidirectional radial force to said cresent ring, said means for applying a bidirectional force includes a threaded cylindrical member secured in said first cylindrical member against longitudinal translation and wherein said crescent ring includes a tongue having a threaded surface in frictional engagement with said threaded member.

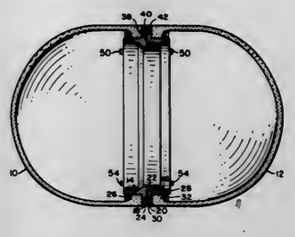
3,346,278
TAPERED PIPE THREAD
William C. Yocum, Mount Lebanon, Pa., assignor to Superior Valve & Fittings Company, Pittsburgh, Pa.
Filed Apr. 5, 1965, Ser. No. 445,675
1 Claim. (Cl. 285—333)



In tapered V- threads which form a seal against flow of fluid under pressure having a female member with internal tapered threads and a male member with external tapered threads, said members being adapted for threaded engagement with one another, the invention comprising said external tapered threads having a basic taper between substantially about 20% and 80% of a basic taper of said internal tapered threads, and prior to initial makeup the thread crest having the smallest diameter on said male member has a diameter greater than the thread root having the smallest diameter on said female member such that said male crest sealingly contacts said female root prior to contact between adjoining flanks and at least one of said crests of said male member always imbeds into an oppositely disposed root of said female member completely around said members, and thereafter adjacent flanks of the male and female member on both sides of the contact point come into full-flank sealing contact, said thread crests of said male member having a maximum truncation which is no greater than the minimum truncation of said female member thread roots, said minimum truncation of said male member thread crests being substantially between 30% and 100% of said maximum truncation of said male member thread crest, said roots of said male member threads having a minimum truncation which is at least equal to the maximum truncation of said crests of said female member threads.

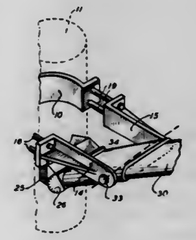
3,346,279
MECHANICAL COUPLING FOR GLASS AND CERAMIC ARTICLES
Jaroslaw D. Stachiw, Oxnard, Calif., and Phillip A. Vonada, State College, Pa., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 13, 1965, Ser. No. 447,614
5 Claims. (Cl. 285—353)

1. A coupling joining two members along annular edges thereof, said coupling comprising
a male coupling ring having a first external threaded surface portion,
a female coupling ring having an internal threaded surface portion in engagement with said first external threaded surface portion of said male coupling ring,
said male coupling ring having a second threaded external surface portion,
said female coupling ring having a threaded external surface portion,
each said coupling ring having an outwardly extending flange portion,
each said member having an inwardly extending flange portion in the vicinity of its said edge,



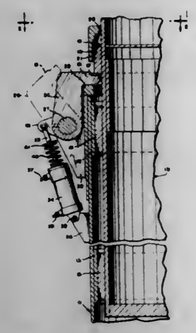
one said inwardly extending flange portion being retained between said outwardly extending flange portion of said male coupling ring and a radially contractible locking ring threaded over said second threaded external surface portion of said male coupling ring, and
the other said inwardly projecting flange portion being retained between said outwardly extending flange portion of said female coupling ring and a radially contractible locking ring threaded over said external threaded portion of said female coupling ring.

3,346,280
ADJUSTABLE MECHANISM FOR SECURING AN ARM TO A POST
Henry C. Pfaff, Jr., Summit, and Francis G. Schlosser, Ridgefield Park, N.J., assignors to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey
Filed Aug. 12, 1965, Ser. No. 479,271
8 Claims. (Cl. 287—14)



1. An adjustable mechanism for securing an arm to a post at a desired angle, comprising strap means adapted to be positioned on the post, elongated link means adjustably engaging the strap means at one end for connection therewith, a saddle member to be positioned against the post, a pivot member movably engaging the saddle member at one end, and engaging the arm at the opposite end, and means engaging the link means and the pivot member at a location axially offset from the axis of rotation of the pivot member for securing the pivot member and thus the arm to the post at the desired angle.

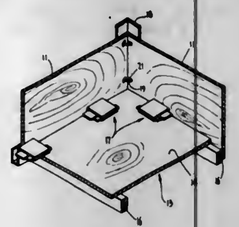
3,346,281
LOCK MECHANISM FOR TELESCOPING SPAR
James R. Thompson, Seattle, Wash., assignor to Washington Iron Works, a corporation of Washington
Filed Jan. 29, 1965, Ser. No. 429,003
7 Claims. (Cl. 287—58)



1. In a telescoping spar of a type which stands upright when in its operating position, in combination: a lower spar section provided adjacent its upper end at spaced intervals of the circumference with upwardly facing support means, an upper spar section held against turning relative to the lower spar section and received for telescoping slide movement within the lower section, said upper section adjacent its lower end being provided with a respective downwardly facing surface for each of said support means spaced circumferentially of the upper section in correspondence with the spacing of the support means and serving as thrust shoulders, said shoulders when the spar is extended to its full height being raised to a level somewhat higher than the level occupied by the support means, a respective lever for each of said support means and its related shoulder having an inverted L-shape when viewed from the side with the upright leg of said L being hinged to the lower spar section for swing motion about an axis tangent to a circle having the axis of the spar as its center and the horizontal leg of the L extending as a dog radially inwardly relative to the extended spar and by said swing action moving into and out of a position whereat the upper surface of the dog underlies the shoulder and the under surface overlies the support means, and means for moving the dogs in said radial movement, the upper section of the spar, when the spar is in an operating condition, occupying a level such that its weight is passed directly through the dogs from the thrust shoulders to the support means, a limit stop being provided prescribing a higher level to which the upper section can be raised, the dog-forming leg in its said radial movement travelling a path which is interrupted by said shoulder when the spar is in its operating condition and thus requires that the upper spar section be first raised a prescribed distance before the dog can be retracted preliminary to a lowering of the upper spar section into the lower spar section.

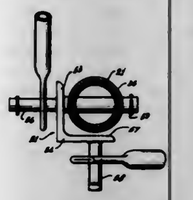
3,346,282
JUNCTION CLIP ARRANGEMENT FOR SECURING ANGULARLY DISPOSED PANEL MEMBERS TOGETHER
Vivvien L. Yarborough, 650 San Pablo Ave., Rodeo, Calif. 94572
Filed Sept. 8, 1964, Ser. No. 395,096
5 Claims. (Cl. 287—20.924)

3. In a structure having first and second panel members disposed in right angular relation, at least one female clip including a saddle having parallel spaced legs interconnected at one end by a web right-angularly extending therebetween and a leg portion extending right-angularly from one of said legs of said saddle and terminating in a right-angularly depending second web terminating in a reentrant right angular flange in parallel spaced subjacent relation to said leg portion to define a channel therebetween with the opening of said channel facing toward said saddle, said first panel member received by the saddle of each female clip and secured thereto, and at least one male clip including a flat portion secured to a surface of



said second panel adjacent an edge thereof and a tongue projecting from the flat portion in offset parallel relation thereto so as to be in generally parallel relation to said surface of said second panel, the free end of said tongue extending in a direction inwardly from said edge, said tongues of said male clips respectively fitting within and interlockingly engaging said channels of said female clips with the saddles of said female clips abutting said edge of said second panel member to provide a structurally strong securance of said second panel to said first panel.

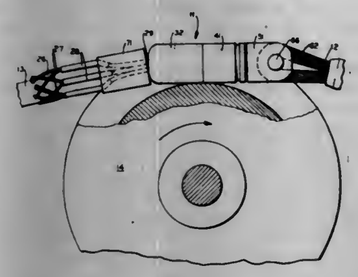
3,346,283
ADAPTER ELEMENT FOR AN EXTENDABLE SHORE
Robert K. Squire, Los Angeles, Calif., assignor to Superior Scaffold Co., Torrance, Calif., a corporation of California
Original application June 30, 1961, Ser. No. 120,985, now Patent No. 3,190,405, dated June 22, 1965. Divided and this application Mar. 12, 1965, Ser. No. 439,228
5 Claims. (Cl. 287—54)



1. An adapter element for adjustably supporting an extension frame on a base frame in a shoring scaffold and for connecting to cross bracing extending between said frames, comprising: a generally L-shaped bracket, each leg of which has an inside and outside planar face adapted to be mounted with the leg of the brace frame disposed within its interior angle; an adapter pin extending from the inside face of one leg of said bracket and at substantially right angles thereto, said adapter pin being adjustably extendable through complementary openings at different levels along the height of the base frame leg, said adapter pin being engaged by the extension frame to directly support it and solely serving to transfer its load to the base frame leg and tie pins secured to and extending from the outside faces of both

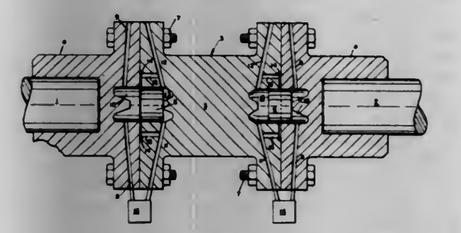
legs of said bracket and at substantially right angles thereto for the attachment of cross braces thereto extending between the frames.

3,346,284
SWIVEL CABLE PULLING GRIP AND FILLER
Gerald A. Petersen, Sunnyvale, and William J. Lanum, Concord, Calif., said Petersen assignor of one-half to Anita E. Petersen, Saratoga, Calif.
Filed Mar. 30, 1965, Ser. No. 444,084
10 Claims. (Cl. 287—91)



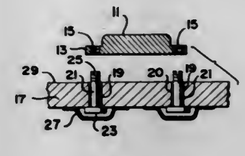
1. A swivel connector cable grip comprising a swivel having a casing, an elongated stocking-type grip formed of a plurality of reticulated wires gathered in a forward extending bundle of wires having an outside diameter substantially less than the outside diameters of said casing and of said grip, means for securing said bundle to said casing, and a resilient filler sleeve over said bundle and having an outside diameter substantially greater than that of said bundle, said filler being split longitudinally for installation over said bundle, and means for holding the edges of said slit close together.

3,346,285
BORE CENTERED COUPLING
Richard F. Miaskiewicz, Sr., Jeannette, Pa., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,070
3 Claims. (Cl. 287—104)



1. A coupling for transmitting rotary movement between a first and a second shaft comprising,
- a first-shaft engaging hub,
- a second-shaft engaging hub, each of said hubs having a central cavity therein,
- a coupling spacer having a central cavity at each end thereof,
- a centering pin disposed within each of said coupling spacer cavities, said pins having an interference fit in said cavities,
- means for securing said coupling spacer to said hubs,
- means for displacing said pins so that portions thereof are disposed within the central cavities of said hubs to align said hubs with said coupling spacer.

3,346,286
COMPONENT MOUNTING EMPLOYING A THREADED BOLT DRIVEN AT ITS THREADED END
Ronald O. Wescott, Edison, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 31, 1965, Ser. No. 484,057
4 Claims. (Cl. 287—189.36)

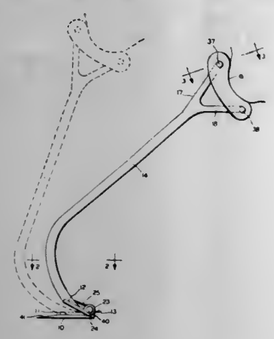


1. A fastening device including an electronic component and a base member to be held together,
- the base member having two opposite sides extending in substantially parallel planes and a plurality of unthreaded apertures therethrough opening out through said opposite sides;
- the component having a flange overlying one of said sides of the base member and further having a plurality of apertures extending through the flange in alignment with the apertures of the base member;
- a plurality of bolts with one of said bolts introduced through each set of said aligned apertures from the side of the base member opposite to the component, each bolt having a threaded end section and being of such a length that when substantially fully inserted into aligned apertures its threaded section projects from the component side of the base member;
- means on each bolt forming a head on the end thereof opposite to its threaded end section and engageable with a side portion of the base member remote to the component for limiting bolt travel towards the component;
- the threaded end section on each of said bolts being shaped to receive a tool for turning the same;
- retaining means engaging each bolt and said base member and being secured to one so that each bolt is held from any substantial movement in the direction away from the component and therefore is supported with its threaded end section in projecting relation to the base member and enters the aligned aperture of the component; and
- said retaining means and said head forming means cooperating together to hold each bolt from substantial axial travel while permitting the bolt to be rotated by a tool engaging the threaded end thereof for performing a threading operation which draws the flange of the component securely to the base member.

3,346,287
AID FOR KNOTTING TIES UNDER TENSION
McLean George, 2110 Perdido St., New Orleans, La. 70112
Filed Dec. 6, 1965, Ser. No. 511,875
2 Claims. (Cl. 289—17)

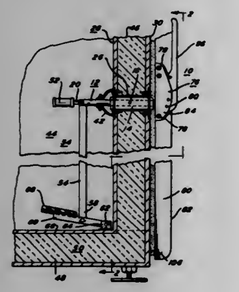
1. A device for securing ties comprising;
(a) a hinged-jaw portion defined by
(1) a lower jaw member,
(2) an upper jaw member,

(3) hinge means adapted to link said lower and upper jaw members, and
(4) resilient means associated with the hinge means adapted to bias the hinged-jaw portion in a jaw-open position; and



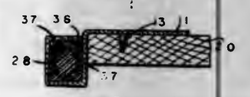
(b) a lever portion comprising an elongated lever arm mounted atop the upper jaw member and extending away therefrom, the end of the elongated lever arm distal to the upper jaw member terminating in a chin accommodating member.

3,346,288
SAFETY LOCK MEANS
John P. Cosentino, 2705 N. Kent Road Broomall, Pa. 19008
Filed Sept. 1, 1965, Ser. No. 484,345
10 Claims. (Cl. 292—92)



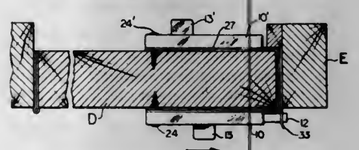
1. A safety lock means comprising a locking lever pivotally attached to and extending through a supporting body; said locking lever having hook engaging means; and a retaining means including a substantially L shaped latch element pivotally attached for movement between engaged and disengaged positions to a member which is to be secured with said body; said latch element having a first hook end for engaging said hook engaging means of said lever to secure said member to said body when said latch element is in its engaged position, and a second end engageable by said locking lever when in its disengaged position to move said latch element to its engaged position; said locking lever having a portion thereon camming said element to its disengaged position upon pivoting said locking lever whereby said locking lever is released from said retaining means.

3,346,289
POSITIVE-HOLDING SPRING LATCHES
Ralph F. Anderson, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,377
7 Claims. (Cl. 292—175)



1. A positive-holding latch assembly for a cabinet door for engaging a strike on the frame of the cabinet, comprising a latch assembly secured to a cabinet door and including a mounting flange secured to the interior surface of the cabinet door, a tubular housing integral with and mounted at one side of the flange and including a front wall, parallel side walls and a rear wall, said housing being open at one end, a latch bolt slidably mounted in said housing, a compression spring within the housing spring-biasing the latch bolt to projected position for engaging the strike, means to limit the reciprocatory motion of said latch bolt in the housing, said latch bolt including an outwardly extending latching projection having a latching surface engaging with the strike, a camming surface and a laterally extending finger engaging arm projecting beyond the housing, said strike member having an elongated body secured to the cabient frame and an outwardly extending arm terminating in an inturned end engaging said latching projection, said rear wall of the housing being offset forwardly of the plane of the mounting flange to accommodate the elongated body of the strike member.

3,346,290
DOOR LATCHING DEVICE
Robert A. Nichols, 11 Chapin St., Binghamton, N.Y. 13905
Filed Dec. 15, 1965, Ser. No. 514,033
5 Claims. (Cl. 292—141)

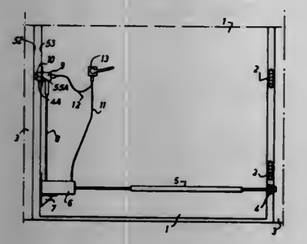


1. A door latching device comprising a first casing adapted to be mounted on one side of a door, a latch bolt slideably supported in said casing, said bolt having a knob extending from said casing for manual actuation, a second casing adapted to be mounted on the other side of said door and opposite to said first casing, a plate slideably supported therein having an actuating knob extending therefrom, a resilient motion transfer band interconnecting said plate with said latch bolt, a flexible sheath encasing said band and interconnecting said casings, said sheath being adapted to be wrapped around the edge of said door, whereby said bolt may be actuated from either side of said door.

3,346,291
MECHANISM FOR LOCKING DOORS OR LIKE MOVABLE PANELS
Louis Léon Joseph Massal, Nice, France, assignor to Societe d'Etudes et de Recherches Techniques (S.E.R.T.), Levallois-Perret, France, a French company
Filed Sept. 21, 1964, Ser. No. 397,854
Claims priority, application France, Sept. 25, 1963, 948,700, Patent 1,383,827
12 Claims. (Cl. 292—144)

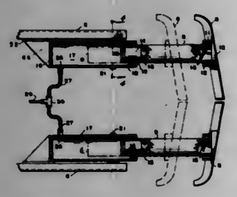
1. A door structure comprising:
frame means defining an opening;

a lock catch mounted on said frame means on one side of said opening;
a door and means mounting said door for movement with respect to said frame means between an open and a closed position;



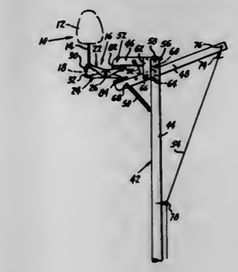
latch operating structure mounted on said door, said latch operating structure comprising a movable locking bolt, a leaf spring for storing energy, two coaxial levers engaging said leaf spring and mounted for relative pivotal movement, means coupled to one of said levers for moving said one lever and thereby deforming said spring to store energy therein during at least the last portion of the travel of said door toward said closed position, holding means for releasably holding the other lever against the urging of said spring, and releasing means for releasing said holding means when said door is at least very close to said closed position whereby said spring can effect movement of said other lever, and connecting means connecting said locking bolt to said other lever so that said locking bolt is urged into its locking position with said lock catch in response to movement of said other lever.

3,346,292
MOTOR-ACTIVATED CUSHIONING BUMPER
Ben Ervin Lundman, Rte. 1, Box 436, Port Angeles, Wash. 98362
Filed Aug. 4, 1966, Ser. No. 570,281
2 Claims. (Cl. 293—9)



1. In a vehicle having a chassis including two longitudinal frame members, the improvement comprising:
(a) shock absorber units associated one each with said frame members,
(b) horizontally aligned identical bumper bars carried one each by said units,
(c) means mounting said units one each to said frame members,
(d) each of said units comprising an elongated air cylinder open at its forward end and closed at its rearward end,
(e) an annular limit stop secured within said air cylinder at said forward open end thereof,
(f) a fluid pressure conduit in open communication with the interior of said air cylinder at the rearward end thereof,
(g) a hollow piston substantially equal in length with that of said air cylinder slidably mounted therewithin and extending through said annular limit stop,
(h) an annular limit stop secured within said hollow piston at the rearward end thereof,
(i) two horizontally aligned identical bumper bars,
(j) means permanently securing each of said bumper bars to said forward ends of its respective hollow piston,
(k) a floating piston slidably mounted within said hollow piston,
(l) a compression spring within said hollow piston and disposed between said bumper bar securing means and said floating piston whereby impact forces of head-on collision will be absorbed by both of said units, and like forces to either of the units will be absorbed thereby individually.

3,346,293
CLAMP POSITIONING DEVICE
Luman L. Wilcox, 3126 E. 67th St., Tulsa, Okla. 74105
Filed Mar. 11, 1966, Ser. No. 533,559
7 Claims. (Cl. 294—19)



1. A clamp positioner for placing a clamp at a remote location, the clamp being of the scissors type in which the operating ends thereof are configured to provide one component of a clamp retaining means comprising:
an elongate standard for reaching to the remote location;
a pair of relatively movable arms on one end of the standard;
a grasping jaw on each of the movable arms adjacent the outer ends thereof, the jaws being aligned to receive the operating ends of the scissors clamp, at least one of the jaws being complementarily configured to the clamp to provide another component of the clamp retaining means for grasping and retaining the operating ends of the clamp between the jaws;
said jaws including first and second plates rigidly connected, respectively, with said first and second arms, said plates being disposed in a common plane parallel to the standard;
a first grasping element on the first plate for engaging the first of the operating ends of the scissors clamp, said first grasping element comprising a stub disposed perpendicular to the first plate and extending toward the second plate;
a second grasping element on the second arm for engaging the second operating end of the scissors clamp, said second grasping element comprising a transverse upstanding ridge extending towards the first plate;
first and second sheets of resilient material fixedly secured on, respectively, said first and second plates with said stub and ridge extending transversely through the immediately adjacent sheet;

said plates, grasping elements and said sheets cooperating with the operating ends of the clamp to form a clamp retaining means for releasably holding the clamp in the jaws;

means normally biasing the arms for relative movement; and

an actuating element operatively engaged with at least one of the movable arms and extending alongside the standard to the opposite end thereof for overcoming the biasing force.

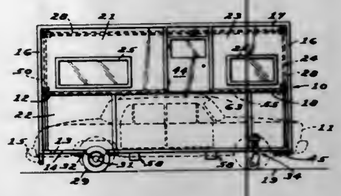
3,346,294
MULTIPURPOSE SHOVEL
Calvert L. Sartz, Rte. 3, Box 777, Coos Bay, Oreg. 97420
Filed Oct. 5, 1965, Ser. No. 493,013
9 Claims. (Cl. 294—49)



1. A shovel of the class described comprising: a relatively long slender smooth-surfaced blade having an arcuate leading end and a straight-across trailing end in a plane at right angles to the long axis of the over-all blade, said blade being relatively narrow, uniform in thickness from end to end, the back of said blade being convex and the front concave, said blade being gradually and progressively decreased in width from its upper trailing end to its lower leading end, the depth of the front side gradually and proportionally decreasing from the trailing end to the leading end, and handle means embodying an elongated shank having means at its lower end integrated with said trailing end and having a yoke at its upper end provided with a fixedly mounted hand-grip, said shank comprising a pair of front and rear identical stainless steel rods superimposed one upon the other and joined by longitudinally spaced paired welding beads, said rods being circular in cross-section and the welding beads of each pair being located on diametrically opposite sides and parallel and directly opposite each other.

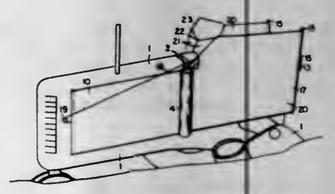
3,346,295
MOBILE HOUSING UNIT
Joseph I. Byer, 2896 Radisson Ave., Windsor Ontario, Canada
Filed Sept. 7, 1965, Ser. No. 485,441
10 Claims. (Cl. 296—23)

1. A self-supported mobile housing unit in combination with a conventional automobile for propelling said unit, said housing unit comprising a box-like framed structure supported on the ground and including an upper part with stationary upper walls, a lower part with lower walls with at least one of said lower walls being vertically movable, a horizontally extending, vertically movable floor in a lower position being substantially at ground level and within said lower part, said one lower wall and said floor being maintained in perpendicular relationship to each other during vertical movement, and a lifting mechanism carried by said structure and operatively connected to said floor and said one vertically movable lower wall, said lifting mechanism operable to move said



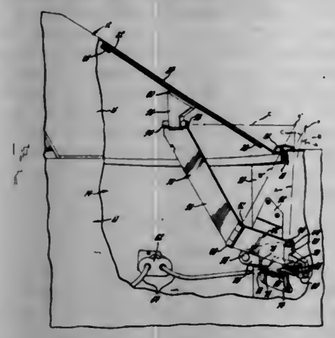
floor from the lower position substantially at ground level while being maintained in a horizontal position, to a raised position above roof level of said automobile into said upper part and move said one lower wall from a position in the lower part to a raised position in the upper part adjacent one of said stationary upper walls to define an opening in the lower part of said structure to allow at least a major portion of said automobile to be received underneath said raised floor in said structure.

3,346,296
FOLD-UP ROLL-UP TRACTOR WINDBREAKER WARMER
Joseph W. Hochmuth, Roundup, Musselshell County, Mont. 59072
Filed Jan. 8, 1965, Ser. No. 424,236
1 Claim. (Cl. 296—78)



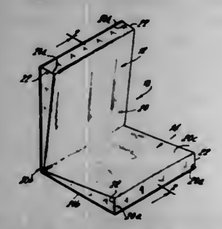
In combination, a tractor and an extendable, assembleable windbreaker warmer comprising, a saddle type frame securely mounted to a tractor, vertically mounted curtain holders secured to said frame and extending down on each side of said tractor, forwardly and rearwardly extendable curtains mounted in said holders, flexible curtain support arms with a spiral coil to provide spring tension thereto are hingedly attached to the upper part of said frame and have downwardly turned ends in the operative position receivable into sockets which are fixedly attached to staffs which are encircled by loops on the free ends of said rearwardly extending curtains in the extended position, staff extensions receivable into the loops of the upper portion of said rearwardly extendable curtains and into said staffs to hold the curtains extended and erect, the upper front ends of said rearwardly extendable curtains are drawn tightly together over the curtain support arms and held with a fastening means, said forwardly extendable curtain having operating means secured to the free end thereof whereby said forwardly extendable curtain may be adjusted to various positions to control the amount of heat directed rearwardly from the tractor to an operator.

3,346,297
WINDOW REGULATOR MECHANISM
Albert J. Colautti, Windsor, Ontario, Canada, and Bela Sandor, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,937
7 Claims. (Cl. 296—146)



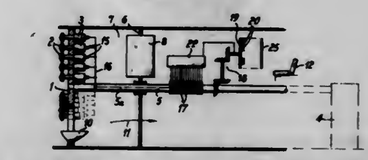
1. In a convertible vehicle body having a top provided with a back window opening therein and being movable between raised and lowered positions, the combination comprising, a window closure for closing said opening, and a pair of foldable linkage means connected to opposite sides of said closure and operative to move said closure between a raised position closing said opening when said top is in the raised position thereof and a lowered position, each of said linkage means including a plurality of members and a plurality of hinges each interconnecting a respective pair of said members for relative movement therebetween, said hinges being oriented with respect to each other to have the axes thereof converge at a point in space short of infinity, said linkages each being foldable and unfoldable transversely of the vehicle body between an unfolded position extending generally upwardly and longitudinally of the vehicle body to locate said closure in raised position and a folded position wherein said linkages are disposed within the vehicle body generally transversely thereof and locate the closure in lowered position.

3,346,298
SEAT CUSHION
Nancy Champion, Beechhurst, N.Y., assignor to Howe Plastics & Chemical Co., Inc., New York, N.Y., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,845
3 Claims. (Cl. 297—455)



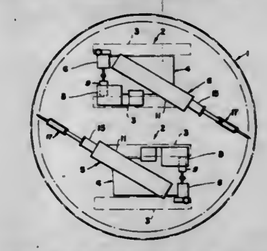
1. A seat cushion comprising a backrest portion, a seat portion and a cover for said backrest and seat portions, each of said backrest and seat portions being formed by a wedge-shaped foam block having opposite sides thereon of comparatively thick and narrow extents, said foam blocks being arranged with said comparatively thick sides thereof respectively defining an upper edge of said backrest portion and a front edge of said seat portion and with said opposite narrow sides thereof in facing relation closely adjacent each other in the medial area of said seat cushion, and said cover having an operative position enclosing said foam blocks and including corner seams therein only at locations coincident with the corners of said comparatively thick sides for providing a trim fit about said foam blocks, said cover being devoid of any corner seams in the medial portion thereof in areas adjacent the corners of said comparatively narrow sides of said foam blocks and spanning the distance between said foam blocks so as to serve as a hinge about which said backrest and seat portions are movable relative to each other.

3,346,299
DRILLING DEVICE WITH MEANS TO INDICATE RESISTANCE TO ROTATION
Otto Meyer, Mulheim (Ruhr), Germany, assignor to Demag Aktiengesellschaft, Duisburg, Germany
Filed Nov. 18, 1964, Ser. No. 412,069
Claims priority, application Germany, Nov. 20, 1963, D 42,982
10 Claims. (Cl. 299—1)



1. A drilling device comprising a rotary drill holder, means for rotating said drill holder, a plurality of rotary drills mounted for rotation on said drill holder at a plurality of angularly spaced locations, means to rotate said drills, electrical means connected to each of said drills transmitting an electrical signal varying in intensity only in proportion to the intensity of the resistance to rotation encountered by the associated drill during its rotation as affected by the substance which it encounters during drilling, and visual indicating means connected to said electrical means and visually indicating the resistance encountered by each drill at each position of its rotary movement along with rotation of said holder.

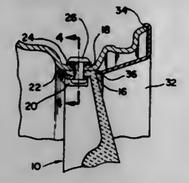
3,346,300
BLAST FURNACE LINING REMOVING MACHINE
Louis A. Grant, 7886 Saltsburg Road, Pittsburgh, Pa. 15239
Filed Aug. 8, 1966, Ser. No. 573,758
20 Claims. (Cl. 299—70)



11. In a demolition apparatus, the combination comprising a chassis including a turntable rotatable about a vertical axis through an angle of 360°, a boom structure pivotally mounted on said turntable, hydraulic means connected to said turntable and to said boom structure for pivoting said structure in a vertical plane, said boom structure including a base boom portion of given cross-section and an extensible boom portion of complementary

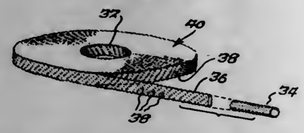
cross-section mounted for longitudinal movement thereon, guiding means on said base portion and engaging said extensible portion for guiding said extensible portion during movement thereof relative to said base portion, means connected to said boom portions for moving said extensible portion between extended and withdrawn positions thereof relative to said base portion, a power-actuated demolition tool mounted on the outward end of said extensible portion, and means for actuating said demolition tool.

3,346,301
RIVETED AUTOMOBILE WHEEL AND RIM STRUCTURE AND METHOD OF MAKING SAME
George H. Hurst, Jr., Abington, and William G. Campbell, Chalfont, Pa. (both of 341 W. Glenside Ave., Glenside, Pa. 19038)
Filed July 23, 1965, Ser. No. 474,341
5 Claims. (Cl. 301—65)



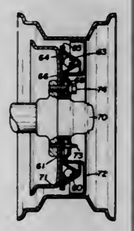
1. A wheel including a spider having a plurality of spokes each comprising a radial portion and a flange substantially normal to said radial portion,
a tire supporting rim, a plate secured along one edge thereof to the inner periphery of said rim and coacting therewith to form a pocket for receiving said flange, and
fastening means passing through said rim, said flange, and said plate.

3,346,302
LUBRICATING AND LOAD-CARRYING PAD FOR RAILWAY CAR CENTER BEARINGS AND THE LIKE
Cecil S. Robinson, Englewood, N.J., and Wesley J. Crake, Granada Hills, Calif., assignors to Robintech Incorporated, a corporation of New York
Filed Nov. 13, 1964, Ser. No. 411,013
2 Claims. (Cl. 308—137)



1. In a heavy-duty, load-supporting railway car center bearing having rigid, flat normally parallel bearing surfaces disposed substantially normal to the axis of load support and providing for oscillatory movement between said surfaces about said axis as well as for limited tilting of said surfaces out of parallelism, the improvement which comprises a flexible and resilient lubricant-retaining and load-carrying pad of metal wire adapted to be interposed between said rigid flat bearing surfaces, said pad being composed of a strip of flattened tubular knitted metal wire fabric convolutely wound upon itself and said pad being highly compressed in directions transverse the width of said strip and parallel with the axis of load support, the metal wire of which said pad is composed having cross-sectional dimensions which are very small compared with the total size of said pad whereby adjacent elements of said wire in said compressed pad are in intimate interlocking relationship which is substantially uniform throughout the volume of said pad with portions of adjacent elements of said wire spaced to form small pockets and passageways of approximately capillary size, said pad being adapted to retain lubricant in a substantially evenly distributed continuous phase throughout the volume of the pad in said small pockets and passageways through which lubricant may flow into contact with said bearing surfaces, said portions of said elements of said wire being resiliently movable relative to one another and in many instances being movable into frictional engagement with one another to make said pad resiliently compressible to yield slightly and recover under varying load conditions, yet firm enough to maintain a very high percentage of the lubricant-retaining and load-distributing capacity thereof under conditions including severe load variations and tilting of said bearing surfaces out of parallelism.

3,346,303
DYNAMIC WHEEL BALANCER
Richard H. Wesley, Fort Worth, Tex., assignor to AWB Manufacturing Co., Inc., Stofford, Kans., a corporation of Kansas
Filed Aug. 19, 1965, Ser. No. 480,930
4 Claims. (Cl. 301—5)

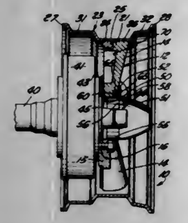


1. A wheel balancer which comprises:
(a) a disk having a central hub port and angularly spaced elongated lug bolt slots therein,
(b) a washer welded to said plate with one of said plate and said washer having an annular hollow peripheral groove therein and the other forming a closure for said groove to form a hollow peripheral ring characterized by an apex at the outer perimeter formed by the juncture of said plate and said washer,
(c) a plurality of balls in said ring having a diameter less than the maximum ball diameter that may be accommodated in said ring wherein rotation of said balancer causes said balls to be disposed about said ring in wheel balancing positions, portions of said balls adapted to be generally disposed in the apex of said ring during rotation of said balancer to substantially eliminate transverse ball movement, and
(d) a damping fluid in said ring of quantity to fill said ring to a depth at least to maintain the points of contact between one of said walls and said balls immersed when said balancer is under rotation.

3,346,304
AXLE CAP FOR SPORTS CAR WHEELS
Aaron J. Fenton, 1301 Monaco Drive, Pacific Palisades, Calif. 90272
Filed Jan. 10, 1966, Ser. No. 519,627
2 Claims. (Cl. 301—108)

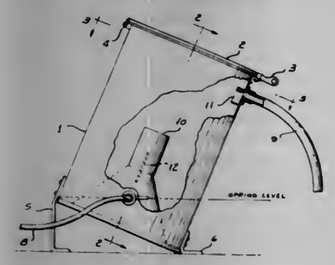
1. As an article of manufacture for use with automobile wheels of the type having a circular center opening and circularly arranged bolt holes, axle cap means comprising a cylindrical member having lugs, the cylindrical member having a size to fit into the opening of the wheel,

a cylindrical tapered axle cap, open at one end and having lugs at that end of substantially the same size as said first mentioned lugs, said lugs on the cylindrical member



and cap being juxtaposed against each other, and means securing said lugs to the portion of the wheel adjacent to the opening, the said circular member and the center opening in the wheel having splined relationship.

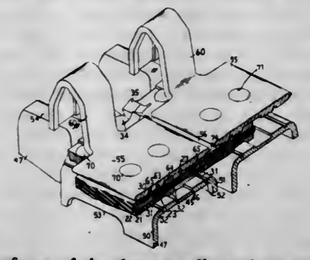
3,346,305
SPRING UNTANGLER
Joseph Heymann, Yonkers, N.Y., assignor to Tiros Plastics Corporation, Yonkers, N.Y., a corporation of New York
Filed Sept. 29, 1965, Ser. No. 491,117
7 Claims. (Cl. 302—2)



1. A spring untangling device comprising a closeable fluid-tight cylindrical container having a discharge outlet in the upper portion of the container, the bottom of the container being tilted away from the horizontal toward the discharge outlet, and having a substantially conical member joined to the container bottom with the apex of the cone extending upwardly and the base of the cone occupying a major portion of the area of the container bottom, and means to pump fluid into the lower portion of the container through an inlet nozzle directed circumferentially about the container to establish a spiral fluid flow path for conveying springs to the discharge outlet.

3,346,306
TRACK ELEMENT FOR A TRACK-LAYING VEHICLE
Erwin-Walter Siber, Longeuil, Quebec, Canada, assignor to Go-Tract Limited, Longeuil, Canada, a company of Canada
Filed Nov. 16, 1964, Ser. No. 411,433
14 Claims. (Cl. 305—40)

1. An element of a track for a track laying vehicle, which element is adapted to form one of a series of like elements which are secured consecutively to each other to constitute the said track; the said element comprising: two relatively movable parts; a separate set of cables connecting each of said parts of the element, each cable of said set having ends respectively anchored to said two parts of the element; means on said parts to permit each of the latter to be secured to the adjacent part of the adjacent element; and each of said two parts having upwardly and downwardly curved tongues permitting the element to be bent to a substantial extent about its transverse axis from an aligned position of the said parts and in directions both towards and away from the center of the track, said upwardly and downwardly curved tongues having side surfaces and curved surfaces, the curved surfaces of said upwardly and downwardly curved tongues of one of said parts being adapted to move over the



curved surfaces of the downwardly and upwardly curved tongues respectively of the other of said parts and the side surfaces of said upwardly and downwardly curved tongues of one of said parts being adapted to abut and move over the side surfaces of the upwardly and downwardly curved tongues respectively of the other of said parts whereby said tongue are engageable with each other throughout said bending and prevent any substantial relative vertical, sideways and approaching movement of adjacent portions of said parts.

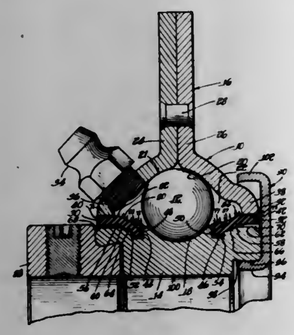
ERRATUM

For Class 308—137 see:
Patent No. 3,346,302

3,346,307
SEALED BEARING
Richard F. Harrington, Lincolnwood, Ill., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Continuation of application Ser. No. 456,461, May 17, 1965, which is a continuation of application Ser. No. 272,892, Apr. 15, 1963. This application Feb. 28, 1966, Ser. No. 534,579
6 Claims. (Cl. 308—187.1)

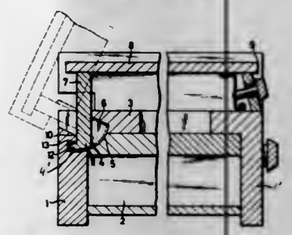
1. A sealed bearing comprising, in combination, an inner bearing element defining an inner annular race, an outer bearing element encircling said inner bearing element and defining an outer annular race encircling said inner race, an annular series of rotary load bearing members intervening between said races in rolling engagement therewith to journal said inner and outer elements for relative rotation about a common axis, said outer bearing element defining an annular sealing surface located axially at one side of said outer race and facing generally in a radially inward direction in concentric relation to said axis, a flexible annular seal formed of yieldable polymeric material and encircling said inner bearing element between said inner and outer bearing elements, said flexible seal including a cantilevering annular portion which cantilevers radially away from said inner bearing element and axially away from said inner race, said cantilevering annular portion of said seal having an axially extending marginal edge which is encircled by said sealing surface, said seal being twisted out of its unstressed shape and thereby having a residual stress which continuously urges said cantilevering annular portion of the seal radially outward against said sealing surface so that the seal slidably engages said sealing surface over an annular band of mutual contact having substantial width, said seal includ-

ing an annular support portion integral with said cantilevering portion and closely encircling said inner bearing element axially inward of said band of mutual engagement to support the seal on the inner bearing element, said seal support portion being shaped to define an annular seal anchoring lip which projects laterally sharply in relation to the adjacent portion of said cantilevering annular portion of the seal and which projects radially inward in relation to said inner bearing element, said inner bearing element defining therein an annular seal anchoring groove concentric with said common axis and opening radially outward between two radial and generally parallel groove walls formed on the inner bearing element, said seal anchoring lip extending radially inward into said groove to anchor the seal against axially outward displacement; said anchoring lip, as disposed in said groove, being twisted out of its unstressed shape and having a residual stress tending to twist the lip against the restraint of said groove walls so that the lip is continuously urged by the residual stress therein into effective sealing engagement with the groove walls, said residual stress in the lip tending to twist the lip rotatably in a direction such that the radially inner periphery of the lip is urged axially away from said inner race and against the outermost groove wall which is on the side of the groove nearer said band of mutual engagement so that the residual stress in the anchoring lip reacts on said outer-



most groove wall to urge said cantilevering portion of the seal toward said rotary load bearing members; said inner bearing element being shaped and dimensioned in relation to said sealing surface and said seal to provide, when the cantilevering portion of the seal is in engagement with said sealing surface, a radial clearance space of annular form disposed on the radially inward side of the seal and having an axial extent running axially entirely across said band of mutual engagement and extending a substantial distance axially from said band of mutual engagement toward said groove; said groove being spaced axially a substantial axial distance from the inner edge of said band of mutual engagement inwardly toward said inner bearing race so that internal fluid pressure acts radially inward on the seal between said band of mutual engagement and said groove to apply to said anchoring lip radially inward force which increases the degree of anchoring the lip in said groove and which swings the cantilevering annular portion of the seal inwardly away from the sealing surface for relieving the internal fluid pressure by passing fluid outwardly between the sealing surface and seal; and said seal being mechanically supported, for engagement with said sealing surface, solely by component integral structure of said inner bearing element that has a permanently fixed and immovable relationship to the portion of said inner bearing element extending between said groove and said journal means.

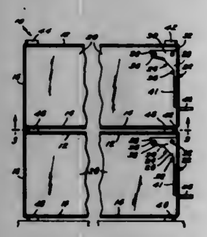
3,346,308
BOX FOR RECORD PLAYERS
Heinrich Zimmermann, St. Georgen, Black Forest, Germany, assignor to Dual Gebruder Steidinger, St. Georgen, Black Forest, Germany, a corporation of Germany
Filed May 19, 1966, Ser. No. 551,288
Claims priority, application Germany, May 20, 1965, St 23,852
1 Claim. (Cl. 312—8)



A box for a phonograph, comprising
a rear wall,
a front wall spaced apart from said rear wall,
a bottom portion disposed between said rear wall and said front wall,
an intermediate bottom between said rear wall and said front wall,
a cover removably mounted on said rear wall and said front wall, respectively,
said cover having a top portion and a rear portion extending substantially perpendicularly and downwardly from said top portion,
said rear portion having inner face and an outer face disposed parallel to said inner face, as well as a projection extending rearwardly from said outer face,
said rear wall of said box having a first recess receiving said rear portion of said cover and a second recess continuing from said first recess and receiving said rearward projection of said rear portion,
said first recess being defined by a first upwardly inclined top face continuing into a second vertically downwardly directed abutment face,
the crossing line of said two faces defining the pivoting axis for lifting and lowering, respectively said cover,
said second recess continuing from said first recess being defined by a third substantially horizontal face, a fourth substantially vertical face and a fifth curved face complementary to the outer face of said projection of said rear portion,
said intermediate bottom having a third recess continuing from said first and second recesses,
said third recess being defined by a sixth upwardly inclined top face disposed opposite and parallel to said first upwardly inclined top face and continuing at its upper end upwardly into a seventh vertically and upwardly directed abutment face and said upwardly inclined top face further continuing downwardly into a curved bottom face and extending into said first recess to continue into said fifth curved face,
said rear portion of said cover being of a thickness substantially identical with the distance between said inclined faces and between said vertical faces of said recesses,
said outer face of said rear portion of said cover abutting said first vertically and downwardly directed abutment face in the closing position of said cover and said inner face of said rear portion of said cover engaging said seventh upwardly inclined top face of said second recess, in the open position, so that said cover is shiftable from its closing position to its open position by a tilting and non-sliding movement, and

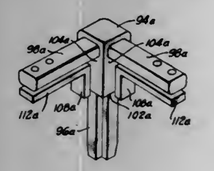
the gravity center of said cover being disposed in the open position of the latter in a vertical plane positioned rearwardly from said pivoting axis for said cover, in order to retain said cover in its open position, upon tilting said cover from its closing position for an angle less than 90° into its open position.

3,346,309
DISPLAY CONTAINER
Frank Mellion, Providence, R.I., assignor to Jo-Dee Corp., Warwick, R.I., a corporation of Rhode Island
Filed Apr. 1, 1965, Ser. No. 444,869
3 Claims. (Cl. 312—109)



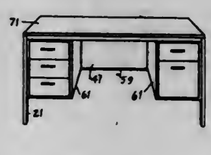
1. In a container for storing and displaying an article therein, a top wall, a bottom wall, side walls joined to said top and bottom walls, a rear wall joined to said top, bottom and side walls, and a front door mounted for pivotal movement about a fixed axis on said side walls, said walls and front door being formed of a clear plastic material to provide visual access to the interior of said container for viewing the contents therein, brackets joined to the front door at the upper ends thereof and adjacent to said side walls, pin means associated with said brackets and cooperating with said side walls to pivotally mount said front door on said side walls at the upper ends thereof, a pin located on the inner surface of each side wall and spaced vertically below the pivot connections that join the brackets to the side walls, each of said brackets having a depression formed therein that is disposed in spaced relation from the pivot connection thereof, each of said pins being receivable in a depression upon pivotal movement of the door from a vertical closed position to a substantially horizontal open position wherein said door is positively retained in said open position.

3,346,310
SHOWCASE CONSTRUCTION
Arthur G. Diack, Inglewood, Calif. (1427 Santee St., Los Angeles, Calif. 90015)
Filed June 28, 1965, Ser. No. 467,468
8 Claims. (Cl. 312—140)



1. A showcase-frame corner construction, including:
(a) a post member and two rail members respectively having square-cut ends positioned in corner-forming relation;
(b) said post member and said rail members respectively having longitudinal sockets therein which extend to said square-cut ends thereof;
(c) said post member and one of said rail members respectively having therein longitudinally-extending panel-receiving channels in a common plane;
(d) said post member and the other of said rail members respectively having therein longitudinally-extending panel-receiving channels in a common plane;
(e) a corner connector having three prongs respectively aligned with and plunged into said sockets in said post and rail members and having three abutment surfaces respectively parallel to and engaged by said square-cut ends of said members in abutting relation;
(f) said prongs having snug sliding fits in said sockets; and
(g) means comprising screws respectively extending laterally into said sockets and into engagement with said prongs, and bearing against said members, for securing said ends of said members to said prongs, respectively, whereby said snug fitting prongs and said screws constitute multiple securing means holding said post and rail members in assembled relation.

3,346,311
DESK CONSTRUCTION
Waldo Whitman Bears, 33 Little Spring Run, Fairport, N.Y. 14450
Filed Apr. 4, 1966, Ser. No. 539,770
8 Claims. (Cl. 312—195)

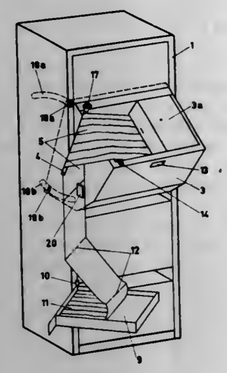


1. A desk structure comprising a pair of end frames, a top unit resting on and supported by said end frames, a pedestal unit in a corner between said top unit and one of said end frames, a portion on said one of said end frames overlying said pedestal unit to prevent upward movement of said pedestal unit relative to said one of said end frames, and a portion on said pedestal unit overlying a portion of said top unit to prevent upward movement of said top unit relative to said pedestal unit, thereby also preventing upward movement of said top unit relative to said one of said end frames.

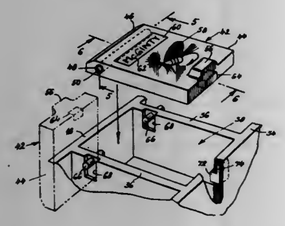
3,346,312
RECORDING APPARATUS STRUCTURE
Fritz Schwarzer, Barmannstr. 38, Munich-Pasing, Germany
Filed May 2, 1966, Ser. No. 546,659
Claims priority, application Germany, May 8, 1965, Sch 38,174
5 Claims. (Cl. 312—234)

1. Recording apparatus structure comprising an upright cabinet having a vertical front wall; and a recording assembly, said recording assembly having a panel arranged for visual inspection of a continuous record form passing sideways with respect to said cabinet over said panel and having an upper and a lower edge, said recording assembly being swingably mounted about an axis substantially coincident with the upper edge of said panel to permit extension of said assembly to a projecting position for

convenient visual inspection of the record and retraction into a flat space-saving position; said panel, when extended, being inclined at an acute angle with respect to the plane of said front wall, the lower edge of said panel projecting from said front wall the upper edge thereof in substantial alignment with said front wall; and guide means guiding said continuous record forms sideways with respect to said cabinet over said panel for subsequent storage.

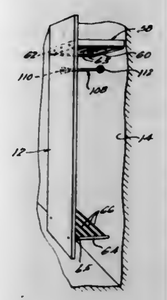


3,346,313
FISHING TACKLE BOX
Willard E. Fee, 1 W. Santa Inez Ave., San Mateo, Calif. 94402
Filed Mar. 5, 1965, Ser. No. 437,466
1 Claim. (Cl. 312—234.1)



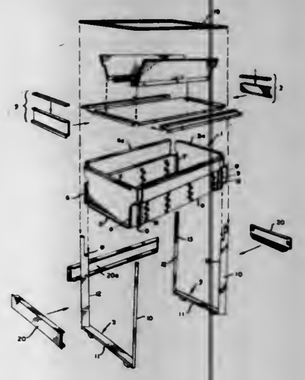
In a flyhook box, a pan-shaped body open at the top, said body divided into a number of compartments with open tops for holding flyhooks therein, said compartments having bottom, end and side walls, plastic plate-like openable covers hingedly mounted on the side walls of said compartments at the tops thereof, said mounting including opposed hinge pins on said side walls at one end of each compartment adjacent the top thereof, a tubular bushing carried by each said plate-like cover at one end thereof journalled on said hinge pins, a permanent magnet supported on the inner surface of one end wall of each compartment, a plated steel block carried by said plate-like cover at one end thereof adapted to contact said permanent magnet when the plate-like cover is in closed condition, a name plate embedded in the cover of each compartment at one end thereof identifying the name of the type of flyhook in the compartment, and an elongated compression coil spring in said bushing contacting the opposed hinge pins for holding the plate-like cover in position on the pins.

3,346,314
WALL WARDROBE
Hugh C. Acton, Birmingham, Mich., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,952
4 Claims. (Cl. 312—245)



1. In a wall wardrobe for containing apparel and the like and adapted to be mounted on a wall or similar structure, a substantially vertically extending rigid cover panel, means extending between the wall and said panel for supporting said panel in a position spaced from and substantially parallel to the wall, said last mentioned means including means defining a generally rectangular configured rigid frame having side portions extending substantially parallel to the wall and said panel, and end portions extending between the wall and said panel, said frame having means for being secured to the wall so as to stand rigidly out from the wall, said panel being sustained against gravity by said frame, and apparel supporting means interposed between the wall and said panel and being at least partially supported by said frame.

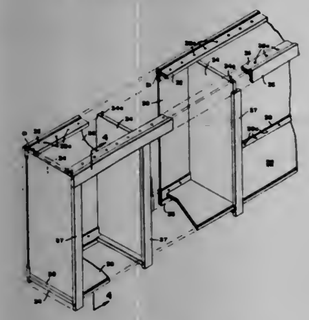
3,346,315
CABINET CONSTRUCTION FOR OFFICE EQUIPMENT
Romeo T. Proulx, Copiague, N.Y., assignor to VISIrecord, Inc., Copiague, N.Y., a corporation of New York
Filed July 12, 1966, Ser. No. 564,602
6 Claims. (Cl. 312—255)



1. In a metal furniture construction having a generally polyhedric working unit adapted to be supported above floor level by at least one leg member, the improvement which comprises an assembly disposed at a first corner of said working unit and including

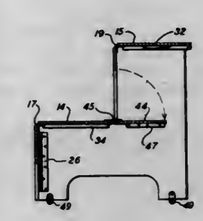
(a) a supporting leg having a cavity therein and formed with a substantially flat strip portion extending along said corner, said strip portion having
  (i) an exterior surface facing the interior of said working unit,
  (ii) an interior surface bounding at least a portion of said cavity, and
  (iii) a longitudinally extending slot therein providing access to said cavity;
(b) a bearing surface on said working unit adjacent said first corner and disposed to engage said leg along the exterior surface of said strip portion adjacent to said slot; and
(c) strip portion engaging means fixed to said working unit adjacent said bearing surface and having a hook-shaped portion constructed and arranged to extend through said slot to engage said interior surface.

3,346,316
MODULAR CABINET STRUCTURE
Kenneth S. Morioka and Kazuo Goto, both of 2054 University Ave., Berkeley, Calif. 94704
Filed Apr. 9, 1965, Ser. No. 446,858
3 Claims. (Cl. 312—257)



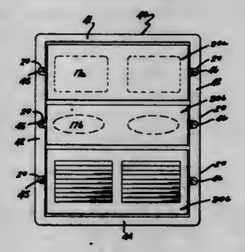
1. In a modular wall cabinet that is adapted to be supported in elevated position on the wall, said cabinet being adapted to be assembled at the site of use from previously designed parts joined by friction joints to provide modules of different sizes in the cabinet, the combination comprising a back panel adapted to be attached to a wall for hanging of the cabinet in elevated position, said back panel having a top rail projecting therefrom and a bottom rail parallel to the top rail, said top rail and said bottom rail each having a row of substantially equally spaced dowel receiving holes, said rows being parallel and the holes of said top rail being aligned with the holes of said bottom rail, a plurality of divider panels, each of said divider panels having a top dowel adapted to be positioned in a hole in said top rail, each of said divider panels also having a lower dowel on the rear thereof near the bottom thereof, said dowels being spaced such that they may be placed only in a pair of aligned holes of said top rail and said bottom rail so that said divider panels cannot be attached to said back panel in any position other than at substantially right angles thereto and at predetermined distances apart, said dowels providing interlocking means between said divider panel and said rails when they are positioned in said pair of aligned holes such that said top dowel holds the top of the divider panel from swinging forward away from said back panel, said lower dowel holds the divider panel from sliding downward with respect to said back panel, and both of said dowels restrain the divider panel from moving upward with respect to the back panel when said back panel is attached to said wall, a top front rail, means supporting said last mentioned rail on the forward parts of the tops of said divider panels comprising dowels in the tops of said divider panels near the front edges thereof engaging said top front rail in a row of dowel receiving holes that are spaced the same as the holes in said first mentioned rails, a bottom shelf positioned under said divider panels and means associated with said bottom rail and said divider panels supporting said shelf in said position.

3,346,317
FOLDING STANDS
Albert L. Peggs, 3450 Conata, Duarte, Calif. 91010
Filed Sept. 16, 1966, Ser. No. 580,068
5 Claims. (Cl. 312—258)



1. A foldable stand comprising a first vertical riser, a second vertical riser, a lower shelf, an upper shelf, hinge means joining the first riser and the lower shelf, hinge means joining the lower shelf and the second riser, hinge means joining the second riser and the upper shelf, a first vertical support, a second vertical support, bearing surfaces on each vertical support adapted to receive the lower and the upper shelves, support locking means on the upper shelf, support registry means on the lower shelf, the support locking means being adapted to lock a vertical support in registry against the support registry means, hinge means joining the first and second vertical supports to the first riser at spaced positions thereon such that the risers, shelves and supports may be folded into mutual parallel relationship.

3,346,318
SHELF-FORMING CARTON
Robert L. Propst, Ann Arbor, Mich., assignor to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed June 8, 1966, Ser. No. 556,008
9 Claims. (Cl. 312—330)



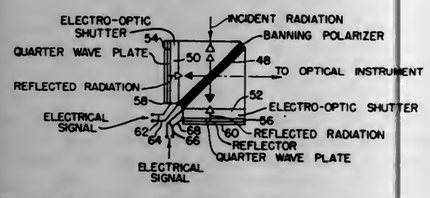
1. A storage unit comprising: a framework having a plurality of runner receiving grooves in opposite interior faces thereof; a plurality of shelf-forming cartons having a width approximately equal to the distance between said opposite interior faces of said framework, each of said cartons having a top, bottom, rear face, front face and two spaced ends, said top, bottom, ends and rear face

being closed, said front face being provided with access means wherethrough access may be gained to the interior of said carton, said carton having sufficient structural rigidity to support the goods to be placed therein in shelf-like fashion when suspended from said ends only; and a runner element positioned on the exterior surface of each of said ends and extending outwardly therefrom, said runner elements adapted to act as runners and be slidably received by said grooves whereby said cartons are slidably suspended within said framework supported solely on said runner elements, access being had to said carton through said front-face access means when said carton has been so slidably suspended.

3,346,319
ELECTRO-OPTIC VALVE WITH POLARIZING BEAM SPLITTER AND REINFORCEMENT

Bruce H. Billings, Lincoln, Mass., assignor to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Sept. 25, 1963, Ser. No. 311,345
6 Claims. (Cl. 350—150)



1. An electro-optic shutter comprising,

(a) a polarizing beam splitter for reflecting a first portion of incident light having a first polarization along a first path and for transmitting a second portion of said incident light having a second polarization along a second path,

(b) first electro-optic means in said first path for rotating the polarization of said first portion of incident light in response to an applied electrical signal,

(c) second electro-optic means in said second path for rotating the polarization of said second portion of incident light in response to an applied electrical signal,

(d) means for applying an electrical signal to said first and second electro-optic means,

(e) means for reflecting said first portion of incident light back through said first electro-optic means along said first path to said polarizing beam splitter in such a manner that in the absence of an applied electrical signal, said reflected first portion is transmitted through said polarizing beam splitter, and

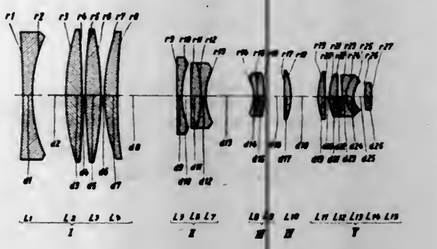
(f) means for reflecting said second portion of incident light back through said second electro-optic means along said second path to said polarizing beam splitter in such a manner that in the absence of an applied electrical signal, said reflected second portion is reflected by said polarizing beam splitter.

3,346,320
HIGH-SPEED VARIFOCAL OBJECTIVE

Karl H. Macher, Bad Kreuznach, Rhineland, Germany, assignor to Jos. Schneider & Co., Bad Kreuznach, Germany, a corporation of Germany

Filed July 17, 1963, Ser. No. 295,851
2 Claims. (Cl. 350—184)

1. In an optical objective system including a fixed-focus rear lens group, the combination therewith of a forward lens group consisting of a substantially fixed positive first component, a negative second component, a negative third component and a fixed positive fourth component; said first component including three air-spaced positive singlets and a dispersive front lens preceding said singlets, said front lens being air-spaced from the next one of said singlets by a distance less than substantially one-fourth of the focal length of said first component, said front lens having an individual focal length whose absolute value is less than that of the focal length of said first component; said second and third components being movable, relatively to each other and to said first and fourth components, into a first position in which the system has a relatively small focal length, an intermediate second position, and a third position in which said system has a relatively large focal length, said second component consisting of a negative singlet followed by a negative



doublet, said third component being a negative doublet; the numerical values of the radii of curvature $r1$ to $r18$ of said dispersive front lens L1, said collective singlets L2, L3, L4, said negative singlet L5 of said second component, said doublet L6, L7 of said negative second component, said doublet L8, L9 of said third component and a positive singlet L10 constituting said fourth component, and of the axial thicknesses and separations $d1$ to $d17$ thereof, based upon a numerical value of 100 for an intermediate overall focal length of the system, the refractive indices n_d of said lenses and their Abbé numbers ν being substantially as given in the following table, the spaces $d8$, $d13$ and $d16$ being given for that second position:

TABLE

	Lens	Radii	Thicknesses and Separations	n_d	ν
I	L1	$r1 = -1,339.00$	$d1 = 15.00$	1.78470	26.10
		$r2 = +249.80$	$d2 = 56.50$	Air space	
	L2	$r3 = +385.40$	$d3 = 30.00$	1.69938	49.57
		$r4 = -1,434.00$	$d4 = 0.00$	Air space	
	L3	$r5 = +1,025.00$	$d5 = 25.75$	1.67790	55.52
		$r6 = -537.20$	$d6 = 1.35$	Air space	
	L4	$r7 = +308.80$	$d7 = 22.50$	1.67790	55.52
		$r8 = +980.75$	$d8 = 155.70$	Air space	
II	L5	$r9 = +10,000.00$	$d9 = 7.50$	1.62041	60.29
		$r10 = +139.75$	$d10 = 15.50$	Air space	
	L6	$r11 = -1,502.00$	$d11 = 17.00$	1.80518	25.46
	L7	$r12 = -160.70$	$d12 = 5.00$	1.52542	64.55
		$r13 = +92.75$	$d13 = 34.50$	Air space	
III	L8	$r14 = -66.00$	$d14 = 4.00$	1.62041	60.29
	L9	$r15 = +872.75$	$d15 = 10.50$	1.64831	33.77
		$r16 = -168.25$	$d16 = 30.00$	Air space	
IV	L10	$r17 = +1,002.00$	$d17 = 11.00$	1.65844	50.84
		$r18 = -126.25$			

CHEMICAL

3,346,321
5-NITROTHIAZOLE-AZOPHENOL DYEING OF METALLIZED POLYOLEFIN ARTICLES AND PRODUCT THEREOF

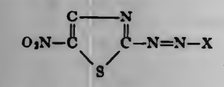
Albin F. Turbak, Danville, Ill., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Original application May 20, 1963, Ser. No. 281,766. Divided and this application Oct. 6, 1964, Ser. No. 402,011
9 Claims. (Cl. 8—4)

1. A process for dyeing a polymeric article formed of an alpha olefin polymer:

(a) containing .01 to 10 weight percent of a metal compound, said metal being selected from the group consisting of nickel, cobalt, chromium, manganese, iron, vanadium, copper and zinc,

which comprises contacting the formed polymer with a monoazo dye having the formula



where X is the radical of a phenol.

3,346,322
STABLE HIGHLY CONCENTRATED SOLUTIONS OF BASIC DYES

Helmut Finkenauer, Walter Selbert, Karl Kohl, Eberhard Luecke, and Fritz Schubert, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,836
Claims priority, application Germany, Mar. 29, 1962, B 66,580; Feb. 16, 1963, B 70,768
9 Claims. (Cl. 8—79)

1. A concentrated solution of at least about 20% by weight of a water-soluble aliphatic carboxylic acid salt of a basic dye as formed by the free base of said dye with said acid in a liquid, water-miscible organic solvent selected from the class consisting of ethylene glycol, diethylene glycol, triethylene glycol, dipropylene glycol, 1,2-propylene glycol, 1,4-butanediol and the monomethyl, -ethyl, -propyl and -butyl ethers of said glycols, formamide, dimethyl formamide, N-methylpyrrolidone, butyrolactone, acetonitrile, tetrahydrofurane, dioxane and dimethylsulfoxide.

3,346,323
TANNING PROCESS

Heinrich Spahrkas, Bergisch Neukirchen, Herbert Knopf, Leverkusen, Kurt Faber, Cologne-Flittard, and Gustav Mauthe, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,590
Claims priority, application Germany, Jan. 18, 1963, F 38,792; Nov. 26, 1963, F 41,363
7 Claims. (Cl. 8—94.26)

1. In a process for tanning animal skins involving the use of inorganic chrome tanning salts and acid-binding agents, the improvement that comprises employing as said acid-binding agent, a member selected from the group consisting of dolomite, and (at least ten percent (10%) calculated on the total amount of neutralizing agents of dolomite in combination with at least one) mixtures of dolomite and one or more other neutralizing agents selected from the group consisting of sodium carbonate, potassium carbonate, sodium bicarbonate, potassium bicarbonate, calcium carbonate and sodium sulphite in which dolomite constitutes at least 10% by weight of said mixture.

3,346,324
TANNING WITH A CONDENSATION PRODUCT OF ACROLEIN AND FORMALDEHYDE

Martin L. Fein and Edward M. Filachione, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 24, 1964, Ser. No. 377,776
4 Claims. (Cl. 8—94.26)

1. A process for tanning hides and skins comprising impregnating said hides and skins under acid conditions with a solution of a water-soluble condensation product, produced by condensation between acrolein and formaldehyde under alkaline conditions, until the hides and skins are tanned.

3,346,325
MODIFICATION OF CELLULOSE WITH TETRASULFATOESTERS OF DISULFONIUM SALTS

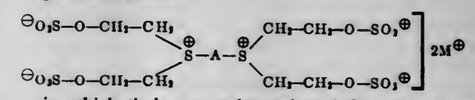
Heinz Bille, Harry Distler, Georg Dittus, Werner Mueller, and Wilhelm Ruettiger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 28, 1964, Ser. No. 363,267
Claims priority, application Germany, May 9, 1963, B 71,821
7 Claims. (Cl. 8—120)

1. A process for finishing textile material of fiber-forming substances containing reactive hydrogen atoms which comprises impregnating the textile material in any sequence with:

(a) an aqueous solution of an alkali metal hydroxide and

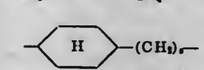
(b) an aqueous solution of a substance having the general formula:



in which A is a member selected from the group consisting of radicals having the formula:

$$-(CH_2)_p-,\ -(CH_2)_q-O-(CH_2)_r-$$

and



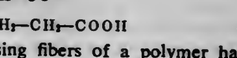
p is one of the numbers 1, 2, 3 and 4, q is one of the numbers 2, 3 and 4, r is one of the numbers 2, 3 and 4, s is one of the numbers 0, 1 and 2 and $M^{\oplus}$ is an ion selected from the group consisting of alkali metal ions and ammonium ions.

3,346,326
CONTROLLED SAPONIFICATION OF FIBROUS POLYGLUTAMIC ACID ESTERS WITH AQUEOUS-ALCOHOLIC SOLUTIONS OF A BASE

Yoshifumi Takeda, Tokyo, and Toru Okuda and Setsuji Sakurai, Kanawaga-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,163
Claims priority, application Japan, Apr. 3, 1962, 37/12,645
9 Claims. (Cl. 8—127.5)

1. A method of preparing polypeptide fibers the molecules of which have recurring groups



which comprises immersing fibers of a polymer having recurring groups



in the molecule thereof, wherein R is a lower alkyl radical, in a solution of an alkaline saponification agent in a liquid mixture of water and a water-soluble alcohol, holding said fibers immersed as a solid phase in said liquid mixture until said lower alkyl radicals are at least partly displaced, and thereafter contacting said fibers with an acid.

3,346,327
MODIFICATION OF WOOL WITH ISATOIC ACID ANHYDRIDES IN THE PRESENCE OF BUTYROLACTONE

Nathan H. Koenig, Berkeley, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

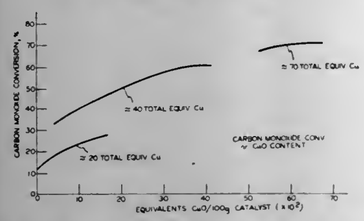
No Drawing. Filed Mar. 26, 1964, Ser. No. 355,128
5 Claims. (Cl. 8—128)

1. A process for chemically modifying wool which comprises reacting wool under essentially anhydrous conditions, in the presence of γ-butyrolactone, with an isatoic anhydride.

3,346,328
METHOD OF TREATING EXHAUST GASES

Francis J. Sergeys, 9917 E. Bexhill Drive, Kensington, Md. 20795; Philip K. Maher, 107 Ridgewood Road, Baltimore, Md. 21210; Warren S. Briggs, 705 Brantford Road, Silver Spring, Md. 20904; and Carl V. McDaniel, 1513 Crestview Drive, Laurel, Md. 20810

Filed Mar. 30, 1967, Ser. No. 627,226
4 Claims. (Cl. 23—2)



1. A method of treating exhaust gases comprising air pollutants comprising carbon monoxide and hydrocarbons by substantially oxidizing said air pollutants, comprising passing a mixture of said exhaust gases and a gas comprising oxygen through a catalyst bed comprising a crystalline zeolite having a porous structure and having an approximate composition in the range

$$M_{2/n}O:Al_2O_3:2\text{–}12SiO_2:xH_2O$$

where M is a metal cation and n is its valence and x is a function of the degree of dehydration having at least 0.10 gram equivalent of copper per hundred grams of total zeolite and wherein said copper consists of cupric ions which form a portion of the metal cations (M) and copper oxide dispersed within the pores of the zeolite, at a temperature of from 400 to 1100° F.

3,346,329
PROCESS FOR RECOVERING VANADIUM VALUES FROM FERROPHOSPHORUS

John A. Hermann, Oklahoma City, Okla., assignor to Kerr-McGee Corporation, a corporation of Delaware

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,616
11 Claims. (Cl. 23—15)

1. A process for recovering vanadium values from vanadium bearing ferrophosphorus comprising the steps of roasting under oxidizing conditions in the presence of an elemental oxygen-containing gas a mixture consisting essentially of vanadium bearing ferrophosphorus having a particle size not greater than about —80 mesh and sodium chloride having a particle size not greater than about —8 mesh at a temperature of about 600–750° C., cooling the roasted ferrophosphorus, adding an additional quantity of the sodium chloride to the roasted ferrophosphorus, reducing the particle size of the cooled roasted ferrophosphorus to provide particles having a size not greater than about —3 mesh, thereafter subjecting a mixture consisting essentially of the roasted ferrophosphorus and the sodium chloride to a second roast under oxidizing conditions in the presence of an elemental oxygen-containing gas at a temperature of about 600–800° C., cooling the roasted ferrophosphorus from the second roast, leaching the cooled ferrophosphorus from the second roast with an aqueous medium to produce an aqueous solution containing vanadium and phosphorus values, precipitating phosphorus-containing ammonium metavanadate from the aqueous solution containing vanadium and phosphorus values by addition of ammonium chloride, separating the precipitated ammonium metavanadate from the aqueous solution, at least partially dissolving the phosphorus-containing ammonium metavanadate in a substance selected from the group consisting of water and an aqueous solution of at least one material selected from the group consisting of sodium, potassium and ammonium carbonates and hydroxides to produce a solution containing dissolved vanadium values, and then precipitating the vanadium values by addition of a mineral acid selected from the group consisting of hydrochloric acid and sulfuric acid to the resulting solution.

3,346,330
PROCESS OF EXTRACTION OF HAFNIUM

Alain de Calmes, Paris, Henri Humeau, Trosly-Breuil, and Alfred Lecocq, Saint-Maur-des-Fosses, France, assignors to Commissariat à l'Energie Atomique, Paris, France

No Drawing. Filed Dec. 12, 1962, Ser. No. 243,984
Claims priority, application France, Dec. 27, 1961, 883,075
9 Claims. (Cl. 23—23)

1. A process for separation of hafnium from zirconium and impurities, comprising completely emulsifying an aqueous acid solution containing hafnium, zirconium and impurities with an organic solvent, the acidity of the acid solution being greater than 7 normal but not so great as to attack the organic solvent, allowing the emulsion to separate into an upper organic phase containing a substantial amount of the hafnium and zirconium, a lower aqueous phase and sludge innerlayer, the aqueous phase and the sludge innerlayer containing most of the impurities, separating the organic phase containing the hafnium and zirconium from the phases containing the impurities and passing said organic phase countercurrent to an aqueous acid solution having an acidity such that the partition co-efficients are different for hafnium and zirconium, whereby the hafnium passes into the aqueous acid phase and most of the zirconium remains in the organic phase.

3,346,331
RECOVERY OF IODINE FROM SOLUTIONS CONTAINING SAME

Hiromichi Nakamura, Sakashita-machi, Bunkyo-ku, Tokyo, Hiroshi Katoo, Sakusabe-machi, Chiba, Nobuaki Minejima, Choosei-gun, Chiba, Hiroshi Shimizu, Bunkyo-ku, Tokyo, Akira Satoo, Edogawa-ku, Tokyo, Masashi Nozaki, Kurume-machi, Kita-tamagun, Tokyo, and Yuu Doochi, Myogadani-machi, Tokyo, Japan, assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

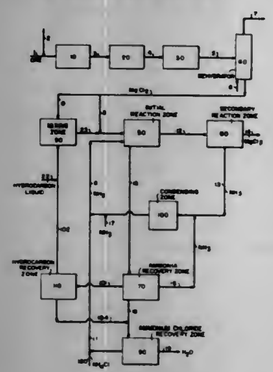
No Drawing. Filed May 4, 1964, Ser. No. 364,788
4 Claims. (Cl. 23—85)

1. A method for liberating, separating and recovering iodine from an aqueous solution containing iodide salts, comprising division of the iodide-containing solution into at least two portions and adding chlorine to one of said portions at a concentration of 1 to 5 mols of chlorine to each equivalent of iodide ion, then alternately contacting the chlorinated and the non-chlorinated solutions with an anion exchange resin to liberate the iodine and have it picked up on the resin, and thereafter eluting the iodine by contacting the resin with at least one eluant from the class consisting of aqueous solutions of sodium hydroxide and sodium chloride.

3,346,332
LIQUID SYSTEM-DEHYDRATION OF MAGNESIUM CHLORIDE USING AMMONIA

Eugene Richard Nightingale, Jr., Murray Hill, and Edward J. Barrasso, Livingston, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 26, 1965, Ser. No. 443,054
9 Claims. (Cl. 23—91)



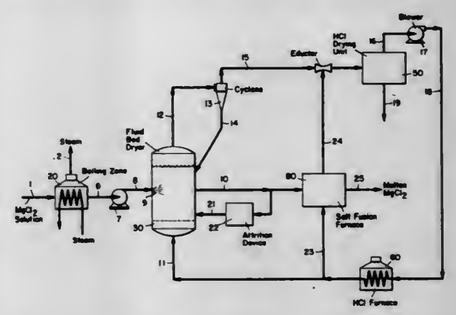
1. Process for the removal of water of hydration from magnesium chloride which comprises mixing hydrated magnesium chloride with liquid ammonia having a concentration in the range of from about 70 to 90% by weight in an initial reaction zone at a temperature in the range of from about 15° C. to 95° C. and at a pressure in the range of from about 100 to 800 lbs. per sq. in. gauge to replace the water of hydration with ammonia, removing the magnesium chloride hexammoniate from said initial reaction zone and passing the same to a secondary reaction zone, maintaining a temperature in the range from about 270° C. to 550° C. and a pressure in the range from about 0.1 to 3.0 atmospheres in said secondary reaction zone so as to decompose the magnesium ammonium chloride to gaseous ammonia and anhydrous magnesium chloride, removing the ammonia and magnesium chloride as separate streams from said secondary reaction zone, removing a liquid ammonia stream from said initial reaction zone containing dissolved therein the water of hydration, passing the liquid ammonia stream to an ammonia recovery zone for the segregation of the ammonia as a vapor from the water, condensing the ammonia and recycling the same to said initial reaction zone.

3,346,333
DEHYDRATION OF MAGNESIUM CHLORIDE UTILIZING FLUID BED SPRAY DRYING IN ATMOSPHERE OF HCl

Murray Nadler, Morristown, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed May 4, 1965, Ser. No. 453,094
7 Claims. (Cl. 23—91)

1. Process for the dehydration of hydrous magnesium chloride which comprises maintaining a thin film of liquid hydrous magnesium chloride at a temperature in the range from about 500° to 700° F. in a hydrogen chloride atmosphere wherein the partial pressure of the hydrogen chloride is in the range from 0.3 to 4.0 atmospheres and wherein the ratio of the partial pressure of the hydrogen chloride to the partial pressure of water is in the range from about 2.5 to 1.8.



3,346,334
AMMONIUM SILICATES

Helmut Hans Wilhelm Weldes, Havertown, Pa., and Mahlon Robert Deroltf, Blackwood, N.J., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,575
6 Claims. (Cl. 23—110)

1. The method which comprises:
(a) introducing an aqueous solution of an alkali metal silicate into a reaction zone,
(b) also introducing into said reaction zone a material selected from the group consisting of ammonia and ammonium hydroxide and bringing said material into admixture with said alkali metal silicate to thereby produce a double silicate solution of an alkali metal and ammonia, said double silicate containing from 1 to 12% SiO_2 and having a ratio of from 2 to 6 $SiO_2/(NH_4)_2O$, 2 to 4 SiO_2/Na_2O and 0.4 to 2.5 $(NH_4)_2O/Na_2O$,
(c) contacting said double silicate solution with a cation exchange resin that is between about 75 and 100% saturated with ammonia;
(d) recovering an ammonium silicate solution that has:
(1) a ratio of SiO_2 to alkali metal oxide of at least 25; and
(2) a ratio of $(NH_4)_2O$ to alkali metal oxide of at least 8; and
(3) an average silica micelle size that does not exceed about 3 millimicrons in diameter.

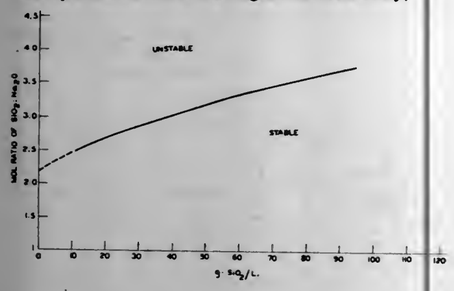
3,346,335
PROCESS FOR SILICA AND SILICATES

Roland Schnürch, Dusseldorf-Holthausen, Alfred Köster, Dusseldorf-Oberkassel, and Rudolf Heise, Dusseldorf-Holthausen, Germany, assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 8, 1965, Ser. No. 437,997
Claims priority, application Germany, Mar. 19, 1964, H 52,102
20 Claims. (Cl. 23—110)

1. A process for the preparation of a finely divided amorphous silica and a pure alkali metal silicate solution which comprises the steps of:
(a) preparing an aqueous alkali metal silicate solution having a mole ratio of silica to metal oxide within the range of about 2.5:1 to about 4.5:1 and a maxi-

mum concentration below about 165 grams of silica per liter of said solution, said mol ratio and said concentration being correlated so that operations are always conducted in the region of unstability;



(b) heating said solution under pressure to a temperature of at least about 100° C. for a time between about 10 minutes and about 3 hours and sufficient to cause precipitation of amorphous silica from said solution; and

(c) separating said amorphous silica from said solution.

3,346,336
PRODUCTION OF ALUMINA

John C. Hayes, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,678
13 Claims. (Cl. 23—143)

1. A method of preparing a stable alkaline alumina hydrosol which comprises instantaneously adding an acidic alumina hydrosol to a solution of an hydroxide of an alkali metal selected from the group consisting of lithium, potassium, rubidium and cesium.

7. A method of preparing bayerite alumina hydrogel which comprises instantaneously adding an acidic alumina hydrosol to a solution of an hydroxide of an alkali metal selected from the group consisting of lithium, potassium, rubidium and cesium, and heating the resultant thermosetting alkaline alumina hydrosol at a temperature of from about 85° C. to about 105° C.

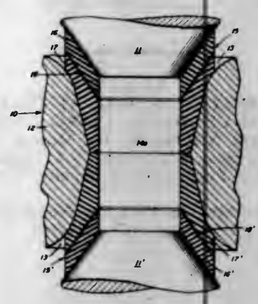
11. A method of preparing spherical alumina particles having a surface area above about 300 square meters per gram, which method comprises instantaneously adding an aluminum chloride hydrosol to a potassium hydroxide solution in a volumetric ratio of potassium hydroxide to hydrosol of at least about 1:1, introducing the resulting alkaline alumina hydrosol in the form of droplets into a water-immiscible suspending medium maintained at a temperature of from about 85° C. to about 105° C., drying the thus-formed bayerite alumina hydrogel spheroids and thereafter calcining the hydrogel spheroids at a temperature within the range of from about 400° C. to about 600° C.

3,346,337
HIGH DENSITY MAGNESIUM COMPOUNDS AND THEIR PREPARATION

Peter Cannon, Alpisus, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,327
7 Claims. (Cl. 23—204)

1. A magnesium compound stable in the presence of atmospheric moisture having an increase in density over the less dense face-center cubic analog thereof of at least 10 percent and having a crystalline structure corresponding to a hexagonal lattice, said magnesium compound being selected from the group consisting of Mg_2Si, Mg_2Ge and Mg_2Sn.

2. The process for preparing a high density form of magnesium silicide said high density form being stable and resistant to atmospheric moisture comprising the steps of:



(a) subjecting a specimen of magnesium silicide to a pressure of at least about 25 kb.

(b) simultaneously subjecting said specimen to a temperature of at least about 900° C. for at least 1 minute, and

(c) releasing the specimen from the application of temperature and pressure.

3,346,338
PRODUCTION OF FINELY DIVIDED SILICON OR TITANIUM CARBIDE

Burton F. Latham, Jr., Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 338,921
5 Claims. (Cl. 23—208)

1. A process for producing a finely-divided carbide selected from the group consisting of silicon carbide and titanium carbide which comprises providing an elongated reaction zone, passing in indirect heat exchange with an exterior portion of the reaction zone a vapor of a compound selected from the group consisting of silicon and titanium chlorides and bromides, admixing with the resulting vapor a vaporous hydrocarbon, passing the resulting admixture into one end of the reaction zone at a velocity sufficient to result in turbulent flow therein, maintaining an upstream portion of said reaction zone at a temperature of at least about 1800° F., and recovering from the other end of the reaction zone a gaseous suspension of finely-divided carbide product.

3,346,339
CARBON BLACK PRODUCTION

Richard K. Lyon, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,612
11 Claims. (Cl. 23—209.1)

1. A method for making carbon black comprising mixing gaseous hydrocarbon and gas containing free bromine, reacting said hydrocarbon and bromine in a reaction zone at temperatures ranging from about 500° F. to about 2000° F. to form carbon black and gaseous hydrogen bromide, withdrawing gas containing said hydrogen bromide from the reaction zone, passing the withdrawn gas to a particulate metal oxide zone containing a transition metal oxide, reacting the hydrogen bromide with said oxide at a temperature ranging from about 300° F. to about 1000° F. to form steam and a metal bromide of said metal, separating the steam and metal bromide, passing a gas containing free oxygen to a metal bromide zone containing the separated metal bromide at a temperature ranging from about 500° F. to about 2000° F. to liberate free gaseous bromine and metal oxide of said metal, and recycling the free gaseous bromine formed to said reaction zone.

3,346,340
PRODUCTION OF BROMINE BY OXIDATION OF HYDROGEN BROMIDE

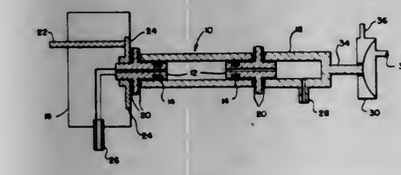
Cecelia J. Louvar, Evanston, and Armand J. de Rosset, Clarendon Hills, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 11, 1966, Ser. No. 571,708
7 Claims. (Cl. 23—216)

1. A process for the substantially quantitative recovery of bromine from hydrogen bromide which comprises treating said hydrogen bromide at oxidation conditions with an oxygen-containing gas in the presence of a catalytic-inert support composite, said composite comprising an oxide of a metal selected from the group consisting of copper and cerium composited on an inert metal oxide support selected from the group consisting of alpha-alumina and theta-alumina having a surface area of from about 5 to about 100 square meters per gram and containing less than about 50 micromoles of hydroxyl per gram, and recovering the resultant bromine.

3,346,341
FRAGMENTATION INLET FOR GAS CHROMATOGRAPHY AND METHOD OF LOADING A SAMPLE THEREINTO

James C. Sternberg, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 28, 1965, Ser. No. 467,597
12 Claims. (Cl. 23—230)



11. A method of loading a sample in a fragmentation inlet sample tube for gas chromatography comprising the steps of:

rotating the upstream end of an alumina sample tube against a sheet of graphite felt to cut out a porous conducting plug the size of the tube;

placing a sample on the upstream end of the plug;

placing a layer of silica wool on top of the sample;

inserting a downstream electrode in the downstream end of the tube;

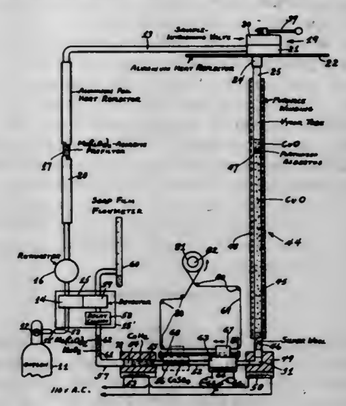
pushing the plug against the downstream electrode; and

placing an upstream electrode in the upstream end of the tube.

3,346,342
CARBON AND HYDROGEN ANALYZER

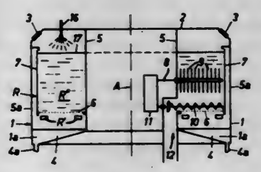
C. David Miller, Greenbelt, Md., assignor to American Instrument Company, Inc., Silver Spring, Md.
Filed Oct. 9, 1964, Ser. No. 402,893
13 Claims. (Cl. 23—253)

1. In an apparatus for analyzing samples by combustion, a pyrolyzer column, means to elevate said column to combustion temperature, means to admit a sample into one end of said column, whereby to cause combustion of the sample, a receiving conduit connected to the other end of said column, a mass of desiccant in a portion of said receiving conduit to absorb water vapor produced by the combustion of the sample, outlet conduit means connected to said receiving conduit and including an electrical gas detector of the type providing a signal peak responsive to the passage of a gas therethrough, a mass of conversion material in said outlet conduit means reacting with water vapor to release hydrogen, and means to heat said portion after the combustion of a sample to drive the absorbed water vapor out of the desiccant and into contact with said conversion material, whereby to generate hydrogen quantitatively from the water vapor.



3,346,343
APPARATUS FOR CONTINUOUS ROTARY EXTRACTION

Hermann Wahler, Zurich, Switzerland, assignor to Von Roll A.G., Gerlafingen, Switzerland
Filed Aug. 17, 1966, Ser. No. 572,943
Claims priority, application Switzerland, Aug. 24, 1965, 11,877/65
6 Claims. (Cl. 23—269)



1. A continuous solvent extraction apparatus comprising a stationary substantially cylindrical annular housing; a substantially cylindrical annular rotor mounted concentrically within said housing and adapted for rotation about its vertical axis; said rotor having an annular, permeable bottom member and a substantially cylindrical upstanding side member fixedly secured to the outer edge of said permeable bottom member for rotation therewith; said housing including a substantially cylindrical inner side wall spaced inwardly from said rotor side wall; said inner side wall being in sliding contact with the inner edge of said annular, permeable bottom member, and with said upstanding side member and said permeable bottom member together defining a single, continuous, annular chamber within said housing; a plurality of radial vertical partitions within the bottom of said housing beneath said permeable rotor bottom defining a plurality of individual collecting chambers; means for feeding a solid material having a component to be extracted into said annular chamber; means for feeding a solvent for extracting said component into said annular chamber; means for removing the component-rich solvent from each

of said collecting chambers; and means for removing spent solids from said annular chamber; said solids removal means including horizontal rotatable scraper means mounted on the inner side wall of said housing and extending radially outwardly from said inner wall substantially across the entire width of said annular chamber; said scraper means being mounted a short distance upstream of the location where said solids material is fed into said annular chamber; means attached to the inner end of said scraper means for rotating said scraper means; a horizontal rotatable discharge worm extending radially outwardly through said inner side wall substantially across the entire width of said annular chamber; said worm being positioned below said scraper means and above said permeable rotor bottom; a discharge chute beneath the inner end of said worm; and means attached to the inner end of said worm for rotating said worm so as to convey scraped, leached-out material from said annular chamber to said chute.

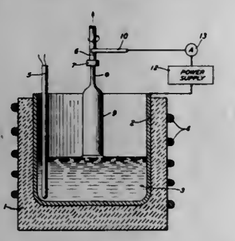
3,346,344

GROWTH OF LITHIUM NIOBATE CRYSTALS

Hyman J. Levinstein, Berkeley Heights, and Kurt Nassau, Bernardsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Continuation of abandoned application Ser. No. 471,240, July 12, 1965. This application Dec. 27, 1965, Ser. No. 516,357

6 Claims. (Cl. 23—301)



1. Procedure comprising passing a unidirectional electrical current the density of which is in the range of .5 ma./cm.^{2} to 50 ma./cm.^{2} through at least a portion of a body of lithium niobate, under such conditions that the said portion attains a temperature between 1000° C. and its Curie point in accordance with which procedure said portion is rendered substantially ferroelectrically single domain.

3,346,345

EXTRACTION OF PLUTONIUM AND NEPTUNIUM FROM AQUEOUS SOLUTIONS

Wallace W. Schulz, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,480

6 Claims. (Cl. 23—340)

1. The process of extracting neptunium and plutonium values from an aqueous nitric acid waste solution containing pentavalent neptunium values, tetravalent plutonium values and fission product values comprising adding an aqueous solution containing 0.02 to 0.05 M hydrazine to said waste solution at room temperature for a minimum of 30 minutes, whereby the neptunium values are selectively reduced to the tetravalent state, contacting the solution with an organic water-immiscible solution of trilaurylamine, whereby both tetravalent neptunium and tetravalent plutonium values are taken up by an organic trilaurylamine extract phase, while said fission product values remain in the waste solution, and separating the organic phase from the aqueous waste solution.

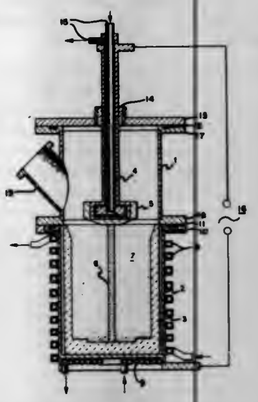
3,346,346

METHOD FOR MELTING URANIUM OXIDE AND PLUTONIUM OXIDE

Lothar Schikarski, Hanau am Main, and Hans-Jürgen Teiwes, Ruckingen, Germany, assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 4, 1966, Ser. No. 525,807

4 Claims. (Cl. 23—344)



1. A process for melting a fine oxide powder charge which comprises placing in the center of a vacuum tight crucible a preheating column of relatively conductive material surrounded by a fine oxide powder charge of the group consisting of plutonium oxide, uranium oxide and mixtures of plutonium and uranium oxides, contacting the upper end of said column with a heating electrode, energizing said heating electrode whereby a vertical path of current is created through the preheating conductive column axially in the oxide powder charge, maintaining said current until an electrically conductive column is created in the oxide powder charge, increasing the electrical current and maintaining the heating until a substantial part of the oxide powder charge is fused substantially free of vaporization.

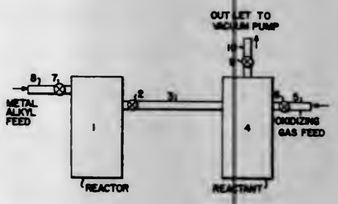
3,346,347

METAL HYDROCARBON DIFLUORAMINES AND THEIR PREPARATION

Edwin A. Schmall, Springfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 25, 1960, Ser. No. 64,959

17 Claims. (Cl. 23—356)



1. A metal difluoramine compound of the following formula $M(R)_{m-1}NF_2$ wherein M is metal selected from the group consisting of lithium, aluminum, boron, and lithium-aluminum, m is the valence of the metal, and R is selected from the group consisting of hydrogen, alkyl, cycloalkyl, phenyl and naphthyl hydrocarbon groups containing 1 to 20 carbon atoms.

11. A process of making metal difluoramine compounds of the following formula $M(R)_{m-1}NF_2$ wherein M is metal selected from the group consisting of lithium, aluminum, boron, and lithium-aluminum, m is the valence of the metal, R is selected from the group consisting of hydrogen, alkyl, cycloalkyl, phenyl and naphthyl hydrocarbon groups containing 1 to 20 carbon atoms, comprising reacting a compound of the formula $M(R)_m$ with an oxidizing gas of the group consisting of N_2F_4, HNF_2 and NF_3 at a temperature of −100° C. to +200° C. at about atmospheric pressure for up to 20 days and recovering the resulting metal difluoramine compound.

3,346,348

PREPARATION OF $Be(BH_4)_2 \cdot 3N_2H_4$

Lz F. Lamoria, Bay City, and Paul F. Reigler, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,167

3 Claims. (Cl. 23—358)

1. A beryllium borohydride hydrazine coordination compound corresponding to the empirical formula

$$Be(BH_4)_2 \cdot 3N_2H_4$$

2. A process for preparing a beryllium borohydride hydrazine coordination compound corresponding to the empirical formula $Be(BH_4)_2 \cdot 3N_2H_4$ which comprises;

(a) dissolving beryllium borohydride in an ether at a weight proportion of $Be(BH_4)_2$/alkyl ether of from about 0.01–2/100,

(b) introducing hydrazine into the ether solution of $Be(BH_4)_2$ thereby to precipitate a beryllium borohydride hydrazine coordination compound corresponding to the empirical formula $Be(BH_4)_2 \cdot 3N_2H_4$, the amount of hydrazine added to said solution based on the grame-mole ratio of $N_2H_4/Be(BH_4)_2$ being at a maximum about 3, and

(c) separating the so-precipitated $Be(BH_4)_2 \cdot 3N_2H_4$ from the residual liquid reaction mass.

3,346,349

DISPROPORTIONATION OF SILICONHALIDES

William A. Harding, Morton, and Harold Shalit, Drexel Hill, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 2, 1961, Ser. No. 142,021

13 Claims. (Cl. 23—366)

10. The method of disproportionating trichlorosilane for the production of products including dichlorosilane, which method comprises passing the trichlorosilane over catalysts at a temperature of 200–600° C., the method of preparing said catalyst consisting essentially of drying aluminaceous granules at a temperature of at least 400° C. and treating the dried granules with a silane compound having the formula $R_1R_nSiX_{(3-n)}$ in which R_n and R_1 are independently selected from the group consisting of hydrogen and alkyl groups having 1 to 5 carbon atoms, X is halogen, n is a whole number from 0 to 3 and wherein at least one of the substituents of Si is halogen or alkyl thereby incorporating 0.1 to 10 mols of the silane compound per liter of said dried granules.

11. The method for obtaining dimethyldichlorosilane which comprises disproportionating organosiliconhalides having the formula $alk_mSiX_nH_{[4-(m+n)]}$ in which X is halogen, alk is an alkyl group of 1 to 5 carbon atoms, m is a whole number from 1 to 3, n is a whole number from 1 to 3 and wherein the total of m and n does not exceed 4, which method comprises: continuously passing the same over a solid catalyst at a temperature in the range of 200–600° C., preventing the disproportionation reaction from going to completion and separating the desired dimethyldichlorosilane from the product of the disproportionation reaction, the method of preparing said catalyst consisting essentially of drying aluminaceous granules at a temperature of at least 400° C. and treating the dried granules with a silane compound having the formula $R_1R_nSiX_{(3-n)}$ in which R_n and R_1 are independently selected from the group consisting of hydrogen and alkyl groups having 1 to 5 carbon atoms, X is halogen, n is a whole number from 0 to 3 and wherein at least one of the substituents of Si is halogen or alkyl, thereby incorporating 0.1 to 10 mols of the silane compound per liter of said dried granules.

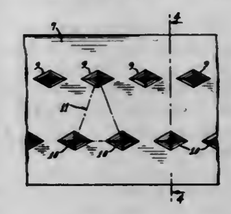
3,346,350

ELECTRICAL CONTACT TAPE

Howard E. Spooner, Lincoln, R.I., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed May 25, 1965, Ser. No. 458,654

6 Claims. (Cl. 29—183)



1. An electrical contact tape comprising a tape body having a surface adapted for welding to a metal base, a plurality of laterally-spaced rows of welding projections on the said surface and directed longitudinally of the tape body, each row comprising a plurality of welding projections spaced from each other longitudinally of the tape body, the projections in one row being staggered relative to projections in an adjacent row so that two projections in one row and one projection in an adjacent row form three points of a hypothetical triangle.

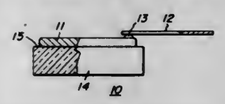
3,346,351

SUPERCONDUCTIVE CONNECTION

Barry P. Flashman, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 17, 1964, Ser. No. 419,158

11 Claims. (Cl. 29—194)



1. A superconductive connection comprising a first superconductive member, a second superconductive member, one of said members consisting of niobium, and a superconductive alloy solder joining together a portion of each said members, said alloy solder selected from the group consisting of indium-lead alloys and indium-bismuth alloys.

3,346,352

FIRE STARTING COMPOSITION

Frederic C. McCoy, Beacon, Edwin C. Knowles, Poughkeepsie, and Arthur R. Goldsby, Chappaqua, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 26, 1965, Ser. No. 459,102

9 Claims. (Cl. 44—10)

1. A quick igniting composition comprising from about 80 to about 99.5 percent by weight of a carbonaceous briquette containing from about 0.5 to about 20 percent by weight of a coating of a wax-fiber mixture thereon, said

fiber being selected from the class consisting of from about 0.001 to 4 percent by weight of an inorganic substantially non-combustible microfibrous material, from 0.01 to 2 percent by weight of an organic non-fusible microfibrous material and mixtures thereof, said fiber component being present in the wax to increase the burning rate of said wax.

3,346,353

HYDROCARBON OILS OF IMPROVED WATER TOLERANCE AND ANTI-RUST CHARACTERISTICS

Barney R. Strickland, Westfield, and Leonard Berkowitz, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 20, 1963, Ser. No. 289,426
6 Claims. (Cl. 44—62)

1. A liquid petroleum distillate oil boiling in the range between about 75° F. and about 900° F. to which have been added:

from about 0.0005 to 1 wt. percent of an ashless oil-soluble polymeric dispersant stabilizing additive selected from the group consisting of (a) a copolymer of an alkyl chloropropylene-oxy mixed ester of an unsaturated conjugated dibasic acid and a polymerizable organic monomer containing a vinyl group and (b) a nitrogen-containing addition-type copolymer of an amine-free monomer containing one polymerizable ethylene linkage and an aliphatic hydrocarbon chain of from 8 to 18 carbon atoms with a monomer containing a nitrogen atom and one polymerizable ethylene linkage; and

from about 0.0001 to about 0.01 wt. percent of a dialkyl dimethyl ammonium nitrite wherein the alkyl groups are principally C_{12}–C_{14} radicals;

said composition having enhanced water tolerance and anti-rust properties.

3,346,354

LONG-CHAIN ALKENYL SUCCINIC ACIDS, ESTERS, AND ANHYDRIDES AS FUEL DETERGENTS

George J. Kautsky, El Cerrito, and Eddie G. Lindstrom, Martinez, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed July 2, 1963, Ser. No. 292,450
3 Claims. (Cl. 44—63)

1. A hydrocarbon fuel composition capable of reducing intake valve and port deposits comprising a major proportion of a distillate hydrocarbon mixture boiling substantially in the range of from 100° F. to 750° F. and from 50 to 1,000 p.p.m. of a succinic acid derivative selected from the group consisting of

(A) an alkenyl succinic acid,

(B) an alkenyl succinic anhydride, and

(C) an alkenyl succinic ester in which the alkoxy group contains from 1 to 6 carbon atoms, wherein the alkenyl groups (A), (B), and (C) contain from 50 to 250 carbon atoms.

3,346,355

JET FUEL COMPOSITION

George W. Eckert, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 10, 1964, Ser. No. 381,917
3 Claims. (Cl. 44—66)

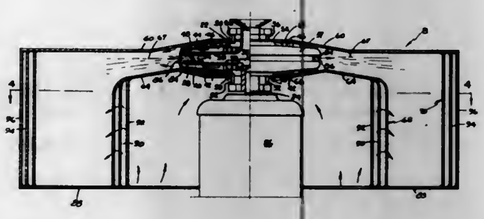
1. A jet fuel composition comprising hydrocarbons boiling in the range from about 90 to 500° F. containing from about 0.001 to 0.50 percent of a fatty material consisting essentially of a compound selected from the group consisting of dimers and trimers of linoleic acid and mixtures thereof and from about 0.001 to 1.0 percent by weight of phenol.

3,346,356

APPARATUS FOR THE MANUFACTURE OF FIBROUS MATERIAL

Robert Cowley Anderson and Vance Sterling Bartoo, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Apr. 9, 1965, Ser. No. 446,822
10 Claims. (Cl. 65—14)



1. Apparatus for producing fibers comprising:

(a) a rotating body for receiving molten material and for projecting said molten material through a plurality of orifices in a peripheral surface thereof as a plurality of filaments in a high state of plasticity and moving generally in a radial direction,

(b) means for providing a band of flame adjacent to and surrounding said peripheral surface for receiving said filaments and for maintaining said filaments in said state of plasticity,

(c) means for creating an air drag acting on said filaments while in said band of flame to attenuate said filaments into fine fibers,

(d) a collection system surrounding said attenuating means, and

(e) means to convey the filaments from the system,

(f) means for inducing an air flow in said collection system to carry said fine fibers to said conveyor means.

3,346,357

PROCESS FOR BONDING DEVITRIFIED SURFACES

Nils Tryggve E. A. Baak, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Dec. 17, 1962, Ser. No. 245,291
7 Claims. (Cl. 65—33)

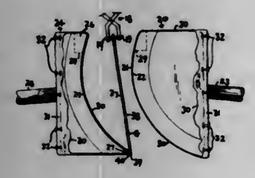
1. A process of forming an article having at least two members, one of said members being a devitrified member consisting essentially of a multiplicity of interlocked inorganic crystals dispersed in a glassy matrix and formed by crystallization in situ from a glass consisting essentially of inorganic constituents and a nucleating agent therefor, said glassy matrix consisting essentially of the uncrystallized portion of the glass, the other of said members being a devitrifiable vitreous member consisting essentially of inorganic constituents and containing a nucleating agent therefor, comprising the steps of placing a surface of said devitrified member into contact with a surface of said devitrifiable vitreous member and subjecting the adjoining contacting surfaces to a temperature sufficient to soften the surface of said vitreous member and diffuse it into the surface of said devitrified member and then further subjecting said adjoining contacting surfaces for a period of time to temperatures sufficient to thermally devitrify said vitreous surface and to bond said surfaces with a devitrified seal.

3,346,358

METHOD OF PRESS BENDING VERTICALLY SUSPENDED GLASS SHEETS

Dean L. Thomas, Crestline, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 15, 1964, Ser. No. 359,895
3 Claims. (Cl. 65—106)



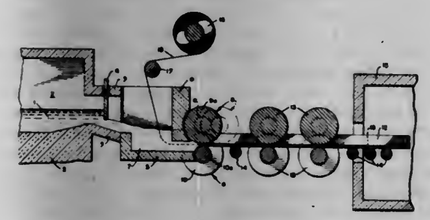
1. In the art of press bending glass sheets wherein a flat glass sheet while heat-softened is supported substantially vertically between a pair of glass shaping members having complementary convex and concave shaping surfaces provided with covers subject to wear defining a curvature about a horizontal axis of curvature and shaped to conform to the shaping surfaces by engaging the heat-softened glass sheet in pressurized engagement therebetween, the improvement comprising first contacting one major surface of the glass sheet slightly above its bottom edge with the bottom edge portion of the concave shaping member, tilting said glass sheet so that its bottom edge moves toward said convex shaping member, and then moving said convex shaping surface into pressurized engagement against the opposite major surface of the glass sheet until the glass sheet is shaped into conformity with said complementary shaping surfaces while keeping the corner line formed between said major surface contacted by said concave shaping member and the bottom edge surface of the glass sheet out of contact with said concave shaping member to reduce the rate of wear of said cover for said concave shaping member.

3,346,359

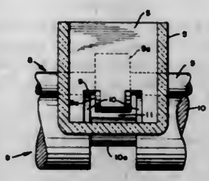
APPARATUS FOR CONTINUOUS MANUFACTURE OF CONTINUOUS PROFILED GLASS MEMBERS

Heinz Forster, Pirna, and Reinhold Seidler, Pirna-Copitz, Germany, assignor to Veb Glas- und Farbenglaswerke Pirna-Copitz, Pirna-Copitz, Germany

Filed Apr. 3, 1963, Ser. No. 270,403
7 Claims. (Cl. 65—183)



1. An apparatus for the continuous manufacture of a continuous profiled glass member, comprising, in combination, a collecting trough adapted to take up a stream of molten glass, said trough having an outlet port, a pair of shaping rollers situated one over the other adjacent the outlet port of said trough for receiving molten glass therefrom, the profiles of said rollers defining a pass for said molten glass which is somewhat narrower but similar to the shape of said port, said rollers being the only shaping rollers which determine the cross sectional configuration of the profiled glass member so that the latter is shaped upon movement through a single pass, and said rollers



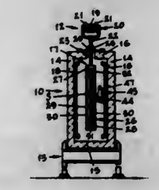
having complementary projections and recesses arranged with said projections extending into said recesses to provide a non-planar pass giving the glass member in cross section a non-planar profile.

3,346,360

APPARATUS FOR HEAT TREATING AND CONVEYING GLASS SHEETS VERTICALLY ORIENTED

Thomas B. O'Connell, Gordon G. Pierce, and Richard A. Herrington, Toledo, and Donald E. Shamp, Millbury, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed May 6, 1964, Ser. No. 365,274
4 Claims. (Cl. 65—273)



1. In apparatus for heat treating flat sheets of glass as said sheets move along a horizontal path, means for supporting a glass sheet on edge in a vertical position while moving along said path, means for heating the glass sheet to an elevated temperature, means for cooling the heated glass sheet comprising a plurality of horizontally disposed tubes supported at opposite sides of said path and extending inwardly toward said path, the inner ends of said tubes at each side of the path being disposed in a common plane, with their outlets normal to the adjacent sheet surface, means supplying air under pressure to said tubes to flow therethrough toward said path and against the opposite surfaces of a glass sheet moving therealong to support said sheet in a vertical plane, and thin wires extending horizontally along opposite sides of said path adjacent the upper edge of the glass sheet and normally spaced from said sheet but sufficiently close thereto to be engaged by the sheet and to support the same in a substantially vertical position upon an imbalance in the pressure of the air directed against opposite surfaces of the sheet.

3,346,361

DESTROYING UNDESIRED VEGETATION WITH N-HALOMETHYLCARBONYL - 3 - AZABICYCLO [3.2.2]NONANES

John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,701
6 Claims. (Cl. 71—88)

1. A herbicidal composition comprising a minor but herbicidally effective proportion of N-halomethylcarbonyl-3-azabicyclo[3.2.2]nonane where the halogen is selected

from the group consisting of chlorine, bromine, and iodine and a major proportion of inert herbicidal adjuvant as carrier.

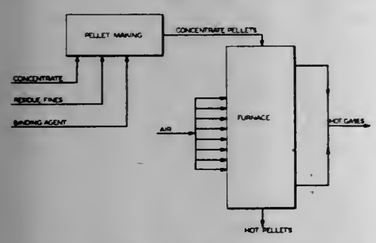
3,346,362
METHOD FOR CONTROLLING WEEDS
William R. Diveley, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Jan. 3, 1961, Ser. No. 79,974
5 Claims. (Cl. 71—118)

1. A method for selective control of weeds in an alfalfa field which comprises applying to an alfalfa field containing a mixed growth of desired and undesired plants, including alfalfa, N-(3,4-dichlorophenyl)-2,2-dimethylvaleramide in an amount in the range of 1 to 10 pounds per acre sufficient to retard the growth of said undesired plants but insufficient to retard the growth of alfalfa.

3,346,363
METHOD OF PRODUCING FERROMANGANESE POWDER
Gerhard Naeser, Duisburg-Huckingen, and Werner Scholz, Duisburg-Ungelsheim, Germany, assignors to Mannesmann Aktiengesellschaft, a corporation of Germany
No Drawing. Filed Feb. 23, 1966, Ser. No. 529,250
Claims priority, application Germany, Feb. 22, 1965, M 64,252
4 Claims. (Cl. 75—.5)

1. In a method of producing ferromanganese powder, wherein molten ferromanganese is atomized with the aid of steam or pressurized water and the liquid droplets are chilled in a water bath, the steps comprising heating the chilled powder at a temperature of from about 200° C. to about 400° C. in a hydrogen-free atmosphere.

3,346,364
DESULFURIZED ZINC CONCENTRATE PELLETS
Don E. Warnes, Beaver, Pa., assignor to St. Joseph Lead Company, New York, N.Y., a corporation of New York
Filed May 5, 1965, Ser. No. 453,385
6 Claims. (Cl. 75—6)



1. A method for preparing zinc concentrate pellets for use in an electrothermic zinc reduction furnace which comprises: forming pellets about ½ inch in diameter from a zinc sulfide ore concentrate containing lead and cadmium impurities and having a particle size distribution of about 98% —100 mesh and 50–60% —325 mesh prior to pellet formation; passing said pellets downward through a vertical shaft furnace having two heating zones; subjecting said pellets in an upper heating zone to a temperature of about 1150° C. in an atmosphere deficient in oxygen to volatilize and drive off lead and cadmium sulfides from the pellets; subjecting said pellets in a lower heating zone to a temperature between about 900–1025° C. in the presence of sufficient oxygen to convert the sulfide sulfur content of the concentrate to sulfur dioxide and the zinc values to zinc oxide; and passing at least some of the sulfur dioxide from the second heating zone to the first heating zone.

3,346,365
TREATMENT OF FLUIDIZED OXIDIC IRON ORES TO INHIBIT BOGGING
Francis Xavier Mayer and Robert O. Maak, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Sept. 25, 1964, Ser. No. 399,386
14 Claims. (Cl. 75—26)

1. In a process for the production of sponge iron from oxidic iron ores wherein the iron ore in particulate form is fed into the process and fluidized within a bed and reduced by a stream of gas at temperatures ranging from about 1000° F. to about 1800° F. the improvement comprising providing within the reducing gas in contact with the fluidized bed to inhibit bogging, at least about 200 parts, per million parts of reducing gas, to about 3 percent, based on the volume of the reducing gas, of a divalent sulfur compound characterized by the formula

$$R_1—S—R_2$$

wherein R_1 and R_2 are selected from hydrogen and monovalent organo radicals.

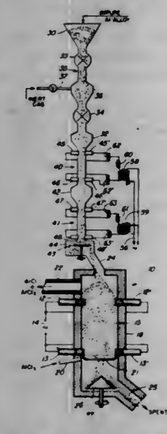
3,346,366
FLUIDIZED ORE REDUCTION WITH BASIC NITROGENOUS ADDITIVES TO PREVENT BOGGING
Francis Xavier Mayer and Robert O. Maak, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Oct. 1, 1964, Ser. No. 400,897
9 Claims. (Cl. 75—26)

1. In a process for the production of sponge iron from oxidic iron ores wherein the iron ore in particulate form is fed into the process and fluidized within a bed and reduced by a stream of reducing gas at temperatures ranging from about 1000° F. to about 1800° F., the improvement comprising feeding a basic nitrogenous compound with the reducing gas in quantities sufficient to inhibit bogging of the ore.

3,346,367
SHROUDED FUEL BLAST FURNACE OPERATION
Ervin G. Bailey, Bethlehem Township, Pa., assignor to Bailey Inventions, Inc., Bethlehem Township, Pa., a corporation of Pennsylvania
Filed May 26, 1964, Ser. No. 370,278
2 Claims. (Cl. 75—42)

1. The method of improving the thermal efficiency of blast furnace operation, wherein solid carbonaceous fuel is added along with ore onto the top of a vertically descending reaction bed in counterflow relation to flow of gaseous constituents ascending through said bed as the result of blasting air into the bosh, comprising decreasing the calorific value of the gas escaping at the top of said bed due to the presence of combustible H_2 and CO constituents therein above the ore-reducing zone of the furnace by feeding the carbonaceous fuel onto the top of said bed encased within a multiplicity of individual gas-impervious rigid ore-free containers constituted of metal having a melting point in excess of 2200° F. and selected from the class of metals which consists of steel, iron and metals which alloy with iron, to shroud said fuel and prevent ascending CO_2 and H_2O gases and any ore from making contact with said fuel as it descends through an upper zone of said bed wherein the temperature is held below ore-reducing temperature and, after said fuel-containing containers have descended below said upper zone, melting said containers to expose the within-contained fuel to the air blasted into said bosh to produce in a zone below said upper zone sufficient CO and heat from said carbonaceous fuel as the primary source of heat and CO for raising the temperature in said lower zone to ore-reducing temperature and reducing the ore as it descends through said lower zone of said bed, substantially none of said carbonaceous fuel being consumed until it reaches said lower zone.

3,346,368
HEATING METALLIC MATERIAL FOR SUBHALIDE REFINING
Victor A. Braunwarth, Alexander Gordon Nickle, and Norman W. F. Phillips, Arvida, Quebec, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Feb. 2, 1965, Ser. No. 429,826
21 Claims. (Cl. 75—68)

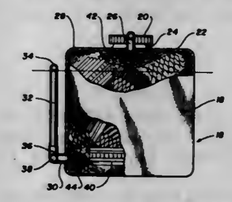


1. A method of heating a continuing feed of a mass which is composed of particulate, solid metallic material and which has a negative temperature coefficient of resistivity over a range of elevated temperatures, for raising the temperature of said particulate material to a predetermined value at least substantially higher than the lower limit of said range, from a value substantially below said predetermined value, comprising advancing said mass of metallic particles along a predetermined downward path while passing electric current through said mass to generate heat therein, said advance of the mass of particles including imparting pulsations of movement, through the mass, which produce mutual displacement of individual particles, and said pulsations being effected with sufficient frequency to prevent substantial mutual adhesion of particles in the mass by fusion under the heating influence of the current, said mass being advanced by moving it under gravity along said downward path in a confined, columnar region, said downward movement being effectuated with the aforesaid pulsations by discharging the material of the mass at a locality below said region at a rate selected to impart said pulsations with the aforesaid sufficient frequency.

4. In a process for separation of aluminum by subhalide distillation at a predetermined elevated temperature from masses which are composed of particulate, solid metallic material containing aluminum and other metal and which have a negative temperature coefficient of resistivity over a range of elevated temperatures below said predetermined elevated temperature, wherein said material is treated for conversion of aluminum therein to aluminum subhalide, by advancing the material through an enclosed zone while heat energy is there supplied to the material and while gaseous halide is there passed in contact with the material for conversion reaction with the aluminum to produce aluminum subhalide in gaseous form: the method of preheating said particulate metallic material while advancing the same to said conversion zone, which includes advancing said particulate material as a mass thereof along a predetermined path while passing electric current through said last-mentioned mass to generate heat therein to raise the temperature of said mass to a value substantially above the lower limit of the aforesaid range of elevated temperatures, said advancing of the mass of particles including imparting pulsations of movement through the mass which produce mutual displacement of individual particles, and said pulsations being effected with sufficient frequency to prevent substantial fusion of particles to each other under the heating influence of the current.

16. In apparatus for producing purified aluminum by subhalide distillation from particulate metallic aluminum-containing material, in combination, a converter comprising an upright columnar vessel adapted to receive a continuing downwardly traveling mass of said material, having vertically spaced electrode means for passage of current through the material in the vessel for supply of heat therein, said vessel having gas inlet and outlet means at respectively opposite ends thereof, and having a predetermined internal cross-sectional area, and means for preheating the particulate material for supply into said converter, comprising upright columnar structure above the converter vessel, to receive a continuing mass of said particulate material for downward advance, vertically spaced electrode means in said columnar structure for passage of current through the material to preheat the same, said columnar structure having an internal cross-sectional area substantially smaller than the aforesaid cross-sectional area of the converter vessel, to provide substantially more rapid downward advance of the particulate mass in the columnar structure than in the converter, and means providing a path for said particulate material between said columnar structure and the converter vessel.

3,346,369
PROCESS FOR RECOVERING SILVER
Russell L. Shigley, Silver Spring, Md., and Robert A. Glenn, Falls Church, Va., assignors to Research Silver Refining Company, Baltimore, Md., a corporation of Maryland
Filed July 8, 1963, Ser. No. 293,441
2 Claims. (Cl. 75—109)



I. Method of recovering silver from spent liquid solutions containing silver comprising the steps of:
(a) recovering radiator core metal of honeycomb construction above silver in the electromotive series from an internal combustion engine;
(b) cutting said core into chunks which substantially retain said honeycomb construction; and
(c) passing the spent liquid solution containing silver through said chunks in a vessel whereby silver in the spent solution is deposited on the chunks.

3,346,370
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,487
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to

10% magnesium; from 0.05 to 0.3% chromium; from 0.01 to 0.80% lithium; and the balance essentially aluminum.

3,346,371
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,488
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to 10% magnesium; from 0.05 to 0.3% chromium; from 0.005 to 0.30% tellurium; and the balance essentially aluminum.

3,346,372
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,489
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to 10% magnesium; from 0.05 to 0.3% chromium; from 0.05 to 0.7% hafnium; and the balance essentially aluminum.

3,346,373
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,490
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to 10% magnesium; from 0.05 to 0.3% chromium; from 0.005 to 0.30% misch metal; and the balance essentially aluminum.

3,346,374
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,509
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to 10% magnesium; from 0.05 to .03% chromium; from 0.01 to 0.55% germanium; and the balance essentially aluminum.

3,346,375
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,510
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to 10% magnesium; from 0.05 to 0.3% chromium; from 0.10 to 0.80% cobalt; from 0.10 to 0.60% copper; and the balance essentially aluminum.

3,346,376
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,515
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to 10% magnesium; from 0.05 to 0.3% chromium; from 0.005 to 0.350% thorium; and the balance essentially aluminum.

3,346,377
ALUMINUM BASE ALLOY
George J. Jagaciak, Milford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed May 20, 1965, Ser. No. 457,523
5 Claims. (Cl. 75—147)

1. An aluminum base alloy having good stress corrosion resistance consisting essentially of: from 5.5 to 10% magnesium; from 0.05 to 0.3% chromium; a material selected from the group consisting of indium from 0.002 to 0.80%, gallium from 0.01 to 0.50%, and cadmium from 0.03 to 0.50%; and the balance essentially aluminum.

3,346,378
COBALT BASE ALLOYS
Allan D. Foster, Schenectady, and Chester T. Sims, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Mar. 22, 1965, Ser. No. 441,831
11 Claims. (Cl. 75—171)

3. A high temperature resistant alloy consisting essentially of by weight carbon 0.10 to 0.60 percent, chromium 24.0 to 35.0 percent, tungsten 6.0 to 9.0 percent, nickel 8.5 to 11.5 percent, boron 0.050 percent maximum, yttrium 0.01 to 1.0 percent, iron 6.0 percent maximum, with the remainder essentially cobalt.

3,346,379
NIOBIUM BASE ALLOY
Thor N. Rhodin, Jr., Ithaca, N.Y., assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 15, 1961, Ser. No. 152,676
14 Claims. (Cl. 75—174)

1. A niobium-base alloy consisting essentially of at least 55% by weight of niobium, from 1–20% by weight of molybdenum and from 1–30% by weight of at least one element selected from the group consisting of iron, chromium, tungsten and zirconium, the total of the elements selected from this 1–30% group not to exceed a total of 35%, said alloy being adapted to withstand prolonged exposure at a temperature above 800° C.

3,346,380
COLUMBIUM-BASE ALLOYS
Lutfi H. Amra, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,358
8 Claims. (Cl. 75—174)

1. A columbium-base alloy consisting essentially of, by weight, about: 4–15% tungsten, 0.5–5% rhenium, 0–5% hafnium, 0–3% molybdenum, 0–5% tantalum, 0–3% zirconium, 0–0.1% carbon, 0–0.5% yttrium, 0–0.01% boron, and 0–0.1% of elements selected from the group consisting of oxygen and nitrogen and mixtures thereof, the balance being essentially all columbium.

3,346,381
ELECTROSTATIC RECORDING ELEMENT
Harold G. Greig, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
No Drawing. Filed July 30, 1964, Ser. No. 386,407
8 Claims. (Cl. 96—1.8)

1. A recording element for electrostatic printing comprising a carrier base and a photoconducting insulating layer attached to said base, said layer being comprised of zinc oxide, cellulose acetate butyrate and mono-organo silsesquioxane.

3,346,382
PROCESS AND MATERIALS FOR THE PRODUCTION OF NON-LATERALLY REVERSED IMAGES BY HEAT DEVELOPMENT
Anita von Konig and Walther Wolf, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Apr. 27, 1965, Ser. No. 451,301
Claims priority, application Germany, May 22, 1964, A 46,114
7 Claims. (Cl. 96—29)

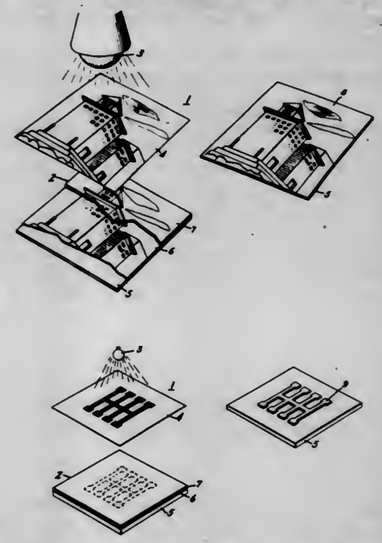
1. A process for the production of a non-laterally reversed photographic image which comprises:
(a) exposing a supported light-sensitive silver halide emulsion layer to an original to be reproduced, said light-sensitive layer contains a silver halide developing agent having at least one amino group in an amount between 0.1 and 2.0 g. per square meter of the light-sensitive emulsion layer;
(b) contacting the exposed layer with a light-insensitive transfer material which contains a heterocyclic compound selected from the group consisting of a pyrroline-(3) derivative or a pyrrolenine derivative, said heterocyclic compounds having at least one imino group said imino group being in the 2- or 5-position in an amount between 0.01 and 1.0 g. per square meter of the transfer material;
(c) heating the exposed layer and the transfer material while in effective contact with each other at a temperature between 100 and 200° C. during which heating the exposed portions of the light-sensitive layer are developed to form a silver image while the developing agent at the unexposed portions of the light-sensitive layer is transferred into the transfer material to produce a non-laterally reversed visible dye image;
(d) separating the developed layer from the transfer material.

3,346,383
IMAGE REPRODUCTION PROCESSES UTILIZING PHOTOPOLYMERIZATION OF VINYL MONOMER COMPOSITIONS COMPRISING A METALLIC SULFIDE COMPOUND
Ralph W. Baxendale, George W. Luckey, and Henry C. Yutzy, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 23, 1960, Ser. No. 71,141
24 Claims. (Cl. 96—35.1)

1. A dry thermal process for transferring underexposed photographic images from a stratum on a support to a separate support, said stratum being solid below 50° C. and containing:
(1) underexposed image areas which are thermally transferable by having a stick or transfer temperature in the range from 50° C. to 90° C., comprising
(a) a thermoplastic compound solid at 50° C. and
(b) an ethylenically unsaturated compound containing at least one terminal ethylenic group, having a boiling point above 100° C. at normal atmospheric pressure, being capable of forming a high polymer by photoinitiated addition polymerization and having a plasticizing action on said thermoplastic compound, said constituents (a) and (b) constituting from 5% to 30% and from 10% to 65% respectively of the composition of said stratum, and
(c) a small amount of an addition polymerization initiator activatable by actinic light constituting from 1% to 30% of the composition of said stratum, and
(2) exposed complementary adjoining image areas solid at 50° C., non-thermally transferable at said stick or transfer temperature at which the underexposed areas are thermally transferable, and comprising an addition polymer of an aforesaid ethylenically unsaturated compound and said thermoplastic compound;
said process comprising:
(A) placing the outer surface of said stratum into contact with the image-receptive surface of a separate element,
(B) heating at least one of said elements to a temperature of at least 50° C. but less than the melting point of the complementary image areas while said surfaces are in contact to selectively soften the underexposed image areas of said stratum, and
(C) separating the two elements whereby the thermally transferable, underexposed image areas of the stratum are transferred to the image-receptive element.

8. A photopolymerizable composition comprising (A) a water-soluble, monoethylenically and terminally-unsaturated, monomeric compound and (B) a photocatalyst selected from the class consisting of cadmium sulfide, zinc sulfide and mercuric iodosulfide, said photocatalyst being prepared in the absence of activating radiation within the wavelengths depressing the catalytic activity of said photocatalyst and remaining in the absence of said activating radiation until photographic exposure of said photopolymerizable composition.

3,346,384
METAL IMAGE FORMATION
Joseph Gaynor, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 25, 1963, Ser. No. 275,753
11 Claims. (Cl. 96—36)



1. A method for producing a design in a metal layer which comprises coating the metal layer with a polyhalogenated organic compound that liberates photolytic

halogen when exposed to activating radiation, said metal being chemically reactable with the photolytic halogen, and selectively exposing the coated metal layer to activating radiation in the desired design pattern for a sufficient time period to react the photolytic halogen generated with the metal to produce a pattern of the product of said reaction in said metal layer which has a point-to-point correspondence with the design pattern of activating radiation.

3,346,385
PROCESS FOR PHOTO-ENGRAVING BY USE OF PHOTO-CHROMIC DYE AND PRODUCT
Peter L. Foris, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Jan. 16, 1964, Ser. No. 338,135
20 Claims. (Cl. 96—36)

3. A process of etching including the steps of

(a) providing the material to be etched with a substantially amorphous thin film of photochromic material of a spiropyran configuration, the molecules of which are converted from a normal state in which they are readily soluble in non-polar hydrocarbon solvents to a state where they are not, by absorption of applied light;

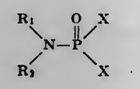
(b) forming a desired image in the film, in terms of such differential solubility, by selective application thereto, by areas, of light;

(c) washing away the unconverted molecules with a non-polar hydrocarbon solvent to leave an image of photochromic material with a surrounding exposed substrate surface to be etched; and

(d) etching the substrate material by application thereto of an etching material to which the converted molecules provide a barrier.

3,346,386
POLYCONDENSATION PRODUCTS OF PHOSPHORIC ACID AMIDES WITH ALIPHATIC POLYETHERS AS DEVELOPER ADJUVANTS
Herbert Müller, Leverkusen, Herbert Grabhöfer, Cologne-Flittard, Hans Ulrich, Leverkusen, and Rolf-Fred Posse, Cologne-Flittard, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 10, 1963, Ser. No. 329,364
Claims priority, application Germany, Dec. 17, 1962, A 41,899
5 Claims. (Cl. 96—66.3)

1. In a process for developing an exposed photographic material containing at least 1 silver halide emulsion layer, the silver halide of which contains at least 50 mol percent of silver chloride, in a photographic aqueous developer composition containing formaldehyde, the improvement which consists in developing the exposed photographic material in contact with a reaction product of 1 to 2 mols of aliphatic polyether having terminal hydroxy groups, and 1 mol of a phosphoric acid amide derivative of the formula

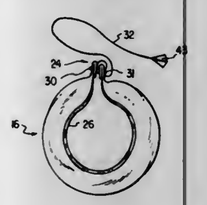


in which R_1 is a radical of the group consisting of alkyl, phenyl, alkyl phenyl and phenyl alkyl; R_2 is a substituent of the group consisting of hydrogen, alkyl, phenyl, alkyl phenyl and phenyl alkyl or R_1 and R_2 together are the methylene groups required to complete a heterocyclic radical of the group consisting of pyrrolidino and piperidino and X represents a substituent of the group consisting of chlorine, bromine and lower alkoxy.

3,346,387
WHIPPING ASSISTANT AND COMESTIBLES UTILIZING SAME
James Moncrieff, Mundelein, Walter M. Cochran, Highland Park, Rudy Ellinger, Prospect, and Donald E. Miller, Oak Park, Ill., assignors to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,857
6 Claims. (Cl. 99—1)

1. A whipping assistant particularly adapted for foaming an aqueous, normally fluent foodstuff, said assistant consisting essentially of a blend of about 40 percent to about 80 percent by weight of stearyl and palmityl (mono) lactylic acids and about 20 percent to about 60 percent by weight of free stearic and palmitic acids, said blend being promoted with fatty acid mixed mono- and diglycerides having an iodine value not substantially above about 20, about 0.1 to about 7 parts of said blend being present per part of said mixed mono- and diglycerides, and the ratio of the monoglycerides to diglycerides being between about 0.2:1 and 9:1.

3,346,388
TEA PACKET
Frederick Percy Andrews, 2924 McKinley St. NW., Washington, D.C. 20015, and Stanley Foster Reed, 1621 Brookside Road, McLean, Va. 22101
Filed Feb. 4, 1966, Ser. No. 525,025
5 Claims. (Cl. 99—77.1)



1. A tea infusion packet comprising an elongated tube formed entirely of a longitudinally creped sheet of pervious paper, longitudinal connecting means joining the longitudinal side edges of the sheet, end closing means closing the ends of the tube, tea particles firmly packed in and filling the tube, said paper being more stretchable along its longitudinal length than transversely thereof to provide a tube having a wall of high longitudinal compliance to facilitate expansion thereof when the tea particles become wet and expand whereby new channels for water flow are formed to facilitate the wetting of the internal core of tea particles.

3,346,389
CAKE MIX, BATTER, METHOD OF MAKING A CAKE AND THE RESULTING PRODUCT
James W. Evans, Highland, Ind., and Charles S. McWilliams, La Grange, Ill., assignors to American Maize-Products Company, a corporation of Maine
No Drawing. Filed June 26, 1964, Ser. No. 378,438
11 Claims. (Cl. 99—92)

6. In a pre-packaged dry cake batter mix composed principally of flour, sugar and shortening, the improvement which comprises from about 1% to about 5% by weight of added pregelatinized starch which contains not more than about 18% by weight of amylose, said proportion of added pregelatinized starch being based upon the weight of solid ingredients in said mix.

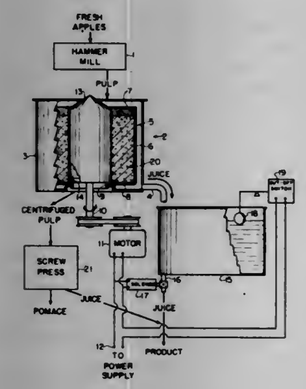
3,346,390
PROCESS FOR PREPARING NUT BUTTER FROM SOYBEANS
Michael J. Pichel, Chicago, Ill., and Theodore J. Weiss, Columbus, Ohio, assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Dec. 6, 1963, Ser. No. 328,473
7 Claims. (Cl. 99—98)

2. A process for preparing a soy spread of improved flavor, color, and consistency from soybeans comprising: moisturizing dehulled soybeans with an amount of water sufficient to increase the moisture content of said soybeans by about 5–50% based on the weight of said soybeans, promptly contacting said soybeans with hot, edible oil at a temperature sufficient to volatilize the water present in said soybeans, adjusting the fat content of said soybeans to about 35–60% by adding an edible oil, and subdividing said soybeans whereby to reduce the particle size thereof so that at least about 97.5% of the fat-free solids passes a 200-mesh screen.

3,346,391
PROCESS OF REMOVING AND RECOVERING OIL FROM DEEP-FRIED PRODUCTS
Sevart N. Miller, Warden, and John F. Flodin, Sunnyside, Wash., assignors to Flodin, Inc., Sunnyside, Wash., a corporation of Washington
Filed June 14, 1965, Ser. No. 463,672
13 Claims. (Cl. 99—100)

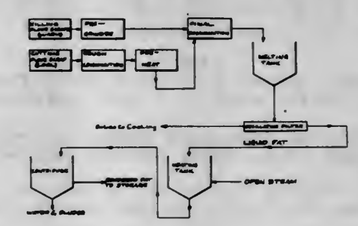
9. In a process for removing and recovering oil from food products, the steps comprising: (a) removing the food product from its oil treatment container; (b) transferring said product to a conveyor means; and (c) subjecting said product while it is on said conveyor means to water to remove excess oil from said product.

3,346,392
PRODUCTION OF FRUIT JUICES
Edison Lowe, El Cerrito, Everett L. Durkee, El Sobrante, and Walter E. Hamilton, El Cerrito, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
Filed July 23, 1964, Ser. No. 384,815
8 Claims. (Cl. 99—105)



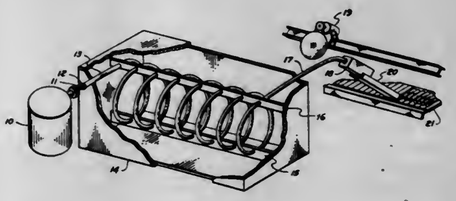
1. A process for preparing fruit juice which comprises introducing a mass of ground fruit into a perforated vessel rotating said vessel and mass at a speed just high enough to hold the mass against the sides of the vessel and to lightly compact the mass, then increasing the speed of rotation to a level to positively expel juice from the mass and continuing rotation at this speed for a period long enough to extract a quantity of juice having a weight equal to 50 to 65% of the weight of the ground fruit.

3,346,393
METHOD AND APPARATUS FOR SEPARATING FAT AND SOLIDS FROM MEAT SCRAPS
Purdy Bradford, Palos Park, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 12, 1960, Ser. No. 55,406
3 Claims. (Cl. 99—108)



1. An improved method for continuously rendering fat from packinghouse scrap, said method comprising: comminuting fatty scrap material; heating the comminuted scrap to a flowable condition but below a temperature at which any protein material present would be denatured; thereafter continuously charging said melted fatty scrap material to a foraminous surface, said surface being arranged as a sling having a bight hung between two ends for receiving the melted material; reciprocating the ends of said sling so as to continuously change the bight thereof and to roll the material therein whereby the liquid material passes through the foraminous surface while any separated protein material is agglomerated and compacted into substantially a single mass by the rolling action within the bight; and continuously discharging said mass from said bight.

3,346,394
CONTINUOUS MANUFACTURE OF COMMINUTED MEAT PRODUCTS
Elbert H. Rongey, Park Forest, Ill., and Robert J. Hlavacek, Buena Park, Calif., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 17, 1964, Ser. No. 338,453
3 Claims. (Cl. 99—109)



1. A method for continuously forming meat product comprising continuously passing meat emulsion containing comminuted meat under pressure through a forming device, said forming device being constructed of rigid plastic having a percent elongation of about 25–1,000 and modulus of elasticity of about 25,000–300,000, continuously conductively heating said meat emulsion during passage through said forming device to a temperature sufficient to set said meat product to a self-sustaining form and continuously removing said meat product having a self-sustaining form from said device.

3,346,395
PROCESS FOR SOFTENING THE SHELL PORTIONS OF CRUSTACEANS FOR EDIBLE PURPOSES
Esler L. D'Aquin, 5959 Colbert St., Apt. #3, New Orleans, La. 70124
No Drawing. Filed Oct. 7, 1965, Ser. No. 493,893
9 Claims. (Cl. 99—111)

1. A process for softening the shells of hard-shell crabs for edible purposes comprising soaking the crabs at temperatures from above 80 to 212 degrees Fahrenheit, in an aqueous solution containing from about 2% to 25% by weight of glacial acetic acid, until the shells become acceptably soft as determined by tactile examination.

3,346,396
REACTION PRODUCT OF SODIUM GLUTAMATE AND ACETIC ACID AS A DRY ACID SEASONING
Akira Kitayama, Sakai, Japan, assignor to Tamanoi Su Kabushiki Kaisha, Sakai, Japan, a corporation of Japan
Filed Apr. 22, 1965, Ser. No. 450,072
Claims priority, application Japan, Oct. 22, 1964, 39/60,198
2 Claims. (Cl. 99—140)

1. A dry, acid seasoning for foods consisting essentially of the reaction product of a concentrated acetic acid containing liquid and sodium glutamate wherein about 3 mols of acetic acid is reacted with about 1 mol of sodium glutamate.

3,346,397
PROCESS FOR DELAYING SENESCENCE OF PINEAPPLE FRUIT
Willis A. Gortner, Honolulu, Hawaii, assignor to Pineapple Research Institute, Honolulu, Hawaii, an association of Hawaii
No Drawing. Filed July 17, 1963, Ser. No. 295,841
7 Claims. (Cl. 99—154)

1. The method of producing pineapple fruit of superior market quality, comprising the steps of:

(a) harvesting said fruit only after said fruit has reached substantially full maturity to thereby obtain to the maximum extent the desirable qualities attainable by natural ripening of pineapple fruit; and

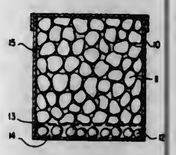
(b) delaying the post-harvest senescence of said fruit by applying to the full-grown fruit after it has become sufficiently ripe that at least part of the eyes of the fruit have turned yellow and during a period beginning about three weeks before and continuing after the harvesting of the fruit a material selected from the group consisting of the following free di- and polycyclic aromatic acids and esters, salts, amides, and nitrile derivatives thereof:

1-naphthaleneacetic acid
3,4-dihydro-1-naphthaleneacetic acid
ε-(1-naphthyl)hexoic acid
β-(1-naphthoyl)propionic acid
α-(2-naphthoxy)propionic acid
4-phenanthreneacetic acid,

the amount of said material applied being adequate to substantially delay senescence of the treated fruit, but sufficiently small to be virtually nontoxic.

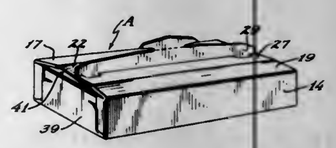
3,346,398
METHOD OF PRESERVING PERISHABLE MATERIAL
Werner O. Tundermann, Colonia, and Stuart D. Friedman, Bound Brook, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Jan. 10, 1964, Ser. No. 337,039
5 Claims. (Cl. 99—171)

1. A method for the preservation of perishable material which comprises placing in a container which is impermeable to air animal or vegetable matter subject to spoilage by bacteria or molds and a sterilizing composition comprising a crystalline porous metal aluminosilicate and an alkylene oxide selected from the group consisting of ethylene oxide and propylene oxide absorbed within the pores of said aluminosilicate, closing said container using an airtight sealing means and maintaining said matter in



a sterilizing atmosphere of said alkylene oxide vapors for an extended period of time by the slow and controlled release of said vapors from said sterilizing composition into the atmosphere surrounding the matter to be protected in response to changes in relative humidity within said container.

3,346,399
EXPANDABLE FROZEN DOUGH PACKAGE
Dighton L. Watson, 4033 13th Ave. S. 55407, and Forest K. Michaelson, 4008 46th Ave. S. 55406, both of Minneapolis, Minn.
Filed June 2, 1964, Ser. No. 371,920
8 Claims. (Cl. 99—172)



1. A vertically expandable package for use as a disposable baking receptacle in a combination with frozen expandable dough which expands to a volume greater than that of the frozen dough, the packaging including a sheet of heat resistant flexible material cut and creased to provide:

a rectangular bottom panel,

a pair of upstanding side walls hingedly connected to two opposed edges of said bottom panel,

a pair of upstanding end walls hingedly connected to the remaining opposed walls of said bottom panel,

side and end wall extensions hingedly connected to the side and end walls respectively along lines of fold parallel to those connecting the side and end walls to said bottom panel,

corner flaps hinged to the edges of the walls of one pair and secured in surface contact with the outer surfaces of the walls of the other pair,

extension corner flaps hingedly connected to the wall extensions of said one pair of side walls and hingedly connected to said first named corner flaps,

said extension corner flaps lying outwardly of the side walls of said other pair in erected position of said side wall extensions,

said wall extensions being folded into position parallel to said bottom panel and said extension corner flaps being diagonally creased and folded beneath the wall extensions of said one pair of walls to provide a cover for said package,

whereby, when the dough rises the expansion of said dough urges the side and end wall extensions into substantially coplanar relation to the walls to which they are hinged thus providing a receptacle of sufficient depth which enables the dough to expand into proper dimensions prior to baking in said receptacle.

3,346,400
TRAY
Donald B. Roesner, Chicago, Ill., assignor to American Excelsior Corporation, a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,895
5 Claims. (Cl. 99—174)



3. A packaged food product, comprising: a plastic receptacle having means forming a liquid proof supporting surface in said receptacle having a plurality of separate, individually distinct, liquid proof wells in said supporting surface; and a moisture containing food product on said supporting surface of said receptacle and extending across said wells, each well having a closed inner end spaced from said product, and each well having a single access opening at the upper end adjacent said product and sealed over by said product to entrap liquid and air in the individual wells.

3,346,401
PROCESSING OF RAW INTESTINES
Sisir Kumar Barat, Adyar, Madras, India, assignor to Council of Scientific and Industrial Research, New Delhi, India, a corporation of India
No Drawing. Filed Apr. 15, 1964, Ser. No. 360,092
2 Claims. (Cl. 99—175)

1. A method of processing raw intestines consisting of the following steps:

(1) Mechanically washing and scraping said intestines;

(2) Cleaning said intestines consecutively in two baths of an aqueous solution containing ¼–¾% soap and ¼–¾% soda, said intestines being retained in said first bath for four hours and said second bath for sixteen hours;

(3) Bleaching the cleaned intestines for a period of one to three days in an aqueous solution consisting of 15–20 ml. per liter of hydrogen peroxide, 5–15 gm. per liter of magnesium sulphate, .25–.75 gm. per liter of a nonionic sulphated fatty alcohol and an alkali selected from the group consisting of sodium hydroxide, sodium carbonate and sodium bicarbonate in an amount sufficient to maintain said solution at a pH between 9 and 10;

(4) Thoroughly washing said intestines with water;

(5) Treating the bleached intestines for a period of one to ten minutes in an aqueous solution containing 2.5–7.5 ml. per liter of dilute acetic acid;

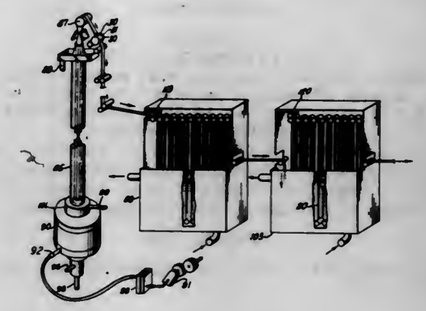
(6) Thoroughly washing said intestines with water;

(7) Treating the acid-treated intestines in an emulsion consisting of 10–30 ml. per liter of groundnut oil and 10–30 ml. per liter of glycerine for a period of about fifteen minutes.

(8) Inflating and drying said intestines.

3,346,402
METHOD OF PRODUCING AN EDIBLE, TUBULAR COLLAGEN-GELATIN SAUSAGE CASING
Emanuel R. Lieberman, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 17, 1964, Ser. No. 375,905
2 Claims. (Cl. 99—176)

1. In a method of producing an edible, tubular collagen sausage casing by extruding a continuous fragile, tubular body from a fluid mass of acid-swollen tendon collagen fibrils into an aqueous ammonium sulfate solution; the improvement that comprises adding to the extrusion mass prior to extrusion, between about 5 percent and about 20 percent gelatin, based upon the weight of



the dry collagen solids, whereby the extruded tubular body has sufficient strength to withstand the stresses applied during subsequent hardening, washing, and drying of said continuous tubular body.

3,346,403
METHOD OF CONTROLLING THE FEED TO FOOD PACKING MACHINES
Eben H. Carruthers, Warrenton, Oreg. 97146
Continuation of application Ser. No. 293,787, July 9, 1963. This application Nov. 29, 1965, Ser. No. 515,291
1 Claim. (Cl. 99—188)

A method of packing a fish product which is of variable weight per unit of volume which comprises the steps of:

(a) supplying a volume of said product to a basin rotatable about a vertical axis at a basin supplying station;

(b) removing some of the product from the conveyor to fill each of a series of containers at a filling station, each of said containers being filled with a substantially constant desired weight of product, said product being supplied to the basin at said supplying station in such volume that some product always rotates with the basin past the filling station toward the supplying station;

(c) sensing the volume of product rotating on the basin after it leaves the final filling station and before it reaches the supplying station; and

(d) varying the volume of product supplied to the basin at the supplying station so that after leaving the supplying station and before reaching the filling station a substantially constant volume is always on the basin.

3,346,404
CHEMICAL PLATING PROCESS
George S. Gardner, Elkins Park, and Albert J. Saukaitis, Wayne, Pa., assignors to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
No Drawing. Filed Jan. 26, 1965, Ser. No. 428,241
10 Claims. (Cl. 106—1)

8. A "liquor finishing" aqueous acid sulfate solution consisting essentially of:

(a) from 1 to 15 grams/liter of dissolved stannous ion, calculated as Sn;

(b) dissolved copper ions in a weight ratio to the stannous ion of from 0.1 to 0.8 as determined by the formula

$$\frac{Cu}{Cu+Sn}$$

and

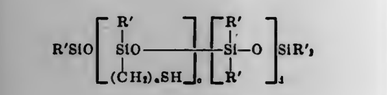
(c) from 0.05 to 5 grams/liter of amino acid chosen from the class which consists of glutamic, aspartic and glycine acids; and wherein the solution has a pH ranging from 0.1 to 2.0.

3,346,405
METAL PROTECTANT
Richard V. Viventi, Niskayuna, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 14, 1964, Ser. No. 418,313
16 Claims. (Cl. 106—14)

1. A compound for protecting silver and copper metal surfaces from corrosion comprising a mercaptoalkyl-substituted organosilicon compound selected from the class consisting of mercaptoalkylsilanes having the formula:

$$A_3Si(CH_2)_aSH$$

and mercaptoalkyl-substituted organopolysiloxanes having the formula:



where A is a hydrolyzable group selected from the class consisting of alkoxy radicals of 1 to 6 carbon atoms and acetoxy radicals; *a* is an integral number of from 3 to 25, inclusive; R′ is a monovalent hydrocarbon radical selected from the group consisting of methyl, ethyl, propyl, isopropyl, amyl, cyclopentyl, cyclohexyl, cyanoethyl, chloropropyl, acrylopropyl, methacrylopropyl, phenyl, biphenyl, naphthyl, tolyl, xylyl, ethylphenyl, benzyl, phenylethyl, chlorophenyl, dibromophenyl, and p-cyanophenyl radicals; the sum of *c* and *d* is from 10 to 100, *c* is at least as large as *d*, and *d* can vary from 0 up to the value of *c*.

3,346,406
PAPER COATING COLOR COMPOSITIONS
Ian C. MacGugan, Trenton, and Herbert P. Trix, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Apr. 15, 1965, Ser. No. 448,256
12 Claims. (Cl. 106—124)

1. A paper coating color composition comprising a pigment, an adhesive and from about 0.1% to about 1% by weight based on the weight of the pigment of a heteric-type polyol having a molecular weight of from 1500 to 8000 having the general formula:

$$Y(—P—E—H)_x$$

wherein Y is the nucleus of an aliphatic polyhydric alcohol having *x* hydroxyl groups and having up to six, inclusive, carbon atoms, *x* is at least two, P is a hydrophobic polyoxyalkylene chain having an oxygen/carbon atom ratio of not more than 0.40, the molecular weight of P and the value of *x* being such that the molecule excluding E has a molecular weight of between 500 and 4000, and E is a hydrophilic heteric polyoxyalkylene chain which (1) contains oxyethylene groups and at least five percent by weight of higher molecular weight oxyalkylene groups having at least three carbon atoms in their structure, and (2) has an average oxygen/carbon atom ratio of greater than 0.40, E being present in the composition to the extent that it constitues from 5 to 90 weight percent of the total compositon.

3,346,407
SOIL EROSION AND EVAPORATION CONTROL
James W. Van Leuven, Duarte, Calif., assignor to Aquatain Company, Incorporated, Pasadena, Calif., a corporation of California
No Drawing. Filed Apr. 27, 1964, Ser. No. 362,944
9 Claims. (Cl. 106—126)

9. A soil erosion and evaporation deterrent comprising by weight:

1.0% pectin,
6.5% glycerin,
0.5% citric acid,
0.4% ammonia,
0.002% silver nitrate,
10% sawdust,
0.25% glue, and
the remainder is water.

3,346,408
METHOD FOR PRODUCING FIBERS CONTAINING VISCOSE AND A CASEIN-EPOXY NITRILE COMPOUND
Keinosuke Nakao, Joto-ku, Osaka, and Tsuneo Minamiyama, Hyogo-ku, Kobe, Japan, assignors to Kanegafuchi Spinning Co., Ltd., Tokyo, Japan
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,715
2 Claims. (Cl. 106—140)

1. A process for producing artificial fibers which comprises (a) mixing viscose with a casein derivative obtained by reacting casein under basic conditions and at a temperature of from about 10 to about 90° C. with an epoxy compound of the formula



wherein *n* is 0, 1 or 2, the epoxy compound being 0.3–2.0 mols per mol of the amino acid residue in the casein, the ratio of the casein derivative to cellulose in the viscose being 10:90 to 30:70, and (b) spinning the mixture in a spinning bath.

3,346,409
ZINC OXIDE COMPOSITIONS AND METHOD OF MAKING THEM
John E. Walrond, Beaver Falls, Pa., assignor to St. Joseph Lead Company, New York, N.Y., a corporation of New York
No Drawing. Filed June 24, 1965, Ser. No. 466,814
11 Claims. (Cl. 106—296)

1. A process for preparing zinc oxide pigment and filler compositions which comprises subjecting zinc oxide to a temperature of at least about 500° C. in the presence of a substance selected from the group consisting of lithium oxide and substances capable of forming lithium oxide at the temperature of treatment in an amount equivalent to from about 0.1% to about 2% of lithium oxide by weight based on the zinc oxide.

3,346,410
COLOR ORNAMENTATION OF GLASS ARTICLES
Daniel N. McCarthy, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Dec. 2, 1963, Ser. No. 327,329
2 Claims. (Cl. 117—8)

1. The method of ornamentally coloring a transparent glass receptacle having outer and under surfaces and relatively smooth normally viewed inner and upper surfaces which comprises the steps of forming in said outer and under surfaces relatively deep recesses having angularly intersecting side walls, spraying translucent colored glass particles in an evaporatable liquid vehicle as a relatively thin coating of uniform thinness over the said outer and under surfaces, heating and drying the coating to remove the vehicle, rubbing the outermost portions of the said outer and under surfaces to remove the dried coating therefrom while leaving said coating applied as a



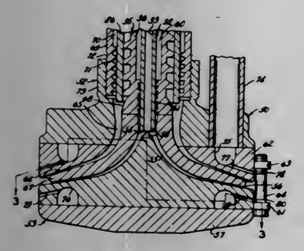
uniformly thin film adhering to the walls of said recesses only, and fusing the colored glass particles in said film to each other and to the walls of the recesses so as to form a uniformly thin translucent colored coating conforming to the angularly formed walls of the recesses.

3,346,411
METHOD OF FORMING AN ARTISTIC RELIEF
Leonard J. O'Dell, Elma, N.Y.
(93 Eagen Drive, Lackawanna, N.Y. 14218)
Filed Jan. 22, 1964, Ser. No. 339,433
9 Claims. (Cl. 117—11)



1. A method for producing an artistic relief of an image on paper which comprises applying only to a relatively narrow perimetric zone around said image on one side of said paper, a liquid shrinking agent whereby to outline said image with said liquid and thereafter drying said paper, said liquid shrinking agent being characterized by its forming a film on said paper upon drying which film tends to shrink as it dries thereby producing a convexity substantially coextensive with said perimetric zone on the other side of said paper.

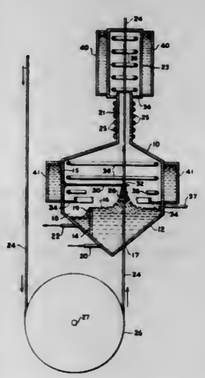
3,346,412
TIRE COATING APPARATUS
Karl Siegenthaler, Prattein, Basel-Land, and Hans Wild, Muttenz, Basel-Land, Switzerland, assignors to Fabrik fur Firestone Produkte AG, Prattein, Switzerland, a corporation of Switzerland
Filed Mar. 30, 1964, Ser. No. 355,640
Claims priority, application Switzerland, Sept. 4, 1963, 10,946/63
16 Claims. (Cl. 117—96)



1. A tire band coating apparatus comprising, a lower support plate, a shaft movably mounted above said lower support plate, an upper support plate slidably mounted on said shaft, a nozzle assembly at one end of said shaft selectively positioned between said upper support plate and said lower support plate by movement of said shaft when said plates engage said tire band, a feed pipe positioned coaxially within said shaft, conveyor means disposed about said feed pipe, said feed pipe and said conveyor means communicating with said nozzle assembly, a housing adapted to restrict the escape of the coating substance, and exhaust means to evacuate said housing.

15. A method of substantially uniformly coating the interior surface of an unvulcanized tire band with a lubricating agent by the controlled distribution of a powdered solid suspended in a liquid comprising the steps of, enclosing the tire band between support plates engaging the bead areas, moving an omnidirectional nozzle assembly axially of and within said tire band, separately feeding the powdered solid and liquid materials to the nozzle assembly, discharging the powdered solid and liquid individually by air pressure from converging discharge channels to effect mixing externally of the nozzle assembly, enclosing the mixed materials within substantially parallel air streams directed toward the tire surface, and removing the coated tire band from between the support plates for the curing operation.

3,346,413
METHOD AND APPARATUS FOR COATING WIRE AND SOLVENT RECOVERY
Otto H. Lindemann, Buffalo, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Oct. 12, 1964, Ser. No. 403,202
8 Claims. (Cl. 117—102)



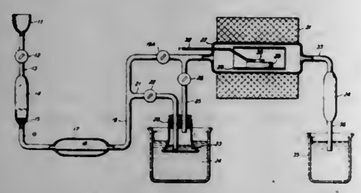
1. A process for coating wire which comprises forming a body of hot liquid coating composition, which composition contains as a solvent therefor, a substantially non-flammable halogenated hydrocarbon solvent, passing wire to be coated through said body of coating composition, continuously adding heated coating composition to and removing coating composition from said body while passing said wire therethrough, maintaining a cool zone immediately above the body of the coating composition, forming a zone of halogenated hydrocarbon solvent vapor above the body of coating composition, which zone is within and below said cooled zone, passing the wire from the body of coating composition through a die maintained within the zone of solvent vapor, removing excess coating composition from the wire, condensing and recovering solvent volatilized from the body of the coating composition and the thus-coated wire in said cool zone, removing the coating wire from said cooled zone, and, thereafter, heating the thus-coated wire to effect removal

of substantially all solvent remaining in the coating, said heating being carried out at a temperature above the boiling point of the solvent but below that at which substantial curing of the coating takes place.

3,346,414
VAPOR-LIQUID-SOLID CRYSTAL GROWTH TECHNIQUE

William C. Ellis, Maplewood, William G. Pfann, Far Hills, and Richard S. Wagner, Basking Ridge, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 28, 1964, Ser. No. 340,701
13 Claims. (Cl. 117—106)



1. A process for the controlled growth of a crystalline body comprising a first material at a given site, comprising providing a second material comprising an agent at the said site, contacting the said second material with a vapor comprising the said first material, the said agent being such that it is capable of forming a liquid solution comprising the said agent and the said first material, the said second material being maintained at a temperature above the initial freezing temperature of the said solution and continuing the said contacting for a time sufficient to supersaturate the said solution with respect to the said first material thereby initiating crystallization at the said site.

3,346,415
FLEXIBLE PRINTED CIRCUIT WIRING

Carl L. Hachenberger, 20903 Puente Road, Woodland Hills, Calif. 91364

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,654
10 Claims. (Cl. 117—212)

2. A method of manufacturing a flexible printed circuit board from an original printed circuit board having a rigid substrate including a flexible material made rigid by a stiffening substance comprising:

subjecting said rigid substrate to a solvent for said stiffening substance;

purging said solvent from said substrate, leaving said flexible material;

impregnating said substrate with a flexible bonding agent to reinforce said flexible material.

3,346,416
METHOD OF PRODUCING ORIENTED GRAPHITE

Leon Podolsky, Pittsfield, Mass., assignor to Drexel Institute of Technology, a corporation of Pennsylvania

Original application May 28, 1962, Ser. No. 198,286, now Patent No. 3,142,158. Divided and this application Mar. 26, 1964, Ser. No. 355,001
3 Claims. (Cl. 117—226)

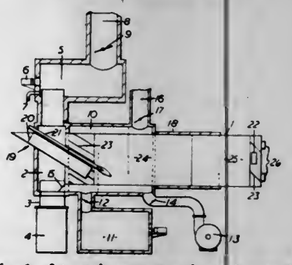
1. A method of producing oriented graphite comprising the steps of providing a furnace, providing a surface within the furnace upon which the graphite may be deposited, heating the furnace to a temperature of the order of 2100° F. sufficient to crack a hydrocarbon gas, introducing such a gas into the furnace, and independently of said heating step creating an electrostatic field at said surface, the direction of said field being the same as the desired direction of the "c" axes of the graphite crystals deposited on said surface as a result of the cracking operation.



3,346,417
METHOD OF AND APPARATUS FOR TREATING METAL SCRAP, PARTICLES OR THE LIKE CONTAMINATED WITH VOLATILE AND/OR COMBUSTIBLE SUBSTANCES

Friedrich Ehrlich, Wendover, England, assignor to International Alloys Limited, Aylesbury, England

Filed Aug. 6, 1963, Ser. No. 300,357
5 Claims. (Cl. 134—2)



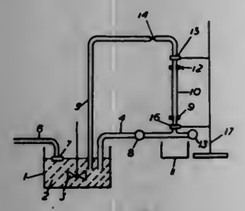
1. A method of treating contaminated metal scrap comprising the steps of imparting rotary and longitudinal motion to the scrap in a rotary drum having scrap entry and discharge ends, subjecting said scrap to a temperature at the entry end in the range 300° C. to 450° C., passing a controlled current of air countercurrently from discharge end to entry end through the moving scrap to remove any volatile substances, applying a pilot flame to the interior of the drum at said entry end to maintain a continuous zone of flame in said drum to promote at least partial combustion of any combustible substances, withdrawing the combustion and other gases at said entry end, subjecting these gases to an afterburning process to obviate discharge of fumes from said drum to atmosphere, controlling said current of air and admitting further air as necessary adjacent the afterburning flame to control the rate of combustion, and circulating temperature conditioned gases around the exterior of the drum along part of the length thereof intermediate said ends for controlling the temperature within the drum within a range determined by the flash point of combustible material in said scrap and the maximum temperature said scrap can withstand without risk of melting or oxidation.

3,346,418
METHOD OF PURIFYING PARTICULATE SOLID MATERIALS

John Harold Chapman, Ruislip, and Maurice Victor Stanley Emm, Rickmansworth, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company

Filed Nov. 15, 1963, Ser. No. 324,122
Claims priority, application Great Britain, Nov. 20, 1962, 43,876/62
21 Claims. (Cl. 134—25)

1. A method of purifying solid particles suspended in liquid medium comprising a solvent for the impurities, which comprises initially passing the suspension over a porous surface at a predetermined rapid rate of flow such that a portion only of said liquid medium passing over the porous surface passes therethrough, whereby said portion is separated from solid particles carried thereby and the separated solid particles are deposited and maintained on said surface in the form of a thin pervious layer, the remainder of said liquid medium and solid particles carried thereby passing completely across said porous surface, and then continuing to pass the remainder of



said liquid medium and solid particles over said porous surface at a rate sufficiently rapid to maintain said thin pervious layer thereon, and to prevent the formation of a layer of said solid particles on said porous surface sufficiently thick so as to be impervious to the passage therethrough of said liquid medium, whereby a portion of said liquid medium continues to pass through said thin pervious layer and said porous surface thereby washing and purifying the separated particles forming said pervious layer.

3,346,419
SOLAR CELL MOUNTING

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Le Roy Forehand, Gardena, and William H. Rodner, Hawthorne, Calif.

Filed Nov. 29, 1963, Ser. No. 327,163
1 Claim. (Cl. 136—89)



In a solar battery, the combination comprising:

(a) a metal base member,

(b) a plurality of solar cells having conductive upper and lower surfaces,

(c) a rigid non-conducting glass type board member,

(d) adhesive means to attach the lower surface of said board member to said base member,

(e) a conducting strip having a lower surface attached directly to the upper surface of said board member and an upper surface connected directly to said lower conductive surfaces of said solar cells,

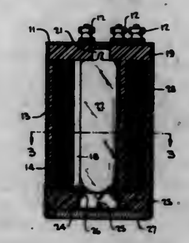
(f) said nonconducting board member electrically insulating said solar cells from said base member, said board member's lower surface having a coefficient of expansion that cooperates with said adhesive means so as to relieve the effect of differences in coefficients of expansion between them, and

(g) connector means to electrically connect the upper surfaces of said solar cells.

3,346,420
AQUEOUS ELECTROLYTE EMULSION

Gilbert R. Snyder, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed June 24, 1965, Ser. No. 468,674
6 Claims. (Cl. 136—90)



1. An aqueous electrolyte emulsion for a reserve type spin battery comprising a stable emulsion of fluoroboric acid and heptane, said fluoroboric acid being an electrolyte and said heptane being an organic insulating liquid.

4. An improvement in a reserve type spin battery adapted for activation upon release of electrolyte from a frangible ampule when the ampule is forced against a projection at the bottom of said battery by setback forces, said electrolyte being forced into a plurality of cells surrounding said frangible ampule by spin forces, said improvement comprising a quantity of an aqueous electrolyte emulsion greater than is required to fill all the cells in said battery, said electrolyte emulsion comprising a stable emulsion of an electrolyte and an insulating liquid, said insulating liquid having a density less than said electrolyte.

3,346,421
TRANSITION METAL ELECTRODE

Charles E. Thompson, Fanwood, and Carl E. Heath, Jr., Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,576
19 Claims. (Cl. 136—120)

1. A porous electrode comprising an intimate mixture of a halogenated hydrocarbon polymer and a compound selected from the group consisting of Groups IV–B, V–B, VI–B silicide, tungsten carbide, vanadium carbide, titanium nitride, vanadium nitride, niobium nitride, tantalum nitride and chromium nitride, said compound being impregnated with 1 to 3 wt. percent catalyst.

3,346,422
METHOD OF MAKING INORGANIC PERMSELECTIVE MEMBRANES

Carl Berger, Corona Del Mar, Calif., assignor, by mesne assignments, to Douglas Aircraft Company, Inc., Santa Monica, Calif.

Filed Nov. 29, 1963, Ser. No. 326,985
19 Claims. (Cl. 136—148)

1. A method of forming a permselective membrane from a permselective membrane incorporating as inorganic ion exchange material selected from the group consisting of an insoluble hydrous metal oxide and an acid salt thereof, comprising the step of, passing an

aqueous solution through said membrane, said solution containing a reagent selected from the group consisting of an acid, a base, and a salt, said reagent being reactive with said ion exchange material to cause said inorganic material to be at least partially converted to an inorganic material having different ion exchange characteristics.

3,346,423

SOLID ELECTROLYTE BATTERY CELLS

Donald M. Smyth and Kurt Lehovec, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 84,483, Jan. 19, 1961. This application May 24, 1965, Ser. No. 462,470
1 Claim. (Cl. 136—153)

A battery cell including a silver electron donor anode and a halogen electron acceptor material separated by a layer of solid barrier electrolyte material incorporating a silver halide selected from the group consisting of silver iodide, silver bromide, and silver chloride; comprising the incorporation of a hydrated salt selected from the group consisting of $MgCl_2 \cdot 6H_2O$, $MgSo_4 \cdot 7H_2O$,

$$Na_2CO_3 \cdot 10H_2O$$

$NaSO_4 \cdot 10H_2O$, $Na_2HPO_4 \cdot 12H_2O$, $CaCl_2 \cdot 2H_2O$, and $CaCl_2 \cdot 6H_2O$ in the cathode material in the range of from 1 to 5 parts by weight of salt to 2 to 10 parts by weight of active cathode material to maintain sufficient water vapor pressure in said cathode material to enhance its operating characteristics.

3,346,424

CAPACITOR FOIL MAKING

Donald W. Watters, Ravenswood, W. Va., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,898
3 Claims. (Cl. 148—2)

1. In a process for preparation of cast aluminum ingot stock for capacitor foil, the steps comprising charging a furnace with a quantity of high purity aluminum metal, melting said quantity of metal, fluxing the metal in the melting furnace with chlorine gas as soon as the metal has melted, said fluxing being performed so as to intimately expose substantially all the molten aluminum to the action of the chlorine gas and being for a period of time ranging from about 10 to 15 minutes and the chlorine gas being in an amount sufficient to supply a chlorine gas cover above the surface of the metal that is slightly above atmospheric pressure, and thereafter, while maintaining said fluxing with chlorine gas, immediately casting the metal into ingot form by continuously casting the metal into an open-ended mold while simultaneously cooling the emerging ingot by direct water chilling, the temperature of the metal during melting, fluxing and casting being maintained at a temperature in the range of about 1290–1330° F. and the total time for the melting, fluxing and casting operations being not greater than about 200 minutes.

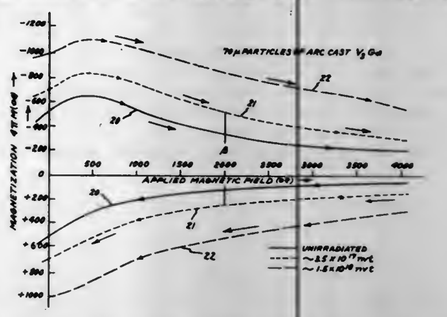
3,346,425

SUPERCONDUCTORS

Robert L. Fleischer, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 1, 1964, Ser. No. 356,377
3 Claims. (Cl. 148—4)

1. A process for increasing the critical current density of atomically ordered superconductive metal alloys of the substitutional type comprising subjecting the alloys to a radiation dose of not less than about 5×10^{16} fast neutrons/cm.^{2} (*nvt*) to effect partial disordering of the atomic structure of the alloys.



3,346,426

WIPE-ON PHOSPHATING COMPOSITION

Louis Schlossberg, Oak Park, Mich., assignor to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan

No Drawing. Filed Apr. 22, 1964, Ser. No. 361,882
4 Claims. (Cl. 148—6.17)

1. An aqueous phosphate coating composition containing in solution a composition consisting esentially of:

Ingredient:	Percent by weight of solution
Zinc (calc. from ZnO)	0.128– 3.84
Phosphoric acid (100%)	0.400–12.00
2,4-dinitrobenzenesodiumsulfonate	0.039– 1.17

3,346,427

DISPERSION HARDENED METAL SHEET AND PROCESS

William Marsh Baldwin, Jr., Cleveland Heights, Ohio, Raymond E. Cairns, Jr., Wilmington, Del., and Harold G. Marsh, Severna Park, and Roger E. Wilson, Baltimore, Md., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,301
12 Claims. (Cl. 148—11.5)

1. In a process for producing a sheet of face-centered-cubic metal, having a melting temperature of from 1000 to 1540° C., said sheet having a particulate refractory oxide dispersed therein and having high strength at elevated temperatures, the steps comprising (1) consolidating to a solid body having a density above about 30% of theoretical density a powder of said metal in which there is substantially uniformly dispersed about from 0.01 to 5.0% by volume of refractory metal oxide particles having an average size of from 5 to 250 millimicrons, said oxide having a free energy of formation at 1000° C. above 60 kilocalories per gram atom of oxygen and a melting point above 1000° C., (2) extruding said solid body at from 1200 to 2400° F. to a formed body having a length substantially greater than its width or thickness, (3) rolling said formed body, at a temperature not substantially higher than about 50% of its absolute melting point to effect a reduction of at least 30% in its thickness and form a sheet, (4) heat-treating said sheet at above its recrystallization temperature but below its melting point for a time sufficient to effect recrystallization of the metal therein in a preferred $(321)\langle 1\bar{2}1 \rangle$ crystallographic orientation, said orientation being so perfect as to have an angular deviation of no more than about 30° from each pole of the idealized orientation as measured on a stereographic projection at one half the maximum intensity value, and (5) rolling said recrystallized sheet at a temperature below its recrystallization temperature in a direction perpendicular to the direction of the initial rolling of said formed body, to effect a further reduction of its thickness.

3,346,428

METHOD OF MAKING SEMICONDUCTOR DEVICES BY DOUBLE DIFFUSION

Iwao Teramoto, Ibaraki-shi, Hitoo Iwasa, Toyonaka-shi, and Shosuke Shinoda, Ibaraki-shi, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,858
Claims priority, application Japan, Feb. 27, 1964, 39/11,190
9 Claims. (Cl. 148—188)

1. A method of producing a semiconductor device comprising applying a phosphate glass on one face of a silicon wafer, applying boron trioxide, B_2O_3, on the other face of the silicon wafer and heating the coated silicon wafer at a temperature of 1100° to 1300° C. to diffuse phosphorus and boron simultaneously into the respective sides of the silicon wafer; the phosphate glass having a viscosity of not more than 100 poises at a temperature of 1000° C., and comprising at least one alkali metal oxide selected from lithium oxide, sodium oxide and potassium oxide; at least one alkali earth metal oxide selected from magnesium oxide, calcium oxide, strontium oxide and barium oxide; and phosphorus pentoxide exceeding in mol percentage the sum of the mol percentages of the selected alkali and alkali earth metal oxides.

3,346,429

AMMONIUM NITRATE, KAOLIN CLAY, MONOAMINE MIXTURE SENSITIZED WITH LIQUID HYDROCARBON AND PREPARATION

Robert D. McMahon, Los Alamitos, Herbert J. Becker, Anaheim, and William H. Wright, Yorba Linda, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 22, 1965, Ser. No. 441,876
3 Claims. (Cl. 149—2)

1. A solid explosive composition having a high resistance to friability during storage at temperatures which fluctuate about and below 90° F. that consists essentially of ammonium nitrate, from about 2 to about 10 weight percent of a liquid hydrocarbon carbonaceous fuel, sufficient to sensitize said ammonium nitrate to detonation and from about 0.1 to about 5.0 weight percent of a preformed additive consisting of from 5 to about 15 weight percent of an aliphatic fatty monoamine having from 12 to about 18 carbons and the balance of a kaolin clay.

3. The method of producing an explosive composition comprising ammonium nitrate sensitized with a liquid hydrocarbon carbonaceous fuel which comprises admixing solid ammonium nitrate prills having particle diameters from about .01 to about 0.1 inch with an additive consisting essentially of from about .01 to about 1.0 weight percent of a C_{12} to C_{18} aliphatic primary monoamine and from 0.1 to about 5.0 weight percent of a kaolin clay to prepare a mixture of ammonium nitrate, kaolin clay, monoamine suitable for shipping; thereafter sensitizing said ammonium nitration by the addition thereto from 2 to about 10 weight percent of a liquid hydrocarbon carbonaceous fuel.

3,346,430

NF_2 ADDUCTS OF BENZENE

Lawrence J. Engel, Dunellen, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 14, 1961, Ser. No. 131,420
8 Claims. (Cl. 149—109)

4. A blend of NF_2 adducts of benzene characterized by an elemental analysis of 45 to 56 wt. percent F, 17 to 20 wt. percent N, 25 to 30 wt. percent C, and 1.8 to 2 wt. percent H, said NF_2 adducts bieng principally bis (difluoramino) cyclohexadiene and tetrakis (difluoramino) cyclohexene.

5. Process for preparing bis NF_2 and tetrakis NF_2 adducts of benzene which comprises reacting benzene with N_2F_4 in at least 1:1 mole ratio at a temperature in the range of about 100 to 350° C. under a pressure of 200 mm. Hg absolute to about 450 p.s.i.g., then recovering the resulting NF_2 adducts of the benzene.

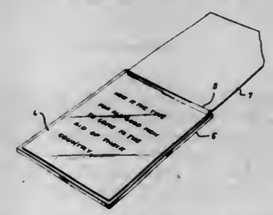
8. An NF_2 adduct of benzene selected from the group consisting of bis (difluoramino) cyclohexadiene and tetrakis (difluoramino) cyclohexene.

3,346,431

NOVEL DEVICE AND METHOD FOR REPRODUCING PRINTED MATTER

John E. Hammonds, 5254 E. 20th St., Tucson, Ariz. 85711

Filed Feb. 25, 1964, Ser. No. 347,261
11 Claims. (Cl. 156—235)



9. Method of reproducing printed indicia carried by a semi-porous substrate such as paper and the like comprising:

(a) treating the substrate with a hydrocarbon solvent which normally swells rubbers, said solvent being applied to the substrate in at least an amount sufficient to saturate the surface areas of said substrate which do not contain printed indicia but in less than an amount which damage the substrate and printed indicia;

(b) pressing into wetting contact with said substrate a reproducing laminate comprising a flexible transparent support sheet bearing thereupon in optical contact therewith a thin film of a normally substantially transparent rubbery organic polymer which is swelled when treated with the hydrocarbon solvent of step (a), the said thin film being disposed upon the surface of the reproducing laminate which contacts the substrate;

(c) maintaining the contact between the reproducing laminate and the solvent-treated substrate for a length of time sufficient to allow the solvent in the substrate to contact the rubbery polymer in the areas corresponding to the areas of the substrate where no printing appears;

(d) separating the reproducing sheet from contact with the substrate thereby rendering the solvent-treated area opaque; and

(e) applying a sheet of opaque dark-colored material to the side of the reproducing laminate which bears the thin film of rubbery polymer.

3,346,432

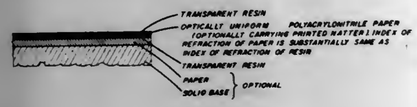
SYNTHETIC PAPER OF IMPROVED FILM-FORMING CHARACTER AND ARTICLES PREPARED THEREFROM

John Kearns Magrane, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Nov. 4, 1966, Ser. No. 600,323
10 Claims. (Cl. 156—330)

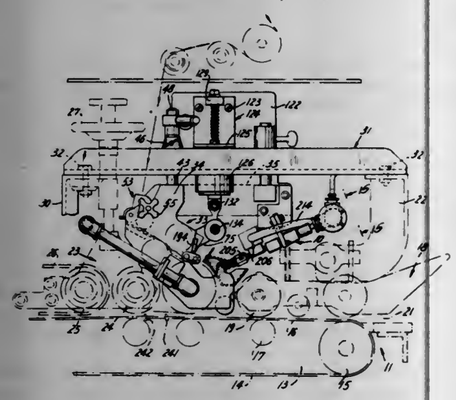
1. A web consisting essentially of uniformly collapsed interfelted optically uniform fibrillated polyacrylonitrile

fibers uniformly carrying transparent polymeric material of lower flow point and of matching refractive index in colloidal microglobular state, the amount of said polymeric material being sufficient to form a continuous phase when said web is hot-pressed at the flow point of said polymeric material.



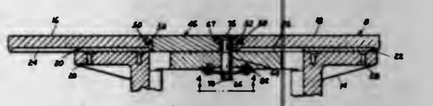
9. A process of forming an adherent transparent coating upon an article, which comprises hot-pressing a web according to claim 1 upon said article at a temperature between the flow points of the polymeric material in said web and the fibers of said web until a continuous polymer phase forms in said web.

3,346,433
SHORT LENGTH TAPE FEEDER
John P. Lopez, Westfield, N.J., assignor to Universal Corrugated Box Machinery Corporation, Cranford, N.J., a corporation of New Jersey
Filed Jan. 21, 1966, Ser. No. 522,149
8 Claims. (Cl. 156—355)



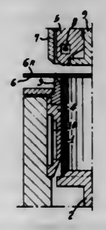
1. A machine for applying tape having a gummed surface to a moving piece of work, comprising tape feeding and tape cutting means, said feeding means comprising a pair of rollers, at least one of which is movable toward the other, said cutting means comprising a knife and an anvil, said knife being movable against said anvil, a pivoted member carrying one of said rollers and said knife on opposed sides of the pivotal axis thereof respectively, whereby when said knife engages said anvil said roller will be spaced from its associated roller, said tape being movable between said rollers and onto said anvil, a rotatable transfer unit having a circular periphery positioned adjacent said knife, said periphery being in the path of movement of the tape past said knife to convey the tape onto the work as the latter is moving, the entire periphery of said transfer unit being rotatable past the path of movement of said tape, suction means in said drum coacting with the inner surface of the tape to retain the latter against the periphery of the transfer unit, means to effect continuous release of the tape from the transfer unit at substantially the location where the tape is moved by the transfer unit onto the movable work, control means to actuate said movable roller and said knife for alternately feeding and cutting controlled lengths of tape, and means associated with said pivotal member to exert a downward force when said knife blade strikes said anvil to prevent bouncing of said knife.

3,346,434
TIRE BUILDING DRUM
Samuel R. Fulton, Cuyahoga Falls, Ohio, assignor to The Akron Standard Mold Company, Akron, Ohio, a corporation of Ohio
Filed June 9, 1964, Ser. No. 373,669
12 Claims. (Cl. 156—415)



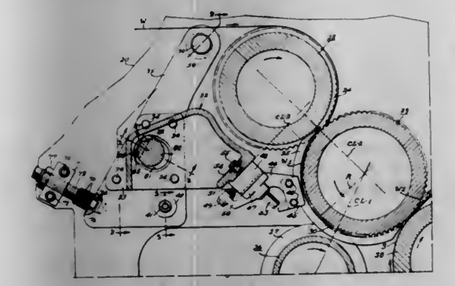
1. In a tire building drum comprising, an arcuate segment support member adapted to be mounted for rotation about a central axis, a pair of arcuate wing members disposed in axially adjusted relation on said support member to provide a substantially continuous tire building surface, an arcuate spacer member adapted to be removably mounted in engaged relation on said support member and intermediate said wing members to maintain a substantially continuous tire building surface for selective axially adjusted positions of said wing members, and resilient releasable clamping means adapted to coact between said support member and said spacer member to secure said wing members in selected axially adjusted positions on said support member.

3,346,435
APPARATUS FOR FORMING CONTAINERS FROM SYNTHETIC PLASTIC FILMS
Rudolf Beck, Wiesbaden, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
Filed Nov. 13, 1962, Ser. No. 237,211
Claims priority, application Germany, Nov. 16, 1961, K 45,215
6 Claims. (Cl. 156—423)



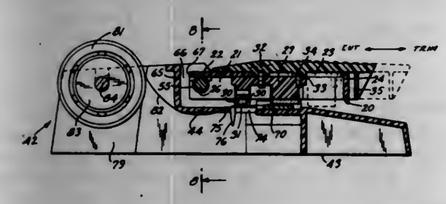
1. An apparatus for the manufacture of can-like containers comprising a piston means for supporting a can body, a jacket adapted to surround a can body supported on the piston means and having a beveled upper end, a reciprocatable welding element mounted above the jacket and having a beveled lower edge corresponding to the bevel on the jacket, and means for ejecting a welded can from the jacket.

3,346,436
MOUNTING FOR PAPER GUIDE SHIELD FINGERS OF CORRUGATING FACER
Hans Meister, Haddonfield, N.J., assignor to The Langston Company, Camden, N.J., a corporation of New Jersey
Filed Oct. 3, 1963, Ser. No. 313,574
11 Claims. (Cl. 156—473)



1. An adjusting device for ganged paper guide fingers in a corrugating single facer machine having a first corrugating roll, a second corrugating roll carrying the corrugated paper, a glue applicator roll, and a facer roll, comprising in combination: laterally spaced side plates swingably mounted on journals and supported by side frames, said journals on an axis located at an elevation above the axis of said second corrugating roll, said side plates having a transverse beam extending therebetween, a plurality of arcuate guide shield fingers mounted on said beam and embracing the periphery of said second corrugating roll, said fingers being disposed in axially spaced grooves in said first corrugating roll and in said applicator roll and being of a length to extend from a point near the corrugating roll nip to a point nearer the facer roll nip, with the applicator roll nip located intermediate the length of the fingers, means for adjusting at least one of said side plates along a line which is approximately parallel to the line of centers of said corrugating rolls to adjust the radial distance of said fingers at said nips, and separate means connecting at least one of said side plates for adjusting at least said one side plate along a line which is approximately perpendicular to said line of corrugating roll centers.

3,346,437
SPLICERS
Herman D. Post, Great Neck, and Edward Perper, Brooklyn, N.Y., assignors to Robins Industries Corporation, Flushing, N.Y.
Filed July 19, 1962, Ser. No. 210,956
1 Claim. (Cl. 156—505)



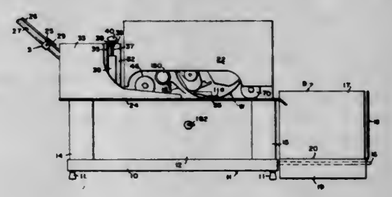
In a splicer, in combination, support means having a bottom surface adapted to rest on a table and including at an elevation higher than said bottom surface a substantially horizontal wall formed with an opening passing therethrough, said wall carrying at a rear edge of said opening a tongue which extends forwardly into said opening and at opposed side edges of said opening a pair of ribs which extend laterally toward each other from said side edges of said opening into the latter; and a raised plastic anvil carried by said horizontal wall adjacent and forwardly of said opening thereof, so that an elongated strip of adhesive material only one side of which is tacky can be guided along the underside of said horizontal wall through said opening with the non-tacky surface of said strip engaging the underside of said wall and the underside of said tongue to be guided thereby over said ribs with only side edges of the tacky surface of the strip engaging said ribs and the strip extending from said ribs to a position located over said anvil.

3,346,438
METHOD AND APPARATUS FOR MAKING CUSHIONING AND INSULATING MATERIAL
Marc A. Chavannes, Fort Lee, N.J., assignor to Sealed Air Corporation, Hawthorne, N.J., a corporation of New Jersey
Filed Sept. 10, 1963, Ser. No. 307,966
7 Claims. (Cl. 156—210)



1. The method of fabricating cushioning material comprising the steps of heating a first plastic film, molding said heated film to provide a plurality of closely spaced embossments, heating a second plastic film to a fusing temperature and feeding it into overlying relationship with the unembossed portions of said first film to fuse said films throughout the unembossed portions of said first film and form a unitary structure having a plurality of closely spaced, hermetically sealed air pockets, heating at least the embossed surface of said structure to the melting point of said plastic films, compressing said heated structure to fuse side walls of adjoining embossments one to the others, and cooling the resultant cushioning material.

3,346,439
STAMP AFFIXING MACHINE
John A. Bollman and Austin A. Gates, Denver, and Harold C. Voss, Westminster, Colo., assignors of one-fourth to said John A. Bollman, one-fourth to Max H. Rechnitz, and two-fourths to Romeo J. Martin, all of Denver, Colo.
Filed Nov. 4, 1963, Ser. No. 321,108
13 Claims. (Cl. 156—522)



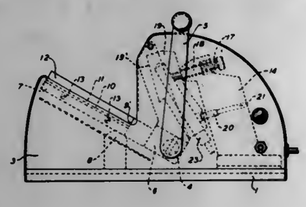
1. A stamp dispensing and affixing machine, including:
a rotatable stamp dispensing and affixing wheel;
means for feeding envelopes past said wheel;
a spindle mounted on said wheel and adapted to receive a roll of stamps;

a feed sprocket mounted on said wheel adjacent said spindle and around which said stamps are fed;
indexing means operatively connected to said feed sprocket for selectively rotating said feed sprocket and thereby dispensing said stamps;
resilient holding means engaging said indexing means for holding said indexing means in indexed position; and
shear means adjacent said feed sprocket adapted to sever said stamps after they are dispensed.

3,346,440
PATCHING MEANS FOR RESTORING PUNCHED CARD FIELD

Herbert A. Kruger, Etobicoke, Ontario, Canada, assignor to Kimball Systems Ltd.

Filed Aug. 14, 1964, Ser. No. 389,705
3 Claims. (Cl. 156—583)



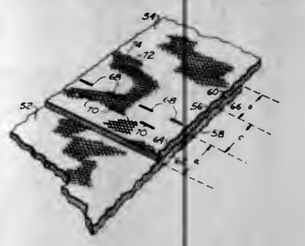
1. A heat sealing apparatus for applying a sheet patch having a heat activatable coating to a record card for covering an area on the card given to punched information; comprising
a platen normally inclined from horizontal condition for facilitating the placement of a card and sheet patch thereon;
a raised stop guide on said platen for limiting said card and sheet patch to a given position thereon;
a mat supported upon said platen and comprising a first thickness of resilient material with a second thickness thereof made of heat resistant material;
a heat transmitting means having a contact face engageable with the patch card in an operated position of said platen for heat sealing said patch to said card;
means including a unitary adjustable member for mounting said heat transmitting means and adapted for automatically aligning said contact face wtih said patch card in the said operated position; and
operating means for effecting a reciprocatory operation of said platen including a rotatable crank arm.

3,346,441
AIR-INFLATED STRUCTURES

Walter W. Bird, Williamsville, N.Y., assignor to Birdair Structures Inc., Buffalo, N.Y.

Filed Apr. 8, 1963, Ser. No. 271,225
5 Claims. (Cl. 161—36)

1. In an air-inflated building construction,
a pair of adjacent panels of flexible woven material having side edge portions thereof in overlapped face-to-face relation and bonded together substantially throughout the area of such edge portions,
each such edge portion having a central region and inner and outer zones on either side thereof with the central regions of the two edge portions being in opposed relation so that the inner zone of one edge portion is opposed to the outer zone of the other edge portion and vice versa,
the main body portions of said panels, exclusive of the stated side edge portion, having a given resistance to elongation,
said side edge portions having their outer zones constructed to exhibit less resistance to elongation than

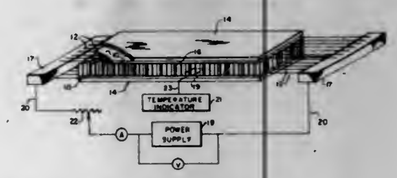


said main body portions, and each of said outer zones being provided with a line of spaced slits extending generally parallel to an associated panel edge.

3,346,442
HONEYCOMB PANEL AND METHOD OF MAKING SAME

Robert J. Carmody, 501 Edgemont Drive, Huntsville, Ala. 35811

Filed Dec. 4, 1963, Ser. No. 328,140
8 Claims. (Cl. 161—68)



1. A honeycomb panel comprising:
(a) a structural core element of thin wall material formed into a honeycomb;
(b) a thermosetting film adhesive disposed on at least one face of said honeycomb core;
(c) at least one outer structural plate element disposed on a side of said adhesive film remote from said honeycomb core; and
(d) at least one of said structural elements being fabricated of an electrically conductive metal offering sufficient resistance to the flow of electric current so that heat is produced over the entire surface area of the said structural element when electric current is passed therethrough, thus curing the film adhesive and bonding the structural elements together.

3,346,443
THERMOSETTABLE RESIN COMPOSITION AND FIBROUS SUBSTRATE IMPREGNATED WITH SAME

Curtis Elmer, Wilbraham, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,377
10 Claims. (Cl. 161—184)

1. An improved thermosettable composition of matter consisting essentially of (a) a substantially homogeneous interpolymer having polymerized therein (1) 20–45 mol percent of an acid monomer selected from the group consisting of an alpha,beta-ethylenically unsaturated polybasic acid, an anhydride of an alpha,beta-ethylenically unsaturated polybasic acid and mixtures thereof, and (2) 80–55 mol percent of at least one vinylidene monomer interpolymerizable with said acid monomer, said interpolymer having said acid monomer and said vinylidene monomer combined throughout the polymer chains in essentially the said mol ratios they are polymerized therein, and (b) an epoxy compound containing a plurality

of epoxy groups; said components (a) and (b) being present in a ratio to provide an average of about 0.2–1.2 epoxy group per carboxyl group of said component (a); the improvement comprising in admixture therewith 1–10 weight percent of silica aerogel based on the total weight of the resin solids.

8. A laminate comprising a fibrous substrate impregnated and bonded with the improved composition of claim 1.

3,346,444
ELECTRICALLY CONDUCTIVE POLYMERS AND PROCESS OF PRODUCING THE SAME

John H. Lupinski, Scotia, and Kenneth D. Kopple, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Aug. 24, 1964, Ser. No. 391,764
11 Claims. (Cl. 161—213)

1. A composition comprising (1) a salt whose cation moiety is a soluble polymer having quaternary nitrogen cationic groups and whose anion moiety is the anion of 7,7,8,8-tetracyanoquinodimethan, and (2) a sufficient quantity of 7,7,8,8-tetracyanoquinodimethan, to give the composition a conductivity greater than 10^{-10} mho per centimeter.

3,346,445
PRESS PACKING SHEET OF A FIBROUS WEB IMPREGNATED WITH POLYURETHANE AND METHOD OF MAKING SAME

Philip T. Gay, Walpole, Mass., assignor to Hillingsworth & Vose Company, East Walpole, Mass., a corporation of Massachusetts

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,153
9 Claims. (Cl. 162—136)

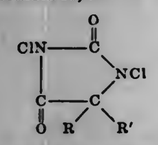
1. The process of making a press packing sheet including the steps of: Forming a porous fibrous web having a bulk factor in the range of 3 to 9 pounds per point from a free draining fiber furnish having a Rogers freeness value from 5 to 40 seconds; drying the web; impregnating the web with 50 to 150 parts by weight of a polyurethane prepolymer to 100 parts of the web; and, curing the impregnated web to cross-link the polyurethane prepolymer and bond it to the web.

3,346,446
HYPOIODOUS ACID GENERATING COMPOSITIONS

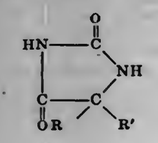
Frank J. Zsoldos, Jr., 25—63 33rd St., Astoria, N.Y. 11102

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,740
The portion of the term of the patent subsequent to Aug. 9, 1983, has been disclaimed
7 Claims. (Cl. 167—17)

1. An aqueous germicidal composition containing in solution a mixture of 1,3-dichloro-5R,5R'-hydantoin having the formula (Formula A):



wherein R and R' represent hydrogen or any alkyl radical having 1 to 5 carbon atoms with the total of carbon atoms in R and R' not more than 5 and 5R,5R'-hydantoin having the formula (Formula B):



wherein R and R' represent hydrogen or any alkyl radical having 1 to 5 carbon atoms with the total of carbon atoms in R and R' not more than 5, the minimum ratio by weight of said hydantoin having Formula B to said dichlorohydantoin having Formula A being 1:20, an iodine-containing substance selected from the group consisting of elemental iodine and non-toxic metallic iodides, and a non-toxic buffer effective to maintain the pH of said composition between 7.1 and 8.6, the minimum ratio by weight of said dichloro-hydantoin to iodine comprised in said iodine-containing substance computed as mono-atomic iodine being 3:1.

3,346,447
COMPOSITIONS AND METHODS FOR PROTECTING PLANTS WITH METAL DERIVATIVES OF HEXACHLOROPHENE

Wilburn T. Wright, 4460 Lagg Ave., Fort Myers, Fla. 33901

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,441
8 Claims. (Cl. 167—31)

4. The method for protecting plants from attack by microorganisms which comprises treating the said plants with an effective amount of a metal derivative of bis-(3,5,6-trichloro-2 hydroxyphenyl) methane corresponding to the formula



in which M is a metal from the group consisting of manganese, zinc, copper, iron, and nickel.

3,346,448
HEXAFLUOROISOPROPYL ETHERS AS ANESTHETICS

Everett E. Gilbert and Benjamin Veldhuis, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,298
4 Claims. (Cl. 167—52)

2. The process which comprises administering a compound selected from the group consisting of 1,1,1,3,3,3-hexafluoroisopropyl methyl ether and 1,1,1,3,3,3-hexafluoroisopropyl ethyl ether to anesthetic-susceptible organisms as a general inhalation anesthetic.

3,346,449
d-METHORPHAN COMPOSITIONS AND METHODS OF MAKING SAME

Louis Magid, Clifton, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,942
3 Claims. (Cl. 167—55)

1. A therapeutically active composition produced by mixing, in the presence of water, (1) a water-soluble salt of d-methorphan with a medicinally acceptable acid and (2) a water-soluble acid carboxyvinyl polymer of acrylic acid, copolymerized with from about 0.75% to about 2.0% by weight of polyalkyl sucrose.

3,346,450
CONCENTRATED LIQUID ACETIC ACID DOUCHE PREPARATION CONTAINING AROMATICS

Galen F. Collins, Oscar L. Butt, and Buford Leroy Poet, Bristol, Tenn., assignors to The S. E. Massengill Company, Bristol, Tenn., a corporation of Tennessee

No Drawing. Filed Jan. 27, 1965, Ser. No. 428,555
3 Claims. (Cl. 167—58)

1. A concentrated liquid douche preparation containing aromatics, said preparation being water dilutable to form

an aqueous douche for restoring and maintaining a normal vaginal pH, said preparation being a buffered aqueous solution of acetic acid having a pH of 3.5 to 5 and containing a wetting agent selected from the group consisting of sodium lauryl sulfate and nonionic surfactants, and, dissolved therein, an alcohol solution of aromatics selected from the group consisting of menthol, thymol, oil of eucalyptus, methyl salicylate and mixtures thereof, the alcohol permitting solution of the aromatics in the buffered aqueous acid solution, the alcohol being isopropanol, essentially no reaction of this alcohol with acetic acid occurring to raise the pH, the solution containing 96 to 74 weight percent acetic acid, 2 to 14 weight percent wetting agent, 2 to 12 weight percent aromatics, the total being 100 percent, and at least sufficient alcohol to dissolve the aromatics.

3,346,451

CONCENTRATED LIQUID LACTIC ACID DOUCHE PREPARATION CONTAINING AROMATICS

Galen F. Collins and Oscar L. Butt, Bristol, Tenn., assignors to The S. E. Massengill Company, Bristol, Tenn., a corporation of Tennessee

No Drawing. Filed Jan. 27, 1965, Ser. No. 428,566
5 Claims. (Cl. 167—58)

1. A concentrated liquid douche preparation containing aromatics, said preparation being water dilutable to form an aqueous douche for restoring and maintaining a normal vaginal pH, said preparation being a buffered aqueous solution of lactic acid having a pH of 3.5 to 5 and containing a wetting agent selected from the group consisting of nonionic surfactants and sodium lauryl sulfate, and, dissolved therein, an alcohol solution of aromatics selected from the group consisting of menthol, thymol, oil of eucalyptus, methyl salicylate and mixtures thereof, the alcohol permitting solution of the aromatics in the buffered aqueous acid solution, the alcohol being selected from the group consisting of ethyl and isopropyl alcohols, essentially no reaction of these alcohols with lactic acid occurring to raise the pH, the solution containing 96 to 74 weight percent lactic acid, 2 to 14 percent wetting agent, 2 to 12 weight percent aromatics, the total being 100 percent, and at least sufficient alcohol to dissolve the aromatics.

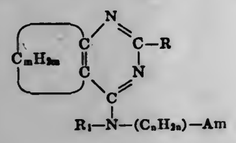
3,346,452

5,6-LOWER ALKYLENE-PYRIMIDINES

Richard William James Carney, Murray Hill, Herbert Morton Blatter, Millburn, and George De Stevens, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1963, Ser. No. 303,163
8 Claims. (Cl. 167—65)

1. A pharmaceutical composition consisting essentially of a pharmacologically effective amount of a member selected from the group consisting of a compound having the formula



$R_1—N—(C_nH_{2n})—Am$

in which Am stands for a member selected from the group consisting of di-lower alkylamino, N-cycloalkyl-N-lower alkylamino and N-cycloalkyl-lower alkyl-N-lower alkylamino in which cycloalkyl has from 5 to 7 carbon atoms, N-phenyl-lower alkyl-N-lower alkylamino, di-hydroxy-lower alkylamino, alkyleneimino with 4 to 8 carbon atoms, azaalkyleneimino and N-lower alkyl-azaalkyleneimino with 4 to 6 carbon atoms and in which the aza-nitrogen is separated from the imino-nitrogen by at least 2 carbon atoms, 4-morpholino and 4-thiamorpholino, $—(C_nH_{2n})—$ for alkylene with 2 to 7 carbon atoms separating Am from the nitrogen atom by at least 2 carbon atoms, R_1 for a member selected from the group consisting of hydrogen, lower alkyl, phenyl-lower alkyl and lower alkanoyl, R for a member selected from the group consisting of hydrogen, lower alkyl, phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, pyridyl, thienyl, furyl and phenyl-lower alkyl and

$—(C_mH_{2m})—$

for lower alkylene having from 3 to 5 carbon atoms, its lower alkyl quaternary, phenyl-lower alkyl quaternary and nontoxic acid addition salt, together with a pharmaceutical excipient.

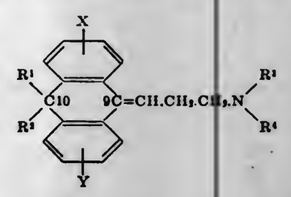
3,346,453

COMPOSITIONS AND METHODS FOR TREATING DEPRESSION WITH DIHYDROANTHRACENE COMPOUNDS

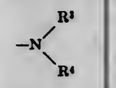
Torkil O. Holm, Copenhagen, Denmark, assignor to Kefalas, A/S, Copenhagen-Valby, Denmark

No Drawing. Original application Sept. 7, 1961, Ser. No. 136,427, now Patent No. 3,177,209, dated Apr. 6, 1965. Divided and this application Aug. 26, 1964, Ser. No. 392,283
Claims priority, application Great Britain, Sept. 16, 1960, 32,011/60; Feb. 17, 1961, 5,893/61
6 Claims. (Cl. 167—65)

1. A pharmaceutical composition in unit dosage form adapted for treatment of a human being comprising (A) a compound selected from the class consisting of (1) aminopropylidene 9,10-dihydroanthracenes of the formula:



in which each of R^1 and R^2 is lower-alkyl, X is selected from the group consisting of hydrogen, halogen, lower-alkyl and lower-alkyloxy, Y is selected from the group consisting of hydrogen and halogen, and



is selected from the group consisting of di-lower-alkylamino, benzyl-lower-alkylamino, and heterocyclic amino radicals, said heterocyclic amines being selected from the group consisting of pyrrolidine, piperidine, morpholine, thiamorpholine, N^1-lower-alkylpiperazine, and C-lower-alkyl derivatives of the foregoing, and (2) non-toxic acid addition salts thereof, and (B) a pharmaceutical carrier.

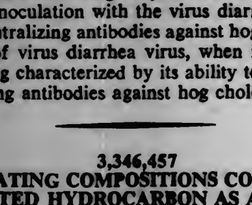
3,346,454

17-ALKYL-19-NOR - $\Delta^{4,9,11}$-PREGNATRIENE-3,20-DIONES, PROCESS AND INTERMEDIATES FOR PREPARING SAME AND THERAPEUTIC COMPOSITIONS THEREOF

Robert Bucourt, Clichy-sous-Bois, André Pierdet, Noisy-le-Sec, Jean Tessier, Vincennes, and Germain Costerousse, Montrouge, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France

No Drawing. Filed Oct. 26, 1965, Ser. No. 505,243
Claims priority, application France, Nov. 4, 1964, 993,811; May 3, 1965, 15,549
10 Claims. (Cl. 167—74)

8. A composition for maintaining pregnancy in mammals comprised of at least one 19-nor-$\Delta^{4,9,11}$-steroids of the formula



wherein R and R′ are lower alkyl of 1 to 4 carbon atoms and a major amount of a pharmaceutical carrier.

3,346,455

LISTERIA-CONTAINING VACCINE

Jean R. Boatright, 1912 S. Vine St., Urbana, Ill. 61801, and Joe L. Streckfuss, Rte. 2, Carterville, Ill. 62918

No Drawing. Continuation of application Ser. No. 383,215, July 16, 1964. This application Apr. 11, 1966, Ser. No. 541,522
17 Claims. (Cl. 167—78)

1. A vaccine comprising a suspension, in a dilute aqueous solution of formaldehyde and sodium chloride, of killed *Listeria monocytogenes*, Streptococcus and Staphylococcus organisms, the *Listeria monocytogenes* being present as a minor proportion of the total of said killed organisms, said Streptococcus and Staphylococcus organisms being present in substantially equal proportions.

3,346,456

IMMUNIZING PIGS AGAINST HOG CHOLERA WITH SELECTED STRAINS OF LIVE VIRUS DIARRHEA VIRUS AND PREPARATION OF VIRUS DIARRHEA VIRUS HYPER-IMMUNE HOG CHOLERA SERUM

James A. Baker, Ithaca, N.Y., assignor to Cornell Research Foundation, Inc., Ithaca, N.Y., a corporation of New York

No Drawing. Filed July 1, 1964, Ser. No. 379,744
7 Claims. (Cl. 167—80)

1. A method of making a pig which is susceptible to hog cholera resistant to hog cholera which consists in inoculating the pig with a strain of live virus diarrhea virus which is immunologically unrelated to hog cholera in that the inoculation with the virus diarrhea virus produces no neutralizing antibodies against hog cholera virus, said strain of virus diarrhea virus, when inoculated into the pig, being characterized by its ability to develop complement-fixing antibodies against hog cholera virus.

3,346,457

HAIR TREATING COMPOSITIONS CONTAINING A SATURATED HYDROCARBON AS A MOISTURE-BARRIER MATERIAL

George Franklin Dasher, Darien, and Fred Presant, Fairfield, Conn., assignors to Clairol Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 5, 1963, Ser. No. 321,443
5 Claims. (Cl. 167—87.1)

3. A hair setting composition capable of imparting to said hair protection against moisture, said composition comprising a volatile lower alkyl alcohol containing therein from .5% to 4.5% by weight of polyvinylpyrrolidone and from .01 to .7% by weight of a saturated aliphatic hydrocarbon moisture-barrier material having from 14 to 45 carbon atoms, said moisture-barrier material also having a boiling point of at least 200° C. and a spreading coefficient greater than mineral oil.

3,346,458

PROCESS AND APPARATUS FOR PLACING MATERIALS IN A STATE OF PLASMA

Paul Schmidt, Bleestrasse 18, Munich 54, Germany

Filed Aug. 7, 1964, Ser. No. 388,249
Claims priority, application Germany, Nov. 28, 1963, Sch 34,227
15 Claims. (Cl. 176—1)



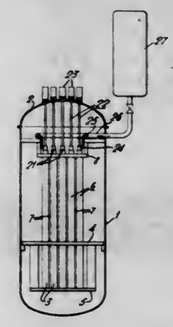
1. In a process for placing a material in a state of plasma, the step of intermittently introducing the material, initially in a condition where its particles have a mean free path of less than 10^{-6} cm. into a shock wave chamber having an interior which is at a high pressure and having the configuration of at least part of a sphere, in which convergent shock waves extending along a radius of the sphere are formed in rapid sequence by periodically repeated shock wave ignition of a combustible mixture which is continuously introduced at the region at the wall of the chamber at the largest radius thereof through an opening in this wall with the mixture spreading out in the chamber, removing the gases after combustion thereof through an opening in the wall of the shock wave chamber, with the material which is to be placed in a state of plasma being introduced into the shock wave chamber in a region of a narrow zone of convergence which is situated within a radial distance from the center of the sphere which at a maximum is 10% of the largest radius of the shock wave chamber, and then removing the material which has been placed in a state of plasma by the action of the shock waves.

3,346,459

NUCLEAR REACTORS

Michael John Prince, Widnes, and Geoffrey Douglas Ainsworth, Heald Green, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed July 18, 1966, Ser. No. 565,764
Claims priority, application Great Britain, July 28, 1965, 32,379/65
4 Claims. (Cl. 176—36)



1. A nuclear reactor comprising a fuel rod cluster, perforated guide tubes interspersed among the fuel rods of the cluster, control pins insertable with clearance into

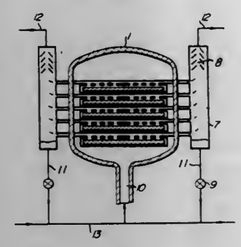
the guide tubes, an operating assembly for inserting and withdrawing the control pins, and conduit means adapted when required to supply fluid coolant to the operating assembly, the latter being so arranged as to pass coolant thus supplied to the guide tubes to be sprayed therefrom over the fuel rods.

3,346,460

BOILING LIQUID NUCLEAR REACTOR HAVING TIERED, HORIZONTALLY EXTENDING COOLANT CHANNELS

Tsutomu Hayashi, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan

Filed Feb. 8, 1965, Ser. No. 431,097
1 Claim. (Cl. 176—54)



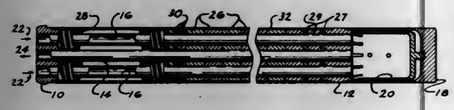
A nuclear reactor comprising a reactor vessel, a reactor core in said reactor vessel, vapor-liquid separators disposed on opposite sides of said reactor vessel, and associated coolant channels, said reactor core comprising a plurality of horizontally extending coolant channels stacked in tiered relation therein, each of said coolant channels being composed of a first coolant channel closed at both ends and containing therein a fuel rod, said first coolant channel defining a coolant passage between its wall and the fuel rod, a second coolant channel closely parallelly arranged with said first coolant channel and having its both ends extended outwardly through the wall of said reactor vessel to terminate in said vapor-liquid separators, a coolant inlet in said first coolant channel, and a plurality of passages between said first coolant channel and said second coolant channel, whereby bubbles formed on the surface of the fuel rods can be guided together with the coolant into said vapor-liquid separators for separation from the coolant.

3,346,461

NUCLEAR REACTOR FUEL ELEMENT

Gennaro V. Notari, Simsbury, and Francis T. Grubelich, Wethersfield, Conn., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 7, 1966, Ser. No. 532,418
6 Claims. (Cl. 176—67)



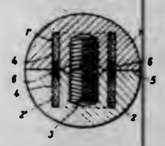
1. In a superheater fuel assembly comprising a plurality of tubes extending between and being interconnected with a pair of tube sheets, a fissionable material positioned about said tubes the improvement comprising means forming part of said assembly whereby steam may be directed for passage first through some of said tubes and then in series through others of said tubes, said assembly being prestressed such that at room temperature the second pass tubes are under tensile stress while the first pass tubes are under a less tensile stress or a compression stress so that during operation in a reactor wherein the second pass tubes are at a higher temperature than the first pass tube the stresses in these tubes will be less than they would be without this prestressing.

3,346,462

FUEL ELEMENTS FOR NUCLEAR REACTORS

Wilhelm Engel, Pfeifferstrasse 56; Werner Cautius, Paul von Hase Strasse 6, both of Dusseldorf, Germany; and Kurt Schoen, Werner-von-Siemensstrasse 11, Meitingen uber Augsburg, Germany

Filed Mar. 19, 1965, Ser. No. 441,060
Claims priority, application Germany, Mar. 25, 1964, A 45,598; Oct. 7, 1964, A 47,268; Feb. 13, 1965, A 48,387
2 Claims. (Cl. 176—67)



1. A nuclear reactor fuel element comprising a graphite sphere defining near the external surface an annular chamber formed about a central axis of the sphere, potted fissile material disposed in said chamber, the remainder of the sphere throughout being free from any of said potted fissile material, said graphite sphere being in the form of two hemispheres which are held together by a screw-threaded connection, said chamber comprising an annular recess formed in each hemisphere in register with the recess in the other hemisphere, and an annular graphite closure plug positioned within the chamber at the boundary between the two hemispheres operable to act as a screen between the fissile material in the two parts of the chamber and the boundary.

3,346,463

STABILIZATION AND ENHANCEMENT OF THE ACTIVITY OF FLOCCULANTS

Mayer B. Goren, Golden, Colo., assignor to Kerr-McGee Corporation, a corporation of Delaware

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,583
16 Claims. (Cl. 195—31)

1. A process for enhancing the flocculating activity of a microbial polysaccharide flocculant synthesized by cultivating in an aqueous fermentation medium therefor at least one microorganism selected from the consisting of *Cryptococcus laurentii* variety *flavescens, Hansenula capsulata, Hansenula holstii, Plectania occidentalis* and *Pseudomonas methanica* comprising heating an aqueous solution of the polysaccharide flocculant having a pH value of at least 5 at a temperature of about 50–100° C. until the flocculating activity is enhanced.

3,346,464

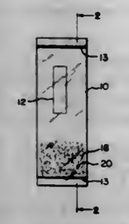
BIOLOGICAL STERILITY INDICATOR AND METHOD FOR MAKING AND USING SAME

Robert R. Ernst, Rochester, N.Y., assignor, by mesne assignments, to Ritter Pfaudler Corporation, a corporation of New York

Filed Oct. 23, 1965, Ser. No. 503,987
32 Claims. (Cl. 195—54)

1. A dry sterility indicator for submerging in water after sterilization comprising:

(a) a semi-permeable envelope, being permeable to selected sterilizing media and to water and to a selected suitable growth media but impermeable to a selected suitable test organism and bacteria in gas and in water; and



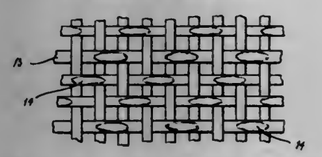
(b) a selected quantity of said test organism being in an unincubated state and sealed within said envelope.

3,346,465

METHOD OF MAKING WIRE CLOTH FOR PAPER MACHINES

Jean-Pierre Franck, 19 Rue de Verdun, Selestat 67, France

Filed Sept. 24, 1963, Ser. No. 310,986
Claims priority, application France, Oct. 30, 1962, 913,855
4 Claims. (Cl. 204—15)



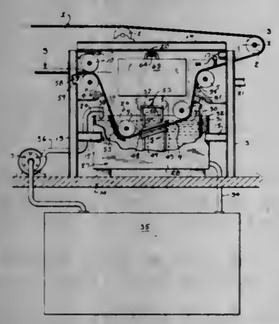
1. A method of manufacturing wire cloth for paper machines, comprising coating wire with an electrically insulating varnish, grinding wire cloth comprising thus-coated wire on the face of the cloth that will come into contact with the machine until visible flat facets of the base metal are formed, and electrolytically depositing on said flat facets a metal that is more resistant to wear than is the metal of the wire cloth.

3,346,466

PROCESS AND APPARATUS FOR MAKING CHROMIUM COATED PAPERMAKING WIRES

Martin A. Golden, Green Bay, and John I. Vlossak, Appleton, Wis., assignors to Ultra Plating Corporation, Green Bay, Wis., a corporation of Wisconsin

Filed Jan. 21, 1964, Ser. No. 339,290
4 Claims. (Cl. 204—24)



1. In a process for continuously electroplating a papermaking wire, the steps comprising.

passing a papermaking wire across and in electrical connection with a negatively charged surface;

successively immersing portions of said papermaking wire in a chromium ion bearing electrolyte at a point electrolytically remote from a positively charged anode to permit said electrolyte to condition said papermaking wire preparatory to plating;

moving said portions of papermaking wire through said electrolyte past in close proximity to a positively charged anode immersed in said electrode.

3,346,467

METHOD OF MAKING LONG LENGTH SUPERCONDUCTORS

Lloyd R. Allen, Belmont, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed May 1, 1964, Ser. No. 364,176
4 Claims. (Cl. 204—37)

1. A method of preparing a superconductive niobium stannide ribbon comprising the steps of continuously feeding a niobium wire having a length in excess of 3,000 feet through a molten tin bath maintained at a temperature between 700° C. and 900° C. under a contaminant-free atmosphere whereby the wire is uniformly coated with tin, subsequently cold rolling the wire to flatten it to a ribbon having a thickness between 1/10 and 1/3 the original wire diameter and rounded edges, heat treating the ribbon to react the tin coating with the niobium ribbon to form a diffusion layer of niobium stannide at the surface of the ribbon whereby the ribbon demonstrates a critical temperature of about 18° K. wherein the tin coated wire is subjected to an electroplating step after dipping to control the final thickness of the coating.

3,346,468

TIN ELECTRODEPOSITION PROCESS

Jan C. Jongkind, Roseville, Mich., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 8, 1964, Ser. No. 366,146
5 Claims. (Cl. 204—54)

1. The novel tin plating process which comprises electrodepositing tin from an alkali metal stannate aqueous bath containing an insoluble anode and a cathode thereby depleting the tin content of said bath, and replenishing the tin content of said bath by adding thereto an alkaline tin oxide sol prepared by the process which comprises reacting at less than 75° C. an alkali metal stannate in aqueous solution with acid to a final pH of less than about 6 thereby precipitating hydrous stannic oxide, separating said hydrous stannic oxide from said aqueous solution, washing said hydrous stannic oxide thereby removing water-soluble ions, peptizing said hydrous stannic oxide with peptizing agent selected from the group consisting of potassium hydroxide and potassium stannate thereby forming a final solution, maintaining the molar ratio of potassium to tin in the final solution at 0.1–1.5, and maintaining said hydrous stannic oxide at temperature below 75° C. prior to said peptizing.

3,346,469

METHOD OF SELECTIVELY COLORING TITANIUM BODIES

Jürgen Weigel, Hamburg-Bergedorf, Germany, assignor to Hamburg-Flugzeugbau G.m.b.H., Hamburg-Finkenwerder, Germany, a corporation of Germany

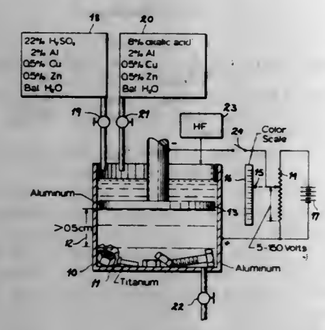
Filed July 2, 1964, Ser. No. 379,889
5 Claims. (Cl. 204—56)

1. A method of selectively coloring a surface of a titanium or titanium alloy body containing at least 20% by weight titanium metal with any one color within a range of coloration, comprising the steps of:

juxtaposing said body with a counterelectrode with said surface and said counterelectrode immersed in at

least one aqueous electrolyte from the group of electrolytes A and B, wherein:

electrolyte A consists essentially of 22% by weight sulfuric acid, 2% by weight dissolved aluminum, 0.5% by weight dissolved copper, 0.5% by weight dissolved zinc, and the balance water, and



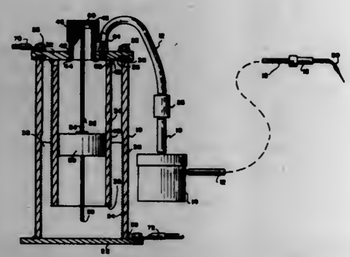
electrolyte B consists essentially of 8% by weight oxalic acid, 2% by weight dissolved aluminum, 0.5% by weight dissolved copper, 0.5% by weight dissolved zinc, and the balance water; and applying a direct-current electrical potential across said body and said counterelectrode while rendering said body anodic with respect to said counterelectrode for a period sufficient to anodically oxidize said surface.

3,346,470

MEANS AND METHOD FOR PRODUCING A HYDROGEN AND OXYGEN TORCH FUEL GAS HAVING A VAPOROUS FLUX HOMOGENEOUSLY MIXED THEREIN

Richard W. Henes, Phoenix, Ariz., assignor to Henes Manufacturing Co., Phoenix, Ariz., a corporation of Arizona

Filed Dec. 24, 1963, Ser. No. 333,093
5 Claims. (Cl. 204—129)



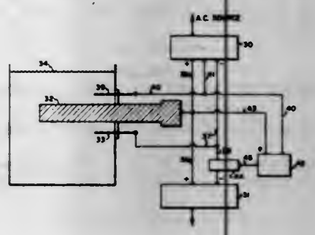
1. A method of producing a homogeneously mixed and fluxed hydrogen and oxygen fuel gas for torches consisting of electrolytically decomposing an aqueous electrolyte and producing a mixture of hydrogen and oxygen, then passing said mixture of hydrogen and oxygen through a solution comprising an alcoholic solvent and a fluxing material in solution therewith thereby causing vaporous entrainment and mixing of said solution with said hydrogen and oxygen gases as they pass through said solution, then conducting said mixture of hydrogen and oxygen gases to a torch; and then creating combustion of the mixture to produce a high velocity high temperature flame having metal cleaning characteristics.

3,346,471

USE OF COMPOSITE D.C. POWER IN ANODIC PROTECTION

Zisis Andrew Foroulis, Somerville, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Continuation of application Ser. No. 284,906, June 3, 1963. This application Mar. 6, 1967, Ser. No. 621,067
2 Claims. (Cl. 204—147)



1. A method for achieving substantially instantaneous anodic passivation of a large metallic structure having a maximum current requirement or passivation in excess of the output of an individual commercial potentiostat comprising the following steps in combination:

(a) connecting said metallic structure to an electrical circuit containing at least one cathode, one reference electrode and one contact controller wherein said metallic structure serves as the anode of said circuit,

(b) supplying a composite current between said anode and said cathode, said composite current comprising a first portion of current supplied from a potentiostatic device and a second portion of current supplied from a direct current power source, said potentiostatic device and said power source being connected in parallel, said composite current being of a magnitude in excess of that required for achieving substantially instantaneous passivation of said metallic structure connected as anode,

(c) automatically sensing when said structure connected as anode is within the desired potential range for anodic protection,

(d) automatically switching off said second portion of current supplied from said direct current power source when the potential of said anode with respect to said reference electrode becomes more negative than the set point of said contact controller and thereafter,

(e) maintaining by means of said potentiostat, the potential of said structure within the desired range.

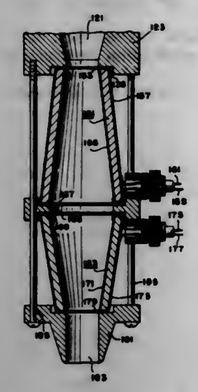
3,346,472

METHOD OF REACTING CHEMICAL COMPONENTS USING SONIC OR SUPERSONIC WAVES

George B. Long, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 5, 1963, Ser. No. 306,747
1 Claim. (Cl. 204—157.1)

The method of reacting chemical components which includes mixing the components capable of reacting and passing the mixture first into contact with a first vibrating wall vibrating at a first frequency within the range of 250 to 1,000,000 cycles per second and then passing the mixture into contact with a second vibrating wall vibrating at a second substantially different frequency within the range of 250 to 1,000,000 cycles per second.



3,346,473

PRODUCTION OF OLEFIN OXIDES AND CARBOXYLIC ACIDS

Robert Stevenson Coffey and Herbert George Lawley, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation of application Ser. No. 180,016, Mar. 15, 1962. This application Dec. 28, 1964, Ser. No. 421,583
Claims priority, application Great Britain, Mar. 17, 1961, 9,812/61
11 Claims. (Cl. 204—158)

1. In a process for the production of olefine oxides and carboxylic acids the step of continuously contacting an aldehyde selected from the group consisting of acetaldehyde, propionaldehyde, n-butyraldehyde, iso-butyraldehyde and benzaldehyde with an olefinic compound selected from the group consisting of mono-olefines having from 3 to 14 carbon atoms in which the double bond is a terminal double bond, and butadiene, at a temperature in the range of 40° to 150° C. and in a liquid phase with a gas containing molecular oxygen, said olefinic compound being present in amounts greater than said aldehyde at any given time in the process.

2. A process as claimed in claim 1 in which there is employed at least one initiator selected from the group consisting of hydrogen peroxide; alkyl hydroperoxides having the formula R—O—O—H where R is an alkyl group; dialkyl peroxides having the formula R—O—O—R, where R is an alkyl group; diacyl peroxides; dialkyl peroxy dicarbonates, peroxy esters and ultra-violet light.

3. A process as claimed in claim 1 conducted in the presence of a diluent selected from the group consisting of acetic acid, methyl acetate, ethyl acetate and acetone.

3,346,474

PHOTOCHEMICAL PROCESS FOR PREPARING ALLENE

Donald P. Gush, Washington, D.C., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,555
1 Claim. (Cl. 204—162)

A method for preparing allene, said method comprising;

(a) preparing a mixture of a methane and ethylene, the mole ratio of methane to ethylene in said mixture being about 0.1–10:1;

(b) subjecting said mixture to ultraviolet radiation, said radiation having a wave length of about 1000–1750 A. while maintaining said mixture at a pressure of about 1–760 millimeters of mercury and at a temperature of about —169 to +300° C. in an apparatus having a window for admitting said radiation; and

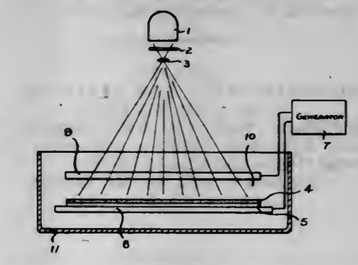
(c) recovering the thus formed allene.

3,346,475

ELECTROPHOTOGRAPHIC METHOD USING AN UNSYMMETRICAL AC CURRENT DURING DEVELOPMENT

Josef Matkan, Malvern, South Australia, and Robert A. Chapman, Dernancourt, South Australia, Australia, assignors to Research Laboratories of Australia Limited, North Adelaide, South Australia, Australia

Filed Feb. 20, 1964, Ser. No. 346,184
Claims priority, application Australia, Feb. 25, 1963, 27,714/63
6 Claims. (Cl. 204—181)



1. The method of producing an image which comprises dark resting a photoconductor surface, subjecting the dark rested photoconductor surface to an electromagnetic wave pattern whereby an image is produced thereon which has a varying conductivity according to the intensity of the electromagnetic wave striking any specific area, and while immersing the photoconductor surface in an electrically insulating liquid which carries electrically responsive toner particles, passing an alternating electrical current of unsymmetrical wave form, with a bias to move toner particles more definitely toward the photoconductor surface than away from the said surface, between electrodes disposed one on either side of the said surface but spaced from the surface on the image side whereby to cause toner particles to be deposited onto the said surface in proportion to the strength of the depositing electrical field at any specific area.

3,346,476

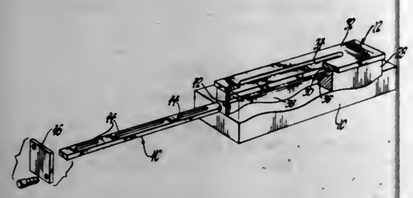
ELECTROCHEMICAL STOCK REMOVAL APPARATUS INCLUDING MEANS TO DISPENSE ELECTROLYTE AT CRITICAL PARTS

Kenneth Secunda, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 27, 1963, Ser. No. 326,607
8 Claims. (Cl. 204—224)

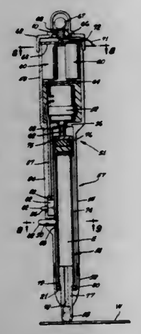
2. An electrode for electrically removing stock from a conductive workpiece comprising a body having a machining surface, a fluid chamber therein, an outlet passage extending from the chamber to the machining surface, and a seat between the fluid chamber and the outlet passage, and a fluid flow directing member slidably positioned within the body and on the seat and having fluid deflecting portions for controlling fluid flow from the fluid chamber to the machining surface.

6. In the electrical stock removal apparatus, the combination of conductive cutting tool and workpiece electrodes spaced apart so as to form a machining gap therebetween, a source of machining fluid, and a source of electrical power connected across the gap so as to effect stock removal from the workpiece electrode, the cutting



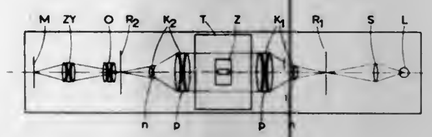
tool electrode having a fluid conducting through passageway therein communicating with the source of machining fluid and extending to the gap, a seat in the passageway, and a fluid flow directing member slidably positioned on the seat, the fluid flow directing member having fluid deflecting portions for controlling fluid flow to the gap.

3,346,477
HAND INSTRUMENT FOR ELECTROLYTIC AND ACID ETCHING
Harnisch P. Wolfer, Studio City, Calif., assignor to W & W Products, Lakewood, Calif., a partnership composed of Donald Whaley and Lillian F. Wolfer
Filed June 8, 1964, Ser. No. 373,182
14 Claims. (Cl. 204—224)



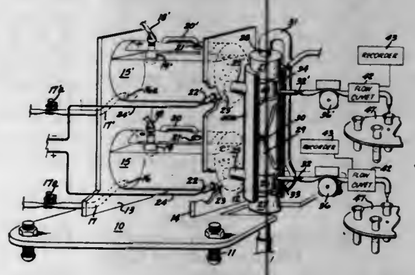
9. In a hand etching instrument:
a casing;
an acid electrolyte cartridge having a tube made of flexible resilient material, said cartridge having an electrode secured at one end of the tube and an applicator attached to the electrode, said electrode having passage means for conducting electrolyte to the applicator;
a detachable tip carried by the casing and mounting the cartridge for rotation about its axis with the applicator exposed at the end of the casing;
a motor in the casing for rotating the cartridge;
battery means in the casing for operating the motor and for polarizing the electrode;
means mounted on the casing for transferring digital pressure to the container; and
switch means for the motor and biased to open position, said switch means having an actuator located adjacent the pressure transferring means.

3,346,478
TISELIUS TYPE ELECTROPHORESIS APPARATUS WITH TELEOBJECTIVES
Erwin Wiedemann, Riehen, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
Filed Sept. 9, 1963, Ser. No. 307,613
Claims priority, application Switzerland, Sept. 25, 1962, 11,296/62
2 Claims. (Cl. 204—299)



1. A Tiselius type electrophoresis apparatus, comprising a source of light, a condenser lens receiving light from said source of light, a first rotatable disc having diffusing means therein at the focal point of said condenser lens, a first collimator lens positioned for receiving light from said first rotatable disc and for collimating the light, a thermostatically controlled chamber through which said collimated light passes, a second mirror reflecting collimator lens positioned to receive light from said chamber, a second rotatable disc having diffusing means thereon positioned to receive light from said second collimator lens, an objective, a cylindrical lens system and a light receiving surface on which the light can shine, the objective and cylindrical lens system being positioned between said second rotatable disc and said surface, each said collimator lens consisting of a teleobjective of a diameter of at most 10 mm., and having spherical and chromatic aberrations less than $\frac{1}{1000}$ of the focal length and a distortion at most 0.3% for a 3° angle; each teleobjective consisting of a positive member constituted by two biconvex lenses with a biconcave lens between them, all three lenses being air spaced, and of a negative member constituted by a biconcave lens and a biconvex lens.

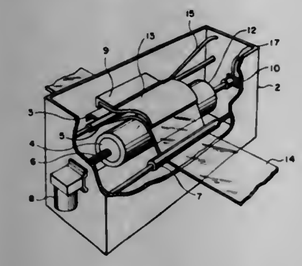
3,346,479
PREPARATIVE SEPARATION BY A COMBINATION OF GEL SEPARATION AND ELECTROPHORESIS
Samuel Natelson, Valley Stream, N.Y., assignor to Scientific Industries, Inc., Queens Village, N.Y.
Filed Apr. 9, 1964, Ser. No. 358,539
12 Claims. (Cl. 204—301)



1. An instrument for preparative gel electrophoresis, comprising in combination;
an elongated hollow curvilinear separation zone defined by outer and inner hollow components, the

outer component forming a zone housing including an outer jacket with a inner wall spaced from said jacket to form an outer cooling zone thereinbetween, the inner component being axially aligned with said inner wall and slightly spaced therefrom, said inner component being hollow forming an inner cooling chamber;
first and second buffer tanks coupled to one and the other end of said zone;
first and second electrodes and electrical leads from said first and second buffer tanks;
support means for maintaining said zone in the vertical position; and
outlet means coupled to the one and the other end of said zone.

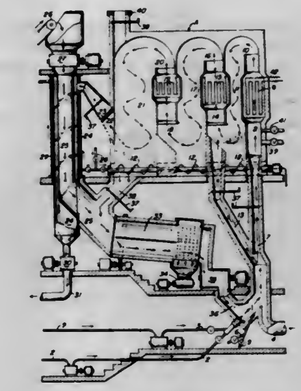
3,346,480
APPARATUS FOR CORONA TREATMENT OF POLYMER FILM INCLUDING A FLEXIBLE METAL FOIL ELECTRODE
Henry G. Schirmer, Spartanburg, S.C., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Aug. 26, 1964, Ser. No. 392,147
5 Claims. (Cl. 204—312)



1. Apparatus for corona treating film comprising, in combination:
(a) at least two spaced apart electrodes chargeable to opposite polarities,
(b) means for applying a high value alternating potential across said electrodes sufficient to form a corona therebetween, and
(c) at least one of said electrodes comprising a flexible metal foil electrode free to adjust itself to a substantially constant corona producing distance from the opposite electrode, and
(d) means for passing said film between said electrodes.

3,346,481
CONTINUOUS RECOVERY OF SHALE OIL AND GAS FROM PULVERIZED OIL SHALE
Carsten Ingeman Johnsen, Floral Park, N.Y.
(Sandvigen, Arendal, Norway)
Filed Nov. 5, 1964, Ser. No. 409,085
3 Claims. (Cl. 208—11)

1. The method for the continuous liberation and recovery of organic mineraloids in the form of shale oil vapor plus gas from host oil shale which comprises the steps of crushing, preheating, pulverizing and mixing said pulverized oil shale with a carrying medium to form a fluidized powder stream; injecting said fluidized powder stream into a processing enclosure in the absence of air; said enclosure internally divided into a plurality of connected chamber groups, each of said groups having a heated chamber and a connected enlarged cooler chamber; passing the said fluidized powder stream introduced into the processing enclosure consecutively through the plurality of connected chamber groups; said stream directed upwardly in each heated chamber; said heated chambers being adequately heated to liberate, vaporize, and gasify the said mineraloids to shale oil vapor plus gas; said stream directed downwardly in each of said enlarged cooler chambers, effecting therein the shedding of residual particles from said stream by a decrease in the



velocity of said stream in said enlarged cooler chambers; each successive cooler chamber being progressively enlarged in cross-sectional areas as the powder stream flows through the chambers to the enclosure exit; ejecting said hot shedded residues from said enclosure, and recovering shale oil vapor plus gas from the last chamber of said enclosure.

3,346,482
HYDROCRACKING HEAVY HYDROCARBON OILS
William Floyd Arey, Jr., Baton Rouge, and Ralph Burgess Mason, Denham Springs, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 23, 1963, Ser. No. 304,269
17 Claims. (Cl. 208—111)

1. A process for hydrocracking a heavy hydrocarbon oil feed to obtain lower boiling product, said feed having a nitrogen content between about 100 and about 20,000 p.p.m. and containing about 20 to 100 volume percent of a petroleum fraction having an initial boiling point of at least about 650° F. and a nitrogen content of at least about 500 p.p.m. which process comprises subjecting said feed to hydrocracking conditions in the presence of added hydrogen and a hydrocracking catalyst comprising a crystalline alumino-silicate zeolite composited with at least about 1.0 wt. percent platinum group metal, said zeolite having pore openings of about 6 to 15 Angstrom units and a silica to alumina mol ratio of 2.5 to 14, and containing less than about 10 wt. percent Na_2O.

3,346,483
REFINING USED LUBRICATING OILS WITH SULFURIC ACID AND HYDROGENATION
László Somogyi, Pál Steingaszner, István Hlinyánszky, József Horváth, and József Károlyi, Budapest, Hungary, assignors to Magynyomasu Kiserleti Intezet, Budapest, Hungary
No Drawing. Filed Nov. 30, 1965, Ser. No. 510,684
Claims priority, application Hungary, Nov. 30, 1964, NA-725
2 Claims. (Cl. 208—179)

1. A process for re-refining used engine lubricating oils and used industrial lubricating oils containing such engine lubricating oils, said process comprising the step of pre-

purifying the used lubricating oil by treatment with sulphuric acid; then subjecting the oil to catalytic hydrogenation at a pressure between 20 and 40 atmospheres, at a temperature between 280 and 380° C., at a space velocity of 0.5 to 2.0 liters per liter-hour and at a gas-to-liquid ratio of 10 to 120 $Nm.^3/m.^3$ in the presence of a preactivated, sulphided hydro-refining catalyst.

3,346,484

PROCESS FOR REMOVING ACIDIC COMPOUNDS FROM AQUEOUS SOLUTIONS

William Richard Lewis, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 3, 1965, Ser. No. 452,867
9 Claims. (Cl. 208—237)

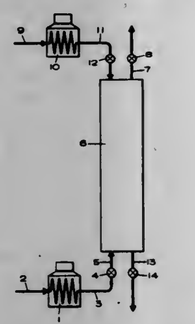
4. In a process wherein a feed stream containing at least one constituent of the group consisting of mercaptans, H_2S, thiophene, and phenol is contacted with a solid sorbing material selected from the group consisting of ion exchange resins and activated charcoal wherein the sorbing material after sufficient contact with the said feed stream is substantially deactivated the improvement which comprises restoring the said sorbing material substantially to its original capacity by heating the sorbing material to a temperature of from about 200° to about 350° F. at a pressure of from about 10 to about 300 millimeters for a sufficient period to substantially restore the original capacity of the sorbing material.

3,346,485

PREVENTION OF DETERIORATION OF FERROUS CONTAINERS BY MOLECULAR SIEVE DISPLACING AGENT

John J. Turney, Chester, and Brian E. Hopkinson, Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 1, 1964, Ser. No. 400,818
12 Claims. (Cl. 208—310)



1. In a molecular sieve separation process wherein normal paraffins are adsorbed on a molecular sieve bed in a molecular sieve zone and displaced with a heated displacing agent having the general formula,



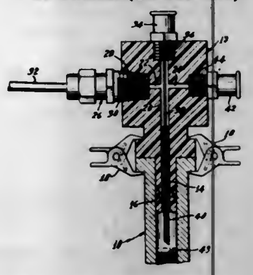
wherein R_1, R_2 and R_3 are selected from the group consisting of hydrogen and C_1 to C_5 alkyl radicals, the improvement which comprises heating the said displacing agent in a ferrous alloy comprising furnace said furnace containing a lining consisting of aluminum prior to passing the said displacing agent into the said molecular sieve zone.

3,346,486

APPARATUS AND METHOD FOR INTRODUCTION OF AMINO ACID SAMPLES INTO A CHROMATOGRAPHY COLUMN

George D. Winter, Katonah, and George N. Catravas, Yonkers, N.Y., assignors to Technicon Corporation, a corporation of New York

Filed Apr. 8, 1964, Ser. No. 358,198
10 Claims. (Cl. 210—31)



5. A method for the chromatography analysis of an amino acid sample by apparatus having a chromatography column containing an ion exchange resin through which a buffer liquid is pumped for forming the chromatogram and for the stripping operation, said method comprising: incorporating the sample in a liquid having a higher density than said buffer liquid, flowing the buffer liquid into the column, interrupting the flow of said buffer into the column, and introducing a quantity of said sample-containing liquid into the column above the resin whereby said sample-containing liquid flows downwardly through the buffer liquid and is thereby layered on the top surface of the resin displacing an equal volume of the buffer liquid.

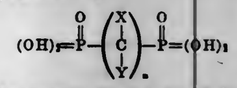
3,346,487

DEFLOCCULATION OF SOLID MATERIALS IN AQUEOUS MEDIUM

Riyad R. Irani and John W. Lyons, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 11, 1965, Ser. No. 463,387
23 Claims. (Cl. 252—8.5)

1. A slurry comprising an aqueous vehicle containing finely divided solid materials selected from the class consisting of coal and inorganic solid materials selected from the group consisting of clays, bauxite, phosphate-containing ores, cements and pigments, and, as a deflocculating agent to disperse said solid materials into a finely divided dispersion, a compound selected from the group consisting of acids having the formula:



wherein n is an integer from 1 to 10 inclusive, X is a member selected from the group consisting of hydrogen and lower alkyl groups and Y is a member selected from the group consisting of hydrogen, hydroxyl, and lower alkyl groups; and their water soluble salts.

3,346,488

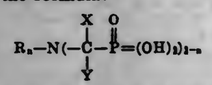
DEFLOCCULATION OF SOLID MATERIALS IN AQUEOUS MEDIUM

John W. Lyons and Riyad R. Irani, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

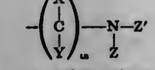
No Drawing. Filed Aug. 24, 1965, Ser. No. 482,296
22 Claims. (Cl. 252—8.5)

1. A slurry comprising an aqueous vehicle containing finely divided solid materials selected from the class consisting of coal and inorganic solid materials selected from

the group consisting of clays, bauxite, phosphate-containing ores, cements and pigments, and, as a deflocculating agent to disperse said solid materials into a finely divided dispersion, a compound selected from the group consisting of acids having the formula:



wherein: n is an integer from 0 to 1 inclusive; R is a member selected from the group consisting of hydrogen, aliphatic hydrocarbons, halo-substituted aliphatic hydrocarbons, hydroxy-substituted aliphatic hydrocarbons, said hydrocarbon groups containing from 1 to 30 carbon atoms, and



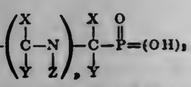
wherein: m is an integer from 1 to 30 inclusive; Z is a member selected from the group consisting of hydrogen and



Z′ is a member selected from the group consisting of



and



wherein: p is an integer from 1 to 30 inclusive; and X and Y are members selected from the group consisting of hydrogen and alkyl groups containing from 1 to 30 carbon atoms; and their water soluble salts.

3,346,489

DRILLING FLUIDS

Woodrow J. Dickson, La Habra, and Fred W. Jenkins, Buena Park, Calif., assignors to Petrolite Corporation

No drawing. Application May 24, 1965, Ser. No. 458,373, which is a continuation of application Ser. No. 115,883, June 9, 1961, and is also a division of application Ser. No. 47,387, Aug. 4, 1960. Divided and this application Mar. 4, 1966, Ser. No. 531,795
3 Claims. (Cl. 252—8.5)

1. A drilling fluid for wells containing an emulsion of water and oil, a fine dispersed solid weighting material dispersed in said emulsion, and a minor amount of a linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2 to 20 carbon atoms.

3,346,490

HEAT RESISTANT BEARING PRODUCT

Franklin W. Eschen, Martinsville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 15, 1963, Ser. No. 295,225
16 Claims. (Cl. 252—12.4)

1. A heat resistant bearing having a low coefficient of friction at temperatures ranging from ambient up through 800° F. consisting essentially of in percent by weight, approximately 15 to 35% of at least one hydraulic setting calcareous binder selected from the group consisting of Portland cement and calcium aluminate cement, approximately 30 to 78% of graphite, approximately 5 to 15% of asbestos fiber, and approximately 2 to 20% of heat resistant thermosetting resin.

3,346,491

POLYAZOPHENOLS AND POLYAZOPHENOL GREASES

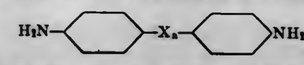
John J. Giammaria, Woodbury, and Derek A. Law, Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 8, 1965, Ser. No. 462,426
12 Claims. (Cl. 252—28)

1. A grease comprising an oil of lubricating viscosity and a grease-forming quantity of a polyazophenol formed by diazotization of an aromatic polyamine represented by the general formulas



wherein Ar is an aromatic hydrocarbon radical, and



wherein X is selected from the group consisting of oxygen, sulfur, and $(CH_2)_m$ and n is selected from the group consisting of 0 and 1 and m is at least 1 in which the amino groups are other than in ortho relationship to form a corresponding diazonium compound and treating the diazonium compound with a base which promotes slow hydrolysis of the diazonium compound to the polyazophenol.

7. A grease defined by claim 1 containing from about 0.05 to about 25 percent by weight of an inorganic grease-thickening agent.

8. A grease defined by claim 7 wherein the inorganic grease-thickening agent is a clay.

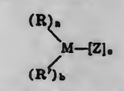
3,346,492

FUEL AND LUBRICANT ADDITIVES

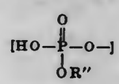
Frederick G. Hess, Cranbury, N.J., assignor to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

No Drawing. Filed May 26, 1965, Ser. No. 459,080
26 Claims. (Cl. 252—32.5)

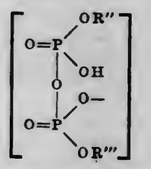
1. A hydrocarbon composition comprising a liquid hydrocarbon and minor amount of a compound sufficient to provide rust suppression, carburetor deicing, and increased lubricity in liquid hydrocarbon fuels and lubricants, said compound being selected from the group consisting of compounds having the formula:



and amine salts thereof, wherein M is selected from the group consisting of silicon and polyvalent metals, R and R′ are each selected from the group consisting of hydrogen and hydrocarbyl radicals of from 1 to 30 carbon atoms, a in an integer from 0 to 2, b is an integer from 1 to 3, c is an integer from 1 to 3, the sum of a plus b is an integer from 1 to 3, the sum of a plus b plus c is an integer from 2 to 4 and is equal to the valence of the metal and Z is a radical selected from the group consisting of:



and



wherein R″ and R_2″ are each hydrocarbyl radicals of from 1 to 30 carbon atoms the amine used to form the

amine salt being selected from the group consisting of hydrocarbon amines and hydroxyhydrocarbon amines containing from 1 to 30 carbon atoms.

3,346,493

LUBRICANTS CONTAINING METAL COMPLEXES OF ALKENYL SUCCINIC ACID-AMINE REACTION PRODUCTS

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Original application Dec. 26, 1963, Ser. No. 333,616, now Patent No. 3,306,908, dated Feb. 28, 1967. Divided and this application Aug. 1, 1966, Ser. No. 569,078

12 Claims. (Cl. 252—32.5)

1. A lubricating composition comprising a major proportion of a lubricating oil and a minor proportion of a metal complex prepared by the process comprising forming a non-acidic, acylated nitrogen intermediate by the reaction of 1 equivalent of a hydrocarbon-substituted succinic acid or anhydride having at least about 50 aliphatic carbon atoms in the hydrocarbon substituent with from about 1 equivalent to about 2 moles of an amine selected from the class consisting of alkylene amines, piperazines, and imidazolines and reacting said acylated nitrogen intermediate with from about 0.1 equivalent to about 2 equivalents per equivalent of the amine, of a complex-forming metal compound selected from the class consisting of nitrates, nitrites, halides, carboxylates, phosphates, phosphites, sulfates, sulfites, carbonates, borates, and oxides of cadmium, tin, and metals having atomic numbers from 24 to 30 at a temperature above about 25° C. and below the decomposition point of the reaction mixture.

3,346,494

MICROEMULSIONS IN LIQUID HYDROCARBONS

Max L. Robbins, South Orange, N.J., and Jack H. Schulman, New York, N.Y., assignors, by direct and mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,642

16 Claims. (Cl. 252—33.2)

5. A process for preparing high concentrations of an inorganic material in a liquid hydrocarbon which comprises adding to said liquid hydrocarbon (1) a volatile dispersible medium insoluble in said liquid hydrocarbon and containing an inorganic material and (2) a sufficient minor proportion of a combination of microemulsifiers consisting essentially of

(a) from about 1 to 10 parts by weight of a fatty acid having from 12 to 20 carbon atoms,

(b) from about 1 to 10 parts by weight of an alkyl amino alcohol containing from 2 to 5 carbon atoms per alkyl group and

(c) from about 1 to 10 parts by weight of an alkylated phenol having at least 1 alkyl group containing 8 to 12 carbon atoms;

thereby forming a clear stable microemulsion and thereafter removing said volatile dispersable medium.

9. A process according to claim 5 wherein prior to removing said volatile dispersable medium about 10 to 50 wt. percent of an oil soluble surface active agent is added to said microemulsion and thereafter said inorganic material is reacted with a second inorganic material to form an inorganic reaction product which is insoluble in said volatile dispersable medium.

11. A process according to claim 9 wherein said oil soluble surface active agent is calcium petroleum sulfonate, said inorganic material is calcium hydroxide, said second inorganic material is CO_2 and said inorganic reaction product is calcium carbonate.

3,346,495

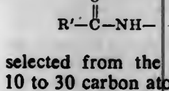
WATER BASE LUBRICANTS

Robert E. Malec and William J. Ludwig, Chicago, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,029

5 Claims. (Cl. 252—49.3)

1. In a process in which metal surfaces are brought into abrasive wear contact, the step of circulating over the wear surfaces water containing per million parts of the water about 80–200 parts of an amine oxide having the following structure:



where R is an aliphatic hydrocarbon group having from 8 to 22 carbon atoms and mixtures thereof.

3,346,496

LUBRICANTS CONTAINING CARBODIIMIDES AS ANTIOXIDANTS

Wolfram Neumann and Walther Lohmar, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 13, 1965, Ser. No. 455,606

Claims priority, application Germany, June 16, 1964, F 43,191

5 Claims. (Cl. 252—50)

1. A lubricating composition comprising

(a) an oil base selected from the group consisting of a mineral oid and a synthetic polyether containing $-(CH_2)_4-O-$ groups and

(b) an oxidation-inhibiting amount of a member selected from the group consisting of an aliphatic monocarbodiimide, aliphatic polycarbodiimide, aromatic monocarbodiimide and aromatic polycarbodiimide.

3,346,497

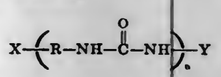
GREASES CONTAINING AMIDOUREA THICKENERS

John L. Dreher, Berkeley, and Bruce W. Hotten, Orinda, Calif., assignors to Chevron Research Corporation, a corporation of Delaware

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,803

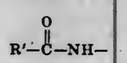
9 Claims. (Cl. 252—51.5)

1. A grease composition comprising an oil of lubricating viscosity and, in an amount sufficient to thicken said oil to the consistency of a grease, a carboxylic-ureido derivative of the formula:



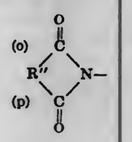
in which R is a hydrocarbylene radical of 1 to 30 carbon atoms, n is a cardinal number 1 to 3, and X is a radical selected from the group consisting of

(a)



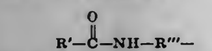
in which R′ is selected from the group consisting of alkyl radicals of 10 to 30 carbon atoms and aryl radicals of 6 to 16 carbon atoms, and

(b)



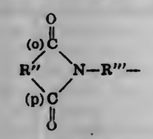
in which R″ is selected from the group consisting of arylene radicals of 6 to 16 carbon atoms and alkylene groups of 2 to 30 carbon atoms and wherein bonds o and p are separated through R″ by 2 carbon atoms, and Y is selected from the group consisting of

(a′)



in which R′ is as previously defined and R‴ is hydrocarbylene of 1 to 30 carbon atoms, and

(b)



in which R″ and R‴ and the bonds (o) and (p) are as previously defined, and (c) hydrocarbyl radicals of 2 to 30 carbon atoms.

3,346,498

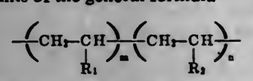
LUBRICATING OIL COMPOSITION CONTAINING HIGH MOLECULAR WEIGHT OLEFIN-DIOLEFIN COPOLYMER

Louis de Vries, Richmond, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 375,967, June 17, 1964, which is a division of application Ser. No. 248,212, Dec. 31, 1962. This application June 6, 1966, Ser. No. 555,618

2 Claims. (Cl. 252—59)

1. A lubricating oil composition comprising a major proportion of waxy mineral lubricating oil and a minor proportion sufficient to lower the pour point of the oil of an unsaturated hydrocarbon polymer having a mixture of recurring units of the general formula



in which polymer R_1 is an alkyl radical and R_2 is an alkenyl radical, said units being formed by polymerizing a cracked wax or cracked wax fraction both being composed essentially of a mixture of C_{11} to C_{15} alpha olefins and diolefins in substantially the same ratio in which they are present in the cracked wax, in the presence of a stereospecific co-catalyst combination of a reducing metal compound with a reducible metal compound, the ratio of m to n being from about 10:1 to about 100:1, said unsaturated polymer having a molecular weight as determined by standard light scattering methods of from about 50,000 to about 1,000,000 and a solubility in mineral lubricating oil of at least about 0.1% by weight.

3,346,499

LEAD ZIRCONATE-TITANATE-STANNATE PIEZOELECTRIC CERAMIC CONTAINING THORIUM AND IRIDIUM

Tsuneo Akashi and Masao Takahashi, Shikokumachi, Fumio Yamauchi, Shiba Mita, Norio Tsubouchi, Minatoku, and Tomeji Ohno, Tokyo, Japan, assignors to Nippon Electric Co. Ltd., Tokyo, Japan

No Drawing. Filed Mar. 6, 1967, Ser. No. 620,620

Claims priority, application Japan, Mar. 12, 1963, 38/12,951

3 Claims. (Cl. 252—62.9)

1. A piezoelectric ceramic composition having the formula $Pb(Zr_xTi_ySn_z)O_3$, wherein x=0.00–0.90, y=0.10–0.60 and z=0.00–0.65, the sum of x, y and z being equal to 1.00; said composition incorporating iridium dioxide and thorium dioxide in amounts of from 0.01 to 0.7 weight percent iridium dioxide, and from 0.30 to 7.0 weight percent thorium dioxide.

3,346,500

STABILIZED DIELECTRIC COMPOSITION CONTAINING 2-BROMONAPHTHALENE

George H. Hunt, West Newton, Mass., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,718

4 Claims. (Cl. 252—63.2)

1. A solid dielectric composition consisting essentially of a solid polymer of an olefin selected from the group consisting of ethylene and propylene, said polymer having disposed therein a soluble amount between .2 and 2.5% by weight based on the polymer of 2-bromonaphthalene.

3,346,501

NON-INFLAMMABLE HYDRAULIC FLUID

Matthew A. Boehmer, Detroit, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Sept. 11, 1964, Ser. No. 395,919

9 Claims. (Cl. 252—73)

9. A hydraulic fluid characterized by a residue flash point of at least 450° F., consisting essentially of by weight about 35 to 40 percent of water, about 40 to 60 percent of at least one water-soluble polyhydric alcohol ether having a molecular weight of 400 to 6000, about 5 to 15 percent of a soluble polyoxyalkylene polymeric thickener having a molecular weight in excess of 6,000 and up to 100,000, about 0.5 to 2.5 percent of at least one corrosion inhibitor, about 0.001 to 0.1 percent of at least one silicone antifoaming agent, about 0.25 to 1.0 percent of at least one antiwear agent selected from the group consisting of fatty acids and alkali metal soaps of fatty acids, and about 0.2 to 3.0 percent of at least one buffering agent to maintain reserve alkalinity.

3,346,502

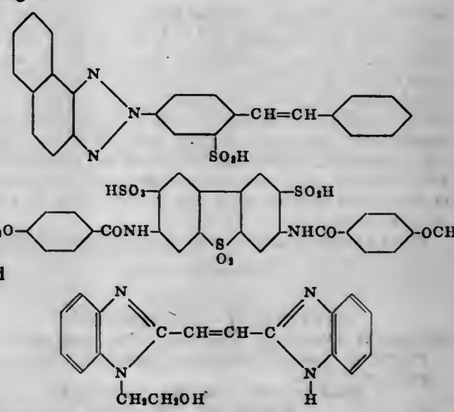
BLEACHING COMPOSITION

Harold Eugene Wixon, New Brunswick, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,348

5 Claims. (Cl. 252—102)

1. A bleaching composition consisting essentially of from about 1 to 99 percent by weight of a heterocyclic N-chloroimide selected from the group consisting of trichlorocyanuric acid, dichlorocyanuric acid and salts thereof, about 0.01 to 5 percent by weight of a fluorescent brightener substantive to cotton and stable in the presence of said N-chloroimide selected from the group consisting of



and ultramarine blue pigment of a particle diameter less than 0.05 millimeter in an amount from about 0.05 to 5 percent by weight sufficient to impart a faint blue shade

to fabrics treated with an aqueous solution of said composition, said composition being in the form of a finely divided particulate product having a maximum particle diameter of about 0.5 millimeter so as to be readily dispersible in water when used in a household washing machine.

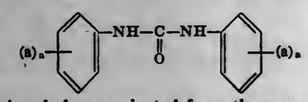
3,346,503

HEAVY-DUTY LIQUID DETERGENT EMULSION COMPOSITIONS AND PROCESSES FOR PREPARING THE SAME

James M. Huggins, St. Ann., Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,704
12 Claims. (Cl. 252—106)

1. A process for preparing a phase-stable, bacteriostatically active, heavy-duty liquid detergent emulsion composition which comprises preparing an emulsion consisting essentially of an aqueous continuous phase having dissolved therein an inorganic builder material selected from the group consisting of sodium and potassium phosphates, carbonates, silicates and combinations thereof in an amount between about 5% to about 60% by weight of said composition, a stabilizing component in an amount between about 0.1% to 8% by weight of said composition of a co-polymer having a molecular weight between about 1,000 and 100,000 of substantially equimolar proportions of maleic anhydride with an olefinically unsaturated compound selected from the group consisting of ethylene, propylene, isobutylene and vinyl methyl ether, and a dispersed phase of a water soluble nonionic detergent selected from the group consisting of alkyl phenols having an alkyl group of from 6 to 20 carbon atoms, monohydric primary alcohols containing from 10 to 18 carbon atoms, fatty acids containing from 10 to 18 carbon atoms, fatty amines containing from 12 to 14 carbon atoms, fatty acid esters containing from 10 to 18 carbon atoms of hexitol anhydrides, and containing at least one polyoxyalkylene chain having from about 5 to about 50 oxyalkylene units wherein the alkylene is selected from the group consisting of ethylene, propylene and butylene and condensates of propylene glycol with ethylene and propylene oxide having molecular weights between about 1000 and 3000, and adding thereto an admixture of a polyhalogen substituted carbanilide in an amount between about 0.1% to about 1% by weight of said composition and having the formula



wherein *a* is a halogen selected from the group consisting of chlorine and bromine and *n* is an integer between 1 and 3 inclusive and a detergent material, in an amount from about 1% to 3% by weight of said composition, selected from the group consisting of said nonionic detergents, supplemental detergents and mixtures thereof, said supplemental detergents selected from the group consisting of anionic alkyl benzene sulfonates and nonionic fatty acid alkanolamides, said nonionic detergent being present in an amount between about 2% to about 20% by weight of said composition.

11. A composition produced by the process of claim 1.

3,346,504

DETERGENT COMPOSITIONS

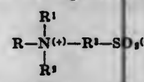
Kenneth W. Herrmann, Greenhills, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Mar. 25, 1966, Ser. No. 547,117
11 Claims. (Cl. 252—137)

1. An aqueous homogeneous liquid detergent composition consisting essentially of:

(I) from about 1% to about 40% by weight of the composition of a detergent selected from the group consisting of

(A) A detergent having the formula



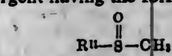
wherein R^1 and R^2 are each selected from the group consisting of hydrogen, methyl, and ethyl groups, R^3 is a straight chain alkylene group containing two to four carbon atoms, and having from 0 to one hydroxyl group substituted on a secondary carbon atom, and R is an alkyl chain of from about 10 to about 20 carbon atoms;

(B) A detergent having the formula $R^4R^5R^6N\rightarrow O$ wherein R^4 is selected from the group consisting of alkyl, alkyl monohydroxy, and alkoxy monohydroxypropyl radicals wherein the alkyl and alkoxy portions of said radicals contain from about 10 to about 20 carbon atoms and R^5 and R^6 are each selected from the group consisting of alkyl radicals and alkanol radicals containing from one to about three carbon atoms;

(C) A detergent having the formula $R^7R^8R^9P\rightarrow O$ wherein R^7 is selected from the group consisting of alkyl and alkyl monohydroxy radicals containing from about 8 to about 16 carbon atoms and R^8 and R^9 are each selected from the group consisting of alkyl radicals and alkanol radicals containing from one to about three carbon atoms;

(D) Nonionic detergents having the formula $R^{10}(C_2H_4O)_xH_y$ wherein R^{10} represents a hydrophobic base selected from the group consisting of (1) alkoxy groups containing from about 8 to about 20 carbon atoms, (2) alkyl phenoxy groups wherein the alkyl group contains from about 6 to about 18 carbon atoms, (3) condensation products of propylene glycol and propylene oxide with a molecular weight of from about 1500 to about 1800, (4) fatty amides containing from about 10 to about 20 carbon atoms, (5) higher alkyl mercaptans containing from about 10 to about 20 carbon atoms, (6) condensation products of propylene oxide and ethylene diamine constituting from about 20% to about 60% by weight of the finished nonionic detergent molecule and (7) condensation products of fatty alcohols containing from about 10 to about 20 carbon atoms and from about three to about 8 propylene oxide units and wherein *x* is an integer from about 4 to about 30 for (1), (2), (4), and (5), but not less than about 0.4 of the number of carbon atoms in the hydrophobic group, and sufficiently large to give the detergent a molecular weight of from about 2,000 to about 10,000 for (3); of from about 5,000 to about 11,000 for (6); and of from about 750 to about 1800 for (7), and wherein *y* is an integer equal to the number of ethylene oxide chains;

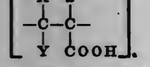
(E) A detergent having the formula



wherein R^{11} is an alkyl radical containing from about 10 to about 20 carbon atoms and contains from 0 to 1 hydroxyl substituents and from 0 to five ether linkages;

(F) and mixtures thereof;

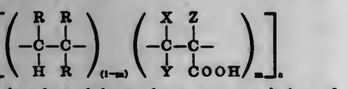
(II) From 0% to about 40% by weight of the composition of a polyvalent electrolyte salt selected from the group consisting of a polyvalent electrolyte salt selected from the group consisting of (1) sulfates; (2) carbonates; (3) tripolyphosphates; (4) pyrophosphates; (5) orthophosphates; (6) hexametaphosphates; (7) ethylenediaminetetraacetates; (8) N-(2-hydroxyethyl)-ethylenediaminetriacetates; (9) nitrilotriacetates; (10) N-(2-hydroxyethyl)-nitrolodiacetates; (11) phytates; (12) ethane-1-hydroxy-1,1-diphosphonates; (13) methylene diphosphonates; (14) ethylidene diphosphonates; (15) isopropylidene diphosphonates; (16) benzylmethylidene diphosphonates; (17) chloromethylidene diphosphonates; (18) a polyelectrolyte builder material consisting of water-soluble salts of a polymeric aliphatic polycarboxylic acid seletced from the group consisting of (a) water-soluble salt of a homopolymer of an aliphatic polycarboxylic acid having the following empirical formula:



wherein X, Y, and Z are each selected from the group consisting of

hydrogen,
methyl,
carboxyl, and
carboxymethyl,

at least one of X, Y, and Z being selected from the group consisting of carboxyl and carboxymethyl, provided that X and Y can be carboxymethyl only when Z is selected from carboxyl and carboxymethyl, wherein only one of X, Y, and Z can be methyl, and wherein *n* is a whole integer having a value within a range, the lower limit of which is three and the upper limit of which is determined by the solubility characteristics in an aqueous system; (b) a water-soluble salt of copolymer of at least two of the monomeric species having the emperical formula described in (a); and (c) a water-soluble salt of a copolymer of a member selected from the group of alkylenes and monocarboxylic acids with the aliphatic polycarboxylic compounds described in (a), said copolymers having the general formula:



wherein R is selected from the group consisting of

hydrogen,
methyl,
carboxyl,
carboxymethyl, and
carboxyethyl;

wherein only one R can be methyl; wherein *m* is at least 45 mole percent of the copolymer;

wherein X, Y, and Z are each selected from the group consisting of

hydrogen,
methyl,
carboxyl, and
carboxymethyl,

at least one of X, Y, and Z being selected from the group of carboxyl and carboxymethyl provided that X and Y can be carboxymethyl only when Z is selected from carboxyl and carboxymethyl, wherein only one of X, Y and Z can be methyl; and

wherein *n* is a whole integer within a range, the lower limit of which is three and the upper limit of which is determined primarily by the solubility characteristics in an aqueous system; said polyelectrolyte builder material having a minimum molecular weight of 350 calculated as the acid form and an equivalent weight of about 50 to about 80, calculated as the acid form; and (19) mixtures thereof, the cations of the above polyvalent electrolytes being selected from the group consisting of sodium, potassium, ammonium; triethanol ammonium, diethanol ammonium and monoethanol ammonium cations and mixtures thereof;

(III) From about 0.5% to about 20% by weight of the composition, and sufficient to keep the composition homogeneous, of solubilizing electrolytes selected from the group consisting of compounds having the formula



wherein M is a cation selected from the group consisting of sodium, potassium, triethanolammonium, diethanolammonium, and monoehtanolammonium cations, and mixtures thereof, and R^{13} is selected from the group consisting of unsaturated aliphatic radicals containing from 2 to about 7 carbon atoms; aromatic, substituted aromatic, and aromatic alkyl radicals containing from 6 to about 12 carbon atoms selected from the group consisting of phenyl radicals, naphthyl radicals, substituted phenyl radicals containing from one to three substituents selected from the group consisting of methyl, ethyl, propyl, isopropyl, pentyl, isopentyl, butyl, isobutyl, chloro, fluoro, and nitro groups and mixtures thereof, napthyl radicals containing from one to about three substituents selected from the group consisting of chloro, fluoro, and nitro groups and mixtures theerof; and phenyl alkyl radicals wherein the above phenyl radicals are attached to alkylene radicals selected from the group consisting of ethylene, propylene, butylene, pentylene, and hexylene groups; branched chain saturated aliphatic radicals containing from three to about six carbon atoms; chloro-substituted saturated and unsaturated aliphatic radicals containing from one to about 5 carbon atoms; sodium, potassium, triethanolammonium, diethanolammonium, and monoethanolammonium trimethylacetates; sodium, potassium, triethanolammonium, diethanolammonium, and monoethanol ammonium ethyl benzene phosphates; sodium, potassium, triethanolammonium, diethanolammonium and monoethanolammonium furoates; and mixtures thereof; and

(IV) The balance substantially water.

3,346,505

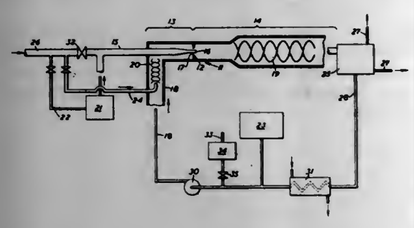
SULPHONATION OF ORGANIC COMPOUNDS

John Murray Blakeway, Bowdon, and Philip Marshall, Timperley, England, assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Mar. 15, 1963, Ser. No. 265,512
5 Claims. (Cl. 252—161)

1. A process for the co-sulphonation of a first sulphonatable organic compound, said compound being a higher alkyl benzene which when sulphonated and neutralized is useful as a detergent, and a lower alkyl benzene which comprises reacting a molar excess of said first organic compound in liquid phase with a gaseous mixture of sulphur trioxide and air in a reaction zone

under sulphonating conditions until at least 50% of said first organic compound is sulphonated; introducing said lower alkyl benzene and additional gaseous sulphur trioxide diluted with air into the partially sulphonated reaction mixture under sulphonating conditions, the weight ratio of xylene to said first organic compound being selected from the range of about 1:4 to about 1:16 and



said additional sulphur trioxide being sufficient substantially to complete the sulphonation of said first organic compound and said lower alkyl benzene; and maintaining the mixture of sulphur trioxide, first organic compound and said lower alkyl benzene in the reaction zone under sulphonating conditions until absorption of the sulphur trioxide is substantially complete.

3,346,506
HYDROGEN-GENERATING COMPOSITION AND USE

Oscar Francis Beumel, Jr., West Chester, Pa., assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 14, 1963, Ser. No. 317,101
16 Claims. (Cl. 252—188)

1. A hydrogen gas-generating composition consisting essentially of lithium hydride particles surrounded by a non-aqueous organic liquid which is inert to lithium hydride and in which lithium hydride is insoluble, selected from the group consisting of pyridine, tetrahydrofuran, dioxane and liquid glycol ethers and mixtures of at least one of these with a liquid hydrocarbon in which the former is in excess, the concentration of said lithium hydride being between about 40% and about 90%, by weight, based on the weight of said composition.

3,346,507
PROCESS OF PREPARING AN ORGANO-SILICA AEROGEL

Thomas A. Taulli, Florissant, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

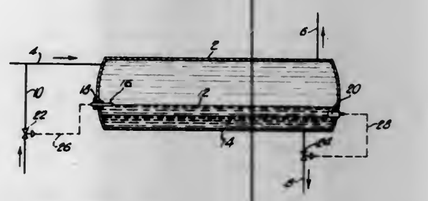
No Drawing. Filed June 4, 1962, Ser. No. 199,655
11 Claims. (Cl. 252—316)

1. The process of preparing an organo-silica aerogel which comprises (1) heating an acidic silica hydro-organosol having a pH of from about 1.8 to 4.5 and comprising (a) silica, (b) from about 8 to 20 mols, per mol of SiO_2 in said sol, of a substantially neutral, water-miscible organic liquid consisting of carbon, hydrogen and oxygen atoms and (c) water, thereby forming a gel, (2) heating the gel in a closed system without subjecting it to a substantial compressive liquid-solid interface until substantially all of the liquid phase of the gel has been converted to a vapor phase, (3) separating said vapor from said gel thereby forming an aerogel and (4) heating said aerogel at a temperature in the range of from about 90° C. to about 750° C., at a pressure of from about 10 p.s.i.g. to about 200 p.s.i.g., and for a time sufficient to form an organo-silica aerogel comprising a silica polymer having siloxy groups and containing carbon and hydrogen atoms chemically bound to a portion of the siloxy groups in said organo-silica aerogel, said organo-silica aerogel being further characterized in having an SiO_2 to carbon atom ratio of from about 10:1 to about 50:1 and an SiO_2 to hydrogen atom ratio of from about 0.77:1 to 2:1.

3,346,508
METHOD FOR EMULSION BREAKING OF CRUDE OILS

Harold A. Thompson, Lockport, Ill., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Original application June 29, 1961, Ser. No. 120,544, now Patent No. 3,220,930. Divided and this application Aug. 16, 1965, Ser. No. 489,092
1 Claim. (Cl. 252—328)



A method for de-emulsification of an aqueous crude oil emulsion by separation into immiscible liquids of different electrical properties and different densities including an oil phase, a water phase, and an oil-water emulsion phase intermediate said oil phase and said water phase with interfaces between each of the phases which comprises introducing said aqueous crude oil emulsion into a vessel wherein said separation occurs into said immiscible liquids, introducing a de-emulsifying agent into said aqueous crude oil emulsion through valve means operatively actuated by an electrical probe responsive to the position of the interface between said oil phase and said oil-water emulsion phase in said vessel for regulating the introduction of said de-emulsifying agent into said aqueous crude oil emulsion, withdrawing oil substantially free of water from the upper part of said vessel, withdrawing water from the lower part of said vessel through outlet valve means operatively actuated by a density probe responsive to the position of the interface between said water phase and said oil-water emulsion phase in said vessel for regulating the rate of withdrawal of said water phase, whereby a predetermined oil-water emulsion phase in said vessel is controlled by the interface responses of said probes.

3,346,509
CO-PRECIPITATED SILICA-ALUMINA CATALYST PROCESS AND COMPOSITION

Meredith M. Stewart, Penn Hills Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 12, 1964, Ser. No. 374,810
4 Claims. (Cl. 252—453)

1. A method for preparing silica-alumina compositions, the method comprising (1) mixing (a) a freshly prepared silica sol substantially free of cationic impurities and having a pH between 1 and 3.5, said silica sol being in an unstable state tending to transform spontaneously into a gel, and containing the equivalent of between 1 and 3 percent by weight of silica and (b) an aqueous solution of a substance which yields aluminum cations in aqueous solution, said mixing being carried out before advancement of polymerization toward formation of a gel and (2) raising the pH of the resultant mixture to cause gelation.

3,346,510
CATALYST COMPOSITIONS AND PROCESS FOR PREPARATION THEREOF

John H. Sinfelt, Berkeley Heights, William F. Taylor, Scotch Plains, and George W. Dembinski, Chatham, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No drawing. Filed July 26, 1965, Ser. No. 474,996
11 Claims. (Cl. 252—455)

6. An improved method for the preparation of bifunctional catalyst compositions containing a hydrogenation-dehydrogenation component composited with an acidic-component selected from the group consisting of amorphous silica-alumina and the crystalline alumina-silicate zeolites having uniform pores in the range of 6 to 15 Angstroms having reactive sites of varying degrees of acidity thereon, comprising the following steps:

(a) treating the acidic component with a basic compound characterized by its ability to selectively and reversibly interact with reactive sites on said acidic component having a greater degree of acidity;
(b) compositing the said treated acidic component with the said hydrogenation-dehydrogenation component so as to selectively deposit said hydrogenation-dehygenation component at reactive sites having a lesser degree of acidity on said acidic component; and
(c) removing said basic compound from said highly acidic reactive sites.

3,346,511
CATALYST, PREPARATION THEREOF, AND POLYMERIZATION PROCESS USING SAID CATALYST

Thomas Hill, Falkirk, Scotland, assignor, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England, a British company

No Drawing. Filed July 23, 1963, Ser. No. 296,919
Claims priority, application Great Britain, Aug. 16, 1962, 13,511/62
5 Claims. (Cl. 252—455)

1. A process of preparing a polymerization catalyst which comprises impregnating a carrier material with vapor of chromyl chloride; and subsequently heating said impregnated carrier material in the presence of molecular oxygen at a temperature of from about 300 to about 1000° C.

2. Process of claim 1 wherein said carrier is selected from the group consisting of silica, silica gel, silica/alumina and alumina.

3,346,512
PREPARATION OF A CRYSTALLINE ALUMINO-SILICATE ZEOLITE IN A SILICEOUS MATRIX

Elroy Merle Gladrow and Warren Maxwell Smith, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,429
14 Claims. (Cl. 252—455)

8. An improved process for preparing a catalyst composition comprising a metal-containing, essentially hydrogen-containing cation free, crystalline alumino-silicate zeolite embedded in a siliceous gel matrix, said zeolite having been base-exchanged with a cation of a metal selected from the group consisting of metals in Groups II, III, IV, V, VI–B, VII–B, VIII, and the rare earth metals; said siliceous gel being selected from the group consisting of silica gel, cogels of silica and at least one other metal oxide selected from the group consisting of oxides of metals in Groups II–A, III–A, and IV–B of the Periodic Table, and mixtures thereof; which process comprises (1) admixing said metal-containing zeolite with a slurry of an unwashed siliceous hydrogel of the siliceous material desired in said matrix, (2) spray drying said admixture, (3) contacting said composite with ammonium ions, and (4) contacting said composite with metal cations of the same metal used in said base exchange so as to essentially replace ammonium cations present in said zeolite by virtue of step (3).

3,346,513
ACTIVATION OF ANTIMONY OXIDE-TIN OXIDE CATALYSTS USING WATER ACID OR BASE

David James Hadley, Epsom Downs, Surrey, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed May 26, 1964, Ser. No. 370,348
Claims priority, application Great Britain, June 20, 1963, 24,513/63
9 Claims. (Cl. 252—461)

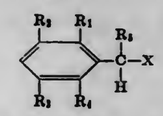
1. A process for the activation of a catalytic composition selected from the group consisting of (i) antimony tetroxide in combination with stannic oxide and (ii) antimony tetroxide in admixture with stannic oxide in a pelleted form which comprises heat treating the pelleted catalyst in the presence of molecular oxygen at a temperature in the range 500 to 1100° C. and subsequently contacting the catalyst with a substance selected from the group consisting of ordinary water, an aqueous solution of a mineral acid and an aqueous solution of ammonia substantially at the boiling point for a period of about 0.5 to 7 hours.

3,346,514
CRYSTALLINE POLYBENZYLS

Robert B. Isaacson, Roselle, and Joseph P. Kennedy, Clark, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,389
13 Claims. (Cl. 260—2)

1. A process for the formation of high melting, crystalline polymers of aralkyl halides which comprises polymerizing a monomer having the formula:



wherein R_1, R_2, R_3, R_4, and R_5 are selected from the group consisting of hydrogen radicals and C_1 to C_8 alkyl radicals and X is a halogen atom, with a catalyst comprising as alkylaluminum compound and a transition metal halide selected from the group consisting of titanium halides and oxyhalides and vanadium halides and oxyhalides, the molar ratio of alkylaluminum compound to transition metal halide not exceeding 1.

3,346,515
METHOD OF PRODUCING ALTERNATING ETHER-SILOXANE COPOLYMERS

James E. Curry, Madison, Ala., assignor to the United States of America as represented by the Administrator of National Aeronautics and Space Administration

No Drawing. Filed Nov. 2, 1965, Ser. No. 506,135
3 Claims. (Cl. 260—2)

1. A method of producing alternating ether-siloxane copolymers which comprises:

(a) admixing a diaminosilane monomer having the formula $R_1R_2Si(NHR_3)(NHR_4)$ wherein R_1, R_2, R_3, and R_4 are aryl groups and a diol monomer selected from the group consisting of hydroquinone, p,p'-biphenol, 2,7-naphthalene diol, 2,2-propene-bis-(4-hydroxybenzene), 1,6-hexanediol, and 4,4'-dihydroxydiphenyl ether.
(b) heating the resulting mixture to a temperature of about 300° to 325° C.; and
(c) dwelling at said temperature for a period of about 4 to 7 hours under a vacuum, whereby relatively high-molecular-weight copolymers are obtained.

3,346,516
PROCESS FOR PRODUCING GUANIDINE-SUBSTITUTED CROSS-LINKED POLY(VINYL AROMATIC) ANION EXCHANGE RESINS

Robert G. Minton, Levittown, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,205
1 Claim. (Cl. 260—2.1)

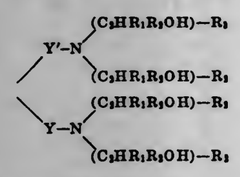
A process for the preparation of an anion exchange resin whose basic groups are guanidyl groups, which consists in reacting under anhydrous conditions (a) a halomethylated copolymer of a monovinyl aromatic monomer and a cross-linker therefor, and (b) a guanidine selected from the group consisting of (1) guanidine and (2) tetraalkyl substituted guanidines, the proportions of the reactants being 0.5 to 3.8 moles of the guanidine per equivalent of the halomethylated groups in said copolymer, said reaction being carried out at a temperature between 0° and 70° C. in the presence of a mixed solvent consisting of a lower alkanol and a solvent which is a swelling agent for the copolymer selected from the class consisting of tetrahydrofuran, dioxane and diglyme.

3,346,517
POLYURETHANES FORMED FROM FATTY AMINE POLYOLS

Marwan R. Kamal, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,928
8 Claims. (Cl. 260—2.5)

1. A polyurethane produced by contacting (1) a polyol compound having the following formula:



wherein R is an aliphtic C_8–C_{22} fatty hydrocarbon chain, Y and Y′ are each C_3—C_4 alkylene groups, R_1 and R_2 are each selected from the group consisting of H and C_1–C_4 alkyl groups, R_1 and R_2 being attached to different C's with the parentheses containing the same in said formula, and R_3 is selected from the group consisting of H, alkaryl, aryl, aralkyl and aryloxy groups; and (2) an organic polyisocyanate; the weight ratio of (1):(2) ranging from substantially 5:1 to 1:5; said polyisocyanate consisting essentially of polyisocyanates having the formula:

$$R'''[—NCO]_y$$

where R''' is selected from the group consisting of polyvalent aliphatic hydrocarbon radicals having from 2 to about 40 carbon atoms, polyvalent alicyclic hydrocarbon radicals having from about 5 to 20 carbon atoms, polyvalent aromatic hydrocarbon radicals having from 6 to about 10 carbon atoms, polyvalent aralkyl radicals having from 7 to about 24 carbon atoms, and y is an integer of 2 to about 4.

3,346,518
METHOD OF PREPARING IMPROVED LATEX AND RUBBER ARTICLES, AND THE PRODUCTS THUS PREPARED

John D. Sutherland, Jr., Baton Rouge, La., assignor to Copolymer Rubber & Chemical Corporation, a corporation of Louisiana

Filed Jan. 6, 1964, Ser. No. 335,887
14 Claims. (Cl. 260—2.5)

1. A method of preparing latex comprising passing pelletized carbon black into a fluid energy pulverizer for grinding pelletized carbon black, passing vapor of a volatile inert organic solvent which is under pressure into the fluid energy pulverizer as a grinding fluid, dry grinding the pelletized carbon black in the fluid energy pulverizer by means of the vapor of the organic solvent as the grinding fluid to produce comminuted carbon black, withdrawing vapor of the organic solvent containing suspended comminuted carbon black from the fluid energy pulverizer, intimately contacting the withdrawn solvent vapor suspension of comminuted carbon black with liquid volatile inert organic solvent to condense the solvent vapor and produce a suspension of comminuted carbon black in the liquid organic solvent, intimately admixing the suspension of carbon black with a solution of polymer dissolved in a volatile inert organic solvent, emulsifying the intimate admixture containing the suspension of carbon black and the solution of polymer in water in the presence of an emulsifying agent to produce latex of the polymer, the particles in the dispersed phase of the latex containing the intimate admixture of the suspension of carbon black and the polymer solution, and evaporating organic solvent from the latex to produce particles in the dispersed phase containing carbon black dispersed in the polymer.

3,346,519
PROCESS OF ADHERING ANIONIC AND NON-IONIC SUBSTANCES TO ANIONIC SUBSTANCES

John C. Williams, Meriden, Conn., assignor to Hawley Products Company, St. Charles, Ill., a corporation of Delaware

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,779
12 Claims. (Cl. 260—9)

1. A process for adhering a substance from the class consisting of anionic and non-ionic resins and pigments to an anionic material from the class consisting of cellulose and starch which consists essentially of reacting said anionic material with an aqueous dispersion of a hydrophilic altering resin from the group consisting of (a) hydrophilic epoxidized precondensates of a polyepoxide having an epoxide equivalent of at least 43 and a polyamine containing at least four carbon atoms and (b) formaldehyde polymers of (a), said altering resin containing at least two equivalents of reactive amino groups for each epoxide group in the precondensate and 0.1 to 0.8 equivalent of additional epoxide group in the altering resin (a) and at least one mole of formaldehyde per mole of epoxidized precondensate in altering resin (b), said altering resin being effective to convert said anionic material to a cationic nitrogenated material, and bringing said cationic nitrogenated material into contact with a substance to be adhered thereto from the class consisting of anionic and non-ionic resins and pigments.

3,346,520
PROCESS FOR MAKING HIGH IMPACT STYRENE POLYMERS IN AQUEOUS SUSPENSION

Lieng-Huang Lee, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,972
5 Claims. (Cl. 260—17)

1. In a process for making a high impact rubber reinforced styrene polymer wherein a solution of from about 2 to 20 weight percent of a rubbery butadiene polymer dissolved in from 98 to 50 weight percent of at least one monovinyl aromatic hydrocarbon of the benzene series and from 0 to 30 weight percent of acrylonitrile, is partially polymerized by heating the solution in mass until said solution contains from about 25 to 30 percent by weight of polymer solids, then is further polymerized by heating said partially polymerized solution in an aqueous suspension containing an alkali metal salt of a water-soluble organic dispersing agent until polymerization of the monomer is substantially complete and solid polymer particles are obtained, the improvement which comprises adding to the mixture, after completing said polymerization, from 0.01 to 1 percent, based on the weight of the polymer in the aqueous suspension, of a polypropylene glycol having an average molecular weight between 1200 and 4000 and thereafter separating the liquid from the polymer.

3,346,521
POLYOLEFIN-FUSIBLE CELLULOSE ETHER BLENDS

Bruce A. Fairbairn, Joseph M. Grenier, and Arthur Holmes, Drummondville, Quebec, Canada, assignors to Chemcell Limited, Montreal, Quebec, Canada

No Drawing. Original application Feb. 23, 1962, Ser. No. 175,292, now Patent No. 3,232,694, dated Feb. 1, 1966. Divided and this application Aug. 27, 1965, Ser. No. 483,319
Claims priority, application Canada, Feb. 21, 1962, 842,883
11 Claims. (Cl. 260—17)

1. A dyeable shaped material consisting essentially of a polyolefin selected from the group consisting of polyethylene and polypropylene and having dispersed therein a conditioning agent selected from the group consisting of fusible cellulose ethers and fusible substituted cellulose ethers having a melting point of from about 140 to about 240° C. and an intrinsic viscosity in solvent solution of from about 0.4 to about 3.5 deciliters per gram, said conditioning agent being present in an amount of from about 5% to about 50% by weight of the shaped material whereby said material is rendered more receptive to dyeing by the presence of said conditioning agent, said conditioning agent being incorporated in said polyolefin by dissolving said conditioning agent in a melt of the polyolefin and thereafter producing a shaped material from the resulting optically clear solution.

8. A process of chemically modifying a polyolefin textile material selected from the group consisting of polyethylene and polypropylene to render the same more receptive to dyeing which comprises dissolving a conditioning agent in said polyolefin, said conditioning agent being selected from the group consisting of fusible cellulose ethers and fusible substituted cellulose ethers having a melting point of from about 140 to about 240° C. and an intrinsic viscosity in solvent solution of from about 0.4 to about 3.5 deciliters per gram, said conditioning agent being present in an amount of from about 5% to about 50% by weight of the total solution, said solution being formed by melting said polyolefin and dissolving said conditioning agent therein.

3,346,522
AQUEOUS SOLUTION CONTAINING A RESIN AND SUCROSE FOR USE WITH SOLUTIONS OF HEXAVALENT CHROMIUM COATING COMPOUNDS

Ludwig K. Schuster, Dresher, and Alfonso L. Baldi, Jr., Drexel Hill, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 23, 1963, Ser. No. 282,571
3 Claims. (Cl. 260—17.4)

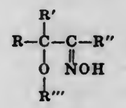
1. A concentrate for mixing with aqueous solutions of hexavalent chromium coating compounds, said concentrate being an aqueous solution of sucrose in which is dispersed an acrylic resin, the resin and sucrose being in the proportion of between about 1:2 and 6:1 by weight, and together constituting at least about 30% by weight of the concentrate.

3,346,523
COATING COMPOSITIONS MADE FROM OXIMES

Herbert K. Wiese, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,215
8 Claims. (Cl. 260—19)

3. An air-hardenable coating composition comprising an evaporable solvent, a resin soluble in said solvent and selected from the group consisting of alkyds, phenolics, epoxies and natural resins, a drier and from 0.05 to 2.0 percent by weight of an alkyl oxime of the formula:



wherein R and R′ are alkyl groups containing from 1 to 8 carbon atoms, and R″ and R‴ are selected from the group consisting of: hydrogen and alkyl groups having from 1 to 8 carbon atoms.

3,346,524
GLOSS RETAINING URETHANE COATING COMPOSITION

Gerald R. Skreckoski, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 24, 1963, Ser. No. 290,155
13 Claims. (Cl. 260—22)

1. A coating composition characterized by excellent retention of gloss on weathering consisting essentially of a reaction product dissolved in an inert organic solvent of an isocyanate selected from the group consisting of methylene-bis-(4-cyclohexylisocyanate) and an adduct of methylene-bis-(4-cyclohexylisocyanate) with a polyhydroxy organic compound, said adduct having free isocyanato groups, and a polyester of a fatty acid having free hydroxyl groups having a hydroxy number of at least 30 formed from a fatty acid and a polyol having a molecular weight of from 62 to 164, the ratio of NCO groups to hydroxyl groups of said reaction product being within the range of 1.5 to 1.0.

3,346,525
NON-YELLOWING BAKING-TYPE MALIC ACID MODIFIED STYRENATED ALKYD/AMINE RESIN COATING COMPOSITIONS AND THE MALIC ACID MODIFIED STYRENATED ALKYDS THEREOF

Bernard C. McAvoy, San Francisco, Calif., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 25, 1964, Ser. No. 347,120
20 Claims. (Cl. 260—22)

1. A resinous non-yellowing composition which is a styrenated, fatty-acid-modified, malic-acid-modified alkyd having the following materials interesterified and copolymerized: (a) fatty acids selected from the group consisting of soybean oil acids, safflower oil acids, dehydrated castor oil acids, tall oil acids, and mixtures thereof, 19–34% by weight; (b) saturated aliphatic polyols having 3–6 carbons and at least 3 esterifiable hydroxyls, 8.5–15%; (c) non-ethylenic carboxylic acid having 8–10 carbons and 2 esterifiable carboxyl groups, 13–22% by weight; (d) malic acid, 1–4% by weight; and (e) styrenating material selected from the group consisting of styrene and the vinyl toluenes, 34–50% by weight; said percentages being based on the total starting materials and totaling

100%, and said resinous composition being further characterized (A) by having the total number of alcoholic hydroxyl groups in the starting materials present in about a 4–10 molar percent excess over the total number of carboxyl groups in said starting materials, and (B) by having the molar ratio of total fatty acid carboxyl groups to total alcoholic hydroxyl groups at about 1 to 3–3.4.

3,346,526
THERMALLY STABLE INKS FOR PRINTING OF POLYVINYL BUTYRAL

Francis T. Buckley, Hampden, and Lionel N. Finch, Springfield, Mass., and Ira L. Seldin, Rochester, N.Y., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 21, 1965, Ser. No. 449,857
1 Claim. (Cl. 260—29.1)

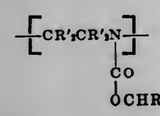
An ink of improved thermal stability adapted for gravure printing on polyvinyl butyral sheets the said ink having a viscosity of 10 to 500 cps. and comprising an admixture of (a) a dye selected from the class consisting of dyestuffs having 2 to 4 cyclic nuclei in the dye molecule and mixtures of the same, (b) 25 to 100% by weight of a polyvinyl butyral resin based on the weight of said dyestuff, the said resin containing up to 25% hydroxyl groups calculated as polyvinyl alcohol and up to 10% acetate groups calculated as polyvinyl acetate, (c) 1500 to 4000 parts by weight based on 100 parts by weight of said resin of a solvent for said resin and said dye and (d) 25 to 350 parts by weight based on 100 parts by weight of the dyestuff of the thermal stabilizer tri-isoctyl phosphite.

3,346,527
METAL COMPLEX-FORMING COMPOUNDS AND PROCESS OF MAKING AND USING SAME

Paul Lagally, State College, Pa., assignor to Chemirad Corporation, East Brunswick, N.J., a corporation of Delaware

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,887
12 Claims. (Cl. 260—29.2)

1. The water-soluble reaction product of a polyalkylene imine having from 800 to 3,000 polymeric units and the cyclic ester of a polyalcohol and carbonic acid having, within the polyalkylene imine chain, units of the formula:



where R is selected from the class consisting of hydrogen, lower alkyl, and methylol; and R′ is selected from the class consisting of hydrogen, alkyl, cycloalkyl, aryl, and aralkyl.

3,346,528
PROCESS OF CRYSTALLIZING ISOTACTIC POLYSTYRENE

Robert J. Slocombe and Ival O. Salyer, Dayton, Ohio, and Seymour Newman, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

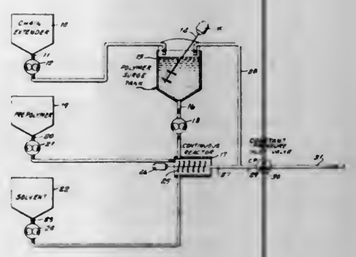
No Drawing. Filed Dec. 30, 1958, Ser. No. 783,693
19 Claims. (Cl. 260—30.6)

1. The method of promoting the crystallization of isotactic polystyrene which comprises forming a composition comprising isotactic polystyrene and a high boiling organic liquid of boiling point of at least 200° C. and solubility parameter from 8 to 11 in amount of 25% to 45% by weight of the composition, forming said mixture into a desired configuration, and heat treating to induce crystallinity.

3,346,529
CONTINUOUS PROCESS OF PRODUCING SOLUTIONS OF SUBSTANTIALLY LINEAR POLYURETHANES

Timothy Victor Peters, Tewkesbury Township, N.J., assignor to Ameliotex, Inc., New York, N.Y., a corporation of New York

Filed Jan. 4, 1965, Ser. No. 423,285
7 Claims. (Cl. 260—32.6)



2. A continuous process of producing a solution of substantially linear polyurethanes comprising passing continuously into a mixing zone a stream of a substantially linear isocyanate terminated prepolymer, a stream of a chain extender containing substantially two active hydrogen atoms capable of reacting with terminating isocyanate groups of said prepolymer, a stream of a solution of substantially linear polyurethanes having a solids content of 15 to 25% and a stream of a solvent for said polyurethanes, the amount of said solution of said linear polyurethanes introduced into said mixing zone being 70 to 85% of the total volume introduced into said mixing zone, said prepolymer being the reaction product of a diisocyanate and a member selected from the class consisting of polyether glycols, polyester glycols and mixtures of said polyether glycols and said polyester glycols.

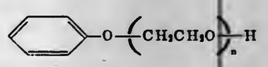
7. A continuous process of producing a solution of substantially linear polyurethanes in accordance with claim 2, in which the chain extender is ethylene diamine, the solvent is dimethyl formamide and the substantially linear isocyanate terminated prepolymer is the reaction product of poly(neopentyladipate) glycol having a molecular weight of about 2000 and a 100% mole excess of methylene-bis-(4-phenylisocyanate).

3,346,530
POLYVINYL ALCOHOL COMPOSITIONS PLASTICIZED WITH MONOPHENYL ETHERS OF POLYOXY ETHYLENE GLYCOLS

Joseph G. Martins, Ludlow, Mass., assignor, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 31, 1963, Ser. No. 299,081
1 Claim. (Cl. 260—33.2)

A polyvinyl alcohol resin composition consisting essentially of a mixture of 95 to 75 parts by weight of a polyvinyl alcohol containing from 28 to 43% by weight of residual acetate groups, calculated as polyvinyl acetate, and having a viscosity of 4 to 60 centipoises as a 4% by weight aqueous solution at 20° C., with 5 to 25 parts of a water-dispersible plasticizer having the general formula



in which *n* is an integer within the range of about 3 to about 15.

3,346,531
INTERPOLYMERS OF A MONOVINYL AROMATIC MONOMER, ALPHA METHYL STYRENE, A MONO-BASIC ACIDIC MONOMER AND AN ACRYLONITRILE

John F. Rooney and Edward W. Boulger, Kankakee, Ill., assignors, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Jan. 6, 1965, Ser. No. 423,867
10 Claims. (Cl. 260—33.4)

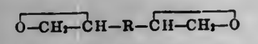
1. A carboxyl functional interpolymer consisting essentially of from about 2 to about 8 weight percent of moieties of at least one nitrile monomer of the group consisting of acrylonitrile and methacrylonitrile, from about 4 to about 12 weight percent of moieties of at least one acidic monomer of the group consisting of acrylic acid, methacrylic acid and crotonic acid, from about 10 to about 25 weight percent of alpha methyl styrene moieties and from about 55 to about 84 weight percent of moieties of at least one vinyl aromatic monomer of the group consisting of styrene and vinyl toluene.

3,346,532
ELASTOMERIC COPOLYMERS FROM DIHYDRIC PHENOLS AND ORGANIC DIEPOXIDES, THEIR PREPARATION AND CURE

Charles E. Greene, Akron, and Willem J. van Essen, Tallmadge, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,939
18 Claims. (Cl. 260—37)

2. An elastomeric material being a reaction product of (A) a component consisting essentially of dihydric phenols having an average molecular weight ranging from 110 to about 140 and (B) a component consisting essentially of organic diepoxides having an average molecular weight no greater than about 300, each organic diepoxide having the general formula



in which R is a divalent organic radical free of any function reactive to phenolic hydroxyl groups and containing in the main chain at least about six atoms selected from the group consisting of at least four carbon atoms and ethereal oxygen atoms, the ratio of said oxygen atoms to said carbon atoms being no greater than 1:2, at least 70% of all the carbon atoms in the R radicals of the diepoxides in component (B) being acyclic, in the presence of a tertiary amine catalyst at a temperature of from about 100° C. to about 150° C. until the reaction product attains a Williams plasticity number of at least about 50.

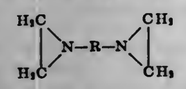
6. A composition consisting essentially of the reaction product of claim 2 and from about 10 to about 60 percent by weight of a reinforcing filler based on the weight of said reaction product.

3,346,533
RAPID CURING MIXTURE OF AN EPOXY RESIN, A DIPHENOL AND A DIAZIRIDENE COMPOUND

Greene W. Strother, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 2, 1963, Ser. No. 313,153
11 Claims. (Cl. 260—32.8)

1. A thermosetting resin comprising a mixture of a diepoxide containing 1,2-epoxide groups, a diphenol and a diaziridine compound having the general formula



where R is selected from the class consisting of aromatic, substituted aromatic and aliphatic groups containing up to about six carbon atoms; said diepoxide, diphenol and diaziridine mixed in a molar ratio between about 1:0.75:0.75 and about 1:1.5:1.5, respectively.

3,346,534
RESINOUS FOUNDRY CORE BINDER

Charles Tyler Bills, South Plainfield, and Peter A. Yurcick, South River, N.J., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No drawing. Filed June 18, 1964, Ser. No. 376,267
9 Claims. (Cl. 260—39)

1. Process of producing a resinous composition adapted for use as a foundry core binder which comprises forming a mixture of urea and for each mol thereof from about 2.0 to about 4.5 mols of formaldehyde and from about 0.20 to about 1.5 mols of furfuryl alcohol and from about 0.01 to about 0.5 mol of a compound selected from the group consisting of melamine, dicyandiamide, benzoguanamine and mixtures thereof, and condensing said mixture at elevated temperature to form a resinous composition.

3,346,535
CARBON GRAFT POLYMERS

Henri G. G. Dekking, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,538
9 Claims. (Cl. 260—41.5)

1. A composition comprising carbon ionically bonded to a polymer through a basic nitrogen cationic radical terminally positioned on said linear polymer, said polymer being derived by the polymerization of at least an ethylenically unsaturated monomer through aliphatic unsaturation.

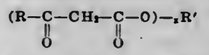
7. The method for propagating a polymer from the surface of carbon that comprises reacting a cationic organic azo compound with carbon having a base exchange capacity of at least one milliequivalent per 100 grams under base exchange conditions so as to form an ionic bond between carboxylic acid radicals that occur on said carbon surface and the basic nitrogen cationic radical of said cationic organic azo compound, thereby forming a carbon-azo complex, mixing said carbon-azo complex with an ethylenically unsaturated monomer that undergoes free radical polymerization through aliphatic unsaturation and heating the mixture to decompose the azo radical of said complex by homolytic fission and thereby obtain free radicals which are ionically bonded to said carbon and which initiate polymerization of said monomer to propagate said polymer from said carbon.

3,346,536
PVC RESIN CONTAINING A KETO ACETIC (A) ACID ESTER OR (B) ANHYDRIDE, AND A METAL (A) PHENOLATE OR (B) CARBOXYLIC ACID SALT

Otto S. Kauder, Jamaica, and Norman L. Perry, Baldwin, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York

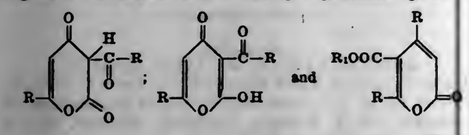
No Drawing. Filed Jan. 22, 1964, Ser. No. 339,344
16 Claims. (Cl. 260—45.85)

1. A polyvinyl chloride stabilizer composition capable of improving the initial clarity and resistance to deterioration when heated at 350° F. of polyvinyl chloride resins, consisting essentially of a nitrogen-free keto acetic acid compound having at least 8 carbon atoms, selected from the group consisting of keto acetic acid esters having the formula:



wherein R is an inert organic group having from one to about thirty carbon atoms, R′ is an inert organic radical

having from one to about thirty carbon atoms, and x is a number from one to ten; and acid anhydride dimers having the formula selected from the group consisting of:



wherein R_1 is selected from the group consisting of hydrogen and R', and R and R' are as above; and a metal compound selected from the group consisting of the alkali and alkaline earth metal salts of non-nitrogenous monocarboxylic organic acids having from six to twenty-four carbon atoms, except in the case of alkali and alkaline earth metal salts of keto acetic acids, having from four to thirty-three carbon atoms, and of hydrocarbon-substituted phenols having from about four to about twenty-four carbon atoms in the hydrocarbon group, the keto acetic acid compound being present in an amount sufficient to enhance the initial clarity and color of any resin stabilized by the metal compound.

12. A polyvinyl chloride resin composition having improved initial clarity and resistance to deterioration when heated at 350° F., consisting essentially of a polyvinyl chloride resin and a stabilizer composition in accordance with claim 1 in a stabilizing amount.

3,346,537

POLYOXYMETHYLENE COMPOSITIONS

Vivien Griffiths, Welwyn Garden City, and John Carswell McGowan, Harpenden, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,521
Claims priority, application Great Britain, Nov. 16, 1961, 41,039/61; Jan. 30, 1962, 3,474/62
13 Claims. (Cl. 260—45.85)

1. A polymeric composition with improved stability to autoxidative degradation at elevated temperatrues comprising 100 parts of an oxymethylene polymer selected from the group consisting of homopolyoxymethylenes and oxymethylene copolymers with a copolymerizable constituent selected from the group consisting of oxacyclic compounds, ethylenically unsaturated compounds containing at least one carbon-to-carbon double bond and preformed polymers selected from the group consisting of polyformals, polyglycols, polythiols, and polysiloxanes and polymers derived from ethylenically unsaturated compounds which contain groups reactive with formaldehyde, in which at least 85 units for every 100 units in the polymer chain are oxymethylene units, and at least 0.05 part of at least one quinone selected from the group consisting of 2,5-dianilino-p-benzoquinone, 2,5-dianilino-3,6-dichloro-p-benzoquinone, 2-anilinoanthraquinone, 1,2-dihydroxy-5,8-di-(p-methylanilino)-anthraquinone, 1,5 - dihydroxy-4-anilino-8-nitroanthraquinone, 2,7-dinitroanthraquinone, 1,5-dihydroxy-4,8-dinitroanthraquinone, benzyl 1-nitroanthraquinone-2-carboxylate, 4-nitrophenanthraquinone and 2,7-dinitrophenanthraquinone.

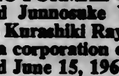
3,346,538

HIGH MOLECULAR WEIGHT DICHLOROACETALDEHYDE HOMOPOLYMERS AND METHOD OF PREPARATION

Clarence L. Sturm, Donald E. Hudgin, and Irving Rosen, Painesville, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed July 29, 1963, Ser. No. 298,409
13 Claims. (Cl. 260—67)

1. A normally solid, easily processible thermoplastic polymer comprising a homopolymer containing per linear polymeric chain at least 180 repeating units derived from dichloroacetaldehyde monomer which have the structure



the said dichloroacetaldehyde polymer having a reduced viscosity of at least 1.0 as determined at 25° C. employing a 0.1% solution of the polymer in tetrahydrofuran and exhibiting a high degree of fire retardance.

2. A process for preparing a dichloroacetaldehyde polymer having a high average molecular weight which comprises polymerizing, under substantially anhydrous conditions and in the presence of a polymerization catalyst selected from the group consisting of halides of aluminum, boron, tin, titanium, zirconium, strontium, niobium, and coordinate complexes of such metal halides with organic compounds in which oxygen or sulfur is the donor atom, dichloroacetaldehyde monomer which has the structure $CHCl_2$—CHO and recovering a solid polymer having an average molecular weight of at least 20,000.

3,346,539

TRIOXANE-GLYCIDALDEHYDE COPOLYMERIZATION

Irving Rosen, Painesville, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Mar. 26, 1964, Ser. No. 355,100
6 Claims. (Cl. 260—67)

1. A process for preparing a copolymer composition having a high degree of thermal stability which comprises reacting under substantially anhydrous conditions, at a temperature ranging from 40° to 80° C. and for a time period of from 1 hour to 30 hours, a major amount of trioxane and a minor amount of glycidaldehyde in the presence of between 0.005 to about 0.6 millimol per mol of trioxane, of a polymerization catalyst selected from the group consisting of Lewis acids and coordinate complexes of metal halides with organic compounds in which the donor atom is selected from the group consisting of oxygen, nitrogen and sulfur; and recovering a solid copolymer containing from about 95 up to 99.9 percent of recurring oxymethylene units and from about 0.1 up to about 5 percent of recurring units derived from glycidaldehyde, the said copolymer composition having a reaction rate constant for thermal degradation at 245° C. of no more than 0.5 weight percent per minute.

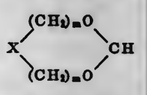
3,346,540

PROCESS FOR THE PRODUCTION OF FORMALDEHYDE-CYCLIC FORMAL COPOLYMERS

Tamotsu Eguchi and Junnosuke Yamauchi, Kurashiki, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed June 15, 1964, Ser. No. 375,385
Claims priority, application Japan, June 20, 1963, 38/259
4 Claims. (Cl. 260—67)

1. A process for the production of high molecular weight formadehyde copolymers having improved thermal stability which comprises contacting the ingredients of a mixture consisting essentially of an acidic catalyst, formaldehyde and a cyclic formal represented by the structure



wherein X is selected from the group consisting of O, S, NH and NR in which R is lower alkyl group and m is an integer selected from 2 and 3, said cyclic formal being used in the amount from 0.1 to 20 moles per 100 moles of formaldehyde.

3,346,541

PROCESS FOR MANUFACTURING LINEAR FIBER AND FILM FORMING POLYESTERS BY POLYCONDENSATION IN THE PRESENCE OF A TITANIUM ALKOXIDE CATALYST AND A GERMANIUM COMPOUND

Trevor Davies, Norman Fletcher, and James Eric McIntyre, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,266
Claims priority, application Great Britain, Mar. 9, 1961, 8,671/61
7 Claims. (Cl. 260—75)

1. A process for the manufacture of linear fiber and film-forming polyesters which comprises reacting and polycondensing ethylene glycol with an ester-forming derivative of terephthalic acid, in the presence, at least during the polycondensation step, of about 0.02% of a titanium alkoxide, together with about 0.035% of a member of the group consisting of germanium alkoxide, germanium dioxide and germanium tetrachloride, the percentages based upon the weight of the ester-forming derivative of terephthalate acid.

3,346,542

ADDITION OF CALCIUM HEXAFLUOROSILICATE OR HEXAFLUOROSILICIC ACID AS HAZE INHIBITOR DURING TWO-STAGE CATALYTIC PRODUCTION OF POLYETHYLENE TEREPHTHALATE

Hans-Martin Koepp, Obernburg (Main), Erhard Siggel, Laudenbach (Main), and Hilmar Roedel, Elsenfeld, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,846
Claims priority, application Germany, Mar. 9, 1963, V 23,779
9 Claims. (Cl. 260—75)

1. In the production of polyethylene terephthalate by a first stage ester-interchange between dimethyl terephthalate and ethylene glycol in the presence of an alkaline earth metal transesterification catalyst followed by a second stage catalytic polycondensation of the resulting diglycol terephthalate, the improvement which comprises: carrying out said second stage polycondensation in the presence of a polycondensation catalyst while introducing as a haze inhibitor after substantial completion of said transesterification at least about 0.001 mol percent, with reference to the initial dimethyl terephthalate, of an additive selected from the group consisting of hexafluorosilicic acid and calcium hexafluorosilicate and mixtures thereof.

3,346,543

METHOD OF PRODUCTION OF PHOSPHORUS CONTAINING POLYAMIDES

Boris Alexandrouvich Arbuzov, Kazan, Mark Abramovich Sokolovsky and Pavel Moiseevich Zavlin, Leningrad, and Galina Mikhailovna Vinokurova, Kazan, U.S.S.R., assignors to Institute Organicheskoi Khimii

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,383
8 Claims. (Cl. 260—78)

1. A method for the production of polyamide-type phosphorus-containing polymers with self-quenching properties according to which polycondensation is carried out in the presence of salt of aliphatic phosphorus-containing dicarboxylic acid with aliphatic diamine and lactam of aminocarboxylic acid and at a temperature of 200 to 240° C., the relative portions of the three starting components being approximately equimolar.

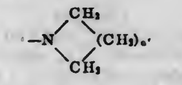
3,346,544

VULCANIZATION ACCELERATORS

Kamal Naguib Ayad, Wrexham, and Alan Jeffrey Neale, Llangollen, Wales, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Sept. 5, 1963, Ser. No. 306,707. Divided and this application Oct. 26, 1966, Ser. No. 589,538
Claims priority, application Great Britain, Sept. 17, 1962, 35,256/62
20 Claims. (Cl. 260—79.5)

17. A process for the vulcanization of a sulfur-vulcanizable rubber which comprises incorporating into the rubber a vulcanizing agent and an accelerating amount of a compound of the formula $R(A—R')_n$ where n is an integer equal to the valence of R and R is an amino radical nitrogen of which is attached to A and is 1,4-piperazinyl, morpholino,

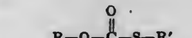


where n' is an integer at least 2 but less than 5, or



where X and Y are hydrogen, alkyl of 1–6 carbon atoms inclusive, cyclohexyl, benzyl or phenyl, A is lower alkylene, and R' is an amino radical nitrogen of which is attached to A and is a thionopyridyl radical or a thionoquinolyl radical.

19. A process for the vulcanization of a sulfur-vulcanizable rubber which comprises incorporating into the rubber a vulcanizing agent and an accelerating amount of a compound of the formula



where R is a straight or branched chain alkyl of 1–12 carbon atoms inclusive, cyclohexyl or methylcyclohexyl and R' is 2-pyridyl or 2-quinolyl.

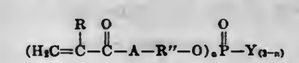
3,346,545

OLEFINICALLY UNSATURATED PHOSPHATE AND PHOSPHONATE MONOMERS AND PROCESS FOR MAKING SAME AND POLYMERS THEREFROM

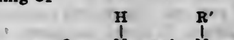
Eugene J. Sehm, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,899
15 Claims. (Cl. 260—89.5)

1. A polymerizable monomer having the structure



wherein R is a member selected from the group consisting of hydrogen and methyl; A is a member selected from the group consisting of



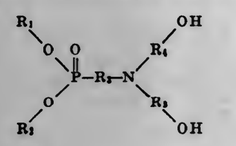
wherein R' is an alkyl group having from 1 to 4 carbon atoms; R'' is a straight chain, branched or cyclic bivalent hydrocarbon radical having from 1 to 6 carbon atoms; Y is a member selected from the group consisting of chlorine, bromine, fluorine, alkyl radicals having from 1 to 6 carbon atoms and aryl radicals having from 6 to 10 carbon atoms; and n is an integer between 2 and 3.

3,346,546
HIGH ENERGY PROPELLANT BINDERS
Leland K. Beach, Westfield, John Brooke Gardiner, Mountainside, and Richard P. Rhodes, Newark, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 21, 1960, Ser. No. 77,466
11 Claims. (Cl. 260—94.7)

1. A modified unsaturated carbon chain polymer containing an NF_2 group linked to each of a number of carbon atoms in said chain, and linked to carbon atoms in said chain a cross-linking function selected from the group consisting of carboxy acid, amide, oxyhalide, epoxide, acid ester, isocyanate and acid anhydride, the thus linked NF_2 groups giving the modified polymer an N_2F_4 content in the range of 34.7 to 62.7 wt. percent.

3,346,547
EXTRUSION OF POLYOLEFINS
David Cohen, Holmdel, N.J., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,350
2 Claims. (Cl. 260—94.9)

1. A composition comprising a blend of high density polyethylene having incorporated therein about 0.01 to 0.10% by weight based on the weight of the polyethylene of an organic ester of a phosphonic acid having the structural formula



where R_1 and R_2 are alkyl radicals having 1 to 6 carbon atoms and R_3, R_4, and R_5 are alkylene radicals having 1 to 6 carbon atoms.

3,346,548
EXTRUSION OF POLYOLEFINS
George B. Feild, New Castle, and Stuart B. Monroe, Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del.
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,351
1 Claim. (Cl. 260—94.9)

A composition comprising a blend of high density polyethylene having incorporated therein about 0.01 to 0.10% by weight based on the weight of the polyethylene of bis(triethylene glycol) hydroxymethanephosphonate.

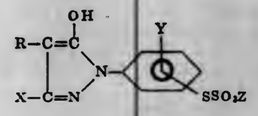
3,346,549
METHOD OF PREPARING AN OIL SOLUBLE SULFUR AND HALOGEN CONTAINING OLEFIN POLYMER AND PRODUCT
John Frederick Ford and Eric Simon Forbes, Sunbury-on-Thames, Middlesex, England, assignors to The British Petroleum Company Limited, London, England, a corporation of London
No Drawing. Filed June 3, 1964, Ser. No. 372,365
Claims priority, application Great Britain, June 14, 1963, 23,782/63
7 Claims. (Cl. 260—139)

1. A method of preparing an oil soluble, sulphur- and halogen-containing olefin polymer, which comprises: reacting a feed olefin selected from the group consisting of methyl-substituted alpha-butene, methyl-substituted alpha-pentene, and methyl-substituted alpha-hexene with a sulphur compound selected from the group consisting of sulphur chlorides, sulphur oxychlorides, sulphur bromides and sulphur oxybromides in the presence of a Friedel Crafts catalyst and at a temperature within the range of 50° to —120° C., wherein the said sulphur compound is present in an amount from 0.1–25 moles per 100 moles of said feed olefin and wherein the molar amount of said Friedel Crafts catalyst is greater than the molar amount of said sulphur compound.

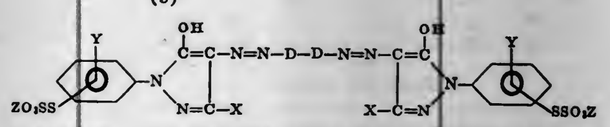
7. A sulphur- and halogen-containing polymer prepared by a method according to claim 1.

3,346,550
AZO DYESTUFFS CONTAINING THIOSULFATO-ARYLPYRAZOLONE GROUPS
Gordon A. Geselbracht, Charlotte, N.C., assignor to Martin-Marietta Corporation, a corporation of Maryland
No Drawing. Filed Apr. 11, 1966, Ser. No. 541,514
14 Claims. (Cl. 260—145)

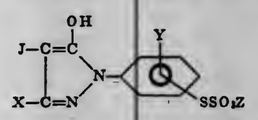
1. A dyestuff selected from the group consisting of:
(a)



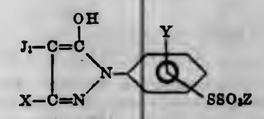
(b)



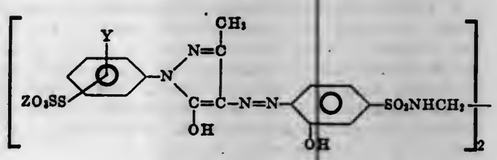
(c) 1:1 copper, 1:1 cobalt, 1:1 chromium, 1:1 nickel, 1:1 iron, 1:2 chromium, 1:2 cobalt, or 1:2 nickel complex compounds of an azo dye of the formula



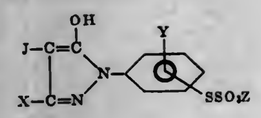
(d) 1:1 copper, 1:1 cobalt, 1:1 chromium, 1:1 nickel, or 1:1 iron complex compounds of an azo dye of the formula



and
(e) the metal complex compound resulting from simultaneous reaction of 1 molecular proportion of an azo dyestuff of the formula

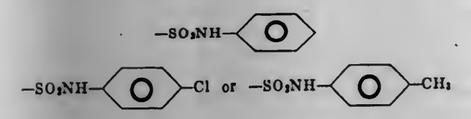


2 molecular proportions of



and 2 atomic proportions of Co, Cr, or Ni, said reactants being in solution; wherein:

R is the radical of a diazo compound of the benzene or naphthylene series connected to the adjoining carbon of the pyrazolone ring by an azo group of said radical of the diazo compound;
X is hydrogen, phenyl, chlorophenyl, methoxyphenyl, ethoxyphenyl, nitrophenyl, tolyl, naphthyl, furyl, methoxycarbonyl, ethoxycarbonyl, carboxy, methyl, ethyl, propyl or isopropyl;
Y is hydrogen, halogen, methyl, ethyl, methoxy, ethoxy, $—SO_2NH_2$, $—SO_2NHCH_3$,



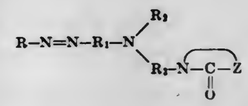
Z is H, Na, K, or NH_4;
D is an arylene group of the naphthylene or phenylene series;
J is the radical of a diazo compound of the benzene series having a metallizable substituent on an aromatic portion thereof, a ring C atom of which aromatic portion is linked to the C atom of the pyrazolone ring via an azo group of the radical of the diazo compound, and in which the metallizable substituent is located ortho to said azo group;
J_1 is the radical of a diazo compound of the benzene series connected to the adjoining carbon of the pyrazolone ring by an azo group of said radical of the diazo compound, said radical of the diazo compound being further characterized in having an aromatic portion bearing two metallizable substituents ortho to each other;
and in which the SSO_3Z group is located meta or para with respect to the N attached to the benzene nucleus.

3,346,551
CRYSTALLINE MODIFICATIONS OF PERYLENE-3,4,9,10-TETRACARBOXYLIC ACID BIS-(4-PHENYLAZO)-PHENYLIMIDE
Ernst Anton, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- und Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Aug. 14, 1963, Ser. No. 302,141
Claims priority, application Germany, Aug. 16, 1962, B 68,460
3 Claims. (Cl. 260—152)

1. As a bluish red pigment dye, perylene-3,4,9,10-tetracarboxylic acid bis-[(4-phenylazo)-phenylimide] in α-modification, having an X-ray diffraction pattern exhibiting two strong lines at a double glancing angle of 5.1°, and 14.7°, a medium line at 10.5° and nine weak lines at 17.7°, 19.4°, 21.2°, 22.3°, 23.6°, 25.4°, 26.0°, 27.4° and 29.0°.

3,346,552
MONOAZO DYES FOR SYNTHETIC FIBERS
James M. Straley, David J. Wallace, and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 17, 1964, Ser. No. 390,211
10 Claims. (Cl. 260—158)

1. Azo compounds having the formula



wherein:

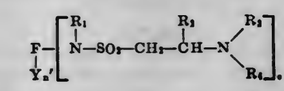
R=a 2-benzothiazolyl radical,
R_1=a phenylene radical,
R_2=a member of the class consisting of hydrogen and a lower alkyl radical,
R_3=lower alkylene, and
Z=the carbon atoms which with



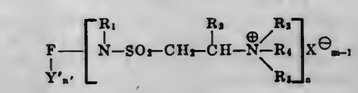
complete a pyrrolidinono radical, a piperidono radical, or a phthalimidino radical, said compounds being free of water-solubilizing groups.

3,346,553
AZO-DYESTUFFS CONTAINING AMINOALKYLENESULFONYLAMINO GROUPS
Rudolf Kuhne and Fritz Meininger, Frankfurt am Main, Germany, and Rolf Pfirrmann, Lucerne, Switzerland, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Oct. 2, 1963, Ser. No. 313,156
Claims priority, application Germany, Oct. 3, 1962, F 37,950
6 Claims. (Cl. 260—163)

1. A compound of the formula



or



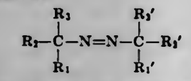
wherein F represents a monoazo or disazo dyestuff molecule containing at least one benzene ring and one naphthol or pyrazolone group; the group shown within the brackets being connected to a benzene ring or naphthol group of said dyestuff molecule directly or by means of methylene, R_1 and R_2 represent hydrogen or lower alkyl, R_3, R_4 and R_5 taken alone represent hydrogen, methyl, ethyl or phenyl, R_3 and R_4 taken together represent pentamethylene, R_3, R_4 and R_5 taken together with the nitrogen atom represent pyridinium, $X^{\ominus}$ represents chlorine, hydrogen sulfate or methosulfate, Y represents $—SO_3H$ or —COOH, Y′ represents $—SO_3H$, $—SO_3^{\ominus}$, —COOH or $COO^{\ominus}$, *n* represents 1 to 3, *n′* represents 0 to 3 and *m* represents 1 to 4.

3,346,554
PROCESS OF PREPARING SYMMETRICAL AZO COMPOUNDS

Julius Jakob Fuchs, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

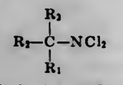
No Drawing. Filed Sept. 16, 1964, Ser. No. 397,022
1 Claim. (Cl. 260—192)

A process for preparing symmetrical azo compounds of the following formula

(1) 

wherein R_1 and R_1 are the same, R_2 and R_2 are the same and R_3 and R_3 are the same,

comprising coupling an N-dichloro-amino compound of the following formula

(2) 

wherein R_1 is an alkyl of 1 to 6 carbon atoms; R_2 is an alkyl of 1 to 6 carbon atoms, or a cycloalkyl of 3 to 6 carbon atoms; and R_3 is —CN, —COOM, or —COOR

wherein M is an alkali metal or an alkaline earth metal and R is an alkyl of 1 to 6 carbon atoms; with the limitation that R_1 and R_2 together can be cycloalkyl of 5 to 12 carbon atoms and with the further limitation that R_1 and R_2 must total to more than 4 carbon atoms,

said coupling reaction being carried out in the presence of an inert organic solvent and a base which has an ionization constant greater than 1×10^{-5} and which will not react with chlorine to form N-chloro compounds, at a temperature between the freezing point and boiling point of the reaction mass and separating the symmetrical azo product thus formed.

3,346,555
ADDUCTS OF POLYGALACTOMANNAN GUMS AND PROCESS FOR PREPARING SAME

Robert Nordgren, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,496
5 Claims. (Cl. 260—209)

1. An acrylamide adduct of a polygalactomannan.

3,346,556
TREATMENT OF MANNO GALACTAN GUMS

Stanley E. Foster, Thomaston, Maine, assignor to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,177
10 Claims. (Cl. 260—209)

10. A process for treating a manno galactan gum selected from the group consisting of guar and locust bean gum which comprises subjecting said gum while contained in a dilute aqueous solution at a concentration of approximately 1% to approximately 2% by weight of said gum to conditions of pH and temperature which induce degradation, and increasing the resistance to degradation of said gum which has been subjected to said degradation-inducing conditions by contacting said gum while in said dilute solution at said concentration with a stabilizing liquid selected from the group consisting of methanol, ethanol, N-propanol, isopropanol, N-butanol, isobutanol, secondary butanol, tertiary butanol, ethylene glycol, trimethylene glycol, propylene glycol, glycerol, sorbitol, acetone and tetrahydrofuran, said stabilizing liquid being present in an amount that is at least about 0.95% by weight and that is insufficient to cause substantial coagulation of said gum in said solution.

3,346,557
PROCESS FOR OXYALKYLATING SOLID POLYOLS

John T. Patton, Jr., Wyandotte, and Walter F. Schulz, Southgate, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed June 4, 1965, Ser. No. 461,502
The portion of the term of the patent subsequent to June 22, 1982, has been disclaimed
6 Claims. (Cl. 260—209)

1. A process for oxyalkylating a normally solid polyol, which comprises, mixing and heating to from 85° C. to 170° C. in the presence of an amine catalyst (1) a vicinal alkylene oxide, (2) a normally solid organic polyol having 3 to 8 hydroxyl radicals per molecule, and (3) a substantially water-free adduct of a normally solid organic polyol having 3 to 8 hydroxyl radicals per molecule with from 0.5 to 1.5 moles of a vicinal alkylene oxide per hydroxyl radical of said polyol, said organic polyol having a melting point of at least 100° C. and being selected from the group consisting of pentaerythritol, dipentaerythritol, tripentaerythritol, trimethylolethane, inositol, monosaccharides, disaccharides, sorbitol and fructose, said alkylene oxide being selected from the group consisting of ethylene oxide, propylene oxide, 1,2-butylene oxide, 2,3-butylene oxide, isobutylene oxide, butadiene monoxide, styrene oxide, cyclohexene oxide, butadiene dioxide, methyl glycidyl ether, phenyl glycidyl ether and mixtures thereof, said catalyst being selected from the group consisting of tetramethylethylenediamine, tetramethylbutanediamine, tetramethylguanidine, trimethylpiperazine, and tributylamine, the amount of said adduct employed being sufficient so that it is the solvent and reaction medium for the process and the amount of said solid organic polyol that is employed being at least sufficient so that the polyol is oxyalkylated by the vicinal alkylene oxide under the conditions of the process.

3,346,558
CONTINUOUS PROCESS FOR PREPARING POLYOL GLYCOSIDES

Claris Deane Roth, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Nov. 19, 1965, Ser. No. 508,825
16 Claims. (Cl. 260—210)

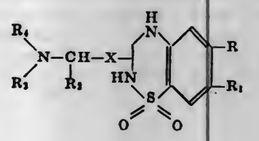
1. A continuous process of preparing polyol-glycosides which comprises subjecting a superficially dry composition comprising starch, polyol and acid to intense mechanical working or shearing in the barrel of an extruder at a temperature and pressure substantially above the autogenous vapor pressure of the composition, whereby the composition is converted into polyol-glycosides and continuously recovering said polyol-glycosides.

3,346,559
ALKYLAMINO-ALKYL-(RUTIN OR HESPERIDIN)-3,4 - DIHYDRO - 1,2,4 - BENZOTHIADIAZINE-1,1 - DIOXIDES AND METHOD FOR MAKING THE SAME

Josef Klosa, Berlin, Germany, assignor to Dr. med. Hans Voigt, Chem. Pharm. Fabrik, Berlin-Waldmannsust, Germany

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,116
7 Claims. (Cl. 260—210)

1. A compound of the formula:



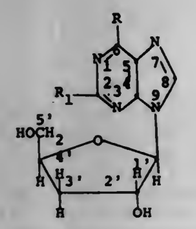
wherein X is a molecule selected from the group consisting of rutin and hesperidin, R is selected from the group consisting of H, halogen, lower alkyl, and halo-lower alkyl; R_1 is selected from the group consisting of H, halogen and sulfonamido; R_2 is selected from the group consisting of H, alkyl containing from 1 to 6 carbon atoms, cyclopentyl, cyclohexyl, phenyl, and benzyl; R_3 and R_4 are selected from the group consisting of H, alkyl containing from 1 to 5 carbon atoms, cyclopentyl, cyclohexyl and benzyl, and a closed heterocyclic nitrogen ring structure formed by R_3 and R_4 selected from the group consisting of piperidine, morpholine, and pyrrolidine.

3,346,560
PURINE 3-DEOXYNUCLEOSIDES

George E. Boxer, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,162
9 Claims. (Cl. 260—211.5)

1. A compound of the structural formula



wherein R is hydrogen, halogen, mercapto, or lower alkyl substituted amino when R′ is hydrogen; and

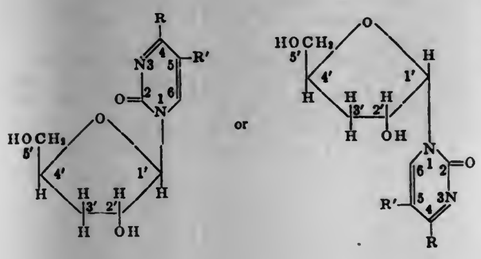
wherein R is amino or hydroxy when R′ is amino; provided also that when R is hydroxy the ribofuranosyl moiety may also be joined to the purine at the 7-position.

3,346,561
PYRIMIDINE 3-DEOXYNUCLEOSIDES

George E. Boxer, Westfield, and Ruth F. Nutt, Cranford, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,029
15 Claims. (Cl. 260—211.5)

1. Compounds of the formula



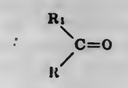
wherein R and R′ may be the same or different lower alkoxy, hydroxy, amino, or lower alkyl substituted amino, in addition, R′ may also be hydrogen, lower alkyl, or halogen; however R′ cannot be hydrogen when R is hydroxy.

3,346,562
METHOD FOR THE PRODUCTION OF RIBONUCLEOSIDE-5′-PHOSPHATE

Mikio Honjo, Takatsuki, and Ryuji Marumoto, Minoo, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed May 31, 1966, Ser. No. 553,718
Claims priority, application Japan, May 29, 1965, 40/31,814
9 Claims. (Cl. 260—211.5)

1. A method for producing ribonucleoside-5′-phosphate from the corresponding ribonucleoside, which comprises allowing the ribonucleoside to react with aliphatic ketone having 3 to 6 carbon atoms and having the formula



wherein each of R_1 and R_2 is alkyl, and with phosphorus trichloride in the presence of water and oxygen, and subsequently hydrolyzing the resulting product into ribonucleoside-5′-phosphate.

3,346,563
PREPARATION OF QUATERNARY AMMONIUM STARCH ETHERS

Paul R. Shildneck and Robert J. Hathaway, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,264
16 Claims. (Cl. 260—233.3)

1. A method of preparing a cationic starch ether that comprises reacting starch and a quaternary halohydrin salt with an alkaline catalyst, said halohydrin salt being obtained by reacting hypohalous acid with an allyl quaternary halide salt of a tertiary amine, said allyl salt being essentially free from excess allyl halide and allyl alcohol, said tertiary amine being selected from the group consisting of (1) tertiary amines whose three nitrogen substituents are selected from the class consisting of alkyl of up to 12 carbon atoms, cyclohexyl, phenyl and benzyl such that, when the three substituents are the same, none has more than 6 carbon atoms and, when any substituent has more than 6 carbon atoms, the other two are alkyl of up to 2 carbon atoms, and (2) heterocyclic tertiary amines wherein the third substituent on the nitrogen of the ring is lower alkyl, the heterocyclic ring being selected from the group consisting of morpholinyl, pyrrolidyl and piperidyl, each having up to one alkyl ring substituent of not more than two carbon atoms.

3,346,564
N-HALOMETHYLCARBONYL-3-AZABICYCLO [3.2.2]NONANES

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 8, 1963, Ser. No. 278,997
2 Claims. (Cl. 260—239)

1. N - halomethylcarbonyl-3-azabicyclo[3.2.2]nonane where the halogen is selected from the group consisting of chlorine, bromine and iodine.

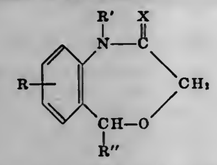
3,346,565

1,2,3,5 - TETRAHYDRO - 4,1 - BENZOXAZEPINES AND 3,5 - DEHYDRO - 4,1 - BENZOXAZEPIN-2-(1H)-ONES

Emilio Testa, Vacallo, Tessin, Switzerland, and Luigi Fontanella, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed May 21, 1964, Ser. No. 369,290
Claims priority, application Great Britain, May 22, 1963, 20,442/63
15 Claims. (Cl. 260—239.3)

1. A compound of the class consisting of 3,5-dihydro-4,1-benzoxazepines of the formula:



wherein R is a member of the class consisting of hydrogen and halogen, R′ is a member of the class consisting of acetyl, propionyl, phenylcarbamyl, chlorobenzoyl, chlorocarbonyl and nitroso groups and a group of the formula

$$-(CH_2)_n-B$$

wherein n is an integer from 1 to 5, and B is a member of the class consisting of dimethylamino, diethylamino, 1-piperidino, and 4-methyl-1-piperazino groups, X is a member of the class consisting of O and H_2, and R″ is a member of the class consisting of hydrogen and the phenyl group.

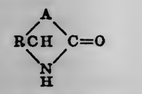
3,346,566

PROCESS OF PREPARING METAL SALTS OF LACTAMS

Max E. Chiddix and Wiley E. Daniels, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,663
6 Claims. (Cl. 260—239.3)

1. The process of preparing metal salts of lactams which comprises heating at reflux 1 equivalent weight of a metal alkoxide of metals of Groups 1 and 2 of the Periodic Table wherein the alkyl group of the alkoxide contains from 1 to 5 carbon atoms with a molecular weight of a lactam having the formula:



wherein R is a member of the class consisting of hydrogen and alkyl of from 1 to 4 carbon atoms and A is an alkylene group of 2 to 10 carbon atoms, in the presence of an inert liquid-suspending agent selected from the group consisting of liquid aliphatic and aromatic hydrocarbons and ethers of at least 6 carbon atoms, removing the alcohol released from said alkoxide and recovering the alkali metal salt of said lactam.

3,346,567

PREPARATION OF ε-CAPROLACTAM

Jan van Westerveld and Guillaume A. T. Sligchers, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,882
Claims priority, application Netherlands, Jan. 19, 1965, 65—631
3 Claims. (Cl. 260—239.3)

1. In processes for the preparation of ε-caprolactam by reaction of ε-caprolactone with ammonia at an elevated temperature in the range of about 200–475° C. and under superatmospheric pressure, followed by removing of ε-caprolactam from the reaction mixture, the improvement consisting essentially in rapidly chilling the reaction mixture to a lower temperature in the range of about 15 to 100° C., and thereafter extracting the ε-caprolactam therefrom.

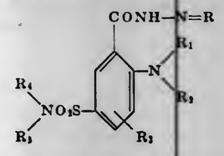
3,346,568

2-AMINO-5-SULFAMYL-BENZOIC ACID HYDRAZIDES

Paul Schmidt, Therwil, Kurt Eichenberger and Max Wilhelm, Basel, and Alberto Rossi, Oberwil, Basel-Land, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 24, 1962, Ser. No. 212,130
Claims priority, application Switzerland, July 28, 1961, 8,917/61; Sept. 14, 1961, 10,685/61; Dec. 1, 1961, 14,013/61; Mar. 15, 1962, 3,140/62; June 22, 1962, 7,538/62
16 Claims. (Cl. 260—239.8)

1. A member selected from the group consisting of a compound of the formula



and an acid addition salt thereof, wherein R is a member selected from the group consisting of two hydrogen atoms, lower alkylidene, lower alkylidene substituted by a member selected from the group consisting of di-lower alkylamino, pyrrolidino, piperidino and morpholino, lower mono-oxa-cycloalkylidine, lower mono-aza-cyclo-alkylidene, N-lower alkyl-lower mono-aza-cycloalkylidene, N-benzyl-lower mono-aza-cycloalkylidene, and lower monothia-cycloalkylidene, each of said cycloalkylidene substituents having 5 to 6 ring members, R_1 is a member selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl and R_2 is a member selected from the group consisting of hydrogen, lower alkyl, and hydroxy-lower alkyl, R_3 is a member selected from the group consisting of hydrogen, lower alkyl and lower alkoxy, R_4 is a member selected from the group consisting of hydrogen, lower alkyl and hydroxy-lower alkyl, and R_5 is a member selected from the group consisting of lower alkyl and hydroxy-lower alkyl.

7. 5 - dimethylsulfamyl-anthranilic acid-N′-(N-methyl-piperidylidene-4)-hydrazide.

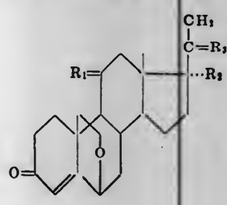
3,346,569

6β:19-OXIDO-PREGNENES

Albert Wettstein, Riehen, Georg Anner, Karl Heusler, and Jaroslav Kalvoda, Basel, Hellmut Ueberwasser, Riehen, and Jules Heer, Binningen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,202
Claims priority, application Switzerland, June 2, 1961, 6,779/61; Sept. 18, 1961, 10,803/61; Sept. 22, 1961, 11,071/61; Jan. 9, 1962, 85/62
9 Claims. (Cl. 260—239.55)

1. Δ⁴-3-oxo-6β:19-oxido-pregnenes of the formula



wherein R_1 stands for a member selected from the group consisting of hydrogen, oxo, hydrogen together with hydroxy and hydrogen together with acyloxy, R_2 stands for a member selected from the group consisting of hydrogen, hydroxy, acyloxy and a 16:17α-oxido group, R_3 stands for a member selected from the group consisting of oxo, hydrogen together with hydroxy and hydrogen together with acyloxy.

3,346,570

PROCESS FOR THE ISOLATION OF 7α-METHYL-STEROIDS FROM MIXTURES OF THE EPIMERIC 7-METHYL COMPOUNDS

Georg Anner, Basel, and Peter Wieland, Oberwil, Basel-Land, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,890
Claims priority, application Switzerland, Feb. 15, 1965, 1,994/65
10 Claims. (Cl. 260—239.55)

1. A process for the isolation of 7α-methyl-3-oxo-Δ⁴-steroids from mixtures of the epimeric 7-methyl compounds, wherein a mixture of epimeric 7-methyl-3-oxo-Δ⁴-steroids is treated with potassium cyanide and from the reaction mixture the 7α-methyl-epimer is isolated.

7. A process as claimed in claim 1, wherein a mixture of epimeric 7-methyl-3-oxo-Δ⁴-androstenes, which contain in 17- position a lower alkylenedioxy radical, is used as starting material.

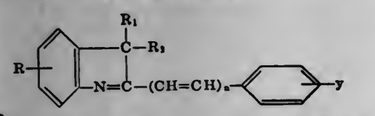
3,346,571

2-(OMEGA-SUBSTITUTED VINYLENE)-3,3-DISUBSTITUTED-3H-INDOLES

Sydney M. Spatz, Buffalo, and Russell I. Steiner, Williamsville, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 5, 1963, Ser. No. 285,563
8 Claims. (Cl. 260—240)

1. 2-(omega-substituted vinylene) 3,3-disubstituted 3H-indole corresponding to the formula:



wherein

R is selected from the group consisting of hydrogen, chlorine, lower alkyl, lower alkoxy, lower alkyl sulfonyl, phenylsulfonyl and sulfamyl,

R^1 and R^2 are each selected from the group consisting of lower alkyl and benzyl,

n is a whole number from 1 to 5, and

Y is selected from the group consisting of hydroxy, lower alkanoylamino, and N-(lower alkyl), N-(cyano-lower alkyl)amino and is in the 2- or 4-position.

4. 2 - (omega - hydroxyphenyl vinylene)-3,3-di-(lower alkyl)-3H-indole, as claimed in claim 1.

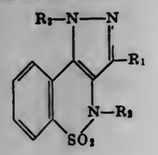
3,346,572

PYRAZOLO[4,3-c][1,2]BENZOTHIAZINE 5,5-DIOXIDES AND PROCESS FOR THEIR PRODUCTION

John Shavel, Jr., Mendham, and Harold Zinnes, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Aug. 17, 1966, Ser. No. 572,877
10 Claims. (Cl. 260—243)

1. A compound of the formula:

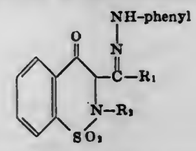


wherein R_1 is a member of the group consisting of lower alkyl and phenyl; R_2 is a member of the group consisting of hydrogen, lower alkyl, benzyl, cyanomethyl, carboxymethyl, carboalkoxymethyl,

$$-CH_2COCH_3, \quad -CH_2COC_6H_5$$

2-hydroxyalkyl and dialkylaminoalkyl; and R_3 is a member of the group consisting of hydrogen, lower alkyl and phenyl.

9. A compound of the formula:



wherein R_1 is lower alkyl, R_2 is a member of the group consisting of hydrogen, lower alkyl, cyanomethyl, carboxymethyl, carboalkoxymethyl,

$$-CH_2COCH_3, \quad -CH_2COC_6H_5$$

2-hydroxyalkyl and dialkylaminoalkyl.

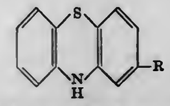
3,346,573

PROCESS FOR AMINOALKYLATION OF PHENOTHIAZINE AND DERIVATIVES THEREOF

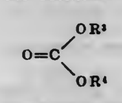
Imre L. Fabricius, Herlev, Denmark, assignor to Novo Terapeutisk Laboratorium A/S, Copenhagen N, Denmark, a Danish joint-stock company

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,255
Claims priority, application Denmark, July 21, 1961, 3,012/61, Patent 98,062; Sept. 20, 1961, 3,732/61, Patent 98,063; Nov. 15, 1961, 4,553/61, Patent 95,419; July 2, 1962, 2,957/62
3 Claims. (Cl. 260—243)

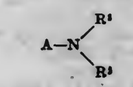
1. A process for the aminoalkylation of phenothiazine and a derivative thereof which comprises reacting by heating to a temperature within the range of 150° C. to 270° C. in the presence of a basic catalyst; selected from the group consisting of potassium carbonate, potassium acetate and potassium phthalate.



in which R is selected from the group consisting of hydrogen, chlorine, lower alkanoyl, and YR′ in which Y is selected from the group consisting of oxygen and sulphur, and R′ is alkyl of 1 to 6 carbon atoms, with a carbonic acid ester of the formula:



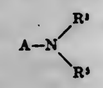
in which R^3 is represented by the formula



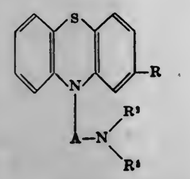
in which A is a primary alkylene having at least 2 carbon atoms in the principal chain and a total of up to 4 carbon atoms and in which the nitrogen atom is in one of the positions 2 and 3 of the alkylene chain,



is selected from the group consisting of di(lower alkyl) amino and N-lower alkylpiperazino, and R^4 is selected from the group consisting of

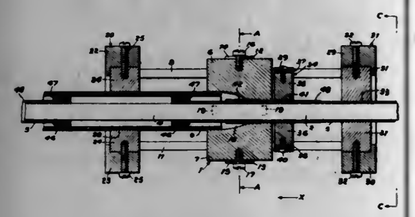


as hereinbefore defined and lower alkyl, whereafter the resultant product which is represented by the formula:



is obtained.

3,346,574
JOINTING PLASTIC MATERIALS
John Richard Eyre, Alojzy Tomica, and Kenneth Richard Way, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,714
Claims priority, application Great Britain, July 20, 1962, 28,063/62
6 Claims. (Cl. 264—248)



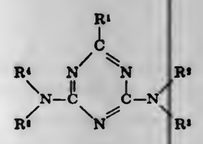
1. A method of jointing plastic members including mounting first and second plastic members in a mould adjacent one another with one overlapping the other, heating the mould to melt one end of said one member and forming it against and melting said other member, agitating the adjacent surface of said other member within said mould to facilitate fusion with said one end, removing the agitation to permit the ends to fuse, and removing the heat to permit the ends to cool and solidify in the shape of the mould.

3,346,575
FUNGICIDES AND A PROCESS FOR PRODUCING THEM
Willy Bernheim, Goggingen, near Augsburg, Heinz Enders, Stadtbergen, Augsburg, and Hans Deiner, Neusass-Lohwald, near Augsburg, Germany, assignors to Chemische Fabrik Pfersee, G.m.b.H., Augsburg, Germany, a firm of Germany
No Drawing. Filed July 12, 1965, Ser. No. 471,472
11 Claims. (Cl. 260—249.6)

2. A process for manufacturing condensation products soluble in organic solvents and acting as fungicides, which comprises reacting while heating an ether of a methylol derivative of a compound selected from the group consisting of urea, polyureas, ethylene urea, propylene urea, and melamine of a monovalent, saturated, aliphatic alcohol having from 1 to 5 carbon atoms with 0.1 to 0.5 mol pentachlorophenol per each methylol group until the condensation products are soluble in non-polar, water immiscible organic solvents.

3,346,576
WATER-SOLUBLE TRIAZINYL HEMIESTERS
Gustav Steinbrunn, Schwegenheim, Pfalz, and Adolf Fischer, Mutterstadt, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Jan. 11, 1965, Ser. No. 424,828
Claims priority, application Germany, Jan. 11, 1964, B 74,952
7 Claims. (Cl. 260—249.8)

1. A compound selected from the group consisting of (a) the hemiesters of a dibasic carboxylic acid selected from the group consisting of succinic acid, glutaric acid, maleic acid, itaconic acid, and said acids having chloro or lower alkyl substituent groups and a hydroxy-substituted triazine of the formula



wherein

R^1 is a member selected from the group consisting of —Cl, —OCH_3 and —SCH_3,

R^2 is a member selected from the group consisting of hydroxyalkyl of 2 to 4 carbon atoms, and hydroxyalkenyl and hydroxyalkynyl of 3 to 4 carbon atoms,

R^3 is a member selected from the group consisting of hydrogen, allyl and alkyl of 1 to 4 carbon atoms, and alkynyl of 2 to 4 carbon atoms,

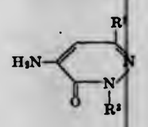
R^4 is a member selected from the group consisting of alkyl of 1 to 4 carbon atoms, alkynyl of 2 to 4 carbon atoms, chloroalkyl of 2 to 3 carbon atoms, ethyl substituted by a radical selected from the group consisting of —OCH_3, —OC_2H_5, —SCH_3 and —SC_2H_5, the radical —SCH_3 and alkyl of 2 to 3 carbon atoms substituted by the radical —SH, and

R^5 is a member selected from the group consisting of hydrogen, allyl and alkyl of 1 to 3 carbon atoms; and

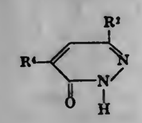
(b) water-soluble salts of said hemiesters.

3,346,577
METHOD FOR THE PREPARATION OF 4-AMINO-3(2H)PYRIDAZINONES
Takenari Nakagome, Nishinomiya, and Toshiaki Komatsu, Toyonaka, Japan, assignors to Sumitomo Chemical Co., Ltd., Osaka, Japan
No Drawing. Original application June 29, 1964, Ser. No. 379,014, now Patent No. 3,313,806, dated Apr. 11, 1967. Divided and this application Aug. 23, 1965, Ser. No. 493,602
2 Claims. (Cl. 260—250)

1. A process for producing a 4-amino-3(2H)pyridazinone derivative of the formula



wherein R^2 represents a member selected from the group consisting of halogen atoms and lower alkoxy and R^3 represents lower alkyl, which comprises reacting a member selected from the group consisting of di-lower alkyl sulfate and lower alkyl halide with a 4-substituted-3(2H) pyridazinone derivative of the formula



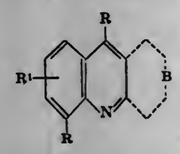
wherein R^2 is as precedingly defined and R^4 is a member selected from the group consisting of amino, halogen and acylamino, in the presence of a member selected from the group consisting of alkali metal hydroxide and alkali metal carbonate, at a temperature from ambient temperature up to 200° C. in an inert reaction medium to form the corresponding 2-lower alkyl-4-substituted-3(2H) pyridazinone, and treating the latter with ammonia when the 4-substituent is halogen and with aqueous alkali metal hydroxide when the 4-substituent is acylamino.

3,346,578
STANNOUS FLUORIDE COMPLEXES OF 2,2'-DITHIODIPYRIDINE-1,1'-DIOXIDES
Asger F. Langlykke, Plainfield, Jack Bernstein, New Brunswick, and Anthony L. La Via, Milltown, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 30, 1965, Ser. No. 468,547
1 Claim. (Cl. 260—270)

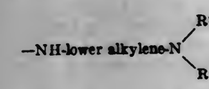
The stannous fluoride complex of 2,2'-dithiodipyridine, 1,1'-dioxide.

3,346,579
IODINE CHLORIDE COMPLEXES OF QUINOLINE AND ACRIDINE COMPOUNDS
John T. Sheehan, Middlesex, and Jack Bernstein, New Brunswick, N.J., assignors to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,856
3 Claims. (Cl. 260—279)

1. The iodine chloride complex of a quinoline or acridine compound having the formula



and acid salts thereof, wherein R^1 is hydrogen, halogen, trifluoromethyl or lower alkoxy, one R is hydrogen and the other R is a basic group of the formula

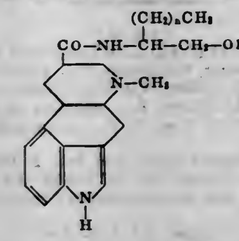


R^2 and R^3 are hydrogen, lower alkyl or hydroxy-lower alkyl, and in the acridine compounds, B is the residue of an aromatic ring.

3. The iodine chloride complex of an acridine of claim 1 wherein R in the heterocyclic ring is 1-methyl-4-diethylaminobutylamino and R in the aromatic ring is hydrogen, R^1 is 6-chloro and B is 2-methoxyphenyl.

3,346,580
D-LYSERGIC ACID AMIDES
Albert Hofmann and Franz Troxler, Bottmingen, Switzerland, and Hans Ott, Hanover, N.J., assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Feb. 5, 1964, Ser. No. 342,803
Claims priority, application Switzerland, Feb. 7, 1963, 1,545/63
3 Claims. (Cl. 260—285.5)

1. A compound selected from the group consisting of d-lysergic acid amides of the formula:



I

in which

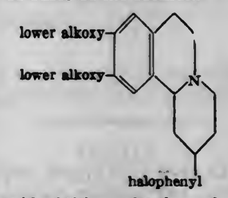
n is an integer from 3 to 5 inclusive

and their pharmaceutically acceptable acid addition salts.

2. 9,10-dihydro-d-lysergic acid-(+)-hexanolamide-(2') and its pharmaceutically acceptable acid addition salts.

3,346,581
HALOPHENYL HEXAHYDRO BENZOQUINOLIZINES
Johan Gootjes, Heerhugowaard, North Holland, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman en Pharmacia, Amsterdam, Netherlands, a Dutch corporation
No Drawing. Filed May 20, 1964, Ser. No. 369,012
Claims priority, application Netherlands, Mar. 27, 1961, 262,858; Jan. 15, 1962, 273,566
6 Claims. (Cl. 260—286)

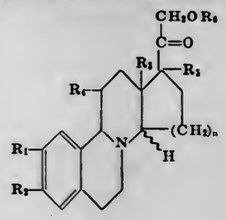
1. A compound selected from the group consisting of the trans form of bases of the formula



and non-toxic acid-addition salts thereof.

3,346,582
1-OXYACYL-BENZ[a]CYCLOPENT-[f]QUINOLIZINES
Richard E. Brown, Hanover, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed July 21, 1965, Ser. No. 473,811
3 Claims. (Cl. 260—287)

1. A compound of the formula:



wherein R_1 and R_2 are each a member of the group consisting of hydrogen, hydroxy and lower alkoxy and R_1 and R_2 taken together form a methylene dioxy group; R_3 is a member selected from the group consisting of hydrogen and lower alkyl; R_4 is a member selected from the group consisting of hydrogen and hydroxy; R_5 is a member of the group consisting of hydrogen and hydroxy; R_6 is a member selected from the group consisting of hydrogen and acyl of a carboxylic acid and n is an integer of from 1 to 2.

3,346,583

N,β-DISUBSTITUTED-α-PHENETHYLAMINES

Edward D. Amstutz, Bethlehem, Pa., Frank P. Palopoli and Charles H. Tilford, Cincinnati, Ohio, and Richard F. Shuman, Allentown, Pa., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 2, 1962, Ser. No. 170,828, now Patent No. 3,236,844, dated Feb. 22, 1966. Divided and this application May 14, 1965, Ser. No. 463,431

5 Claims. (Cl. 260—296)

2. 2 - {2 - (p - chloroanilino) - 2-[p-(β-diethylaminoethoxy)phenyl]ethyl}pyridine.

3. 2 - {2 - (p-toluidino)-2-[p-(β-diethylaminoethoxy)phenyl]ethyl}pyridine.

3,346,584

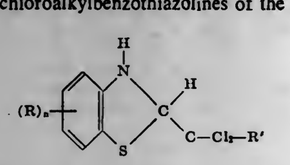
2-POLYCHLOROALKYLBENZOTHIAZOLINES

David T. Manning, South Charleston, W. Va., and Anthony A. Sousa, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,799

9 Claims. (Cl. 260—304)

1. 2-polychloroalkylbenzothiazolines of the formula:



wherein R is hydrogen or halogen, and R′ is hydrogen, chlorine, lower alkyl, or lower chloroalkyl, and n is 0 or 1.

3,346,585

DIAZAPOLYMETHINE DYES

Johannes Dehnert, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

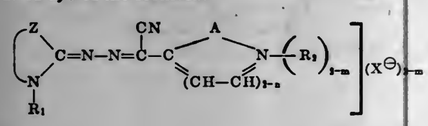
No Drawing. Filed Apr. 12, 1963, Ser. No. 272,529

Claims priority, application Germany, Nov. 30, 1960, B 60,291; June 6, 1961, B 62,786; Apr. 17, 1962, B 66,851; May 19, 1962, B 67,320

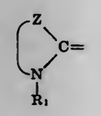
The portion of the term of the patent subsequent to Oct. 27, 1981, has been disclaimed

4 Claims. (Cl. 260—305)

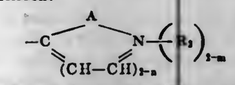
1. A dye of the formula:



in which

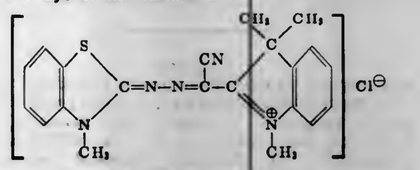


denotes a radical selected from the class consisting of thiazole, benzothiazole, quinoline, 1,3,4-thiadiazole, 1,2,4-triazole, 1,3,4-oxadiazole, pyrazole, tetrazole, cinnoline, pyridazine and indazole and the same heterocyclic radicals having an azo dye substituent selected from the class consisting of alkyl, alkoxy, aralkyl, aryl, nitro, acyl, acylamino, alkylsulfonyl, sulfonic acid amide, carboxylic acid amide and halogen, R_1 denotes a radical selected from the class consisting of hydrogen, methyl, ethyl, chloroethyl, propyl, butyl, cyclohexyl and benzyl, R_2 denotes a radical selected from the class consisting of methyl, ethyl, chloroethyl, propyl, butyl, cyclohexyl and benzyl, A denotes a linking member which makes up the part of the formula:



to a radical selected from the class consisting of 1,3,3-trimethylindolenine - 2 - yl and 1,3,3-trimethyl-5-chloroindolenine-2-yl, X denotes a colorless anion, m denotes one of the numbers 1 and 2 and n denotes one of the numbers 1 and 2.

2. The dye of the formula:



3,346,586

PRODUCTION OF N-VINYL 2-OXAZOLIDONES

Richard Frederick James Ingleby, 52 Ram Gorse, Harlow, England

No Drawing. Filed Oct. 14, 1960, Ser. No. 62,547

Claims priority, application Great Britain, Mar. 9, 1960, 8,362/60

12 Claims. (Cl. 260—307)

1. A method of making an N-vinyl 2-oxazolidone, comprising the steps of decomposing by heat at reduced pressure in the presence of an acid catalyst in the form of a Lewis acid an oxazolidone-aldehyde condensation product of the formula:

wherein R is selected from the group consisting of primary and secondary alkyl, and wherein R_2, R_3, R_4 and R_5 are selected from the group consisting of hydrogen, alkyl, aryl and aralkyl, to give a 2-oxazolidone and an N-vinyl 2-oxazolidone; removing the reaction products from the reaction mixture; and separating the reaction products from one another.

3,346,587

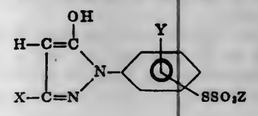
PYRAZOLONE COMPOUNDS

Gordon A. Geselbracht, Charlotte, N.C., assignor to Martin-Marietta Corporation, a corporation of Maryland

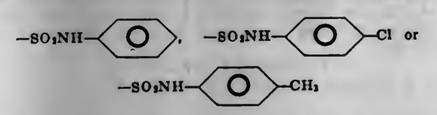
No Drawing. Filed Apr. 11, 1966, Ser. No. 541,498

4 Claims. (Cl. 260—310)

1. A pyrazolone compound of the formula



wherein X is hydrogen, phenyl, chlorophenyl, methoxyphenyl, ethoxyphenyl, nitrophenyl, tolyl, naphthyl, furyl, lower alkoxy carbonyl, carboxyl, or lower alkyl; Y is hydrogen, halogen, lower alkyl, lower alkoxy, $—SO_2NH_2$, $—SO_2NHCH_3$,



Z is H, Na, K or NH_4; and the SSO_3Z group is positioned meta or para with respect to the N attached to the benzene nucleus.

3,346,588

SILICON-SUBSTITUTED PYRROLES

Bruce A. Ashby, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

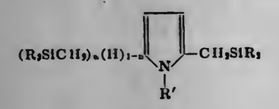
No Drawing. Filed Oct. 1, 1965, Ser. No. 492,285

9 Claims. (Cl. 260—326.61)

1. A silylmethyl-substituted pyrrole having a formula selected from the class consisting of:



and



where R represents a member selected from the class consisting of alkyl of 1 to 8 carbon atoms, phenyl, xylyl, tolyl, naphthyl, benzyl, phenylethyl, and lower alkoxy, R′ represents lower alkyl, and n is a whole number equal to from 0 to 1, inclusive.

3,346,589

NF_2 ADDUCTS OF UNSATURATED HYDROCARBYL AMINE, HYDRAZINE, OR AMMONIUM PERCHLORATES AND METHOD OF PREPARATION

Michael H. Gianni, Roselle, and Charles M. Orlando, Union City, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 29, 1964, Ser. No. 371,890

7 Claims. (Cl. 260—326.85)

1. NF_2 adduct of an unsaturated hydrocarbon radical linked to nitrogen in a function of the group consisting of amine, hydrazine and ammonium which is combined in a salt with perchloric acid.

3,346,590

SULFONYL ISOTHIOCYANATES AND A PROCESS FOR THEIR PRODUCTION

Karlfried Dickoré, Leverkusen, and Engelbert Kühle, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 18, 1964, Ser. No. 368,418

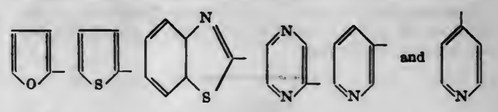
Claims priority, application Germany, Jan. 21, 1964, F 39,854

20 Claims. (Cl. 260—327)

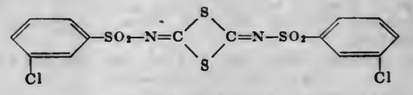
1. A sulfonyl-isothiocyanate of the formula

$$R—SO_2—NCS$$

wherein R represents alkyl having 1–12 carbon atoms, cyclohexyl, phenyl, toluyl, benzyl, phenyl lower alkyl, dilower alkylamino, chlorophenyl,



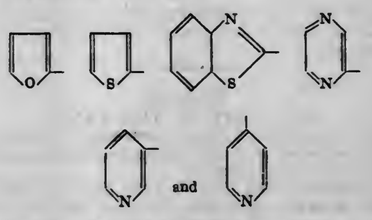
16.



17. A process for the production of sulfonyl-isothiocyanate having the formula

$$R—SO_2—NCS$$

wherein R represents alkyl having 1–12 carbon atoms, cyclohexyl, phenyl, toluyl, benzyl, phenyl lower alkyl, dilower alkylamino, chlorophenyl,



which comprises reacting a sulfonyl-iminodithio carbonate selected from the group consisting of

and

wherein R is as above defined with an acid halide selected from the group consisting of phosgene, thiophosgene, oxalyl chloride, sulfur dichloride, disulfurdichloride, thionyl chloride, sulfuryl chloride, phosphorous trichloride, phosphorous oxychloride, phosphorous pentachloride, phosphorous pentabromide, carbonic acid dibromide, carbonic methyl-ester chloride, carbonic butyl ester chloride, and carbonic phenyl ester chloride at a temperature of from −10° C. to 120° C., utilizing said sulfonylimino dithiocarbonate and acid halide in a molar ratio of between 1:1 to 1:3.

3,346,591

PREPARATION OF PARTLY SATURATED 4-KETOBENZOTHIOPHENES

Harold M. Foster, Middlesex, Roger P. Napier, Edison, and Chin-Chiun Chu, North Plainfield, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,230

4 Claims. (Cl. 260—332.3)

1. A process that comprises reacting a cyclohexanone compound having the formula:

wherein n is 0 to 3 and R is selected from the group consisting of alkyl (C_1–C_8) and alkenyl (C_2–C_8), with a chlorine compound selected from the group consisting of chloroacetaldehyde and 2,2-dichloroacetaldehyde, in the presence of a protic acid catalyst; said R occupying any 4–6 position on the ring.

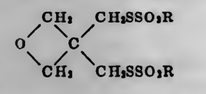
3,346,592

OXACYCLOBUTANE BIS(THIOSULFONATES)

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 3, 1965, Ser. No. 461,152
6 Claims. (Cl. 260—333)

1. The compound having the formula



wherein R represents a member of the group consisting of lower alkyl, phenyl, halophenyl, methylphenyl and methoxyphenyl.

3,346,593

RECOVERY OF TRIOXANE

Gerhard Langecker, Cologne-Lindenthal, Germany, assignor to Josef Meissner Kommanditgesellschaft, Cologne-Bayenthal, Germany

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,059
Claims priority, application Germany, Mar. 24, 1964, M 60,421
5 Claims. (Cl. 260—340)

1. Method for the recovery of trioxane from aqueous solutions thereof which comprises treating an aqueous solution of trioxane with dichlorobenzene, separating the dichlorobenzene extract, and distilling the extract to recover trioxane therefrom.

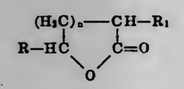
3,346,594

HALOALKYL AND POLYHALOALKYL LACTONES

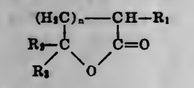
Ashot Merijan, Rahway, and Frederick Grosser, Midland Park, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,635
8 Claims. (Cl. 260—343)

1. A lactone selected from the class consisting of those having the following formulae:



and



wherein n is an integer of from 1 to 3, R is selected from the group consisting of hydrogen and alkyl of from 1 to 4 carbon atoms, R_1 is selected from the group consisting of monohaloalkyl and polyhaloalkyl of from 2 to 6 carbon atoms, R_2 and R_3 are selected from the group consisting of methyl and ethyl, the halo in said monohaloalkyl and polyhaloalkyl group is selected from the class consisting of bromine, chlorine and fluorine.

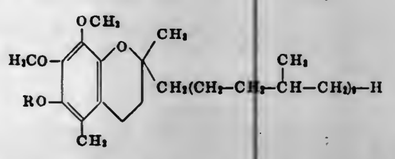
3,346,595

DERIVATIVES OF COENZYME Q_{10}

Karl Folkers, Plainfield, and Donald E. Wolf, Princeton, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application July 20, 1960, Ser. No. 44,013, now Patent No. 3,064,012, dated Nov. 13, 1962. Divided and this application Dec. 15, 1961, Ser. No. 163,953
3 Claims. (Cl. 260—345.5)

1. A chroman compound of the formula



wherein R is a member from the group consisting of hydrogen p-nitrobenzyl and alkanoyl radicals having from one to nine carbon atoms.

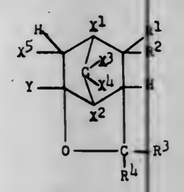
3,346,596

TRICYCLIC KETAL COMPOUNDS HAVING BIOLOGICAL ACTIVITY

Paul E. Hoch, Youngstown, and George B. Stratton, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,947
16 Claims. (Cl. 260—346.1)

1. A compound having the formula:



wherein

X^1 and X^2 are independently selected from the group consisting of hydrogen, halogen, alkyl, alkenyl, halogenated alkyl and halogenated alkenyl;

X^3 and X^4 are independently selected from the group consisting of hydrogen, halogen, alkoxy, alkyl, alkenyl, halogenated alkyl, and halogenated alkenyl, at least two of X^1, X^2, X^3 and X^4 being halogen;

X^5 is selected from the group consisting of hydrogen, halogen and alkoxy;

Y is a nucleophilic radical;

R^1 and R^2 are independently selected from the group consisting of hydrogen, hydrocarbyl, halogen-substituted hydrocarbyl, and carboxy;

R^3 and R^4 are independently selected from the group consisting of hydrogen, hydrocarbyl, halogen-substituted hydrocarbyl, hydroxy-substituted alkyl, alkoxy-substituted alkyl, and hydroxy-substituted alkoxyalkyl; and

R^1 and R^3 are cycloalkyl when R^1 and R^3 join to form a ring; provided that at least one of R^1 and R^2 can be hydroxy-substituted alkyl when Y is one of halogen, hydroxy, hydrocarbyloxy, mercapto, substituted hydrocarbyloxy and substituted hydrocarbylmercapto; wherein alkyl has 1 to 18 carbon atoms, alkenyl has 1 to 18 carbon atoms, alkoxy has 1 to 18 carbon atoms, hydrocarbyl has 1 to 18 carbon atoms, cycloalkyl has 3 to 12 carbon atoms, hydrocarbyloxy has 1 to 18 carbon atoms, hydrocarbylmercapto has 1 to 18 carbon atoms and hydrocarbylthio has 1 to 18 carbon atoms.

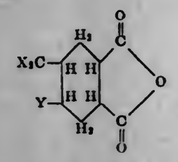
3,346,597

HALOGEN-CONTAINING CYCLIC ANHYDRIDES

William De Acetis, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

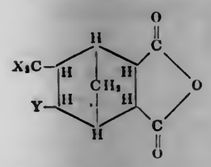
No Drawing. Filed Mar. 30, 1964, Ser. No. 355,923
6 Claims. (Cl. 260—346.3)

1. The compound

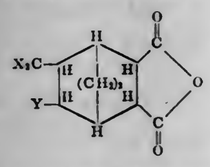


wherein X and Y independently are halogen having an atomic number from 17 to 35.

3. The compound selected from the group consisting of



and



wherein X and Y independently are halogen having an atomic number from 17 to 35.

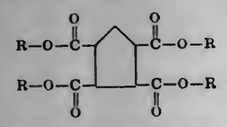
3,346,598

ANHYDRIDES AND ESTERS OF 1,2,3,4-CYCLOPENTANETETRACARBOXYLIC ACID

Ross Van Volkenburgh, Baton Rouge, Harold W. Hyde, Natchitoches, and Grover C. Royston, Baton Rouge, La., assignors to Copolymer Rubber & Chemical Corporation, a corporation of Louisiana

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,518
34 Claims. (Cl. 260—346.3)

1. A substance selected from the group consisting of alkyl esters of 1,2,3,4 - cyclopentanetetracarboxylic acid having the formula



wherein the four R groups are monovalent substitute individually selected from the group consisting of alkyl, hydrogen, alkali metal, alkaline earth metal and —NH_4, said monovalent substituent containing 4 through 24 carbon atoms when R is alkyl and at least one R being alkyl, and

monoalkyl and dialkyl esters of monoanhydrides of 1,2,3,4 - cyclopentanetetracarboxylic acid wherein each alcoholic residue of the monoalkyl and dialkyl ester groups contains 4 through 24 carbon atoms.

3,346,599

DERIVATIVES OF FURAN

James R. Michael, Roselle, Ralph J. Leary and Perry A. Argabright, Cranford, and Anthony J. Passannante, Metuchen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,465
9 Claims. (Cl. 260—347.3)

1. Tetrakis (NF_2) adduct of dicarbomethoxy furan.

2. Tetrakis NF_2 adduct of furan diisocyanate.

3. Tetrakis NF_2 adduct of the diacid halide of furan 2,5-dicarboxylic acid.

3,346,600

SOLID PROPELLANT OXIDIZER AND ITS PREPARATION

Anthony J. Passannante, Metuchen, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,464
10 Claims. (Cl. 260—347.5)

6. A compound containing 4 to 6 NF_2 groups linked to carbon atoms in a furan nucleus which has one to two side chains having an ester linkage to a polynitrocarbyl group, —$C(NO_2)_3$.

3,346,601

PROCESS FOR THE MANUFACTURE OF 19-NOR-STEROIDS

Albert Wettstein, Riehen, Georg Anner, Karl Heusler, and Jaroslav Kalvoda, Basel, and Helmut Ueberwasser, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,949
Claims priority, application Switzerland, Apr. 28, 1962, 5,083/62
14 Claims. (Cl. 260—397.4)

1. Process for the manufacture of $\Delta^{5(10)}$-19-nor steroids wherein a member selected from the group consisting of a 3-unsubstituted Δ^5-steroid-19-acid and a Δ^5-3-acyloxy-steroid-19-acid is heated in the absence of an acid until carbon dioxide evolution ceases.

11. A member selected from the group consisting of $\Delta^{5(10)}$-3-hydroxy-17-oxo-19-nor-androstene and its esters derived from carboxylic acids having up to 15 carbon atoms.

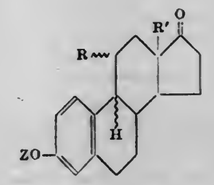
3,346,602

13β - ALKYL - 11 - ALKYLGONA-1,3,5(10)-TRIEN-17-ONES, ETHERS AND ESTERS THEREOF

John S. Baran, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 12, 1967, Ser. No. 608,729
Claims priority, application Great Britain, Oct. 12, 1966, 45,594/66
8 Claims. (Cl. 260—397.45)

1. A compound of the formula



wherein R and R′ are lower alkyl radicals and Z is selected from the group consisting of hydrogen, a lower alkyl and a lower alkanoyl radical.

6. As in claim 1, the compound which is 3-methoxy-11α-methylestra-1,3,5(10)-trien-17-one.

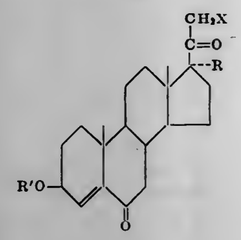
3,346,603

3β-ACETOXYPREGN-4-ENE-6,20-DIONES AND THEIR PREPARATION

Yvon Lefebvre, Pierrefonds, Quebec, and Peter F. Morand, Ottawa, Ontario, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,252
12 Claims. (Cl. 260—397.4)

1. A compound of the formula



where R is a member selected from the group consisting of hydrogen, straight-chain lower alkyl groups of from one to four carbon atoms, and acetoxy; R′ is a member selected from the group consisting of hydrogen and acetyl; and X is a member selected from the group consisting of hydrogen and fluorine.

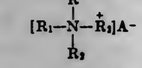
3,346,604

QUATERNARY AMMONIUM COMPLEXES WITH HETEROPOLYANIONS

George Leathwhite Roberts, Jr., Lynchburg, Va., and Robert Glenn Fessler, Martinsville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 11, 1962, Ser. No. 201,278
4 Claims. (Cl. 260—429)

1. As a new composition of matter, an insoluble organic quaternary ammonium complex wherein the anion of said complex is derived from a heteropolyanionic acid; and the cation is derived from a cationic surfactant represented by the following formula:



wherein A^- is a water-solubilizing anion, R is lower alkyl, R_1 is an alkyl radical of from 1–25 carbons, R_2 is selected from the group consisting of alkyl of more than 6 carbons and lower oxyalkylene radicals having less than 11 recurring oxyalkylene moieties and terminated by a member selected from the group consisting of hydrogen, halogen, lower alkyl, amino, phenyl, alkylphenyl and monocyclicar-(lower alkyl) and R_3 is a member selected from the group consisting of an alkyl radical of 1–6 carbons and R_2.

3,346,605

AMMONIA COMPLEX MANGANESE SALT OF ETHYLENEBISDITHIOCARBAMIC ACID

Hermann Windel, Frankenthal, Pfalz, and Ernst-Heinrich Pommer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 21, 1962, Ser. No. 218,431
Claims priority, application Germany, Aug. 26, 1961, B 63,793
1 Claim. (Cl. 260—429)

A complex manganese salt of ethylenebisdithiocarbamic acid with ammonia, said complex salt having an ammonia content of about 4 to 9%.

3,346,606

PROCESS OF PREPARING PERFLUOROALKANE-DISULFONIC ACID SALTS BY CONTACTING BIS (ALKYLSULFONYL) PERFLUOROALKANES WITH ALKALI PERMANGANATE

Richard Bernard Ward, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 19, 1965, Ser. No. 426,687
11 Claims. (Cl. 260—429)

1. A process which comprises contacing a bis-sulfone having the structure $RSO_2(CF_2CF_2)_nSO_2R$, wherein R is an alkyl group of one to five carbon atoms and n is an integer of from one to twenty, with aqueous alkali permanganate in a pH range of from about 7.0 to 9.0 and recovering the corresponding alkali metal salt of the acid $HO_3S(CF_2CF_2)_nSO_3H$ from the reaction mixture.

3,346,607

QUATERNARY AMMONIUM ORGANOTIN HALIDES

Michael E. Lombardo, Nanuet, N.Y., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware

No Drawing. Filed Dec. 29, 1964, Ser. No. 422,033
11 Claims. (Cl. 260—429.7)

1. A compound of the formula

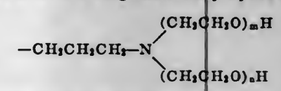


wherein Hal is a halide ion and R is lower alkyl, said compound being selected from the group:

(A) wherein R′ is a long chain fatty hydrocarbon, R″ is $—(CH_2CH_2O)_yH$, and $x+y$ is about 10;

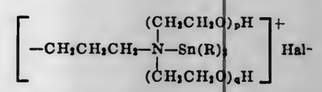
(B) wherein R′ is a long chain fatty hydrocarbon, R″ is $—(CH_2CH_2O)_zH$, and $x+z$ is about 50;

(C) wherein R′ is a long chain fatty hydrocarbon, R″ is



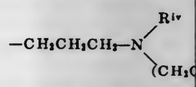
and $x+m+n$ is about 10;

(D) wherein R′ is a long chain fatty hydrocarbon, R″ is



$x+p+q$ is about 10, and R is lower alkyl; and

(E) wherein R′ is $—(CH_2CH_2O)_rH$, R″ is



$x+r+s$ is about 10, and R^{iv} is a long chain fatty hydrocarbon.

3,346,608

PHOSPHITE-CONTAINING NICKEL-(O)-COMPLEXES AND METHOD FOR THEIR PREPARATION

Nikolaus von Kutepow, Karlsruhe, and Hubertus Seibt and Fritz Meier, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 19, 1965, Ser. No. 457,183
Claims priority, application Germany, July 7, 1960, B 58,507
11 Claims. (Cl. 260—439)

1. A nickel complex compound of the formula

$$[Ni\{P(OR)_3\}_xZ_{y-1}]$$

wherein R represents a member selected from the group consisting of alkyl, aryl, alkylaryl, alkoxyaryl and halogenaryl, Z represents a member selected from the group consisting of α,β-ethylenically unsaturated aldehydes and nitriles, x stands for an integer of from 2 to 3, y stands for an integer of from 1 to 2, the sum of x and $y-1$ being an integer of from 2 to 3.

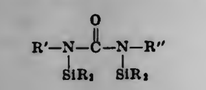
3,346,609

BIS-SILYLATED UREIDO COMPOUNDS AND PROCESS THEREFOR

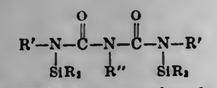
Johann F. Klebe, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 28, 1964, Ser. No. 371,119
12 Claims. (Cl. 260—448.2)

1. A ureido compound selected from the class consisting of



and



where R, R′, and R″ are monovalent hydrocarbon radicals.

7. The process for making ureido compounds which comprises effecting reaction between 1 to 2.4 moles of an organic isocyanate of the formula R′NCO and 1 to 1.2 moles of a triorganosilylated amine of the formula

$$R''—N—(SiR_3)_2$$

where R, R′, R″ are monovalent hydrocarbon radicals.

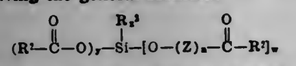
3,346,610

ACYLOXY-CONTAINING SILOXANES AND PROCESS THEREFOR

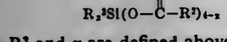
George M. Omietanski, Tonawanda, and Wallace G. Reid, Grand Island, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,673
25 Claims. (Cl. 260—448.8)

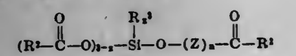
1. Process for preparing acyloxy-endblocked organosiloxanes having the general formula:



wherein R^2 are monovalent organic radicals which are not readily acylated and which are selected from the class consisting of alkyl radicals, cyanoalkyl radicals, alkenyl radicals, alkoxyalkyl radicals and nitroaryl radicals; R_2 is selected from the class consisting of hydrogen, alkyl radicals, aryl radicals, alkaryl radicals and aralkyl radicals; x is an integer having a value of 0 to 3 inclusive; y is an integer having a value of 0 to 3 inclusive: w is an integer having a value of 1 to 3 inclusive; the sum of $x+y+w$ is 4; n is an integer having a value greater than 0; Z is a divalent radical consisting of (RR^1SiO) units wherein R and R^1 are monovalent organic radicals which are not readily acylated as defined above for R^3, which comprises reacting in the presence of a metal halide Friedel-Crafts catalyst (1) an acyloxy-containing silicon compound selected from the class consisting of acyloxysilanes having the general formula:



wherein R^2, R^3 and x are defined above, and acyloxysiloxanes having the general formula:

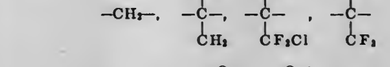


wherein R^2, R^3, Z, x and n are defined above, with (2) a cyclic diorganosiloxane having the general formula:

$$(RR^1SiO)_p$$

wherein R and R^1 are defined above and p is an integer having a value from 3 to 4 inclusive.

21. A composition of matter of an acyloxy-containing siloxane having the formula:



wherein R, R^2, R^3 are defined above in claim 1, s is an integer having a value of 0 to 1 inclusive, t is an integer having a value of 2 to 3 inclusive, and the sum of s and t is 3.

3,346,611

PREPARATION OF THIOL ESTERS HAVING ALPHA-SULFIDE LINKAGES

Richard C. Doss, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 8, 1965, Ser. No. 424,196
10 Claims. (Cl. 260—455)

1. A method of preparing a thiol ester having a sulfide linkage alpha to the ester group comprising contacting a thiol of the formula RSH wherein R is a monovalent hydrocarbon radical containing from 1 to 18 carbon atoms and selected from the group consisting of alkyl, cycloalkyl, alkenyl, cycloalkenyl, and aryl with an alpha-oxo aldehyde, the contacting being carried out under a pressure sufficient to keep the reactants substantially liquid and at a temperature of from about 80 to about 300° C.

3,346,612

PERFLUOROALKANE SULFONATE ESTERS

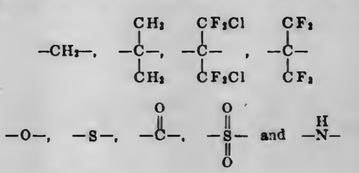
Robert L. Hansen, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed July 2, 1964, Ser. No. 380,017
9 Claims. (Cl. 260—456)

1. A perfluoroalkanesulfonate of the formula

$$(R_fSO_2O)_nArR_m$$

wherein: n is an integer from 1 to 4; m is a number from 0 to 3; R_f is perfluoroalkyl of 1 to 18 carbon atoms including perfluorocyclic alkyls; Ar is an aryl nucleus having a valence equal to the sum of n and m and having from 1 to 3 unsubstituted aromatic rings connected by no more than one atom by means of a member of the group consisting of carbon-to-carbon bonds and the divalent radicals



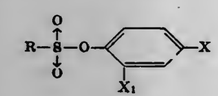
each R is a member of the group consisting of fluorine, chlorine, bromine, iodine, perfluoroalkyl of 1 to 18 carbon atoms, hydroxyl, aldehydo, carboxy-acyl of 2 to 7 carbon atoms, carboxyl, carboalkoxy, carbamido, nitrile, alkyl of 1 to 6 carbon atoms, alkenyl of 2 to 3 carbon atoms, phenoxy, benzyloxy, alkoxy having 1 to 6 carbon atoms and nitro and wherein m is not greater than 1 when an R group comprising more than 2 atoms is present.

3,346,613
2,4-DIHALOPHENYL ESTERS OF LOWER ALKANE- AND HALOALKANE-SULFONIC ACIDS

John E. Larson, Concord, and Jerome G. Kuderna, Jr., Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 29, 1965, Ser. No. 475,862
7 Claims. (Cl. 260—456)

1. A compound of the formula:



wherein each X and X_1 is a different halogen and R is a member of the group consisting of alkyl, monochloroalkyl and monobromoalkyl of one to four carbon atoms.

3,346,614
PREPARATION OF ALKYL METABORATES

Charles M. Starks and Eugene Flynt Kennedy, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Jan. 27, 1965, Ser. No. 428,517
10 Claims. (Cl. 260—462)

1. In the process where a liquid alkane having 6–20 carbon atoms is oxidized with free oxygen at a temperature between about 160° C. and about 200° C. to convert alkane to corresponding compounds having a hydroxyl group, in the presence of a boron compound selected from the class consisting of boric acid and boron oxide in an amount of at least one mole of boron per mole of alkane converted whereby a solution of alkylmetaborate and alkane is obtained, the improvement comprising:

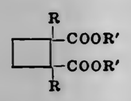
at a temperature below the decomposition temperature of the alkylmetaborate, atomizing the solution of alkylmetaborate and alkane in a chamber where the atomized solution is contacted with a stripping agent, at about the same temperature as said solution, and recovering alkylmetaborate product essentially free of said alkane.

3,346,615
MANUFACTURE OF ESTERS

Janice L. Greene, Warrensville Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 10, 1964, Ser. No. 388,699
5 Claims. (Cl. 260—464)

1. The process for preparing esters having the formula



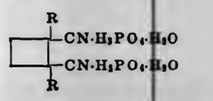
wherein R is hydrogen or a lower alkyl group and R′ represents an alkyl group having from 1 to 20 carbon atoms comprising reacting

(A) the adduct resulting from mixing together one mole of 1,2-dicyanocyclobutane and two moles of the monohydrate of an acid selected from the group consisting of sulfuric acid and phosphoric acid at a temperature of from 40° C. to 125° C. for from 15 minutes to 4 hours with

(B) an alcohol having the formula R′OH wherein R′ has the foregoing designation

at a temperature of from about room temperature up to about 200° C.

4. The composition resulting from the reaction between one mole of a 1,2-dicyanocyclobutane and two moles of the monohydrate of phosphoric acid at a temperature of from 40° C. to 125° C. for from 15 minutes to 4 hours, said composition having the formula



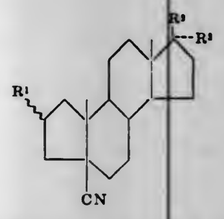
wherein R is hydrogen or a lower alkyl group.

3,346,616
5β-CYANO-A-NORANDROSTANE COMPOUNDS

Seymour D. Levine, North Brunswick, and Pacifico A. Principe, South River, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,515
9 Claims. (Cl. 260—464)

1. A compound having the formula



wherein R^1 and R^2 are hydroxy or an acyloxy group of a hydrocarbon carboxylic acid of less than twelve carbon atoms and R^3 is selected from the group hydrogen, vinyl, ethynyl, halo substituted vinyl, trifluoromethyl substituted vinyl, halo substituted ethynyl and trifluoromethyl substituted ethynyl and R^2 and R^3 together are oxo (O=).

3,346,617
METHOD FOR PREPARING METHACRYLONITRILE

Kenzo Hiroki, Urawa-shi, Tashichika Shizume, Yokohama, Yutaka Nakamura, Musashino-shi, and Tokachika Yoshino, Hiroyoshi Kamio, Sozaburo Irie, and Yuichi Kawamura, Yokohama, Japan, assignors to Nitto Chemical Industry Co., Ltd., Tokyo, Japan

Filed Feb. 16, 1965, Ser. No. 436,990
Claims priority, application Japan, July 11, 1961, 36/24,069, 36/24,070; Dec. 22, 1961, 36/46,321
10 Claims. (Cl. 260—465.3)

1. A process for the production of methacrylonitrile by a single-step reaction from isobutylene which comprises contacting a mixture of isobutylene, molecular oxygen, and ammonia in the vapor phase at a temperature of about 400° C. to 500° C. with a catalyst which is an oxide of the element components in atomic ratios expressed by the empirical formula:

$$P_nSb_aMo_bBi_cO_d$$

where

n=0–12
a=0.5–20
b=1–18
c=0.5–11, $c \leqq 4.4+b$,
$a+b+c$=22, and
$d=\frac{5}{2}n+\frac{3}{2}a+3b+\frac{3}{2}c$.

4. A process defined in claim 1 wherein said catalyst is supported on carrier material which consists essentially of silica.

3,346,618
PRODUCTION OF ε-CYANOCAPROIC ACID

Horst Metzger and Martin Pape, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 2, 1965, Ser. No. 429,885
Claims priority, application Germany, Feb. 7, 1964, B 75,332
5 Claims. (Cl. 260—465.4)

1. A process for the production of an alkali metal salt of ε-cyanocaproic acid which comprises reacting α-cyanocyclohexanone at a temperature of about 150° C. to 210° C. with an alkali metal glycolate of the ethylene, propylene or butylene series having a maximum viscosity of 8 centistokes at 100° C., the molar ratio of said alkali metal glycolate to said α-cyanocyclohexanone being about 1:1 to 4:1, while substantially excluding water such that at least 50% of the alkali metal ions are present in the form of the glycolate.

3,346,619
PROCESS FOR PREPARING AN NF_2-CONTAINING NITRATE

William E. Tyler III, New Providence, and John R. Lovett, Edison, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 22, 1962, Ser. No. 219,370
5 Claims. (Cl. 260—467)

1. The method for preparing an NF_2-containing nitrate, which comprises reacting N_2O_4 with an isocyanate having the formula:

$$R(NF_2)_a(NCO)_b$$

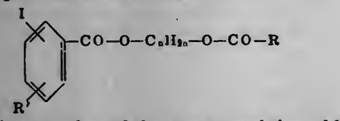
wherein R represents an organic compound in which NF_2 and NCO groups are substituents, said compound being selected from the group consisting of alkanes of 2 to 6 carbon atoms, cyclohexane and tetrahydrofuran, and the subscript a signifying at least 2 to the total number of carbon atoms in the R compound, and the subscript b signifying 1 to 2 of the isocyanato (NCO) substituents, and recovering a resulting compound corresponding to the isocyanate in which the NCO substituent groups are converted to ONO_2 groups.

3,346,620
ACYLOXYALKYL ESTERS OF MONOIODINATED BENZOIC ACIDS

James E. Siggins and James H. Ackerman, Bethlehem, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,361
10 Claims. (Cl. 260—476)

1. A compound of the formula



wherein R is a member of the group consisting of lower-alkyl, lower-alkenyl, lower-alkoxy-lower-alkyl and lower-alkylthio-lower-alkyl; R′ is a member of the group consisting of hydrogen and lower-alkoxy; and n is an integer from 2 to 7.

3,346,621
REACTION OF TETRAFLUOROHYDRAZINE WITH UNSATURATED ESTERS OF ACRYLATES AND METHACRYLATES

Robert C. Petry and Samuel F. Reed, Jr., Huntsville, Ala., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 22, 1962, Ser. No. 206,542
4 Claims. (Cl. 260—482)

1. A process for the preparation of polymerizable monomers containing bis(difluoramino) groups which comprises reacting

(A) tetrafluorohydrazine, with

(B) a monomer selected from the group consisting of vinyl, allyl and methallyl esters of acrylic and methacrylic acids.

3,346,622
PREPARATION OF AN AROMATIC ESTER FROM AN ALKYL-AROMATIC COMPOUND AND A CARBOXYLIC ACID IN THE PRESENCE OF A TETRAVALENT CERIUM SALT AND AN INHIBITOR

Charles M. Selwitz, Pitcairn, and Edmond R. Tucci, Ross Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed July 15, 1965, Ser. No. 472,084
20 Claims. (Cl. 260—488)

1. A process for the selective production of esters which comprises contacting at least one alkyl-monocyclic aromatic compound having between 7 and 18 carbon atoms, said alkyl-monocyclic aromatic compound having between 1 and 4 alkyl groups, at least one of said alkyl groups having at least one hydrogen atom attached to a carbon atom which is directly connected to an aromatic ring, and which carbon atom also forms a part of said alkyl group, said alkyl group having between 1 and 10 carbon atoms and having no olefinic unsaturation between the alpha and beta carbon atoms of said alkyl group, the remaining open positions on said alkyl-monocyclic aromatic having substituents selected from the group consisting of hydrogen, halogen, NO_2 and —C≡N with a promoter comprising a tetravalent cerium salt which has a water solubility at 25° C. of at least 0.05 gram per 100 grams of water and a monobasic organic acid selected from the group consisting of fatty acids having from 2 to 10 carbon atoms per molecule and chloroactetic acid under esterification conditions including a temperature between 60° and 300° C. and in the presence of an inhibitor selected from the group consisting of water and a soluble salt of an organic acid selected from the group consisting of the alkali metal, alkaline earth metal, and ammonium salts of a fatty acid having between 2 and 10 carbon atoms per molecule.

3,346,623
IMPROVED PROCESS FOR PREPARING UNSATURATED ESTERS, ALDEHYDES, KETONES, ACETALS AND KETALS BY THE OXIDATION OF OLEFINS WITH A NOBLE METAL CATALYST

Donald C. Young, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,495
10 Claims. (Cl. 260—497)

1. In the oxidation of a hydrocarbon olefin having 2 to 25 carbons to valuable oxygenated compounds selected from the class consisting of:

(a) unsaturated esters of carboxylic acids;

(b) acetals and ketals; and

(c) aldehydes and ketones;

wherein the olefin is contacted in a reaction zone at a temperature from 15° to 300° C. and a pressure from atmospheric to about 1500 p.s.i. to maintain liquid phase conditions with a platinum group metal catalyst and in the presence of a reaction medium selected from the class consisting of:

(a) substantially anhydrous aliphatic carboxylic acids having 1 to about 20 carbons;

(b) substantially anhydrous aliphatic monohydroxy alcohols having 1 to about 20 carbons; and

(c) aqueous acids having a pH from 1 to about 7; to prepare unsaturated esters when said member is selected as a carboxylic acid, to prepare acetals and ketals when said member is selected as a monohy-

droxy alcohol and to prepare aldehydes or ketones when said member is selected as said aqueous acid; the improvement that comprises:
employing said platinum group metal catalyst as a negatively charged complex selected from the class consisting of halo, hydroxyl, oxalato, thiocyano, nitro and cyano complexes of said platinum group metal, said complex being ionically bonded to the ion exchange sites of an anion exchange solid selected from the class consisting of inorganic hydrous metal oxides and organic polymers having molecular weights from 2500 to 500,000 units and having basic nitrogen functional groups; said anion exchange solid having a base exchange capacity from 1 to about 500 milliequivalents per 100 grams in said reaction zone.

3,346,624

PROCESS FOR THE CATALYTIC OXIDATION OF OLEFINS WITH A GROUP VIII NOBLE METAL CATALYST AND OXYGEN TO ALDEHYDES, ACETALS AND UNSATURATED ESTERS

William D. Schaeffer, Pomona, and James L. Lafferty, Yorba Linda, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed May 11, 1964, Ser. No. 366,556
9 Claims. (Cl. 260—497)

1. The oxidation of a hydrocarbon olefin having 2 to about 20 carbon atoms to an oxygenated product selected from the class consisting of:
(a) aldehydes;
(b) acetals; and
(c) carboxylic acid esters of unsaturated alcohols;
wherein the olefin is contacted, in a reaction zone, at a temperature from 30° to 300° C. and a pressure from atmospheric to about 100 atmospheres and sufficient to maintain liquid phase conditions and in the presence of a reaction medium selected from the class consisting of:
(a) aqueous acids having a pH from 1 to about 7;
(b) substantially anhydrous alkanols having 1 to about 20 carbons; and
(c) substantially anhydrous carboxylic acids having 1 to about 8 carbons;
to prepare aldehydes when said medium is selected as said aqueous acid, to prepare acetals when said medium is selected as said alcohol and to prepare said esters when said medium is selected as said carboxylic acid; the improvement that comprises:
(1) introducing said olefin, oxygen and liquid reaction medium into mutual contact in a first reaction zone packed with a finely divided solid inert to said oxidation, insoluble in said reaction medium and having a specific surface area from 2 to 1000 square meters per gram and containing impregnated thereon between about 0.1 and 5.0 weight percent of a platinum ground metal;
(2) withdrawing a liquid phase oxidate from said first reaction zone;
(3) introducing said liquid oxidate into a second reaction zone that is also packed with inert solid;
(4) passing said liquid oxidate through said reaction zone while maintaining said second reaction zone substantially free of oxygen;
(5) withdrawing a reduced crude oxidate product from said second reaction zone; and
(6) when the oxygen absorption rate in said first reaction zone decreases to a value from 10 to 75 percent of the oxygen absorption rate initially observed, periodically switching said introduction of olefin, oxygen and reaction media from said first to said second reaction zone and reversing the flow of said reaction medium through said first and second reaction zones.

3,346,625

OXIDATIVE CARBONYLATION OF OLEFINS IN THE PRESENCE OF A DEHYDRATED ALUMINOSILICATE MOLECULAR SIEVE

Donald M. Fenton, Anaheim, and Kenneth L. Olivier, Placentia, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,638
10 Claims. (Cl. 260—497)

1. The oxidative carbonylation of hydrocarbon olefins having from 2 to about 25 carbons that comprises contacting said olefin, oxygen and carbon monoxide with an organic reaction solvent at a temperature of 30° to about 300° C. and a pressure sufficient to maintain the solvent in liquid phase, said solvent containing from about 0.01 to about 5.0 weight percent of a catalyst comprising a platinum group metal and 0.1 to about 50 weight percent of a dehydrated molecular sieve comprising a crystalline aluminosilicate having a uniform pore diameter which is nonreactive with the organic reactants and products and the catalyst and insoluble in the reaction medium at the reaction conditions to thereby obtain an alpha,beta-ethylenically unsaturated acid having a total of one more carbon than said olefin.

3,346,626

OXIDATION OF ETHYLENE TO VINYL ESTERS BY A PLATINUM GROUP METAL CATALYST IN THE PRESENCE OF A HALOGEN COMPOUND, A HEAVY METAL SALT, MOLECULAR OXYGEN AND A VANADIUM COMPOUND

William D. Schaeffer, Pomona, and Kenneth L. Olivier, Placentia, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Mar. 16, 1966, Ser. No. 534,763
7 Claims. (Cl. 260—497)

1. In the oxidation of ethylene to vinyl acetate wherein ethylene and oxygen are contacted with a substantially anhydrous reaction medium comprising acetic acid, an acetate selected from the class of alkali metal and alkaline earth metal acetates, a halogen compound selected from the class of bromine and chlorine compounds, catalytic amounts of a member selected from the class consisting of a platinum group metal and halide salts thereof and a salt of a multivalent heavy metal having a more positive oxidation potential in said reaction medium than said platinum group metal and wherein oxalic acid is produced as a byproduct of the oxidation and precipitates said multivalent metal as an insoluble oxalate, the improved method for preventing the precipitation of said multivalent metal and thereby maintaining the catalytic activity of the reaction medium that comprises the destructive oxidation of the oxalic acid byproduct of said oxidation by the contacting of at least a portion of the reaction medium with catalytic amounts of from 0.05 to 0.5 weight percent of a vanadium compound and oxygen at a temperature from about 30° to 300° C. and a pressure from 5 to 100 atmospheres, sufficient to maintain liquid phase conditions.

3,346,627

PREPARATION OF VINYL ESTERS FROM ACETYLENE IN THE PRESENCE OF A MIXED ZINC SALT CATALYST

Günther Roscher, Kelkheim, Taunus, and Wilhelm Riemenschneider, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Apr. 1, 1965, Ser. No. 444,757
Claims priority, application Germany, Apr. 18, 1964, F 42,648
2 Claims. (Cl. 260—498)

1. In a process for preparing the vinyl ester of a monocarboxylic acid by contacting the acid and acetylene in the gaseous phase with a zinc salt catalyst on a carrier, the improvement wherein said zinc salt is a mixed salt of a hydrocarbon monocarboxylic acid having up to 12 carbon atoms and of a mineral acid selected from the group consisting of phosphoric acid and sulfuric acid, the ratio of equivalents of mineral acid to equivalents of monocarboxylic acid in said mixed salt being from 0.15 to 6.0.

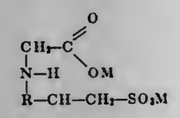
3,346,628

N-SUBSTITUTED AMINO-ALKANE SULPHONIC ACIDS

Gerrit Riezebos, Ashford, Kent, England, and David Adriaan van Dorp and Othmar Friedrich Schweigl, Vlaardingen, Netherlands, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,656
Claims priority, application Great Britain, June 7, 1963, 22,911/63
2 Claims. (Cl. 260—501)

1. A substituted sulphonic acid sequestering agent having the formula



wherein R is a straight chain alkyl radical having from 4 to 16 carbon atoms and M is selected from the group consisting of hydrogen and sodium atoms.

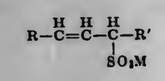
3,346,629

PROCESS FOR PREPARING BETA-ETHYLENICALLY UNSATURATED ORGANIC SULFONATES

George L. Broussalian, Overland, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,440
9 Claims. (Cl. 260—513)

1. A process for preparing a compound of the formula



wherein R and R′ in each instance are selected from the group consisting of hydrogen, alkyl radicals and halogen, lower alkoxy, phenyl, hydroxy, methyl mercapto, naphthyl, epoxy acetoxy, carboethoxy, carbamido, nitroso, and cyclohexyl substituted alkyl radicals, the total number of carbon atoms in R plus R′ being from about 8 to about 21, and wherein M is selected from the group consisting of hydrogen, alkali metal cations, alkaline earth metal cations, and ammonium cations, which comprises reacting together in a neutral, in the Lewis acid-base sense, solvent and at a temperature below about 15° C. (a) a monoolefinically unsaturated organic compound containing one double bond, said double bond connecting two adjacent carbon atoms, and a third carbon atom connected directly to one of said two adjacent carbon atoms; said third carbon atom having attached thereto at least two hydrogen atoms, said compound containing a total of form about 11 to about 24 carbon atoms, and said compound being selected from the group consisting of olefins and substituted olefins having substituents selected from the group consisting of halogen, lower alkoxy, phenyl, hydroxy, methyl mercapto, naphthyl, epoxy, acetoxy, carboethoxy, carbamido, nitroso, and cyclohexyl substituents; with (b) at most about 1.5 moles of sulfur trioxide per mole of said compound; diluting the resulting reaction product with a basic, in the Lewis base sense, solvent; and then raising the temperature of the resulting diluted reaction product above about 20° C.

3,346,630

TRIIODINATED BENZOIC ACIDS

Vernon H. Wallingford, Ferguson, Mo., assignor to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,535
8 Claims. (Cl. 260—518)

1. 3-amino-5-[N-(N-methylcarbamylmethyl)-acetamido]-2,4,6-triiodobenzoic acid.

3,346,631

LIQUID CARBOXYLATED POLYMERS AND METHOD OF PREPARING THE SAME

Thomas W. Boyer, Richard C. Chang, and Edward L. Ries, Louisville, Ky., assignors to American Synthetic Rubber Corporation, Louisville, Ky., a corporation of Delaware

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,696
6 Claims. (Cl. 260—523)

1. A process for the preparation of carboxy terminated liquid butadiene polymer comprising dissolving a high molecular weight butadiene polymer in an inert solvent therefor, contacting the resulting solution with a gas containing ozone, said ozone being present in an amount of less than 0.5% by weight of the total gas, and in at least a sufficient amount to obtain the desired polymer viscosity at a temperature in the range between —80° C. and 150° C., stopping the flow of ozone when the desired polymer viscosity in the range of 0.1 to 10,000,000 poises at 25° C. has been reached, removing the solvent and recovering the carboxylated liquid butadiene polymer, the polymer viscosity being determined by isolating samples during the reaction and measuring the viscosity.

3,346,632

METHOD FOR PREPARING THIOFORMAMIDE

Roger J. Tull, Metuchen, and Leonard M. Weinstock, Rocky Hill, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,896
7 Claims. (Cl. 260—551)

1. The process for preparing thioformamide which comprises treating hydrogen cyanide with hydrogen sulfide at a temperature of about 0–150° C. and in the presence of a base, said base being other than a member of the group consisting of primary amine and secondary amine and having a pK_a value of 5–12.

3,346,633

N,N′-(2-HYDROXYTRIMETHYLENE)BIS [o-(HYDROXYMETHYL)-BENZENESULFONAMIDE]

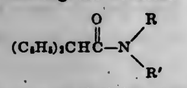
John Shavel, Jr., Mendham, and Harold Zinnes, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,538
2 Claims. (Cl. 260—556)

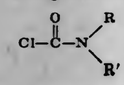
1. N,N′-(2-hydroxytrimethylene)bis [o-(hydroxymethyl)-benzenesulfonamide].

3,346,634
PROCESS FOR THE PREPARATION OF N-SUBSTITUTED AMIDES OF DIPHENYLACETIC ACID
Haldor Christensen, Martin E. Hultquist, and Thomas D. Waugh, Boulder, Colo., assignors, by mesne assignments, to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Mar. 20, 1964, Ser. No. 353,603
5 Claims. (Cl. 260—558)

1. In a process for preparing N-substituted amides of diphenylacetic acid having the formula



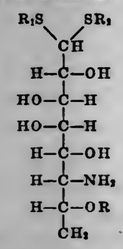
which involves the reaction of diphenylmethyl sodium and a carbamyl chloride having the formula



wherein in the above formulas, each of R and R' is a lower alkyl group, the improvement which comprises adding diphenylmethyl sodium dispersed in an inert diluent to said carbamyl chloride.

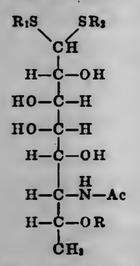
3,346,635
MERCAPTALS OF 6-AMINO-6,8-DIDEOXY-D-ERYTHRO - D - GALACTO - ALDEHYDO-OCTOSE AND N-ACYL DERIVATIVES
Brian Bannister, Kalamazoo, and Herman Hoeksema, Cooper Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,966
11 Claims. (Cl. 260—558)

1. A mercaptal of the formula:



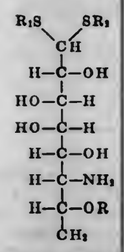
wherein R is selected from the group consisting of hydrogen and methyl and wherein R_1 and R_2 are selected from the group consisting of alkyl radicals of from 1 to 18 carbon atoms, inclusive, benzyl and 2-thenyl.

4. A compound of the formula:



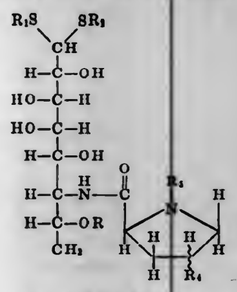
wherein R is selected from the group consisting of hydrogen and methyl, wherein R_1 and R_2 are selected from the group consisting of alkyl radicals of from 1 to 18 carbon atoms, inclusive, benzyl and 2-thenyl, and wherein Ac is the acyl radical of an alkanoic acid having from 2 to 12 carbon atoms, inclusive or benzoic acid.

9. A process for the production of a mercaptal of Formula I:



I

wherein R is selected from the group consisting of hydrogen and methyl and wherein R_1 and R_2 are selected from the group consisting of alkyl radicals of from 1 to 18 carbon atoms, inclusive, benzyl and 2-thenyl, which comprises: heating a mercaptal of Formula II:



II

wherein R, R_1 and R_2 have the significance as hereinabove and wherein R_4 and R_5 are alkyl radicals of from 1 to 12 carbon atoms, inclusive, with hydrazine hydrate to obtain the mercaptal of Formula I above.

3,346,636
PRODUCTION OF CYCLOHEXYLAMINE
Robert S. Barker, Port Washington, N.Y., assignor to Halcon International, Inc., a corporation of Delaware
No Drawing. Filed Feb. 13, 1964, Ser. No. 344,531
3 Claims. (Cl. 260—563)

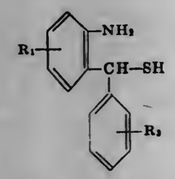
1. A process for the preparation of a cyclohexylamine from a cyclohexanol mixture containing up to about 15% of the corresponding cyclohexanone, comprising reacting the mixture with ammonia in the presence of hydrogen and a hydrogenation catalyst at elevated temperature in the range of 130° to 500° C. and pressure in the range of 5 to 250 atmospheres to form said cyclohexylamine, at least part of said cyclohexylamine being derived from the cyclohexanone, recovering the latter, the ratio of ammonia being in the range of 2 to 10 mols per mol of the crude cyclohexanol and the ratio of hydrogen being in the range of 2 to 10 mols per mol of said cyclohexanol.

3,346,637
PROCESS FOR THE MANUFACTURE OF 1,2-DIAMINOMETHYLCYCLOBUTANE
Kurt Sennewald, Knapsack, near Cologne, Heinz Erpenbach, Surth, near Cologne, Hugo Gudernatsch, Hermulheim, near Cologne, and Wilhelm Vogt, Knapsack, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,612
Claims priority, application Germany, Sept. 7, 1963, K 50,767
6 Claims. (Cl. 260—563)

1. A process for preparing 1,2-diaminomethylcyclobutane comprising dissolving 1,2-dicyanocyclobutane reactant in an inert solvent, treating the resulting solution with hydrogen at a temperature of about 100–200° C. and under a pressure of about 100–500 atmospheres, in the presence of Raney-cobalt as a hydrogenating catalyst and at least a molar excess proportion of ammonia, and recovering the resulting 1,2-diaminomethylcyclobutane product from the reaction mixture.

3,346,638
α-PHENYL-2-AMINO-BENZYLMERCAPTANES
Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,248
2 Claims. (Cl. 260—570)

1. A compound of the formula



wherein R_1 is selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy and R_3 is selected from the group consisting of hydrogen and halogen.

3,346,639
PROCESS FOR THE PREPARATION OF ALKYL DIFLUORAMINES
Robert A. Wiesboeck, Atlanta, Ga., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,889
7 Claims. (Cl. 260—583)

1. A process for the preparation of alkyl difluoramines which comprises treating compounds selected from the group consisting of alkyl sulfonamides and alkyl sulfamates of the general formula

$$RNHSO_2R^1$$

in which R is alkyl containing 1 to 5 carbon atoms and R^1 is selected from the group consisting of ONa, NH_2 and R with fluorine in aqueous solution.

3,346,640
PREPARATION OF MONOALKYLAMINES AND DIALKYLAMINES
August Guyer and Pio Guyer, Zurich, Switzerland, assignors to Lonza Ltd., Basel, Switzerland
No Drawing. Filed July 21, 1964, Ser. No. 384,241
Claims priority, application Switzerland, July 24, 1963, 9,195/63
7 Claims. (Cl. 260—583)

1. A process for the preparation of monoalkylamines and dialkylamines comprising forcing first and aliphatic aldehyde into a reaction of liquid anhydrous ammonia or a mixture of liquid anhydrous ammonia with a monoalkylamine in the molar ratio aldehyde to liquid anhydrous ammonia or a mixture of liquid anhydrous ammonia and a monoalkylamine of 1:2 to 15 and at a temperature in the range of 0 to 40° C., thereby forming an aldehyde-ammonia solution, then reacting and hydrogenating with hydrogen while maintaining said solution in liquid phase under a hydrogen pressure of at least 40 atmospheres and a temperature of 70 to 220° C. in the presence of a hydrogenation catalyst, and finally recovering the obtained alkylamine.

3,346,641
DIFLUOROAMINO ACETALS AND METHOD OF PREPARATION
Edwin A. Schmall, Springfield, and John R. Lovett, Edison, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 23, 1961, Ser. No. 135,405
10 Claims. (Cl. 260—584)

1. Difluoramino substituted acetal having the formula:

$$RCH(OR')(NF_2)$$

wherein (OR') is an alkoxy group, NF_2 is a difluoramino group attached to the same carbon as is (OR') and R is selected from the group consisting of H, alkyl radical, alkenyl radical, and said radicals having an alkoxy substituent.

5. Process of substituting an NF_2 group for an alkoxy group (OR') in an acetal having the formula:

$$RCH(OR')_2$$

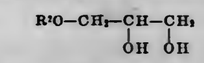
wherein R is selected from the group consisting of H, alkyl radical, alkenyl radical, and said radicals having alkoxy substituents, which comprises reacting the acetal with HNF_2 in a reaction mixture containing 1 to 10 moles of HNF_2 per mole of the acetal at a reaction temperature in the range of about 20° to 200° C. under a pressure sub-atmospheric to 450 p.s.i.a. until a product is formed having at least an NF_2 substituted for one of the (OR') groups in the acetal, then recovering as products an alcohol having the composition R'OH and the acetal conversion product containing an NF_2 group substituted for at least one (OR') group.

3,346,642
PROCESS FOR THE PREPARATION OF DIFLUORAMINO ETHERS
Samuel Franklin Reed, Jr., Huntsville, Ala., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed May 24, 1963, Ser. No. 283,109
7 Claims. (Cl. 260—584)

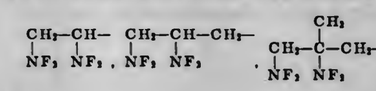
1. Process for the preparation of NF_2-containing ethers, said ethers being selected from the group consisting of alkyl ethers in which the alkyl is $C_{1\text{-}10}$, which comprises reacting the mixture of the said ether and tetrafluorohydrazine at a temperature of 200° to 400° C.

3,346,643
DIFLUORAMINO GLYCOLS AND THEIR PREPARATION
Samuel Franklin Reed, Jr., Huntsville, Ala., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Oct. 24, 1962, Ser. No. 234,278
10 Claims. (Cl. 260—584)

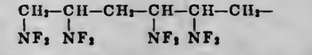
1. Compounds of the general formula



in which R^2 is selected from the group consisting of

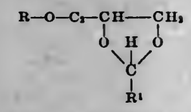


and

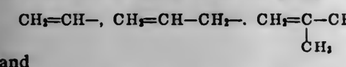


6. A process for the preparation of the compounds of claim 1 which comprises reacting

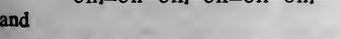
(A) the substituted 1,3-dioxolane of the general formula



in which R is selected from the group consisting of



and



and

R^1 is selected from the group consisting of hydrogen and lower alkyl containing 1 to 4 carbon atoms;

(B) tetrafluorohydrazine, N_2F_4; and

(C) hydrolyzing the reaction product of (A) and (B) by treatment with dilute acid.

3,346,644

DIFLUORAMINO ETHERS AND THEIR PREPARATION

Charles B. Colburn, Huntsville, Ala., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 17, 1963, Ser. No. 274,383
11 Claims. (Cl. 260—584)

1. Nitrogen- and fluorine-containing ethers selected from the group consisting of α-difluoramino diethyl ether, β-difluoramino diethyl ether, difluoramino dimethyl ether, and sym-bis(difluoramino)dimethyl ether.

6. A process for the preparation of difluoramino ethers which comprises reacting lower alkyl ethers and tetrafluorohydrazine, N_2F_4, under the influence of ultraviolet light.

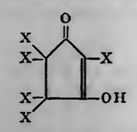
3,346,645

METHOD FOR MAKING HALOGENATED CYCLIC ENOLS AND SALTS THEREOF

Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,598
4 Claims. (Cl. 260—586)

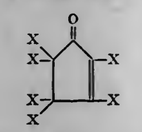
1. A process for preparing a compound of the formula:



wherein X is a halogen selected from the group consisting of chlorine and bromine comprising reacting a compound having the structure:

ROH

wherein R is selected from the group consisting of alkyl, alkoxy-substituted alkyl, halogen-substituted alkyl and phenyl-substituted alkyl wherein said alkyl is of 1 to 20 carbon atoms, with a compound of the structure:



wherein X is a halogen selected from the group consisting of chlorine and bromine at a temperature up to about 150 degrees centigrade.

3,346,646

SELECTIVE HALOGENATION OF KETONES

Michael Kokorudz, Southgate, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Aug. 2, 1963, Ser. No. 299,490
20 Claims. (Cl. 260—593)

1. A process for the production of a 1,1,1-trihalo-2-lower-alkanone which comprises reacting a starting material consisting essentially of a 1-halo-2-lower-alkanone having at least one hydrogen atom bonded to the 1-carbon atom with a hypohalite in an aqueous medium, the halogen of said hypohalite having an atomic weight of at least 35, at a temperature within the range of about 0° to about 70° C., while maintaining the pH of the reaction mixture within the range of about 6 to about 10.

3,346,647

PROCESS FOR PREPARING HYDROXYALKYL PHOSPHINE OXIDES

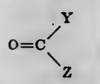
Albert Y. Garner, Yellow Springs, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,857
5 Claims. (Cl. 260—606.5)

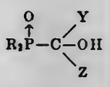
1. The method which comprises mixing together (1) a phosphorus compound of the formula

$$R_2—P—X$$

wherein R is a benzoid hydrocarbon radical linked to the phosphorus through nuclear carbon, free of acetylenic and olefinic unsaturation and containing from 6 to 12 carbon atoms, and X is halogen having an atomic weight of above 34, (2) an alkanone of the formula



in which Y and Z are alkyl radicals of from 1 to 4 carbon atoms, and (3) an alkaline earth metal, to obtain a reaction product, and subsequently contacting the reaction product with water to obtain a diaryl(α-hydroxyalkyl) phosphine oxide of the formula



wherein R, Y and Z are as above defined.

3,346,648

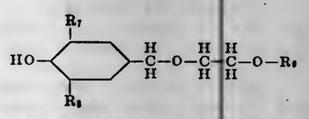
BENZYL ETHERS

Calvin J. Worrel, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 1, 1961, Ser. No. 135,428
4 Claims. (Cl. 260—611)

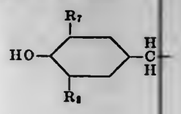
1. A compound having the formula

III.



R_7 is an alkyl group of from 1–12 carbon atoms, R_8 is an alpha-branched alkyl group of from 3–12 carbon atoms, and R_9 is selected from the group consisting of hydrogen and radicals having the formula

IV.



3,346,649

SELECTIVE PARTIAL DEALKYLATION OF TERTIARY ALKYLATED PHENOLS

Gerd Leston, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,489
9 Claims. (Cl. 260—624)

1. A method of selectively partially dealkylating 4,6-di-t-alkyl-3-lower alkylphenols, comprising heating at a temperature of 200° C. up to reflux temperature a 4,6-di-t-alkyl-3-lower alkylphenol in the presence of a catalytic amount of an aryloxide of a metal selected from the group consisting of the fifth and sixth periods of the Group IV–B and V–B elements of the Periodic Table until about 0.2–1.5 moles of isoolefin per mole of 4,6-di-t-alkyl-3-lower alkylphenol are evolved, the resulting product being a mixture containing mixed mono-t-alkyl-3-lower alkylphenols, wherein the 4-t-alkyl-3-lower alkylphenol is present in an amount greater than the 6-t-alkyl-3-lower alkylphenol.

3,346,650

PREPARATION OF CITRONELLOL

Bernard J. Kane, Atlantic Beach, Fla., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 22, 1965, Ser. No. 441,854
7 Claims. (Cl. 260—631.5)

1. A process of selectively catalytically hydrogenating a dienol selected from the class consisting of geraniol, nerol, and mixtures thereof to produce predominantly citronellol, comprising:

contacting said dienol in a closed system with copper chromite and a hydrogen-source selected from the group consisting essentially of molecular hydrogen, alkanols and cycloalkanols containing up to six carbon atoms, and mixtures of said hydrogen and said alkanols and said cycloalkanols,

carrying out said hydrogenation at a temperature of about 150° C. to about 240° C. and at a pressure of about 60 p.s.i.g. to about 600 p.s.i.g., and

stopping said hydrogenation prior to hydrogenating substantially all of the dienol.

3,346,651

STABILISED VINYLIDENE CHLORIDE MONOMER CONTAINING PARAALKOXY PHENOL AND AMMONIA

John E. Moakes, Fairlight, New South Wales, Australia, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,714
Claims priority, application Great Britain, Mar. 8, 1963, 9,323/63
8 Claims. (Cl. 260—652.5)

1. A stabilised vinylidene chloride composition comprising monomeric vinylidene chloride and a paraalkoxy phenol having 1 to 4 carbon atoms in the alkoxy group and ammonia as additives synergistically effective in inhibiting prepolymerisation.

7. A method of inhibiting the prepolymerisation of monomeric vinylidene chloride comprising adding to the vinylidene chloride a composition comprising a paraalkoxy phenol having 1 to 4 carbon atoms in the alkoxy group and ammonia, and periodically adding additional ammonia, whereby the storage life of the stabilised vinylidene chloride is increased.

3,346,652

FLUORINATION OF HALOOLEFINS

Donald Pilipovich, Canoga Park, Calif., assignor to North American Aviation, Inc.

No Drawing. Filed Dec. 24, 1962, Ser. No. 248,178
8 Claims. (Cl. 260—653)

1. A process for fluorinating a halo-olefin having an ethylenic linkage in which at least one carbon atom of the linkage is a terminal carbon atom of the halo-olefin, the process comprising reacting the olefin with trifluoramine oxide and boron trifluoride in condensed phase, whereby a fluorocarbon is produced which is a fluorine addition product of the olefin.

3,346,653

PROCESS FOR DEHYDROHALOGENATION

Eugene F. Lutz, Concord, Calif., and Stephen W. Beatty, New York, N.Y., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,980
9 Claims. (Cl. 260—666)

1. A process for the dehydrohalogenation of non-aromatic hydrocarbon halides in which not more than about 50% of the bonds are unsaturated and which contain from 2 to about 20 carbon atoms by contacting the hydrocarbon halides with a media comprising a major portion of N-alkylpyrrolidone containing from 1 to about 12 carbon atoms in the alkyl group, and with a halide catalyst to form a reaction mixture and heating said reaction mixture to from about 25 to about 300° C. whereby said HCl can be recovered without neutralization.

3,346,654

PROCESS FOR THE PRODUCTION OF POLYALKYLCYCLOHEXENES AND POLYALKYLBENZENES

Masataka Amagasa and Tadashi Yamaguchi, Sendai-shi, Japan, assignors to Chiyoda Kakokensetsu Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,595
The portion of the term of the patent subsequent to Oct. 11, 1983, has been disclaimed
4 Claims. (Cl. 260—666)

1. A process for producing polyalkylcyclohexenes and polyalkylbenzenes consisting essentially of contacting polyalkylcyclohexadienes with alkali metal amide or alkaline earth metal amide in the presence of liquid ammonia.

3,346,655

PREPARATION OF UNSATURATED SIDE CHAIN CYCLOALKANES

George R. Lester, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 7, 1965, Ser. No. 493,907
9 Claims. (Cl. 260—666)

1. A process for the preparation of a vinylcyclohexane which comprises photochemically reacting a vinylcyclohexene with a ketone by irradiation at a wavelength of from about 2700 to about 5000 A. at a temperature in the range of from about ambient to about 100° C., reacting the resultant product with hydrogen in the presence of a hydrogenation catalyst at hydrogenation conditions including a temperature in the range of from about ambient to about 75° C. and at a pressure in the range of from about 10 to about 200 pounds per square inch, thereafter decomposing the resultant hydrogenated product by treatment with an inorganic acid at ambient temperature and atmospheric pressure, and recovering the resultant vinylcyclohexane.

3,346,656

PREPARATION OF DIMETHYLDECALINS

Abraham Schneider, Los Angeles, Calif., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Jan. 10, 1963, Ser. No. 250,503
4 Claims. (Cl. 260—666)

1. Method for preparing dimethyldecalins which comprises contacting a C_8 naphthene hydrocarbon feed substantially free of paraffin hydrocarbon of seven or more

carbon atoms at a temperature in the range of −20° C. to 80° C. with a preformed liquid catalyst complex obtained by reacting a paraffin hydrocarbon having at least eight carbon atoms with an aluminum halide selected from the group consisting of $AlCl_3$ and $AlBr_3$ and a hydrogen halide selected from the group consisting of HCl and HBr.

3,346,657

PROCESS FOR ALKYLATING AROMATIC HYDROCARBONS USING SUPPORTED HETEROPOLY ACID CATALYST

Alfred M. Henke, Springdale, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,444
19 Claims. (Cl. 260—671)

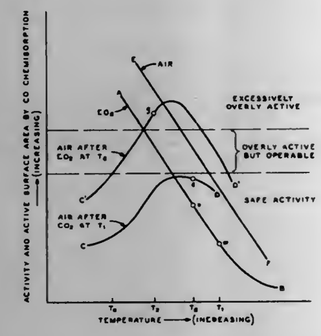
1. A process for the alkylation of an aromatic hydrocarbon having at least one alkylatable position open on a ring which comprises contacting said aromatic hydrocarbon in admixture with an olefinic organic compound at a temperature between 100° F. and 450° F. with a catalyst comprising a tungsten containing heteropoly acid on a solid support comprising at least 50 weight percent silica.

3,346,658

METHOD FOR ADJUSTING THE INITIAL ACTIVITY OF CHROMIA-ALUMINA CATALYSTS

Bernard F. Mulaskey, Point Richmond, Hugh F. Harnsberger, San Anselmo, and Robert H. Lindquist, Berkeley, Calif., assignors to Chevron Research Company, a corporation of Delaware

Filed Jan. 27, 1964, Ser. No. 340,200
9 Claims. (Cl. 260—680)



1. The method of pretreating a chromia-alumina catalyst for use in a fixed-bed, cyclically operated, butane dehydrogenation process to improve the operation thereof, said catalyst being of a type which would normally be overly active for butane dehydrogenation when first used such that excessively high temperatures would be reached in the catalyst bed during regeneration in startup operation of the process unless limited to low per-pass conversion operation until the catalyst is substantially deactivated, which method comprises: treating said catalyst with flowing hot vapor free of oxygen at between 1400° F. and 1800° F. until the butane dehydrogenation activity of the catalyst has been decreased to lower than desired for use in said process, and then treating said catalyst with flowing hot vapor containing oxygen at between 1000° F. and 1800° F., until the butane dehydrogenation activity of the catalyst has been increased to substantially the activity desired for use in said process whereby the possibility of reaching excessively high temperatures in the catalyst bed during regeneration, in subsequent startup operation of the process at desired high per pass conversion, is substantially eliminated.

3,346,659

PRODUCTION OF CONJUGATED DIOLEFINES

John Lynn Barclay, Tadworth, and Edward James Gasson, Epsom Downs, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed June 2, 1964, Ser. No. 372,081
Claims priority, application Great Britain, June 13, 1963, 23,699/63
22 Claims. (Cl. 260—680)

1. A process for the production of a conjugated diolefine which comprises reacting a mono olefine, the molecule of which contains a chain of not less than 4 carbon atoms in the vapour phase with halogen-free molecular oxygen over an oxide composition consisting essentially of the oxides of antimony and a metal selected from the group consisting of vanadium, chromium, cobalt, copper, nickel, zinc, gallium, germanium, arsenic, selenium, rubidium, yttrium, zirconium, iridium, platinum, thorium, thallium, bismuth, niobium, ruthenium, rhodium, silver, indium, tantalum and osmium and mixtures thereof as catalyst.

3,346,660

ALKYLATION PROCESS WITH PRECOOLED ISOPARAFFIN AND HF ACID CATALYST

Thomas Hutson, Jr., and Cecil O. Carter, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 20, 1965, Ser. No. 488,401
1 Claim. (Cl. 260—683.49)

A process for increasing the octane value of the effluent from an alkylation reaction zone which comprises alkylating isobutane with an olefin feedstock consisting essentially of butylene and propylene in the presence of an HF acid catalyst in an alkylation zone wherein said isobutane is precooled to a temperature of 35° F. and said HF acid catalyst is precooled to a temperature of about 89° F. and the resulting mixture of isobutane, HF acid catalyst and olefin feedstock having a temperature of about 89° F., an isobutane:olefin ratio of about 12.4 and an HF catalyst:olefin ratio of about 3.98 is introduced to said alkylation zone, recovering alkylation effluent having a temperature of about 95° F. from said alkylation zone, separating said HF acid catalyst therefrom and thereafter recovering the improved isobutane: olefin alkylate as a product of the process.

3,346,661

START UP PROCEDURE FOR OLEFIN DISPROPORTIONATION REACTIONS

Reagan T. Wilson and Lewis G. Larson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed June 4, 1964, Ser. No. 372,552
6 Claims. (Cl. 260—683)

1. In a catalytic olefin disproportionation process wherein a solid olefin disproportionation catalyst is maintained in a fixed bed and contacted with an olefin for conversion thereof and wherein the catalyst is regenerated by raising the temperature above reaction temperature and lowering the temperature prior to reinitiating the reaction, the improvement which comprises lowering the temperature of the catalyst below reaction temperature a sufficient amount that the heat of adsorption of the reactant stream including said olefin upon the surface of the catalyst will raise the temperature of the catalyst to the desired disproportionating temperature.

3,346,662

PREPARATION OF LINEAR INTERNAL OLEFINS

Donald H. Antonsen, Glen Mills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,950
19 Claims. (Cl. 260—683.15)

1. Method of preparing linear internal olefins of trans structure which comprises contacting a linear alpha olefin of the C_6–C_{24} range at a temperature in the range of 0–50° C. with a catalyst system comprising $TiCl_4$ and an aluminum alkyl compound selected from the group consisting of AlR_3, AlR_2Cl, $AlR_{1.5}Cl_{1.5}$ and $AlRCl_2$ wherein the proportions of $TiCl_4$ and aluminum alkyl compound are such that the R:Ti molar ratio is in the range of 0.5–5.0, whereby conversion of said alpha olefin to higher boiling compounds occurs, distilling the reaction product to obtain a dimer fraction comprising a major amount of unbranched trans olefin dimer and a minor but substantial amount of vinylidene-type dimer, and selectively separating from said dimer fraction the unbranched trans olefin dimer in a product concentration of at least 95%.

3,346,663

PROCESS FOR THE PRODUCTION OF POLYOXYMETHYLENES

Werner Kern and Volker Jaacks, Mainz (Rhine), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Aug. 26, 1960, Ser. No. 52,051
Claims priority, application Germany, Aug. 29, 1959, D 31,399; Mar. 10, 1960, D 32,823, D 32,824; May 13, 1960, D 33,328
7 Claims. (Cl. 260—823)

1. A process for the production of polyoxymethylenes comprising polymerizing trioxane at a temperature between −20 and +160° C. under essentially water free conditions in the presence of a Lewis acid catalyst and at least one organic compound selected from the group consisting of polyvinyl acetate, polymethyl methacrylate, the polycarbonate of 4,4'-dihydroxy phenyl-2,2-propane and polyvinyl butyral, said polymeric compounds having a degree of polymerization of at least 10, the quantity of said organic compound being 0.001 to 50 parts by weight per 100 parts by weight of the trioxane.

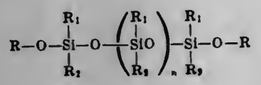
3,346,664

COATING COMPOSITIONS CONTAINING HYDROXYLATED DIOLEFIN POLYMER AND SILICONE RESIN

Stephen A. Yuhas, Jr., Perth Amboy, and Clifford W. Muessig, Roselle, N.J., and Marnell Albin Segura, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,681
6 Claims. (Cl. 260—827)

1. A new coating composition comprising a liquid hydroxylated diolefin polymer containing 5 to 20 wt. percent of a polysiloxane having the formula



where R is a C_1 to C_4 alkyl and R_1 and R_2 are selected from the group consisting of C_1 to C_4 alkyl, C_1 to C_4 alkoxyl and C_6 to C_8 aryl, alkylaryl and aralkyl and n is an integer of from 1 to 4.

3,346,665

PROCESS FOR CURING POLYEPOXIDES WITH PYROMELLITIC DIIMIDE OR ADDUCTS THEREOF AND RESULTING PRODUCTS

Carl G. Schwarzer, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,922
14 Claims. (Cl. 260—830)

1. A process for providing cured polyepoxide systems having improved properties at elevated temperatures which comprises

(a) mixing a stoichiometric amount of a diimide selected from the group consisting of pyromellitic diimide and the compound formed by reacting 2 moles of pyromellitic diimide and 1 mole of a dihalide of a dicarboxylic acid with a polyepoxide possessing more than one vicinal epoxy group, and

(b) heating the resulting mixture at a temperature ranging from about 250° to 650° F.

3,346,666

POLYMERIC DICARBOXYLIC ACIDS OF BLOCK COPOLYMERS OF ALPHA-METHYL STYRENE AND CONJUGATED DIOLEFINS AND METHOD OF MAKING THE SAME

Kent S. Dennis, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,285
6 Claims. (Cl. 260—879)

1. A method of making a polymeric dicarboxylic acid which comprises polymerizing from about 2 to about 150 gram molecular proportions of an aliphatic conjugated diolefin having from 4 to 6 carbon atoms in the molecule in a substantially anhydrous inert liquid solvent comprising an organic ether at temperatures between −78° and −20° C. in contact with an initiating polymerization catalyst consisting of an alkali metal addition compound of alpha-methyl styrene trimers to hexamers with said alkali metal at each end of said alpha-methyl styrene moiety to form a block copolymer of the type . . . AAABBBAA . . . wherein B represents the alpha-methyl styrene moieties and A represents the aliphatic conjugated diolefin moieties and in which the terminal carbon atoms of the block copolymer chains are negatively charged end groups and thereafter reacting the block copolymer with carbon dioxide whereby the block copolymer is converted to the correspondingly polymeric dicarboxylic acid.

3,346,667

PRODUCT PRODUCED BY REACTING PHOSPHORUS OXIDE OR SULFIDE, AN OXIRANE COMPOUND, AND A HYDROXY OR THIOL COMPOUND TOGETHER, AND PROCESS

Francis G. Firth, 11580 Bellagio Road, Los Angeles, Calif. 90049

No Drawing. Filed Sept. 6, 1963, Ser. No. 307,020
10 Claims. (Cl. 260—920)

1. Hydrolysis resistant, phosphorous containing composition having an acid number not higher than 1 which has been produced by the reaction together at temperatures less than about 120° C. of

(a) a member selected from the group consisting of dry phosphorous oxides and sulfides:

(b) as an oxyalkylating agent a compound containing at least one reactive oxirane group; and

(c) a compound having at least one active hydrogen from an attached group selected from hydroxyl and thiol, the reaction products of (a), (b) and (c) being present in the composition in the molar ratio of $a:b:c$ of 1:3.5 to 20:up to 2 with the proviso that (a), (b) and (c) are mixed together prior to reaction between any of the reactants.

9. Process for the preparation of hydrolysis resistant, phosphorous containing compositions having an acid number not higher than 1 comprising mixing together prior to reaction between any two of the reactants;

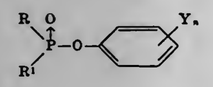
(a) a member selected from the group consisting of dry phosphorous oxides and sulfides;

(b) from 3.5 to 20 moles per mole of (a) of as an oxyalkylating agent a compound containing at least one reactive oxirane group; and

(c) up to 2 moles per mole of (a) of a compound having at least one active hydrogen from a member selected from the group consisting of hydroxyl and thiol, maintaining the mixture at a reaction temperature less than 120° C. and for a time sufficient to produce a product containing chemically combined the reactants in the ratio of 1 mole of (a) from 3.5 to 20 moles of (b) and 2 moles of (c).

3,346,668
FLUORINE-CONTAINING PHOSPHINATES
David R. Dalton, Columbus, and Ralph E. De Brunner and Edward S. Blake, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,785
10 Claims. (Cl. 260—955)

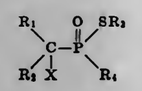
1. A compound of the formula



in which R and R′ are hydrocarbyl radicals selected from the class consisting of alkyl, aryl, cycloalkyl, and aralkyl and containing from 1 to 12 carbon atoms, Y is a perfluoroalkyl radical of from 1 to 8 carbon atoms, and *n* is a number of from 1 to 2.

3,346,669
HALO-PHOSPHORUS COMPOUNDS AND PROCESS FOR THEIR PREPARATION
Erik Regel, Mission, Kans., assignor to Chemagro Corporation, Kansas City, Mo., a corporation of New York
No Drawing. Filed Apr. 6, 1964, Ser. No. 357,761
18 Claims. (Cl. 260—960)

1. A compound of the formula



where

R_1 is an alkyl radical having 1 to 8 carbon atoms

R_2 is a hydrocarbon radical selected from the group consisting of alkyl having 1 to 8 carbon atoms, phenyl, chlorophenyl, and benzyl

R_1 and R_2 taken together is $—CH_2—CH_{2_n}—CH_2—$ and *n* is a whole number from 1 to 3 inclusive

R_3 is a hydrocarbon radical selected from the group consisting of alkyl having 1 to 8 carbon atoms and haloalkyl containing 1 to 3 carbon atoms inclusive

R_4 is a member of the group consisting of chlorine or bromine and a hydrocarbon radical selected from the group consisting of phenyl, benzyl, and alkyl having 1 to 8 carbon atoms

X is a halogen selected from the class consisting of chlorine and bromine.

11. A process of preparing alpha-halo thiophosphorus containing compounds which comprises reacting essentially one mole of an alkyl mercaptan having 1 to 8 carbon atoms and essentially one mole of a ketone having the formula



where

R_1 is an alkyl radical having 1 to 8 carbon atoms and

R_2 is a hydrocarbon radical selected from the group consisting of alkyl having 1 to 8 carbon atoms, phenyl, chlorophenyl, and benzyl

R_1 and R_2 taken together is $—CH_2—CH_{2_n}—CH_2—$ and *n* is a whole number from 1 to 3 inclusive

with essentially one mole of halophosphine selected from the group consisting of PX_3 and R_4PX_2 where

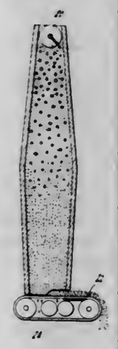
R_4 is a hydrocarbon radical selected from the group consisting of alkyl having 1 to 8 carbon atoms, phenyl, and benzyl and

X is chlorine or bromine.

3,346,670
METHOD FOR THE PREPARATION OF PHOSPHATE ESTERS
John G. Papalos, Fort Worth, Tex., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 11, 1962, Ser. No. 243,721
11 Claims. (Cl. 260—980)

1. A process for the preparation of phosphate esters comprising reacting phosphorus pentoxide with ethoxylated nonyl phenol or an ethoxylated aliphatic alcohol containing at least 6 carbon atoms, wherein a small amount of water is added to said ethoxylated nonyl phenol or aliphatic alcohol prior to the reaction with phosphorus pentoxide.

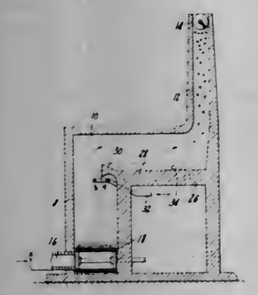
3,346,671
VERTICAL KILN OPERATION USING SHROUDED FUEL
Ervin G. Bailey, Bethlehem Township, Pa., assignor to Bailey Inventions, Inc., Bethlehem Township, Pa., a corporation of Pennsylvania
Filed Sept. 9, 1963, Ser. No. 307,418
2 Claims. (Cl. 263—53)



1. The method of improving the operating efficiency of a vertical kiln having a preheating zone, a combustion zone and a cooling zone characterized by the fact that inorganic material to be treated is loosely intermixed with individual pieces of solid carbonaceous fuel with said fuel pieces being separately encased with individual shrouds of a solid meltable refractory material, inert to O_2 and CO_2, to from a charge, feeding the charge to the preheating zone, descending the charge vertically in counterflow

relation to gases ascending therethrough as the result of feeding combustion air into the cooling zone of the kiln, which ascending air reacts with said exposed fuel after the shrouds have been melted away to heat the charge to the desired maximum treating temperature in the combustion zone of the kiln above the melting point of said shrouds but below the melting point of said inorganic material, and the resulting gases of combustion escape through the incoming charge, thereby preheating the charge, and the upflowing combustion air is preheated as it cools the treated inorganic material as the latter descends through the cooling zone of the kiln and is removed from the bottom of the kiln as solid finished product with none of said carbonaceous fuel being consumed until it descends in said kiln to the combustion zone wherein the temperature is high enough to melt said shrouds away from said carbonaceous fuel pieces.

3,346,672
METHOD FOR HEATING SOLID INORGANIC MATERIAL
Ervin George Bailey, Bethlehem Township, Pa., assignor to Bailey Inventions, Inc., Easton, Pa., a corporation of Pennsylvania
Filed Sept. 26, 1966, Ser. No. 581,927
3 Claims. (Cl. 263—53)

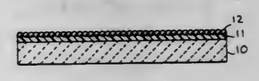


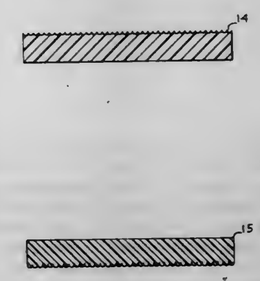
1. A method for the efficient production of solid aggregate from solid reactable inorganic materials comprising advancing solid inorganic materials to be reacted in admixture with a solid carbonaceous fuel in counterflow relation to a stream of gaseous products of combustion of said solid fuel, while restraining the fuel from reacting with said gases during the initial portion of advance of said fuel therethrough, and exposing said fuel to combustion-sustaining air after said fuel has proceeded through said restrained-combustion path of travel, to melt said reactable materials, collecting said melted material in a liquid pool, and discharging said melted material from said pool and advancing said discharged material in relative counterflow relation to the stream of combustion-sustaining air, as it is being fed towards said fuel, to solidify said discharged material into solid aggregates.

3,346,673
FORMATION OF SUBMICRON URANIUM CARBIDE PARTICLES IN METALLIC URANIUM
George A. Last and Robert S. Kemper, Jr., Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 19, 1965, Ser. No. 508,867
3 Claims. (Cl. 264—.5)

1. A method of forming a fine dispersion of uranium carbide in uranium comprising dissolving carbon in molten uranium to obtain a concentration of 700–1000 p.p.m. carbon therein, forming small droplets of the resulting solution, and fast quenching said droplets to form solid shot.

3,346,674
METHOD FOR FABRICATING BACKLIT PROJECTION SCREENS
Harvey L. Kidder, San Pedro, and Poul B. Roulund, Redondo Beach, Calif., assignors to FMA, Inc., El Segundo, Calif., a corporation of California
Filed Dec. 4, 1962, Ser. No. 242,193
2 Claims. (Cl. 264—1)





1. A method of fabricating a projection screen having a surface covered with a layer of tiny randomly distributed hemispherical lenses, said method comprising the steps of: placing a first fluid substance that will harden into a resilient solid into a container of suitable configuration; curing said first substance until its consistency is tacky; forming a half-immersed layer of tiny spheres on the surface of said cured substance; further curing said first substance until it hardens into a first resilient solid; placing a second fluid substance that will harden into a resilient solid over said layer of spheres; curing said second substance until it hardens into a second resilient solid; separating said second resilient solid from said layer of spheres, thereby producing a mold whose surface is covered with hemispherical recesses; and molding the projection screen from said mold.

3,346,675

METHOD OF PREPARING SMALL PARTICLE NITROCELLULOSE

John J. Saplego, New Brunswick, N.J., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 8, 1966, Ser. No. 577,821
7 Claims. (Cl. 264—3)

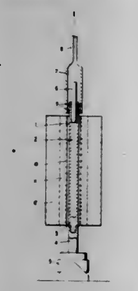
1. A process for preparing a densified nitrocellulose product which comprises:
(a) forming a slurry of fibrous nitrocellulose in water,
(b) subjecting the slurry to high shear agitation at a temperature of about 20 to 50° C.,
(c) while continuing said high shear agitation at about 20 to 50° C., adding an active nitrocellulose solvent having limited solubility in water in amount to soften and swell the nitrocellulose fibers without dissolving the same; and
(d) removing solvent by azeotropic distillation while continuing vigorous agitation.

3,346,676

METHOD FOR THE PRODUCTION OF CERAMIC NUCLEAR FUEL ELEMENTS

Yasuo Hirose and Seiji Takeda, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Oct. 28, 1964, Ser. No. 407,213
Claims priority, application Japan, Oct. 28, 1963, 38/57,306.
2 Claims. (Cl. 264—.5)



1. The method of manufacturing metal clad non-sintered ceramic powder nuclear fuel elements of great density from a metallic cladding tube and ceramic nuclear fuel powder wherein the ceramic nuclear fuel powder is placed in the metal cladding tube and compacted therein by vibration, the improvement comprising subjecting the inner parts of the metal cladding tube including the ceramic nuclear fuel powder to evacuation while heating the same to a temperature below the sintering temperature of the ceramic nuclear fuel powder and concurrently compacting the powder in the metal clad tube by vibration.

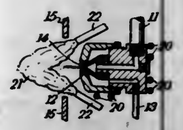
3,346,677

MANUFACTURE OF POWDERED LEAD

David Kinsell, Ellesmere Port, England, assignor, by mesne assignments, to St. Joseph Lead Company, New York, N.Y., a corporation of New York

Filed May 25, 1965, Ser. No. 458,699
3 Claims. (Cl. 264—12)

1. A method for the manufacture of lead powder which consists in supplying compressed air to an annular orifice surrounding a jet through which molten lead emerges as a stream and is conveyed by the air in atomised form to a collecting chamber and subjecting the stream of particles of molten lead to a flame which heats the particles of lead in the stream to a temperature not substantially exceeding 400° C. and thereby delays freezing of the particles on their way to the collecting chamber.

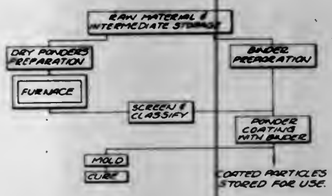


3,346,678

PROCESS FOR PREPARING CARBON ARTICLES

Harold A. Ohlgren, 2920 Overridge Drive, Ann Arbor, Mich. 48104

Filed Sept. 30, 1963, Ser. No. 312,761
6 Claims. (Cl. 264—29)



1. The process for manufacturing a molded carbon article comprising the steps of:
(a) preparing a carbon powder having particles varying in size;
(b) preparing a binder consisting of from 60%–80% phenol formaldehyde and 20%–40% phenol dialcohol;
(c) intimately mixing said powder and binder in a proportion of 70%–90% by weight powder and 10%–30% by weight binder so as to coat said particles with said binder;
(d) molding said coated powder under a pressure in the 800–10,000 p.s.i. range at an initial temperature of 175°–225° F;
(e) evacuating gases and reaction products from said coated powder during molding;
(f) gradually increasing the molding temperature 5°–10° F. per minute until a final temperature of 300°–600° F. is reached;
(g) post curing the molded article at substantially atmospheric pressures at a temperature in the 300°–600° F. range for a period of one–four hours; and
(h) further heating said article above said curing temperature at a temperature sufficient to fully carbonize or graphitize the article contents.

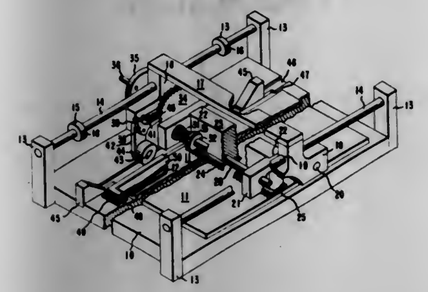
4. In a process for preparing a molded powder article; the steps comprising:
(a) providing a blended mixture of finely ground powder consisting essentially of about 90% silicon and 10% zirconium;
(b) mixing carbon particles with said silicon and zirconium mixture;
(c) heating said mixture from about 400° C. to 2200° C. in the presence of vaporized $SiCl_4$ and $ZrCl_4$ and hydrogen gas to obtain graphite particles provided with a film of silicon carbide-zirconium carbide binary;
(d) cooling said powder to room temperature;
(e) mixing said powder with a resin binder; and
(f) vacuum molding said powder and binder under pressure and at predetermined temperatures.

3,346,679

MACHINE FOR FORMING IMAGES

Cecil Louis Long, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 31, 1964, Ser. No. 356,319
5 Claims. (Cl. 264—340)



1. In a process for forming clear images in an opaque, pressure-clearable film by maintaining in contact with the relief surface of a printing form the pressure-sensitive surface of a thin, flexible sheet embodying a stratum of opaque pressure-clearable material while subjecting the opposite surface of the sheet simultaneously to a unit of equally spaced linear pressure strokes of narrow width to form a unit of spaced pressure traces, and consecutively applying the unit of strokes to form a new unit of traces adjacent to the first unit of pressure traces until the entire desired relief area has been subjected to at least one pressure stroke; the improvement characterized by shifting a plurality of times laterally in either direction the successive unit strokes so that the pressure traces are displaced from each other farther than the tracing width and then applying additional unit strokes to complete pressure tracing of the entire desired relief area.

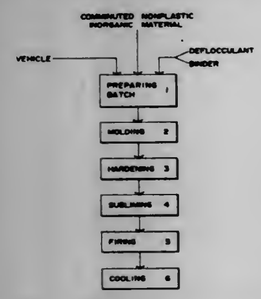
2. An improved process according to claim 1 wherein the unit of pressure strokes is applied from two rows of pressure contact areas that are offset from each other so as to form interspaced pressure tracings.

3,346,680

METHOD OF MOLDING COMMINUTED NONPLASTIC INORGANIC MATERIAL

Edward A. Bush, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 26, 1965, Ser. No. 428,114
9 Claims. (Cl. 264—44)



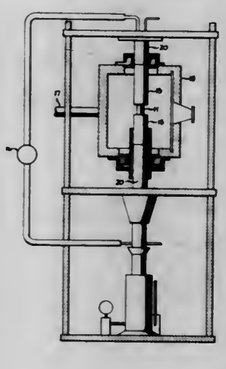
1. The process of making sintered articles from comminuted nonplastic inorganic material comprising the steps of:
(a) preparing a molding batch mixture consisting of comminuted nonplastic inorganic material as a major component by weight thereof, a melted organic vehicle that is solid at normal room temperature and pressure, said vehicle having a melting point below about 200° C. and having a vapor pressure of at least about 1 mm. of Hg at the melting point of said vehicle under ambient atmospheric pressure of substantially one atmosphere, and an organic deflocculant selected from monohydric alcohols containing at least eight carbon atoms,
(b) molding said mixture, while said vehicle remains melted, to the desired shape,
(c) cooling said molded mixture to solidify said vehicle and harden the mixture into a rigidified green body,
(d) subliming said vehicle from said green body, and
(e) firing said green body to sinter the nonplastic inorganic material into a coherent body.

3,346,681

METHOD OF MAKING REFRACTORY PRODUCTS

Jack L. White, Del Mar, and Joseph M. Pontelandolfo, San Diego, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed June 23, 1965, Ser. No. 466,490
7 Claims. (Cl. 264—56)



1. A method for treating a body formed of a refractory material matrix which includes a liquable dispersant, which method comprises heating the body to a temperature sufficient to maintain dispersant in a liquid state while applying a compressive stress to said body for a predetermined time while said dispersant is molten.

3,346,682

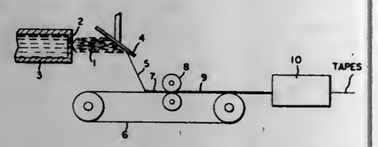
METHOD FOR MAKING A FILTERING MEDIUM FROM PLEXIFILAMENTARY MATERIAL

Richard Noble Thomson, Chesterfield County, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 16, 1962, Ser. No. 180,079
4 Claims. (Cl. 264—93)

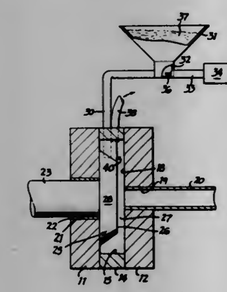
1. A process for making a tobacco smoke filtering material comprising flash spinning a crystalline synthetic polymer through an orifice to form a plexifilamentary strand, intercepting the strand as it issues from the orifice by an oscillating surface set at angle to the direction of travel of the strand in order to spread the strand into a web and direct the web downward toward a moving collection surface, collecting the web on the collection surface in

overlapping, multi-directional, intersecting layers to form a sheet, calendering the sheet to reduce its thickness to below about 0.5 cm. at a basis weight of between about 0.25 oz./yd.^{2} and 10 oz./yd.^{2}, slitting the pressed sheet into tapes of between about 0.3 and 10 inches in width,



feeding a tape into a jet, impinging a stream of gas against the plane of the tape and at an angle of between about 10° and 45° thereto increase the cross-sectional area of the said tape at least 5 times and reduce its density to between about 0.001 and 0.120 gm./cm.^{3} and collecting the bulked tape.

3,346,683
METHOD AND APPARATUS FOR EXTRUDING THERMOPLASTIC MATERIAL
Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed June 1, 1964, Ser. No. 371,497
8 Claims. (Cl. 264—169)



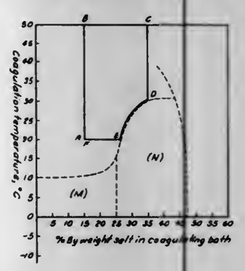
1. In an elastic melt extruder having a casing providing a central generally cylindrical recess and a tangential inlet passage, a closure plate fixed to said casing and having its inner face defining one surface of a melt chamber, said plate having a central outlet orifice opening onto said chamber, a rotatable plate centrally located in said chamber and rotatable about an axis coxially with said orifice, said rotatably plate having a front face spaced from the closure plate inner face in confronting relation to define a melt gap therebetween and means for rotating said plate, the improvements of providing said rotatable plate with a peripheral surface of substantial area passing adjacent said casing inlet passage as said rotatable plate is rotated in said recess, a supply conduit having an outlet end disposed in said tangential inlet passage adjacent the peripheral surface of said rotatable plate, means for introducing a suspension of finely-divided thermoplastic material in a gaseous medium into said supply conduit for adherence to said peripheral surface, means exhausting said medium from said passage, and a fixed scraper blade carried by said casing and projecting into scraping relation to said plate peripheral surface to remove adherent material therefrom, said scraper blade extending to said melt gap for directing the removed thermoplastic material into said melt gap for plasticization thereof.

3,346,684
SPINNING OF HIGH MOLECULAR WEIGHT POLYAMIDE FILAMENTS
Raymond George Gosden, Cwmbran, England, assignor to British Nylon Spinners Limited, Pontypool, England
Filed May 7, 1964, Ser. No. 365,665
Claims priority, application Great Britain, May 25, 1963, 20,970/63
2 Claims. (Cl. 264—176)



1. In a process of making high molecular weight synthetic linear polyamides into filaments wherein the polyamides are melt-spun in the form of molten filaments and wherein the filaments are solidified, treated with steam, wound up and subsequently unwound and drawn, the improvement which increases the mass rate of melt spinning and drawing without adversely affecting the birefringence and extensibility of the drawn filaments, said improvement comprising: increasing the mass rate of melt spinning the filaments thereby forming filaments of greater denier; positively forwarding the filaments, almost immediately after solidification and before treating with steam by contacting the filaments with a forwarding means, at a linear speed which is substantially equal to the linear speed of winding up whereby the denier of the wound up filaments is increased and whereby the filaments may be drawn subsequently to a greater extent without producing undesirable properties in the drawn filaments.

3,346,685
WET SPINNING OF ACRYLONITRILE POLYMER FIBERS
Ronald D. Crozier, Newport News, and Richard E. Harder, James H. Hood, and Rupert B. Hurley, Williamsburg, Va., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 390,034
13 Claims. (Cl. 264—182)



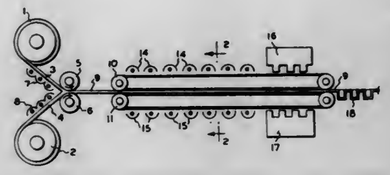
1. The method of spinning acrylonitrile polymer fibers comprising spinning an aqueous inorganic saline solution of a polymer of an ethylenically unsaturated monomeric material containing between about 85 and 95 weight percent polymerized acrylonitrile at between about 55° and 100° C. into a coagulation bath of an aqueous inorganic saline solution maintained at temperatures and saline constituent concentrations within the area bounded by the curve ABCDEF of the attached FIGURE 2.

ERRATUM

For Class 264—248 see:
Patent No. 3,346,574

3,346,686
METHOD OF UNITING FOAMED PLASTIC SHEETS AND THERMOFORMING THE SAME
Frederick H. Collins, Cedar Grove, N.J., assignor, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed May 27, 1964, Ser. No. 370,508
4 Claims. (Cl. 264—321)

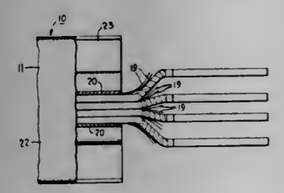
1. A method of making articles from thermoplastic foam sheets comprising the steps of:
(a) providing two separate thermoplastic foam sheet plies, each ply having approximately the same thickness;
(b) heating one surface of each of said plies to a temperature below that at which said thermoplastic foam undergoes cellular collapse but at least to a temperature at which said plies can be bonded together;
(c) pressing the two heated surfaces of said plies together to bond same into a composite two ply sheet;



(d) heating the external surfaces of the composite sheet to a temperature below that at which said thermoplastic foam undergoes cellular collapse, but at least to a temperature at which said sheet can be deformed without rupture; and,
(e) draw-forming said composite sheet while still heated into said article.

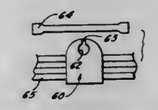
ELECTRICAL

3,346,687
ELECTRIC POWER BUSWAY HAVING NON-SELF-ADHERING INSULATION BETWEEN THE BUSBARS AND BETWEEN THE HOUSING AND THE BUSBARS
Walter Giger, Jr., West Hartford, and Lynn M. Harton, Avon, Conn., assignors to General Electric Company, a corporation of New York
Filed Aug. 5, 1966, Ser. No. 570,598
10 Claims. (Cl. 174—68)



1. Electric power busway apparatus comprising:
(a) an elongated rigid housing;
(b) a plurality of relative wide thin flat busbars supported in said housing in side-by-side relation with said flat surfaces adjacent each other;
(c) means carried by said housing urging said busbar conductors together throughout the major portion of the length of said housing;
(d) a first layer of a first insulating material on each of said bars;
(e) at least two separate sheets of a second insulating material between each pair of adjacent busbars;
(f) said first material having the characteristic of adhering to itself under sustained pressure;
(g) said second material having the characteristic of not adhering to itself under sustained pressure, each of said two sheets of insulating material adhering to said first insulating material of said adjacent busbars respectively, whereby relative movement between said pairs of busbars causes relative sliding movement of said two sheets of said second insulating material.

3,346,688
FORK-TYPE WIRING HARNESS
Paul Fields, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverley Hills, Calif.
Filed Nov. 12, 1964, Ser. No. 410,674
4 Claims. (Cl. 174—68)



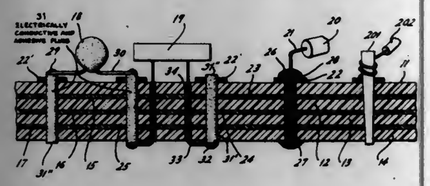
1. A fork-type harness for retaining filaments comprising a unitary member of substantially rigid resilient plastic, said member comprised of a base portion and at least two spaced upstanding tines forming a U-shaped channel, each of said tines having portions forming a resiliently deformable aperture near a free end remote from the base portion, a linear solid channel closing bar member bridging said U-shaped channel and engaging said aperture forming portions of said two upstanding tines, said bar member including spaced portions dimensioned larger than said apertures which deform said apertures forming portions during interengagement of said bar and tines and function to inhibit removal of said bar member from said tines.

3,346,689
MULTILAYER CIRCUIT BOARD USING EPOXY CARDS AND SILVER EPOXY CONNECTORS
John Parstorfer, Philadelphia, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 428,971
2 Claims. (Cl. 174—68.5)

1. A multilayer circuit board comprising a plurality of flat, electrically insulative cards, laminated and bonded together and having:
(a) a dense pattern of metallic electrical conductors printed on a plurality of said cards to provide circuit systems in several layers of said board, said systems including mutually superposed crossover points whereat conductors of different layers overlie

one another and are aligned with one another in superposed relation;

(b) numerous small, substantially cylindrical apertures piercing the cards and conductors at locations distributed over the board, each disposed at one of the aligned crossover points and individual to the same;



(c) conductive metallic films plated out on the walls of said apertures; and

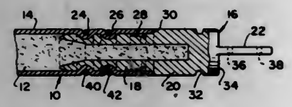
(d) plugs of electrically conductive material mechanically adhesive to said films on said insulative cards and said metallic conductors and filling said apertures.

3,346,690

ALKALI METAL CONDUCTOR TERMINAL

Norman E. McNerney, Hampden, N.H., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 10, 1966, Ser. No. 533,335
1 Claim. (Cl. 174—77)



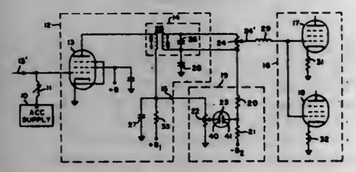
A terminal for an elongated conductor of an alkali metal, alkaline earth metal or an alloy or mixtures thereof, which conductor is enclosed in a tubular sheath, said terminal being in the form of a plug having a contact portion adapted to fit within an end of the sheath in close proximity thereto and positioned therein, an annular grooving extending about the periphery of said contact portion, external compression means positioned about said sheath to retain said sheath against said annular grooving, means forming a circumferential relief about said contact portion adjacent the end of said sheath proportioned to define a capillary sealing space between said contact portion and said sheath, and sealant filling said space.

3,346,691

SIMPLIFIED COLOR-KILLER CIRCUIT

Robert F. Tschannen, Lombard, Ill., assignor to Hazeltine Research, Inc., a corporation of Illinois

Filed June 2, 1965, Ser. No. 460,627
4 Claims. (Cl. 178—5.4)



1. A chrominance signal processing channel, which provides color-killer action, for use in a compatible color television receiver, comprising:

means for deriving an automatic chrominance control signal which varies as a function of the signal intensity of the received chrominance signal;

amplifier means, including an electron device having at least an input electrode and an output electrode with said chrominance and automatic chrominance control signals coupled to said input electrode and a load circuit coupled to said output electrode, for providing at a first terminal of said load circuit an amplified chrominance signal whose amplitude is dependent on the amplitude of the automatic chrominance control signal and for providing at a second terminal of said load circuit an amplified automatic chrominance control signal;

demodulator means, including a pair of electron devices, coupled to said first terminal for demodulating said amplified chrominance signal;

a resistive coupling network connecting a source of potential to said demodulator means sufficient to render said electron devices inoperative;

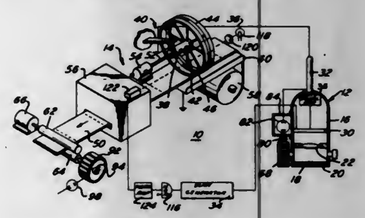
a gas discharge device, connected between said second terminal and the resistive coupling network, for coupling the D-C potential at the second terminal to said resistive coupling network when a chrominance signal is received for rendering the demodulator responsive to the amplified chrominance signal and for preventing the D-C potential at said second terminal from being coupled to said resistive network when a monochrome signal is received, thereby permitting said electron devices to be rendered inoperative by said source of potential.

3,346,692

COPYING APPARATUS HAVING A HAND-HELD SCANNER SYNCHRONIZED TO THE RECORDING UNIT

Eugene Garfield, Swarthmore, Pa., and Lawrence Lutzker, Palo Alto, Calif., assignors to Institute for Scientific Information, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 21, 1966, Ser. No. 536,077
9 Claims. (Cl. 178—6)



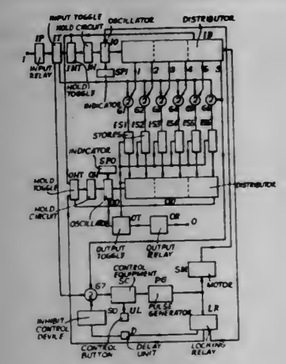
1. Copying and reproducing apparatus comprising a scanning head having an outer housing with a scanning opening in said housing, means within said housing for sensing light transmitted into said opening and producing electrical signals proportional thereto, recording means for receiving said signals and recording a pattern corresponding to the pattern of light transmitted into said opening, said recording means including a recording head and an electro-sensitive strip; drive means for moving said strip past said recording head; scanning head movement sensing means for sensing the movement of said scanning head, said scanning head movement sensing means including a light source; a light sensing transducer for transducing light received from said light source into electrical signals; and a displaceable light interrupter, intermediate said source and said transducer, for sequentially interrupting the passage of light to said transducer in proportion to the movement of said scanning head; and synchronizing means for controlling said drive means in accordance with signals received from said transducer, whereby the movement of said strip will be directly proportional to the movement of said scanning head.

3,346,693

CONVERTERS FOR TELEGRAPH SIGNALS OR THE LIKE

Norman George Green and Edward Hodgson, Taplow, England, assignors to British Telecommunications Research Limited, Taplow, England, a British company

Filed Dec. 12, 1963, Ser. No. 330,148
5 Claims. (Cl. 178—26)



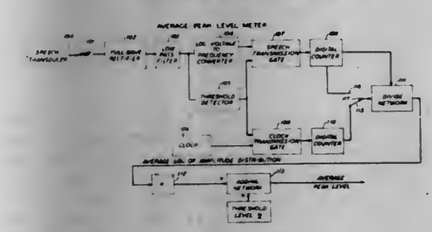
1. In a start-stop telegraph system, a speed converter including in combination, means responsive to incoming signal characters, a first distributor switch, means responsive to the receipt of a start signal for causing said first distributor switch to perform a cycle of operation, means controlled by said first distributor switch for the sampling at their nominal mid-points of succeeding elements of a signal character having a total duration substantially equal to the cycle time of said first distributor switch, a set of storage devices corresponding in number to the number of information elements in said signal character, means for setting said storage devices respectively in accordance with the nature of the samples provided by said first distributor switch, a second distributor switch, means responsive to the sampling of the final information element of said signal character by said first distributor switch for causing said second distributor switch to perform a cycle of operation in a time period less than the cycle time of said first distributor switch, and signal generating means jointly controlled by said storage devices and said second distributor switch for producing a signal character corresponding to the elements sampled by said first distributor switch.

3,346,694

SPEECH LEVEL MEASURING APPARATUS

Paul T. Brady, Maplewood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 2, 1965, Ser. No. 460,108
11 Claims. (Cl. 179—1)



1. Apparatus for automatically obtaining a one-dimensional measure of the level of a speech signal above a selected threshold, which comprises

means for generating from said speech signal a variable frequency signal wherein said frequency is proportional to the amplitude of the logarithm of the level of the envelope of a rectified version of said speech signal,

processing means including means for integrating said variable frequency signal with respect to time whenever the level of the envelope of said rectified version of said speech signal exceeds said selected threshold and means for obtaining an average frequency which is proportional to the average logarithm of the level of said envelope above said selected threshold, and

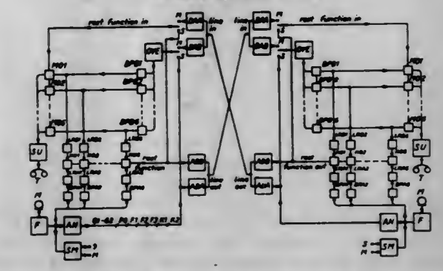
means for deriving from said average frequency the average peak level of the envelope of said rectified speech signal over a predetermined time period, said average peak level being independent of the threshold and thus being a one-dimensional measure of the level of said speech signal.

3,346,695

VOCODER SYSTEM

Gunnar Fant, Shirnervagen 1, Djursholm, Sweden

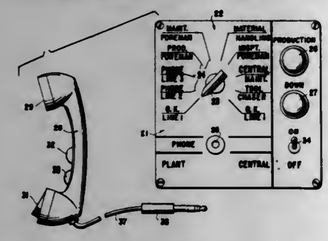
Filed Apr. 27, 1964, Ser. No. 362,771
Claims priority, application Sweden, May 8, 1963
5,027/63
4 Claims. (Cl. 179—1)



1. A vocoder system comprising a sender part and a receiver part, means in said sender part for continuously analyzing a speech signal with respect to values of voice fundamental periodicity, formant frequencies and voice/hiss relationship and for producing a characteristic signal for each of said analyzed values, means in said sender part for transmitting said characteristic signals, means in said receiver part for receiving said characteristic signals, synthesis means in said receiver part for reconstructing the voice fundamental frequency and the formant frequencies by means of said characteristic signals so as to reconstruct the original speech signal, said synthesis means including output means for transmitting said speech signal, said sender part including furthermore a first group of bandpass filters each belonging to a definite frequency range among a number of sequential frequency ranges and each having a series connected rectifier so as to produce intensity values by integration in said definite frequency ranges of the original speech signal, further synthesis means in said sender part and of the same type as in said receiver part for reconstructing the voice fundamental frequency and the formant frequencies by means of the characteristic signals produced by said analyzing means in said sender part so as to reconstruct the original speech, said further synthesis means including output means for transmitting said speech signal, a second group of bandpass filters in said sender part belonging to the same frequency ranges to which the bandpass filters in said first group belong and each being connected to said output means of said further synthesis means and each having a series connected rectifier so as to produce intensity values by integration in said definite frequency ranges of the synthesized speech signal, comparator means

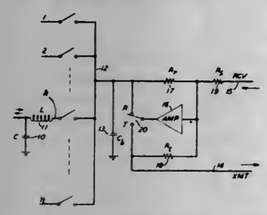
at least in said sender part for each of said frequency ranges in the original speech signal and the synthesized speech signal to produce a residual function signal for each of the ranges in dependence on the difference between said two intensity values, means for transmitting said residual function signals each corresponding to the residual function signal in one of said frequency ranges, and modulating means at least in said receiver part for receiving a residual signal corresponding to one of said frequency ranges and for modulating the output of one of said bandpass filters in said second group of filters so as to compensate for differences of intensity in the respective frequency range between the original and the synthesized speech signal, and a summation circuit arranged at least in said receiver part for summing the output signals of said modulators.

3,346,696
PRODUCTION MONITORING SYSTEM WITH PORTABLE PLUG-IN ENABLING SWITCH
Charles G. Mann, Farmington, Mich., assignor to Weltronic Company, Southfield, Mich., a corporation of Michigan
Filed Aug. 28, 1963, Ser. No. 305,172
18 Claims. (Cl. 179—2)



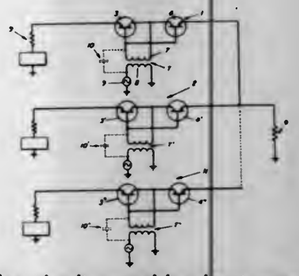
17. A production monitoring system including a work station, a monitoring station remote from said work station, monitoring equipment at said monitoring station for monitoring operations at said work station, said monitoring equipment having a first operative state and a second operative state, a manually operable switch at said work station for controlling the transfer of said monitoring equipment between said first and second operative states, a portable switch for enabling said manually operable switch to transfer said monitoring equipment between said first and second operative states, a means for temporarily connecting said portable switch to said work station.

3,346,697
TIME DIVISION HYBRID WITH BILATERAL GAIN
Sotirios C. Kitsopoulos, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 517,002
11 Claims. (Cl. 179—15)



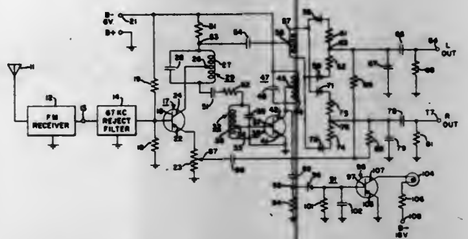
4. A time division communication system in accordance with claim 3, in which said first impedance forms a shunt-shunt negative feedback for said amplifier when said time division switch connects said output terminal to said bilateral channel and said second impedance forms a shunt-shunt negative feedback path for said amplifier when said time division switch connects said output terminal to said transmitting channel.

3,346,698
ISOLATING ARRANGEMENT FOR GATING CIRCUIT
Guy E. Bradford, Fort Lauderdale, Fla., assignor to Systems Engineering Laboratories, Incorporated, Fort Lauderdale, Fla., a corporation of Florida
Filed Jan. 15, 1964, Ser. No. 337,876
9 Claims. (Cl. 179—15)



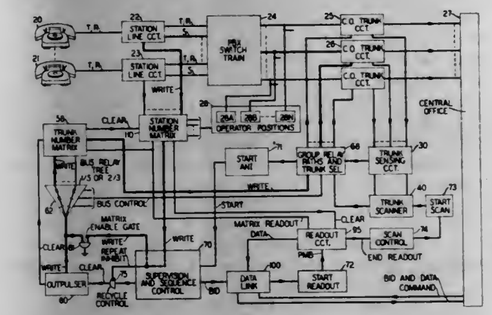
1. A gating circuit comprising input means, output means, switch means connected between said input and output means, drive means for feeding a switch control signal to said switch means, isolating means connected between said drive means and said switch means for conveying the control signal from said drive means to said switch means and isolating said drive means from said output means, said switch means comprising at least two first transistors of the same polarity having collectors and emitters connected in series with said input and output means and having bases connected to said isolating means, said isolating means comprising at least two second transistors of opposite polarity from said first transistors.

3,346,699
STEREOPHONIC RADIO CIRCUIT INCLUDING PHASING CIRCUIT FOR PROVIDING RECONSTITUTED SUBCARRIER SIGNAL
Antal Csicsatka, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 23, 1964, Ser. No. 405,904
3 Claims. (Cl. 179—15)



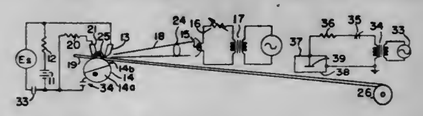
1. A circuit for deriving stereo signals from a composite signal including as frequency components thereof a sum combination of the stereo signals, a difference combination of the stereo signals amplitude modulated on a suppressed carrier of given frequency, and a pilot signal at a frequency of one-half said given frequency and lying in a frequency gap between said sum and difference combinations of stereo signals, said circuit comprising a split-load amplifier having an input electrode adapted to have said composite signal applied thereto and having first and second load circuits connected thereto in a split-load arrangement, said first load circuit comprising a resistor and a first parallel resonant circuit connected in series and said second load circuit comprising a resistance element, said first parallel resonant circuit being resonant at the frequency of said pilot signal, whereby an amplified composite signal is provided in said resistor, a relatively more greatly amplified pilot signal is provided in said first parallel resonant circuit, and a composite signal is provided in said resistance element and having opposite phase with respect to said composite signal provided in said resistor, a second parallel resonant circuit resonant at the frequency of said pilot signal, a time delay network connected between said first and second parallel resonant circuits to apply said amplified pilot signal from the first to the second parallel resonant circuit, an amplifier device normally in the cut-off condition and having an input electrode connected to said second parallel resonant circuit and having an output electrode, a third parallel resonant circuit resonant at said given frequency of the suppressed carrier and connected to said output electrode, said amplifier device being adapted to be driven into conduction by alternate half-cycles of the pilot signal from said second parallel resonant circuit whereby a signal of said given frequency is produced in said third parallel resonant circuit, a stereo demodulator circuit having an input circuit connected to receive said amplified composite signal from said resistor and also connected to receive said signal of given frequency from said third parallel resonant circuit, said time delay network having a value of time delay to cause said signal of given frequency at said input circuit to be in the same phase as said suppressed carrier with respect to said difference combination of stereo signals, said stereo demodulator circuit having two output circuits and being adapted to derive said stereo signals from said composite signal under the control of said signal of given frequency and provide said derived stereo signals respectively at said output circuits, and means for applying at least a portion of the sum combination signal from the composite signal at said resistance element to said first and second output circuits, respectively.

3,346,700
PRIVATE BRANCH EXCHANGE AUTOMATIC NUMBER IDENTIFICATION SYSTEM
Harold P. Anderson, Lincroft, N.J., and Frank J. McMahon, West Los Angeles, Calif., and George A. Scharg, Holmdel, and Harry Winter, Franklin Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 17, 1964, Ser. No. 389,993
31 Claims. (Cl. 179—27)



1. In a telephone system, a central office, a private branch exchange, a plurality of stations connectable through said private branch exchange to said central office, scanning means at said private branch exchange responsive to an outgoing service request from one of said stations for generating a start signal, identification storage means at said private branch exchange including a plurality of switching matrices for storing data individual to said stations, gating means at said private branch exchange coupled to said identification storage means, control means at said private branch exchange responsive to said start signal for transmitting an identification signal simultaneously over two paths, the first of said paths including said gating means and the second of said paths including said matrices, said private branch exchange, said control means and said gating means, checking means within said control means for signaling said central office if said data has been stored in said matrices in response to the passage of said identification signal over said second path, and data readout means at said private branch exchange responsive to a command signal from said central office for sequentially reading out said data from said matrices and transmitting said data to said central office.

3,346,701
ELECTROSTATIC RECORDING SYSTEM EMPLOYING PHOTOCONDUCTIVE ELECTRODES
James J. Brophy, Western Springs, Ill., assignor to IIT Research Institute, a corporation of Illinois
Filed July 5, 1963, Ser. No. 292,889
10 Claims. (Cl. 179—100.1)



7. An electrostatic transducer comprising
means for moving a charge retentive dielectric record medium along a record medium path,
first and second frontal electrodes disposed in proximity to the record medium path at one side thereof and successively spaced along the path,
a backing electrode disposed at the opposite side of the record medium path in confronting relation to said frontal electrodes,
a source of electric bias potential connected between said first and second frontal electrodes to produce a voltage between the first frontal electrode and the backing electrode exceeding a threshold voltage that produces an electric field between the first frontal electrode and the backing electrode of intensity corresponding to an abrupt rise in current flow in the first frontal electrode as said record medium passes along said record medium path but of magnitude less than that to cause breakdown of the record medium,
means comprising an electric signal source connected between said second frontal electrode and the backing electrode for applying charges of opposite polarity to the opposite sides of the record medium in accordance with a signal to be recorded,
at least one of the electrodes having a first boundary in proximity to the record medium and a second boundary relatively remote from said record medium path and having a current flow path between said first and second boundaries along which electrode current flows during a recording operation,
wherein the improvement comprises
said one of said electrodes being formed of a photoconductive material between said first and second boundaries with the resistivity of the photoconductive material along the extent of said current flow path determining the total resistance presented to said electrode current flow between said first and second boundaries,

illumination means for supplying a substantially constant illumination to said photoconductive material and tending to produce a substantially restricted region of gaseous discharge between the one of said electrodes and the record medium in comparison to the extent of the region of gaseous discharge in the absence of said illumination, and

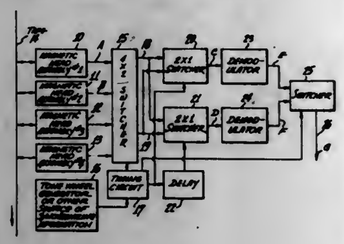
means for maintaining the illumination of said photoconductive material continuously at a substantially constant level throughout a recording operation.

3,346,702

ELECTRONIC SWITCHING SYSTEM UTILIZING DELAY MEANS FOR SWITCHING TRANSIENT ELIMINATION

John T. Heizer, Haddonfield, and Fred E. Shasbous, Cherry Hill, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 31, 1963, Ser. No. 255,315
18 Claims. (Cl. 179—100.2)



1. In combination,

input means adapted to receive a plurality of input signals timing means,

switching means for combining said plurality of input signals into a first continuous signal and with said timing means to produce a second continuous signal which is substantially identical to said first signal in information content except that any switching distortion in said first signal is displaced in time with respect to said switching distortion in said second signal by the action of said timing means,

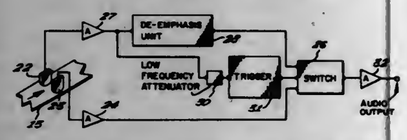
and means for combining said first and second signals into a single, continuous output signal substantially free of said distortion.

3,346,703

TWO TRACK TRANSDUCING SYSTEM WITH MEANS TO EXTEND DYNAMIC RANGE

John T. Mullin, St. Paul, and Kenneth Clunis, Stillwater, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Mar. 13, 1964, Ser. No. 351,768
10 Claims. (Cl. 179—100.2)



4. In combination in a recording and reproducing system including means for increasing the dynamic range of the system to record on a recording medium an information signal having a wide amplitude range and to reproduce the information signal from the medium without distortion,

first means disposed relative to the recording medium and responsive to the information signal for recording the information signal on the recording medium at a first level,

second means disposed relative to the recording medium and responsive to the information signal for recording the information signal on the recording medium at a second level which is the same as said first level for signal frequencies below a first predetermined value and becomes increasingly higher than said first level as the signal frequency increases until a relatively constant differential between said first and second levels is maintained for frequencies above a second predetermined value, and

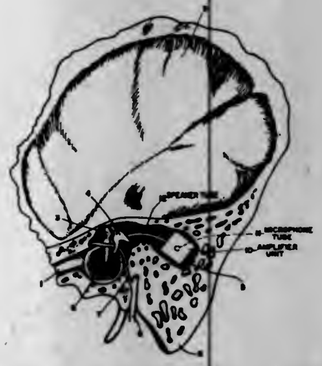
third means disposed relative to the recording medium for reproducing the information signal recorded by the second means for amplitude values of the information signal below a particular value and for reproducing the output signal recorded by the first means only for amplitude values of the information signal above the particular value and above said first predetermined frequency.

3,346,704

MEANS FOR AIDING HEARING

Jack L. Mahoney, Box 276, Rte. 2, Carmel, Calif. 93921

Filed Dec. 27, 1963, Ser. No. 333,858
1 Claim. (Cl. 179—107)



An aid for hearing comprising a sound receiving and amplifying unit completely encased and sealed within a covering material which is neutral to the tissues of the human body, and is adapted to be implanted within the mastoid antrum of the body, said unit comprising a microphone, a battery, an amplifying system, and a speaker; a microphone tube extending from the microphone within said unit to a point beneath the skin and behind the ear of the wearer of the implant, said tube consisting of a material which is neutral to the tissues of the human body, and which is completely concealed by said skin; and a speaker tube extending from the speaker within said unit through the mastoid antrum and into the middle ear space behind the ear drum, said speaker tube also consisting of a material which is neutral to the tissues of the human body.

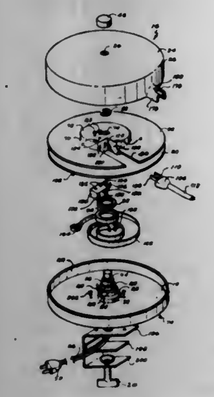
3,346,705

ELECTRIC CORD REEL APPARATUS

James E. Slinkard, Independence, Kans., assignor to Robert E. Breidenthal, Wichita, Kans.

Filed Feb. 28, 1964, Ser. No. 348,072
8 Claims. (Cl. 191—12.4)

1. An electric cord reel comprising a reel mounted for rotation on a frame, said reel including a hollow hub provided with spaced radially extending flanges, an electric cord having one end thereof wound upon said hub as a radially extending spiral between the flanges, a first set of electric terminals insulated from each other and carried by the hub with said electric cord including an equal number of electric conductors insulated from each other, a single electric male plug and female socket means releasably connecting mechanically and electrically each one of the first set of terminals to separate ones of the electric conductors, whereby all of the electric conductors can jointly be mechanically and electrically released from the first set of terminals to free the electric cord from the hub of the reel, a second set of electric



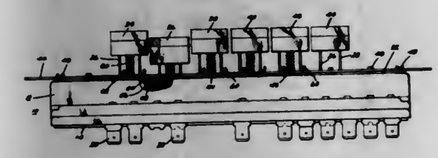
terminals carried by the frame and insulated from each other and equal in number to the first set of terminals, and means including a rotary electrical coupler having sliding contacts electrically connecting each one of the second set of terminals to separate ones of the first set of terminals, said contacts of the coupler being disposed within the hub and directly radially inward of said wound end of the cord whereby electrical energy supplied to the second set of terminals is delivered to the electric conductors of the electric cord when such conductors are electrically connected to the first set of terminals by said plug and socket means.

3,346,706

PUSHBUTTON SWITCH WITH IMPROVED SLIDER MEANS FOR OPTIONAL CIRCUIT SELECTION

Stewart A. Woodward, Stratford, Conn., assignor to General Electric Company, a corporation of New York

Filed July 14, 1966, Ser. No. 565,160
7 Claims. (Cl. 200—5)



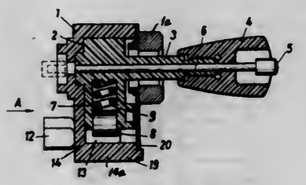
1. A pushbutton switch comprising: a housing; a plurality of pushrods movably mounted in said housing; a plurality of sliders disposed in said housing in side-by-side relationship for response to movement of certain of the pushrods; contact means including a plurality of movable contacts supported by said housing, at least one of the movable contacts being operable by one of the sliders in response to movement of one of the pushrods for completing an operating circuit through the switch, said contact means including another movable contact supported in the housing and operable by another slider as it moves to a second position for closing an optional circuit through said switch; means for normally biasing said another slider to a first position, said another slider being responsive to a preselected pushrod for movement to the second position; means for locking said another slider and said preselected pushrod in the second position thereby to maintain the optional circuit in a closed condition; and an unlocking slider disposed in said housing and responsive to said one pushrod for unlocking said locking means; said biasing means acting to return said other slider to said first position thereby to effect an opening of the optional circuit when said locking means is unlocked by said unlocking slider.

3,346,707

MULTI-POSITION ELECTRICAL SWITCH WITH IMPROVED GUIDE RAIL AND MOVABLE CONTACT STRUCTURE

Willy Bock and Erich Mutschler, Bietigheim, and Karl-Heinz Theurer, Marbach, Germany, assignors to SWF-Spezialfabrik fur Authozubehor Gustav Rau G.m.b.H., Bietigheim, Germany

Filed May 13, 1966, Ser. No. 549,869
Claims priority, application Germany, Dec. 31, 1965, S 101,288
13 Claims. (Cl. 200—8)



1. An electrical switch including a housing having wall means with a plurality of spaced slots defined in said wall means, and a contact terminal element including a flat terminal portion extending through a respective slot of the housing and disposed at the exterior of the housing to form a terminal connection, an interior portion located on the interior of said housing forming a contact element, and a projection formed on said housing wall means adjacent each slot, said interior portion of each contact terminal element being engaged around an associated projection.

3,346,708

ROTARY SWITCH WITH ROLLER DETENT APPARATUS DIRECTLY BIASING CONTACT STRUCTURE INTO OPEN AND CLOSED POSITIONS

Edward E. Morra, 950 Terminal Way, San Carlos, Calif. 94070

Filed July 27, 1966, Ser. No. 573,439
2 Claims. (Cl. 200—11)

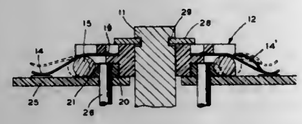
1. A rotary switch comprising in combination:

a fixed printed circuit board having a plurality of conductive traces thereon;

an actuating ring securely mounted upon said circuit board and having a plurality of spaced detents around the outer periphery thereof;

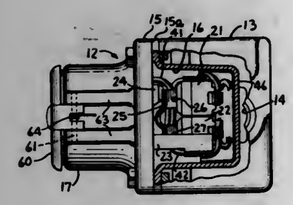
a rotor assembly movably mounted upon said actuating ring, said rotor assembly comprising a substantially circular member having a plurality of spaced housing

cavities around the outer periphery thereof, a plurality of electrical contact blades each having one end fixed within each of said housing cavities and having a free end in movable electrical contact with the conductive traces of said circuit board, actuating means movably secured within each of said housing cavities in movable contact with the detents of said



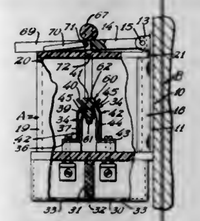
actuating ring and said electrical contact blades and means for rotating said rotor assembly whereby a force is exerted on said actuating means by the lobes of said detents, said force being transmitted through said actuating means to said contact blades to force the free end thereof upward as said rotor assembly is rotated.

3,346,709
EXPLOSION-PROOF PLUG AND RECEPTACLE WITH RELEASABLE SOCKET ENGAGING MEANS
Arthur I. Appleton, Northbrook, Ill. (1713 Wellington Ave., Chicago, Ill. 60613)
Filed Apr. 21, 1965, Ser. No. 449,695
7 Claims. (Cl. 200—51.09)



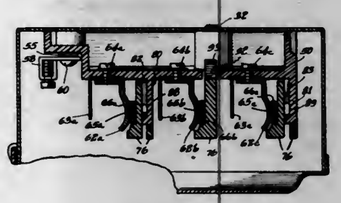
1. An electrical outlet assembly of the explosion-proof type for use with an explosion-proof connection box comprising, in combination, a two-part cover for said connection box formed to define a sealed switch chamber between the two parts thereof, said cover having a hollow neck portion with internal threads therein, an outlet socket dimensioned for insertion into said neck and having external threads thereon, said internal and external threads sealingly engaging said socket in said hollow neck while permitting rotation of said socket between first and second positions, an electrical plug having a pair of contact prongs and a guide prong thereon, said socket having a pair of complementary contact elements and a locating recess formed respectively to receive said contact prongs and guide prong, a pair of switches located in said chamber, lead-in wires passing through and sealed in a wall of said chamber from said connection box, circuit means including said switches for connecting said lead-in wires to said contact elements, means for actuating said switches to close said circuit means incident to rotation of said socket from said first position to said second position, means releasably engaging said socket and neck for retaining said socket in said first position, said guide prong when inserted substantially completely into said locating recess releasing said engaging means thereby conditioning said socket for rotation to said second position, and means in said neck engageable with said plug for preventing insertion or removal of said plug except when said socket is in said first position.

3,346,710
HIGH VOLTAGE VISIBLE OIL SWITCH
Ralph B. Weston, Culver City, and Albert E. Colato, Tujunga, Calif., assignors to Plastics, Inc., a corporation of Minnesota
Filed July 12, 1965, Ser. No. 471,269
10 Claims. (Cl. 200—150)



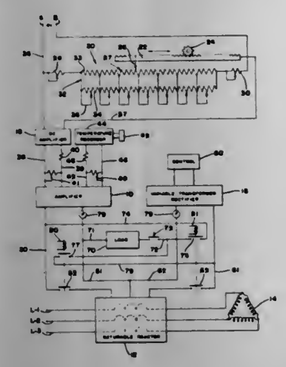
3. A switch comprising:
a sealed switch housing including a top closure, a bottom closure, and peripheral transparent walls connecting said closure,
a pair of resilient contact blades including horizontal lower end portions, upwardly and inwardly inclined intermediate portions, and upwardly and outwardly inclined upper end portions arranged in opposed relation and normally in contact at the juncture between the intermediate portions and the upper end portions,
electrically conductive blade securing means extending through said horizontal blade portions and said bottom closure,
a circuit breaker blade,
a pair of parallel breaker blade supports secured to said circuit breaker blade and extending through, and slideably supported by said top closure,
said blade supports supporting said breaker blade for movement from a position between said blades to a position above said blades, and
a handle connecting the upper ends of said blade supports.

3,346,711
ELECTRICAL SWITCH
Tadeusz J. Rys and Harris I. Stanback, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Original application Dec. 5, 1962, Ser. No. 242,423, now Patent No. 3,240,888, dated Mar. 15, 1966. Divided and this application Sept. 20, 1965, Ser. No. 488,531
15 Claims. (Cl. 200—114)



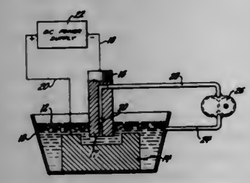
1. A fusible electrical switch comprising a pair of aligned fuse holders adapted to hold opposite end portions of a fuse, a stationary contact member mounted generally in alignment with said pair of fuse holders, a pivotally mounted blade actuator adjacent one of said fuse holders closer to said stationary contact member, and a switch blade pivotally mounted on a portion of said one fuse holder in engagement with an opposite side thereof from a side thereof which normally engages an end portion of a fuse, said switch blade being operable by said blade actuator and engageable with said stationary contact member.

3,346,712
AUTOMATIC TEMPERATURE CONTROL
Richard F. Seyfried, Parma Heights, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio
Continuation of abandoned application Ser. No. 140,941, Sept. 26, 1961. This application Apr. 7, 1965, Ser. No. 448,566
10 Claims. (Cl. 219—8.5)



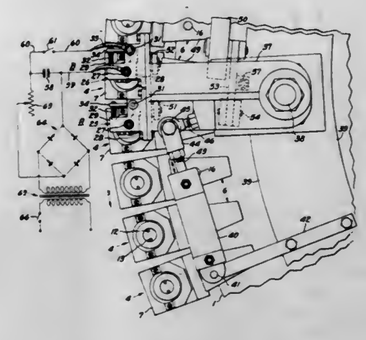
1. An automatic temperature control adapted to control the power of an inductor in accordance with the speed of a workpiece, comprising a first means for supplying power to the inductor, a second means for controlling said first means to vary the power output to the inductor, a speed sensing device to control said second means in accordance with the speed of the workpiece, the improvement comprising: said speed sensing device having a voltage pickup movable in response to a change in workpiece speed, a voltage divider, a plurality of shunting circuits along the length of the divider, and a standard control voltage across said divider, said shunting circuits having electrical resistance to control the voltage drop per length along the voltage divider.

3,346,713
ELECTRICAL DISCHARGE MACHINING DIELECTRIC COOLANT
Rudolph W. Blatt, Warren, and Charles F. Froberger, Mount Clemens, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 19, 1963, Ser. No. 296,265
15 Claims. (Cl. 219—69)



1. A method of eroding particles from an electrically conductive anodic article by electrical discharge which comprises causing intermittent electrical discharge across a gap between a cathode and an anode while maintaining in said gap a fluid consisting essentially of at least one polycyclic organic compound, said compound having a carbon-to-hydrogen atomic ratio of about 0.8 to about 1.8.

3,346,714
LAMP BASE TERMINAL WELDING APPARATUS
Joseph J. Plescia, Euclid, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 11, 1963, Ser. No. 315,609
2 Claims. (Cl. 219—80)

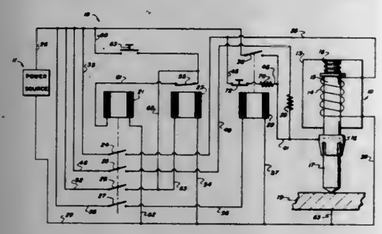


1. In a lamp basing machine, the combination of a carrier, holder means on said carrier for supporting a lamp having a base thereon with a pair of pins extending therefrom in parallel spaced relationship and lead wires extending through said pins, means to index said holder to successive stations with a dwell period at each station, welding means comprising a head portion at one of said stations carrying a grounding contact and an electrode, and a capacitor discharge welding circuit means connected to said contact and electrode, means mounting said lamp holder means on said carrier for biasing movement toward the said electrode at said one station, means effective upon indexing of the lamp holder means toward said one station to bias the holder means in a direction away from said electrode and to release said holder means upon arrival at said one station, and gauging means at said one station in the path of movement of the holder means toward said electrode and located to be engaged by said holder to space the pins of the lamp in said holder a predetermined distance from said electrode, means for oscillating said welding head to carry said contact and electrode from welding relationship with one pin of a lamp in a holder at said one station to welding relationship with the other pin during the dwell period of said holder at said one station, and means to effect sequential operations of said welding circuit to strike a welding arc while said contact and electrode are in welding relation with first one and then the other of said pins, and means mounting said gauging means in fixed relation to said welding head and for oscillation therewith while maintaining engagement with said lamp holder means during said oscillation.

3,346,715
ELECTRICAL CONTROL SYSTEM FOR STUD WELDING
Henry H. Jenkins, 615 Westlake Drive, Amherst, Ohio 44001
Filed June 6, 1963, Ser. No. 291,595
15 Claims. (Cl. 219—98)

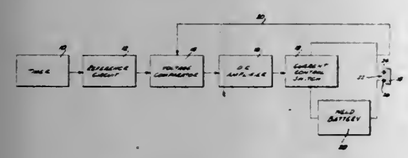
12. Welding apparatus including in combination, a core, a single coil upon energization thereof moving said core in a first direction, means urging said core in a second

direction, a chuck carried by said core, first electrical circuit means including a first switch and said single coil connected across a power source for actuating said core, second electrical circuit means including a main welding contactor and said chuck adapted to carry a metal member relative to a workpiece connectable across said power source depending upon the condition of said single coil, third electrical circuit means connected at one



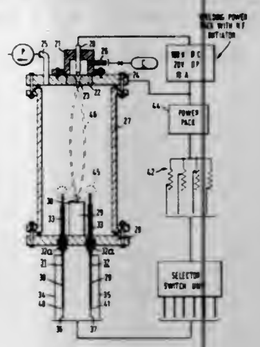
end to said first electrical circuit means between said first switch and said single coil and at the other end to said second electrical circuit means between said main welding contactor and said chuck thereby assuring energization of said single coil for a period of time after opening of said first switch and until opening of said main welding contactor.

3,346,716
WELDING CONTROL CIRCUIT
Gordon E. Broomhall, Escondido, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 20, 1964, Ser. No. 353,501
7 Claims. (Cl. 219—110)



1. A welding control circuit comprising: first and second welding electrodes; a battery; a weld current control transistor having an emitter electrode, a base electrode, and a collector electrode; said emitter electrode being directly connected to said first welding electrode; said collector electrode being connected to one terminal of said battery; another terminal of said battery being connected to said second welding electrode; timing means for generating a timing signal of preselected duration; reference means responsive to said timing means for providing a reference voltage of predetermined magnitude during the duration of said timing signal; feedback means for providing a feedback voltage indicative of the voltage between said first and second welding electrodes; comparator means for comparing said reference voltage with said feedback voltage and for providing a control signal indicative of the difference between said reference voltage and said feedback voltage; and means for applying said control signal to said base electrode to maintain said transistor conductive of current and thereby establish a current path between said battery and said welding electrodes during the duration of said timing signal.

3,346,717
APPARATUS FOR GAS PLASMA HEATING
Harold Pugh, Thelwall, Warrington, and George Gauterin, Saughall, Chester, England, assignors to United Kingdom Atomic Energy Authority, London, England
Original application Aug. 8, 1963, Ser. No. 300,774, now Patent No. 3,314,129, dated Apr. 18, 1967. Divided and this application Mar. 17, 1966, Ser. No. 554,233
Claims priority, application Great Britain, Aug. 14, 1962, 31,224/62
4 Claims. (Cl. 219—121)

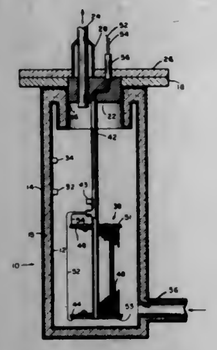


1. Apparatus comprising a plasma generator for carrying out a gas plasma heating process on at least one workpiece assembly having mutually insulated parts, said apparatus comprising,
- a sealed vessel to accommodate said assembly under vacuum,
- a plurality of electrical conductors passing in a sealed manner into said vessel for establishing electrical connection with the mutually insulated parts of the assembly,
- and an associated electric circuit externally of said vessel, said circuit including selective switching means for sequentially connecting each of said assembly parts as an anode with respect to said plasma generator by way of said conductors.

3,346,718
ELECTRICALLY HEATED CRYOGENIC LIQUID VAPORIZING APPARATUS
Gerald J. Cooley, Allentown, Joseph J. Gehringer, Emmaus, and Algird J. Karalis, Allentown, Pa., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed July 27, 1965, Ser. No. 475,300
1 Claim. (Cl. 219—275)

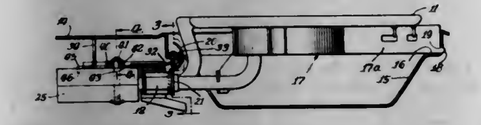
Cryogenic vaporization apparatus of fast thermal response comprising:
- (a) a vessel consisting of a pair of walls separated by a vacuum space filled with insulation for containing under pressure a cryogenic liquid to be vaporized;
- (b) means immersed in said liquid for the selective vaporization of controlled amounts of said liquid, said means being of relatively low mass to reduce thermal inertia, thereby acting to vaporize quickly upon actuation and to terminate vaporization quickly upon de-energization;
- (c) said selective vaporization means comprising electrical resistance means consisting of a plurality of bare filaments in parallel in direct contact with said liquid to obtain the reduced thermal inertia as aforesaid, said filaments being wide, thin ribbons of relatively high surface area to mass ratio;

- (d) said vessel being provided with an opening and outlet means for vaporized liquid;
- (e) means supporting said vaporization means and said outlet means for closing said opening, said vaporization means being small enough to pass through said opening; and



- (f) means comprising a plurality of probes mounted on said vessel and said supporting means for sensing the level of said cryogenic liquid.

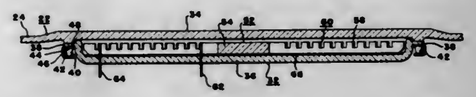
3,346,719
PLUG-IN RECEPTACLE
Joseph J. Jasionowski, Niles, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Mar. 5, 1965, Ser. No. 437,476
3 Claims. (Cl. 219—451)



1. In combination with a coiled electrical surface unit having a pair of parallel terminal ends, said unit being adapted for use on a cook top, a mounting assembly comprising a receptacle of insulating material having a pair of parallel channels therein, electrical contacts wi hin said channels, a bracket to be secured in fixed relation to the cook top, a pair of guides secured to the bracket and means for securing the receptacle to the bracket to position the guides adjacent the open ends of the channels and extending outwardly and downwardly therefrom to guide the terminal ends thereinto, said securing means including a lost motion connection between the bracket and the receptacle to permit the receptacle to move with insertion of the terminal ends to align the channels therewith.

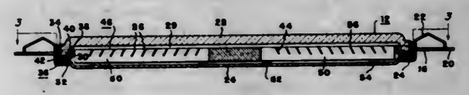
3,346,720
INFRARED SURFACE HEATING UNIT WITH CORRUGATED RIBBON-SHAPED FILAMENT
Donald C. Siegla, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 25, 1965, Ser. No. 458,718
5 Claims. (Cl. 219—464)

1. A cooking assembly comprising, a sheet of infrared transmissive non-metallic material including an upper utensil supporting surface, said sheet of non-metallic material having a thermal conductivity of substantially .5 to 2.5 B.t.u. per hour foot degree F., a plurality of infrared heating units, means for supporting each of said heating units on the underside of said sheet in spaced relationship with one another, each of said heating units including an uninsulated electrical resistance element located in spaced relationship with said sheet, said each of said heating units having a predetermined planar extent and being energizable into the infrared



range of 1500° F. to 2000° F. for directly heating utensils supported on said upper surface thereabove through radiation energy absorbed by said cover sheet immediately above said heating units being restricted by the low thermal conductivity of said cover sheet primarily to passage by conduction directly to a utensil supported by said cover sheet rather than to areas of said cover sheet in radially surrounding relationship to the predetermined planar extent thereof overlying each of said heating units.

3,346,721
RADIANT HEATER WITH IMPROVED SEAL ASSEMBLY
Arthur T. Bassett, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,304
1 Claim. (Cl. 219—465)



In an infrared electrical surface heating unit, the combination of, an outer envelope having an upper infrared transmissive plate and a lower support plate, and means on said plates forming an open region therebetween, infrared heating means located within said region, each of said upper and lower plates having a peripheral edge portion, a rigid sealing ring disposed between said edge portions continuously therearound including an inner rim spaced radially inwardly of said peripheral edge portions of said plates continuously around the periphery thereof forming a dammed spaced to contain foreign matter entering said region between said plates across said peripheral edge portions thereof, and a resilient annular sealing member disposed between said rigid ring and said upper plate, said resilient ring being held in sealing engagement between said upper plate and rigid seal ring by clamp means formed continuously around the outer surface of the upper and lower plates, said resilient annular sealing member forming a primary seal at the separation between the peripheral edges of said plates upstream of said dammed space defined by said rim on said rigid sealing ring.

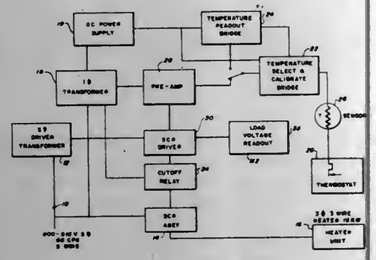
3,346,722
OIL WELL HEATING APPARATUS CONTROL SYSTEM
Gary R. Milton, Bakersfield, Calif., assignor to American Thermoelectric Corp., a corporation of Ohio
Filed May 12, 1964, Ser. No. 366,818
15 Claims. (Cl. 219—499)

8. In an electrical system for heating a well, the combination comprising:
a Wheatstone bridge including as one leg thereof a tem-

perature responsive reasistor and a serially connected thermostat;

modulator means connected to said bridge for delivering an output signal modulated in accordance with the resistance of said temperature responsive resistance and including a magnetic amplifier having its control winding connected to said bridge;

amplifier means connected to the output of said modulator means;



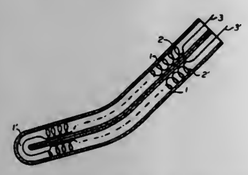
power input means;

heater means for heating said well;

controlled rectifier means connected between said power input means and said heater means; and

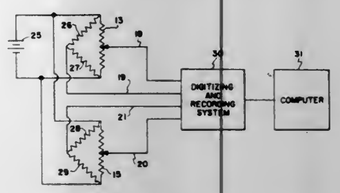
gate means connected betwen said amplifier means and said controlled rectifier means for applying a gating signal to said controlled rectifier means in accordance with said output signal.

3,346,723
ELECTRIC INFRARED EMITTER
Heinrich Mohn, Hailer, Kreis Glenhausen, and Georg Horstmann, Bruchkobel, Germany, assignors to Heraeus Quarzschmelze G.m.b.H., Hanau am Main, Germany
Filed Apr. 20, 1964, Ser. No. 360,890
Claims priority, application Germany, Apr. 27, 1963, H 44,712
3 Claims. (Cl. 219—553)



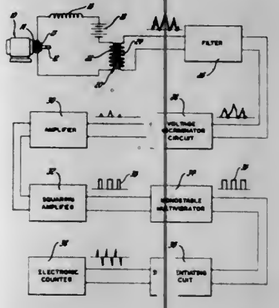
1. An electric infrared radiation emitter comprising a plurality of substantially parallel radiation permeable tubes of a material selected from the group consisting of opaque quartz ware, quartz glass and high melting point glass, said tubes being fused together at a plurality of points along their adjacent surfaces, each tube having one end fused together with a similar end of another tube to define a common passage between said tubes, said tubes being bent at a location intermediate to their fused ends and their opposite ends to position the length portions of said tubes between their fused ends and the bending location at a predetermined angle with respect to the remaining length portions of said tubes, an electrical resistance heating coil disposed within each of said tubes for extension therein, said heating coil being approximately equal in diameter to the internal diameter of its associated tube, and an electrical conductor extending through said passage and conductively connecting said heating elements together in series each heating coil having a lead conductor extending from the end of its associated tube remote from the fused end thereof and disposed for connection to an external source of electricity for energization of the heating coil thereby to generate and emit infrared radiation.

3,346,724
RANDOM FUNCTION TRACER
Paul F. Fuhrmeister, Williamsburg, and Milner H. Eskew, Jr., Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 15, 1964, Ser. No. 382,976
8 Claims. (Cl. 235—61.6)



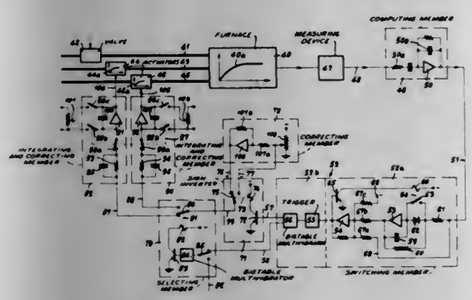
1. A random function tracer for tracing lines on a map and converting the tracings into Cartesian coordinates comprising: a table with said map on the surface of the table; a first arm with one of its ends rotatably mounted to said table; a second arm with one of its ends rotatably attached to the other end of said first arm; means attached to the other end of said second arm for tracing lines on said map; means for producing a first voltage proportional to the angle of rotation of said first arm; means for producing a second voltage proportional to the angle of rotation of said second arm; and means for computing from said first and second voltages the Cartesian coordinates of points on the lines traced by said tracing means.

3,346,725
COMMUTATOR PULSE COUNTING APPARATUS
Robert B. Allured, Rochester, Anthony S. Strzelewicz, Roseville, and Martin Woods, St. Clair Shores, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,848
2 Claims. (Cl. 235—92)



1. Apparatus for obtaining a digital representation of the amount of rotation of a D-C commutator motor having a commutator and brushes connected in an energizing circuit, said apparatus comprising a transformer for developing an output signal proportional to the voltage amplitude variations in said energizing circuit caused by movement of said commutator relative to said brushes, said transformer including a primary and a secondary winding, the primary winding being connected in said energizing circuit, filter means connected to said secondary winding for filtering said output signal to remove certain high frequency components, voltage discriminator means connected to said filter means for removing that portion of the output signal below a predetermined amplitude, pulse shaping means connected to said discriminator means for developing a pulsating output of uniform amplitude and time duration, and counting means connected to said pulse shaping means for counting each pulse of said pulsating output to thereby obtain a reading of the number of the segments of said commutator which have moved relative to said brushes during the counting interval.

3,346,726
APPARATUS TO OPTIMIZE INDUSTRIAL CONTROL BY MAXIMIZING TIME DERIVATIVE OF CONTROL PARAMETER
Roland Rouxel, Troinex, 2 Rue des Moulins, Geneva, Switzerland, and René Perret, 4 Square Michels, Grenoble, France
Filed Feb. 25, 1963, Ser. No. 260,479
Claims priority, application Switzerland, Feb. 26, 1962, 2,361/62
7 Claims. (Cl. 235—150.1)



1. Apparatus for controlling an industrial installation having at least one significant time constant, the performance of said installation depending on action quantities capable of being varied independently one after the other by corresponding actuators and the performance of said installation being defined by a first signal representing the instantaneous value of an operating criterion and which first signal is a function of at least one physical quantity continuously measured in said installation by a corresponding one of at least one transducer, said apparatus having to bring and maintain dynamically said installation to optimum performance, defined by said operating criterion reaching a maximum value, and said apparatus comprising:

(a) a computing member connected with said at least one transducer and fed said first signal and arranged to generate a second signal representative of the instantaneous value of the time-derivative of order n of said first signal where n is equal to the number of said significant time constants;

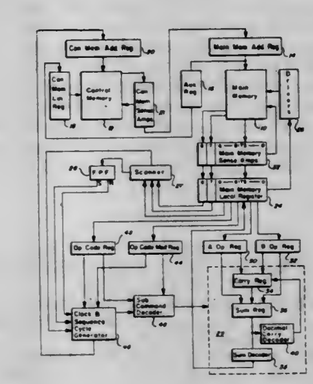
(b) a correcting member for generating a correction signal representative of the rate of variation of said action quantity;

(c) a switching member arranged for reversing the sign of said correction signal at switching instants defined by a switching law based upon having said correction signal maximize the magnitude of said time-derivative of order n progressively;

(d) a selecting member arranged to route said correction signal with its sign successively in different channels each corresponding to one of said actuators, with the commutation from one channel to another being operated at defined selection moments; and

(e) a plurality of integrating members each in one of said channels and arranged to generate the time-integral of said correction signal and apply said integrated signal to the corresponding actuator; whereby said apparatus brings said second signal representative of the time-derivative of order n of the operating criterion toward maximum value and maintains this maximum in order to have the operating criterion itself dynamically brought toward a maximum value corresponding to the optimum performance of said installation and maintained at the latter maximum.

3,346,727
JUSTIFICATION OF OPERANDS IN AN ARITHMETIC UNIT
Walter R. Lethin, Canton, Nicholas A. Papantonis, Lexington, and John J. Bradley, Framingham, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,302
7 Claims. (Cl. 235—160)

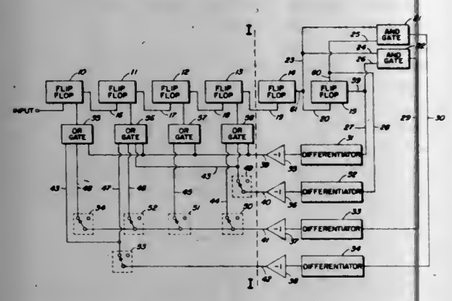


1. A data processing apparatus including the combination comprising an addressable main memory for storing a plurality of characters of information including both divisor and dividend operands, a control portion operatively connected to said addressable main memory, said control portion including a first register initially storing the main memory address of the low order digit of the divisor, a second register for storing the main memory address of the high order digit of the dividend, scanning means connected to the output of said addressable main memory to alternately scan the contents of main memory locations referenced by said first and second registers and to sense for the presence of punctuation defining a particular digit as the high order digit of the divisor, and means connected to said scanning means and adapted in the absence of said defining punctuation to increment one of said first and second registers while decrementing said other one of said first and second registers, said last-named means being further operative upon detection of said defining punctuation to thereafter initiate the actual division operation by the method of over-and-over subtraction.

3,346,728
BINARY DIVIDER WITH MULTIPLE FEEDBACK LINES

Samuel L. Broadhead, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 30, 1964, Ser. No. 407,787
8 Claims. (Cl. 235—164)

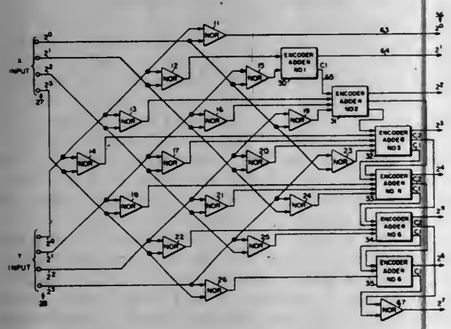


1. A circuit for providing a plurality of time-spaced pulses to a network of bistable circuits via an equal plurality of conductive lines comprising: a plurality of pulse generators each providing a first and a second output, a plurality of load devices equal to twice the number of pulse generators, a plurality of adder circuits equal to one half the number of load devices, the outputs from one of said pulse generators going to different ones of said adder circuits, the first output of the other of said pulse generators going to one of said load devices and one of said adder circuits and the second output of the other of said pulse generators going to another of said load devices and another of said adder circuits, and the outputs of each of said adder circuits going to the remaining load devices and means coupling the output of said load devices to said network of bistable circuits.

3,346,729
DIGITAL MULTIPLIER EMPLOYING MATRIX OF NOR CIRCUITS

Harold R. Dell, Palo Alto, and Merrill J. Maloney, Mountain View, Calif., assignors to General Precision Systems Inc., a corporation of Delaware

Continuation of application Ser. No. 234,679, Nov. 1, 1962. This application Sept. 1, 1965, Ser. No. 490,762
12 Claims. (Cl. 235—164)

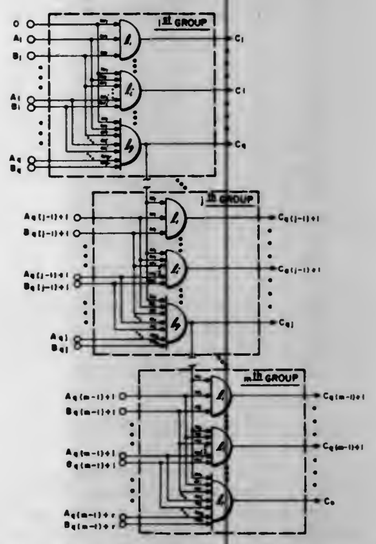


1. A multiplier comprising a plurality of NOR circuits each having two input leads and an output lead, each NOR circuit being operable to generate an output signal on the output lead when no input signals appear on either of the input leads, and being operable to provide no signal on the output lead when an input appears on at least one of the input leads, said multiplier including two groups of input terminals for receiving two respective groups of binary coded signals, the input leads of each of the NOR circuits being coupled respectively to one of the input terminals of each group, and a plurality of encoder adder circuits each having a plurality of input leads and an output lead, the input leads of encoder adder circuits being coupled to respective ones of the output leads of the NOR circuits, and the output leads being operable to generate binary signals corresponding to the product of the binary signals impressed upon the respective groups of input terminals, said encoder adder circuits being coupled to each other to propagate carry signals from one encoder adder circuit to another.

3,346,730
SIGNED TERNARY CARRY GENERATOR USING THRESHOLD LOGIC ELEMENTS

William H. Hanson, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 30, 1965, Ser. No. 491,594
6 Claims. (Cl. 235—175)



1. A signed ternary carry generator, for generating n signals $C_n \ldots C_k \ldots C_1$ representative of carries corresponding to two ternary words the augend of which has the form $A_n \ldots A_k \ldots A_1$ and an addend of which has the form $B_n \ldots B_k \ldots B_1$, comprising:

m carry generating groups for generating signal representations of $C_n \ldots C_k \ldots C_1$,

each of said carry generating groups $j=1, \ldots m-1$, coupled to the next lower carry generating group, for generating q signals representative of carries $C_{qj} \ldots C_{q(j-1)+1}$ corresponding to digit-orders $A_{qj} \ldots A_{q(j-1)+1}$ of said augend and digit-orders $B_{qj} \ldots B_{q(j-1)+1}$ of said addend comprising:

input means for receiving signal representations of digit-orders $A_{qj} \ldots A_{q(j-1)+1}$, $B_{qj} \ldots B_{q(j-1)+1}$, and carry signal $C_{q(j-1)}$, the latter being representative of the highest digit-order carry generated by the next lower carry generating group, and

a plurality of multi-input ternary threshold logic elements coupled to said input means for utilizing said digit-order and carry signals to generate q signals representative of the carries $C_{qj} \ldots C_{q(j-1)+1}$ in accordance with the logical function,

$$C_{q(j-1)+i} = w_i A_{q(j-1)+i}{}^{1_i} w_i B_{q(j-1)+i}{}^{1_i} \ldots {}^{1_i} w_1 A_{q(j-1)+1}{}^{1_i} w_1 B_{q(j-1)+1}{}^{1_i} w_1 C_{q(j-1)}$$

said carry generating group, $j=m$, coupled to the next lower carry generating group, for generating r signals representative of the carries $C_n \ldots C_{q(m-1)+1}$ corresponding to digit-orders $A_n \ldots A_{q(m-1)+1}$ of said augend and digit-orders $B_n \ldots B_{q(m-1)+1}$ of said addend comprising:

input means for receiving signal representations of digit-orders $A_n \ldots A_{q(m-1)+1}$, $B_n \ldots B_{q(m-1)+1}$ and carry signal $C_{q(m-1)}$, the latter being representative of the highest digit-order carry generated by the next lower carry generating group, and

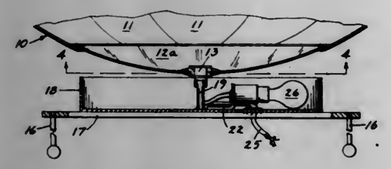
r multi-input ternary threshold input logic elements coupled to said input means for utilizing said digit-order and carry signals to generate r signals representative of $C_n \ldots C_{q(m-1)+1}$ in accordance with the logical function,

$$C_{q(m-1)+i} = w_i A_{q(m-1)+i}{}^{1_i} w_i B_{q(m-1)+i}{}^{1_i} \ldots {}^{1_i} w_1 A_{q(m-1)+1}{}^{1_i} w_1 B_{q(m-1)+1}{}^{1_i} C_{q(m-1)}$$

3,346,731
INFLATABLE, ILLUMINATABLE GLOBE

George W. Poncy, 59 Dale Drive
Chatham, N.J. 07928

Filed May 25, 1965, Ser. No. 458,713
5 Claims. (Cl. 240—2)



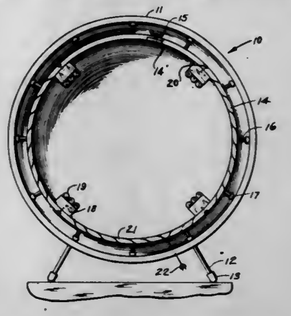
5. An inflatable, collapsible and illuminatable, rotatable globe of the world having a pair of poles and comprising a flexible, translucent body having a transparent area adjacent one of said poles, a bearing secured to the globe at each pole, a stand for supporting said globe for rotation in an inflated condition, a trunnion on said stand engaging one of said bearings, a dished member on said stand adjacent said transparent area, said dished member containing lighting means to illuminate said globe through said area, said dished member having a trunnion therein, said trunnion engaging the other bearing of said globe, said trunnion extending through said dished member to provide a supporting leg for said globe, said last named trunnion connecting said stand to said dished member.

3,346,732
MULTI-COLORED DRUM LIGHTING SYSTEM

Karl Dieter Crusius, Monterey, Calif.
(1206 Funston Ave., Pacific Grove, Calif. 93950)

Filed May 16, 1966, Ser. No. 550,223
5 Claims. (Cl. 240—3.1)

1. A multi-colored lighting system for drums comprising, in combination, a circular drum body and expandable and collapsable supporting ring within said drum, a plurality of equally spaced, radially disposed projections extending from said supporting ring, a rubber shoe on the end portion of said each projection, said rubber shoes abutting the interior wall of said drum body for preventing said ring from rotating within said body,

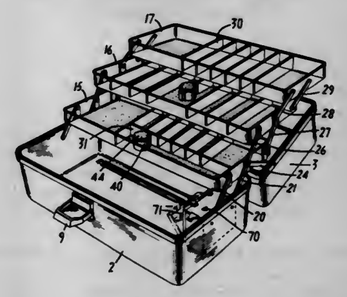


a plurality of substantially rectangular sockets extending inwardly from within said ring, a plurality of bulbs having different colors within each socket and electric wire having a plug for providing electric current to said bulbs for illuminating said drum.

3,346,733
LIGHTED TACKLE BOX

Richard G. Woolworth, Lancaster, Pa., assignor to Old Pal, Inc., Lititz, Pa.

Filed Nov. 17, 1964, Ser. No. 411,818
17 Claims. (Cl. 240—6.4)



1. A box comprising means defining a bottom half of said box, a lid pivotally mounted for opening and closing said bottom half and thereby jointly therewith defining said box, at least one tray in said box, said tray having a bottom and sidewalls comprising a material for transmitting light therealong, a light receptacle mounted on the tray, a light positioned in the light receptacle to project light downwardly onto any lower tray and into the bottom half of said box and to apply light to edges of the tray for transmission along the bottom and the sidewalls of the tray, and circuit means in said box including connections for a power source for turning said light on and off.

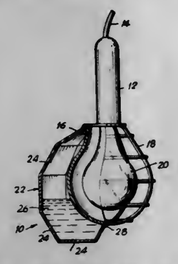
3,346,734
LAMP-SUPPORT ASSEMBLY

Allan E. Bloomberg, 199 Palisade Ave.,
Dobbs Ferry, N.Y. 10522

Filed Oct. 23, 1965, Ser. No. 503,761
10 Claims. (Cl. 240—53)

1. For use with a lamp, lamp-support means including a hollow container having an exterior wall provided with a plurality of wall portions respectively having flat ex-

terior surfaces situated in different planes which have a non-parallel relationship with respect to each other, and fluent weight means situated in the interior of said container to become automatically situated over whichever one of said flat exterior surfaces is placed on an upwardly directed supporting surface on which the lamp is to be



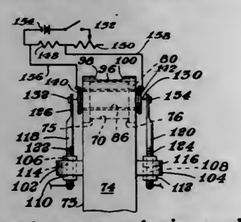
mounted, so that the lamp can have a selected one of a plurality of different orientations in accordance with that one of said flat surfaces which the operator selects to place on the upwardly directed supporting surface, said fluent weight means having sufficient weight to maintain the lamp stably in its selected orientation.

3,346,735

ELECTRON SOURCE FOR MASS SPECTROMETERS HAVING AN ELONGATED FILAMENT AND A CONCAVE FOCUSING ELECTRODE WITH A RESISTIVE COATING

Franklin J. Karle, Natick, Mass., and Earl D. Ayers, Auburn, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Michigan

Filed Dec. 7, 1964, Ser. No. 416,385
2 Claims. (Cl. 250—41.9)



1. In an electron beam source having an elongated filament, an elongated focusing electrode having a concave surface facing said filament and disposed in spaced apart relationship along its length, and a slotted electrode, said slot being disposed on the opposite side of said filament from said focusing electrode and spaced further from said filament than said focusing electrode, the improvement comprising said focusing electrode having an insulating body with an electrically resistive coating on said concave surface, and means to apply an electrical potential across the length of said surface.

3,346,736

ELECTRON PROBE APPARATUS HAVING AN OBJECTIVE LENS WITH AN APERTURE FOR RESTRICTING FLUID FLOW

Hermann Neuhaus, Montrose, Calif., assignor to Applied Research Laboratories, Inc., Glendale, Calif., a corporation of Delaware

Filed Sept. 22, 1964, Ser. No. 398,280
1 Claim. (Cl. 250—49.5)

Apparatus for bombarding an object with an electron beam to cause the object to emit X-rays, said apparatus comprising:

(1) an electron gun,

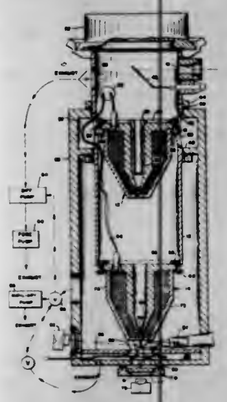
(2) a magnetic condenser lens,

(3) a magnetic objective lens,

(4) a tubular housing for mounting said gun and said lenses in coaxial alignment with each other, said objective lens being mounted at the opposite end of said housing from said gun and being sealed to said housing so that the sole opening at said opposite end is through the magnetic gap of said objective lens,

(5) an outer housing for receiving said tubular housing with a major portion of said tubular housing within said outer housing and with said objective lens within said outer housing and with said gun outside of said outer housing,

(6) aperture means for restricting fluid flow through the magnetic gap of said objective lens, whereby in operation a hard vacuum may be maintained within said tubular housing while a substantial pressure is present in said outer housing,



(7) means sealing said tubular housing to said outer housing,

(8) means for exposing an object to an electron beam passing through the magnetic gap of said objective lens out of said tubular housing, said exposing means including an aperture through the exterior wall of said outer housing aligned with the magnetic gap of said objective lens to allow the electron beam to pass out of said outer housing and to impinge upon an object exteriorly thereof and sealed against the exterior wall,

(9) an X-ray spectrometer mounted in said outer housing for detecting X-rays emitted by an object exposed to the electron beam, and

(10) an optical system for visually observing an object exposed to the electron beam.

3,346,737

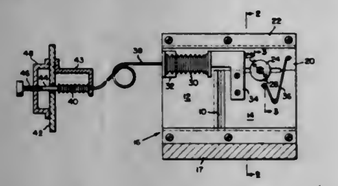
HYDRAULICALLY CONTROLLABLE SPECTROSCOPIC SLIT APPARATUS FOR MAKING PRECISION ADJUSTMENTS OF THE SLIT WIDTH

Hermann Neuhaus, Montrose, Calif., assignor to Applied Research Laboratories, Inc., Glendale, Calif., a corporation of Delaware

Filed Sept. 22, 1964, Ser. No. 398,342
5 Claims. (Cl. 250—105)

5. In spectroscopic apparatus of the type including a pair of jaws defining a slit, means mounting the jaws for travel together and for limited motion toward and away from each other, and a housing, the jaws being mounted for travel within the housing, slit adjustment mechanism for moving the jaws relative to each other comprising a first hydraulic bellows, means connecting said bellows to the jaws for alternately moving the jaws towards and

away from each other, a second hydraulic bellows, means mounting said second bellows in a fixed position relative to the housing, a flexible tube connecting said first and second bellows to each other, biasing means for yieldably compressing said first bellows and for yieldably expanding said second bellows, and drive means for controllably compressing said second bellows, said drive means being actuatable from a position outside of the housing, said second bellows having a smaller cross section than said first bellows whereby a given motion of said second bellows produces a smaller motion of said first bellows.

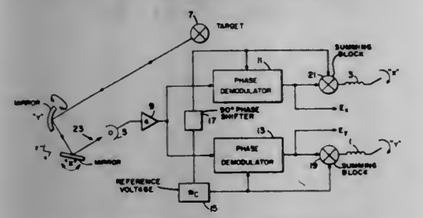


3,346,738

RADIATION SENSITIVE HIGH RESOLUTION OPTICAL TRACKER

James G. Rogers, Fullerton, and Norbert L. Moulin, Placentia, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Nov. 10, 1964, Ser. No. 410,329
10 Claims. (Cl. 250—203)



1. A tracking system comprising first and second mirror means; said first mirror means adapted to be rotatable about a first axis; said second mirror means adapted to be rotatable about a second axis; a source of electromagnetic energy on a target to be tracked; said mirrors reflecting said energy into a beam to a sensing device of a position detecting means; said position detecting means having an output voltage which represents a direction vector of a target; converter means in circuit with the output voltage of said position detecting means for converting said voltage into first and second quadrature voltages which represent said vector; first and second servo means for moving said first and second mirrors respectively; said first quadrature voltage being in circuit with the first servo means for controlling the rotation of said first mirror means; and said second quadrature voltage being in circuit with the second servo means for controlling the rotation of said second mirror means.

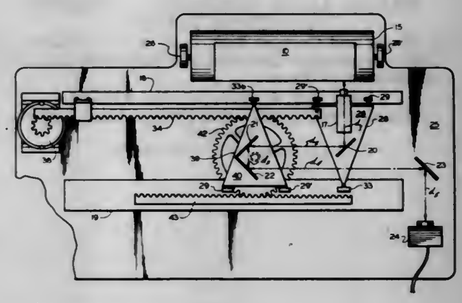
3,346,739

PHOTOSENSITIVE CHARACTER READING APPARATUS

Kurt W. Jenkner, Vestal, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware

Filed May 18, 1964, Ser. No. 367,988
10 Claims. (Cl. 250—219)

9. In an apparatus for reading successive characters arranged on a document in substantially parallel lines extending in a first direction laterally across said document with successive lines spaced in a second direction transverse to said first direction; a platform; a rotating drum adapted to support such a document placed thereon with the lines transverse to the axis thereof whereby the rotation of said drum corresponds to said first direction, whereas the longitudinal axis of said drum extends in said second direction; a pair of vertically extending supports affixed to said platform, said supports forming a pair of parallel tracks; a first carriage having rollers adapted to travel over said tracks; a lens mounted on said carriage and directed toward said drum for imaging the characters of a document thereon; a rack attached to said carriage and slidably supported over said track; motor means for moving said rack and said carriage in said second direction; a photoelectric receptor affixed to said platform; a second carriage adjacent to said first carriage having rollers slidable over said tracks; a stationary rack parallel to said movable rack; a pinion engaging said racks; said pinion being journalled in said second carriage, whereby movement of said slidable rack constrains said pinion to travel over said stationary rack and thus displace said second carriage; and optical reflector means mounted on said second carriage directing the light received from said lens onto said receptor, the displacement of said second carriage being so proportioned with respect to the displacement of said first carriage as to maintain the optical path between said lens and said receptor substantially constant over the scanning travel of said lens.

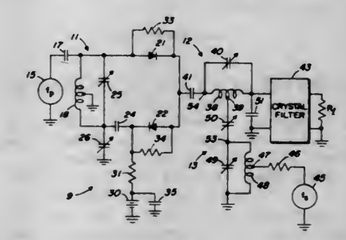


3,346,740

HIGH FREQUENCY PARAMETRIC AMPLIFIER OF THE UP-CONVERTER TYPE

James D. Brobst and Joseph A. Vanous, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed July 23, 1963, Ser. No. 297,117
4 Claims. (Cl. 307—88.3)



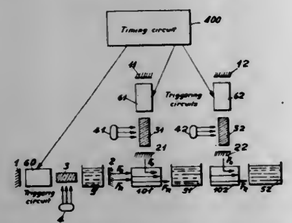
1. A parametric amplifier of the up-converter type, comprising: parallel variable capacitance means having nonlinear capacitance characteristics; tuned circuit means

resonant at a first frequency f_u and connected to the output side of said variable capacitance means; pump means connected to the input side of said variable capacitance means for varying the capacitance thereof at the rate of a second frequency f_p; input means for supplying an input signal at a third frequency f_s, said tuned circuit means including an inductor the center tap of which is at virtual ground, said input means being connected to said center tap of said inductor and output means connected to said tuned circuit means for coupling an output signal from said parametric amplifier at said first frequency f_u, $f_u=f_p+f_s$ and f_p being outside the resonant frequency of said tank.

3,346,741
RAMAN LIGHT INTENSITY AMPLIFIER UTILISING FLUIDS

Guy Mayer and Georges Bret, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Mar. 4, 1965, Ser. No. 437,204
Claims priority, application France, Mar. 5, 1964, 966,171
4 Claims. (Cl. 307—88.3)



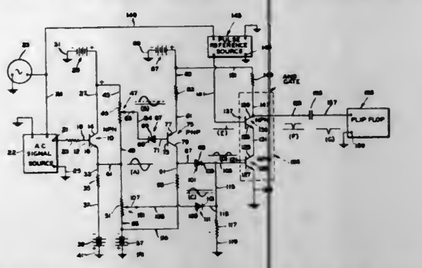
1. A luminous energy amplifier comprising: a first active body having two ends; two first mirrors parallel to each other, near said two ends respectively; a first container containing a Raman fluid between one end and one first mirror, said one mirror being semi-transparent; a first pumping-light source for activating said body, for producing a first beam of light in a direction perpendicular to said mirrors, thus forming a first laser, the luminous energy of said first beam having a first frequency characteristic of said fluid and a second frequency characteristic of said laser; a second active body, having two further ends, situated outside the trajectory of said first beam; near said two further ends, two second mirrors parallel to each other, one of which is semi-transparent, thus forming with said second body a second laser; a second pumping-light source for activating said second body for producing a second beam of light perpendicular to said second mirrors, said second beam having said second frequency; and at least one second container, filled with said fluid; said fluid in said second container being, located outside of said lasers on the path of said first and said second beams.

3,346,742
ALTERNATING CURRENT SIGNAL LEVEL DETECTOR

John B. J. Aniano, Dunellen, and William O. Yaeger, Wayne, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Mar. 31, 1964, Ser. No. 356,170
8 Claims. (Cl. 307—88.5)

1. An alternating current signal level detector comprising a full wave rectifier including means for clipping positive and negative half waves of an alternating current signal in excess of predetermined amplitudes, means for combining said clipped half waves in a series of control pulses, gate means including a pair of serially connected current control devices, one of said devices being controlled by said series of control pulses, pulse reference source means for supplying reference pulses in synchronism with said control pulses, and means for applying said reference pulses to said other current control device

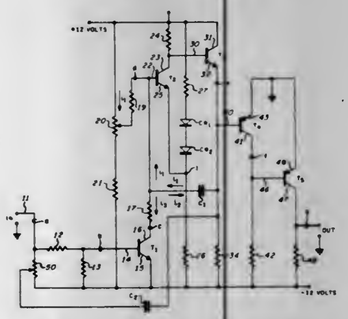


so as to effect the control of said other current control device in synchronism with the control of said one control device to effect an output signal pulse through said pair of serially connected current control devices upon the alternating current signal exceeding said predetermined amplitudes.

3,346,743
PULSE WIDTH MULTIPLYING CIRCUIT HAVING CAPACITIVE FEEDBACK

Harry F. Strenglein, Clearwater, Fla., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,652
6 Claims. (Cl. 307—88.5)

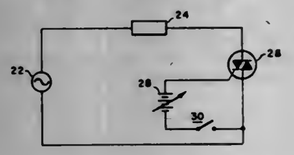


6. Pulse width multiplying means comprising,
an amplifier having an input terminal and an output terminal,
means including capacitative means coupled between the input and output terminals of said amplifier to provide a negative feedback path therebetween,
gating means coupled to said feedback path at a point between said input terminal and said capacitive means for applying a pulsed signal to said amplifier,
means coupled to said feedback path at a point between the output terminal of said amplifier and said capacitive means for clamping said output terminal at a reference voltage prior to the time said pulsed signal is applied to said input terminal and for unclamping the output terminal in response to a signal produced by the amplifier in response to said pulsed input signal,
means operable in response to said clamping means for producing an output signal when the amplifier output terminal is unclamped, and
means for also applying said input pulse signal to the output terminal of said amplifier.

3,346,744
POWER CONTROL CIRCUITS

Edward Keith Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 343,302, Feb. 7, 1964. This application Mar. 8, 1967, Ser. No. 621,710
15 Claims. (Cl. 307—88.5)

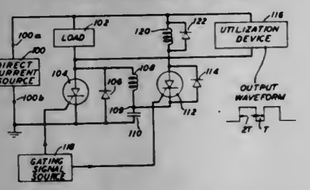


7. In combination, a bilateral controllable semiconductor switching device for controlling the current applied to a load from a source of alternating potential under control of switching signals comprising a body of semiconductor material including five layers of one and the opposite conductivity types, layers of one conductivity type being interleaved with layers of the opposite conductivity type forming a plurality of P-N junctions therein, a first main current carrying electrode in low resistance ohmic contact with a surface of an external layer of said body and an exposed surface of an adjacent intermediate layer, a second main current carrying electrode in low resistance ohmic contact with a surface of the other external layer of said body and an exposed surface of an adjacent intermediate layer, means for coupling said device in series between said first and said second main current carrying electrodes with said load and said alternating potential, a gate region of the same conductivity type as said external layers of said body adjacent said intermediate layer contacted by said first main current carrying electrode, gating electrode means in ohmic contact with said gate region and with the adjacent intermediate layer, means for switching said semiconductor device between high and low impedance states for current through said device in opposite senses comprising means for coupling such switching signals between said gate electrode means and one of said first and second main current carrying electrodes.

3,346,745
PULSE GENERATOR

William B. Harris, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 24, 1966, Ser. No. 522,516
6 Claims. (Cl. 307—88.5)

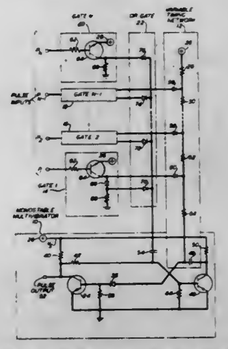


1. In combination in a pulse generator,
a controlled switching device connected in an opposed shunt relationship with an asymmetrically conducting diode and further connected in shunt with a series-tuned circuit comprising an inductor and a capacitor, said circuit including a junction point between said inductor and capacitor,
a load and a direct-current source connected in series with said device, said series arrangement including a junction point between said source and load,
and means connected between said junction points for rapidly recharging said capacitor at the termination of a pulse.

3,346,746
MONOSTABLE MULTIVIBRATOR CIRCUIT HAVING VARIABLE TIMING INTERVAL

Alan M. Gordon, Matawan Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 20, 1965, Ser. No. 498,413
6 Claims. (Cl. 307—88.5)

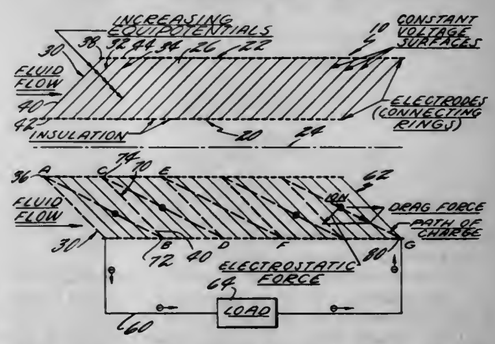


1. A generator of variable duration pulses which comprises a monostable multivibrator having a stable state, a quasi-stable state, a trigger input, and a timing impedance for fixing the duration of said quasi-stable state, means to generate input pulses, said input pulses being routed to said trigger input to trigger said multivibrator from its stable state to its quasi-stable state, and means responsive to said pulses to selectively short out respectively different portions of said timing impedance, whereby the duration of each pulse generated by said multivibrator is dependent upon which portion of said timing impedance is shorted out.

3,346,747
ELECTRO-FLUID-DYNAMIC GENERATOR

John W. Larson, Phoenixville, Pa., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

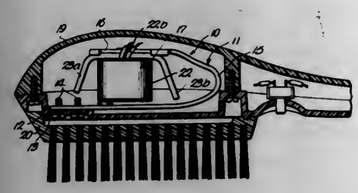
Filed July 7, 1964, Ser. No. 380,759
6 Claims. (Cl. 310—11)



4. The method of reducing the space charge effect in an electro-fluid-dynamic engine having an annular fluid passage defined between inner and outer walls including small ringed electrodes in the inner wall and large ringed electrodes in the outer wall comprising positioning electri-

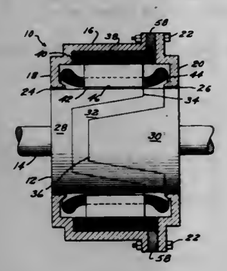
cally connected pairs of small and large ringed electrodes in spaced axial relation along the passage to establish constant voltage potential regions therebetween to thereby establish the space charge field at an angle to the electrostatic field.

3,346,748
VIBRATOR MOTOR WITH SELF-CONTAINED COOLING MEANS
Samuel L. McNair, Fullerton, Calif., assignor to The Songrand Corporation, Kansas City, Mo., a corporation of Missouri
Filed June 7, 1965, Ser. No. 461,642
4 Claims. (Cl. 310—16)



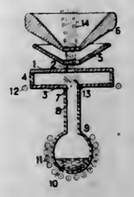
2. In a vibrating device having a freely vibrating core and an excitation coil which induces a directional field in said core, said directional field assisting in causing said core to vibrate and to transmit the vibratory energy to said device, the improvement comprising,
said core consisting of a single leg of a non-laminated magnetically permeable metal,
said inducing coil circumscribing said core, and
a means to conduct heat developed by the cooperating core and coil combination away from said combination.

3,346,749
SELF-EXCITED BRUSHLESS ALTERNATOR
Robert J. Shafranek, Kent Ohio, assignor to TRW Inc., a corporation of Ohio
Filed Feb. 2, 1965, Ser. No. 429,717
17 Claims. (Cl. 310—263)



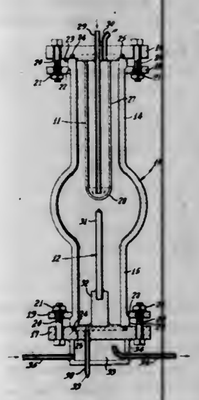
1. An alternator comprising
(a) a stator of magnetic material,
(b) means defining a pair of walls of magnetic material spaced axially from opposite ends of said stator,
(c) field means for inducing a north magnetic pole in one of said walls and a south magnetic pole in the other of said walls,
(d) a rotor journalled for rotation within said stator and including a pair of sections of magnetic material respectively coupled magnetically to said walls, and
(e) a permanent magnet magnetically coupled between said walls and positioned to induce a north magnetic pole in said one wall and a south magnetic pole in said other wall.

3,346,750
CAVITY TYPE PARTICLE STREAM ACCELERATOR HAVING A NON-ISOTHERMAL CHAMBER
Harry Huber and Daniel Maugis, Paris, France, assignors to CSF—Compagne Generale de Telegraphie Sans Fil, a corporation of France
Filed Mar. 1, 1966, Ser. No. 530,899
Claims priority, application France, Mar. 1, 1965, 7,403
10 Claims. (Cl. 313—231)



1. A source of charged particles of the type having a heated cavity in which electrons are emitted from at least a portion of the inner surface of the cavity, while a plasma of an ionizable substance is produced by contact ionization within the cavity, said cavity comprising two mutually facing, opposite walls, spaced apart by an intermediate wall and heated to two different temperatures, the spacing between said opposite walls being sufficiently small to enable an arc discharge at least within a portion of the space comprised between said opposite walls.

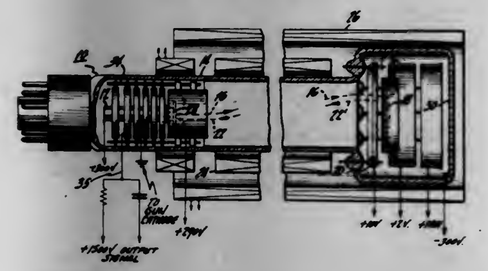
3,346,751
CLAMPED SEAL FOR HIGH PRESSURE GAS DISCHARGE LAMP
Otto E. Lienhard, Upper Montclair, N.J., assignor to Engelhard Hanovia, Inc., Newark, N.J., a corporation of New Jersey
Filed Oct. 1, 1963, Ser. No. 313,007
2 Claims. (Cl. 313—32)



1. A high pressure gas discharge lamp comprising a quartz lamp envelope having a pair of generally tubular portions open at their outer ends with an enlarged annu-

lar shoulder portion around the outer edge of each of the outer ends, a collar around each of the tubular portions and bearing against said shoulder portions, an electrically conductive plate across each of the open ends of said tubular portions, seal means between the plates and adjacent edges of said open ends, clamp means between the collars and the plates securing the plates against said open ends, a pair of electrodes with one electrically conductively secured to one plate and the other electrically conductively secured to the other end plate and both extending into the lamp envelope through the respective open ends, one of said electrodes being a hollow anode electrode with inlet and outlet conduits through the adjacent plate into the hollow portion of the electrode for the circulation of liquid coolant through the electrode, the other electrode being a substantially solid cathode electrode and means for liquid cooling said cathode electrode.

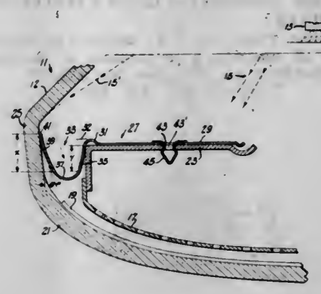
3,346,752
ELECTRON MULTIPLIER DYNODE HAVING AN APERTURE OF REDUCED SECONDARY EMISSION
Donald F. Battson, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 27, 1965, Ser. No. 451,228
13 Claims. (Cl. 313—68)



1. An electron multiplier tube having:
(a) a first dynode,
(b) said first dynode having walls defining an aperture therein,
(c) a cathode having an electron emissive coating thereon disposed relatively close to and in axial register with said aperture, whereby some of the material of said electron emissive coating is undesirably deposited on said walls during formation of said cathode,
(d) said walls having thereon a coating of a material comprising a chemical compound of an organic material and a portion of said emissive material deposited on said walls, said compound having a secondary electron emission ratio less than one.

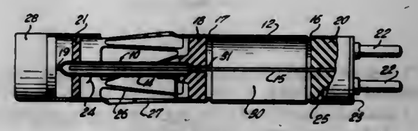
3,346,753
PERIPHERAL SHIELD FOR COLOR TELEVISION TUBE SHADOW MASKS
Paul Haas, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,645
5 Claims. (Cl. 313—92)

1. In a color cathode ray tube having a funnel portion, a viewing panel integrally joined thereto with a substantially upstanding perimetrical sidewall portion, a multipattern cathodoluminescent screen disposed on the inner surfaces of said panel, a frame supported foraminous mask positioned within said panel on supoprt means extending therefrom to provide spaced relationship with said screen, and a source of electrons oriented to beam said electrons through said mask to discretely excite the electron responsive color phosphors in said screen, that improvement therein which comprises metallic means for shielding the peripheral portion of said screen from electrons peripherally reflected from the panel sidewall during tube operation in the form of:



a channelized electron dispersion shield having a seating portion formed for attachment to said frame with a substantially U-shaped channel portion integral thereto being formed to extend peripherally around said frame in a substantially continuous manner to provide a wedge-like concave fit between said frame and said panel sidewall and resiliently bridge the peripheral spacing therebetween, said channel portion having a proximal wall adjacent said frame extending from the periphery of said seating portion to the concavity portion of said channel and a substantially opposed distal wall extending a substantially upstanding manner from said concavity portion to a terminal leading edge to substantially make contact with said panel sidewall, said upstanding portion of said distal wall being oriented in angular relationship with said panel sidewall.

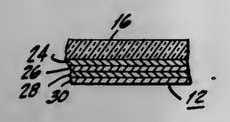
3,346,754
MOUNTING ASSEMBLY FOR RADIATION DETECTOR TUBES OF VARIOUS SIZES AND SENSITIVITIES TO RADIATION
Hussein Natanagara, Bronx, and Philip Gotthoffer, Brooklyn, N.Y., assignors, by mesne assignments, to Trilobe Coupling Corp., Brooklyn, N.Y., a corporation of New York
Filed Mar. 26, 1964, Ser. No. 354,933
14 Claims. (Cl. 313—93)



1. A mounting structure for radiation detector tubes of different sizes, comprising: an external elongated mounting shell, two spaced insulator means mounted within said shell for holding a detector tube to be mounted within the shell, and a plurality of circumferentially spaced ribs forming an opening in the wall of the mounting shell between said insulator means and extending substantially in longitudinal direction of said shell at

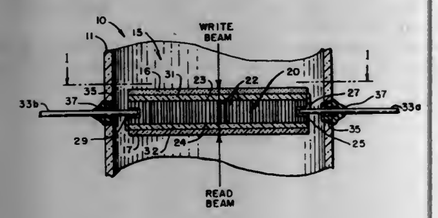
acute angles with regard to lines parallel to the longitudinal axis of said shell to permit an incident radiation field to impinge upon a detector tube mounted within said shell without concealing entire radial sectors of the tube.

3,346,755
DARK CURRENT REDUCTION IN PHOTOCONDUCTIVE TARGET BY BARRIER JUNCTION BETWEEN OPPOSITE CONDUCTIVITY TYPE MATERIALS
Joseph Dresner, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,107
7 Claims. (Cl. 313—94)



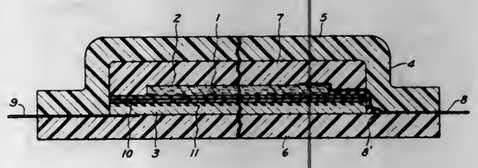
4. A target for a photoconductive device comprising:
(a) an air-baked substrate including a support and succeeding layers of bismuth trioxide and gold on said support,
(b) a layer of cadmium selenide on said gold, and
(c) a layer of vitreous selenium-tellurium alloy on said layer of cadmium selenide,
(1) the tellurium in said vitreous alloy being graded in content from a maximum at the surface of said alloy adjacent to said layer of cadmium selenide, to a minimum in the opposite surface of said alloy layer.

3,346,756
ELECTRODE SUPPORT FOR AN OPTICAL FIBER DISC
Robert J. Doyle, Darien, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Apr. 13, 1965, Ser. No. 447,932
7 Claims. (Cl. 313—94)



7. In an electron tube having an envelope, the combination comprising:
a discoidal bundle of fiber optic rods terminating in first and second opposed face portions,
a first optically transparent electrically conductive layer disposed on said first face portion,
a second optically transparent electrically conductive layer disposed on said second face portion,
a plurality of spaced slots formed in the edge of said bundle,
a first electrically conductive coating disposed in one of said slots and connected to said first layer,
a second electrically conductive coating disposed in another of said slots and connected to said second layer,
said envelope including a number of apertures each containing an eyelet,
a plurality of electrically conductive mounting pins each extending through a corresponding eyelet in said envelope into a corresponding one of said slots and mechanically engaging the boundary of that slot, one of said pins electrically and mechanically contacting said first coating,
another of said pins electrically and mechanically contacting said second coating,
and means for fixedly securing said pins to said eyelets;
whereby said discoidal bundle is directly and solely supported by said pins.

3,346,757
ELECTROLUMINESCENT LAMP HAVING AN ALUMINUM ELECTRODE, A LAYER OF DIELECTRIC MATERIAL AND AN ALUMINUM OXIDE LAYER DISPOSED BETWEEN THE ALUMINUM ELECTRODE AND THE DIELECTRIC LAYER
Gunther H. A. E. Dierssen, Mentor-on-the-Lake, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 24, 1962, Ser. No. 232,699
4 Claims. (Cl. 313—108)

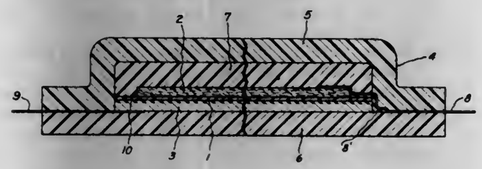


1. An electroluminescent device comprising a layer of aluminum forming a first electrode, a thin transparent layer of conductive material forming a second electrode, a layer of electroluminescent phosphor-impregnated dielectric material between said first and second electrode layers forming an electroluminescent layer, a layer of aluminum oxide tightly adhered to said aluminum layer and disposed between said aluminum layer and said electroluminescent layer, said layer of aluminum oxide being of a thickness greater than the thickness of the natural skin of aluminum oxide which forms on aluminum when exposed to the atmosphere, and an additional layer of dielectric material disposed between said layer of aluminum oxide and said electroluminescent layer.

3,346,758
ELECTROLUMINESCENT LAMP HAVING AN ALUMINUM ELECTRODE WITH AN ALUMINUM OXIDE LAYER DISPOSED BETWEEN THE ALUMINUM ELECTRODE AND THE ELECTROLUMINESCENT MATERIAL
Paul A. Dell, Highland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 24, 1962, Ser. No. 232,700
5 Claims. (Cl. 313—108)

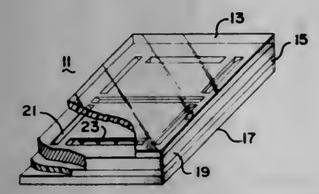
1. An electroluminescent device comprising a layer of aluminum forming a first electrode, a thin transparent layer of conductive material forming a second electrode, a layer of electroluminescent phosphor-impregnated dielectric material between said first and second electrode layers forming an electroluminescent layer, and a layer of aluminum oxide tightly adhered to said aluminum layer and disposed between said aluminum layer and said

electroluminescent layer, said layer of aluminum oxide being of a thickness greater than the thickness of the



natural skin of aluminum oxide which forms on aluminum when exposed to the atmosphere.

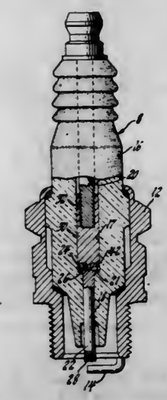
3,346,759
PLANAR ARRAY OF CATHODE AND ANODE ELECTRODES INSTALLED IN CHANNELS FOR VISUAL INDICATOR DISPLAY DEVICE
Albert J. Hardwick, West Chester, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 31, 1965, Ser. No. 484,053
13 Claims. (Cl. 313—109.5)



1. In a cold glow discharge tube having an array of selectively energizable electrodes, the improvement comprising:
an insulating block mounted within said tube and having a display plane disposed for viewing from outside of said tube;
an array of channels formed oblique to said display plane in said display block;
at least one cathode defining area visible through said display plane on a side wall of at least one channel; and
anode defining areas formed beneath the projection of the overhanging edges of the oblique channels and thus substantially invisible from the normal to the display plane.

3,346,760
SPARK PLUG CENTER ELECTRODE WITH A SPLIT TRUNCATED HEAD
John I. Jalbing, Millington, and Ernest H. Myers, Flushing, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,546
9 Claims. (Cl. 313—136)

1. A spark plug comprising an insulator having a stepped centerbore therethrough, a center electrode having an enlarged head at the upper end thereof and extending through said centerbore, said enlarged head having sides which form an inverted frusto conical shape thereon, said enlarged head having the top edge thereof almost touching said insulator, a fused glass mass positioned in said centerbore above and around said head forming a seal between said insulator and said head, and said enlarged head having slot passageway means adapted



to permit the flow of said glass mass in the formation of said glass seal below said top edge of said enlarged head.

3,346,761
INCANDESCENT LAMP WITH A TUNGSTEN FILAMENT WITH TANTALUM IMBEDDED IN THE SURFACE TO ACT AS A GETTERING AGENT
Stanley C. Ackerman, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed July 2, 1965, Ser. No. 469,163
3 Claims. (Cl. 313—180)

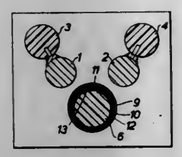


1. An electric incandescent lamp comprising a sealed envelope, a pair of lead-in wires sealed into said envelope, and a tungsten filament coil in said envelope connected to said lead-in wires, said filament coil being substantially free of carbon, iron and molybdenum surface layer embedded impurities and containing tantalum diffused into and embedded in its surface layer in a small but effective amount serving as a getter but materially less than 300 parts per million of its surface layer composition.

3,346,762
SPARK GAPS
John Christopher Martin, Tadley, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Dec. 30, 1964, Ser. No. 422,127
Claims priority, application Great Britain, Jan. 3, 1964, 430/64
15 Claims. (Cl. 313—306)

1. A spark-gap including a trigger assembly arranged in spaced relationship with a main electrode in the gap, said assembly comprising a trigger electrode having a sharp edge exposed to the gap and a field-forming electrode separated from said exposed sharp edge by a thin layer of dielectric material to produce a corona-producing electric field at said sharp edge by application of a trig-

gering voltage between said trigger electrode and said field-forming electrode, said dielectric material extending beyond said sharp edge to prevent the formation of a further gap extending from a conducting surface of said

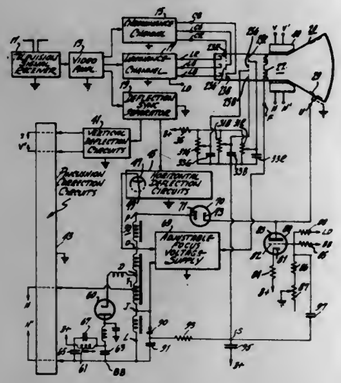


trigger electrode to a conducting surface of said field-forming electrode and thereby prevent electrical breakdown occurring between said trigger and field-forming electrodes on application of said triggering voltage.

3,346,763
REGULATED VOLTAGE SUPPLIES FOR CATHODE RAY TUBE SYSTEMS

John Stark, Jr., Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,128
6 Claims. (Cl. 315—22)



1. In a cathode ray tube system involving development of display rasters comprising recurring fields of scanning lines, said system including a cathode ray tube and respective line and field rate cathode ray beam deflection circuits, said cathode ray tube including an ultor electrode and additional electrodes, the operating potentials for said ultor electrode and at least one of said additional electrodes being derived in respective supply circuits at least in part via rectification of flyback pulses generated in said line rate deflection circuit, said system being subject to the appearance of undesired field rate variations in parameters of said line rate deflection circuit, reflection of said field rate variations in said operating potentials tending to adversely affect operation of said cathode ray tube; a voltage regulating arrangement comprising in combination:

a regulating device having a control electrode, said regulating device being connected to said ultor electrode and serving as a controllable load on said ultor operating potential supply circuit;

a source of control voltage sensitive to variations in the load presented by said cathode ray tube to said ultor operating potential supply circuit;

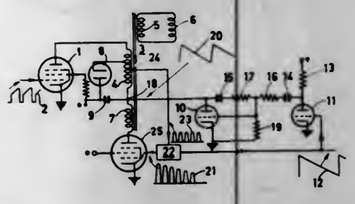
means providing a direct current conductive coupling between said control voltage source and said regulating device control electrode for causing said regulating device to oppose long term D.C. variations in said ultor potential caused by said cathode ray tube load variations;

and means providing an exclusively alternating current coupling between the operating potential supply circuit for said additional electrode and said regulating device control electrode for causing said regulating device to oppose undesired field rate variations in said ultor potential.

3,346,764
CIRCUIT ARRANGEMENT FOR PRODUCING A DEFLECTION CURRENT THROUGH THE HORIZONTAL DEFLECTION COILS OF A TELEVISION APPARATUS

Teunis Poorter, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 2, 1964, Ser. No. 356,767
Claims priority, application Netherlands, Apr. 5, 1963, 291,219
13 Claims. (Cl. 315—27)



1. A circuit for producing a sawtooth deflection current in the horizontal deflection coil of a television system comprising, amplifying means comprising first and second electrodes which define a current path therein and a control electrode for controlling the flow of current in said path, an output circuit coupled to said first electrode comprising an output transformer and means for coupling said horizontal deflection coil thereto, means for applying a cyclically varying control voltage of the horizontal deflection frequency to said control electrode thereby to control the conduction of said amplifying means to produce said sawtooth deflection current in said transformer and said horizontal deflection coil, means including said amplifying means for amplitude modulating said horizontal deflection current at the vertical deflection frequency, said output circuit having a quality Q determined by said output transformer, said deflection coil and the capacitances of said output circuit, and means for varying the Q of said output circuit at a frequency equal to said vertical deflection freqency and in the same sense as the amplitude modulation of the horizontal deflection current thereby to compensate for any DC current component of said vertical deflection frequency produced in said horizontal deflection current.

3,346,765
RASTER DISTORTION CORRECTION

William H. Barkow, Pennsauken, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,185
9 Claims. (Cl. 315—27)

1. A deflection circuit arrangement for a television apparatus comprising:

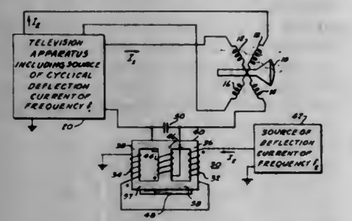
a deflection winding adapted for deflecting an electron beam of a cathode ray device in one direction when a deflection current flows therein;

a body of ferromagnetic material arranged in a two-window magnetic circuit configuration having first and second outside body segments and a center segment;

means establishing a magnetic bias flux in said body;

first and second series coupled input windings positioned respectively about said first and second outside body segments;

an output winding positioned about said center segment;



means coupling said output winding in series with said deflection winding;

reactive circuit means coupled to said output winding and forming a parallel resonant circuit with said output winding;

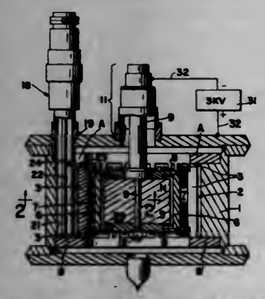
means for causing a deflection current of frequency (f_1) and sawtooth waveform to flow in said deflection winding and in said resonant circuit; and

a source of current of relatively higher frequency (f_2) coupled to said input windings.

3,346,766
MICROWAVE COLD CATHODE MAGNETRON WITH INTERNAL MAGNET

Joseph Feinstein, Livingston, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey

Filed Mar. 13, 1964, Ser. No. 351,749
7 Claims. (Cl. 315—39.71)

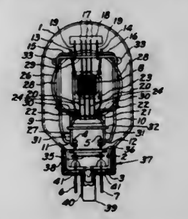


1. In a magnetron microwave tube apparatus; means forming a generally cylindrical cathode electrode structure; means for producing an arcuate stream of electrons adjacent said cold cathode electrode; means forming an anode electrode structure coaxially disposed of said cathode electrode in spaced apart relationship and defining an electronic interaction region therebetween, said anode electrode including an arcuate wave circuit facing said cylindrical cathode electrode structure for electronic interaction between waves on said circuit and the stream of electrons; means forming a permanent magnet disposed within said cathode electrode for generating an axially directed magnetic field in said interaction region to cause the electron stream to move tangentially to said wave circuit to effect cumulative electronic interaction between the electron stream and waves on said anode circuit; means for extracting microwave energy from said circuit, means forming an evacuable envelope enclosing said magnet, said cathode and the magnetron interaction region, the improvement comprising, means forming a pair of magnetic pole pieces disposed within said evacuable envelope at the ends of said permanent magnet, said pole pieces projecting toward said anode electrode structure and overhanging the sides of said permanent magnet to improve the uniformity of the magnetic field in the magnetron interaction region.

3,346,767
INTEGRAL LENS AND REFLECTOR PROJECTION LAMP

Emmett H. Wiley, Chesterland, Ohio, assignor to General Electric Company, a corporation of New York

Filed Apr. 29, 1965, Ser. No. 451,882
4 Claims. (Cl. 315—71)

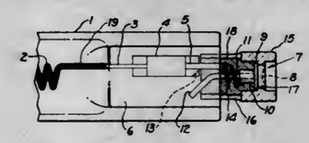


1. An electric projection lamp comprising a tubular glass bulb having a glass stem sealed to the end thereof and at least four wire pin members projecting into the envelope through said stem and arranged in first and second pairs located in respective planes extending longitudinally of and on opposite sides of the bulb axis, filament support wire members connected to and extending longitudinally of the bulb from respective ones of said first pair of wire pins, a filament located between and supported from said filament support wire members, a reflector in said bulb supported from and insulated from said filament support wires and located at the side of said filament away from the bulb axis, a lens member in said bulb in apposition to said filament and at the opposite side thereof from said reflector, a wire frame member embracing said lens and supported from the second pair of wire pin members, brace means mechanically interconnecting said filament support wire members with said wire frame member at the ends thereof remote from said pin members, and means electrically connecting said filament to two of said pin members which serve as current supply conductors.

3,346,768
INCANDESCENT LAMP WITH A FUSE INTEGRAL WITH THE LEAD-IN STRUCTURE

Glenn F. Patsch, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York

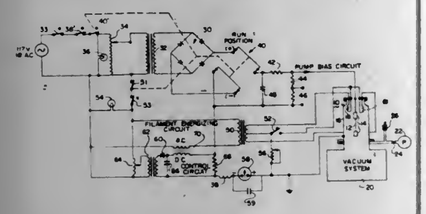
Filed Oct. 29, 1964, Ser. No. 407,480
9 Claims. (Cl. 315—74)



1. An electric incandescent lamp comprising a sealed envelope having a pinch seal, a filament in said envelope, a lead-in conductor having at least a portion thereof hermetically sealed in said pinch seal portion and one

end electrically connected to said filament, a contact member at the exterior of said pinch seal, a rigid auxiliary support wire member carrying said contact member at a fixed predetermined position and having a portion thereof embedded in and supported from said pinch seal in insulated relationship to said lead-in conductor, and a fuse wire member at the exterior of said pinch seal electrically connected at one end to said contact member and at its other end to said lead-in conductor.

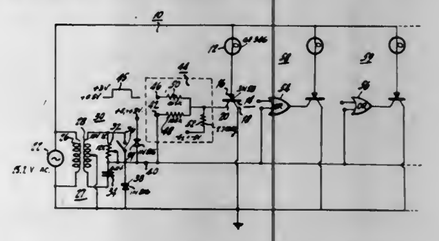
3,346,769
ORBITING VACUUM PUMP POWER SUPPLY WITH A FILAMENT CURRENT REGULATOR
Deane P. Sheldon, Franklin, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 7, 1965, Ser. No. 493,690
7 Claims. (Cl. 315—106)



1. An improved power supply circuit for orbiting electron vacuum pumps, and the like, comprising in combination:
(a) a direct current source of high voltage,
(b) a pump bias circuit for connecting the said high voltage source to a first electrode of the pump and comprising polarity reversal switch means,
(c) an alternating current source,
(d) a filament energizing circuit for connecting the said alternating current source to a thermionic emitting filament of said pump,
(e) a control circuit comprising a direct current source of a reference low voltage and a current sensing resistor, said current sensing resistor being located in series between the said polarity reversing switch and an electrode of said pump, and
(f) a saturable reactor with its alternating current windings in said filament energizing circuit and its direct current windings in said control circuit constructed and arranged so that increasing current drawn by said current sensing resistor is counteracted by decreasing filament heating power output and so that decreasing current drawn by said current sensing resistor is counteracted by increasing filament heating power output.

3,346,770
LAMP DRIVER CIRCUITS
Neil R. Stewart, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,574
2 Claims. (Cl. 315—194)

1. A surge protection circuit for controlling a current through an indicator lamp having a filament that exhibits substantially less resistance when cold than hot, comprising in combination,
means providing a source of alternating signals having a half period of a predetermined duration,
a controlled rectifier having an anode electrode and a cathode electrode that defines a unidirectional current conductive path through said rectifier, and a gate electrode that controls the activation of said conductive path,
means for applying said alternating signals to said indicator lamp solely through said controlled rectifier by coupling the filament of said indicator lamp in series with the conductive path of said controlled rectifier and said source of alternating signals,
a phase shifter circuit coupled to said source of alternating signals to shift the phase of the initial alternating signals from said source so that said phase shifted and initial alternating signals are coincidentally positive for a period of time less than said predetermined half period,
rectifying means coupled to said phase shifter circuit for rectifying said phase shifted alternating signals to provide positive phase shifted pulses,
an OR gate having an output terminal coupled to the gate electrode of said controlled rectifier, and having a pair of input terminals,
means for coupling said rectifying means to one of said input terminals of said OR gate for applying said positive phase shifted pulses to said gate electrode to activate the conductive path of said controlled rectifier to pass current pulses through said indicator lamp when both said original alternating signals and said pulses exhibit a positive phase,

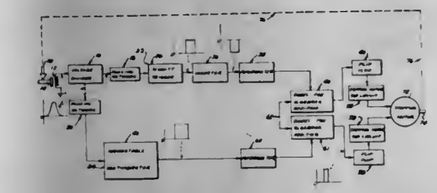


means coupled to said phase shifter circuit for varying the phase of said phase shifted signals to shape said current pulses to exhibit a duration substantially less than said predetermined half period to produce a trickle current that maintains said indicator lamp hot but unilluminated, and
means for applying an overriding signal to the other input terminal of said OR gate to maintain said gate electrode of said controlled rectifier positive with respect to said cathode electrode so as to pass through said controlled rectifier a current that is substantially greater than said trickle current so as to illuminate said indicator lamp,
whereby the filament of said indicator lamp is maintained hot so that said indicator lamp is illuminated by said overriding signal without surge currents developing.

3,346,771
DIGITAL ELECTRONIC SPEED CONTROL GOVERNOR UTILIZING PULSE WIDTH COMPARISON
Robert S. Sutton, Grosse Pointe Farms, Mich. (26091 German Mill Road, Franklin, Mich. 48025)
Filed Oct. 27, 1964, Ser. No. 406,754
9 Claims. (Cl. 317—5)

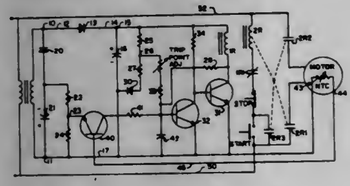
1. A digital electronic speed control governor for controlling the speed of a controlled apparatus having a speed-controlling regulator, said governor comprising
means associated with said apparatus and responsive to the speed thereof for generating an electronic pulse having a width proportional to said speed,
means for dividing the thus generated pulse into two pulse outputs, a variable width square wave branch circuit connected to one of said pulse outputs and effective to convert the received pulse into a square wave having a width varying in accordance with the variation of speed of the controlled apparatus,

a constant width square wave branch circuit connected to the other of said pulse outputs and effective to convert the received pulse into a square wave having a constant width proportional to the speed desired for the apparatus,
said branch circuits being connected in parallel relationship to one another,
means in one of said branch circuits for inverting the square wave produced by the pulse conversion action of said one branch circuit.



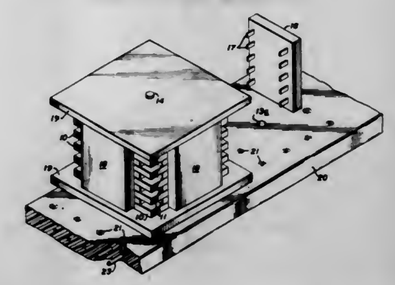
means for algebraically combining the opposite square waves emitted by said branch circuits to produce a resultant pulse,
a reversible stepping motor connected to said combining means to receive the resultant square wave increment therefrom and operatively responsive to said square wave increment,
and feedback means responsive to the operation of said stepping motor for actuating the speed-controlling regulator of the apparatus to alter the speed thereof to said desired speed.

3,346,772
CONTROL APPARATUS
Robert E. Mierendorf, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 477,523
1 Claim. (Cl. 317—13)



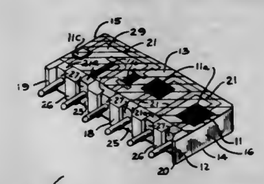
In an over-temperature turn-off device for the protection of electrical apparatus: a source of unidirectional potential; voltage divider circuit means connected across said source of potential; a negative coefficient thermistor mounted in the apparatus to be protected; power switching means having a control circuit and a pair of power switching terminals adapted to be connected in circuit with the apparatus to control the energization thereof; said control circuit including transistor switching means and relay means connected to a first portion of said voltage divider circuit means to energize said relay means to close said power switching terminals when said negative coefficient thermistor detects a normal temperature in said protected electrical apparatus; second transistor means in series circuit with said negative coefficient thermistor and energized in circuit with a second portion of said voltage divider circuit means; and said second transistor circuit means changing an input voltage to said first transistor switching means in the event that said negative coefficient thermistor opens circuits or becomes a low value indicative of an over-temperature condition to thereby switch and de-energize said relay means to open said pair of power switching terminals to de-energize said electrical apparatus.

3,346,773
MULTILAYER CONDUCTOR BOARD ASSEMBLY
Robert B. Lomerson, Fort Worth, Tex., assignor to Varo, Inc.
Filed Nov. 21, 1966, Ser. No. 595,815
4 Claims. (Cl. 317—100)



1. A stacked circuit board assembly comprising: alternate layers of circuit boards and flat insulators of substantially the same planar dimensions, conductor pins extending perpendicularly through said boards and insulators, lateral conductors on said boards connecting selected said conductor pins with slots in the edges of said boards, and said slots having sides into which ends of said lateral conductors are received whereby the leads of electrical devices may be inserted and thereby make contact with said conductors.

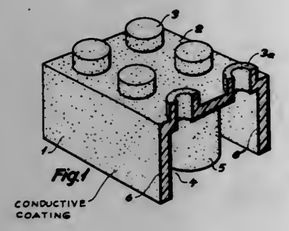
3,346,774
ELECTRICAL COMPONENT SUBSTRATE WITH CAVITIES FOR ANCHORING LEAD WIRES THEREIN
Lynn J. Brady, Edwardsburg, Mich., assignor to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed July 30, 1965, Ser. No. 475,997
17 Claims. (Cl. 317—101)



1. A high-heat resistant substrate of ceramic dielectric material for an electrical component adapted to support a plurality of electrical devices comprising a flat top surface for supporting the electrical devices, a flat bottom surface parallel to the top surface, a pair of end surfaces in spaced relationship, a rear surface and a front surface, the distance between the top surface and the bottom surface being substantially less than the distance between the rear surface and the front surface, a plurality of spaced recesses arranged along the front surface of the substrate, each of the recesses being provided with an inner wall substantially parallel to the front surface of the substrate, and a cavity communicating with the inner wall of each of the recesses for receiving a lead wire, the cavity being of a size insufficient to receive freely an end portion of the lead

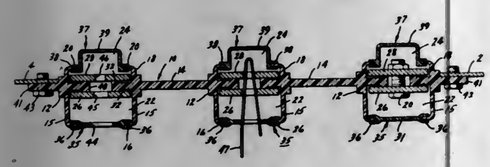
wire, the end portion being forced into the cavity to deform the lead wire and fixedly secure the lead wire directly to the substrate.

3,346,775
COMPONENTS FOR MAKING STRUCTURES COMPRISING ELECTRICAL CIRCUITS
Godtfred Kirk Christiansen, Billund, Denmark, assignor to Interlego A.G., Zug, Switzerland
Filed June 14, 1966, Ser. No. 557,575
Claims priority, application Denmark, June 19, 1965, 3,101/65; Germany, Mar. 1, 1966, A 51,709
10 Claims. (Cl. 317—101)



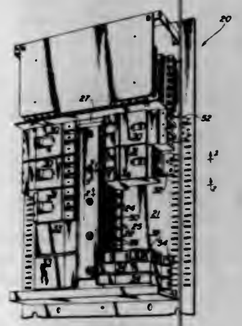
1. In a toy building set having a plurality of blocks, each block having a hollow parallelepiped body open at one face, a bottom and four side walls defining a cavity, at least one primary projection extending normally outwardly from said bottom, at least one secondary projection within said cavity, the position of said secondary projection relative to the walls being such that a primary projection of a block can be clamped between at least one side wall and at least one secondary projection of another similar block the improvement wherein at least one primary projection is electrically conductive and at least one electrical component is located in the cavity of said blocks and electrically connected with said conductive primary projection.

3,346,776
BUS BAR SUPPORTING AND INSULATING ASSEMBLY HAVING BACK-TO-BACK BUS BAR RECEIVING CHANNELS
William F. Olashaw, New Britain, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 17, 1965, Ser. No. 514,594
11 Claims. (Cl. 317—117)



1. An insulated busway assembly comprising:
(a) a generally planar sheet of insulating material having a plurality of pairs of back-to-back busbar receiving channels in parallel spaced side-by-side relation;
(b) said planar sheet including dividing wall portion extending between said busbar receiving channels of each of said pairs thereof, and upstanding side walls;
(c) a busbar retained in at least one busbar receiving channel of each of said pairs thereof;
(d) fastening means fastening said busbar to said planar sheet, said fastening means comprising securing means passing through said dividing wall portion and engaging a retaining member on the opposite side thereof; and
(e) insulating closure means closing each of said channels containing a busbar.

3,346,777
ELECTRIC CIRCUIT BREAKER AND MOUNTING MEANS THEREFOR
James H. Leonard and Edward P. Dessert, Cedar Rapids, Iowa, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 20, 1966, Ser. No. 603,366
10 Claims. (Cl. 317—119)

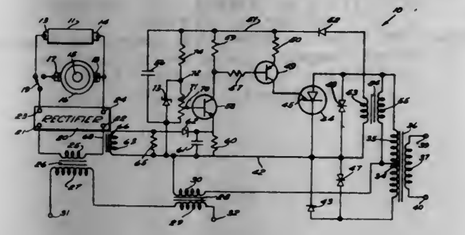


1. An electrical panelboard comprising a generally flat mounting pan, a plurality of elongated flat bus bars of substantially the same cross sectional shape, and a plurality of elongated insulators, said bus bars being interleaved between said insulators to form a stack, said insulators being substantially coextensive longitudinally with said bus bars, said stack of insulators and bus bars being secured to said mounting pan with the flat sides of said bus bars parallel to said mounting pan and a rear one of said insulators disposed between said mounting pan and a rear one of said bus bars, and a portion of said rear insulator adjacent said mounting pan projecting beyond said bus bars transversely thereof in a direction parallel to said mounting pan and having a plurality of locating means thereon equally spaced longitudinally along said rear insulator and adapted to cooperate selectively with complementary locating means on a casing of a circuit breaker upon endwise movement of the circuit breaker for electrically connecting the circuit breaker to the bus bars.

3,346,778
AUTOMATICALLY CONTROLLED MAGNETIZING SYSTEM
Kenneth W. Schroeder, Arlington Heights, and Bruce G. Isaacson, Chicago, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,922
12 Claims. (Cl. 317—123)

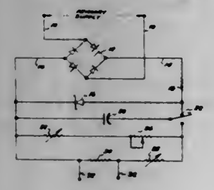
1. In a system for inspection of parts by magnetization and application of magnetic particles thereto, magnetizing means for developing a magnetic field in a part to be inspected, means for energizing said magnetizing means from an AC supply voltage source, and control means responsive to load current applied to said magnetizing means for automatically controlling said energizing means to maintain load current constant at a set value irrespective of variations in supply voltage and

circuit resistances, said control means comprising an adjustable current throttling device in circuit with said magnetizing means and responsive to a control current for



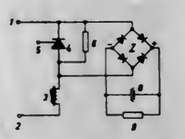
controlling load current, and an on-off control circuit for controlling supply of control current to said current throttling device in accordance with the error between actual load current and the set value.

3,346,779
ELECTRICAL TIMING APPARATUS
George W. Enk, 2635 Hyland, Ferndale, Mich. 48220
Filed May 17, 1963, Ser. No. 281,296
2 Claims. (Cl. 317—141)



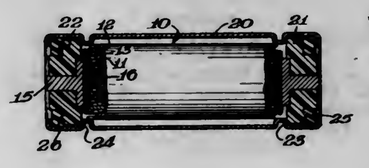
1. A timing circuit operative to be powered from a primary alternating current electrical supply comprising: a voltage breakover rectifier device set to break over at a lower voltage than will normally be produced by said primary electrical supply; a rectifier circuit connecting said breakover rectifier device to the primary electrical supply; a capacitor; a single pole double throw switch having its common terminal connected to the capacitor and having the first of its other terminals connected to one side of the breakover rectifier device; a connection between the other side of the capacitor and the other side of the breakover rectifier device whereby when said single pole double throw switch is connected to the terminal joining said rectifier device, said capacitor is shunted across said breakover device; a variable resistance discharge path for said capacitor having one end connected to the capacitor and the other end connected to the second terminal of the single pole double throw switch whereby, when said single pole double throw switch is connected to its second terminal the capacitor is discharged through the variable resistance discharge circuit; and means for sensing the passage of current through said discharge circuit, whereby when said switch is connected to the first terminal, the capacitor is charged to the voltage of the breakover rectifier device, and when said switch is thrown to the position wherein it contacts the second terminal, the voltage of the capacitor is dissipated through the discharge circuit producing output from said means for detecting the passage of current through the discharge circuit for a predetermined time.

3,346,780
CONTROLLABLE SUPPLY OR FEED CIRCUIT FOR ELECTROMAGNETIC VIBRATORS
Uwe Klix, Rottweil, Germany, assignor to Entwicklungsanstalt für Industrie-Elektronik, Schaan, Liechtenstein, a corporation of Liechtenstein
Filed Jan. 4, 1965, Ser. No. 423,240
Claims priority, application Switzerland, Feb. 13, 1964, 1,734/64
7 Claims. (Cl. 317—148.5)



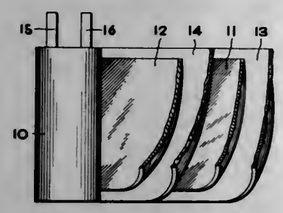
1. Controllable alternating current supply circuit for electromagnetic vibrators comprising a vibrator coil, a controlled semiconductor rectifier connected in series with said vibrator coil, an ohmic resistor bridging said controlled semiconductor rectifier, and a voltage-limiting branch circuit bridging said controlled semiconductor rectifier.

3,346,781
ELECTROLYTIC CAPACITOR AND METHOD OF MAKING
Joseph A. Moresi, Jr., North Adams, and Albert E. Scherr III, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Apr. 16, 1964, Ser. No. 360,350
5 Claims. (Cl. 317—230)



1. An electrolytic capacitor comprising a convolutely wound capacitor section having a pair of aluminum foil electrodes separated by porous spaces, each of said electrodes having convoluted edges extending from one respective end of said section, each of said edges respectively being bent over and interconnected into a common terminal for the respective electrode, each of said bent over edges extending from the convolute edges of the opposite ends of the section, a first conductive metal coating covering substantially the entire bent over edges of a first of said electrodes and having passages for permitting flow of electrolyte between said bent over edges into and out of said section, and an electrical terminal connected to said coating, a second conductive metal coating covering substantially the entire bent over edges of a second of said electrodes and having passages for permitting flow of electrolyte between said bent over edges into and out of said section, and an electrical terminal connected to said coating, the extended bent over foil edges being interconnected at the respective ends by the respective first and second metal coatings, each of said bent over edges, coatings and terminals providing through passageways into the convolute layers of said section for circulation of electrolyte and an electrolyte impregnating said section, an in situ formed dielectric aluminum oxide on at least one of said electrodes, said electrolyte being retained within said section.

3,346,782
ELECTROLYTIC CAPACITOR
Robert S. Alwitt, North Adams, and Sidney D. Ross, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed July 1, 1964, Ser. No. 379,538
3 Claims. (Cl. 317—230)

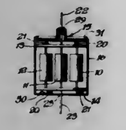


1. An electrolytic capacitor comprising electrodes separated from one another by an inert spacer impregnated with an electrolyte consisting essentially of a nonaqueous solvent containing a substantially constant concentration of an ammonium salt of the formula $R_1COONH_2R_2R_3$ wherein R_1, R_2 and R_3 are selected from the group consisting of hydrogen, a straight, branched, substituted, unsubstituted, saturated and unsaturated C_1–C_7 alkyl group and mixtures thereof; said solvent also containing the amide derivative of said ammonium salt and from about 0.1 to about 5% of added water; the concentrations of the amide and water being related to the concentration of the salt in accordance with the equation:

$$[\text{amide}][H_2O]=K[\text{salt}]^2$$

wherein K is the equilibrium constant.

3,346,783
ASSEMBLY OF SOLID ELECTROLYTIC CAPACITORS
Richard J. Millard, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Apr. 16, 1965, Ser. No. 448,619
3 Claims. (Cl. 317—230)



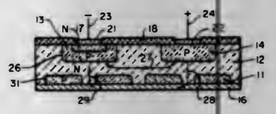
1. A capacitor unit comprising an anode terminal disc and a cathode terminal disc disposed in spaced substantially parallel planes, a plurality of solid electrolyte sub-capacitors each including an anode terminal and cathode terminal extending from opposite ends thereof, said sub-capacitors disposed in spaced planes between said terminal discs and each having one of its terminals electrically connected to a terminal on each of said anode and cathode terminal discs, a unit terminal mounted on each of said anode and cathode terminal discs respectively, each of said discs having conductors connecting at least one terminal thereon to the unit terminal on the disc, and said conductors on the two discs together interconnecting the sub-capacitors into a unit electrical circuit between said unit terminals on the respective discs, a sealed container enclosing said sub-capacitors and said terminal discs with the unit terminal on said anode terminal disc sealingly extending therethrough, said container comprising terminal means for electrically connecting to the unit terminal on said cathode terminal disc, and means for electrically insulating the unit terminals from each other.

3,346,784
MINIATURE RECTIFIER AND METHOD OF MANUFACTURE
Robert W. Blake, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed June 9, 1965, Ser. No. 462,579
5 Claims. (Cl. 317—234)



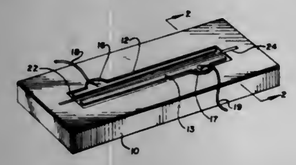
1. A rectifier assembly including a tube of insulating material, end caps on both ends of said tube and forming an enclosure therewith, a stack of rectifier elements and a pair of conductive spring members inside said tube, said stack of rectifier elements being located between said spring members, said spring members located between and held in compression by said end caps whereby said rectifier stack is held in compression, at least one of said spring members comprising a coil spring having at least one coil with an outside diameter slightly larger than that of the remaining coils and also slightly larger than the minimum interior dimension across said tube so as to retain the spring within the tube by resilient engagement with the interior surface thereof, the remaining coils of said spring extending away from said rectifier stack toward one of said end caps.

3,346,785
HIDDEN EMITTER SWITCHING DEVICE
Jacques R. Beaudouin, San Mateo, Calif., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Aug. 19, 1965, Ser. No. 480,953
3 Claims. (Cl. 317—234)



1. A semiconductor switching device, comprising:
a wafer of semiconductor material of one conductivity type having upper and lower opposed major surfaces,
said wafer having four zones of alternately different conductivity types successfully interposed between said surfaces, one end zone comprising a plurality of regions contiguous with said lower surface, said end zone being inset into the next adjacent zone such that said lower surface is common to both said end and adjacent zones, said next adjacent zone extending to said upper surface;
a conductive layer on said lower surface electrically interconnecting said end and adjacent zones, said layer being free of any external electrical connections thereto;
a first electrode on said upper surface in ohmic contact with the other end zone;
a second electrode spaced from said first electrode on said upper surface; and
means electrically coupling said second electrode to said next adjacent zone,
the thickness, resistivities, and minority carrier lifetimes of said zones being such that application of an increasing voltage between said electrodes of reverse polarity to the central junction between the two of said four zones adjacent the end zones switches said device from a high resistance to a low resistance state when said increasing voltage exceeds the reverse breakdown voltage of said central junction and the junction between said one end zone and said next adjacent zone is internally biased to cause conduction through all four zones by the internal voltage drop due to the initial current flow across said central junction.

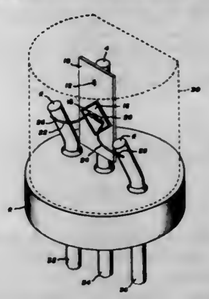
3,346,786
FIELD-EFFECT TRANSISTORS
Will F. Parmer, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 216,843, Aug. 14, 1962. This application July 26, 1966, Ser. No. 568,056
9 Claims. (Cl. 317—235)



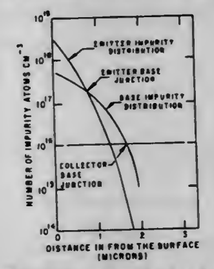
1. A field-effect transistor comprising a semiconductor body of one type of conductivity, a first region within said semiconductor body and adjacent a major face thereof comprised of semiconductor material of the opposite conductivity type from said semiconductor body, said first region being separated from the rest of said semiconductor body by a P-N junction, a second region having the same conductivity type as said semiconductor body extending across said first region and separating surface portions of the said first region adjacent said major face into two distinct parts and connecting with said semiconductor body, said first region comprising a channel, between said body and second region, connecting said parts, and contacts connected to said two parts of said first region and said semiconductor body.

3,346,787
HIGH FREQUENCY TRANSISTOR WITH INTERNAL ANGULAR POSTS AND DIVERGENT, STIFF LEADS TO REDUCE INTERELECTRODE CAPACITANCE
John R. Fahey, Camillus, and Robert H. Lanzl, Baldwinsville, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 446,992, Apr. 9, 1965. This application Dec. 28, 1966, Ser. No. 605,506
3 Claims. (Cl. 317—235)

1. In a transistor, three electrically conductive lead-posts having coplanar parallel portions adapted to serve as external leads of the transistor and having internal portions adapted to be enclosed within a housing, the internal portion of the center lead-post being parallel and coplanar with said external portions, a body of semi-conductor material carried by said internal portion of the center lead-post, said body having collector, emitter, and base regions and having a collector contact surface on one major face electrically connected to said center lead-post, respective emitter and base region contact surfaces on the other major face of said semiconductor body, the internal portions of the side lead-posts being shorter than the internal portion of the center lead-post, said internal portions of the side lead-posts extending out of the common plane of said external portions of said three lead-posts in the direction confronted by said other major face of said semiconductor body by an angle of about 20–30° to minimize capacitance coupling with the internal portion of said center lead-post, an emitter whisker-lead extending from said emitter region contact surface to connection with one side lead-post adjacent its end, and a base whisker-lead extending from said base region contact surface to connection with the other side lead-post adjacent its end.



3,346,788
GALLIUM ARSENIDE TRANSISTOR AND METHODS OF MAKING SAME
Melvin Belasco, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 15, 1965, Ser. No. 463,989
8 Claims. (Cl. 317—237)

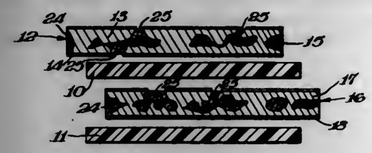


1. A body of gallium arsenide having an N-type conductivity region and a layer of P-type conductivity adjacent one surface thereof forming a PN junction within said body, the concentration of P-type impurities in said layer of P-type conductivity being about 5×10^{17} atoms/cm.^{3} at the surface thereof and decreasing with distance toward said PN junction in approximately complementary error function distribution.

3,346,789
ELECTRICAL CAPACITOR WITH IMPREGNATED METALLIZED ELECTRODE
Preston Robinson, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 131,971, Aug. 14, 1961. This application Oct. 22, 1965, Ser. No. 502,262
4 Claims. (Cl. 317—258)

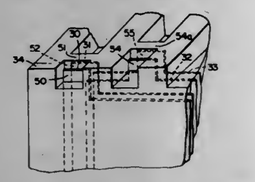
1. A capacitance section having two electrodes separated by distinct non-porous plastic films, at least one of said electrodes being of porous dielectric material which

is metallized on both faces with the metallized surfaces being electrically interconnected through the pores of said material, said section being fully impregnated with a



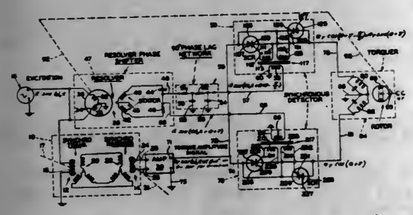
solid dielectric resin material, said impregnant being maintained at the electrode-film interface by said at least one electrode.

3,346,790
LOW INDUCTANCE HIGH VOLTAGE CAPACITOR
Edward Blank, Sharon, Mass., assignor to Tobe Deutschmann Laboratories, Canton, Mass., a partnership composed of Edward Blank and Tobe Deutschmann
Filed Feb. 18, 1960, Ser. No. 9,551
13 Claims. (Cl. 317—261)



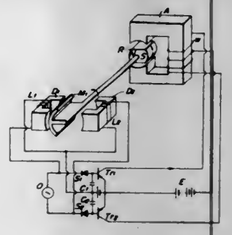
1. A low inductance capacitor formed of a plurality of alternating dielectric and metallic sheets, said metallic sheets each having a projecting tab extending from the edge thereof, said metallic sheets positioned in parallel aligned relation with pairs of said metallic sheets having coextensive tabs oriented to project in staggered relation to tabs of adjacent pairs of metallic sheets, said dielectric sheets each having a plurality of narrow tabs with one wider tab on alternate dielectric sheets, having a width equal to substantially the width of two of said narrow dielectric tabs plus the space therebetween, and said wider tabs interposed between said tabs forming said pairs of coextensive tabs.

3,346,791
RESOLVER CONTROLLED TORQUING SYSTEM
James E. Brook, Maywood, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed July 15, 1964, Ser. No. 382,896
7 Claims. (Cl. 318—24)



1. The combination comprising a torquer including a magnetic rotor and stator field windings arranged in cooperative relation to the magnetic rotor to apply a torque to the rotor in opposite senses, means to generate an error signal to cause excitation of said field windings in such a manner as to effect the sense of the torque applied to the magnetic rotor, means operable in synchronism with angular movement of the magnetic rotor to supply rotor-to-stator angle signals, a pair of current modifying devices operatively connected to said last mentioned means and effective to modify said error signal for controlling excitation of said field windings so as to effect a magnetic field acting on the magnetic rotor to produce an optimum torque at varying angular adjusted positions of the rotor.

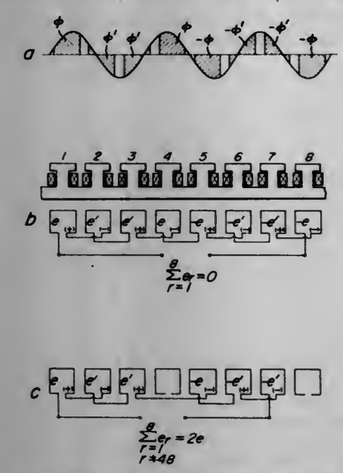
3,346,792
BRUSHLESS MOTORS WHEREIN COMMUTATION IS CONTROLLED BY AN IMPEDANCE RESPONSIVE TO ROTOR MOVEMENT
Makoto Noumi, Yokohama, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed June 15, 1964, Ser. No. 374,929
6 Claims. (Cl. 318—138)



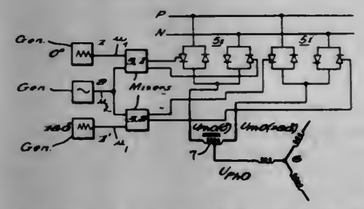
1. A brushless motor comprising:
(1) a permanent magnet rotor,
(2) a stator,
(3) an armature coil wound around said stator in a manner to provide current flow therethrough in alternate directions,
(4) first and second amplifiers having their outputs applied to said armature coil for supplying current flow therethrough in alternate directions,
(5) first and second reactance elements operatively coupled to said first and second amplifiers for controlling the operation of said amplifiers,
(6) means for continuously applying a high frequency signal to both said reactance elements, and
(7) means for alternately varying primarily only the impedance value of one of said reactance elements in accordance with rotation of said rotor to thereby turn on said first and second amplifiers which alternately excite said armature coil alternately with the outputs of said first and second amplifiers.

3,346,793
STARTING METHOD FOR DOUBLE SPEED SALIENT-POLE TYPE SYNCHRONOUS MACHINES
Noriyoshi Takahashi, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 14, 1964, Ser. No. 382,482
Claims priority, application Japan, July 26, 1963, 38/37,561
6 Claims. (Cl. 318—173)

1. A method for starting a synchronous machine having damper windings for starting and a number of poles for the field winding and a number of poles for the armature winding, either one of said numbers of poles being made changeable, the turns of the field winding being so interconnected that the voltages induced in the individual coils of the windings cancel each other out and the sum of the voltages of all of the coils is essentially zero, the steps comprising changing the number of poles of either said field winding or said armature winding in such a manner that the number of effective poles of the armature winding is different from the number of effective poles of the field winding in advance of and during starting, and applying an alternating voltage to the armature winding to initiate starting.

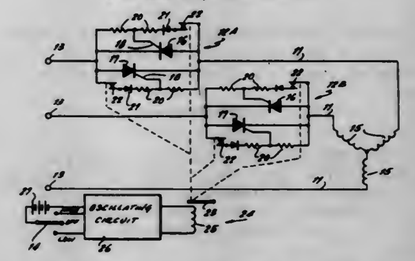


3,346,794
INVERTER CIRCUIT FOR SUPPLYING CURRENT TO POLYPHASE MOTORS
Herbert Stemmler, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Apr. 12, 1965, Ser. No. 447,183
Claims priority, application Switzerland, Apr. 24, 1964, 5,402/64
8 Claims. (Cl. 318—227)



1. In an inverter circuit for supplying a variable frequency polyphase alternating voltage output from a source of unidirectional voltage input, the combination comprising at least one pair of inverter groups connected between said input and each phase of said polyphase output, each said inverter group including a pair of grid-controlled valves, means producing a sinusoidal control voltage at a frequency corresponding to the desired frequency of said polyphase alternating voltage output, means producing first and second triangular control voltages having a frequency higher than the highest frequency desired for said polyphase alternating voltage output, said first and second triangular control voltages having the same frequency and amplitude but being displaced in phase by 180°, first and second mixer means for each triangular and sinusoidal control voltages, said first mixer means having as an input thereto said sinusoidal control voltage and said first triangular control voltage, and said second mixer means having as an input thereto said sinusoidal control voltage and said second triangular control voltage, said first mixer means including two outputs connected respectively to the control grids of the valves of one inverter group and said second mixer means including two outputs connected respectively to the control grids of the valves of the other inverter group, one output of each said mixer means carrying a voltage when the instantaneous value of the appertaining triangular voltage is higher than the instantaneous value of said sinusoidal voltage, and the other output of each said mixer means carrying a voltage when the instantaneous value of the appertaining triangular voltage is lower than the instantaneous value of said sinusoidal voltage.

3,346,795
SPEED CONTROL SYSTEM FOR POLYPHASE INDUCTION MOTORS
Ernest A. Linke, Maplewood, N.J., assignor to Breeze Corporation, Inc., Union, N.J., a corporation of New Jersey
Filed May 25, 1965, Ser. No. 458,612
6 Claims. (Cl. 318—227)

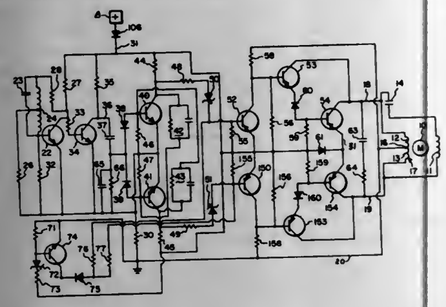


1. A speed control circuit for polyphase induction motors comprising; a plurality of terminals for the application of polyphase alternating current power, a plurality of stator windings, one for each phase, in the motor, a plurality of variable impedance circuits connected in series between the terminals and the stator windings, each of said variable impedance circuits having two silicon controlled rectifiers, each having an anode, a cathode, and a control electrode, each impedance circuit also including a voltage divider circuit coupled to said control electrode and connected in series with one of said pair of contacts, two control circuits and at least one pair of contacts connected to the control circuits, a relay including a winding and means for actuating said contacts, said control circuits adapted to change the resistance of the controlled rectifiers when the contacts are actuated, and an oscillating circuit connected to said relay winding for generating a series of pulses which actuate the contacts at a predetermined rate.

3,346,796
DC ENERGIZED CONSTANT SPEED DRIVE FOR AN AC MOTOR
Spencer E. Avey, Kettering, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 322,191, Nov. 7, 1963. This application Sept. 13, 1966, Ser. No. 579,800
18 Claims. (Cl. 318—341)

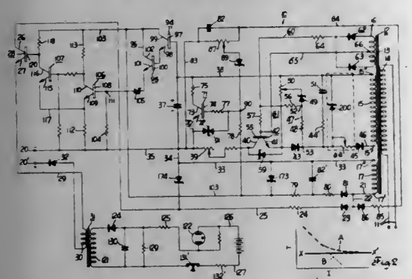
1. A constant speed direct current energized drive for an alternating current motor having at least one energizing winding comprising:
a pair of direct current power impulse producing circuits connected to opposite terminals of said winding of the motor and having a common return path connectable to an intermediate tap on the said motor winding,
and means for alternately triggering said pair of impulse producing circuits into operating at a constant rate,

said triggering means including a constant frequency oscillator and a flip-flop switching circuit energized by the oscillator and producing a pair of opposite polarity output signals,



and means connecting each of said output signals to trigger a different one of the direct current power impulse producing circuits in synchronism therewith.

3,346,797
STATIC RELAY CONTROL CIRCUIT
John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 21, 1963, Ser. No. 252,633
6 Claims. (Cl. 320—1)



4. A control system responsive to current in an electrical circuit to produce a signal, said control system comprising: means responsive to the current in the electrical circuit for producing an output varying as a function of the current in the electrical circuit; a capacitor connected to receive the output; means connected to the capacitor for controlling the portion of the output received by the capacitor; a sensing device connected to the capacitor for producing a signal when the voltage across the capacitor reaches a preselected level; a zener diode connected across the capacitor for passing to the capacitor only that portion of the output below a preselected maximum level; and means connected to the capacitor for short circuiting the capacitor when the output is below a preselected minimum level.

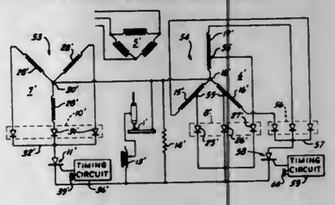
3,346,798
REGULATOR FOR INVERTER
Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Aug. 8, 1963, Ser. No. 300,876
3 Claims. (Cl. 321—18)

1. In an inverter wherein switch devices are switched between conducting and nonconducting states to convert a source of direct current to alternating current, a voltage regulator comprising gating means coupled to selected ones of said switch devices for switching said devices between conducting and nonconducting states, a saturable reactor having a single winding, sensing means coupled to said alternating current to sense the voltage amplitude thereof, control means serially coupling the winding of said saturable reactor across the output of said inverter, said control means being responsive to said sensing means



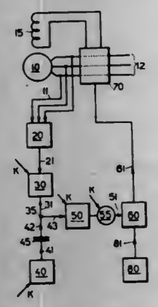
to control the voltage across said winding in accordance with the deviation of the voltage amplitude of said alternating current from a preselected level, and means coupling said winding to said gating means so that a switching signal is produced by said gating means when said saturable reactor is saturated.

3,346,799
POLYPHASE RECTIFIER CIRCUIT HAVING MEANS TO VARY THE OUTPUT VOLTAGE
Bernard J. Aldenhoff, Oconomowoc, Wis., assignor, by mesne assignments, to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 7, 1965, Ser. No. 446,210
20 Claims. (Cl. 321—18)



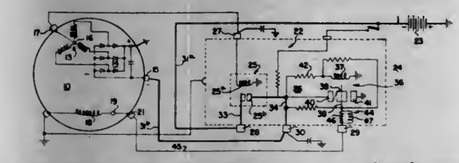
5. In a direct current power source,
a first polyphase transformer secondary,
a bank of rectifiers connected to the transformer secondary and defining a first output means providing a half wave rectified output,
a second polyphase transformer secondary having a peak output substantially greater than the first polyphase transformer secondary,
a second bank of rectifiers connected to the second transformer secondary and defining second output means providing a second half wave rectified output,
said second bank of rectifiers being connected to provide a peak output voltage substantially less than said first bank of rectifiers,
a third bank of rectifiers connected to the second transformer secondary and defining third output means providing a third half wave rectified output, said third bank of rectifiers being connected to provide a peak output voltage substantially greater than said first bank of rectifiers,
output connecting means, and
circuit means connecting said first, second and third output means in parallel to each other to the output connecting means and including a first controlled rectifier in series with the first output means and a second controlled rectifier in series with the third output means.

3,346,800
VOLTAGE CONTROL CIRCUIT ARRANGEMENT
Jiří Pondělíček, Prague, Czechoslovakia, assignor to Zavody V.I. Lenina Plzen, narodni podnik, Plzen, Czechoslovakia
Filed Apr. 19, 1965, Ser. No. 449,224
Claims priority, application Czechoslovakia, Apr. 28, 1964, 2,479/64
10 Claims. (Cl. 322—28)



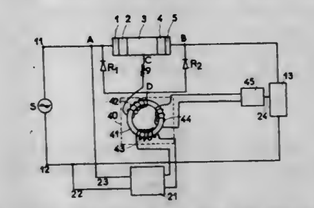
1. Voltage control circuit arrangement, especially for voltage control of synchronous compound generators, comprising in combination:
(a) a control circuit consisting of a limiting block, a monostable multivibrator and a control block, said parts being in series connection;
(b) a pulse generator being connected through a capacitor with said control circuit by means of a junction point placed between the limiting block and the monostable multivibrator;
(c) a connection line between the input of the limiting block and a controlled source of voltage;
(d) a source of a magnetization current connected with said control block, said control block controlling the magnetization current in dependance on a width of pulses supplied to said control block;
(e) a source control block, the input of which being connected with the input of said control block;
(f) a source of constant voltage, the output of which being connected with the inputs of said limiting block, said pulse generator and said monostable multivibrator.

3,346,801
REGULATOR WITH NOISE SUPPRESSION
James D. Reid and Phil Way, Lakewood, Ohio, assignors to The Leece-Neville Company, Cleveland, Ohio, a corporation of Ohio
Filed May 9, 1963, Ser. No. 279,135
5 Claims. (Cl. 322—58)



1. In an electric generating system, an electric generating machine having a winding variably energized to control the electrical output of the machine, a regulator connected to the output side of said machine for controlling the energization of said winding in response to the magnitude of the electrical output of said machine, a lead extending from the output of the regulator to said winding, and a low D.C. resistance radio-frequency filter connected between said regulator and said lead for passing direct current from said regulator to said winding to energize the latter and for preventing radio-frequency energy produced by the operation of said regulator from passing to said lead to be radiated from the latter or from said generating machine.

3,346,802
CONTROL AND REGULATION DEVICE INCLUDING A SEMICONDUCTOR OF SYMMETRICAL BLOCKING-UNBLOCKING TYPE
Jean Pierre Biet, Saulx-les-Chartreux, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed Aug. 5, 1964, Ser. No. 387,705
Claims priority, application France, Aug. 6, 1963, 943,896
12 Claims. (Cl. 323—4)



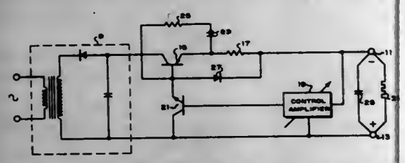
1. Control and regulation circuit including a symmetrically conducting, gate controlled turn-on and turn-off semiconductor device of the triggered avalanche conducting type having a single control electrode, the single control electrode being connected to one of the output terminals of a signal generating device through a resistance, the second output terminal of the signal generating device being connected to the two main electrodes of said semiconductor device respectively through two rectifiers the passing direction of which are directed to the main electrodes, said signal generating device including a transformer the core of which is made of a quasi-rectangular hysteresis curve material, the signal generating device being synchronized with the alternating current source supplying the circuit which includes the semiconductor device, and being controlled by means of a regulation device responsive to the parameters defining the work of the load inserted in said circuit.

3,346,803
POWER SUPPLY CIRCUIT
Robert E. Lynn, Somerville, N.J., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Dec. 28, 1964, Ser. No. 421,400
1 Claim. (Cl. 323—22)

A regulated power supply comprising:
a pair of output terminals;
a source of undirectional voltage having one terminal connected to an output terminal of the power supply and having another terminal;
a transistor regulator of one conductivity type having a base electrode and an emitter-collector current conduction path connected in circuit between the other terminal of said source and another of said pair of output terminals;
control means connected to said output terminals for producing a control signal related to the variations of the voltage across said output terminals about a selected value;
a transistor amplifier of the opposite conductivity type having a base electrode connected to receive the control signal from said control means and having a collector-emitter current conduction path;
means connecting the base electrode of said transistor regulator to the current conduction path of said transistor amplifier for receiving signal therefrom to control the conductivity of the regulator in proper sense to maintain the voltage across the output terminals at said selected value;

a diode; and

a discharge circuit including said diode and the collector-emitter current conduction path of said transistor amplifier serially connected in a common current



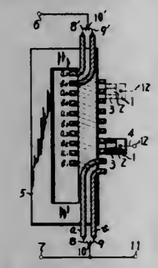
conduction direction between said output terminals for providing a current conduction path in said common direction in response to control signal applied to said transistor amplifier to decrease the conductivity of said transistor regulator.

3,346,804

SLIDE VOLTAGE REGULATOR

Keiichiro Ryu, No. 16, 1-Chome, Ebisuminami, Shibuya-ku, Tokyo, Japan

Filed Dec. 27, 1963, Ser. No. 333,876
1 Claim. (Cl. 323—47)



A slide voltage regulator comprising slide windings having a plurality of wires wound in parallel on a transformer core; input terminals and a pair of short-circuit preventing reactor windings, each of which is connected between the respective ends of said slide windings, the mid-points of the reactor windings being connected to the input; and a brush arrangement for sliding on the surface of said slide windings, said brush arrangement comprising a metal brush surrounded by an auxiliary sliding brush piece made of a high resistant material, said auxiliary sliding brush being so adapted and disposed as to contact the succeeding slide windings before the metal brush, thus preventing sparks from being produced by the voltage difference existing between the adjacent windings so as to eliminate damages to the slide windings and the sliding surface of the metal brush which may be caused by the spark.

3,346,805

VARIABLE T-NETWORK ATTENUATOR USING VARACTOR DIODES

Norris C. Hekimian, Kensington, Md., assignor to Page Communications Engineers, Inc., Washington, D.C., a corporation of Delaware

Filed Sept. 18, 1964, Ser. No. 397,442
3 Claims. (Cl. 323—74)

1. A voltage controlled attenuator comprising:

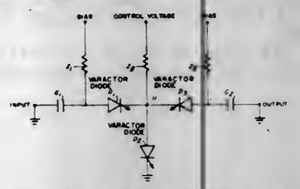
an input terminal,

an output terminal,

first and second varactor diodes connected in series between said input and output terminals, said diodes being connected in opposed polarity configuration,

a third varactor diode connected in shunt configuration between said first and second diodes,

means for applying a reverse bias to said first and second diodes, and



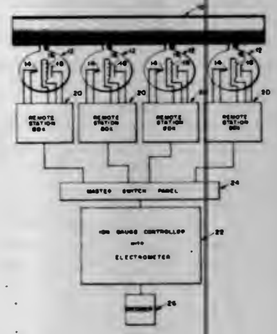
means for applying a variable voltage to the junction between said first, second and third diodes.

3,346,806

PRESSURE MONITORING WITH A PLURALITY OF IONIZATION GAUGES CONTROLLED AT A CENTRAL LOCATION

Robert C. Finke, Westlake, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Dec. 12, 1963, Ser. No. 330,210
7 Claims. (Cl. 324—33)



1. Apparatus for monitoring the pressure at various locations in a vacuum chamber comprising,

a plurality of ionization gauge tubes mounted on said vacuum chamber at said locations, each of said tubes comprising

a filament for emitting electrons to ionize gases in said tube,

a grid for receiving said electrons, and

a collector for contacting ions of said gases,

means connected to each of said collectors for selectively measuring ion current in each of said tubes at spaced intervals,

means for heating each of said filaments to an elevated temperature when said ion current is measured, and

means for maintaining each of said filaments at a temperature slightly lower than said elevated temperature between said spaced intervals when said ion current is measured.

3,346,807

RECIPROCATING APPARATUS WITH MEANS TO MAINTAIN THE RECIPROCATION CENTERED OVER AN ANOMALY

Fenton M. Wood, Sugarland, and Alfred E. Crouch and William T. Walters, Houston, Tex., assignors to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 24, 1964, Ser. No. 362,314
15 Claims. (Cl. 324—37)

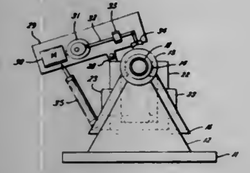
1. In combination with an apparatus for performing a work operation on a magnetizable member moving relatively thereby and having an anomaly which extends gen-

erally parallel with the direction of said relative movement and which anomaly is subject to variation in directions transverse to said relative movement and which apparatus has oscillation means mounted on a support means for transversely oscillating a work means over said anomaly during said relative movement, the improvement for causing said oscillations to be uniform in relation to said anomaly, including times when said anomaly varies in said transverse directions, said improvement comprising:

a movable frame mounted on said support means and supporting said oscillation means,

means for establishing a magnetic field in a portion of said magnetizable member and through said anomaly,

magnetic responsive means mounted on said oscillation means for oscillation therewith over said anomaly and producing a first voltage as an incident of each crossing of said magnetic responsive means over said anomaly,



a first comparator circuit connected to said magnetic responsive means and adjusted to produce an output when said magnetic responsive means produces a first voltage above a preselected level,

a flip-flop circuit connected to said first comparator and having two output voltages of different levels and adapted to alternately apply said output voltages to two leads as an incident of successive inputs from said first comparator,

electrical circuit means for averaging the output voltages received from said flip-flop circuit and applying said averaged output voltages to alternately operate a motor in forward and reverse directions when said averaged output voltages vary beyond preselected limits,

said motor being connected to move said movable frame transversely with respect to said anomaly.

whereby said work means is moved to a preselected position with respect to said anomaly when said motor is operated in forward and reverse directions as said anomaly alternately varies in said transverse directions.

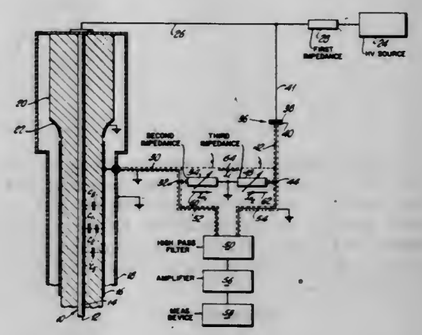
3,346,808

APPARATUS INCLUDING CAPACITANCE MEANS FOR MEASURING IONIZATION IN HIGH VOLTAGE CABLES UNDER CONDITIONS OF HEAVY EXTERNAL INTERFERENCE

George Bader, Metuchen, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Sept. 25, 1963, Ser. No. 311,470
3 Claims. (Cl. 324—54)

1. Apparatus for measuring ionization discharges in a length of high voltage cable having a conductor and insulator wall and a shield comprising a high voltage source of sufficient amplitude to initiate ionization discharges in said high voltage cable, said high voltage source containing noise due to internal ionization discharges, a grounded pipe enclosing said cable, a first impedance coupling the conductor of said cable to said high voltage source, a second impedance, means coupling one terminal of said second impedance to the shield of said cable, a third impedance, means including a high voltage capacitor and said first impedance for coupling one terminal of said third impedance to said high voltage source, means coupling the other terminals of said second and third impedances to ground, said second and third impedances each comprising a resistor and a capacitor coupled in parallel, said above recited impedances being dimensioned to make the following ratios equal: the capacitance of the cable to the capacitance of said high voltage capacitor; the capacitance of said second impedance and parallel stray capacitance to the capacitance of



said third impedance and parallel stray capacitance; and the resistnce of said third impedance to the resistance of said second impedance, in order to cancel out noise signals generated in said high voltage source when measured between said one terminal of said respective second and third impedances, said high voltage capacitor supplying the energy for ionization discharges in said cable through the serial coupling of said second and third impedances to generate a voltage across said one terminal of said respective second and third impedances, the amplitude of which is related to the ionization discharge, and means for deriving measurement signals related to ionization discharges in said cable across said one terminal of said respective second and third impedances.

3,346,809

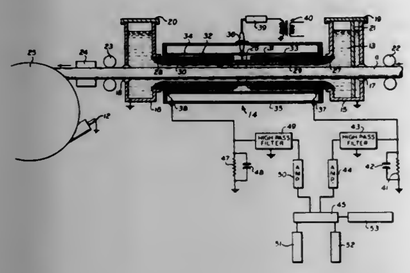
CABLE INSULATION TEST APPARATUS INCLUDING A FLUID CONTAINING CYLINDRICAL TEST BUSHING HAVING A PLURALITY OF ELECTRODES AND CONDENSER STACKS POSITIONED ALONG A PAIR OF INSULATING TUBES CONNECTING THE ELECTRODES

George Bader, Metuchen, and George S. Eager, Jr., Upper Montclair, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed June 28, 1966, Ser. No. 561,275
11 Claims. (Cl. 324—54)

1. Apparatus for continuously measuring the ionization inception voltage or the ionization extinction voltage of an insulated conductor as the conductor is moved longitudinally through the apparatus comprising, in combination, a cylindrical test bushing including a centrally located high voltage cylindrical electrode and two grounded cylindrical electrodes arranged in aligned relation with and spaced from the high voltage electrode on opposite sides thereof, a high voltage power frequency source connected between the high voltage electrode and ground, insulating tubes extending between the high voltage electrode and the grounded electrodes and connected

thereto in fluid-tight relation, closures for the ends of the test bushing provided with means to permit an insulated conductor to be moved coaxially through the test bushing, high dielectric constant liquid filling the space within the test bushing through which the insulated conductor moves, ionization voltage measuring apparatus, con-



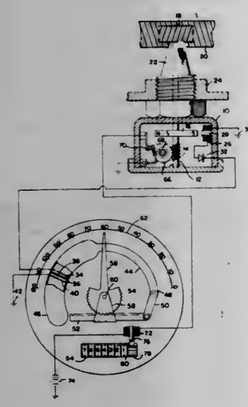
denser stacks arranged longitudinally along the outer surfaces of the insulating tubes and connected each at one terminal to the high voltage electrode and at the opposite terminal to the ionization voltage measuring apparatus, and a metal shield connected to the grounded electrodes and enclosing the high voltage electrode and the condenser stacks.

3,346,810

SPEEDOMETER UNIT INCLUDING AN ELECTRO-OSMOTIC PUMP ACTUATED INDICATOR

Joseph C. Littmann, Grosse Pointe Woods, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan

Filed Mar. 16, 1964, Ser. No. 351,980
7 Claims. (Cl. 324—70)



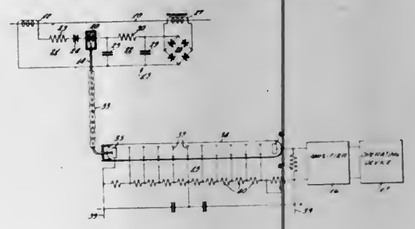
4. An indicator comprising a closed chamber having an electro-osmosis pump therein, said chamber having a main portion containing said pump and a closed elongated curved extension in fluid communication with said main portion, said extension having a free end portion remote from said main portion movable as the curvature of said extension varies with variations in pressure of liquid therein, a scale, a pointer movable over said scale, means connecting said pointer and the free end of said extension, a rotary shaft whose speed is to be indicated by said indicator, magnet means on said shaft, a pick-up coil adjacent the path of said magnet means, a circuit connecting said coil to said pump, and a rectifier in said circuit.

3,346,811

MEANS FOR SENSING CONDITIONS IN HIGH POTENTIAL REGION AND FOR TRANSMITTING SUCH INTELLIGENCE BY LIGHT MEANS TO LOW POTENTIAL REGIONS

Elijah R. Perry and James C. W. Ransom, Portland, Oreg., assignors, by mesne assignments, to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Feb. 24, 1964, Ser. No. 346,892
2 Claims. (Cl. 324—96)



1. A device for sensing an electrical condition in a high voltage electrical power transmission system which is surrounded by a region of high potential comprising,

a light source comprising a semiconductor located in said region of high potential and responsive to current to produce a light signal at a junction,

a pair of current transformers located in said region of high potential and each inductively coupled to said system,

one of said current transformers providing bias current energization for said semiconductor which causes the latter to emit a quiescent light value,

the other of said current transformers providing a current output which varies as the transmission system condition varies, said current output energizing said semiconductor to cause its light emission signal to vary about said quiescent value,

light responsive means positioned in a region outside of said high potential region and operable in response to a light signal from said semiconductor to produce an electrical output signal in response to the value of said light signal,

flexible dielectric fiber optic light transmitting means extending between said semiconductor and said light receiving means to transmit the light signal from said light source to said light responsive means,

and means responsive to said electrical output signal to transmit the light signal from said light source to said light responsive means.

3,346,812

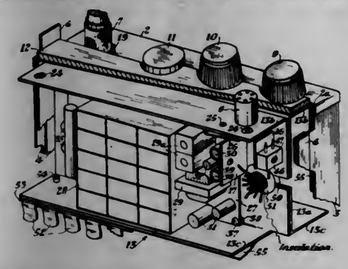
HOUSING ASSEMBLAGE FOR PORTABLE TWO-WAY RADIO

George W. McKenna, Penn Hills Township, Allegheny County, and Cornelius T. de Kam, Edgewood, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Dec. 1, 1964, Ser. No. 415,035
9 Claims. (Cl. 325—16)

1. In a portable two-way radio, the combination of a pair of housing members, a symmetrical supporting structure fixedly secured to one of said housing members, a transmitter and receiver unit fixedly mounted on and in thermal contact with said supporting structure, a battery

assembly fixedly mounted on said supporting structure, and control means carried by said one housing member, said supporting structure operating as an electrical shield



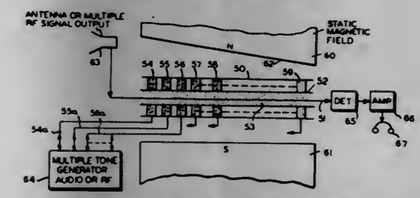
between said transmitter and receiver units, and said supporting structure and said housing members absorbing any vibrational shock imparted to said radio.

3,346,813

CONVERTER USING SPIN RESONANT MATERIAL

Harold C. Anderson, Rockville, and Alfred E. Shanholtzer, Greenbelt, Md., assignors to Litton Systems, Inc., Silver Spring, Md.

Filed June 26, 1964, Ser. No. 378,363
16 Claims. (Cl. 325—448)



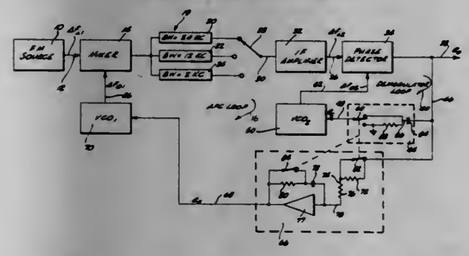
11. A process for modulating a radio frequency signal comprising the steps of applying the signal to a spin resonant mass, tuning the mass into resonance with the frequency of the radio signal by applying a magnetic field thereto, and varying the intensity of the magnetic field applied to the mass by a modulating signal.

3,346,814

DUAL LOOP DEMODULATOR INCLUDING A PHASE LOCK LOOP AND AN AFC LOOP

Theodore F. Haggai, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed July 29, 1964, Ser. No. 385,941
12 Claims. (Cl. 329—122)



1. A demodulator system having a source of signals comprising

mixing means coupled to the source of signals,

a phase detector coupled between said mixing means and an output terminal,

a first loop coupled between said output terminal and said phase detector and including a first voltage controlled oscillator,

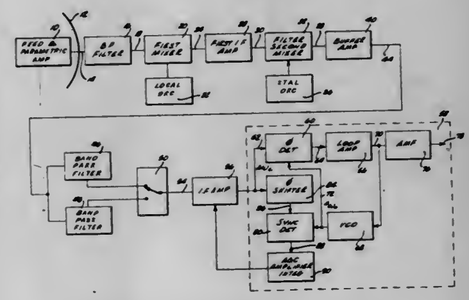
and a second loop coupled between said output terminal and said mixing means and including a second voltage controlled oscillator.

3,346,815

FM DEMODULATOR SYSTEM WITH IMPROVED SENSITIVITY

Theodore F. Haggai, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 21, 1964, Ser. No. 369,071
7 Claims. (Cl. 329—122)



1. A demodulator responsive to a source of signals comprising

filter means coupled to the source of signals for providing a passband with a selected bandwith value,

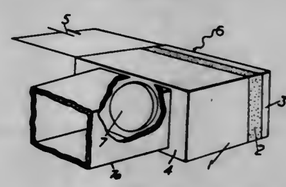
and a phase lock loop coupled to said filter means and including means for providing an undamped resonant frequency larger than half of said selected bandwidth value.

3,346,816

OPTICAL ENERGY CONVERTER

Thomas Arthur Midford and Richard H. Pantell, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 17, 1964, Ser. No. 360,697
Claims priority, application Great Britain, Apr. 23, 1963, 15,942/63
19 Claims. (Cl. 329—144)



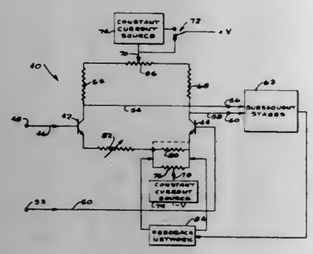
1. Apparatus for the detection and amplification of a signal modulating an optical frequency carrier wave including a single crystal body of piezoelectric semiconductor material having at least one pair of parallel faces, means for applying a direct current bias potential between the two faces, means for coupling to one of the faces of the body of piezoelectric semiconductor material the modulated optical carrier wave, whereby the interaction

between the wave and the body of piezoelectric semiconductor material produces within the material a photocurrent corresponding to the modulating signal and an acoustically responsive output transducer coupled to the body of piezoelectric semiconductor material to produce an acoustic output corresponding to the modulating signal.

3,346,817
TEMPERATURE INDEPENDENT AMPLIFIER AND METHOD

Norman C. Walker, Newport Beach, and Charles E. Engle, Tustin, Calif., assignors to Dana Laboratories, Inc., Santa Ana, Calif., a corporation of California

Filed June 4, 1963, Ser. No. 285,360
3 Claims. (Cl. 330—23)



1. The method of adjusting a direct-current transistor amplifier to have a substantially zero temperature drift co-efficient, said amplifier having at least one stage including first and second transistors each having an emitter, a collector and a base, said method comprising the steps of:

(1) Applying an input signal having a fixed predetermined value to said pair of transistors simultaneously;

(2) Setting the voltage drop across the base-emitter electrodes of said first transistor substantially equal to the voltage drop across the base-emitter electrodes of said second transistor;

(3) Adjusting a circuit element in said amplifier until the output voltage thereof is equaled to a predetermined value corresponding to the predetermined fixed input signal;

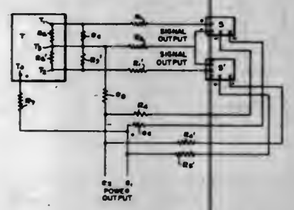
(4) Setting the base emitter voltage across said first transistor different from the base-emitter voltage across said second transistor by an amount equal to the temperature drift coefficient of said amplifier in microvolts per degree centigrade multiplied by the temperature of the environment of said amplifier in degrees Kelvin; and setting the output voltage of said amplifier to a value corresponding to said predetermined fixed input signal.

3,346,818
TELEMETERING CIRCUITS AND AMPLIFIERS EMPLOYED THEREIN

John F. Price, Van Nuys, Calif., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California

Filed Nov. 12, 1963, Ser. No. 322,835
8 Claims. (Cl. 330—30)

1. A single-ended direct-coupled differential amplifier comprising a driver stage, including a pair of symmetrically arranged transistors, the emitters of said transistors connected to a reference potential, the collectors of said transistors coupled to one each of a pair of complementary transistors connected as emitter-followers, a common load resistance connected between the emitters of said complementary transistors, a voltage translating resistance connected to one of the collectors of one of said complementary transistors, a power source for said amplifier, said common load resistor and the emitter-to-collector impedance of said complementary transistors being in series with the power source, the output current of said amplifier established in said translating resistor being dependent substantially only on the potential established

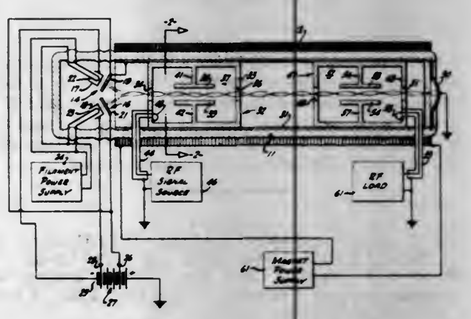


across said common load resistor and independent of the current in all other current paths of said amplifier, negative feedback connections from each of said emitters of each of said complementary transistors and across said common load resistor to the bases of each of the driver transistors and a resistance in each of said feedback connections and a single ended output connection to one of the collectors of one of said complementary transistors.

3,346,819
TWO-STREAM CYCLOTRON WAVE AMPLIFIER

Charles K. Birdsall, Lafayette, Calif., assignor to The Regents of The University of California, Berkeley, Calif., a corporation of California

Filed June 8, 1964, Ser. No. 373,385
4 Claims. (Cl. 330—44)



1. A two-stream cyclotron wave amplifier comprising means generating a magnetic field in an evacuated interaction region, means directing two well coupled electron streams respectively having different velocities into said interaction region substantially parallel to said magnetic field, input means generating an electric field in said interaction region transverse to said magnetic field and having a frequency of ω defined by the relation

$$\omega = \frac{v_M}{v_R}\omega_c$$

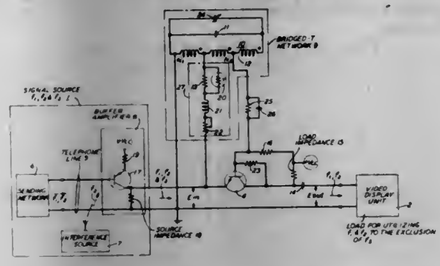
wherein v_M is the mean drift velocity of electrons in the two streams, v_R is the relative drift velocity of electrons in the two streams and ω_c is the cyclotron frequency of electrons in the streams, to thereby excite synchronous and cyclotron waves in each of said electron streams with a cyclotron wave of one stream interacting with a synchronous wave of the other stream during transit of the streams through the interaction region to produce a wave of increasing intensity, and output means coupled

in energy transfer relation to said streams at a position of said interaction region displaced from said input means in the direction of stream motion for extracting an amplified signal from said wave of increasing intensity.

3,346,820
FREQUENCY-BAND-REJECTING TRANSMISSION NETWORK

David P. Borenstein, Redbank, and Larned A. Meacham, Colts Neck, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 27, 1963, Ser. No. 333,943
11 Claims. (Cl. 330—109)

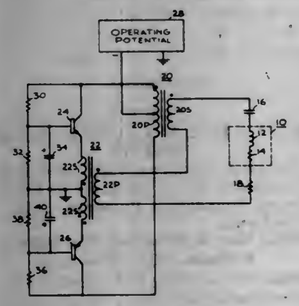


1. A transmission network comprising a signal source capable of generating signals having frequencies f_1, f_2 and f_3, a load adapted for utilizing signals having the frequencies f_1 and f_2 to the exclusion of f_3, a bridged-T network having input and output terminals, said bridged-T network being characterized by maximum attenuation at said frequency f_2, means for coupling said signal source across said bridged-T network input terminals, a device having an input terminal, an output terminal, a variable impedance between said device input and output terminals, and a signal path for controlling said variable impedance, means for coupling said bridged-T network output terminals across said signal path, means directly connecting said signal source in series with the input terminal of said device, and means directly connecting said load in series with the output terminal of said device so that said bridged-T network is isolated from said load.

3,346,821
OSCILLATOR

Miroslav Swyryd, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Nov. 22, 1963, Ser. No. 325,673
5 Claims. (Cl. 331—113)

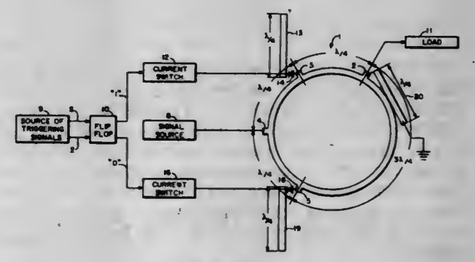


2. An oscillator circuit comprising a first and second amplifier each having an input electrode, an output electrode, and a bias electrode, an output transformer having a center-tapped primary winding and a secondary winding, means for applying operating potential to the center tap of said output transformer primary winding, means connecting the output electrodes of said first and second amplifiers respectively to the opposite ends of said output transformer center-tapped primary winding, a feedback transformer having a primary winding and a center-tapped secondary winding, means connecting the respective first and second amplifier input electrodes to the respective opposite ends of the center-tapped secondary winding of said feedback transformer, means connected between said first and second amplifier bias electrodes and said means for applying operating potential for biasing said first and second amplifiers to their fully conductive states, means connecting in series said output transformer secondary winding and said feedback transformer primary winding, a series resonant circuit connected across said series connected output transformer secondary winding and feedback transformer primary winding, and capacitance means connected between said feedback transformer secondary winding center tap and said first and second amplifier bias electrodes for alternately biasing off said first and second amplifiers in the presence of feedback current from said feedback transformer.

3,346,822
HYBRID RING STRUCTURE FOR REVERSING THE PHASE OF AN RF SIGNAL IN ACCORDANCE WITH THE LEVEL OF A TWO-VOLTAGE LEVEL SIGNAL PRODUCING MEANS

Ernest S. Levy, San Diego, and John C. Bronaugh, Escondido, and Alex D. Christie, San Diego, Calif., assignors to Cubic Corporation, San Diego, Calif., a corporation of California

Filed Feb. 15, 1963, Ser. No. 258,928
6 Claims. (Cl. 333—7)



1. An electronic phase reversal modulator for controlling the phase shift of an R–F signal produced by an R–F signal source traveling to a load, said R–F signal having a predetermined wavelength, said electronic phase reversal modulator comprising: hybrid ring means having an effective circular dimension equal to one and one-half the wavelength of said R–F signal, said hybrid ring means including first, second, third and fourth junctions, said first and second junctions being spaced apart by one-half wavelength measured along one circular dimension of said hybrid ring means and one wavelength apart measured along the other circular dimension of said hybrid ring means, said third junction being positioned intermediate said first and second junctions along said one circular dimension, and spaced one-quarter of a wavelength from said first junction, said fourth junction being positioned along said other circular dimension and one-quarter wavelength from said first junction between said first and second junctions; signal producing means for producing first and second output signals, each of said first and second signals being either at a first or a second voltage level; first means for applying said first signal

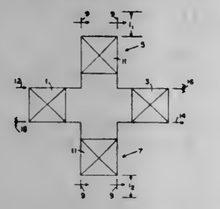
to said third junction, said first means being responsive to the first voltage level of said first signal for placing said third junction at an effective R–F open circuit impedance whereby the path of the R–F signal from said R–F signal source to said load is through said fourth junction and hence undergoes a phase shift corresponding to one wavelength, said one wavelength corresponding to no effective phase shift; and second means for applying said second signal to said fourth junction, said second means being responsive to said first voltage level of said second signal for placing said fourth junction at an effective R–F open circuit impedance whereby the path of the R–F signal from said R–F signal source to said load is through said third junction and hence undergoes a one-half wavelength phase shift, said one-half wavelength phase shift corresponding to a phase reversal of said R–F signal.

3,346,823

PASSIVE DEVICE FOR OBTAINING INDEPENDENT AMPLITUDE AND PHASE CONTROL OF A UHF OR MICROWAVE SIGNAL

John W. Maurer, Albany, and John P. Quine, Schenectady, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Dec. 18, 1964, Ser. No. 420,255
8 Claims. (Cl. 333—11)



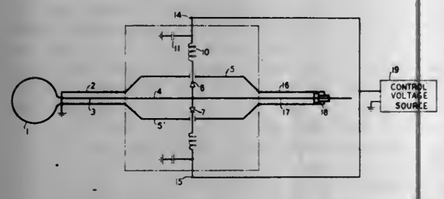
1. A passive device including: two 3 db hybrid four port junctions which are interconnected by two phase shifters, said phase shifters having ganged devices coupled thereto for independently or simultaneously adjusting each of said phase shifters in either the forward or reverse direction for varying the phase and amplitude of a power input signal applied to one port of one of the 3 db hybrid four port junctions before appearing as an output signal at one of the ports of the other 3 db hybrid four port junction.

3,346,824

MICROWAVE SWITCH

William C. Jakes, Jr., Rumson, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 27, 1965, Ser. No. 483,251
16 Claims. (Cl. 333—98)



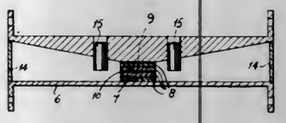
11. In a waveguide, a switch comprising a resonant conductive loop with open ends disposed within said waveguide, means for sharply decreasing the impedance existing at said loop ends to attenuate energy transmitted through said waveguide including a diode switching element having a forward and a reverse bias impedance, a control voltage connected to said diode to selectively bias said diode and a transmission line interconnecting said diode switch with said loop ends having a sufficient length to transform the impedance of said diode for a selected bias to a short at said loop ends.

3,346,825

WAVEGUIDE SWITCH WITH SEMICONDUCTOR IN THERMAL CONTACT WITH WAVEGUIDE WALLS

William Joseph Scott and Norman Robert Howard, Rugby, England, assignors to Associated Electrical Industries Limited, London, England, a company of Great Britain

Filed June 28, 1965, Ser. No. 467,281
22 Claims. (Cl. 333—98)



1. A microwave device comprising a section of waveguide, a semiconductor junction element; said element comprising a body of high resistivity semiconductor material of one conductivity type having a pair of surface regions each including one of respective opposite faces of the body, said regions being of high electrical conductivity of P and N conductivity type respectively with a PN junction between said high resistivity material and the surface region of opposite conductivity type and with each of said faces covered by a layer of electrically conductive material which serves as a contact to the element, with the element mounted in the section of waveguide with one face of the element in thermal contact with a wall of said waveguide, and means for applying bias voltages of suitable polarity and magnitude between said contacts to control the impedance of the element to required values between two extreme conditions in which the element is highly conductive and highly resistive respectively, such that during the operation of the device in the first extreme condition of the element the penetration of microwave energy is substantially confined to a minor proportion of the element and the major proportion thereof constitutes a thermally conductive path to the wall of the waveguide for heat produced by microwave energy dissipated in the minor proportion of the element, and in the second extreme condition a proportion of the element is substantially depleted of current carries so that the microwave energy passes therethrough with substantially negligible absorption.

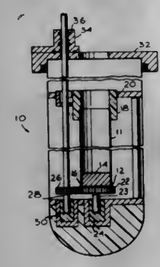
3,346,826

APPARATUS FOR EXCLUDING MAGNETIC FIELDS

Lorin L. Vant-Hull, Pasadena, Calif., and James E. Mercereau, Dearborn, Mich., assignors to California Institute Research Foundation, Pasadena, Calif., a corporation of California

Filed Nov. 9, 1964, Ser. No. 409,835
9 Claims. (Cl. 335—216)

1. Apparatus for creating and maintaining a very low magnitude magnetic field in a small region within a larger magnitude magnetic field region, said apparatus comprising a conductive body enveloping said small region; means for rotating said conductive body relative to said larger magnitude magnetic field to induce eddy currents therein tending to exclude at least a portion of said larger magnitude magnetic field from said small region;



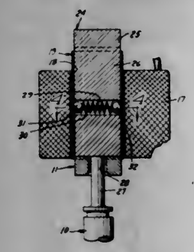
and means for cooling said conducting body to a superconducting state to thereby produce self-maintaining super currents therein.

3,346,827

SOLENOID WITH DETENT MEANS

Sanford H. Baker, Oak Park, and Ulrich C. Hoischen, Detroit, Mich., assignors to MAC Valves, Inc., Detroit, Mich., a corporation of Michigan

Filed Oct. 4, 1965, Ser. No. 492,816
1 Claim. (Cl. 335—253)



In a solenoid, the combination comprising:

(a) a C-shaped solenoid coil frame having spaced-apart side members and a transverse inner end member provided with an opening through which is received an operating member for an apparatus to be operated by the solenoid and outer spaced-apart end portions directed toward each other;

(b) a solenoid coil disposed in said solenoid frame and having an axial hole with a rectangular cross-section aligned with the opening in the frame transverse inner end member;

(c) an open ended tubular core guide having a four-walled rectangular cross-section mounted in said solenoid coil, and at least one of the four walls of the core guide having a hole therethrough;

(d) a solenoid plunger of generally T-formation with a cross head outwardly of the solenoid coil frame and having an elongated leg portion of rectangular cross-section mounted in said core guide with its inner end contacting said operating member, and said plunger being shiftable axially from a first position to a second position when said solenoid coil is energized;

(e) said plunger being provided with a transverse hole which is aligned with the hole in the core guide when the plunger is in said second position;

(f) releasable detent means in the plunger transverse hole engageable with said hole in the core guide when the plunger is shifted to said second position to releasably lock the plunger in said second position;

(g) said detent means including at least one detent member; and

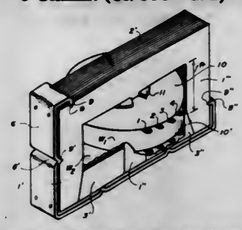
(h) a spring means for biasing said detent member into releasable locking engagement with said hole in the core guide when the plunger is shifted to said second position.

3,346,828

TRANSFORMER ASSEMBLY FOR VARYING ELECTRICAL PARAMETERS AND METHOD OF CONSTRUCTING THE SAME

Howard J. Buschman, 741 Mirador Road, Vestal, N.Y. 13850

Filed Aug. 10, 1964, Ser. No. 388,492
6 Claims. (Cl. 336—192)



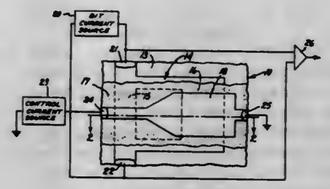
1. For use in the assembly of transformers of varying electrical parameters, a plurality of separately encapsulated annular windings of different winding turns and of different wire sizes each of substantially 26 percent different area than the next larger wire size, at least certain of the windings having exposed terminals including taps at points corresponding substantially to six and twelve percent of the corresponding winding length, with 82% of the number of winding turns of the next smaller wire size having no less than substantially six percent more turns than the total number of turns of the next larger wire-size winding; magnetic core means receiving pluralities of the different wire-size windings and provided with magnetic leg means and a separable magnetic member that enables assembly of preselected encapsulated windings of the said plurality over the leg means as coupled primary and secondary windings and completes the magnetic flux loop thereof; means for holding the preselected assembled windings in fixed relationship upon the said leg means; and bracket means clamping the core means with the windings so-assembled.

3,346,829

CRYOTRON CONTROLLED STORAGE CELL

Vernon L. Newhouse, 8 Rosemary Drive, Scotia, N.Y. 12302, and Harold H. Edwards, 1151 Dean St., Schenectady, N.Y. 12309

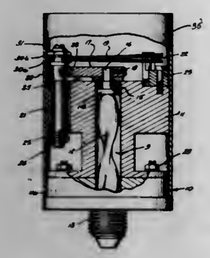
Filed Feb. 14, 1966, Ser. No. 527,256
14 Claims. (Cl. 338—32)



1. A cryotron controlled storage cell comprising a closed path of soft superconductor material having at least two parallel legs, a path of hard superconductor material crossing over both of said legs and directed substantially normal thereto, and insulating means spacing the path of hard superconductor material from the path of

soft superconductor material at each of the crossovers, said path of hard superconductor material being wider at one of said crossovers than at the other of said crossovers so as to facilitate establishment of a weaker magnetic field at said one crossover than at said other crossover due to current flow in said hard superconductor material.

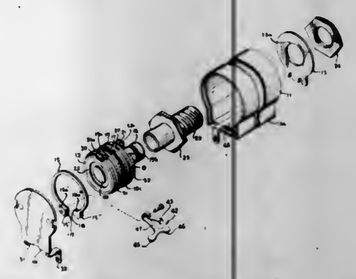
3,346,830
HIGH RESOLUTION PRESSURE TRANSDUCER
Claude C. Ankeny, Sandoval, N. Mex., assignor to Sparton Corporation, Jackson, Mich., a corporation of Ohio
Filed Jan. 21, 1966, Ser. No. 522,140
2 Claims. (Cl. 338—40)



1. A precision, miniature pressure-to-electric transducer comprising, in combination,
(a) electrical input means,
(b) housing means defining a cavity,
(c) pressure summing means disposed within said cavity and in direct communication with pressure input signals,
(d) said pressure summing means being a Bourdon tube twisted about its longitudinal axis and having a fixed end at the pressure inlet portion thereof and an opposed movable end,
(e) multiple mechanical means directly transferring pressure summing means end movement into amplified rotary motion,
(f) potentiometer means having the wiper arm thereof radially driven by said amplifier rotary motion multiple mechanical means, and
(g) container seal means to provide for a completely encapsulated functional transducer.

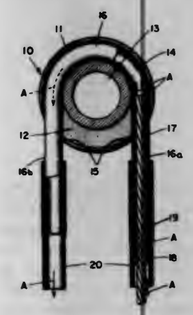
3,346,831
VARIABLE RESISTOR
George J. Mucher, Rochester, N.H., assignor to Clarostat Mfg. Co., Inc., Dover, N.H., a corporation of New York
Filed July 14, 1965, Ser. No. 471,953
2 Claims (Cl. 338—145)

1. In a multiturn variable resistor, a casing, a non-conducting drum rotatably supported in said casing, a helically wound resistance element supported by said drum, a continuous helical track formed between adjacent turns of said resistance element, a non-conducting contact carrier, means preventing relative rotational movement of said contact carrier with respect to the housing such that the contact carrier advances longitudinally along the housing, a conducting resilient arm supported by said contact carrier, a contact portion of said resilient arm in wiping engagement with said resistance element, a second contact portion of said resilient arm, a collector rail in wiping contact with said second contact portion, said contact carrier being generally circular in the form of a split ring with a bore diameter slightly greater than the diameter of said track with a width slightly less than the width of said track whereby it is disposed with a substantial portion of its bore periphery in said track, a foot portion of said contact carrier at each of its ends having a width greater than



the width of said track and each of said foot portions having an arcuate groove formed in its surface which can receive and ride on said resistance element upon rotation of said drum.

3,346,832
ELECTRICAL CONNECTOR FOR WELDING TORCHES
Raymond Wallace, Hacienda Heights, Calif., assignor to WDL Incorporated, Los Angeles, Calif.
Filed July 30, 1965, Ser. No. 476,018
8 Claims. (Cl. 339—112)

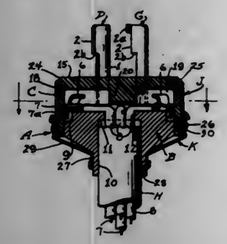


1. A power adapter for welding torches, comprising: a cylindrical ring having two tangential openings therein communicating with a channel formed in said ring; a U-shaped tube positioned within said channel and said opening; a conductor cable connected to said tube; and flexible tubes connected to said U-shaped tube, whereby a coolant may flow through said U-shaped tube and about said cable.

3,346,833
ELECTRIC PLUG AND SOCKET WITH INTERLOCKING TERMINALS
Hop Lee, 779 Commercial St., San Francisco, Calif. 94108
Filed July 22, 1965, Ser. No. 474,073
4 Claims. (Cl. 339—139)

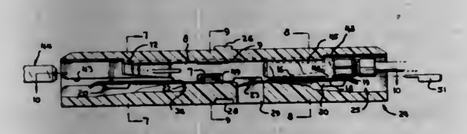
1. In a device of the type described; a socket comprising:
(a) a body member made of insulating material and having an end and a bore extending longitudinally through said body for receiving electric wires;
(b) a plurality of two-pronged electrodes secured to the end of said body; all of said electrodes having an integral lip at the outer end of one prong in each

electrode that extends at an angle toward the other associate prong; all but one of said lips being with such prong; said one lip being spaced from the adjacent side of its associate prong;



(c) an insulating cap for said body and having slots registering with the outer ends of the prongs of said electrodes; one of said slots having a recess extending at an angle to the slot for registering with the lip of said electrode that is spaced from the adjacent side of its other prong; and
(d) a two-part casing for securing said cap to said body.

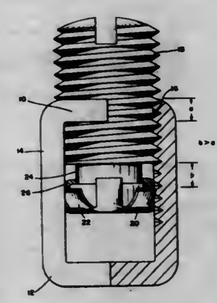
3,346,834
FEED-THRU CONNECTOR
Robert J. Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 20, 1964, Ser. No. 405,144
6 Claims. (Cl. 339—217)



1. In an electrical connector, the combination of an insulating housing having opening means therein, said opening means having spaced locking surfaces, contact means in said opening means comprising side section means connected by other section means, locking means extending outwardly from said other section means and in engagement with said locking surfaces to lock said contact means in said opening means, tine means extending outwardly from said side section means toward an entrance means of said opening means and including inwardly-directed sections defining tab-engaging means for receiving a tab means in electrical engagement therewith, and spring tab-lock means extending outwardly from said other section means and along said tine means, said tab-lock means being in spaced relationship with respect to said tine means and extending toward said entrance means of said opening means for engaging said tab means to lock same within said tab-engaging means.

3,346,835
ELECTRICAL CONNECTOR
Raymond J. Burnston, Old Bridge, N.J., assignor to Buchanan Electrical Products Corporation, Union, N.J., a corporation of New Jersey
Filed July 19, 1965, Ser. No. 472,818
7 Claims. (Cl. 339—272)

1. An electrical connector comprising:
a body including a top portion of predetermined thickness having a top and a bottom, a bottom portion and at least one side portion maintaining said top and bottom portions in spaced relation;
a tapped hole in the top portion;
a clamping screw received within the tapped hole and having a threaded portion lying between a top and a bottom; and
a unitary captive jaw assembled with the clamping screw at the bottom thereof in swivel connection therewith for permitting relative rotation between the clamping screw and the captive jaw about a vertical swivel axis and vertical movement of the captive jaw relative to the bottom portion of the body in response to the advancement of the clamping screw within the tapped hole to clamp an electrical conductor between the captive jaw and said bottom portion;

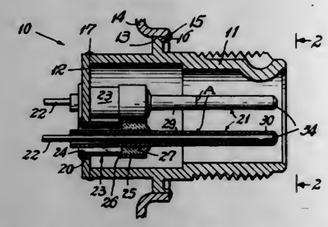


said captive jaw having a pressure plate portion juxtaposed with the bottom of the clamping screw and having a diameter no greater than the inside diameter of the tapped hole, and at least one integral projection normally extending laterally outwardly beyond the inside diameter of said tapped hole, said projection being resiliently yieldable and inclined upwardly from the pressure plate portion toward the top of the clamping screw and outwardly from the swivel axis such that the captive jaw may be passed downwardly through the tapped hole by resilient flexing of the projection laterally inwardly to present an overall diameter no greater than the inside diameter of the tapped hole and upon passage of the captive jaw through said tapped hole, the projection will return laterally outwardly to preclude retraction of the clamping screw from the tapped hole by engagement of the projection with the bottom of the top portion of the body and to preclude rotation of the captive jaw by engagement of the projection with the side portion of the body during rotation of the clamping screw.

3,346,836
FLUID-TIGHT ELECTRICAL FITTING
Robert R. Hellman, Bridgeport, Conn., assignor to Westport Development & Manufacturing Company, Inc., Milford, Conn., a corporation of Connecticut
Filed July 7, 1964, Ser. No. 380,837
2 Claims. (Cl. 339—275)

1. A fluid-tight electrical fitting comprising a base formed with an aperture extending therethrough, a tubular metal sleeve positioned in said aperture and having its rear end portion connected thereto by a fused metal joint, an annulus formed of electrical insulating material having a central opening positioned within the front end portion of the sleeve and being connected thereto by a fused metal joint, said annulus being smaller in length than said sleeve, a tube positioned within the opening and being connected thereto by a fused metal joint, said tube being longer than said sleeve to have a forward portion projecting substantially forwardly of said annulus to form at least in part a releasable electrical connection

and having at least an intermediate portion that is longer than the annulus to project from both ends thereof with the intermediate portion flaring outwardly as it extends rearwardly, a conducting wire extending through the aperture into said tube, said conducting wire being connected to said forward portion of said tube by a fused metal joint to close the forward end of said tube, in which the opening in the annulus is cylindrical, the intermediate portion of the tube has a wedge fit therein and the tube is brazed to



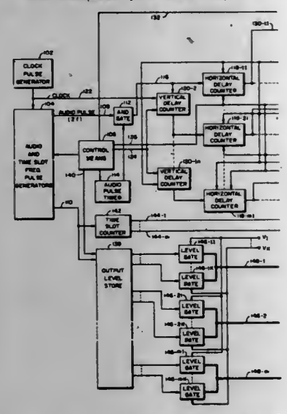
the annulus by a joint that is wedge-shaped in cross-section, in which the interior of the forward portion of the tube defines a substantially constant cross-sectional cavity that corresponds with the exterior of conducting wire inserted therein and in which the intermediate portion defines a cavity increasingly larger than the cross-section of the wire positioned therein, wherein said wire is transversely moveable within the cavity of said intermediate portion.

3,346,837

DELAY COUNTER PHASE CONTROL SYSTEM FOR USE IN PRODUCING A VARIABLE DIRECTION BEAM FROM A FIXED TRANSMITTING ARRAY

Uwe A. Pommerening, Webster, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Continuation of application Ser. No. 412,956, Nov. 23, 1964. This application Oct. 18, 1966, Ser. No. 587,622
22 Claims. (Cl. 340—5)

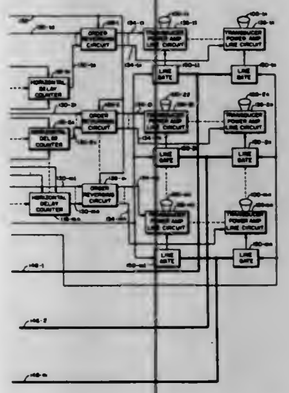


22. A system for steering the directional pattern of a transducer array wherein transducers are arranged in rows and columns, said system comprising

(a) an array of delay counter means each corresponding to a different one of said transducers and arranged in rows and columns,

(b) means connecting the counters in each of said rows and columns in series relationship so that an input pulse applied to the first counter means in one corner of said rows and columns propagates through all of said counter means,

(c) a plurality of line circuits each corresponding to a different one of said transducers and each being responsive to output pulses from different ones of said counter means, said line circuits, each including a bi-stable device for producing a first level of potential when in its first stable state and a second level of potential when in its second stable state to produce a square wave when said bi-stable device is switched between its stable states and a low pass filter for passing only the fundamental of said square wave for applying a sinusoidal wave to the transducer to which that line circuit corresponds,



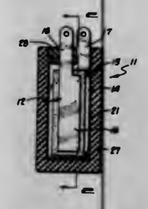
(d) digital control means for presetting said delay counter means to control the direction of said pattern.

3,346,838

PRESSURE SENSITIVE DETECTOR FOR MARINE SEISMIC EXPLORATION

Walter P. Johnson III, and Eugene F. Florian, Houston, Tex., assignors to Mandrel Industries, Inc., Houston, Tex., a corporation of Michigan

Filed May 3, 1965, Ser. No. 452,685
10 Claims. (Cl. 340—7)



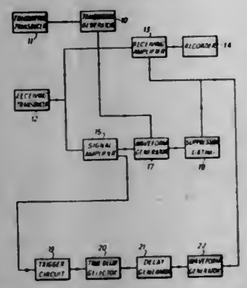
8. Pressure sensitive detector means comprising a sealed flexible water impervious elongated jacket; a plurality of detectors disposed in longitudinally spaced relation within said jacket, each of said detectors including a flat rectangular piezoelectric crystal slab, flexible contact elements conductively secured to the opposite faces of said slab to form a transducer sandwich assembly, fulcrum means rigidly supporting said assembly only adjacent opposite longitudinal ends of said slab, and a flexible housing sealably enclosing said transducer assembly and fulcrum means with terminal portions of said contact plates projecting from said housing; a paired conductor cable extending longitudinally through said jacket; means connecting said terminal portions of said contact plates of said detectors respectively in parallel to said cable; and fluid filling the interior of said jacket.

3,346,839

ECHO-SOUNDING APPARATUS FOR EXAMINING STRATA BELOW THE SEA-BED WITH VARIABLE GAIN MEANS RESPONSIVE TO SEA-BED ECHOES

Stanley Frederick Ovens and Geoffrey Harold Ellis, Cricklewood, London, England, assignors to S. Smith & Sons (England) Limited, Cricklewood, London, England, a British company

Filed May 24, 1965, Ser. No. 458,260
Claims priority, application Great Britain, May 29, 1964, 22,377/64
6 Claims. (Cl. 340—7)



1. Echo sounding apparatus for examining strata below the sea-bed comprising transmitter means for transmitting mechanical-wave energy towards the sea-bed, receiver means for receiving echoes of the transmitted energy to derive signals in accordance respectively with received sea-bed and strata echoes, display means responsive to said signals to provide a display of echoes received by the receiver means, and suppression means for attenuating the sea-bed echo-signal relative to the strata echo-signals, said suppression means comprising a controllable-gain amplifier coupled between said receiver means and said display means for passing said signals derived by said receiver means to said display means, and control means for controlling the amplifier-gain to increase from a low value during passage through the amplifier of the sea-bed echo-signal to a higher value during passage through the amplifier of the immediately-following strata echo-signals, said control means including first means triggerable to supply a predetermined control signal having at least a portion thereof that changes as a predetermined function of time from a first value to a second value, second means responsive to reception of the sea-bed echo by said receiver means to trigger said first means to supply said control signal, and third means coupled to the amplifier to increase the amplifier-gain immediately following passage through the amplifier of said sea-bed echo-signal, said third means being responsive to supply of said control signal by said first means to increase said amplifier-gain in accordance with change in said control signal from said first value to said second value.

3,346,840

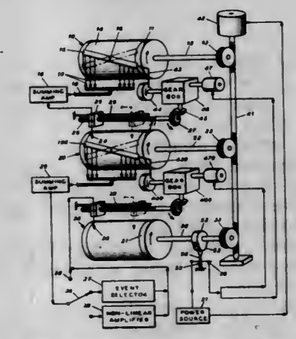
DOUBLE SONOGRAMMING FOR SEISMIC RECORD IMPROVEMENT

Rolando Lara, Hacienda Heights, Calif., assignor to Chevron Research Company, a corporation of Delaware

Filed July 23, 1964, Ser. No. 384,725
9 Claims. (Cl. 340—15.5)

9. The method of transforming an original multitrace recording of machine-readable electrical signals representing seismic energy into an improved multitrace record representing said energy comprising the steps of:

(a) reading the electrical signals in said multitrace recording and sonogramming said read signals to produce a plurality of separate signal summation traces of the instantaneous amplitude variations of said electrical signals representing said seismic energy in each trace of said original multitrace record, each of said separate signal summation traces being characterized by shifts of the time axis of each trace of said original record with respect to one trace of said original record, each trace of said original record having its time axis shifted a fixed increment with respect to the shift of the next adjacent trace, each separate signal summation trace being characterized by control of said fixed increment in shifting of said time axis of said traces of said original record and including a time reference derived from said one trace to identify moveout oriented energy represented by the particular signal summation trace, and recording said separate signal summation traces in sequence as side-by-side traces in an intermediate record including one summation trace representing zero moveout oriented energy and having a time axis based on said one trace of said original record, all other signal summation traces having a time axis aligned with the time axis of said zero moveout summation trace,



(b) reading said signal summations in said traces of said intermediate record and sonogramming said read signal summations to produce said improved multitrace record, each trace of said improved multitrace record being produced by summing the instantaneous electrical signal summation variations of said moveout oriented energy represented in all of said separate signal summation traces, each separate summing of said signal summations being characterized by shifts of the time axis of each trace of said intermediate record a fixed increment with respect to said zero moveout summation trace, and each signal summation trace having its time axis shifted a fixed increment with respect to the shift of the next adjacent signal summation trace, and

(c) restricting the energy content of said improved multitrace record by controlling the range through which said time axes are shifted in said sonogramming steps.

3,346,841

MAGNETOSTRICTIVE ACOUSTIC TRANSDUCERS

Helmut Welchart, Hannover, Germany, assignor to Prakla Gesellschaft fur Praktische Lagerstattenforschung G.m.b.H., Hannover, Germany, a corporation of Germany

Continuation of application Ser. No. 437,690, Mar. 8, 1965. This application Feb. 28, 1967, Ser. No. 619,485
Claims priority, application Germany, Mar. 19, 1964, P 33,871
6 Claims. (Cl. 340—17)

1. A magnetostrictive acoustic transducer comprising in combination:

a support having a central axis,

a longitudinal extension parallel to said axis and of a limited diameter perpendicular to said axis,

at least one piece of magnetostrictive material of substantially arched configuration mounted on said support,

said piece extending over a limited arc around said axis,

said arched piece having an opening the diameter of which is larger than said limited diameter of said support,

said piece having opposed end portions,

at least one piece of ferromagnetic material having opposed ends which closely engage said opposed end portions of said magnetostrictive piece, thereby forming a closed magnetostrictive circuit, and a plurality of conductor windings coiled around said piece of magnetostrictive material,



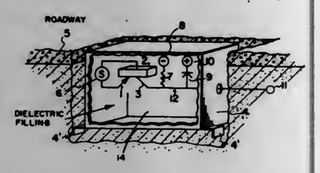
the faces of said segments juxtaposed to one another at the divisions between the separate segments offering larger areas to the magnetic flux than the cross-sectional area of the magnetostrictive segments themselves,

said segments being formed of magnetostrictive sheet metal and said larger areas being formed by turning up the margins of said cylindrical segments of magnetostrictive sheet metal,

a central cylindrical supporting body of nonmagnetizable material having longitudinal slots on its circumference,

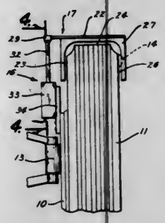
said turned-up margins of adjacent magnetostructive sheet metal segments being inserted in said slots in contact wtih one another.

3,346,842
VEHICLE DETECTORS
Harold A. Dixon, Bethesda, Md., assignor to Laboratory for Electronics, Inc., Waltham, Mass., a corporation of Delaware
Continuation of abandoned application Ser. No. 143,911, Oct. 9, 1961. This application Apr. 20, 1965, Ser. No. 453,541
14 Claims. (Cl. 340—38)



1. Apparatus for detecting passage of a vehicle comprising a semiconductor, a casing including an insulating dielectric, said semiconductor including emitter, collector and base positioned in said dielectric within said casing, means for mounting said casing within a roadway, said dielectric being a pressure-transmitting means for transmitting vibrations from said casing to said semiconductor, means for biasing said emitter in one direction, output means including a reverse biased diode and a terminal connected to said collector whereby vibrations caused by the passage of a vehicle on the roadway are transmitted to said semiconductor to generate a pulse at said output terminal.

3,346,843
PNEUMATIC TIRE BLOW-OUT WARNING APPARATUS
Warren G. Lambert, 525 Aspen St., Morgantown, W. Va. 26505
Filed Jan. 14, 1965, Ser. No. 425,489
2 Claims. (Cl. 340—58)



1. Apparatus for warning an operator of a vehicle having a wheel unit including a pneumatic tire mounted on a wheel of a change in the rotational condition of the wheel unit, the apparatus comprising:

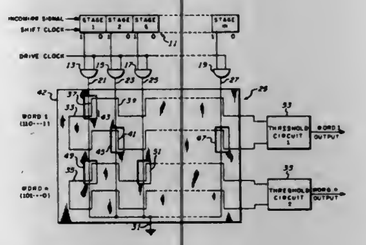
striker means including a normally stationary member swingably mounted to the tire, said member having an inner edge contiguous to the inner and outer sidewalls and the tread of the tire;

means attached to the wheel and movable therewith, and swingably supporting said striker means;

actuator means connected to said attached means and including an element movable in response to a swinging movement of said member; and

signaling means including a normally de-energized signal device noticeable, when energized, by the operator, said signal means responsive to movement of the element to energize said signal device.

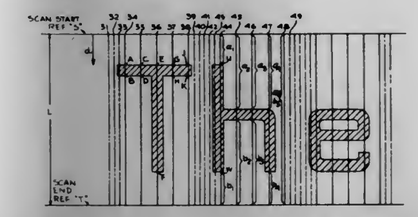
3,346,844
BINARY CODED SIGNAL CORRELATOR
John E. Scott, Rego Park, N.Y., and Teddy R. Thomas, Houston, Tex., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,490
9 Claims. (Cl. 340—146.2)



1. A stored data correlator comprising a shift register to receive an incoming word to be processed; means to produce individual drive signals corresponding to each binary ONE and only to each binary ONE in the incoming word; a coded memory to store a group of binary coded words; a single column of bit positions in said memory corresponding to each stage in the shift register; means to apply each of said drive signals to the corresponding column of bit positions; means responsive to a drive signal to produce a sense voltage pulse at any bit position at which a binary ONE is stored; means to add concurrent sense voltage pulses produced at the bit positions corresponding to a given stored word; and means

to produce a word output signal when the sum of the sense voltage pulses exceeds a predetermined minimum.

3,346,845
CHARACTER RECOGNITION METHOD AND APPARATUS
Sergei M. Fomenko, Woodland Hills, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,749
8 Claims. (Cl. 340—146.3)



7. A character recognizing apparatus for scanning a line of text to recognize characters thereon comprising:

a flying spot scanner for scanning with scanning lines a line of text, said flying spot scanner being operable in either a search mode and a scan mode;

scanner control means coupled to and energizing said flying spot scanner to scan said line of text in a search mode whereby said line of text is scanned by scanning lines spaced apart by a distance substantially equal to one-half the line widths of the characters comprising said line of text, the length of said scanning lines being substantially equal to one and one-half times the maximum height of the characters;

mode control means in said scanner control means energized by video signals which exceed a first threshold level produced by a first scanning line being modulated by the detail of the leading edge of a first character for switching said flying spot scanner to scan said line of text in a scan mode whereby said line of text with said character thereon are scanned by a series of scanning lines sufficient in number to scan the entire first character, the scanning lines being spaced apart by a distance substantially equal to one and one-half the line widths of the characters comprising said line of text, the length of said scanning lines being substantially equal to one and one-half times the maximum height of the characters;

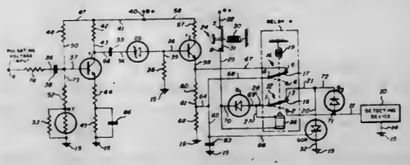
generating means responsive to the scanning lines scanning said first character for generating digital profiling functions of said first character which represent the relative distances from the beginning and ends of said scanning lines within said series to the first and and last intersections of said scanning lines with said character, said generating means including;

means for generating digital internal structure functions which represent the number of crossings of the series of said scanning lines over said first character and means for generating a character spacing function representing the spacing between crossings of a selected scanning line over said first character;

storing means for storing digital profiling, internal structure and character spacing functions of known characters; and

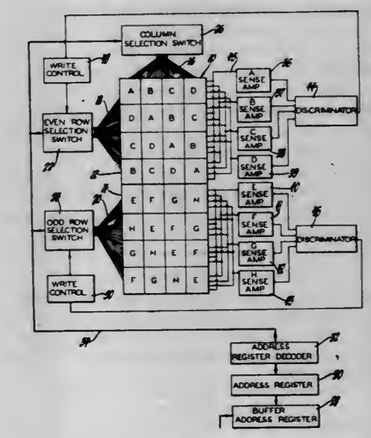
means included in said storing means and coupled to said generating means for energizing said storing means with the functions generated by scanning said first character to compare them with the stored functions therein, to produce an output signal representing said first character.

3,346,846
SIGNAL LEVEL DETECTION CIRCUIT HAVING AUTOMATICALLY CHANGED IMPEDANCE
Donald C. Ferguson, Scottsdale, and Morris V. Flowers, Phoenix, Ariz., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,554
8 Claims. (Cl. 340—172)



1. In an electrical system for detecting a pulsating voltage input at a first amplitude threshold level and at a second amplitude threshold level higher than the first level, a relay having a coil, a make-break switch and a switch with a common terminal connected to a source of electrical energy through the relay coil, and second and third output terminals, an on-off circuit connected to the second output terminal of the three terminal switch including a gating device that fires initially at the first amplitude threshold level and fires subsequently at the second amplitude threshold level, a circuit connected to the third output terminal of the three terminal switch having a detecting device therein, an input circuit having an amplitude sensitive rectifier for passing pulsating inputs above the first threshold level, a circuit connecting the rectifier and gating device having parallel branches respectively including a resistor and the make-break relay switch in which the switch changes from a make condition shorting the resistor to a break condition at the first amplitude level with operation of the relay, and a higher threshold level firing circuit for the gating device having a rectifier therein connecting the detecting and on-off circuits in bypassing relation to the detecting device.

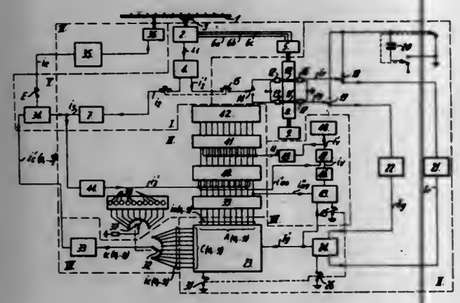
3,346,847
MAGNETIC MEMORY SYSTEM
Alfred H. Faulkner, Redondo Beach, and Seymour Markowitz, Los Angeles, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 16, 1963, Ser. No. 316,682
12 Claims. (Cl. 340—172.5)



1. A coincident current memory comprising a two-dimensional array of magnetic elements having two stable

remanent states, a plurality of column selection lines linking respective columns of elements and a plurality of row selection lines linking respective rows of elements, means for receiving an address for access to the array, means for decoding the address and for simultaneously energizing a column selection line and a pair of row selection lines respectively representing individual bits of the word addressed.

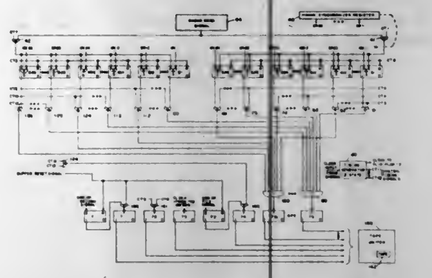
3,346,848
DISPLACEMENT CONTROL SYSTEM
Robert Viret and Alain Stahl, Geneva, Switzerland, assignors to Societe Genevoise d'Instruments de Physique, Geneva, Switzerland, a corporation of Switzerland
Filed June 25, 1965, Ser. No. 467,032
Claims priority, application Switzerland, July 1, 1964, 8,623/64
31 Claims. (Cl. 340—172.5)



1. An electronic control system for positioning a movable member, said system comprising transducer means for producing a signal representative of the actual position of the movable member, an actuating device for displacing said movable member, sequential counting means, memory means storing at least one analogue electronic endless graduation of signals corresponding to a succession of positions of the movable member, a reader for delivering pulse trains representing repetitive readings of the signals of said graduation, a counter receiving said pulse trains, said counter having a number of outputs corresponding to the number of divisions of the said graduation and thus to the number of pulses contained in each pulse train, said counter delivering on each output pulses corresponding to the order number of the said output; selector means for delivering a signal from at least one of the said outputs of said counter, and comparator means for comparing the signals delivered by the transducer means and the signals delivered from a selected output of the counter, said comparator yielding an error signal, and means connecting said comparator to said actuating device whereby said error signal controls said actuating device and in turn movement of said member.

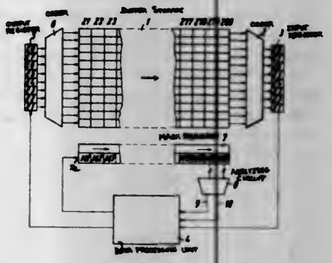
3,346,849
RADAR-TO-MAGNETIC-TAPE BUFFERING UNIT
David L. Jones, Kensington, and Sylvester C. Tabisz, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 6, 1964, Ser. No. 365,542
18 Claims. (Cl. 340—172.5)

1. In a radar system a tape writer having a plurality of inputs connected to outputs of a plurality of flip-flops: a first group of said flip-flops being disposed to receive output information from a plurality of registers each having first and second set inputs and a reset input; first connection means connecting said registers to said flip-flops; a source of signals containing said information; timing means having a plurality of clock time outputs; second means connecting a first clock time output of said tim-



ing means to said first set input of each of said registers; means connecting said second set inputs of the registers to said source of signals; and means connecting a second clock time output to the reset input of each of said registers.

3,346,850
INPUT CIRCUIT FOR DATA PROCESSING UNIT
Helmut Wehrig, Bad Hersfeld, Germany, assignor to Zuse K.G., Bad Hersfeld, Germany
Filed June 1, 1964, Ser. No. 371,495
Claims priority, application Germany, June 1, 1963, Z 10,155
17 Claims. (Cl. 340—172.5)



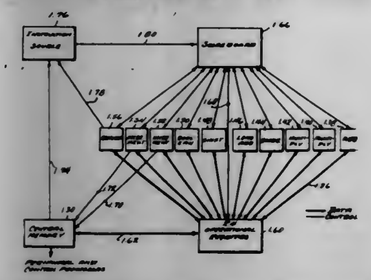
1. An arrangement for transmitting data from a card reader to a data processing unit or from such a unit to a card writer, wherein each card is capable of storing a plurality of information words, each of which words consists of a plurality of characters which are transmitted serially, said arrangement comprising, in combination:

(a) a mask register having as many digital positions as each card to be used with the arrangement has characters;

(b) means for serially reading out the mask register in synchronism with said serial transmission of characters commencing with the first character of a group of characters corresponding to one card and ending with the last character thereof; and

(c) digital analyzing means coupled to at least one digital position of said mask register for identifying word boundaries between adjacent characters of said group of characters while they are being transmitted.

3,346,851
SIMULTANEOUS MULTIPROCESSING COMPUTER SYSTEM
James E. Thornton and Seymour R. Cray, Chippewa Falls, Wis., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed July 8, 1964, Ser. No. 381,076
7 Claims. (Cl. 340—172.5)



1. A data processing system having a storage section, an input-output section, a control section, and a function section, the invention being characterized by:

(a) the function section comprising:

(1) a plurality of registers (**1.60**) connected to the storage section and capable of holding numerical data received from the storage section and transmitting data to the storage section;

(2) a plurality of functional units (**2.12**) connected to the registers, each unit being capable of performing arithmetic and logical operations on data received from the registers and transmitting results to the registers;

(b) the control section comprising:

(1) a single instruction source (**1.76**) connected to the storage section and capable of receiving a plurality of instruction commands sequentially from the storage section;

(2) a scoreboard logic network (**1.66**) connected to the instruction source, the functional units, and the registers, and responsive to signals from the instruction source to reserve selected functional units and selected registers for numerical data and results, the scoreboard logic network providing control signals to allow concurrent operation of a plurality of functional units in cooperation with the selected registers.

3,346,852
DIGITAL COMPUTER SYSTEM
Jack C. Smeltzer, Woodland Hills, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Continuation of application Ser. No. 89,476, Feb. 15, 1961. This application Sept. 25, 1964, Ser. No. 402,682
5 Claims. (Cl. 340—172.5)

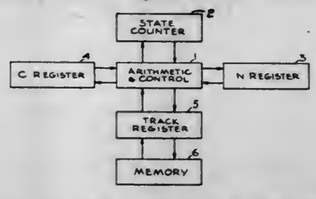
1. In a data processing system including a cyclic memory having a plurality of storage locations thereon, each identifiable by both a track and sector address and each storing information bits comprising instruction or operand words and wherein each of said instruction words includes an operand address portion specifying, by track and sector address, a memory location storing an operand word;

a first storage register;

a track address storage register;

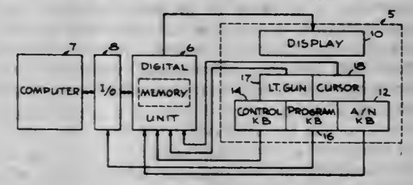
said first and said track address storage registers adapted to store information bits comprising an instruction address and respectively including a sector and track address specifying a memory location storing a first instruction word;

means serially transferring the information bits comprising said operand address portion of said first instruction word from said specified memory location into said first storage register; and



means subsequently transferring the information bits comprising the track address portion of said operand address portion in parallel into said track address register.

3,346,853
CONTROL/DISPLAY APPARATUS
Robert A. Koster, Frank J. Beach, and Roland F. Bryan, Canoga Park, Los Angeles, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,430
30 Claims. (Cl. 340—172.5)



1. Apparatus for displaying information and for controlling the information displayed, said apparatus comprising:

a display means including a screen;

a digital memory including a plurality of storage locations, each location being capable of storing one of a plurality of information codes, said information codes including positioining control codes, coordinate codes, and symbol codes;

means for cyclically accessing said storage locations;

means for applying said codes accessed from said storage locations to said display means;

said display means being responsive to said codes applied thereto for displaying information represented thereby on said screen;

a control means including a plurality of actuatable controls;

means responsive to the actuation of at least one of said controls for generating coordinate codes identifying a selected position on said screen and storing said generated coordinate codes in said memory;

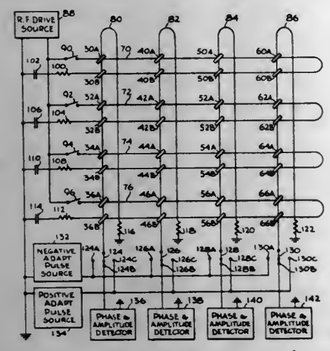
means responsive to the actuation of at least one of said controls for generating a marker symbol code and storing it in said memory in association with said generated coordinate codes;

said display means being responsive to said marker symbol code applied thereto for displaying a marker symbol on said screen at the position identified by the coordinate codes associated with said marker symbol code;

means for selectively identifying one of said storage locations; and

means responsive to the actuation of at least one of said controls for transferring said marker code to said identified storage location.

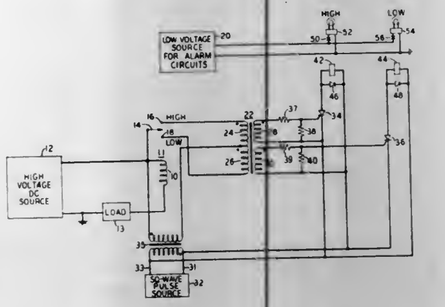
3,346,854
ANALOG STORAGE SYSTEM
Harold S. Crafts and George E. Forsen, Palo Alto, Calif., assignors to Stanford Research Institute, Palo Alto, Calif., a corporation of California
Filed Mar. 20, 1963, Ser. No. 266,645
5 Claims. (Cl. 340—174)



1. A random access magnetic analog storage system comprising a plurality of magnetic adaptive logic elements arranged in rows and columns, each element having a plurality of states of magnetic remanence, means for determining the state of magnetic remanence of a predetermined one of said magnetic adaptive logic elements including a source of oscillation at a predetermined frequency, means for selectively applying oscillations from said source to a row of said elements including said predetermined one of said magnetic adaptive logic elements, said means including a winding means connected to said source of oscillations and wound on each core in said row of cores with a single winding sense, and means for deriving from said predetermined one of said magnetic adaptive logic elements a signal having a higher frequency than said predetermined oscillation frequency and having an amplitude and phase representative of the state of magnetic remanence of said predetermined adaptive logic element; and means for altering the state of magnetic remanence of said predetermined adaptive logic element including means for selectively applying to the column of adaptive logic elements including said predetermined one of said elements a magnetomotive force which is less in the absence of oscillations from said source being applied than the threshold required to be exceeded to alter the remanent state of an adaptive logic element but which in the presence of said oscillations from said source exceeds said threshold, whereby only the predetermined one of said adaptive logic elements has its remanent state altered.

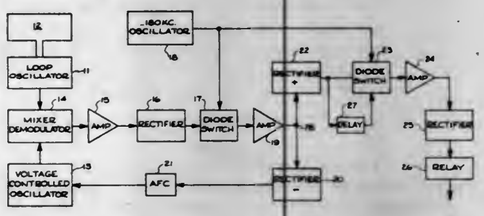
3,346,855
CIRCUIT FOR MONITORING THE STATE OF A RELAY
John D. Bishop, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 18, 1964, Ser. No. 368,233
6 Claims. (Cl. 340—248)

1. Apparatus for monitoring the condition of a relay comprising a transformer having a primary circuit and a secondary circuit, a periodic signal source, means for coupling the output of said source to said primary circuit so as to transmit the periodic signal to said secondary circuit in one phase when said relay is in a first state and for coupling the output of said source to said primary circuit so as to transmit the periodic signal to said secondary circuit in an opposite phase when said relay is in a second state, means for comparing the phase of the signal transmitted to said secondary circuit with the output of said source, said comparing means including first and second coincidence detection means coupled to said secondary circuit, means to directly couple one phase and the opposite phase of the output of said periodic signal



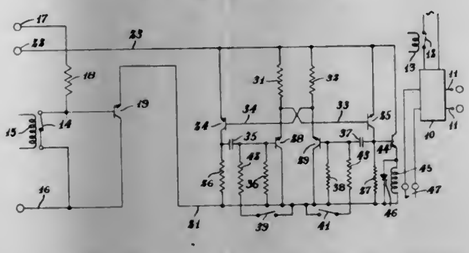
source to said first and second coincidence detection means, respectively, one of said first and second coincidence detection means being exclusively operated in response to the periodic signal transmitted to said secondary circuit, and means responsive to said comparing means for indicating the state of said relay.

3,346,856
INDUCTIVE LOOP VEHICLE DETECTOR
Robert N. Doble, Palo Alto, Robert J. Miller, San Bruno, and Lawrence Sepe, San Francisco, Calif., assignors to General Precision Systems Inc., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,559
6 Claims. (Cl. 340—258)



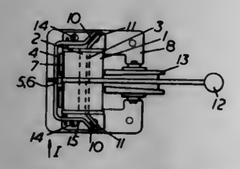
1. A vehicle detection system comprising a first oscillator including an inductive loop, a second oscillator, a mixer circuit coupled to both oscillators for generating a difference frequency signal, a discriminator coupled to the mixer circuit for generating a direct signal level corresponding to the difference frequency, means for amplifying the direct signal level, an automatic frequency control circuit coupled to control the frequency of the second oscillator from the direct signal level, a means for storing a signal level corresponding to the direct signal level, said signal storing means having dual time constant paths whereby a signal level may be received relatively fast and may be dissipated relatively slowly, and a switching means coupled to the direct signal level and to the signal level storing means, said switching means being responsive to the relative values of the direct signal level and the stored signal level.

3,346,857
PLURAL TONE AUDIBLE INDICATING APPARATUS HAVING VARIABLE TIME RATIO OF TONES
Earle G. Cromer, Jr., Mount Prospect, Ill., assignor to Mangood Corporation, a corporation of Illinois
Filed July 19, 1965, Ser. No. 473,112
7 Claims. (Cl. 340—328)



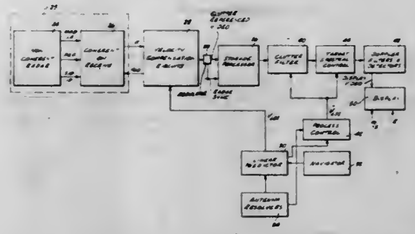
1. An apparatus for monitoring condition changes by audible indications therefor, comprising in combination oscillator means operable to produce a plurality of audible tone signals, relay means connected to said oscillator means to change the tone signal produced thereby, periodically operating means to operate said relay means in a predetermined timed sequence, and control means adapted to be operated in response to said condition changes to vary said predetermined timed sequence an audibly distinct amount to thereby indicate a condition change.

3,346,858
TELEPHONE RINGER
James Samuel Paterson Robertson, Leslie Eugene Basil Dymoke-Bradshaw, and Nirmal Singh Lotay, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,702
Claims priority, application Great Britain, June 8, 1964 23,592/64
9 Claims. (Cl. 340—397)



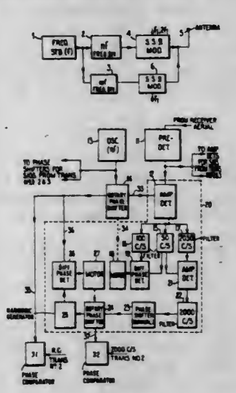
1. A polarized magnetic ringing device having at least one gong, said device comprising a magnetizable core surrounded by an energizing coil, end portions of said core projecting out of said coil to form pole pieces, an armature of generally U-shaped construction with the base portion of the U-shape normally parallel to said core, said armature being rockable about a pivotal axis located between the ends of said base portion, end portions of the legs of said U-shaped armature cooperatively associated with the pole pieces, arm and hammer means attached to said armature in a position normal to the length of said core and juxtaposed with said hammer to said gong, permanent magnet means for imparting magnetization of the same sense to the faces of each of the pole pieces, so that energization of the coil with alternating current causes the said armature to rock about the pivotal axis, and the end portions of the armature and the faces of the pole pieces being parallel to each other and at an obtuse angle to the length of the core.

3,346,859
MAINLOBE DOPPLER CLUTTER RETURN COMPENSATOR FOR MOVING PLATFORM RADAR
William H. Mulline, Manhattan Beach, and Samuel Thaler, Encino, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,791
6 Claims. (Cl. 343—7.7)



1. A Doppler return signal compensator system for moving platform radar, having a scanning antenna comprising:
open-loop predictor means responsive to radar platform motions and antenna scan motions to produce an output signal corresponding to the doppler frequency shift due to the motions of said platform and said scanning antenna; and
closed-loop means responsive to a continuously varying Doppler frequency and coupled between said radar and said open-loop predictor means to produce an output signal containing Doppler compensated information.

3,346,860
RADIO NAVIGATION SYSTEM
Charles William Earp, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,315
14 Claims. (Cl. 343—105)



1. A radio navigation system comprising:
a transmitter including:
first means for generating a first wave having a first frequency;
second means for generating only waves unilaterally displaced in the same sense from said first frequency, said unilaterally displaced waves including two waves displaced from said first frequency by harmonically related difference frequencies; and

means coupled to said generating means to transmit said two waves; and

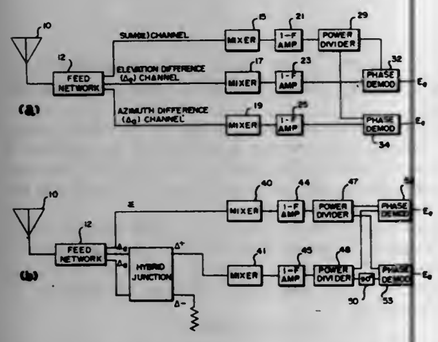
a receiver for receiving the said two transmitted waves, said receiver including:

means to derive from said transmitted waves a signal having a phase proportional to the phase that the wave at the said first frequency would have had at the receiver if transmitted from said transmitter.

3,346,861
SUM-DIFFERENCE FEED NETWORK

George G. Chadwick, Annandale, Va., and John Paul Shelton, Bethesda, Md., assignors to Radiation Systems Incorporated, Alexandria, Va., a corporation of Nevada

Filed July 12, 1966, Ser. No. 564,621
10 Claims. (Cl. 343—16)



1. A sum-difference feed network for a monopulse system having a radiator structure with $2(2N+1)$ arms, where N is an integer greater than or equal to one, said feed network comprising a pair of hybrid phasing matrices each coupled to a different set of $(2N+1)$ arms of said radiator structure, each set characterized by arms disposed 180 degrees apart from the arms of the other set, each of said hybrid phasing matrices having sum and difference mode terminals, and power dividing means symmetrically coupled to the corresponding difference mode terminals of each of said matrices for each sense of polarization.

3,346,862
CORRELATION DETECTION SYSTEMS

Ilmar G. Raudsep, Baltimore, Md., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed May 24, 1962, Ser. No. 197,833
7 Claims. (Cl. 343—113)

5. In an autocorrelation detecting system comprising:

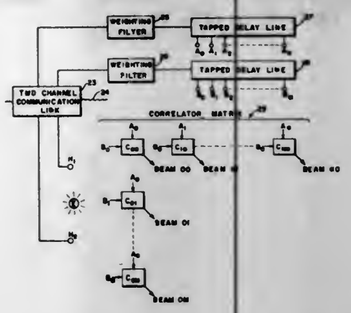
at least two spaced receiving elements;

a correlator, said two receiving elements being connected to the inputs of said correlator;

whereby the time difference of arrival of a signal at said two receiving elements, and therefore the angular position of the source of said signal, may be determined by the autocorrelation of signals from said two receiving elements in said correlator, with the autocorrelation function of the received signal defining the system beam pattern;

the improvement comprising:

at least two filters, one corresponding to each said receiving elements and being placed between said receiving elements and said correlator, said filters having substantially identical power response characteristics $W_W(f)$ satisfying the equation $W_R(f)W_W(f)=W_O(f)$, where $W_R(f)$ is the power spectrum of the received signal, and

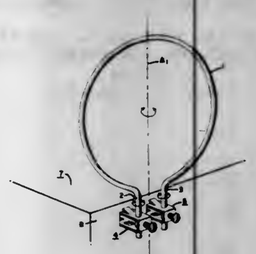


$W_O(f)$ is a power spectrum comprising the inverse Fourier transform of a beam pattern having better directional characteristics than the beam pattern defined by the autocorrelation function of the received signal.

3,346,863
TELEVISION ANTENNA AND CONNECTOR APPARATUS

Donald J. Siebold, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 17, 1964, Ser. No. 419,148
4 Claims. (Cl. 343—702)



1. An antenna and connector apparatus for selectively connecting an indoor antenna and an outdoor antenna to a television receiver comprising:

(A) an indoor antenna element having a wire structure with first and second parallel, adjacently disposed indoor lead members projecting therefrom,

(B) bracket means attached to the television receiver for engaging said indoor lead members and for supporting said indoor antenna element,

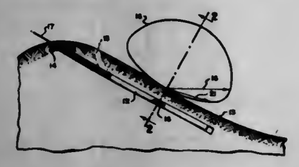
(C) adjustable locking means on said bracket means, said adjustable locking means having a first portion for frictionally engaging said parallel, adjacently disposed indoor lead members to frictionally maintain said antenna element in a set position after being manually oriented thereto, and

(D) said adjustable locking means having a second portion for frictionally engaging outdoor lead members when said indoor lead members are disengaged from said bracket.

3,346,864
UNDERGROUND ANTENNA

Gregory J. Harmon, Sudbury, Mass., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed Sept. 9, 1966, Ser. No. 578,407
9 Claims. (Cl. 343—719)

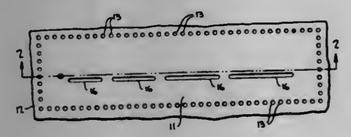


1. An underground antenna in a mountain or large hill having a rock sub-surface and a surface slope greater than about 10° in a desired azimuth direction which comprises a resonant antenna in said rock sub-surface, the depth of said antenna being at least approximately one-tenth wavelength in the medium at the operating frequency, the electrically conductive surface of said antenna being closely adjacent said sub-surface rock in close coupling relationship therewith, said antenna having a position and orientation predetermined to yield a radiation pattern having a major lobe directed toward said surface slope and a refracted beam in air having near-maximal radiation vectors at small angles to the horizontal in said desired direction.

3,346,865
SLOT ANTENNA BUILT INTO A DIELECTRIC RADOME

Howard S. Jones, Jr., Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army

Filed Dec. 10, 1964, Ser. No. 417,523
4 Claims. (Cl. 343—771)



1. An integral radome-antenna structure comprising:

(a) a radome made of a thin, low loss dielectric material;

(b) said radome having a plurality of closely-spaced holes drilled therein to define the mechanical boundaries of a waveguide antenna;

(c) said holes and the surfaces of said radome enclosed by said holes being plated with a thin layer of metal; and

(d) the thin layer of metal on the exterior surface of said radome having at least one radiating slot.

3,346,866
METHOD AND APPARATUS FOR PERFORMING A HODOMETER FLOOR USE STUDY

Robert B. Bechtel, Lawrence, Kans., assignor to Environmental Research Foundation, Topeka, Kans., a corporation of Kansas

Filed Oct. 4, 1965, Ser. No. 492,619
6 Claims. (Cl. 346—1)

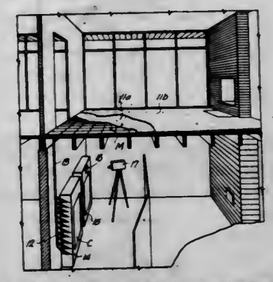
1. The method of measuring topological foot movement of a test subject in a defined test area having a plurality of sensitive portions located therein, said method comprising the steps of

detecting the presence of a foot or feet of the test subject on said sensitive portions of the test area,

counting the number of times that the test subject moves upon said sensitive portions,

timing the presence of the test subject on the sensitive portion of said area,

visually indicating the position of the test subject on a light panel, and

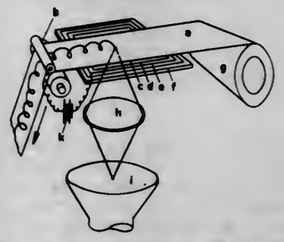


photographing the light panel at preselected time intervals to assist in obtaining a direction of movement indication of the test subject.

3,346,867
ELECTRO-OPTICAL LINE RECORDER

Fritz Schwarzer, Barmannstrasse 38, Munich-Pasing, Germany

Filed May 6, 1965, Ser. No. 453,670
Claims priority, application Germany, May 6, 1964, Sch 35,115
7 Claims. (Cl. 346—33)



1. In a line recorder to record traces on a surface having a current sensitive recording medium (*a*) a thin layer (*d*) of photosensitive resistance material having a dark resistance large with respect to the resistance of the material where illuminated; means establishing electrical contact (FIGS. 1–3: *e*; FIG. 4: *o*) of one side of said layer of photosensitive resistance material (*d*) with said recording medium and means applying a potential difference (*b*; *k*) across the other side of said layer (*d*) of photosensitive resistance material and said recording medium the improvement comprising an electrical conductor member (*c*) having an electrical conductivity in a direction transverse to said surface which is large with respect to the conductivity parallel to said surface, said electrical conductor member (*c*) being in series circuit with said means establishing electrical contact (*e*, *o*) and said potential applying means (*b*, *k*).

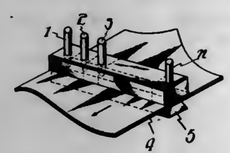
3,346,868
ELECTROGRAPH USING FOR PLURALITY OF ELECTRODE DEVICES HAVING A THERMOPLASTIC FILM AS A RECORDING MEDIUM

Noboru Masuda, Ota-ku, Tokyo-to, Japan, assignor to Denki-Onkyo Kabushiki-Kaisha, Tokyo-to, Japan

Filed Mar. 24, 1965, Ser. No. 442,262
3 Claims. (Cl. 346—74)

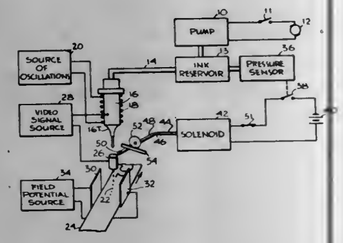
1. In electrograph apparatus a plurality of electrode devices and a transparent thermoplastic film as a record-

ing medium the combination comprising multiplex recording needles; insulation coated on each needle; a shield



case having a hole made in the part facing said recording medium for each needle interposed between the needles and the medium and enclosing a portion of each needle.

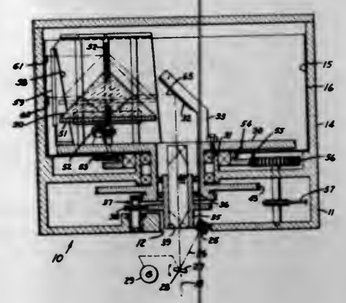
3,346,869
NOZZLE COVER
Joseph J. Stone, Glenview, Ill., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1966, Ser. No. 527,967
7 Claims. (Cl. 346—75)



1. In ink drop writing apparatus of the type wherein there is a nozzle, means for vibrating said nozzle, a source of ink under pressure, means for applying ink from said source under pressure to said vibrating nozzle to cause ink drops to be emitted from the tip of said vibrating nozzle, means for rendering said ink drop writing apoperation of said means for rendering said ink drop apparatus inoperative for covering said nozzle tip for paratus inoperative, and means operative responsive to preventing clogging of said tip by dried ink.

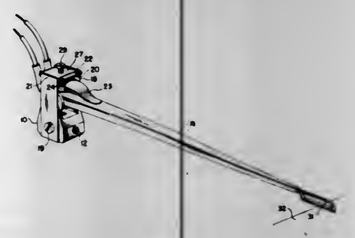
3,346,870
RECORDER
Witold Krynicki, 148 N. Sierra Bonita, Pasadena, Calif. 91106, and Francis E. Lehner, 145 Mauna Loa Drive, Monrovia, Calif. 91016
Filed Oct. 22, 1965, Ser. No. 502,034
12 Claims. (Cl. 346—109)

1. A photographic recording device having a central axis, and adapted to receive a substantially axially-directed image for the purpose of recording the same, comprising: a base; a cylindrical recording surface on said base comprising a surface of revolution generated around said axis; a table rotatably mounted to said base for rotation about said axis as a center; a deflection mirror mounted to said table and intersecting the axis at an angle thereto, whereby to deflect an axially-directed image laterally toward the recording surface; a prism mount rotatably mounted to the base and adapted to rotate about said axis as a center; a dove prism held by said prism mount for rotation therewith, the said axis intersecting the dove prism; drive means driving the table at a first angular velocity, and also driving the prism mount at a second angular velocity, the second angular velocity being half that of the first angular velocity, whereby because the dove prism has the property of rotating an image impinging thereon through an angle twice that of its own rotation, and because the deflection



mirror has the property of rotating an image impinging thereon through an angle equal to that of its own rotation, an image which is upright on the reference surface at one angular position of the table remains upright on the recording surface at all other angular positions of the table.

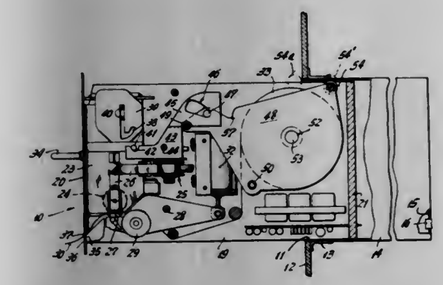
3,346,871
DEVICE FOR ATTACHMENT OF A RECORDING ARM TO A DRIVE MECHANISM WITH ADJUSTABLE BIAS FORCE
Leslie E. Fowler, Arlington Heights, Ill., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 21, 1966, Ser. No. 535,795
10 Claims. (Cl. 346—139)



1. In a recorder, the combination comprising
an elongated arm having a recording stylus on one end and a hub at the other end thereof,
a trunnion extending from each side of said hub,
a cradle rigidly attached to a drive mechanism and having two upright members, each with a V-type bearing adapted to receive a trunnion extending from said hub,
a cover plate adapted to capture said hub in said cradle, with said trunnions resting in said bearings, said cover plate having at least one flat spring connected to one side thereof, with said spring passing between said cover and said hub and extending in a direction along said stylus arm,
two support members, each disposed on a different side of said cradle proximate one of said V-type bearings and each with a means for securing said cover in a proper position for capturing said hub in said cradle,

one of said means comprising a latching portion of a support so formed as to hook over a portion of said cover plate to latch it in said proper position against the force of said spring,
and means for adjusting the force of said spring against said stylus arm, said adjusting means being fastened to said cover plate, whereby said cover plate may be unlatched for said stylus arm to be easily removed without disturbing the adjustment of said force.

3,346,872
PAPER SUPPORTING MECHANISM FOR DATA PRINTER
Maurice D. Teichner, New Canaan, Conn., assignor, by mesne assignments, to Practical Automation, Inc., Shelton, Conn., a corporation of Connecticut
Filed May 11, 1966, Ser. No. 549,332
7 Claims. (Cl. 346—145)



1. A data printing apparatus comprising an enclosure, a frame supported in the enclosure for movement between an accessible position substantially out of the enclosure and a normal position substantially within the enclosure, a cover plate mounted on the frame for movement with respect thereto, cooperative releasable aligning means carried by the frame and cover plate for positioning said cover plate with respect to the frame, a paper supporting assembly mounted on said frame for movement substantially out of and into said frame and including a part of the paper supporting assembly positioned to be engaged by said enclosure, said part being displaced thereby when the frame is in the enclosure and means cooperatively interconnectting said engaging means and said cover plate for urging the cover plate to an aligned position by the displacement of the engaging means.

3,346,873
LIQUID DETERGENT COMPOSITION CONTAINING SOLUBILIZING ELECTROLYTES
Kenneth W. Herrmann, Greenhills, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 21, 1966, Ser. No. 549,754
6 Claims. (Cl. 252—137)

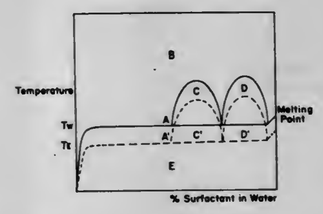
1. An aqueous homogeneous liquid detergent composition consisting essentially of:
(I) from about 1% to about 40% by weight of the composition of a detergent selected from the group consisting of
(A) a detergent having the formula

$$R-\overset{\displaystyle R^1}{\underset{\displaystyle R^2}{\overset{|}{\underset{|}{N^{(+)}}}}}-R^3-SO_3^{(-)}$$

wherein R^1 and R^2 are each selected from the group consisting of hydrogen, methyl, and ethyl groups, R^3 is a straight chain alkylene group containing two to four carbon atoms, and having from 0 to 1 hydroxyl group substituted on a secondary carbon atoms, and R is an alkyl chain of from about 10 to about 20 carbon atoms;
(B) a detergent having the formula $R^7R^8R^9P\rightarrow O$ wherein R^7 is selected from the group consisting of alkyl and monohydroxy alkyl radicals containing from about 8 to about 16 carbon atoms and R^8 and R^9 are each selected from the group consisting of alkyl radicals and alkanol radicals containing from one to about three carbon atoms; and
(C) mixtures thereof;
(II) from 0% to about 40% by weight of the composition of a polyvalent electrolyte salt selected from the group consisting of (1) sulfates; (2) carbonates; (3) tripolyphosphates; (4) pyrophosphates; (5) orthophosphates; (6) hexametaphosphates; (7) ethylenediaminetetraacetates; (8) N-(2-hydroxyethyl)-ethylenediaminetriacetates; (9) nitrilotriacetates; (10) N-(2-hydroxyethyl)-nitrilodiacetates; (11) phytates; (12) ethane-1-hydroxy-1,1-diphosphonates; (13) methylene diphosphonates; (14) ethylidene diphosphonates; (15) isopropylidene diphosphonates; (16) benzylmethylidene diphosphonates; (17) chloromethylidene diphosphonates; (18) a polyelectrolyte builder material consisting of water-soluble salts of a polymeric aliphatic polycarboxylic acid selected from the group consisting of
(a) water-soluble salt of a homopolymer of an aliphatic polymer of an aliphatic polycarboxylic acid having the following empirical formula:

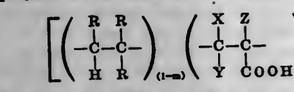
$$\left[\begin{array}{cc} X & Z \\ | & | \\ -C- & -C- \\ | & | \\ Y & COOH \end{array}\right]_n$$

wherein X, Y, and Z are each selected from the group consisting of
hydrogen,
methyl,
carboxyl, and
carboxymethyl,



at least one of X, Y, and Z being selected from the group consisting of carboxyl and carboxymethyl, provided that X and Y can be carboxymethyl, only when Z is selected from carboxyl and carboxymethyl, wherein only one of X, Y, and Z can be methyl, and wherein n is a whole integer having a value within a range, the lower limit of which is three and the upper limit of which is determined by the solubility characteristics in an aqueous system;
(b) a water-soluble salt of a copolymer of at least two of the monomeric species having the empirical formula described in (a); and
(c) a water-soluble salt of a copolymer of a member selected from the group of alkylenes and monocarboxylic acids with the aliphatic poly-

carboxylic compounds described in (a), said copolymers having the general formula:

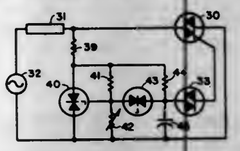


wherein R is selected from the group consisting of
hydrogen,
methyl,
carboxyl,
carboxymethyl, and
carboxyethyl;
wherein only one R can be methyl; wherein *m* is at least 45 mole percent of the copolymer; wherein X, Y, and Z are each selected from the group consisting of
hydrogen,
methyl,
carboxyl, and
carboxymethyl,
at least one of X, Y and Z being selected from the group of carboxyl and carboxymethyl provided that X and Y can be carboxymethyl only when Z is selected from carboxyl and carboxymethyl, wherein only one of X, Y, and Z can be methyl, and wherein *n* is a whole integer within a range, the lower limit of which is three and the upper limit of which is determined primarily by the solubility characteristics in an aqueous system; said polyelectrolyte builder material having a minimum molecular weight of 350 calculated as the acid form and an equivalent weight of about 50 to about 80, calculated as the acid form; and (19) mixtures thereof, the cations of the above polyvalent electrolytes being selected from the group consisting of sodium, potassium, ammonium, triethanol ammonium, diethanol ammonium and monoethanol ammonium cations and mixtures thereof;

(III) from about 0.5% to about 20% by weight of the composition, and sufficient to keep the composition homogeneous, of inorganic solubilizing electrolytes selected from the group consisting of sodium, potassium, ammonium, monoethanolammonium, diethanolammonium and triethanolammonium chlorides, bromides, iodides, nitrites, bromates, iodates, chlorates, thiocyanates, perchlorates, nitrates and mixtures thereof; and

(IV) the balance substantially water.

3,346,874
POWER CONTROL CIRCUITS
Edward Keith Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 7, 1964, Ser. No. 343,372
12 Claims. (Cl. 307—88.5)



1. A circuit for connection to a source of alternating current comprising in combination, a bi-directional current conducting semiconductor device, said device comprising a body of semiconductor material including five layers of one and the opposite conductivity types, layers of one conductivity type being interleaved with layers of the opposite conductivity type forming a plurality of p-n junctions therein, a first main current carrying electrode in low resistance ohmic contact with a surface of an external layer of said body and an exposed surface of an adjacent intermediate layer, a second main current carrying electrode in low resistance ohmic contact with a surface of the other external layer of said body and an exposed surface of the adjacent intermediate layer, a gate region of the same conductivity as said external layers of said body adjacent said intermediate layer contacted by said first main current carrying electrode, and third electrode means in ohmic contact with said gate region and with the adjacent intermediate layer, normally exhibiting a high impedance between said two main current carrying electrodes thereof and exhibiting a low impedance therebetween in response to the application of a signal having an amplitude greater than a predetermined magnitude to said third electrode thereof, means for interconnecting a load with the two main current carrying electrodes of said semiconductor and a source of alternating current, phase shifting means supplied by said source of alternating current, means connecting the output of said phase shifting means between the third electrode of said semiconductor and one of said two main current carrying electrodes and operative to furnish a low impedance path therebetween in response to a signal from said phase shifting means having at least said predetermined magnitude, and additional means supplied by said source of alternating current and operative to modify the output of said phase shifting means.

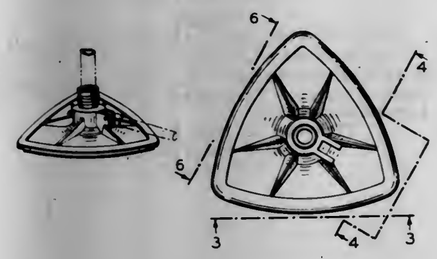
DESIGNS

OCTOBER 10, 1967

208,850
SOCK
James L. Thorneburg, Lewis L. Thorneburg, and James D. Keever, Statesville, N.C., assignors to Thorneburg Hosiery Mills, Inc., Iredell, N.C., a corporation of North Carolina
Filed Mar. 14, 1966, Ser. No. 1,437
Term of patent 14 years
(Cl. D2—330)



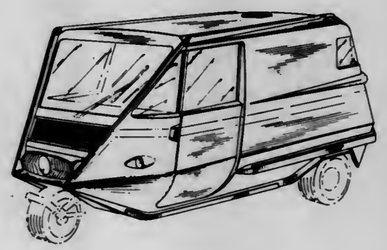
208,851
SWIMMING POOL VACUUM CLEANER HEAD
Albert W. Lindberg, Jr., 126 W. 6th St., Bayonne, N.J. 07002
Filed Nov. 25, 1966, Ser. No. 4,814
Term of patent 14 years
(Cl. D9—2)



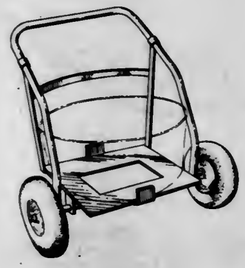
208,852
TRAPEZIUM BUILDING
Richard Lee Rood, St. Louis, Mo. (2509 Halstead, Wichita, Kans. 67204)
Filed July 7, 1966, Ser. No. 3,039
Term of patent 14 years
(Cl. D13—1)



208,853
MOTOR VEHICLE
Robert Von Heck, 11827 Runnymede St., North Hollywood, Calif. 90028
Filed Nov. 21, 1966, Ser. No. 4,755
Term of patent 14 years
(Cl. D14—3)



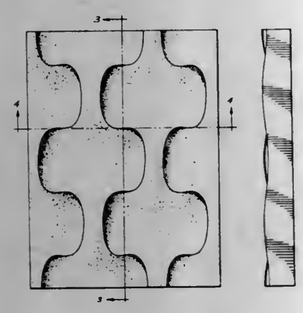
208,854
CART FOR CARRYING REFUSE RECEPTACLES
Oran D. Bratton, Memphis, Tenn., assignor to Mid-America Fabrication Co., a division of Wheel Estate, Inc., Memphis, Tenn.
Filed Jan. 3, 1967, Ser. No. 5,272
Term of patent 14 years
(Cl. D14—3)



208,855
ANIMAL REPELLENT
Robert T. Johnson, R.R. 3, Kingston, Ontario, Canada
Filed Jan. 17, 1966, Ser. No. 669
Claims priority, application Canada Oct. 21, 1965
Term of patent 14 years
(Cl. D16—1)



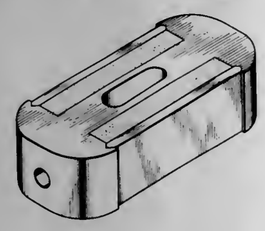
208,856
ARCHITECTURAL TILE WALL
Erwin Franz Hauer, Wooding Hill Road, Bethany, Conn. 06525
Filed Feb. 28, 1967, Ser. No. 5,993
Term of patent 14 years
(Cl. D18—2)



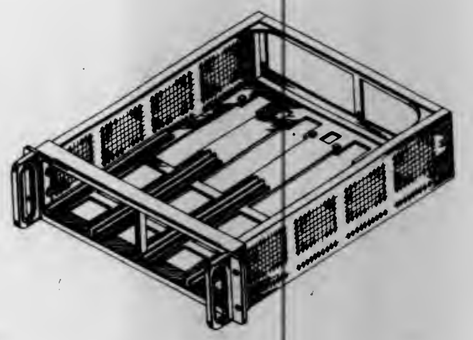
208,857
FISHING ROD HANDLE
Arthur M. Shannon, Union City, Ind. 47390
Filed Aug. 16, 1966, Ser. No. 5,567
Term of patent 14 years
(Cl. D22—23)



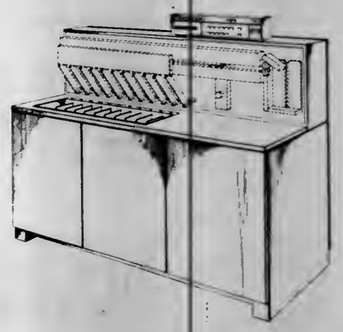
208,858
TOOL FOR MAGNETIZING AND DE-MAGNETIZING
Cloyd D. Smith, P.O. Box 338, Reno, Nev. 89101
Filed Aug. 29, 1966, Ser. No. 3,614
Term of patent 14 years
(Cl. D26—1)



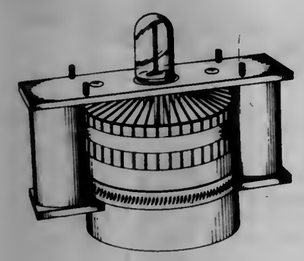
208,859
RACK ADAPTER
Lester Dubin, Pelham Manor, Maury Paulson, Huntington, and Benjamin Shmurak, Lynbrook, N.Y., assignors to Lambda Electronics Corporation, Huntington, N.Y., a corporation of New York
Filed Mar. 23, 1965, Ser. No. 84,417
Term of patent 14 years
(Cl. D26—5)



208,860
COMBINED READER AND SORTER FOR MAGNETIC INSCRIBED DOCUMENTS
Edward J. Sabella, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 30, 1966, Ser. No. 3,649
Term of patent 14 years
(Cl. D26—5)



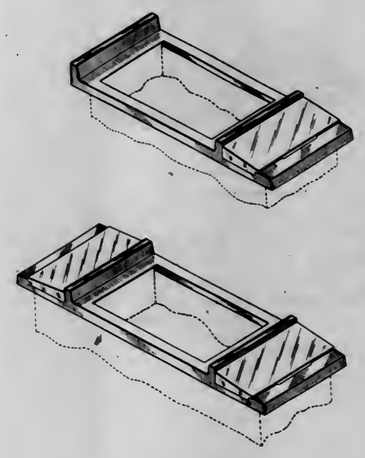
208,861
COMBINED ELECTRON DISCHARGE DEVICE AND FITTINGS THEREFOR
Benjamin V. Valles, San Jose, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 3,516
Term of patent 14 years
(Cl. D26—8)



208,862
ELECTRON DISCHARGE DEVICE
Benjamin V. Valles, San Jose, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 3,529
Term of patent 14 years
(Cl. D26—8)



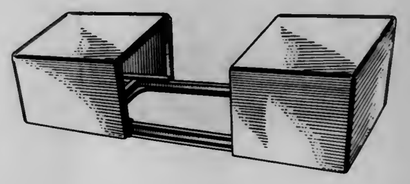
208,863
COMBINED ESCUTCHEON, INDICATOR LIGHT MEANS, AND BASE FOR AN ELECTRIC SWITCH OR SIMILAR ARTICLE
Harry J. Collins, Jr., Bayside, Alvin W. Krieger and Thomas J. Schimmels, Milwaukee, and Rudolph J. Santo, Mequon, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 86,389
Term of patent 14 years
(Cl. D26—13)



208,864
ELECTROMAGNETICALLY ACTUATED MINIATURE VACUUM RELAY
James William Roy, Saratoga, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 22, 1966, Ser. No. 4,816
Term of patent 14 years
(Cl. D26—13)



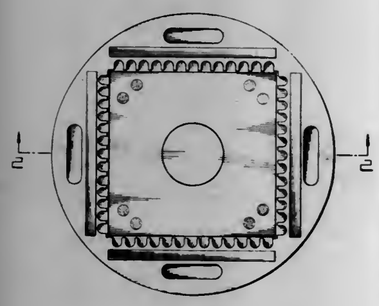
208,865
TABERNACLE
William R. Palmer, Jr., 290 Red Fox Road, Stamford, Conn. 06903
Filed Mar. 26, 1965, Ser. No. 84,452
Term of patent 14 years
(Cl. D29—23)



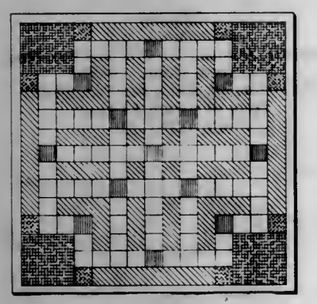
208,866
FIGURINE
Sam Bernardi, 5252 Corteen Place, North Hollywood, Calif. 90028
Filed May 27, 1966, Ser. No. 2,446
Term of patent 3½ years
(Cl. D29—23)



208,867
GAME BOARD
Henry J. Hebert, 926 Granby Road, Aldenville, Mass. 01001
Filed June 10, 1966, Ser. No. 2,636
Term of patent 14 years
(Cl. D34—5)



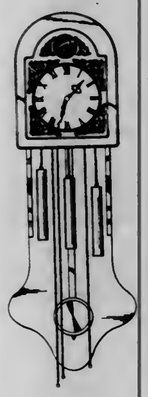
208,868
GAME BOARD
Francisco J. Gonzalez, San Luis Potosi, San Luis Potosi, Mexico
Filed Nov. 10, 1966, Ser. No. 4,616
Term of patent 7 years
(Cl. D34—5)



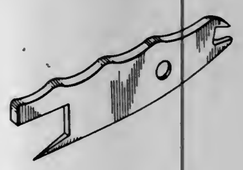
208,869
SLED
Robert P. Guastini, 11 Dell St., Coventry, R.I. 02816
Filed Dec. 19, 1966, Ser. No. 5,121
Term of patent 3½ years
(Cl. D34—15)



208,870
CLOCK
Robert E. Murray, 13962 Holt Ave., Santa Ana, Calif. 92705
Filed July 5, 1966, Ser. No. 2,920
Term of patent 3½ years
(Cl. D42—7)



208,871
COMBINED NUT PICKER AND SHELL CRACKER
Vincent G. Brunderman, 1725 N. 1st Ave., Melrose Park, Ill. 60160
Filed Jan. 25, 1967, Ser. No. 5,562
Term of patent 14 years
(Cl. D44—1)



208,872
CUP
Paul Davis, Beverly, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed May 23, 1966, Ser. No. 2,402
Term of patent 14 years
(Cl. D44—9)



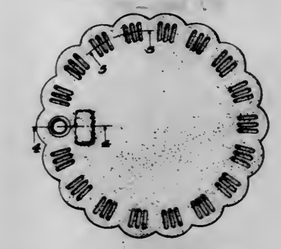
208,873
COMBINED TUMBLER AND SAVING BANK
Frank Skupien, 5443 S. Wolcott St., Chicago, Ill. 60609
Filed Nov. 3, 1966, Ser. No. 4,576
Term of patent 14 years
(Cl. D44—9)



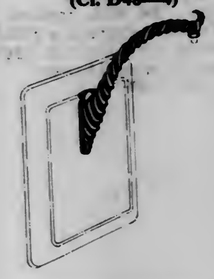
208,874
ICE CRACKER OR SIMILAR ARTICLE
Samuel D. Sacks, 1633 E. 4th St., Brooklyn, N.Y. 11230
Filed July 11, 1966, Ser. No. 3,012
Term of patent 14 years
(Cl. D44—29)



208,875
SCREW CAP OPENER
Victor G. Flegel, 248 W. Centralia, St., Elkhorn, Wis. 53121
Filed Dec. 5. 1966, Ser. No. 4,967
Term of patent 14 years
(Cl. D44—29)



208,876
BRACKET ARM FOR A LAMP
Henry J. Salvador, Long Beach, Calif., assignor to Eagle Manufacturing Co., City of Industry, Calif., a corporation of California
Filed Nov. 29, 1966, Ser. No. 4,849
Term of patent 14 years
(Cl. D48—4)



208,877
LIGHTING FIXTURE
Robert B. MacLeod, Jr., Marblehead, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 15, 1966, Ser. No. 3,084
Term of patent 14 years
(Cl. D48—20)



208,878
BASE FOR FLOODLIGHT OR SIMILAR ARTICLE
Roland A. Monbaron, Newington, Conn., assignor to Infranor S.A., Geneva, Switzerland, a corporation of Switzerland
Filed Mar. 8, 1967, Ser. No. 6,129
Term of patent 14 years
(Cl. D48—20)



208,879
VEHICLE LAMP
David Warwick Neale, Old Hill, England, assignor to Raydyot Limited, Old Hill, England, a British company
Filed Oct. 24, 1966, Ser. No. 4,387
Term of patent 14 years
(Cl. D48—32)



208,880
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 15, 1967, Ser. No. 5,818
Term of patent 14 years
(Cl. D54—12)



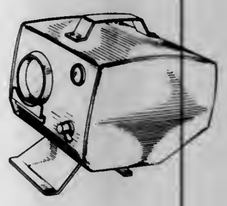
208,881
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 15, 1967, Ser. No. 5,819
Term of patent 14 years
(Cl. D54—12)



208,882
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 15, 1967, Ser. No. 5,820
Term of patent 14 years
(Cl. D54—12)



208,883
OPHTHALMOLOGICAL UNIT FOR PLEOPTIC TREATMENT
Ralph G. Ostensen, Morton Grove, Ill., assignor to Medical Products Corp., Skokie, Ill., a corporation of Illinois
Filed Feb. 7, 1966, Ser. No. 945
Term of patent 14 years
(Cl. D57—1)



208,884
COMBINED BOTTLE AND DISPENSING CUP
Bishop F. McLeod, Wantagh, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed May 5, 1965, Ser. No. 85,104
Term of patent 14 years
(Cl. D58—8)



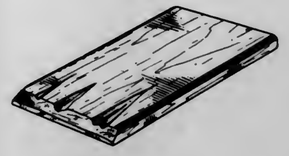
208,885
BOTTLE OR THE LIKE
Paul E. Roehrich, Rockville Centre, N.Y., assignor to Richford Corporation, Oceanside, N.Y., a corporation of New York
Filed May 19, 1966, Ser. No. 2,361
Term of patent 14 years
(Cl. D58—8)



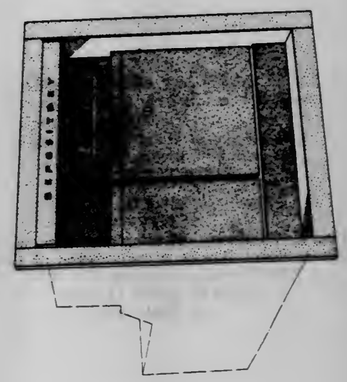
208,886
DISPENSER CAP FOR A PRESSURIZED CONTAINER
Robert P. Vuillemenot, Oradell, N.J., and Thomas B. Aldrich, New York, N.Y., assignors to The Procter & Gamble Company, Cincinnati, Ohio
Filed Nov. 21, 1966, Ser. No. 4,746
Term of patent 14 years
(Cl. D58—26)



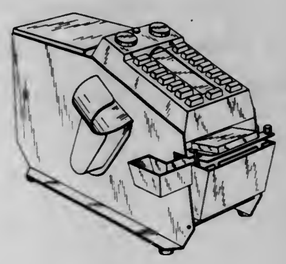
208,887
SHINGLE
Donald M. Gillis, Los Angeles, Calif. (7770 Hollywood Blvd., Hollywood, Calif. 90046)
Filed July 19, 1966, Ser. No. 3,131
Term of patent 14 years
(Cl. D68—1)



208,888
FRONT OF A NIGHT DEPOSITORY
George Payne, Bedford Hills, N.Y., assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Dec. 1, 1966, Ser. No. 4,882
Term of patent 14 years
(Cl. D69—1)



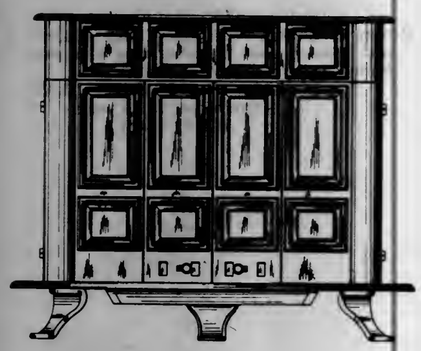
208,889
TAPE DISPENSER
Robert B. Baeker, Newtown, Conn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 17, 1966, Ser. No. 2,332
Term of patent 14 years
(Cl. D74—1)



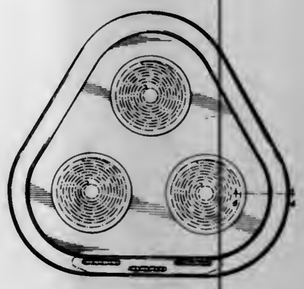
208,890
TIE HANGER
Walter H. Sorensen, Rte. 11, Box 160H, San Antonio, Tex. 78213
Filed Feb. 8, 1967, Ser. No. 5,723
Term of patent 14 years
(Cl. D80—8)



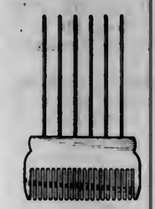
208,891
STOVE
Judkins E. Wilkinson, Birmingham, Ala., assignor to Atlanta Stove Works, a corporation of Georgia
Filed Dec. 2, 1966, Ser. No. 4,907
Term of patent 14 years
(Cl. D81—19)



208,892
COOKING UNIT
Harald Flanstrand, Pelham, N.Y., assignor to Homestrand Incorporated, Larchmont, N.Y., a corporation of New York
Filed Jan. 10, 1966, Ser. No. 560
Term of patent 14 years
(Cl. D81—25)



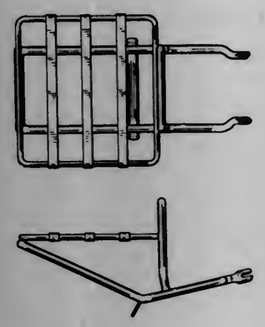
208,893
COMBINED HAIR LIFTER AND COMB
Daniel A. Mauro, 4657 Malden Drive, Wilmington, Del. 19803
Filed Sept. 20, 1966, Ser. No. 3,926
Term of patent 14 years
(Cl. D86—8)



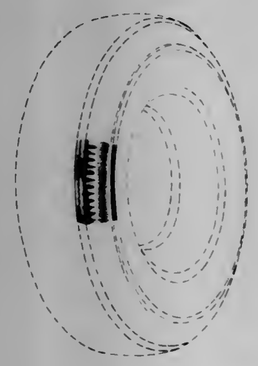
208,894
COMBINED BACK SCRATCHER AND SHOE HORN
Henry Wedermeyer, 1140 Broadway, New York, N.Y. 10001
Filed Mar. 1, 1967, Ser. No. 6,019
Term of patent 14 years
(Cl. D86—10)



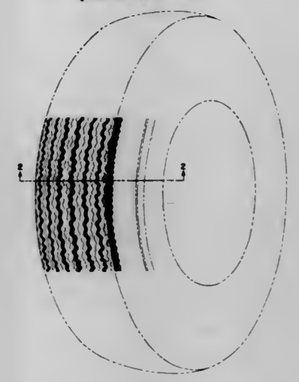
208,895
MOTORCYCLE LUGGAGE RACK
Aleksis Lahti, Ann Arbor, Mich., assignor to American Safety Equipment Corporation of Michigan, Southfield, Mich.
Filed Feb. 20, 1967, Ser. No. 5,883
Term of patent 14 years
(Cl. D90—3)



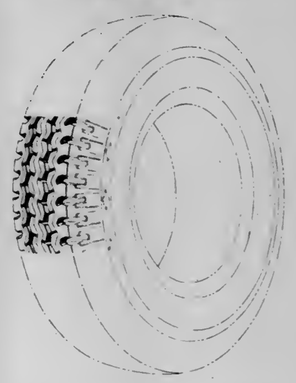
208,896
TIRE
Marco Maxemovich, Warren, Mich., assignor to Uniroyal, Inc., a corporation of New Jersey
Filed Apr. 29, 1966, Ser. No. 2,074
Term of patent 14 years
(Cl. D90—20)



208,897
TIRE
Bruce R. De Young, Akron, Thomas E. Dow, Tallmadge, and Gerald E. Gaskill, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 21, 1966, Ser. No. 3,944
Term of patent 14 years
(Cl. D90—20)



208,898
TIRE
Robert M. Allen, Brooklin Sao Paulo, Brazil, assignor to the Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 23, 1967, Ser. No. 6,359
Term of patent 14 years
(Cl. D90—20)



LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Aldrich, Thomas B.: *See*—
Vuillemenot, Robert P., and Aldrich. 208,886.

Allen, Robert M., to The Goodyear Tire & Rubber Co. Tire. 208,898, 10–10–67, Cl. D90—20.

American Safety Equipment Corp. of Michigan: *See*—
Lahti, Aleksis. 208,895.

Atlanta Stove Works: *See*—
Wilkinson, Judkins E. 208,891.

Baeker, Robert B., to Minnesota Mining and Mfg. Co. Tape dispenser. 208,889, 10–10–67, Cl. D74—1.

Bernardi, Sam. Figurine. 208,866, 10–10–67, Cl. D29—23.

Bratton, Oran D., to Mid-America Fabrication Co. Cart for carrying refuse receptacles. 208,854, 10–10–67, Cl. D14—3.

Brunderman, Vincent G. Combined nut picker and shell cracker. 208,871, 10–10–67, Cl. D44—1.

Collins, Harry J., Jr., A. W. Krieger, T. J. Schimmels, and R. J. Santo, to Cutler-Hammer, Inc. Combined escutcheon, indicator light means and base for an electric switch or similar article. 208,863, 10–10–67, Cl. D26—13.

Cutler-Hammer, Inc.: *See*—
Collins, Harry J., Jr., Krieger, Schimmels, and Santo. 208,863.

Davis, Paul, to Sweetheart Plastics, Inc. Cup. 208,872, 10–10–67, Cl. D44—9.

De Young, Bruce R., T. E. Dow, and G. E. Gaskill, to The Goodyear Tire & Rubber Co. Tire. 208,897, 10–10–67, Cl. D90—20.

Dow, Thomas E.: *See*—
De Young, Bruce R., Dow, and Gaskill. 208,897.

Dubin, Lester, M. Paulson, and B. Shmurak, to Lambda Electronics Corp. Rack adapter. 208,859, 10–10–67, Cl. D26—5.

Eagle Mfg. Co.: *See*—
Salvador, Henry J. 208,876.

Fiegel, Victor G. Screw cap opener. 208,875, 10–10–67, Cl. D44—29.

Finnstrand, Harald, to Homestrand Inc. Cooking unit. 208,892, 10–10–67, Cl. D81—25.

Gaskill, Gerald E.: *See*—
De Young, Bruce R., Dow, and Gaskill. 208,897.

Gillis, Donald M. Shingle. 208,887, 10–10–67, Cl. D68—1.

Gonsales, Francisco J. Game board. 208,868, 10–10–67, Cl. D34—5.

Goodyear Tire & Rubber Co., The: *See*—
Allen, Robert M. 208,898.
De Young, Bruce R., Dow, and Gaskill. 208,897.

Guastini, Robert P. Sled. 208,869, 10–10–67, Cl. D34—15.

Hauer, Erwin F. Architectural tile wall. 208,856, 10–10–67, D18—2.

Hebert, Henry J. Game board. 208,867, 10–10–67, Cl. D34—5.

Homestrand Inc.: *See*—
Finnstrand, Harald. 208,892.

Infranor S.A.: *See*—
Monbaron, Roland A. 208,878.

International Business Machines Corp.: *See*—
Sabella, Edward J. 208,860.

Jennings Radio Mfg. Corp.: *See*—
Roy, James W. 208,864.

Johnson, Robert T. Animal repellant. 208,855, 10–10–67, Cl. D6—1.

Keever, James D.: *See*—
Thorneburg, James L. and L. L., and Keever. 208,850.

Krieger, Alvin W.: *See*—
Collins, Harry J., Jr., Krieger, Schimmels, and Santo. 208,863.

Lahti, Aleksis, to American Safety Equipment Corp. of Michigan. Motorcycle luggage rack. 208,895, 10–10–67, Cl. D90—3.

Lambda Electronics Corp.: *See*—
Dubin, Lester, Paulson, and Shmurak. 208,859.

Lindberg, Albert W., Jr. Swimming pool vacuum cleaner head. 208,851, 10–10–67, Cl. D9—2.

Litton Precision Products, Inc.: *See*—
Valles, Benjamin V. 208,861.
Valles, Benjamin V. 208,862.

Macleod, Robert B., Jr. to Sylvania Electric Products, Inc. Lighting fixture. 208,877, 10–10–67, Cl. D48—20.

Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 208,880, 10–10–67, Cl. D54—12.

Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 208,881, 10–10–67, Cl. D54—12.

Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 208,882, 10–10–67, Cl. D54—12.

Mauro, Daniel A. Combined hair lifter and comb. 208,893, 10–10–67, Cl. D86—8.

Maxemovich, Marco, to Uniroyal, Inc. Tire. 208,896, 10–10–67, Cl. D90—20.

McLeod, Bishop F., to Schenley Industries, Inc. Combined bottle and dispensing cup. 208,884, 10–10–67, Cl. D58—8.

Medical Products Corp.: *See*—
Ostensen, Ralph G. 208,883.

Mid-America Fabrication Co.: *See*—
Bratton, Oran D. 208,854.

Minnesota Mining and Mfg. Co.: *See*—
Baeker, Robert B. 208,889.

Monbaron, Roland A., to Infranor S.A. Base for floodlight or similar article. 208,878, 10–10–67, Cl. D48—20.

Mosler Safe Co., The: *See*—
Payne, George. 208,888.

Murray, Robert E. Clock. 208,870, 10–10–67, Cl. D42—7.

Neale, David W., to Raydyot Ltd. Vehicle lamp. 208,879, 10–10–67, Cl. D48—32.

Oneida Ltd.: *See*—
Manderfield, Ellen B. 208,880.
Manderfield, Ellen B. 208,881.
Manderfield, Ellen B. 208,882.

Ostensen, Ralph G., to Medical Products Corp. Opthalmological unit for pleoptic treatment. 208,883, 10–10–67, Cl. D57—1.

Palmer, William R., Jr. Tabernacle. 208,865, 10–10–67, Cl. D29—23.

Paulson, Maury: *See*—
Dubin, Lester, Paulson, and Shmurak. 208,859.

Payne, George, to The Mosler Safe Co. Front of a night depository. 208,888, 10–10–67, Cl. D69—1.

Procter & Gamble Co., The: *See*—
Vuillemenot, Robert P., and Aldrich. 208,886.

Raydyot Ltd.: *See*—
Neale, David W. 208,879.

Richford Corp.: *See*—
Roehrich, Paul E. 208,885.

Roehrich, Paul E., to Richford Corp. Bottle or the like. 208,885, 10–10–67, Cl. D58—8.

Rood, Richard L. Trapezium building. 208,852, 10–10–67, Cl. D13—1.

Roy, James W., to Jennings Radio Mfg. Corp. Electromagnetically actuated miniature vacuum relay. 208,864, 10–10–67, Cl. D26—13.

Sabella, Edward J., to International Business Machines Corp. Combined reader and sorter for magnetic inscribed documents. 208,860, 10–10–67, Cl. D26—5.

Sacks, Samuel D. Ice cracker or similar article. 208,874, 10–10–67, Cl. D44—29.

Salvador, Henry J., to Eagle Mfg. Co. Bracket arm for a lamp. 208,876, 10–10–67, Cl. D48—4.

Santo, Rudolph J.: *See*—
Collins, Harry J., Jr., Krieger, Schimmels, and Santo. 208,863.

Schenley Industries, Inc.: *See*—
McLeod, Bishop F. 208,884.

Schimmels, Thomas J.: *See*—
Collins, Harry J., Jr., Krieger, Schimmels, and Santo. 208,863.

Shannon, Arthur M. Fishing rod handle. 208,857, 10–10–67, Cl. D22—23.

Shmurak, Benjamin: *See*—
Dubin, Lester, Paulson, and Shmurak. 208,859.

Skupien, Frank. Combined tumbler and savings bank. 208,873, 10–10–67, Cl. D44—9.

Smith, Cloyd D. Tool for magnetizing and de-magnetizing. 208,858, 10–10–67, Cl. D26—1.

Sorensen, Walter H. Tie hanger. 208,890, 10–10–67, Cl. D80—8.

Sweetheart Plastics, Inc.: *See*—
Davis, Paul. 208,872.

Sylvania Electric Products, Inc.: *See*—
Macleod, Robert B., Jr. 208,877.

Thorneburg Hosiery Mills, Inc.: *See*—
Thorneburg, James L. and L. L., and Keever. 208,850.

Thorneburg, James L. and L. L., and J. D. Keever, to Thorneburg Hosiery Mills, Inc. Sock. 208,850, 10–10–67, Cl. D2—330.

Thorneburg, Lewis L.: *See*—
Thorneburg, James L. and L. L., and Keever. 208,850.

Uniroyal, Inc.: *See*—
Maxemovich, Marco. 208,896.

Valles, Benjamin V., to Litton Precision Products, Inc. Combined electron discharge device and fittings therefor. 208,861, 10–10–67, Cl. D26—8.

Valles, Benjamin V., to Litton Precision Products, Inc. Electron discharge device. 208,862, 10–10–67, Cl. D26—8.

Von Heck, Robert. Motor vehicle. 208,853, 10–10–67, Cl. D14—3.

Vuillemenot, Robert P., and T. B. Aldrich, to The Procter & Gamble Co. Dispenser cap for a pressurized container. 208,886, 10–10–67, Cl. D58—26.

Wedermeyer, Henry. Combined back scratcher and shoe horn. 208,894, 10–10–67, Cl. D86—10.

Wilkinson, Judkins E., to Atlanta Stove Works. Stove. 208,891, 10–10–67, Cl. D81—19.

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NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ABW Mfg. Co., Inc.: *See*—
Wesley, Richard H. 3,346,303.

ACF Industries, Inc.: *See*—
Bollins, Dallas W. 3,346,224.

AGA Aktiebolag: *See*—
Johannisson, Dag O. A. 3,346,011.

AMP Inc.: *See*—
Cobaugh, Robert F., May, and Ritter. 3,345,692.
Kinkald, Robert J. 3,346,834.
Werner, Walter N., and Hays. 3,345,856.

Ace Finishing Co., Inc.: *See*—
Lusebrink, Elmer H., and Meyer. 3,345,767.

Ackerman, James H.: *See*—
Siggins, James E., and Ackerman. 3,346,620.

Ackerman, Stanley C., to General Electric Co. Incandescent lamp with a tungsten filament with tantalum imbedded in the surface to act as a gettering agent. 3,346,761, 10–10–67, Cl. 313—180.

Acloque, Paul H., to Compagnie de Saint-Gobain. Apparatus for measuring phase differences in polarized light. 3,345,-905, 10–10–67, Cl. 88—14.

Acton, Hugh C., to Brunswick Corp. Wall wardrobe. 3,346,-314, 10–10–67, Cl. 312—245.

Adamczyk, Jan, to Firth Cleveland Ltd. Step climbing wheel carriage. 3,34,270, 10–10–67, Cl. 280—5.28.

Addressograph Multigraph Corp.: *See*—
Porter, Ralph B., and Maul. 3,345,940.

Admiral Corp.: *See*—
Kolomayets, George, and Bury. 3,346,261.

Agett, Albert H., and P. Gallagher, to Eastman Kodak Co. Machine and method for controlling the circumference of paper wrapped cigarette filter rods. 3,345,917, 10–10–67, Cl. 93—1.

Agfa Aktiengesellschaft: *See*—
Muller, Herbert, Grabhofer, Ulrich, and Posse. 3,346,386.
Von Konig, Anita, and Wolf. 3,346,382.

Agnon, Shmuel, to The State of Israel, Ministry of Defence. Gas flow control louvres. 3,346,007, 10–10–67, Cl. 137—512.1.

Ainsworth, Geoffrey D.: *See*—
Prince, Michael J., and Ainsworth. 3,346,459.

Air Products and Chemicals, Inc.: *See*—
Harding, William A., and Shalit. 3,346,349.
Klee, David J., and Berreth. 3,345,828.

Ajinomoto Co., Inc.: *See*—
Takeda, Yoshifumi, Okuda, and Sakural. 3,346,326.

Akashi, Tsuneo, M. Takahashi, F. Yamauchi, N. Tsubouchi, and T. Ohno, to Nippon Electric Co., ltd. Lead zirconite-titanate-stannate piezoelectric ceramic containing thorium and iridium. 3,346,49, 10–10–67, Cl. 252—62.9.

Akron Standard Mold Co., The: *See*—
Fulton, Samuel R. 3 346,434.

Akustische u. Kino-Gerate Gesellschaft, G.m.b.H.: *See*—
Cech, Karl. 3,346,222.

Aldenhoff, Bernard J., to Harnischfeger Corp. Polyphase rectifier circuit having means to vary the output voltage. 3,346,799, 10–10–67, Cl. 321—18.

Allegretti, Albert J. Lawn edger. 3,346,053, 10–10–67, Cl. 172—18.

Allen, Herbert, to Cameron Iron Works, Inc. Valve. 3,346,234, 10–10–67, Cl. 251—174.

Allen, Lloyd R., to National Research Corp. Method of making long length superconductors. 3,346,467, 10–10–67, Cl. 204—37.

Allied Chemical Corp.: *See*—
Gilbert, Everett E., and Veldhuis. 3,346,448.
Skreckoski, Gerald R. 3,346,524.
Spatz, Sydney M., and Steiner. 3,346,571.

Allis-Chalmers Mfg. Co.: *See*—
Baude, John. 3,346,797.
Murdock, Henry T., and Ringel. 3,345,740.
Perry, Elijah R., and Ransom. 3,346,811.

Allured, Robert B., A. S. Strzelewicz, and M. Woods, to General Motors Corp. Commutator pulse counting apparatus. 3,346,725, 10–10–67, Cl. 235—92.

Alsco, Inc.: *See*—
Brand, Eugene L. 3,345,778.

Aluminium Laboratories Ltd.: *See*—
Braunwarth, Victor A., Nickle, and Phillips. 3,346,368.

Alves Photo Service, Inc.: *See*—
Lee, Richard G. 3,345,911.

Alwitt, Robert S., and S. D. Ross, to Sprague Electric Co. Electrolytic capacitor. 3,346,782, 10–10–67, Cl. 317—230.

Amagasa, Masataka, and T. Yamaguchi, to Chiyoda Kakoken-setsu Kabushiki Kaisha. Process for the production of polyalkylcyclohexenes and polyalkylbenzenes. 3,346,654, 10–10–67, Cl. 260—666.

Amce Bulletin & Directory Board Corp.: *See*—
Timlin, George A. 3,345,766.

Amchem Products, Inc.: *See*—
Gardner, George S., and Saukaitis. 3,346,404.

Ameliotex, Inc.: *See*—
Peters, Timothy V. 3,346,529.

American Cyanamid Co.: *See*—
Magrane, John K. 3,346,432.
Roberts, George L., Jr., and Fessler. 3,346,604.

American Excelsior Corp.: *See*—
Roesner, Donald B. 3,346,400.

American Home Products Corp.: *See*—
Lefebvre, Yvon, and Morand. 3,346,603.

American Instrument Co., Inc.: *See*—
Miller, C. David. 3,346,342.

American Machine & Foundry Co.: *See*—
Wood, Fenton M., Crouch, and Walters. 3,346,807.

American Maize-Products Co.: *See*—
Evans, James W., and McWilliams. 3,346,389.

American Optical Co.: *See*—
Berkovits, Barough V. 3,345,990.

American Synthetic Rubber Corp.: *See*—
Boyer, Thomas W., Chang, and Ries. 3,346,631.

American Thermolectric Corp.: *See*—
Milton, Gary R. 3,346,722.

Ammco Tools, Inc.: *See*—
Kuderko, Ronald A. 3,345,884.

Ammons, Walter D. Air grill including a wooden frame. 3,345,930, 10–10–67, Cl. 98—114.

Ampex Corp.: *See*—
Swyryd, Miroslav. 3,346,821.

Amra, Lutfi H., to General Electric Co. Columbium-base alloys. 3,346,380, 10–10–67, Cl. 75—174.

Amsted Laboratories Ltd.: *See*—
Polanin, Walter R. 3,346,080.

Amstutz, Edward D., F. P. Palopoli, C. H. Tilford, and R. F. Shuman, to Richardson-Merrell, Inc. N,β-disubstituted-α-phenethylamines. 3,346,583, 10–10–67, Cl. 260—296.

Anchor Hocking Glass Corp.: *See*—
McCarthy, Daniel N. 3,346,410.

Anderberg, A. W., Mfg. Co.: *See*—
Anderberg, Axel W., and Taylor. 3,345,777.

Anderberg, Axel W., and G. A. Taylor, to A. W. Anderberg Mfg. Co. Supporting bracket for windows. 3,345,777, 10–10–67, Cl. 49—248.

Anderson, Harold C., and A. E. Shanheltzer, to Litton Systems, Inc. Converter using spin resonant material. 3,346,-813, 10–10–67, Cl. 325—448.

Anderson, Harold P., F. J. McMahon, G. A. Scharg, and H. Winter, to Bell Telephone Laboratories, Inc. Private branch exchange automatic number identification system. 3,346,-700 10–10–67, Cl. 179—27.

Anderson, John A., Jr., to Symington Wayne Corp. Fluid-operated ramp having automatic lip. 3,345,665, 10–10–67, Cl. 14—71.

Anderson, Lloyd R. Non-loosening hinge. 3,345,679, 10–10–67, Cl. 16—128.

Anderson, Ralph F. Method and apparatus for packaging bars of plastic material. 3,345,795, 10–10–67, Cl. 53—23.

Anderson, Ralph F., to National Lock Co. Positive-holding spring latches. 3,346,289, 10–10–67, Cl. 292—175.

Anderson, Robert C., and V. S. Barton, to Johns-Manville Corp. Apparatus for the manufacture of fibrous material. 3,346,356, 10–10–67, Cl. 65—14.

Anderson, Roy H., and D. J. Lemery, to Globe Industries, Ltd. Saw chain. 3,346,025, 10–10–67, Cl. 143—135.

Andrea, Christo, to Diamond Power Specialty Corp. Liquid level gauge. 3,345,871, 10–10–67, Cl. 73—331.

Andrews, Frederick P., and S. F. Reed. Tea packet. 3,346,388, 10–10–67, Cl. 99—77.1.

Andrews, Frederick R.: *See*—
Grant, James N., Honold, Andrews, Brown, and Shepard. 3,345,878.

Aniano, John B. J., and W. O. Yaeger, to The Bendix Corp. Alternating current signal level detector. 3,346,742, 10–10–67, Cl. 307—88.5.

Ankeny, Claude C., to Sparton Corp. High resolution pressure transducer. 3,346,830, 10–10–67, Cl. 338—40.

Ann Arbor Trust Co.: *See*—
Hickman, Charles E., and Goldsmith. 3,345,726.

Anner, Georg: *See*—
Wettstein, Albert, Anner, Heusler, Kalvoda, Ueberwasser, and Heer. 3,346,569.
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,346,601.

Anner, Georg, and P. Wieland, to Ciba Corp. Process for the isolation of 7α-methyl-steroids from mixtures of the epimeric 7-methyl compounds. 3,346,570, 10–10–67, Cl. 260—239.55.

Anton, Ernst, to Badische-Anilin- & Soda-Fabrik Aktiengesellschaft. Crystalline modifications of perylene-3.4,9,10-tetra carboxylic acid bis-(4-phenylazo)-phenylimide. 3,346,551, 10–10–67, Cl. 260—152.

Antonsen, Donald H., to Sun Oil Co. Preparation of linear internal olefins. 3,346,662, 10–10–67, Cl. 260—683.15.

Aoki, Katashi. Injection molding machine. 3,345,691, 10–10–67, Cl. 18—30.

Appalachian Electronic Instruments, Inc.: *See*—
Fertig, Raymond B., and Nickell. 3,345,886.
Nickell, Lawrence C., and Fertig. 3,345,885.

Appleton, Arthur I. Explosion-proof plug and receptacle with releasable socket engaging means. 3,346,709, 10–10–67, Cl. 200—51.9.

Applied Research Laboratories, Inc.: *See*—
Neuhaus, Hermann. 3,346,736.
Neuhaus, Hermann. 3,346,787.

Aquatain Co., Inc.: *See*—
Van Leuven, James W. 3,346,407.

Arbusov, Boris A., M. A. Sokolovsky, P. M. Zavlin, and G. M. Vinokurova, to Institute Organicheskoi Khimii. Method of production of phosphorus containing polyamides. 3,346,543, 10–10–67, Cl. 260—78.

Arenco Aktiebolag: *See*—
Carlson, Arne, and Sandberg. 3,345,894.
Sjöberg, Goran R. 3,346,093.

Arey, William F., Jr. and R. B. Mason, to Esso Research and Engineering Co. Hydrocracking heavy hydrocarbon oils. 3,346,482, 10–10–67, Cl. 208—111.

Argabright, Perry A.: *See*—
Michael, James R., Leary, Argabright, and Passaannante. 3,346,599.

Argus Chemical Corp.: *See*—
Kauder, Otto S., and Perry. 3,346,536.

Armour and Co.: *See*—
Malec, Robert E., and Ludwig. 3,346,495.

Armstrong, Claud C., Jr. Gasket mountable upon drum head bead. 3,346,189, 10–10–67, Cl. 220—46.

Armstrong, David T. Method of furniture construction. 3,345,-720, 10–10–67, Cl. 29—91.1.

Armstrong, John N., to National Research Development Corp. Toric race transmission units. 3,345,882, 10–10–67, Cl. 74—200.

Armstrong, Richard L.: *See*—
Russell, Fred J., Armstrong, and Falk. 3,345,838.

Arps Corp.: *See*—
Arps, Jan J. 3,345,867.

Arps, Jan J., to Arps Corp. Method and apparatus for measuring rock bit wear while drilling. 3,345,867, 10–10–67, Cl. 78—151.

Artisan Industries, Inc.: *See*—
Donovan, James, and Mendelsohn. 3,346,034.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Nasu, Noriyuki, Yamazaki, Shinozaki, and Yonekura. 3,345,879.

Ashby, Bruce A., to General Electric Co. Silicon-substituted pyrroles. 3,346,588, 10–10–67, Cl. 260—326.61.

Ashland Oil & Refining Co.: *See*—
Bills, Charles T., and Yurcick. 3,346,534.

Aspy, William L., Jr., to Eastman Kodak Co. Apparatus for banding filamentary tow. 3,345 697, 10–10–67, Cl. 19—66.

Associated Baby Services, Inc.: *See*—
Mele, Sidney C. 3,346,140.

Associated Electrical Industries Ltd.: *See*—
Scott, William J., and Howard. 3,346,825.

Astle-Fletcher, Marcus W.: *See*—
Starkie, David, and Astle-Fletcher. 3,345,815.

Atkins, Doris I.: *See*—
Jennings, William O., Robinson, Atkins, and Geoffrey. 3,345,886.

Atkins, William F.: *See*—
Jennings, William O., Robinson, Atkins, and Geoffrey. 3,345,886.

Atlantic Richfield Co.: *See*—
Woods, John P., Riggs, and Dransfield. 3,346,068.

Avant Inc.: *See*—
Kitrosser, Samuel 3,345,924.

Avey, Spencer E., to TRW Inc. DC energized constant speed drive for an AC motor. 3,346,796, 10–10–67, Cl. 318—341.

Ayad, Kamal N., and A. J. Neale, to Monsanto Co. Vulcanization accelerators. 3,346,544, 10–10–67, Cl. 260—79.5.

Ayers, Earl D.: *See*—
Karle, Franklin J., and Ayers. 3,346,735.

Baak, Nils T. E. A., to Owens-Illinois, Inc. Process for bonding devitrified surfaces. 3,346,357, 10–10–67, Cl. 65—33.

Babcock & Wilcox Co.: *See*—
Edgecombe, David A., and Wudski. 3,345,853.

Bader, George, to General Cable Corp. Apparatus including capacitance means for measuring ionization in high voltage cable under conditions of heavy external interference. 3,346,808, 10–10–67, Cl. 324—54.

Bader, George, and G. S. Eager, Jr., to General Cable Corp. Cable insulation test apparatus including a fluid containing cylindrical test bushing having a plurality of electrodes and condenser stacks positioned along a pair of insulating tubes connecting the electrodes. 3 346,809, 10–10–67, Cl. 324—54.

Badische-Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Anton, Ernst. 3,346,551.
Bille Heins, Distler, Dittus, Mueller, and Ruettiger. 3,346,325.
Debnert, Johannes. 3,346,585.
Finkenauer, Helmut, Seibert, Kohl, Luecke, and Schubert. 3 346,322.
Metzger, Horst, and Pape. 3,346,618.
Steinbrunn, Gustav, and Fischer. 3 346,576.
Von Kutepow, Nikolaus, Seibt, and Meier. 3,346,608.
Windel, Hermann, and Pommer. 3,346,605.

Bailey, David Z. Hydrofoil. 3,345,968, 10–10–67, Cl. 114—66.5.

Bailey, Ervin G., to Bailey Inventions, Inc. Shrouded fuel blast furnace operation. 3,346,367, 10–10–67, Cl. 75—42.

Bailey, Ervin G., to Bailey Inventions, Inc. Vertical kiln operation using shrouded fuel. 3,346,671, 10–10–67, Cl. 263—53.

Bailey, Ervin G., to Bailey Inventions, Inc. Method for heating solid inorganic material. 3,346,672, 10–10–67, Cl. 263—53.

Bailey, Frank G. Matrices for use in contouring workpieces. 3,345,662, 10–10–67, Cl. 12—142.

Bailey Inventions, Inc.: *See*—
Bailey, Ervin G. 3,346,367.
Bailey, Ervin G. 3,346,671.
Bailey, Ervin G. 3,346,672.

Baird-Atomic, Inc.: *See*—
Billings, Bruce H. 3,346,319.

Baker, H. Keats: *See*—
Yunt, Fred W., and Baker. 3,345,889.

Baker, James A., to Cornell Research Foundation, Inc. Immunizing pigs against hog cholera with selected strains of live virus diarrhea virus and preparation of virus diarrhea virus hyper-immune hog cholera serum. 3,346,456, 10–10–67, Cl. 167—80.

Baker, Sanford H., and U. C. Holschen, to MAC Valves, Inc. Solenoid with detent means. 3,346,827, 10–10–67, Cl. 335—253.

Baker, Theodore C. Combined paperboard and plastic egg carton. 3,346,171, 10–10–67, Cl. 229—44.

Baldi, Alfonso L., Jr.: *See*—
Schuster, Ludwig K., and Baldi. 3,346,522.

Baldwin, William M., Jr., R. E. Cairns, Jr., H. G. Marsh, and R. E. Wilson, to E. I. du Pont de Nemours and Co. Dispersion hardened metal sheet and process. 3,346,427, 10–10–67, Cl. 148—11.5.

Bally, Alexander O., to Corning Glass Works. Filter and method for its production. 3,346,121, 10–10–67, Cl. 210—498.

Bannister, Brian, and H. Hoeksema, to The Upjohn Co. Mercaptals of 6-amino-6,8-dideoxy-D-erythro-D-galacto-aldehydo-octose and N-acyl derivatives. 3,346,635, 10–10–67, Cl. 260—558.

Baran, John S., to G. D. Searle & Co. 13β-alkyl-11-alkylgona-1,3,5(10)-trien-17-ones, ethers and esters thereof. 3,346,-602, 10–10–67, Cl. 260—397.45.

Barat, Sisir K., to Council of Scientific and Industries Research. Processing of raw intestines. 3,346,401, 10–10–67, Cl. 99—175.

Barclay, John L., and E. J. Gasson, to The Distillers Co., Ltd. Production of conjugated dioleflnes. 3,346,659, 10–10–67, Cl. 260—680.

Barker, Robert S., to Halcon International, Inc. Production of cyclohexylamine. 3,346,636, 10–10–67, Cl. 260—563.

Barkow, William H., to Radio Corp. of America. Raster distortion correction. 3,346,765, 10–10–67, Cl. 315—27.

Barnes, Lawrence M. Padlock. 3,345,837, 10–10–67, Cl. 70—52.

Baron, Alfred M., to Brass Craft Mfg. Co. Insulated union coupling. 3,346,274, 10–10–67, Cl. 285—52.

Barrasso, Edward J.: *See*—
Nightingale, Eugene R., Jr., and Barrasso. 3,346,332.

Barrows Industries, Inc.: *See*—
Fontaine, Ludger A. 3,345,830.

Barry-Wehmiller Co.: *See*—
Vamvakas, Michael. 3,346,094.

Bartelt Engineering Co., Inc.: *See*—
Berrt, Carl J. 3,346,254.

Bartoo, Vance S.: *See*—
Anderson, Robert C., and Bartoo. 3,346,356.

Barsee, Verl N., and J. J. Harapat. Drafting table apparatus. 3,345,751, 10–10–67, Cl. 33—78.

Bassett, Arthur T., Jr., to General Motors Corp. Radiant heater with improved seal assembly. 3,346,721, 10–10–67, Cl. 219—465.

Batchelder, Charles F., and J. A. Rubico, to Batchelder-Rubico, Inc. Process for making shoe having cross-linked rand insole. 3 345,663, 10–10–67, Cl. 12—142.

Batchelder-Rubico, Inc.: *See*—
Batchelder, Charles F., and Rubico. 3,345,663.

Bates Industries, Inc.: *See*—
Jones, Paul R. 3,346,156.

Bath Iron Works Corp.: *See*—
Danyluke, Ostap. 3,346,203.

Battson, Donald F., to Radio Corp. of America. Electron multiplier dynode having an aperture of reduced secondary emission. 3,346,752, 10–10–67, Cl. 313—68.

Baude, John, to Allis-Chalmers Mfg. Co. Static relay control circuit. 3 346,797. 10–10–67, Cl. 320—1.

Baxendale, Ralph W., G. W. Luckey, and H. C. Yutzy, to Eastman Kodak Co. Image reproduction processes utilising photopolymerisation of vinyl monomer compositions comprising a metallic sulfide compound. 3,346,383, 10–10–67, Cl. 96—35.1.

Beach, Frank J.: *See*—
Koster, Robert A., Beach, and Bryan. 3,346,853.

Beach, Leland K., J. B. Gardiner, and R. P. Rhodes, to Esso Research and Engineering Co. High energy propellant binders. 3,346,546, 10–10–67, Cl. 260—94.7.

Bearman, Sumner D., to Space Ad Co. Selectively engageable and disengageable fastener means. 3,345,709, 10–10–67, Cl. 24—208.

Bears, Waldo W. Desk construction. 3,346,311, 10–10–67, Cl. 312—195.

Beatty, Stephen W.: *See*—
Lutz, Eugene F., and Beatty. 3,346,653.

Beaudouin, Jacques R., to International Telephone and Telegraph Corp. Hidden emitter switching device. 3,346,785, 10–10–67, Cl. 317—234.

Bechtel, Robert B., to Environmental Research Foundation. Method and apparatus for performing a hodometer floor use study. 3.346,866, 10–10–67, Cl. 346—1.

Beck, Rudolf, to Kalle Aktiengesellschaft. Apparatus for forming containers from synthetic plastic films. 3,346,435, 10–10–67, Cl. 156—423.

Becker, Ernst: *See*—
Sack, Ernst T., and Becker. 3,345,850.

Becker, Herbert J.: *See*—
McMahon, Robert D., Becker, and Wright. 3,346,429.

Beckman Instruments, Inc.: *See*—
Fowler, Leslie E. 3,346,871.
Sternberg, James C. 3,346,341.

Belasco, Melvin, to Texas Instruments Inc. Gallium arsenide transistor and methods of making same. 3,346,788, 10–10–67, Cl. 317—237.

Bell Telephone Laboratories, Inc.: *See*—
Anderson, Harold P., McMahon, Scharg, and Winter. 3,346,700.
Bishop, John D. 3,346,855.
Borenstein, David P., and Meacham. 3,346,820.
Brady, Paul T. 3,346,694.
Ellis, William C., Pfann, and Wagner. 3,346,414.
Gordon, Alan M. 3,346,746.
Harris, William B. 3,346,745.
Jakes, William C., Jr. 3,346,824.
Kitsopoulos, Sotirios C. 3,346,697.
Levinstein, Hyman J., and Nassau. 3,346,344.
Schroeder, Manfred R. 3,346,067.

Bell, William T., to Schlumberger Technology Corp. Well bore perforating apparatus. 3,346,057, 10–10–67, Cl. 175—4.52.

Beloit Corp.: *See*—
Cronin, Dennis C. 3,346,209.
Daane, Robert A. 3,345,757.

Beloit Eastern Corp.: *See*—
Patterson, Henry R., Jr. 3,345,895.

Belsinger, Inc.: *See*—
Belsinger, Samuel P. 3,345,796.

Belsinger, Samuel P., to Belsinger, Inc. Method of packaging a compressible material in a compressible carton. 3,345,796, 10–10–67, Cl. 53—24.

Bender, Emil A. Deep well pumping apparatus. 3,345,950, 10–10–67, Cl. 103—206.

Bendix Corp., The: *See*—
Aniano, John B. J., and Yaeger. 3,346,742.
Brook, James E. 3,346,791.

Bennett, Edward D., to Minnie Punch & Die Co., Inc. Punching die set. 3,345,896, 10–10–67, Cl. 83—128.

Berg Electronics, Inc.: *See*—
De Shong, George T. 3,346,162.

Berger, Carl, to Douglas Aircraft Co., Inc. Method of making inorganic permselective membranes. 3,346,422, 10–10–67, Cl. 136—148.

Berkeley, John P., to Harnischfeger Corp. Reel pay-off stand. 3,346,214, 10–10–67, Cl. 242—156.1.

Berkovits, Barough V., to American Optical Co. Heart-beat pacing apparatus. 3,345,990, 10–10–67, Cl. 128—419.

Berkowitz, Leonard: *See*—
Strickland, Barney R., and Berkowitz. 3,346,353.

Berman, Sanford, and E. L. Wright, to Customline Control Products, Inc. Fluid pickup and delivery head. 3,346,024, 10–10–67, Cl. 141—25.

Bernheim, Willy, H. Enders, and H. Deiner, to Chemische Fabrik Pfersee, G.m.b.H. Fungicides and a process for producing them. 3,346,575, 10–10–67, Cl. 260—249.6.

Bernstein, Jack: *See*—
Langlykke, Asger F., Bernstein, and La Via. 3,346,578.
Sheehan, John T., and Bernstein. 3,346,579.

Berreth, Raymond L.: *See*—
Klee, David J., and Berreth. 3,345,828.

Berrt, Carl J., to Bartelt Engineering Co., Inc. Apparatus for removing packets from a stack. 3,346,254, 10–10–67, Cl. 271—41.

Bertin, Jean H., to Societe Bertin & Cie. Gaseous cushion sustained vehicle and the like. 3,346,063, 10–10–67, Cl. 180—7.

Bess, Cornelius G. Jet air idle screw. 3,346,244, 10–10–67, Cl. 261—41.

Beumel, Oscar F., Jr., to Foote Mineral Co. Hydrogen-generating composition and use. 3,346,506, 10–10–67, Cl. 252—188.

Beuyukian, Charles S.: *See*—
Webb, James E. 3,345,840.

Beyer, Leaman R. Rotary-air-percussion, stabilizer and reamer drill bit of its own true gauge. 3,346,060, 10–10–67, Cl. 175—410.

Biagini, Henry G.: *See*—
Henry, Elliott A., and Biagini. 3,345,863.

Biber, Albert, and B. R. Walsh, to Gulf Research & Development Co. Apparatus for atomizing oil. 3,346,196, 10–10–67, Cl. 239—404.

Biehl, Arthur T., and R. Meinhardt, to MB Associates. Method of manufacturing a miniature rocket. 3,345,902, 10–10–67, Cl. 86—1.

Biet, Jean P., to Compagnie Generale d'Electricite. Control and regulation device including a semiconductor of symmetrical blocking-unblocking type. 3,346,802, 10–10–67, Cl. 323—4.

Biggers, Howard O.: *See*—
Bussella, Robert W., and Biggers. 3,345,786.

Bigiel, Max: *See*—
Wiesnagrotzki, Ernst, Bigiel, and Muller. 3,345,810.

Billarant, Jean, Machine for producing separable fastening elements. 3,345,688, 10–10–67, Cl. 18—5.

Bille, Heinz, H. Distler, G. Dittus, W. Mueller, and W. Ruettiger, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Modification of cellulose with letra-sulfatoesters of disulfonium salts. 3,346,325, 10–10–67, Cl. 8—120.

Billings, Bruce H., to Baird-Atomic, Inc. Electro-optic valve with polarizing beam splitter and reinforcement. 3,346,319, 10–10–67, Cl. 350—150.

Bills, Charles T., and P. A. Yurcick, to Ashland Oil & Refining Co. Resinous foundry core binder. 3,346,534, 10–10–67, Cl. 260—39.

Billson, Frederick W., to Sanders Valve Co. Ltd. Seating ring for valves for the control of fluids. 3,346,233, 10–10–67, Cl. 251—172.

Binding, Kenneth W., to Market Forge Co. Ski boot fastening. 3,345,704, 10–10–67, Cl. 24—70.

Bingham, Sidney H. Guideway for high-speed mass transportation systems. 3,345,952, 10–10–67, Cl. 104—124.

Bird, Walter W., Birdair Structures Inc. Air inflated structures. 3,346,441, 10–10–67, Cl. 161—36.

Birdair Structures Inc.: *See*—
Bird, Walter W. 3,346,441.

Birdsall, Charles K., to The Regents of the University of California. Two-stream cyclotron wave amplifier. 3,346,819, 10–10–67, Cl. 330—44.

Bishop, John D., to Bell Telephone Laboratories, Inc. Circuit for monitoring the state of a relay. 3,346,855, 10–10–67, Cl. 340—248.

Bishop, Richard M. Deer dragging harness kit. 3,346,154, 10–10–67, Cl. 224—5.

Bittel, Karl, to Veb Zentrale Entwicklung und Konstruktion sek Hydraulik. Liquid spring. 3,346,251, 10–10–67, Cl. 267—1.

Blake, Edward S.: *See*—
Dalton, David R., De Brunner, and Blake. 3,346,668.

Blake, Robert W., to General Electric Co. Miniature rectifier and method of manufacture. 3,346,784, 10–10–67, Cl. 317—234.

Blakely Products Co.: *See*—
Tatum, Roy E. 3,345,789.

Blakeway, John M., and P. Marshall, to Colgate-Palmolive Co. Sulphonation of organic compounds. 3,346,505, 10–10–67, Cl. 252—161.

Blank, Edward, to Tobe Deutschmann Laboratories. Low inductance high voltage capacitor. 3,346,790, 10–10–67, Cl. 317—261.

Blatt, Rudolph W., and C. F. Froberger, to General Motors Corp. Electrical discharge machining dielectric coolant. 3,346,713, 10–10–67, Cl. 219—69.

Blatter, Herbert M.: *See*—
Carney, Richard W. J., and Blatter. 3,346,452.

Blau, Theodore N., and E. J. Davis, to Johns-Manville Corp. High temperature thermal insulation. 3,346,016, 10–10–67, Cl. 138—138.

Blevins, Kenneth A., to Sirco Mfg., Inc. Multiple use table. 3,345,958, 10–10–67, Cl. 108—13.

Bloom, Milton, and R. Blum. Adjustable rack shelving. 3,346,126, 10–10–67, Cl. 211—176.

Bloomberg, Allan E. Lamp-support assembly. 3,346,734, 10–10–67, Cl. 240—53.

Blue, John, Co., Inc.: *See*—
Horton, Donelson B. 3,346,006.

Blum, Josef, to Gunter Leifheit and Ingeborg Leifheit. Cleaning apparatus, particularly for floors. 3,345,667, 10–10–67, Cl. 15—119.

Blum, Rubin: *See*—
Bloom, Milton, and Blum. 3,346,126.

Boatright, Jean R., and J. L. Streckfuss. Listeria-containing vaccine. 3,346,455, 10–10–67, Cl. 167—78.

Bochan, John, to General Electric Co. Spring clutch. 3,346,083, 10–10–67, Cl. 192—81.

Bock, Willy, E. Mutschler, and K.-H. Theurer, to SWF Spezialfabrik Fur Authozubehor Gustav Rau G.m.b.H. Multi-position electrical switch with improved guide rail and movable contact structure. 3,346,707, 10–10–67, Cl. 200—8.

Boehmer, Matthew A., to Wyandotte Chemicals Corp. Non-inflammable hydraulic fluid. 3,346,501, 10–10–67, Cl. 252—73.

Boehmer, Robert B.: *See*—
Hubbard, David C., Harper, Lynch, and Boehmer. 3,346,236.

Boenisch, Dietmar. Apparatus for measurement of physical characteristics of solid bodies. 3,345,880, 10–10–67, Cl. 73—432.

Boggs, LeRoy R., to Universal Moulded Fiber Glass Corp. System for preparing and delivering liquid resin. 3,345,999, 10–10–67, Cl. 137—205.

Bohn, F. O., to Dresser Industries, Inc. Hollow carrier gun. 3,346,056, 10–10–67, Cl. 175—4.6.

Bollman, John A., A. A. Gates, and H. C. Voss, assors. of ¼ to said J. A. Bollman, ¼ to M. H. Rechnitz, and ¾ to R. J. Martin. Stamp affixing machine. 3,346,439, 10–10–67, Cl. 156—522.

Bollman, John A.: *See*—
Bollman, John A., Gates, and Voss. 3,346,439.

Bondroit, Fritz, to Goetzewerke Friedrich Goets A.-G. Sealing means for flanges, especially for cylinder heads. 3,346,266, 10–10–67, Cl. 277—153.

Boole, Reginald E. G., to The Wellman Bibby Co. Ltd. Flexible couplings. 3,345,831, 10–10–67, Cl. 64—14.

Borbe-Wanner AG.: *See*—
Kuoni, Xaver. 3,346,023.

Borden, Joseph H., R. O. Bradley, and C. Panter, to Toledo Scale Corp. Flexible guide clamp safety. 3,346,074, 10–10–67, Cl. 187—91.

Borenstein, David P., and L. A. Meacham, to Bell Telephone Laboratories, Inc. Frequency-band-rejecting transmission network. 3,346,820, 10–10–67, Cl. 330—109.

Borsvold, Herbert H.: *See*—
Talalay, Leon, Borsvold, and Queenan. 3,346,247.

Boston, William G., to Mobil Oil Corp. Secondary recovery of oil by partially miscible phase displacement. 3,346,046, 10–10–67, Cl. 166—9.

Bottoms, Clifford C. Rotary driving mechanism. 3,345,832, 10–10–67, Cl. 64—23.

Boulger, Edward W.: *See*—
Rooney, John F. and Boulger. 3,346,531.

Bourquard, Fernand E. G. Measurement apparatus for studying the physical properties of a medium. 3,346,065, 10–10–67, Cl. 181—.5.

Bouyoucos, John V., to General Dynamics Corp. Acoustic apparatus. 3,346,058, 10–10–67, Cl. 175—56.

Bowden, Donald W., and J. E. Johnson, to Materials Handling Equipment Co. Discharge assemblies for screw conveyors. 3,346,092, 10–10–67, Cl. 198—1.

Boxer, George E., to Merck & Co., Inc. Purine 3-deoxynucleosides. 3,346,560, 10–10–67, Cl. 260—211.5.

Boxer, George E., and R. F. Nutt, to Merck & Co., Inc. Pyrimidine 3-deoxynucleosides. 3,346,561, 10–10–67, Cl. 260—211.5.

Boyer, Thomas W., R. C. Chang, and E. L. Ries, to American Synthetic Rubber Corp. Liquid carboxylated polymers and method of preparing the same. 3,346,631, 10–10–67, Cl. 260—523.

Bradford, Guy E., to Systems Engineering Laboratories, Inc. Isolating arrangement for gating circuit. 3,346,698, 10–10–67, Cl. 179—15.

Bradford, Purdy, to Swift & Co. Method and apparatus for separating fat and solids from meat scraps. 3,346,393, 10–10–67, Cl. 99—108.

Bradley, John J.: *See*—
Lethin, Walter R., Papantonis, and Bradley. 3,346,727.

Bradley, Mary A. L. Disposable dress shield. 3,345,643, 10–10–67, Cl. 2—53.

Bradley, Robert O.: *See*—
Borden, Joseph H., Bradley, and Panter. 3,346,074.

Brady, Lynn J., to CTS Corp. Electrical component substrate with cavities for anchoring lead wires therein. 3,346,774, 10–10–67, Cl. 317—101.

Brady, Paul T., to Bell Telephone Laboratories, Inc. Speech level measuring apparatus. 3,346,694, 10–10–67, Cl. 179—1.

Brand, Eugene L., to Alsco, Inc. Sliding sash storm window. 3,345,778, 10–10–67, Cl. 49—450.

Brandon Equipment Co., Inc.: *See*—
Broling, Keith W. 3,346,223.

Branson Instruments Inc.: *See*—
Henry, Elliott A., and Biagini. 3,345,863.

Brass Craft Mfg. Co.: *See*—
Baron Alfred M. 3,346,274.

Braun, B.: *See*—
Koelle, Otto. 3,345,877.

Braunwarth, Victor A., A. G. Nickle, and N. W. F. Phillips, to Aluminium Laboratories Ltd. Heating metallic material for subhalide refining. 3,346,368, 10–10–67, Cl. 75—68.

Brazeway, Inc.: *See*—
Hickman, Charles E., and Goldsmith. 3,345,726.

Breeze Corp., Inc.: *See*—
Linke, Ernest A. 3,346,795.

Breidenthal, Robert E.: *See*—
Slinkard, James E. 3,346,705.

Bret, Georges: *See*—
Mayer, Guy, and Bret. 3,346,741.

Bridgestone Tire Co. Ltd.: *See*—
Kikukawa, Ryosuke. 3,346,015.

Briggs, Walton E., to National Research Corp. Vacuum system inlet valve. 3,345,860, 10–10–67, Cl. 73—40.

Briggs, Warren S.: *See*—
Sergeys, Francis J., Maher, Briggs, and McDaniel. 3,346,328.

Brissette, Lawrence P., to General Motors Corp. Latch Locking arrangement. 3,345,839, 10–10–67, Cl. 70—240.

Bristol-Myers Co.: *See*—
Thomas, Ralph H., and Marlatt. 3,346,099.

British Hydrocarbon Chemicals Ltd.: *See*—
Hill, Thomas. 3,346,511.

British Nylon Spinners Ltd.: *See*—
Gosden, Raymond G. 3,346,684.

British Petroleum Co. Ltd.: *See*—
Ford, John F., and Forbes. 3,346,549.

British Telecommunications Research Ltd.: *See*—
Green, Norman G., and Hodgson. 3,346,693.

Broadhead, Samuel L., Jr., to Collins Radio Co. Binary divider with multiple feedback lines. 3,346,728, 10–10–67, Cl. 235—164.

Brobst, James D., and J. A. Vanous, to Collins Radio Co. High frequency parametric amplifier of the up-converter type. 3,346,740, 10–10–67, Cl. 307—88.3.

Broling, Keith W., to Brandon Equipment Co., Inc. Collapsible fifth wheel stand for piggy back trailers. 3,346,223, 10–10–67, Cl. 248—119.

Bronaugh, John C.: *See*—
Levy, Ernest S., Bronaugh, and Christie. 3,346,822.

Brook, James E., to The Bendix Corp. Resolver controlled torquing system. 3,346,791, 10–10–67, Cl. 318—24.

Broomhall, Gordon E., to Hughes Aircraft Co. Welding control circuit. 3,346,716, 10–10–67, Cl. 219—110.

Brophy, James J., to IIT Research Institute. Electrostatic recording system employing photoconductive electrodes. 3,346,701, 10–10–67, Cl. 178—100.1.

Brossett, Fritz V., to Western Electric Co., Inc. Blind rivet assembly. 3,345,901, 10–10–67, Cl. 85—77.

Brossett, Fritz V., and D. B. Orrell, to Western Electric Inc. Material handling control systems. 3,346,019, 10–10–67, Cl. 140—71.5.

Broussalian, George L., to Monsanto Co. Process for preparing beta-ethylenically unsaturated organic sulfonates. 3,346,629, 10–10–67, Cl. 260—513.

Brower, David F., to General Dynamics Corp. Method of shrink fitting and apparatus therefor. 3,345,732, 10–10–67, Cl. 29—421.

Brown, Boveri & Cie Aktiengesellschaft: *See*—
Stemmler, Herbert. 3,346,794.

Brown, Cicero C. Crossover cementing apparatus. 3,346,050, 10–10–67, Cl. 166—128.

Brown, Frank M., J. A. Burton, J. L. Farmer, and H. F. Irmen, to Geo. A. Hormel & Co. Process and apparatus for inspecting containers. 3,346,112, 10–10–67, Cl. 209—75.

Brown, John W. E.: *See*—
Phillips, William G., and Brown. 3,345,974.

Brown, Richard E., and R. I. Meltzer, to Warner-Lambert Pharmaceutical Co. 1-oxyacyl-bens[a]cyclopent[f]quinolizines. 3,346,582, 10–10–67, Cl. 260—289.

Brown, Roger S.: *See*—
Grant, James N., Honold, Andrews, Brown, and Shepard. 3,345,878.

Brown, Timothy D., to Halliburton Co. Method of treating formation with prior removal of detritus. 3,346,049, 10–10–67, Cl. 166—13.

Brucher, Hans: *See*—
Schatz, Gunther, Gemeinhardt, Brucher, and Jurisch. 3,345,719.

Brunswick Corp.: *See*—
Acton, Hugh C. 3,346,314.
Higgins, John L., and Gilson. 3,346,147.
Schimanski, William H., Gautraud, and Satchell. 3,346,258.

Bryan, Roland F.: *See*—
Koster, Robert A., Beach, and Bryan. 3,346,853.

Bryand, Edward T., and E. G. Peabody, to Metal-Tech, Inc. Method and apparatus for drying a wet web. 3,345,756, 10–10–67, Cl. 34—23.

Buckely, Francis T., L. N. Finch, and I. L. Seldin, to Monsanto Co. Thermally stable inks for printing of polyvinyl butyral. 3,346,526, 10–10–67, Cl. 260—29.1.

Bucourt, Robert, A. Pierdet, J. Tessier, and G. Costerousse, to Roussel-Uclaf. 17-Alkyl-19-nor-Δ4,9,11-pregnatriene-3,20-diones, process and intermediates for preparing same and therapeutic compositions thereof. 3,346,454, 10–10–67, Cl. 167—74.

Bullock, Ellis W., and W. E. Driver, to The Fly Ash Arrestor Corp. Bag type dust collector. 3,345,806, 10–10–67, Cl. 55—293.

Bungeroth, Adolf: *See*—
Speith, Karl-Georg, and Bungeroth. 3,346,035.

Bungeroth, Adolf, to Mannesmann Aktiengesellschaft. Grooved continuous casting mold for slabs. 3,346,037, 10–10–67, Cl. 164—273.

Bunker-Ramo Corp., The: *See*—
Fomenko, Sergei M. 3,346,845.
Koster, Robert A., Beach, and Bryan. 3,346,853.
Smeltzer, Jack C. 3,346,852.

Burger, William H., to Kimberly-Clark Corp. Apparatus for making pledgets. 3,345,699, 10–10–67, Cl. 19—145.

Burke, John T.: *See*—
Phelan, John E., and Burke. 3,345,841.

Burrell, Keith S.: *See*—
Nye, William T., and Burrell. 3,346,105.

Burroughs Corp.: *See*—
Hardwick, Albert J. 3,346,759.
Simmons, Charles A. 3,345,944.
Wescott, Ronald O. 3,346,286.

Burrows, Arthur T. C., to Geo. W. King, Ltd. Drive transmitting mechanisms. 3,345,833, 10–10–67, Cl. 64—30.

Burton, Jean A.: *See*—
Brown, Frank M., Burton, Farmer, and Irmen. 3,346,112.

Bury, Allen J.: *See*—
Kolomayets, George, and Bury. 3,346,261.

Buschman, Howard J. Transformer assembly for varying electrical parameters and method of constructing the same. 3,346,828, 10–10–67, Cl. 336—192.

Bush, Edward A., to Corning Glass Works. Method of molding comminuted nonplastic inorganic material. 3,346,680, 10–10–67, Cl. 264—44.

Bush, Robert M., to Hydranautics. Locking disconnect coupling. 3,345,710, 10–10–67, Cl. 24—221.

Busscher, Justin. Post structure for a partition system. 3,345,787, 10–10–67, Cl. 52—242.

Butler, Donald F., Sr. Aggregate manufacturing machine. 3,346,201, 10–10–67, Cl. 241—189.

Butt, Oscar L.: *See*—
Collins, Galen F., Butt, and Poet. 3,346,450.
Collins, Galen F., and Butt. 3,346,451.

Buzzella, Robert W., and H. O. Biggers. Vented metal umbrella. 3,345,786, 10–10–67, Cl. 52—73.

Byer, Joseph I. Mobile housing unit. 3,346,295, 10–10–67, Cl. 296—23.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Huber, Harry, and Maugis. 3,346,750.
Mayer, Guy, and Bret. 3,346,741.

CTS Corp.: *See*—
Brady, Lynn J. 3,346,774.

Cabra, Jose A. Mechanical control device for a liquid containing water closet. 3,345,649, 10–10–67, Cl. 4—67.

Cairns, Raymond E., Jr.: *See*—
Baldwin, William M., Jr., Cairns, Marsh, and Wilson. 3,346,427.

Caledex Machine Co., Ltd.: *See*—
Williams, Albert H., Vitole, and Taylor. 3,345,922.

California Car Wash Systems, Inc.: *See*—
La Mers, Herbert, and Wayne. 3,345,672.

California Institute Research Foundation: *See*—
Vant-Hull, Lorin L., and Mercereau. 3,346,826.

Cameron Iron Works, Inc.: *See*—
Allen, Herbert. 3,346,234.

Camp, Alfred L. to I. Terry. Backflow preventing valve. 3,346,001, 10–10–67, Cl. 137—218.

Campbell, William G.: *See*—
Hurst, George H., Jr., and Campbell. 3,346,301.

Canfield, H. O., Co.: *See*—
Miller, Keith W., and Shriver. 3,345,724.

Cannon, Peter, to General Electric Co. High density magnesium compounds and their preparation. 3,346,337, 10–10–67, Cl. 23—204.

Carding Specialists (Canada) Ltd.: *See*—
Varga, John M. J. 3,345,703.

Carlson, Arne, and I. O. Sandberg, to Arenco Aktiebolag. Device in cigar machines for removing tobacco waste. 3,345,894, 10–10–67, Cl. 83—100.

Carlson, Arthur B., to Textron, Inc. Packaging of ballpoint pen writing units. 3,346,100, 10–10–67, Cl. 206—46.

Carmody, Robert J. Honeycomb panel and method of making same. 3,346,442, 10–10–67, Cl. 161—68.

Carney, Richard W. J., H. M. Blatter, and G. De Stevens, to Ciba Corp. 5,6-lower alkylene-pyrimidines. 3,346,452, 10–10–67, Cl. 167—65.

Carniol, Bohdan, and Z. Malý, to Tesla, narodni podnik. Circuit arrangement for accurate measurement of temperatures or small temperature changes. 3,345,874, 10–10–67, Cl. 73—362.

Carrier Corp.: *See*—
Miaskiewicz, Richard F., Sr. 3,346,285.

Carrier, Elizabeth D.: *See*—
Carrier, Robert M., Jr. 3,346,097.

Carrier, Robert M., Jr., deceased, by Louisville Trust Co., E. D. Carrier, P. H. Mitchell, and A. D. Stevens, executors and trustees. Adjustable stroke vibratory feeder. 3,346,097, 10–10–67, Cl. 198—220.

Carruthers, Eben H. Method of controlling the feed to food packing machines. 3,346,403, 10–10–67, Cl. 99—188.

Carson, Laurence F., to Pittsburgh Plate Glass Co. Vertical opening sash. 3,345,776, 10–10–67, Cl. 49—246.

Carstensen, William H., C. G. Ott, and J. J. Van Acker, to Varityper Corp. Cartridge for light-sensitive strip. 3,346,210, 10–10–67, Cl. 242—71.1.

Carson, William W., Jr., to Velvac, Inc. Vehicle mirror assembly. 3,346,229, 10–10–67, Cl. 248—477.

Carter, Cecil O.: *See*—
Hutson, Thomas, Jr., and Carter. 3,346,660.

Carter, Paul H., to Maryland Cup Corp. Lid construction. 3,346,170. 10–10–67, Cl. 229—43.

Carter, Robert M., and G. L. Petrik, to Link-Belt Co. Power shovel. 3,346,129, 10–10–67, Cl. 214—135.

Cator, Edward J. to Crawford Fitting Co. Push button fluid valve. 3,346,232, 10–10–67, Cl. 251—66.

Catravas, George N.: *See*—
Winter, George D., and Catravas. 3,346,486.

Cautius, Werner: *See*—
Engel, Wilhelm, Cautius, and Schoen. 3,346,462.

Cech, Karl, to Akustische u. Kino-Gerate Gesellschaft, G.m.b.H. Resilient support. 3,346,222, 10–10–67, Cl. 248—24.

Chadwick, George G., and J. P. Shelton, to Radiation Systems Inc. Sum-difference feed network. 3,346,861, 10–10–67, Cl. 343—16.

Champion, Nancy, to Howe Plastics & Chemical Co., Inc. Seat cushion. 3,346,298, 10–10–67, Cl. 297—455.

Chance, A. B., Co.: *See*—
Hubbard, David C., Harper, Lynch, and Boehmer. 3,346,236.

Chandler, Benson, to Holdsworth & Co., Inc. Wood deck structure. 3,345,792, 10–10–67, Cl. 52—648.

Chang, Richard C.: *See*—
Boyer, Thomas W., Chang, and Ries. 3,346,631.

Chapman, John H., and V. S. Maurice, to Glaxo Laboratories Ltd. Method of purifying particulate solid materials. 3,346,418, 10–10–67, Cl. 134—25.

Chapman, Robert A.: *See*—
Matkan, Josef, and Chapman. 3,346,475.

Charle, Lillian P. Disposable dust pan. 3,345,670, 10–10–67, Cl. 15—257.1.

Chavannes, Marc A., to Sealed Air Corp. Method and apparatus for making cushioning and insulating material. 3,346,438, 10–10–67, Cl. 156—210.

Chemagro Corp.: *See*—
Regel, Erik. 3,346,669.

Chemcell Ltd.: *See*—
Fairbairn, Bruce A., Grenier, and Holmes. 3,346,521.

Chemetron Corp.: *See*—
Sadove, Max S., and Skowronski. 3,346,996.

Chemirad Corp.: *See*—
Lagally, Paul. 3,346,527.

Chemische Fabrik Pfersee, G.m.b.H.: *See*—
Bernheim, Willy, Enders, and Deiner. 3,346,575.

Chevron Research Co.: *See*—
De Vries, Louis. 3,346,498.
Dreher, John L., and Hotten. 3,346,497.
Kantsky, George J., and Lindstrom. 3,346,354.
Lara, Rolando. 3,346,840.
Mulackey, Bernard F., Harnsberger, and Lindquist. 3,346,658.

Chiddix, Max E., and W. E. Daniels, to General Aniline & Film Corp. Process of preparing metal salts of lactams. 3,346,566, 10–10–67, Cl. 260—239.3.

Chiyoda Kakokensetsu Kabushiki Kaisha: *See*—
Amagasa, Masataka, and Yamaguchi. 3,346,654.

Christensen, Haldor, M. E. Hultquist, and T. D. Waugh, to Syntex Corp. Process for the preparation of N-substituted amides of diphenylacetic acid. 3,346,634, 10–10–67, Cl. 260—558.

Christiansen, Godtfred K., to Imterlego A. G. Components for making structures comprising electrical circuits. 3,346,775, 10–10–67, Cl. 317—101.

Christie, Alex D.: *See*—
Leby, Ernest S., Bronaugh, and Christie. 3,346,822.

Chu, Chin-Chiun: *See*—
Foster, Harold M., Napier, and Chu. 3,346,591.

Ciba Corp.: *See*—
Anner, Georg, and Wieland. 3,346,570.
Carney, Richard W. J., Blatter, and De Stevens. 3 346,452.
Schmidt, Paul, Eichenberger, Wilhelm, and Rossi. 3,346,568.
Wettstein, Albert, Anner, Heusler, Kalvoda, Ueberwasser, and Heer. 3.346,569.
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,346,601.

Cities Service Oil Co.: *See*—
Hess, Frederick G. 3,346,492.

Clairol Inc.: *See*—
Dasher, George F., and Presant. 3,346,457.

Clarostat Mfg. Co., Inc.: *See*—
Mucher, George J. 3,346,831.

Clopton, James W. Ski pants hanger. 3,346,150, 10–10–67, Cl. 223—95.

Clunis, Kenneth: *See*—
Mullin, John T., and Clunis. 3,346,703.

Coanda, George, to Pharmaseal Laboratories. Urometer. 3,345,980, 10–10–67, Cl. 128—2.

Cobaugh, Robert F., D. H. May, and G. T. Ritter, Jr., to AMP Inc. Dies for applying insulation to an electrical connector. 3,345,692, 10–10–67, Cl. 18—36.

Cochran, Walter M.: *See*—
Moncrieff, James, Cochran, Ellinger, and Miller. 3,346,387.

Coffey, Robert S., and H. G. Lawley, to Imperial Chemical Industries Ltd. Production of olefin oxides and carboxylic acids. 3,346,473, 10–10–67, Cl. 204—158.

Cogsdill Tool Products, Inc.: *See*—
Gustkey, John E. 3,345,888.

Cohen, David, to Hercules Inc. Extrusion of polyolefins. 3,346,547, 10–10–67, Cl. 260—94.9.

Cohen, Theodore. Air conditioning system including humidity control sensing means. 3,346,040, 10–10–67, Cl. 165—21.

Colato, Albert E.: *See*—
Weston, Ralph B., and Colato. 3,346,710.

Colautti, Albert J., and B. Sandor, to General Motors Corp. Window regulator mechanism. 3,346,297, 10–10–67, Cl. 296—146.

Colburn, Charles B., to Rohm & Haas Co. Difluoramino ethers and their preparation. 3,346,644, 10–10–67, Cl. 260—584.

Colgate-Palmolive Co.: *See*—
Blakeway, John M., and Marshall. 3,346,505.
Tundermann, Werner O., and Freidman. 3,346,398.
Wixon, Harold E. 3,346,502.

Collins, Frederick H., to W. R. Grace & Co. Method of uniting foamed plastic sheets and thermoforming the same. 3,346,686, 10–10–67, Cl. 264—321.

Collins, Galen F., O. L. Butt, and B. L. Poet, to The S. E. Massengill Co. Concentrated liquid acetic acid douche preparation containing aromatics. 3,346,450, 10–10–67, Cl. 167—58.

Collins, Galen F., and O. L. Butt, to The S. E. Massengill Co. Concentrated liquid lactic acid douche preparation containing aromatics. 3,346,451, 10–10–67, Cl. 167—58.

Collins, Lowell J., deceased, by R. H. Collins, executrix. Vat for setting and agitating cottage cheese. 3,345,744, 10–10–67, Cl. 31—47.

Collins Radio Co.: *See*—
Broadhead, Samuel L., Jr. 3,346,728.
Brobst, James D., and Vanous. 3,346,740.

Collins, Rose H.: *See*—
Collins, Lowell J. 3,345,744.

Colombo, Giannino, and G. A. Holt, to International Business Machines Corp. Pitch changing apparatus for proportional escapement typewriter. 3,346,087, 10–10–67, Cl. 197—84.

Colonial Sugar Refining Co. Ltd., The: *See*—
Thompson, Richard L., and Dwyer. 3,346,111.

Combourieux, Andre, to Industrial Holding Establishment. Projectile fuze with anti-sabotage means. 3,345,947, 10–10–67, Cl. 102—76.

Commercial Shearing & Stamping Co.: *See*—
Williams, Arthur J. 3,346,012.

Commissariat a l'Energie Atomique: *See*—
De Calmers, Alain, Humeau, and Lecocq. 3,346,330.

Compagnie de Saint-Gobain: *See*—
Acloque, Paul H. 3,345,905.

Compagnie Generale d'Electricite: *See*—
Biet, Jean P. 3,346,802.

Compo Shoe Machinery Corp.: *See*—
Peterson, Evald O. 3,345,660.

Conklin, H. T.: *See*—
Richison, Eugene M. and Ethel M. 3,346,062.

Connor Engineering Corp.: *See*—
Stocks, Elbert G., Jr., and Day. 3,346,185.

Conoflow Corp.: *See*—
Hansen, Albert J. 3,346,005.

Construction Accessories Mfg. Corp.: *See*—
Tolf, Carl O., Jr. 3,346,230.

Continental Can Co., Inc.: *See*—
Obidowski, Edmond J. 3,345,966.
Volker, Herbert W. 3,345,800.

Continental Carbon Co.: *See*—
Latham, Burton F., Jr. 3,346,338.

Continental Oil Co.: *See*—
Starks, Charles M., and Kennedy. 3,346,614.

Control Data Corp.: *See*—
Thornton, James E., and Cray. 3,346,851.

Cooley, Gerald J., J. J. Gebringer, and A. J. Karalis, to United States of America, Atomic Energy Commission. Electrically heated cryogenic liquid vaporizing apparatus. 3,346,718, 10–10–67, Cl. 219—275.

Copolymer Rubber & Chemical Corp.: *See*—
Sutherland, John D., Jr. 3,346,518.
Van Volkenburgh, Ross, Hyde, and Royston. 3,346,598.

Corman, Erskine G.: *See*—
Tiger, Emil, Corman, and Reick. 3,345,926.

Cornelissen, Arnold J. Modular construction system. 3,345,790. 10–10–67, Cl. 52—476.

Cornelissen, Jan, to Shell Oil Co. Plate separator with drainage gutter. 3,346,122, 10–10–67, Cl. 210—522.

Cornell Research Foundation, Inc.: *See*—
Baker, James A. 3,346,456.

Corning Glass Works: *See*—
Bally, Alexander O. 3,346,121.
Bush, Edward A. 3,346,680.
Stachiw, Jaroslaw D., and Vonada. 3,346,279.

Cosentino, John P. Safety lock means. 3,346,288, 10–10–67, Cl. 292—92.

Costello, Milton. Diaphragm control valve with hollow guide stem. 3,346,004, 10–10–67, Cl. 137—271.

Costerousse, Germain: *See*—
Bucourt, Robert, Pierdet, Tessier, and Costerousse. 3,346,454.

Council of Scientific and Industries Research: *See*—
Barat, Slair K. 3,346,401.

Crafts, Harold S., and G. E. Forsen, to Stanford Research Institute. Analog storage system. 3,346,864, 10–10–67, Cl. 340—174.

Crake, Wesley J.: *See*—
Robinson, Cecil S., and Crake. 3,346,802.

Cralle, Walter O., Jr., G. A. Holt, E. J. Lenney, D. E. Sederholm, and N. D. Walton, to International Business Machines Corp. Proportional escapement apparatus for a single element typewriter. 3,346,086, 10–10–67, Cl. 197—84.

Cralle, Walter O., Jr., G. A. Holt, and E. J. Lenney, to International Business Machines Corp. Carrier mechanism for proportional escapement typewriter. 3,346,088, 10–10–67, Cl. 197—84.

Cralle, Walter O., Jr., E. J. Lenney, K. A. Lennon, and N. D. Walton, to International Business Machines Corp. Carrier mechanism for proportional escapement typewriter. 3,346,089, 10–10–67, Cl. 197—90.

Cralle, Walter O., Jr., K. A. Lennon, and N. D. Walton, to International Business Machines Corp. Tabulation apparatus for typewriter. 3,346,091, 10–10–67, Cl. 197—176.

Crawford Fitting Co.: *See*—
Cator, Edward J. 3,346,232.

Cray, Seymour R.: *See*—
Thornton, James E., and Cray. 3,346,851.

Cretors, C., & Co.: *See*—
Miller, Jeanne M., Marcus, and Cretors. 3,346,125.

Cretors, Charles J.: *See*—
Miller, Jeanne M., Marcus, and Cretors. 3,346,125.

Crocker, Foster, and J. A. Theys, to H. J. Heins Co. Batch cooking process. 3,345,936. 10–10–67, Cl. 99—334.

Cromer, Earle G., Jr., to Mangood Corp. Plural tone audible indicating apparatus having variable time ratio of tones. 3,346,857. 10–10–67 Cl. 340—328.

Cronin, Dennis C., to Beloit Corp. Winder. 3,346,209, 10–10–67, Cl. 242—66.

Crosby, Peter F., to Diebold Inc. Fire door. 3,345,775, 10–10–67, Cl. 49—4.

Crossland, Edward J., to Seismograph Service Corp. Voting machine. 3,346,177, 10–10–67, Cl. 235—54.

Crossly Window Corp.: *See*—
Evans, Rupert L. 3,345,779.

Crouch, Alfred E.: *See*—
Wood, Fenton M., Crouch, and Walters. 3,346,807.

Crown Cork Co. (Belgium) S.A.: *See*—
Leemann, Johannes. 3,346,134.

Crown Zellerbach Corp.: *See*—
Nye, William T., and Burrell. 3,346,105.

Crozier, Ronald D., R. E. Harder, J. H. Hood, and R. B. Hurley, to The Dow Chemical Co. Wet spinning of acrylonitrile polymer fibers. 3,346,685, 10–10–67, Cl. 264—182.

Crumpler, Weymouth B., to United States of America, National Aeronautics and Space Administration. Multilegged support system. 3 345,866, 10–10–67, Cl. 73—147.

Cruslus, Karl D. Multi-colored drum lighting system. 3,346,732 10–10–67, Cl. 240—8.1.

Csicsatka, Antal, to General Electric Co. Sterophonic radio circuit including phasing circuit for providing reconstituted subcarrier signal. 3,346,699, 10–10–67, Cl. 179—15.

Cubic Corp.: *See*—
Levy, Ernest S., Bronaugh, and Christie. 3,346,822.

Cumming, James C., to Rockwell-Standard Corp. Floating cam brake. 3,346,077. 10–10–67, Cl. 188—78.

Cunningham, Samuel P.: *See*—
Scott, Franklin R., and Cunningham. 3,345,906.

Cupolo, Dennis: *See*—
Mariani, Thomas L., Hirschmann, Cupolo, and Peterman. 3,345,804.

Curry, James E., to United States of American, National Aeronautics and Space Administration. Method of producing alternating ether-siloxane copolymers. 3,346,515, 10–10–67, Cl. 260—2.

Cushing, Donald S., to General Electric Co. Anti-siphon device for an automatic washer. 3,346,000, 10–10–67, Cl. 137—216.

Customline Control Products, Inc.: *See*—
Berman, Sanford, and Wright. 3,346,024.

Cvikl, Ernst. Three-dimensional load-supporting structures and methods of producing such structures. 3,345,793, 10–10–67, Cl. 52—655.

Czubak, Albin S., and G. A. Hubble, to Micromatic Hone Corp. Automatic stamping mechanism. 3,345,938, 10–10–67, Cl. 101—43.

DASA Corp.: *See*—
Ironside, Donald S., and Watts. 3,346,161.

Daane, Robert A., to Beloit Corp. Dryer ventilating roll. 3,345,757, 10–10–67, Cl. 34—111.

Dalton, David R., R. E. De Brunner, and E. S. Blake, to Monsanto Research Corp. Fluorine containing phosphinates. 3,346,668, 10–10–67, Cl. 260—955.

Daltry, John H., to The English Electric Co. Ltd. Heat exchangers. 3,346,041, 10–10–67, Cl. 165—47.

D'Amico, John J., to Monsanto Co. Destroying undesired vegetation with N-halomethylcarbonyl-3-azabicyclo[3.2.2] nonanes. 3,346,361, 10–10–67, Cl. 71—88.

D'Amico, John J., to Monsanto Co. N-halomethylcarbonyl-3-azabicyclo[3.2.2]nonanes. 3,346,564, 10–10–67, Cl. 260—239.

Dana Laboratories, Inc.: *See*—
Walker, Norman C., and Engle. 3,346,817.

Daniels, Wiley E.: *See*—
Chiddix, Max E., and Daniels. 3,346,566.

Danyluke, Ostap, to Bath Iron Works Corp. Impeller for centrifugal pulveriser. 3,346,203, 10–10–67, Cl. 241—275.

D'Aquin, Esler L. Process for softening the shell portions of crustaceans for edible purposes. 3,346,895, 10–10–67, Cl. 99—111.

Dasher, George F., and F. Presant, to Clairol Inc. Hair treating compositions containing a saturated hydrocarbon as a moisture-barrier material. 3,346,457, 10–10–67, Cl. 167—87.1.

Dashio, John C., 83½ to W. B. Jaspett. Combined wall and awning structure. 3,346,238, 10–10–67, Cl. 256—24.

Davidson, Kenneth H.: *See*—
Moore, Arthur D., and Davidson. 3,346,052.

Davies, Trevor, N. Fletcher, and J. E. McIntryre, to Imperial Chemical Industries Ltd. Process for manufacturing linear fiber and film forming polyesters by polycondensation in the presence of a titanium alkoxide catalyst and a germanium compound. 3,346,541, 10–10–67, Cl. 260—75.

Davis, Edward J.: *See*—
Blau, Theodore N., and Davis. 3,346,016.

Davis, James R.: *See*—
Lievens, Ronald J., Raitzer, Davis, and Klug. 3,346,174.

Davis, Leo W., and W. T. Mounts, to Westinghouse Air Brake Co. Spring applied emergency brake device. 3,346,079, 10–10–67, Cl. 188—170.

Day, Thomas L.: *See*—
Stocks, Elbert G., Jr., and Day. 3,346,185.

De Acetis, William, to Shell Oil Co. Halogen-containing cyclic anhydrides. 3,346,597, 10–10–67, Cl. 260—346.3.

Dean, Ralph, Jr., to General Motors Corp. Power transmission controls. 3,346,082, 10–10–67, Cl. 192—4.

Deardorff, George A.: *See*—
Wilson, Ross D., and Deardorff. 3,345,671.

De Brunner, Ralph E.: *See*—
Dalton, David R., De Brunner, and Blake. 3,346,668.

De Calmers, Alain, H. Humeau, and A. Lecocq, to Commissariat a l'Energie Atomique. Process of extraction of hafnium. 3,346,330, 10–10–67, Cl. 23—23.

Degli Antoni, Carlo. Web doffing device for carding machines, with blades or wires moving in planes tangent to the doffer. 3,345,698, 10–10–67, Cl. 19—106.

De Groft, Walter J., to Sanford Research Co. Marking device. 3,345,674, 10–10–67, Cl. 15—563.

Dehnert, Johannes, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Diazapolymethine dyes. 3,346,585, 10–10–67, Cl. 260—305.

Deiner, Hans: *See*—
Bernheim, Willy, Enders, and Deiner. 3,346,575.

De Kam, Cornelius T.: *See*—
McKenna, George W., and de Kam. 3,346,812.

Dekking, Henri G. G., to Union Oil Co. of California. Carbon graft polymers. 3,346,535, 10–10–67, Cl. 260—41.5.

Delbuguet, Rene G. Plant watering and feeding device. 3,345,774. 10–10–67, Cl. 47—48.5.

Dell'Orfano, Anthony M., R. W. Hood, S. W. Rollins, and R. R. Siders, to Hersey-Sparling Meter Co. Reversible drive. 3,346,182, 10–10–67, Cl. 235—91.

Dell, Harold R., and M. J. Maloney, to General Precision Systems Inc. Digital multiplier employing matrix of NOR circuits. 3,346,729, 10–10–67, Cl. 235—164.

Dell, Paul A., to General Electric Co. Electroluminescent lamp having an aluminum electrode with an aluminum oxide layer disposed between the aluminum electrode and the electroluminescent material. 3,346,758, 10–10–67, Cl. 313—108.

De Long, Louis H. Boat and barge combination. 3,345,970, 10–10–67, Cl. 114—235.

De Luxe Laboratories, Inc.: *See*—
Hanson, Everett L., and Hall. 3,346,158.

Demag Aktiengesellschaft: *See*—
Meyer, Otto. 3,346,299.

De Maria, Anthony J., to United Aircraft Corp. Direction sensor for laser gyro. 3,345,909, 10–10–67, Cl. 88—14.

Dembinski, George W.: *See*—
Sinfelt, John H., Taylor, and Dembinski. 3,346,510.

Demonsablon, Philippe: *See*—
Maurin, Alexandre J., and Demonsablon. 3,345,619.

Denki-Onkyo Kabushiki-Kaisha: *See*—
Masuda, Noboru. 3,346,865.

Denney, Harry A., Jr. Clothing support for surgical patients. 3,345,983, 10–10–67, Cl. 128—82.

Dennis, Kent S., to The Dow Chemical Co. Polymeric dicarboxylic acids of block copolymers of alpha-methyl styrene and conjugated diolefins and method of making the same. 3,346,666. 10–10–67, Cl. 260—879.

Derolf, Mahlon R.: *See*—
Weldes, Helmut H. W., and Derolf. 3,346,334.

Derschler, Lee: *See*—
Kovolnis, Stanley R. 3,346,166.

De Rosset, Armand J.: *See*—
Louvar, Cecelia J., and de Rosset. 3,346,340.

De Sherbinin, William N. Pallet adaptor and shield therefor. 3,346 098, 10–10–67, Cl. 206—1.7.

De Shong, George T., to Berg Electronics, Inc. Method of and apparatus for applying terminal pins to printed circuit boards. 3,346,162, 10–10–67, Cl. 227—95.

Des Jardins, Pharon J., to Fitting Specialties Corp. Swivel pipe joint. 3.346,275, 10–10–67, Cl. 285—98.

Desmarteau, Paul. Airship. 3,346,216, 10–10–67, Cl. 244—30.

Dessert, Edward P.: *See*—
Leonard, James H., and Dessert. 3,346,777.

De Stevens, George: *See*—
Carney, Richard W. J., Blatter, and De Stevens. 3,346,452.

Detrex Chemical Industries, Inc.: *See*—
Schlossberg, Louis. 3,346,426.

Deutsch Fastener Corp.: *See*—
Gulistan, Bulent. 3,346,032.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
Kern, Werner, and Jaacks. 3,346,663.

Deutscher Spinnereimaschinenbau Ingolstadt: *See*—
Miedler, Hermann, and Meinke. 3,345,702.

Devon, Harry J., to Jas. H. Matthews & Co. Rotary die layout machine. 3,345,749, 10–10–67, Cl. 33—22.

Diack, Arthur G. Showcase construction. 3,346,310, 10–10–67, Cl. 312—140.

Di Addario, Alexander N. Method of manufacture of a custom garment. 3,345,645, 10–10–67, Cl. 2—115.

Diamond Alkali Co.: *See*—
Rosen, Irving. 3,346,539.
Sturm, Clarence L., Hudgin, and Rosen. 3,346,538.

Diamond Power Specialty Corp.: *See*—
Andrea, Christo. 3,345,871.

Dick, A. B., Co.: *See*—
Stone, Joseph J. 3,346,869.

Dickore, Karlfried, and E. Kuhle, to Farbenfabriken Bayer Aktiengesellschaft. Sulfonyl isothiocyanates and a process for their production. 3,346,590, 10–10–67, Cl. 260—327.

Dickson, Woodrow J., and F. W. Jenkins, to Petrolite Corp. Drilling fluids. 3,346,489, 10–10–67, Cl. 252—8.5.

Diebold Inc.: *See*—
Crosby, Peter F. 3,345,775.

Dierssen, Gunther H. A. E., to General Electric Co. Electroluminescent lamp having an aluminum electrode, a layer of dielectric material and an aluminum oxide layer disposed between the aluminum electrode and the dielectric layer. 3,346,757, 10–10–67, Cl. 313—108.

Dillon-Beck Mfg. Co.: *See*—
Hoffman, Louis S., and Marlatt. 3,346,208.

Dinger, Edward H., to General Electric Co. Regulator for inverter. 3,346,798, 10–10–67, Cl. 321—18.

Di Settembrini, Antoine. Improvement relating to a machine for manufacturing plastic containers. 3,345,686, 10–10–67, Cl. 18—5.

Di Stefano, Fred: *See*—
Sessa, Michael N., and Di Stefano. 3,346,145.

Distillers Co., Ltd., The: *See*—
Barclay, John L., and Gasson. 3,346,659.
Hadley, David J. 3,346,513.

Distler, Harry: *See*—
Bille, Heinz, Distler, Dittus, Mueller, and Ruettiger. 3,346,325.

Dittgen, Gerd: *See*—
Schmitt, Paul, and Dittgen. 3,345,847.

Dittus, Georg: *See*—
Bille, Heinz, Distler, Dittus, Mueller, and Ruettiger. 3,346,325.

Diveley, William R., to Hercules Inc. Method for controlling weeds. 3,346,362, 10–10–67, Cl. 71—118.

Dixon Automatic Tool Inc.: *See*—
Dixon, Paul H. 3,346,095.

Dixon, Harold A., to Laboratory for Electronics, Inc. Vehicle detectors. 3,346,842, 10–10–67, Cl. 340—38.

Dixon, Paul H., to Dixon Automatic Tool Inc. Vibratory feeding mechanism. 3,346,095, 10–10–67, Cl. 198—33.

Dobb, John A., to General Motors Corp. Vehicle brake system and method. 3,346,078, 10–10–67, Cl. 188—152.

Doble, Robert N., R. J. Miller, and L. Sepe, to General Precision Systems Inc. Inductive loop vehicle detector. 3,346,856, 10–10–67, Cl. 340—258.

Dogaru, Leon: *See*—
Nicolau, Ioan, Dogaru, Evghenide, Ionascut, Tihon, and Motoroiu. 3,345,881.

Dombrowski, Theodor, to Wilhelm Hegenscheidt Kommanditgesellschaft. Machine for treating wheels of railroad vehicles. 3,345,890, 10–10–67, Cl. 82—8.

Dombrowski, Theodor, to Wilhelm Hegenscheidt Kommanditgesellschaft. Machine for treating wheels of railroad vehicles. 3,345,891, 10–10–67, Cl. 82—8.

Dombrowski, Theodor, to Wilhelm Hegenscheidt Kommanditgesellschaft. Wheel turning lathe. 3,345,892, 10–10–67, Cl. 82—8.

Donovan, James, and M. Mendelsohn, to Artisan Industries, Inc. Thin film processing apparatus. 3,346,034, 10–10–67, Cl. 159—6.

Doochi, Yuu: *See*—
Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,346,331.

Doss, Richard C., to Phillips Petroleum Co. Preparation of thiol esters having alpha-sulfide linkages. 3,346,611, 10–10–67, Cl. 260—455.

Dotto, Gianni A., to P. R. Mallory & Co., Inc. Snap action fluid escapement for obtaining intermittent rotary motion. 3,345,915, 10–10–67, Cl. 91—50.

Dotto, Gianni A. Safety check valve. 3,345,998, 10–10–67, Cl. 137—118.

Douglas Aircraft Co., Inc.: *See*—
Pfaffenberger, Richard T., and Van Horik. 3,345,965.
Berger, Carl. 3,346,422.

Dovey, Norman E. Rotary knife. 3,345,898, 10–10–67, Cl. 83—663.

Dow Chemical Co., The: *See*—
Crozier, Ronald D., Harder, Hood, and Hurley. 3,346,685.
Dennis, Kent S. 3,346,666.
Dunbar, Joseph E. 3,346,592.
Karle, Franklin J., and Ayers. 3,346,735.
Lamoria, Lz F., and Reigler. 3,346,348.
Lee, Lieng-Huang. 3,346,520.
Strother, Greene W., Jr. 3,346,533.
Von Stoeser, Walter G. 3,345,797.

Doyle, Robert J., to United States of America, Army. Electrode support for an optical fiber disc. 3,346,756, 10–10–67, Cl. 313—94.

Dransfield, Clifford D.: *See*—
Woods, John P., Riggs, and Dransfield. 3,346,068.

Drechsler, Lee: *See*—
Koolnis, Stanley R. 3,346,165.

Dreher, John L., and B. W. Hotten, to Chevron Research Corp. Greases containing amidourea thickeners. 3,346,497, 10–10–67, Cl. 252—51.5.

Dresner, Joseph, to Radio Corp. of America. Dark current reduction in photoconductive target by barrier junction between opposite conductivity type materials. 3,346,755, 10–10–67, Cl. 313—94.

Dresser Industries, Inc.: *See*—
Bohn, F. O. 3,346,056.

Drexel Institute of Technology: *See*—
Podolsky, Leon. 3,346,416.

Driver, William E.: *See*—
Bullock, Ellis W., and Driver. 3,345,806.

Dryden, Hugh L., Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of T. D. Masek. Electron bombardment ion engine. 3,345,820, 10–10–67, Cl. 60—202.

Dual Gebrüder Steidinger: *See*—
Zimmermann, Heinrich. 3,346,308.

Dunbar, Joseph E., to The Dow Chemical Co. Oxacyclobutane bis(thiosulfonates). 3,346,592, 10–10–67, Cl. 260—333.

Duncan, Gordon E.: *See*—
Johnston, George F., and Duncan. 3,346,061.

Dunlop, Richard G., to Evans Products Co. Freight bracing apparatus. 3,345,956, 10–10–67, Cl. 105—369.

Du Pont de Nemours and Co., E. I.: *See*—
Baldwin, William M., Jr., Cairns, March, and Wilson. 3,346,427.
Fuchs, Julius J. 3,346,554.
Long, Cecil L. 3,346,679.
Thomson, Richard N. 3,346,682.
Ward, Richard B. 3,346,606.

Duran, Peter J. Clear view coin pack. 3,346,109, 10–10–67, Cl. 206—.82.

Durkee, Everett L.: *See*—
Lowe, Edison, Durkee, and Hamilton. 3,346,392.

Duszka, Stephen. Load shifting mechanism. 3,346,132, 10–10–67, Cl. 214—516.

De Vries, Louis, to Chevron Research Co. Lubricating oil composition containing high molecular weight olefin-diolefin copolymer. 3,346,498, 10–10–67, Cl. 252—59.

Dwyer, Francis B.: *See*—
Thompson, Richard L., and Dwyer. 3,346,111.

Dymoke-Bradshaw, Leslie E. B.: *See*—
Roberton, James S. P., Dymoke-Bradshaw, and Lotay. 3,346,858.

Eager, George S., Jr.: *See*—
Bader, George, and Eager. 3,346,809.

Earp, Charles W., to International Standard Electric Corp. Radio navigation system. 3,346,860, 10–10–67, Cl. 343—105.

Eastman Kodak Co.: *See*—
Agett, Albert H., and Gallagher. 3,345,917.
Aspy, William L., Jr. 3,345,697.
Baxendale, Ralph W., Luckey, and Yutzy. 3,346,383.
Straley, James M., Wallace, and Weaver. 3,346,552.

Ebeling, Jack F.: *See*—
Hanna, Daniel C., and Ebeling. 3,345,666.

Eckert, George W., to Texaco Inc. Jet fuel composition. 3,346,355, 10–10–67, Cl. 44—66.

Edgecombe, David A., and A. Wudski, to Babcock & Wilcox Co. Work feeding method and apparatus for piercing press. 3,345,853, 10–10–67, Cl. 72—263.

Edlin, Eric H. Pressurized face mask. 3,345,987, 10–10–67, Cl. 128—254.

Edwards, Harold H.: *See*—
Newhouse, Vernon L., and Edwards. 3,346,829.

Edwards High Vacuum International Ltd.: *See*—
Olejniczak, Jerzy S. 3,346,033.

Eguchi, Tamotsu, and J. Yamauchi, to Kurashiki Rayon Co., Ltd. Process for the production of formaldehyde-cyclic formal copolymers. 3,346,540, 10–10–67, Cl. 260—67.

Ehrlich, Friedrich, to International Alloys Ltd. Method of and apparatus for treating metal scrap, particles or the like contaminated with volatile and/or combustible substances. 3,346,417, 10–10–67, Cl. 134—2.

Eichenberger, Hansulrich, W. Naegeli, and P. Schwengeler, to Rieter Machine Works Ltd. Apparatus for depositing sliver in a stationary can. 3,345,701, 10–10–67, Cl. 19—159.

Eichenberger, Kurt: *See*—
Schmidt, Paul, Eichenberger, Wilhelm, and Rossi. 3,346,568.

Elrich, Gustav: *See*—
Elrich, Wilhelm and G. 3,345,683.

Elrich, Wilhelm and G. Inclined-dish granulator and separator. 3,345,683, 10–10–67, Cl. 18—1.

Eisenkraft, Bernard J. Electromechanical atomizer apparatus. 3,346,189. 10–10–67, Cl. 239—102.

Eklund, Hans E., to Aktiebolaget Ljungmans Verkstoder. Liquid dispensing systems. 3,346,142, 10–10–67, Cl. 222—20.

Ellinger, Rudy: *See*—
Moncrieff, James, Cochran, Ellinger, and Miller. 3,346,387.

Ellis, Geoffrey H.: *See*—
Ovens, Stanley F., and Ellis. 3,346,839.

Ellis, William C., W. C. Pfann, and R. S. Wagner, to Bell Telephone Laboratories, Inc. Vapor-liquid-solid crystal growth technique. 3,346,414, 10–10–67, Cl. 117—106.

Elmer, Curtis, to Monsanto Co. Thermosetttable resin composition and fibrous subatrate impregnated with same. 3,346,443, 10–10–67, Cl. 161—184.

Enblom, Paul A., to Judd Ringer Corp. Liquid dispenser. 3,346,194, 10–10–67, Cl. 239—333.

Enders, Heinz: *See*—
Bernheim, Willy, Enders, and Deiner. 3,346,575.

Engel, Karl: *See*—
Pherson, Perry O., Slater, aand Engel. 3,346,141.

Engel, Lawrence J., to Esso Research and Engineering Co. NFs adducts of benzene. 3,346,430, 10–10–67, Cl. 149—109.

Engel, Wilhelm, W. Cauttius, and K. Schoen. Fuel elements for nuclear reactors. 3,346,462, 10–10–67, Cl. 176—67.

Engelhard Hanovia, Inc.: *See*—
Lienhard, Ortto E. 3,346,751.

Engelhard Industries, Inc.: *See*—
Spooner, Howard E. 3,346,350.

Engle, Charles E.: *See*—
Walker, Norman C., and Engle. 3,346,817.

English Electric Co. Ltd., The: *See*—
Daltry, John H. 3,346,041.

English Rose Ltd.: *See*—
Starkie, David, and Astle-Fletcher. 3,345,815.

Enk, George W. Electrical timing apparatus. 3,346,779, 10–10–67, Cl. 317—141.

Entwicklungsanstalt fur Industrie-Elektronik Schaan FL.: *See*—
Klix, Uwe. 3,346,780.

Environmental Research Foundation: *See*—
Bechtel, Robert B. 3,346,866.

Erpenbach, Heinz: *See*—
Sennewald, Kurt, Erpenbach, Gudernatsch, and Vogt. 3,346,637.

Erickson, John W., to Preco Inc. Wall fillers. 3,345,955, 10–10–67, Cl. 105—369.

Erickson, Louis A., B. B. Klinke, and R. I. Karr, to Smith-Berger Mfg. Corp. Power braking and regenerative system. 3,346,287, 10–10–67, Cl. 254—185.

Erdos, John. Lubricating device. 3,346,072, 10–10–67, Cl. 184—1.

Erk, Amir. Sheet collecting mechanism. 3,345,923, 10–10–67, Cl. 93—93.

Ernst, Robert R., to Ritter Pfaudler Corp. Biological sterility indicator and method for making and using same. 3,346,464, 10–10–67, Cl. 195—54.

Escapa, Lucy. Dual clothespin. 3,345,708, 10–10–67, Cl. 24—137.

Eschen, Franklin W., to Johns-Manville Corp. Heat resistant bearing product. 3,346,490, 10–10–67, Cl. 252—12.4.

Eskew, Milner H., Jr.: *See*—
Fuhrmeister, Paul F., and Eskew. 3,346,724.

Esso Production Research Co.: *See*—
Knapp, Richard P., and Goodrich. 3,346,045.

Esso Research and Engineering Co.: *See*—
Arey, William F., Jr., and Mason. 3,346,482.
Beach, Leland K., Gardiner, and Rhodes. 3,346,546.
Engel, Lawrence J. 3,346,430.
Foroulis, Zisis A. 3,346,471.
Gianni, Michael H., and Orlando. 3,346,589.
Gladrow, Elroy M., and Smith. 3,346,512.
Isaacson, Robert B., and Kennedy. 3,346,514.
Lewis, William R. 3,346,484.
Lyon, Richard K. 3,346,339.
Magee, Ellington M. 3,345,821.
Manny, Erwin H. 3,346,249.
Mayer, Francis X., and Maak. 3,346,365.
Mayer, Francis X., and Maak. 3,346,366.
Michael, James R., Leary, Argabright, and Passannante. 3,346,599.
Nadler, Murray. 3,346,333.
Nightingale, Eugene R., Jr., and Barrasso. 3,346,332.
Passannante, Anthony J. 3,346,600.
Robbins, Max L., and Schulman. 3,346,494.
Schmall, Edwin A. 3,346,347.
Schmall, Edwin A., and Lovett. 3,346,641.
Sinfelt, John H., Taylor, and Dembinski. 3,346,510.
Strickland, Barney R., and Berkowitz. 3,346,353.
Thompson, Charles E., and Heath. 3,346,421.
Turbak, Albin F. 3,346,321.
Turney, John J., and Hopkinson. 3,346,485.
Tyler, William E., III, and Lovett. 3,346,619.
Wiese, Herbert K. 3,346,523.
Yuhas, Stephen A., Jr., Muessig, and Segura. 3,346,664.

Ethyl Corp.: *See*—
Worrel, Calvin J. 3,346,648.

Evans, James W., and C. S. McWilliams, to American Maize-Products Co. Cake mix, batter, method of making a cake and the resulting product. 3,346,389, 10–10–67, Cl. 99—92.

Evans Products Co.: *See*—
Dunlop, Richard G. 3,345,956.

Evans, Rupert L., to Crossly Window Corp. Clip-type shield. 3,345,779, 10–10–67, Cl. 49—501.

Evghenide, Constantin: *See*—
Nicolau, Ioan, Dogaru, Evghenide, Ionascut, Tihon, and Motoroiu. 3,345,881.

Ex-Cell-O Corp.: *See*—
Gooding, Elwyn R. 3,346,106.

Eyre, John R., A. Tomica, and K. R. Way, to International Standard Electric Corp. Jointing plaatic materials. 3,346,574, 10–10–67, Cl. 264—248.

Ezop, L. Eugene, to General Motors Corp. Rotary mechanism including abradable lubricating and sealing means. 3,346,176, 10–10–67, Cl. 230—137.

FMA, Inc.: *See*—
Kidder Harvey L., and Roulund. 3,346,674.
Smith, Frederick R. 3,345,803.

Faber, Kurt: *See*—
Spahrkas, Heinrich, Knopf, Faber, and Mauthe. 3,346,323.

Fabricius, Imre L., to Novo Terapeutisk Laboratorium A/S. Process for aminoalkylation of phenothiazine and derivatives thereof. 3,346,573, 10–10–67, Cl. 260—243.

Fabrik Fur Firestone Produkte AG.: *See*—
Siegenthaler, Karl, and Wild. 3,346,412.

Fabey, John R., and R. H. Lanzl, to General Electric Co. High frequency transistor with internal angular posts and divergent, stiff leads to reduce interelectrode capacitance. 3,346,787, 10–10–67, Cl. 317—235.

Fairbairn, Bruce A., J. M. Grenier, and A. Holmes, to Chemcell Ltd. Polyolefin-fusible cellulose ether blends. 3,346,521, 10–10–67, Cl. 260—17.

Falk, Harold W.: *See*—
Russell, Fred J., Armstrong, and Falk. 3,345,838.

Fant, Gunnar. Vocoder system. 3,346,695, 10–10–67, Cl. 179—1.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Dickore, Karlfried, and Kuhle. 3,346,590.
Neumann, Wolfram, and Lohmar. 3,346,496.
Spahrkas, Heinrich, Knopf, Faber, and Mauthe. 3,346,323.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Kuhne, Rudolf, Meininger, and Pfirrmann. 3,346,553.
Roscher, Günther, and Riemenschneider. 3,346,627.

Farley, David L., to Halliburton Co. Cup for multi-size pipe string. 3,346,267, 10–10–67, Cl. 277—212.

Farmer, Everett W., to Sanders Associates, Inc. Critically damped vibration system. 3,346,221, 10–10–67, Cl. 248—24.

Farmer, James L.: *See*—
Brown, Frank M., Burton, Farmer, and Irmen. 3,346,112.

Faulkner, Alfred H., and S. Markowitz, to General Motors Corp. Magnetic memory system. 3,346,847, 10–10–67, Cl. 340—172.5.

Federal-Mogul Corp.: *See*—
Rhoads, George D., and Haynie. 3,346,265.

Federal Tool Engineering Co.: *See*—
Manganaro, George F. 3,346,163.

Fee, Willard E. Fishing tackle box. 3,346,313, 10–10–67, Cl. 312—234.1.

Feild, George B., and S. B. Monroe, to Hercules Inc. Extrusion of polyolefins. 3,346,548, 10–10–67, Cl. 260—94.9.

Fein, Martin L., and E. M. Filachione, to United States of America, Agriculture. Tanning with a condensation product of acrolein and formaldehyde. 3,346,324, 10–10–67, Cl. 8—94.26.

Feinstein, Joseph, to S-F-D Laboratories, Inc. Microwave cold cathode magnetron with internal magnet. 3,346,766, 10–10–67, Cl. 315—39.71.

Felton, Leslie N., to Grassland Dairy Products, Inc. Apparatus for cleaning articles. 3,345,994, 10–10–67, Cl. 134—111.

Fenaille, Pierre: *See*—
Maurice, Pierre, Girard, and Fenaille. 3,345,960.

Fend, Heinrich, to Oerlikon-Buhrle-Holding AG. Method and apparatus for resuming weaving. 3,346,017, 10–10–67, Cl. 139—12.

Fenske, Ellsworth R., to Universal Oil Products Co. Continuous chromatographic analysis. 3,345,858, 10–10–67, Cl. 73—23.1.

Fenske, Ellsworth R.. to Universal Oil Products Co. Chromatographic analysis with automatic baseline compensation. 3,345,859, 10–10–67, Cl. 73—23.1.

Fenton, Aaron J. Axle cap for sports car wheels. 3,346,304, 10–10–67, Cl. 301—108.

Fenton, Donald M., and K. L. Olivier, to Union Oil Co. of California. Oxidative carbonylation of olefins in the presence of a dehydrated aluminosilicate molecular sieve. 3,346,623, 10–10–67, Cl. 260—497.

Ferebee, Roy H. Mechanical centering device. 3,345,755, 10–10–67, Cl. 33—191.

Ferguson, Donald C., and M. V. Flowers, Jr., to Sperry Rand Corp. Signal level detection circuit having automatically changed impedance. 3,346,846, 10–10–67, Cl. 340—172.

Ferro Corp.: *See*—
Jasionowski, Joseph J. 3,346,719.

Ferro Mfg. Corp.: *See*—
Littmann, Joseph C. 3,346,810.

Fertig, Raymond B.: *See*—
Nickell, Lawrence C., and Fertig. 3,345,835.

Fertig, Raymond B., and L. C. Nickell, to Appalachian Electronic Instruments, Inc. Scanning system for revolving creel type circular knitting machines. 3,345,836, 10–10–67, Cl. 66—166.

Fessler, Robert G.: *See*—
Roberts, George L., Jr., and Fessler. 3,346,604.

Fiddler, Theodore E. Synthetic resin fasteners. 3,345,899, 10–10–67, Cl. 85—32.

Fields, Paul, to Litton Systems, Inc. Fork-type wiring harness. 3,346,688, 10–10–67, Cl. 174—68.

Filachione, Edward M.: *See*—
Fein, Martin L., and Filachione. 3,346,324.

Finch, Lionel N.: *See*—
Buckely, Francis T, Finch, and Seldin. 3,346,526.

Finke, Robert C., to United States of America, National Aeronautics and Space Administration. Pressure monitoring with a plurality of ionization gauges controlled at a central location. 3,346,806, 10–10–67, Cl. 324—33.

Finkenauer, Helmut, W. Seibert, K. Kohl, E. Luecke, and F. Schubert, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Stable highly concentrated solutions of basic dyes. 3,346,322, 10–10–67, Cl. 8—79.

Finkel, Henry, and L. Waxman, said Finkel assor. to said Waxman. Clip fastener. 3,345,714, 10–10–67, Cl. 24—246.

Firth Cleveland Ltd.: *See*—
Adamczyk, Jan. 3,346,270.

Firth, Francis G. Product produced by reacting phosphorus oxide or sulfide, an oxirane compound and a hydroxy or thiol compound together and process. 3,346,667, 10–10–67, Cl. 260—920.

Firth Sterling, Inc.: *See*—
Sowko, John J. 3,345,734.

Fischer, Adolf: *See*—
Steinbrunn, Gustav, and Fischer. 3,346,576.

Fisher, Leonard, to Vickers Ltd. Hospital bed with pressure chamber. 3,345,985, 10–10–67, Cl. 128—204.
Fisher, Robert J. and W. S. Slipper device. 3,345,762, 10–10–67, Cl. 36—9.
Fisher, William S.: *See*—
Fisher, Robert J. and W. S. 3,345,762.
Fitting Specialties Corp.: *See*—
Des Jardins, Pharon J. 3,346,275.
Flashman, Barry P., to General Electric Co. Superconductive connection. 3,346,351, 10–10–67, Cl. 29—194.
Fleischer, Robert L., to General Electric Co. Superconductors. 3,346,425, 10–10–67, Cl. 148—4.
Fletcher, Norman: *See*—
Davies, Trevor, Fletcher, and McIntryre. 3,346,541.
Flexible Plastic Straw Corp.: *See*—
Mueller, Martin. 3,346,187.
Flodin, Inc.: *See*—
Miller, Sevart N., and Flodin. 3,346,391.
Flodin, John F.: *See*—
Miller, Sevart N., and Flodin. 3,346,391.
Florian, Eugene F.: *See*—
Johnson, Walter P., III, and Florian. 3,346,838.
Flowers, Morris V., Jr.: *See*—
Ferguson, Donald C., and Flowers. 3,346,846.
Fly Ash Arrestor Corp., The: *See*—
Bullock, Ellis W., and Driver. 3,345,806.
Fomenko, Sergei M., to The Bunker-Ramo Corp. Character recognition method and apparatus. 3,346,845, 10–10–67, Cl. 340—146.3.
Fontaine, Ludger A., to Barrows Industries, Inc. Self-piercing ear wire. 3,345,830, 10–10–67, Cl. 63—13.
Fontanella, Luigi: *See*—
Testa, Emilio, and Fontanella. 3,346,565.
Folkerts, Henry. Traction hitch. 3,346,273, 10–10–67, Cl. 280—457.
Folkers, Karl, and D. E. Wolf, to Merck & Co., Inc. Derivatives of coenzyme Q_{10}. 3,346,595, 10–10–67, Cl. 260—345.5.
Foote Mineral Co.: *See*—
Beumel, Oscar F., Jr. 3,346,506.
Forbes, Eric S.: *See*—
Ford, John F., and Forbes. 3,346,549.
Ford, John F., and E. S. Forbes, to The British Petroleum Co. Ltd. Method of preparing an oil soluble sulfur and halogen containing olefin polymer and product. 3,346,549, 10–10–67, Cl. 268—139.
Forehand, Le Roy: *See*—
Webb, James E., National Aeronautics and Space Administration, Forehand, and Rodner. 3,346,419.
Foris, Peter L., to The National Cash Register Co. Process for photo-engraving by use of photo-chromic dye and product. 3,346,385, 10–10–67, Cl. 96—36.
Formfoto Mfg. Co.: *See*—
Tiger, Emil, Corman, and Reick. 3,345,926.
Foroulis, Zisis A., to Esso Research and Engineering Co. Use of composite D.C. power in anodic protection. 3,346,471, 10–10–67, Cl. 204—147.
Forrest, John L., to General Aniline & Film Corp. Abrasive article. 3,345,668, 10–10–67, Cl. 15—209.
Forsen, George E.: *See*—
Crafts, Harold S., and Forsen. 3,346,854.
Forster, Heins, and R. Saidler, to Veb Guss- und Farbenglaswerke Pirna-Copitz. Apparatus for continuous manufacture of continuous profiled glass members. 3,346,359, 10–10–67, Cl. 65—183.
Foss, Orlando W. Method of making a box. 3,345,921, 10–10–67, Cl. 93—36.
Fossen, Helmut, to W. Reiners. Yarn guiding drum. 3,346,206, 10–10–67, Cl. 242—43.2.
Foster, Allan D., and C. T. Sims, to General Electric Co. Cobalt base alloys. 3,346,378, 10–10–67, Cl. 75—171.
Foster, Harold M., R. P. Napier, and C.-C. Chu, to Mobil Oil Corp. Preparation of partly saturated 4-ketobenzothiophene. 3,346,591, 10–10–67, Cl. 260—332.3.
Foster, Stanley E., to Marine Colloids, Inc. Treatment of manno galactan gums. 3,346,556, 10–10–67, Cl. 260—209.
Foster Wheeler Corp.: *See*—
Stevens, William D., and Gorzegno. 3,345,975.
Foster, Willard F.: *See*—
Roberts, John W., Old, Gibson, Foster, Purvis, and Wycoff. 3,346,198.
Fowler, Leslie E., to Beckman Instruments, Inc. Device for attachment of a recording arm to a drive mechanism with adjustable bias force. 3,346,871, 10–10–67, Cl. 346—139.
Fox, Martin, to The Seng Co. Sofa bed. 3,345,651, 10–10–67, Cl. 5—13.
Franck, George E., to Imperial Eastman Corp. Tube clamp for flaring tool. 3,345,855, 10–10–67, Cl. 72—317.
Franck, Jean-Pierre. Method of making wire cloth for paper machines. 3,346,465, 10–10–67, Cl. 204—15.
Frazier, Bruce J.: *See*—
Thompson, William S., Jr., Frazier, and Morrisett. 3,346,002.
Freidman, Stuart D.: *See*—
Tundermann, Werner O., and Freidman. 3,346,398.
Froberger, Charles F.: *See*—
Blatt, Rudolph W., and Froberger. 3,346,713.
Froehlig, Rudolph A., to Modern Album and Finishing, Inc. Laminated game board. 3,346,259, 10–10–67, Cl. 273—136.
Fuchs, Julius J., to E. I. du Pont de Nemours and Co. Process of preparing symmetrical azo compounds. 3,346,554, 10–10–67, Cl. 260—192.
Fulton, Donald L., R. S. Reel, J. L. Reeve, J. A. Stahmann, and J. G. Vehige, to North American Aviation, Inc. Extensible rocket nozzle comprised of a coated flexible mesh subsequently deployed and heated to become impermeable. 3,346,186, 10–10–67, Cl. 239—11.
Fulton, Samuel R., to The Akron Standard Mold Co. Tire building drum. 3,346,434, 10–10–67, Cl. 156—415.
Fuhrmeister, Paul F., and M. H. Eskew, Jr., to United States of America, National Aeronautics and Space Administration. Random function tracer. 3,346,724, 10–10–67, Cl. 235—61.6.
Furness, Stanley W., and L. E. Hard. Recording devices. 3,346,180, 10–10–67, Cl. 235—74.
Gabriel, Edwin Z. Precision triangle solver, computer and classroom demonstrator. 3,345,752, 10–10–67, Cl. 33—97.
Galasso, Louis. Putty holder attachment. 3,346,153, 10–10–67, Cl. 224—5.
Gallagher, Paul: *See*—
Agett, Albert H., and Gallagher. 3,345,917.
Gardiner, John B.: *See*—
Beach, Leland K., Gardiner, and Rhodes. 3,346,546.
Gardner, George S., and A. J. Saukaitis, to Amchem Products, Inc. Cnemical plating process. 3,346,404, 10–10–67, Cl. 106—1.
Garfield, Eugene, and L. Lutzker, to Institute for Scientific Information, Inc. Copying apparatus having a hand-held scanner synchronized to the recording unit. 3,346,692, 10–10–67, Cl. 178—6.
Garib, Henri. Cutting blade mounting heads. 3,345,721, 10–10–67, Cl. 29—105.
Garner. Albert Y., to Monsanto Research Corp. Process for preparing hydroxyalkyl phosphine oxides. 3,346,647, 10–10–67, Cl. 260—606.5.
Gasson, Edward J.: *See*—
Barclay, John L., and Gasson. 3,346,659.
Gates, Austin A.: *See*—
Bollman, John A., Gates, and Voss. 3,346,439.
Gaupp, Kurt, to Jacoby-Bender, Inc. Folding clasp for bracelets and the like. 3,345,705, 10–10–67, Cl. 24—71.
Gaupp, Kurt, to Jacoby-Bender, Inc. Snap catch. 3,345,713, 10–10–67, Cl. 24—239.
Gauterin, George: *See*—
Pugh, Harold, and Gauterin. 3,346,717.
Gautraud, Michael G.: *See*—
Schimanski, William H., Gautraud, and Satchell. 3,346,258.
Gay, Philip T., to Hillingsworth & Vose Co. Press packing sheet of fibrous web impregnated with polyurethane and method of making same. 3,346,445, 10–10–67, Cl. 162—136.
Gaynor, Joseph, to General Electric Co. Metal image formation. 3,346,384, 10–10–67, Cl. 96—36.
Gebr. Bohler & Co. Aktiengesellschaft: *See*—
Tarmann, Bruno. 3,346,036.
Gebringer, Joseph J.: *See*—
Cooley, Gerald J., Gebringer, and Karalis. 3,346,718.
Geisendorff, Annette D. Shower safety soap belts. 3,346,152, 10–10–67, Cl. 224—5.
Geisinger, George H., to The Thomas & Betts Co. Wire harness device. 3,346,020, 10–10–67, Cl. 140—92.1.
Gemeinhardt, Hermann: *See*—
Schatz, Gunther, Gemeinhardt, Brucher, and Jurisch. 3,345,719.
Gemeinhardt, Hermann, and R. Munzner, to Vereinigte Glanzstoff-Fabriken AG. Device for joining thread ends. 3,345,809, 10–10–67, Cl. 57—22.
General Aniline & Film Corp.: *See*—
Chiddix, Max E., and Daniels. 3,346,566.
Forrest, John L. 3,345,668.
Merijan, Ashot, and Grosser. 3,346,594.
Papalos, John G. 3,346,670.
Takats, Zoltan. 3,345,927.
General Cable Corp.: *See*—
Bader, George. 3,346,808.
Bader, George, and Eager. 3,346,809.
General Dynamics Corp.: *See*—
Bouyoucos, John V. 3,346,058.
Brower, David F. 3,345,732.
Golden, Martin P., and Wildi. 3,345,843.
Jansen, Hansjorg, and Wild. 3,345,844.
Miller, Park H., Jr., Pound, and Snodgrass. 3,346,066.
Pommerening, Uwe A. 3,346,837.
Potter, Richard D. 3,345,717.
Scott, Franklin R., and Cunningham. 3,345,906.
General Electric Co.: *See*—
Ackerman, Stanley C. 3,346,761.
Amra, Lutfi H. 3 346,380.
Ashby, Bruce A. 3,346,588.
Blake, Robert W. 3,346,784.
Bochan, John. 3,346,083.
Cannon, Peter. 3,346,337.
Csicsatka, Antal. 3 346,699.
Cushing, Donald S. 3,346,000.
Dell, Paul A. 3,346,758.
Dierssen, Gunther H. A. E. 3,346,737.
Dinger, Edward H. 3,346,798.
Fahey, John R., and Lanzl. 3,346,787.
Flashman, Barry P. 3,346,351.
Fleischer, Robert L. 3,346,425.
Foster, Allan D., and Sims. 3,346,378.
Gaynor, Joseph. 3,346,384.
Giger, Walter, Jr., and Harton. 3,346,687.
Howell, E. Keith. 3,346,744.
Howell, Edward K. 3,346,874.
Klebe, Johann F. 3,346,609.
Lupinski, John H., and Kopple. 3,346,444.
Marx, Arthur J. 3 345,687.
Olashaw, William F. 3,346,776.
Patsch, Glenn F. 3,346,768.
Plescia, Joseph J. 3,346,714.
Reynolds, Luther W. 3,345,989.
Siebold, Donald J. 3 346,863.
Strong, Herbert M. 3,346,102.
Toma, Daniel N. 3,346,003.
Viventi, Richard V. 3,346,405.
Wiley, Emmett H. 3,346,767.
Woodward, Stewart A. 3,346,706.

General Ionics Corp.: *See*—
Seehausen, Jobst W. 3,346,042.
General Mills, Inc.: *See*—
Kamal, Marwan R. 3,346,517.
Nordgren, Robert. 3,346,555.
General Motors Corp.: *See*—
Allured, Robert B., Strzelewicz, and Woods. 3,346,725.
Bassett, Arthur T., Jr. 3,346,721.
Blatt, Rudolph W., and Froberger. 3,346,713.
Brissette, Lawrence P. 3,345,839.
Colautti, Albert J., and Sandor. 3,346,297.
Dean, Ralph Jr. 3,346,082.
Dobb, John A. 3,346,078.
Ezop, L. Eugene. 3,346,176.
Faulkner, Alfred H., and Markowitz. 3,346,847.
Jalbing, John I., and Myers. 3,346,760.
Johnson, Marvin W., and Park. 3,345,946.
Long, George B. 3,346,472.
Secunda, Kenneth. 3,346,476.
Siegle, Donald C. 3,346,720.
Wiles Frank M. 3,346,175.
General Precision Systems Inc.: *See*—
Dell, Harold R., and Maloney. 3,346,729.
Doble, Robert N., Miller, and Sepe. 3,346,856.
Jenkner, Kurt W. 3,346,739.
General Time Corp.: *See*—
Pickering, Norman C. 3,345,812.
General Tire & Rubber Co., The: *See*—
Greene, Charles E., and Van Essen. 3,346,532.
Gentiluomo, Joseph A. Mechanical hand having computer-type drive mechanisms for producing numerous hand articulations similar to a human hand. 3,345,647, 10–10–67, Cl. 3—12.7.
Geoffrey, Nelson: *See*—
Jennings, William O., Robinson, Atkins, and Geoffrey. 3,345,886.
George, McLean. Aid for knotting ties under tension. 3,346,287, 10–10–67, Cl. 289—17.
Geselbracht, Gordon A., to Martin-Marietta Corp. Azo dyestuffs containing thiosulfatoarylpyrazolone groups. 3,346,550, 10–10–67, Cl. 260—145.
Geselbracht, Gordon A., to Martin-Marietta Corp. Pyrazolone compounds. 3 346,587, 10–10–67, Cl. 260—310.
Giammaria, John J., and D. A. Law, to Mobil Oil Corp. Polyazophenols and polyazophenol greases. 3,346,491, 10–10–67, Cl. 252—28.
Gianni, Michael H., and C. M. Orlando, to Esso Research and Engineering Co. NF_2 adducts of unsaturated hydrocarbyl amine, hydrazine, or ammonium perchlorates and method of preparation. 3,346,589, 10–10–67, Cl. 260—326.85.
Giardino, Loris. Measuring instrument for measuring discontinuous surfaces and transducer therefor. 3,345,753, 10–10–67, Cl. 33—172.
Gibson, Richard F.: *See*—
Roberts, John W., Old, Gibson, Foster, Purvis, and Wycoff. 3,346,198.
Giger, Walter, Jr., and L. M. Harton, to General Electric Co. Electric power busway having non-self-adhering insulation between the busbars and between the housing and the busbars. 3,346,687, 10–10–67, Cl. 174—68.
Gilbert, Everett E., and B. Veldhuis, to Allied Chemical Corp. Hexafluoroisopropyl ethers as anesthetics. 3,346,448, 10–10–67, Cl. 167—52.
Gilchrist, Reginald S., to The Klinger Mfg. Co., Ltd. Apparatus for false twisting yarn. 3,345,811, 10–10–67, Cl. 57—77.45.
Gilman Paper Co.: *See*—
Smith, Willard O., Weaver, and Harmsen. 3,346,173.
Gilson, Richard W.: *See*—
Higgins, John L., and Gilson. 3,346,147.
Girard, Pierre: *See*—
Maurice, Pierre, Girard, and Fenaille. 3 345,960.
Gladrow, Elroy M., and W. M. Smith, to Esso Research and Engineering Co. Preparation of a crystalline aluminosilicate zeolite in a siliceous matrix. 3,346,512, 10–10–67, Cl. 252—455.
Glaus, Bernhard, to Ulrich Steinmann, A.G., Ltd. Coating apparatus with tilting conveyor. 3,345,973, 10–10–67, Cl. 118—324.
Glaxo Laboratories Ltd.: *See*—
Chapman, John H., and Maurice. 3,346,418.
Glenn, Robert A.: *See*—
Shigley, Russell L., and Glenn. 3,346,869.
Glidden Co., The: *See*—
Kane, Bernard J. 3,346,650.
McAvoy, Bernard C. 3,346,525.
Moncrieff, James, Cochran, Eilinger, and Miller. 3,346,387.
Globe Industries, Ltd.: *See*—
Anderson, Roy H., and Lemery. 3,346,025.
Glocker, Paul L. Gearing and process and apparatus for manufacturing the same. 3,345,883, 10–10–67, Cl. 74—462.
Gluckin, William, & Co., Inc.: *See*—
Rouder, Henry N. 3,346,168.
Goetzewerke, Friedrich Goetz A.-G.: *See*—
Bondroit, Frits. 3,346,266.
Goff, Willie, Jr., and J. O. Schaefer, to International Business Machines Corp. Ribbon feed mechanism. 3,346,090, 10–10–67, Cl. 197—158.
Golden, Martin A., and J. I. Vlossak, to Ultra Plating Corp. Process and apparatus for making chromium coated papermaking wires. 3,346,466, 10–10–67, Cl. 204—24.
Golden, Martin P., and P. Wildi, to General Dynamics Corp. Forming apparatus. 3.345,843, 10–10–67, Cl. 72—56.
Goldsmith, Allen L.: *See*—
Hickman, Charles E., and Goldsmith. 3,345,726.
Goldsmith, Kathryn: *See*—
Hickman, Charles E., and Goldsmith. 3,345,726.
Gooding, Elwyn R., to Ex-Cell-O Corp. Container carrier. 3,346,106, 10–10–67, Cl. 206—65.
Goodrich, B. F., Co., The: *See*—
Lister, Paul J., and Krynytzky. 3,345,689.
Sehm, Eugene J. 3,346,545.
Talalay, Leon, Borsvold, and Queenan. 3,346,247.
Goodrich, Jerome D., Jr.: *See*—
Knapp, Richard P., and Goodrich. 3,346,045.
Gootjes, Johan, to Koninklijke Pharmaceutische Fabrieken v/h Brocades Stheeman en Pharmacia N.V. Halophenyl hexahydro benzoquinolizines. 3,346,581, 10–10–67, Cl. 206—286.
Gordon, Adolf, to Otoacustica Electronics, Ltd. Method of producing fitted hearing aid with sound amplifier incorporated therein. 3,345,737, 10–10–67, Cl. 29—527.
Gordon, Alan M., to Bell Telephone Laboratories, Inc. Monostable multivibrator circuit having variable timing interval. 3,346,746, 10–10–67, Cl. 307—88.5.
Gore, Graves T., to Riegel Textile Corporation. Apparatus for producing prefolded diapers. 3,345,965, 10–10–67, Cl. 112—2.
Goren, Mayer B., to Kerr-McGee Corp. Stabilization and enhancement of the activity of flocculants. 3,346,463, 10–10–67, Cl. 195—31.
Gortner, Willis A., to Pineapple Research Institute. Process for delaying senescence of pineapple fruit. 3,346,397, 10–10–67, Cl. 99—154.
Gorzegno, Walter P.: *See*—
Stevens, William D., and Gorzegno. 3,345,975.
Gosden, Raymond G., to British Nylon Spinners Ltd. Spinning of high molecular weight polyamide filaments. 3,346,684, 10–10–67, Cl. 264—176.
Goto, Kazuo: *See*—
Morioka, Kenneth S., and Goto. 3,346,316.
Go-Tract Ltd.: *See*—
Siber, Erwin-Walter. 3,346,306.
Gotthoffer, Philip: *See*—
Natanagara, Hussein, and Gotthoffer. 3,346,754.
Graber, Joseph V., and F. F. Salzmann, to Graber Mfg. Co., Inc. Support for draperies and the like. 3,345,676, 10–10–67, Cl. 16—87.6.
Graber, Joseph V., and F. F. Salzmann, to Graber Mfg. Co., Inc. Support for draperies and the like. 3,345,678, 10–10–67, Cl. 16—94.
Graber Mfg. Co., Inc.: *See*—
Graber, Joseph V., and Salzmann. 3,345,676.
Graber, Joseph V., and Salzmann. 3,345,678.
Grabhöfer, HerLert: *See*—
Müller, Herbert Grabhöfer, Ulrich, and Posse. 3,346,386.
Grace W. R., & Co.: *See*—
Collins, Frederick H. 3,346,686.
Gush, Donald P. 3,346,474.
Schirmer, Henry G. 3,346,480.
Sternau, Martin M. 3,345,798.
Grant, James N., E. A. Honold, F. R. Andrews, R. S. Brown, and C. L. Shepard, to United States of America, Agriculture. Card assembly sampler. 3,345,878, 10–10–67, Cl. 73—421.
Grant, Louis A. Blast furnace lining removing machine. 3,346,300, 10–10–67, Cl. 299—70.
Grassland Dairy Products, Inc.: *See*—
Felton, Leslie N. 3,345 994.
Green, Norman G., and E. Hodgson, to British Telecommunications Research Ltd. Converters for telegraph signals or the like. 3,346.693, 10–10–67, Cl. 178—26.
Greene, Charles E., and W. J. van Essen, to The General Tire & Rubber Co. Elastomeric copolymers from dihydric phenols and organic diepoxides, their preparation and cure. 3,346,532. 10–10–67, Cl. 260—37.
Greene, Janice L., to The Standard Oil Co. Manufacture of esters. 3,346,615, 10–10–67, Cl. 260—464.
Greenwald, William H.: *See*—
Stilla, John E., and Greenwald. 3,345,723.
Greenwood, David L., to Varityper Corp. Liquid treatment of sheets. 3,346,255, 10–10–67, Cl. 271—45.
Greig, Harold G., to Radio Corp. of America. Electrostatic recording element. 3,346,381, 10–10–67, Cl. 96—1.8.
Grenier, Joseph M.: *See*—
Fairbairn, Bruce A., Grenier, and Holmes. 3,346,521.
Griffiths, Vivien, and J. C. McGowan, to Imperial Chemical Industries Ltd. Polyoxymethylene compositions. 3,346,537. 10–10–67, Cl. 260—45.85.
Grinnell Corp.: *See*—
Merdinyan, Philip H. 3,346,051.
Griswold Coffee Co.: *See*—
Steiner, Robert T., and Woodis. 3,345,934.
Gross, Johann, to Hydraulik G.m.b.H. Extruder having means for exchanging pressure plates and dies. 3,345,854, 10–10–67, Cl. 72—263.
Grosser, Frederick: *See*—
Merijan, Ashot, and Grosser. 3,346,594.
Groth, Vernon C., to Sprayon Products, Inc. Aerosol spray device. 3,346,195, 10–10–67, Cl. 239—337.
Grubelich, Francis T.: *See*—
Notari, Gennaro V., and Grubelich. 3,346,461.
Gruber, Francis E., to Northwest Plastics, Inc. Computer reels. 3,346,211, 10–10–67, Cl. 242—71.8.
Gruet, Daniel, to Societe Rhodiaceta. Device for winding yarn onto a spool by means of a ring. 3,345,814, 10–10–67, Cl. 57—124.
Gudernatsch, Hugo: *See*—
Sennewald, Kurt, Erpenbach, and Gudernatsch, and Vogt. 3,346,637.
Guiler, Robert L., to Sta-Rite Products, Inc. Drain mounted hydrotherapeutic apparatus for bathtub. 3,345,982, 10–10–67, Cl. 128—66.

Gulf Research & Development Co.: *See*—
Biber, Albert, and Walsh. 3,346,196.
Henke, Alfred M., and Sebulsky. 3,346,657.
Selwitz, Charles M., and Tucci. 3,346,622.
Shutes, Emmett B., and Gustavson. 3,345,857.
Stewart, Meredith M. 3,346,509.
Walsh, Bruce R. 3,345,931.

Gulistan, Bulent, to Deutsch Fastener Corp. Floating captive screw. 3,346,032, 10–10–67, Cl. 151—69.

Gunter Leifheit and Ingeborg Leifheit: *See*—
Blum, Josef. 3,345,667.

Gush, Donald P., to W. R. Grace & Co. Photochemicaal process for preparing allene. 3,346,474, 10–10–67, Cl. 204—162.

Gustavson, Carl A.: *See*—
Shutes, Emmett B., and Gustavson. 3,345,857.

Gustkey, John E., to Cogsdill Tool Products, Inc. Cutting tool. 3,345,888, 10–10–67, Cl. 77—58.

Guyer, August and P., to Lonza Ltd. Preparation of monoalkylamines and dialkylamines. 3,346,640, 10–10–67, Cl. 260—583.

Guyer, Pio: *See*—
Guyer, August and P. 3,346,640.

Haas, Paul, to Sylvania Electric Products, Inc. Peripheral shield for color television tube shadow masks. 3,346,753, 10–10–67, Cl. 313—92.

Haberstump, Alfred H. Parts feeding device with discharging-receiver controlled delivery from source. 3,346,143, 10–10–67, Cl. 222—56.

Hachenberger, Carl L. Flexible printed circuit wiring. 3,346,415, 10–10–67, Cl. 117—212.

Hadley, David J., to The Distillers Co. Ltd. Activation of antimony oxide-tin oxide catalysts using water acid or base. 3,346,513, 10–10–67, Cl. 252—461.

Haefele, John W., to The Proctor & Gamble Co. Polyurethane foam end wrap and permanent waving process employing same. 3,345,993, 10–10–67, Cl. 132—7.

Haggai, Theodore F., to Hughes Aircraft Co. Dual loop demodulator including a phase lock loop and an AFC loop. 3,346,814, 10–10–67, Cl. 329—122.

Haggai, Theodore F., to Hughes Aircraft Co. FM demodulator system with improved sensitivity. 3,346,815, 10–10–67, Cl. 329—122.

Hagen, Reinold. Apparatus for extruding thermoplastic tubes. 3,345,690, 10–10–67, Cl. 18—14.

Hagihara, Shingo, Y. Kobayashi, K. Hasogawa, and S. Osumi, to Rayon Kabushiki Kaisha. Traversing roll. 3,346,204, 10–10–67, Cl. 242—43.2.

Haitsch, Edward P., to Richardson-Merrell Inc. Dual function stopper, 3,346,133, 10–10–67, Cl. 215—48.

Halcon International, Inc.: *See*—
Barker, Robert S. 3,346,636.

Hall, Jack P.: *See*—
Hanson, Everett L., and Hall. 3,346,158.

Hall, Lester F. Suspended pressurized gas operated paper cone projector. 3,345,977, 10–10–67, Cl. 124—11.

Halliburton Co.: *See*—
Brown, Timothy D. 3,346.049.
Farley, David L. 3,346,267.
Thompson, William S., Jr., Frazier, and Morrisett. 3,346,002.

Hamburg-Flugzeugbau G.m.b.H.: *See*—
Weigel. Jurgen. 3.346,469.

Hamilton, Walter E.: *See*—
Lowe, Edison, Durkee. and Hamilton. 3,346,392.

Hamm, Douglas W., to Muskegon Piston Ring Co. Oil rings. 3,346,264, 10–10–67, Cl. 277—141.

Hall, Henry J. Method and means for controlling the condensation of vapors under a varying ambient. 3,345,829, 10–10–67, Cl. 62—93.

Hammonds, John E. Novel device and method for reproducing printed matter. 3,346,431, 10–10–67. Cl. 156—235.

Haney, Paul O. Carrying device. 3,346,157, 10–10–67, Cl. 224—49.

Hankin, Robert W., Swish Products Ltd. Curtain suspension devices. 3,346,227, 10–10–67, Cl. 248—262.

Hanna, Daniel C., and J. F. Ebeling; said Ebeling assor. to said Hanna. Car washing apparatus. 3,345,666, 10–10–67, Cl. 15—21.

Hansen, Robert L., to Minnesota Mining and Mfg. Co. Perfluoroalkane sulfonate esters. 3,346,612, 10–10–67, Cl. 260—456.

Hanson, Everett L., and J. P. Hall, to De Luxe Laboratories, Inc. Sprocket device. 3,346,158, 10–10–67, Cl. 226—79.

Hanson, William H., to Sperry Rand Corp. Signed ternary carry generator using threshold logic elements. 3,346,730, 10–10–67, Cl. 235—175.

Hanssen, Albert J., to Conoflow Corp. Lined butterfly valves. 3,346,005, 10–10–67, Cl. 137—375.

Harapat, Joseph J.: *See*—
Barzee, Verl N., and Harapat. 3,345,751.

Hard, Lionel E.: *See*—
Furness, Stanley W., and Hard. 3,346,180.

Harder, Richard E.: *See*—
Crozier, Ronald D., Harder, Hood, and Hurley. 3,346,685.

Hardick, Alden V.: *See*—
Harrington, John A., Tassell, and Hardick. 3,345,781.

Harding, William A., and H. Shalit, to Air Products and Chemicals, Inc. Disproportionation of silicon halides. 3,346,349, 10–10–67, Cl. 23—366.

Hardwick, Albert J., to Burroughs Corp. Planar array of cathode and anode electrodes installed in channels for visual indicator display device. 3,346,759, 10–10–67, Cl. 313—109.5.

Hare, Harold H. Electronic organ speaker system. 3,346,070, 10–10–67, Cl. 181—31.

Harmon, Gregory J., to Northrop Corp. Underground antenna. 3,346,864, 10–10–67, Cl. 343—719.

Harmsen, Arnold C.: *See*—
Smith, Willard O., Weaver, and Harmsen. 3,346,173.

Harnischfeger Corp.: *See*—
Aldenhoff, Bernard J. 3,346,799.
Berkeley, John P. 3,346,214.

Harnsberger, Hugh F.: *See*—
Mulackey, Bernard F., Harnsberger, and Lindquist. 3,346,658.

Harper, James K.: *See*—
Hubbard, David C., Harper, Lynch, and Boehmer. 3,346,236.

Harrington, John A., K. B. Tassell, and A. V. Hardick, to World Wide, Inc. Sole sanding machine. 3,345,781, 10–10–67, Cl. 51—34.

Harrington, Richard F., to Textron Inc. Sealed bearing. 3,346,307, 10–10–67, Cl. 308—187.1.

Harris, Thaddeus W. Type of flash card. 3,345,759, 10–10–67, Cl. 35—31.

Harris, William B., Jr. Safety spatula for food blender. 3,346,029, 10–10–67, Cl. 146—68.

Harris, William B., to Bell Telephone Laboratories, Inc. Pulse generator. 3,346,745, 10–10–67, Cl. 307—88.5.

Harton, Lynn M.: *See*—
Giger, Walter, Jr., and Harton. 3,346,687.

Harvey Aluminum (Inc.): *See*—
Hilton, Ralph W. 3,345,852.

Hathaway, Robert J.: *See*—
Shildneck, Paul R., and Hathaway. 3,346,563.

Hawkins, James E., to Seismograph Service Corp. Method and apparatus using high velocity impact in the exploration of earth formations. 3,346,064, 10–10–67, Cl. 181—.5.

Hawley Products Co.: *See*—
Williams, John C. 3,346,519.

Hayashi, Tsutomu, to Hitachi, Ltd. Boiling liquid nuclear reactor having tiered, horizontally extending coolant channels. 3,346,460, 10–10–67, Cl. 176—54.

Haydock, Raymond, Jr.: *See*—
Haydock, Raymond S. 3,345,675.

Haydock, Raymond S., ½ to R. Haydock, Jr., and S. L. Haydock. Furniture caddy carrier. 3,345,675, 10–10–67, Cl. 16—45.

Haydock, Sandra L.: *See*—
Haydock, Raymond S. 3,345,675.

Heyes, Edward J., to Kelsey-Hayes Co. Disc brake with reinforced shoe. 3,346,076, 10–10–67, Cl. 188—73.

Hayes, John C., to Universal Oil Products Co. Production of alumina. 3,346,336, 10–10–67, Cl. 23—143.

Haynie, Robert N.: *See*—
Rhoads, George D., and Haynie. 3,346,265.

Haye, Kenneth S.: *See*—
Werner, Walter N., and Hays. 3,345,856.

Hazeltine Research, Inc.: *See*—
Tschannen, Robert F. 3,346,691.

Heath, Carl E., Jr.: *See*—
Thompson, Charles E., and Heath. 3,346,421.

Heath, Charles A. Acoustical testing method and apparatus. 3,345,861, 10–10–67, Cl. 73—67.2.

Heer, Jules: *See*—
Wettstein, Albert, Anner, Heulser, Kalvoda, Ueberwasser, and Heer. 3,346,569.

Hege, Hermann. Atomizing apparatus. 3,346,192, 10–10–67, Cl. 239—223.

Heidmann, Marcus F.: *See*—
Povinelli, Louis A., and Heidmann. 3,345,822.

Heinz, H. J., Co.: *See*—
Crocker, Foster, and Theys. 3,345,936.

Heise, Rudolf: *See*—
Schnurch, Roland, Koster, and Heise. 3,346,335.

Heisman, Robert M.: *See*—
Webb, James E. 3,345,840.

Heizer, John T., and F. E. Shashoua, to Radio Corp. of America. Electronic switching system utilizing delay means for switching transient elimination. 3,346,702, 10–10–67, Cl. 179—100.2.

Heizer, Marshall B., Jr. Torque transmitter with overload release. 3,346,084, 10–10–67, Cl. 192—150.

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Henes Mfg. Co.: *See*—
Henes, Richard W. 3,346,470.

Henes, Richard W., to Henes Mfg. Co. Means and method for producing a hydrogen and oxygen torch fuel gas having a vaporous flux homogeneously mixed therein. 3,346,470, 10–10–67, Cl. 204—129.

Henke, Alfred M., and R. T. Sebulsky, to Gulf Research & Development Co. Process for alkylating aromatic hydrocarbons using supported heteropoly acid catalyst. 3,346,657, 10–10–67, Cl. 260—671.

Henkel, Eugen G.: *See*—
Weinschenk, Albert. 3,345,659.

Henry, Elliott A., and H. G. Biagini, to Branson Instruments Inc. Method and apparatus for determining the marbling in the muscle of a live animal by ultrasonics. 3,345,863, 10–10–67, Cl. 73—67.5.

Henschker, Erhard R., to The Loewy Engineering Co. Ltd. Rolling mill, in particular for rods and bars. 3,345,848, 10–10–67, Cl. 72—237.

Heraeus Quarzschmelze G.m.b.H.: *See*—
Mohn, Heinrich, and Horstmann. 3,346,723.

Hercules Inc.: *See*—
Cohen, David. 3,346,547.
Dweley, William B. 3,346,362.
Feild, George B., and Monroe. 3,346,548.
Sapiego, John J. 3,346,675.

Herdman, Charles W. Dispensing device for use with nursing bottle assembly. 3,346,133, 10–10–67, Cl. 215—11.

Hermann, John A., to Kerr-McGee Corp. Process for recovering vanadium values from ferrophosphorus. 3,346,329, 10–10–67, Cl. 23—15.

Herrington, Richard A.: *See*—
O'Connell, Thomas B., Pierce, Herrington, and Shamp. 3,346,360.

Herrmann, Kenneth W., to The Procter & Gamble Co. Detergent compositions. 3,346,504, 10–10–67, Cl. 252—137.

Herrmann, Kenneth W., to The Procter & Gamble Co. Liquid detergent composition containing solubilizing electrolytes. 3,346,873, 10–10–67, Cl. 252—137.

Hersey-Sparling Meter Co.: *See*—
Dell'Orfano, Anthony M., Hood, Rollins, and Siders. 3,346,182.

Hess, Frederic O., to Selas Corp. of America. Metal heating. 3,345,846, 10–10–67, Cl. 72—200.

Hess, Frederick G., to Cities Service Oil Co. Fuel and lubricant additives. 3,346,492, 10–10–67, Cl. 252—32.5.

Heusler, Karl: *See*—
Wettstein, Albert, Anner, Heulser, Kalvoda, Ueberwasser, and Heer. 3,346,569.
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,346,601.

Hewlett-Packard Co.: *See*—
Lynn, Robert E. 3,346,803.

Heymann, Joseph, to Tuco Plastics Corp. Spring untangler. 3,346,305, 10–10–67, Cl. 302—2.

Hickin, Robert J., to Packaging Corp. of America. Apparatus for transferring packages. 3,345,799, 10–10–67, Cl. 53—47.

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Hicks, James C.: *See*—
Martinet, Jacques R., and Hicks. 3,346,248.

Higgins, John L., and R. W. Gilson, to Brunswick Corp. Dental compound syringe. 3,346,147, 10–10–67, Cl. 222—326.

Hignite, Walter, to Wisconsin Caisson, Inc. Removable casing construction. 3,345,826, 10–10–67, Cl. 61—53.

Hill, James H. Adjustable carpenter's square. 3,345,750, 10–10–67, Cl. 33—75.

Hill, Thomas, to British Hydrocarbon Chemicals Ltd. Catalyst, preparation thereof, and polymerization process using said catalyst. 3,346,511, 10–10–67, Cl. 252—455.

Hillingsworth & Vose Co.: *See*—
Gay, Philip T. 3,346,445.

Hilton, Ralph W., to Harvey Aluminum (Inc.). Extrusion press. 3,345,852. 10–10–67, Cl. 72—253.

Hings, David C., to Whitmoyer-Reed Ltd. Apparatus for dispensing and mixing liquids in predetermined relative proportions. 3,346,144, 10–10–67, Cl. 222—57.

Hiraga, Sadaji, to K. Ito. Clinical commode. 3,345,652, 10–10–67, Cl. 5—90.

Hiroki, Kenzo, T. Shisume. Y. Nakamura, to Nitto Chemical Industry Co., Ltd. Method for preparing methacrylonitrile. 3,346,617. 10–10–67. Cl. 260—465.5.

Hirose, Yasuo, and S. Takeda, to Hitachi, Ltd. Method for the production of ceramic nuclear fuel elements. 3,346,676, 10–10–67, Cl. 264—.5.

Hirschmann, Robert P.: *See*—
Mariani, Thomas L., Hirschmann, Cupolo, and Peterman. 3,345,804.

Hitachi, Ltd.: *See*—
Hayashi, Tsutomu. 3,346,460.
Hirose, Yasuo, and Takeda. 3,346.676.
Miura, Tanetoshi, and Koshikawa. 3,345,979.
Noumi, Makoto. 3.346,792.
Takahashi, Noriyosni. 3,346,793.

Hjort-Convevor A/S: *See*—
Valentin-Hjorth, Morton. 3,345,954.

Hlavacek, Robert J.: *See*—
Rongey, Elbert H., and Hlavacek. 3,346,394.

Hlinyanszky, Istvan: *See*—
Somogyi, Laszlo, Steingaszner, Hlinyanszky, Horvath, and Karolyi. 3,346,483.

Hoch, Paul E., and G. B Stratton, to Hooker Chemical Corp. Tricyclic ketal compounds having biological activity. 3,346,596, 10–10–67, Cl. 260—346.1.

Hochmuth, Joseph W. Fold-up, roll-up tractor windbreaker warmer. 3,346.296, 10–10–67, Cl. 296—78.

Hodges Earnest S., to J.M.P. Corp. Coning tool for cervical surgery. 3,345,981, 10–10–67, Cl. 128—2.

Hodgson. Edward: *See*—
Green, Norman G., and Hodgson. 3,346,698.

Hoeksema, Herman: *See*—
Bannister, Brian, and Hoeksema. 3,346,635.

Hoffmann-La Roche, Inc.: *See*—
Magid, Louis. 3,346,449.
Metlesics, Werner, and Sternbach. 3,346,638.

Hoffman, Louis S., and L. J. Marlatt, to Dillon-Beck Mfg. Co. Towel holder. 3,346,208, 10–10–67, Cl. 242—55.2.

Hofmann, Albert, F. Troxler, and H. Ott, to Sandox Ltd. (also known as Sandos, A.G.). D-lysergic acid amides. 3,346,580, 10–10–67, Cl. 260—285.5.

Holschen, Ulrich C.: *See*—
Baker, Sanford H., and Holschen. 3,346,827.

Holdridge, Warren B. Radii cutter. 3,345,893, 10–10–67, Cl. 82—12.

Holdsworth & Co., Inc.: *See*—
Chandler, Benson. 3,345,792.

Holm, Torkil O., to Kefalas, A/S. Compositions and methods for treating depression with dihydroanthracene compounds. 3,346,453, 10–10–67, Cl. 167—65.

Hollihan, John P., A. J. Reed, and W. Turton, to J. P. Stevens & Co., Inc. Process and apparatus for texturizing textile material. 3,345,718, 10–10–67, Cl. 28—1.

Holmes, Arthur: *See*—
Fairbairn, Bruce A., Grenier, and Holmes. 3,346,521.

Holsman, Henry T. Plaster or stucco bead. 3,345,788, 10–10–67, Cl. 52—254.

Holt, George A.: *See*—
Cralle, Walter O., Jr., Holt, and Lenney. 3,346,088.
Cralle, Walter O., Jr., Holt, Lenney, Sederholm, and Walton. 3,346,086.
Colombo, Giannino, and Holt. 3,346,087.

Honeywell, Inc.: *See*—
Lethin, Walter R., Papantonis, and Bradley. 3,346,727.
Mierendorf, Robert E. 3,346,772.
Wall, Lamar J. 3,346,231.

Honjo, Mikio, and R. Marumoto, to Takeda Chemical Industries, Ltd. Method for the production of ribonucleoside-5'-phosphate. 3,346,562, 10–10–67, Cl. 260—211.5.

Honold, Edith A.: *See*—
Grant, James N., Honold, Andrews, Brown, and Shepard. 3,345,878.

Hood, James H.: *See*—
Crozier, Ronald D., Harder, Hood, and Hurley. 3,346,685.

Hood, Roger W.: *See*—
Dell'Orfano, Anthony M., Hood, Rollins, and Siders. 3,346,182.

Hooker Chemical Corp.: *See*—
Hoch, Paul E., and Stratton. 3,346,596.
Lindemann, Otto H. 3,346,413.
Well, Edward D. 3,346,645.

Hopkinson, Brian E.: *See*—
Turney, John J., and Hopkinson. 3,346,485.

Hormel, Geo. A., & Co.: *See*—
Brown, Frank M., Burton, Farmer, and Irmen. 3,346,112.

Horstmann, Georg: *See*—
Mohn, Heinrich, and Horstmann. 3,346,723.

Horton, Donelson B., to John Blue Co., Inc. Fluid metering device. 3,346,006, 10–10–67, Cl. 137—501.

Horvath, Jozsef: *See*—
Somogyi, Laszlo, Steingaszner, Hlinyanszky, Horvath, and Karolyi. 3,346,483.

Hotten, Bruce W.: *See*—
Dreher. John L., and Hotten. 3,346,497.

Hotz Mfg. Co.: *See*—
Osborn. Albert J. 3,346,136.

Howard, Norman R.: *See*—
Scott, William J., and Howard. 3,346,825.

Howe Plastics & Chemicals Co., Inc.: *See*—
Champion, Nancy. 3,346,298.

Howell, Edward K., to General Electric Co. Power control circuits. 3,346,744, 10–10–67, Cl. 307—88.5.

Howell, Edward K., to General Electric Co. Power control circuits. 3,346,874, 10–10–67, Cl. 307—88.5.

Hoyt, Firman G., to Hoyt Wire Cloth Co. Tensioning apparatus for vibrator screens. 3,346,114, 10–10–67, Cl. 209—403.

Hoyt Wire Cloth Co.: *See*—
Hoyt, Firman G. 3,346,114.

Hubbard, David C., J. K. Harper, R. L. Lynch, and R. B. Boehmer, to A. B. Chance Co. Live line tension tool assembly. 3,346,236, 10–10–67, Cl. 254—67.

Hubble, Gerald A.: *See*—
Czubak, Albin S., and Hubble. 3,345,938.

Huber, Harry, and D. Maugis, to CSF-Compagne Generale de Telegraphie Sans Fil. Cavity type particle stream accelerator having a non-isothermal chamber. 3,346,750, 10–10–67, Cl. 313—231.

Hudgin, Donald E.: *See*—
Sturm, Clarence L., Hudgin, and Rosen. 3,346,538.

Huggins, James M., to Monsanto Co. Heavy-duty liquid detergent emulsion compositions and processes for preparing the same. 3,346,503, 10–10–67, Cl. 252—106.

Hughes Aircraft Co.: *See*—
Broomhall, Gordon E. 3,346,716.
Haggai, Theodore F. 3,346,814.
Haggai, Theodore F. 3,346,815.
Mullins, William H., and Thaler. 3,346,859.

Hullhorst, William B., to Owens-Corning Fiberglas Corp. Apparatus for materials handling. 3,346,128, 10–10–67, Cl. 214—6

Hultquist, Martin E.: *See*—
Christensen, Haldor, Hultquist; and Waugh. 3,346,634.

Humble Oil & Refining Co.: *See*—
Robbins, Max L., and Schulman. 3,346,494.

Humeau, Henri: *See*—
De Calmers, Alain, Humeau, and Lecocq. 3,346,330.

Hunt, George H., to Simplex Wire and Cable Co. Stabilized dielectric composition containing 2-bromonaphthalene. 3,346,500, 10–10–67, Cl. 252—63.2.

Hurley, Rupert B.: *See*—
Crozier, Ronald D., Harder, Hood, and Hurley. 3,346,685.

Hurst, George H., Jr., and W. G. Campbell. Riveted automobile wheel and rim structure and method of making same. 3,346,301. 10–10–67, Cl. 301—65.

Hutson, Thomas, Jr., and C. O. Carter, to Phillips Petroleum Co. Alkylation process with precooled isoparaffin and HF acid catalyst. 3,346,660, 10–10–67, Cl. 260—683.49.

Hyde, Harold W.: *See*—
Van Volkenburgh Ross, Hyde, and Royston. 3,346,598.

Hydranautics: *See*—
Bush, Robert M. 3,345,710.

Hydraulik G.m.b.H.: *See*—
Gross. Johann. 3,345,854.

IIT Research Institute: *See*—
Brophy, James J. 3,346,701.

Iannucci, Luigi. Men's suit type jacket with concealable button fastener. 3,345,644, 10–10–67, Cl. 2—96.

Ideal Industries, Inc.: *See*—
Pittman, David M. 3,345,694.
Rayfield, James A. F., and Whiteburst. 3,345,695.
Whitehurst, Joe R. 3,345,696.

Illinois Tool Works Inc.: *See*—
Stokes, John B. 3,345,706.

Imperial Chemical Industries Ltd.: *See*—
Coffey, Robert S., and Lawley. 3,346,473.
Davies, Trevor, Fletcher, and McIntryre. 3,346,541.
Griffiths, Vivien, and McGowan. 3,346,537.
Moakes, John E. 3,346,651.

Imperial Eastman Corp.: *See*—
Franck, George E. 3,345,855.

Imterlego A. G.: *See*—
Christiansen, Godtfred K. 3,346,775.

Industrial Holding Establishment: *See*—
Combourieux, Andre. 3,345,947.

Ingersoll-Rand Co.: *See*—
Law, John P. 3,345,729.

Ingleby, Richard F. J. Production of N-vinyl 2-oxazolidones. 3,346,586, 10–10–67, Cl. 260—307.

Institute for Scientific Information, Inc.: *See*—
Garfield, Eugene, and Lutzker. 3,346,692.

Institute Organischeskoi Khimii: *See*—
Arbuzov, Boris A., Sokolovsky, Zavlin, and Vinokurova. 3,346,543.

International Alloys Ltd.: *See*—
Ehrlich, Friedrich. 3,346,417.

International Business Machines Corp.: *See*—
Colombo, Giannino, and Holt. 3,346,087.
Cralle, Walter O., Jr., Holt, Lenney, Sederholm, and Walton. 3,346,086.
Cralle, Walter O., Jr., Holt, and Lenney. 3,346,088.
Cralle, Walter O., Jr., Lenney, Lennon, and Walton. 3,346,089.
Cralle, Walter O., Jr., Lennon, and Walton. 3,346,091.
Goff, Willie, Jr., and Schaefer. 3,346,090.
Jensen, Roy A. 3,345,908.
Lohmann, Adolf W. 3,345,912.
Schaefer, John O. 3,346,184.

International Paper Co.: *See*—
Pherson, Perry O., Slater, and Engel. 3,346,141.

International Standard Electric Corp.: *See*—
Earp, Charles W. 3,346,860.
Eyre, John R., Tomica, and Way. 3,346,574.
Midford, Thomas A., and Pantell. 3,346,816.
Roberton, James S. P., Dymoke-Bradshaw, and Lotay. 3,346,858.

International Telephone and Telegraph Corp.: *See*—
Beaudouin, Jacques R. 3,346,785.

Ionascut, Arion: *See*—
Nicolau, Ioan, Dogaru, Evghenide, Ionascut, Tihon, and Motoroiu. 3,345,881.

Irani, Riyad R., and J. W. Lyons, to Monsanto Co. Deflocculation of solid materials in aqueous medium. 3,346,487, 10–10–67, Cl. 252—8.5.

Irani, Riyad R.: *See*—
Lyons, John W., and Irani. 3,346,488.

Irie, Sozaburo: *See*—
Hiroki, Kenzo, Shizume, Nakamura, Yoshino, Kamio, Irie, and Kawamura. 3,346,617.

Irmen, Howard F.: *See*—
Brown, Frank M., Burton, Farmer, and Irmen. 3,346,112.

Ironside, Donald S., and W. A. Watts, to DASA Corp. Tape magazine having loop blocking means. 3,346,161, 10–10–67, Cl. 226—190.

Isaacson, Bruce G.: *See*—
Schroeder, Kenneth W., and Isaacson. 3,346,778.

Isaacson, Robert B., and J. P. Kennedy, to Esso Research and Engineering Co. Crystalline polybenzyls. 3,346,514, 10–10–67, Cl. 260—2.

Israel, The State of, Ministry of Defence: *See*—
Agnon, Shmuel. 3,346,007.

Ito, Kazumitsu: *See*—
Hiraga, Sadaji. 3,345,652.

Iwasa, Hitoo: *See*—
Teramoto, Iwao, Iwasa, and Shinoda. 3,346,428.

J. M. P. Corp.: *See*—
Hodges, Earnest S. 3,345,981.

Jaacks, Volker: *See*—
Kern, Werner, and Jaacks. 3,346,663.

Jacoby-Bender, Inc.: *See*—
Gaupp, Kurt. 3,345,705.
Gaupp, Kurt. 3,345,713.

Jacuzzi Bros., Inc.: *See*—
Jacuzzi, Candido. 3,346,014.

Jacuzzi, Candido, to Jacuzzi Bros., Inc. Pressure tank assembly for water pressure system. 3,346,014, 10–10–67, Cl. 138—30.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,370, 10–10–67, Cl. 75—147.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,371, 10–10–67, Cl. 75—147.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,372, 10–10–67, Cl. 75—147.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,373, 10–10–67, Cl. 75—147.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,374, 10–10–67, Cl. 75—147.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,375, 10–10–67, Cl. 75—147.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,376, 10–10–67, Cl. 75—147.

Jagaciak, George J., to Olin Mathieson Chemical Corp. Aluminum base alloy. 3,346,377, 10–10–67, Cl. 75—147.

Jakes, William C., Jr., to Bell Telephone Laboratories, Inc. Microwave switch. 3,346,824, 10–10–67, Cl. 333—98.

Jakeway, Gerald V., to Keeler Brass Co. Method of assembling a body member and a stud to produce a unitary structure. 3,345,736, 10–10–67, Cl. 29—509.

Jalbing, John I., and E. H. Myers, to General Motors Corp. Spark plug center electrode with a split truncated head. 3,346,760, 10–10–67, Cl. 313—136.

Jansen, Hansjorg, and P. Wild, to General Dynamics Corp. Coil for magnetic forming. 3,345,844, 10–10–67, Cl. 72—56.

Jasionowski, Joseph J., to Ferro Corp. Plug-in receptacle. 3,346,719, 10–10–67, Cl. 219—451.

Jaspett, Willima B.: *See*—
Dashio, John C. 3,346,238.

Jemseby, Anton W. Methods of preparing a graphic multicolor reproduction. 3,345,939, 10–10–67, Cl. 101—211.

Jenkins, Fred W.: *See*—
Dickson, Woodrow J., and Jenkins. 3,346,489.

Jenkins, Henry H. Electrical control system for stud welding. 3,346,715, 10–10–67, Cl. 219—98.

Jenkner, Kurt W., to General Precision Systems Inc. Photosensitive character reading apparatus. 3,346,739, 10–10–67, Cl. 250—219.

Jennings, David C., to United Aircraft Corp. Ventilated space suit. 3,345,641, 10–10–67, Cl. 2—2.1.

Jennings, William O., G. Robinson, W. F. Atkins, deceased (by D. I. Atkins, administratrix), and N. Geoffrey, to National Research Development Corp. Indexing devices. 3,345,886, 10–10–67, Cl. 74—826.

Jenny, Rudolf, to Maschinenfabrik Schweiter AG. Yarn guide mechanism for a winding location. 3,346,205, 10–10–67, Cl. 242—43.2.

Jenny, Rudolf, to Maschinenfabrik Schweiter AG. Precision cross-winding apparatus. 3,346,207, 10–10–67, Cl. 242—45.

Jensen, Roy A., to International Business Machines Corp. Print characteristics displayer. 3,345,908, 10–10–67, Cl. 88—14.

Jo-Dee Corp.: *See*—
Mellion, Frank. 3,346,309.

Johannisson, Dag O. A., to AGA Aktiebolag. Valve arrangement for breathing apparatus, 3,346,011, 10–10–67, Cl. 137—604.

Johnsen, Carsten I. Continuous recovery of shale oil and gas from pulverized oil shale. 3,346,481, 10–10–67, Cl. 208—11.

Johns-Manville Corp.: *See*—
Anderson, Robert C., and Bartoo. 3,346,356.
Blau, Theodore N., and Davis. 3,346,016.
Eschen, Franklin W. 3,346,490.

Johnson, Fred I. Grouping conveyors. 3,346,096, 10–10–67, Cl. 198—34.

Johnson & Johnson: *See*—
Kalwaites, Frank. 3,345,700.
Lieberman, Emanuel R. 3,346,402.

Johnson, Jon E.: *See*—
Bowden, Donald W., and Johnson. 3,346,092.

Johnson, Marvin W., and R. M. Park, to General Motors Corp. Rocket stage separator. 3,345,946, 10–10–67, Cl. 102—49.4.

Johnson, Walter P., III, and E. F. Florian, to Mandrel Industries, Inc. Pressure sensitive detector for marine seismic exploration. 3,346,838, 10–10–67, Cl. 340—7.

Johnston, George F., and G. E. Duncan. Weight recording system. 3,346,061, 10–10–67, Cl. 177—2.

Jones, David L., and S. C. Tabisz, to United States of America, Army. Radar-to-magnetic-tape buffering unit. 3,346,849, 10–10–67, Cl. 340—172.5.

Jones, George H., to Quebec Smelting & Refining Ltd. Magnetic separators. 3,346,116, 10–10–67, Cl. 210—222.

Jones, Howard S., Jr., to United States of America, Army. Slat antenna built into a dielectric radome. 3,346,865, 10–10–67, Cl. 343—771.

Jones & Laughlin Steel Corp.: *See*—
Mizikar, Eugene A., Wojcik, and Li. 3,345,738.

Jones, Paul R., to Bates Industries, Inc. Motorcycle bag mounting apparatus. 3,346,156, 10–10–67, Cl. 224—32.

Jongkind, Jan C., to M & T Chemicals Inc. Tin electrodeposition process. 3,346,468, 10–10–67, Cl. 204—54.

Jordan, Clarence A., to United States of America, Agriculture. Process for closing containers. 3,345,920, 10–10–67, Cl. 93—36.

Juculano, Theodore C., to Marvel Equipment Corp. Releasable metal scaffolding connector. 3,345,635, 10–10–67, Cl. 5—327.

Jurisch, Otto: *See*—
Schatz, Gunther, Gemeinhardt, Brucher, and Jurisch. 3,345,719.

Kaiser Aluminum & Chemical Corp.: *See*—
Martinet, Jacques R., and Hicks. 3,346,248.
Watters, Donald W. 3,346,424.

Kalle Aktiengesellschaft: *See*—
Beck, Rudolf. 3,346,435.

Kalvoda, Jaroslav: *See*—
Wettstein, Albert, Anner, Heusler, Kalvoda, Ueberwasser, and Heer. 3,346,569.
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,346,601.

Kalwaites, Frank, to Johnson & Johnson. Apparatus for producing slivers. 3,345,700, 10–10–67, Cl. 19—150.

Kamal, Marwan R., to General Mills, Inc. Polyurethanes formed from fatty amine polyols. 3,346,517, 10–10–67, Cl. 260—2.5.

Kamio, Hiroyoshi: *See*—
Hiroki, Kenzo, Shizume, Nakamura, Yoshino, Kamio, Irie, and Kawamura. 3,346,617.

Kane, Bernard J., to The Glidden Co. Preparation of citronellol. 3,346,650, 10–10–67, Cl. 260—631.5.

Kanegafuchi Spinning Co., Ltd.: *See*—
Nakao, Keinosuke, and Minamiyama. 3,346,408.

Karalis, Algird J.: *See*—
Cooley, Gerald J., Gehringer, and Karalis. 3,346,718.

Karbosky, Joseph T., to Phillips Petroleum Co. Method and apparatus for controlling the temperature of a fluid removed from a source thereof. 3,345,827, 10–10–67. Cl. 62—55.

Kariby, Henning, and W. F. Z. Lee, to Rockwell Mfg. Co. Fluid flow meter. 3,345,869, 10–10–67, Cl. 73—231.

Karle, Franklin J., and E. D. Ayers, to The Dow Chemical Co. Electron source for mass spectrometers having an elongated filament and a concave focusing electrode with a resistive coating. 3,346,735, 10–10–67, Cl. 250—41.9.

Karolyi, Jozsef: *See*—
Somogyi, Laszlo, Steingaszner, Hlinyanszky, Horvath, and Karolyi. 3,346,483.

Karr, Robert I.: *See*—
Erickson, Louis A., Klinke, and Karr. 3,346,237.

Kasting, Howard E., and J. P. Sachs, to Union Carbide Corp. Continuous bag making machine. 3,345,919, 10–10–67, Cl. 93—8.

Katehis, George. Diving mask with snorkel. 3,345,984, 10–10–67, Cl. 128—145.

Katoo, Hiroshi: *See*—
Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,346,331.

Kauder, Otto S., and N. L. Perry, to Argus Chemical Corp. PVC resin containing a keto acetic (A) acid ester or (B) anhydride, and a metal (A) phenolate or (B) carboxylic acid salt. 3,346,536, 10–10–67, Cl. 260—45.85.

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Kawamura, Yuichi: *See*—
Hiroki, Kenzo, Shizume, Nakamura, Yoshino, Kamio, Irie, and kawamura. 3,346,617.

Keeler Brass Co.: *See*—
Jakeway, Gerald V. 3,345,736.

Kefalas, A/S: *See*—
Holm, Torkil O. 3,346,453.

Kelsey-Hayes Co.: *See*—
Hayes, Edward J. 3,346,076.
Swift, Harvey C. 3,346,075.

Kemper, Robert S., Jr.: *See*—
Last, George A., and Kemper. 3,346,673.

Kennedy, Eugene F.: *See*—
Starks, Charles M., and Kennedy. 3,346,614.

Kennedy, Joseph P.: *See*—
Isaacson, Robert B., and Kennedy. 3,346,514.

Kern, Werner, and V. Jaacks, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for the production of polyoxymethylenes. 3,346,663, 10–10–67, Cl. 260—823.

Kerr-McGee Corp.: *See*—
Goren, Mayer B. 3,346,463.
Hermann, John A. 3,346,329.

Kidder, Harvey L., and P. B. Roulund, to FMA, Inc. Method for fabricating backlit projection screens. 3,346,674, 10–10–67, Cl. 264—1.

Kikukawa, Ryosuke, to Bridgestone Tire Co. Ltd. Submerged floatable hoses for transporting oil and other liquids on the sea. 3,346,015, 10–10–67, Cl. 138—114.

Kimball Systems Ltd.: *See*—
Kruger, Herbert A. 3,346,440.

Kimberly-Clark Corp.: *See*—
Burger, William H. 3,345,699.

King, Geo. W., Ltd.: *See*—
Burrows, Arthur T. C. 3,345,833.

Kinkaid, Robert J., to AMP Inc. Feed-thru connector. 3,346,834, 10–10–67, Cl. 339—217.

Kinsell, David, to St. Joseph Lead Co. Manufacture of powdered lead. 3,346,677, 10–10–67, Cl. 264—12.

Kirsten, Paul A. Knife disc wood cutting machine. 3,346,027, 10–10–67, Cl. 144—176.

Kitayama, Akira, to Tamanoi Su Kabushiki Kaisha. Reaction product of sodium glutamate and acetic acid as a dry acid seasoning. 3,346,396, 10–10–67, Cl. 99—140.

Kitrosser, Samuel, to Avant Inc. Identification card camera. 3,345,924, 10–10–67, Cl. 95—1.1.

Kitsopoulos, Sotirios C., to Bell Telephone Laboratories, Inc. Time division hybrid with bilateral gain. 3,346,697, 10–10–67, Cl. 179—15.

Klebe, Johann F., to General Electric Co. Bis-silylated ureido compounds and process therefor. 3,346,609, 10–10–67, Cl. 260—448.2.

Klee, David J., and R. L. Berreth, to Air Products and Chemicals, Inc. Parallel flow cryogenic freezer. 3,345,828, 10–10–67, Cl. 62—63.

Kleiss, Louis D. Apparatus for loading shells for small arms. 3,345,904, 10–10–67, Cl. 86—25.

Klinger Mfg. Co., Ltd., The: *See*—
Gilchrist, Reginald S. 3,345,811.

Klinke, Bernhard R.: *See*—
Erickson, Louis A., Klinke, and Karr. 3,346,237.

Klix, Uwe, to Entwicklungsanstalt fur Industrie-Elektronik Schaan FL. Controllable supply or feed circuit for electromagnetic vibrators. 3,346,780, 10–10–67, Cl. 317—148.5.

Klosa, Josef, to Dr. Hans Voigt, med., Chem.-Pharm. Fabrik. Alkylamino-alkyl-(rutin or hesperidin)-3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxides and method for making the same. 3,346,559, 10–10–67, Cl. 260—210.

Klug, William A.: *See*—
Lievens, Ronald J., Raitzer, Davis, and Klug. 3,346,174.

Knapp, Richard P., and J. D. Goodrich, Jr., to Esso Production Research Co. Operation in a submarine well. 3,346,045, 10–10–67, Cl. 166—.5.

Knapsack-Griesheim Aktiengesellschaft: *See*—
Sennewald, Kurt, Erpenbach, Gudernatsch, and Vogt. 3,346,637.

Kneip, George D., Jr., to National Research Corp. Method of producing Nb-Zr wire by double vacuum melting and heat-treating. 3,345,739, 10–10–67, Cl. 29—528.

Knopf, Herbert: *See*—
Spahrkas, Heinrich, Knopf, Faber, and Mauthe. 3,346,323.

Knowles, Edwin C.: *See*—
McCoy, Frederic C., Knowles, and Goldsby. 3,346,352.

Kobayashi, Yasutake: *See*—
Hagihara, Shingo, Kobayashi, Hasogawa, and Osumi. 3,346,204.

Koch, Werner, and F. Preuss, to Roland Offselmaschinenfabrik Faber & Schleicher AG. Adjustable vibrating roller in the inking mechanism of a printing machine. 3,345,941, 10–10–67, Cl. 101—350.

Koelle, Otto, to B. Braun. Apparatus for measuring small variations in gas pressure. 3,345,877, 10–10–67, Cl. 73—401.

Koenig, Nathan H., to United States of America, Agriculture. Modification of wool with isatoic acid anhydrides in the presence of butyrolactone. 3,346,327, 10–10–67, Cl. 8—128.

Koepp, Hans-Martin, E. Siggel, and H. Roedel, to Vereinigte Glanzstoff-Fabriken AG. Addition of calcium hexafluorosilicate or hexafluorosilicic acid as haze inhibitor during two-stage catalytic production of polyethylene terephthalate. 3,346,542, 10–10–67, Cl. 260—75.

Kohl, Karl: *See*—
Finkenauer, Helmut, Seibert, Kohl, Luecke, and Schubert. 3,346,322.

Kohler, Lothar, to Ruti Machinery Works Ltd. Arrangement for automatic and manual bobbin changing. 3,346,018, 10–10–67, Cl. 139—232.

Kokorudz, Michael, to Wyandotte Chemicals Corp. Selective halogenation of ketones. 3,346,646, 10–10–67, Cl. 260—593.

Kolomayets, George, and A. J. Bury, to Admiral Corp. Phonograph spindle actuation lever. 3,346,261, 10–10–67, Cl. 274—10.

Komarnitsky, Rostislaw S., to Rockwell-Standard Corp. Method of making taper leaf springs. 3,345,727, 10–10–67, Cl. 29—173.

Komatsu, Toshiaki: *See*—
Nakagome, Takenari, and Komatsu. 3,346,577.

Koolnis, Stanley R., to L. Drechsler and F. Zandell. Reclosable dispensing container with buckle lock. 3,346,165, 10–10–67, Cl. 229—17.

Koolnis, Stanley R., to L. Drechsler and F. Zandell. Reclosable dispensing container with locking flap. 3,346,166, 10–10–67, Cl. 229—17.

Koons, David S.: *See*—
Strange, Lloyd K., Marberry, and Koons. 3,346,048.

Koppers Co., Inc.: *See*—
Leston, Gerd. 3,346,649.

Kopple, Kenneth D.: *See*—
Lupinski, John H., and Kopple. 3,346,444.

Koshikawa, Tsuneji: *See*—
Miura, Tanetoshi, and Koshikawa. 3,345,979.

Köster, Alfred: *See*—
Schnurch, Roland, Köster, and Heise. 3,346,335.

Koster, Robert A., F. J. Beach, and R. F. Bryan, to The Bunker-Ramo Corp. Control/display apparatus. 3,346,853, 10–10–67, Cl. 340—172.5.

Krehbiel, Vivian D. Flexible material transport mechanism. 3,345,928, 10–10–67, Cl. 95—94.

Kruger, Herbert A., to Kimball Systems Ltd. Patching means for restoring punched card field. 3,346,440, 10–10–67, Cl. 156—583.

Krynicki, Witold, and F. E. Lehner. Recorder. 3,346,870, 10–10–67, Cl. 346—109.

Krynytzky, Alexander: *See*—
Lister, Paul J., and Krynytzky. 3,345,689.

Krzyzewski, Stefan: *See*—
Pope, Joseph A., and Krzyzewski. 3,345,976.

Kuderko, Ronald A., to Ammco Tools, Inc. Grinding device. 3,345,884, 10–10–67, Cl. 74—574.

Kuderna, Jerome G., Jr.: *See*—
Larson, John E., and Kuderna. 3,346,613.

Kuhne, Rudolf, F. Meininger, and R. Pfirrmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Azo-dyestuffs containing aminoalkylenesulfonylamino groups. 3,346,553, 10–10–67, Cl. 260—163.

Kuhle, Engelbert: *See*—
Dickore, Karlfried, and Kuhle. 3,346,590.

Kuonl, Xaver, to Borbe-Wanner AG. Apparatus for tightening and closing of band-like closure hoops. 3,346,023, 10–10–67, Cl. 140—93.4.

Kurashiki Rayon Co., Ltd.: *See*—
Eguchi, Tamotsu, and Yamanchi. 3,346,540.

Kusters, Eduard, and K. Quoos; said Quoos assor. to said Kusters. Calender roll for pressure treating materials. 3,345,937, 10–10–67, Cl. 100—155.

Laboratory for Electronics, Inc.: *See*—
Dixon, Harold A. 3,346,842.

Lader, Allan N. Muffler construction for motorcycles. 3,346,071, 10–10–67, Cl. 181—56.

Lafferty, James L.: *See*—
Schaeffer, William D., and Lafferty. 3,346,624.

La Franca, Joseph J., Jr., M. Mayer, Jr., and H. W. Weller, Jr., to United States of America, Agriculture. Fiber fractionating apparatus and process. 3,346,110, 10–10–67, Cl. 209—2.

Lagally, Paul, to Chemirad Corp. Metal complex-forming compounds and process of making and using same. 3,346,527, 10–10–67, Cl. 260—29.2.

Laing, Nikolaus, to Laing Vortex, Inc. Fluid conveying apparatus. 3,345,961, 10–10–67, Cl. 110—72.

Laing Vortex, Inc.: *See*—
Laing, Nikolaus. 3,345,961.

Laitram Corp., The: *See*—
Lapeyre, James M. 3,345,682.

Lambert, Alfred, to Lambert Frame and Picture Co., Inc. Clamps for picture frames. 3,345,715, 10–10–67, Cl. 24—259.

Lambert Frame and Picture Co., Inc.: *See*—
Lambert, Alfred. 3,345,715.

Lambert, Warren G. Pneumatic tire blow-out warning apparatus. 3,346,843, 10–10–67, Cl. 340—58.

La Mers, Herbert, and M. W. Wayne, to California Car Wash Systems, Inc. Window cleaning device. 3,345,672, 10–10–67, Cl. 15—322.

La Monica, Michael S., Jr.: *See*—
Russo, Joseph J., and La Monica. 3,346,120.

Lamoria, La F., and P. F. Reigler, to The Dow Chemical Co. Preparation of $Be(BH)_2 \cdot 3N_2H_4$. 3,346,348, 10–10–67, Cl. 23—358.

Langecker, Gerhard, to Josef Meissner Kommanditgesellschaft. Recovery method. 3,346,593, 10–10–67, Cl. 260—340.

Langlykke, Asger F., J. Bernstein, and A. L. La Via, to Olin Mathieson Chemical Corp. Stannous fluoride complexes of 2,2′-dithiodipyridine 1,1′-dioxides. 3,346,578, 10–10–67, Cl. 260—270.

Langston Co., The: *See*—
Meister, Hans. 3,346,436.

Lanum, William J.: *See*—
Petersen, Gerald A., and Lanum. 3,346,284.

Lansi, Robert H.: *See*—
Fahey, John R., and Lansi. 3,346,787.

Lapeyre, James M., to The Laitram Corp. Process for individually treating headless shrimp. 3,345,682, 10–10–67, Cl. 17—45.

Lara, Rolando, to Chevron Research Co. Double sonogramming for seismic record improvement. 3,346,840, 10–10–67, Cl. 340—15.5.

Larson, John E., and J. G. Kuderna, Jr., to Shell Oil Co. 2,4-dihalophenyl esters of lower alkane- and haloalkanesulfonic acids. 3,346,613, 10–10–67, Cl. 260—456.

Larson, John W., to United Aircraft Corp. Electro-fluid-dynamic generator. 3,346,747, 10–10–67, Cl. 310—11.

Larson, Lewis G.: *See*—
Wilson, Reagan T., and Larson. 3,346,661.

Larson, Lowell A. Combined material mixer and distributor. 3,346,239, 10–10–67, Cl. 259—9.

La Salle Machine Tool Inc.: *See*—
Sattler, Robert I. 3,345,747.

La Soudure Autogene Francaise: *See*—
Maurice, Pierre, Girard, and Fenaille. 3,345,960.

Last, George A., and R. S. Kemper, Jr., to United States of America, Atomic Energy Commission. Formation of submicron uranium carbide particles in metallic uranium. 3,346,673, 10–10–67, Cl. 264—.5.

Latham, Burton F., Jr., to Continental Carbon Co. Production of finely divided silicon or titanium carbide. 3,346,338, 10–10–67, Cl. 23—208.

Lavelle, Thomas W.: *See*—
Lavelle, William A. and T. W. 3,346,240.

Lavelle, William A. and T. W., to Ready T' Pour, Inc. Mixing apparatus. 3,346,240, 10–10–67, Cl. 259—26.

Laverty, Martin J., to Murray Mfg. Corp. Apparatus for affixing a flange to a tube. 3,345,730, 10–10–67, Cl. 29—243.52.

La Via, Anthony L.: *See*—
Langlykke, Asger F., Bernstein, and La Via. 3,346,578.

Law, Derek A.: *See*—
Giammaria, John J., and Law. 3,346,491.

Law, John P., to Ingersoll-Rand Co. Fastener positioner. 3,345,729, 10–10–67, Cl. 29—211.

Lawley, Herbert G.: *See*—
Coffey, Robert S., and Lawley. 3,346,473.

Leach, Hugh K.: *See*—
Stelljes, Charles R., and Leach. 3,345,784.

Leary, Ralph J.: *See*—
Michael, James R., Leary, Argabright, and Passannante. 3,346,599.

Lecocq, Alfred: *See*—
De Calmers, Alain, Humeau, and Lecocq. 3,346,330.

Lederman, Arthur N., and F. H. Lindstrom, to Vacudyne Corp. Method for conditioning tobacco. 3,345,992, 10–10–67, Cl. 131—140.

Lee, Hop. Electric plug and socket with interlocking terminals. 3,346,883, 10–10–67, Cl. 339—139.

Lee, Lieng-Huang, to The Dow Chemical Co. Process for making high impact styrene polymers in aqueous suspension. 3,346,520, 10–10–67, Cl. 260—17.

Lee, Richard G., to Alves Photo Service, Inc. Paper transport. 3,345,911, 10–10–67, Cl. 88—24.

Lee, Winston F. Z.: *See*—
Karlby, Henning, and Lee. 3,345,869.

Leece-Neville Co., The: *See*—
Reid, James D., and Way. 3,346,801.

Leemann, Johannes, to Crown Cork Co. (Belgium) S.A. Crown closure. 3,346,134, 10–10–67, Cl. 215—39.

Lefebvre, Yvon, and P. F. Morand, to American Home Products Corp. 3β-acetoxypregn-4-ene-6,20-diones and their preparation. 3,346,603, 10–10–67, Cl. 260—397.4.

Lehner, Francis E.: *See*—
Krynicki, Witold, and Lehner. 3,346,870.

Lehovec, Kurt: *See*—
Smyth, Donald M., and Lehovec. 3,346,423.

Leibman, Leonid M.: *See*—
Lesin, Abram D., and Leibman. 3,346,200.

Leifheit, Gunter, and Leifheit, Ingeborg: *See*—
Blum, Josef. 3,345,667.

Leifheit, Ingeborg: *See*—
Blum, Josef. 3,345,667.

Lellep, Otto G. Rotary kiln temperature measurement. 3,345,873, 10–10–67, Cl. 73—351.

Lemelson, Jerome H. Ducted panelling and articles. 3,346,220, 10–10–67, Cl. 244—117.

Lemery, Douglas J.: *See*—
Anderson, Roy H., and Lemery. 3,346,025.

Lenney, Edwin J.: *See*—
Cralle, Walter O., Jr., Holt, Lenney, Sederholm, and Walton. 3,346,086.
Cralle, Walter O., Jr., Holt, and Lenney. 3,346,088.
Craddle, Walter O., Jr., Lenney, Lennon, and Walton. 3,346,089.

Lennon, Kenneth A.: *See*—
Cralle, Walter O., Jr., Lenney, Lennon, and Walton. 3,346,089.

Lellep, Otto G. Rotary kiln temperature measurement. 3,345,873.
Cralle, Walter O., Jr., Lennon, and Walton. 3,346,091.

Leonard, James H., and E. P. Dessert, to Square D Co. Electric circuit breaker and mounting means therefor. 3,346,777, 10–10–67, Cl. 317—119.

Lepetit S.p.A.: *See*—
Testa, Emilio, and Fontanella. 3,346,565.

Lesin, Abram D., and L. M. Leibman, to Vsesojuzny Nauchno-Issledovatelsky Institute Stroitelnjkh Materialov. Vibrating mill. 3,346,200, 10–10–67, Cl. 241—171.

Lester, George R., to Universal Oil Products Co. Preparation of unsaturated side chain cycloalkanes. 3,346,655, 10–10–67, Cl. 260—666.

Leston, Gerd, to Koppers Co., Inc. Selective partial dealkylation of tertiary alkylated phenolds. 3,346,649, 10–10–67, Cl. 260—624.

Le Suer, William M., to The Lubrizol Corp. Lubricants containing metal complexes of alkenyl succinic acid-amine reaction products. 3,346,493, 10–10–67, Cl. 252—32.5.

Lethin, Walter R., N. A. Papantonis, and J. J. Bradley, to Honeywell, Inc. Justification of operands in an arithmetic unit. 3,346,727, 10–10–67, Cl. 235—160.

Lever Brothers Co.: *See*—
Riezebos, Gerrit, Van Dorp, and Schweigl. 3,346,628.

Levine, Seymour D., and P. A. Principe, to E. R. Squibb & Sons, Inc. 5 β-Cyano-A-norandrostane compounds. 3,346,616, 10–10–67, Cl. 260—464.

Levinstein, Hyman J., and K. Nassau, to Bell Telephone Laboratories, Inc. Growth of lithium niobate crystals. 3,346,344, 10–10–67, Cl. 23—301.

Levy, Ernest S., J. C. Bronaugh, and A. D. Christie, to Cubic Corp. Hybrid ring structure for reversing the phase of an RF signal in accordance with the level of a two-voltage level signal producing means. 3,346,822, 10–10–67, Cl. 333—7.

Lewis, William E., to Esso Research and Engineering Co. Process for removing acidic compounds from aqueous solutions. 3,346,484, 10–10–67, Cl. 208—237.

Libby-Owens-Ford Glass Co.: *See*—
O'Connell, Thomas B., Pierce, Herrington, and Shamp. 3,346,360.

Lieberman, Emanuel R., to Johnson & Johnson. Method of producing an edible, tubular collagen-gelatin sausage casing. 3,346,402, 10–10–67, Cl. 99—176.

Lienhard, Ortto E., to Engelhard Hanovia, Inc. Clamped seal for high pressure gas discharge lamp. 3,346,751, 10–10–67, Cl. 313—32.

Lievens, Ronald J., A. Raitzer, J. R. Davis, and W. A. Klug, to The Trane Co. Compact axial flow fan. 3,346,174, 10–10–67, Cl. 230—120.

Light's London Ltd.: *See*—
Palmer, George W. 3,345,964.

Li, Kun: *See*—
Mizikar, Eugene A., Wojcik, and Li. 3,345,738.

Lindberg, John E., Jr. Heat detecting sensor. 3,345,875, 10–10–67, Cl. 73—368.3.

Lindeboom, Herman, to Sealol, Inc. Check valve with self centering poppet. 3,346,009, 10–10–67, Cl. 137—540.17.

Lindemann, Otto H., to Hooker Chemical Corp. Method and apparatus for coating wire and solvent recovery. 3,346,413, 10–10–67, Cl. 117—102.

Lindquist, Robert H.: *See*—
Mulackey, Bernard F., Harnsberger, and Lindquist. 3,346,658.

Lindstrom, Eddie G.: *See*—
Kautsky, George J., and Lindstrom. 3,346,354.

Lindstrom, Fred H.: *See*—
Lederman, Arthur N., and Lindstrom. 3,345,992.

Link-Belt Co.: *See*—
Carter, Robert M., and Petrik. 3,346,129.
Schmidt, Edward W. 3,345,953.

Linke, Ernest A., to Breeze Corp., Inc. Speed control system for polyphase induction motors. 3,346,795, 10–10–67, Cl. 318—227.

Linstead, Robert S., to Structo Division, King-Seeley Thermos Co. Portable foldable table. 3,345,959, 10–10–67, Cl. 108—119.

Lipkins, Morton S. Sine bars. 3,345,764, 10–10–67, Cl. 33—174.

List, Heinz. Mixing machine. 3,346,242, 10–10–67, Cl. 259—111.

Lister, Paul J., and A. Krynytsky, to The B. F. Goodrich Co. Hose curing unit. 3,345,689, 10–10–67, Cl. 18—6.

Littmann, Joseph C., to Ferro Mfg. Corp. Speedometer unit including an electro-osmotic pump actuated indicator. 3,346,810, 10–10–67, Cl. 324—70.

Litton Systems, Inc.: *See*—
Anderson, Harold C., and Shanholtzer. 3,346,813.
Fields, Paul. 3,346,688.
Reimann, William G. 3,345,741.

Ljungmans Verkstoder Aktiebolaget: *See*—
Eklund, Hans E. 3,346,142.

Lockheed Aircraft Corp.: *See*—
Painter, Giles W., and Parry. 3,345,864.

Loetel, Charles E., and H. A. Shryock, to The Marley Co. Cooling tower fill assembly of foraminous sheet material. 3,346,246, 10–10–67, Cl. 261—103.

Loewy Engineering Co. Ltd., The: *See*—
Henschker, Erhard R. 3,345,848.
Singleton, Peter. 3,345,851.

Lohmann, Adolf W., to International Business Machines Corp. Rotary shearing interferometer. 3,345,912, 10–10–67, Cl. 88—56.

Lohmar, Walther: *See*—
Neumann, Wolfram, and Lohmar. 3,346,496.

Lombardo, Michael E., to Stapling Machines Co. Quaternary ammonium organotin halides. 3,346,607, 10–10–67, Cl. 260—429.7.

Lomerson, Robert B., to Varo, Inc. Multilayer conductor board assembly. 3,346,773, 10–10–67, Cl. 317—100.

Long, Cecil L., to E. I. du Pont de Nemours and Co. Machine for forming images. 3,346,679, 10–10–67, Cl. 264—40.

Long, George B., to General Motors Corp. Method of reacting chemical components using sonic or supersonic waves. 3,346,472, 10–10–67, Cl. 204—157.1.

Long, John R., to Shuford Mills, Inc. Bobbin drive mechanism for roving frames. 3,345,813, 10–10–67, Cl. 57—96.

Longenecker, Levi S. Link and yoke suspended roof. 3,345,962, 10–10–67, Cl. 110—99.

Lonza Ltd.: *See*—
Guyer, August and P. 3,346,640.

Lopez, John P., to Universal Corrugated Box Machinery Corp. Short length tape feeder. 3,346,433, 10–10–67, Cl. 156—355.

Lotay, Nirmal S.: *See*—
Roberton, James S. P., Dymoke-Bradshaw, and Lotay. 3,346,858.

Louisville Trust Co.: *See*—
Carrier, Robert M., Jr. 3,346,097.

Louvar, Cecelia J., and A. J. de Rosset, to Universal Oil Products Co. Production of bromine by oxidation of hydrogen bromide. 3,346,340, 10–10–67, Cl. 23—216.

Lovett, John R.: *See*—
Tyler, William E., III., and Lovett. 3,346,619.
Schmall, Edwin A., and Lovett. 3 346,641.

Lowe, Edison, E. L. Durkee, and W. E. Hamilton, to United States of America, Agriculture. Production of fruit juices. 3,346,392, 10–10–67, Cl. 99—105.

Lowy, Paul M., to Mesta Machine Co. Rolling mill roll drives. 3,345 849, 10–10–67, Cl. 72—249.

Lubrizol Corp., The: *See*—
Le Suer, William M. 3,346,493.

Luckey, George W.: *See*—
Baxendale, Ralph W., Luckey, and Yutzy. 3,346,383.

Lucien, Rene, to Recherches Etudes Production R.E.P. Retraction of fuselage under-carriages with wheels arranged in diabolo mounting. 3,346 218, 10–10–67, Cl. 244—102.

Ludwig, Albert R., to Zagar, Inc. Numerical control system. 3,346,183, 10–10–67, Cl. 235—91.

Ludwig, Herbert. Method of making a shoe with injection molded bottom. 3,345,664, 10–10–67, Cl. 12—142.

Ludwig, Walter D., to Mac Valves, Inc. Locking device. 3,346,277, 10–10–67, Cl. 285—308.

Ludwig, William J.: *See*—
Malec, Robert E., and Ludwig. 3,346,495.

Lundell, Vernon J. Hydraulic transporter trailer. 3,346,131, 10–10–67 Cl. 214—506.

Lundman, Ben E. Motor actuated cushioning bumper. 3,346,292, 10–10–67, Cl. 293—9.

Lundmark, Werner N., to Sala Maskingfabriks AB. Device for recovering feebly magnetic material in wet separators. 3,346,113, 10–10–67, Cl. 209—223.

Luecke, Eberhard: *See*—
Finkenauer, Helmut, Seibert, Kohl, Luecke, and Schubert. 3 346,322.

Lupinski, John H., and K. D. Kopple, to General Electric Co. Electrically conductive polymers and process of producing the same. 3,346,444, 10–10–67, Cl. 161—213.

Lusebrink, Elmer H., and A. H. Meyer, to Ace Finishing Co., Inc. Display device. 3,345,767, 10–10–67 Cl. 40—106.53.

Lutz, Eugene F., and S. W. Beatty, to Marathon Oil Co. Process for dehydrohalogenation. 3,346,653, 10–10–67, Cl. 260—666.

Lutzker Lawrence: *See*—
Garfield, Eugene, and Lutzker. 3,346,692.

Lynch, Robert L.: *See*—
Hubbard, David C., Harper, Lynch, and Boehmer. 3,346,236.

Lynn, Robert E., to Hewlett-Packard Co. Power supply circuit. 3,346 803, 10–10–67, Cl. 323—22.

Lyon, Richard K., to Esso Research and Engineering Co. Carbon black production. 3,346,339, 10–10–67, Cl. 23—209.1.

Lyons, Edward J., to United Aircraft Corp. Mold heater. 3,346,039, 10–10–67, Cl. 164—338.

Lyons, John W.: *See*—
Irani Riyad R., and Lyons. 3,346,487.

Lyons, John W., and R. R. Irani, to Monsanto Co. Deflocculation of solid materials in aqueous medium. 3,346,488, 10–10–67, Cl. 252—8.5.

MAC Valves, Inc.: *See*—
Baker, Sanford H., and Holschen. 3,346,827.

MB Associates: *See*—
Biehl, Arthur T., and Meinhardt. 3,345,902.

M & T Chemicals Inc.: *See*—
Jongkind, Jan C. 3,346,468.

Maak, Robert O.: *See*—
Mayer, Francis X., and Maak. 3,346,365.
Mayer, Francis X., and Maak. 3,346,366.

MacGugan Ian C., and H. P. Trix, to Wyandotte Chemicals Corp. Paper coating color compositions. 3,346,406, 10–10–67, Cl. 106—124.

Macher, Karl H., to Jos. Schneider & Co. High-speed varifocal objective. 3,346,320, 10–10–67, Cl. 350—184.

Mac Valves, Inc.: *See*—
Ludwig, Walter D. 3,346,277.

Magee, Ellington M., to Esso Research and Engineering Co. Storable liquid rocket propellants containing tetranitromethane with difluoramino compounds and method of use. 3,345,821, 10–10–67, Cl. 60—214.

Magid, Louis, to Hoffmann-La Roche, Inc. α-Methorphan compositions and methods of making same. 3,346,449. 10–10–76, Cl. 167—55.

Magnaflux Corp.: *See*—
Schroeder, Kenneth W., and Isaacson. 3,346,778.

Magrane, John K., to American Cyanamid Co. Synthetic paper of improved film-forming character and articles prepared therefrom. 3,346,432, 10–10–67, Cl. 156—330.

Maher, Philip K.: *See*—
Sergeys, Francis J., Maher, Briggs, and McDaniel. 3,346,328.

Mahoney, Jack L. Means for aiding hearing. 3,346,704, 10–10–67, Cl. 179—107.

Mainhardt, Robert: *See*—
Biebl, Arthur T., and Mainhardt. 3,345,902.

Malec, Robert E., and W. J. Ludwig, to Armour and Co. Water base lubricants. 3,346,495, 10–10–67, Cl. 252—49.3.

Mallinchrodt Chemical Works: *See*—
Wallingford, Vernon H. 3,346,630.

Mallory, P. R., & Co., Inc.: *See*—
Dotto, Gianni A. 3,345,915.

Maloney, Merrill J.: *See*—
Dell, Harold R., and Maloney. 3,346,729.

Malsam, Albert C. Two-way terracing device. 3,345,764, 10–10–67, Cl. 37—110.

Malý, Zdeněk: *See*—
Carniol, Bohdan, and Malý. 3,345,874.

Mamba Engineering Co., Inc.: *See*—
Oliver, James E., Miller, and Taylor. 3,346,054.

Mandrel Industries, Inc.: *See*—
Johnson, Walter P., III, and Florian. 3,346,838.

Manganaro, George F., to Federal Tool Engineering Co. Automatic electric stapler. 3,346,163, 10–10–67, Cl. 227—131.

Mangood Corp.: *See*—
Cromer, Earle G., Jr. 3,346,857.

Mann, Charles G., to Weltronic Co. Production monitoring system with portable plug-in enabling switch. 3,346,696, 10–10–67, Cl. 179—2.

Mannesmann Aktiengesellschaft: *See*—
Bungeroth, Adolf. 3,346,037.
Naeser, Gerhard, and Scholz. 3,346,363.
Speith, Karl-Georg, and Bungeroth. 3,346,035.

Mannesmann-Meer Aktiengesellschaft: *See*—
Schmitt, Paul, and Dittgen. 3,345,847.

Manning, David T., and A. A. Sousa, to Union Carbide Corp. 2-polychloroalkylbenzothiazolines. 3,346,584, 10–10–67, Cl. 260—304.

Manny, Erwin H., to Esso Research and Engineering Co. Gaseous fuel control system and apparatus for furnaces. 3,346,249, 10–10–67, Cl. 266—29.

Marathon Oil Co.: *See*—
Lutz, Eugene F., and Beatty. 3,346,653.

Marberry, James E.: *See*—
Strange, Lloyd K., Marberry, and Koons. 3,346,048.

Marcovitch, Isaac and J., said I. Marcovitch assignor to said J. Marcovitch. Profiling methods and machines. 3,345,845, 10–10–67, Cl. 72—91.

Marcovitch, Jacob: *See*—
Marcovitch, Isaac and J. 3,345,845.

Marcus, Freddie: *See*—
Miller, Jeanne M., Marcus, and Cretors. 3,346,125.

Mariani, Thomas L., R. P. Hirschmann, D. Cupolo, and C. J. Peterman. Separation of gases by gas-solid chromatography in a synthetic diamond column. 3,345,804, 10–10–67, Cl. 55—67.

Marine Colloids, Inc.: *See*—
Foster, Stanley E. 3,346,556.

Market Forge Co.: *See*—
Binding, Kenneth W. 3,345,704.

Markowitz, Seymour: *See*—
Faulkner, Alfred H., and Markowitz. 3,346,847.

Marlatt, Lewis J.: *See*—
Hoffman, Louis S., and Marlatt. 3,346,208.
Thomas, Ralph H., and Marlatt. 3,346,099.

Marley Co., The: *See*—
Loetel, Charles E., and Shryock. 3,346,246.

Marsh, Harold G.: *See*—
Baldwin, William M., Jr., Cairns, Marsh, and Wilson. 3,346,427.

Marsh, John R., to Mobil Oil Corp. Bag package. 3,346,104, 10–10–67, Cl. 206—57.

Marshall, Philip: *See*—
Blakeway, John M., and Marshall. 3,346,505.

Martin-Marietta Corp.: *See*—
Geselbracht, Gordon A. 3,346,550.
Geselbracht, Gordon A. 3,346,587.
Raudsep, Ilmar G. 3,346,862.

Martin, John C., to United Kingdom Atomic Energy Authority. Spark gaps. 3,346,762, 10–10–67, Cl. 313—306.

Martin, Richard F., to Montgomery Elevator Co. Safety brake tripping system for elevators. 3,346,073, 10–10–67, Cl. 187—90.

Martin, Romeo J.: *See*—
Bollman, John A., Gates, and Voss. 3,346,489.

Martinet, Jacques R., and J. C. Hicks, to Kaiser Aluminum & Chemical Corp. Refractory structure for a rotary kiln. 3,346,248, 10–10–67, Cl. 263—33.

Martins, Joseph G., to Monsanto Co. Polyvinyl alcohol compositions plasticized with monophenyl ethers of polyoxy ethylene glycols. 3,346,530, 10–10–67, Cl. 260—33.2.

Marumoto, Ryuji: *See*—
Honjo, Mikio, and Marumoto. 3,346,562.

Marvel Equipment Corp.: *See*—
Juculano, Theodore C. 3,345,655.
Marx, Arthur J., to General Electric Co. Injection molding apparatus. 3,345,687, 10–10–67, Cl. 18—5.
Maryland Cup Corp.: *See*—
Carter, Paul H. 3,346,170.
West, John B. 3,345,801.
Maschinenfabrik Fabr A.G.: *See*—
Scherrer-Wirz, Donat. 3,345,684.
Maschinenfabrik Memmingen Ingenieur: *See*—
Wiesnagrotzki, Ernst, Bigiel, and Muller. 3,345,810.
Maschinenfabrik Sack G.m.b.H.: *See*—
Sack, Ernst T., and Becker. 3,345,850.
Maschinenfabrik Schweiter A.G.: *See*—
Jenny, Rudolf. 3,346,205.
Jenny, Rudolf. 3,346,207.
Masek, Tommy D.: *See*—
Dryden, Hugh L. 3,345,820.
Mason, Ralph B.: *See*—
Arey, William F., Jr., and Mason. 3,346,482.
Massal, Louis L. J., to Societe d'Etudes et de Recherches Techniques (S.E.E.T.). Mechanism for locking doors or like movable panels. 3,346,291, 10–10–67, Cl. 292—144.
Massengill, S. E., Co., The: *See*—
Collins, Galen F., and Butt. 3,346,451.
Collins, Galen F., Butt, and Poet. 3,346,450.
Masuda, Noboru, to Denki-Onkyo Kabushiki-Kaisha. Electrograph using for plurality of electrode devices having a thermoplastic film as a recording medium. 3,346,868, 10–10–67, Cl. 346—74.
Masulis, Leonard J., to Owens-Illinois, Inc. Means to adjust effective width of curtain coater. 3,345,972, 10–10–67, Cl. 118—301.
Materials Handling Equipment Co.: *See*—
Bowden, Donald W., and Johnson. 3,346,092.
Matkan, Josef, and R. A. Chapman, to Research Laboratories of Australia Ltd. Electrophotographic method using an unsymmetrical AC current during development. 3,346,475, 10–10–67, Cl. 204—181.
Matsushita Electronics Corp.: *See*—
Teramoto, Iwao, Iwasa, and Shinoda. 3,346,428.
Matthews, Jas. H., & Co.: *See*—
Devon, Harry J. 3,345,749.
Maugis, Daniel: *See*—
Huber, Harry, and Maugis. 3,346,750.
Maul, John A.: *See*—
Porter, Ralph B., and Maul. 3,345,940.
Maurer, John W., and J. P. Quine, to United States of America, Army. Passive device for obtaining independent amplitude and phase control of a UHF or microwave signal. 3,346,823, 10–10–67, Cl. 333—11.
Maurice, Pierre, P. Girard, and P. Fenaille, to La Soudure Autogene Francaise. Organic materials destructor. 3,345,960, 10–10–67, Cl. 110—8.
Maurice, Victor S.: *See*—
Chapman, John H., and Maurice. 3,346,418.
Maurin, Alexandre J., and P. Demonsablon. Foundation structure for turbo-electric power plants. 3,345,819, 10–10–67, Cl. 60—95.
Mauthe, Gustav: *See*—
Spahrkas, Heinrich, Knopf, Faber, and Mauthe. 3,346,323.
May, Donald H.: *See*—
Cobaugh, Robert F., May, and Ritter. 3,345,692.
Mayer, Francis X., and R. O. Maak, to Esso Research and Engineering Co. Treatment of fluidized oxidic iron ores to inhibit bogging. 3,346,365, 10–10–67, Cl. 75—26.
Mayer, Francis X., and R. O. Maak, to Esso Research and Engineering Co. Fluidized ore reduction with basic nitrogenous additives to prevent bogging. 3,346,366, 10–10–67, Cl. 75—26.
Mayer, Guy, and G. Bret, to CSF-Compagnie Generale de Telegraphie Sans Fil. Raman light intensity amplifier utilising fluids. 3,346,741, 10–10–67, Cl. 307—88.3.
Mayer, Mayer, Jr.: *See*—
La Franca, Joseph J., Jr., Mayer, and Weller. 3,346,110.
Maytag Co., The: *See*—
Mellinger, John C. 3,346,115.
McAvoy, Bernard C., to The Glidden Co. Non-yellowing baking-type maleic acid modified alkyd/amine resin coating compositions and the maleic acid modified styrenated alkyds thereof. 3,346,525, 10–10–67, Cl. 260—22.
McCann, Charles P. Parachute hat. 3,345,646, 10–10–67, Cl. 2—199.
McCarthy, Daniel N., to Anchor Hocking Glass Corp. Color ornamentation of glass articles. 3,346,410, 10–10–67, Cl. 117—8.
McCarthy, John J., to Norco Inc. Releasable mechanical coupling. 3,345,711, 10–10–67, Cl. 24—230.
McCoy, Frederic C., E. C. Knowles, and A. R. Goldsby, to Texaco Inc. Fire starting composition. 3,346,352, 10–10–67, Cl. 44—10.
McCullough, Edward E., to Thiokol Chemical Corp. Apparatus for forming ignition surfaces in solid propellant motors. 3,345,693, 10–10–67, Cl. 18—45.
McDaniel, Carl V.: *See*—
Sergeys, Francis J., Maher, Briggs, and McDaniel. 3,346,328.
McGhee, Thomas B. Molded jamb-frame combination and method of manufacture. 3,345,780, 10–10–67, Cl. 49—504.
McGowan, John C.: *See*—
Griffiths, Vivien, and McGowan. 3,346,537.
McIntryre, James E.: *See*—
Davies, Trevor, Fletcher, and McIntryre. 3,346,541.
McKenna, George W., and C. T. de Kam, to Westinghouse Air Brake Co. Housing assemblage for portable two-way radio. 3,346,812, 10–10–67, Cl. 325—16.
McLean, Robert E., to Rival Mfg. Co. Power operated can opener with power pierce and cutlery grinding means. 3,345,742, 10–10–67, Cl. 30—4.
McMahon, Frank J.: *See*—
Anderson, Harold P., McMahon, Scharg, and Winter. 3,346,700.
McMahon, Robert D., H. J. Becker, and W. H. Wright, to Union Oil Co. Ammonium nitrate, kaolin clay, monoamine mixture sensitized with liquid hydrocarbon and preparation. 3,346,429, 10–10–67, Cl. 149—2.
McMillen, James M.: *See*—
Townsend, Harold L., and McMillen. 3,346,047.
McNair, Samuel L., to The Songrand Corp. Vibrator motor with self-contained cooling means. 3,346,748, 10–10–67, Cl. 310—16.
McNerney, Norman E., to Simplex Wire and Cable Co. Alkali metal conductor terminal. 3,346,690, 10–10–67, Cl. 174—77.
McWilliams, Charles S.: *See*—
Evans, James W., and McWilliams. 3,346,389.
Meacham, Larned A.: *See*—
Borenstein, David P., and Meacham. 3,346,820.
Meginnis, Charles E. Sight glass assembly. 3,345,872, 10–10–67, Cl. 73—334.
Meier, Fritz: *See*—
Von Kutepow, Nikolaus, Seibt, and Meier. 3,346,608.
Meinhardt, Robert: *See*—
Biehl, Arthur T., and Meinhardt. 3,345,902.
Meininger, Fritz: *See*—
Kuhne, Rudolf, Meininger, and Pfirrmann. 3,346,553.
Meinke, Hans: *See*—
Miedler, Hermann, and Meinke. 3,345,702.
Meissner, Josef, Kommanditgesellschaft: *See*—
Langecker, Gerhard. 3,346,593.
Meister, Hans, to The Langston Co. Mounting for paper guide shield fingers of corrugating facer. 3,346,436, 10–10–67, Cl. 156—473.
Mele, Sidney C., to Associated Baby Services, Inc. Deodorant holder for a diaper hamper. 3,346,140, 10–10–67, Cl. 220—87.
Mellinger, John C., to The Maytag Co. Method and apparatus for centrifugal extraction. 3,346,115, 10–10–67, Cl. 210—78.
Mellion, Frank, to Jo-Dee Corp. Display container. 3,346,309, 10–10–67, Cl. 312—109.
Meltz, Robert R., to The Moreland Corp. Rubber covered roller. 3,345,942, 10–10–67, Cl. 101—148.
Meltzer, Robert I.: *See*—
Brown, Richard E., and Meltzer. 3,346,582.
Mendelsohn, Max: *See*—
Donovan, James, and Mendelsohn. 3,346,034.
Mennesson, Andre L., to Societe Industrielle de Brevets et d'Etudes S.I.B.E. Carburetors for internal combustion engines. 3,346,245, 10–10–67, Cl. 261—61.
Menzimer, L. W.: *See*—
Slattery, Robert E. 3,345,680.
Mercereau, James E.: *See*—
Vant-Hull, Lorin L., and Mercereau. 3,346,826.
Merck & Co., Inc.: *See*—
Boxer, George E. 3,346,560.
Boxer, George E., and Nutt. 3,346,581.
Folkers, Karl, and Wolf. 3,346,595.
Tull, Roger J., and Weinstock. 3,344,632.
Merdinyan, Philip H., to Grinnell Corp. Pilot operated fire protection device. 3,346,051, 10–10–67, Cl. 169—20.
Merijan, Ashot, and F. Grosser, to General Aniline & Film Corp. Haloalkyl and polyhaloalkyl lactones. 3,346,594, 10–10–67, Cl. 260—343.
Mesta Machine Co.: *See*—
Lowy, Paul M. 3,345,849.
Metal-Tech, Inc.: *See*—
Bryand, Edward T., and Peabody. 3,345,756.
Metlesics, Werner, and L. H. Sternbach, to Hoffmann-La Roche Inc. α-phenyl-2-amino-benzylmercaptanes. 3,346,638, 10–10–67, Cl. 260—570.
Metzger, Horst, and M. Pape, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of ε-cyanocaproic acid. 3,346,618, 10–10–67, Cl. 260—465.4.
Meyer, Alvin H.: *See*—
Lusebrink, Elmer H., and Meyer. 3,345,767.
Meyer, Otto, to Demag Aktiengesellschaft. Drilling device with means to indicate resistance to rotation. 3,346,299, 10–10–67, Cl. 299—1.
Miaskiewicz, Richard F., Sr., to Carrier Corp. Bore centered coupling. 3,346,285, 10–10–67, Cl. 287—104.
Michael, James R., R. J. Leary, P. A. Argabright, and A. J. Passannante, to Esso Research and Engineering Co. Derivatives of furan. 3,346,599, 10–10–67, Cl 260—347.3.
Michaelson, Forest K.: *See*—
Watson, Dighton L., and Michaelson. 3,346,399.
Micromatic Hone Corp.: *See*—
Czubak, Albin S., and Hubble. 3,345,938.
Militzer, Robert W. 3,345,783.
Microtron Corp.: *See*—
Sherrill, James W. 3,345,805.
Midford, Thomas A., and R. H. Pantell, to International Standard Electric Corp. Optical energy converter. 3,346,816, 10–10–67, Cl. 329—144.
Miedler, Hermann, and H. Meinke, to Deutscher Spinnereimaschinenbau Ingolstadt. Sliver band storage apparatus. 3,345,702. 10–10–67, Cl. 19—159.
Mierendorf, Robert E., to Honeywell, Inc. Control apparatus. 3,346,772, 10–10–67, Cl. 317—13.
Milanowski, Floyd J., to United States of America, Army. Detent assembly. 3,345,913, 10–10–67, Cl. 89—1.
Milette, Kenneth A. Floor guide for bottom edge of sliding doors. 3,345,677, 10–10–67, Cl. 16—90.

Militser, Robert W., to Micromatic Hone Corp. Centerless honing apparatus. 3,345,783, 10–10–67, Cl. 51—58.
Millard, Richard J., to Sprague Electric Co. Assembly of solid electrolytic capacitors. 3,346,783, 10–10–67, Cl. 317—230.
Miller, C. David, to American Instrument Co., Inc. Carbon and hydrogen analyzer. 3,346,342, 10–10–67, Cl. 23—253.
Miller, Donald F.: *See*—
Moncrieff, James, Cochran, Ellinger, and Miller. 3,346,387.
Miller, Herman, Inc.: *See*—
Propst, Robert L. 3,346,318.
Miller, Jeanne M., F. Marcus, and C. J. Cretors, to C. Cretors & Co. Tray. 3,346,125, 10–10–67, Cl. 211—126.
Miller, Keith W., and H. D. Shriver, to H. O. Canfield Co. Method and apparatus for manufacturing resilient bushings. 3,345,724, 10–10–67, Cl. 29—149.5.
Miller, Park H., Jr., D. C. Pound, and H. R. Snodgrass, to General Dynamics Corp. Method of and apparatus for generating seismic waves. 3,346,066, 10–10–67, Cl. 181—.5.
Miller, Robert J.: *See*—
Doble, Robert N., Miller, and Sepe. 3,346,856.
Miller, Roy E., and E. R. Mowery. Chemical proportioning device and the like. 3,345,997, 10–10–67, Cl. 137—99.
Miller, Sevart N., and J. F. Flodin, to Flodin, Inc. Process of removing and recovering oil from deep-fried products. 3,346,391, 10–10–67, Cl. 99—100.
Miller, William H.: *See*—
Oliver, James E., Miller, and Taylor. 3,346,054.
Mills, Edmund H., to William Mills & Co. (Sheffield) Ltd. Forks for agricultural, horticultural and like purposes. 3,345,887, 10–10–67, Cl. 76—111.
Mills, William & Co. (Sheffield) Ltd.: *See*—
Mills, Edmund H. 3,345,887.
Milster, Arthur N., to Wagner Electric Corp. Tandem master cylinder. 3,345,818, 10–10–67, Cl. 60—54.6.
Milton, Gary R., to American Thermoelectric Corp. Oil well heating apparatus control system. 3,346,722, 10–10–67, Cl. 219—499.
Minamiyama, Tsuneo: *See*—
Nakao, Keinosuke, and Minamiyama. 3,346,408.
Mine Safety Appliances Co.: *See*—
Uminski, Edward A. 3,345,642.
Minejima, Nobuaki: *See*—
Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nosaki, and Doochi. 3,346,331.
Minerals & Chemicals Philipp Corp.: *See*—
Sagar, Lester R. 3,346,197.
Ministerul Petrolului: *See*—
Nicolau, Ioan, Dogaru, Evghenide, Ionascut, Tihon, and Motoroiu. 3,345,881.
Minnesota Mining and Mfg. Co.: *See*—
Hansen, Robert L. 3,346,612.
Mullin, John T., and Clunis. 3,346,703.
Minnie Punch & Die Co., Inc.: *See*—
Bennett, Edward D. 3,345,896.
Minton, Robert G., to Rohm & Haas Co. Process for producing guanidine-substituted cross-linked poly(vinyl aromatic) anion exchange resins. 3,346,516, 10–10–67, Cl. 260—2.1.
Mirrlees National Ltd.: *See*—
Pope, Joseph A., and Krzyzewski. 3,345,976.
Mitchell, Patrick H.: *See*—
Carrier, Robert M., Jr. 3,346,097.
Mitten, Leonard A., to E. E. Runnion. Profiling of a log by use of cutter heads, and improved pulp chip produced thereby. 3,346,028, 10–10–67, Cl. 144—326.
Miura, Tanetoshi, and T. Koshikawa, to Hitachi, Ltd. Apparatus for observing vocal cord wave. 3,345,979, 10–10–67, Cl. 128—2.
Mixon, Clyde E., to Pedicraft, Inc. Crib top. 3,345,653, 10–10–67, Cl. 5—97.
Mizikar, Eugene A., W. M. Wojcik, and K. Li, to Jones & Laughlin Steel Corp. Method of producing steel strip of uniform thickness by direct casting. 3,345,738, 10–10–67, Cl. 29—528.
Moakes, John E., to Imperial Chemical Industries Ltd. Stabilised vinylidene chloride monomer containing paraalkoxy phenol and ammonia. 3,346,651, 10–10–67, Cl. 260—652.5.
Mobil Oil Corp.: *See*—
Boston, William G. 3,346,046.
Foster, Harold M., Napier, and Chu. 3,346,591.
Giammaria, John J., and Law. 3,346,491.
Marsh, John R. 3,346,104.
Rooney, John F., and Bouliger. 3,346,531.
Slusser, Marion L. 3,346,044.
Strange, Lloyd K., Marberry, and Koons. 3,346,048.
Townsend, Harold L., and McMillen. 3,346,047.
Modern Album and Finishing, Inc.: *See*—
Froehlig, Rudolph A. 3,346,259.
Mohn, Heinrich, and G. Horstmann, to Heraeus Quarzschmelse G.m.b.H. Electric infrared emitter. 3,346,723, 10–10–67, Cl. 219—553.
Molins Organisation Ltd., The: *See*—
Rakowics, Jan A., and Wark. 3,345,943.
Moncrieff, James, W. M. Cochran, R. Ellinger, D. F. Miller, to The Glidden Co. Whipping assistant and comestibles utilising same. 3,346,387, 10–10–67, Cl. 99—1.
Monroe Auto Equipment Co.: *See*—
Smith, Charles J. 3,346,272.
Monroe, Stuart B.: *See*—
Feild, George B., and Monroe. 3,346,548.
Monsanto Co.: *See*—
Ayad, Kamal N., and Neale. 3,346,544.
Broussalian, George L. 3,346,629.
Buckely, Francis T., Finch, and Seidin. 3,346,526.
D'Amico, John J. 3,346,361.
D'Amico, John J. 3,346,564.
Elmer, Curtis. 3,346,443.
Monsanto Co.: *See*—Continued
Huggins, James M. 3,346,503.
Irani, Riyad R., and Lyons. 3,346,487.
Lyons, John W., and Irani. 3,346,488.
Martins, Joseph G. 3,346,530.
Slocombe, Robert J., Salyer, and Newman. 3,346,528.
Taulli, Thomas A. 3,346,507.
Monsanto Research Corp.: *See*—
Dalton, David R., De Brunner, and Blake. 3,346,668.
Garner, Albert Y. 3,346,647.
Salyer, Ival O., and Schwendeman. 3,346,219.
Montgomery Elevator Co.: *See*—
Martin, Richard F. 3,346,073.
Moore, Arthur D., and K. H. Davidson, to Snorkel Fire Equipment Co. Folding boom aerial water delivery apparatus for mobile fire fighting equipment. 3,346,052, 10–10–67, Cl. 169—25.
Morand, Peter F.: *See*—
Lefebvre, Yvon, and Morand. 3,346,603.
Morchand, Charles A. Educational device. 3,345,758, 10–10–67, Cl. 35—9.
Moreland Corp., The: *See*—
Meltz, Robert R. 3,345,942.
Moresi, Joseph A., Jr., and A. E. Scherr, III, to Sprague Electric Co. Electrolytic capacitor and method of making. 3,346,781, 10–10–67, Cl. 317—230.
Morioka, Kenneth S., and K. Goto. Modular cabinet structure. 3,346,316, 10–10–67, Cl. 312—257.
Morra, Edward E. Rotary switch with roller detent apparatus directly biasing contact structure into open and closed positions. 3,346,708, 10–10–67, Cl. 200—11.
Morrisett, O. L.: *See*—
Thompson, William S., Jr., Frazier, and Morrisett. 3,346,002.
Motoroiu, Valeriu: *See*—
Nicolau, Ioan, Dogaru, Evghenide, Ionascut, Tihon, and Motoroiu. 3,345,881.
Moulin, Norbert L.: *See*—
Rogers, James G., and Moulin. 3,346,736.
Mounts, William T.: *See*—
Davis, Leo W., and Mounts. 3,346,079.
Mowery, Earl R.: *See*—
Miller, Roy E., and Mowery. 3,345,997.
Mucher, George J., to Clarostat Mfg., Inc. Variable resistor. 3,346,831, 10–10–67, Cl. 338—145.
Mueller, Martin, to Flexible Plastic Straw Corp. Flexible drinking straws. 3,346,187, 10–10–67, Cl. 239—33.
Mueller, Werner: *See*—
Bille, Heinz, Distler, Dittus, Mueller, and Ruettiger. 3,346,325.
Muessig, Clifford W.: *See*—
Yuhas, Stephen A., Jr., Muessig, and Segura. 3,346,664.
Mulackey, Bernard F., H. F. Harnsberger, and R. H. Lindquist, to Chevron Research Co. Method for adjusting the initial activity of chromia alumina catalysts. 3,346,658, 10–10–67, Cl. 260—680.
Muller, Gerhard. Orthodontic fastening means and method of applying the same. 3,345,745, 10–10–67, Cl. 32—14.
Muller, Hans: *See*—
Wiesnagrotzki, Ernst, Bigiel, and Muller. 3,345,810.
Muller, Herbert, H. Grabhofer, H. Ulrich, and R.-F. Posse, to Agfa Aktiengesellschaft. Polycondensation products of phosphoric acid amides with aliphatic polyethers as developer adjuvants. 3,346,386, 10–10–67, Cl. 96—66.3.
Mullin, John T., and K. Clunis, to Minnesota Mining and M.g. Co. Two track transducing system with means to extend dynamic range. 3,346,703, 10–10–67, Cl. 179—100.2.
Mullins, William H., and S. Thaler, to Hughes Aircraft Co. Mainlobe doppler clutter return compensator for moving platform radar. 3,346,859, 10–10–67, Cl. 343—7.7.
Multipane, Inc., U.S.A.: *See*—
Shinefeld, David. 3,345,791.
Munzner, Richard: *See*—
Gemeinhardt, Hermann, and Munzner. 3,345,809.
Murdock, Henry T., and S. M. Ringel, to Allis-Chalmers Mfg. Co. Method of winding dynamoelectric cores by using two winding heads. 3,345,740, 10–10–67, Cl. 29—596.
Murray Mfg. Corp.: *See*—
Laverty, Martin J. 3,345,730.
Muskegon Piston Ring Co.: *See*—
Hamm, Douglas W. 3,346,264.
Mutschler, Erich: *See*—
Bock, Willy, Mutschler, and Theurer. 3,346,707.
Myers, Ernest H.: *See*—
Jalbing, John I., and Myers. 3,346,760.
Myhr, Oystein. Portable instruction and demonstration unit with various equipment. 3,345,760, 10–10–67, Cl. 35—60.
N.V. Koninklyke Pharmaceutische Fabrieken v/h Brocades Stheeman en Pharmacia: *See*—
Gootjes, Johan. 3,346,581.
Nadler, Murray, to Esso Research and Engineering Co. Dehydration of magnesium chloride utilizing fluid bed spray drying in atmosphere of HCl. 3,346,333, 10–10–67, Cl. 23—91.
Naegeli, Werner: *See*—
Eichenberger, Hansulrich, Naegeli, and Schwengeler. 3,345,701.
Naesser, Gerhard, and W. Scholz, to Mannesmann Aktiengesellschaft. Method of producing ferromanganese powder. 3,346,363, 10–10–67, Cl. 75—.5.
Nagybyomasu Kiserleti Intezet: *See*—
Somogyi, László, Steingaszner, Hlinyánszky, Horvath, and Karolyi. 3,346,483.
Nakagome, Takenari, and T. Komatsu, to Sumitomo Chemical Co., Ltd. Method for the preparation of 4-amino-3(2H) pyridazinones. 3,346,577, 10–10–67, Cl. 260—250.
Nakamura, Hiromichi, H. Katoo, N. Minejima, H. Shimizu, A. Satoo, M. Nozaki, and Y. Doochi, to Rohm & Haas Co. Recovery of iodine from solutions containing same. 3,346,331, 10–10–67, Cl. 23—85.

Nakamura, Yutaka: *See*—
Hiroki, Kenzo, Shisume, Nakamura, Yoshino, Kamio, Irie, and Kawamura. 3,346,617.

Nakao, Keinosuke, and T. Minamiyama, to Kanegafuchi Spinning Co., Ltd. Method for producing fibers containing viscose and a casein-epoxy nitrile compound. 3,346,408, 10–10–67, Cl. 106—140.

Nalco Chemical Co.: *See*—
Phelan, John E., and Burke. 3,345,841.

Napier, Roger P.: *See*—
Foster, Harold M., Napier, and Chu. 3,346,591.

Nassau, Kurt: *See*—
Levinstein, Hyman J., and Nassau. 3,346,344.

Nasu, Noriyuki, H. Yamasaki, H. Shinozaki, and T. Yonekura, to Asahi Kaseu Kogyo Kabushiki Kaisha. Apparatus for extracting samples from the bed of a body of water. 3,345,879, 10–10–67, Cl. 73—425.2.

Natanagara, Hussein, and P. Gotthoffer, to Trilobe Coupling Corp. Mounting assembly for radiation detector tubes of various sizes and sensitivities to radiation. 3,346,754, 10–10–67, Cl. 313—93.

Natelson, Samuel, to Scientific Industries, Inc. Preparative separation by a combination of gel separation and electrophoresis. 3,346,479, 10–10–67, Cl. 204—301.

Nathan, Gerd, to Nathan Industries, Inc. Telephone card index for a push button dial telephone. 3,345,769, 10–10–67, Cl. 40—336.

Nathan Industries, Inc.: *See*—
Nathan, Gerd. 3,345,769.

National Aeronautics and Space Administration, The: *See*—
Dryden, Hugh L. 3,345,820.
Webb, James E. 3,345,419.
Webb, James E. 3,345,840.

National Cash Register Co., The: *See*—
Foris, Peter L. 3,346,385.
Toft, Roger D. 3,346,160.

National Lock Co.: *See*—
Anderson, Ralph F. 3,346,289.

National Research Corp.: *See*—
Allen, Lloyd R. 3,346,467.
Briggs, Walton E. 3,345,860.
Kneip, George D., Jr. 3,345,739.
Sheldon, Deane P. 3,346,769.

National Research Development Corp.: *See*—
Armstrong, John N. 3,345,882.
Jennings, William O., Robinson, Atkins, and Geoffrey. 3,345,886.

National Steel Corp.: *See*—
Shepherd, William E. 3,346,190.
Strassburger, Julius H. 3,346,250.

Neale, Alan J.: *See*—
Ayad, Kamal N., and Neale. 3,346,544.

Nederveld, Terrill L., to Packaging Corp. of America. Shipping or storage package. 3,346,107, 10–10–67, Cl. 206—65.

Nelson, Barton R., to L. R. Nelson Mfg. Co., Inc. Hose reel assembly. 3,346,213, 10–10–67, Cl. 242—86.2.

Nelson, L. R., Mfg. Co., Inc.: *See*—
Nelson, Barton R. 3,346,213.

Neuhaus, Hermann, to Applied Research Laboratories, Inc. Electron probe apparatus having an objective lens with an aperture for restricting fluid flow. 3,346,736, 10–10–67, Cl. 250—49.5.

Neuhaus, Hermann, to Applied Research Laboraeories, Inc. Hydraulically controllable spectroscopic slit apparatus for making precision adjustments of the slit width. 3,346,737, 10–10–67, Cl. 250—105.

Neumann, Wolfram, and W. Lohmar, to Farbenfabriken Bayer Aktiengesellschaft. Lubricants containing carbodiimides as antioxidants. 3,346,496, 10–10–67, Cl. 252—50.

Neuschotz, Robert. Threaded elements and locking keys therefor. 3,346,031, 10–10–67, Cl. 151—23.

Newcomb, Fred N., and E. A. Spellman, to United States of America, Army. Two round burst mechanism mechanical automatic rifle. 3,345,914, 10–10–67, Cl. 89—129.

Newcomer, Harold B. Air brake coupling components. 3,346,263, 10–10–67, Cl. 277—81.

Newhouse, Vernon L., and H. H. Edwards. Cryotron controlled storage cell. 3,346,829, 10–10–67, Cl. 338—32.

Newman, Seymour: *See*—
Slocombe, Robert J., Salyer, and Newman. 3,346,528.

Nichols, Robert A. Door latching device. 3,346,290, 10–10–67, Cl. 292—141.

Nicholls, Augustus H. Honeycomb core construction through the application of heat and pressure. 3,345,735, 10–10–67, Cl. 29—470.9.

Nickell, Lawrence C., and R. B. Fertig, to Appalachian Electronic Instruments, Inc. Retro-reflective stop motion system. 3,345,835, 10–10–67, Cl. 66—166.

Nickell, Lawrence C.: *See*—
Fertig, Raymond B., and Nickell. 3,345,836.

Nickle, Alexander G.: *See*—
Braunwarth, Victor A., Nickle, and Phillips. 3,346,368.

Nicolau, Ioan, L. Dogaru, C. Evghenide, A. Ionascut, N. Tihon, and V. Motoroiu, to Ministerul Petrolului. Method and means for measuring fluid density. 3,345,881, 10–10–67, Cl. 73—434.

Nightingale, Eugene R., Jr., and E. J. Barrasso, to Esso Research and Engineering Co. Liquid system-dehydration of magnesium chloride using ammonia. 3,346,332, 10–10–67, Cl. 23—91.

Nippon Electric Co., Ltd.: *See*—
Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,346,499.

Nitto Chemical Industry Co., Ltd.: *See*—
Hiroki, Kenzo, Shisume, Nakamura, Yoshino, Kamio, Irie, and Kawamura. 3,346,617.

Noble, Ruth I. Drop foot and heel guard for bed patients. 3,345,654, 10–10–67, Cl. 5—319.

Norco Inc.: *See*—
McCarthy, John J. 3,345,711.

Nordgren, Robert, to General Mills, Inc. Adducts of polygalactomannan gums and process for preparing same. 3,346,555, 10–10–67, Cl. 260—209.

North American Aviation, Inc.: *See*—
Fulton, Donald L., Reel, Reeve, Stahmann, and Vehige. 3,346,186.
Pilolpovich, Donald. 3,346,652.

North American Philips Co., Inc.: *See*—
Poorter, Teunis. 3,346,764.

Northrop Corp.: *See*—
Harmon, Gregory J. 3,346,864.
Yunt, Fred W., and Baker. 3,345,889.

Northwest Plastics, Inc.: *See*—
Gruber, Francis E. 3,346,211.

Nosler, John A., to Nosler Partition Bullet Co. Bullet. 3,345,949, 10–10–67, Cl. 102—92.2.

Nosler Partition Bullet Co.: *See*—
Nosler, John A. 3,345,949.

Notari, Gennaro V., and F. T. Grubelich, to United States of America, Atomic Energy Commission. Nuclear reactor fuel element. 3,346,461, 10–10–67, Cl. 176—67.

Noumi, Makoto, to Hitachi, Ltd. Brushless motors wherein commutation is controlled by an impedance responsive to rotor movement. 3,346,792, 10–10–67, Cl. 318—138.

Novo Terapeutisk Laboratorium A/S: *See*—
Fabricius, Imre L. 3,346,573.

Nozaki, Masashi: *See*—
Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,346,331.

Nusbaum, George D. Calibration stop for fuel injectors and the like. 3,346,188, 10–10–67, Cl. 239—90.

Nutt, Ruth F.: *See*—
Boxer, George E., and Nutt. 3,346,561.

Nye, William T., and K. S. Burrell, to Crown Zellerbach Corp. Packing material. 3,346,105, 10–10–67, Cl. 206—59.

Obidowski, Edmond J., to Continental Can Co., Inc. Method of flanging can bodies having prestretched circumferential edges. 3,345,966, 10–10–67, Cl. 113—120.

O'Connell, Thomas B., G. G. Pierce, R. A. Herrington, and D. E. Shamp, to Libbey-Owens-Ford Glass Co. Apparatus for heat treating and conveying glass sheets vertically oriented. 3,346,360, 10–10–67, Cl. 65—273.

O'Dell, Leonard J. Method of forming an artistic relief. 3,346,411, 10–10–67, Cl. 117—11.

Odgers Drilling Inc.: *See*—
Svendsen, Walter W. 3,346,059.

Oechsle, Carl F. Carrier for books and small articles. 3,346,155, 10–10–67, Cl. 224—9.

Oerlikon-Buhrle-Holding AG: *See*—
Fend, Heinrich. 3,346,017.

Ohio Crankshaft Co., The: *See*—
Seyfried, Richard F. 3,346,712.

Ohigren, Harold A. Process for preparing carbon articles. 3,346,678, 10–10–67, Cl. 264—29.

Ohno, Tomeji: *See*—
Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,346,499.

Oksakovsky, Anatole, and H. Pirnke. Photo developing apparatus. 3,345,929, 10–10–67, Cl. 95—96.

Okuda, Toru: *See*—
Takeda, Yoshifumi, Okuda, and Sakurai. 3,346,326.

Olashaw, William F., to General Electric Co. Bus bar supporting and insulating assembly having back-to-back bus bar receiving channels. 3,346,776, 10–10–67, Cl. 317—117.

Old, Albert F.: *See*—
Roberts, John W., Old, Gibson, Foster, Purvis, and Wycoff. 3,346,198.

Old Pal, Inc.: *See*—
Woolworth, Richard G. 3,346,733.

Olejniczak, Jersy S., to Edwards High Vacuum International Ltd. Apparatus for stripping liquids. 3,346,033, 10–10–67, Cl. 159—4.

Olin Mathieson Chemical Corp.: *See*—
Jagaciak, George J. 3,346,870–7.
Langlykke, Asger F., Bernstein, and La Via. 3,346,578.

Oliver, James E., W. H. Miller, and R. A. Taylor, to Mamba Engineering Co., Inc. Precision casing boring machine. 3,346,054, 10–10–67, Cl. 173—23.

Olivier, Kenneth L.: *See*—
Fenton, Donald M., and Olivier. 3,346,625.
Schaeffer, William D., and Olivier. 3,346,626.

Olympia Brewing Co.: *See*—
Schmidt, Trueman L. 3,346,167.

Olympia Werke AG: *See*—
Thevis, Paul. 3,346,178.
Thevis, Paul. 3,346,179.

Omietanski, George M., and W. G. Reid, to Union Carbide Corp. Acyloxy-containing siloxanes and process therefor. 3,346,610, 10–10–67, Cl. 260—448.8.

Ontario Store Fixture Co., Ltd.: *See*—
Sobel, Sydney M. 3,346,124.

Orlando, Charles M.: *See*—
Gianni, Michael H., and Orlando. 3,346,589.

Orrell, Donald B.: *See*—
Brosseit, Fritz V., and Orrell. 3,346,019.

Osborn, Albert J., to Hotz Mfg. Co. Knockdown container. 3,346,136, 10–10–67, Cl. 217—12.

Ostensen, Ralph G., to SCM Corp. Electrostatic printing and developing apparatus. 3,345,925, 10–10–67, Cl. 95—1.7.

Ostradyne, Inc.: *See*—
Ostrander, Robert F. 3,345,865.

Ostrander, Robert F., to Ostradyne, Inc. Vehicle testing device. 3,345,865, 10–10–67, Cl. 73—117.

Osumi, Shinso: *See*—
Hagihara, Shingo, Kobayashi, Hasegawa, and Osumi. 3,346,204.

Otoacustica Electronics, Ltd.: *See*—
Gordon, Adolf. 3,345,737.

Ott, Charles G.: *See*—
Carstensen, William H., Ott, and Van Acker. 3,346,210.

Otto, Hans: *See*—
Hofmann, Albert, Troxler, and Ott. 3,346,580.

Ovens, Stanley F., and G. H. Ellis, to S. Smith & Sons (England) Ltd. Enche-sounding apparatus for examining strata below the sea-bed with variable gain means responsive to sea-bed echoes. 3,346,839, 10–10–67, Cl. 340—7.

Owens-Corning Fiberglas Corp.: *See*—
Hullhorst, William B. 3,346,128.

Owens-Illinois, Inc.: *See*—
Baak, Nils T. E. A. 3,346,357.
Masulis, Leonard J. 3,345,972.
Plymale, Charles E. 3,346,683.
Richards, Raymond S. 3,345,842.

Pacific Press & Shear Corp.: *See*—
Pearson, Eugene W. 3,345,897.

Packaging Corp. of America: *See*—
Hickin, Robert J. 3,345,799.
Nederveld, Terrill L. 3,346,107.
Zeitter, Charles R. 3,346,164.

Page, Charles E., Jr., to Texaco, Inc. De-emulsifying apparatus. 3,346,117, 10–10–67, Cl. 210—304.

Page Communications Engineers, Inc.: *See*—
Hekimian, Norris C. 3,346,805.

Paillos, George J., to United States of America, Army. Perforated tape control system for low altitude targets and target missiles. 3,346,215, 10–10–67, Cl. 244—3.15.

Painter, Giles W., and H. J., to Lockheed Aircraft Corp. Transient synthesis method and apparatus. 3,345,864, 10–10–67, Cl. 73—71.6.

Palle, Alice F.: *See*—
Palle, Robert A., Sr., A. F. Palle, and R. A. Palle, Jr. 3,346,169.

Palle, Robert A., Jr.: *See*—
Palle, Robert A., Sr., A. F. Palle, and R. A. Palle, Jr. 3,346,169.

Palle, Robert A., Sr., A. F. Palle, and R. A. Palle, Jr. Container. 3,346,169, 10–10–67, Cl. 229—37.

Palmer, George W., to Light's London Ltd. Apparatus for guiding a workholder relative to a tool. 3,345,964, 10–10–67, Cl. 112—2.

Palopoli, Frank P.: *See*—
Amstuts, Edward D., Palopoli, Tilford, and Shuman. 3,346,583.

Pantell, Richard H.: *See*—
Midford, Thomas A., and Pantell. 3,346,816.

Panter, Carl: *See*—
Borden, Joseph H., Bradley, and Panter. 3,346,074.

Papalos, John G., to General Aniline & Film Corp. Method for the preparation of phosphate esters. 3,346,670, 10–10–67, Cl. 260—980.

Papantonis, Nicholas A.: *See*—
Lethin, Walter R., Papantonis, and Bradley. 3,346,727.

Pape, Martin: *See*—
Metzger, Horst, and Pape. 3,346,618.

Papst, Hermann. Boundary layer control. 3,346,235, 10–10–67, Cl. 253—39.15.

Park, Raymond M.: *See*—
Johnson, Marvin W., and Park. 3,345,946.

Parker, James E. Tool for inserting locking ball in retainer block. 3,345,731. 10–10–67, Cl. 29—270.

Parker, Louis F. Portable dock. 3,345,825, 10–10–67, Cl. 61—48.

Parmer, Will F., to Texas Instruments Inc. Field-effect transistors. 3,346,786, 10–10–67, Cl. 317—235.

Parri, Fulvio. Device for the manufacture of mocassins. 3,345,658, 10–10–67, Cl. 12—1.

Parry, Hugh J.: *See*—
Painter, Giles W., and Parry. 3,345,864.

Parsons, Fred E. Nestable cart of molded material. 3,346,271, 10–10–67, Cl. 280—33.99.

Parstorfer, John, to Philco Ford Corp. Multilayer circuit board using epoxy cards and silver epoxy connections. 3,346,689, 10–10–67, Cl. 174—68.5.

Parthum, Richard. Device for severing or cutting away superfluous thread ends by removing the same in circular knitting of knitted goods such as stockings or the like hosiery goods. 3 345 834, 10–10–67, Cl. 66—145.

Partridge, Gerald J.: *See*—
Smith, Lawrence H., and Partridge. 3,345,712.

Paschke, Frank R. Electrostatic sheet control means. 3,346,253, 10–10–67, Cl. 271—36.

Passannante, Anthony J.: *See*—
Michael, James B., Leary, Argabright, and Passannante. 3,346,599.

Passannante, Anthony J., to Esso Research and Engineering Co. Solid propellant oxidizer and its preparation. 3,346,600, 10–10–67, Cl. 260—347.5.

Patsch, Glenn F., to General Electric Co. Incandescent lamp with a fuse integral with the lead-in structure. 3,346,768, 10–10–67, Cl. 315—74.

Patton, John T., Jr., and W. F. Schuls, to Wyandotte Chemicals Corp. Process for oxyalkylating solid polyols. 3,346,557, 10–10–67, Cl. 260—209.

Paulson. Alfred R.: *See*—
Paulson, Harold E. and A. R. 3,345,743.

Paulson, Harold E. and A. R. Blade handle. 3,345,743, 10–10–67, Cl. 30—337.

Payne & Associates, Inc.: *See*—
Peeler, Donald H., and Payne. 3,345,657.

Payne, William H.: *See*—
Peeler, Donald H., and Payne. 3,345,657.

Peabody, Edward G.: *See*—
Bryant, Edward T., and Peabody. 3,345,756.

Pearson, Eugene W., to Pacific Press & Shear Corp. Holddown means for a shear machine or the like. 3,345,897, 10–10–67, Cl. 83—389.

Peeler, Donald H., and W. H. Payne, to Payne & Associates, Inc. Inflatable life jacket. 3,345,657, 10–10–67, Cl. 9—316.

Pedicraft, Inc.: *See*—
Mixon, Clyde E. 3,345,653.

Pegna, Albert L. Folding stands. 3,346,317, 10–10–67, Cl. 312—258.

Pelton, Norman R.: *See*—
Pelton, Thomas E. and N. R. 3,346,127.

Pelton, Thomas E. and N. R. Drag utilizing transporting apparatus. 3,346,127, 10–10–67, Cl. 212—71.

Pennsalt Chemicals Corp.: *See*—
Schuster, Ludwig K., and Baldi. 3,346,522.

Pentapco, Inc.: *See*—
Snyder, Benjamin L. 3,345,748.

Perper, Edward: *See*—
Post, Herman D., and Perper. 3,346,437.

Perret, Rene: *See*—
Rouxel, Roland, and Perret. 3,346,726.

Perry, Norman L.: *See*—
Rauder, Otto S., and Perry. 3,346,536.

Perry, Elijah R., and J. C. W. Ransom, to Allis-Chalmers Mfg. Co. Means for sensing conditions in high potential region and for transmitting such intelligence by light means to low potential regions. 3,346,811, 10–10–67, Cl. 324—96.

Pestka, John A., to Warwick Electronics Inc. Inflatable packing insert. 3,346,101, 10–10–67, Cl. 206—46.

Peterman, Charles J.: *See*—
Mariani, Thomas L., Hirschmann, Cupolo, and Peterman. 3,345,904.

Peters, Melville F. Method of extending the useful life of surge attenuating devices. 3,345,725, 10–10–67, Cl. 29—157.

Peters, Timothy V., to Ameliotex, Inc. Continuous process of producing solutions of substantially linear polyurethanes. 3,346,529, 10–10–67, Cl. 260—32.6.

Petersen, Anita E.: *See*—
Petersen, Gerald A. 3,345,765.
Petersen, Gerald A., and Lanum. 3,346,284.

Petersen, Gerald A., ½ to A. E. Petersen. Reversely bent resilient retainer for digging implement blades. 3,345,765, 10–10–67, Cl. 37—142.

Petersen, Gerald A. and W. J. Lanum, said Petersen assor of ¼ to A. E. Petersen. Swivel cable pulling grip and filler. 3,346,284. 10–10–67, Cl. 287—91.

Peterson, Evald O., to Compo Shoe Machinery Corp. Device for operating on shoe bottoms. 3,345,660, 10–10–67, Cl. 12—16.4.

Petrich, Bernard E. Concrete deflector. 3,346,085, 10–10–67, Cl. 193—14.

Petrik, George L.: *See*—
Carter, Robert M., and Petrik. 3,346,129.

Petrolite Corp.: *See*—
Dickson, Woodrow J., and Jenkins. 3,346,489.

Petry, Robert C., and S. F. Reed, Jr., to Rohm & Haas Co. Reaction of tetrafluorohydrazine with unsaturated esters of acrylates and methacrylates. 3,346,621, 10–10–67, Cl. 260—482.

Pfaff, Henry C., Jr., and F. G. Schlosser, to Pfaff and Kendall. Adjustable mechanism for securing an arm to a post. 3,346,280. 10–10–67, Cl. 287—14.

Pfaff and Kendall: *See*—
Pfaff, Henry C., Jr., and Schlosser. 3,346,280.

Pfaffenberger, Richard T., and L. R. Van Horik, to Douglas Aircraft Co., Inc. Chemical metal removal device. 3,345,995, 10–10–67, Cl. 134—167.

Pfann, William G.: *See*—
Ellis, William C., Pfann, and Wagner. 3,346,414.

Pfirrmann, Rolf: *See*—
Kuhne, Rudolf, Meininger, and Pfirrmann. 3,346,553.

Phalan, John E., and J. T. Burke, to Nalco Chemical Co. Hot strip rolling mill. 3,345,841. 10–10–67, Cl. 72—39.

Pharmaseal Laboratories: *See*—
Coanda, George. 3,345,980.

Pherson, Perry O., A. A. Slater, and K. Engel, to International Paper Co. Package. 3,346,141, 10–10–67, Cl. 221—48.

Philadelphia Quartz Co.: *See*—
Schnurch, Roland. Koster, and Heise. 3,346,335.
Weldes, Helmut H. W., and Deroll. 3,346,334.

Philco Ford Corp.: *See*—
Parstorfer, John. 3,346,689.

Phillips, Norman W. F.: *See*—
Braunwarth, Victor A., Nickle, and Phillips. 3,346,368.

Phillips Petroleum Co.: *See*—
Doss, Richard C. 3,346,611.
Hutson, Thomas, Jr., and Carter. 3,346,660.
Karbosky, Joseph T. 3,345,827.
Wilson, Reagon T., and Larson. 3,346,661.

Phillips, William G., and J. W. E. Brown, to United States of America, Army. Arthropod feeding device. 3,345,974, 10–10–67, Cl. 119—51.

Pichel, Michael J., and T. J. Weiss, to Swift & Co. Process for preparing nut butter from soybeans. 3,346,390, 10–10–67, Cl. 99—98.

Pickering, Norman C., to General Time Corp. Strand break detector. 3,345,812, 10–10–67, Cl. 57—81.

Pierce, Gordon G.: *See*—
O'Connell, Thomas B., Pierce, Herrington, and Shamp. 3,346,360.

Pierdet, Andre: *See*—
Bucourt, Robert, Pierdet, Tessier, and Costerousse. 3,346,454.

Pilotpovich, Donald, to North American Aviation, Inc. Fluorination of haloolefins. 3,346,652, 10–10–67, Cl. 260—653.

Pineapple Research Institute: *See*—
Gortner, Willis A. 3,346,397.
Pinkham, Jesse R., to R. J. Reynolds Tobacco Co. Disassembling apparatus for cigarette and filter assemblies. 3,345,991, 10–10–67, Cl. 131—20.
Pirnke, Heinz: *See*—
Oksakovsky, Anatole, and Pirnke. 3,345,929.
Pittman, David M., to Ideal Industries, Inc. Picker stop mechanism. 3,345,694, 10–10–67, Cl. 19—.2.
Pittsburgh Plate Glass Co.: *See*—
Carson, Laurence F. 3,345,776.
Thomas, Dean L. 3,346,358.
Wyatt, Howard F. 3,345,802.
Plasser, Frans, and J. Theurer. Apparatus for the continuously progressing lateral alignment of a curved track section. 3,345,746, 10–10–67, Cl. 33—1.
Plastics, Inc.: *See*—
Weston, Ralph B., and Colato. 3,346,710.
Pleascia, Joseph J., to General Electric Co. Lamp base terminal welding apparatus. 3,346,714, 10–10–67, Cl. 219—80.
Pletscher, Gebruder: *See*—
Pletscher, Oskar. 3,345,681.
Pletscher, Oskar, to Pletscher, Gebruder. Hinge connection assembly for the support or stand of bicycles and the like. 3,345,681, 10–10–67, Cl. 16—182.
Pluchino, Anthony. Router guide attachment. 3,346,026, 10–10–67, Cl. 144—144.
Plymale, Charles E., to Owens-Illinois, Inc. Method and apparatus for extruding thermoplastic material. 3,346,683, 10–10–67, Cl. 264—169.
Podolsky, Leon, to Drexel Institute of Technology. Method of producing oriented graphite. 3,346,416, 10–10–67, Cl. 117—226.
Poet, Buford L.: *See*—
Collins, Galen F., Butt, and Poet. 3,346,450.
Polanin, Walter R., to AMSTED Industries Inc. Slack adjuster. 3,346,080, 10–10–67, Cl. 188—196.
Polit, Neil A., to Signode Corp. Strapping tool construction. 3,346,022, 10–10–67, Cl. 140—93.4.
Pommer, Ernst-Heinrich: *See*—
Windel, Hermann, and Pommer. 3,346,605.
Pommerening, Uwe A., to General Dynamics Corp. Delay counter phase control system for use in producing a variable direction beam from a fixed transmitting array. 3,346,837, 10–10–67, Cl. 340—5.
Poncy, George W. Inflatable, illuminatable globe. 3,346,731, 10–10–67, Cl. 240—2.
Pondeliček, Jiří, to Zavody V. I. Lenina Plzen Narodni Podnik. Voltage control circuit arrangement. 3,346,800, 10–10–67, Cl. 322—28.
Pontelandolfo, Joseph M.: *See*—
White, Jack L., and Pontelandolfo. 3,346,681.
Poorter, Teunis, to North American Philips Co., Inc. Circuit arrangement for producing a deflection current through the horizontal deflection coils of a television apparatus. 3,346,764, 10–10–67, Cl. 315—27.
Pope, Joseph A., and S. Krasyswski, to Mirrlees National Ltd. Poppet valves for internal combustion engines. 3,345,976, 10–10–67, Cl. 123—188.
Porter, H. Cameron, 50% to V. A. Porter. Sewing awl. 3,346,151, 10–10–67, Cl. 223—104.
Porter, Ralph B., and J. A. Maul, to Addressograph Multigraph Corp. Ribbon feed mechanism. 3,345,940, 10–10–67, Cl. 101—336.
Porter, Verdon A.: *See*—
Porter, H Cameron. 3,346,151.
Posse, Rolf-Fred: *See*—
Muller, Herbert, Grabhofer, Ulrich, and Posse. 3,346,386.
Post, Herman D., and E. Perper, to Robins Industries Corp. Splicers. 3,346,437, 10–10–67, Cl. 156—505.
Potter, Richard D., to General Dynamics Corp. High pressure generating anvils. 3,345,717, 10–10–67, Cl. 25—102.
Pound, Dwight C.: *See*—
Miller, Park H., Jr., Pound, and Snodgrass. 3,346,066.
Povinelli, Louis A., and M. F. Heidmann, to United States of American, National Aeronautics and Space Administration. Burning rate control of solid propellants. 3,345,822, 10–10–67, Cl. 60—251.
Practical Automation, Inc.: *See*—
Teichner, Maurice D. 3,346,872.
Prakla Gesellschaft Fur Parktische Lagerstattenforschung G.m.b.H.: *See*—
Weichart, Helmut. 3,346,841.
Preco Inc.: *See*—
Erickson, John W. 3,345,955.
Presant, Fred: *See*—
Dasher, George F., and Presant. 3,346,457.
Presuss, Friedrich: *See*—
Koch, Werner, and Preuss. 3,345,941.
Price, John F., to Statham Instruments, Inc. Telemetering circuits and amplifiers employed therein. 3,346,818, 10–10–67, Cl. 330—30.
Prince, Michael J., and G. D. Ainsworth, to United Kingdom Atomic Energy Authority. Nuclear reactors. 3,346,459, 10–10–67, Cl. 176—36.
Principe, Pacifico A.: *See*—
Levine, Seymour D., and Principe. 3,346,616.
Procter & Gamble Co., The: *See*—
Haefele, John W. 3,345,993.
Herrmann, Kenneth W. 3,346,504.
Herrmann, Kenneth W. 3,346,873.
Properzi, Ilario. Continuous casting wheel, with improved cooling device. 3,346,038, 10–10–67, Cl. 164—278.
Propper Mfg. Co., Inc.: *See*—
Speelman, Erving A. 3,346,069.
Propst, Robert L., to Herman Miller, Inc. Shelf forming carton. 3,346,318, 10–10–67, Cl. 312—330.
Proud, Norman T., to Paul Segaert Pty. Ltd. Construction and erection of framing members. 3,345,794, 10–10–67, Cl. 52—731.
Proulx, Romeo T., to VISIrecord, Inc. Cabinet construction for office equipment. 3,346,315, 10–10–67, Cl. 312—255.
Pugh, Harold, and G. Gauterin, to United Kingdom Atomic Energy Authority. Apparatus for gas plasma heating. 3,346,717, 10–10–67, Cl. 219—121.
Purdie, Clarence E. Loading press. 3,345,903, 10–10–67, Cl. 86—23.
Purvis, Minton G. Sailing rig. 3,345,969, 10–10–67, Cl. 114—102.
Purvis, Thomas L.: *See*—
Roberts, John W., Old, Gibson, Foster, Purvis, and Wycoff. 3,346,198.
Quebec Smelting & Refining Ltd.: *See*—
Jones, George H. 3,346,116.
Queenan, Joseph P.: *See*—
Talalay, Leon, Borsvold, and Queenan. 3,346,247.
Quine, John P.: *See*—
Maurer, John W., and Quine. 3,346,823.
Quinlan, Joseph B., and J. J. Schanlon, Jr., to United States of America, Army. Uniformed density caseless cartridge. 3,345,945, 10–10–67, Cl. 102—38.
Quinn, Aloysius K. Parallel resistors calculator. 3,346,181, 10–10–67, Cl. 235—84.
Quoos, Kurt: *See*—
Kusters, Eduard, and Quoos. 3,345,937.
RO-Search, Inc.: *See*—
Rollman, Ernest E. 3,345,763.
Radiation Systems Inc.: *See*—
Chadwick, George G., and Shelton. 3,346,861.
Radio Corp. of America: *See*—
Barkow, William H. 3,346,765.
Battson, Donald F. 3,346,752.
Dresner, Joseph. 3,346,755.
Greig, Harold G. 3,346,351.
Helzer, John T., and Shashoua. 3,346,702.
Stark, John, Jr. 3,346,763.
Stewart, Neil R. 3,346,770.
Rafferty, Martin J. Flush-tank outlet valve. 3,345,648, 10–10–67, Cl. 4—67.
Raitzer, Albert: *See*—
Lievens, Ronald J., Raitzer, Davis, and Klug. 3,346,174.
Rakcevic, Savo, to Titovi Zovodi Litostroj. Sluice gate. 3,345,823, 10–10–67, Cl. 61—24.
Rakowicz, Jan A., and G. A. Wark, to The Molins Organisation Ltd. Inking devices for printers. 3,345,943, 10–10–67, Cl. 101—366.
Randol, Glenn T. Hydraulic power-assisted master brake cylinder. 3,345,817, 10–10–67, Cl. 60—54.6.
Ransom, James C. W.: *See*—
Perry, Elijah R., and Ransom. 3,346,811.
Raudsep, Ilmar G., to Martin-Marietta Corp. Correlation detection systems. 3,346,862, 10–10–67, Cl. 343—113.
Rayfield, James A. F., and J. R. Whitehust, to Ideal Industries, Inc. Double stop motion for a creel. 3,345,695, 10–10–67, Cl. 19—.25.
Rayon Kabushiki Kaisha: *See*—
Hagihara, Shingo, Kobayashi, Hasogawa, and Osumi. 3,346,204.
Ready T' Pour, Inc.: *See*—
Lavelle, William A. and T. W. 3,346,240.
Recherches Etudes Production R.E.P.: *See*—
Lucien, Rene. 3,346,218.
Rechnitz, Max H.: *See*—
Bolliman, John A., Gates, and Voss. 3,346,439.
Reed, Alfred J.: *See*—
Hollihan, John P., Reed, and Turton. 3,345,718.
Reed, Martin C., to Warwick Electronics Inc. Speed change mechanism. 3,346,260, 10–10–67, Cl. 274—9.
Reed, Martin C., to Warwick Electronics Inc. Record changer turntable cover. 3,346,262, 10–10–67, Cl. 274—39.1.
Reed, Samuel F., Jr.: *See*—
Petry, Robert C., and Reed. 3,346,621
Reed, Samuel F., Jr., to Rohm & Haas Co. Process for the preparation of difluoramino ethers. 3,346,642, 10–10–67, Cl. 260—584.
Reed, Samuel F., Jr., to Rohm & Haas Co. Difluoramino glycols and their preparation. 3,346,643, 10–10–67, Cl. 260—584.
Reed, Stanley F.: *See*—
Andrews, Frederick P., and Reed. 3,346,388.
Reel, Richard S.: *See*—
Fulton, Donald L., Reel, Reeve, Stahmann, and Vehige. 3,346,186.
Reeve, James L.: *See*—
Fulton, Donald L., Reel, Reeve, Stahmann, and Vehige. 3,346,186.
Regel, Erik, to Chemagro Corp. Halo-phosphorus compounds and process for their preparation. 3,346,669, 10–10–67, Cl. 260—960.
Reichow, William A., to Ruskin Mfg. Co. Damper control and linkage therefor. 3,346,013, 10–10–67, Cl. 137—628.
Reid, James D., and P. Way, to The Leece-Neville Co. Regulator with noise suppression. 3,346,801, 10–10–67, Cl. 322—58.
Reid, Wallace G.: *See*—
Omietanski, George M., and Reid. 3,346,610.
Reick, Kenneth R.: *See*—
Tiger, Emil, Corman, and Reick. 3,345,926.
Reigler, Paul F.: *See*—
Lamoria, Le F., and Reigler. 3,346,348.
Reimann, William G., to Litton Systems, Inc. Weldable printed circuit board techniques. 3,345,741, 10–10–67, Cl. 29—626.
Reiners, Walter: *See*—
Fossen, Helmut. 3,346,206.

Renfroe, Charles C. Hydraulic pump and circuit system. 3,345,816, 10–10–67, Cl. 60—52.
Research Laboratories of Australia Ltd.: *See*—
Mathan, Josef, and Chapman. 3,346,475.
Research Silver Refining Co.: *See*—
Shigley, Russell L., and Glenn. 3,346,369.
Rethorst, Scott C. Automotive-monorail transportation system. 3,345,951, 10–10–67, Cl. 104—91.
Reynolds, Luther W., to General Electric Co. Implantable power source employing a body fluid as an electrolyte. 3,345,989, 10–10–67, Cl. 128—419.
Reynolds, R. J., Tobacco Co.: *See*—
Pinkham, Jesse R. 3,345,991.
Rhoads, George D., and R. N. Haynie, to Federal-Mogul Corp. Elastomeric oil seal having a laminated metal reinforcing member. 3 346,265, 10–10–67, Cl. 277—152.
Rhodes, Richard P.: *See*—
Beach, Leland K., Gardiner, and Rhodes. 3,346,546.
Rhodin, Thor N., Jr., to Union Carbide Corp. Niobium base alloy. 3,346,379, 10–10–67, Cl. 75—174.
Ricci, Fausto M. Receptacle. 3,346,137, 10–10–67, Cl. 220—236.
Richards, Raymond S., to Owens-Illinois, Inc. Fluid film lubrication for extrusion of metal. 3,345,842, 10–10–67, Cl. 72—42.
Richison, Eugene M. and E. M., to H. T. Conklin. Power-operated wheelchair. 3,346,062, 10–10–67, Cl. 180—6.7.
Richardson-Merrell, Inc.: *See*—
Amstutz, Edward D., Palopoli, Tilford, and Shuman. 3,346,583.
Haltsch, Edward P. 3,346,185.
Richison, Ethel M.: *See*—
Richison, Eugene M. and E. M. 3,346,062.
Richman, Robert W. Vehicle with climbing wheels. 3,346,268, 10–10–67, Cl. 280—5.26.
Riegel Textile Corp.: *See*—
Gore, Graves T. 3,345,965.
Rieker & Co., Tuttlingen: *See*—
Stöhr, Rudolf. 3,345,761.
Riemenschneider, Wilhelm: *See*—
Roscher, Günther, and Riemenschneider. 3,346,627.
Ries, Edward L.: *See*—
Boyer, Thomas W., Chang, and Ries. 3,346,631.
Rieter Machine Works Ltd.: *See*—
Eichenberger, Hansulrich, Naegeli, and Schwengeler. 3,345,701.
Riggs, Emmet D.: *See*—
Woods, John P., Riggs, and Dransfeld. 3,346,068.
Riezebos, Gerrit, D. A. Van Dorp, and O. F. Schweigl, to Lever Bros. Co N-substituted amino-alkane sulphonic acids. 3,346,028, 10–10–67, Cl. 260—501.
Riker, Warren N. Sanding disc assembly. 3,345,785, 10–10–67, Cl. 51—362.
Ringel, Stanley M.: *See*—
Murdock, Henry T., and Ringel. 3,345,740.
Ringer, Judd, Corp.: *See*—
Enblom, Paul A. 3,346,194.
Risdon Mfg. Co., The: *See*—
Swenson, Roy S. 3,346,103.
Rita, Albert M. Decorative shoe lace keeper. 3,345,707, 10–10–67, Cl. 24—120.
Ritter Pfaudler Corp.: *See*—
Ernst, Robert R. 3,346,464.
Rival Mfg. Co.: *See*—
McLean, Robert E. 3,345,742.
Roach, Homer E. Antifreeze system for fluid lines. 3,346,191, 10–10–67. Cl. 239—135.
Robbins, Jim Seat Belt Co.: *See*—
Smith, Lawrence H., and Partridge. 3 345,712.
Robbins, Max L., and J. H. Schulman, to Esso Research and Engineering Co. Microemulsions in liquid hydrocarbons. 3,346,494, 10–10–67, Cl. 252—33.2.
Robertson, James S. P. L. E. B. Dymoke-Bradshaw, and N. S. Lotay, to International Standard Electric Corp. Telephone ringer. 3 346,858, 10–10–67. Cl. 340—397.
Roberts, George L., Jr., and R. G. Fessler, to American Cyanamid Co. Quaternary ammonium complexes with heteropolyanions. 3,346,604, 10–10–67, Cl. 260—429.
Roberts, John W., A. F. Old, R. F. Gibson, W. F. Foster, T. L. Purvis, and J. C. Wycoff, to Solite Corp. Uniform lightweight aggregate. 3 346,198, 10–10–67, Cl. 241—23.
Roberts, Ralph R., and B. Schwartz. Intravenous syringe apparatus. 3,345,986 10–10–67, Cl. 128—214.
Robins Industries Corp.: *See*—
Post, Herman D., and Perner. 3,346,437.
Robinson, Cecil S., and W. J. Crake, to Robintech Inc. Lubricating and load-carrying pad for railway car center bearings and the like. 3,346,302, 10–10–67, Cl. 308—137.
Robinson, Gilbert: *See*—
Jennings, William O., Robinson, Atkins, and Geoffrey. 3,345,886.
Robinson, Preston, to Sprague Electric Co. Electrical capacitor with impregnated metallized electrode. 3,346,789, 10–10–67, Cl. 317—258.
Robintech Inc.: *See*—
Robinson, Cecil S., and Crake. 3,346,302.
Rockwell Mfg. Co.: *See*—
Karlby, Henning, and Lee. 3,345,869.
Stelijes, Charles R., and Leach. 3,345,784.
Rockwell-Standard Corp.: *See*—
Cumming, James C. 3,346,077.
Komarnitsky, Rostislaw S. 3,345,727.
Rodner, William H.: *See*—
Webb, James E., Forehand, and Rodner. 3,346,419.
Roedel, Hilmar: *See*—
Koepp, Hans-Martin, Siggel, and Roedel. 3,346,542.
Roesner, Donald B., to American Excelsior Corp. Tray. 3,346,400, 10–10–67, Cl. 99—174.
Rogers, James G., and N. L. Moulin, to United States of America, Army. Radiation sensitive high resolution optical tracker. 3,346,738, 10–10–67, Cl. 250—203.
Rohm & Haas Co.: *See*—
Colburn, Charles B. 3,346,644.
Minton, Robert G. 3,346,516.
Nakamura, Hiromichi, Katoo, Minejima, Shimisu, Satoo, Nozaki, and Doochi. 3,346,331.
Petry, Robert C., and Reed. 3,346,621.
Reed, Samuel F., Jr. 3,346,642.
Reed, Samuel F., Jr. 3,346,643.
Wiesboeck, Robert A. 3,346,639.
Roland Offselmaschinenfabrik Faber & Schleicher A.G.: *See*—
Koch, Werner, and Preuss. 3,345,941.
Rollins, Dallas W., to ACF Industries, Inc. Collapsible hitch. 3,346,224, 10–10–67, Cl. 248—119.
Rollins, Stanley W.: *See*—
Dell'Orfano, Anthony M., Hood, Rollins, and Siders. 3,346,182.
Rollman, Ernest E., to RO-Search, Inc. Molded-sole footwear. 3,345,763. 10–10–67, Cl. 36—14.
Rongey, Elbert H., and R. J. Hlavacek, to Swift & Co. Continuous manufacture of comminuted meat products. 3,346,394, 10–10–67. Cl. 99—109.
Rooney, John F., and E. W. Boulger, to Mobil Oil Corp. Interpolymers of a monovinyl aromatic monomer, alpha methyl styrene, a mono-basic acidic monomer and an acrylonitrile 3,346,531, 10–10–67, Cl. 260—33.4.
Rosaen, Nils O., ½ to O. E. Rosaen, and ½ to B. O. Rosaen Continuous filter system. 3,346,118, 10–10–67, Cl. 210—391.
Rosaen, Oscar E.: *See*—
Rosaen, Nils O. 3,346,118.
Roscher, Günther, and W. Riemenschneider, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Preparation of vinyl esters from acteylene in the presence of a mixed zinc salt catalyst. 3,346,627, 10–10–67, Cl. 260—498.
Rosen, Irving: *See*—
Sturm, Clarence L., Hudgin, and Rosen. 3,346,538.
Rosen, Irving, to Diamond Alkali Co. Trioxane-glycidaldehyde copolymerization. 3,346,539, 10–10–67, Cl. 260—67.
Rosin, Seymour, and W. J. Smythe, to Technicon Corp. Colorimeter flow cell. 3,345,910, 10–10–67, Cl. 88—14.
Ross, Albert I. Apparatus for winding armature coils. 3,346,021, 10–10–67, Cl. 140—92.2.
Ross, Sidney D.: *See*—
Alwitt, Robert S., and Ross. 3,346,782.
Rossi, Alberto: *See*—
Schmidt, Paul, Eichenberger, Wilhelm, and Rossi. 3,346,568.
Roth, Claris D., to A. E. Staley Mfg. Co. Continuous process for preparing polyol glycosides. 3,346,558, 10–10–67, Cl. 260—210.
Rouanet, Michel. Fishing reel. 3,346,212, 10–10–67, Cl. 242—84.21.
Rouder, Henry N., to William Gluckin & Co., Inc. Container with independent display and indentification closure. 3,346,168, 10–10–67, Cl. 229—23.
Roulund, Poul B.: *See*—
Kidder, Harvey L., and Roulund. 3,346,674.
Roussel-UCLAF: *See*—
Bucourt, Robert, Pierdet, Tersier, and Costerousse. 3,346,454.
Royston, Grover C.: *See*—
Van Volkenburgh, Ross, Hyde, and Royston. 3,346,598.
Rouxel, Roland, and R. Perret. Apparatus to optimize industrial control by maximizing time derivative of control parameter. 3,346,726, 10–10–67, Cl. 235—150.1.
Rowe, Robert G. Resonance vibration apparatus for testing articles. 3,345,862, 10–10–67, Cl. 73—67.2.
Rowse, Dean M. Means for stopping the tractor transmission gear train upon disengagement of the clutch. 3,346,081, 10–10–67, Cl. 192—3.5.
Rubico, Jerome A.: *See*—
Batchelder, Charles F., and Rubico. 3,345,663.
Ruettiger, Wilhelm: *See*—
Bille, Heinz, Distler, Dittus, Mueller, and Ruettiger. 3,346,325.
Ruskin Mfg. Co.: *See*—
Reichow, William A. 3,346,013.
Russell, Fred J., R. L. Armstrong, and H. W. Falk, said Armstrong and Falk assor to said Russel. Double sliding door lock. 3,345,838, 10–10–67. Cl. 70—100.
Russo, Joseph J., and M. S. La Monica, Jr. Oil cleaner. 3,346,120, 10–10–67, Cl. 210—439.
Ruti Machinery Works Ltd.: *See*—
Kohler, Lothar. 3,346,018.
Rys, Tadeusz J. and H. I. Stanback, to Square D Co. Electrical switch. 3,346,711, 10–10–67, Cl. 200—114.
Ryu, Keiichiro. Slide voltage regulator. 3,346,804, 10–10–67, Cl. 323—47.
SCM Corp.: *See*—
Ostensen, Ralph G. 3,345,925.
S-F-D Laboratories, Inc.: *See*—
Feinstein, Joseph. 3,346,766.
SWF Spezialfabrik fur Authozubehor Gustav Rau G.m.b.H.: *See*—
Bock, Willy, Mutschler, and Theurer. 3,346,707.
Sachs, John P.: *See*—
Kasting, Howard E., and Sachs. 3,345,919.
Sack, Ernst T., and E. Becker, to Maschinenfabrik Sack G.m.b.H. Roll tables. 3,345,850, 10–10–67, Cl. 72—251.
Sadove, Max S. and S. J. Skowronski, to Chemetron Corp. Portable isolation roomette. 3,345,996, 10–10–67, Cl. 135—1.
Sagar, Lester R., to Minerals & Chemicals Philipp Corp. Method for granulating material of plastic consistency and system therefor. 3,346,197, 10–10–67, Cl. 241—23.

St. Joseph Lead Co.: *See*—
Walrond, John E. 3,346,409.
Warnes, Don E. 3,346,364.
Kinsell, David. 3,346,677.

Sakurai, Setsuji: *See*—
Takeda, Yoshifumi, Okuda, and Sakurai. 3,346,326.

Sala Maskingfabriks AB: *See*—
Lundmark, Werner N. 3,346,113.

Salem Tool Co., The: *See*—
Young, William G. 3,346,055.

Salyer, Ival O., and J. L. Schwendeman, to Monsanto Research Corp. Mat structure. 3,346,219, 10–10–67, Cl. 244—114.

Salyer, Ival O.: *See*—
Slocombe, Robert J., Salyer, and Newman. 3,346,528.

Salzmann, Ferdinand F.: *See*—
Graber, Joseph V., and Salzmann. 3,345,676.
Graber, Joseph V., and Salzmann. 3,345,678.

Sam, George. Bodily attached hoop toy. 3,345,772, 10–10–67, Cl. 46—51.

Sandberg, Ivar O.: *See*—
Carlson, Arne, and Sandberg. 3,345,894.

Sanders Associates, Inc.: *See*—
Farmer, Everett W. 3,346,221.

Sanders Valve Co. Ltd.: *See*—
Billson, Frederick W. 3,346,233.

Sandor, Bela: *See*—
Colautti, Albert J., and Sandor. 3,346,297.

Sandos Ltd.: *See*—
Hofmann, Albert, Troxler, and Ott. 3,346,580.
Wiedemann, Erwin. 3,346,478.

Sanford Research Co.: *See*—
De Groft, Walter J. 3,345,674.

Sapiego, John J., to Hercules Inc. Method of preparing small particle nitrocellulose. 3,346,675, 10–10–67, Cl. 264—3.

Sartz, Calvert L. Multipurpose shovel. 3,346,294, 10–10–67, Cl. 294—49.

Sarvis, John W. Projectile. 3,345,948, 10–10–67, Cl. 102—87.

Satchell, Fred E.: *See*—
Schimanski, William H., Gautraud, and Satchell. 3,346,-258.

Satoo, Akira: *See*—
Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,346,331.

Sattler, Robert I., to La Salle Machine Tool, Inc. Mechanical coordinating device. 3,345,747, 10–10–67, Cl. 33—1.

Sauer, Fred W. Ventilating device for fabric bodies. 3,345,-932, 10–10–67, Cl. 98—83.

Saukaitis, Albert J.: *See*—
Gardner, George S., and Saukaitis. 3,346,404.

Saylor, Lee H., to Sealed Power Corp. Narrow width piston ring and expander-spacer. 3,346,252, 10–10–67, Cl. 267—1.5.

Scanlon, John J., Jr., to United States of America, Army. Automatic rifle for firing caseless ammunition. 3,345,770, 10–10–67, Cl. 42—18.

Scaramucci, Domer. Ball check valve. 3,346,008, 10–10–67, Cl. 137—516.29.

Schaefer, John O.: *See*—
Goff, Willie, Jr., and Schaefer. 3,346,090.

Schaefer, John O., to International Business Machines Corp. Pneumatic accumulator. 3,346,184, 10–10–67, Cl. 235—201.

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Schaeffer, William D., and K. L. Olivier, to Union Oil Co. of California. Oxidation of ethylene to vinyl esters by a platinum group metal catalyst in the presence of a halogen compound, a heavy metal salt, molecular oxygen and a vanadium compound. 3,346,626, 10–10–67, Cl. 260—497.

Schanlon, John J., Jr.: *See*—
Quinlan, Joseph B., and Schanlon. 3,345,945.

Scharg, George A.: *See*—
Anderson, Harold P., McMahon, Scharg, and Winter. 3,346,700.

Schatz, Gunther, H. Gemeinhardt, H. Brucher, and O. Jurisch, to Vereinigte-Glanzstoff-Fabriken AG. Apparatus for continuous production of crimped filaments. 3,345,719, 10–10–67, Cl. 28—1.

Schering Corp.: *See*—
Thompson, Robert E. 3,346,146.

Scherr, Albert E., III: *See*—
Moresi, Joseph A., Jr., and Scherr. 3,346,781.

Scherrer-Wirz, Donat, to Maschinenfabrik Fahr AG. Apparatus for fully automatic molding presses. 3,345,684, 10–10–67, Cl. 18—2.

Schikarski, Lothar, and H.-J. Teiwes, to United States of America, Atomic Energy Commission. Method for melting uranium oxide and plutonium oxide. 3,346,346, 10–10–67, Cl. 23—344.

Schimanski, William H., M. G. Gantraud, and F. E. Satchell, to Brunswick Corp. Bowling pin with flexible belly. 3,346,-258, 10–10–67, Cl. 273—82.

Schirmer, Henry G., to W. R. Grace & Co. Apparatus for corona treatment of polymer film including a flexible metal foil electrode. 3,346,480, 10–10–67, Cl. 204—312.

Schlossberg, Louis, to Detrex Chemical Industries, Inc. Wipe-on phosphating composition. 3,346,426, 10–10–67, Cl. 148—6.17.

Schlosser, Francis G.: *See*—
Pfaff, Henry C., Jr., and Schlosser. 3,346,280.

Schlumberger Technology Corp.: *See*—
Bell, William T. 3,346,057.

Schmall, Edwin A., to Esso Research and Engineering Co. Metal hydrocarbon difluoramines and their preparation. 3,346,347 10–10–67, Cl. 23—356.

Schmall, Edwin A., and J. R. Lovett, to Esso Research and Engineering Co. Difluoroamino acetals and method of preparation. 3,346,641, 10–10–67, Cl. 260—594.

Schmidt, Edward W., to Link-Belt Co. Floor truck for tow line system. 3,345,958, 10–10–67, Cl. 104—170.

Schmidt, Paul. Process and apparatus for placing materials in a state of plasma. 3,346,458, 10–10–67, Cl. 176—1.

Schmidt, Paul, K. Eichenberger, M. Wilhelm, and A. Rossi, to Ciba Corp. 2-amino-5-sulfamyl-benzoic acid hydrazides. 3,346,568, 10–10–67, Cl. 260—239.8.

Schmidt, Trueman L., to Olympia Brewing Co. Insulated reclosable beer carton. 3,346,167, 10–10–67, Cl. 229—20.

Schmitt, Paul, and G. Dittgen, to Mannesmann-Meer Aktiengesellschaft. Roll-straightening machine. 3,345,847, 10–10–67, Cl. 72—224.

Schneider, Abraham, to Sun Oil Co. Preparation of dimethyldecalins. 3,346,656, 10–10–67, Cl. 260—666.

Schneider, Jos., & Co.: *See*—
Macher, Karl H. 3,346,320.

Schnurch, Roland, A. Koster, and R. Heise, to Philadelphia Quartz Co. Process for silica and silicates. 3,346,335, 10–10–67, Cl. 23—110.

Schoen, Kurt: *See*—
Engel, Wilhelm, Cautius, and Schoen. 3,346,462

Scholz, Werner: *See*—
Naeser, Gerhard, and Scholz. 3,346,363.

Schroeder, Kenneth W., and B. G. Isaacson, to Magnaflux Corp. Automatically controlled magnetizing system. 3,346,-778, 10–10–67, Cl. 317—128.

Schroeder, Manfred R., to Bell Telephone Laboratories, Inc. System for determining acoustic reflection coefficients. 3,346,067, 10–10–67, Cl. 181—.5.

Schubert Auto-Body Tools, Inc.: *See*—
Schubert, Harry A. 3,346,241.

Schubert, Fritz: *See*—
Finkenauer, Helmut, Seibert, Kohl, Luecke, and Schubert. 3,346,322.

Schubert, Harry A., to Schubert Auto-Body Tools, Inc. Mixing apparatus. 3,346,241, 10–10–67, Cl. 259—72.

Schulman, Jack H.: *See*—
Robbins, Max L., and Schulman. 3,346,494.

Schulz, Kenneth H. Display means for works of art. 3,345,768, 10–10–67, Cl. 40—152.1.

Schulz, Wallace W., to United States of America, Atomic Energy Commission. Extraction of plutonium and neptunium from aqueous solutions. 3,346,345. 10–10–67, Cl. 23—340.

Schulz, Walter F.: *See*—
Patton, John T., Jr., and Schulz. 3,346,557.

Schuster, Ludwig K., and A. L. Baldi, Jr., to Pennsalt Chemicals Corp. Aqueous solution containing a resin and sucrose for use with solutions of hexavalent chromium coating compounds. 3,346,522, 10–10–67, Cl. 260—17.4.

Schwartz, Boris: *See*—
Roberts, Ralph R., and Schwartz. 3,345,986.

Schwartzman, Gilbert. Brush-type applicator. 3,345,673, 10–10–67, Cl. 15—543.

Schwarzer, Carl G., to Shell Oil Co. Process for curing polyepoxides with pyromellitic diimide or adducts thereof and resulting products. 3,346,665, 10–10–67, Cl. 260—830.

Schwarzer, Fritz. Recording apparatus structure. 3,346,312, 10–10–67, Cl. 312—234.

Schwarzer, Fritz. Electro-optical line recorder. 3,346,867, 10–10–67, Cl. 346—33.

Schweigl, Othmar F.: *See*—
Riezebos, Gerrit, Van Dorp, and Schweigl. 3,346,628.

Schwendeman, James L.: *See*—
Salyer, Ival O., and Schwendeman. 3,346,219.

Schwengeler, Peter: *See*—
Eichenberger, Halsulrich, Naegeli, and Schwengeler. 3,345,701.

Scientific Industries, Inc.: *See*—
Natelson, Samuel. 3,346,479.

Scott, Carleton B.: *See*—
Sturgess, John B., and Scott. 3,345,773.

Scott, Franklin R., and S. P. Cunningham, to General Dynamics Corp. Spectral line profile analyzer. 3,345,906, 10–10–67, Cl. 88—14.

Scott, John E., and T. R. Thomas, to Sperry Rand Corp. Binary coded signal correlator. 3,346,844, 10–10–67, Cl. 340—146.2.

Scott, William J., and N. R. Howard, to Associated Electrical Industries Ltd. Waveguide switch with semiconductor in thermal contact with waveguide walls. 3,346,825, 10–10–67, Cl. 333—98.

Sealed Air Corp.: *See*—
Chavannes, Marc A. 3,346,438.

Sealed Power Corp.: *See*—
Saylor, Lee H. 3,346,252.

Sealol, Inc.: *See*—
Lindeboom, Herman. 3,346,009.

Searle, G. D., & Co.: *See*—
Baran, John S. 3,346,602.

Sebulsky, Raynor T.: *See*—
Henke, Alfred M., and Sebulsky. 3,346,657.

Secunda, Kenneth, to General Motors Corp. Electrochemical stock removal apparatus including means to dispense electrolyte at critical parts. 3,346,476, 10–10–67, Cl. 204—224.

Sederholm, Douglas E.: *See*—
Cralle, Walter O., Jr., Holt, Lenney, Sederholm, and Walton. 3,346,086.

Seehausen, Jobst W., to General Ionics Corp. Radiator recuperator. 3,346,042, 10–10–67, Cl. 165—154.

Segaert, Paul, Pty. Ltd.: *See*—
Proud, Norman T. 3,345,794.

Segura, Marnell A.: *See*—
Yuhas, Stephen A., Jr., Muessig, and Segura. 3,346,664.

Sehm, Eugene J., to B. F. Goodrich Co. Olefinically unsaturated phosphate and phosphonate monomers and process for making same and polymers therefrom. 3,346,545, 10–10–67, Cl. 260—89.5.

Seibert, Walter: *See*—
Finkenauer, Helmut, Seibert, Kohl, Luecke, and Schubert. 3,346,322.

Seibt, Hubertus: *See*—
Von Kutepow, Seibt, and Meier. 3,346,608.

Seidler, Reinhold: *See*—
Forster, Heinz, and Seidler. 3,346,359.

Seismograph Service Corp.: *See*—
Crossland, Edward J. 3,346,177.
Hawkins, James E. 3,346,064.

Selas Corp. of America: *See*—
Hess, Frederic O. 3,345,846.

Seldin, Ira L.: *See*—
Buckely, Francis T., Finch, and Seldin. 3,346,526.

Selwitz, Charles M., and E. R. Tucci, to Gulf Research & Development Co. Preparation of an aromatic ester from an alkylaromatic compound and a carboxylic acid in the presence of a tetravalent cerium salt and an inhibitant. 3,346,-622, 10–10–67, Cl. 260—488.

Seng Co., The: *See*—
Fox, Martin. 3,345,651.

Sennewald, Kurt, H. Erpenbach, H. Gudernatsch, and W. Vogt, to Knapsack-Griesheim Aktiengesellschaft. Process for the manufacture of 1,2-diaminomethylcyclobutane. 3,346,637, 10–10–67, Cl. 260—563.

Sepe, Lawrence: *See*—
Doble, Robert N., Miller, and Sepe. 3,346,836.

Sergeys, Francis J., P. K. Maher, W. S. Briggs, and C. V. McDaniel. Method of treating exhaust gases. 3,346,328, 10–10–67, Cl. 23—2.

Sessa, Michael N., and F. DiStefano. Dispensing device. 3,346,-145, 10–10–67, Cl. 222—162.

Seyfried, Richard F., to The Ohio Crankshaft Co. Automatic temperature control. 3,346,712, 10–10–67, Cl. 219—8.5.

Shafranek, Robert J., to TRW, Inc. Self excited brushless alternator. 3,346,749, 10–10–67, Cl. 310—263.

Shalit, Harold: *See*—
Hardin, William A., and Shalit. 3,346,349.

Shamp, Donald E.: *See*—
O'Connell, Thomas B., Pierce, Herrington, and Shamp. 3,346,360.

Shanholtzer, Alfred E.: *See*—
Anderson, Harold C., and Shanholtzer. 3,346,813.

Shapiro, Sanford S. Antisiphon fluid dispensing and distributing system. 3,346,010, 10–10–67, Cl. 137—564.5.

Shashoua, Fred E.: *See*—
Heizer, John T., and Shashoua. 3,346,702.

Shavel, John, Jr., and H. Zinnes, to Warner-Lambert Pharmaceutical Co. Pyrazolo[4,3-c][1,2]benzothiazine 5,5-dioxides and process for their production. 3,346,572, 10–10–67, Cl. 260—243.

Shavel, John, Jr., and H. Zinnes, to Warner-Lambert Pharmaceutical Co. N,N'-(2-hydroxytrimethylene)bis[O-(hydroxymethyl)-benzenesulfonamide]. 3,346,633, 10–10–67, Cl. 260—556.

Sheehan, John T., and J. Bernstein, to E. R. Squibb & Sons, Inc. Iodine chloride complexes of quinoline and acridine compounds. 3,346,579, 10–10–67, Cl. 260—279.

Sheldon, Deane P., to National Research Corp. Orbiting vacuum pump power supply with a filament current regulator. 3,346,769, 10–10–67, Cl. 315—106.

Shell, Irving W. Adjustable angle bracket. 3,346,226, 10–10–67, Cl. 248—242.

Shell Oil Co.: *See*—
Cornelissen, Jan. 3,346,122.
De Acetis, William. 3,346,597.
Larson, John E., and Kuderna. 3,346,613.
Schwarzer, Carl G. 3,346,665.

Shelton, John P.: *See*—
Chadwick, George G., and Shelton. 3,346,861.

Shepard, Charles L.: *See*—
Grant, James N., Honold, Andrews, Brown, and Shepard. 3,345,878.

Shepherd, William E., to National Steel Corp. Apparatus and method for supplying gas to a high temperature process. 3,346,190, 10–10–67, Cl. 239—132.3.

Sherrill, James W., to Microtron Corp. Apparatus for cleaning filters. 3 345,805, 10–10–67, Cl. 55—271.

Shigley, Russell L., and R. A. Glenn, to Research Silver Refining Co. Process for recovering silver. 3,346,309, 10–10–67, Cl. 75—109.

Shildneck, Paul R., and R. J. Hathaway, to A. E. Staley Mfg. Co. Preparation of quaternary ammonium starch ethers. 3,346,563, 10–10–67, Cl. 260—233.3.

Shimizu, Hiroshi: *See*—
Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,346,331.

Shinefeld, David, to Multipane, Inc., U.S.A. Multiple pane window units. 3,345,791, 10–10–67, Cl. 52—616.

Shinoda, Shosuke: *See*—
Teramoto, Iwao, Iwasa, and Shinoda. 3,346,428.

Shinozaki, Hiroshi: *See*—
Nasu, Noriyuki, Yamazaki, Shinozaki, and Yonekura. 3,345,879.

Shisume, Tashichika: *See*—
Hiroki, Kenzo, Shisume, Nakamura, Yoshino, Kamio, Irie, and Kawamura. 3,346,617.

Shoaf, Floyd R. Garment severing and stacking apparatus. 3,345,963, 10–10–67, Cl. 112—2.

Shriver, Harry D.: *See*—
Miller, Keith W., and Shriver. 3,345,724.

Shryock, Howard A.: *See*—
Loetel, Charles E., and Shryock. 3,346,246.

Shuford Mills, Inc.: *See*—
Long, John R. 3,345,813.

Shuman, Richard F.: *See*—
Amatuzi, Edward D., Palopoli, Tilford, and Shuman. 3,346,583.

Shutes, Emmett B., and C. A. Gustavson, to Gulf Research & Development Co. Calibration gauge for use with borehole calipers. 3,345,857, 10–10–67, Cl. 73—1.

Silber, Erwin-Walter, to Go-Tract Ltd. Track element for a track-laying vehicle. 3,346,306, 10–10–67, Cl. 305—40.

Siders, Robert B.: *See*—
Dell 'Orfano, Anthony M., Hood, Rollins, and Siders. 3,346,182.

Siebold, Donald J., to General Electric Co. Television antenna and connector apparatus. 3,346,863, 10–10–67, Cl. 343—702.

Siegenthaler, Karl, and H. Wild, to Fabrik fur Firestone Produkte AG. Tire coating apparatus. 3,346,412, 10–10–67, Cl. 117—96.

Siegle, Donald C., to General Motors Corp. Infrared surface heating unit with corrugated ribbon-shaped filament. 3,346,-720, 10–10–67, Cl. 219—464.

Siggel, Erhard: *See*—
Koepp, Hans-Martin, Siggel, and Roedel. 3,346,542.

Siggins, James E., and J. H. Ackerman, to Sterling Drug Inc. Acyloxyalkyl esters of monoiodinated benzoic acids. 3,346,-620, 10–10–67, Cl. 260—476.

Signode Corp.: *See*—
Polit, Neil A. 3,346,022.

Silsby, Stanley D., to United States of America, Army. High capacity magazine and cooperating firearm structure. 3,345,-771, 10–10–67, Cl. 42—18.

Simeone, Mario J., to Warner-Lambert Pharmaceutical Co. Tear-strip wrapper processing apparatus. 3,345,918, 10–10–67, Cl. 93—1.

Simplex Wire and Cable Co.: *See*—
Hunt, George H. 3,346,500.
McNerney, Norman E. 3,346,690.

Simmons, Charles A., to Burroughs Corp. Duplication of electrostatic printing. 3,345,944, 10–10–67, Cl. 101—426.

Sims, Chester T.: *See*—
Foster, Allan D., and Sims. 3,346,378.

Sinfelt, John H., W. F. Taylor, and G. W. Dembinski, to Esso Research and Engineering Co. Catalyst compositions and process for preparation thereof. 3,346,510, 10–10–67, Cl. 252—455.

Singleton, Peter, to The Loewy Engineering Co., Ltd. Mandrel attachments for metal tube extrusion presses. 3,345,851, 10–10–67, Cl. 72—253.

Sirco Mfg., Inc.: *See*—
Blevins, Kenneth A. 3,345,958.

Sjöberg, Goran R., to Arenco Aktiebolag. Device for laterally transferring cigars or the like from one conveying means to another. 3,346,093, 10–10–67, Cl. 198—22.

Skowronski, Steve J.: *See*—
Sadove, Max S., and Skowronski. 3,345,996.

Skreckoski, Gerald R., to Allied Chemical Corp. Gloss retaining urethane coating composition. 3,346,524, 10–10–67, Cl. 260—22.

Slater, Alfred A.: *See*—
Pherson, Perry O., Slater, and Engel. 3,346,141.

Slattery, Robert E., to L. W. Menzimer, Trustee. Friction type automobile door hold-open means. 3,345,680, 10–10–67, Cl. 16—140.

Sligchers, Guilllaume A. T.: *See*—
Van Westerveld, Jan, and Sligchers. 3,346,567.

Slinkard, James E., to R. E. Breidenthal. Electric cord reel apparatus. 3,346,705, 10–10–67, Cl. 191—12.4.

Slocombe, Robert J., I. O. Salyer, and S. Newman, to Monsanto Co. Process of crystallising isotactic polystyrene. 3,346,-528, 10–10–67, Cl. 260—30.6.

Slusser, Marion L., to Mobil Oil Corp. Method and structure for retorting oil shale in situ by cycling fluid flows. 3,346,-044, 10–10–67, Cl. 166—2.

Smeltzer, Jack C., to The Bunker-Ramo Corp. Digital computer system. 3,346,852, 10–10–67, Cl. 340—172.5.

Smith-Berger Mfg. Corp.: *See*—
Erickson, Louis A., Klinke, and Karr. 3,346,237.

Smith, Bessie I.: *See*—
Smith, Herman A. and B. I. 3,346,225.

Smith, Charles J., to Monroe Auto Equipment Co. Vehicle suspension device. 3,346,272, 10–10–67, Cl. 280—96.2.

Smith, Frederick R., to FMC Corp. Method and apparatus for degassing viscose. 3,345,803, 10–10–67, Cl. 55—55.

Smith, Herman A. and B. I. Accordion support stand. 3,346,-225. 10–10–67. Cl. 248—125.

Smith, Lawrence H., and G. J. Partridge, to Jim Robbins Seat Belt Co. Buckle for seat belts. 3,345,712, 10–10–67, Cl. 24—230.

Smith, Nathan D. High pressure indicator. 3,345,876, 10–10–67, Cl. 73—388.

Smith, S., & Sons (England) Ltd.: *See*—
Ovens, Stanley F., and Ellis. 3,346,839.

Smith, Warren M.: *See*—
Gladrow, Elroy M., and Smith. 3,346,512.

Smith, Willard O., K. L. Weaver, and A. C. Harmsen, to Gilman Paper Co. Gusseted multi-wall waterproof paper bag. 3,346,173, 10–10–67, Cl. 229—55.

Smyth, Donald M., and K. Lehovec, to Sprague Electric Co. Solid electrolyte battery cells. 3,346,423, 10–10–67, Cl. 136—153.

Smythe, William J.: *See*—
Rosin, Seymour, and Smythe. 3,345,910.

Snodgrass, Herschel R.: *See*—
Miller, Park H., Jr., Pound, and Snodgrass. 3,346,066.

Snorkel Fire Equipment Co.: *See*—
Moore, Arthur D., and Davidson. 3,346,052.

Snyder, Benjamin L., to Pentapco, Inc. Sewing gauge. 3,345,748, 10–10–67, Cl. 33—2.

Snyder, Clifford H., Jr. Sealing arrangement for fluid tight coupling. 3,346,276, 10–10–67, Cl. 285—110.

Snyder, Gilbert R., to United States of America, Army. Aqueous electrolyte emulsion. 3,346,420, 10–10–67, Cl. 136—90.

Sobel, Sydney M., to Ontario Store Fixture Co., Ltd. Modular knockdown shelving construction. 3,346,124, 10–10–67, Cl. 211—148.

Societe Bertin & Cie: *See*—
Bertin, Jean H. 3,346,063.

Societe d'Etudes & de Recherches Techniques (S.E.R.T.): *See*—
Massal, Louis L. J. 3,346,291.

Societe Genevoise d'Instruments de Physique: *See*—
Viret, Robert, and Stahl. 3,346,848.

Societe Industrielle de Brevets et d'Etudes S.I.B.E.: *See*—
Mennesson, Andre L. 3,346,245.

Societe Rhodiaceta: *See*—
Gruet, Daniel. 3,345,814.

Sokolovsky, Mark A.: *See*—
Arbuzov, Boris A., Sokolovsky, Zavlin, and Vinokurova. 3,346,543.

Solite Corp.: *See*—
Roberts, John W., Old, Gibson, Foster, Purvis, and Wycoff. 3,346,198.

Somogyi, László, P. Steingaszner, I. Hlinyánszky, J. Horváth, and J. Károlyi, to Nagynyomasu Kiserleti Intezet. Refining used lubricating oils with sulfuric acid and hydrogenation. 3,346,483, 10–10–67, Cl. 208—179.

Songrand Corp., The: *See*—
McNair, Samuel L. 3,346,748.

Soto, Dario T., to Soto Mfg. and Welding Co. Stair climbing hand truck. 3,346,269, 10–10–67, Cl. 280—5.26.

Soto Mfg. and Welding Co.: *See*—
Soto, Dario T. 3,346,269.

Sousa, Anthony A.: *See*—
Manning, David T., and Sousa. 3,346,584.

Sowko, John J., to Firth Sterling, Inc. Method of making a shaped wear-resistant composite. 3,345,734, 10–10–67, Cl. 29—471.1.

Space Ad Co.: *See*—
Bearman, Sumner D. 3,345,709.

Spahrkas, Heinrich, H. Knopf, K. Faber, and G. Mauthe, to Farbenfabriken Bayer Aktiengesellschaft. Tanning process. 3,346,323, 10–10–67, Cl. 8—94.26.

Sparton Corp.: *See*—
Ankeny, Claude C. 3,346,830.

Spatz, Sydney M., and R. I. Steiner, to Allied Chemical Corp. 2-(omega-substituted vinylene)-3,3-disubstituted-3H-indoles. 3,346,571, 10–10–67, Cl. 260—240.

Speelman, Erving A., to Propper Mfg. Co., Inc. One-piece binaural assemblies for stethoscope. 3,346,069, 10–10–67, Cl. 181—24.

Speith, Karl-Georg, and A. Bungeroth, to Mannesmann Aktiengesellschaft. Preventing the overflow of liquid metal from an end casting head discharged in a curved continuous casting path towards the horizontal plane. 3,346,035, 10–10–67, Cl. 164—82.

Spellman, Edsel A.: *See*—
Newcomb, Fred N., and Spellman. 3,345,914.

Sperry Rand Corp.: *See*—
Ferguson, Donald C., and Flowers. 3,346,846.
Hanson, William H. 3,346,730.
Scott, John E., and Thomas. 3,346,844.
Strenglein, Harry F. 3,346,743.

Spindelfabrik Suessen, Schurr Stahlecker & Grill G.m.b.H.: *See*—
Stahlecker, Hans. 3,345,722.

Spooner, Howard E., to Engelhard Industries, Inc. Electrical contact tape. 3,346,350, 10–10–67, Cl. 29—183.

Sprague Electric Co.: *See*—
Alwitt, Robert S., and Ross. 3,346,782.
Millard, Richard J. 3,346,783.
Moresi, Joseph A., Jr., and Scherr. 3,346,781.
Robinson, Preston. 3,346,789.
Smyth, Donald M., and Lehovec. 3,346,423.

Sprayon Products, Inc.: *See*—
Groth, Vernon C. 3,346,195.

Square D Co.: *See*—
Leonard, James H., and Dessert. 3,346,777.
Rys, Tadeusz J., and Stanback. 3,346,711.

Squibb, E. R., & Sons, Inc.: *See*—
Levine, Seymour D., and Principe. 3,346,616.
Sheehan, John T., and Bernstein. 3,346,579.

Squire, Robert K., to Superior Scaffold Co. Adapter element for an extendable shore. 3,346,283, 10–10–67, Cl. 287—54.

Stachiw, Jaroslaw D., and P. A. Vonada, to Corning Glass Works. Mechanical coupling for glass and ceramic articles. 3,346,279, 10–10–67, Cl. 285—353.

Stahl, Alain: *See*—
Viret, Robert, and Stahl. 3,346,848.

Stahlecker, Hans, to Spindelfabrik Suessen, Schurr Stahlecker & Grill G.m.b.H. Twin pressure rollers for spinning or twisting machines. 3,345,722, 10–10–67, Cl. 29—116.

Stahmann, John A.: *See*—
Fulton, Donald L., Reel, Reeve, Stahmann, and Vehige. 3,346,186.

Sta-Rite Products, Inc.: *See*—
Guiler, Robert L. 3,345,982.

Staley, A. E., Mfg. Co.: *See*—
Roth, Claris D. 3,346,558.
Shildneck, Paul R., and Hathaway. 3,346,563.

Stamicarbon N.V.: *See*—
Van Westerveld, Jan, and Sligchers. 3,346,567.

Stanback, Harris I.: *See*—
Rys, Tadeusz J., and Stanback. 3,346,711.

Standard Oil Co., The (Ohio): *See*—
Greene, Janice L. 3,346,615.

Standard Pressed Steel Co.: *See*—
Villo, Joseph P. 3,345,900.

Stanford Research Institute: *See*—
Crafts, Harold S., and Forsen. 3,346,854.

Stanwick Corp., The: *See*—
Stanwick, Tad. 3,345,971.

Stanwick, Tad, to The Stanwick Corp. Ship maneuvering method. 3,345,971, 10–10–67, Cl. 114—235.

Stapling Machines Co.: *See*—
Lombardo, Michael E. 3,346,607.

Stark, John, Jr., to Radio Corp. of America. Regulated voltage supplies for cathode ray tube systems. 3,346,763, 10–10–67, Cl. 315—22.

Starkie, David, and M. W. Astle-Fletcher, to English Rose Ltd. Crimped yarn. 3,345,815, 10–10–67, Cl. 57—140.

Starks, Charles M., and E. F. Kennedy, to Continental Oil Co. Preparation of alkyl metaborates. 3,346,614, 10–10–67, Cl. 260—462.

Starry, Glenn L. Sponge cleaning device. 3,345,669, 10–10–67, Cl. 15—244.

Statham Instruments, Inc.: *See*—
Price, John F. 3,346,818.

Steinbrunn, Gustav, and A. Fischer, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Water-solubel triazinyl hemiesters. 3,346,576, 10–10–67, Cl. 260—249.8.

Steiner, Robert T., and G. E. Woodis, to Griswold Coffee Co. Coffee brewing and serving apparatus. 3,345,934, 10–10–67, Cl. 99—290.

Steiner, Russell I.: *See*—
Spatz, Sydney M., and Steiner. 3,346,571.

Steingaszner, Pál: *See*—
Somogyi, László, Steingaszner, Hlinyánszky, Horváth, and Károlyi. 3,346,483.

Steinman, Charles. Foot protective device. 3,345,656, 10–10–67, Cl. 5—327.

Steinmann, Ulrich, A.G., Ltd.: *See*—
Glaus, Bernhard. 3,345,973.

Stellar Industrial Products Co.: *See*—
Stilla, John E., and Greenwald. 3,345,723.

Stelljes, Charles R., and H. K. Leach, to Rockwell Mfg. Co. Orbital finishing sander. 3,345,784, 10–10–67, Cl. 51—170.

Stemmler, Herbert, to Brown, Boveri & Cie Aktiengesellschaft. Inverter circuit for supplying current to polyphase motors. 3,346,794, 10–10–67, Cl. 318—227.

Sterilon Corp.: *See*—
Vitello, John P. 3,345,988.

Sterling Drug Inc.: *See*—
Siggins, James E., and Ackerman. 3,346,620.

Sternau, Martin M., to W. R. Grace & Co. Method and apparatus for making and applying closures. 3,345,798, 10–10–67, Cl. 53—41.

Sternbach, Leo H.: *See*—
Metlesics, Werner, and Sternbach. 3,346,638.

Sternberg, James C., to Beckman Instruments, Inc. Fragmentation inlet for gas chromatography and method of loading a sample thereinto. 3,346,341, 10–10–67, Cl. 23—230.

Stevens, A. D.: *See*—
Carrier, Robert M., Jr. 3,346,097.

Stevens, J. P., & Co., Inc.: *See*—
Hollihan, John P., Reed, and Turton. 3,345,718.

Stevens, William D., and W. P. Gorzegno, to Foster Wheeler Corp. Reheater and superheater circuit arrangement. 3,345,975, 10–10–67, Cl. 122—406.

Stewart, Meredith M., to Gulf Research & Development Co. Co-precipitated silica-alumina catalyst process and composition. 3,346,509, 10–10–67, Cl. 252—453.

Stewart, Neil R., to Radio Corp. of America. Lamp driver circuits. 3,346,770, 10–10–67, Cl. 315—194.

Stilla, John E., and W. H. Greenwald, to Stellar Industrial Products Co. Dummy pin means and method for assembling needle bearings. 3,345,723, 10–10–67, Cl. 29—148.4.

Stocks, Elbert G., Jr., and T. L. Day to Connor Engineering Corp. Modulated volume unit and method of controlling the volume of air flow for air conditioning apparatus. 3,346,185, 10–10–67, Cl. 236—49.

Stöhr, Rudolf, to Tuttlingen Rieker & Co. Ski boot. 3,345,761, 10–10–67, Cl. 36—2.5.

Stokes, John B., to Illinois Tool Works Inc. Clips for mounting rods and the like or panels. 3,345,706, 10–10–67, Cl. 24—73.

Stone, Joseph J., to A. B. Dick Co. Nozzle cover. 3,346,869, 10–10–67, Cl. 346—75.

Straley, James M., D. J. Wallace, and M. A. Weaver, to Eastman Kodak Co. Mono azo dyes for synthetic fibers. 3,346 552, 10–10–67, Cl. 260—158.

Strange, Lloyd K., J. E. Marberry, and D. S. Koons, to Mobil Oil Corp. Thermal recovery method for oil sands. 3,346,048, 10–10–67, Cl. 166—11.

Strassburger, Julius H., to National Steel Corp. Blast furnace automatic control apparatus. 3,346,250, 10–10–67, Cl. 266—30.

Stratton, George B.: *See*—
Hoch, Paul E., and Stratton. 3,346,596.

Streckfuss, Joe L.: *See*—
Boatright, Jean R., and Streckfuss. 3,346,455.

Strenglein, Harry F., to Sperry Rand Corp. Pulse width multiplying circuit having capacitive feedback. 3,346,743, 10–10–67, Cl. 307—88.5.

Strickland, Barney R., and L. Berkowitz, to Esso Research and Engineering Co. Hydrocarbon oils of improved water tolerance and anti-rust characteristics. 3,346,353, 10–10–67, Cl. 44—62.

Strite, Gordon H. Feed blender and crusher. 3,346,199, 10–10–67, Cl. 241—144.

Strong, Herbert M., to General Electric Co. Graphite-catalyst charge element for the preparation of diamond. 3,346,102, 10–10–67, Cl. 208—47.

Strother, Greene W., Jr., to The Dow Chemical Co. Rapid curing mixture of an epoxy resin, a diphenol and a diaziridene compound. 3,346,533, 10–10–67, Cl. 260—32.8.

Structo Division, King-Seeley Thermos Co.: *See*—
Linstead, Robert S. 3,345,959.

Strzelewicz, Anthony S.: *See*—
Allured, Robert B., Strzelewicz, and Woods. 3,346,725.

Sturgess, John B., and C. B. Scott, to Union Oil Co. Mulch. 3,345,773, 10–10–67, Cl. 47—9.

Sturm, Clarence L., D. E. Hudgin, and I. Rosen, to Diamond Alkali Co. High molecular weight dichloroacetaldehyde homopolymers and method of preparation. 3,346,538, 10–10–67, Cl. 260—67.

Sulzer Bros. Ltd.: *See*—
Thurnauer, Ernst. 3,346,043.

Sumitomo Chemical Co., Ltd.: *See*—
Nakagome, Takenari, and Komatsu. 3,346,577.

Sun Oil Co.: *See*—
Antonsen, Donald H. 3,346,662.
Schneider, Abraham. 3,346,656.

Superior Scaffold Co.: *See*—
Squire, Robert K. 3,346,283.

Superior Valve & Fittings Co.: *See*—
Yocum, William C. 3,346,276.

Sutherland, John D., Jr., to Copolymer Rubber & Chemical Corp. Method of preparing improved latex and rubber articles, and the products thus prepared. 3,346,518, 10–10–67, Cl. 260—2.5.

Sutton, Robert S. Digital electronic speed control governor utilizing pulse width comparison. 3,346,771, 10–10–67, Cl. 317—5.

Svendsen, Walter W., to Odgers Drilling Inc. Retractable wire line core barrel. 3,346,059, 10–10–67, Cl. 175—246.

Swartz, Harry: *See*—
Weese, Wilfred W. 3,346,148.

Sweet, Theodore R. Multiple hulled boat. 3,345,967, 10–10–67, Cl. 114—61.

Swenson, Roy S., to The Risdon Mfg. Co. Lipstick holder. 3,346,103, 10–10–67, Cl. 206—56.

Swift & Co.: *See*—
Bradford, Purdy. 3,346,393.
Pichel, Michael J., and Weiss. 3,346,390.
Rongey, Elbert H., and Hlavacek. 3,346,394.

Swift, Harvey C., to Kelsey-Hayes Co. Guide means for a caliper of a disk brake. 3,346,075, 10–10–67, Cl. 188—73.

Swish Products Ltd.: *See*—
Hankin, Robert W. 3,346,227.

Swyryd, Miroslav, to Ampex Corp. Oscillator. 3,346,821, 10–10–67, Cl. 331—113.

Sylvania Electric Products, Inc.: *See*—
Haas, Paul. 3,346,753.

Symington Wayne Corp.: *See*—
Anderson, John A., Jr. 3,345,665.

Syntex Corp.: *See*—
Christensen, Haldor, Hultquist, and Waugh. 3,346,634.

Systems Engineering Laboratories, Inc.: *See*—
Bradford, Guy E. 3,346,698.

TRW Inc.: *See*—
Avey, Spencer E. 3,346,796.
Shafranek, Robert J. 3,346,749.

Tabisz, Sylvester C.: *See*—
Jones, David L., and Tabisz. 3,346,849.

Takahashi, Masao: *See*—
Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,346,499.

Takahashi, Noriyoshi, to Hitachi, Ltd. Starting method for double speed salient-pole type synchronous machines. 3,346,793, 10–10–67, Cl. 318—173.

Takats, Zoltan, to General Aniline & Film Corp. Apparatus for rapid development of photographic film. 3,345,927, 10–10–67, Cl. 95—89.

Takeda Chemical Industries, Ltd.: *See*—
Honjo, Mikio, and Marumoto. 3,346,562.

Takeda, Seiji: *See*—
Hirose, Yasuo, and Takeda. 3,346,676.

Takeda, Yoshifumi, T. Okuda, and S. Sakurai, to Ajinomoto Co., Inc. Controlled saponification of fibrous polyglutamic acid esters with aqueous-alcoholic solutions of a base. 3,346,326, 10–10–67, Cl. 8—127.5.

Talalay, Leon, H. H. Borswold, and J. P. Queenan, to The B. F. Goodrich Co. Heating apparatus for rubber-like stamp material. 3,346,247, 10–10–67, Cl. 263—3.

Tamanot Su Kabushiki Kaisha: *See*—
Kitayama, Akira. 3,346,396.

Tarmann, Bruno, to Gebr. Bohler & Co. Aktiengesellschaft. Process for the continuous casting of tubular products. 3,346,036, 10–10–67, Cl. 164—85.

Tassell, Kitchener B.: *See*—
Harrington, John A., Tassell, and Hardick. 3,345,781.

Tatum, Roy E., to Blakely Products Co. Plaster edge strips. 3,345,789, 10–10–67, Cl. 52—367.

Taulli, Thomas A., to Monsanto Co. Process of preparing an organo-silica aerogel. 3,346,507, 10–10–67, Cl. 252—316.

Taylor, George A.: *See*—
Anderberg, Axel W., and Taylor. 3,345,777.

Taylor, Laurence W.: *See*—
Williams, Albert H., Vitols, and Taylor. 3,345,922.

Taylor, Romey A.: *See*—
Oliver, James E., Miller, and Taylor. 3,346,054.

Taylor, William F.: *See*—
Sinfelt, John H., Taylor, and Dembinski. 3,346,510.

Technicon Corp.: *See*—
Rosin, Seymour, and Smythe. 3,345,910.
Winter, George D., and Catravas. 3,346,486.

Teichner, Maurice D., to Practical Automation, Inc. Paper supporting mechanism for data printer. 3,346,872, 10–10–67, Cl. 346—145.

Teiwes, Hans-Jurgen: *See*—
Schikarski, Lothar, and Teiwes. 3,346,346.

Ten Brink, Karl C., to Texaco Inc. Productivity logging apparatus. 3,345,868, 10–10–67, Cl. 73—155.

Teramoto, Iwao, H. Iwasa, and S. Shinoda, to Matsushita Electronics Corp. Method of making semiconductor devices by double diffusion. 3,346,428, 10–10–67, Cl. 148—188.

Terry, Irving: *See*—
Camp, Alfred L. 3,346,001.

Tesla, narodni podnik: *See*—
Carniol, Bohdan, and Maly. 3,345,874.

Tessier, Jean: *See*—
Bucourt, Robert, Pierdet, Tessier, and Costerousse. 3,346,454.

Testa, Emilio, and L. Fontanella, to Lepetit S.p.A. 1,2,3,5-tetrahydro-4,1-benzoxazepines and 3,5-dihydro-4,1-benzoxazepin-2-(1H)-ones. 3,346,565, 10–10–67, Cl. 260—239.8.

Texaco Inc.: *See*—
Eckert, George W. 3,346,355.
McCoy, Frederic C., Knowles, and Goldsby. 3,346,852.
Page, Charles B., Jr. 3,346,117.
Ten Brink, Karl C. 3,345,868.
Thompson, Harold A. 3,346,508.

Texas Instruments Inc.: *See*—
Belasco, Melvin. 3,346,788.
Parmer, Will F. 3,346,786.
Van Der Lely, Cornelis. 3,345,808.

Textron, Inc.: *See*—
Carlson, Arthur B. 3,346,100.
Harrington, Richard F. 3,346,807.

Thaler, Samuel: *See*—
Mullins, William H., and Thaler. 3,346,859.

Theurer, Josef: *See*—
Plasser, Franz, and Theurer. 3,345,746.

Theurer, Karl-Heinz: *See*—
Bock, Willy, Mutschler, and Theurer. 3,346,707.

Thevis, Paul, to Olympia Werke AG. Apparatus for carrying out shortened multiplications in calculators. 3,346,178, 10–10–67, Cl. 235—60.

Thevis, Paul, to Olympia Werke AG. Apparatus for preventing calculations with numerical values having a number of orders greater than the capacity of a calculator. 3,346,179, 10–10–67, Cl. 235—60.

Theys, James A.: *See*—
Crocker, Foster, and Theys. 3,345,936.

Thiokol Chemical Corp.: *See*—
McCullough, Edward E. 3,345,693.

Thomas & Betts Co., The: *See*—
Geisinger, George H. 3,346,020.

Thomas, Dean L., to Pittsburgh Plate Glass Co. Method of press bending vertically suspended glass sheets. 3,346,358, 10–10–67, Cl. 65—106.

Thomas, Ralph H., and L. J. Mariatt, to Bristol-Myers Co. Moisture-proof container. 3,346,099, 10–10–67, Cl. 206—42.

Thomas, Teddy R.: *See*—
Scott, John E., and Thomas. 3,346,844.

Thompson, Charles E., and C. E. Heath, Jr., to Esso Research and Engineering Co. Transition metal electrode. 3,346,421, 10–10–67, Cl. 136—120.

Thompson, Earl A., to Earl A. Thompson Mfg. Co. Internal grinding machine. 3,345,782, 10–10–67, Cl. 51—50.

Thompson, Earl A., Mfg. Co.: *See*—
Thompson, Earl A. 3,345,782.

Thompson, Harold A., to Texaco Inc. Method for emulsion breaking of crude oils. 3,346,508, 10–10–67, Cl. 252—328.

Thompson, James R., to Washington Iron Works. Lock mechanism for telescoping spar. 3,346,281, 10–10–67, Cl. 287—58.

Thompson, Richard L., and F. B. Dwyer, to The Colonial Sugar Refining Co. Ltd. Method of rendering asbestos ore particles differentially fluorescent. 3,346,111, 10–10–67, Cl. 209—9.

Thompson, Robert E., to Schering Corp. Combination dispenser. 3,346,146, 10–10–67, Cl. 222—189.

Thompson, William S., Jr., B. J. Frazier, and O. L. Morrisett, to Halliburton Co. Rotary valve with expandable liner. 3,346,002, 10–10–67, Cl. 137—246.22.

Thomson, Richard N. to E. I. du Pont de Nemours and Co. Method for making a filtering medium from plexifilamentary material. 3,346,682, 10–10–67, Cl. 264—93.

Thorman, Richard F. Soap cake holder. 3,346,228, 10–10–67, Cl. 248—316.

Thornton, James E., and S. R. Cray, to Control Data Corp. Simultaneous multiprocessing computer system. 3,346,851, 10–10–67, Cl. 340—172.5.

Thurman & Yonnkin, Inc.: *See*—
Younkin, James R. 3 346.217.

Thurnauer, Ernst, to Sulzer Brothers Ltd. Heat exchanger pipe coil with support means. 3,346,043, 10–10–67, Cl. 165—162.

Tiger, Emil. E. G. Corman, and K. R. Reick, to Formfoto Mfg. Co. Electrophotographic copying machine. 3,345,926, 10–10–67, Cl. 95—1.7.

Tigrett, John B., and V. F. Wigal. said Tigrett assors to S. A. Tintarella. Match making machine. 3,345,685, 10–10–67, Cl. 18—4.

Tihon, Nicolae: *See*—
Nicolau, Ioan, Dogaru, Evghenide, Ionascut, Tihon, and Motorolu. 3,345,881.

Tilford, Charles H.: *See*—
Amstutz, Edward D., Palopoli, Tilford, and Shuman. 3,346,583.

Timlin, George A., to Acme Bulletin & Directory Board Corp. Display devices. 3 345,766, 10–10–67, Cl. 40—77.

Tintarella, S. A.: *See*—
Tigrett, John B., and Wigal. 3,345,685.

Tiros Plastics Corp.: *See*—
Heymann, Joseph. 3,346,305.
Tisa, Irving D. Garment shaping bust form. 3,346,149, 10–10–67, Cl. 223—66.
Titovi Zovodi Litostroj: *See*—
Rakcevic, Savo. 3,345,823.
Tobe Deutschmann Laboratories: *See*—
Blank, Edward. 3,346,790.
Tobias, Jaromir. High efficiency hydraulic apparatus. 3,345,916, 10–10–67, Cl. 92—58.
Toft, Roger D., to The National Cash Register Co. Roller for strip feeding means. 3,346,160, 10–10–67, Cl. 226—191.
Toledo Scale Corp.: *See*—
Borden, Joseph H., and Bradley. 3,346,074.
Tolf, Carl O., Jr., to Construction Accessories Mfg. Corp. Pipe sleeve. 3,346,230, 10–10–67, Cl. 249—177.
Toma, Daniel N., to General Electric Co. Water supply mechanism for washing machines. 3,346,003, 10–10–67, Cl. 137—247.25.
Tomica, Alojay: *See*—
Eyre, John R., Tomica, and Way. 3,346,574.
Townsend, Harold L., and J. M. McMillen, to Mobil Oil Corp. Multistage waterflood. 3,346,047, 10–10–67, Cl. 166—9.
Trane Co., The: *See*—
Lievens, Ronald J., Raitzer, Davis, and Klug. 3,346,174.
Trilobe Coupling Corp.: *See*—
Natanagara, Hussein, and Gotthoffer. 3,346,754.
Trix, Herbert P.: *See*—
MacGugan, Ian C., and Trix. 3,346,406.
Troxler, Franz: *See*—
Hofmann, Albert, Troxler, and Ott. 3,346,580.
Tschannen, Robert F., to Haseltine Research, Inc. Simplified color-killer circuit. 3,346,691, 10–10–67, Cl. 178—5.4.
Tschanz, Carl A. Transmission apparatus. 3,345,885, 10–10–67, Cl. 74—687.
Tsubouchi, Norio: *See*—
Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,346,499.
Tubbs, Howard A. Gas-liquid separation. 3,346,138, 10–10–67, Cl. 220—26.
Tucci, Edmond R.: *See*—
Selwitz, Charles M., and Tucci. 3,346,622.
Tucker, Billy J. Postal card having protectable adhesively coated area. 3,346,172, 10–10–67, Cl. 229—92.8.
Tull, Roger J., and L. M. Weinstock, to Merck & Co., Inc. Method for preparing thioformamide. 3,346,632, 10–10–67, Cl. 260—551.
Tumicki, Thomas F., to United Aircraft Corp. Supersonic ejector type exhaust nozzle. 3,346,193, 10–10–67, Cl. 239—265.17.
Tundermann, Werner O., and S. D. Freidman, to Colgate-Palmolive Co. Method of preserving perishable material. 3,346,398, 10–10–67, Cl. 99—171.
Turbak, Albin F., to Esso Research and Engineering Co. 5-nitrothiazole-azophenol dyeing of metallized polyolefin articles and product thereof. 3,346,321, 10–10–67, Cl. 8—4.
Turney, John J., and B. E. Hopkinson, to Esso Research and Engineering Co. Prevention of deterioration of ferrous containers by molecular sieve displacing agent. 3,346,485, 10–10–67, Cl. 208—310.
Turton, Walter: *See*—
Hollihan, John P., Reed, and Turton. 3,345,718.
Tursillo, Lee A. Method and means for bracing or bolstering subaqueous structures. 3,345,824, 10–10–67, Cl. 61—85.
Tyler, William E., III, and J. R. Lovett, to Esso Research and Engineering Co. Process for preparing an NF_3 containing nitrate. 3,346,619, 10–10–67, Cl. 260—467.
Ueberwasser, Hellmut: *See*—
Wettstein, Albert, Anner, Heusler, Kalvoda, Ueberwasser, and Heer. 3,346,569.
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,346,601.
Uden, Rupert H. Concrete pipe mold apparatus. 3,345,716, 10–10–67, Cl. 25—34.
Ulrich, Hans: *See*—
Muller, Herbert, Grabhofer, Ulrich, and Posse. 3,346,386.
Ultra Plating Corp.: *See*—
Golden, Martin A., and Vlossak. 3,346,466.
Uminski, Edward A., to Mine Safety Appliances Co. Headgear with retractable vertically movable eye shield. 3,345,642, 10–10–67, Cl. 2—6.
Union Carbide Corp.: *See*—
Kasting, Howard E., and Sachs. 3,345,919.
Manning, David T., and Sousa. 3,346,584.
Omietanski, George M., and Reid. 3,346,610.
Rhodin, Thor N., Jr. 3,346,379.
Union Oil Co.: *See*—
McMahon, Robert D., Becker, and Wright. 3,346,429.
Sturgess, John B., and Scott. 3,345,773.
Union Oil Co. of California: *See*—
Dekking, Henri G. G. 3,346,535.
Fenton, Donald M., and Olivier. 3,346,625.
Schaeffer, William D., and Lafferty. 3,346,624.
Schaeffer, William D., and Olivier. 3,346,626.
Young, Donald C. 3,346,623.
United Aircraft Corp.: *See*—
De Maria, Anthony J. 3,345,909.
Jennings, David C. 3,345,641.
Larson, John W. 3,346,747.
Lyons, Edward J. 3,346,039.
Tumicki, Thomas F. 3,346,193.
United Kingdom Atomic Energy Authority: *See*—
Prince, Michael John, and Ainsworth. 3,346,459.
Pugh, Harold, and Gauterin. 3,346,717.
Martin, John C. 3,346,762.
Weaver, John H. 3,345,733.
United States of America
Agriculture: *See*—
Fein, Martin L., and Filachione. 3,346,324.
Agriculture: *See*—Continued
Grant, James N., Honold, Andrews, Brown, and Shepard. 3,345,878.
Jordan, Clarence A. 3,345,920.
Koenig, Nathan H. 3,346,327.
La Franca, Joseph J., Jr., Mayer, and Weller. 3,346,110.
Lowe, Edison, Durkee, and Hamilton. 3,346,392.
Army: *See*—
Doyle, Robert J. 3,346,756.
Jones, David L., and Tabisz. 3,346,849.
Jones, Howard S., Jr. 3,346,865.
Maurer, John W., and Quine. 3,346,823.
Milanowski, Floyd J. 3,345,913.
Newcomb, Fred N., and Spellman. 3,345,914.
Pailloz, George J. 3,346,215.
Phillips, William G., and Brown. 3,345,974.
Rogers, James G., and Moulin. 3,346,738.
Scanlon, John J., Jr. 3,345,770.
Silsby, Stanley D. 3,345,771.
Snyder, Gilbert R. 3,346,420.
Quinlan, Joseph B., and Schanlon. 3,345,945.
Atomic Energy Commission: *See*—
Cooley, Gerald J., Gehringer, and Karalis. 3,346,718.
Last, George A., and Kemper. 3,346,673.
Notari, Gennaro V., and Grubelich. 3,346,461.
Schikarski, Lothar, and Teiwes. 3,346,346.
Schulz, Wallace W. 3,346,345.
White, Jack L., and Pontelandolfo. 3,346,681.
National Aeronautics and Space Administration: *See*—
Crumpler, Weymouth B. 3,345,886.
Curry, James E. 3,346,515.
Finke, Robert C. 3,346,806.
Fuhrmeister, Paul F., and Eskew. 3,346,724.
Povinelli, Louis A., and Heidmann. 3,345,822.
Universal Corrugated Box Machinery Corp.: *See*—
Lopez, John P. 3,346,433.
Universal Moulded Fiber Glass Corp.: *See*—
Boggs, LeRoy R. 3,345,999.
Universal Oil Products Co.: *See*—
Fenske, Ellsworth R. 3,345,858.
Fenske, Ellsworth R. 3,345,859.
Hayes, John C. 3,346,336.
Lester, George R. 3,346,655.
Louvar, Cecelia J., and de Rosset. 3,346,340.
University of California, The Regents of the: *See*—
Birdsall, Charles K. 3,346,819.
Upchurch, Lawson R., Jr. Apparatus for mounting wiring or the like. 3,345,728, 10–10–67, Cl. 29—203.
Upjohn Co., The: *See*—
Bannister, Brian, and Hoeksema. 3,346,635.
VISIrecord, Inc.: *See*—
Proulx, Romeo T. 3,346,315.
Vacudyne Corp.: *See*—
Lederman, Arthur N., and Lindstrom. 3,345,992.
Valente, Carlo E. Coin operated automatic vending machine, to brew and distribute hot coffee in cups. 3,345,933, 10–10–67, Cl. 99—283.
Valentin-Hjorth, Morton, to Hjort-Conveyor A/S. Chain-conveyor. 3,345,954, 10–10–67, Cl. 104—172.
Vamvakas, Michael, to Barry-Wehmiller Co. Container loader apparatus for washers. 3,346,094, 10–10–67, Cl. 198—25.
Van Acker, John J.: *See*—
Carstensen, William H., Ott, and Van Acker. 3,346,210.
Van der Lely, Cornelis, to Texas Industries Inc. Harvesting machines. 3,345,808, 10–10–67, Cl. 56—20.
Van Dorp, David A.: *See*—
Riezebos, Gerrit, Van Dorp, and Schweigl. 3,346,628.
Van Essen, Willem J.: *See*—
Greene, Charles E., and van Essen. 3,346,532.
Van Horik, Leonard R.: *See*—
Pfaffenberger, Richard T., and Van Horik. 3,345,995.
Van Leuven, James W., to Aquatain Co., Inc. Soil erosion and evaporation control. 3,346,407, 10–10–67, Cl. 106—126.
Vanous, Joseph A.: *See*—
Brobst, James D., and Vanous. 3,346,740.
Van Volkenburgh, Ross, H. W. Hyde, and G. C. Royston, to Copolymer Rubber & Chemical Corp. Anhydrides and esters of 1,2,3,4-cyclopentanetetracarboxylic acid. 3,346,598, 10–10–67, Cl. 260—346.3.
Vant-Hull, Lorin L., and J. E. Mercereau, to California Institute Research Foundation. Apparatus for excluding magnetic fields. 3,346,826, 10–10–67, Cl. 335—216.
Van Westerveld, Jan, and G. A. T. Slijchers, to Stamicarbon N.V. Preparation of ε-caprolactam. 3,346,567, 10–10–67, Cl. 260—239.3.
Varga, John M. J., to Carding Specialists (Canada) Ltd. Textile silver coiling means. 3,345,703, 10–10–67, Cl. 19—159.
Varityper Corp.: *See*—
Carstensen, William H., Ott, and Van Acker. 3,346,210.
Greenwood, David L. 3,346,255.
Varo, Inc.: *See*—
Lomerson, Robert B. 3,346,773.
Veb Guss- und Farbenglaswerke Pirna-Copitz: *See*—
Forster, Heinz, and Seidler. 3,346,359.
Veb Zentrale Entwicklung und Konstruktion zek Hydraulik: *See*—
Bittel, Karl. 3,346,251.
Vehige, Joseph G.: *See*—
Fulton, Donald L., Reel, Reeve, Stahmann, and Vehige. 3,346,186.
Veldhuis, Benjamin: *See*—
Gilbert, Everett E., and Veldhuis. 3,346,448.
Velvac, Inc.: *See*—
Carson, William W., Jr. 3,346,229.

Vereinigte Glanzstoff-Fabriken AG: *See*—
Gemeinhardt, Hermann, and Munsner. 3,345,809.
Koepp, Hans-Martin, Siggel, and Roedel. 3,346,542.
Schatz, Gunther, Gemeinhardt, Brucher, and Jurisch. 3,345,719.
Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft: *See*—
Winkler, Karl. 3,346,159.
Vernay, Marc. Rotary drum filter. 3,346,119, 10–10–67, Cl. 210—404.
Vickers Ltd.: *See*—
Fisher, Leonard. 3,345,985.
Villo, Joseph P., to Standard Pressed Steel Co. Blind fastener. 3,345,900, 10–10–67, Cl. 85—72.
Vinokurova, Galina M.: *See*—
Arbusov, Boris A., Sokolovsky, Zavlin, and Vinokurova. 3,346,543.
Viret, Robert, and A. Stahl, to Societe Genevoise d'Instruments de Physique. Displacement control system. 3,346,848, 10–10–67, Cl. 340—172.5.
Vitello, John P., to Sterilon Corp. Catheter lubricating sac. 3,345,988, 10–10–67, Cl. 128—349.
Vitols, Reinhards: *See*—
Williams, Albert H., Vitols, and Taylor. 3,345,922.
Viventi, Richard V., to General Electric Co. Metal protectant. 3,346,405, 10–10–67, Cl. 106—14.
Vlossak, John I.: *See*—
Golden, Martin A., and Vlossak. 3,346,466.
Vogt, Wilhelm: *See*—
Sennewald, Kurt, Erpenbach, Gudernatsch, and Vogt. 3,346,637.
Voigt, Hans, Dr. Med. Chem., Pharm. Fabrik: *See*—
Kloss, Josef. 3,346,559.
Volker, Herbert W., to Continental Can Co., Inc. Rotary jar capping machine. 3,345,800, 10–10–67, Cl. 53—303.
Vonada, Phillip A.: *See*—
Stachiw, Jaroslaw D., and Vonada. 3,346,279.
Von Felden, Ray J. Air and liquid separating device. 3,345,807, 10–10–67, Cl. 55—433.
Von Konig, Anita, and W. Wolf, to Agfa Aktiengesellschaft. Process and materials for the production of non-laterally reversed images by heat development. 3,346,382, 10–10–67, Cl. 96—29.
Von Kutepow, Nikolaus, H. Seibt, and F. Meier, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Phosphite-containing nickel-(O)-complexes and method for their preparation. 3,346,608, 10–10–67, Cl. 260—439.
Von Roll AG: *See*—
Wahler, Hermann. 3,346,348.
Wüthrich, Fritz. 3,346,202.
Von Stoeser, Walter G., to The Dow Chemical Co. Heat sealing method and apparatus. 3,345,797, 10–10–67, Cl. 53—39.
Voss, Harold C.: *See*—
Bollman, John A., Gates, and Voss. 3,346,439.
Vsesojusny Naucitno-Issledovatelsky Institute Stroiteinjkh Materialov: *See*—
Lesin, Abram D., and Leibman. 3,346,200.
W.L.D., Inc.: *See*—
Wallace, Raymond. 3,346,832.
W & W Products: *See*—
Wolfer, Harnisch P. 3,346,477.
Wada, Akiyoshi. Dichroism spectroscopes. 3,345,907, 10–10–67, Cl. 88—14.
Wagner Electric Corp.: *See*—
Milster, Arthur N. 3,345,818.
Wagner, Richard S.: *See*—
Ellis, William C., Pfann, and Wagner. 3,346,414.
Wahler, Hermann, to Von Roll A.G. Apparatus for continuous rotary extraction. 3,346,348, 10–10–67, Cl. 22—269.
Waline, Clifford M. Multisectioned disposable coffee brewing bag and basket. 3,345,935, 10–10–67, Cl. 99—295.
Walker, Brooks. Fuel feeding device. 3,346,243, 10–10–67, Cl. 261—41.
Walker, Norman C., and C. E. Engle, to Dana Laboratories, Inc. Temperature independent amplifier and method. 3,346,817, 10–10–67, Cl. 330—23.
Wall, Lamar J., to Honeywell, Inc. Ambient compensated bimetal actuated valve. 3,346,231, 10–10–67, Cl. 251—11.
Wallace, David J.: *See*—
Straley, James M., Wallace, and Weaver. 3,346,552.
Wallace, Raymond, to W.L.D., Inc. Electrical connector for welding torches. 3,346,832, 10–10–67, Cl. 339—112.
Wallingford, Vernon H., to Mallinckrodt Chemical Works. Triiodated benzoic acids. 3,346,680, 10–10–67, Cl. 260—518.
Walrond, John E., to St. Joseph Lead Co. Zinc oxide compositions and method of making them. 3,346,409, 10–10–67, Cl. 106—296.
Walsh, Bruce R.: *See*—
Biber, Albert, and Walsh. 3,346,196.
Walsh, Bruce R., to Gulf Research and Development Co. Venturi ejector including automatically movable disc members. 3,345,931, 10–10–67, Cl. 98—78.
Walter, William T.: *See*—
Wood, Fenton M., Crouch, and Walters. 3,346,807.
Walton, Neil D.: *See*—
Cralle, Walter O., Jr., Holt, Lenney, Sederholm, and Walton. 3,346,086.
Cralle, Walter O., Jr., Lenny, Lennon, and Walton. 3,346,089.
Cralle, Walter O., Jr., Lennon, and Walton. 3,346,091.
Ward, Richard B., to E. I. du Pont de Nemours and Co. Process of preparing perfluoroalkane-disulfonic acid salts by contacting bis(alkylsulfonyl) perfluoroalkanes with alkali permanganate. 3,346,606, 10–10–67, Cl. 260—429.
Wark, Geoffrey A.: *See*—
Rakowics, Jan A., and Wark. 3,345,943.
Warner-Lambert Pharmaceutical Co.: *See*—
Brown, Richard E., and Meltzer. 3,346,582.
Shavel, John, Jr., and Zinnes. 3,346,572.
Shavel, John, Jr., and Zinnes. 3,346,633.
Simeone, Mario J. 3,345,918.
Warnes, Don E., to St. Joseph Lead Co. Desulfurized zinc concentrate pellets. 3,346,364, 10–10–67, Cl. 75—6.
Warwick Electronics Inc.: *See*—
Pestka, John A. 3,346,101.
Reed, Martin C. 3,346,260.
Reed, Martin C. 3,346,262.
Washington Iron Works: *See*—
Thompson, James R. 3,346,281.
Waters, Ovington E., Toilet seat sanitary lifting mechanism. 3,345,650, 10–10–67, Cl. 4—251.
Watson, Dighton L., and F. K. Michaelson. Expandable frozen dough package. 3,346,399, 10–10–67, Cl. 99—172.
Watters, Donald W., to Kaiser Aluminum & Chemical Corp. Capacitor foil making. 3,346,424, 10–10–67, Cl. 148—2.
Watts, Wayne A.: *See*—
Ironside, Donald S., and Watts. 3,346,161.
Waugh, Thomas D.: *See*—
Christensen, Haldor, Hultquist, and Waugh. 3,346,634.
Waxman, Lewis: *See*—
Fiskel, Henry, and Waxman. 3,345,714.
Way, Kenneth R.: *See*—
Eyre, John R., Tomica, and Way. 3,346,574.
Way, Phil: *See*—
Reid, James D., and Way. 3,346,801.
Wayne, Maury W.: *See*—
La Mers, Herbert, and Wayne. 3,345,672.
Weaver, John H., to United Kingdom Atomic Energy Authority. Nuclear reactor fuel elements. 3,345,733, 10–10–67, Cl. 29—455.
Weaver, Kenneth L.: *See*—
Smith, Willard O., Weaver, and Harmsen. 3,346,173.
Weaver, Max A.: *See*—
Straley, James M., Wallace, and Weaver. 3,346,552.
Webb, James E., Administrator of the National Aeronautics and Space Administration, with respect to an invention of C. S. Beuyukian, and R. M. Heisman. Tube dimpling tool. 3,345,840, 10–10–67, Cl. 72—34.
Webb, James E., Administrator of the National Aeronautics and Space Administration, with respect to an invention of L. Forehand, and W. H. Rodner. Solar cell mounting. 3,346,419, 10–10–67, Cl. 136—89.
Weese, Wilfred W., to H. Swartz. Dispensing shower head. 3,346,148, 10–10–67, Cl. 222—402.11.
Wehrig, Helmut, to K. Y. Zuse. Input circuit for data processing unit. 3,346,850, 10–10–67, Cl. 340—172.5.
Weichart, Helmut, to Prakla Gesellschaft fur Parktische Lagerstatten-forschung G.m.b.H. Magnetostrictive acoustic transducers. 3,345,841, 10–10–67, Cl. 340—17.
Weigel, Jurgen, to Hamburg-Flugzeugbau G.m.b.H. Method of selectively coloring titanium bodies. 3,346,469, 10–10–67, Cl. 204—56.
Weil, Edward D., to Hooker Chemical Corp. Method for making halogenated cyclic enols and salts thereof. 3,346,645, 10–10–67, Cl. 260—586.
Weinschenk, Albert, to E. G. Henkel. Lasting machine. 3,345,059, 10–10–67, Cl. 12—12.
Weinstock, Leonard M.: *See*—
Tull, Roger J., and Weinstock. 3,346,632.
Weiss, Theodore J.: *See*—
Pichel, Michael J., and Weiss. 3,346,390.
Welch, John G. Stripping mechanism for baking cookies. 3,345,957, 10–10–67, Cl. 107—57.
Welder, Helmut H. W., and M. R. Derolf, to Philadelphia Quartz Co. Ammonium silicates. 3,346,334, 10–10–67, Cl. 23—110.
Weller, Heber W., Jr.: *See*—
La Franca, Joseph J., Jr., Mayer, and Weller. 3,346,110.
Wellman Bibby Co. Ltd., The: *See*—
Boole, Reginald E. G. 3,345,831.
Weltronic Co.: *See*—
Mann, Charles G. 3,346,696.
Werner, Walter N., and K. S. Hays, to AMP Inc. Tool for crimping electrical connectors. 3,345,856, 10–10–67, Cl. 72—410.
Wescott, Ronald O., to Burroughs Corp. Component mounting employing a threaded bolt driven at its threaded end. 3,346,286, 10–10–67, Cl. 287—189.36.
Wesley, Richard H., to ABW Mfg. Co., Inc. Dynamic wheel balancer. 3,346,303, 10–10–67, Cl. 301—5.
West, John B., to Maryland Cup Corp. Auxiliary unit for packaging machine. 3,345,901, 10–10–67, Cl. 53—311.
Western Electric Co., Inc.: *See*—
Broaselt, Fritz V. 3,345,901.
Western Electric Inc.: *See*—
Broaselt, Fritz V., and Orrell. 3,346,019.
Westinghouse Air Brake Co.: *See*—
Davis, Leo W., and Mounts. 3,346,079.
McKenna, George W., and De Kam. 3,346,812.
Weston, Ralph B., and A. E. Colato, to Plastics, Inc. High voltage visible oil switch. 3,346,710, 10–10–67, Cl. 200—150.
Westport Development & Mfg. Co., Inc.: *See*—
Hellman, Robert R. 3,346,836.
Wettstein, Albert, G. Anner, K. Heusler, J. Kalvoda, and H. Ueberwasser, to Ciba Corp. Process for the manufacture of 19-nor-steroids. 3,346,601, 10–10–67, Cl. 260—397.4.
Wettstein, Albert, G. Anner, K. Heusler, J. Kalvoda, H. Ueberwasser, and J. Heer, to Ciba Corp. 6β,19-oxido-pregnenes. 3,346,569, 10–10–67, Cl. 260—239.55.
White, Jack L., and J. M. Pontelandolfo, to United States of America, Atomic Energy Commission. Method of making refractory products. 3,346,681, 10–10–67, Cl. 264—56.
White, James R. Guidedly mounted lift bar having adjustable weight means. 3,346,256, 10–10–67, Cl. 272—81.

Whitehurst, Joe R.: *See*—
Rayfield, James A. F., and Whitehurst. 3,345,695.
Whitehurst, Joe R., to Ideal Industries, Inc. Calender roll loading and knock-off. 3,345,696, 10–10–67, Cl. 19—26.
Whitmoyer-Reed Ltd.: *See*—
Hinge, David C. 3,346,144.
Whitney, James W. Club swing training device. 3,346,257, 10–10–67, Cl. 273—26.
Wiedemann, Erwin, to Sandoz Ltd. (also known as Sandoz A.G.). Tiselius type electrophoresis apparatus with telescopic objectives. 3,346,478, 10–10–67, Cl. 204—299.
Wieland, Peter: *See*—
Anner, Georg, and Wieland. 3,346,570.
Wiesboeck, Robert A., to Rohm & Haas Co. Process for the preparation of alkyl difluoramines. 3,346,639, 10–10–67, Cl. 260—583.
Wiese, Herbert K., to Esso Research and Engineering Co. Coating compositions made from oximes. 3,346,523, 10–10–67, Cl. 260—19.
Wiesnagrotzki, Ernst, M. Bigiel, and H. Muller, to Maschinenfabrik Memmingen Ingenieur. Method and device for the production of a wire rope. 3,345,810, 10–10–67, Cl. 57—68.
Wigal, Voorhis F.: *See*—
Tigrett, John B., and Wigal. 3,345,685.
Wilcox, Luman L. Clamp positioning device. 3,346,293, 10–10–67, Cl. 294—19.
Wild, Hans: *See*—
Siegenthaler, Karl, and Wild. 3,346,412.
Wild, Paul: *See*—
Jansen, Hansjorg, and Wild. 3,345,844.
Golden, Martin F., and Wild. 3,345,843.
Wiles, Frank M., to General Motors Corp. Plastic coating for compressors. 3,346,175, 10–10–67, Cl. 230—120.
Wiley, Emmett H., to General Electric Co. Integral lens and reflector projection lamp. 3,346,767, 10–10–67, Cl. 313—71.
Wilhelm Hegenscheidt Kommanditgesellschaft: *See*—
Dombrowski, Theodor. 3,345,890.
Dombrowski, Theodor. 3,345,891.
Dombrowski, Theodor. 3,345,892.
Wilhelm, Max: *See*—
Schmidt, Paul, Eichenberger, Wilhelm, and Rossi. 3,346,568.
Willisch, Horst. Shoe-heel upper forming apparatus. 3,345,661, 10–10–67, Cl. 12—54.3.
Williams, Albert H., R. Vitols, and L. W. Taylor, to Caledex Machine Co., Ltd. Method and apparatus for wrapping containers. 3,345,922, 10–10–67, Cl. 93—54.
Williams, Arthur J., to Commercial Shearing & Stamping Co. Fluid control valves with float position. 3,346,012, 10–10–67, Cl. 137—625.69.
Williams, John C., to Hawley Products Co. Process of adhering anionic and non-ionic substances to anionic substances. 3,346,519, 10–10–67, Cl. 260—9.
Wilson, Reagan T., and L. G. Larson, to Phillips Petroleum Co. Start up procedure for olefin disproportionation reactions. 3,346,661, 10–10–67, Cl. 260—683.
Wilson, Roger E.: *See*—
Baldwin, William M., Jr., Cairns, Marsh, and Wilson. 3,346,427.
Wilson, Ross D., and G. A. Deardorff. Floor scrubbing and polishing machine. 3,345,671, 10–10–67, Cl. 15—320.
Windel, Hermann, and E.-H. Pommer, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Ammonia complex manganese salt of ethylenebisdithiocarbamic acid. 3,346,605, 10–10–67, Cl. 260—429.
Winkler, Karl, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Apparatus for threading a web into a plant for processing said web. 3,346,159, 10–10–67, Cl. 226—92.
Winter, George D., and G. N. Catravas, to Technicon Corp. Apparatus and method for introduction of amino acid samples into a chromatography column. 3,346,486, 10–10–67, Cl. 210—31.
Winter, Harry: *See*—
Anderson, Harold P., McMahon, Scharg, and Winter. 3,346,700.
Wioszek, Joseph T. Tube centering conveyor. 3,346,130, 10–10–67, Cl. 214—339.
Wisconsin Caisson, Inc.: *See*—
Hignite, Walter. 3,345,826.
Witt, Dorothy: *See*—
Witt, Merlin L. 3,346,123.
Witt, Merlin L., deceased, by D. Witt, executrix. Scale traps for a pipe. 3,346,123, 10–10–67, Cl. 210—532.
Wixon, Harold E., to Colgate-Palmolive Co. Bleaching composition. 3,346,502, 10–10–67, Cl. 252—102.
Wizelman, Morris. Dispensing package. 3,346,108, 10–10–67, Cl. 206—78.
Wloszek, Joseph T. Tube centering conveyor. 3,346,130, 10–10–67, Cl. 214—339.
Wojcik, Witold M.: *See*—
Mizikar, Eugene A., Wojcik, and Li. 3,345,738.
Wolf, Donald E.: *See*—
Folkers, Karl, and Wolf. 3,346,595.
Wolf, Walther.: *See*—
Von Konig, Anita, and Wolf. 3,346,382.
Wolfer, Harnisch P., to W & W Products, composed of D. Whaley, and L. F. Wolfer. Hand instrument for electrolytic and acid etching. 3,346,477, 10–10–67, Cl. 204—224.
Wood, Fenton M., A. E. Crouch, and W. T. Walters, to American Machine & Foundry Co. Reciprocating apparatus with means to maintain the reciprocation centered over an anomaly. 3,346,807, 10–10–67, Cl. 324—37.
Woodis, George E.: *See*—
Steiner, Robert T., and Woodis. 3,345,934.
Woods, John P., E. D. Riggs, and C. D. Dransfield, to Atlantic Richfield Co. Focusing and scanning either or both of a plurality of seismic sources and seismometers to produce an improved seismic record. 3,346,068, 10–10–67, Cl. 181—.5.
Woods, Martin: *See*—
Allured, Robert B., Strzelewicz, and Woods. 3,346,725.
Woodward, Stewart A., to General Electric Co. Pushbutton switch with improved slider means for optional circuit selection. 3,346,706, 10–10–67, Cl. 200—5.
Woolf, George. Theft-proofing device for billfold. 3,346,030, 10–10–67, Cl. 150—47.
Woolworth, Richard G., to Old Pal, Inc. Lighted tackle box. 3,346,733, 10–10–67, Cl. 240—6.4.
World Wide, Inc.: *See*—
Harrington, John A., Tassell, and Hardick. 3,345,781.
Worrel, Calvin J., to Ethyl Corp. Benzyl ethers. 3,346,648, 10–10–67, Cl. 260—611.
Wright, Edward L.: *See*—
Berman, Sanford, and Wright. 3,346,024.
Wright, Wilburn T. Compositions and methods for protecting plants with metal derivatives of hexachlorophene. 3,346,447, 10–10–67, Cl. 167—31.
Wright, William H.: *See*—
McMahon, Robert D., Becker, and Wright. 3,346,429.
Wudski, Alfred: *See*—
Edgecombe, David A., and Wudski. 3,345,853.
Wüthrich, Frits, to Von Roll AG. Apparatus for the size reduction of refuse. 3,346,202, 10–10–67, Cl. 241—262.
Wyandotte Chemicals Corp.: *See*—
Boehmer, Matthew A. 3,346,501.
Kokoruds, Michael. 3,346,646.
MacGugan, Ian C., and Trix. 3,346,406.
Patton, John T., Jr., and Schuls. 3,346,557.
Wyatt, Howard F., to Pittsburgh Plate Glass Co. Recovery of CS_2 from absorbing oil. 3,345,802, 10–10–67, Cl. 55—50.
Wycoff, John C.: *See*—
Roberts, John W., Old, Gibson, Foster, Purvis, and Wycoff. 3,346,198.
Yaeger, William O.: *See*—
Aniano, John B. J., and Yaeger. 3,346,742.
Yamauchi, Fumio: *See*—
Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,346,499.
Yamauchi, Junnosuke: *See*—
Eguchi, Tamotsu, and Yamauchi. 3,346,540.
Yamaguchi, Tadashi: *See*—
Amagasa, Masataka, and Yamaguchi. 3,346,654.
Yamazaki, Hiroshi: *See*—
Nasu, Noriyuki, Yamazaki, Shinozaki, and Yonekura. 3,345,879.
Yarborough, Vivvien L. Junction clip arrangement for securing angularly disposed panel members together. 3,346,282, 10–10–67, Cl. 287—20.924.
Yates, John W. Liquid fuel feeding system. 3,345,978, 10–10–67, Cl. 126—94.
Yocum, William C., to Superior Valve & Fittings Co. Tapered pipe thread. 3,346,278, 10–10–67, Cl. 285—333.
Yonekura, Tadasu: *See*—
Nasu, Noriyuki, Yamazaki, Shinozaki, and Yonekura. 3,345,879.
Yoshinaga, Masajiro, to Yoshinaga Prince Kabushiki Kaisha. Fuel level indicator. 3,345,870, 10–10–67, Cl. 73—327.
Yoshinaga Prince Kabushiki Kaisha: *See*—
Yoshinaga, Masajiro. 3,345,870.
Yoshino, Tokachika: *See*—
Hiroki, Kenso, Shizume, Nakamura, Yoshino, Kamio, Irie, and Kawamura. 3,346,617.
Young, Donald C., to Union Oil Co. of California. Improved process for preparing unsaturated esters, aldehydes, ketones, acetals and ketals by the oxidation of olefins with a noble metal catalyst. 3,346,623, 10–10–67, Cl. 260—497.
Young, William G., to The Salem Tool Co. Augering machine for mining upwardly and downwardly at steep angles. 3,346,055, 10–10–67, Cl. 173—37.
Younkin, James R., to Thurman & Younkin, Inc. Altitude hold with air speed limit. 3,346,217, 10–10–67, Cl. 244—78.
Yuhas, Stephen A., Jr., C. W. Muessig, and M. A. Segura, to Esso Research and Engineering Co. Coating compositions containing hydroxylated diolefin polymer and silicone resin. 3,346,664, 10–10–67, Cl. 260—827.
Yunt, Fred W., and H. K. Baker, to Northrop Corp. Slide and grip quick-action cam-lock clamp. 3,345,889, 10–10–67, Cl. 77—63.
Yurcick, Peter A.: *See*—
Bills, Charles T., and Yurcick. 3,346,534.
Yutzy, Henry C.: *See*—
Baxendale, Ralph W., Luckey, and Yutzy. 3,346,383.
Zagar, Inc.: *See*—
Ludwig, Albert R. 3,346,183.
Zavlin, Pavel M.: *See*—
Arbusov, Boris A., Sokolovsky, Zavlin, and Vinokurova. 3,346,543.
Zavody V. I. Lenina Plzen Narodni Podnik: *See*—
Pondeliček, Jiří. 3,346,800.
Zeitter, Charles R., to Packaging Corp. of America. Folding carton and blank therefor. 3,346,164, 10–10–67, Cl. 229—16.
Zimmermann, Heinrich, to Dual Gebrüder Steidinger. Box for record players. 3,346,308, 10–10–67, Cl. 312—8.
Zinnes, Harold: *See*—
Shavel, John, Jr., and Zinnes. 3,346,572.
Shavel, John, Jr., and Zinnes. 3,346,633.
Zsoldos, Frank J., Jr. Hypoiodous acid generating compositions. 3,346,446, 10–10–67, Cl. 167—17.
Zuse K. G.: *See*—
Wehrig, Helmut. 3,346,850.

CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

2– 2.1	3,345,641	23–358	3,346,348	52– 73	3,345,786	73–231	3,345,869	99– 92	3,346,389	134– 25	3,346,418
6	3,345,642	366	3,346,349	242	3,345,787	327	3,345,870	98	3,346,390	111	3,345,994
53	3,345,643	24– 70	3,345,704	254	3,345,788	331	3,345,871	100	3,346,391	167	3,345,995
96	3,345,644	71	3,345,705	367	3,345,789	334	3,345,872	105	3,346,392	135– 1	3,345,996
115	3,345,645	73	3,345,706	476	3,345,790	351	3,345,873	108	3,346,393	136– 89	3,346,419
199	3,345,646	120	3,345,707	616	3,345,791	362	3,345,874	109	3,346,394	90	3,346,420
3– 12.7	3,345,647	137	3,345,708	648	3,345,792	368.3	3,345,875	111	3,346,395	120	3,346,421
4– 67	3,345,648	208	3,345,709	655	3,345,793	388	3,345,876	140	3,346,396	148	3,346,422
	3,345,649	221	3,345,710	731	3,345,794	401	3,345,877	154	3,346,397	153	3,346,423
251	3,345,650	230	3,345,711	53– 23	3,345,795	421	3,345,878	171	3,346,398	137– 99	3,345,997
5– 13	3,345,651		3,345,712	24	3,345,796	425.2	3,345,879	172	3,346,399	118	3,345,998
90	3,345,652	239	3,345,713	39	3,345,797	432	3,345,880	174	3,346,400	205	3,345,999
97	3,345,653	246	3,345,714	41	3,345,798	434	3,345,881	175	3,346,401	216	3,346,000
319	3,345,654	259	3,345,715	47	3,345,799	74–200	3,345,882	176	3,346,402	218	3,346,001
327	3,345,655	25– 34	3,345,716	303	3,345,800	462	3,345,883	188	3,346,403	246.22:	3,346,002
	3,345,656	102	3,345,717	311	3,345,801	574	3,345,884	283	3,345,933	247.25:	3,346,003
8– 4	3,346,321	28– 1	3,345,718	55– 50	3,345,802	687	3,345,885	290	3,345,934	271	3,346,004
79	3,346,322		3,345,719	55	3,345,803	826	3,345,886	295	3,345,935	375	3,346,005
94.26:	3,346,323	29– 91.1	3,345,720	67	3,345,804	75– .5	3,346,363	334	3,345,936	501	3,346,006
	3,346,324	105	3,345,721	271	3,345,805	6	3,346,364	100–155	3,345,937	512.1	3,346,007
120	3,346,325	116	3,345,722	293	3,345,806	26	3,346,365	101– 43	3,345,938	516.29:	3,346,008
127.5	3,346,326	148.4	3,345,723	433	3,345,807		3,346,366	211	3,345,939	543.17:	3,346,009
128	3,346,327	149.5	3,345,724	56– 20	3,345,808	42	3,346,367	336	3,345,940	564.5	3,346,010
9–316	3,345,657	157	3,345,725	57– 22	3,345,809	68	3,346,368	348	3,345,942	604	3,346,011
12– 1	3,345,658	157.3	3,345,726	68	3,345,810	109	3,346,369	350	3,345,941	625.69:	3,346,012
12	3,345,659	173	3,345,727	77.45:	3,345,811	147	3,346,370	366	3,345,943	628	3,346,013
16.4	3,345,660	183	3,346,350	81	3,345,812		3,346,371	426	3,345,944	138– 30	3,346,014
54.3	3,345,661	194	3,346,351	96	3,345,813		3,346,372	102– 38	3,345,945	114	3,346,015
142	3,345,662	203	3,345,728	124	3,345,814		3,346,373	49.4	3,345,946	138	3,346,016
	3,345,663	211	3,345,729	140	3,345,815		3,346,374	76	3,345,947	139– 12	3,346,017
	3,345,664	243.52:	3,345,730	60– 52	3,345,816		3,346,375	87	3,345,948	232	3,346,018
14– 71	3,345,665	270	3,345,731	54.6	3,345,817		3,346,376	92.2	3,345,949	140– 71.5	3,346,019
15– 21	3,345,666	421	3,345,732		3,345,818		3,346,377	103–206	3,345,950	92.1	3,346,020
119	3,345,667	455	3,345,733	95	3,345,819	171	3,346,378	104– 91	3,345,951	92.2	3,346,021
209	3,345,668	470.9	3,345,735	202	3,345,820	174	3,346,379	124	3,345,952	93.4	3,346,022
244	3,345,669	471.1	3,345,734	214	3,345,821		3,346,380	170	3,345,953		3,346,023
257.1	3,345,670	509	3,345,736	251	3,345,822	76–111	3,345,887	172	3,345,954	141– 25	3,346,024
320	3,345,671	527	3,345,737	61– 24	3,345,823	77– 58	3,345,888	105–369	3,345,955	143–135	3,346,025
322	3,345,672	528	3,345,738	35	3,345,824	63	3,345,889		3,345,956	144–144	3,346,026
543	3,345,673		3,345,739	48	3,345,825	82– 8	3,345,890	106– 1	3,346,404	176	3,346,027
563	3,345,674	596	3,345,740	53	3,345,826		3,345,891	14	3,346,405	326	3,346,028
16– 45	3,345,675	626	3,345,741	62– 55	3,345,827		3,345,892	124	3,346,406	146– 68	3,346,029
87.6	3,345,676	30– 4	3,345,742	63	3,345,828	12	3,345,893	126	3,346,407	148– 2	3,346,424
90	3,345,677	337	3,345,743	93	3,345,829	83–100	3,345,894	140	3,346,408	4	3,346,425
94	3,345,678	31– 47	3,345,744	63– 13	3,345,830	105	3,345,895	296	3,346,409	6.17:	3,346,426
128	3,345,679	32– 14	3,345,745	64– 14	3,345,831	128	3,345,896	107– 57	3,345,957	11.5	3,346,427
140	3,345,680	33– 1	3,345,746	23	3,345,832	389	3,345,897	108– 13	3,345,958	188	3,346,428
182	3,345,681		3,345,747	30	3,345,833	663	3,345,898	119	3,345,959	149– 2	3,346,429
17– 45	3,345,682	2	3,345,748	65– 14	3,346,356	85– 32	3,345,899	110– 8	3,345,960	109	3,346,430
18– 1	3,345,683	22	3,345,749	33	3,346,357	72	3,345,900	72	3,345,961	150– 47	3,346,030
2	3,345,684	75	3,345,750	106	3,346,358	77	3,345,901	99	3,345,962	151– 23	3,346,031
4	3,345,685	78	3,345,751	183	3,346,359	86– 1	3,345,902	112– 2	3,345,963	69	3,346,032
5	3,345,686	97	3,345,752	273	3,346,360	23	3,345,903		3,345,964	156–210	3,346,438
	3,345,687	172	3,345,753	66–145	3,345,834	25	3,345,904		3,345,965	235	3,346,431
	3,345,688	174	3,345,754	166	3,345,835	88– 14	3,345,905	113–120	3,345,966	330	3,346,432
6	3,345,689	191	3,345,755		3,345,836		3,345,906	114– 61	3,345,967	355	3,346,433
14	3,345,690	34– 23	3,345,756	70– 52	3,345,837		3,345,907	66.5	3,345,968	415	3,346,434
30	3,345,691	111	3,345,757	100	3,345,838		3,345,908	102	3,345,969	423	3,346,435
36	3,345,692	35– 9	3,345,758	240	3,345,839		3,345,909	235	3,345,970	473	3,346,436
45	3,345,693	31	3,345,759	71– 88	3,346,361		3,345,910		3,345,971	505	3,346,437
19– .2	3,345,694	60	3,345,760	118	3,346,362	24	3,345,911	117– 8	3,346,410	522	3,346,439
.25:	3,345,695	36– 2.5	3,345,761	72– 34	3,345,840	56	3,345,912	11	3,346,411	583	3,346,440
.26:	3,345,696	9	3,345,762	39	3,345,841	89– 1	3,345,913	96	3,346,412	159– 4	3,346,033
66	3,345,697	14	3,345,763	42	3,345,842	129	3,345,914	102	3,346,413	6	3,346,034
106	3,345,698	37–110	3,345,764	56	3,345,843	91– 50	3,345,915	106	3,346,414	161– 36	3,346,441
145	3,345,699	142	3,345,765		3,345,844	92– 58	3,345,916	212	3,346,415	68	3,346,442
150	3,345,700	40– 77	3,345,766	91	3,345,845	93– 1	3,345,917	226	3,346,416	184	3,346,443
159	3,345,701	106.53:	3,345,767	200	3,345,846		3,345,918	118–301	3,345,972	213	3,346,444
	3,345,702	152.1	3,345,768	224	3,345,847	8	3,345,919	324	3,345,973	162–136	3,346,445
	3,345,703	336	3,345,769	237	3,345,848	36	3,345,920	119– 51	3,345,974	164– 82	3,346,035
23– 2	3,346,328	42– 18	3,345,770	249	3,345,849		3,345,921	122–406	3,345,975	85	3,346,036
15	3,346,329		3,345,771	251	3,345,850	54	3,345,922	123–188	3,345,976	273	3,346,037
23	3,346,330	44– 10	3,346,352	253	3,345,851	93	3,345,923	124– 11	3,345,977	278	3,346,038
85	3,346,331	62	3,346,353		3,345,852	95– 1.1	3,345,924	126– 94	3,345,978	338	3,346,039
91	3,346,332	63	3,346,354	263	3,345,853	1.7	3,345,925	128– 2	3,345,979	165– 21	3,346,040
	3,346,333	66	3,346,355		3,345,854		3,345,926		3,345,980	47	3,346,041
110	3,346,334	46– 51	3,345,772	317	3,345,855	89	3,345,927		3,345,981	154	3,346,042
	3,346,335	47– 9	3,345,773	410	3,345,856	94	3,345,928	66	3,345,982	162	3,346,043
143	3,346,336	48.5	3,345,774	73– 1	3,345,857	96	3,345,929	82	3,345,983	166– .5	3,346,045
204	3,346,337	49– 4	3,345,775	23.1	3,345,858	96– 1.8	3,346,381	145	3,345,984	2	3,346,044
208	3,346,338	246	3,345,776		3,345,859	29	3,346,382	204	3,345,985	9	3,346,046
209.1	3,346,339	248	3,345,777	40	3,345,860	35.1	3,346,383	214	3,345,986		3,346,047
216	3,346,340	450	3,345,778	67.2	3,345,861	36	3,346,384	254	3,345,987	11	3,346,048
230	3,346,341	501	3,345,779		3,345,862		3,346,385	349	3,345,988	13	3,346,049
253	3,346,342	504	3,345,780	67.5	3,345,863	66.3	3,346,386	419	3,345,989	128	3,346,050
269	3,346,343	51– 34	3,345,781	71.6	3,345,864	98– 78	3,345,931		3,345,990	167– 17	3,346,446
301	3,346,344	50	3,345,782	117	3,345,865	83	3,345,932	131– 20	3,345,991	31	3,346,447
340	3,346,345	58	3,345,783	147	3,345,866	114	3,345,930	140	3,345,992	52	3,346,448
344	3,346,346	170	3,345,784	151	3,345,867	99– 1	3,346,387	132– 7	3,345,993	55	3,346,449
356	3,346,347	362	3,345,785	155	3,345,868	77.1	3,346,388	134– 2	3,346,417	58	3,346,450

167– 58 : 3,346,451
65 : 3,346,452
3,346,453
74 : 3,346,454
78 : 3,346,455
80 : 3,346,456
87.1 : 3,346,457
169– 20 : 3,346,051
25 : 3,346,052
172– 16 : 3,346,053
173– 23 : 3,346,054
37 : 3,346,055
174– 68 : 3,346,687
3,346,688
68.5 : 3,346,689
77 : 3,346,690
175– 4.52: 3,346,057
4.6 : 3,346,056
56 : 3,346,058
246 : 3,346,059
410 : 3,346,060
176– 1 : 3,346,458
36 : 3,346,459
54 : 3,346,460
67 : 3,346,461
3,346,462
177– 2 : 3,346,061
178– 5.4 : 3,346,691
6 : 3,346,692
26 : 3,346,693
179– 1 : 3,346,694
3,346,695
2 : 3,346,696
15 : 3,346,697
3,346,698
3,346,699
27 : 3,346,700
100.1 : 3,346,701
100.2 : 3,346,702
3,346,703
107 : 3,346,704
180– 6.7 : 3,346,062
7 : 3,346,063
181– .5 : 3,346,064
3,346,065
3,346,066
3,346,067
3,346,068
24 : 3,346,069
31 : 3,346,070
56 : 3,346,071
184– 1 : 3,346,072
187– 90 : 3,346,073
91 : 3,346,074
188– 73 : 3,346,075
3,346,076
78 : 3,346,077
152 : 3,346,078
170 : 3,346,079
196 : 3,346,080
191– 12.4 : 3,346,705
192– 3.5 : 3,346,081
4 : 3,346,082
81 : 3,346,083
150 : 3,346,084
193– 14 : 3,346,085
195– 31 : 3,346,463
54 : 3,346,464
197– 84 : 3,346,086
3,346,087
3,346,088
90 : 3,346,089
158 : 3,346,090
176 : 3,346,091
198– 1 : 3,346,092
22 : 3,346,093
25 : 3,346,094
33 : 3,346,095
34 : 3,346,096
220 : 3,346,097
200– 5 : 3,346,706
8 : 3,346,707
11 : 3,346,708
51.09: 3,346,709
114 : 3,346,711
150 : 3,346,710
204– 15 : 3,346,465
24 : 3,346,466
37 : 3,346,467
54 : 3,346,468
56 : 3,346,469
129 : 3,346,470
147 : 3,346,471
157.1 : 3,346,472
158 : 3,346,473
162 : 3,346,474
181 : 3,346,475
224 : 3,346,476
3,346,477
299 : 3,346,478
301 : 3,346,479

204–312 : 3,346,480
206– .82: 3,346,109
1.7 : 3,346,098
42 : 3,346,099
46 : 3,346,100
3,346,101
47 : 3,346,102
56 : 3,346,103
57 : 3,346,104
59 : 3,346,105
65 : 3,346,106
3,346,107
78 : 3,346,108
208– 11 : 3,346,481
111 : 3,346,482
179 : 3,346,483
237 : 3,346,484
310 : 3,346,485
209– 2 : 3,346,110
9 : 3,346,111
75 : 3,346,112
223 : 3,346,113
403 : 3,346,114
210– 31 : 3,346,486
78 : 3,346,115
222 : 3,346,116
304 : 3,346,117
391 : 3,346,118
404 : 3,346,119
439 : 3,346,120
493 : 3,346,121
522 : 3,346,122
532 : 3,346,123
211–126 : 3,346,125
148 : 3,346,124
176 : 3,346,126
212– 71 : 3,346,127
214– 6 : 3,346,128
135 : 3,346,129
339 : 3,346,130
506 : 3,346,131
516 : 3,346,132
215– 11 : 3,346,133
39 : 3,346,134
48 : 3,346,135
217– 12 : 3,346,136
219– 8.5 : 3,346,712
69 : 3,346,713
80 : 3,346,714
98 : 3,346,715
110 : 3,346,716
121 : 3,346,717
275 : 3,346,718
451 : 3,346,719
464 : 3,346,720
465 : 3,346,721
499 : 3,346,722
553 : 3,346,723
220– 23.6 : 3,346,137
26 : 3,346,138
46 : 3,346,139
87 : 3,346,140
221– 48 : 3,346,141
222– 20 : 3,346,142
56 : 3,346,143
57 : 3,346,144
162 : 3,346,145
189 : 3,346,146
326 : 3,346,147
402.11: 3,346,148
223– 66 : 3,346,149
95 : 3,346,150
104 : 3,346,151
224– 5 : 3,346,152
3,346,153
3,346,154
9 : 3,346,155
32 : 3,346,156
49 : 3,346,157
226– 79 : 3,346,158
92 : 3,346,159
191 : 3,346,160
196 : 3,346,161
227– 95 : 3,346,162
131 : 3,346,163
229– 16 : 3,346,164
17 : 3,346,165
3,346,166
20 : 3,346,167
23 : 3,346,168
37 : 3,346,169
43 : 3,346,170
44 : 3,346,171
55 : 3,346,173
92.8 : 3,346,172
230–120 : 3,346,174
3,346,175
157 : 3,346,176
235– 54 : 3,346,177
60 : 3,346,178
3,346,179

235– 61.6 : 3,346,724
74 : 3,346,180
84 : 3,346,181
91 : 3,346,182
3,346,183
92 : 3,346,725
150.1 : 3,346,726
160 : 3,346,727
164 : 3,346,728
3,346,729
175 : 3,346,730
201 : 3,346,184
236– 49 : 3,346,185
239– 11 : 3,346,186
33 : 3,346,187
90 : 3,346,188
102 : 3,346,189
132.3 : 3,346,190
135 : 3,346,191
223 : 3,346,192
265.17: 3,346,193
333 : 3,346,194
337 : 3,346,195
404 : 3,346,196
240– 2 : 3,346,731
3.1 : 3,346,732
6.4 : 3,346,733
53 : 3,346,734
241– 23 : 3,346,197
3,346,198
144 : 3,346,199
171 : 3,346,200
189 : 3,346,201
262 : 3,346,202
275 : 3,346,203
242– 43.2 : 3,346,204
3,346,205
3,346,206
45 : 3,346,207
55.2 : 3,346,208
66 : 3,346,209
71.1 : 3,346,210
71.8 : 3,346,211
84.21: 3,346,212
86.2 : 3,346,213
156.1 : 3,346,214
244– 3.15: 3,346,215
30 : 3,346,216
78 : 3,346,217
102 : 3,346,218
114 : 3,346,219
117 : 3,346,220
248– 24 : 3,346,221
3,346,222
119 : 3,346,223
3,346,224
125 : 3,346,225
242 : 3,346,226
262 : 3,346,227
316 : 3,346,228
477 : 3,346,229
249–177 : 3,346,230
250– 41.9 : 3,346,735
49.5 : 3,346,736
105 : 3,346,737
203 : 3,346,738
219 : 3,346,739
251– 11 : 3,346,231
66 : 3,346,232
172 : 3,346,233
174 : 3,346,234
252– 8.5 : 3,346,487
3,346,488
3,346,489
12.4 : 3,346,490
28 : 3,346,491
32.5 : 3,346,492
3,346,493
33.2 : 3,346,494
49.3 : 3,346,495
50 : 3,346,496
51.5 : 3,346,497
59 : 3,346,498
62.9 : 3,346,499
63.2 : 3,346,500
73 : 3,346,501
102 : 3,346,502
106 : 3,346,503
137 : 3,346,504
3,346,873
161 : 3,346,505
188 : 3,346,506
316 : 3,346,507
328 : 3,346,508
453 : 3,346,509
455 : 3,346,510
3,346,511
3,346,512
461 : 3,346,513
253– 39.15: 3,346,235
254– 67 : 3,346,236

254–185 : 3,346,237
256– 24 : 3,346,238
259– 9 : 3,346,239
26 : 3,346,240
72 : 3,346,241
111 : 3,346,242
260– 2 : 3,346,514
3,346,515
2.1 : 3,346,516
2.5 : 3,346,517
3,346,518
9 : 3,346,519
17 : 3,346,520
3,346,521
17.4 : 3,346,522
19 : 3,346,523
22 : 3,346,524
3,346,525
29.1 : 3,346,526
29.2 : 3,346,527
30.6 : 3,346,528
32.6 : 3,346,529
32.8 : 3,346,533
33.2 : 3,346,530
33.4 : 3,346,531
37 : 3,346,532
39 : 3,346,534
41.5 : 3,346,535
45.85: 3,346,536
3,346,537
67 : 3,346,538
3,346,539
3,346,540
75 : 3,346,541
3,346,542
78 : 3,346,543
79.5 : 3,346,544
89.5 : 3,346,545
94.7 : 3,346,546
94.9 : 3,346,547
3,346,548
139 : 3,346,549
145 : 3,346,550
152 : 3,346,551
158 : 3,346,552
163 : 3,346,553
192 : 3,346,554
209 : 3,346,555
3,346,556
3,346,557
210 : 3,346,558
210 : 3,346,559
211.5 : 3,346,560
3,346,561
3,346,562
233.3 : 3,346,563
239 : 3,346,564
239.3 : 3,346,565
3,346,566
3,346,567
239.55: 3,346,569
3,346,570
239.8 : 3,346,568
240 : 3,346,571
243 : 3,346,572
3,346,573
249.6 : 3,346,575
249.8 : 3,346,576
250 : 3,346,577
270 : 3,346,578
279 : 3,346,579
285.5 : 3,346,580
286 : 3,346,581
289 : 3,346,582
296 : 3,346,583
304 : 3,346,584
305 : 3,346,585
307 : 3,346,586
310 : 3,346,587
326.61: 3,346,588
326.85: 3,346,589
327 : 3,346,590
332.3 : 3,346,591
333 : 3,346,592
340 : 3,346,593
343 : 3,346,594
345.5 : 3,346,595
346.1 : 3,346,596
346.3 : 3,346,597
3,346,598
347.3 : 3,346,599
347.5 : 3,346,600
397.4 : 3,346,601
3,346,603
397.45: 3,346,602
429 : 3,346,604
3,346,605
3,346,606
429.7 : 3,346,607
439 : 3,346,608
448.2 : 3,346,609

260–448.8 : 3,346,610
455 : 3,346,611
456 : 3,346,612
3,346,613
462 : 3,346,614
464 : 3,346,615
3,346,616
465.3 : 3,346,617
465.4 : 3,346,618
467 : 3,346,619
476 : 3,346,620
482 : 3,346,621
488 : 3,346,622
497 : 3,346,623
3,346,624
3,346,625
3,346,626
498 : 3,346,627
501 : 3,346,628
513 : 3,346,629
518 : 3,346,630
523 : 3,346,631
551 : 3,346,632
556 : 3,346,633
558 : 3,346,634
3,346,635
563 : 3,346,636
3,346,637
570 : 3,346,638
583 : 3,346,639
3,346,640
584 : 3,346,641
3,346,642
3,346,643
586 : 3,346,645
593 : 3,346,646
606.5 : 3,346,647
611 : 3,346,648
624 : 3,346,649
631.5 : 3,346,650
652.5 : 3,346,651
653 : 3,346,652
666 : 3,346,653
3,346,654
3,346,655
3,346,656
671 : 3,346,657
680 : 3,346,658
3,346,659
683 : 3,346,661
683.15: 3,346,662
683.49: 3,346,660
823 : 3,346,663
827 : 3,346,664
830 : 3,346,665
879 : 3,346,666
920 : 3,346,667
955 : 3,346,668
960 : 3,346,669
980 : 3,346,670
261– 41 : 3,346,243
3,346,244
61 : 3,346,245
103 : 3,346,246
263– 3 : 3,346,247
33 : 3,346,248
53 : 3,346,671
3,346,672
264– .5 : 3,346,673
3,346,676
1 : 3,346,674
3 : 3,346,675
12 : 3,346,677
29 : 3,346,678
44 : 3,346,680
56 : 3,346,681
93 : 3,346,682
169 : 3,346,683
176 : 3,346,684
182 : 3,346,685
248 : 3,346,574
321 : 3,346,686
340 : 3,346,679
266– 29 : 3,346,249
30 : 3,346,250
267– 1 : 3,346,251
1.5 : 3,346,252
271– 36 : 3,346,253
41 : 3,346,254
45 : 3,346,255
272– 81 : 3,346,256
273– 26 : 3,346,257
82 : 3,346,258
136 : 3,346,259
274– 9 : 3,346,260
10 : 3,346,261
39 : 3,346,262
277– 81 : 3,346,263
141 : 3,346,264
152 : 3,346,265

277–153 : 3,346,266
212 : 3,346,267
280– 5.26: 3,346,268
3,346,269
5.28: 3,346,270
33.99: 3,346,271
96.2 : 3,346,272
457 : 3,346,273
285– 52 : 3,346,274
98 : 3,346,275
110 : 3,346,276
308 : 3,346,277
333 : 3,346,278
353 : 3,346,279
287– 14 : 3,346,280
20.924 3,346,282
54 : 3,346,283
58 : 3,346,281
91 : 3,346,284
104 : 3,346,285
189.36: 3,346,286
289– 17 : 3,346,287
292– 92 : 3,346,288
141 : 3,346,290
144 : 3,346,291
175 : 3,346,289
293– 9 : 3,346,292
294– 19 : 3,346,293
49 : 3,346,294
296– 23 : 3,346,295
78 : 3,346,296
146 : 3,346,297
297–455 : 3,346,298
299– 1 : 3,346,299
70 : 3,346,300
301– 5 : 3,346,303
65 : 3,346,301
108 : 3,346,304
302– 2 : 3,346,305
305– 40 : 3,346,306
307– 88.3 : 3,346,740
3,346,741
88.5 : 3,346,742
3,346,743
3,346,744
3,346,745
3,346,746
3,346,874
308–137 : 3,346,302
187.1 : 3,346,307
310– 11 : 3,346,747
16 : 3,346,748
263 : 3,346,749
312– 8 : 3,346,308
109 : 3,346,309
140 : 3,346,310
195 : 3,346,311
234 : 3,346,312
234.1 : 3,346,313
245 : 3,346,314
255 : 3,346,315
257 : 3,346,316
258 : 3,346,317
330 : 3,346,318
313– 32 : 3,346,751
68 : 3,346,752
92 : 3,346,753
93 : 3,346,754
94 : 3,346,755
3,346,756
108 : 3,346,757
3,346,758
109.5 : 3,346,759
136 : 3,346,760
180 : 3,346,761
231 : 3,346,750
306 : 3,346,762
315– 22 : 3,346,763
27 : 3,346,764
3,346,765
39.71: 3,346,766
71 : 3,346,767
74 : 3,346,768
106 : 3,346,769
194 : 3,346,770
317– 5 : 3,346,771
13 : 3,346,772
100 : 3,346,773
101 : 3,346,774
3,346,775
117 : 3,346,776
119 : 3,346,777
123 : 3,346,778
141 : 3,346,779
148.5 : 3,346,780
230 : 3,346,781
3,346,782
3,346,783
234 : 3,346,784
3,346,785
235 : 3,346,786

317–235 : 3,346,787
237 : 3,346,788
258 : 3,346,789
261 : 3,346,790
318– 24 : 3,346,791
138 : 3,346,792
173 : 3,346,793
227 : 3,346,794
3,346,795
341 : 3,346,796
320– 1 : 3,346,797
321– 18 : 3,346,798
3,346,799
322– 28 : 3,346,800
58 : 3,346,801

323– 4 : 3,346,802
22 : 3,346,803
47 : 3,346,804
74 : 3,346,805
324– 33 : 3,346,806
37 : 3,346,807
54 : 3,346,808
3,346,809
70 : 3,346,810
96 : 3,346,811
325– 16 : 3,346,812
448 : 3,346,813
329–122 : 3,346,814
3,346,815
144 : 3,346,816

330– 23 : 3,346,817
30 : 3,346,818
44 : 3,346,819
109 : 3,346,820
331–113 : 3,346,821
333– 7 : 3,346,822
11 : 3,346,823
98 : 3,346,824
3,346,825
335–216 : 3,346,826
253 : 3,346,827
336–192 : 3,346,828
338– 32 : 3,346,829
40 : 3,346,830
145 : 3,346,831

339–112 : 3,346,832
139 : 3,346,833
217 : 3,346,834
258 : 3,346,835
275 : 3,346,836
340– 5 : 3,346,837
7 : 3,346,838
3,346,839
15.5 : 3,346,840
17 : 3,346,841
38 : 3,346,842
58 : 3,346,843
146.2 : 3,346,844
146.3 : 3,346,845
172 : 3,346,846

340–172.5 : 3,346,847
3,346,848
3,346,849
3,346,850
3,346,851
3,346,852
3,346,853
174 : 3,346,854
248 : 3,346,855
258 : 3,346,856
328 : 3,346,857
397 : 3,346,858
343– 7.7 : 3,346,859
16 : 3,346,861

343–105 : 3,346,860
113 : 3,346,862
702 : 3,346,863
719 : 3,346,864
771 : 3,346,865
346– 1 : 3,346,866
33 : 3,346,867
74 : 3,346,868
75 : 3,346,869
109 : 3,346,870
139 : 3,346,871
145 : 3,346,872
350–150 : 3,346,319
184 : 3,346,320

Classification of Designs

D 2–330 : 208,850
D 9– 2 : 208,851
D13– 1 : 208,852
D14– 3 : 208,853
208,854
D16– 1 : 208,855
D18– 2 : 208,856
D22– 23 : 208,857
D26– 1 : 208,858

D26– 5 : 208,859
208,860
8 : 208,861
13 : 208,863
208,864
D29– 23 : 208,865
208,866

D34– 5 : 208,867
208,868
15 : 208,869
D42– 7 : 208,870
D44– 1 : 208,871
9 : 208,872
208,873
29 : 208,874

D44– 29 : 208,875
D48– 4 : 208,876
20 : 208,877
208,878
32 : 208,879
D54– 12 : 208,880
208,881
208,882

D57– 1 : 208,883
D58– 8 : 208,884
208,885
26 : 208,886
D68– 1 : 208,887
D69– 1 : 208,888
D74– 1 : 208,889
D80– 8 : 208,890

D81– 19 : 208,891
25 : 208,892
D86– 8 : 208,893
10 : 208,894
D90– 3 : 208,895
20 : 208,896
208,897
208,898

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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1 : 3,345,806
3,346,006
3,346,215
3,346,442
3,346,515
3,346,621
3,346,642
3,346,643
3,346,644
4 : 3,345,759
3,346,021
3,346,148
3,346,228
3,346,431
3,346,470
3,346,846
6 : 3,345,671
3,345,672
3,345,677
3,345,709
3,345,710
3,345,732
3,345,735
3,345,741
3,345,744
3,345,750
3,345,751
3,345,765
3,345,773
3,345,777
3,345,780
3,345,788
3,345,807
3,345,832
3,345,838
3,345,843
3,345,844
3,345,852
3,345,864
3,345,873
3,345,875
3,345,889
3,345,893
3,345,897
3,345,902
3,345,906
3,345,908
3,345,912
3,345,935
3,345,950
6 : 3,345,951
3,345,955
3,345,967
3,345,980
3,345,987
3,345,995
3,346,001
3,346,010
3,346,014
3,346,030
3,346,031
3,346,032
3,346,053
3,346,066
3,346,070
3,346,105
3,346,137
3,346,156
3,346,158
3,346,186
3,346,231
3,346,243
3,346,248
3,346,258
3,346,265
3,346,269
3,346,274
3,346,279
3,346,282
3,346,283
3,346,284
3,346,304
3,346,310
3,346,313
3,346,316
3,346,317
3,346,327
3,346,341
3,346,354
3,346,392
3,346,407
3,346,415
3,346,422
3,346,429
3,346,477
3,346,489
3,346,497
3,346,498
3,346,525
3,346,535
6 : 3,346,613
3,346,623
3,346,624
3,346,625
3,346,626
3,346,652
3,346,653
3,346,656
3,346,658
3,346,665
3,346,667
3,346,674
3,346,681
3,346,688
3,346,704
3,346,708
3,346,710
3,346,716
3,346,722
3,346,729
3,346,732
3,346,736
3,346,737
3,346,738
3,346,748
3,346,785
3,346,814
3,346,815
3,346,817
3,346,818
3,346,819
3,346,821
3,346,822
3,346,826
3,346,832
3,346,833
3,346,840
3,346,845
3,346,847
3,346,852
3,346,853
3,346,854
3,346,856
3,346,859
3,346,870
7 : 3,346,687
8 : 3,346,439
3,346,463
3,346,634
9 : 3,345,641
9 : 3,345,711
3,345,863
3,345,865
3,345,909
3,346,039
3,346,103
3,346,135
3,346,141
3,346,145
3,346,171
3,346,185
3,346,193
3,346,247
3,346,370
3,346,371
3,346,372
3,346,373
3,346,374
3,346,375
3,346,376
3,346,377
3,346,432
3,346,457
3,346,461
3,346,519
3,346,706
3,346,776
3,346,836
3,346,872
10 : 3,345,803
3,346,362
3,346,548
3,346,554
11 : 3,345,820
3,345,840
3,345,971
3,346,388
3,346,419
3,346,474
3,346,865
12 : 3,345,653
3,345,669
3,345,779
3,345,786
3,345,930
3,345,978
3,345,984
3,346,054
3,346,098
3,346,133
12 : 3,346,147
3,346,151
3,346,153
3,346,197
3,346,447
3,346,650
3,346,698
3,346,743
13 : 3,345,796
3,345,816
3,345,921
3,346,152
3,346,173
3,346,639
15 : 3,346,397
16 : 3,346,268
17 : 3,345,651
3,345,654
3,345,674
3,345,675
3,345,690
3,345,757
3,345,767
3,345,772
3,345,795
3,345,797
3,345,800
3,345,855
3,345,858
3,345,859
3,345,884
3,345,925
3,345,926
3,345,953
3,345,959
3,345,969
3,345,972
3,345,992
3,345,996
3,346,022
3,346,073
3,346,079
3,346,080
3,346,092
3,346,095
3,346,096
3,346,101
3,346,118
3,346,125
3,346,187
17 : 3,346,199
3,346,201
3,346,209
3,346,213
3,346,223
3,346,225
3,346,226
3,346,230
3,346,253
3,346,254
3,346,260
3,346,261
3,346,262
3,346,289
3,346,307
3,346,321
3,346,336
3,346,340
3,346,387
3,346,390
3,346,393
3,346,394
3,346,400
3,346,455
3,346,495
3,346,508
3,346,531
3,346,558
3,346,563
3,346,602
3,346,655
3,346,691
3,346,701
3,346,709
3,346,719
3,346,778
3,346,857
3,346,869
3,346,871
18 : 3,345,665
3,345,898
3,345,946
3,346,175
3,346,389
3,346,763
19 : 3,346,100
3,346,115
3,346,129
3,346,131
3,346,728

19 : 3,346,740
3,346,777
20 : 3,345,764
3,345,928
3,346,085
3,346,246
3,346,669
3,346,705
3,346,866
21 : 3,346,000
3,346,003
3,346,083
3,346,086
3,346,088
3,346,089
3,346,090
3,346,091
3,346,097
3,346,184
3,346,631
3,346,711
22 : 3,345,682
3,345,878
3,346,045
3,346,110
3,346,117
3,346,287
3,346,365
3,346,366
3,346,395
3,346,482
3,346,484
3,346,512
3,346,518
3,346,598
23 : 3,345,756
3,346,244
3,346,556
24 : 3,345,679
3,345,801
3,345,817
3,345,876
3,345,914
3,345,974
3,346,169
3,346,170
3,346,328
3,346,342
3,346,369
3,346,805
3,346,813
3,346,842
3,346,849
3,346,862
25 : 3,345,660
3,345,663
3,345,704
3,345,739
3,345,748
3,345,771
3,345,830
3,345,860
3,345,899
3,345,911
3,345,924
3,345,948
3,346,034
3,346,155
3,346,182
3,346,319
3,346,416
3,346,423
3,346,443
3,346,445
3,346,467
3,346,500
3,346,526
3,346,530
3,346,601
3,346,727
3,346,735
3,346,769
3,346,781
3,346,782
3,346,789
3,346,790
3,346,864
26 : 3,345,644
3,345,712
3,345,726
3,345,727
3,345,731
3,345,736
3,345,747
3,345,781
3,345,782
3,345,783
3,345,787
3,345,789
3,345,829
3,345,837
26 : 3,345,839
3,345,861
3,345,888
3,345,938
3,345,956
3,346,059
3,346,075
3,346,076
3,346,077
3,346,078
3,346,082
3,346,106
3,346,143
3,346,164
3,346,176
3,346,190
3,346,252
3,346,264
3,346,271
3,346,272
3,346,277
3,346,298
3,346,314
3,346,318
3,346,348
3,346,406
3,346,426
3,346,468
3,346,476
3,346,501
3,346,520
3,346,557
3,346,592
3,346,597
3,346,635
3,346,646
3,346,648
3,346,666
3,346,678
3,346,696
3,346,713
3,346,725
3,346,756
3,346,760
3,346,771
3,346,774
3,346,779
3,346,783
3,346,810
3,346,827
27 : 3,345,743
3,345,825
3,345,903
3,345,934
3,346,112
3,346,188
3,346,194
3,346,211
3,346,399
3,346,517
3,346,555
3,346,612
3,346,703
3,346,730
3,346,772
28 : 3,345,720
29 : 3,345,742
3,345,818
3,345,841
3,345,901
3,345,970
3,346,013
3,346,019
3,346,052
3,346,060
3,346,224
3,346,236
3,346,257
3,346,487
3,346,488
3,346,503
3,346,507
3,346,629
3,346,630
30 : 3,345,958
3,346,296
31 : 3,345,716
3,346,081
33 : 3,346,221
3,346,690
3,346,831
34 : 3,345,646
3,345,648
3,345,700
3,345,705
3,345,713
3,345,718
3,345,725
3,345,752
3,345,762
3,345,770
34 : 3,345,785
3,345,804
3,345,821
3,345,871
3,345,896
3,345,913
3,345,919
3,345,945
3,345,975
3,345,986
3,346,016
3,346,020
3,346,024
3,346,061
3,346,067
3,346,072
3,346,099
3,346,126
3,346,132
3,346,140
3,346,146
3,346,149
3,346,163
3,346,181
3,346,208
3,346,210
3,346,220
3,346,249
3,346,280
3,346,286
3,346,302
3,346,332
3,346,333
3,346,339
3,346,344
3,346,347
3,346,353
3,346,356
3,346,381
3,346,398
3,346,402
3,346,414
3,346,421
3,346,430
3,346,433
3,346,436
3,346,438
3,346,448
3,346,449
3,346,452
3,346,471
3,346,485
3,346,490
3,346,491
3,346,492
3,346,494
3,346,502
3,346,510
3,346,514
3,346,523
3,346,529
3,346,534
3,346,546
3,346,547
3,346,560
3,346,561
3,346,572
3,346,578
3,346,579
3,346,582
3,346,589
3,346,591
3,346,594
3,346,595
3,346,599
3,346,600
3,346,616
3,346,619
3,346,632
3,346,633
3,346,638
3,346,641
3,346,664
3,346,675
3,346,679
3,346,686
3,346,694
3,346,697
3,346,700
3,346,702
3,346,731
3,346,742
3,346,745
3,346,746
3,346,751
3,346,755
3,346,765
3,346,766
3,346,770
3,346,791
3,346,795
34 : 3,346,803
3,346,808
3,346,809
3,346,820
3,346,824
3,346,835
3,346,855
35 : 3,346,830
36 : 3,345,645
3,345,647
3,345,650
3,345,656
3,345,668
3,345,673
3,345,708
3,345,715
3,345,730
3,345,737
3,345,754
3,345,758
3,345,766
3,345,775
3,345,784
3,345,798
3,345,812
3,345,862
3,345,910
3,345,916
3,345,918
3,345,927
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3,346,217	49 : 3,345,693	3,346,724	3,346,673	3,345,676	3,346,174
3,346,234	3,346,150	3,346,784	54 : 3,345,802	3,345,678	3,346,214
3,346,256	51 : 3,345,724	3,346,798	3,345,835	3,345,699	3,346,229
3,346,303	3,345,769	3,346,861	3,345,836	3,345,768	3,346,239
3,346,338	3,345,866	53 : 3,345,792	3,345,872	3,345,826	3,346,241
3,346,533	3,346,084	3,346,167	3,346,361	3,345,920	3,346,275
3,346,670	3,346,172	3,346,237	3,346,424	3,345,982	3,346,466
3,346,773	3,346,198	3,346,273	3,346,564	3,345,994	3,346,797
3,346,786	3,346,420	3,346,281	3,346,584	3,346,123	3,346,799
3,346,788	3,346,604	3,346,292	3,346,843	3,346,136	3,346,851
3,346,807	3,346,682	3,346,345			

Design Patents

1 : 208,891	9 : 208,856	18 : 208,857	32 : 208,858	36 : 208,882	37 : 208,860
6 : 208,853	208,865	25 : 208,866	34 : 208,851	208,884	39 : 208,897
208,861	208,878	208,867	208,886	208,885	44 : 208,869
208,862	208,889	208,872	36 : 208,859	208,888	47 : 208,854
208,864	10 : 208,893	208,877	208,874	208,892	48 : 208,890
208,870	17 : 208,871	26 : 208,895	208,880	208,894	55 : 208,863
208,876	208,873	208,896	208,881	37 : 208,850	208,875
208,887	208,883	29 : 208,852			

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

October 10, 1967 Volume 843 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 106,166 (JOHNSON'S), S. C. Johnson & Sons, Inc., Powdered wax, prepared wax, wood dye, paste wood filler, varnish remover and floor cleaner; **Reg. No. 176,953**, same, Polishing brushes; **Reg. No. 176,495**, same, Prepared wax in paste, powdered, and liquid forms for finishing and polishing floors and interior woodwork, and for paint and varnish remover; **Reg. No. 224,356**, same, Varnish; **Reg. No. 227,213**, same, Electric floor-polishing machines; **Reg. No. 230,757**, same, Oil and spirit stains, varnish, and wood and crack filler; **Reg. No. 241,695**, same, Prepared wax, in paste, in powdered, or liquid form; **Reg. No. 247,965**, same, Lacquers; **Reg. No. 260,874** (JOHNSON'S AND DESIGN), same, Wax for coating and polishing wood, metal, and other surfaces and lacquers; **Reg. No. 261,319**, same, Polishing wax for coating and polishing wood, metal, and other surfaces; **Reg. No. 264,655** (JOHNSON'S WAX AND DESIGN), same, Polishing wax for coating and polishing wood, metal and other surfaces; **Reg. No. 265,536**, same, Wax for coating and polishing wood, metal, and other surfaces and lacquer; **Reg. No. 310,728** (JOHNSON'S AND DESIGN), same, Wax for coating and polishing wood, metal, and other surfaces, automobile cleaner and lacquer; **Reg. No. 336,511** (JOHNSON'S), same, Liquid wax polish for finishing and coating furniture and interior finished surfaces; **Reg. No. 344,112** (JOHNSON'S GLO-COAT), same, Liquid polish for finishing and coating floors and other surfaces of wood, linoleum, rubber, cork, tile, asphalt, concrete, cement, composition, mastic, magnesite, terrazzo, marble, travertine, stone, slate, and metal, and other materials; **Reg. No. 379,681** (JOHNSON'S TRAFFIC-COTE), same, Varnish; **Reg. No. 387,149** (JOHNSON'S BLEM), same, Cleaner for removing blemishes, white rings, scratches, and other stains and surface defects from wood surfaces; **Reg. No. 387,150** (JOHNSON'S SHUR-TRED), same, Liquid polish for finishing and coating floors and other surfaces of wood, linoleum, rubber, cork, tile, asphalt, concrete, cement, composition, mastic, magnesite, terrazzo, marble, travertine, stone, slate, and metal; **Reg. No. 389,110** (JOHNSON'S), same, Rubber dressing to coat, preserve, renew, and clean all rubber, automotive and household articles; **Reg. No. 389,111** (JOHNSON'S RUBBER DRESSING), same, Rubber dressing to coat, preserve, renew, and clean all rubber, automotive, and household articles; **Reg. No. 389,112** (JOHNSON'S WAX), same, Liquid wax polish for finishing and coating furniture and interior and exterior finished surfaces; **Reg. No. 389,113** (JOHNSON'S), same, Liquid wax polish for finishing and coating furniture and interior and exterior finished surfaces; **Reg. No. 460,242**, same, Cleaner for removing old wax and wax emulsions from floors and other surfaces; **Reg. No. 522,854** (JOHNSON'S SELBST-GLANZ), same, Floor polish; **Reg. No. 532,619** (JOHNSON'S ANT KILLER), same, Insecticide; **Reg. No. 541,660** (JOHNSON'S), same, Combination cleaning and polishing preparation for automobiles and enameled and painted surfaces; **Reg. No. 560,338**, same, House-

CONDITION OF TRADEMARK APPLICATIONS AS OF AUGUST 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,726
Date of oldest new application	Oct. 18, 1966
Date of oldest amended application (filing date)	July 5, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-25-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-25-66	1-14-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-18-66	7-5-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-24-66	10-30-64
Renewals (All Classes)	7-3-67	
Sec. 12(c) Publications (All Classes)	6-29-67	

Applications filed during the month of August 1967—2,513

Registrations Issued ---------- 433—No. 836,484 to No. 836,916
Renewals Issued ---------- 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

hold cleaner for cleaning oriental and domestic rugs, upholstery, woolens, woodwork, Venetian blinds, walls, and tile; **Reg. No. 642,931**, same, Long-handled, hand-manipulated applicator to facilitate cleaning and coating of floors and other surfaces; **Reg. No. 643,807**, same, Preparations for wax coating agricultural produce; **Reg. No. 646,281**, same, Laundry wax-starch; **Reg. No. 647,655**, same, Laundry and dry cleaning preparation for making fabrics water repellent and stain resistant; **Reg. No. 649,929**, same, Polishes, dressings, and cleaners for shoes; **Reg. No. 699,513**, same, Metal working preparations for use as lubricants and/or coolants; **Reg. No. 706,486** (JOHNSON'S SHINE-UP), same, Preparation for cleaning and waxing; **Reg. No. 717,018** (JOHNSON'S), same, Phenol derivatives and synthetic resinous compositions, both kinds of products being for general use in the industrial arts; **Reg. No. 718,418**, same, Preparations in paste and liquid form for polishing, protecting, and adding color to leather surfaces of shoes and other leather goods; **Reg. No. 726,593**, same, Cleaners for use on hard, resilient and soft surfaces in and around the home and in commercial, institutional and industrial establishments; **Reg. No. 733,213** (JOHNSON'S SHINE), same, Preparations for polishing and protecting hard resilient surfaces; **Reg. No. 780,726** (JOHNSON'S), same, All purpose cleaners, and all purpose cleaners having incidental germicidal, deodorizing and sanitizing properties; **Reg. No. 790,861**, same, Phenolic derivatives and synthetic resinous compositions, both kinds of products being for general use in the industrial arts, **filed July 5, 1967, D.C. Del. (Wilmington), Doc. 3374, *S. C. Johnson & Son, Inc.* v. *Johnson Home Products, Inc.***

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 235,759. Lombardi—Societa Italiana Lavorazioni Alimentari S.I.L.A. S.p.A., Ferrara, Italy. Filed Jan. 4, 1966.

LOMBARDI

Priority claimed under Sec. 44(d) on Italian application filed July 14, 1965; Reg. No. 173,934, dated Dec. 15, 1965.

Class 45—Soft Drinks and Carbonated Waters

For Canned and Bottled Soft Drinks, Powdered Fruit and Flavoring Agents for Flavoring and Making Soft Drinks, and Flavoring Mineral Waters.

Class 46—Foods and Ingredients of Foods

For Food and Food Products, Including Those Specially Prepared for Infants and Invalids—Namely, Canned, Whole and Sliced Fruits, Canned and Bottled Fruit Juices and Nectars, Bouillon Cubes, Dried and Canned Prepared Soups and Soup Mixes, Powdered Puddings and Instant Pudding Mixtures, Canned Prepared Vegetables, Powdered Eggs, Canned and Powdered Milk, Cheese and Butter, Edible Animal and Vegetable Oils and Fats, Coffee Substitutes, Dried Breakfast Cereals, Canned and Bottled Jams, Jellies and Marmalade, Bottled Honey; Canned and Packaged Condiments, Namely, Salt and Pepper.

SN 239,571. The Acme Shear Company, Bridgeport, Conn. Filed Feb. 18, 1966.

KLEENCUT

Owner of Reg. Nos. 522,059, 698,534, and 708,706.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Knives and Knife Blades.
First use about Jan. 1, 1962.

Class 44—Dental, Medical, and Surgical Appliances

For Manicure Implements—Namely, Nail Clippers, Tweezers, Nail Files, and Cuticle Scissors.
First use about Nov. 1, 1961.

SN 242,699. Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. Filed Apr. 5, 1966.

QUINTUS

Owner of Swedish Reg. Nos. 104,859, dated Jan. 11, 1963, and 110,490, dated July 24, 1964.

Class 4—Abrasives and Polishing Materials

For Grinding Discs and Grinding Stones.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mechanical Machining Tools, Cutting Tools, Grinding Tools for Metals and Other Hard Material, Such as Stone, Glass and Ceramic Material and Earth Drills, Machine Saws, Mechanical Reamers, Drills, Drill Borers, Mining Drills, Rock Drills, Cutters, Lathe Tools, Screw Taps, Saw Blades and Files in the Form of Machine Parts, Scraping Iron, Chisels, Scrapers, Presses and Parts for Same, Draw Benches and Parts for Same, and Mill Stands and Parts for Same, All Both Electrical and Mechanical.

SN 244,330. Kabushiki Kaisha Wadagen (Wadagen Co., Ltd.), Minato-ku, Tokyo, Japan. Filed Apr. 26, 1966.

WELDAN

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hollow Ware of Non-Precious Materials.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Flatware of Non-Precious Metal.

Class 28—Jewelry and Precious-Metal Ware

For Flatware and Hollow Ware Made of or Plated With Precious Metals.

First use on or about May 1, 1957; in commerce on or about Apr. 1, 1958.

SN 250,358. Crystal Greetings, Inc., Waukegan, Ill. Filed July 15, 1966.

EXQUISITE

Class 37—Paper and Stationery

For Gift Wrapping Paper.

Class 40—Fancy Goods, Furnishings, and Notions

For Ribbon Bows.

First use on or about Aug. 28, 1964.

SN 253,027. The Fur Seal Processing Corporation, New York, N.Y. Filed Aug. 24, 1966.



Class 1—Raw or Partly Prepared Materials

For Processed Fur Pelts.

Class 39—Clothing

For Garments Made Wholly or in Part of Sealskin—Namely, Coats, Scarves, Jackets, Stoles, Capes, Hats, Boas, and Muffs.

First use June 30, 1966.

SN 255,493. J. C. Zobrist Company, Charleston, W. Va. Filed Oct. 3, 1966.



Owner of Reg. No. 415,438.

Class 51—Cosmetics and Toilet Preparations

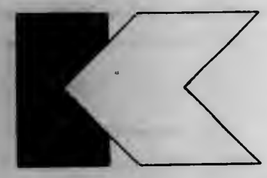
For All-Purpose Skin Lotions.

Class 106—Material Treatment

For Custom Manufacture and Packaging of Chemical Products Such as Cleaners, Deodorizing Products, Bactericidal Products, Wax Removers, Vehicle and Tire Cleaners, and the Like for Others.

First use at least as early as Sept. 1, 1944.

SN 256,253. Kennametal Inc., Latrobe, Pa. Filed Oct. 12, 1966.



Owner of Reg. Nos. 528,690, 776,137, and others.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Metal Products in the Form of Tools and Parts for Machinery—Namely, Mining Tools, Cutting Inserts, and Tool Holders.

First use Apr. 15, 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Anti-Skid Tire Studs.

First use Apr. 15, 1965.

SN 257,550. Baldwin-Lima-Hamilton Corporation, Chicago, Ill. Filed Oct. 31, 1966.

BLH

Class 21—Electrical Apparatus, Machines, and Supplies

For Transducers.

First use Dec. 31, 1957.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Power Graders, Cranes, Compaction Units, Street Sweepers, Power Shovels, Drag Lines, Pull Shovels, Front end Loaders, Rock Crushing Units, Road Rollers, Asphalt Plants, Pavers, Dust Collectors, Turbines, Metal Working Machines, Extrusion Presses, Forging Presses, Locomotive and Diesel Engine Renewal Parts, Governors, Clutches, Machinery Shaft Couplings and Water Pumps.

First use Dec. 1, 1960.

Class 26—Measuring and Scientific Appliances

For Strain Gages, Thermocouples, and Electronic Measuring Instruments Comprising Process Control Instruments, Strain Indicators, Calibrators, Data Recording Scanners, and Strip Chart Recorders.

First use Dec. 31, 1957.

Class 31—Filters and Refrigerators

For Water Distillation and Purification Plants Comprising Pumps, Heaters, Condensors and Flash Chambers.

First use Mar. 31, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Steam Generators and Water Heaters.

First use Mar. 31, 1966.

SN 262,538. Formco, Inc., Cincinnati, Ohio. Filed Jan. 16, 1967.

FORMCO

Class 12—Construction Materials

For Window Sills and Doors.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Sinks, Faucets, and Lavatories.

Class 32—Furniture and Upholstery

For Bar Tops, Desk Tops, Kitchen Cabinets, Sink Tops, Table Tops, Vanities, and Vanity Tops.

First use Nov. 29, 1957.

SN 264,992. Trans-Dapt of California, Long Beach, Calif. Filed Feb. 17, 1967.



Class 19—Vehicles

For Vehicles—Namely, Motorcycles.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Parts and Equipment—Namely, Exhaust Headers, Transmission Adapter Plates, Transmission Protector Shields, Carburetor Adapter Plates, and Exhaust Collector Pipes.

First use on or about Aug. 30, 1962.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 248,154. National Lead Company, New York, N.Y. Filed June 15, 1966.



Owner of Reg. Nos. 62,136, 802,112, and others.

For Acrylic Plastic in Sheet and Powdered Form.

First use on or about May 15, 1966.

Class 2—Receptacles

SN 244,611. The Ohio Art Company, Bryan, Ohio. Filed Apr. 29, 1966.

BOND XX

For Lunch Boxes and Lunch Pails.

First use Dec. 8, 1965.

SN 264,095. Plastics, Inc., St. Paul, Minn. Filed Feb. 6, 1967.

PLASSWARE

For Plastic Cups and Glasses.

First use Oct. 17, 1966.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 248,295. Brumley-Donaldson Company, Huntington Park, Calif. Filed June 17, 1966.

DALES BETTER PADS

The term "Better Pads" is disclaimed apart from the mark as shown.

For Rubber Hoof Pads for American Saddlebreds, Tennessee Walking Horses, Parade Horses, and Police Horses.

First use Sept. 8, 1965.

SN 264,620. United States Trunk Company, Inc., Fall River, Mass. Filed Feb. 13, 1967.

"SWINGER"

For Luggage—Namely, Trunks, Suit Cases, Attaché Cases, Weekend Cases, Hat Cases, Shoe Cases, Travelling Bags, Pullman Cases, Wardrobe Trunks, Foot Lockers, Empty Men's and Women's Vanity Cases, and Toilet Accessory Cases.

First use Nov. 7, 1966.

SN 265,660. Societe des Chaussures Seducta Charles Jourdan & Fils, Romans (Drome), France. Filed Feb. 28, 1967.



CHARLES JOURDAN

Priority claimed under Sec. 44(d) on French Reg. No. 719,747, dated Aug. 29, 1966. Owner of U.S. Reg. No. 679,333. The name "Charles Jourdan" identifies the director of the corporation whose consent is of record.

For Goods Made of Leather—Namely, Ladies' Bags, Travelling Bags, and Luggage.

SN 265,668. United States Trunk Company, Inc., Fall River, Mass. Filed Feb. 28, 1967.

ELEGANTÉ

For Luggage—Namely, Trunks, Suit Cases, Attaché Cases, Weekend Cases, Hat Cases, Shoe Cases, Travelling Bags, Pullman Cases, Wardrobe Trunks, Wardrobe Cases, Foot Lockers, Empty Men's and Women's Vanity Cases, and Toilet Accessory Cases.

First use Aug. 16, 1966.

Class 4—Abrasives and Polishing Materials

SN 250,977. Kozak Auto Drywash, Inc., Batavia, N.Y. Filed July 25, 1966.

LADY KOZAK

For Polishing Cloths Impregnated With Cleaning and Polishing Ingredients and Intended for Use on Furniture.

First use June 28, 1965.

SN 264,858. Star Diamond Industries, Inc., Harbor City, Calif. Filed Feb. 16, 1967.

GREEN STAR

For Grinding Wheels.

First use Aug. 10, 1964.

SN 270,533. Simoniz Company, Chicago, Ill. Filed May 3, 1967.

TONE

For Cleaning and Polishing Materials for Use on Furniture, Porcelain and Enamel Surfaces, Metals, Plastic Surfaces, Leather and Imitation Leather Upholstery, Ceramic Tile, and Marble.
First use Jan. 7, 1949.

Class 5—Adhesives

SN 242,178. American Cyanamid Company, Wayne, N.J. Filed Mar. 30, 1966.

CYBOND

Owner of Reg. No. 796,577.
For Polyurethane-Based Adhesives, Epoxy-Based Adhesives and Polyester-Based Adhesives for Bonding Metal, Plywood, Wood, Laminates, Rubber, Leather, Fabrics, Paper, etc.
First use Mar. 10, 1966.

SN 251,852. Western Auto Supply Company, Kansas City, Mo. Filed Aug. 5, 1966.

WIZARD

Owner of Reg. No. 645,278 and others.
For Cements—Namely, Activator Cement, Plastic Roof Cement, Cold Patch Cement, Tire Patching Cement, Reliner and Boot Cement, Gasket Shellac, Gasket Forming Adhesive Material.
First use June 1, 1953.

SN 275,626. Chemical Development Corporation, Danvers, Mass. Filed July 10, 1967.



Owner of Reg. No. 693,707.
For General Purpose Adhesive and Mender.
First use April 1957.

Class 6—Chemicals and Chemical Compositions

SN 237,983. Macnaughton-Brooks Limited, Weston, Toronto, Ontario, Canada. Filed Feb. 3, 1966.

CURITE

For Chemical Additive To Insure Proper Cure, Eliminate Shrinkage, Resist Staining, and Prevent Pitting for Terrazzo and Concrete Mixtures.
First use Apr. 18, 1962; in commerce Apr. 18, 1962.

SN 255,284. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Sept. 28, 1966.

BACIDOR

For Cotton Herbicide.
First use Mar. 9, 1961; in commerce July 27, 1966.

Class 7—Cordage

SN 255,148. Global Strapping Company, Dalton, Ga. Filed Aug. 5, 1966.

WELD-LOC

For Non-Metallic Polypropylene Strapping.
First use July 1, 1966.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 242,044. Peterson's Ltd., Inc., New York, N.Y. Filed Mar. 28, 1966.



For Smoking Pipes.
First use at least as early as Feb. 10, 1959.

Class 10—Fertilizers

SN 242,212. The Borden Company, New York, N.Y. Filed Mar. 30, 1966.



For Fertilizer.
First use Jan. 3, 1966.

SN 255,764. Armour Agricultural Chemical Company, Chicago, Ill. Filed Oct. 5, 1966.

VALMOR

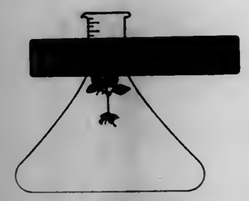
For Fertilizer.
First use Oct. 15, 1965.

SN 262,633. George Sroda, d.b.a. Turkey Peat Co., Amherst Junction, Wis. Filed Jan. 16, 1967.

TURKEY PEAT

For Soil Conditioner and Compost Made With Peat Moss and Poultry Droppings.
First use Apr. 1, 1961.

SN 263,665. W. R. Grace & Co., New York, N.Y. Filed Jan. 31, 1967.



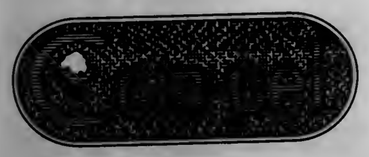
The drawing is lined for red and green, but no claim is made to color.
For Cultures of Nodule Bacteria Which Will Improve the Adhesion of the Inoculant to the Seed and Prolong the Life of Nodule Forming Bacteria.
First use Nov. 1, 1966.

SN 263,666. W. R. Grace & Co., New York, N.Y. Filed Jan. 31, 1967.

GRACE

Owner of Reg. No. 777,996.
For Cultures of Nodule Bacteria Which Will Improve the Adhesion of the Inoculant to the Seed and Prolong the Life of Nodule Forming Bacteria.
First use Nov. 1, 1966.

SN 266,505. Community Gin Company, Scottsdale, Ariz. Filed Mar. 13, 1967.



The drawing is lined for the colors blue and gold.
For Organic Compost Manufactured From Cotton Plants for Improved Growth of Lawns, Plants, and Flowers.
First use Apr. 15, 1965.

Class 11—Inks and Inking Materials

SN 257,748. Allied Carbon and Ribbon Manufacturing Corp., New York, N.Y. Filed Nov. 2, 1966.

ROCKET

For Carbon Paper and Typewriter Ribbons.
First use February 1939.

SN 276,509. The Sherwin-Williams Company, Cleveland, Ohio. Filed July 21, 1967.

KEMSPERSE

For Pigmented Textile Printing Emulsions.
First use October 1966.

Class 12—Construction Materials

SN 253,186. Wilhelm Gail'sche Tonwerke KG.a.A., Giessen, Germany. Filed Aug. 25, 1966.



For Ceramic Building Materials—Namely, Floor and Wall Tile, Plaquettes, Cones, Cone Skirtings, Window Sills, Scum Channels, and the Like.
First use as early as 1935; in commerce Feb. 10, 1964.

SN 253,771. Middlestadt Corporation, Baltimore, Md. Filed Sept. 2, 1966.

COMPRESSEAL

For Cellular Synthetic or Natural Elastomeric Strips for Compression Sealing of Concrete and Structural Joints.
First use Aug. 11, 1966.

SN 258,836. Penn Metal Company, Inc., Boston, Mass. Filed Nov. 16, 1966.

PENWALL

For Movable Interior Partitions and Parts Thereof.
First use Sept. 21, 1961.

SN 261,694. Woodcraft Guild Inc., New York, N.Y. Filed Dec. 29, 1966.

"HEWNRITE"

For Ceiling and Wall Trim, Including Beams.
First use Dec. 12, 1966.

SN 262,172. International Stanley Corporation, Omaha, Nebr. Filed Jan. 9, 1967.



The mark comprises the stylized letters "I" and "S."
For Grain Doors Made of Metal Reinforced Corrugated Paperboard.
First use Oct. 6, 1966.

SN 262,349. Republic Powdered Metals, Inc., Cleveland, Ohio. Filed Jan. 11, 1967.

JET SET

For Patching Cement.
First use Sept. 15, 1966.

SN 262,362. Williams Products, Inc., Hazel Park, Mich. Filed Jan. 11, 1967.

DYNASEAL

For Elastomeric Polyurethane Base Sealing Compound.
First use June 22, 1966.

SN 262,599. Martin-Marietta Corporation, New York, N.Y. Filed Jan. 16, 1967.



No registration rights are claimed for the letter "K" and the word "Mix" apart from the mark as shown, but applicant waives none of his common law rights therein.
For Magnesite Grains for Repair of Furnaces.
First use Nov. 7, 1966.

SN 262,806. Paltier Corporation, Michigan City, Ind. Filed Jan. 18, 1967.

THRESHOLDER

For Anchoring Device for Installing Thresholds or Sills.
First use July 6, 1962.

SN 267,987. Simpson Timber Company, Seattle, Wash. Filed Mar. 30, 1967.

INSULGUARD

For Insulated Floor Cover System, Comprising, Plywood Sandwich Panels With a Polystyrene Foam Core Principally for Ice Arenas.
First use Jan. 24, 1967.

SN 273,554. J. H. Baxter & Co., San Francisco, Calif. Filed June 12, 1967.

J.H.Baxter

"J. H. Baxter" is the name of the founder of applicant's corporation, now deceased. Owner of Reg. No. 826,699.
For Poles, Piling, and Lumber.
First use 1915.

SN 275,628. Chemical Development Corporation, Danvers, Mass. Filed July 10, 1967.



Owner of Reg. No. 693,707.
For General Purpose Filling and Sealing Materials for Making Repairs and for Making Tools, Jigs, Fixtures, Molds and Dies, Said Materials Containing One or More of the Following Constituents: Aluminum, Steel, Bronze, Lead, Zinc, Carbide, Rubber, Asbestos, Glass Fibers, Epoxy Resin, Fluorocarbon Resin, and Sand.
First use Apr. 26, 1954.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 243,204. Water Refining Company, Inc., Middletown, Ohio. Filed Apr. 11, 1966.

FAST-FLO

For Valves for Water Treatment Equipment for Commercial Use.
First use at least as early as 1961.

SN 246,497. Supreme Automotive Manufacturing Corp., Brooklyn, N.Y. Filed May 24, 1966.

SU-PLATE

For Automotive Products—Namely, Battery Terminal Bolts, Brake Cable Adjusters, Bumper Bolts, Cap Screws, Carriage Bolts, Tail Pipe Hangers and Insulators, Cotter Pins, Drain Cocks, Floor Board Screws, Gear Shift Lever Screws, Headlamp Adjusting Screws, Machine Screws, Manifold Bolts, Moulding Bolts, Muffler Clamps, Nuts of All Kinds, Sheet Metal Screws, Stove Bolts, Striker Plate Screws, Thread Cutting Machine Screws, Tri-Drive Screws, Trim Screws, Metal Washers, and Wire Stops and Muffler Strap and Bolts.
First use Feb. 1, 1966.

SN 254,193. Schlage Lock Company, San Francisco, Calif. Filed Sept. 9, 1966.

CUSH-N-STOP

For Door Check and Door Closer.
First use Nov. 30, 1965.

SN 261,251. The Powers Regulator Company, Skokie, Ill. Filed Dec. 21, 1966.

FLOWRITE

Owner of Reg. No. 570,455.
For Control Valves, for Controlling Fluids and Gases, for Heating and Air Conditioning Systems, Water Heaters and Industrial Processes.
First use at least as early as Jan. 3, 1950.

SN 263,387. The Lamson & Sessions Co., Cleveland, Ohio. Filed Jan. 26, 1967.

SLC

For Rope Clamps.
First use 1954.

SN 268,508. Bob Martin Corporation, Washington, D.C. Filed Apr. 6, 1967.

"Bomarco"

For Construction Screws.
First use Mar. 24, 1967.

Class 14—Metals and Metal Castings and Forgings

SN 230,915. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.



The words "Made in Italy" are disclaimed apart from the mark as shown. Owner of Italian Reg. No. 69,166, dated May 16, 1946.
For Plates, Discs, Bands, Wires, Bars of Copper, Brass, Nickel, Aluminum, and Other Metals.

SN 230,918. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

SMIBRAL

Owner of Italian Reg. No. 134,402, dated Jan. 28, 1958.
For Semifinished Products—Namely, Sheets, Bands, Wires, and Bars Made of Copper Alloys.

SN 230,921. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

MBT

Owner of Italian Reg. No. 143,524, dated May 9, 1959.
For Sheets, Wires, Bars, Bands, and Strips Made of Steel, Copper and Its Alloys, Aluminum and Its Alloys, Nickel and Its Alloys.

SN 230,933. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.



Owner of Italian Reg. No. 140,001, dated Nov. 29, 1958.
For Sheet Steel.

SN 230,934. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.



Owner of Italian Reg. No. 140,002, dated Nov. 29, 1958.
For Sheet Steel.

SN 230,935. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.



Owner of Italian Reg. No. 139,988, dated Nov. 29, 1958.
For Sheet Steel.

SN 230,938. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

S.M.I.-LIMESTRE

Owner of Italian Reg. No. 75,705, dated Sept. 25, 1947.
For Semifinished Metal Products in the Form of Sheets, Plates, Wires, Disks, Bars, and Bands.

SN 244,345. Nippon Kokan Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Apr. 26, 1966.

LEONITE

Owner of Japanese Reg. No. 610,996, dated May 8, 1963.
For Sheared Plate, Light Plate, Hot Rolled Sheets, Cold Rolled Sheets, Surface Treated Sheets, Bars, Sections, Ingots, Slabs, and Billets, All Made of Iron and Steel, and Iron Alloys.

SN 260,792. Wells Manufacturing Company, Skokie, Ill. Filed Dec. 14, 1966.

DURA-BAR

For Cast Iron Bars.
First use on or about Nov. 1, 1966.

Class 15—Oils and Greases

SN 247,174. Ashland Oil & Refining Company, Ashland, Ky. Filed June 3, 1966.

VALVOLINE

Owner of Reg. Nos. 53,237, 700,385, and 766,216.
For Motor Oils, Lubricating Greases, Gasoline, Kerosene, All Being Manufactured From Petroleum Products or Synthetic Products, or a Combination Thereof.
First use at least as early as May 6, 1960.

SN 247,632. Signal Oil and Gas Company, Los Angeles, Calif. Filed June 8, 1966.

HANCOCK 550

Owner of Reg. Nos. 213,522, 276,862, and 303,972.
For Gasoline.
First use Aug. 18, 1965.

SN 250,250. Cristy Chemical Corporation, Worcester, Mass. Filed July 14, 1966.

LIQUID TOW

No claim is made to the word "Liquid" apart from the mark as shown.
For Liquid Fuel Containing Propanol for Emergency Use in Gas Tanks for Motor Vehicles.
First use July 5, 1966.

SN 261,874. Penn Harris Oil Co., Camp Hill, Pa. Filed Jan. 3, 1967.

PENN-HARRIS

For Lubricating Oils and Greases.
First use Apr. 1, 1966.

Class 16—Protective and Decorative Coatings

SN 219,741. Transparent Glass Coatings Company, Los Angeles, Calif. Filed May 25, 1965.



The words "Don't Squint—Tint!!" are disclaimed apart from the mark as shown. The drawing is lined for the colors blue, red, and yellow, but no claim is made to color. Owner of Reg. No. 724,401.
For Transparent Colored Coating for Window Glass of Homes and Vehicles.
First use on or about Feb. 15, 1964.

SN 242,509. Alvin A. Sobel, d.b.a. Masco Chemical Co., New York, N.Y. Filed Apr. 1, 1966.

MASCO

For Lacquer Thinners.
First use Jan. 14, 1925.

SN 247,984. The Valspar Corporation, Rockford, Ill. Filed June 13, 1966.

"TWIN-POUR"

For Epoxy-Type Finishes in the Nature of Paint for Wood and Metal Surfaces, Comprising Undercoaters, Primers, Sealers, and Gloss Finish Coats.
First use about June 1, 1965.

SN 248,884. Blue Ridge Talc Company, Inc., d.b.a. Blue Ridge Paint Works, Henry, Va. Filed June 24, 1966.

VELVA-HUE

For Vinyl Latex Paint.
First use at least as early as Apr. 15, 1951.

SN 251,312. Mason Marking Systems Corporation, Norfolk, Va. Filed July 29, 1966.

MARK-OUT

For Paint for Obliterating Markings on Cartons.
First use on or about July 7, 1966.

SN 251,761. John C. Walter, d.b.a. Organic Products Company, Irving Tex. Filed Aug. 4, 1966.

TORQUE-SEAL

For Protective Coatings—Namely, Lacquers and Identification and Anti-Sabotage Inspector's Lacquer.
First use on or about Feb. 1, 1960.

SN 253,434. Harris Paint Company, Tampa, Fla. Filed Aug. 30, 1966.

Kool-X

For Roof Paints and Heat Reflective Specialty Coatings.
First use on or about Aug. 20, 1957.

Class 18—Medicines and Pharmaceutical Preparations

SN 253,749. Charles E. Frosst & Co., Montreal, Quebec, Canada. Filed Sept. 2, 1966.

ENTROPHEN

Owner of Canadian Reg. No. 135/34521, dated Feb. 21, 1950.
For Analgesic Pharmaceutical Preparations.

SN 259,895. BJR Laboratories, Inc., Shawnee Mission, Kans. Filed Dec. 1, 1966.

BJR Black and Red

The words "Black and Red" are disclaimed apart from the mark as shown.
For Asthma Capsules.
First use July 1, 1966.

SN 260,961. Salsbury Laboratories, Charles City, Iowa. Filed Dec. 16, 1966.

AKLOMIX

For Veterinary Preparations for the Treatment of Gastro-Intestinal Infections and the Stimulation of Growth in Poultry.
First use Nov. 29, 1966.

SN 265,387. American Home Products Corporation, New York, N.Y. Filed Feb. 24, 1967.

LINQUELL

For Preparation for the Symptomatic Relief of Upper Respiratory Congestion.
First use July 12, 1965.

Class 19—Vehicles

SN 238,139. Alfa Romeo S.p.A., Milan, Italy. Filed Dec. 7, 1965.

VELOCE

Priority claimed under Sec. 44(d) on Italian application filed June 11, 1965; Reg. No. 171,229, dated Sept. 7, 1965. The term "Veloce" in Italian means "fast" or "rapid."
For Motor Cars or Automobiles, and Parts Thereof.

SN 244,412. Kawasaki Aircraft Co., Ltd., Ikuta-ku, Kobe, Japan. Filed Apr. 27, 1966.

KAWASAKI superlube

Applicant disclaims the word "Superlube" separately and apart from the mark as shown.
For Motorcycles and Parts Thereof.
First use November 1965; in commerce Dec. 22, 1965.

SN 248,037. Harsco Corporation, Harrisburg, Pa. Filed June 14, 1966.

EAGLE

For Farm Wagons and Wagon Running Gear.
First use June 1, 1918.

SN 248,231. Thomas R. Hubbard, d.b.a. Hubbard Sheet Metal Works, Rocky Mount, Va. Filed June 16, 1966.

FLOAT-WELL

For Pontoon-Type Boats.
First use at least as early as Apr. 26, 1966.

SN 250,067. Western Auto Supply Company, Kansas City, Mo. Filed July 11, 1966.

WIZARD

Owner of Reg. Nos. 584,692, 595,828, 607,013, and others.
For Automobile Camper Trailers, Automobile Wheel Weights; Laundry Carts; Lawn and Garden Carts Including Tractor Hauled Lawn Carts; Radiator Caps, Automobile Door-To-Door Mat Felt Base Carpets.
First use June 1, 1956, on lawn carts.

SN 250,589. Moto Guzzi S.p.A., Milan, Italy. Filed July 19, 1966.

TROTTER

Priority claimed under Sec. 44(d) on Italian application filed Apr. 1, 1966; Reg. No. 179,550, dated July 15, 1966.
For Motor Bicycle.

SN 252,658. Hupp Corporation, Cleveland, Ohio. Filed Aug. 18, 1966.

Hā Dees

Owner of Reg. No. 559,882.
For Automobile Heaters and Parts and Accessories Therefor, More Particularly, Hot Water Heaters Employing Engine Coolant and Engine Fuel Fired Heaters and Automobile Air Conditioners and Parts and Accessories Therefor.
First use Oct. 28, 1947, on automobile heaters.

Class 20—Linoleum and Oiled Cloth

SN 264,883. Stauffer Chemical Company, New York, N.Y. Filed Feb. 17, 1967.

VINCO

For Plastic Wall Covering.
First use Mar. 25, 1957.

SN 275,236. Congoleum-Nairn Inc., Kearny, N.J. Filed July 3, 1967.

CORALTONE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles.
First use June 13, 1967.

SN 275,237. Congoleum-Nairn Inc., Kearny, N.J. Filed July 3, 1967.

CASA GRANDE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles.
First use June 13, 1967.

SN 275,532. Kentile Floors Inc., Brooklyn, N.Y. Filed July 7, 1967.

TANGLEWOOD

For Vinyl Asbestos Tile.
First use June 8, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 230,936. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

SMIMEC

Owner of Italian Reg. No. 149,858, dated June 27, 1960.
For Electric Light Bulb Sockets and Holders.

SN 235,423. Oak Electro/Netics Corp., Crystal Lake, Ill., assignee of Phillips-Eckardt Electronic Corporation, Oakbrook, Ill. Filed Dec. 28, 1965.

VERSAPAC

For Low Amperage Electromechanical Relay, Comprising an Actuating Coil, an Armature and Plural Contacts Operated Thereby.
First use Nov. 1, 1965.

SN 241,417. The Autocall Company, Shelby, Ohio. Filed Mar. 21, 1966.

AUTO-MONITOR

For Automatic Detecting, Reporting, and Annunciating System for Use in Property Supervision and Control.
First use Nov. 10, 1965.

SN 242,368. La Telemecanique Electrique Société Anonyme, Nanterre, Haute-de-Seine, France. Filed Apr. 7, 1966.

CANALIS

Owner of French Reg. No. 411,269, dated Apr. 3, 1951.
For Distribution Systems of Electric Energy—Namely, Power Conduits, Removable Derivation Boxes and Removable Current Supply Attachments Along the Conduits, All of It Being Reinforced and Provided for Connecting and Disconnecting Electric Current Everywhere Within the Given Enclosure.

SN 243,110. Fabri-Tek Incorporated, Minneapolis, Minn. Filed Apr. 11, 1966.

FTI

For Printed and Other Prewired Electronic Circuits and Components of the Electronic Circuits for Use on Computers, Ionizing Radiation, Detection and Measuring Devices, Missile Guiding Equipment, Communications Equipment, Radar Detection Equipment, and Similar Electronic Equipment.
First use June 2, 1965.

SN 251,684. Liberty Combustion Corporation, Syracuse, N.Y. Filed Aug. 4, 1966.

SPARKTRONIC

For Unitary Voltage Generator and Burner Control Assemblies Composed Largely of Electronic and Semiconductor Components for Controlling and Igniting Fluid Fired Burners.
First use Mar. 9, 1966.

SN 251,749. Francis A. Schafer, d.b.a. Brite Glo Enterprises, McHenry, Ill. Filed Aug. 4, 1966.

BRITE GLO

For Table Lamps and TV Lamps.
First use about April 1954.

SN 255,373. Varian Associates, Palo Alto, Calif. Filed Sept. 28, 1966.

VARIAN

For Microwave and Radio Frequency Amplifiers, Filters, Mixers, Modulators, Oscillators, Transmitters, Receivers and Tubes; Microwave Duplexers, Detectors, Noise Generators, Isolators and Pressurized Waveguides and Waveguide Windows; Electric Attenuators, Capacitors, Coils, Solenoids, Switches and Couplers; Current and Voltage Generators, Regulators, Rectifiers and Dividers; Frequency Multipliers, Diplexers and Stabilizers; Television Transmitters and Receivers, Diodes; Atmosphere and Vacuum Furnaces, and Electronic Ion-Getter Vacuum Pumps; Electro, Permanent and Cryogenic Magnets, and Magnetic Field Regulators.
First use in or about November 1949 on klystron tubes.

SN 255,443. Interstate Battery System of America, Inc., Dallas, Tex. Filed Sept. 29, 1966.

INTERSTATE

Owner of Reg. No. 830,122.
For Storage Batteries.
First use April 1953.

SN 256,943. Lahti of Ann Arbor Incorporated, Ann Arbor, Mich. Filed Oct. 21, 1966.

SPHERE-O

For Loudspeakers.
First use Nov. 15, 1965.

SN 257,446. Advance Transformer Co., Chicago, Ill. Filed Oct. 28, 1966.

PREMIER

For Ballasts for Fluorescent Lamps.
First use Oct. 21, 1966.

SN 257,765. Channel Master Corporation, Ellenville, N.Y. Filed Nov. 2, 1966.

VISTA-CHROME

Owner of Reg. No. 770,665.
For Antennas and Parts Thereof.
First use Sept. 28, 1966.

SN 257,781. I.M.S. Corporation, Albuquerque, N. Mex. Filed Nov. 2, 1966.

NIGHT WATCH

For Insect Trap Utilizing an Electric Light.
First use June 9, 1965.

SN 258,521. The Filtron Company, Inc., Flushing, N.Y. Filed Nov. 14, 1966.

LIFE-TERM

For Terminals for Radio Frequency Interference Filters.
First use March 1964.

SN 258,794. Engelhard Industries, Inc., Newark, N.J. Filed Nov. 16, 1966.

LUSTERBOND

For Anodes for Electrolytic Plating Apparatus.
First use May 13, 1966.

SN 258,985. Engelhard Industries, Inc., Newark, N.J. Filed Nov. 18, 1966.

SATINBOND

For Anodes for Electrolytic Plating Apparatus.
First use July 20, 1966.

SN 259,027. S & A Electronics, Inc., Toledo, Ohio. Filed Nov. 18, 1966.

MAGGIE

For Antennas.
First use May 27, 1966.

SN 259,654. Fisher Radio Corporation, Long Island City, N.Y. Filed Nov. 29, 1966.

XP-6

For Speakers.
First use Nov. 13, 1964.

SN 259,971. Semtech Corporation, Newbury Park, Calif. Filed Dec. 2, 1966.

SLIMPAC JR.

For Semiconductor Devices—Namely, Silicon Semiconductor Rectifier Assemblies.
First use on or about Mar. 1, 1966.

SN 259,972. Semtech Corporation, Newbury Park, Calif. Filed Dec. 2, 1966.

ALPAC

For Semiconductor Devices—Namely, Silicon Semiconductor Rectifier Assemblies.
First use on or about June 2, 1966.

SN 259,973. Semtech Corporation, Newbury Park, Calif. Filed Dec. 2, 1966.

SLIMPAC SR.

For Semiconductor Devices—Namely, Silicon Semiconductor Rectifier Assemblies.
First use on or about June 21, 1966.

SN 259,974. Semtech Corporation, Newbury Park, Calif. Filed Dec. 2, 1966.

SLIMPAC

For Semiconductor Devices—Namely, Silicon Semiconductor Rectifier Assemblies.
First use on or about July 27, 1965.

SN 261,843. The Hobart Manufacturing Company, Troy, Ohio. Filed Jan. 3, 1967.

TRIDURA

For Protective Coating Fused on Porcelain Enamel Used on Electric Dishwashing Machines.
First use Nov. 28, 1966.

SN 262,416. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 12, 1967.

XP-55

For Speakers.
First use Jan. 5, 1967.

Class 22 — Games, Toys, and Sporting Goods

SN 251,512. Canor Plarex Inc., Seattle, Wash. Filed Aug. 2, 1966.

SEAFARER

For Buoyant Vests and Jackets.
First use Mar. 2, 1966.

SN 254,044. Flexi-Mat Corporation, Chicago, Ill. Filed Sept. 8, 1966.

CHAMP AT

For Exercise Mat.
First use Aug. 11, 1966.

SN 255,414. Brumberger Co., Inc., Brooklyn, N.Y. Filed Sept. 29, 1966.

ART-A-MATIC

For Battery Operated Art Set or Kit Comprising a Turntable, Unbreakable Bottles, and Art Boards for Making Color Designed Patterns.
First use Mar. 29, 1966.

SN 255,451. My-Toy Company, Inc., Brooklyn, N.Y. Filed Sept. 29, 1966.

½pints

For Dolls and Doll Accessories.
First use July 1966.

SN 256,382. Springbok Editions, Inc., New York, N.Y. Filed Oct. 13, 1966.

"WORDS, WORDS, WORDS"

For Jigsaw Puzzles.
First use July 1, 1966.

SN 256,996. Diane Mecham Casebolt, d.b.a. Ski Dry Boot Co., Saratoga, Calif. Filed Feb. 24, 1966.

SKI DRY

For Plastic Jackets for Ski Boots.
First use on or about Oct. 15, 1965.

SN 257,167. De Luxe Topper Corporation, Elizabeth, N.J. Filed Oct. 25, 1966.

STEVE FALCON

The name "Steve Falcon" is fictitious.
For Toy Guns and Accessories.
First use Oct. 5, 1966.

SN 258,185. Wilson Sporting Goods Co., River Grove, Ill. Filed Nov. 7, 1966.

SUPER-STROKE

Owner of Reg. No. 752,881.
For Golf Clubs.
First use 1922.

SN 260,838. First Flight Company, Chattanooga, Tenn. Filed Dec. 15, 1966.

ROADRUNNER

For Golf Clubs.
First use Sept. 30, 1966.

SN 261,139. Basic Products Development Company, Oakland, Calif. Filed Dec. 20, 1966.

ARROWCOPTER

For Aerial Toys.
First use Aug. 1, 1966.

SN 261,314. Miracle Equipment Company. Inc., Grinnell, Iowa. Filed Dec. 22, 1966.

MIRACLE

For Playground Equipment Comprising Merry-Go-Rounds, Swings, Climbers, and Teeter-Totters.
First use about May 1, 1946, on merry-go-rounds.

SN 261,315. Miracle Equipment Company, Inc., Grinnell, Iowa. Filed Dec. 22, 1966.



The drawing is lined for silver and red.
For Playground Equipment Comprising Merry-Go-Rounds, Swings, Climbers, Teeter-Totters, Slides, Ferris Wheels, and Basket Ball Backboards.
First use Jan. 15, 1964.

SN 261,542. Wilson Sporting Goods Co., River Grove, Ill. Filed Dec. 27, 1966.

BILTMORE

For Golf Clubs and Golf Balls.
First use May 1963.

SN 261,543. Wilson Sporting Goods Co., River Grove, Ill. Filed Dec. 27, 1966.

AER FLO

Owner of Reg. No. 750,471.
For Golf Balls.
First use October 1964.

SN 261,547. Wilson Sporting Goods Co., River Grove, Ill. Filed Dec. 27, 1966.

SNAP ACTION

For Baseball Gloves.
First use 1951.

SN 262,621. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed Jan. 16, 1967.

RA RECREaction

For Athletic Balls.
First use Oct. 18, 1966.

SN 263,727. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 1, 1967.

PRO FOOTBALL

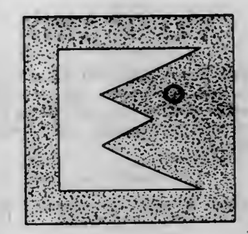
Applicant claims no registration rights in the word "Football" as the name of a game.
For Apparatus Sold as a Unit for Playing a Board Game.
First use Sept. 20, 1966.
Subj. to Intf. with SN 263,656.

SN 263,897. Austin E. Cox, d.b.a. Austin Enterprises, Akron, Ohio. Filed Feb. 3, 1967.



For Chess Sets and Boards.
First use January 1965.

SN 275,107. Glen L. Evans, Inc., Caldwell, Idaho. Filed June 30, 1967.



For Fishing Tackle.
First use June 9, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 233,915. Killoren Company, Appleton, Wis. Filed Dec. 3, 1965.

MIDWEST LAWN-SAVER

For Cable Laying Plow.
First use Sept. 30, 1963.

SN 238,374. Waggon- und Maschinenbau Aktiengesellschaft, Donauworth, Germany. Filed Feb. 8, 1966.

ROBBER

Priority claimed under Sec. 44(d) on German application filed Aug. 14, 1965; Reg. No. 814,702, dated Jan. 14, 1966.
For Power Operated Lifting and Tilting Plaforms for the Mechanical Handling of Tanks and Containers.

SN 238,584. Waukesha Foundry Company, Waukesha, Wis. Filed Feb. 10, 1966.

M/SD

For Continuous Industrial Mayonnaise and Salad Dressing Mixer.
First use Nov. 24, 1965.

SN 240,422. Electro-Seal Corporation, Maywood, N.J. Filed Mar. 8, 1966.



Owner of Reg. No. 659,951.
For Label Applying Machines Utilizing Heat and Pressure in Application of Laundry-Dry Clean Adhesive Labels, Emblems, Tags, Patches, and Ribbons.
First use Feb. 21, 1966.

SN 241,513. Plant Protection Limited, Yalding, Kent, England. Filed Mar. 21, 1966.

ARBOGARD

Owner of British Reg. No. 859,800, dated Feb. 5, 1964.
For Machines and Implements for Applying Fertilizers, Chemicals, Minerals, and the Like, and Being for Use in Agriculture, Horticulture, Silviculture, and Arboriculture; and Parts of Such Goods.

SN 244,322. Goulds Pumps, Inc., Seneca Falls, N.Y. Filed Apr. 26, 1966.

WaterGun

For Electrically Driven Booster Pumps for Water and Other Liquids.
First use Sept. 1, 1965.

SN 244,472. Eastern Engineering Sales Co., Quincy, Mass. Filed Apr. 28, 1966.

€€SCO

For Pit and Quarry Equipment for Aggregate and Mineral Processing, for Sand and Gravel and Crushed Stone Plants, for Plants for Bagging Sand and Gravel and Cement; and for Cement Batching Plants—Namely, Conveyors, Sand Washers, Sand Classifiers, Plate Feeders, Bins and Bin Gates, Hoppers, Pulleys, Elevators, Rotary Screens and Scrubbers, and Centrifugal Classifiers.
First use July 1944.

SN 246,537. Carrier Manufacturing Co., Jeffersonville, Ind. Filed May 25, 1966.

ADJUST-A-FLOW

For Adjustable Rate Vibrating Feeders and Conveying Equipment Used for Handling Bulk Materials.
First use Feb. 27, 1966.

SN 250,037. St. Regis Paper Company, New York, N.Y. Filed July 11, 1966.

ST REGIS

Owner of Reg. Nos. 377,917, 712,869, and others.
For Packaging Machinery Comprising: Bag Filling and Closing Machines and Automatic Scales Sold as a Unit; Baling, and Over-Wrap Machines; and Carton-Forming and Filling Machines.
First use on or about Mar. 28, 1966.

SN 250,063. The Warner & Swasey Company, Cleveland, Ohio. Filed July 11, 1966.

SELECTOMATIC

For Booms for Excavating and Grading Equipment.
First use May 24, 1966.

SN 250,485. Industrial & Merchandising Services S.A., Brussels, Belgium. Filed July 18, 1966.

Owner of Belgian Reg. No. 87,783, dated Sept. 4, 1959.
For Shoe Repair Finishing Machines, Shoe Repair Drilling Machines, Heel Attaching Machines, Shoe Repair Nailing Machines, Portable Shoe Repair Electric Nailing Guns, Sole Driers and Glue Activators for Preglued Soles, and Hand Tools Used in Shoe Repairing.

SN 252,547. Collator Corporation, Seattle, Wash. Filed Aug. 17, 1966.

BOOKMAKER

For Machines for Handling Sheet Material, Including Sheet Collators and Collator Receiver Bins.
First use Apr. 28, 1965.

SN 252,681. Rockwell Manufacturing Company, Pittsburgh, Pa. Filed Aug. 18, 1966.

FLEXANDER

For Tools for Surface Finishing Materials, Parts Thereof, and Attachments and Accessories Thereto.
First use Apr. 21, 1966.

SN 253,241. Patience & Nicholson Limited, Maryborough, Victoria, Australia. Filed Aug. 26, 1966.

P&N

For Twist Drills and Screw-Cutting Taps, Dies and Cutters, Reamers, Slitting Saws, Machine Tools, and Parts Thereof.
First use 1919; in commerce 1954.

SN 255,374. Varian Associates, Palo Alto, Calif. Filed Sept. 28, 1966.

VARIAN

For Vacuum Chambers and Pumps.
First use December 1959 on vacuum pumps.

SN 255,593. Bristol Siddeley Engines Limited, Filton, Bristol, England. Filed Oct. 3, 1966.

ODIN

Owner of British Reg. No. 876,741, dated Mar. 10, 1965.
For Engines for Aircraft and for Missiles.

SN 256,111. Maschinenfabrik Fahr Aktiengesellschaft, Gottmadingen, Kreis Konstanz, Germany. Filed Oct. 10, 1966.

KREISELHEUER CRYZALHOYER

Owner of German Reg. No. 822,488, dated Aug. 1, 1966.
For Haymaking Machines.

SN 257,389. The Hobart Manufacturing Company, Troy, Ohio. Filed Oct. 27, 1966.

FASTRACK

For Commercial Dishwashers.
First use Aug. 25, 1966.

SN 258,231. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Nov. 8, 1966.

ANGLERS AIDE

For Pocket, Fish, and Sheath Knives.
First use Oct. 17, 1966.

SN 258,256. Sheetmaster Corporation, Boca Raton, Fla. Filed Nov. 8, 1966.

SHEETMASTER

For Textile Machines—Namely, an Apparatus for Expanding and/or Spreading Fabric Webs or the Like.
First use at least as early as January 1966.

SN 258,375. Goerlich's, Inc., Toledo, Ohio. Filed Nov. 10, 1966.

SECURITY

For Exhaust Mufflers for Motor Vehicles.
First use Sept. 26, 1962.

SN 258,850. Towle Manufacturing Company, Newburyport, Mass. Filed Nov. 16, 1966.



Owner of Reg. Nos. 521,685, 622,659, and others.
For Cutlery—Namely, Steak Knives, Steak Knife Sets, and Carving Sets.
First use Mar. 24, 1966, on steak knives and steak knife sets.

SN 258,851. Towle Manufacturing Company, d.b.a. Carvel Hall, Newburyport, Mass. Filed Nov. 16, 1966.

PRECEDENT

For Cutlery—Namely, Carving Knives and Fork, Slicers, Parers, Chef's Knife, Trimmer, Steak Knives, and Carving and Steak Knife Sets.
First use May 11, 1966.

SN 258,853. Towle Manufacturing Company, Newburyport, Mass. Filed Nov. 16, 1966.

EXETER

For Stainless Steel Flatware.
First use July 29, 1966.

SN 258,900. A. P. de Sanno & Son, Inc., Phoenixville, Pa. Filed Nov. 17, 1966.

DeSCAL

For Abrasive Cut-Off Machines and Parts Thereof.
First use June 15, 1965.

SN 258,922. Plews Oiler, Inc., Minneapolis, Minn. Filed Nov. 17, 1966.

PLEWS

Owner of Reg. No. 527,071.
For Oilers, Grease Guns, Oil Can Dispensing Spouts, Transmission Fillers, Brake Bleeders, Battery and Radiator Fillers, and Bearing Packers and Cleaners.
First use 1927.

SN 259,158. Ready Devices Corporation, Monrovia, Calif. Filed Nov. 21, 1966.

RDC RECORD-A-NOTE

The words "Record-A-Note" are disclaimed apart from the mark as shown.
For Duplicating Note Autographic Recorder.
First use Oct. 21, 1966.

SN 259,269. Shimano American Corporation, New York, N.Y. Filed Nov. 22, 1966.

CLICK-STICK

For Speed Control Apparatus or Speed Shifter for Bicycles.
First use on or about May 25, 1966.

SN 265,517. Gray Company, Inc., Minneapolis, Minn. Filed Feb. 27, 1967.

HYDRA-SPRAY

Owner of Reg. No. 440,286.
For Airless Spray-Painting Equipment—Namely, Pumps, Hoses, Pressure Regulators, and Spray-Gun at End of Hose.
First use Feb. 11, 1958.

SN 265,518. Gray Company, Inc., Minneapolis, Minn. Filed Feb. 27, 1967.

HYDRA-CLEAN

Owner of Reg. No. 440,286.
For High-Pressure Spray-Washing Equipment for Washing and Rinsing Cars and Other Objects With High Velocity Sprays or Jets of Water (With or Without a Detergent Therein), Including Power-Driven Liquid Pumps, Hoses, Pressure-Regulators, Pressure-Gauges, Spray-Guns and Spray-Nozzles.
First use Aug. 21, 1958.

SN 274,575. Tornado Systems Inc., Phoenix, Ariz. Filed June 23, 1967.

TORNADO SYSTEMS INC.

The words "Systems Inc." are disclaimed apart from the mark as shown.
For Automatic Car Washing Apparatus.
First use Mar. 1, 1967.

SN 275,513. Citation Manufacturing Co., Inc., Siloam Springs, Ark. Filed July 7, 1967.

WAND-A-WASH

For Coin Operated Car Washing Machines.
First use at least as early as Jan. 11, 1967.

Class 24 — Laundry Appliances and Machines

SN 273,234. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1967.

3M

For Press Padding Sheet for Laundry Use.
First use Mar. 20, 1967.

SN 273,239. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1967.

NYPOR

For Press Padding Sheet for Laundry Use.
First use Mar. 20, 1967.

Class 26 — Measuring and Scientific Appliances

SN 234,563. Guildline Instruments Ltd., Smiths Falls, Ontario, Canada. Filed Dec. 14, 1965.

GUILDLINE

For Electrical Measuring Instruments and Standards and Parts Thereof—Namely, Potentiometers; Bridges for Measurement of Resistance, Capacitance, Inductance Temperature; Galvanometers; Photocell Galvanometer Amplifiers; Standards of Voltage and Resistance, for Standards Laboratories; Consant Temperature Oil Baths and Air Baths; Transformer Calibration Equipment; and Special Purpose Press Button and Rotary Switches for Use With the Aforementioned Products.
First use 1965; in commerce on or about Oct. 28, 1965.

SN 234,683. The Bendix Corporation, Detroit, Mich., assignee of A. D. Schneider & Co., Lansing, Mich. Filed Dec. 15, 1965.

TRU-AX

For Expanding Arbor Holding and Measuring Device Specifically Constructed To Rotate a Held Object About Precisely Maintained Center, Presenting Selected Stations of Said Object for Extremely High Tolerance for Gaging and Measuring.
First use Sept. 12, 1960.

SN 242,022. The Kendrey Company, San Mateo, Calif. Filed Mar. 28, 1966.

GEOMEDOODLE

For Construction Kit of Tubular Members and Fittings To Join Members Together Used To Illustrate Plane and Solid Geometric Figures, Physical Lattice Structures, Arrangements of Atoms in Chemical Formulae, and the Like, and Also for Construction of Three Dimensional Art Forms.
First use Mar. 11, 1966.

SN 243,587. Rol-Ruler Co., Riegelsville, Pa. Filed Apr. 15, 1966.

LINEMASTER

For Outrigger Bar Drafting Attachment for a Rolling Type of Ruler.
First use Feb. 5, 1964.

SN 252,629. American District Telegraph Company, New York, N.Y. Filed Aug. 18, 1966.

SIGMAC

For Optical-Electrical High Speed Fire Detection Systems Utilizing Photo-Conductive Infra-Red Sensing Cells.
First use on or about Aug. 2, 1966.

SN 259,959. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Dec. 2, 1966.

DSR

For Optical Stress-Determining Instruments.
First use at least as early as July 13, 1966.

SN 259,962. Recson Incorporated, Chicago, Ill. Filed Dec. 2, 1966.

FOCUS-GRIP

For Camera Accessory Handle.
First use Oct. 12, 1966.

SN 267,472. Thexton Manufacturing Company, Hopkins, Minn. Filed Mar. 22, 1967.

COLD-CHEK

For Antifreeze Solution Tester.
First use Oct. 3, 1966.

SN 267,879. Decca Limited, London, England. Filed Mar. 30, 1967.

SEA-FIX

Owner of U.S. Reg. No. 827,819.
For Scientific Instruments and Apparatus for Use in Ships and Aircraft in Connection With Surveys and Position-Fixing—Namely, Remote Indicators, Left-Right Indicators, Track Plotters, Lane Identification Display Units, Frequency Independent Displays, Fix-Printers, Camera Control and Display Units, Computers, and Parts Therefor.
First use July 14, 1965; in commerce July 14, 1965.

SN 267,924. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Recorders, Meters, Regulators, Gauges, and Other Measuring Devices for Measuring Quantity, Quality, Pressure, and Temperature of Liquids and Gases, and Parts, Controls and Components of the Foregoing.
First use Mar. 8, 1967.

SN 267,925. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Recorders, Meters, Regulators, Gauges, and Other Measuring Devices for Measuring Quantity, Quality, Pressure, and Temperature of Liquids and Gases, and Parts, Controls and Components of the Foregoing.
First use Mar. 7, 1967.

SN 270,023. Wabash Magnetics, Inc., Wabash, Ind. Filed Apr. 26, 1967.

DURAMIL 7

For Digital Computer Tape and for a Formulation of Ingredients Which Make Up an Oxide Coating on the Substrate Material of Digital Computer Tape.
First use Apr. 11, 1967.

SN 273,334. Weight Watchers International, Inc., Forest Hills, N.Y. Filed June 7, 1967.

WW

The mark consists of the letters "WW" in fanciful script, etc. and design.
For Scales.
First use January 1967.

SN 273,928. Washington Scientific Industries, Inc., Minnetonka, Minn. Filed June 15, 1967.

QUADRA-SCAN

For Optical Viewers—Namely, a Portable Aperture Card Viewer.
First use Nov. 2, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 247,623. Rogers, Lunt & Bowlen Company, d.b.a. Lunt Sterling, Greenfield, Mass. Filed June 8, 1966.

ELOQUENCE

Owner of Reg. No. 588,763.
For Sterling Silver Tableware and Silver Plated Holloware—Namely, Trays, Platters, Bowls, Plates, Dishes, Pitchers, Gravy Boats, Centerpieces, and Candlesticks.
First use May 21, 1953, on silverware.

SN 266,729. Stephen L. Campbell, d.b.a. Campbell House, Estes Park, Colo. Filed Mar. 15, 1967.

Campbell House

For Jewelry.
First use Apr. 1, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 260,413. EZ Paintr Corporation, Milwaukee, Wis. Filed Dec. 9, 1966.

REACH-MASTER

For Painting Tool Extension Rod.
First use Nov. 14, 1966.

Class 30 — Crockery, Earthenware, and Porcelain

SN 242,939. Syracuse China Corporation, Syracuse, N.Y., Filed Apr. 7, 1966.

SYRACUSE 1871 China

No claim is made by the applicant to the exclusive use of the word "China" and the date "1871" apart from the mark as shown. Owner of Reg. Nos. 107,744, 302,608, and 734,163.
For Dinnerware and Tableware Made of China.
First use Feb. 16, 1966.

Class 31 — Filters and Refrigerators

SN 267,926. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Apparatus for Water and Waste Conditioning, Apparatus for the Filtration, Separation, Chemical Treatment and Ion Exchange of Fluids, Apparatus for the Deaeration, Purification, Separation and Treatment of Steam, and Parts, Controls and Components of the Foregoing; Refrigerators and Parts, Controls and Components of the Foregoing.
First use Mar. 8, 1967.

SN 267,927. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Apparatus for Water and Waste Conditioning, Apparatus for the Filtration, Separation, Chemical Treatment and Ion Exchange of Fluids, Apparatus for the Deaeration, Purification, Separation and Treatment of Steam, and Parts, Controls and Components of the Foregoing; Refrigerators and Parts, Controls and Components of the Foregoing.
First use Mar. 8, 1967.

Class 32 — Furniture and Upholstery

SN 250,041. Selfix, Inc., Chicago, Ill. Filed July 11, 1966.

PEG-TAPE

Owner of Reg. No. 813,918.
For Self-Adhering Plastic Board for Pegs.
First use at least as early as Jan. 31, 1966; on or about July 12, 1965, as to "Peg-Tape."

SN 252,505. Wood Conversion Company, St. Paul, Minn. Filed Aug. 15, 1966.

CONWED

For Furniture Cushions.
First use on or about Mar. 2, 1966.

SN 257,149. Atlantic Company, Atlanta, Ga. Filed Oct. 25, 1966.

WORLD BAZAAR

For Wood and Rattan Chairs, Headboards, Chests, Tables, Bookcases, Wooden Picture Frames, Bamboo Curtains, and Cabinets.
First use on or about Nov. 15, 1965.

SN 263,035. Duralite Company, Inc., New York, N.Y. Filed Jan. 23, 1967.

DURALOUNGER

Owner of Reg. No. 628,682.
For Reclining Chairs.
First use Dec. 29, 1966.

SN 263,562. Goodman Brothers Mfg. Co., Philadelphia, Pa. Filed Jan. 30, 1967.

ELECTRO-EASE

For Adjustable Frames for Beds, Chairs, and Similar Articles of Furniture.
First use Jan. 25, 1967.

SN 263,831. Heckethorn Manufacturing Company, d.b.a. Heco, Dyersburg, Tenn. Filed Feb. 2, 1967.

HOT-N-TOTE

For Seat Cushions.
First use during August 1966.

SN 263,832. Heckethorn Manufacturing Company, d.b.a. Heco, Dyersburg, Tenn. Filed Feb. 2, 1967.

TOUCH-N-GLO

For Seat Cushions.
First use during August 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 246,533. The Harvey P. Bertram Company, Cincinnati, Ohio. Filed May 25, 1966.

AX-CENT-AIR FANS
AXIAL FLOW CENTRIFUGAL WHEEL AIR MOVING

No claim is made to the exclusive right to the use of the words "Air Fans," "Axial Flow," "Centrifugal Wheel," and "Air Moving."
For Industrial Fans.
First use Dec. 9, 1965.

SN 247,556. Air Devices, Inc., New York, N.Y. Filed June 8, 1966.

AGITAIR AGITRAK

Owner of Reg. Nos. 378,803 and 651,484.
For Air Outlets To Admit Ventilating, Diffusing and Conditioning Air Into a Room.
First use January 1965; January 1939 as to the mark "Agitair."

SN 252,334. Adcola Products Pty. Limited, Mont Albert, Victoria, Australia. Filed Aug. 15, 1966.

ADCOLA

Owner of Australian Reg. No. A155,463, dated Aug. 14, 1959.
For Electric Soldering Tools; and Parts of Electric Soldering Tools—Namely, Heating Units and Soldering and Desoldering Tips.

SN 255,063. Charmglow Products, Inc., Antioch, Ill. Filed Sept. 26, 1966.

CHEFS CHOICE

For Gas Operated Outdoor Cooking Units for Broiling, Grilling, and/or Baking.
First use Mar. 7, 1966.

SN 255,355. Radio Corporation of America, New York, N.Y. Filed Sept. 28, 1966.

RCA

Owner of Reg. Nos. 582,443, 709,060, and others.
For Humidifiers.
First use Aug. 16, 1963.

SN 256,236. St. Regis Paper Company, New York, N.Y. Filed Oct. 11, 1966.

ST REGIS

Owner of Reg. Nos. 377,917, 712,869, and others.
For Food Processing Equipment, Comprising Plate, and Shell and Tube Heat Exchangers and Pasteurizers.
First use on or about Sept. 2, 1966.

SN 267,928. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Apparatus for Heating, Cooling, Humidifying, Dehumidifying, and Conditioning Air, Gas and Fluids, and Parts, Controls and Components of the Foregoing; Heat Exchangers and Flash Tanks, and Parts, Controls and Components of the Foregoing.
First use Mar. 6, 1967.

SN 267,929. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Apparatus for Heating, Cooling, Humidifying, Dehumidifying, and Conditioning Air, Gas and Fluids, and Parts, Controls and Components of the Foregoing; Heat Exchangers and Flash Tanks, and Parts, Controls and Components of the Foregoing.
First use Mar. 6, 1967.

SN 270,233. Crane Co., New York, N.Y. Filed Apr. 28, 1967.

C

For Gas and Oil Fired Warm Air Furnaces, Electric Condensor-Evaporation Air Conditioners, and Parts, Controls and Components Therefor.
First use Jan. 31, 1967.

Class 36 — Musical Instruments and Supplies

SN 242,620. Manna Music Inc., Hollywood, Calif. Filed Apr. 4, 1966.



Applicant disclaims the word "Records," the musical symbol G-Clef, and the musical bar lines apart from their respective uses in the mark as illustrated.
For Phonograph Records.
First use July 27, 1964.

SN 247,121. H. & A. Selmer, Inc., Elkhart, Ind. Filed June 2, 1966.

OCTAMATIC

For Sub-Octave Couplers for Electronic Musical Instruments, Specifically Saxophones, Flutes, Clarinets, and Trumpets.
First use Apr. 12, 1966.

SN 247,558. Akai Electric Company Limited, Ohta-ku, Tokyo, Japan. Filed June 8, 1966.

AKAI

For Magnetic Tape Recording Machine, and Parts Thereof.
First use Dec. 3, 1954; in commerce Sept. 30, 1957.

SN 257,650. Remo, Inc., North Hollywood, Calif. Filed Oct. 31, 1966.

SPARKLTONE

For Drumheads.
First use Oct. 12, 1966.

Class 38 — Prints and Publications

SN 244,408. The Granet Corp., Framingham, Mass. Filed Apr. 27, 1966.



The words "Work Safely" are disclaimed apart from the mark as shown.
For Printed Educational Material Concerning Hand Safety.
First use during September 1962.

SN 255,109. Midcontinent Map Company, Tulsa, Okla. Filed Sept. 26, 1966.

A LAND MARK MAP

The word "Map" is disclaimed apart from the mark as shown.
For Maps.
First use Aug. 1, 1966.

SN 277,250. Childrens Press, Inc., Chicago, Ill. Filed Aug. 1, 1967.



For Children's Educational Books.
First use on or about Apr. 1, 1967.

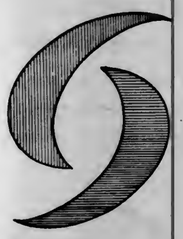
Class 39 — Clothing

SN 143,337. A. S. Beck Shoe Corporation, New York, N.Y. Filed Apr. 30, 1962.

petals
* by Windsor

Owner of Reg. No. 688,368.
For Women's Shoes.
First use Mar. 30, 1962; Jan. 4, 1937, as to "Windsor."

SN 236,073. Eastern Plastics Corp., Sanford, Maine. Filed Jan. 10, 1966.



The drawing is lined for blue and red.
For Molded Plastic Heels for Shoes.
First use in or about June 1964.

SN 247,796. The Thomas Holmes Corporation, Philadelphia, Pa. Filed June 10, 1966.

PRESTO NET

The word "Net" is disclaimed apart from the mark as shown.
For Hair Nets.
First use July 15, 1965.

SN 248,641. Shoe Corporation of America, Columbus, Ohio. Filed June 21, 1966.

Dena
OF ITALY

No claim is made to the words "of Italy" apart from the mark as shown.
For Shoes for Men, Women, and Children.
First use Oct. 1, 1963.

SN 251,895. Coast Empire, Inc., Charlotte, N.C. Filed Aug. 8, 1966.



For Ladies' Nylon Hosiery.
First use June 24, 1966.

SN 252,011. J. Eulan Johnson, d.b.a. Royal J Hosiery Co., Hickory, N.C. Filed Aug. 9, 1966.



For Hosiery.
First use July 3, 1966.

SN 254,591. Dexter Company, Inc., Watertown, Mass. Filed Sept. 16, 1966.

PARADOR

For Women's Hosiery.
First use in or about May 1964.

SN 255,055. Angelica Uniform Company, St. Louis, Mo. Filed Sept. 26, 1966.

BARBAC

For Fabrics Sold Only in Finished Wearing Apparel for Institutional Users.
First use June 16, 1966.

SN 259,220. Cannon Shoe Company, Baltimore, Md. Filed Nov. 22, 1966.

Perfect Day

Owner of Reg. No. 625,473.
For Hosiery.
First use May 19, 1955.

SN 259,574. Plymouth Wholesale Corporation, New York, N.Y. Filed Nov. 28, 1966.

FIFTH AVE.
Designers
GROUP

Owner of Reg. No. 425,911.
For Women's Hats, Dresses, Coats, Underwear, Sweaters, Jackets, and Under and Outer Skirts.
First use Jan. 28, 1943.

SN 260,574. Joseph Love Inc., New York, N.Y. Filed Dec. 12, 1966.

LOVERALLS

For Girls' Outergarments—Namely, Smocks, Playsuits, Jumpers, and Dresses.
First use February 1953.

SN 260,761. Ferdinand Nusbaum, New York, N.Y. Filed Dec. 14, 1966.

FUN CITY

Owner of Reg. No. 829,155.
For Women's Sweaters, Suits, and Skirts.
First use Nov. 28, 1966.

SN 260,931. Freeman-Toor Corporation, Beloit, Wis. Filed Dec. 16, 1966.

BANISTER

Owner of Reg. No. 604,277.
For Men's Shoes.
First use 1845.

SN 261,213. Guido Brustia Couture S.p.A., Vigevano, Pavia, Italy. Filed Dec. 21, 1966.

Guido Brustia

For Footwear.
First use Apr. 5, 1965; in commerce Apr. 5, 1965.

SN 262,247. Maidenform, Inc., New York, N.Y. Filed Jan. 10, 1967.

SLIT SHELL

Owner of Reg. No. 829,509.
For Foundation Garments.
First use Dec. 14, 1966.

SN 263,671. Kayser-Roth Corporation, New York, N.Y. Filed Jan. 31, 1967.

VOULEZ-VOUS

The translation of the French words "Voulez-Vous" into English is "do you wish."
For Ladies' Hosiery.
First use Jan. 10, 1967.

SN 265,874. Gregg Draddy, Inc., New York, N.Y. Filed Mar. 3, 1967.

IPPY
by Gregg Draddy

For Woman's Garment Consisting of Shift With Attached Shorts.
First use Feb. 17, 1967.

SN 276,903. David Crystal, Inc., New York, N.Y. Filed July 27, 1967.

CRYSTAL

Owner of Reg. Nos. 535,038, 764,347, and others.
For Ladies' and Misses' Dresses, Coats, Suits, Blouses, Skirts, and Sweaters.
First use 1906.

SN 277,103. The H. D. Lee Company, Incorporated, Shawnee Mission, Kans. Filed July 31, 1967.

TECH-TWILL

For Trousers, Slacks, and Outer Shirts.
First use on or about June 1, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 260,140. Capital Imports, Ltd., Brentwood, Mo. Filed Dec. 6, 1966.

tête-à-tête

For Hair Pieces—Namely, Wigs and Wiglets.
First use Dec. 4, 1965.

SN 276,992. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

CAMELOT

For Ladies' Wigs and Hair pieces.
First use on or about July 1, 1967.

SN 276,993. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

TREND-WIG

For Ladies' Wigs and Hair Pieces.
First use on or about July 1, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 255,542. Victor S. Noerdlinger, Inc., New York, N.Y. Filed Sept. 30, 1966.

RAYLINE

For Rayon Lining.
First use July 8, 1966.

SN 261,974. Comptoir de l'Industrie Textile de France, Paris, France. Filed Jan. 5, 1967.

GAMO RAMA

For Piece Goods of Cotton Fibres and Cotton and Synthetic Fibres.
First use March 1966; in commerce March 1966.

SN 264,195. Callaway Mills Company, La Grange, Ga. Filed Feb. 8, 1967.

HONESTY

For Tufted Fabrics—Namely, Carpet and Rugs.
First use May 13, 1966.

SN 264,452. J. P. Stevens & Co., Inc., New York, N.Y. Filed Feb. 10, 1967.

MERRYWEATHER

For Woven, Tufted and Needle Punched Textile Carpets.
First use Jan. 31, 1967.

SN 275,372. The General Tire & Rubber Company, Akron, Ohio. Filed July 5, 1967.

WW/75

For Sponge Rubber Carpet Cushion.
First use Mar. 13, 1967.

SN 275,913. Burlington Industries, Inc., New York, N.Y. Filed July 13, 1967.

ULTRA VINO

Owner of Reg. No. 791,905.
For Fabrics in the Piece Composed of Cotton and Synthetic Fibers and Blends Thereof.
First use at least as early as Oct. 19, 1965.

SN 275,914. Burlington Industries, Inc., New York, N.Y. Filed July 13, 1967.

SUPER VINO

Owner of Reg. No. 791,905.
For Fabrics in the Piece Composed of Cotton and Synthetic Fibers and Blends Thereof.
First use at least as early as Apr. 7, 1965.

SN 276,301. Beaunit Corporation, New York, N.Y. Filed July 19, 1967.

BEM

For Knitted Fabric for Lingerie and Loungewear.
First use on or about June 2, 1967.

Class 43—Thread and Yarn

SN 263,913. Hudson Mills, Inc., Paterson, N.J. Filed Feb. 3, 1967.

FIBRLON

For Threads and/or Yarns of Rayon, Cotton, Silk, or Combinations Thereof, and Synthetic Fibers Used in Making of Drapery Fabrics.
First use May 23, 1966.

SN 274,171. Beaunit Corporation, New York, N.Y. Filed June 19, 1967.

BEM

Owner of Reg. No. 308,809 and others.
For Rayon Yarn.
First use on or about May 4, 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 241,842. Richard D'Agostino, Detroit, Mich. Filed Mar. 25, 1966.

STREAKIT

For Assembly of Chemicals and Apparatus for Bleaching Selected Portions of a Woman's Hair.
First use Mar. 24, 1966.

SN 242,698. Zimmer Manufacturing Company, Warsaw, Ind. Filed Apr. 4, 1966.

BROWN AIR DERMATOME

No claim is made to the word "Brown" apart from the mark as shown.
For Surgical Instrument for Removing Skin or Grafting.
First use Aug. 25, 1964.

SN 245,239. Ritter Pfaudler Corporation, Rochester, N.Y. Filed May 9, 1966.

UNIFLEX

For Diathermy Apparatus and Accessories for Producing Heat Within Body Tissues—Namely, High Frequency Electrical Current Generators, and Applicators for Coupling the High Frequency Current to the Treatment Area.
First use Apr. 22, 1965.

SN 246,505. Whirl Jet Corporation, Encino, Calif. Filed May 24, 1966.

BENSON Whirl Jet

For Chair Device Comprising a Continuous Hollow Tubing Having Apertures Through Which Air Is Forced Causing Turbulence in the Water in Which the Chair Device is Immersed.
First use Mar. 2, 1964.

SN 247,640. Standard X-Ray Company, Chicago, Ill. Filed June 8, 1966.

OPTIMA-102

For Diagnostic X-Ray Equipment.
First use Sept. 25, 1964.

SN 246,795. F.R.A. di Mignone & Cherio, Cisterna d'Asti, Italy. Filed June 23, 1966.

SURGIFIX

Priority claimed under Sec. 44(d) on Italian application filed Feb. 22, 1966; Reg. No. 178,450, dated May 27, 1966.
For Polystretchable Elastic Sheaths To Keep Dressing in Position.

SN 249,343. J. O. McKeever and Joe B. Simmons, Jr. (partnership), Odessa, Tex. Filed June 30, 1966.

Figuremagic

For Electronic Exerciser Machine.
First use May 24, 1965.

SN 276,900. Instrumentation Associates Inc., New York, N.Y. Filed July 27, 1967.

DIFFUSIONET

For Apparatus for Testing and Measuring the Permeability of Gases Through Lung Membranes.
First use July 21, 1967.

SN 276,902. Instrumentation Associates Inc., New York, N.Y. Filed July 27, 1967.

DIFFUSIONETTE

For Apparatus for Testing and Measuring the Permeability of Gases Through Lung Membranes.
First use July 24, 1967.

Class 45—Soft Drinks and Carbonated Waters

SN 241,579. A. M. Braswell, Jr. Food Company, Inc., Statesboro, Ga. Filed Mar. 22, 1966.

BRASWELL'S Juiced-RITE

For Ready To Serve Orange Flavored Food Drink.
First use on or before May 26, 1959.

SN 270,733. PepsiCo, Inc., New York, N.Y. Filed May 5, 1967.

TROPIC SURF

For Soft Drinks.
First use Apr. 12, 1967.

SN 273,922. PepsiCo, Inc., New York, N.Y. Filed June 15, 1967.

SURF

Owner of Reg. No. 783,287.
For Soft Drinks.
First use May 1, 1967.

Class 46—Foods and Ingredients of Foods

SN 237,130. Ellen Hull Leonard, d.b.a. A. S. Hull Co., Burlington, Vt. Filed Jan. 24, 1966.

HULL

For Food Flavoring Extracts, Food Flavoring Concentrates and Food Colors.
First use June 1924.

SN 240,245. Big D Foods Co., Chicago, Ill. Filed Mar. 7, 1966.

BIG "D"

Owner of Reg. Nos. 782,155 and 782,158.
For Ice Cream, Ice Milk, Fluid Milk, Fresh Eggs, Salt, Seasoning Compounds of a Spice Nature, Canned Vegetables, Canned Fruits; Prepared Meat Products—Namely, Ham, Bacon, Sausages, Luncheon Meats, Meat Loafs; and Salad Dressing.
First use Oct. 14, 1962.

SN 244,248. Ralston Purina Company, St. Louis, Mo. Filed Apr. 25, 1966.

CHUCK WAGON

Owner of Reg. No. 368,073.
For Dog Food.
First use Feb. 22, 1966.

SN 244,483. General Flavors Inc., Jamaica, N.Y. Filed Apr. 28, 1966.

LEMON MASTER

The word "Lemon" is disclaimed apart from the mark as shown.
For Powdered Lemon Flavoring.
First use Dec. 22, 1964.

SN 245,908. Carnation Company, Los Angeles, Calif. Filed May 18, 1966.

FRUIT PIZZA

Applicant disclaims any exclusive right to the use of the word "Fruit" apart from the mark as a whole.
For Frozen Dessert Consisting of a Combination of Pastry and Fruit Components.
First use May 3, 1966.

SN 249,554. The Nestlé Company, Inc., White Plains, N.Y. Filed July 5, 1966.

VIKING

Owner of Reg. No. 70,001.
For Chocolate Coating Used in Food Manufacturing.
First use Mar. 11, 1940.

SN 253,243. Red Arrow Products Corporation, Milwaukee, Wis. Filed Aug. 26, 1966.

SMOKEZEST

For Aqueous Solution of Natural Wood Smoke Flavoring.
First use Aug. 12, 1966.

SN 255,705. The Governors of the University of Toronto, Toronto, Ontario, Canada. Filed Oct. 4, 1966.

UNIMIX

Owner of Canadian Reg. No. 137,272, dated Sept. 11, 1964.
For Gluten-Free Mix of Ingredients for Use in Baking of Foods—Namely, Bread, Cakes, Cookies, Cupcakes, Macaroons, and Like Bakery Products.

SN 257,503. Grace L. McKellop, d.b.a. The Sweet Shop, Cadillac, Mich. Filed Oct. 28, 1966.

Cadillac SNOW BIRDS

For Candies.
First use Sept. 16, 1963.

SN 257,655. Edward Sharp & Sons Limited, Maidstone, Kent, England. Filed Oct. 31, 1966.

BUTTERSNAP

Owner of British Reg. No. 866,720, dated July 10, 1964.
For Chocolate Coated Toffee.

SN 257,848. Frito-Lay, Inc., Dallas, Tex. Filed Nov. 3, 1966.

FRITO-LAY

Owner of Reg. Nos. 306,005, 766,005, and others.
For Corn Chips, Potato Chips, Cheese Flavored Puffed Corn Snack, Pretzels, Fried Pork Skins, Canned Chicken Liver Dip; Dehydrated Dip Mixes, Specifically, Onion, Green Onion, Caeser, Bleu Cheese, Horseradish, Kosher Dill, Chili Con Queso, and Bacon and Cheese; Cracker Sandwiches, Canned and Packaged Nut Meats, Popped Popcorn, Canned Bean Dip, Canned Beans, Canned Beans and Franks, Canned Lima Beans and Ham, Canned Rice, Canned Corned Beef Hash, Bottled Chili Powder, Canned Enchiladas, Canned Chili (With and Without Beans), Canned Tamales, Canned Barbecued Beef, Canned Spaghetti and Meat Balls, Canned Gravy and Beef, and Canned Beef Stew.
First use January 1962.

SN 257,991. Seaboard Allied Milling Corporation, d.b.a. George Urban Milling Company, Kansas City, Mo. Filed Nov. 4, 1966.

SPRING-HEARTH

For Flour.
First use Oct. 17, 1966.

SN 258,169. The Theobald Industries, Harrison, N.J. Filed Nov. 7, 1966.

Doña Pura

The word "Pura" is disclaimed apart from the mark as shown. The Spanish words "Dona" and "Pura" mean "lady or woman" and "pure," respectively.
For Lard.
First use November 1964.

SN 259,154. Piggly Wiggly Corporation, Jacksonville, Fla. Filed Nov. 21, 1966.

Golden Best

No claim is made to the word "Best" apart from the mark as shown.
For Sliced Bacon.
First use Oct. 25, 1965.

SN 260,615. Wajay Bakery, Inc., Miami, Fla. Filed Dec. 12, 1966.

SUAVE

For Crackers, Biscuits, and Breads.
First use Mar. 1, 1966.

SN 261,988. Horner Sales Corporation, Pittsburgh, Pa. Filed Jan. 5, 1967.

NOVELICE

For Stabilizers Adapted To Be Incorporated Into Water Ice, Ice Milk, and the Like.
First use Oct. 29, 1965.

SN 262,124. Caravetta Foods Co., Chicago, Ill. Filed Jan. 9, 1967.

MONTE CARLO

For Cheese, Canned Tomatoes, Tomato Puree, Tomato Paste, and Pizza Sauce.
First use June 30, 1933.

SN 263,291. Potter-McCune Company, McKeesport, Pa. Filed Jan. 25, 1967.

MASTER CHEF

Owner of Reg. No. 637,805.
For Soup Bases, Pickle Relish, Frozen Prepared Potatoes, and Canned Vegetables.
First use Nov. 27, 1956.

SN 263,391. Morgan Packing Co., Inc., Austin, Ind. Filed Jan. 26, 1967.

RED KEY

For Canned Tomatoes, Canned Tomato Juice, and Canned Pork and Beans.
First use at least as early as Oct. 14, 1966.

SN 263,582. Kees & Company, Chicago, Ill. Filed Jan. 30, 1967.

RICH-MO-LASS

For Dried Molasses Animal and Poultry Food Supplement.
First use Jan. 7, 1965.

SN 270,034. Laura Lee Candies, Inc., d.b.a. Laura Lee, Miami, Fla. Filed Apr. 26, 1967.

TASTE CRUISE

For Candies.
First use Mar. 15, 1967.

SN 276,998. Bruce Church, Inc., Salinas, Calif. Filed July 28, 1967.

WHITE WING

Owner of Reg. No. 724,577.
For Fresh Melons and Fresh Grapes.
First use at least as early as June 1959.

SN 277,503. Rolland Jones Potatoes, Inc., Rupert, Idaho. Filed Aug. 4, 1967.

KITCHEN KING

For Raw Potatoes.
First use Oct. 28, 1954.

Class 48—Malt Beverages and Liquors

SN 228,883. The Burger Brewing Co., Cincinnati, Ohio. Filed Sept. 29, 1965.

Burger Keg

Applicant disclaims the word "Keg" apart from the mark as shown. Owner of Reg. Nos. 243,662, 503,625, and others.
For Bottled Draft Beer.
First use June 8, 1965.

Class 50—Merchandise Not Otherwise Classified

SN 257,151. Atlantic Company, Atlanta, Ga. Filed Oct. 25, 1966.

WORLD BAZAAR

For Carved Wood Statues, Earthenware Statues, Ceramic Statues, Carved Wood Wall Plaques, Bamboo Chimes, and Doormats.
First use on or about Nov. 15, 1965.

SN 258,238. Marlo Company, St. Paul, Minn. Filed Nov. 8, 1966.

HUGGER PUF

For Kit for Making Padded Garment Hangers, Comprising Hangers, Padding Material, and Decorative Material.
First use Apr. 15, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 264,021. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 6, 1967.

SLICK TRICK

For Leg Cosmetic and Skin Softener.
First use Jan. 9, 1967.

SN 264,022. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 6, 1967.

TWO-ACTS

For Leg Cosmetic and Skin Softener.
First use Jan. 9, 1967.

SN 268,002. Sandi Kelz, d.b.a. Black Garter Dist., New York, N.Y. Filed Mar. 31, 1967.

BLACK GARTER

For Eau de Cologne for Men.
First use Mar. 20, 1967.

SN 269,725. Monsieur Robaire, Inc., Los Angeles, Calif. Filed Apr. 21, 1967.



For Skin Freshener, Eye Oil, Liquid Makeup, Cleansing Liquid, Hand and Body Lotion, Moisturiser, Astringent, Eye Shadow, Translucent Powder, Bath Oil, Cologne, After Shave, Rouge, Lipstick, Eyeliner, and Perfume.
First use Feb. 10, 1967.

Class 52 — Detergents and Soaps

SN 262,782. General Foods Corporation, White Plains, N.Y. Filed Jan. 18, 1967.

TOWER OF POWER

For Laundry Detergent.
First use Dec. 7, 1966.

SN 262,783. General Foods Corporation, White Plains, N.Y. Filed Jan. 18, 1967.

SATURN

For Laundry Detergent.
First use Dec. 7, 1966.

SN 262,979. Texize Chemicals, Inc., Greenville, S.C. Filed Jan. 20, 1967.

CONTACT

For Spray Cleaner for Household Use.
First use Dec. 30, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 226,895. Cape Supply Company, d.b.a. ABC Associated Building Centers, Cape Girardeau, Mo. Filed Sept. 1, 1965.



Without waiving its common law rights, applicant disclaims the exclusive right to the words "Associated Building Centers" apart from the mark as a whole.
For Association Services—Namely, Promoting the Interests of Members in the Building Supply Industry.
First use Nov. 15, 1964.

SN 245,714. Institut Francais du Pétrole, des Carburants et Lubrifiants, Hauts-de-Seine, France. Filed May 16, 1966.

FLEXOTIR

Priority claimed under Sec. 44(d) on French Reg. No. 709,746, dated Feb. 11, 1966.
For Geological and Natural Resources Research and Testing.

SN 252,101. Illinois State Medical Society, Chicago, Ill. Filed Aug. 10, 1966.

DR. SIMS

For Association Services—Namely, Promoting the Interests of Members and Promoting Health by Dissemination of Information to the Public Through News Media Such as Radio, TV, and Newspapers and by Pamphlets, Exhibits, Records, and Personal Appearances.
First use June 1, 1964.

SN 253,829. Master's Fashions, Youngstown, Ohio. Filed Aug. 29, 1966.



For Rental of Formal Wear.
First use on or about July 1, 1961.

SN 254,389. Hilton Hotels Corporation, Chicago, Ill. Filed Sept. 13, 1966.

LADY HILTON

Owner of Reg. Nos. 601,761, 810,877, and others.
For Hotel Services Especially Designed for Women Travellers.
First use Apr. 15, 1966.

SN 256,959. National Taco Company, Eugene, Oreg. Filed Oct. 21, 1966.

TACO TIME

The term "Taco" is disclaimed apart from the mark as shown.
For Restaurant Services.
First use December 1959.

SN 257,253. Coney King International, Inc., Fort Wayne, Ind. Filed Oct. 26, 1966.



For Restaurant Service.
First use Sept. 15, 1959.

SN 261,342. Wometco Blue Circle, Inc., Knoxville, Tenn. Filed Dec. 22, 1966.

BLUE CIRCLE

Owner of Reg. Nos. 738,022 and 833,035.
For Restaurant Services.
First use during 1932.

Class 101 — Advertising and Business

SN 239,793. Photo-Eye Film Service Corporation, Youngstown, Ohio. Filed Feb. 28, 1966.

COLOR-LOC

For Developing and Printing of Color Photographs and the Like.
First use Feb. 1, 1966.

SN 243,847. College Placement Services, Inc., Washington, D.C. Filed Apr. 20, 1966.



For Assisting Negro Institutions of Higher Learning To Develop or Improve the Career Counseling and Placement Programs They Offer to Their Students.
First use Mar. 17, 1966.

SN 250,626. Action Listings, Inc., Chicago, Heights, Ill. Filed July 20, 1966.

ACTION LINE

For Providing Those Who Wish To Buy, Lease, Rent or Charter Construction Equipment, Airplanes and Other Vehicles, With the Identities of Those Who Have the Same Available for Sale, Lease, Rent or Charter, and Vice-Versa.
First use during or before May 1966.

SN 250,627. Action Listings, Inc., Chicago Heights, Ill. Filed July 20, 1966.

ACTION LISTINGS

Applicant claims no exclusive right to the word "Listings" apart from the mark as shown.
For Providing Those Who Wish To Buy, Lease, Rent or Charter Construction Equipment, Airplanes and Other Vehicles, With the Identities of Those Who Have the Same Available for Sale, Lease, Rent or Charter, and Vice-Versa.
First use during or before May 1966.

SN 250,628. Action Listings, Inc., Chicago Heights, Ill. Filed July 20, 1966.

ACTION

For Providing Those Who Wish To Buy, Lease, Rent or Charter Construction Equipment, Airplanes and Other Vehicles, With the Identities of Those Who Have the Same Available for Sale, Lease, Rent or Charter, and Vice-Versa.
First use during or before May 1966.

SN 251,451. Multiples, Inc., New York, N.Y. Filed Aug. 1, 1966.



For Services Rendered in Connection With the Display and Sale of Works of Art for Others.
First use July 1, 1965.

SN 258,880. Associated Food Stores, Inc., Jamaica, N.Y. Filed Nov. 17, 1966.

SUPER A

For Retail Grocery Store Services.
First use Sept. 7, 1966.

SN 263,499. The Western Union Telegraph Company, New York, N.Y. Filed Jan. 27, 1967.

MELODY GRAM

The mark is lined for the colors blue, green, orange, and red.
For Forwarding and Delivering Greeting Records on Behalf of Others for Various Occasions.
First use on or about July 1, 1966.

Class 102 — Insurance and Financial

SN 248,896. Commercial Credit Corporation, Baltimore, Md. Filed June 24, 1966.

CCC

Owner of Reg. No. 795,723.
For Furnishing Credit Services—Namely, Providing Business Loans, Equipment Financing, Retail Financing, and Wholesale Financing.
First use Feb. 7, 1966.

SN 252,263. Midland National Insurance Company, Chicago, Ill., by merger from La Salle Casualty Company, Chicago, Ill. Filed Aug. 12, 1966.

STOREPAK

For Underwriting of Insurance.
First use June 1963.

SN 253,127. Dean Witter & Co., San Francisco, Calif. Filed Aug. 25, 1966.

THE PEOPLE WHO DIG DEEP

For Underwriting and Brokerage Services in the Field of Securities.
First use May 1964.

SN 253,162. Nassau Insurance Company, Jamaica, N.Y. Filed Aug. 25, 1966.



For Underwriting of Insurance.
First use Mar. 22, 1965.

SN 255,018. Provident Life and Accident Insurance Company, Chattanooga, Tenn. Filed Sept. 23, 1966.

QUAD

For Computerized Analysis of the Claim Payments Made Under Group Plans of Health Insurance.
First use May 6, 1966.

SN 256,862. Return Premiums, Inc., New York, N.Y. Filed Oct. 20, 1966.

RETURN PREMIUMS $ RETURN PREMIUMS, INC.

Applicant disclaims the words "Return Premiums" and "Inc." when used apart from the mark as shown.
For Insurance Consultant Services—Namely, the Rendering of Advice on Insurance and Financial Problems Relating Thereto.
First use May 15, 1966.

SN 268,131. Marion Federal Savings and Loan Association of Grant County, Marion, Ind. Filed Apr. 3, 1967.

MF

For Savings and Loan Services.
First use Aug. 22, 1966.

SN 269,825. Mack Trucks, Inc., Allentown, Pa. Filed Apr. 24, 1967.

Mack

Owner of Reg. Nos. 231,645, 789,599, and others.
For Financing of Purchases of Trucks and Arranging for Insurance Coverage in Connection With Such Financing.
First use October 1965; 1924 in a different form of display.

Class 103 — Construction and Repair

SN 232,675. D–150 Incorporated, Los Angeles, Calif. Filed Nov. 15, 1965.

D-150

For Custom Manufacture of Complete Projection and Photographic Systems for Motion Picture Theaters.
First use in or before the Spring of 1961.

SN 232,676. D–150 Incorporated, Los Angeles, Calif. Filed Nov. 15, 1965.

DIMENSION 150

For Custom Manufacture of Complete Projection and Photographic Systems for Motion Picture Theaters.
First use on or before Dec. 31, 1960.

SN 243,083. Borg-Warner Corporation, Chicago, Ill. Filed Apr. 11, 1966.

TELEDRIFT

For Oil Well Drilling Services—Namely, Providing a Continuous Check on the Angle of Deviation From Perpendicular of the Drill Bit.
First use on or prior to June 2, 1961.

SN 249,798. James F. Rice, Jr., d.b.a. AAA–A1 Floors, Lubbock, Tex. Filed July 7, 1966.

AAA-A1 FLOORS

No claim is made to the word "Floors" apart from the mark as shown.
For Floor Construction, Repair and Cleaning Services of Floors.
First use Mar. 1, 1966.

SN 256,960. Oberson Insulation Co., Royal Oak, Mich. Filed Oct. 21, 1966.

oi

For Services of Installing Sound Insulation, Thermal Insulation, Aluminum Siding, and Acoustical Tile.
First use May 2, 1966.

SN 257,252. William H. Clifton, d.b.a. Orbit Pest Control, Jacksonville, Fla. Filed Oct. 26, 1966.

"Blast Bugs out of this world!" ORBIT PEST CONTROL

No claim is made to the term "Pest Control" or the slogan "Blast Bugs Out of This World," apart from the mark, without waiving any common law rights therein.
For Pest Control Services.
First use on or about Sept. 21, 1966.

Class 104 — Communication

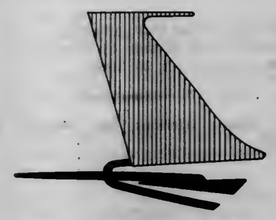
SN 254,345. WAIT, Chicago, Ill. Filed Sept. 12, 1966.

TRY A LITTLE TENDERNESS

For Radio Broadcasting Services.
First use on or about Nov. 25, 1964.

Class 105 — Transportation and Storage

SN 254,620. Northwest Airlines, Inc., d.b.a. Northwest Orient Airlines, St. Paul, Minn. Filed Sept. 16, 1966.



The drawing is lined for red. Owner of Reg. No. 823,788.
For Transportation of Passengers, Cargo, and Mail by Air.
First use May 1965.

SN 255,887. Empress Travel Service Inc., New York, N.Y. Filed Oct. 6, 1966.

FIESTA MIAMI BEACH

Applicant disclaims "Miami Beach" separate and apart from the mark as shown.
For Guided Travel Tour and Travel Agency Services.
First use on or about May 1, 1966.

SN 257,459. Cityrama Corp., New York, N.Y. Filed Oct. 28, 1966.

Europ'rama

For Travel Representative Services—Namely, Providing Travel Tour Plans and Reservation Services to Travel Agencies for Selected Foreign Tours.
First use Feb. 5, 1964.

SN 258,465. Alaska Airlines, Inc., Seattle, Wash. Filed Nov. 14, 1966.

GOLDEN NUGGET JETS

No claim is made to the word "Jets" apart from the mark as shown. Owner of Reg. No. 687,392.
For Air Transportation of Passengers and Freight.
First use Apr. 1, 1966.

SN 259,271. Southern Airways, Inc., Atlanta, Ga. Filed Nov. 22, 1966.



The drawing is lined for blue and gold.
For Transportation of Persons by Airplane.
First use on or before Oct. 25, 1966.

SN 263,241. Alaska Airlines, Inc., Seattle, Wash. Filed Jan. 25, 1967.



No claim is made to the word "Freighter" apart from the mark as shown. Owner of Reg. No. 687,392.
For Air Transportation of Freight and Passengers.
First use Apr. 10, 1966.

SN 273,923. Atlas Van-Lines, Inc., Evansville, Ind. Filed June 15, 1967.



The pictorial representation of the moving van is disclaimed apart from the mark as shown.
For Transporting Household and Other Goods by Motor Van.
First use Jan. 1, 1949.

SN 273,924. Atlas Van-Lines, Inc., Evansville, Ind. Filed June 15, 1967.

ATLAS

For Transporting Household and Other Goods by Motor Van.
First use Jan. 1, 1949.

Class 106 — Material Treatment

SN 250,246. Crab Machine Company, Rockford, Ill. Filed July 14, 1966.



For Custom Machined Parts—Namely, Casings for Header Dies, Shafts, Cylinders, and Pinch-Point Dies, Made To Order and Specifications of Others.
First use September 1964.

Class 107 — Education and Entertainment

SN 242,540. Automation Institute of America, Inc., San Francisco, Calif. Filed Apr. 4, 1966.

AI

Owner of Reg. No. 676,136.
For Education and Training Services in Connection With the Automation Data Processing Systems.
First use Feb. 1, 1956.

SN 246,077. J. Kent Hackleman, Houston, Tex. Filed May 19, 1966.

TRADIO

For Radio Program on Which Listeners Call in With Items To Buy, Sell, or Trade.
First use August 1957.

SN 246,687. Heart O'Wisconsin Broadcasters, Inc., Madison, Wis. Filed May 26, 1966.

BITS ABOUT LEARNING

For Providing Radio Conversations and Interviews With Educators.
First use in or about March 1960.

SN 262,246. Mrs. Samuel Melitzer, d.b.a. Lee R. Steiner, New York, N.Y. Filed Jan. 10, 1967.

PSYCHOLOGICALLY SPEAKING

For Title of a Radio Program Constituting Round-Table Discussions by Experts in Human Relations Who Discuss the Solution to Personal and Emotional Problems That the Radio Listeners Meet in Their Every Day Living.
First use Oct. 12, 1948.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

836,484. TALLEX. West Virginia Pulp and Paper Company. SN 254,081. Pub. 7-25-67. Filed 9-8-66.

836,485. GAF AND DESIGN. General Aniline & Film Corporation. SN 254,147. Pub. 7-25-67. Filed 9-9-66.

836,486. ZIPLOC. The Dow Chemical Company. SN 256,433. Pub. 7-25-67. Filed 10-14-66.

836,487. GENUINE OZARK HICKORY SMOK PAK ETC. AND DESIGN. Ozark Forest Products, Inc. SN 263,688. Pub. 7-25-67. Filed 1-31-67.

836,488. HIGH CHIEF AND DESIGN. King Kullen Grocery Co., Inc. SN 270,106. Pub. 7-25-67. Filed 4-27-67.

Class 2 — Receptacles

836,489. STYRA-PAK. Mallinckrodt Chemical Works. SN 199,905. Pub. 4-13-65. Filed 8-14-64.

836,490. GAY BAGS. Union Carbide Corporation, assignee of Point of View House, Inc. SN 217,389. Pub. 6-14-66. Filed 4-26-65.

836,491. NOSCO. Nosco, Inc. MULTIPLE CLASS (Classes 2, 23, 32, and 37). SN 228,859. Pub. 7-25-67. Filed 9-29-65.

836,492. PAKERKAN. Sealright Co., Inc. SN 239,326. Pub. 7-25-67. Filed 2-21-66.

836,493. SOCK TUCKER. Stanton P. Kunzi. SN 241,668. Pub. 7-25-67. Filed 3-23-66.

836,494. FAK-PAK. Premium Corporation of America, Inc. SN 244,736. Pub. 7-25-67. Filed 5-2-66.

836,495. UNISEAL CASKET. Rex-Metallic Casket Company. SN 247,721. Pub. 7-25-67. Filed 6-9-66.

836,496. AMFORM. American Thermoform Corporation. SN 248,095. Pub. 7-25-67. Filed 6-15-66.

836,497. AMPAK. Amberg File and Index Company. SN 248,405. Pub. 7-25-67. Filed 6-20-66.

836,498. STERILPAC. Rheem Manufacturing Company. SN 249,579. Pub. 7-25-67. Filed 7-5-66.

836,499. CARRY-LITE. Carry-Lite Incorporated. SN 250,821. Pub. 7-25-67. Filed 7-22-66.

836,500. HR AND DESIGN. Household Research Institute. SN 251,060. Pub. 7-25-67. Filed 7-26-66.

836,501. EASY TATCH. Sunbeam Corporation. SN 251,665. Pub. 7-25-67. Filed 8-3-66.

836,502. ALFOIL. Aluminum Foil Packaging Co., d.b.a. Alfoil Co. SN 251,692. Pub. 7-25-67. Filed 8-4-66.

836,503. STA-KLEEN. Action Bag & Envelope Co., Inc. SN 251,985. Pub. 7-25-67. Filed 8-9-66.

836,504. STA-PAK. Action Bag & Envelope Co., Inc. SN 251,989. Pub. 7-25-67. Filed 8-9-66.

836,505. HPD. Armstrong Cork Company. SN 252,454. Pub. 7-25-67. Filed 8-16-66.

836,506. HP. Armstrong Cork Company. SN 252,455. Pub. 7-25-67. Filed 8-16-66.

836,507. CTA. Armstrong Cork Company. SN 252,456. Pub. 7-25-67. Filed 8-16-66.

836,508. C. Armstrong Cork Company. SN 252,457. Pub. 7-25-67. Filed 8-16-66.

836,509. GX. Armstrong Cork Company. SN 252,458. Pub. 7-25-67. Filed 8-16-66.

836,510. HEDLINER. Hedwin Corporation. SN 252,657. Pub. 7-25-67. Filed 8-18-66.

836,511. "BAL" SUPER AERO-LAN. William Bal Corporation. SN 256,786. Pub. 7-25-67. Filed 10-19-66.

836,512. "BAL" SUPER AEROFIBRE. William Bal Corporation. SN 256,787. Pub. 7-25-67. Filed 10-19-66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

836,513. TRAVALONG. Leonard F. Rosen, d.b.a. Leonard F. Rosen & Company. SN 222,421. Pub. 7-25-67. Filed 6-30-65.

836,514. GREEN STRIPE HORSE SHOES AND DESIGN. Brumley-Donaldson Company. SN 248,294. Pub. 7-25-67. Filed 6-17-66.

836,515. COTTAM TRAINING PLATES AND DESIGN. Brumley-Donaldson Company. SN 252,718. Pub. 7-25-67. Filed 8-19-66.

836,516. "STRIPES OF FASHION." Ventura Travelware, Inc. SN 264,260. Pub. 7-25-67. Filed 2-8-67.

Class 4 — Abrasives and Polishing Materials

836,517. VESTA-GLOSS. W. R. Grace & Co. SN 249,327. Pub. 7-25-67. Filed 6-30-66.

836,518. CHORE REDDY AND DESIGN. General Cable Corporation. SN 249,634. Pub. 7-25-67. Filed 7-6-66.

836,519. LIFE LOCK. Felker Manufacturing Company. SN 249,852. Pub. 7-25-67. Filed 7-8-66.

836,520. SUPRA. Edison Brothers Stores Inc. SN 250,367. Pub. 7-25-67. Filed 7-15-66.

Class 5 — Adhesives

836,521. SUN-GLO AND DESIGN. The Goodyear Tire & Rubber Company. SN 231,350. Pub. 7-25-67. Filed 10-11-65.

836,522. GOODYEAR AND DESIGN. The Goodyear Tire & Rubber Company. SN 240,515. Pub. 7-25-67. Filed 3-9-66.

836,523. POOL CALS Union Laboratories, Inc. SN 243,603. Pub. 7-25-67. Filed 4-15-66.

836,524. LIQUI-LAG. The R. K. Le Blond Machine Tool Co. SN 249,168. Pub. 7-25-67. Filed 6-28-66.

836,525. REGAL. International Minerals & Chemical Corporation, assignee of E. J. Lavino and Company. SN 249,242. Pub. 7-25-67. Filed 6-29-66.

836,526. UNISTIK. Brown Company. SN 250,555. Pub. 7-25-67. Filed 7-19-66.

Class 6 — Chemicals and Chemical Compositions

836,527. FAULTLESS AND DESIGN. Faultless Starch Company. SN 199,464. Pub. 6-1-65. Filed 8-7-64.

836,528. ALBRIGHT. Tenneco Chemicals, Inc., by merger from Berkshire Color & Chemical Co. SN 225,921. Pub. 7-25-67. Filed 8-18-65.

836,529. SWEPCO. Southwestern Petroleum Corporation. SN 240,031. Pub. 7-25-67. Filed 3-2-66.

836,530. CUPRASOL. Printing Developments Incorporated. SN 242,281. Pub. 7-25-67. Filed 3-30-66.

836,531. LINCOLN. John Lincoln, d.b.a. The John Lincoln Company. SN 243,684. Pub. 7-25-67. Filed 4-18-66.

836,532. BUTANOX. Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V. SN 247,812. Pub. 7-25-67. Filed 6-10-66.

836,533. LAURYDOL. Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V. SN 247,813. Pub. 7-25-67. Filed 6-10-66.

836,534. LAUROX. Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V. SN 247,815. Pub. 7-25-67. Filed 6-10-66.

836,535. CYCLONOX. Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V. SN 247,816. Pub. 7-25-67. Filed 6-10-66.

836,536. TRIGONOX. Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V. SN 247,817. Pub. 7-25-67. Filed 6-10-66.

836,537. ESTABEX. Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V. SN 247,818. Pub. 7-25-67. Filed 6-10-66.

836,538. ECONOMIX. Chalbar Limited. SN 247,894. Pub. 7-25-67. Filed 6-13-66.

836,539. FORMULA 55. Marshall Hyde, Incorporated. SN 247,926. Pub. 7-25-67. Filed 6-13-66.

836,540. SAVIN. Savin Business Machines Corporation. MULTIPLE CLASS (Classes 6 and 26). SN 251,033. Pub. 7-25-67. Filed 7-26-66.

836,541. DRIFTROL. The Dow Chemical Company. SN 252,551. Pub. 7-25-67. Filed 8-17-66.

836,542. WETAID. Heatbath Corporation. SN 252,736. Pub. 7-25-67. Filed 8-19-66.

836,543. FM INERT. American Gas & Chemicals, Inc. SN 253,269. Pub. 7-25-67. Filed 8-29-66.

836,544. AZOBANE. Shell Oil Company. SN 253,932. Pub. 7-25-67. Filed 11-17-66.

836,545. TURFCIDE. Olin Mathieson Chemical Corporation. SN 263,422. Pub. 7-25-67. Filed 1-27-67.

Class 8 — Smokers' Artides, Not Including Tobacco Products

836,546. PIPE-UPS. Melville Keim, d.b.a. Newport Tell-Tale. SN 241,902. Pub. 7-25-67. Filed 3-25-66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

836,547. AMWAL. American Walnut Co., Inc. SN 251,502. Pub. 7-25-67. Filed 8-2-66.

Class 11 — Inks and Inking Materials

836,548. IT'S THE IMPRESSION THAT COUNTS. Standard Products Corporation. SN 254,806. Pub. 7-25-67. Filed 9-20-66.

Class 12 — Construction Materials

836,549. UNIFIC AND DESIGN. Unific Products, Incorporated. SN 195,902. Pub. 4-13-65. Filed 6-17-64.

836,550. BETONITE. Everguard Coatings (International) Limited. SN 229,961. Pub. 7-25-67. Filed 10-12-65.

836,551. EV-KOTE. Everguard Coatings (International) Limited. SN 229,963. Pub. 7-25-67. Filed 10-12-65.

836,552. EPO-KOTE. Everguard Coatings (International) Limited. SN 229,964. Pub. 7-25-67. Filed 10-12-65.

836,553. LONG-SEAL. International Paper Company. SN 234,033. Pub. 7-25-67. Filed 12-6-65.

836,554. PERIMETER VEE. Weyerhaeuser Company. SN 243,206. Pub. 7-25-67. Filed 4-11-66.

836,555. CAST-CRETE. Cast-Crete Corporation of Florida. SN 243,542. Pub. 7-25-67. Filed 4-15-66.

836,556. SURE-JOINT. Birma Products Corporation. SN 247,882. Pub. 7-25-67. Filed 6-13-66.

836,557. R AND DESIGN. Readco Industries, Inc. SN 252,029. Pub. 7-25-67. Filed 8-9-66.

836,558. RONTHOR. Ronthor Reins Corporation. SN 252,683. Pub. 7-25-67. Filed 8-18-66.

836,559. BJASMA. Bjorksten Research Laboratories, Inc. SN 254,984. Pub. 7-25-67. Filed 9-23-66.

836,560. ALGONQUIN. U.S. Plywood-Champion Papers Inc., by merger and change of name from United States Plywood Corporation. SN 255,481. Pub. 7-11-67. Filed 9-29-66.

836,561. THE LIVELY ONE AND DESIGN. National Homes Corporation. SN 270,104. Pub. 7-25-67. Filed 4-27-67.

836,562. ARBORON. Domtar Limited. SN 270,738. Pub. 7-25-67. Filed 5-5-67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

836,563. MAINLINER. Harvey Aluminum (Incorporated). SN 211,426. Pub. 9-28-65. Filed 2-5-65.

836,564. HIGBEE BUTTONS. Higbee Button Co., Inc. SN 245,311. Pub. 7-25-67. Filed 5-10-66.

836,565. BOSTITCH. Textron Inc., assignee of Bostitch, Inc. SN 249,299. Pub. 7-25-67. Filed 6-30-66.

836,566. ACCENT II. Regal Ware, Inc. SN 249,445. Pub. 7-25-67. Filed 7-1-66.

836,567. Y.K.K. AND DESIGN. Yoshida Kogyo Kabushiki Kaisha. SN 249,462. Pub. 7-25-67. Filed 7-1-66.

836,568. POZ-I-LOK. Phillips Screw Company. SN 249,672. Pub. 7-25-67. Filed 7-6-66.

836,569. ITAS. Italsider S.p.A. SN 249,770. Pub. 7-25-67. Filed 7-7-66.

836,570. RMC. Reynolds Metals Company. SN 249,796. Pub. 7-25-67. Filed 7-7-66.

836,571. HAGER. C. Hager & Sons Hinge Manufacturing Company. SN 251,213. Pub. 7-25-67. Filed 7-28-66.

836,572. DOR-LINE. Dor-Line, Inc. SN 251,398. Pub. 7-25-67. Filed 8-1-66.

836,573. SWIV-LON. Faull & Son Tool & Die Company. SN 251,405. Pub. 7-25-67. Filed 8-1-66.

836,574. MINAC. MAC Valves Inc. SN 252,672. Pub. 7-25-67. Filed 8-18-66.

836,575. DEFLECTOFUSER. FMC Corporation. SN 253,076. Pub. 7-25-67. Filed 8-24-66.

836,576. WEDGE-TITE. Von Duprin, Inc. SN 253,250. Pub. 7-25-67. Filed 8-26-66.

836,577. THETFORD AND DESIGN. Thetford Engineering Corporation. SN 253,362. Pub. 7-25-67. Filed 8-29-66.

836,578. AQUA MAGIC. Thetford Engineering Corporation. SN 253,363. Pub. 7-25-67. Filed 8-29-66.

836,579. DRIL-N-SET. United States Expansion Bolt Company. SN 253,579. Pub. 7-25-67. Filed 8-31-66.

Class 14 — Metals and Metal Castings and Forgings

836,580. PSW PRECISION BRAND AND DESIGN. Precision Steel Warehouse, Inc. SN 247,963. Pub. 7-25-67. Filed 6-13-66.

836,581. BLENWEAVE. Levolor Lorentzen, Inc. SN 251,733. Pub. 7-25-67. Filed 8-4-66.

836,582. COP-R-LUM. Cop-R-Lum Industries, Inc. SN 251,900. Pub. 7-25-67. Filed 8-8-66.

836,583. VERSASTEEL. Crucible Steel Company of America. SN 251,902. Pub. 7-25-67. Filed 8-8-66.

836,584. AMIXALOY. American Metal Climax, Inc., d.b.a. Pyron Company. SN 252,610. Pub. 7-25-67. Filed 7-28-66.

Class 15 — Oils and Greases

836,585. ME-TEE-OR. W. H. Barber Oil Company. SN 250,443. Pub. 7-25-67. Filed 7-18-66.

836,586. SUPER MG. Fleet-Wing Corporation. SN 253,134. Pub. 7-25-67. Filed 8-25-66.

836,587. WM. PENN AND DESIGN. Fleet-Wing Corporation. SN 253,135. Pub. 7-25-67. Filed 8-25-66.

836,588. TOWN HOUSE. California Candle Corporation, by change of name from Royalite Candle Company. SN 253,561. Pub. 7-25-67. Filed 8-31-66.

836,589. LUBRICOOLANT. W. R. Grace & Co. SN 255,431. Pub. 7-25-67. Filed 9-29-66.

836,590. FET. A. W. Chesterton Company. SN 258,669. Pub. 7-25-67. Filed 11-15-66.

836,591. HOPPE'S AND DESIGN. Frank A. Hoppe, Inc. SN 268,854. Pub. 7-25-67. Filed 4-11-67.

Class 16 — Protective and Decorative Coatings

836,592. SWEPCO. Southwestern Petroleum Corporation. SN 240,032. Pub. 7-25-67. Filed 3-2-66.

836,593. FLEXTRED. Kyanize Paints, Inc. SN 263,380. Pub. 7-25-67. Filed 1-26-67.

836,594. FANTAZIA. United Gilsonite Laboratories. SN 263,497. Pub. 7-25-67. Filed 1-27-67.

Class 18 — Medicines and Pharmaceutical Preparations

836,595. TRENCARBO. F. Trenka Chemisch-Pharmazeutische Fabrik. SN 235,805. Pub. 7-25-67. Filed 1-4-66.

836,596. OBRIG. Obrig Chemical Corp. SN 247,393. Pub. 7-25-67. Filed 6-6-66.

836,597. RIDDOHALER. Riddell Products Limited. SN 252,763. Pub. 7-25-67. Filed 8-19-66.

836,598. NOX-IVY. Noxell Corporation. SN 253,980. Pub. 7-25-67. Filed 9-7-66.

836,599. COBAN. Eli Lilly and Company. SN 254,676. Pub. 7-25-67. Filed 9-19-66.

836,600. REXIGEN. Goodrich-Wright Incorporated. SN 255,430. Pub. 7-25-67. Filed 9-29-66.

836,601. TOMAC. American Hospital Supply Corporation. SN 260,391. Pub. 7-25-67. Filed 12-9-66.

836,602. BRONCHODIL. Meyer Laboratories, Inc. SN 263,933. Pub. 7-25-67. Filed 2-3-67.

836,603. BATHANAL. Alfanal Sales Co. SN 265,258. Pub. 7-25-67. Filed 2-23-67.

Class 19 — Vehicles

836,604. MARINE CAMPER. Caco Manufacturing Co. SN 239,222. Pub. 7-25-67. Filed 2-21-66.

836,605. VA-CAR. Williams Automotive Manufacturers, Incorporated. MULTIPLE CLASS (Classes 19, 21, 23, and 35). SN 252,230. Pub. 7-25-67. Filed 8-12-66.

836,606. TOWNLINE. Champion Home Builders Co. SN 254,235. Pub. 7-25-67. Filed 9-12-66.

836,607. ATLAS. Atlas Supply Company. SN 254,500. Pub. 7-25-67. Filed 9-15-66.

836,608. THE CLAM AND DESIGN. Nordam, Inc., d.b.a. Nordam Division. SN 254,618. Pub. 7-25-67. Filed 9-16-66.

836,609. THE CLAM. Nordam, Inc., d.b.a. Nordam Division. SN 254,619. Pub. 7-25-67. Filed 9-16-66.

Class 21 — Electrical Apparatus, Machines, and Supplies

836,605. (See Class 19 for this trademark.)

836,610. SABA. SABA Schwarzwälder Apparate-Bau-Anstalt August Schwer Söhne G.m.b.H. MULTIPLE CLASS (Classes 21, 26, and 36). SN 207,838. Pub. 7-25-67. Filed 12-9-64.

836,611. U-LOK. Appleton Electric Company. SN 227,545. Pub. 7-25-67. Filed 9-10-65.

836,612. R AND DESIGN. Robosonics, Inc. SN 230,901. Pub. 7-25-67. Filed 10-21-65.

836,613. FIREMARK. Rixson Inc. MULTIPLE CLASS (Classes 21 and 26). SN 232,094. Pub. 7-25-67. Filed 11-3-65.

836,614. "ENCORE." Thomas Industries Inc. SN 236,158. Pub. 7-25-67. Filed 1-10-66.

836,615. TELE-SLIM. Tele-Norm Corporation. SN 236,299. Pub. 7-25-67. Filed 1-12-66.

836,616. DYNASORBER. Eaton Yale & Towne Inc. SN 247,013. Pub. 7-25-67. Filed 6-1-66.

836,617. COMMANDER THIRTY-TWO. The Hallicrafters Co. (California corporation), by assignment and change of name from The Hallicrafters Co. (Delaware corporation). SN 248,805. Pub. 7-25-67. Filed 6-23-66.

836,618. LUAU. Hy Glow Products, Inc. SN 249,647. Pub. 7-25-67. Filed 7-6-66.

836,619. GUARANTEED WIRING DEVICES F AND DESIGN. Circle F Industries, Inc. SN 249,948. Pub. 7-25-67. Filed 7-11-66.

836,620. TURBOWRAP. American Enka Corporation. SN 250,334. Pub. 7-25-67. Filed 7-15-66.

836,621. HEAT-GRIP. Natvar Corporation. SN 252,229. Pub. 7-25-67. Filed 7-14-66.

836,622. DOUBLE DIAMOND (DESIGN). The Rucker Manufacturing Company, assignee of Insul-8-Corp. SN 252,386. Pub. 7-25-67. Filed 8-15-66.

836,623. COLORVUE. American Electronic Laboratories, Inc. SN 252,630. Pub. 7-25-67. Filed 8-18-66.

836,624. PERFORMER. Koss Electronics, Inc. SN 252,668. Pub. 7-25-67. Filed 8-18-66.

836,625. ANGELITE. Cima Electronics, Inc. SN 252,724. Pub. 7-25-67. Filed 8-19-66.

836,626. VEM AND DESIGN. Warenzeichenverband VEM e.V. SN 253,069. COLLECTIVE MARK. Pub. 7-25-67. Filed 8-24-66.

836,627. MSW. Triple-A Specialty Company. SN 253,179. Pub. 7-25-67. Filed 8-25-66.

836,628. MOVA-LINE. Carter Products Company, Inc. SN 253,494. Pub. 7-25-67. Filed 8-31-66.

836,629. KWIK-LITE AND DESIGN. Kwik-Lite Manufacturing Corporation. SN 253,973. Pub. 7-25-67. Filed 9-7-66.

836,630. BUC-LARM. Continental Instruments Corp. SN 266,839. Pub. 7-25-67. Filed 3-16-67.

836,631. BY-WORD. Message Systems, Inc. SN 267,887. Pub. 7–25–67. Filed 3–30–67.

836,632. MISCELLANEOUS DESIGN. Message Systems, Inc. SN 267,888. Pub. 7–25–67. Filed 3–30–67.

Class 22—Games, Toys, and Sporting Goods

836,633. LAWNMASTER. Western Import Inc. SN 240,373. Pub. 7–25–67. Filed 3–7–66.

836,634. COMPUTER QUIZ. William G. Nutting, d.b.a. Nutting Associates. SN 240,533. Pub. 7–25–67. Filed 3–9–66.

836,635. DUNKETT. Thomas B. Gilbert, d.b.a. Sta-Tom Company. SN 247,593. Pub. 7–25–67. Filed 6–8–66.

836,636. HC–30. Bear Archery Company. SN 249,830. Pub. 7–25–67. Filed 7–8–66.

836,637. PUPPET PLAYMATES. Instructo Products Company. SN 250,581. Pub. 7–25–67. Filed 7–19–66.

836,638. DIVE TRIO. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 250,598. Pub. 7–25–67. Filed 7–19–66.

836,639. THE LITTLE TWINS & POOCHY. Loral Corporation. SN 254,696. Pub. 7–25–67. Filed 9–19–66.

836,640. SPARTAFLEX AND DESIGN. Major Pool Equipment Corp. SN 255,217. Pub. 7–25–67. Filed 9–27–66.

836,641. AJAY. Ajay Golf Products, Inc. SN 262,747. Pub. 7–25–67. Filed 1–18–67.

836,642. MOON SHOT. Cadaco, Inc. SN 270,327. Pub. 7–25–67. Filed 5–1–67.

836,643. WHEEL & DEAL. Cadaco, Inc. SN 270,328. Pub. 7–25–67. Filed 5–1–67.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

836,491. (See Class 2 for this trademark.)

836,605. (See Class 19 for this trademark.)

836,644. ELECTRO MEASURE. Electro Measure, Inc. SN 236,576. Pub. 7–25–67. Filed 1–17–66.

836,645. POLYCELL. Polycell Products Limited. SN 239,311. Pub. 7–25–67. Filed 2–21–66.

836,646. TUFLINE. Monroe-Tufline Mfg. Co., Inc. SN 241,161. Pub. 7–25–67. Filed 3–16–66.

836,647. POOL-BRITE. Barr Chemical Products, Inc. SN 241,851. Pub. 7–25–67. Filed 3–25–66.

836,648. COLOSSUS. Anderston Clyde Engineers Limited. SN 242,537. Pub. 7–25–67. Filed 4–4–66.

836,649. F AND DESIGN. Futurmill, Inc. SN 245,702. Pub. 7–25–67. Filed 5–16–66.

836,650. WELDCO. The Youngstown Welding & Engineering Company. SN 248,276. Pub. 7–25–67. Filed 6–16–66.

836,651. HI-CONE. Illinois Tool Works Inc. SN 249,328. Pub. 7–25–67. Filed 6–30–66.

836,652. PACA-WAITER. Waupaca Supply Company, Inc. SN 249,458. Pub. 7–25–67. Filed 7–1–66.

836,653. ZIP-FLO. Applied Power Industries, Inc. SN 249,614. Pub. 7–25–67. Filed 7–6–66.

836,654. UNI-SONE. Walker Manufacturing Company. SN 249,691. Pub. 7–25–67. Filed 7–6–66.

836,655. FUSAMATIC. The Meyercord Co. SN 250,389. Pub. 7–25–67. Filed 7–15–66.

836,656. SATINIQUE. General Mills, Inc. SN 250,473. Pub. 7–25–67. Filed 7–18–66.

836,657. BI-WIND AND DESIGN. Beloit Eastern Corporation. SN 250,733. Pub. 7–25–67. Filed 7–21–66.

836,658. SHUROUT. Em-Kay Engineering Company. SN 250,835. Pub. 7–25–67. Filed 7–22–66.

836,659. AGATEWOOD. Utica Cutlery Company. SN 250,878. Pub. 7–25–67. Filed 7–22–66.

836,660. GORHAMCRAFT. Gorham Corporation. SN 251,298. Pub. 7–25–67. Filed 7–29–66.

836,661. GREAT STATES. Pennsylvania Saw Corporation. SN 251,321. Pub. 7–25–67. Filed 7–29–66.

836,662. TRIPLE TEST. Pennsylvania Saw Corporation. SN 251,322. Pub. 7–25–67. Filed 7–29–66.

836,663. ASSEMBLE-MATIC. The Cross Company. SN 251,609. Pub. 7–25–67. Filed 8–3–66.

836,664. CONSTAN-CARBO. UMC Industries, Inc. SN 251,668. Pub. 7–25–67. Filed 8–3–66.

836,665. GIFTABLE GADGETS. American Home Products Corporation. SN 251,869. Pub. 7–25–67. Filed 8–8–66.

836,666. ECR. The Youngstown Sheet and Tube Company. SN 252,142. Pub. 7–25–67. Filed 8–10–66.

836,667. EMBEE MULTIPOST AND DESIGN. Math. Bäuerle G.m.b.H. SN 252,194. Pub. 7–25–67. Filed 8–11–66.

836,668. EMBEE MULTIMAIL AND DESIGN. Math. Bäuerle G.m.b.H. SN 252,195. Pub. 7–25–67. Filed 8–11–66.

836,669. SAFTI-CIRCLE. Rotek Incorporated. SN 252,420. Pub. 7–25–67. Filed 8–15–66.

836,670. PRECISION FLOW. Eaton Yale & Towne Inc. SN 252,473. Pub. 7–25–67. Filed 8–16–66.

836,671. CONWED. Wood Conversion Company. SN 252,504. Pub. 7–25–67. Filed 8–15–66.

836,672. DRIFTROL. The Dow Chemical Company. SN 252,552. Pub. 7–25–67. Filed 8–17–66.

836,673. CLEARLINE. Teleflex Products Limited. SN 252,767. Pub. 7–25–67. Filed 8–19–66.

836,674. BOWIE HYDRO-MULCHER. Bowie Machine Works, Inc. SN 252,809. Pub. 7–25–67. Filed 8–22–66.

836,675. SILENT HOSTESS. Ray Dolac Enterprises, Inc. SN 252,894. Pub. 7–25–67. Filed 8–22–66.

836,676. KAB-KING AND DESIGN. Burch Manufacturing Company. SN 253,116. Pub. 7–25–67. Filed 8–25–66.

836,677. HYDROSHEAR. FMC Corporation. SN 253,132. Pub. 7–25–67. Filed 8–25–66.

836,678. SILAMIX. Art's-Way Manufacturing Company Incorporated. SN 253,203. Pub. 7–25–67. Filed 8–26–66.

836,679. P.D. QUIK. Butler Manufacturing Company. SN 253,204. Pub. 7–25–67. Filed 8–26–66.

836,680. GUTTER-SNIPE. Municipal Supply Company. SN 253,542. Pub. 7–25–67. Filed 8–31–66.

836,681. MISCELLANEOUS DESIGN. Shunk Manufacturing Company, Inc. SN 253,688. Pub. 7–25–67. Filed 9–1–66.

836,682. SILVER AND DESIGN. American Factors Associates, Limited. SN 254,429. Pub. 7–25–67. Filed 9–14–66.

836,683. P & H AND DESIGN. Harnischfeger Corporation. SN 254,604. Pub. 7–25–67. Filed 9–16–66.

836,684. STELMOR. Morgan Construction Company. SN 266,836. Pub. 7–25–67. Filed 3–16–67.

836,685. CHEMITHON. The Chemithon Corporation. SN 267,485. Pub. 7–25–67. Filed 3–24–67.

Class 26—Measuring and Scientific Appliances

836,540. (See Class 6 for this trademark.)

836,610. (See Class 21 for this trademark.)

836,613. (See Class 21 for this trademark.)

836,686. LASER SCAN. Conductron Corporation. SN 205,254. Pub. 7–25–67. Filed 11–2–64.

836,687. WESTPORT. Westport Development and Mfg. Co., Inc. SN 233,203. Pub. 7–25–67. Filed 11–23–65.

836,688. UNICON. Precision Instrument Company. SN 236,137. Pub. 7–25–67. Filed 1–10–66.

836,689. MULTRUL. Rainsford J. Winslow, d.b.a. Mul-T-Rul Company. SN 237,508. Pub. 7–25–67. Filed 1–27–66.

836,690. UNIPAS. William M. Pearson Travel Agency, Inc., by change of name and mesne assignment from College Hill Industries, Inc. SN 239,387. Pub. 7–25–67. Filed 2–23–66.

836,691. DITRIC AND DESIGN. Ditric Corporation. SN 239,393. Pub. 7–25–67. Filed 2–23–66.

836,692. MACRODAPTER. Spiratone, Inc. SN 241,383. Pub. 7–25–67. Filed 3–18–66.

836,693. VU-PORT. Flow Laboratories Incorporated. SN 244,315. Pub. 7–25–67. Filed 4–26–66.

836,694. CADETTE "TWENTY." Stewart-Warner Corporation. SN 246,385. Pub. 7–25–67. Filed 5–23–66.

836,695. VIDEOFILE. Ampex Corporation. SN 246,432. Pub. 7–25–67. Filed 5–24–66.

836,696. METROMETER AND DESIGN. Metrometer, Inc. SN 247,137. Pub. 7–25–67. Filed 6–2–66.

836,697. TERRAPAK. Precision Exploration Company. SN 247,404. Pub. 7–25–67. Filed 6–6–66.

836,698. CO-PILOT. Edward Spasek, d.b.a. Avion Aids Company. SN 247,730. Pub. 7–25–67. Filed 6–9–66.

836,699. ECI AND DESIGN. Electronic Communications, Inc. SN 248,793. Pub. 7–25–67. Filed 6–23–66.

836,700. EASY-READ. Badger Meter Manufacturing Company. SN 250,730. Pub. 7–25–67. Filed 7–21–66.

836,701. CHARTER. Textron Inc. SN 250,784. Pub. 7–25–67. Filed 7–21–66.

836,702. EQWIN. Jerome J. Kurland, d.b.a. Kedcograph Company. SN 250,979. Pub. 7–25–67. Filed 7–25–66.

836,703. SUNJET. Anger International, Inc. SN 251,041. Pub. 7–25–67. Filed 7–26–66.

836,704. ATLAS. Atlas Supply Company. SN 252,535. Pub. 7–25–67. Filed 8–17–66.

836,705. CUEMATIC. Gryphon Corporation. SN 252,839. Pub. 7–25–67. Filed 8–22–66.

836,706. VARIAN. Varian Associates. SN 255,378. Pub. 7–25–67. Filed 9–28–66.

Class 27—Horological Instruments

836,707. CALL-IDENT. Pennwood Numechron Company. SN 245,097. Pub. 7–25–67. Filed 5–6–66.

836,708. JEAN PIQUET. Emil Leichter Watch Co., Inc. SN 247,371. Pub. 7–25–67. Filed 6–6–66.

836,709. HUNTER. Medco, Inc. SN 251,446. Pub. 7–25–67. Filed 8–1–66.

836,710. COUGAR. Benrus Watch Company, Inc. SN 251,601. Pub. 7–25–67. Filed 8–3–66.

836,711. PACEMAKER. Benrus Watch Company, Inc. SN 251,602. Pub. 7–25–67. Filed 8–3–66.

836,712. WEE WINKIE. General Time Corporation. SN 251,811. Pub. 7–25–67. Filed 8–5–66.

Class 28—Jewelry and Precious-Metal Ware

836,713. EAR-JOY. Harry Wright, d.b.a. Wright Industries. SN 249,099. Pub. 5–30–67. Filed 6–27–66.

Class 29—Brooms, Brushes, and Dusters

836,714. VELVET-TIP. John O. Butler Company. SN 252,148. Pub. 7–25–67. Filed 8–11–66.

Class 31—Filters and Refrigerators

836,715. ECONO-GUARD. Frick Company. SN 251,907. Pub. 7–25–67. Filed 8–8–66.

836,716. DOW AND DESIGN. The Dow Chemical Company. SN 253,505. Pub. 7–25–67. Filed 8–31–66.

836,717. DURACREST AND DESIGN. Metro Wholesale Corporation. 257,294. Pub. 7–25–67. Filed 10–26–66.

Class 32—Furniture and Upholstery

836,491. (See Class 2 for this trademark.)

836,718. KE-MASTER. P. O. Moore, Inc., d.b.a. Ke-Master Division. SN 247,611. Pub. 7–25–67. Filed 6–8–66.

Class 33—Glassware

836,719. DANSE. Riekes Crisa Corporation. SN 244,620. Pub. 7–25–67. Filed 4–29–66.

836,720. FIREBIRD. Riekes Crisa Corporation. SN 253,171. Pub. 7–25–67. Filed 8–25–66.

Class 34—Heating, Lighting, and Ventilating Apparatus

836,721. ROCKET. Jürgen Schneider, d.b.a. Ostra-Electronics. SN 245,621. Pub. 7–25–67. Filed 5–13–66.

836,722. VULCAN. Vulcan Iron Works, Inc. SN 247,545. Pub. 7–25–67. Filed 6–7–66.

836,723. LINDBERG HEVI-DUTY. Sola Basic Industries, Inc. SN 250,188. Pub. 7–25–67. Filed 7–13–66.

836,724. INSTAMATIC. Crescent Metal Products, Inc. SN 252,356. Pub. 7–25–67. Filed 8–15–66.

836,725. MINUTE-MAN. Arrow Service Corporation. SN 253,000. Pub. 7–25–67. Filed 8–24–66.

836,726. MURECOR. Air Reduction Company, Incorporated, d.b.a. Murex Welding Products. SN 253,478. Pub. 7–25–67. Filed 8–31–66.

836,727. SUZIE THE SOLDERER. Eldon Industries, Inc. SN 261,427. Pub. 7–25–67. Filed 12–27–66.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

836,605. (See Class 19 for this trademark.)

836,728. SERVOTRONICS. Servotronics, Inc. SN 224,653. Pub. 7–25–67. Filed 7–30–65.

836,729. UNI-STRIP. The B. F. Goodrich Company. SN 237,110. Pub. 7–25–67. Filed 1–24–66.

836,730. SUPER ORTAC. The Goodyear Tire & Rubber Company. SN 245,823. Pub. 7–25–67. Filed 5–17–66.

836,731. ARMSEAL. S. A. Armstrong Limited. SN 249,490. Pub. 7–25–67. Filed 7–5–66.

836,732. VANWAY. A. W. Chesterton Company. SN 251,382. Pub. 7–25–67. Filed 8–1–66.

836,733. ESTEEM. Delta Tire Corporation. SN 253,502. Pub. 7–25–67. Filed 8–31–66.

836,734. CORDAFOIL. McCord Corporation. SN 253,543. Pub. 7–25–67. Filed 8–31–66.

836,735. WINGFOOT SL. The Goodyear Tire & Rubber Company. SN 263,058. Pub. 7–25–67. Filed 1–23–67.

836,736. ORTAC SL. The Goodyear Tire & Rubber Company. SN 263,059. Pub. 7–25–67. Filed 1–23–67.

Class 36 — Musical Instruments and Supplies

836,610. (See Class 21 for this trademark.)

836,737. VEGA. Vega Instrument Co., Inc. SN 251,486. Pub. 7–25–67. Filed 8–1–66.

836,738. LIBRARY EDITIONS AND DESIGN. Request Records, Inc. SN 252,210. Pub. 7–25–67. Filed 8–11–66.

836,739. DURANITE. Grossman Music Corporation. SN 252,475. Pub. 7–25–67. Filed 8–16–66.

836,740. SOLID STATE AND DESIGN. United Artists Records, Inc. SN 253,067. Pub. 7–25–67. Filed 8–24–66.

836,741. ROCKET. The Harmony Company. SN 253,395. Pub. 7–25–67. Filed 8–29–66.

836,742. STATUS AND DESIGN. Prestige Records, Inc. SN 255,546. Pub. 7–25–67. Filed 9–30–66.

Class 37 — Paper and Stationery

836,491. (See Class 2 for this trademark.)

836,743. LONG-TOM. The Joseph Dixon Crucible Company. SN 227,826. Pub. 7–25–67. Filed 9–15–65.

836,744. SUPERMARK. The Joseph Dixon Crucible Company. SN 227,827. Pub. 7–25–67. Filed 9–15–65.

836,745. READYMARK. The Joseph Dixon Crucible Company. SN 227,828. Pub. 7–25–67. Filed 9–15–65.

836,746. SUREMARK. The Joseph Dixon Crucible Company. SN 227,932. Pub. 7–25–67. Filed 9–16–65.

836,747. WONDERMARK. The Joseph Dixon Crucible Company. SN 227,933. Pub. 7–25–67. Filed 9–16–65.

836,748. GIANT. The Joseph Dixon Crucible Company. SN 227,934. Pub. 7–25–67. Filed 9–16–65.

836,749. SPACE AGE WORKING PAPERS. Hammermill Paper Company. SN 239,618. Pub. 7–25–67. Filed 2–25–66.

836,750. SCRIPTEMPOS. Arvey Corporation. SN 240,837. Pub. 12–13–66. Filed 3–14–66.

836,751. NIRICO. Nightwriter Corporation, Inc., d.b.a. Nirico. SN 244,921. Pub. 7–25–67. Filed 5–4–66.

836,752. CARLTON. The Northwest Paper Company. SN 265,914. Pub. 7–25–67. Filed 3–3–67.

Class 38 — Prints and Publications

836,753. PALM SPRINGS LIFE. Desert Publications, Inc. SN 229,339. Pub. 7–25–67. Filed 10–5–65.

836,754. SEND A GRIN. Y Doodle Company. SN 246,008. Pub. 7–25–67. Filed 5–18–66.

836,755. AMERICAN INTERNATIONAL AND DESIGN. American International Pictures. SN 249,932. Pub. 7–25–67. Filed 7–11–66.

836,756. INSIDE VIEW. General Features Corporation. SN 250,955. Pub. 7–25–67. Filed 7–25–66.

836,757. READERS & WRITERS. S. S. Beitler, Inc. SN 251,373. Pub. 7–25–67. Filed 8–1–66.

836,758. BRIGITTE. Gruner+Jahr G.m.b.H. & Co. SN 251,918. Pub. 7–25–67. Filed 8–8–66.

836,759. HUG-A-BOO. Norcross, Inc. SN 251,943. Pub. 7–25–67. Filed 8–8–66.

836,760. KEYPER. International Cellulose Research Limited. SN 252,008. Pub. 7–25–67. Filed 8–9–66.

836,761. PAISLEY BOUTIQUE. Norcross, Inc. SN 252,122. Pub. 7–25–67. Filed 8–10–66.

836,762. CLINICAL NORMS. Francis Roberts Agency, Inc. SN 252,594. Pub. 7–25–67. Filed 8–17–66.

836,763. ELSI AND DESIGN. Electrical Log Services, Inc. SN 252,949. Pub. 7–25–67. Filed 8–23–66.

836,764. BUTLER AGRI-BUILDER AND DESIGN. Butler Manufacturing Company. SN 253,117. Pub. 7–25–67. Filed 8–25–66.

836,765. BUTLER BUILDER. Butler Manufacturing Company. SN 253,205. Pub. 7–25–67. Filed 8–26–66.

836,766. NORCROSS (IN DESIGN). Norcross, Inc. SN 253,235. Pub. 7–25–67. Filed 8–26–66.

836,767. CLINOPTIKON. Schering Corporation. SN 264,107. Pub. 7–25–67. Filed 2–6–67.

Class 39 — Clothing

836,768. SADDLE CHAMP. O'Brien Manufacturing Co. SN 128,365. Pub. 8–20–63. Filed 9–21–61.

836,769. WEE TEES AND DESIGN. American Argo Corporation, assignee of Atlas General Industries, Inc. SN 174,003. Pub. 7–21–64. Filed 7–30–63.

836,770. FLEECY. Browns Hosiery Mills, Inc., assignee, by mesne assignment, of P. H. Hanes Knitting Company, Inc. SN 195,525. Pub. 3–2–65. Filed 6–12–64.

836,771. YOUNG LIFE. Tober-Salfer Shoe Manufacturing Company. SN 219,478. Pub. 7–25–67. Filed 5–21–65.

836,772. SPATZIES. Marie Flint and Margaret M. Schuttler (joint owners). SN 226,348. Pub. 7–25–67. Filed 8–24–65.

836,773. S'TEN. Gebr. Schulten. SN 228,079. Pub. 7–25–67. Filed 9–17–65.

836,774. PRINT-TIME. Maidenform, Inc. SN 239,531. Pub. 7–25–67. Filed 2–24–66.

836,775. TYROL CLOUD. Palmer Commodities Corporation. SN 242,278. Pub. 7–25–67. Filed 3–30–66.

836,776. CENTURA 100. Rapid American Corporation. SN 242,333. Pub. 3–21–67. Filed 3–31–66.

836,777. BOND STREET BOUTIQUE. Brevitt Shoes Limited. SN 245,152. Pub. 7–25–67. Filed 5–9–66.

836,778. SWISS-MATES. Raymond Dayan, assignee of Swissknit Mfg. Inc. SN 245,766. Pub. 7–25–67. Filed 5–16–66.

836,779. MC GLEN. McGlen, Incorporated. SN 248,820. Pub. 7–25–67. Filed 6–23–66.

836,780. "MAN OF THE DAY." Mr. Mod Shop, Inc. SN 249,038. Pub. 7–25–67. Filed 6–27–66.

836,781. "MISS OF THE DAY." Mr. Mod Shop, Inc. SN 249,050. Pub. 7–25–67. Filed 6–27–66.

836,782. CAPITO'S. Edorado Grosaisti Shoe Company. SN 249,146. Pub. 7–25–67. Filed 6–28–66.

836,783. BRIAN MACNEIL. The Gillman Knitwear Company. SN 251,058. Pub. 7–25–67. Filed 7–26–66.

836,784. INTERLINE AND DESIGN. Interline A.G. SN 253,439. Pub. 7–25–67. Filed 8–30–66.

836,785. OMBREL. S. Augstein & Co., Inc. SN 256,812. Pub. 7–25–67. Filed 10–20–66.

836,786. YALE AND DESIGN. Pennington Manufacturing Company, Inc. SN 256,967. Pub. 7–25–67. Filed 10–21–66.

836,787. SNUG HARBOR. Tempo Sportswear Corp. SN 257,319. Pub. 7–25–67. Filed 10–26–66.

836,788. BLUE CHIPS. Chips 'N Twigs, Inc. SN 259,885. Pub. 7–25–67. Filed 12–2–66.

836,789. PJO AND DESIGN. Systems Incorporated. SN 270,854. Pub. 7–25–67. Filed 5–8–67.

Class 40 — Fancy Goods, Furnishings, and Notions

836,790. FLIRTIES. Robert Gordon Bau. SN 211,980. Pub. 6–28–66. Filed 2–15–65.

836,791. TRIMTEX. Trimtex, Inc. SN 267,567. Pub. 7–25–67. Filed 3–24–67.

836,792. DURA-MATE. Wyomissing Corporation. SN 269,821. Pub. 7–25–67. Filed 4–24–67.

836,793. DURA-TRIM. Wyomissing Corporation. SN 269,822. Pub. 7–25–67. Filed 4–24–67.

Class 41 — Canes, Parasols, and Umbrellas

836,794. "MAN OF THE DAY." Mr. Mod Shop, Inc. SN 249,039. Pub. 7–25–67. Filed 6–27–66.

836,795. "MISS OF THE DAY." Mr. Mod Shop, Inc. SN 249,051. Pub. 7–25–67. Filed 6–27–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

836,796. PEDI-PURE. West Point-Pepperell, Inc. SN 246,733. Pub. 7–25–67. Filed 5–26–66.

836,797. BH (DESIGN). Burlington Industries, Inc. SN 248,209. Pub. 7–25–67. Filed 6–16–66.

836,798. TSM AND DESIGN. Silks and Woolens From France Corporation. SN 257,896. Pub. 7–25–67. Filed 11–3–66.

836,799. ROYALWEVE AND DESIGN. California Weavers, Inc. SN 258,280. Pub. 7–25–67. Filed 11–9–66.

836,800. BEACON HILL. Beacon Looms Inc. SN 260,918. Pub. 7–25–67. Filed 12–16–66.

Class 43 — Thread and Yarn

836,801. COTEXTURED. Northern Yarn Mills. SN 194,827. Pub. 12–22–64. Filed 6–3–64.

836,802. PERNELLE. Francois Masurel Freres Societe Anonyme. SN 249,151. Pub. 7–25–67. Filed 6–28–66.

Class 44 — Dental, Medical, and Surgical Appliances

836,803. SLENDERTRON. John D. McDonald, d.b.a. National Electronics. SN 245,088. Pub. 7–25–67. Filed 5–6–66.

836,804. FIGURETRON. John D. McDonald, d.b.a. National Electronics. SN 245,090. Pub. 7–25–67. Filed 5–6–66.

836,805. RETRO ELECTRIC. Joerns Furniture Company. SN 247,802. Pub. 7–25–67. Filed 6–10–66.

836,806. RONTHOR. Ronthor Reiss Corporation. SN 252,686. Pub. 7–25–67. Filed 8–18–66.

836,807. RIDDOHALER. Riddell Products Limited. SN 252,762. Pub. 7–25–67. Filed 8–19–66.

836,808. PICK-O-MATIC. The Songrand Corporation. SN 258,326. Pub. 7–25–67. Filed 11–9–66.

836,809. AMWAY. Amway Corporation. SN 258,472. Pub. 7–25–67. Filed 11–14–66.

836,810. CLINAC. Varian Associates. SN 258,762. Pub. 7–25–67. Filed 11–16–66.

Class 45 — Soft Drinks and Carbonated Waters

836,811. SODAFROST. General Foods Corporation. SN 194,295. Pub. 7–6–65. Filed 5–26–64.

836,812. APACHE TRIBAL TRICKLE. Meryl L. Stoddard. SN 257,432. Pub. 7–25–67. Filed 10–24–66.

Class 46 — Foods and Ingredients of Foods

836,813. RAS. Rixona Conserven N.V. SN 209,803. Pub. 7–25–67. Filed 1–12–65.

836,814. SOFT LIFE. General Mills, Inc. SN 213,967. Pub. 10–5–65. Filed 3–12–65.

836,815. RAS SUPER FRIES. Rixona Conserven N.V. SN 214,372. Pub. 7–25–67. Filed 3–17–65.

836,816. WILD 'N RARE. Harry and David. SN 226,841. Pub. 7–25–67. Filed 8–31–65.

836,817. WEDDING CAKE STUDIO. Harold J. Benz, d.b.a. Wedding Cake Studio. SN 231,025. Pub. 7–25–67. Filed 10–22–65.

836,818. YUM-FRIES. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,343. Pub. 7–25–67. Filed 10–22–65.

836,819. YUM-BAR-B-QUE. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,344. Pub. 7–25–67. Filed 10–22–65.

836,820. YUM-DOGGIE. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,346. Pub. 7–25–67. Filed 10–22–65.

836,821. CHUPA CHUPS! NO HAY NADA IGUAL NI QUE SEA LO MISMO. Enrique Bernat Fontlladosa. SN 232,824. Pub. 7–25–67. Filed 11–17–65.

836,822. THE GO-GO! STICK AND DESIGN. Clyde A. Harbin, d.b.a. J. C. Harbin's Freeze Rite Mix Company, and Harbin Mix Company, Inc. SN 232,833. Pub. 12–6–66. Filed 11–17–65.

836,823. CHIP-PROOF. The Milton Company. SN 232,843. Pub. 7–25–67. Filed 11–17–65.

836,824. TRAIL CUT BRAND AND DESIGN. Armour and Company. SN 239,957. Pub. 7–25–67. Filed 3–2–66.

836,825. COATA-CURE. First Spice Mixing Co., Inc. SN 242,722. Pub. 7–25–67. Filed 4–5–66.

836,826. CAPTAIN HY. Boston Bonnie, Inc., by change of name from Genoa Fisheries, Inc., d.b.a. Boston Bonnie Fisheries. SN 244,820. Pub. 7–25–67. Filed 5–3–66.

836,827. KRAFT IN CHEF'S HAT AND WORLD DESIGN. National Dairy Products Corporation. SN 248,829. Pub. 7–25–67. Filed 6–23–66.

836,828. CUP-A-REDY. Rexall Drug and Chemical Company, d.b.a. Thompson Industries Co. SN 250,105. Pub. 7–25–67. Filed 7–12–66.

836,829. SPAGHENY. Nissin Shokuhin Kaisha Ltd. SN 250,294. Pub. 7–25–67. Filed 7–14–66.

836,830. CHIPS. Filigree Foods, Inc. SN 250,371. Pub. 7–25–67. Filed 7–15–66.

836,831. AGATE. Ventura County Fruit Growers, Inc. SN 250,415. Pub. 7–25–67. Filed 7–15–66.

836,832. TOPAZ. Ventura County Fruit Growers, Inc. SN 250,416. Pub. 7–25–67. Filed 7–15–66.

836,833. BETTY QUIK'S. Claridge Food Co., Inc. SN 250,935. Pub. 7–25–67. Filed 7–25–66.

836,834. GOLDEN GLEN. Carnation Company. SN 251,378. Pub. 7–25–67. Filed 8–1–66.

836,835. CHINA FARM. Comet Rice Mills, Inc. SN 251,518. Pub. 7–25–67. Filed 8–2–66.

836,836. TEXTAID. National Starch and Chemical Corporation. SN 252,022. Pub. 7–25–67. Filed 8–9–66.

836,837. DRI-BOND. National Starch and Chemical Corporation. SN 252,023. Pub. 7–25–67. Filed 8–9–66.

836,838. CHEWY-KINS. Beatrice Foods Co., d.b.a. The Candy Kitchens of Beatrice Foods Co. SN 253,483. Pub. 7–25–67. Filed 8–31–66.

836,839. CRUNCHIE-KINS. Beatrice Foods Co., d.b.a. The Candy Kitchens of Beatrice Foods Co. SN 253,484. Pub. 7–25–67. Filed 8–31–66.

836,840. DAYBREAK. Libby, McNeill & Libby. SN 253,536. Pub. 7–25–67. Filed 8–31–66.

836,841. JERI. Jerissa Nut Co., Inc. SN 253,763. Pub. 7–25–67. Filed 9–2–66.

836,842. Z5–A. Driscoll Strawberry Associates, Inc. SN 253,861. Pub. 7–25–67. Filed 9–6–66.

836,843. CHRISTINA. Escalon Packers, Inc. SN 254,143. Pub. 7–25–67. Filed 9–9–66.

836,844. RUN OF THE GARDEN. White Rose Foods Corp. SN 254,205. Pub. 7–25–67. Filed 9–9–66.

836,845. OLD AMERICAN. Tyson's Foods, Inc. SN 254,334. Pub. 7–25–67. Filed 9–12–66.

836,846. FILSPICE. Food Industries Limited. SN 254,678. Pub. 7–25–67. Filed 9–19–66.

836,847. FRUIT-FLOAT. Libby, McNeill & Libby. SN 255,006. Pub. 7–25–67. Filed 9–23–66.

836,848. BLUE PARROT. Di Giorgio Corporation, d.b.a. Earl Fruit Company. SN 255,072. Pub. 7–25–67. Filed 9–26–66.

836,849. RIO SUN. Mission Shippers, Inc. SN 255,220. Pub. 7–25–67. Filed 9–27–66.

836,850. NESTLE'S KEEN. The Nestlé Company, Inc. SN 255,224. Pub. 7–25–67. Filed 9–27–66.

836,851. PINEBREEZE. Winn-Dixie Stores, Inc. SN 255,667. Pub. 7–25–67. Filed 10–3–66.

836,852. OSTROM'S. Ostrom Mushroom Company. SN 255,715. Pub. 7–25–67. Filed 10–4–66.

836,853. SNIFF'S. Sniff's Date Gardens. SN 255,728. Pub. 7–25–67. Filed 10–4–66.

836,854. HAPPY CHEF. Steele Canning Company. SN 255,731. Pub. 7–25–67. Filed 10–4–66.

836,855. NATURELLA. P. Ferrero & C. S.p.A. SN 259,911. Pub. 7–25–67. Filed 12–2–66.

836,856. CIAO BRAND AND DESIGN. Giuseppe Citterio S.p.A. SN 265,865. Pub. 7–25–67. Filed 3–3–67.

836,857. BOBBINS. General Mills, Inc. SN 270,646. Pub. 7–25–67. Filed 5–4–67.

836,858. FINAL. General Mills, Inc. SN 270,648. Pub. 7–25–67. Filed 5–4–67.

836,859. BASIS. General Mills, Inc. SN 270,649. Pub. 7–25–67. Filed 5–4–67.

836,860. MR. KUMQUAT. Albert Valdora, d.b.a. Valdora Produce Co. SN 270,736. Pub. 7–25–67. Filed 5–5–67.

836,861. ROCKING K WESTERN GOURMET AND DESIGN. Rocking K Foods, Inc. SN 270,737. Pub. 7–25–67. Filed 5–5–67.

Class 47 — Wines

836,862. VON STIEHL. Von Stiehl Wine, Inc. SN 231,321. Pub. 7–25–67. Filed 10–22–65.

Class 49 — Distilled Alcoholic Liquors

836,863. KINGSWAY. L. J. McGuinness and Co. Limited. SN 238,553. Pub. 7–25–67. Filed 2–10–66.

836,864. MCGUINNESS OLD CANADA AND DESIGN. L. J. McGuinness and Co. Limited. SN 238,555. Pub. 7–25–67. Filed 2–10–66.

836,865. REDHEAD. W. A. Taylor & Company. SN 256,397. Pub. 7–25–67. Filed 10–13–66.

Class 50 — Merchandise Not Otherwise Classified

836,866. SKYLON. Niagara International Centre Limited. SN 231,655. Pub. 7–25–67. Filed 10–27–65.

836,867. VENT COV'R. Monsanto Company. SN 253,159. Pub. 7–25–67. Filed 8–25–66.

836,868. NYLOPRINT. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 261,967. Pub. 7–25–67. Filed 1–5–67.

Class 51 — Cosmetics and Toilet Preparations

836,869. CINESCENT. Merchandising Corporation of America. SN 229,842. Pub. 7–25–67. Filed 10–11–65.

836,870. PREV-COAT. Prev-Coat Corporation. SN 232,148. Pub. 7–25–67. Filed 11–4–65.

836,871. STEP LIVELY. Helena Rubinstein, Inc. SN 240,957. Pub. 7–25–67. Filed 3–14–66.

836,872. LUNE DE MIEL. Jean Eymond, Inc. SN 241,056. Pub. 7–25–67. Filed 3–15–66.

836,873. MENT. DeMert & Dougherty, Inc. SN 250,140. Pub. 7–25–67. Filed 7–13–66.

836,874. CHIN UP. Beauty Counselors, Inc. SN 255,056. Pub. 7–25–67. Filed 9–26–66.

836,875. LIGNUM. Humphreys Medicine Company, Incorporated. SN 255,440. Pub. 7–25–67. Filed 9–29–66.

836,876. CHIP. Noxell Corporation. SN 256,587. Pub. 7–25–67. Filed 10–17–66.

836,877. RUDDY GLOW. The Mennen Company. SN 256,760. Pub. 7–25–67. Filed 10–19–66.

836,878. SO GAY. Luzier Incorporated. SN 256,948. Pub. 7–25–67. Filed 10–21–66.

836,879. MALE ANIMAL. Carter-Wallace, Inc. SN 257,359. Pub. 7–25–67. Filed 10–27–66.

836,880. ARRID. Carter-Wallace, Inc. SN 257,361. Pub. 7–25–67. Filed 10–27–66.

836,881. BRAWN. Carter-Wallace, Inc. SN 257,363. Pub. 7–25–67. Filed 10–27–66.

836,882. BRAWN. Carter-Wallace, Inc. SN 257,364. Pub. 7–25–67. Filed 10–27–66.

836,883. BRAWN. Carter-Wallace, Inc. SN 257,365. Pub. 7–25–67. Filed 10–27–66.

836,884. MALE ANIMAL. Carter-Wallace, Inc. SN 257,366. Pub. 7–25–67. Filed 10–27–66.

836,885. MALE ANIMAL. Carter-Wallace, Inc. SN 257,367. Pub. 7–25–67. Filed 10–27–66.

836,886. CUSTOMIZER. Clairol Incorporated. SN 258,047. Pub. 7–25–67. Filed 11–7–66.

836,887. SPEAK EASY. Philip Morris Incorporated. SN 270,313. Pub. 7–25–67. Filed 5–1–67.

836,888. 8 BELLS. The Procter & Gamble Company. SN 270,846. Pub. 7–25–67. Filed 5–8–67.

Class 52 — Detergents and Soaps

836,889. MECHANICS CHOICE. Avnet, Inc. SN 256,917. Pub. 7–25–67. Filed 10–21–66.

836,890. BAN-TAN. Baxter Laboratories, Inc. SN 258,034. Pub. 7–25–67. Filed 11–7–66.

836,891. SUDZTAIN. Chemical Service of Baltimore, Inc. SN 259,085. Pub. 7–25–67. Filed 11–21–66.

Service Marks

Class 100 — Miscellaneous

836,892. SEILER'S OF NEW ENGLAND AND DESIGN. H. J. Seiler Co., Inc. SN 244,059. Pub. 7–25–67. Filed 4–22–66.

836,893. SEILER'S OF NEW ENGLAND ETC. AND DESIGN. H. J. Seiler Co., Inc. SN 244,062. Pub. 7–25–67. Filed 4–22–66.

836,894. RICHARD'S. Richards Wig Service, Inc. SN 249,446. Pub. 7–25–67. Filed 7–1–66.

836,895. EMERGO. Continental Illinois National Bank and Trust Company of Chicago. SN 252,351. Pub. 7–25–67. Filed 8–15–66.

836,896. GOLDEN RAZOR BARBER SALON. Interco Incorporated, d.b.a. The Florsheim Shoe Company. SN 255,323. Pub. 7–25–67. Filed 9–28–66.

Class 101 — Advertising and Business

836,897. ONE OF LIFE'S LITTLE PLEASURES. Dairy Queen National Development Company. SN 230,796. Pub. 7–25–67. Filed 10–21–65.

836,898. PERSONNEL ASSOCIATES AND DESIGN. Reginald L. Muir, d.b.a. Personnel Associates. SN 236,000. Pub. 7–25–67. Filed 1–7–66.

836,899. EXECUTRANS. Executrans, Inc. SN 238,065. Pub. 7–25–67. Filed 2–4–66.

836,900. ITCO AND DESIGN. International Textbook Company. SN 241,344. Pub. 7–25–67. Filed 3–18–66.

836,901. MAPTEK. Quantum Science Corporation. SN 247,059. Pub. 7–25–67. Filed 6–1–66.

836,902. KEY MARKETS AND DESIGN. The Creasey Company of Delaware. SN 250,248. Pub. 7–25–67. Filed 7–14–66.

836,903. GATEWAY SUPER MARKETS AND DESIGN. The Creasey Company of Delaware. SN 250,249. Pub. 7–25–67. Filed 7–14–66.

836,904. BEST & CO. McCrory Corporation. SN 266,278. Pub. 7–25–67. Filed 3–9–67.

Class 102 — Insurance and Financial

836,905. TRIANGLE OF PROGRESS ETC. AND DESIGN. Renshaw, McKeown & Young, Inc. SN 195,713. Pub. 7–25–67. Filed 6–15–64.

836,906. SUPPLECARE. Guarantee Trust Life Insurance Company. SN 249,983. Pub. 7–25–67. Filed 7–11–66.

836,907. THE MAN WITH THE RED SEAL. Investors Syndicate Life Insurance and Annuity Company. SN 251,433. Pub. 7–25–67. Filed 8–1–66.

Class 105 — Transportation and Storage

836,908. FREE LANCE TRAVEL AND DESIGN. Don Davis. SN 238,719. Pub. 7–25–67. Filed 2–14–66.

836,909. ALL STATES. All States Freight, Inc. SN 250,123. Pub. 7–25–67. Filed 7–13–66.

836,910. INVERTED EQUILATERAL TRIANGLE (DESIGN). All States Freight, Inc. SN 250,124. Pub. 7–25–67. Filed 7–13–66.

836,911. BUDGET ETC. AND DESIGN. Budget Rent-A-Car Corporation of America. SN 253,845. Pub. 7–25–67. Filed 9–6–66.

Class 107 — Education and Entertainment

836,912. LITTLE MISS PEANUT. Pepsi Cola Bottling Company of Dothan, Inc. SN 236,410. Pub. 7–25–67. Filed 1–13–66.

836,913. THE YOUNG SOUND. Columbia Broadcasting System, Inc. SN 248,214. Pub. 7–25–67. Filed 6–16–66.

836,914. THE PHILADELPHIA EAGLES. The Philadelphia Eagles Football Club, Inc. SN 250,224. Pub. 7–25–67. Filed 7–14–66.

Certification Mark

Class A — Goods

836,915. USTER ANALYSIERT. Zellweger Ltd. SN 256,171. Pub. 7–25–67. Filed 10–10–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 38 — Prints and Publications

836,916. Fiduciary Publishers, Inc., New York, N.Y., assignee of Dornost Publishing Company, Inc., New York, N.Y. SN 249,963. Filed P.R. 7–11–66; Am. S.R. 6–30–67.

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TRADEMARK REGISTRATIONS RENEWED

63,177. JOB. Cl. 17. 6–11–07.
65,031. U AND DESIGN. Cl. 9. 9–3–07.
65,094. CLOVER LEAF (DESIGN). Cl. 4. 9–10–07.
65,498. JUMP. Cl. 50. 10–8–07.
65,538. VICTOR. Cl. 50. 10–8–07.
66,933. SPOT CORD. Cl. 7. 1–7–08.
230,074. CHOCO-LOAFE. Cl. 46. 7–12–27.
231,817. PEET BROS. Cl. 52. 8–30–27.
232,051. FORD. Cl. 15. 8–30–27.
232,388. DIAMOND (DESIGN). Cl. 46. 9–6–27.
232,394. SURPRISE. Cl. 46. 9–6–27.
233,423. PLANTATION PRIDE. Cl. 46. 9–27–27.
235,605. NONOX. Cl. 6. 11–22–27.
236,227. ATMOSET. Cl. 12. 12–6–27.
236,924. TUF-NUT. Cl. 39. 12–27–27.
237,330. DETTRA FLAG PRODUCTS AND DESIGN. Cl. 50. 1–10–28.
237,781. SURPLUS RECORD. Cl. 38. 1–17–28.
237,827. SERVE-WELL. Cl. 39. 1–17–28.
238,145. COCA-COLA. Cl. 45. 1–31–28.
238,146. COCA-COLA. Cl. 45. 1–31–28.
238,176. LA MESA. Cl. 46. 1–31–28.
238,737. EATWELL. Cl. 46. 2–14–28.
238,782. MASTERBILT. Cl. 39. 2–14–28.
426,831. ROTEX. Cl. 23. 1–14–47.
429,907. JADESTICK. Cl. 2. 5–20–47.
431,251. SWIFT'S. Cl. 46. 7–15–47.
431,442. ZIG ZAG. Cl. 46. 7–22–47.
431,488. GALA GAMINS. Cl. 39. 7–22–47.
431,806. JEN-CEL-LITE. Cl. 1. 8–12–47.
432,108. REGUTRON. Cl. 21. 8–19–47.
432,121. WILCOLOY. Cl. 21. 8–19–47.
432,130. KROMECAST. Cl. 12. 8–19–47.
432,357. NOFADE "A NATIONAL WASH-WORD." Cl. 39. 9–2–47.
432,504. VIVID BLACK. Cl. 51. 9–2–47.
432,584. BLACK SUNLIGHT. Cl. 51. 9–9–47.
432,883. THAYER. Cl. 32. 9–16–47.
433,095. VIRGO. Cl. 28. 9–23–47.
433,096. PHOENIX. Cl. 28. 9–23–47.
433,098. IRIS. Cl. 28. 9–23–47.
433,186. VICTOR. Cl. 22. 9–30–47.
433,311. SWAN (DESIGN). Cl. 33. 10–7–47.
433,469. CHAIR-LOC AND DESIGN. Cl. 5. 10–14–47.
433,991. CALLURE. Cl. 42. 11–4–47.
434,267. COVER GIRL. Cl. 28. 11–18–47.
434,744. DESEGATIZED. Cl. 14. 12–2–47.
434,874. HYFLAVIN. Cl. 18. 12–9–47.
434,952. PLAYGROUND. Cl. 1. 12–9–47.
435,031. HISTAPON. Cl. 18. 12–9–47.

435,086. CELOFER. Cl. 18. 12–9–47.
435,134. PARZATE. Cl. 6. 12–9–47.
435,267. TANVALD AND DESIGN. Cl. 42. 12–16–47.
435,874. VICTOR BLACK CAT. Cl. 50. 1–13–48.
435,905. INSIGNIA (DESIGN). Cl. 50. 1–13–48.
435,906. FLYING TIGER. Cl. 50. 1–13–48.
435,907. FLYING TIGER AND DESIGN. Cl. 50. 1–13–48.
436,043. LOWBOY. Cl. 31. 1–20–48.
436,046. RPM AND DESIGN. Cl. 15. 1–20–48.
436,180. Q–N. Cl. 46. 1–27–48.
436,365. TECHMATIC. Cl. 23. 2–3–48.
436,377. REVCO. Cl. 23. 2–3–48.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

802,065. CHROMA-KIT. Cl. 6. 1–18–66.

Section 8

719,915. LAMBKIN. Cl. 19. 8–15–61.

The following registrations issued Aug. 22, 1961

720,152. KING'S K BRAND. Cl. 1.
720,160. BRESSLER ROLL-A-WAY CUSHINESTS. Cl. 1.
720,170. POLREZ. Cl. 1.
720,173. KRAFTSMAN. Cl. 1.
720,176. FUN FOAM AND DESIGN. Cl. 2.
720,178. GLAMRLINE. Cl. 2.
720,182. TWO CAN GARAGE. Cl. 2.
720,183. PYRO-FLEX. Cl. 2.
720,185. MURRAY HILL. Cl. 3.
720,187. VULC-A-WELD. Cl. 5.
720,189. POOL-GARD. Cl. 6.
720,190. SML-Z-GUD. Cl. 6.
720,193. THE EXTRA MAN. Cl. 6.
720,196. DIPOFENE. Cl. 6.
720,198. HY-LINE. Cl. 6.
720,200. TREPOLINE. Cl. 6.
720,202. EVERWITE. Cl. 6.
720,205. LIQUI-CHALK. Cl. 6.
720,206. GYROLUBE. Cl. 6.
720,208. HUMAPLASTIN. Cl. 6.
720,210. "LIKE-BEST." Cl. 6.
720,212. NULL. Cl. 6.
720,214. TYDEX. Cl. 10.
720,219. DEPTH TONE. Cl. 12.
720,220. VELBLOC. Cl. 12.
720,221. TPC AND DESIGN. Cl. 12.
720,222. LUMI-RAIL. Cl. 12.
720,229. DESIGN OF COMPASS ROSE SURROUNDING A THREE-BLADED PROPELLER. Cl. 13.
720,231. SWIRL-IZER. Cl. 13.
720,240. SAVE-KOTE. Cl. 16.
720,241. CORRO BOND. Cl. 16.
720,246. COMPOUND S. Cl. 18.
720,249. SPENSOID. Cl. 18.
720,254. VI-DOM-E. Cl. 18.
720,256. CARBASTESIN. Cl. 18.
720,259. VIO-CAL. Cl. 18.
720,264. TEGRETOL. Cl. 18.
720,271. RECREATION UNLIMITED AND DESIGN. Cl. 19.
720,272. POLYMERITE. Cl. 20.
720,274. ONE WAY WIRES. Cl. 21.
720,276. FM IN MOTION AND DESIGN. Cl. 21.
720,277. C-Z TEMP CONTROL. Cl. 21.
720,279. HAYDON AND DESIGN. Cl. 21.
720,284. DESIGN OF COMPASS ROSE SURROUNDING A THREE BLADE PROPELLER. Cl. 22.
720,288. WATER TURKEY. Cl. 22.
720,289. MINI-BOWL. Cl. 22.
720,290. POLY RODS. Cl. 22.
720,291. PAFCO. Cl. 22.
720,292. SONAR SUB HUNT. Cl. 22.
720,293. MITZI. Cl. 22.
720,297. ROOT "SAFETY SHAVE." Cl. 23.
720,300. WATER PROVED. Cl. 23.
720,301. TTT. Cl. 23.
720,302. SP AND DESIGN. Cl. 23.
720,303. PUSH-A-DRINK. Cl. 23. 8–22–61.
720,307. SNOW EAGLE AND DESIGN. Cl. 23.
720,308. LINEMASTER. Cl. 24.
720,318. SP AND DESIGN. Cl. 26.
720,320. GRANSTAT. Cl. 26.
720,321. KWIKDISK. Cl. 26.
720,323. LINDELLS AND DESIGN. Cl. 26.
720,324. HAYDON AND DESIGN. Cl. 26.
720,325. HONEYWELL BROWN DUR-O-PULSE AND DESIGN. Cl. 26.
720,327. INDUCTALARM. Cl. 26.
720,333. WITCH AND DESIGN. Cl. 29.
720,334. REFRIGI-GRIDDLE. Cl. 31.
720,335. CLEANAIRE. Cl. 31.
720,336. ERINFLO. Cl. 31.
720,339. NIFTY KNICKNACK. Cl. 32.
720,347. RE-CALL-IT. Cl. 37.
720,348. CHEMI-JET. Cl. 37.
720,352. FIT-TESTED ETC. AND DESIGN. Cl. 37.
720,353. DRAGON FLY. Cl. 37.
720,358. RECEPTO. Cl. 37.
720,364. JOB TALKS. Cl. 38.
720,365. A MILLER GREETING IS LIKE A PERSONAL MEETING. Cl. 38.
720,366. TALL TALES. Cl. 38.
720,368. SHOE-O-GRAMS. Cl. 38.
720,373. FAMILY LANE. Cl. 39.
720,377. MADRIGAL. Cl. 39.
720,381. BEAUTIFOAM. Cl. 39.
720,384. DRI-NIGHTER PANTY. Cl. 39.
720,386. RIVETEX. Cl. 39.
720,390. SOFLON. Cl. 39.
720,395. CONQUEROR. Cl. 44.
720,407. EVR-FRESH. Cl. 46.
720,415. CHEF ROBERTO'S AND REPRESENTATION OF A CHEF. Cl. 46.
720,416. SUNGLO. Cl. 46.
720,425. FOODS FOR LIFE. Cl. 46.
720,432. VITA-SHUG. Cl. 46.
720,435. BILLY PENN AND DESIGN. Cl. 46.
720,436. FETCH. Cl. 46.
720,437. MONTAIRE. Cl. 46.
720,442. ORELAND KENNELS AND DESIGN. Cl. 46.
720,445. TURK-E-WISE. Cl. 46.
720,449. RILLING AND DESIGN. Cl. 47. 8–22–67.
720,453. NATIVE SUN. Cl. 51.
720,456. EXCITE. Cl. 51.
720,457. ESPRIT DE NUIT. Cl. 51.
720,458. PANAROMA. Cl. 51.
720,462. FAB AND DESIGN. Cl. 52.
720,463. GALVANIC. Cl. 52.
720,468. U.S. FLARE. Cl. 100.
720,469. DURAMIR. Cl. 100.
720,470. CHECK-A-TRON AND DESIGN. Cl. 101.
720,471. REPRESENTATION OF MYTHICAL FIGURE. Cl. 101.
720,475. KMAND AND DESIGN. Cl. 102.
720,483. HOUSE OF CERAMICS AND DESIGN. Cl. 1.
720,486. ENDRASH. Cl. 18.
720,491. TEN TO READ. Cl. 38.
720,493. PLYMOUTH ETC. AND DESIGN. Cl. 49.
720,496. MASQUE BLEU. Cl. 51.
720,499. CONVERT-A-FRONT. Cl. 103.

Section 18

722,339. FAIRFIELD FARMS. Cl. 46. 10–3–61.

INDEX OF REGISTRANTS

OCTOBER 10, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Action Bag & Envelope Co., Inc., Brooklyn, N.Y. 836,503–4, pub. 7–25–67. Cl. 2.
Adpact Sign Corp.: *See*—
General Indicator Corp.
Aeroplastics Corp., Venice, Calif. 720,176, canc. Cl. 2.
Air Reduction Co., Inc., d.b.a. Murex Welding Products, New York, N.Y. 836,726, pub. 7–25–67. Cl. 34.
Ajay Golf Products, Inc., Delavan, Wis. 836,641, pub. 7–25–67. Cl. 22.
Akro-Mils, Inc., Akron, Ohio. 720,339, canc. Cl. 32.
Aktiebolaget Bofors, Bofors, Sweden. 720,256, canc. Cl. 18.
Akts. Holmegaards Glasvaerk, to Kastrup Og Holmegaards Glasvaerker A/S, Copenhagen, Denmark. 433,311, ren. 10–10–67. Cl. 33.
Alfanal Sales Co., Sacramento, Calif. 836,603, pub. 7–25–67. Cl. 18.
Alfoil Co.: *See*—
Aluminum Foil Packaging Co.
All States Freight, Inc., Akron, Ohio. 836,909–10, pub. 7–25–67. Cl. 105.
Allied Mfg. Co., Inc., Denver, Colo. 720,241, canc. Cl. 16.
Aluminum Foil Packaging Co., d.b.a. Alfoil Co., Fort Madison, Iowa. 836,502, pub. 7–25–67. Cl. 2.
Amberg File & Index Co., Kankakee, Ill. 836,497, pub. 7–25–67. Cl. 2.
American Argo Corp., from Atlas General Industries, Inc., New York, N.Y. 836,769, pub. 7–21–64. Cl. 39.
American Can Co., New York, N.Y. 720,178, canc. Cl. 2.
American Electronic Laboratories, Inc., Colmar, Pa. 836,623, pub. 7–25–67. Cl. 21.
American Enka Corp., Enka, N.C. 836,620, pub. 7–25–67. Cl. 21.
American Factors Associates, Ltd., Honolulu, Hawaii. 836,682, pub. 7–25–67. Cl. 23.
American Gas & Chemicals, Inc., New York, N.Y. 836,543, pub. 7–25–67. Cl. 6.
American Home Products Corp., New York, N.Y. 836,665, pub. 7–25–67. Cl. 23.
American Hospital Supply Corp., Evanston, Ill. 836,601, pub. 7–25–67. Cl. 18.
American International Pictures, Los Angeles, Calif. 836,755, pub. 7–25–67. Cl. 38.
American Metal Climax, Inc., d.b.a. Pyron Co., New York, N.Y. 836,584, pub. 7–25–67. Cl. 14.
American Termoform Corp., Los Angeles, Calif. 836,496, pub. 7–25–67. Cl. 2.
American Walnut Co., Inc., Kansas City, Kans. 836,547, pub. 7–25–67. Cl. 9.
Ampex Corp., Redwood City, Calif. 836,695, pub. 7–25–67. Cl. 26.
Amway Corp., Ada, Mich. 836,809, pub. 7–25–67. Cl. 44.
Anger International, Inc., New York, N.Y. 836,703, pub. 7–25–67. Cl. 26.
Animal Trap Co. of America, to Woodstream Corp., Lititz, Pa. 433,186, ren. 10–10–67. Cl. 22.
Animal Trap Co. of America, to Woodstream Corp., Lititz, Pa. 435,874, ren. 10–10–67. Cl. 50.
Appleton Electric Co., Chicago, Ill. 836,611, pub. 7–25–67. Cl. 21.
Applied Power Industries, Inc., Milwaukee, Wis. 836,653, pub. 7–25–67. Cl. 23.
Amour & Co., Chicago, Ill. 836,824, pub. 7–25–67. Cl. 46.
Armstrong Cork Co., Lancaster, Pa. 836,505–9, pub. 7–25–67. Cl. 2.
Armstrong, S.A. Ltd., Toronto, Ontario, Canada. 836,731, pub. 7–25–67. Cl. 35.
Arrow Research Medicinals: *See*—
Sacharow, Benjamin F.
Arrow Service Corp., Milwaukee, Wis. 836,725, pub. 7–25–67. Cl. 34.
Arthur, Glenn, Corp., State College, Pa. 720,160, canc. Cl. 1.
Art's-Way Mfg. Co., Inc., Armstrong, Iowa. 836,678, pub. 7–25–67. Cl. 23.
Arvey Corp., Chicago, Ill. 836,750, pub. 7–25–67. Cl. 37.
Associated Products, Inc., Chicago, Ill., to Richard Hudnut, Morris Plains, N.J. 429,907, ren. 10–10–67. Cl. 2.
Atlantic Research Corp., Alexandria, Va. 720,468, canc. Cl. 100.
Atlas General Industries, Inc.: *See*—
American Agro Corp.
Atlas Supply Co., Springfield, N.J. 836,607, pub. 7–25–67. Cl. 19.
Atlas Supply Co., Springfield, N.J. 836,704, pub. 7–25–67. Cl. 26.
Augstein, S., & Co., Inc., New York, N.Y. 836,785, pub. 7–25–67. Cl. 39.
Automatic Information Products Co.: *See*—
Datafax Corp.
Avion Aids Co.: *See*—
Spasek, Edward.
Avnet, Inc., New York, N.Y. 836,889, pub. 7–25–67. Cl. 52.
Babcock & Wilcox Co., The, New York, N.Y. 432,130, ren. 10–10–67. Cl. 12.
Badger Meter Mfg. Co., Milwaukee, Wis. 836,700, pub. 7–25–67. Cl. 26.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 836,868, pub. 7–25–67. Cl. 50.
Bal, William, Corp., Elizabeth, N.J. 836,511–12, pub. 7–25–67. Cl. 2.
Barber, W. H., Oil Co., Chicago, Ill. 836,585, pub. 7–25–67. Cl. 15.
Barr Chemical Products, Inc., Berkeley, Calif. 836,647, pub. 7–25–67. Cl. 23.
Bastian-Blessing Co., The, Chicago, Ill. 720,334, canc. Cl. 31.
Bau, Robert G., Studio City, Calif. 836,790, pub. 6–28–66. Cl. 40.
Baxter Laboratories, Inc., Morton Grove, Ill. 836,890, pub. 7–25–67. Cl. 52.
Beacon Looms Inc., New York, N.Y. 836,800, pub. 7–25–67. Cl. 42.
Bear Archery Co., Grayling, Mich. 836,636, pub. 7–25–67. Cl. 22.
Beatrice Foods Co.: *See*—
Clark, D. L., Co., The.
Beatrice Foods Co., Chicago, Ill. 720,416, canc. Cl. 46.
Beatrice Foods Co., d.b.a. The Candy Kitchens of Beatrice Foods Co., Chicago, Ill. 836,838–9, pub. 7–25–67. Cl. 46.
Beauty Counselors, Inc., Grosse Pointe, Mich. 836,874, pub. 7–25–67. Cl. 51.
Beitler, S. S., Inc., Laurelton, N.Y. 836,757, pub. 7–25–67. Cl. 38.
Beloit Eastern Corp., Downingtown, Pa. 836,657, pub. 7–25–67. Cl. 23.
Benrus Watch Co., Inc., New York, N.Y. 836,710–11, pub. 7–25–67. Cl. 27.
Bens, Harold J., d.b.a. Wedding Cake Studio, Peoria, Ill. 836,817, pub. 7–25–67. Cl. 46.
Berkshire Color & Chemical Co.: *See*—
Tenneco Chemicals, Inc.
Bernard, Clem, Co., Inc., New Orleans, La. 720,471, canc. Cl. 101.
Berry, J. Chester, Durham, N.C. 720,352, canc. Cl. 37.
Best Brands Merchandising Service, Inc., Chicago, Ill. 720,375, canc. Cl. 39.
Birma Products Corp., Sayreville, N.J. 836,556, pub. 7–25–67. Cl. 12.
Bjorksten Research Laboratories, Inc., Madison, Wis. 836,559, pub. 7–25–67. Cl. 12.
Blaupunkt Werke Gesellschaft mit beschrankter Haftung, Hildesheim, Germany, from Robert Bosch Corp., Long Island City, N.Y. 720,276, canc. Cl. 21.
Blickman, S., Inc., Weehawken, N.J. 720,395, canc. Cl. 44.
Borden Co., The: *See*—
Reid Ice Cream Corp.
Borg-Warner Corp., Chicago, Ill. 720,301, canc. Cl. 23.
Bosch, Robert, Corp.: *See*—
Blaupunkt Werke Gesellschaft mit beschrankter Haftung.
Bostitch, Inc.: *See*—
Textron, Inc.
Boston Bonnie Fisheries: *See*—
Boston Bonnie, Inc.
Boston Bonnie, Inc., from Genoa Fisheries, Inc., d.b.a. Boston Bonnie Fisheries, Boston, Mass. 836,826, pub. 7–25–67. Cl. 46.
Bowie Machine Works, Inc., Bowie, Tex. 836,674, pub. 7–25–67. Cl. 23.
Brevitt Shoes Ltd., Leicester, England. 836,777, pub. 7–25–67. Cl. 39.
British Dyestuffs Corp., Ltd., Blackley, Manchester, to Imperial Chemical Industries, Ltd., London, England. 235,605, ren. 10–10–67. Cl. 6.
Brown Co., Kalamazoo, Mich. 836,526, pub. 7–25–67. Cl. 5.
Browns Hosiery Mills, Inc., Burlington, from P. H. Hanes Knitting Co., Inc., Winston-Salem N.C. 836,770, pub. 3–2–65. Cl. 39.
Brumley-Donaldson Co., Huntington Park, Calif. 836,514–15, pub. 7–25–67. Cl. 3.
Budget Rent-A-Car Corp. of America, Chicago, Ill. 836,911, pub. 7–25–67. Cl. 105.
Bulluck Hosiery, Inc.: *See*—
Elliott Knitting Mills, Inc.
Burch Mfg. Co., Fort Dodge, Iowa. 836,676, pub. 7–25–67. Cl. 23.
Burlington Industries, Inc., New York, N.Y. 836,797, pub. 7–25–67. Cl. 42.
Butler, John O., Co., Chicago, Ill. 836,714, pub. 7–25–67. Cl. 29.
Butler Mfg. Co., Kansas City, Mo. 836,679, pub. 7–25–67. Cl. 23.
Butler Mfg. Co., Kansas City, Mo. 836,764–5, pub. 7–25–67. Cl. 38.
CRC Corp.: *See*—
Corrosion Reaction Consultants, Inc.
CWR Citrus Processors, Inc.: *See*—
Monte Vista Citrus Assn.
Caco Mfg. Co., Houston, Tex. 836,604, pub. 7–25–67. Cl. 19.
Cadaco, Inc., Chicago, Ill. 836,642–3, pub. 7–25–67. Cl. 22.
California Candle Corp., from Royalite Candle Co., Millbrae, Calif. 836,588, pub. 7–25–67. Cl. 15.
California Weavers, Inc., Los Angeles, Calif. 836,799, pub. 7–25–67. Cl. 42.
Callaway Mills, to Callaway Mills Co., La Grange, Ga. 433,991, ren. 10–10–67. Cl. 42.

Callaway Mills Co.: *See*—
Callaway Mills.
Candy Kitchens of Beatrice Foods Co., The: *See*—
Beatrice Foods Co.
Capco Products: *See*—
Columbus Auto Parts Co., The.
Carnation Co., Los Angeles, Calif. 836,834, pub. 7–25–67. Cl. 46.
Carry-Lite, Inc., Milwaukee, Wis. 836,499, pub. 7–25–67. Cl. 2.
Carter Products Co., Inc., Grand Rapids, Mich. 836,628, pub. 7–25–67. Cl. 21.
Carter-Wallace, Inc., New York, N.Y. 836,879–85, pub. 7–25–67. Cl. 51.
Cast-Crete Corp. of Florida, Tampa, Fla. 836,555, pub. 7–25–67. Cl. 12.
Chair-Loc Co., The, Lakehurst, N.J. 433,469, ren. 10–10–67. Cl. 5.
Chalbar, Ltd., London, England. 836,538, pub. 7–25–67. Cl. 6.
Champion Home Builders Co., Dryden, Mich. 836,606, pub. 7–25–67. Cl. 19.
Check-A-Tron of Princeton, Inc., Princeton, N.J. 720,470, canc. Cl. 101.
Chef Roberto Food Products, Inc., Miami, Fla. 720,415, canc. Cl. 46.
Chemical Service of Baltimore, Inc., Baltimore, Md. 836,891, pub. 7–25–67. Cl. 52.
Chemithon Corp., The, Seattle, Wash. 836,685, pub. 7–25–67. Cl. 23.
Chesterton, A. W., Co., Everett, Mass. 836,590, pub. 7–25–67. Cl. 15.
Chesterton, A. W., Co., Everett, Mass. 836,732, pub. 7–25–67. Cl. 35.
Chip 'N Twigs, Inc., Philadelphia, Pa. 836,788, pub. 7–25–67. Cl. 39.
Cima Electronics, Inc., Jamaica, N.Y. 836,625, pub. 7–25–67. Cl. 21.
Circle F Industries, Inc., Trenton, N.J. 836,619, pub. 7–25–67. Cl. 21.
Citterio, Guiseppe, S.p.A., Rho, Milan, Italy. 836,856, pub. 7–25–67. Cl. 46.
Clairol, Inc., New York, N.Y. 836,886, pub. 7–25–67. Cl. 51.
Claridge Food Co., Inc., Flushing, N.Y. 836,833, pub. 7–25–67. Cl. 46.
Clark, D. L., Co., The, Pittsburgh, Pa., to Beatrice Foods Co., Chicago, Ill. 431,442, ren. 10–10–67. Cl. 46.
Clover Mfg. Co., The: *See*—
Gallaher, Edward B.
Clyde, Anderston, Engineers, Ltd., Nead Bolton, England. 836,648, pub. 7–25–67. Cl. 23.
Coates & Co. (Plymouth), Ltd., Plymouth, England. 720,493, canc. Cl. 49.
Coca Cola Co., The, to The Coca-Cola Co., Atlanta, Ga. 238,-145–6, ren. 10–10–67. Cl. 45.
Cohen, Joseph H., & Sons, Inc., New York, N.Y. 720,386, canc. Cl. 39.
Cohn, Gustav, New York, N.Y., to Gamins, Inc., Wilkes-Barre, Pa. 431,488, ren. 10–10–67. Cl. 39.
Colgate-Palmolive Co.: *See*—
Palmolive-Peet Co., The.
Colgate-Palmolive Co., New York, N.Y. 720,462–3, canc. Cl. 52.
College Hill Industries, Inc.: *See*—
Pearson, William M., Travel Agency, Inc.
Columbia Broadcasting System, Inc., New York, N.Y. 836,-913, pub. 7–25–67. Cl. 107.
Columbus Auto Parts Co., The, d.b.a. Capco Products, Columbus, Ohio. 720,229, canc. Cl. 13.
Columbus Auto Parts Co., The, d.b.a. Capco Products, Columbus, Ohio. 720,284, canc. Cl. 22.
Comet Rice Mills, Inc., Houston, Tex. 836,835, pub. 7–25–67. Cl. 46.
Commercial Shirt Corp., New York, N.Y. 432,357, ren. 10–10–67. Cl. 39.
Conductron Corp., Ann Arbor, Mich. 836,686, pub. 7–25–67. Cl. 26.
Continental Illinois National Bank & Trust Co. of Chicago, Chicago, Ill. 836,895, pub. 7–25–67. Cl. 100.
Continental Industries, Inc., Westbury, N.Y. 720,303, canc. Cl. 23.
Continental Instruments Corp., Lynbrook, N.Y. 836,630, pub. 7–25–67. Cl. 21.
Cop-R-Lum Industries, Inc., Lynbrook, N.Y. 836,582, pub. 7–25–67. Cl. 14.
Corrosion Reaction Consultants, Inc., d.b.a. CRC Corp., Philadelphia, Pa. 720,193, canc. Cl. 6.
Council Mfg. Corp., Fort Smith, Ark., from The Yum-Burger Corp. of America, Springfield, Mo. 836,818–20, pub. 7–25–67. Cl. 46.
Craddock-Terry Co., to Craddock-Terry Shoe Corp., Lynchburg, Va. 238,782, ren. 10–10–67. Cl. 39.
Craddock-Terry Shoe Corp.: *See*—
Craddock-Terry Co.
Creasey Co. of Delaware, The, Louisville, Ky. 836,902–3, pub. 7–25–67. Cl. 101.
Crescent Metal Products, Inc., Cleveland, Ohio. 836,724, pub. 7–25–67. Cl. 34.
Cross Co., The, Fraser, Mich. 836,663, pub. 7–25–67. Cl. 23.
Crown Zellerbach Corp., San Francisco, Calif. 720,277, canc. Cl. 21.
Crucible Steel Co. of America, Pittsburgh, Pa. 836,583, pub. 7–25–67. Cl. 14.
Curtis, Helene, Industries, Inc.: *See*—
Lentheric, Inc.
Dairy Queen National Development Co., St. Louis, Mo. 836,-897, pub. 7–25–67, Cl. 101.
Datafax Corp., d.b.a. Automatic Information Products Co., Atlanta, Ga. 720,274, canc. Cl. 21.
Davis, Don, San Jose, Calif. 836,908, pub. 7–25–67. Cl. 105.
Dayan, Raymond, from Swissknit Mfg., Inc., New York, N.Y. 836,778, pub. 7–25–67. Cl. 39.
Dearborn Lawn Products, Inc., Dearborn, Mich. 720,231, canc. Cl. 13.
Delta Tire Corp., Detroit, Mich. 836,733, pub. 7–25–67. Cl. 35.
Demert & Dougherty, Inc., Chicago, Ill. 836,873, pub. 7–25–67. Cl. 51.
Desert Publications, Inc., Palm Springs, Calif. 836,753, pub. 7–25–67. Cl. 38.
Dettra Flag Co., Inc., Oaks, Pa. 237,350, ren. 10–10–67. Cl. 50.
Di Giorgio Corp., d.b.a. Earl Fruit Co., San Francisco, Calif. 836,848, pub. 7–25–67. Cl. 46.
Ditric Corp., Waltham, Mass. 836,691, pub. 7–25–67. Cl. 26.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 836,-743–8, pub. 7–25–67. Cl. 37.
Dolac, Ray, Enterprises, Inc., Chicago, Ill. 836,675, pub. 7–25–67. Cl. 23.
Dome Chemicals, Inc., New York, N.Y. 720,254, canc. Cl. 18.
Domtar, Ltd., Montreal, Quebec, Canada. 836,562, pub. 7–25–67. Cl. 12.
Dor-Line, Inc., Glendale, Wis. 836,572, pub. 7–25–67. Cl. 13.
Dornost Publishing Co., Inc.: *See*—
Fiduciary Publishers, Inc.
Dow Chemical Co., The, Midland, Mich. 720,214, canc. Cl. 10.
Dow Chemical Co., The, Midland, Mich. 836,486, pub. 7–25–67. Cl. 1.
Dow Chemical Co., The, Midland, Mich. 836,541, pub. 7–25–67. Cl. 6.
Dow Chemical Co., The, Midland, Mich. 836,672, pub. 7–25–67. Cl. 23.
Dow Chemical Co., The, Midland, Mich. 836,716, pub. 7–25–67. Cl. 31.
Driscoll Strawberry Associates, Inc., Salinas, Calif. 836,842, pub. 7–25–67. Cl. 46.
Drug Specialties, Inc., Clemmons, N.C. 720,249, canc. Cl. 18.
DuBarry of Hollywood, Inc., Los Angeles, Calif. 720,381, canc. Cl. 39.
Dublin Industries, Inc., Hayward, Calif. 720,336, canc. Cl. 31.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 435,134, ren. 10–10–67. Cl. 6.
Earl Fruit Co.: *See*—
Di Giorgio Corp.
Eaton Yale & Towne, Inc., Cleveland, Ohio. 836,616, pub. 7–25–67. Cl. 21.
Eaton Yale & Towne Inc., Cleveland, Ohio. 836,670, pub. 7–25–67. Cl. 23.
Edison Brothers Stores, Inc., St. Louis, Mo. 836,520, pub. 7–25–67. Cl. 4.
Edwards, Lindell N., d.b.a. Mini-Bowl of America, St. Louis, Mo. 720,289, canc. Cl. 22.
Eicher, Peter, & Son, Inc., Archbold, Ohio. 720,445, canc. Cl. 46.
Eldon Industries, Inc., Hawthorne, Calif. 836,727, pub. 7–25–67. Cl. 34.
Electric Machinery Mfg. Co., Minneapolis, Minn. 432,108, ren. 10–10–67. Cl. 21.
Electrical Log Services, Inc., Dallas, Tex. 836,763, pub. 7–25–67. Cl. 38.
Electro Measure, Inc., Menasha, Wis. 836,644, pub. 7–25–67. Cl. 23.
Electronic Communications, Inc., St. Petersburg, Fla. 836,699, pub. 7–25–67. Cl. 26.
Elliott Knitting Mills, Inc., Hickory, N.C., to Bulluck Hosiery, Inc., New York, N.Y. 237,827, ren. 10–10–67. Cl. 39.
Em-Kay Engineering Co., Forest Park, Ill. 836,658, pub. 7–25–67. Cl. 23.
Ender-Monarch Corp., Garfield, N.J. 720,222, canc. Cl. 12.
Endo Laboratories, Inc.: *See*—
Endo Products, Inc.
Endo Products, Inc., New York, to Endo Laboratories, Inc., Garden City, N.Y. 434,874, ren. 10–10–67. Cl. 18.
Endo Products, Inc., New York, to Endo Laboratories, Inc., Garden City, N.Y. 435,031, ren. 10–10–67. Cl. 18.
Endo Products, Inc., New York, to Endo Laboratories, Inc., Garden City, N.Y. 435,086, ren. 10–10–67. Cl. 18.
Engelhard Industries, Inc.: *See*—
Wilson, H. A., Co., The.
Escalon Packers, Inc., Escalon, Calif. 836,843, pub. 7–25–67. Cl. 46.
Etablissements Andre Giller, Troyes, Aube, France. 720,377, canc. Cl. 39.
Everguard Coatings (International), Ltd., Niagara Falls, Ontario, Canada. 836,550–2, pub. 7–25–67. Cl. 12.
Evr-Fresh Pet Products Co., Chicago, Ill. 720,407, canc. Cl. 46.
Executrans, Inc., New York, N.Y. 836,899, pub. 7–25–67. Cl. 101.
Eymond, Jean, Inc., Miami, Fla. 836,872, pub. 7–25–67. Cl. 51.
FMC Corp., San Jose, Calif. 836,575, pub. 7–25–67. Cl. 13.
FMC Corp., San Jose, Calif. 836 677, pub. 7–25–67. Cl. 23.
Falco Products Co., d.b.a. Falco Products Co., Philadelphia, Pa. 720.308, canc. Cl. 24.
Faull & Son Tool & Die Co., Niles, Ohio. 836,573, pub. 7–25–67. Cl. 13.
Faultless Starch Co., Kansas City, Mo. 836,527, pub. 6–1–65. Cl. 6.
Felker Mfg. Co., Torrance, Calif. 836,519. pub. 7–25–67. Cl. 4.
Ferrero, P., & C. S.p.A., Cuneo, Italy. 836,855, pub. 7–25–67. Cl. 46.

Ferry-Morse Seed Co., Mountain View, Calif. 434,952, ren. 10–10–67. Cl. 1.
Fiduciary Publishers, Inc., from Dornost Publishing Co., Inc., New York, N.Y. 836,916. Cl. 38.
Filigree Foods, Inc., Lyndhurst, N.J. 836,830, pub. 7–25–67. Cl. 46.
First Spice Mixing Co., Inc., Long Island City, N.Y. 836,825, pub. 7–25–67. Cl. 46.
Fischer & Porter Co., Warminster, Pa. 720,327, canc. Cl. 26.
Fleet-Wing Corp., Cleveland, Ohio. 836,586–7, pub. 7–25–67. Cl. 15.
Flint, Marie, and Margaret M. Schuttler, Park Ridge, Ill. 836,-772, pub. 7–25–67. Cl. 39.
Florsheim Shoe Co., The: *See*—
Interco, Inc.
Flow Laboratories Inc., Rockville, Md. 836,693, pub. 7–25–67. Cl. 26.
Flying Tigers (American Volunteer Group-Chinese Air Force), Inc., The, Los Angeles, Calif. 435,905–7, ren. 10–10–67. Cl. 50.
Fontlladosa, Enrique Bernat, Barcelona, Spain. 836,821, pub. 7–25–67. Cl. 46.
Food Industries, Ltd., Liverpool, England. 836,846, pub. 7–25–67. Cl. 46.
Foods for Life, Inc., Glendale, Calif. 720,425, canc. Cl. 46.
Ford Motor Co., Dearborn, Mich. 232,051, ren. 10–10–67. Cl. 15.
Frank, Richard, d.b.a. Richard Frank & Co., New York, N.Y. to Thomas J. Lipton, Inc., Englewood Cliffs, N.J. 232,394, ren. 10–10–67. Cl. 46.
Frank, Richard, & Co.: *See*—
Frank, Richard.
French Sardine Co. of Calif., d.b.a. French Sardine Co., Inc., to Star-Kist Foods, Inc., Terminal Island, Calif. 238,737, ren. 10–10–67. Cl. 46.
French Sardine Co., Inc.: *See*—
French Sardine Co. of Calif.
Frick Co., Waynesboro, Pa. 836,715, pub. 7–25–67. Cl. 31.
Fruit Cake Bakers of America, Inc., Chicago, Ill. 722,339, canc. Cl. 46.
Futurmill, Inc., Farmington, Mich. 836,649, pub. 7–25–67. Cl. 23.
Gallaher, Edward B., New York, N.Y., to The Clover Mfg. Co., Norwalk, Conn. 65,094, ren. 10–10–67. Cl. 4.
Gamble Machine, Inc., Carthage, N.Y. 720,307, canc. Cl. 23.
Gamins, Inc.: *See*—
Cohn, Gustav.
Garde Drug Co., Philadelphia, Pa. 720,189, canc. Cl. 6.
Gebr. Schulten, Oeding, near Borken, Germany. 836,773, pub. 7–25–67. Cl. 39.
Geigy Chemical Corp., Ardsley, N.Y. 720,196, canc. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 720,264, canc. Cl. 18.
General Aniline and Film Corp., New York, N.Y., from Grant Photo Products, Inc., Lakewood, Ohio. 720,320, canc. Cl. 26.
General Aniline & Film Corp., New York, N.Y. 836,485, pub. 7–25–67. Cl. 1.
General Cable Corp., New York, N.Y. 836,518, pub. 7–25–67. Cl. 4.
General Development Corp., Miami, Fla. 720,469, canc. Cl. 100.
General Features Corp., New York, N.Y. 836,756, pub. 7–25–67. Cl. 38.
General Foods Corp., White Plains, N.Y. 836,811, pub. 7–6–65. Cl. 45.
General Indicator Corp., from Adpact Sign Corp., New York, N.Y. 720,499, canc. Cl. 103.
General Mills, Inc., Minneapolis, Minn. 836,656, pub. 7–25–67. Cl. 23.
General Mills, Inc., Minneapolis, Minn. 836,814, pub. 10–3–65. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 836,857–9, pub. 7–25–67. Cl. 46.
General Time Corp., New York, N.Y. 720,279, canc. Cl. 21.
General Time Corp., New York, N.Y. 720,324, canc. Cl. 26.
General Time Corp., Stamford, Conn. 836,712, pub. 7–25–67. Cl. 27.
Genoa Fisheries, Inc.: *See*—
Boston Bonnie, Inc.
Gilbert, Thomas B., d.b.a. Sta-Tom Co., Anton, Tex. 836,635, pub. 7–25–67. Cl. 22.
Gillette Co., The: *See*—
Gillette Safety Razor Co.
Gillette Safety Razor Co., to The Gillette Co., Boston, Mass. 436,365, ren. 10–10–67. Cl. 23.
Gillman Knitwear Co., The, Cincinnati, Ohio. 836,783, pub. 7–25–67. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 836,729, pub. 7–25–67. Cl. 35.
Goodrich-Wright, Inc., Dallas, Tex. 836,600, pub. 7–25–67. Cl. 18.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 836,521–2, pub. 7–25–67. Cl. 5.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 836,730, pub. 7–25–67. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 836,735–6, pub. 7–25–67. Cl. 35.
Gordon-Pagel Co., assor. to Gordon Baking Co., to Silvercup Bakers, Inc., Detroit, Mich. 232,388, ren. 10–10–67. Cl. 46.
Gorham Corp., Providence, R.I. 836,660, pub. 7–25–67. Cl. 23.
Grace, W. R., & Co., New York, N.Y. 836,517, pub. 7–25–67. Cl. 4.
Grace, W. R., & Co., New York, N.Y. 836,589, pub. 7–25–67. Cl. 15.
Grant Photo Products, Inc.: *See*—
General Aniline and Film Corp.
Green, A. P., Fire Brick Co., to A. P. Green Refractories Co., Mexico, Mo. 236,227, ren. 10–10–67. Cl. 12.
Green, A. P., Refractories Co.: *See*—
Green, A. P., Fire Brick Co.
Grossisti, Edoardo, Shoe Co., Alliance, Ohio. 836,782, pub. 7–25–67. Cl. 39.
Grossman Music Corp., Cleveland, Ohio. 836,739, pub. 7–25–67. Cl. 36.
Gruner & Jahr G.m.b.H. & Co., Hamburg, Germany. 836,758, pub. 7–25–67. Cl. 38.
Gryphon Corp., Burbank, Calif. 836,705, pub. 7–25–67. Cl. 26.
Guarantee Trust Life Insurance Co., Chicago, Ill. 836,906, pub. 7–25–67. Cl. 102.
Hager, C., & Sons Hinge Mfg. Co., St. Louis, Mo. 836,571, pub. 7–25–67. Cl. 13.
Hallicrafters Co., The, from The Hallicrafters Co., Chicago, Ill. 836,617, pub. 7–25–67. Cl. 21.
Hammermill Paper Co., Erie, Pa. 836,749, pub. 7–25–67. Cl. 37.
Hanes, P. H., Knitting Co., Inc.: *See*—
Browne Hosiery Mills, Inc.
Harbin, Clyde A., d.b.a. J. C. Harbin's Freeze Rite Mix Co., and Harbin Mix Co., Inc., South Memphis, Tenn. 836,822, pub. 12–6–66. Cl. 46.
Harbin Mix Co., Inc.: *See*—
Harbin, Clyde A.
Harbin's, J. C., Freeze Rite Mix Co.: *See*—
Harbin, Clyde A.
Harmony Co., The, Chicago, Ill. 836,741, pub. 7–25–67. Cl. 36.
Harnischfeger Corp., West Milwaukee, Wis. 836,683, pub. 7–25–67. Cl. 23.
Harry & David, Medford, Oreg. 836,816, pub. 7–25–67. Cl. 46.
Harvey Aluminum, Inc., Torrance, Calif. 836,563, pub. 9–28–65. Cl. 13.
Heatbath Corp., Springfield, Mass. 836,542, pub. 7–25–67. Cl. 6.
Hedwin Corp., New York, N.Y. 836,510, pub. 7–25–67. Cl. 2.
Hermann & Jacobs Corp., New York, N.Y. 435,267, ren. 10–10–67. Cl. 42.
Higbee Button Co., Inc., Valley Stream, N.Y. 836,564, pub. 7–25–67. Cl. 13.
Hoppe, Frank A., Inc., Philadelphia, Pa. 836,591, pub. 7–25–67. Cl. 15.
House of Ceramics, Inc., Memphis, Tenn. 720,483, canc. Cl. 1.
Household Research Institute, San Francisco, Calif. 836,500, pub. 7–25–67. Cl. 2.
Hudnut, Richard: *See*—
Associated Products, Inc.
Humphreys Medicine Co., Inc., Rutherford, N.J. 836,875, pub. 7–25–67. Cl. 51.
Hy Glow Products, Inc., Los Angeles, Calif. 836,618, pub. 7–25–67. Cl. 21.
Hyde, Marshall, Inc., Port Huron, Mich. 836,539, pub. 7–25–67. Cl. 6.
Hyland Laboratories, Los Angeles, Calif. 720,198, canc. Cl. 6.
Ideal Toy Corp., Hollis, N.Y. 720,293, canc. Cl. 22.
Illinois Tool Works, Inc., Chicago, Ill. 836,651, pub. 7–25–67. Cl. 23.
Imperial Chemical Industries, Ltd.: *See*—
British Dyestuffs Corp., Ltd.
Instructo Products Co., Philadelphia, Pa. 836,637, pub. 7–25–67. Cl. 22.
Insul-8-Corp.: *See*—
Rucker Mfg. Co., The.
Interco, Inc., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 836,-896, pub. 7–25–67. Cl. 100.
Interline A.G., Burgodorf (Bern), Switzerland. 836,784, pub. 7–25–67. Cl. 39.
International Cellulose Research, Ltd., Hawkesbury, Ontario, Canada. 836.760, pub. 7–25–67. Cl. 38.
International Minerals & Chemical Corp., Skokie, Ill. 720,212, canc. Cl. 6.
International Minerals & Chemical Corp., Skokie, Ill., from E. J. Lavino & Co., Philadelphia, Pa. 836,525, pub. 7–25–67. Cl. 5.
International Paper Co., New York, N.Y. 836,553, pub. 7–25–67. Cl. 12.
International Textbook Co., Scranton, Pa. 836,900, pub. 7–25–67. Cl. 101.
Investors Syndicate Life Insurance & Annuity Co., Minneapolis, Minn. 836,907, pub. 7–25–67. Cl. 102.
Italsider S.p.A., Genoa, Italy. 836,569, pub. 7–25–67. Cl. 13.
Jen-Cel-Lite Corp.: *See*—
Jensen Mfg. Co.
Jensen Mfg. Co., to Jen-Cel-Lite Corp., Seattle, Wash. 431,806, ren. 10–10–67. Cl. 1.
Jerissa Nut Co., Inc., Brooklyn, N.Y. 836,841, pub. 7–25–67. Cl. 46.
Joerns Furniture Co., Stevens Point, Wis. 836,805, pub. 7–25–67. Cl. 44.
Kastrup og Holmegaards Glasvaerker A/S: *See*—
Akta. Holmegaards Glasvaerk.
Kedcograph Co.: *See*—
Kurland, Jerome J.
Keim, Melville, d.b.a. Newport Tell-Tale, Newport Beach, Calif. 836,546, pub. 7–25–67. Cl. 8.
Ke-Master Division: *See*—
Moore, P. O., Inc.
King Kullen Grocery Co., Inc., Westbury, N.Y. 836,488, pub. 7–25–67. Cl. 1.
King Merritt & Co., Inc., New York, N.Y. 720,475, canc. Cl. 102.
Knickerbocker Biologicals, Inc., New York, N.Y. 720,208, canc. Cl. 6.

Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V., Deventer, Netherlands. 836,532–7, pub. 7–25–67. Cl. 6.
Koss Electronics, Inc., Milwaukee, Wis. 836,624, pub. 7–25–67. Cl. 21.
Kuehn Milling Co., Redwood City, to Nutro Dog Food, Inc., El Monte, Calif. 436,180, ren. 10–10–67. Cl. 46.
Kunzi, Stanton P., to Lake Park, Fla. 836,493, pub. 7–25–67. Cl. 2.
Kurland, Jerome J., d.b.a. Kedcograph Co., Chicago, Ill. 836,702, pub. 7–25–67. Cl. 26.
Kwik-Lite Mfg. Corp., Peekskill, N.Y. 836,629, pub. 7–25–67. Cl. 21.
Kyanize Paints, Inc., Everett, Mass. 836,593, pub. 7–25–67. Cl. 16.
Latrobe Electric Steel Co., to Latrobe Steel Co., Latrobe, Pa. 434,744, ren. 10–10–67. Cl. 14.
Latrobe Steel Co.: *See*—
Latrobe Electric Steel Co.
Lavino, E. J., & Co.: *See*—
International Minerals & Chemical Corp.
Le Blond, R. K., Machine Tool Co., The, Cincinnati, Ohio. 836,524, pub. 7–25–67. Cl. 5.
Lefcourte, Albert, d.b.a. Lefcourte Cosmetics Co., New York, N.Y., to Noxell Corp., Baltimore, Md. 434,267, ren. 10–10–67. Cl. 28.
Lefcourte Cosmetics Co.: *See*—
Lefcourte, Albert.
Leichter, Emil, Watch Co., Inc., New York, N.Y. 836,708, pub. 7–25–67. Cl. 27.
Lentheric, Inc., New York, N.Y., to Helene Curtis Industries, Inc., Chicago, Ill. 432,504, ren. 10–10–67. Cl. 51.
Lentheric, Inc., New York, N.Y., to Helene Curtis Industries, Inc., Chicago, Ill. 432,584, ren. 10–10–67. Cl. 51.
Levy, I., Sons, New York, N.Y. 720,182, canc. Cl. 2.
Libby, McNeill & Libby, Chicago, Ill. 836,840, pub. 7–25–67. Cl. 46.
Libby, McNeill & Libby, Chicago, Ill. 836,847, pub. 7–25–67. Cl. 46.
Lilly, Eli, & Co., Indianapolis, Ind. 836,599, pub. 7–25–67. Cl. 18.
Lincoln, John, d.b.a. The John Lincoln Co., San Francisco, Calif. 836,531, pub. 7–25–67. Cl. 6.
Lincoln, John, Co., The: *See*—
Lincoln, John.
Lindells Vagfabriks Aktiebolag, Jonkopin, Sweden. 720,323, canc. Cl. 26.
Lipschultz Bros., St. Paul, Minn. 719,915, canc. Cl. 19.
Lipton, Thomas J., Inc.: *See*—
Frank, Richard.
Loral Corp., Bronx, N.Y. 836,639, pub. 7–25–67. Cl. 22.
Lorentzen, Levolor, Inc., Hoboken, N.J. 836,581, pub. 7–25–67. Cl. 14.
Luscoe Products Ltd., Toronto, Ontario, Canada. 720,486, canc. Cl. 18.
Luzier, Inc., Kansas City, Mo. 836,878, pub. 7–25–67. Cl. 51.
MAC Valves, Inc., Detroit, Mich. 836,574, pub. 7–25–67. Cl. 13.
Maidenform, Inc., New York, N.Y. 836,774, pub. 7–25–67. Cl. 39.
Maison Pierre Bardou-Job, to Societe Job, Anciens Etablissements Bardou-Job & Paulihac, Perpignan, France. 63,177, ren. 10–10–67. Cl. 17.
Major Pool Equipment Corp., Kearny, N.J. 836,640, pub. 7–25–67. Cl. 22.
Mallinckrodt Chemical Works, St. Louis, Mo. 802,065, canc. Cl. 6.
Mallinckrodt Chemical Works, St. Louis, Mo. 836,489, pub. 4–13–65. Cl. 2.
Masurel, Francois, Freres Societe Anonyme, Tourcoing, Nord, France. 836,802, pub. 7–25–67. Cl. 43.
Math. Bauerle G.m.b.H., St. Georgen, Black Forest, Germany. 836,667–8, pub. 7–25–67. Cl. 23.
Mattel, Inc., Hawthorne, Calif. 720,292, canc. Cl. 22.
McCord, Corp., Detroit, Mich. 836,734, pub. 7–25–67. Cl. 35.
McCrory Corp., New York, N.Y. 836,904, pub. 7–25–67. Cl. 101.
McDonald, John D., d.b.a. National Electronics, Dallas, Tex. 836,803–4, pub. 7–25–67. Cl. 44.
McGlen, Inc., New York, N.Y. 836,779, pub. 7–25–67. Cl. 39.
McGuinness, L. J., & Co., Ltd., Mimico, Ontario, Canada. 836,863–4, pub. 7–25–67. Cl. 49.
McIntosh, J. J., Sons Corp., Tipton, Ind. 720,333, canc. Cl. 29.
Medco, Inc., Kansas City, Mo. 836,709, pub. 7–25–67. Cl. 27.
Mennen Co., The, Morristown, N.J. 836,877, pub. 7–25–67. Cl. 51.
Mercer, Clifton A., Tampa, Fla. 720,288, canc. Cl. 22.
Merchandising Corp. of America, Universal City, Calif. 836,869, pub. 7–25–67. Cl. 51.
Message Systems, Inc., New Haven, Conn. 836,631–2, pub. 7–25–67. Cl. 21.
Metro Wholesale Corp., New York, N.Y. 836,717, pub. 7–25–67. Cl. 31.
Metrometer, Inc., Waukegan, Ill. 836,696, pub. 7–25–67. Cl. 26.
Meyer, Joseph H., Bros., Brooklyn, to The Richelieu Corp., Holbrook, N.Y. 433,095–6, ren. 10–10–67. Cl. 28.
Meyer, Joseph H., Bros., Brooklyn, to The Richelieu Corp., Holbrook, N.Y. 433,098, ren. 10–10–67. Cl. 28.
Meyer Laboratories, Inc., Detroit, Mich. 836,602, pub. 7–25–67. Cl. 18.
Meyercord Co., The, Chicago, Ill. 836,655, pub. 7–25–67. Cl. 23.
Michell, Henry F., Co., King of Prussia, Pa. 720,152, canc. Cl. 1.
Miller Art Co., Inc., Brooklyn, N.Y. 720,365, canc. Cl. 38.
Milton Co., The, El Segundo, Calif. 836,823, pub. 7–25–67. Cl. 46.
Milwaukee Glove Co., Milwaukee, Wis. 236,924, ren. 10–10–67. Cl. 39.
Mini-Bowl of America: *See*—
Edwards, Lindell N.
Minneapolis-Honeywell Regulator Co., Philadelphia, Pa. 720,325, canc. Cl. 26.
Mission Shippers, Inc., Mission, Tex. 836,849, pub. 7–25–67. Cl. 46.
Modular Fabrications, Inc., New York, N.Y. 720,290, canc. Cl. 22.
Monroe-Tufline Mfg. Co., Inc., Columbus, Miss. 836,646, pub. 7–25–67. Cl. 23.
Monsanto Co., St. Louis, Mo. 836,867, pub. 7–25–67. Cl. 50.
Monte Vista Citrus Assn., Riverside, Calif., to CWR Citrus Processors, Inc., Yuma, Ariz. 238,178, ren. 10–10–67. Cl. 46.
Moore, P. O., Inc., d.b.a. Ke-Master Division, Glen Riddle, Pa. 836,718, pub. 7–25–67. Cl. 32.
Morgan Construction Co., Worcester, Mass. 836,684, pub. 7–25–67. Cl. 23.
Morris, Philip, Inc., New York, N.Y. 836,887, pub. 7–25–67. Cl. 51.
Mr. Mod Shop, Inc., New Orleans, La. 836,780–1, pub. 7–25–67. Cl. 39.
Mr. Mod Shop, Inc., New Orleans, La. 836,794–5, pub. 7–25–67. Cl. 41.
Muir, Reginald L., d.b.a. Personnel Associates, Burlington, Vt. 836,898, pub. 7–25–67. Cl. 101.
Mul-T-Rul Co.: *See*—
Winslow, Rainsord J.
Municipal Supply Co., South Bend, Ind. 836,680, pub. 7–25–67. Cl. 23.
Murex Welding Products: *See*—
Air Reduction Co., Inc.
Nabisco Foods Ltd., Niagara Falls, Ontario, Canada. 720,436, canc. Cl. 46.
National Dairy Products Corp., Chicago, Ill. 836,827, pub. 7–25–67. Cl. 46.
National Electronics: *See*—
McDonald, John D.
National Homes Corp., Lafayette, Ind. 836,561, pub. 7–25–67. Cl. 12.
National Starch & Chemical Corp., New York, N.Y. 836,836–7, pub. 7–25–67. Cl. 46.
Natvar Corp., Woodbridge, N.J. 836,621, pub. 7–25–67. Cl. 21.
Nestle Co., Inc., The, White Plains, N.Y. 836,850, pub. 7–25–67. Cl. 46.
New York Herald Tribune, Inc., New York, N.Y. 720,366, canc. Cl. 38.
Newport Tell-Tale: *See*—
Keim, Melville.
Newsweek, Inc., New York, N.Y. 720,491, canc. Cl. 38.
Niagara International Centre, Ltd., Ontario, Canada. 836,866, pub. 7–25–67. Cl. 50.
Nightwriter Corp., Inc., Alexandria, Va. 836,751, pub. 7–25–67. Cl. 37.
Nissin Shokuhin Kaisha, Ltd., Takatsuki, Japan. 836,829, pub. 7–25–67. Cl. 46.
Norcross, Inc., New York, N.Y. 836,759, pub. 7–25–67. Cl. 38.
Norcross, Inc., New York, N.Y. 836,761, pub. 7–25–67. Cl. 38.
Norcross, Inc., New York, N.Y. 836,766, pub. 7–25–67. Cl. 38.
Nordam Division: *See*—
Nordam, Inc.
Nordam, Inc., d.b.a. Nordam Division, Tulsa, Okla. 836,608–9, pub. 7–25–67. Cl. 19.
Northern Yarn Mills, Newark, N.J. 836,801, pub. 12–23–64. Cl. 43.
Northwest Paper Co., The, Cloquet, Minn. 836,752, pub. 7–25–67. Cl. 37.
Nosco, Inc., Waukegan, Ill. 836,491, pub. 7–25–67. Multiple Class (Classes 2, 23, 32, and 37).
Noxell Corp.: *See*—
Lefcourte, Albert.
Noxell Corp., Baltimore, Md. 836,598, pub. 7–25–67. Cl. 18.
Noxell Corp., Baltimore, Md. 836,876, pub. 7–25–67. Cl. 51.
Nutro Dog Food, Inc.: *See*—
Kuehn Milling Co.
Nutting Associates: *See*—
Nutting William G.
Nutting, William G., d.b.a. Nutting Associates, Palo Alto, Calif. 836,634, pub. 7–25–67. Cl. 22.
O'Brien, Chilton, & Martin Davis, Trustees in Reorganization of Texas Portland Cement Co., Beaumont, Tex. 720,221, canc. Cl. 12.
O'Brien Mfg. Co., Temple, Tex. 836,764, pub. 8–20–63. Cl. 39.
Obrig Chemical Corp., Sarasota, Fla. 836,596, pub. 7–25–67. Cl. 18.
Ohio Carbon Co., The, Lakewood, Ohio. 720,335, canc. Cl. 31.
Olavarria & Co., Inc., New York, N.Y. 720,432, canc. Cl. 46.
Olin Mathieson Chemical Corp., New York, N.Y. 836,545, pub. 7–25–67. Cl. 6.
Oneida Community, Ltd., Oneida, and Niagara Falls, N.Y., to Woodstream Corp., Lititz, Pa. 65,498, ren. 10–10–67. Cl. 50.
Oneida Community, Ltd., Oneida, and Niagara Falls, N.Y., to Woodstream Corp., Lititz, Pa. 65,535, ren. 10–10–67. Cl. 50.
Oreland Kennels, Inc., Haskell, Tex. 720,442, canc. Cl. 46.
Ostra-Electronics: *See*—
Schneider, Jurgen.
Ostrom Mushroom Co., Seattle, Wash. 836,852, pub. 7–25–67. Cl. 46.
Outboard Marine Corp., Waukegan, Ill. 720,300, canc. Cl. 23.
Ozark Forest Products, Inc., Fayetteville, Ark. 836,487, pub. 7–25–67. Cl. 1.

Pacific American Fisheries, Inc., Bellingham, Wash. 720,291, canc. Cl. 22.
Pacific Polymers, Inc., Hawthorne, Calif. 720,170, canc. Cl. 1.
Palmer Commodities Corp., New York, N.Y. 836,775, pub. 7–25–67. Cl. 39.
Palmolive-Peet Co., The Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 231,817, ren. 10–10–67. Cl. 52.
Parfums Ciro, Inc., New York, N.Y. 720,458, canc. Cl. 51.
Patrick, C. H., & Co., Inc., Greenville, S.C. 720,202, canc. Cl. 6.
Paxton, Frank, Lumber Co., Kansas City, Mo. 720,219, canc. Cl. 12.
Pearson, William M., Travel Agency, Inc., Providence, from College Hill Industries, Inc., East Providence, R.I. 836,690, pub. 7–25–67. Cl. 26.
Penn, Billy, Packing Co.: *See*—
Solomon, Edward E. Sol.
Pennington Mfg. Co., Inc., Columbia, S.C. 836,786, pub. 7–25–67. Cl. 39.
Pennsylvania Saw Corp., York, Pa. 836,661–2, pub. 7–25–67. Cl. 23.
Pennwood Numechron Co., Pittsburgh, Pa. 836,707, pub. 7–25–67. Cl. 27.
Pepsi Cola Bottling Co. of Dothan, Inc., Dothan, Ala. 836,912, pub. 7–25–67. Cl. 107.
Personnel Associates: *See*—
Muir, Reginald L.
Peyron, Antoine Francois Regis, Paris, France. 720,496, canc. Cl. 51.
Philadelphia Eagles Football Club, Inc., The, Philadelphia, Pa. 836,914, pub. 7–25–67. Cl. 107.
Phillips Screw Co., Natick, Mass. 836,568, pub. 7–25–67. Cl. 13.
Pillsbury Co., The, Minneapolis, Minn. 720,437, canc. Cl. 46.
Point of View House, Inc.: *See*—
Union Carbide Corp.
Polycell Products Ltd., Welwyn Garden City, England. 836,645, pub. 7–25–67. Cl. 23.
Powers, John Robert, Products Co., Inc., New York, N.Y. 720,456–7, canc. Cl. 51.
Precision Exploration Co., Tulsa, Okla. 836,697, pub. 7–25–67. Cl. 26.
Precision Instrument Co., Palo Alto, Calif. 836,688, pub. 7–25–67. Cl. 26.
Precision Steel Warehouse, Inc., Franklin Park, Ill. 836,580, pub. 7–25–67. Cl. 14.
Premium Corp. of America, Inc., Minneapolis, Minn. 836,494, pub. 7–25–67. Cl. 2.
Prestige Records, Inc., Bergenfield, N.J. 836,742, pub. 7–25–67. Cl. 36.
Prev-Coat Corp., Fairfield, Conn. 836,870, pub. 7–25–67. Cl. 51.
Price System, Inc., New York, N.Y. 720,205, canc. Cl. 6.
Printing Developments, Inc., New York, N.Y. 836,530, pub. 7–25–67. Cl. 6.
Procter & Gamble Co., The, Cincinnati, Ohio. 836,888, pub. 7–25–67. Cl. 51.
Pyron Co.: *See*—
American Metal Climax, Inc.
Quantum Science Corp., New York, N.Y. 836,901, pub. 7–25–67. Cl. 101.
Quimby Pump Co., Inc., Newark, N.J., to Warren Pumps, Inc., Warren, Mass. 426,831, ren. 10–10–67. Cl. 23.
Rapid American Corp., New York, N.Y. 836,776, pub. 7–25–67. Cl. 39.
Rap-In-Wax Co., The, Minneapolis, Minn. 720,183, canc. Cl. 2.
Readco Industries, Inc., Reading, Mass. 836,557, pub. 7–25–67. Cl. 12.
Recreation Unlimited, Inc., Princeton, Fla. 720,271, canc. Cl. 19.
Redfield, Robert H., Inc., Chicago, Ill. 720,240, canc. Cl. 16.
Regal Ware, Inc., Kewaskum, Wis. 836,566, pub. 7–25–67. Cl. 13.
Reid Ice Cream Corp., Brooklyn, to The Borden Co., New York, N.Y. 230,074, ren. 10–10–67. Cl. 46.
Reliable Food Products: *See*—
Sparer, Isadore.
Remidat Enterprises, Baltimore, Md. 720,347, canc. Cl. 37.
Remington Arms Co., Inc.: *See*—
Union Metallic Cartridge Co., The.
Renshaw, McKeown & Young, Inc., Detroit, Mich. 836,905, pub. 7–25–67. Cl. 102.
Request Records, Inc., New Rochelle, N.Y. 836,738, pub. 7–25–67. Cl. 36.
Revco Products: *See*—
Reverse Stitch Mfg. Co.
Reverse Stitch Mfg. Co., to Revco Products, Whittier, Calif. 436,377, ren. 10–10–67. Cl. 23.
Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 836,638, pub. 7–25–67. Cl. 22.
Rexall Drug & Chemical Co., d.b.a. Thompson Industries Co., Los Angeles, Calif. 836,828, pub. 7–25–67. Cl. 46.
Rex-Metallic Casket Co., Webb City, Mo. 836,495, pub. 7–25–67. Cl. 2.
Reynolds Metals Co., Richmond, Va. 836,570, pub. 7–25–67. Cl. 13.
Rheem Mfg. Co., New York, N.Y. 836,498, pub. 7–25–67. Cl. 2.
Richards Wig Service, Inc., Kansas City, Mo. 836,894, pub. 7–25–67. Cl. 100.
Richelieu Corp., The: *See*—
Meyer, Joseph H., Bros.
Riddell Products, Ltd., London, England. 836,597, pub. 7–25–67. Cl. 18.
Riddell Products, Ltd., London, England. 836,807, pub. 7–25–67. Cl. 44.
Riekes Crisa Corp., Laredo, Tex. 836,719–20, pub. 7–25–67. Cl. 33.
Rilling, Albert, d.b.a. Ludwig Rilling Stuttgart, Bad Cannstatt, Germany. 720,449, canc. Cl. 47.
Rilling, Ludwig: *See*—
Rilling, Albert.
Rixona Conserven N.V., Warffum, Netherlands. 836,813, pub. 7–25–67. Cl. 46.
Rixona Conserven N.V., Warffum, Netherlands. 836,815, pub. 7–25–67. Cl. 46.
Rixson, Inc., Franklin Park, Ill. 836,613, pub. 7–25–67. Multiple Class (Classes 21 and 26).
Roberts, Francis, Agency, Inc., Louisville, Ky. 836,762, pub. 7–25–67. Cl. 38.
Robinson Syrup Co., Inc., Cairo, Ga. 233,423, ren. 10–10–67. Cl. 46.
Robosonics, Inc., Bronx, N.Y. 836,612, pub. 7–25–67. Cl. 21.
Rocking K Foods, Inc., Los Angeles, Calif. 836,861, pub. 7–25–67. Cl. 46.
Ronthor Reiss Corp., New York, N.Y. 836,558, pub. 7–25–67. Cl. 12.
Ronthor Reiss Corp., New York, N.Y. 836,806, pub. 7–25–67. Cl. 44.
Root Mfg. Co., Inc., Baxter Springs, Kans. 720,297, canc. Cl. 23.
Rosen, Leonard F., d.b.a. Leonard F. Rosen & Co., Chicago, Ill. 836,513, pub. 7–25–67. Cl. 8.
Rosen, Leonard F., & Co.: *See*—
Rosen, Leonard F.
Rotek Inc., Ravenna, Ohio. 836,669, pub. 7–25–67. Cl. 23.
Rowell Laboratories, Inc., Baudette, Minn. 720,259, canc. Cl. 18.
Royal Crest Lingerie Co., Inc., Brooklyn, N.Y. 720,384, canc. Cl. 39.
Royalite Candle Co.: *See*—
California Candle Corp.
Ruberoid Co., The, South Bound Brook, N.J. 720,272, canc. Cl. 20.
Rubinstein, Helena, Inc., New York, N.Y. 836,871, pub. 7–25–67. Cl. 51.
Rucker Mfg. Co., The, Oakland, from Insul-8-Corp., San Carlos, Calif. 836,622, pub. 7–25–67. Cl. 21.
Saba Schwarzwalder Apparate-Bau-Anstalt August Schwer Sohne G.m.b.H., Black Forest, Germany. 836,610, pub. 7–25–67. Multiple Class (Classes 21, 26, and 36).
Sacharow, Benjamin F., d.b.a. Arrow Research Medicinals, Hollywood, Calif. 720,453, canc. Cl. 51.
Samson Cordage Works, Boston, Mass. 66,933, ren. 10–10–67. Cl. 7.
Savin Business Machines Corp., New York, N.Y. 836,540, pub. 7–25–67. Multiple Class (Classes 6 and 26).
Schering Corp., Bloomfield, N.J. 836,767, pub. 7–25–67. Cl. 38.
Schneider, Jurgen, d.b.a. Ostra-Electronics, Siegen, Westphalia, Germany. 836,721, pub. 7–25–67. Cl. 34.
Sealright Co., Inc., Fulton, N.Y. 836,492, pub. 7–25–67. Cl. 2.
Seamless Rubber Co., The: *See*—
Rexall Drug & Chemical Co.
Setler, H. J., Co., Inc., Boston, Mass. 836,892–3, pub. 7–25–67. Cl. 100.
Selective Personnel, Columbus, Ohio. 720,364, canc. Cl. 38.
Service Industries, Philadelphia, Pa. 720,190, canc. Cl. 6.
Servotronics, Inc., Cheektowaga, N.Y. 836,728, pub. 7–25–67. Cl. 35.
Shawmut, Inc., Brockton, Mass. 720,390, canc. Cl. 39.
Shell Oil Co., New York, N.Y. 836,544, pub. 7–25–67. Cl. 6.
Shunk Mfg. Co., Inc., Bucyrus, Ohio. 836,681, pub. 7–25–67. Cl. 23.
Silks and Woolens From France Corp., New York, N.Y. 836,798, pub. 7–25–67. Cl. 42.
Silvercup Bakers, Inc.: *See*—
Gordon-Pagel Co.
Simmonds Precision Products, Inc., Tarrytown, N.Y. 720,302, canc. Cl. 23.
Simmonds Precision Products, Inc., Tarrytown, N.Y. 720,318, canc. Cl. 26.
Sinco Novelties Corp., New York, N.Y. 720,368, canc. Cl. 38.
Smallman, I., & Sons Co., New York, N.Y. 720,185, canc. Cl. 3.
Sniff's Date Gardens, Indio, Calif. 836,853, pub. 7–25–67. Cl. 46.
Societe Job, Anciens Etablissements Bardou-Job & Paulihac: *See*—
Maison Pierre Bardou-Job.
Sola Basic Industries, Inc., Milwaukee, Wis. 836,723, pub. 7–25–67. Cl. 34.
Solomon, Edward E., d.b.a. Billy Penn Packing Co., Philadelphia, Pa. 720,435, canc. Cl. 46.
Songrand Corp., The, Kansas City, Mo. 836,808, pub. 7–25–67. Cl. 44.
Sorg Paper Co., The, Middletown, Ohio. 720,358, canc. Cl. 37.
Southwestern Petroleum Corp., Fort Worth, Tex. 836,529, pub. 7–25–67. Cl. 6.
Southwestern Petroleum Corp., Forth Worth, Tex. 836,592, pub. 7–25–67. Cl. 16.
Sparer, Isadore, d.b.a. Reliable Food Products, Detroit, Mich. 720,210, canc. Cl. 6.
Spasek, Edward, d.b.a. Avion Aids Co., San Francisco, Calif. 836,698, pub. 7–25–67. Cl. 26.
Sperry Rand Corp., Great Neck, N.Y. 720,206, canc. Cl. 6.
Spiratone, Inc., Flushing, N.Y. 836,692, pub. 7–25–67. Cl. 26.
Standard Oil Co. of California, San Francisco, Calif. 436,046, ren. 10–10–67. Cl. 15.
Standard Products Corp., New Rochelle, N.Y. 836,548, pub. 7–25–67. Cl. 11.
Star-Kist Foods, Inc.: *See*—
French Sardine Co. of Calif.
Sta-Tom Co.: *See*—
Gilbert, Thomas B.

Steele Canning Co., Springdale, Ark. 836,854, pub. 7–25–67. Cl. 46.
Stewart-Warner Corp., Chicago, Ill. 836,694, pub. 7–25–67. Cl. 26.
Stoddard, Meryl L., Scottsdale, Ariz. 836,812, pub. 7–25–67. Cl. 45.
Sunbeam Corp., Chicago, Ill. 836,501, pub. 7–25–67. Cl. 2.
Surplus Record, Inc.: *See*—
Surplus Record Publishing Co., Inc.
Surplus Record Publishing Co., Inc., to Surplus Record, Inc., Chicago, Ill. 237,781, ren. 10–10–67. Cl. 38.
Swift & Co., Chicago, Ill. 431,251, ren. 10–10–67. Cl. 46.
Swissknit Mfg., Inc.: *See*—
Dayan, Raymond.
Systems Inc., New York, N.Y. 836,789, pub. 7–25–67. Cl. 39.
Taylor, W. A., & Co., New York, N.Y. 836,865, pub. 7–25–67. Cl. 49.
Tegre Sales Co., Inc., New York, N.Y. 720,348, canc. Cl. 37.
Teleflex Products Ltd., Basildon, Essex, England. 836,673, pub. 7–25–67. Cl. 23.
Tele-Norm Corp., Woodside, N.Y. 836,615, pub. 7–25–67. Cl. 21.
Tempo Sportswear Corp., Hingham, Mass. 836,787, pub. 7–25–67. Cl. 39.
Tenneco Chemicals, Inc., New York, N.Y., from Berkshire Color & Chemical Co., Reading, Pa. 836,528, pub. 7–25–67. Cl. 6.
Textron, Inc., Providence, from Bostitch, Inc., East Greenwich, R.I. 836,565, pub. 7–25–67. Cl. 13.
Textron, Inc., Rochester, N.Y. 836,701, pub. 7–25–67. Cl. 26.
Thayer Co., to Thayer, Inc., Gardner, Mass. 432,883, ren. 10–10–67. Cl. 32.
Thetford Engineering Corp., Ann Arbor, Mich. 836,577–8, pub. 7–25–67. Cl. 13.
Thiem Products, Inc., Milwaukee, Wis. 720,187, canc. Cl. 5.
Thomas Industries, Inc., Louisville, Ky. 836,614, pub. 7–25–67. Cl. 21.
Thompson Industries Co.: *See*—
Rexall Drug & Chemical Co.
Thurber, William G., Templeton, Calif. 720,321, canc. Cl. 26.
Tober-Saifer Shoe Mfg. Co., St. Louis, Mo. 836,771, pub. 7–25–67. Cl. 39.
Tombow Pencil Mfg. Co., Ltd., Tokyo, Japan. 720,353, canc. Cl. 37.
Trenka, F., Chemisch-Pharmazeutische, Fabrik, Vienna, Austria. 836,595, pub. 7–25–67. Cl. 18.
Treplow Chemical Co., Paterson, N.J. 720,200, canc. Cl. 6.
Trimtex, Inc., Williamsport, Pa. 836,791, pub. 7–25–67. Cl. 40.
Triple-A-Specialty Co., Chicago, Ill. 836,627, pub. 7–25–67. Cl. 21.
Tyson's Foods, Inc., Springdale, Ark. 836,845, pub. 7–25–67. Cl. 46.
UMC Industries, Inc., St. Louis, Mo. 836,664, pub. 7–25–67. Cl. 23.
Unific Products, Inc., Steelton, Pa. 836,549, pub. 4–13–65. Cl. 12.
Union Carbide Corp., from Point of View House, Inc., New York, N.Y. 836,490, pub. 6–14–66. Cl. 2.
Union Laboratories, Inc., Morganville, N.J. 836,523, pub. 7–25–67. Cl. 5.
Union Metallic Cartridge Co., The, to Remington Arms Co., Inc., Bridgeport, Conn. 65,031, ren. 10–10–67. Cl. 9.
United Artists Records, Inc., New York, N.Y. 836,740, pub. 7–25–67. Cl. 36.
United Gilsonite Laboratories, Scranton, Pa. 836,594, pub. 7–25–67. Cl. 16.
United States Expansion Bolt Co., York, Pa. 836,579, pub. 7–25–67. Cl. 13.
U.S. Plywood-Champion Papers, Inc., from United States Plywood Corp., New York, N.Y. 836,560, pub. 7–11–67. Cl. 12.
United States Plywood Corp.: *See*—
U.S. Plywood-Champion Papers, Inc.
Utica Cutlery Co., Utica, N.Y. 836,659, pub. 7–25–67. Cl. 23.
Valdora, Albert, d.b.a. Valdora Produce Co., Riverside, Calif. 836,860, pub. 7–25–67. Cl. 46.
Valdora Produce Co.: *See*—
Valdora, Albert.
Varian Associates, Palo Alto, Calif. 836,706, pub. 7–25–67. Cl. 26.
Varian Associates, Palo Alto, Calif. 836,810, pub. 7–25–67. Cl. 44.
Vega Instrument Co., Inc., Boston, Mass. 836,737, pub. 7–25–67. Cl. 36.
Velsicol Chemical Corp., Chicago, Ill. 720,220, canc. Cl. 12.
Ventura County Fruit Growers, Inc., Fillmore, Calif. 836,831–2, pub. 7–25–67. Cl. 46.
Ventura Travelware, Inc., New York, N.Y. 836,516, pub. 7–25–67. Cl. 3.
Von Duprin, Inc., Indianapolis, Ind. 836,570, pub. 7–25–67. Cl. 13.
Von Stiehl Wine, Inc., Algoma, Wis. 836,862, pub. 7–25–67. Cl. 47.
Vulcan Iron Works, Inc., Wilkes-Barre, Pa. 836,722, pub. 7–25–67. Cl. 34.
Walker Mfg., Co., Racine, Wis. 836,654, pub. 7–25–67. Cl. 23.
Warenzeichenverband Vem E.V., Dresden, Germany. 836,626, pub. 7–25–67. Cl. 21.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 720,246, canc. Cl. 18.
Warren Co., Inc., The, Atlanta, Ga. 436,043, ren. 10–10–67. Cl. 31.
Warren Pumps, Inc.: *See*—
Quimby Pump Co., Inc.
Waupaca Supply Co., Inc., Waupaca, Wis. 836,652, pub. 7–25–67. Cl. 23.
Wedding Cake Studio: *See*—
Benz, Harold J.
West Point-Pepperell, Inc., New York, N.Y. 836,796, pub. 7–25–67. Cl. 42.
West Virginia Pulp & Paper Co., New York, N.Y. 720,173, canc. Cl. 1.
West Virginia Pulp & Paper Co., New York, N.Y. 836,484, pub. 7–25–67. Cl. 1.
Western Import, Inc., Portland, Oreg. 836,633, pub. 7–25–67. Cl. 22.
Westport Development and Mfg. Co., Inc., Milford, Conn. 836,687, pub. 7–25–67. Cl. 26.
Weyerhaeuser Co., Tacoma, Wash. 836,554, pub. 7–25–67. Cl. 12.
White Rose Foods Corp., Syosset, N.Y. 836,844, pub. 7–25–67. Cl. 46.
Williams Automotive Manufacturers, Inc., Richmond, Va. 836,605, pub. 7–25–67. Multiple Class (Classes 19, 21, 23, and 35).
Wilson, H. A., Co., The, to Engelhard Industries, Inc., Newark, N.J. 432,121, ren. 10–10–67. Cl. 21.
Winn-Dixie Stores, Inc., Jacksonville, Fla. 836,851, pub. 7–25–67. Cl. 46.
Winslow, Rainsford J., d.b.a. Mul-T-Rul Co., Fort Morgan, Colo. 836,689, pub. 7–25–67. Cl. 26.
Wood Conversion Co., St. Paul, Minn. 836,671, pub. 7–25–67. Cl. 23.
Woodstream Corp.: *See*—
Animal Trap Co. of America.
Oneida Community, Ltd.
Wright, Harry, d.b.a. Wright Industries, La Mesa, Calif. 836,713, pub. 5–30–67. Cl. 28.
Wright Industries: *See*—
Wright, Harry.
Wyomissing Corp., Reading, Pa. 836,792–3, pub. 7–25–67. Cl. 40.
Y Doodle Co., Cincinnati, Ohio. 836,754, pub. 7–25–67. Cl. 38.
Yoshida Kogyo Kabushiki Kaisha, Tokyo, Japan. 836,567, pub. 7–25–67. Cl. 13.
Youngstown Sheet and Tube Co., The, Youngstown, Ohio. 836,666, pub. 7–25–67. Cl. 23.
Youngstown Welding & Engineering Co., The, Youngstown, Ohio. 836,650, pub. 7–25–67. Cl. 23.
Yum-Burger Corp. of America, The: *See*—
Council Mfg. Corp.
Zellweger, Ltd., Uster, Switzerland. 836,915, pub. 7–25–67. Cl. A.

U.S. GOVERNMENT PRINTING OFFICE: 0—1967

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
October 17, 1967 Volume 843 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of August 1967

Examiner affirmed	145
Examiner affirmed in part	17
Examiner reversed	31
Total	193

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Amendment of Claims

Sections 1.119, 1.121 and 1.126 (Patent Rules 119, 121 and 126) are revised as set forth below, said revisions to take effect November 1, 1967. The prosecution of all applications for which no amendment has been filed prior to November 1, 1967, must be in compliance with the sections as revised.

The purpose of these revisions is to effect more efficient operation in the prosecution of patent applications as well as in the clerical operations in support thereof.

The general substance of the proposed revisions was published in the Federal Register of June 24, 1967 (32 F.R. 9026). A hearing was held on July 31, 1967, and all persons, who desired to, were invited to attend and to submit their views, objections, recommendations or suggestions. Both the oral and written comments were carefully considered. The sections are being revised substantially as published with a few additional changes.

The full text of the revised sections 1.119, 1.121 and 1. 26 reads as follows:

§ 1.119 *Amendment of claims.*

The claims may be amended by canceling particular claims, by presenting new claims, or by rewriting particular claims as indicated in section 1.121. The requirements of section 1.111 must be complied with by pointing out the specific distinctions believed to render the claims patentable over the references in presenting arguments in support of new claims and amendments.

§ 1.121 *Manner of making amendments.*

(a) Erasures, additions, insertions, or alterations of the Office file of papers and records must not be physically entered by the applicant. Amendments to the application (excluding the claims) are made by filing a paper (which should conform to section 1.52), directing or requesting that specified amendments be made. The exact word or words to be stricken out or inserted by said amendment must be specified and the precise point indicated where the deletion or insertion is to be made.

(b) Except as otherwise provided herein, a particular claim may be amended only by directions to cancel or by rewriting such claim with underlining below the word or words added and brackets around the word or words deleted. The rewriting of a claim in this form will be construed as directing the cancellation of the original claim; however, the original claim number followed by the parenthetical word "amended" must be used for the rewritten claim. If a previously rewritten claim is rewritten, underlining and bracketing will be applied in reference to the previously rewritten claim with the parenthetical expression "twice amended," "three times amended," etc., following the original claim number.

(c) A particular claim may be amended in the manner indicated for the application in section 1.121(a) to the extent of corrections in spelling, punctuation, and typographical errors. Additional amendments in this manner will be admitted provided the changes are limited to (1) deletions and/or (2) the addition of no more than five words in any one claim. Any amendment submitted with instructions to amend particular claims but failing to conform to the provisions of paragraphs (b) and (c) may be considered non-responsive and treated accordingly.

(d) Where underlining or brackets are intended to appear in the printed patent or are properly part of the claimed material and not intended as symbolic of changes in the particular claim, amendment by rewriting in accordance with paragraph (b) above shall be prohibited.

(e) In reissue applications, both the descriptive portion and the claims are to be amended as specified in paragraph (a) above.

§ 1.126 *Numbering of claims.*

The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When claims are added, except when presented in accordance with section 1.121(b), they must be numbered by the applicant consecutively beginning with the number next following the highest numbered claim previously presented (whether entered or not). When the application is ready for allowance, the examiner, if necessary, will renumber the claims consecutively in the order in which they appear or in such order as may have been requested by applicant.

(Sec. 1, 66 Stat. 792; 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:

JOHN F. KINCAID,
Acting Assistant Secretary for Science and Technology.

Dated: Sept. 25, 1967.

Published in 32 F.R. 13582–3, Sept. 28, 1967

Change in Content of the Patents Section of the Official Gazette

In keeping with the Patent Office program to encourage the use of patents in the scientific, engineering and business com-

New Applications Received During August 1967

Patents	7377
Designs	377
Plant Patents	5
Reissues	36
Total	7795

Issue—October 17, 1967

Patents	1361	No. 3,346,875 to No.	3,348,235, incl.
Designs	67	No. 208,899 to No.	208,965, incl.
Plant Patents	3	No. 2,771 to No.	2,773, incl.
Reissues	10	No. 26,280 to No.	26,289, incl.
Total	1441		

munities, as well as the patent profession, a change in the content of the patents section of the OFFICIAL GAZETTE is being made.

Beginning with the first issue of the OFFICIAL GAZETTE in January 1968, a copy of the abstract of each patent where an abstract is available will appear, in lieu of the claim. This change in content is being made in order that patent information may be better utilized by the patent public.

In addition to the regular issue of the OFFICIAL GAZETTE an extract of the patents section, i.e., the descriptive matter relating to patents only, will be made available. The subscription rate for the patents section extract only for the first six months period beginning with the first issue in January 1968, will be twenty-seven dollars ($27.00) and one dollar and twenty-five cents ($1.25) for a single copy. The extract will be mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402, to whom all subscriptions should be made payable and all communications addressed. The title of the extract will be "Official Gazette—Patent Abstracts Section."

It is to be noted that the Government Printing Office has determined that the subscription rate for the regular issue of the OFFICIAL GAZETTE will be increased to sixty-seven dollars ($67.00) for the subscription year beginning January 1968, and the price of individual copies will be increased to one and a half dollars ($1.50). The increased rate is not related to the new program.

EDWARD J. BRENNER,
Commissioner of Patents.

Sept. 25, 1967.

Disclaimer

3,131,588.—*William Mynard McConnell*, Pittsburgh, Pa. METHOD AND APPARATUS FOR CUTTING ELONGATED ARTICLES TO LENGTH OR INTO MULTIPLES. Patent dated May 5, 1964. Disclaimer filed Aug. 29, 1967, by the assignee, *Taylor-Wilson Manufacturing Company*.

Hereby enters this disclaimer to claims 38–52 and 54–67 of said patent.

Dedications

3,108,595.—*Alfred P. Overment*, Chicago, Ill. RETENTION CATHETER. Patent dated Oct. 29, 1963. Dedication filed Sept. 19, 1967, by the inventor.

Hereby dedicates the remaining term of said patent to the People of the United States.

3,137,387.—*Alfred P. H. Overment*, Chicago, Ill. DISPOSABLE STERILE FIELD SURGICAL KIT. Patent dated June 16, 1964. Dedication filed Sept. 19, 1967, by the inventor.

Hereby dedicates the remaining term of said patent to the People of the United States.

3,312,221.—*Alfred P. H. Overment*, Chicago, Ill. URINARY DRAINAGE APPARATUS. Patent dated Apr. 4, 1967. Dedication filed Sept. 19, 1967, by the inventor.

Hereby dedicates the remaining term of said patent to the People of the United States.

Patents Available for Licensing or Sale

3,260,785. VIBRATO CIRCUIT. William H. Krug, 7357 Sepulveda Blvd., Apt. #7, Van Nuys, Calif., 91406.

3,292,174. INDICATING ARRANGEMENT. Contraves A.G., Zurich, Switzerland. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,299,529. DRIER DEVICE FOR SKI SHOES AND THE LIKE. Hershel C. Roberts et al., 3770 Malibu Way, Sacramento, Calif., 95826.

3,300,974. REHEAT CYCLE FOR STEAM TURBINE POWER PLANTS. Frank M. Reed et al., 1019 Cypress Drive, Apt. J, Reidsville, N.C., 27320.

3,308,634. BUILT-IN WALL AIR CONDITIONER CASING AND AIR CONDITIONER COMBINATION. Herman M. Smith, 2628 Forest Hill Blvd., West Palm Beach, Fla., 33406.

3,326,845. POLYESTER-AGGREGATE COMPOSITIONS AND METHOD OF MAKING. Henriette A. Arens et al., North Mankato, Minn. Correspondence to: Adams, Cwayna & Haugen, 709 First National Bank Bldg., Minneapolis, Minn., 55402.

3,327,231. CIRCUIT ARRANGEMENT FOR CHANGING TWO ELECTRICAL ANALOG QUANTITIES. Contraves A.G., Zurich, Switzerland. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,332,164. COMPACT SNELLED FLY CARRIER. Roy Parrett, Jr., R.F.D. #1, Box 112A, Butte, Mont., 59701.

3,335,729. CIGARETTE FILTER MEANS. Andrew L. Ice, 7340 Lone Oak Drive, Citrus Heights, Calif., 95610.

3,338,646. TEA BAG DISPENSER. Harry A. Harvey, 304 Washburn St., Lockport, N.Y., 14094.

3,346,705. ELECTRIC CORD REEL APPARATUS. Robert E. Braidenthal, 612 Brown Bldg., Wichita, Kans., 67202.

Honeywell Inc., is prepared to grant non-exclusive licenses under the following patent upon reasonable terms to domestic manufacturers.

Applications for license may be addressed to: ADG Patent Department, Honeywell Inc., 2600 Ridgway Road, Minneapolis, Minn., 55413.

3,314,327. COLORIMETER EMPLOYING TRI-STIMULUS VALUES.

General Electric Company is prepared to grant non-exclusive licenses under the following 88 patents upon reasonable terms to domestic manufacturers.

Applications for the following patent may be addressed to: Dr. T. O. Paine, Manager-TEMPO, General Electric Company, 816 State St., P.O. Drawer QQ, Santa Barbara, Calif., 93102.

3,327,666. SUMMING STRUCTURE FOR SPATIALLY DISTRIBUTED FORCES.

Applications for license under the following 2 patents may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,325,708. HIGH VOLTAGE CAPACITOR ASSEMBLY.

3,333,119. ATTENUATION OF HIGH FREQUENCIES IN COMMERCIAL FREQUENCY POWER TRANSMISSION LINES.

Applications for license under the following 5 patents may be addressed to: Patent Counsel, Metallurgical Products Dept., General Electric Company, Box 237–GEO, Detroit, Mich., 48232.

2,941,243. HIGH TEMPERATURE HIGH PRESSURE APPARATUS.

2,941,244. HIGH TEMPERATURE HIGH PRESSURE APPARATUS.

2,941,245. DIE.

2,941,861. METHOD OF MAKING GARNET.

2,944,289. REACTION VESSEL.

Applications for license under the following 7 patents may be addressed to: Patent Counsel, Major Appliance & Hotpoint Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,296,417. HINGING MEANS FOR OVEN HEATING ELEMENT.

3,310,354. RACK SYSTEM FOR AUTOMATIC DISHWASHER.

3,327,610. MOUNTING MEANS FOR MOTOR-BLOWER UNIT.

3,327,700. TORSION SPRING BALANCING MEANS FOR PIVOTED DOORS.

3,328,560. RECIRCULATING VENTING SYSTEM FOR DOMESTIC OVEN.

3,331,215. ICE MAKER WITH BIN SENSING MECHANISM.

3,331,384. AUTOMATIC SEQUENTIAL VALVE.

Applications for license under the following 73 patents may be addressed to: Patent Counsel, Electronic Components Division, General Electric Company, 316 E. 9th St., Owensboro, Ky., 42301.

2,990,492. ELECTRIC DISCHARGE DEVICE.

2,997,623. SWITCHING APPARATUS.

3,038,094. RUGGEDIZED ELECTRIC DISCHARGE DEVICE STRUCTURE.

3,090,016. BROADBAND MATCHING CIRCUIT.

3,093,767. GAS GENERATING SWITCHING TUBE.

3,118,078. GASEOUS ELECTRIC DISCHARGE DEVICE.

3,119,040. GAS DISCHARGE GAP TUBE.

3,121,820. SINGLE MODE AMPLIFIER OR OSCILLATOR.

3,121,822. CIRCUITS FOR UNIMODING CROSSED FIELD DEVICES.

3,134,047. NEUTRODE CROSSED FIELD VOLTAGE TUNED OSCILLATOR.

3,137,803. VIBRATION ISOLATING ELECTRODE MOUNT.

3,155,859. TARGET ELECTRODE ASSEMBLY.

3,155,864. DISPENSER CATHODE.

3,155,865. LOW POWER HEATER.

3,156,879. POWER DIVIDER UTILIZING INDUCTIVE COUPLING IN A CAVITY RESONATOR EXCITED IN THE TM_{010} MODE.

3,156,881. VACUUM TIGHT ELECTROMAGNETIC RADIATION PERMEABLE WINDOW SEAL.

3,156,882. VACUUM TIGHT ELECTROMAGNETIC RADIATION PERMEABLE WINDOW SEAL.

3,167,438. CERAMIC ARTICLES AND METHODS OF MAKING.

3,167,678. GETTER OPERATING AT VARIOUS TEMPERATURES TO OCCLUDE VARIOUS GASES.

3,175,118. LOW POWER HEATER.

3,176,180. DISPENSER CATHODE.

3,176,188. MIXED LINES CROSSED FIELDS OSCILLATOR OR AMPLIFIER.

3,185,891. ELECTRON OPTICS FOR INFRARED CAMERA TUBES.

3,193,718. GAS DIODE HAVING AUXILIARY CATHODE FOR FAULT CURRENTS.

3,194,998. MAGNETIC TEMPERATURE-COMPENSATING STRUCTURE.

3,195,010. MAGNETRON DEVICE WITH OUTPUT COUPLING.

3,201,712. TUNABLE MAGNETRON APPARATUS.

3,202,862. MAKE-ALIVE ELECTRODE FOR AN ARC DISCHARGE DEVICE.

3,204,140. HOT CATHODE ELECTRON TUBE.

3,207,937. THIN FILM STORGE ELECTRODE.

3,213,386. SERIES AMPLIFIERS.

3,223,871. ELECTRON OPTICAL SYSTEM.

3,223,881. MAGNETRON MOUNTING STRUCTURE AND OUTPUT COUPLING.

3,223,882. TRAVELING WAVE ELECTRIC DISCHARGE OSCILLATOR WITH DIRECTIONAL COUPLING CONNECTIONS TO A TRAVELING WAVE STRUCTURE WHEREIN THE NUMBER OF COUPLING CONNECTIONS TIMES THE PHASE SHIFT BETWEEN ADJACENT CONNECTIONS EQUAL AN INTEGRAL NUMBER OF WAVELENGTHS.

3,223,883. MAGNETRON HAVING INTERNAL CONDUCTIVE MATERIAL COATED AREA BETWEEN ANODE TERMINALS.

3,223,950. WAVEGUIDE WINDOW.

3,225,249. MAGNETRON HAVING EVACUATED DISCHARGE SUB-ASSEMBLY UNITED WITH UNEVACUATED MAGNETIC AND RESONANT CAVITY STRUCTURE.

3,229,147. THERMIONIC EMITTER AND METHOD OF MAKING.

3,229,152. MAGNETRON HAVING EVACUATED DISCHARGE SUBASSEMBLY UNITED WITH UNEVACUATED MAGNETIC AND RESONANT CAVITY STRUCTURE.

3,234,351. VACUUM DEVICES HAVING ARC ELECTRODES FREE OF ADSORBED GAS AND GAS-FORMING CONSTITUENTS.

3,236,686. STORAGE ELECTRODE.

3,243,637. DISPENSER CATHODE.

3,243,638. DISPENSER CATHODE.

3,247,420. DISTRIBUTED AMPLIFIER WITH INDUCTANCE-CONNECTED ANODE SEGMENTS.

3,248,593. MULTIPLE BEAM RADIO FREQUENCY APPARATUS HAVING COOPERATING RESONATORS AND MODE SUPPRESSION MEANS.

3,248,594. MULTIPLE-BEAM RADIO FREQUENCY APPARATUS.

3,248,595. RADIO FREQUENCY APPARATUS.

3,248,596. MULTIPLE-BEAM KLYSTRON TUNING MEANS.

3,248,597. MULTIPLE-BEAM KLYSTRON APPARATUS WITH PERIODIC ALTERNATE CAPACITANCE LOADED WAVEGUIDE.

3,249,786. ELECTRON LENS.

3,249,790. PICKUP TUBE ELECTRON GUN.

3,258,434. SEMICONDUCTING GLASS.

3,258,636. ELECTRON EMITTER WITH ACTIVATOR OF SILICIDE, BORIDE OR CARBIDE OF SOLID SOLUTION OF BARIUM AND AT LEAST ONE OTHER ALKALINE EARTH METAL.

3,259,774. TARGET VIBRATION ISOLATION MOUNT.

3,269,804. DISPENSER CATHODE AND METHOD FOR THE PRODUCTION THEREOF.

3,270,232. GASEOUS DISCHARGE DEVICE WITH SHIELD FOR DIRECTLY HEATED CATHODE.

3,270,240. EXTENDED INTERACTION RESONANT ELECTRIC DISCHARGE SYSTEM.

3,275,435. METHOD OF PRODUCTION OF A DISPENSER CATHODE.

3,275,873. ELECTRIC DISCHARGE DEVICE HAVING IMPROVED DISPENSER CATHODE.

3,278,793. MULTIPLE-BEAM R.F. APPARATUS.

3,278,795. MULTIPLE-BEAM KLYSTRON APPARATUS WITH WAVEGUIDE PERIODICALLY LOADED WITH RESONANT ELEMENTS.

3,286,114. VARIABLE MAGNIFICATION ELECTRON LENS.

3,286,125. RADIO FREQUENCY APPARATUS.

3,294,508. SEALING A MEMBRANE TO A TARGET SUPPORT METAL RING.

3,300,037. RUPTURABLE CONTAINERS.

3,300,673. TOLERANCE COMPENSATING ELECTRODE SUPPORT STRUCTURE AND METHOD OF MANUFACTURING SAME.

3,300,681. ADJUSTABLE MAGNET FOR A MAGNETRON.

3,304,463. CROSSED-FIELD AMPLIFIER DEFINING A TRANSMISSION LINE.

3,307,061. ELECTROSTATIC RETURN BEAM CAMERA TUBE.

3,307,068. MAGNETRON SHIELDING MEANS.

3,312,859. CROSS-FIELD TRANSVERSE WAVE AMPLIFIER COMPRISING TRANSMISSION LINE.

3,312,914. HIGH POWER MICROWAVE LOAD.

3,317,785. MAGNETRON ASSEMBLY HAVING DIELECTRIC MEANS, EXTERNAL TO ENVELOPE, FOR SETTING THE CENTER OPERATING FREQUENCY.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 28, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-16-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	3-6-64	3-1-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-17-64	4-9-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	6-1-64	5-18-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-3-64	4-16-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-12-64	7-5-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	11-29-63	11-29-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1-8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-16-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1-14-66	9-3-65

Total number of pending applications (excluding Designs)	183, 535
Total number of Design applications pending	4, 353
Total number of applications awaiting action (excluding Designs)	134, 011
Total number of Design applications awaiting action	2, 473
Date of oldest new application awaiting action	Nov. 29, 1963
Date of oldest amended application awaiting action	Nov. 29, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during October 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1955*.

Patents ..... Numbers 2,524,026 to 2,528,482, inclusive

Plant Patents ..... Numbers 962 to 985, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-3-66	9-22-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	6-17-65	2-7-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	3-4-65	3-4-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-13-66	12-2-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	10-5-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	8-23-65	10-18-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE KENNETH E. MCCONNAUGHAY

No. 7619. Decided February 9, 1967

[54 CCPA —; 371 F.2d 889; 152 USPQ 548]

1. PATENTABILITY—STATUTORY BASIS FOR REJECTION—35 U.S.C. 103.
Held, with respect to the rejection of certain claims as "unpatentable over" a combination of references, "Although this manner of rejection is ambiguous as to the precise statutory ground relied upon by the Examiner, we find the record as a whole clearly presents a rejection under 35 U.S.C. 103."

2. SAME—PARTICULAR SUBJECT MATTER—"ASPHALTIC EMULSION AND METHOD OF MAKING IT."
The refusal of certain claims in an application entitled "Asphaltic Emulsion and Method of Making It," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 36,736.

AFFIRMED.

J. Austin Stone (*Jack W. Hanley*, of counsel) for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

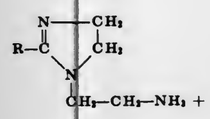
Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the rejection of claims 1, 3 and 4 in appellant's application [1] for "Asphaltic Emulsion and Method of Making It."

The subject matter is reflected in claim 1:

1. An asphaltic paving emulsion, consisting essentially of a mixture of an asphaltic material and an aqueous solution of an ionized mixture of polyfunctional imidazolines present in a proportion of about 0.1% to about 0.5% based upon the weight of the asphaltic material and consisting primarily of a diamine represented by the formula



in which R represents an alkyl radical containing 17 carbon atoms, the negative ion of the ionized emulsifier being the anionic substituent of an acid selected from the class consisting of hydrochloric, phosphoric, acetic, and carbolic acids and mixtures thereof, and mixtures with oxalic, boric, benzoic, citric, hexanoic, lauric, stearic, tartaric, picric, and nitric acids.

Claim 3 is directed to a method of making the asphaltic emulsion by acidifying the imidazoline defined in claim 1 and then emulsifying an asphaltic material with the acidified imidazoline in a dispersing mill. Claim 4 is limited to the use, in the method of claim 3, of about 15% to 40% active acid based on the imidazoline in the dispersion.

The Board affirmed the Examiner's rejection of the appealed claims as "unpatentable over" [2] a British patent to Dussek in view of Wilson.

[1] Serial No. 36,736, filed June 17, 1960.

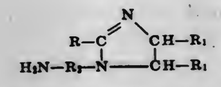
[1] [2] Although this manner of rejection is ambiguous as to the precise statutory ground relied upon by the Examiner, we find the record as a whole clearly presents a rejection under 35 U.S.C. 103.

The Examiner and Board both noted that Dussek acknowledges certain compositions as prior art. Dussek states:

Bitumen emulsions made with emulsifiers consisting of cationic surface active agents in acid solutions have certain advantages over normal anionic emulsions. In particular, adhesion of the resulting binder to acid stones is improved. However, when used for coating stone by mixing the rapid breakdown of the emulsion which takes place usually necessitates the use of a softened binder. This is not always desirable.

As an improvement over that prior art, Dussek discloses an aqueous bitumen emulsion suitable for road surface dressing made by adding a cationic surface-active agent (such as heptadecenylhydroxyethylglyoxaldine) and acid to an alkaline casein solution, heating the same and then preparing a bitumen emulsion using the acidified cationic surfactant solution as the emulsifier.

Wilson relates to an improved method for making glyoxalidines (imidazolines) which are said to be valuable emulsifying agents for producing *stable* dispersions of mineral oils or other oleaginous substances. Among the glyoxalidines disclosed by Wilson is one having the formula:



where R represents an alkyl or alkenyl group containing 9 to 19 carbon atoms, R_1 represents hydrogen or a lower alkyl group and R_2 may be an alkylene group.

In sustaining the Examiner's rejection, the Board [3] stated:

The Wilson reference teaches that the claimed imidazoline and its salts are good emulsifying agents and produce stable dispersions of mineral oils and other oleaginous substances. We see nothing more in the claimed composition and method than the use of Wilson's specific cationic emulsifier in the compositions that the British patent describes as old. * * *

To overcome the prima facie case of obviousness appellant directs our attention to the Goetz affidavit. We find little or no probative value in this affidavit * * *.

* * * if we were to take the affidavit at face value it is not seen that it would prove that the claimed imidazoline is superior in any respects to other known cation surface active agents * * *.

Appellant urges that the British patent is deficient as a reference because it does not disclose the proportions of bitumen and dispersing agent. We do not regard this as a real deficiency since it would be well within the skill of the art to ascertain the proper proportions with any particular surface active agent. * * *

Appellant contends that the proportion of emulsifier to the asphaltic material recited in his claims is critical as indicated by the Goetz affidavit.[4] However, that affidavit only contains a comparison of appellant's emulsifier composition with that claimed by Dussek—there is no comparison with the prior art acknowledged by Dussek upon which the Examiner and the Board relied.

[3] The Board also observed that appellant submitted literature bearing a date of August 1958 to the Examiner which states that the cationic surface active agent recited in the claims:

* * * is a highly effective wetting and dispersing agent in hydrocarbon systems. It has given outstanding results as a coating and anti-stripping agent for petroleum asphalts and coal tar pitches * * *.

[4] The affidavit presents comparative data on four samples of emulsions. Samples 1 and 2 employ the emulsifiers recited in claim 1 while Samples 3 and 4 employ emulsifiers additionally containing casein and KOH. The cationic surface active agent in Sample 3 is glyoxalidine and in Sample 4 it is the same as that used in Samples 1 and 2. In addition, the amounts of the cationic surface active agents employed in Samples 1–4 are 0.42%, 0.25%, 0.84% and 0.84%, respectively, based on the weight of the asphalt. The results show that asphaltic mixtures prepared from Samples 1 and 2 have nearly the same settlement and mixing characteristics, and the same is true of that of Samples 3 and 4. However, asphaltic mixtures prepared from Samples 1 and 2, as a group, have characteristics superior to those prepared from Samples 3 and 4.

Appellant further contends that his processing step sequence defined by claims 3 and 4 is not anticipated by the references. However, as noted earlier, the record shows that the rejection is based on obviousness rather than anticipation. Appellant concedes that the Dussek process comprises the steps of: (1) dissolving casein in an alkali, (2) adding a cationic surface-active agent to the casein solution, (3) adding acid, (4) heating to redissolve any casein or casein complex thrown out of solution, and (5) preparing a bitumen emulsion using the resulting solution as the emulsifier. The above steps describe Dussek's *claimed* process which specifies the use of casein and KOH. Since the prior art acknowledged by Dussek shows the preparation of bitumen emulsions without casein and KOH, it appears evident that steps 1, 2 and 4 may be eliminated from the above enumerated Dussek process, thus leaving a process substantially the same as defined in appealed claims 3 and 4.

It seems to us that the references adequately suggest what appellant has done. We find no reversible error in the decision of the Board.

[2] The decision is affirmed.

AFFIRMED.

MARTIN, *J.*, participated in the hearing of this case but died before a decision was reached.

U.S. Court of Customs and Patent Appeals

IN RE WILLIAM A. HIGGINS AND WILLIAM M. LE SUEB

No. 7648. Decided December 8, 1966

[54 CCPA —; 369 F.2d 144; 152 USPQ 103]

1. PATENTABILITY—DOUBLE PATENTING—COMPOSITIONS USING PATENTED COMPOUNDS.

Upon considering a rejection for double patenting of claims to a lubricating composition comprising a lubricating oil and zinc salts of a mixture of phosphorodithioic acids over the prior art in conjunction with appellants' patent claiming the same zinc salt mixtures per se and describing them as useful in the very lubricating oil compositions now claimed in the present application, and with reference to the statement of the Board of Appeals "We * * * hold that this is a clear case of double patenting," *Held* that "We are of like mind" and that "The prior art of record, as well as appellants' admissions with respect to what the art knew, are persuasive that the use as lubricant additives of the zinc salts claimed in the patent would be entirely obvious."

2. SAME—SAME—SAME.

"* * * the claimed compositions [comprising a lubricating oil and zinc salts of a mixture of phosphorodithioic acids] are unpatentable over the claims of the patent [to the same zinc salt mixtures per se] * * *. A different situation would be presented, of course, if the compounds had not been patented on the basis of the express disclosure of their unexpected advantageous properties in the very compositions in which they are now claimed."

APPEAL from the Patent Office. Serial No. 74,236.

AFFIRMED.

Joseph F. Shekleton (*Almon S. Nelson*, of counsel) for appellants.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

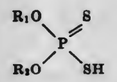
This appeal is from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection of claims 1–8 of application Serial No. 74,236, filed December 7, 1960, for "Phosphorodithioate Inhibitors."

The ground of rejection is double patenting in view of appellants' own Patent No. 3,000,822, issued September 19, 1961, on an application, Serial No. 635,102, filed January 22, 1957, for "Phosphorodithioate Inhibitors," taken with prior art references as follows:

Freuler, 2,364,283, December 5, 1944.
Mulvany, 2,689,220, September 14, 1954.
Asseff et al., 2,723,236, November 8, 1955.
Goldsmith, 2,838,555, June 10, 1958.

Claim 1 is illustrative of the claims on appeal and reads:

1. A lubricating composition comprising a major proportion of a lubricating oil and a minor proportion, sufficient to improve the thermal stability thereof, of the zinc salts of a mixture of phosphorodithioic acids having the structure



in which R_1 and R_2 are primary aliphatic hydrocarbon radicals selected from the class consisting of lower molecular weight radicals having less than five carbon atoms and higher molecular weight radicals having at least five carbon atoms, the mole ratio of lower molecular weight radicals to higher molecular weight radicals in the zinc salt mixture being within the range of 1:1 to 3:1.

It is unnecessary to differentiate the claims. They are all drawn to lubricating compositions having a major proportion of lubricating oil and a minor proportion of the mixture of zinc salts of phosphorodithioic acids, which additive acts as an oxidation and corrosion inhibitor at high temperatures.

Appellants' patent claims the same zinc salt mixtures per se and describes them as useful in the very lubricating oil compositions which are being claimed in this application. In fact, the instant application duplicates the specification of the patent wherein the zinc salts and their uses and advantages as lubricant additives are described, adding to the opening paragraph the sentence, "The invention relates more particularly to a lubricating composition containing such zinc salts." [1] and adding at the end seven examples of lubricant compositions.

The prior art references were cited by the Examiner to show that it was old to use zinc phosphorodithioates as lubricant additives but it is not necessary to discuss them in view of appellants' admission that they have been so known and used since 1940. The Examiner explained the rejection as follows:

This is a rejection on double patenting. Higgins et al. claim the instant zinc salt mixtures while the secondary references teach that zinc salts of dialkyl dithiophosphoric acids are effective anti-oxidation and anti-corrosion additives or [for] lubricating oil compositions. It is the Examiner's contention that the use of the instant salts in a lubrication composition is obvious in view of the secondary references. * * *

* * * * * * *

The rejection on double patenting is made because it is the contention of the Examiner that a lubricating oil containing the instant salts is obvious and it is this composition that is being instantly claimed. In other words, the use of such salts as corrosion and oxidation inhibitors in lubricating oils is an *obvious* use

[1] The opening sentence in the application at bar, together with its title, appears to be misleading as the claimed subject matter cannot be said to be "Inhibitors" and the claims do not conform to the statement:

> This invention relates to a new composition of matter, and in a more particular sense it relates to zinc salts of phosphorodithioic acids which contain certain alkyl or isoalkyl groups tending to enhance the physical and chemical properties of these salts.

The zinc salts are the subject of the patent claims, not of the claims herein.

of such salts. As appellants have put it, "zinc phosphorodithioates are accepted today as the most generally useful corrosion inhibitor in lubricant compositions." The fact is also shown by the four secondary references. * * *

* * * * * * *

Appellants now wish to extend this right of exclusion [from their patent] for another period of years to further monopolize the obvious use of these salts. To prevent such an extension of monopoly is the exact reason that rejections on double patenting are made.

We note the fact that though this application and the application for the patent were copending for a little over nine months, this application was not filed until nearly four years after the application for the patent in which the presently claimed inventions were disclosed. No terminal disclaimer is of record on this appeal.

[1] The Board, in affirming the Examiner, said, "We see no merit in appellants' arguments and hold that this is a clear case of double patenting." We are of like mind. The prior art of record, as well as appellants' admissions with respect to what the art knew, are persuasive that the use as lubricant additives of the zinc salts claimed in the patent would be entirely obvious. The claimed subject matter is therefore unpatentable in accordance with the principles enunciated in our decisions in *In re Simmons*, 50 CCPA 990, 312 F.2d 821, 136 USPQ 450; *In re Sebek*, 52 CCPA 1442, 347 F.2d 632, 146 USPQ 44; and *In re Zickendraht*, 50 CCPA 1529, 1533 et seq., 319 F.2d 225, 229 et seq., 138 USPQ 22, 25 et seq.

Appellants make an argument based on 35 U.S.C. 103, contending that when their patented zinc salts are used in lubricating compositions advantages are obtained which would not be obvious from the prior art and, as a corollary to that argument, that to use the teaching of their patent to that effect is to use the disclosure thereof, which is not permissible since their patent is not prior art.

We agree with appellants, of course, that we cannot utilize the disclosure of their patent *as prior art*. In applying the test of the obviousness of the *use* of the previously claimed compounds, we are utilizing the true prior art references, and appellants' admission not appellants' disclosures.

The starting point for the consideration of obviousness of the use is the compounds claimed in appellants' patent. The Patent Office Solicitor, after pointing out that we have held it proper to consult the patent's disclosure to determine *what* is being claimed, citing *In re Copeman*, 30 CCPA 962, 135 F.2d 349, 57 USPQ 312, and *In re Greenlee*, 42 CCPA 926, 222 F.2d 739, 106 USPQ 104, contends that looking at the bare words and structural formula of the patent claims is not enough in determining what is claimed. His argument runs thus:

Recent decisions of this court emphasize the proposition that a patent claim to a chemical compound, referring merely to the compound structure or name, does not constitute a complete definition of the compound. The matter was analyzed in some depth in *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, and the court found as follows:

> "From the standpoint of patent law, a compound and all of its properties are inseparable; they are one and the same thing. The graphic formulae, and the chemical nomenclature, the systems of classification and study such as the concepts of homology, isomerism, etc., are mere symbols by which compounds can be identified, classified, and compared. But a formula is not a compound and while it may serve in a claim to *identify* what is being patented, as the metes and bounds of a deed identify a plot of land, the *thing* that is patented is not the formula but the compound identified by it."

The Examiner in *In re Ward*, 51 CCPA 1132, 329 F.2d 1021, contended that compound claims rejected there were not drawn to certain uses which were urged as distinctions over prior art and that if the invention did involve a use, "the invention if properly claimed could belong to a different statutory class of invention." This court held:

> "The difficulty with that reasoning is that claims to chemical compounds are drawn to more than structural formulae. They define the compounds themselves and compounds possess properties which must be considered along with the formulae."

In line with those decisions, it is not enough, in determining what appellants claimed in their patent, to look merely to the structural formulae in the claims. It is necessary to determine from the specification the properties and characteristics on which patentability was premised. Those characteristics are, of course, those already alluded to, the high degree of thermal stability of the zinc salts * * *, both alone and in lubricating oil compositions. As the Board pointed out * * *, the fact that the new salts gave superior results "made possible the grant of a patent on these salts to appellants."

Taking into consideration the properties of the salts, as it is necessary to do in order to comprehend what the patent claims are directed to, the issue becomes: whether it would be obvious to one skilled in the art, having knowledge of the patented zinc salts and the fact that they impart unexpectedly good thermal stability to lubricating oil, that the salts should be used as lubricating oil additives.

That issue, of course, contains its own answer. An essential part of the invention claimed in the appellants' patent is the property of the defined compounds of imparting unexpected thermal stability to lubricating oils. There could be no clearer suggestion that they be put to that use.

[2] We agree with that line of reasoning, which confirms us in the correctness of our holding that the claimed compositions are unpatentable over the claims of the patent, so construed. A different situation would be presented, of course, if the compounds had not been patented on the basis of the express disclosure of their unexpected advantageous properties in the very compositions in which they are now claimed.

We agree with the Examiner's assessment of the situation as one in which patenting of the appealed claims would extend, timewise, the temporary monopoly of the patented salt mixtures insofar as used for the same purposes as were put forward as justifying the issuance of the patent.

The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

MARTIN, *J.*, participated in the hearing of this case but died before a decision was reached.

U.S. Court of Customs and Patent Appeals

IN RE KURT ORTHS

No. 7649. Decided December 19, 1966

[54 CCPA —; 369 F.2d 421; 152 USPQ 163]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—CORRECTION BY BOARD OF APPEALS AFTER NOTICE OF APPEAL—*In re Grier* CONSTRUED.

"In *In re Grier*, 52 CCPA 1081, 342 F.2d 120, 144 USPQ 654, we held that the Board had the power, after the filing of the notice of appeal, to exercise a purely ministerial function in its administrative capacity to correct certain language in its decision. Applying that principle to the present situation, we find that the Board properly acted to clarify its original decision by correcting certain obvious errors therein."

2. PATENTABILITY—EVIDENCE.

"Appellant contends in his brief that the feeding of the solid slag-forming mixture to the layer of molten slag is responsible for certain improved results

over the prior art shown in FIG. 1 of the application. In said FIG. 1, several curves are presented to compare the results obtained by the use of several prior art processes and that of appellant's method. However, there is no showing that the method of the British patent or that of Brassert was used in obtaining any of the curves. Moreover, appellant's application seems to indicate, and counsel admitted during argument, that none of the curves in FIG. 1 was in fact obtained by the method of either of the references cited by the Examiner. Under the circumstances, we find appellant's contention to be without merit."

3. SAME—PARTICULAR SUBJECT MATTER—"DEPHOSPHORIZATION OF FERROUS MELTS."

The refusal of certain claims in an application entitled "Dephosphorization of Ferrous Melts," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 118,486.

AFFIRMED.

Raymond W. Colton for appellant.

J. Schimmel (*J. F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This is an appeal from a decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the Examiner's rejection of appellant's method claims 1–7, 9 and 12–14 in application Serial No. 118,486, filed May 19, 1961, for "Dephosphorization of Ferrous Melts." No claim is allowed and no other claim remains in the application.

Appellant's invention relates to a method for reducing the phosphorus content of molten ferrous metals without substantially reducing the carbon content thereof. The application discloses:

The invention is based on the findings that a ferrous melt may be effectively dephosphorized with minimal losses of carbon content by treating the melt with continuously fed solid slag forming material while continuously supplying gaseous oxygen and simultaneously withdrawing the excess slag formed. The melt which is contained in a refractory lined container is held at a temperature not more than 200° C. above its solidification temperature, preferably between 50° and 150° C. above the latter temperature. The slag forming material includes reactive constituents known to dephosphorize ferrous metal, such as lime and iron oxide, together with fluxing agents.

The solid slag forming mixture is preferably fed to the same area of the melt to which the oxygen is supplied and in which the temperature is significantly higher than in the remainder of the melt.

The application further states:

A layer of slag is established on top of the melt and up to the overflow level by charging slag forming solids which, at the temperature assumed by contact with the melt, fuse to form a liquid phase of relatively low viscosity. The fused layer of slag is basic, capable of reacting with the phosphorus and silicon in the ferrous melt and has oxidizing qualities when supplied with oxygen. The slag forming solids are preferably granular or pulverized but the material may also be compacted into larger units, such as rods, which readily disintegrate at the temperature prevailing in the ladle.

Feeding of slag forming material then continues while oxygen is simultaneously supplied. Because of the position of the chute between the two nozzles of the forked oxygen lance, the slag forming solids are fed to the hottest spot in the ladle and quickly melt. It is simplest to drop the solid material on the surface of the molten slag layer as closely adjacent the hot spot as possible but more elaborate feeding arrangements may be used in larger installations, or where the conservation of heat is important. *At least a portion of the slag forming solids may be blown onto the surface of the slag layer by pre-mixing with the oxygen supplied so that the oxygen serves simultaneously as a carrier gas for the finely divided slag material. By submerging the nozzles of such an arrangement below the surface of the metallic melt, the slag forming solids and the oxygen are directly introduced in the melt. Slag forming solids may also be injected directly into the melt, preferably at or near the hottest area at which oxygen is supplied, by means other than the propellant action of the oxygen.* [Emphasis added and reference numerals omitted.]

Appellant's single independent claim 1 reads:

1. A method of dephosphorizing a melt of ferrous metal substantially without concomitant loss of carbon from said melt, comprising forming a melt of fused phosphorus bearing ferrous metal, forming on said melt a layer of molten slag containing at least one reactive constituent capable of reacting with the phosphorus in said melt, the temperature of said melt being not more than 200° C. above the solidification temperature of said melt; continuously supplying oxygen to said *melt*; continuously feeding a solid slag forming mixture containing said reactive constituent to said *layer* whereby the amount of slag in said layer is increased; and simultaneously continuously withdrawing slag from said layer. [Emphasis added.]

The other claims all depend from claim 1 with further limitations added. Thus, claim 2 specifies that the oxygen and the slag-forming mixture are fed to the same pre-determined area in the melt. Claim 3 calls for a slag-forming mixture containing at least one inert constituent and the proportions of the reactive and inert constituents are varied during the course of the process. Claim 4 calls for the mixing of the slag-forming mixture with a portion of the withdrawn slag. Claim 5 calls for a constant rate of supplying the oxygen but a varying rate of feeding the slag-forming mixture. Claim 6 is limited to the process without an external heat supply. Claim 7 calls for containing the melt within a layer of basic lining material. Claim 9 specifies that the slag-forming mixture is previously shaped into elongated bodies. Claim 12 is limited to an oxygen supply between 50 and 10 cubic meters per thousand kilograms of melt and between 2–30 kilograms of the slag-forming mixture per cubic meter of supplied oxygen. Claim 13 calls for a basic and oxidizing slag. Claim 14 recites that the rate of withdrawing of the slag is substantially equal to the rate of feeding the slag-forming mixture.

The claims have been rejected by the Examiner and the Board as being unpatentable over the following references:

Brassert, 1,032,653, July 16, 1912.

British patent, 756,429, September 5, 1956.

Before reaching the merits of the rejection, we must dispose of an initial contention made by appellant to the effect that the Board did not predicate its decision on a correct copy of the appealed claims. That contention is based on the fact that the Board's initial decision contains an incorrect copy of appealed claim 1. In that copy, the relative position of the two emphasized words in the above copy of claim 1 was reversed. After the Board's initial decision was rendered, appellant requested reconsideration based, inter alia, on the above indicated error. In a second decision, the Board stated that claim 1 was correctly copied in its first decision. Thereafter, appellant filed a further request for reconsideration and filed a notice of appeal to this court. Subsequently, the Board found that claim 1 in its initial decision was in fact incorrectly copied but stated that the decision was rendered following a study of the claims presented in appellant's brief which are admittedly correctly copied. Appellant labels the last statement from the Board as being a face-saving rationalization and contends that the application had passed beyond the jurisdiction of the Patent Office after the filing of the notice of appeal to this court.

Thus, appellant concludes that the Board of Appeals never considered the actual claims on appeal and, therefore, it could not have ruled on the question of their obviousness.

[1] In *In re Grier*, 52 CCPA 1081, 342 F.2d 120, 144 USPQ 654, we held that the Board had the power, after the filing of the notice of appeal, to exercise a purely ministerial function in its administrative capacity to correct certain language in its decision. Applying that principle to the present situation, we find that the Board properly acted to clarify its original decision by correcting certain obvious errors therein. The appellant's contention that the Board never considered a correct copy of the appealed claims is not well-taken in view of the Board's statement that its initial decision was rendered following a study of the claims copied in appellant's brief. Moreover, the Board's initial decision contains the statement: "Appellant emphasizes in his brief that it is necessary *to add the slag-forming solids to the slag layer* in a continuous stream in order to maintain a stable state at the interface between the melt and the slag. A review of the specification and the original claims fails to substantiate the importance now ascribed to this feature." [Emphasis added.] The emphasized portion in the above quoted statement shows that the Board was aware that appellant's claims are directed to the addition of slag-forming solids to the *slag layer* and not to the *melt*. That is consistent only with a consideration of the correct claims.

Prior art rejection

The appealed claims were all rejected as "unpatentable over" the Brassert patent in view of the British patent, or the British patent alone. Brassert discloses a method for manufacturing steel wherein the phosphorus content is reduced by the use of an oxidizing gas, such as air, and an oxidizing agent, such as lime. According to Brassert, a quantity of molten iron is placed in a receptacle lined with acid or basic fire brick, the oxidizing agent is placed on the molten metal and the oxidizing gas is blown into the surface of the metal.

The British patent relates to a process for dephosphorizing a ferrous metal by blowing a mixture of an oxidizing gas and burnt lime into a pig iron bath. The patent states that the oxidizing gas may be blown in through one or more nozzles projecting beneath the surface of the molten metal in a container and that burnt lime is also continuously supplied to the molten metal bath.

In appellant's brief and argument, he emphasized the features of continuously feeding the solid slag-forming mixture to the layer of molten slag and continuously supplying oxygen to the melt to distinguish over the references. Appellant alleges that those features are critical. However, the British patent clearly shows continuously blowing burnt lime into a pig iron bath along with the oxygen-containing gas. The only difference between the appellant's claimed process and the method disclosed by the British patent resides in the fact that the reference teaches the introduction of the burnt lime into the molten metal bath whereas appellant specifies the addition of the slag-forming material to the molten slag layer. This feature of appellant's invention, however, is clearly shown by the Brassert patent although Brassert apparently teaches the addition of *all* of his oxidizing agents at the beginning of the operation. Furthermore, as the above quoted portions from appellant's application indicate, appellant also contemplates the addition of at least a portion of his slag-forming solids into the melt by pre-mixing the solids with oxygen and introducing the mixture into the melt. In view of such disclosure in the application, the alleged criticality with respect to the introduction of the slag-forming solids to the molten layer of slag is not supported.

[2] Appellant contends in his brief that the feeding of the solid slag-forming mixture to the layer of molten slag is responsible for certain improved results over the prior art shown in FIG. 1 of the application. In said FIG. 1, several curves are presented to compare the results obtained by the use of several prior art processes and that of appellant's method. However, there is no showing that the method of the British patent or that of Brassert was used in obtaining any of the curves. Moreover, appellant's application seems to indicate, and counsel admitted during argument, that none of the curves in FIG. 1 was in fact obtained by the method of either of the references cited by the Examiner. Under the circumstances, we find appellant's contention to be without merit.

The dependent claims add various limitations to claim 1 but they were also rejected by the Examiner and the Board as being taught by the references of record or obvious therefrom. Appellant has not seriously challenged those rejections except in urging that the dependent claims all contain the limitations of claim 1 and so should be similarly patentable. After a thorough review of the record, we find no error in the Board's rejection of those claims.

[3] The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, took no part in the decision of this case.

MARTIN, *J.*, participated in the hearing of this case but died before a decision was reached.

U.S. Court of Customs and Patent Appeals

IN RE HERMANN SCHNELL, HANS JOACHIM REHBERG AND WILHELM HECHELHAMMER

No. 7702. Decided January 12, 1967

[54 CCPA —; 370 F.2d 584; 152 USPQ 228]

1. PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103.

"Appellants also argue that 'The differences between the subject matter sought to be patented and the prior art are not obvious under section 103,' indicating several differences in properties between their invention and the denture of Becker. The legal issue, of course, is not the obviousness of the differences between the invention and the prior art but the obviousness of the invention as a whole taking those differences into account as section 103 clearly states."

2. SAME—PARTICULAR SUBJECT MATTER—"DENTAL PROSTHESES AND DENTAL AIDS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Dental Prostheses and Dental Aids" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 660,767.

AFFIRMED.

Connolly and Hutz (*Earl Christensen*, of counsel) for appellants.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK *

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals, affirming the rejection of claims 11–19 of application Serial No. 660,767, filed May 22, 1957, entitled "Dental Prostheses and Dental Aids." No claim has been allowed.

The invention is a dental prosthetic device, for example, a denture, in which polycarbonate resin is employed in the manufacture of the "gum" portion. Claim 11 is typical:

> 11. A dental prosthesis device wherein an essential structure element thereof is composed of a linear high molecular weight fiber and film forming thermoplastic polycarbonate.

The Examiner relied on the following references:

Becker, 2,874,467, February 24, 1959.
Bayer (Belgian), 532,543, October 30, 1954.

Becker discloses the manufacture of dentures with methyl methacrylate, a moldable thermoplastic material. These are said to have the advantage "of physiological and chemical indifference as well as of good mechanical properties."

Bayer teaches the manufacture of polycarbonates and fibers, films, and moldings thereof. The properties of the polycarbonates are described:

> The polycarbonates produced according to the invention are thermoplastic and elastic synthetic materials whose softening point or melting point and physical properties depend in large measure on the kind of di-monohydroxyaryl-alkane employed. They are soluble in a variety of organic solvents * * * and can be worked up from solutions into shaped articles such [as] films, fibers, etc., or into lacquer coatings. They melt without decomposition and can therefore be worked up into useful shaped articles or coatings by pressing, spraying, flame spraying, etc.
>
> It is surprising to note that according to the present process * * * there can be obtained crystallizable and linear polycarbonates from which films, fibers, etc., can be produced from the melt or solution, and which films, fibers, etc., can be oriented by stretching. The tensile strength of these products is significantly increased by the stretching process, whereas their elongation-to-break is decreased.

It is also disclosed that the polycarbonates form colorless, viscous, elastic materials.

The Examiner was of the opinion that it would be obvious to use the polycarbonates of Bayer in forming the Becker denture inasmuch as no more was involved than the substitution of one moldable thermoplastic material for another. He stated:

> The Bayer reference teaches that this material may be injection molded and can be formed into hard and solid films and fibers. It is also stated that it has small water absorption, high elasticity, stability of shape up to 180° C. and is uncolored. Thus the material would not be affected by mouth fluids, would not be easily cracked or broken, could be sterilized without change of shape and would not have an unsuitable color. These are attributes which would indicate its usefulness in dental prosthesis to one skilled in the art. Once these properties are known the possible use of the material in dentistry would be obvious.

The Board agreed. We agree.

Appellants argue that the question is whether there is any suggestion in the cited references to make the substitution of the materials. They urge that in the absence of an express suggestion there should be at least such a description of the properties of the polycarbonates that their use in dentures would be encouraged. They find the Examiner's recitation of properties insufficient, pointing out to us that the Bayer reference does not disclose the "small water absorption" of polycarbonates.

We think, however, that the uncontroverted part of the Examiner's analysis provided sufficient basis for a finding of obviousness under 35 U.S.C. 103. Appellants' specification discusses the materials of the prior art, particularly polymethyl methacrylate, polyamides, and polyurethanes. It lists advantages and disadvantages. Polymethyl methacrylates have an undesirable capacity for water absorption and less than suitable mechanical properties. The polyurethanes and polyamides are marked by the disadvantages of high capacity for water absoption, some tendency toward changes in shape under strain, unsatisfactory appearance, and difficulty of repair. The obviousness of the use of polycarbonates in denture preparation would then hardly be foreclosed by the *possibility* that such dentures might have one or more of the disadvantages of the prior art materal.

[1] Appellants also argue that "The differences between the subject matter sought to be patented and the prior art are not obvious under section 103," indicating several differences in properties between their invention and the denture of Becker. The legal issue, of course, is not the obviousness of the *differences* between the invention and the prior art but the obviousness of *the invention as a whole*, taking those differences into account as section 103 clearly states.

On the record here, we agree with the Patent Office finding of obviousness to make this new use of a known material.

[2] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE FRANTZ LUND AND WAGN OLE GODTFREDSEN

No. 7713. Decided May 11, 1967

[54 CCPA —; — F.2d —; 153 USPQ 625]

1. CLAIM—BROADER THAN DISCLOSURE—35 U.S.C. 112.

"The terms 'aralkyl' and 'mononuclear aralkyl' are broad terms, but are not objectionable for that reason alone if those terms are supported by the specification and properly define the subject matter described therein. Consonant with the purpose behind section 112, the *invention claimed* should be no broader than the *invention set forth* in the written description contained in the specification."

2. SAME—SAME—WORDS AND PHRASES—"ARYL" AND "ALKYL."

"We think the terms 'aralkyl' and 'mononuclear aralkyl' as used here are broader than the invention described in the specification. Manifestly, the terms 'aryl' and 'alkyl' encompass far more than the phenyl groups and carbon chains of less than five carbon atoms, respectively, which appellants have set forth in their specification. The term 'aryl' for example, is broad enough to include multi-ring compounds, mention of which we do not find in appellants' specification. Similarly, the term 'alkyl' is sufficiently broad to include radicals derived from paraffin hydrocarbons of a chain length far greater than five carbon atoms."

3. SAME—SAME—REPRESENTATIVE EXAMPLES REQUIRED.

"Thus it seems to us that one skilled in the art would learn from the specification that *certain* aryl or alkyl radicals would be suitable for the purposes of the invention, not that *any* aryl radical or alkyl radical would be so suitable. *In re Sus*, supra. There is no question but that the disputed terms—though they are the same as the terms used in the specification—are so broad that they embrace subject matter not described to be appellants' actual invention by means of adequate representative examples. See also *In re Holmen*, 52 CCPA 1926, 347 F.2d 852, 146 USPQ 290; *In re Cavallito*, 49 CCPA 1335, 306 F.2d 505, 134 USPQ 370."

4. PATENTABILITY—REFERENCE—REFERENCE PATENT WITH EARLIER FILING DATE BARS PATENT ON LATER INVENTION BY ANOTHER—35 U.S.C. 102(e).

"It is, of course, incontrovertible that a description of an invention of another in an application filed before an applicant's date of invention, upon which application a patent is issued, constitutes a bar to the issuance of a valid patent for the same invention, *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390 (1926) codified by § 102(e), or obvious variations thereof, *Hazeltine Research, Inc.* v. *Brenner*, 382 U.S. 252 (1965)."

5. SAME—SAME—EFFECTIVE DATE OF REFERENCE PATENT IS FILING DATE OF PARENT APPLICATION AS TO COMMON SUBJECT MATTER—35 U.S.C. 102(e) AND 120.

"It is also well settled that where a patent purports on its face to be a 'continuation-in-part' of a prior application, the continuation-in-part application is entitled to the filing date of the parent application as to all subject matter *carried over* into it from the parent application, whether for purposes of obtaining a patent or subsequently utilizing the patent disclosure as evidence to defeat another's right to a patent. 35 U.S.C. 102(e), 120; *Goodyear Tire & Rubber Co.* v. *Ladd*, 121 U.S.App.D.C. 275, 349 F.2d 710, 146 USPQ 93 (1965), certiorari denied 382 U.S. 973; *Asseff* v *Marzall*, 88 U.S.App.D.C. 358, 189 F.2d 660, 89 USPQ 206 (1951), certiorari denied 342 U.S. 828; *In re Switzer*, 35 CCPA 1013, 166 F.2d 827, 77 USPQ 156."

6. SAME—SAME—INCORPORATION BY REFERENCE IN REFERENCE PATENT.

"We recognize that, subject to compliance with 35 U.S.C. 112 and 132, the disclosure in a patent application may be deliberately supplemented or completed by reference to disclosure set forth in other patents, *National Latex Products Co.* v. *Sun Rubber Co.*, 274 F.2d 224, 230, 123 USPQ 279, 283 (6 Cir., 1959); *In re Chaplin*, 35 CCPA 1155, 168 F.2d 85, 77 USPQ 601; *In re Stauber*, 18 CCPA 774, 45 F.2d 661, 7 USPQ 258, to disclosure in earlier or concurrently filed copending applications, *In re Ziegler*, 53 CCPA 1457, 363 F.2d 888, 150 USPQ 619, 621; *In re Fried*, 51 CCPA 1118, 329 F.2d 323, 141 USPQ 27, which may have become abandoned, *In re Heritage*, 37 CCPA 1109, 182 F.2d 639, 86 USPQ 160, or, in general, to 'disclosure which is available to the public,' *In re Heritage*. As the expression itself implies, the purpose of 'incorporation by reference' is to make one document become a part of another document by referring to the former in the latter in such a manner that it is apparent that the cited document is part of the referencing document as if it were fully set out therein."

7. SAME—SAME—SAME—MERE MENTION OF EARLIER PARENT APPLICATION INSUFFICIENT FOR INCORPORATION BY REFERENCE IN REFERENCE PATENT.

"Here, however, we do not think that the single sentence by which Margerison refers to his earlier application 'The present application is a continuation-in-part application of our application Serial No. 763,806, filed September 29, 1958 (now abandoned)' is sufficient in and of itself to render Example 2 of the abandoned application part of the patent disclosure as if fully set out therein. There is little in the term 'continuation-in-part' which would suggest to the reader of the patent that a disclosure of the nature of Example 2 is present in the earlier application and that it should be considered a part of the patent specification. Thus we cannot agree that the subject matter of claim 3 is tacitly 'described' in the Margerison patent within the meaning of § 102(e)."

8. SAME—SAME—35 U.S.C. 102(e).

"It seems to us that the sine qua non of § 102(e) and the *Milburn* case is that, consistent with the gain to the public which the patent laws mean to secure, a *patent must issue* which contains, explicitly or implicitly, the description of an invention which is to be relied on to defeat a later inventor's patent rights."

9. SAME—PRIOR KNOWLEDGE—ABANDONED APPLICATION REFERRED TO IN PATENT IS PRIOR KNOWLEDGE AS OF ISSUE DATE—35 U.S.C. 102(a)—RULE 14(b).

"The question remains whether the disclosure in the abandoned '806 application is otherwise available as evidence of prior knowledge under 35 U.S.C. 102(a). There it is provided that a person shall be entitled to a patent unless 'the invention was *known* or used by others in this country * * * before the invention thereof by the applicant for patent.' The 'knowledge' required by that provision to defeat another's patent rights has long been interpreted to mean *public* knowledge. See *In re Hilmer*, 53 CCPA 1287, 359 F.2d 859, 878–879, 149 USPQ 480, 495–496; *In re Borst*, 52 CCPA 1398, 345 F.2d 851, 145 USPQ 554, certiorari denied 382 U.S. 973; *In re Schlittler*, 43 CCPA 986, 234 F.2d 882, 110 USPQ 304, and cases cited therein. Consistent with those rulings we think the disclosure in Example 2 of the abandoned Margerison application becomes available as evidence of prior knowledge, if at all, only as of the issue date of the Margerison patent, as public access to the abandoned application is then provided for by Patent Office Rule 14(b)."

10. SAME—PARTICULAR SUBJECT MATTER—"SUBSTITUTED DIHYDROBENZOTHIADIAZINES."

The refusal of certain claims in an application entitled "Substituted Dihydrobenzothiadiazines" as unpatentable over the prior art and because of undue breadth, is reversed as to the former rejection and affirmed as to the latter.

APPEAL from the Patent Office. Serial No. 831,949.

MODIFIED.

Lawrence S. Levinson (*N. Dale Sayre*, *Robert Alpher*, *Merle J. Smith*, of counsel) for appellants.

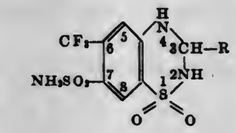
Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, MARTIN, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

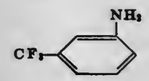
This is an appeal from the decision of the Board of Appeals affirming the Examiner's rejection of claims 2–4, 15 and 16 in appellants' application [2] entitled "Substituted Dihydrobenzothiadiazines."

The subject matter of the application relates to certain 3-substituted-6-trifluoromethyl-7-sulfamyl - 3,4 - dihydro - 1,2,4 - benzothiadiazine-1,1-dioxides of the formula

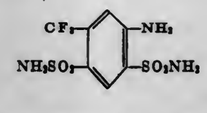


As set forth in the claims, the "R" group at position 3 of the benzothiadiazine nucleus is the only variable,[3] defined in claim 15 as "aralkyl," in claim 16 as "mononuclear aralkyl," in claim 2 as "phenyl (lower alkyl)," in claim 3 as "benzyl" and in claim 4 as "phenethyl."

Appellants prepare the claimed compounds by reacting *α,α,α*-trifluoro-m-toluidene,



with excess chlorosulfonic acid in the presence of an alkali metal chloride to yield 5-trifluoromethylaniline-2,4-disulfonyl chloride. That compound is treated with aqueous ammonia to yield 5-trifluoromethyl-2,4-disulfamylaniline,



The latter derivative, in turn, is reacted with an aldehyde of the formula RCHO, where R is as defined above, to yield the claimed compounds. To obtain the 3-benzyl compound of claim 3, for example,

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 831,949, filed August 6, 1959.
[3] Disclosed, but not claimed, are compounds substituted in the 5-position by halogen and lower alkyl.

phenylacetaldehyde is reacted with 5-trifluoromethyl-2,4-disulfamylaniline.

According to appellants, the claimed compounds exert "strongly saluretic [sodium expelling] and diuretic [water expelling] effects" and are useful in the treatment of heart conditions and hypertension. The record shows that the compounds of the claims are generally more active than the corresponding 3-unsubstituted or 3-aliphatically substituted compounds, with the specific compounds of claims 3 and 4 having greatest activity.

With that background information concerning appellants' invention in mind, we turn to the issues presented to us by the decision of the Board and appellants' reasons of appeal. As those issues are quite diverse in nature, we shall discuss each separately.

The 35 U.S.C. 112 Rejection

The Examiner rejected claims 15 and 16 as "failing to properly define the invention in accordance with the requirements of 35 U.S.C. 112." He was of the view that the expressions "aralkyl" and "mononuclear aralkyl," which are employed in those claims to define the substitutent in the 3-position of the molecule, are "beyond the scope of the disclosure" in appellants' specification, having found that the disclosure was not "sufficiently representative to support the breadth of the claims." The Board agreed.

Appellants disagree with that position, and contend that the following portion of their specification, which describes the aldehyde reactants employed to introduce the 3-substituent, provides sufficient support for claims 15 and 16:

> • • • Among the suitable aldehyde reactants may be mentioned; *aralkanals*, particularly *mononuclear* ar (*lower* alkanals), such as phenylacetaldehyde, α-phenylpropionaldehyde, β-phenylpropionaldehyde, β-phenyl-*n*-butyraldehyde, *o*, *m*, and *p*-tolylacetaldehyde [and] 6-phenylcaproaldehyde; • • • [and] diarylalkanals, particularly *mononuclear* diaryl *lower* alkanals, such as diphenylacetaldehyde, β,β-diphenylpropionaldehyde, and α-phenyl-β-phenylpropionaldehyde. • • • [Emphasis added.]

We note, as did the Board, that the alkyl radicals provided by the above aldehydes all fall within a limited range, none exceeding five carbon atoms, and that the aryl radicals provided by the above aldehydes are all phenyl or hydrocarbon substituted phenyl.

Appellants have not defined the intended scope of the terms "aralkyl" and "mononuclear aralkyl" in their specification. Under the circumstances, we must give those terms their broadest possible meaning in determining just what appellants are claiming as the subject matter which they regard as their invention.[4] See *In re Sus*, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301.

[1] The terms "aralkyl" and "mononuclear aralkyl" are broad terms, but are not objectionable for that reason alone if those terms

[4] For that purpose, we adopt the definition of "aryl" set forth in the authorities listed in footnote 3 of *In re Sus* at 49 CCPA 1306, 306 F.2d 498, 134 USPQ 304. In addition, we find the following definitions of "alkyl," "alkane" and "aralkyl" in the same authorities:

> alkyl. A paraffin hydrocarbon radical which may be represented as derived from an alkane by dropping one hydrogen from the formula. Examples are ethyl, C_2H_5—; propyl, $CH_3CH_2CH_2$—; isopropyl, $(CH_3)_2CH$—; etc. • • • (The Condensed Chemical Dictionary, sixth ed., p. 41).
>
> alkane. 1. General term for a saturated aliphatic hydrocarbon; a paraffin hydrocarbon. Its formula is C_nH_{2n+2}. Examples range from methane, CH_4, through eicosane, $C_{20}H_{42}$, and higher homologs. • • • (The Condensed Chemical Dictionary, sixth ed., p. 39).
>
> alkyl. • • • A monovalent radical derived from an aliphatic hydrocarbon by removal of one hydrogen atom, as methyl-, ethyl-, or propyl-. Their general formula is C_nH_{2n+1}—. • • • (Hackh's Chemical Dictionary, third ed., p. 33).
>
> aralkyl. • • • A radical in which an aryl group is substituted for a hydrogen atom of an alkyl. • • • (Hackh's Chemical Dictionary, third ed., p. 71).

are supported by the specification and properly define the subject matter described therein. Consonant with the purpose behind section 112, the *invention claimed* should be no broader than the *invention set forth* in the written description contained in the specification.

[2] We think the terms "aralkyl" and "mononuclear aralkyl" as used here are broader than the invention described in the specification. Manifestly, the terms "aryl" and "alkyl" encompass far more than the phenyl groups and carbon chains of less than five carbon atoms, respectively, which appellants have set forth in their specification. The term "aryl," for example, is broad enough to include multiring compounds, mention of which we do not find in appellants' specification. Similarly, the term "alkyl" is sufficiently broad to include radicals derived from paraffin hydrocarbons of a chain length far greater than five carbon atoms. In their specification, appellants themselves characterize the aldehydes they employ to synthesize the present compounds as "lower alkanals." As we stated in *In re Cavallito*, 48 CCPA 720, 282 F.2d 363, 127 USPQ 206:

> • • • Moreover, the selection of the examples and other exemplary material used as the disclosure to support a claim must be adequately representative of the area covered by it. In some instances a limited disclosure which is typical of various areas covered by a claim may be of greater value in determining the patentable characteristics of the claimed compounds than a more extensive disclosure would be if related only to a limited portion of the area.

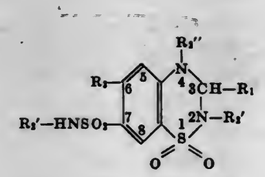
[3] Thus it seems to us that one skilled in the art would learn from the specification that *certain* aryl or alkyl radicals would be suitable for the purposes of the invention, not that *any* aryl radical or alkyl radical would be so suitable. *In re Sus*, supra. There is no question but that the disputed terms—though they are the same as the terms used in the specification—are so broad that they embrace subject matter not described to be appellants' actual invention by means of adequate representative examples. See also *In re Holmen*, 52 CCPA 1626, 347 F.2d 852, 146 USPQ 290; *In re Cavallito*, 49 CCPA 1335, 306 F.2d 505, 134 USPQ 370.

We affirm the rejection of claims 15 and 16 under section 112.

The Rejection on Margerison

The issue presented by the Patent Office rejection of claims 2–4, 15 and 16 as "unpatentable over" the Margerison patent is one which, insofar as we are aware, has never been before this court in the present context.

The Margerison Patent 3,095,446, issued June 25, 1963, on an application filed May 12, 1959, relates to processes for the preparation of certain 7-sulfamyl-3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxides of the general formula



The generic formula of Margerison reproduced above includes within its scope the compounds of appellants' claims, and a hindsight

selection from the column-long list of appropriate substituents disclosed by Margerison [5] yields the compounds of appellants' narrowest claims, claims 3 and 4. One of the processes disclosed by the Margerison patent for preparing the compounds appears identical to appellants' process in all material respects. The compounds so disclosed are said to be useful as diuretic agents to relieve excess water and/or salt retention, or to relieve states of hypertension.

The Examiner noted that the Margerison patent specification states that it is "a continuation-in-part application of our application Serial No. 763,806, filed September 29, 1958 (*now abandoned*)." [Emphasis added.] The '806 application reproduced in the record before us discloses several closely related processes for preparing compounds having a generic formula which, for purposes here, may be said to be identical to that disclosed in the issued patent. A comparison of the generic disclosure and the nature of the substituents on the benzothiadiazine nucleus as disclosed in the Margerison patent with the abandoned application reveals them, in the words of the Board, "to be strikingly parallel." Thus, in both the Margerison patent and abandoned application, R_2' and R_2'' may be hydrogen; and R_3 and R_1 may be, among many other things, trifluoromethyl and benzyl or 2-phenylethyl, respectively. It seems to be generally agreed between appellants and the Patent Office that the appellants' *process* for preparing the compounds is not described in the '806 application.[6]

While the Examiner rejected all claims as "unpatentable over" the Margerison patent, it seems clear from his answer that he at least [7] does not rely on anything described above as being disclosed either in the Margerison patent or in the abandoned application for evidence that appellants are not the first inventors of the presently claimed subject matter. Rather, the Examiner turned to Example 2 of the abandoned '806 application, which discloses the preparation of 6-chloro-7-sulfamyl-3,4-dihydro-2-H [1,2,4]-benzothiadiazine by first reacting 5-chloro-4-sulfamyl-aniline-2-sulfonyl chloride with paraformaldehyde to form 5-chloro-4-sulfamyl-N-chloromethyl-aniline-2-sulfonyl chloride, and then reacting the latter compound with ammonia to yield the desired product. The last paragraph of Example 2 was particularly relied upon by the Examiner. It reads:

> Other sulfamyl-aniline-2-sulfonyl chlorides, aldehydes or amines may be used in the above process; for example, 5-methyl-4-sulfamyl-aniline-2-sulfonyl chloride, *5-trifluoromethyl-4-sulfamyl-aniline-2-sulfonyl chloride* or 5-chloro-4-(N-methyl-sulfamyl)-aniline-2-sulfonyl chloride may replace the starting material in the above reaction; dimethoxymethane, acetaldehyde, propionaldehyde, benzaldehyde or *phenylacetaldehyde* may substitute paraformaldehyde and methylamine may replace *ammonia*. [Emphasis added.]

It is the Examiner's position that utilization of the italicized reagents appearing in the above paragraph in the process described in Example 2 results in the compound of appellants' claim 3. The compound of claim 4 was regarded as obvious in view of the same disclosure since it "represents a homolog of claim 3 and has the same utility." Claims 2, 15 and 16, which are generic to claim 3, were carried along with the rejection of claim 3.

One matter must be clear before we move to a more detailed discussion of the Patent Office position and appellants' contentions. Example 2, and particularly the last paragraph thereof which is relied on by the Patent Office in rejecting the claims, is present only in the abandoned '806 application. Example 2 is not present—explicitly, that is—in the specification of the issued Margerison patent.

The Examiner recognized that Example 2 of the '806 application was not part of the express disclosure of the Margerison *patent*, observing that the patent "has not carried forward the disclosure that is being relied upon by the Examiner as the prior art." Nevertheless, he was of the view that "the abandoned application has been incorporated by reference in the patent." He quite evidently relied on the aforementioned paragraph of the Margerison patent, which states that it is "a continuation-in-part" of the '806 application. "In effect," said the Examiner, the compound of claim 3 "has been described in the issued patent. 35 U.S.C. 102(e)." He regarded the effective date of that disclosure of the '806 application to be its filing date, September 29, 1958, some ten months before appellants filed the application here on appeal.

The Board agreed in substance with the Examiner's reasoning, adding that

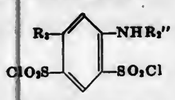
> * * * the subject matter of Serial No. 763,806 has been carried forward into Patent No. 3,095,446, and the parent application may properly be referred to for further elucidation or exemplification of the subject matter found in the issued patent. So far as the final products are concerned, the patent and its parent application are as one. * * *

Here, as below, appellants present four arguments as to why Example 2 of the abandoned application should not be used to reject the claims under 35 U.S.C. 102 and 103. One of the arguments relates to the *sufficiency* of the disclosure in Example 2 to anticipate or render obvious the subject matter of claims 3 and 4, appellants urging that there is no express disclosure of any compound within the scope of the claims and that, in any event, the disclosure is in fact inoperative to yield the compound of claim 3. The remaining three arguments are concerned with the *legal availability* of Example 2 as evidence of prior art. Appellants first contend that they are entitled to the benefit of two British applications, each having a filing date earlier than the filing date of the Margerison abandoned application, under the provisions of 35 U.S.C. 119. Second, they urge that the disclosure of the abandoned application becomes available as a reference, if at

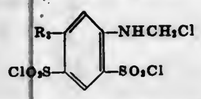
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[5] In the patent, R_2' and R_2'' are said to be "*hydrogen* or lower alkyl"; R_3 "stands primarily for halogen, e.g. fluorine, bromine, iodine or particularly chlorine" but may also represent "lower alkyl, e.g. methyl or ethyl, or halogeno-lower alkyl, e.g. *trifluoromethyl*." According to the patent, R_1 may represent a wide variety of substituent groups, among which are hydrogen, lower alkyl, substituted lower alkyl, lower alkenyl, cycloalkyl, cycloalkenyl, carbocyclic, aryl, substituted carbocyclic aryl, carbocyclic aryl-lower alkyl, heterocyclic aryl or heterocyclic-lower alkyl. Various specific groups are disclosed to exemplify each of the above generic terms, the patentee stating that "carbocyclic aryl-lower alkyl may be represented by monocyclic carbocyclic aryl-lower alkyl, e.g. *benzyl or 2-phenylethyl*." [Emphasis supplied.]

[6] The Margerison patent and abandoned application *do* contain common disclosure of at least one process for preparing compounds of the generic formula mentioned earlier. In that process, a dichlorosulfonyl aniline of the formula



is treated with an aldehyde of the formula R_1CHO in the presence of hydrogen chloride. That product is reacted subsequently with an amine of the formula $R_3'NH_2$ (such as NH_3) to effect ring closure. The product of the first step of the above process, where paraformaldehyde is employed as the aldehyde reactant, is the subject of the claims of the Margerison patent and has the formula



[7] Appellants, apparently in an abundance of caution, contend that the generic disclosures of the Margerison patent and abandoned application are "too broad and diffuse" to suggest appellants' invention. They assert error in what they believe is a contrary holding of the Board. Upon review of the record, we are inclined to agree with the Solicitor that the aforestated issue to which appellants direct their arguments "does not exist for the reason that the rejection of the appealed claims is not based on the broad generic disclosures in the Margerison et al. patent and abandoned application."

all, only as of the issue date of the Margerison patent (June 25, 1963), the first time the public had access to it (see 35 U.S.C. 122) and long after appellants filed their application in the United States. Finally, appellants argue that the disclosure of Example 2 of the abandoned application is not carried forward to and is not common with the disclosure of the Margerison patent—rather, it was omitted when the application upon which the patent issued was filed. It is their position that 35 U.S.C. 102(e) is "not applicable" here since "the invention" disclosed in Example 2 of the Margerison '806 application was not "described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent" as required by § 102(e). In effect, appellants state, the Examiner and Board have relied upon the disclosure of the abandoned application *per se*, use of which, they contend, is proscribed by well-established principles of law.

The primary issue before us is whether the subject matter of claim 3 *is* "described" in the Margerison patent by virtue of its asserted appearance in Example 2 of the abandoned parent application.

[4] It is, of course, incontrovertible that a description of an invention of another in an application filed before an applicant's date of invention, upon which application a patent is issued, constitutes a bar to the issuance of a valid patent for the same invention, *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U.S. 390 (1926), codified by § 102(e), or obvious variations thereof, *Hazeltine Research, Inc.* v. *Brenner*, 382 U.S. 252 (1965). [5] It is also well settled that where a patent purports on its face to be a "continuation-in-part" of a prior application, the continuation-in-part application is entitled to the filing date of the parent application as to all subject matter *carried over* into it from the parent application, whether for purposes of obtaining a patent or subsequently utilizing the *patent* disclosure as evidence to defeat another's right to a patent. 35 U.S.C. 102(e), 120; *Goodyear Tire & Rubber Co.* v. *Ladd*, 121 U.S.App.D.C. 275, 349 F.2d 710, 146 USPQ 93 (1965), certiorari denied 382 U.S. 973; *Asseff* v. *Marzall*, 88 U.S.App.D.C. 358, 189 F.2d 660, 89 USPQ 206 (1951), certiorari denied 342 U.S. 828; *In re Switzer*, 35 CCPA 1013, 166 F.2d 827, 77 USPQ 156.[8]

The question is—what has been "carried over" from the Margerison '806 application to the application on which the Margerison patent issued? Although the Board stated that "the subject matter" of the '806 application "has been carried forward" into the patent, it would seem that it was referring to the broad, *generic* disclosure of the compounds and perhaps the other disclosure common to the two applications which we have outlined earlier in this opinion. The Examiner stated, and the Board and Solicitor do not disagree, that the patent "has not carried forward the disclosure that is being relied upon by the Examiner as the prior art." We agree with this conclusion of the Examiner. Thus it is apparent that the claimed subject matter has not literally or explicitly been "described" in the patent upon which the rejection is predicated. Nor is the factual situation presented here by the '806 application and Margerison patent comparable to the

[8] In *Switzer*, this court affirmed a rejection of certain claims directed to the use of carbon black in a resin as obvious in view of several references, one of which described the use of titanium dioxide in a resin. The court stated:

> The Examiner correctly held that * * * [appellants] did not antedate or avoid the three abandoned applications which were referred to in the Hempel patent as copending applications of which the patent application was a continuation-in-part. Those earlier applications are part of the record herein and two of them disclose the use of the titanium dioxide *just as the patent does*. [Emphasis added.]

factual situations present in the *Goodyear*, *Asseff* and *Switzer* cases, supra, since the patent and '806 application are not "as one" insofar as the subject matter of Example 2 is concerned.

Those observations do not dispose of the problem before us, however. The Examiner has stated that the disclosure of Example 2 of the abandoned '806 application has been "incorporated by reference" into the patent disclosure. The inference we draw from the Examiner's and Board's statements is that they view the patent specification acknowledgment that it is a "continuation-in-part" of the abandoned '806 application as accomplishing incorporation of the entire disclosure of the abandoned application, including Example 2, into the disclosure of the patent, with the result that appellants' invention is described, if not explicitly, at least implicitly in the Margerison patent.

[6] We recognize that, subject to compliance with 35 U.S.C. 112 and 132, the disclosure in a patent application may be deliberately supplemented or completed by reference to disclosure set forth in other patents, *National Latex Products Co.* v. *Sun Rubber Co.*, 274 F.2d 224, 230, 123 USPQ 279, 283 (6 Cir., 1959); *In re Chaplin*, 35 CCPA 1155, 168 F.2d 85, 77 USPQ 601; *In re Stauber*, 18 CCPA 774, 45 F.2d 661, 7 USPQ 258, to disclosure in earlier or concurrently filed copending applications, *In re Ziegler*, 53 CCPA 1457, 363 F.2d 888, 150 USPQ 619, 621; *In re Fried*, 51 CCPA 1118, 329 F.2d 323, 141 USPQ 27, which may have become abandoned, *In re Heritage*, 37 CCPA 1109, 182 F.2d 639, 86 USPQ 160, or, in general, to "disclosure which is available to the public," *In re Heritage*. As the expression itself implies, the purpose of "incorporation by reference" is to make one document become a part of another document by referring to the former in the latter in such a manner that it is apparent that the cited document is part of the referencing document as if it were fully set out therein.

[7] Here, however, we do not think that the single sentence by which Margerison refers to his earlier application "The present application is a continuation-in-part application of our application Serial No. 763,806, filed September 29, 1958 (now abandoned)" is sufficient in and of itself to render Example 2 of the abandoned application part of the patent disclosure as if fully set out therein. There is little in the term "continuation-in-part"[9] which would suggest to the reader of the patent that a disclosure of the nature of Example 2 is present in the earlier application and that it should be considered a part of the patent specification. Thus we cannot agree that the subject matter of claim 3 is tacitly "described" in the Margerison patent within the meaning of § 102(e).

The Examiner, as well as the Solicitor, rely on this court's decision in *In re Heritage* to support the view that the manner in which the Margerison patent refers to the prior abandoned application here amounts to an incorporation by reference in the patent of the entire disclosure of the abandoned application. We do not see that decision as supporting that proposition. There this court approved the Board's finding that a Finck patent employed as a reference had referred to an earlier, copending, subsequently abandoned application in a manner to make it "part of the patent disclosure." The court stated:

> While the Primary Examiner specifically stated that the copending application

[9] The Manual of Patent Examining Procedure, section 201.08, states:

> A continuation-in-part is an application filed during the lifetime of an earlier application by the same applicant, repeating some substantial portion or all of the earlier application *and adding matter not disclosed* in the said earlier case. (*In re Klein*, 1930, C.D. 2; O.G. 519.)

of Finck, referred to in his patent and subsequently abandoned, was not relied upon, the Board of Appeals held that the disclosure by reference to the abandoned application was part of the patent disclosure. * * *

* * * * * * * *

We do not deem it necessary to refer to the disclosure of the abandoned application referred to in the Finck patent, although, in our opinion, such reference was properly discussed in the Board's decision. There can be no question but that in a patent application, the disclosure thereof may be supplemented by reference to another patent. *In re Georg Stauber*, 18 CCPA (Patents) 774, 45 F.2d 661, 7 USPQ 258.

It must be remembered that the abandoned application by itself was not cited by the Board as a reference, and since it was referred to by the patentee in his specification, it surely became part of the disclosure set out therein. Furthermore, it is sound law, in our opinion, that any reference to a disclosure which is available to the public is permissible. *The Hamilton Laboratories, Inc.* v. *Massengill*, 111 F.2d 584 (C.C.A. 6th 1940), 45 USPQ 594, certiorari denied 311 U.S. 688, 47 USPQ 531.

Counsel for appellant in their brief stated that the abandoned application was not open to the public. However, the record shows and after suitable petition for access had been made such access had been granted.

While the manner in which the Finck abandoned application disclosure was incorporated by reference to supplement the patent disclosure is not entirely clear from the *Heritage* opinion, the manner is clearly reflected in the decision of the Board of Appeals in *Ex parte Heritage*, 77 USPQ 179,[10] which involved a Heritage application related to that appealed to this court. It should be apparent that the court, in stating that the Finck patent "referred to" the abandoned application, did not intend to imply that *any* manner of reference to an earlier application was sufficient to incorporate the entire disclosure or any part thereof by reference into the patent. We think the manner in which the Finck patent "referred to" and thereby incorporated the abandoned Finck application as part of the disclosure is clearly distinguished from the present situation. The remaining cases cited by the Solicitor here, all of which cite and follow *Heritage*—*Rolls Royce Ltd.* v. *United States*, 339 F.2d 654, 143 USPQ 445 (Ct. of Claims, 1964)[11]; *Technograph Printed Circuits Ltd.* v. *Bendix Corp.*, 218 F. Supp. 1, 31, 137 USPQ 725, aff'd. 327 F.2d 497, 140 USPQ 285 (4 Cir., 1964); *B. F. Goodrich Co.* v. *U.S. Rubber Co.*, 147 F. Supp. 40, 58, 111 USPQ 397,[12] aff'd. 244 F.2d 468, 113 USPQ 397 (4 Cir., 1957)—appear to be similarly distinguishable.

[10] The paragraphs of the Board opinion at 77 USPQ 181, 182, appearing between headnote [1] and [2], as well as its decision on petition for reconsideration, are identical to those in the decision of the Board appearing in the record in *In re Heritage*. The Finck patent stated, inter alia:

> The invention also is an improvement over my former invention disclosed in my co-pending application filed December 27, 1927, Serial #242,776, *which shall be referred to more particularly hereafter.*
>
> * * * * * * * *
>
> In introducing the loose insulating material into the insulation space 4 through the openings 8 *there is preferably employed the air pressure process of filling disclosed in my pending application aforesaid. As there disclosed* the air pressure, in a process of this kind, is utilized as a means to pack the material into the insulation space at a proper density.
>
> * * * * * * * *
>
> Another embodiment of my present invention consists in the use of the above method of introducing and fixing loose, fibrous materials within an insulation space of a complete structure, such as a refrigerator, formed by inner and outer spaced apart walls *as considered in my former application.* * * * [Emphasis added.]

[11] There the court analyzed the reference patent as follows:

> * * * As we have already pointed out this 2,497,667 patent is a process patent but it refers to the 711,204 application in discussing the alloys which might be used in the process. * * *
>
> The patent stated:
>
> An alloy *as proposed* by the applicants and Marcus Allan Wheeler *in our patent application* filed November 20, 1946, Ser. No. 711,204, containing [certain elements] * * * [w]hen given first preliminary heat treatment *according to this invention* followed by the said proposed heat treatment * * * gave under the same test conditions a life of 72 hours. [Emphasis added.]
>
> The majority of the court concluded that "the full disclosure of the 711,204 application is as much a part of the disclosure of the 2,497,667 patent as if fully set out therein," thus making available as apparent prior art certain other alloys described *only* in the 711,204 application.

Appellants concede, subject to their alternative arguments as to the sufficiency of the disclosure in Example 2 and to whatever rights they may have under 35 U.S.C. 119, that:

> If Example 2 of the abandoned Margerison application were subject matter that was carried forward into the application that matured into the Margerison patent, appellants would readily concur in the Board's holding. * * *

That is not the case here, however. [8] It seems to us that the sine qua non of § 102(e) and the *Milburn* case is that, consistent with the gain to the public which the patent laws mean to secure, a *patent must issue* which contains, explicitly or implicitly, the description of an invention which is to be relied on to defeat a later inventor's patent rights. It does not appear that the patentee here has done "all that he could do to make his description public," *Milburn*, supra, for the language Margerison employs is not sufficient to incorporate the description of his earlier application into the patent and the description which the Patent Office relies upon appears only in the earlier application. Upon the facts here, we think it would require an unreasonable extension of the language of § 102(e), and of the *Milburn* decision it codifies, to find that the subject matter of claim 3 is "described" in the patent issued to Margerison. That conclusion disposes of the rejection of claims 2 and 4 as well.

[9] The question remains whether the disclosure in the abandoned '806 application is otherwise available as evidence of prior knowledge under 35 U.S.C. 102(a). There it is provided that a person shall be entitled to a patent unless "the invention was *known* or used by others in this country * * * before the invention thereof by the applicant for patent." The "knowledge" required by that provision to defeat another's patent rights has long been interpreted to mean *public* knowledge.[13] See *In re Hilmer*, 53 CCPA 1287, 359 F.2d 859, 878–879, 149 USPQ 480, 495–496; *In re Borst*, 52 CCPA 1398, 345 F.2d 851, 145 USPQ 554, certiorari denied 382 U.S. 973; *In re Schlittler*, 43 CCPA 986, 234 F.2d 882, 110 USPQ 304, and cases cited therein. Consistent with those rulings, we think the disclosure in Example 2 of the abandoned Margerison application becomes available as evidence of prior knowledge, if at all, only as of the issue date of the Margerison patent, as public access to the abandoned application is then provided for by Patent Office Rule 14(b).[14] Since appellants' filing date is well before the issue date of the Margerison patent, we

[12] The court quoted the language of the reference patent to Bull at 147 F. Supp. 52, footnote 26:

> In the co-pending application of McNeill and Eger, Serial No. 647,730, filed Dec. 17, 1932, there is [sic] shown and described tires which are adapted to cooperate directly with such rims, and provide a fluid tight seal without the use of inner tubes. * * *

and later stated, 147 F. Supp. 58:

> * * * that part of * * * [defendant's] work represented by patent application of defendant's employees McNeill and Eger, and a patent granted * * * to defendant's expert Dr. Bull, became part of the public domain on the issuance of the Bull patent. * * *

The court concluded that the McNeill application was [at footnote 39]:

> * * * available as evidence of prior knowledge. 35 U.S.C. § 102(a). Moreover, having been referred to by Bull in his specifications in Patent No. 1,966,580, it became part of the disclosure set out therein. * * *

[13] Inasmuch as § 102(e) makes a description in a *patent* available as evidence of prior knowledge as of the effective filing date of the application on which the patent issues, it should be regarded as an exception to the general rule that prior knowledge must be public in order to defeat another's patent rights. See, in general, *In re Land*, 54 CCPA 806, 368 F.2d 866, 877–8, 151 USPQ 621, 631–2; *In re Hilmer*, infra; 35 U.S.C. 122.

[14] Rule 14(b) reads:

> Abandoned applications are likewise not open to public inspection, except that if an application referred to in a United States patent is abandoned and is available, it may be inspected or copies obtained by any person on written request, without notice to the applicant. Abandoned applications may be destroyed after twenty years from their filing date, except those to which particular attention has been called and which have been marked for preservation. Abandoned applications will not be returned.

need not consider what weight should be given to Example 2 in the abandoned application by itself as evidence of prior knowledge or whether it is available as evidence at all. See, generally, *The Corn-Planter Patent*, 23 Wall (90 U.S.) 181, 210–211 (1874); *Milburn* v. *Davis*, supra; *Smith* v. *Hall*, 301 U.S. 216, 227 (1936); *In re Schlittler*, supra; Patent Office Rule 108. But also see *In re Borst*, supra. It should also be apparent that we have not found it necessary to discuss appellants' arguments concerning the *sufficiency* or operativeness of the disclosure in Example 2 of the '806 application, or their rights under 35 U.S.C. 119.

[10] The decision of the Board is affirmed with respect to claims 15 and 16 and is reversed with respect to claims 2, 3 and 4.

MODIFIED.

MARTIN, *J.*, participated in the hearing of this case but died before a decision was reached.

SMITH, *J.*, concurring.

I agree with the reasoning and conclusion of the majority. Because of the importance of the issue presented by the Patent Office's use of the Margerison patent in the present circumstances, I should like to cite the following material as of interest and relevancy to that issue, in addition to the cases and materials appearing in the majority opinion.

I.

Monroe Auto Equip. Co. v. *Heckethorn Mfg. & Supply Co.*, 332 F.2d 406, 416, 141 USPQ 549 (6th Cir., 1964)
Monarch Marking System Co. v. *Dennison Mfg. Co.*, 92 F.2d 90, 92–3, 34 USPQ 85, 88 (6th Cir., 1937)
Interurban Ry. & Terminal Co. v. *Westinghouse Electric & Mfg. Co.*, 186 Fed. 166, 168 (6th Cir., 1911)
United States Blind Stitch Mach. Corp. v. *Reliable Mach. Works, Inc.*, 67 F.2d 327, 19 USPQ 269 (2nd Cir., 1933)
Overman Cushion Tire Co. v. *Goodyear Tire & Rubber Co.*, 40 F.2d 460, 5 USPQ 250 (2nd Cir., 1930)
Fessenden v. *Wilson*, 18 CCPA 1171, 48 F.2d 422, 9 USPQ 274
In re Tenney, 45 CCPA 894, 254 F.2d 619, 117 USPQ 348

II. *Decisions of the Board of Appeals*

Ex parte Burgess, 152 USPQ 711, 712
Ex parte Thelin, 152 USPQ 624
Ex parte Shacter, 139 USPQ 380
Ex parte Tummers, 137 USPQ 444
Ex parte Lipkin, 129 USPQ 427
Ex parte MacDonald, 113 USPQ 262
Ex parte Gresham, 90 USPQ 350
Ex parte Jordan, 90 USPQ 41
Ex parte Peterson, 63 USPQ 99
Ex parte Clifford, 49 USPQ 152
Ex parte Caldwell, 32 USPQ 129

III. *Literature*

Orenbuch, "Abandoned Applications as Prior Art," 45 J.P.O.S. 613 (August 1963)
Randle, "Patent Invalidity: Prior Knowledge as Evidenced by an Unpublished Written Description," 45 J.P.O.S. 97 (February 1963)
Jacobs, "Abandoned Applications as References," 44 J.P.O.S. 184 (March 1962)
Orenbuch, "The Doctrine of Incorporation by Reference in the Law of Patents," 43 J.P.O.S. 467 (July 1961)
Levy, "*Offensive* Defensive Patent Applications," 39 J.P.O.S. 159 (March 1957)
Jones, "*Ex parte Heritage* (vs. *Finck*)," 33 J.P.O.S. 729 (October 1951)
Federico, "The Use of Abandoned Applications as References," 28 J.P.O.S. 160 March 1946)
Osheroff, "The Use of Abandoned Applications Referred to in a Patent as a Reference," 19 Geo. Wash. Law Review 73 (October 1950)
Manual of Patent Examining Procedure, §§ 901.02, 901.01

U.S. Court of Customs and Patent Appeals

IN RE ROBERT A. BOYER, ARTHUR A. SCHULZ AND EDMOND A. SCHATZMAN

No. 7701. Decided April 27, 1967

[54 CCPA —; 363 F.2d 455; 153 USPQ 402]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—REFUSAL TO ENTER CLAIMS FOR PURPOSE OF INTERFERENCE WITH PATENT AFTER APPEAL IN PATENT OFFICE.

In connection with appellants' request to reverse the decision of the Director of the Chemical Examining Operation, acting for the Commissioner of Patents, refusing to direct the Examiner to enter certain claims submitted after appeal had been taken to the Board of Appeals for purpose of interference with an issued patent, the Examiner having found and the Director agreed that the claims sought to be entered were not supported by appellants' application and the Board having regarded such action to be "a matter which is not appealable" to it, *Held* that "Until such time as the Board has ruled on the patentability of claims 14–21 to appellants in an application properly presenting them, we cannot review that question"; and that "We are without authority to review the action of the Commissioner in matters of this nature."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"METHOD OF MANUFACTURING A PROTEIN FOOD PRODUCT."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Method of Manufacturing a Protein Food Product" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 168,807.

AFFIRMED.

J. Harold Kilcoyne, *John D. Pope III* for appellants.

Joseph Schimmel (*J. F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 1–12 in appellants' application,[2] entitled "Method of Manufacturing a Protein Food Product," as obvious in view of the prior art.

The invention relates to a method of forming edible protein products designed to simulate natural meats of mammals, fish or fowl. According to the specification, the protein products produced by processes disclosed in certain prior art patents were too dark in color and possessed relatively poor flavor and texture. Appellants treat various protein materials—soy or casein protein, for example—with sulfite materials [3] to produce a product having lighter color, improved flavor and texture, and increased resistance to bacterial and fungal growth, as reflected in claim 1:

1. The method of forming an edible protein product which comprises precipitating protein from a protein-containing solution, said precipitation being carried out under spinning conditions to form the precipitating protein into filaments, and treating the protein with at least approximately 0.25% by weight of a sulfite.

The references are:

Smith et al., 2,370,266, February 27, 1945.
Boyer, 2,682,466, June 29, 1954.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 168,807, filed January 25, 1962.
[3] Appellants use such sulfites as sodium sulfite, sodium metabisulfite, and sodium hydrosulfite. Webster's New International Dictionary, 3rd edition, 1961, defines "sodium sulfite" as "the crystalline normal salt Na_2SO_3 used chiefly as a reducing agent, bleaching agent, and antichlor, in * * * preserving foods," and "sodium metabisulfite" as "a compound $Na_2S_2O_5$ * * * used chiefly as a reducing agent, bleaching agent, and antichlor, in preserving foods and silage * * *."

Recognizing that Boyer, one of the prior art patents cited in appellants' specification, meets the terms of the claims except for treatment of the protein with sulfite, the Examiner turned to Smith, who discloses that an industrial problem relating to the dark color of soybean, peanut, casein or cottonseed protein may be obviated by treating them with 0.25–3% sodium hydrosulfite to lighten the protein color. The proteins which Smith treats in that manner are used in the paper coating industry or "wherever a light colored protein is required." "[I]t would be obvious," said the Examiner, "to treat the Boyer protein filaments with the Smith et al. protein-improving agent." The Board agreed.

We appreciate appellants' arguments directed to the allegedly nonanalogous nature of the Smith patent to the problem at hand, as well as the arguments and affidavits relating to the "appearance," "appeal," "flavor," "texture" and "aroma" of appellants' sulfite-treated products in comparison with the products of the prior art. But, as the Board and Solicitor point out, an improvement in color of Boyer's protein product which can be used to simulate the white meat of fowl, and a concomitant improvement in appeal and appearance, might well be expected from sulfite treatment in view of the Smith reference. Considering all the evidence, we think sufficient reason is provided by the prior art for doing what appellants have done, and we find no reversible error in the decision below.

Appellants also ask us to reverse the decision of the Director of the Chemical Examining Operation, acting for the Commissioner of Patents, refusing to direct the Examiner to enter claims 14–21, submitted after appeal had been taken to the Board and the Examiner's answer written,[4] for purposes of interference with an issued patent. The Examiner found, and the Director agreed, that the claims sought to be entered were not supported by appellants' application. In its decision, the Board regarded such action to be "a matter which is not appealable" to it.

[1] Until such time as the Board has ruled on the patentability of claims 14–21 to appellants in an application properly presenting them, we cannot review that question. See *In re Pavlecka*, 50 CCPA 1342, 319 F.2d 180, 138 USPQ 118; *In re Smitley*, 49 CCPA 803, 296 F.2d 767, 132 USPQ 3; *In re Korum*, 33 CCPA 923, 154 F.2d 185, 69 USPQ 144. We are without authority to review the action of the Commissioner in matters of this nature. 35 U.S.C. 141; *In re Jewett*, 45 CCPA 714, 247 F.2d 953, 115 USPQ 134, and cases cited therein.

[2] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

The inquiry here under section 103 is whether, considering the differences between the claimed subject matter and the "prior art," appellants' invention would have been obvious *at the time it "was made to a person having ordinary skill in the art to which said subject matter pertains."* I am unable to agree with the majority opinion which seems to me to ignore the above italicized portions of section 103. Considering the *prior art of record*, and evaluating it in view of *all* of the requirements of section 103, I would find appellants' invention to be nonobvious.

[4] See Patent Office Rule 116(c).

The appealed claims were rejected "as being unpatentable over Boyer, in view of Smith." Of these references only Boyer was concerned with an edible protein product. Concerning this reference appellants' specification states:

> This invention relates to a method of manufacturing a protein food product and more specifically to the preparation of a *product which is an improvement over those disclosed in U.S. Patents 2,682,466* [Boyer], 2,730,447 and 2,730,448. [Emphasis added.]

Boyer sought to provide "a low cost but satisfactory substitute for meat." According to Boyer,

> * * * The stumbling block up to this point has been in the reproduction of the texture and appearance of natural meat, the texture of course involving the factor of "chewiness." * * *

Boyer discloses a process to produce

> * * * a product which closely resembles natural meat as to its appearance, as to its fibrous qualities, as to its flavor, as to its nutritive value, and as to its chewiness.

The product, according to Boyer, should "closely simulate the white meat of chicken or turkey * * * filet mignon or a pork chop or other specific types and cuts of meat available in butcher shops." Boyer started with protein fibers, resulting from spinnerets, or extruded proteins, admittedly old products. The fibers were then treated with edible binders and fats.

Boyer teaches that "toughness" of the product could be controlled through the use of "hardening, tanning, or insolubilizing chemicals" or through stretching the fibers to increase tensile strength. Tenderizing, when desired, could be accomplished through the use of "proteolytic enzymes." Flavor could be controlled by adding the fat of the particular meat simulated. Texture could be controlled through assembly pressures. As for color, Boyer states:

> Regardless of the initial procedure in producing the filaments, the filaments will normally be approximately the color of the starting protein. If a coloring agent is added to the protein dispersion, the resulting filaments will retain the approximate color of the dye. * * *

Such are the teachings of record specifically directed to *edible protein products and processes*, the subject matter of concern to appellants.

I shall now consider the teachings of Smith. The patent states:

> In the industrial utilization of protein there are several properties which are of primary importance, such as color, adhesive strength, viscosity, plasticity, and dispersibility. In the specialized field of paper coatings two of the most important properties are color and adhesive strength. For high grade paper coatings casein is used more than any other protein because, in addition to having very good adhesive strength, it approaches more nearly to a white color than other commercial proteins which have been used for this purpose. Soybean protein is used to a limited extent for paper coating, but its general acceptance for this application has been prevented by its dark color.
>
> The present invention has to do with a soybean protein which is much lighter in color than any prepared heretofore and for this reason is especially suited to fulfill the need for a cheaper adhesive in the paper coating industry and also for protein plastics and wherever a light colored protein is required. * * *

Smith teaches the addition of sodium dithionite salts or dithionous acids, which act as bleaching agents, to yield lighter colored proteins for industrial application, particularly in the paper coating industry.

Turning to appellants' specification for a more detailed consideration of their invention, it is stated:

> While valuable edible protein products can be prepared utilizing the teachings of U.S. Patents 2,682,466 [Boyer], 2,730,447 and 2,730,448, these products may be

darker in color than desired, may possess sufficient rubberyness [sic] so that they cannot be masticated in the same way that natural meat products are masticated, for example, and the flavor thereof often possesses undesired characteristics. In addition, the spinning solution possesses a higher viscosity in operation than is preferred. It has been found in accordance with the present invention that *all of these disadvantages can be overcome and additional advantageous results secured* if the protein is treated with a sulfate during the process of preparing edible protein products. [Emphasis added.]

The advantageous results are stated to be:

* * * The protein filaments are lighter in color than the filaments secured when a sulfite is not employed. It is found that the flavor of the edible protein product has been unexpectedly improved and that it has a more desirable structure. Specifically the structure of the product causes it to break without rubberyness [sic] when chewed so that the product has the tenderness desired for meat products. Whether the sulfite is mixed with the original protein or is added to the spinning solution, the viscosity of the spinning solution is lowered, thereby lowering power consumption and increasing the protein level which can be utilized. Finally, the protein product of the present invention exhibits increased resistance to bacterial and fungal growth.

The main thrust of appellants' argument is that teachings of Smith are taken from a nonanalogous art which one of ordinary skill in the field of edible protein would not be aware of. The Patent Office reply is that as both appellants and Smith were concerned with the problem of overcoming the undesirable dark color of protein, the teachings of Smith would be knowledge which one of ordinary skill in the edible protein art would be aware of.

It seems to me that the reasoning of the Patent Office begs the question and proceeds from too narrow a basis in deciding whether the teachings of Smith are properly to be considered in making the determination of obviousness under the terms and limitations of section 103. The proper basis upon which this decision must be made, if the terms of section 103 are to be honored, is as follows. Appellants sought to discover a new method by which an improved edible protein product could be made. The results sought included improved flavor, tenderness, texture, color, and efficiency in preparation. These results were, in effect, required to overcome the deficiencies in the prior art teachings in the relevant art. Faced with *this* problem, the totality of the deficiencies in the prior art, the inquiry is whether one of ordinary skill in the edible protein art would turn to the protein paper coating art or more broadly to the industrial protein art to solve these problems. The Patent Office answers, in effect, "Yes," and this for the sole reason that *one aspect* of the problem solved by appellants is to achieve a lighter color of the protein and Smith allegedly does this.

I do not agree with this reasoning. It makes obvious by hindsight what had eluded the workers in the art prior to appellants' invention. Followed to its logical conclusion, totally unrelated fields of research and inventive activity may be combined *after the combination is taught* by appellants. This is the precise result which section 103 tried to prevent. The "prior art" therein referred to is that art to which the claimed subject matter as a whole pertains, and not to art to be located only *after* the invention, and with hindsight as a guide, through all fields of research to find but one aspect in common. It seems to me that should the Patent Office view prevail, there is no end to the string of hindsight reconstruction which could be made to provide a thread and make *all* prior art relevant to the section 103 determination. I do not think this was the intent or purpose of Congress in enacting this provision.

Under section 103 it seems to me that the Patent Office has failed in its burden of proof to show that one of ordinary skill in the art of edible protein products would have been aware of teachings in the paper coating and industrial protein art to solve the existing problem in the edible protein art.

The majority states, "We appreciate appellants' arguments directed to the allegedly nonanalogous nature of the Smith patent to the problem at hand." I fail to see from the majority opinion how or in what manner the majority "appreciates" appellants' arguments. It immediately then states an unsupported conclusion that the claimed improvements "might well be expected * * * in view of the Smith reference." The majority then concludes, absent any explanation, "Considering all the evidence, we think sufficient reason is provided by the prior art for doing what appellants have done." Nowhere does the majority explain or set forth its reasoning as to why it considers the nonanalogous art teachings of Smith proper here for consideration of the issue under section 103.

It is my view, considering the record herein, that the reasoning advanced by the Patent Office is not supported and does not overcome the fact that the Smith reference has been selected by hindsight from a nonanalogous art. As such, it is my position it does not support the rejection under section 103. Considering the teachings of Boyer alone, I find appellants' invention to be nonobvious and would reverse the decision of the Board.[5]

[5] Perhaps the rationale for the majority's decision is contained in its conclusion that it finds "no reversible error in the decision below" in combination with the quotation from Webster's New International Dictionary, 3rd edition, 1961 (appellants' filing date is January 29, 1962), in footnote 3 of the majority opinion. It seems to me that this is an explicit recognition that the art of record is lacking in its support of the rejection. The burden of producing prior art to render an invention obvious under section 103 is that of the Patent Office.

Insofar as the majority sua sponte relies on the "facts" set forth in footnote 3, appellants' brief sets forth the following argument *based on facts of record*:

> Moreover, one skilled in the art and having a knowledge of the effects of conventional bleaches on edible proteins would avoid the introduction of a bleach such as sulfite into the Boyer process. The affidavit of William B. Brew * * * filed October 16, 1963, while the application was still pending before the Examiner, clearly establishes this point. In that affidavit, Mr. Brew stated under oath that he followed the teachings of the instant application, but in lieu of the sulfite employed by applicants, he used three other conventional bleaches, namely, sodium hypochlorite, calcium hypochlorite, and hydrogen peroxide. The resultant protein products possessed unsatisfactory flavor and aroma, poor texture, and they tended to deteriorate within a short span of time. Thus, the affidavit established that conventional bleaching agents such as these have no beneficial effect on texture, flavor, aroma, or general appeal. The mere fact that certain sulfite bleaching agents lighten industrial proteins would provide no incentive for the skilled worker to try them on edible protein products and no hint that new and unexpected results would flow from their application to the Boyer process. In view of the affidavit, it seems clear that one seeking to improve the flavor, texture, aroma, and general appeal to the Boyer product would have no reason to look to bleaching agents since these well-known bleaching agents are undesirable. * * *

The Board in its opinion answered the above argument by stating the affidavit was "not considered pertinent." No explanation was given. I fail to see how the Board can ignore *facts* in its determination of obviousness under section 103.

U.S. Court of Customs and Patent Appeals

IN RE MARTHA TOMANEK, NEE KUNITZER

No. 7692. Decided May 4, 1967

[54 CCPA —; 376 F.2d 325; 153 USPQ 451]

1. CLAIM—CONSTRUCTION.

Where the appealed claims reciting a developer for electrostatic latent images consisting of a mixture of two toners verbally distinguish over those portions of the reference disclosure relating to the inclusion of carrier particles in the mixture of toners, and where appellant contends that the claims "not only exclude the presence or use of particulate carriers but also exclude *any* 'carrier,' even the brush, drum or sheet 'carrier' surfaces" employed by the reference patent, *Held* that "That appellant's present construction of the claims is primarily an advocate's afterthought is further demonstrated by the

disclosure of the specification, earlier quoted, that the toner mixture is applied to the latent image in 'known manner'."; and that "While it is not at all clear from the specification what 'known manner' of distributing the toner mixture over the image is contemplated, it is evident that the use of a brush, drum or sheet, each of which is shown by Bixby and other references to be a very well 'known manner' of applying toners to electrostatic images, is not excluded by the language of either the specification or the claims."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"DEVELOPER FOR ELECTROSTATIC LATENT IMAGES."

The refusal of certain claims in an application entitled "Developer for Electrostatic Latent Images," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 123,099.

AFFIRMED.

James E. Bryan for appellant.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of composition claims 1–9 and process claims 10–12 and 14–19 in appellant's application [2] entitled "Developer for Electrostatic Latent Images."

The application describes and claims a method of, and compositions for, developing an electrostatic latent image. According to the specification and record, such an image is formed by uniformly charging (by corona discharge, for example) a photoconductive insulating layer in the dark, then photographically exposing the charged layer to a light pattern. Where light strikes, the photoconductive layer becomes conductive and the charges in that area "leak" away in proportion to the intensity of illumination, leaving an electrostatic latent image in the non-illuminated areas. It appears that the image is commonly "developed" by applying compositions including "toner" powders which temporarily adhere to larger "carrier" particles and bear a charge or polarity opposite to that of the latent image. The "toner" powder is electrostatically attracted to image areas of opposite charge whereafter it may be permanently affixed, for example, by heating. The heavier "carrier" particles roll away under gravity forces.

According to appellant, the known developers "have the disadvantage that they do not uniformly develop image portions covering rather large areas, but are deposited only around the edges leaving the inside portions of such areas to all intents and purposes undeveloped." To solve that problem, appellant employs a so-called "double toner," as reflected in composition claim 1 and process claim 10:

1. A developer for electrostatic latent images *consisting* of a mixture of effective amounts of at least one *organic resinous toner* capable of acquiring a *positive* charge and at least one *inorganic toner*, of approximately the same effective particle size, capable of acquiring a *negative* charge, the charges acquired by the toners being not in excess of about 10 volts.

10. A method of developing an electrostatic latent image which *comprises* applying to the image a *mixture consisting of* effective amounts of at least one *organic, resinous toner* having a *positive* charge and at least one *inorganic toner*, of approximately the same effective particle size, having a *negative* charge, the charges on the toners being not in excess of about 10 volts. [Emphasis supplied.]

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 123,099, filed July 11, 1961.

According to the specification, the "double toner" is applied to the electrostatic image "in known manner." The positively charged, fusible, organic, toner materials are drawn to image areas of negative charge where they are fixed by heat. The negatively charged inorganic materials adhere temporarily to image areas of no charge from which they may easily be removed, provided that the fixing temperature is maintained low enough to prevent melting of the photoconductive insulating layer. According to appellant, the claimed "double toners" are advantageous because "they are capable of developing large areas and do not adhere merely to the edges of the image."

The Examiner rejected the claims as unpatentable over the following prior art references:

Carlson I, 2,221,776, November 19, 1940.
Carlson II, 2,297,691, October 6, 1942.
Carlson III, 2,940,934, June 14, 1960.
Sugarman, 2,758,939, August 14, 1956.
Wielicki, 2,986,521, May 30, 1961.
Bixby, 3,013,890, December 19, 1961 (filed July 8, 1958).

It is evident that the Patent Office regards Bixby as the principal reference against claims 1 and 10, the Board agreeing with the Examiner that Bixby "substantially" or "fully" meets the terms of those claims. The remaining references are mainly employed to demonstrate that certain specific developer materials recited in other claims were known in the art. Appellant argues here:

* * * There is only one reference which relates to * * * a "double toner," i.e., the patent to Bixby, * * * but the present invention distinguishes from * * * Bixby in two very important respects: (1) In Bixby it is essential to use a carrier whereas *no carrier* is employed in the developer of the present invention, and (2) one component of the "double toner" of the present invention is *inorganic* and, therefore infusible, whereas both toner components of the Bixby developer are organic and, therefore, fusible.

The Examiner and Board did not agree with appellant's characterization and interpretation of the Bixby disclosure, nor do we. [1] With respect to argument (1) of appellant, it is true that the present claims, reciting a "developer * * * *consisting* of a *mixture* of * * * one organic resinous toner capable of acquiring a positive charge and * * * one inorganic toner * * * capable of acquiring a negative charge," verbally distinguish over those portions of Bixby's disclosure relating to the inclusion of "carrier" *particles in* his mixture of positively charged and negatively charged toner particles. However, as the Examiner and Board correctly point out,[3] Bixby need not include carrier *particles in* his developer composition, but can use bristles of a brush, drum surfaces or sheet surfaces as "carriers" for application of the toner mixture to the latent image. While appellant does

[3] The Examiner stated:

* * * Bixby teaches mixing the organic resin capable of acquiring a positive charge with the particles capable of acquiring a negative charge and which may be inorganic prior to contacting the toner particles with a "carrier" * * *, illustrated in FIGURES 3 and 5, respectively, of the drawing. * * * [The] method claims * * * read on "applying" the developer composition consisting of a mixture of toners to the surface to be developed by means of the cylindrical drum shown in FIGURE 3 or the "belt" apparatus in FIGURE 5 or the bristles of a fur brush as disclosed in column 3, lines 53–65 of the Bixby patent.

The Board also found Bixby to disclose mixtures of positively and negatively chargeable toners without particulate carriers:

* * * In column 8, lines 35 to 46, describing hopper 25 containing a mixture of positively and negatively charged toners 26, and similarly in column 10, lines 1 to 21, describing a supply of a toner mixture 36 in reservoir 35, Bixby clearly teaches compositions which do not contain the argued carriers.

* * * * * * * *

We are also in agreement with the Examiner's position as to method claims 10, 11, 12 and 14 to 19. The term "comprises applying" does not preclude the Bixby expedient of applying the mixed toner particles, which have been given their positive or negative charge by means of nonparticulate carriers such as belts or drums. These embodiments of Bixby in our opinion fully meet the terms of appellant's claims.

not directly controvert that finding of fact, she contends the present claims not only exclude the presence or use of particulate carriers but also exclude *any* "carrier," even the brush, drum or sheet "carrier" surfaces employed by Bixby. The Examiner and Board did not find that to be the case, and appellant's arguments here do not convince us of error in that decision.

That appellant's present construction of the claims is primarily an advocate's afterthought is further demonstrated by the disclosure of the specification, earlier quoted, that the toner mixture is applied to the latent image in "known manner." While it is not at all clear from the specification what "known manner" of distributing the toner mixture over the image is contemplated, it is evident that the use of a brush, drum or sheet, each of which is shown by Bixby and other references to be a very well "known manner" of applying toners to electrostatic images, is not excluded by the language of either the specification or the claims.

With regard to appellant's argument (2), it is true that Bixby discloses a toner mixture of positively and negatively charged particles in which both sets of particles *are* organic and fusible in nature. The Examiner and Board were of the view, however, that Bixby also discloses the use of mixtures of positively charged organic and negatively charged inorganic toner particles. To resolve those contentions, it is necessary to look at the Bixby disclosure in some detail. Bixby first discloses specific examples of resinous organic toners which are positively and negatively chargeable with respect to a polystyrene carrier surface:

> • • • suitable toner materials which are positive relative to the polystyrene are gilsonite [an asphalt material], either by itself or with Raven Beads carbon black to give a black toner; Amberol 800–P (a trade name of Rohm & Haas Co. for a synthetic resin) either with Hansa yellow (a trade name of General Dyestuff Corp.) for a yellow toner, or with Duplex Maroon lithol (a trade name of Calco Division of American Cyanamid Co.) for a red toner or with phthalocyanine blue for a blue toner. Suitable toner compositions which are negative relative to a polystyrene surface are Amberol F–71 (a trade name of Rohm & Haas Co. for a synthetic resin) with either Raven Beads carbon black or black iron oxide for a black toner.

Bixby then states:

> *In general*, resins such as manjak, gilsonite, casein, polymethyl methacrylate and cellulose acetate give up electrons relatively easily i.e., are easily charged to a *positive* potential triboelectrically. While materials such as Vinsol (a trade name of Hercules Powder Co. for a thermoplastic resin derived from pine wood), dammar, tartaric acid, polyvinyl butyral and various rosin-modified urea-formaldehyde resins easily acquire electrons, i.e., become *negatively* charged triboelectrically. *In black pigments and dyes, it has been found that materials such as manganese dioxide, black iron oxide and Raven Beads carbon black easily acquire a negtive charge*, while nigrosine easily acquires a positive charge. *The selection of suitable toner materials can be made by any one skilled in the art from the many materials that have been tested and occupy recognized positions in the triboelectric series.* The dimension of the charge acquired by any particular material through triboelectric contact with any designated material is easily and readily determined as is well known to those skilled in the art. [Emphasis supplied.]

Contrary to appellant's arguments, we think that the inorganic manganese dioxide, black iron oxide and carbon black materials disclosed by Bixby would be contemplated by one of ordinary skill in this art not only to be useful as coloring pigments for organic resinous toners, but also to be separately useful as negatively charged inorganic toners per se. Certainly nothing in Bixby suggests that both the positive and negative charge bearing components of his toner mixture must be organic to achieve his purpose. Moreover, as the Examiner and Board point out, the other references of record, notably Carlson I and II, make it clear that inorganic materials such as talcum, zinc oxide, or carbon black have long been used in the art as toners in their own right.

The record shows that all claims were treated by the Patent Office and appellant below as standing or falling with claims 1 and 10, as we so treat them here. See *In re Allen*, 51 CCPA 809, 324 F.2d 993, 139 USPQ 492.

In view of the above, it is unnecessary to consider the remaining rejections of the claims under 35 U.S.C. 112 which were made below.

[2] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

The record shows that the Board of Appeals here consisted of an examiner-in-chief and two acting examiners-in-chief. Appellant does not challenge the legality of that Board. For the reasons expressed in my dissenting opinion in *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247, the decision of such a Board in my view is a legal nullity. However, I must accept the majority's view on this issue in the *Wiechert* case, i.e., the legality of the Board is not an issue here. I therefore participate in the merits of this appeal and in so doing, agree with the conclusion of the majority.

PATENT SUITS

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2,839,900, J. E. Morgan, KNITTED FABRIC, filed Oct. 28, 1966, D.C., W.D. Va. (Roanoke), Doc. 66–C–97–R, *John E. Morgan and J. E. Morgan Knitting Mills, Inc.* v. *Roanoke Mills, Inc.* Consent judgment; patent valid, defendant enjoined, July 17, 1967.

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2,985,830. (See 2,656,508.)

3,017,323. (See 2,561,080.)

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3,045,735, H. W. Kern, METHOD OF MAKING FASTENING DESIGNED FOR WELDING, filed Dec. 23, 1963, D.C., S.D.N.Y., Doc. 63–C–3705, *Earl E. Howe, Richard W. Howe and Margaret H. Frisbey* v. *Russell Burdsall and Ward Bolt and Nut Co., Inc.* Order dismissing action, consented to July 14, 1967.

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3,112,905. (See 3,043,540.)

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REISSUES

OCTOBER 17, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

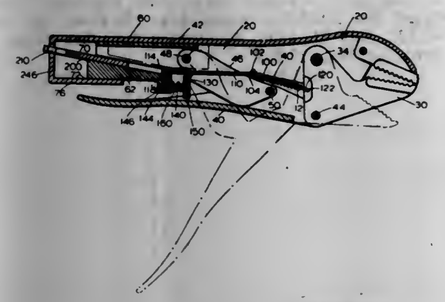
26,280

SELF-ADJUSTING PLIER-TYPE TOGGLE LOCKING WRENCH

John L. Hostetter, Murray, Nebr. 68409

Original No. 3,116,656, dated Jan. 7, 1964, Ser. No. 175,441, Feb. 26, 1962. Application for reissue Jan. 6, 1966, Ser. No. 536,932

7 Claims. (Cl. 81—379)



5. In a wrench, the combination of an elongated first handle forming a body portion provided at one end with a stationary jaw and formed with an elongated recess, a co-acting movable jaw pivoted to said body, a second handle pivoted to said movable jaw, a toggle link pivotally attached to said second handle and extending away from said jaws and toward the farther end of said recess, a section of said handle portion which is spaced a substantial distance from said jaws being provided with a hollow portion having first and second spaced apart surfaces disposed opposite each other and extending generally linearly of said handle, said first and second surfaces being substantially parallel both to each other and to the length of said first handle, first and second wedges disposed between said first and second surfaces, said wedges each having one end of greater width than the other end as seen in side elevation, said wedges being arranged with the wide end of one disposed toward the jaw end of said wrench and the wide end of the other disposed away from the jaw end of the wrench, said toggle link being pivotally connected at its rearward end to a first one of said wedges, resilient means positioned in said wrench such that said resilient means urges said second wedge forwardly toward said jaws, said toggle link having a rearwardly facing shoulder thereon, means on the forward end of said second wedge for engaging said shoulder to force said second wedge rearwardly as the rearward end of said toggle link moves rearwardly upon a movement of said second handle toward said first mentioned handle, and free-floating separation means disposed between said wedges, said separation means limited in movement longitudinally of said first handle by the rear end of said first handle and the rear end of said resilient means, said separation means operable to prevent a rearward motion of said first wedge from causing a rearward motion of said second wedge by maintaining said wedges out of frictional engagement whereby upon a movement of said second handle toward said first handle said first wedge is moved rearwardly by said link to an extent proportional to the size of a work piece engaged between said jaws until said wedges jam against said separation means and against the said first and second surfaces of said first handle so that they are set, and whereby after said wedges are set a fixed position of the pivotal connection of the rearward end of said link is established, whereby still further movement of said second handle toward said first handle will cause said movable jaw to be urged toward said stationary jaw still further thereby causing a clamping pressure on said work piece.

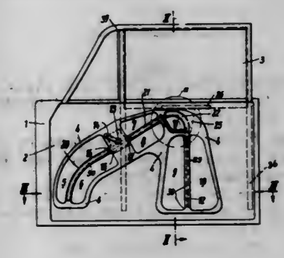
26,281

MOTOR VEHICLE DOOR WINDOW CONTROL

Johannes Werner, Offenbach (Main), Germany, assignor to H. T. Golde G.m.b.H. & Co. K.G., Frankfurt am Main, Germany

Original No. 3,181,257, dated May 4, 1965, Ser. No. 229,639, Oct. 10, 1962. Application for reissue Jan. 10, 1966, Ser. No. 539,231

8 Claims. (Cl. 49—352)

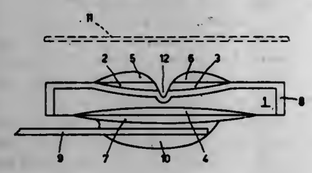


1. A motor vehicle door comprising an outer panel, an inner panel connected to said outer panel and defining a space therebetween, a window frame connected to the panels and defining a window aperture, window guide means disposed at opposite locations and extending in said aperture in the window frame and in said space between the panels, a window slidably supported in said guide means for movement between a raised position in which the window fills said aperture and a lowered position in which the window is accommodated in the space between the panels, said window having a lower edge, connecting means attached to the lower edge of the window, a driving cable of determinable length engaged with the connecting means, said inner panel being provided with a plurality of apertures, said inner panel including an integral web portion remaining between adjacent apertures with free remote edges, said web portions including upturned flanges extending in a direction towards the outer panel to define a duct extending along a particular path on said inner panel, said driving cable being guidably supported along substantially its entire length in said duct for longitudinal displacement, and means engaging said cable for displacing the same lengthwise through said duct in opposite directions for raising and lowering the window.

26,282
METHOD OF MAKING SEMICONDUCTOR DEVICE

Julian Robert Anthony Beale and Andrew Francis Beer, by North American Philips Company, Inc., assignee

Original No. 2,980,983, dated Apr. 25, 1961, Ser. No. 828,777, July 22, 1959. Application for reissue Mar. 10, 1967, Ser. No. 628,172
Claims priority, application Great Britain, July 29, 1958, 24,404/58
6 Claims. (Cl. 29—583)

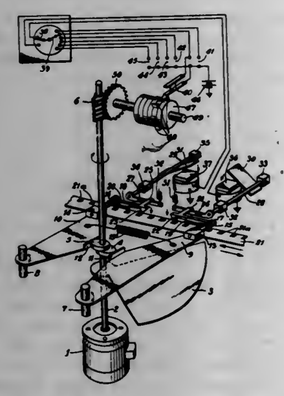


1. A method for the manufacture of a semi-conductor device comprising a semi-conductive body having two adjacent, spaced, conductive projections, comprising the steps of connecting a common conductor of a length substantially greater than the spacing between the said projections to and across the said projections such that the common conductor forms a connecting part between said projections and forms extensions over a substantial length beyond each of said projections, and thereafter severing the connecting part of the common conductor between said projections to obtain the said extensions of said common conductor as separate current supply conductors for each of said projections.

26,283
DEVICE FOR CONTROLLING THE IMAGE FREQUENCY DURING THE PROJECTION OF A MOTION PICTURE FILM

Erwin Gerlach, Tyreso, Sweden, assignor, by mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Original No. 3,165,251, dated Jan. 12, 1965, Ser. No. 198,528, May 29, 1962. Application for reissue Jan. 3, 1967, Ser. No. 613,059
21 Claims. (Cl. 226—50)



7. An intermittent film feeding mechanism for a film projector, comprising:

a film claw;

means for effecting continuous reciprocating motion of said film claw back and forth along the film;

electrically actuatable means effective upon actuation thereof for moving said film claw into and out of engagement with the film in synchronism with the back and forth movement of said film claw to thereby advance film through the projector;

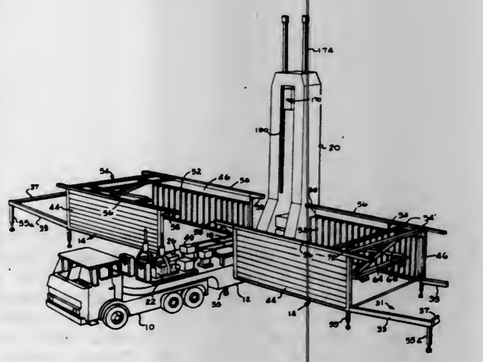
a rotatable member having a plurality of different series of cam projections; and

means including switch means actuated by said series of cam projections for selectively rendering said electrically actuatable means operative to move said film claw into and out of engagement with the film at a plurality of different frequencies.

26,284
PORTABLE DRILL RIG METHODS AND APPARATUS

Joseph V. O'Neill, Inkster, Mich., and George Homanick, West Hartford, Conn., assignors, by direct and mesne assignments, to Leyman Corporation, Cincinnati, Ohio

Original No. 3,145,786, dated Aug. 25, 1964, Ser. No. 42,132, July 11, 1960. Application for reissue June 7, 1966, Ser. No. 562,927
13 Claims. (Cl. 175—57)



11. The method of assembling a drill string from a plurality of individual elongate drill pipes comprising the steps of supporting the uppermost pipe of the drill string with its longitudinal axis lying in a vertical plane, locating the next pipe to be assembled into the string in a ready position in which the longitudinal axis thereof lies in said vertical plane, and pivoting said next pipe upwardly from said ready position in said vertical plane about a stationary horizontal axis perpendicular to said vertical plane and located in adjacent spaced relationship to the longitudinal axis of said uppermost pipe at the side thereof at which said ready position is located until said next pipe is located above and in coaxial alignment with said uppermost pipe, and connecting said next pipe and said uppermost pipe.

26,285
TRAVELING-WHILE-SPRINKLING IRRIGATION APPARATUS AND SYSTEM

Robert R. Stafford, Rte. 4, Box 177D, Eugene, Oreg. 97401

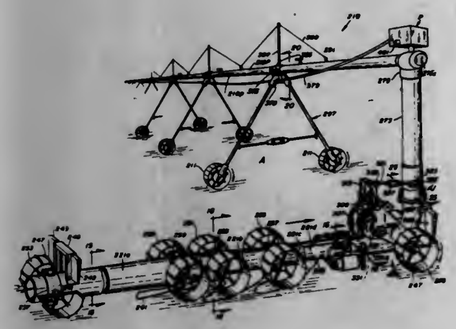
Original No. 3,255,968, dated June 14, 1966, Ser. No. 438,152, Feb. 10, 1965. Application for reissue Dec. 7, 1966, Ser. No. 604,522
27 Claims. (Cl. 239—212)

1. An irrigation apparatus comprising,

sprinkling pipeline means supported for movement across a plot of ground in transverse relation to its direction of travel,

wheeled means connected to said pipeline means to conduct water thereto,

a connecting assembly for connecting said wheeled [unit] *means* to a source of water under pressure,



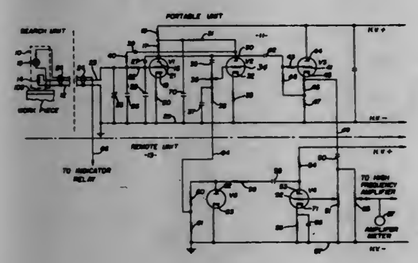
each means being driven independently of the other but in the same direction,

and braking means for controlling the rate of movement of said wheeled means so that such rate corresponds to that of said pipeline means.

26,286
METHOD AND APPARATUS FOR INSPECTING WORKPIECES WHICH ARE RELATIVELY INDEPENDENT OF PROBE MOTION

William C. Harmon, Chagrin Falls, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Original No. 2,914,726, dated Nov. 24, 1959, Ser. No. 596,657, July 9, 1956. Application for reissue Apr. 20, 1966, Ser. No. 546,129
25 Claims. (Cl. 324—37)

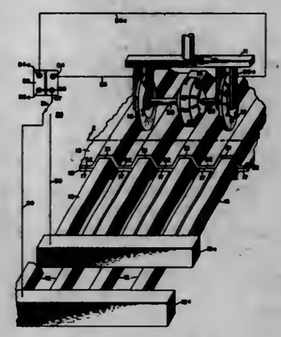


1. In combination, an oscillator comprising an amplifier stage and a feedback stage, each including an electron means having a grid circuit and a plate circuit, the grid circuit of each stage being coupled to the plate circuit of the other stage, a coil in the grid circuit of said amplifier stage adapted to be placed in proximity to an object to be tested, amplifying means coupled to the plate circuit of said amplifier stage, and rectifying means connected between the output of said amplifying means and the grid circuit of said feedback stage for applying a bias to the grid circuit of the feedback stage, said grid circuit including means for integrating changes in bias potential produced by the rectified signals from the amplifying stage.

26,287
CORE MANUFACTURE

Michael E. Wasilisin and Donald E. Wenz, Baltimore County, Md., assignors to Martin-Marietta Corporation, a corporation of Maryland

Original No. 2,780,716, dated Feb. 5, 1957, Ser. No. 535,638, Sept. 21, 1955. Application for reissue Oct. 15, 1958, Ser. No. 767,495
9 Claims. (Cl. 219—83)

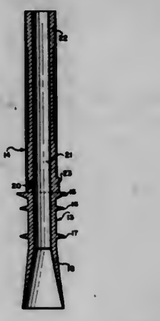


8. In all metal honeycomb core fabricating machine, a work station, a feed mechanism for supporting an oppositely corrugated pair of transversely corrugated metal ribbons in juxtaposition at said work station with the nodes thereof in abutment and for intermittently advancing said ribbons longitudinally through said work station a distance equal to a whole number multiple of the spacing between said corrugations, and means at said work station cyclically operative in timed relation to the movement of said strips to bond said abutting nodes together.

26,288
MIX-AND-AIR FEEDING DEVICE FOR DISPENSING FREEZERS

Charles W. Clark, Jr., Seattle, Wash., assignor to Sweden Freezer Manufacturing Co., Seattle, Wash., a corporation of Washington

Original No. 3,258,030, dated June 28, 1966, Ser. No. 330,326, Dec. 13, 1963. Application for reissue Oct. 10, 1966, Ser. No. 597,178
12 Claims. (Cl. 137—589)

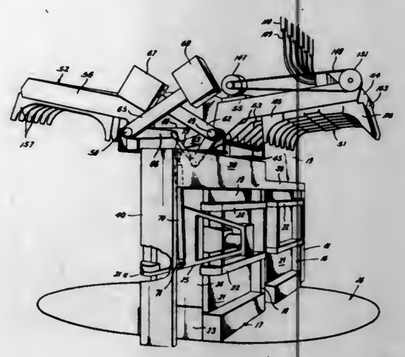


8. In a mix-and-air feeding device for introduction to a tubular connection between the mix tank and freezing chamber of a dispensing freezer, an open-ended tube having an annular stopper flange intermediate its ends for seating on the upper rim of said connection, a mix port therethrough located closely above said stopper

flange and having an area smaller than the minimum interior cross-sectional area of the tube, and a land surmounting said stopper flange extending above the level of the top of said mix port in circumferentially spaced relation thereto; and an adjusting sleeve on said tube having a bottom slot open to the lower end of the sleeve and extending upwardly a distance exceeding the differences in levels between the top of said land and the bottom of said mix port.

26,289
APPARATUS FOR BANDING BALES
Joseph C. Neitzel and Tibor Laky, Dallas, Tex., assignors, by mesne assignments, to Murray Company of Texas, Inc., Dallas, Tex., a corporation of Texas
Original No. 3,213,780, dated Oct. 26, 1965, Ser. No. 341,526, Jan. 31, 1964. Application for reissue May 26, 1966, Ser. No. 559,032
13 Claims. (Cl. 100—4)

11. The combination with a baling press including a box having a doorway with a door and a bale forming platen loosely movable within said box, of banding apparatus including first and second band guide track parts extending respectively across said doorway and said platen, said first track part being shiftable from a position clear of said doorway to a banding position across said doorway and intersecting said second track part, at least the intersecting portion of one of said track parts being



resiliently mounted and said parts having interfitting elements for insuring alignment of said parts when moved together.

PLANT PATENTS

GRANTED OCTOBER 17, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,771
ALMOND
Leland O. Mugg, Wasco, Calif., assignor to Kern County Land Company, San Francisco, Calif.
Filed Aug. 18, 1966, Ser. No. 573,433
1 Claim. (Cl. Plt.—30)

A new and distinct variety of almond tree, as illustrated and described, characterized by red blooms and nuts.

2,772
VERONICA PLANT
Louis E. Gavello, 3436 Maricopa Ave., Richmond, Calif. 94804
Filed Apr. 25, 1966, Ser. No. 545,169
1 Claim. (Cl. Plt.—54)

A new and distinct variety of Hebe (Veronica) plant, substantially as illustrated and described, characterized as to novelty by:

(a) the compact, prostrate form of the plant having a low height and an exceedingly wide spread, being vigorous and very robust with thick foliage,
(b) the paired, spaced arrangement of the leaves on each branch lying in the same plane with the leaves at the tip of the branch disposed generally in a plane at right angles thereto,
(c) the profuse grouping of elongated conical shaped compound racemes, each generally downwardly arched and each on a separate peduncle at the end of each branch,
(d) the buds becoming white tipped and progressing downwardly towards the base of the buds and opening to white florets, some having a slight lavender blush,
(e) the dark green color of its leaves of large size and generally elliptic obovate in shape contrasting with the white color of its flowers,
(f) the elongated tubular form of the florets of the racemes,
(g) its resistance to disease,
(h) its ability to grow in most types of soil and
(i) its moderate growth and suitability for garden decorative purposes coming to full bloom in late summer and bearing flowers the year around.

2,773
JUNIPER PLANT
Walter S. Lee, Bellflower, Calif., assignor to Monrovia Nursery Co., Azusa, Calif., a corporation of California
Filed July 1, 1966, Ser. No. 563,637
1 Claim. (Cl. Plt.—50)

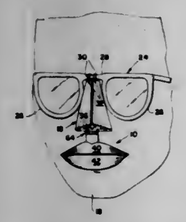
A new and distinct variety of juniper plant, substantially as herein described and illustrated, and characterized particularly as to novelty by its low and spreading habit of growth and by its distinctive blue-green coloring.

PATENTS

GRANTED OCTOBER 17, 1967

GENERAL AND MECHANICAL

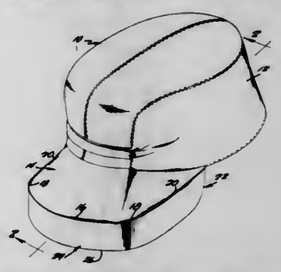
3,346,875
NOSE AND LIP PROTECTOR APPARATUS
David Weisberger, 101 Ellwood Ave., Mount Vernon, N.Y. 10552
Filed June 3, 1965, Ser. No. 461,047
4 Claims. (Cl. 2—9)



1. Protector apparatus for protecting the nose portion and lips of a body from the elements, substantially irrespective of prevailing weather conditions, and particularly to prevent them from becoming sunburned, windburned, or otherwise abused by exposure thereto, and comprising:
a nose shield particularly adapted to substantially enclose the nose portion of a body;
said nose shield being contoured, configured and arranged so as to be retained in a protective position substantially in the absence of accidental dislodgement;
a lip shield detachably connected to said nose shield particularly adapted to substantially encompass the lips of a body;
said lip shield being contoured, configured and arranged so as to be retained in a protective position substantially in the absence of accidental dislodgement; and
a hinge assembly detachably connecting said nose and lip shields with respect to one another, enabling said shields to conjointly be disposed in a protective position, further enabling said shields to be utilized independently of one another, and comprising:
a plurality of projections extending in opposite directions;
at least one of the projections extending in one of said directions having a protuberance, and at least one of the projections extending in another of said plurality of directions having a recess;
said protuberance being removably disposed within said recess detachably connecting said shields.

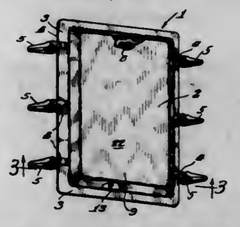
3,346,876
ANTI-GLARE VISORS
Willis L. Hutton, Rte. 1, Rupert, Idaho 83350
Filed Aug. 6, 1965, Ser. No. 477,707
6 Claims. (Cl. 2—10)

1. A visor adapted to be positioned on the forehead of a wearer, comprising a slightly arcuate body for extending a substantial distance forwardly, slightly downwardly and for the full width of the forehead of a wearer, said body having a convex forward edge directed forwardly of single radius of curvature, side edges extending rearwardly and a curved rear edge, and a relatively narrow, continuous band depending from and extending completely around said forward and side edges of the body and terminating in a substantially straight bottom edge substantially at eye level of a wearer so as to position said band both at the front and at the



sides of the body between the wearer's eyes and incoming glare, said band being opaque to passage of light rays.

3,346,877
KNEE PAD SERVING AS A CUSHIONING AND PROTECTIVE DEVICE
Theodore N. Zirves, 8049 N. Overhill, Niles, Ill. 60648
Filed Oct. 14, 1965, Ser. No. 495,921
5 Claims. (Cl. 2—24)



1. A knee pad serving as a cushioning and protective device, comprising a holder, a block of spongy resilient material carried by said holder, a plurality of fastening devices adapted for attachment to a trouser leg, elastic bands connecting said devices to said holder, said elastic bands extending laterally from said holder with an equal number of said bands extending from the opposite lengthwise edges of said holder and which in their retracted position draw said devices close to the perimeter of said holder but which are stretchable to permit attachment of said devices to a trouser leg at desired points remote from said holder adapted to resiliently urge and hold the said block of spongy resilient material in place against the leg and knee of a wearer.

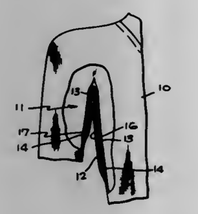
3,346,878
DISPOSABLE GARMENT SHIELD
Josephine H. Morris, Burbank, Calif., assignor of fifteen-one hundredths part to Roger A. Marrs, Van Nuys, Calif.
Filed Oct. 12, 1965, Ser. No. 495,052
2 Claims. (Cl. 2—55)

1. A disposable garment shield adapted to be releasably secured to the armpit skin of a wearer comprising:
an elongated backing strip of rectangular shape formed from a relatively thin plastic-like material having

an elongated rectangular central portion disposed on one surface of said strip so as to define a continuous edge marginal region between said central portion and the edge of said strip extending about the periphery of said strip;

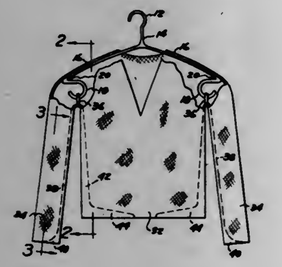
a moisture absorbent pad conforming in configuration to the configuration of said central portion secured to said strip central portion and being adapted to make surface contact with the skin of the user;

pressure sensitive adhesive carried by the surface of said backing edge marginal region about said pad; and



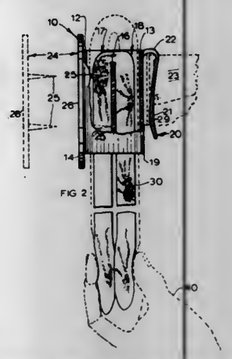
said strip having a pre-formed fold line of irregular contour provided in said strip which extends between the opposite edges of said strip across the width thereof and across said central portion, said fold line proximating a single sine curve lobe, the irregularity of said fold line being adapted to substantially figuide and direct the gathering of said strip material deep into the wearer's armpit so that the gathering thereof will substantially occupy and fill any gaps immediately adjacent the furthermost depth of the armpit.

3,346,879
GARMENT CONSTRUCTION AND HANGER FOR SUCH GARMENT
Frank D. Buzzelli, 22055 W. Brandon, Farmington, Mich. 48024
Filed June 1, 1965, Ser. No. 460,034
8 Claims. (Cl. 2—90)



1. A system for supporting garments comprising: a sweater and like garments having arms and a body portion, a pair of flexibles loops joined to the garment at the lower end of the interior side of the joinder between the arms and the body thereof, a hanger including a hook portion adapted to engage a normal closet bar, a pair of oppositely extending shoulder support bars, and loop engaging means disposed below the ends of the shoulder support bars and supported thereby, said loop engaging means being operative to support the loops at such times as the hanger is disposed within the garment with its shoulder support bars disposed along and below the shoulders of the garment.

3,346,880
ARTICLE FOR HOLDING A CRAVAT ADJACENT TO A SHIRT COLLAR
Raymond W. Kerr, 838 S. 47th St., Lincoln, Nebr. 68510
Filed Dec. 3, 1964, Ser. No. 415,607
6 Claims. (Cl. 2—150)



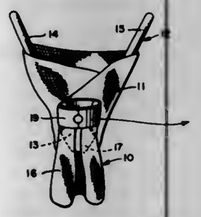
1. An ornamental cravat holder adapted to be attached adjacent to the front of a buttoned shirt collar, said ornamental cravat holder comprising:

(A) a bottomless and topless box-like yoke member comprising a front panel, a rear panel, and two side panels all integrally joined together in a box-like relationship, said yoke including a transverse panel connected to said side panels between the front and rear panels so as to divide the yoke into front and rear compartments, the upper extremity of said transverse panel being recessed below the upper extremity of said yoke member, the lower portions of said front and rear panels being narrower than the upper portions thereof so that said front and rear compartments are of a wedge-like configuration,

(B) hooked means attached to said yoke rear panel for removably attaching said yoke onto the front of a buttoned shirt collar, said hook being formed of a resiliently deflectable material so that the hook normally draws the yoke against the shirt collar, the forward surface of the hook being provided with serrations adapted to engage the fabric of the shirt collar, and

(C) a separable ornamental cover for said yoke front panel, said ornamental cover extending beyond the confines of said front panel.

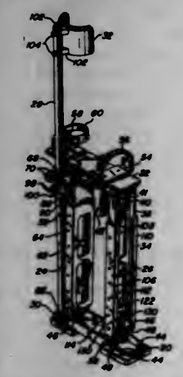
3,346,881
PRE-TIED TIE ARTICLES
Robert V. Mathison, 5 Woodcrest Road, Asheville, N.C. 28804
Filed July 26, 1965, Ser. No. 474,686
9 Claims. (Cl. 2—150)



1. A pre-tied tie having mounted behind the knot portion thereof a tie mounting member having a rear wall with a vertical slot therethrough, the edges of said rear wall adjacent said slot adapted to be slipped behind a

shirt collar button with the threads of said button in said slot, and a plurality of small, tapered, relatively sharply pointed, downwardly slanting projections on the rear face of said rear wall along opposite sides of said slot, said projections adapted to penetrate the fabric of a shirt in the vicinity of the collar button thereof upon slight downward movement and thereby grip said shirt and resist further downward displacement of the tie and also adapted to release quickly and slide over said shirt during upward movement of said tie.

3,346,882
LEG EXTENSION DEVICE
Howard J. Wilhoyte, Lafayette, Ind., assignor to Topper Tools, Inc., Lafayette, Ind., a corporation of Indiana
Filed Oct. 19, 1964, Ser. No. 404,710
6 Claims. (Cl. 3—4)



3. A leg extension device comprising in combination: a horizontal elongate foot member; a horizontal elongate shoe pad; and front and rear substantially vertical struts having upper and lower ends; means mounting the upper ends of both struts upon the shoe pad; and means mounting the lower ends of both struts upon the foot member; an elongate leg post having a lower and an upper end portion; an arcuate part-cylindrical leg cradle formed about an axis which intersects the shoe pad approximately at right angles; means mounting said cradle upon said upper end portion of the leg post, with the cradle extending laterally from the post axis and in overlying relationship to the shoe pad; means anchoring the lower end of the leg post upon one of said struts; and means for adjusting the cradle rotationally to dispose the cradle axis at selected distances from a perpendicular line upstanding upon one end of the shoe pad; the aforesaid anchoring means comprising a hinge about which the post has lateral angular movement in a direction transverse to the major axis of the shoe pad; the combination including clamp means adjacent to the shoe pad and operative upon the leg post intermediate the ends of the latter, for fixing said post in selected positions of its lateral angular movement.

3,346,883
RECEPTACLES
Robert A. Ersek, Aldan, Pa., assignor of fifty percent to Louise Sandler, Elkins Park, Pa.
Filed Oct. 21, 1965, Ser. No. 499,541
17 Claims. (Cl. 4—1)

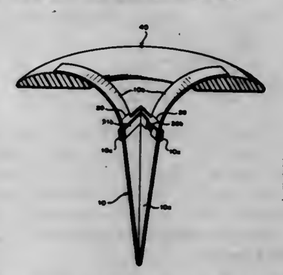
15. A receptacle for use with a supporting member in the collection, transportation, storage and disposal of biological samples, comprising:

a container open at one end thereof;

means on said container, adjacent said open end, connecting said container to the supporting member;

a first arcuate reinforcing means adjacent said open end of said container and extending about a portion of the periphery thereof;

a second arcuate reinforcing means adjacent said open end of said container and extending about the remainder of the periphery thereof, said second arcuate reinforcing means having a diameter less than the diameter of said first arcuate means;



said first arcuate means being greater than 180° and said second arcuate means being not less than 180°;

whereby said first arcuate means receives said second arcuate means for sealing said open end of said container;

and adhesive means on a portion of the inner surface of said container adjacent the open end thereof to provide an additional seal for said open end of said container.

3,346,884
BATH TUB
Lal Behari Roy, 4 Pusa Road, New Delhi 5, India
Filed July 10, 1964, Ser. No. 381,868
3 Claims. (Cl. 4—173)



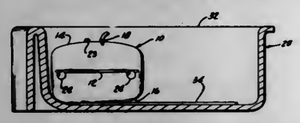
1. A bathing device comprising, an outer shell, a bath tub mounted within said outer shell, said outer shell and said bath tub having peripheral top portions which present adjacent but spaced edge surfaces so as to provide a water discharge opening for the spilling of water over the top wall of said bath tub and into the space between said bath tub and said outer shell, said bath tub having a sloping outer bottom surface, and water supply means comprising a plurality of eyelets positioned in the bottom wall portion of said bath tub and each comprising two water jets and separate pipe and faucet means for hot and cold water connected respectively to the two jets of each of said eyelets.

3,346,885
AIR LIFT FOR BATHTUBS
Henry H. Merriman, 751 W. Washington St., Jackson, Mich. 49201
Filed Sept. 16, 1964, Ser. No. 396,893
3 Claims. (Cl. 4—185)

1. A bathtub seat adapted to be used with a bathtub having opposed side walls and capable of raising and lowering a person seated thereon comprising, in combination,

(a) an inflatable envelope having an inflated longitudinal dimension and end portions, said envelope longitudinal dimension being greater than the spacing between the bathtub side walls in which the seat is to be employed,

(b) means attached to said envelope to permit the inflation and deflation thereof whereby said envelope upon being inflated will inflate against and wedge itself between the side walls of a bathtub to provide a firm connection with the bathtub upon the longitudinal dimension of the envelope being transversely disposed to the bathtub side walls, and



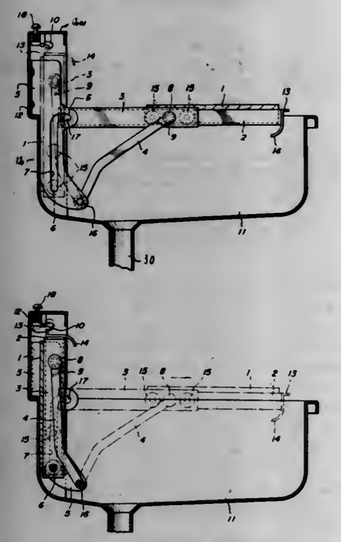
(c) vacuum cup means defined upon said envelope end portions adapted to aid in initially positioning said envelope within a bathtub and augment the interconnection between the inflated envelope and bathtub side walls, said vacuum cup means being forced against the side walls of the bathtub by said envelope upon inflation of the envelope.

3,346,886

COMBINATION BASIN AND WORK BOARD

Keiji Kashiwamura, 301 Tenjin-cho, Kamimaruko, Kawasaki, Kanagawa Prefecture, Japan

Filed Nov. 26, 1963, Ser. No. 326,172
Claims priority, application Japan, May 1, 1963, 38/22,841
7 Claims. (Cl. 4—187)



1. In combination, a basin including a back wall protruding upwardly; a pair of spaced-apart brackets mounted on said basin's back wall, said brackets extending from within said basin and upwardly along said protruding back wall out of said basin, each said bracket having a long vertical slot therethrough extending from within said basin upwardly to a termination point approximately above said basin, the slot at said upward termination point defining a detention hole angularly offset from said vertical slot; a pair of longitudinal guide rail members, each guide rail member having a pin extending perpendicularly outward from an end thereof, the guide rail members' pins being received in said respective slots enabling said guide rail members to be slidable and rotatable by the sliding of said pins along said respective slots into or out of said detention holes; a work board; a frame supporting said work board; rollers fastened to opposing sides of said frame, said rollers being received by said guide rail members on opposing sides of said frame and enabling movement of said frame and its supported board in a longitudinal direction parallel to said guide rail members; a pair of rotatable lever arms, each said lever arm having an end thereof pivoted to a portion of a respective bracket below said slot therein and having the other end thereof pivoted near the end of a guide rail member opposite the end having said perpendicularly extending pin; a handle on said frame for facilitating manual rotative and sliding movement of said board-supporting frame and guide rail members from a horizontal position over the basin to a generally vertical position against the basin's back wall by allowing said rollers to roll along said guide rail members to slide the frame therealong and to cause said pin to move out of said detention hole and slide downwardly along said slot; a latch on the basin's back wall for holding the frame, board and guide rail members in said vertical position; and spring means urging said lever arms into rotative movement so that, upon release of the latch, said lever arms rotate in a direction into said basin thereby sliding the guide rail members' pins upwardly in said slots into the detention holes and rotate said guide rail members and frame-supported board into said horizontal position.

3,346,887

SANITARY DRAIN SYSTEM, METHOD, AND FITTINGS THEREFOR

Fritz Sommer, Bern, Switzerland, assignor, by mesne assignments, of 1/11 to each: Anaconda American Brass Company, a corporation of Connecticut; Bridgeport Brass Company, division of National Distillers and Chemical Corporation, a corporation of Virginia; Calumet & Hecla, Inc., a corporation of Michigan; Cerro Copper & Brass Company, division of Cerro Corporation, a corporation of New York; Chase Brass & Copper Co. Incorporated, a corporation of Connecticut; Mueller Brass Co., a corporation of Michigan; Phelps Dodge Copper Products Corporation, a corporation of Delaware; Reading Tube Corporation, a corporation of Delaware; Revere Copper and Brass Incorporated, a corporation of Maryland; Scovill Manufacturing Company, a corporation of Connecticut; and Triangle Conduit and Cable Co., Inc., a corporation of Delaware

Filed Feb. 11, 1965, Ser. No. 431,823
14 Claims. (Cl. 4—211)



1. An aerating fitting for connecting a lateral sanitary drain pipe to a vertical drain pipe stack comprising a body portion having side walls defining a mixing chamber, the upper portion of said mixing chamber having a width at least twice as great as the lower portion thereof, said body portion having a drain stack inlet connection at its upper end, a drain stack outlet connection at its lower end,

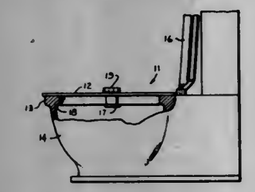
and a lateral drain inlet connection, said stack inlet connection and said lateral drain inlet connection communicating said by side with the upper portion of the mixing chamber and said stack outlet communicating with the lower portion of the mixing chamber, a side wall of the mixing chamber between the lateral drain inlet connection and the stack outlet connection being vertical and parallel to the axis of said outlet connection and the opposite side wall being divergent upwardly and away from said axis, a guide plate within the fitting above the mixing chamber in position to direct substantially the entire volume of liquid flowing into the fitting through the lateral inlet connection downwardly in a straight line vertical path through the mixing chamber to the stack outlet connection, the stack inlet connection communicating with the upper portion of the mixing chamber on the side of said guide plate opposite the lateral drain inlet connection and on an axis displaced laterally from the axis of the stack outlet connection by at least the diameter of said outlet, whereby there is no straight line path for the flow of fluid through the mixing chamber from the stack inlet to the stack outlet.

3,346,888

PROTECTIVE CLOSURE FOR TOILET BOWLS

Curtis L. Paysinger, Richmond, Calif.
(2629 Francisco Way, El Cerrito, Calif. 94530)

Filed Dec. 18, 1964, Ser. No. 419,350
6 Claims. (Cl. 4—253)



1. A protective closure for toilet bowls having a rim with an undercut shoulder comprising a cover having a size and configuration to be supported upon the upper surface of said rim in closing relation to said bowl, latch means carried by said cover for selective movement into and out of locking engagement with said undercut shoulder, and a latch actuating mechanism carried by said cover and operatively engageable with said latch means to effect said movement thereof, said latch actuating mechanism having an external portion manipulable in a predetermined manner into and out of operative engagement with said latch means, said latch actuating mechanism including a shaft portion and a bushing coaxial with said shaft portion, one of said shaft portion and said bushing being secured to said latch means and the other thereof having an actuating knob secured thereto, said actuating knob being rotatably mounted on the top of said cover, one of said shaft portion and bushing having an annular groove and longitudinal groove communicating therewith and the other thereof having a detent engaging said grooves whereby in response to rotational and axial movement of said knob said detent is engaged in said longitudinal groove to key said knob into said operative engagement with said latch means.

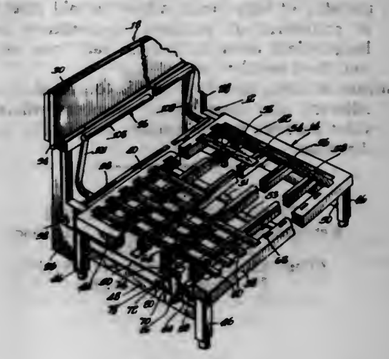
3,346,889

SOFA BED

Norman J. Gran, 3130 N. Lake Shore Drive, Chicago, Ill. 60614

Filed Apr. 11, 1966, Ser. No. 541,753
8 Claims. (Cl. 5—12)

1. A bed comprising a rectangular frame having foot, head and side rails, a plurality of substantially rigid, spaced, parallel stringers supported at opposite ends on adjacent the foot and head rails, the upper surfaces of the stringers being substantially in a common plane, and



a plurality of closely spaced, flexible bands fastened at their opposite ends to the side rails and supported by said stringers and free to slide thereover.

3,346,890

ADJUSTABLE DRAW SHEET FRAME AND DRAW SHEET

Adrian J. Thompson, St. Croix Falls, Wis. 54024

Filed Feb. 25, 1966, Ser. No. 530,126
8 Claims. (Cl. 5—82)



3. A draw sheet frame and draw sheet for bedside nursing suitable to support a patient, said draw sheet frame and draw sheet comprising, in combination,

a pair of opposed, parallel longitudinal members, each longitudinal member having an inner tube of a predetermined outer diameter and an outer tube of a predetermined inner diameter adapted to receive the inner tube for slidable movement therein,

a pair of opposed parallel transverse members each transverse member having an inner tube of a predetermined outer diameter and an outer tube of a predetermined inner diameter adapted to receive the inner tube for slidable movement therein, said transverse members connected to said longitudinal members in right angular relation forming a substantially rectangular frame,

means adjusting the length of said pair of longitudinal members said means interposed in each of said pair of longitudinal members,

means adjusting the width of said pair of transverse members said means interposed in each of said transverse members,

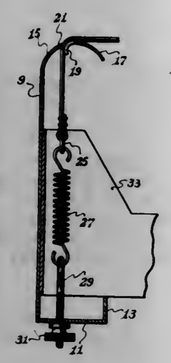
a sheet member of flexible, yieldable material,

a plurality of longitudinal tie elements affixed to said sheet member, said tie elements secured to said pair of transverse members whereby said draw sheet is substantially taut in the longitudinal direction,

a plurality of loop means affixed to said sheet member in predetermined positions, sandwiching each said longitudinal member between said loop means and said sheet member, and

means securing said loop means to said sheet member adjacent said longitudinal members whereby said sheet member is substantially taut in the transverse direction.

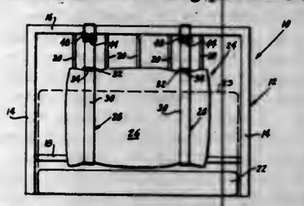
3,346,891
TAPE-TYPE BED SPRINGS
Kenneth K. Cundiff, 3545 E. 21st Place, Tulsa, Okla. 74114
Filed May 23, 1966, Ser. No. 551,993
3 Claims. (Cl. 5—220)



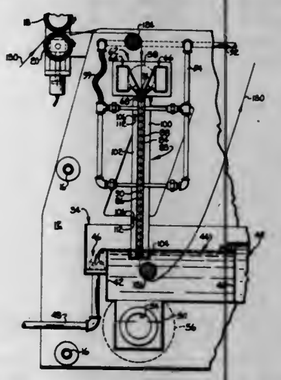
1. Tape-type bed springs comprising a sheet metal frame having upright sheet metal sides that terminate upwardly in sheet metal upper portions that extend inwardly and then downwardly, and a plurality of flexible tapes extending between and secured to opposite sides of the frame, said upper portions of the frame having openings therethrough for the reception of end portions of the tapes, each opening being provided by tongues of the sheet metal of the frame partially severed from the frame and bent to provide convexly curved surfaces about which the tapes change direction, the tongues on one side of the frame extending away from the tongues on the other side of the frame, the tongues being bent downwardly from their unsevered position so that they extend below the contour of the said upper portions of the sheet metal frame.

3,346,892
PILLOW AND PILLOW HOLDER
Florence Du Priest, 519 N. 13th St., Waco, Tex. 76706
Filed Dec. 6, 1965, Ser. No. 511,714
4 Claims. (Cl. 5—325)

1. In combination, a pillow having at least one face of generally rectangular configuration, and at least two straps, each of the straps carrying the first means at one end thereof forming a first loop, the first loops surrounding the pillow in spaced apart relation, each of the straps carrying second means on the other end thereof selectively forming a second loop for receiving a horizontal bed support, the second loop forming means including a frame forming at least two spaced apart generally coplanar braces, the terminal end of the strap being affixed to the first brace, the second brace being positioned intermediate the strap, the length of the strap from the first brace to the second brace being longer than the straight line distance between the two braces.

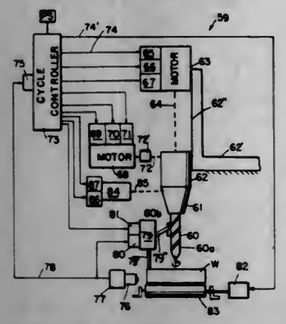


3,346,893
METHOD FOR THE CONTINUOUS FLUID TREATMENT OF RUNNING WEB MATERIAL
William T. Carpenter, Stanley, N.C., assignor to Gaston County Dyeing Machine Co., Stanley, N.C., a corporation of North Carolina
Filed Sept. 29, 1965, Ser. No. 491,169
5 Claims. (Cl. 8—151)



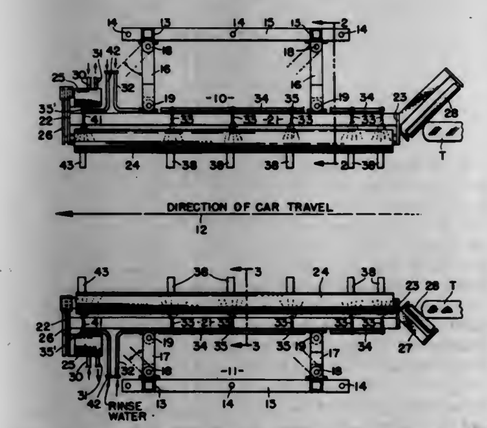
1. A method of continuously treating open-width web material with fluid at high speeds and without distortion and wrinkling, comprising: introducing the web material into an elongate upright treatment chamber having open upper and lower ends in substantial vertical alignment, the web material being introduced into the upper end of the treatment chamber in a substantially relaxed, open-width and tensionless condition; circulating treatment fluid downwardly through the treatment chamber and from the lower end thereof at a high velocity and in engagement with the full width of the opposite sides of the web material to feed the web material rapidly downwardly through the treatment chamber, while simultaneously directing components of the downwardly-circulating treatment fluid transversely toward and away from opposite sides of the web material to produce turbulence in the fluid and facilitate its penetration and treatment of the web material; the web material being fed through the treatment chamber and from the lower end thereof solely by the downwardly-circulating treatment fluid and the velocity of the downwardly-circulating treatment fluid from the time of its initial engagement with the web material until the withdrawal of the web material therefrom being at all times greater in the direction of movement of the web material than the rate of travel of the web material engaged thereby; and withdrawing the web material from the downwardly-circulating treatment fluid directly after passage thereof from the lower end of the treatment chamber by conveying the same upwardly along a path of travel and at a speed causing the web material to form a slack, generally catenary loop extending from and disposed closely adjacent the lower end of the treatment chamber.

3,346,894
APPARATUS FOR CONTROLLING ROTARY AND LONGITUDINAL MOVEMENTS OF A COMBINED TOOL CARRYING SPINDLE
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Filed Aug. 23, 1965, Ser. No. 481,653
12 Claims. (Cl. 10—128)



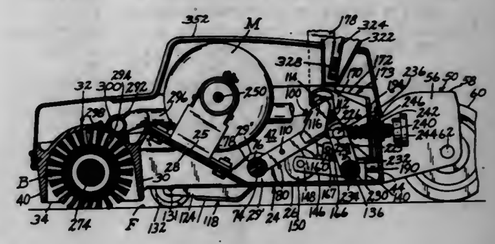
1. A tool comprising a plurality of operating portions each adapted to perform a selected operation on a workpiece, said operating portions being aligned on a common axis to provide a unitary structure, means at one end of said structure to manipulate said tool and means at the other end to initiate an operation on a workpiece, the tool being movable through said workpiece to apply said operating portions thereto one after another, and means operable to predeterminately control both the rotary and longitudinal movement of said tool and vary same as each of said operating portions engage said workpiece in a cycle including controlled removal of said tool from said workpiece.

3,346,895
WHEEL AND TIRE WASHING APPARATUS
Ralph G. Consolo, 2072 S. Green Road, South Euclid, Ohio 44121
Filed May 5, 1966, Ser. No. 547,880
6 Claims. (Cl. 15—21)



1. A washing apparatus for washing the wheels and tires of an automobile as the vehicle proceeds along a predetermined path of travel comprising a pair of elongate washing and brushing units spaced apart laterally and pivotally supported on opposite sides of and in the path of travel of the vehicle and engageable thereby for movement about their pivots in opposed lateral and upward directions, said units each including vehicle wheel engaging means at the approach end thereof, an elongate rotary tire engaging brush, means for driving the rotatable brush in response to said upward and lateral movement of the units, and liquid spray means carried by said units to direct liquid in spray form toward said brush and tires as said wheels and tires enter and pass through the spray zone.

3,346,896
CARPET AND FLOOR-SCRUBBING MACHINE
Daniel A. Aronea, Wayzata, Minn., assignor to Advance Machine Company, Spring Park, Minn.
Filed Oct. 22, 1965, Ser. No. 501,154
10 Claims. (Cl. 15—50)



1. A carpet scrubbing machine comprising;

(a) a frame housing having a bottom wall, side walls, and end walls,

(b) a cylindrical brush rotatably mounted on said frame housing transversely thereof for engagement with the carpet,

(c) means for rotating said brush connected to and operated by

(d) a motor carried by said housing,

(e) ground-engaging wheel means mounted on the rear of said housing,

(f) front wheel mounting means pivotally mounted on said housing,

(g) front ground engaging wheels mounted on said wheel mounting means,

(h) a cam arm rigidly secured to said wheel mounting means substantially centrally thereof,

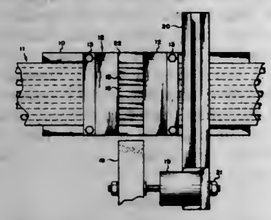
(i) handle arm means pivotally mounted on said main housing for guiding the same, and

(j) lever means connected to said handle arm means and contactable with said cam arm for causing said cam arm to pivot said wheel mounting means upon the pivotal movement of said handle arm means thereby moving said front wheels relative to said housing and to said rear wheels.

3,346,897
FLAT CONDUCTOR CABLE STRIPPING MACHINE
Roy Nelson, Burlingame, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 3, 1964, Ser. No. 387,123
5 Claims. (Cl. 15—97)

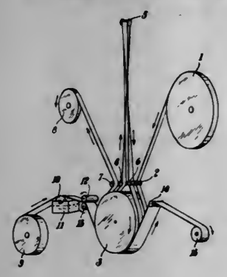
1. A machine for removing insulating material from conductor cable of flat conductor traces comprising: means for securely holding a flat conductor cable, said means including a knife-like edge positioned across the

width of said flat conductor cable adjacent the insulating material to be removed; buffing material; means for passing said buffing material across the surface of the



insulating material to be removed in a direction substantially parallel to the knife-like edge whereby the movement of the buffing material across the flat conductor cable removes the insulating material.

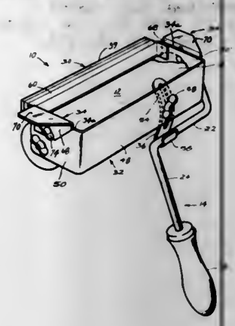
3,346,898
DEVICE FOR SIMULTANEOUSLY TREATING BOTH SIDES OF RUNNING LENGTH FILM
Virginio Stella, 39 Via Placido Zurla, and Sergio Pellacani, 46 Via di Villa San Filippo, both of Rome, Italy
Filed Feb. 4, 1965, Ser. No. 430,439
Claims priority, application Italy, Feb. 17, 1964, 3,380/64
1 Claim. (Cl. 15—100)



A device for simultaneously treating both sides of running length film comprising in combination a supply reel for the film to be treated, a taking up reel for the treated film, a rotary driven drum arranged with its axis parallel to the axes of said supply and taking up reels, a pair of inlet rollers and a pair of outlet rollers aligned with said both reels, respectively, for guiding said film in contact with said drum, and a twist roller having its axis arranged at right angles to the axis of the drum for overturning the film, a treatment tape being driven in contact with both surfaces of the film at the lower circumferential portion of said drum in a motion direction contrary to that of the film to cause said tape to slide on the film surfaces.

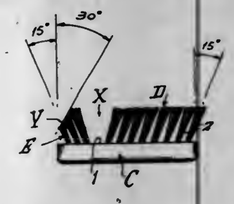
3,346,899
EDGE TRIMMING DEVICE FOR PAINT ROLLER
Frederick J. Murphy, 50 Jay St., Wethersfield, Conn. 06109
Filed Mar. 4, 1965, Ser. No. 437,225
6 Claims. (Cl. 15—118)

1. A roller type applying and trimming device for paint and other liquid surface coating compounds comprising an applicator roller having a surface of revolution and rotatable about an axis to pick up and spread liquid coating compounds, means supporting said roller for rotation about said axis, elongated handle means adapted to be manually grasped for moving the device relative to a surface to be coated, said handle means being connected with said supporting means and extending generally radially from one side of said roller, a resilient sponge applicator and trimming pad having a generally flat surface adapted to pick up and spread liquid compounds, means securing said pad adjacent said roller and on a side thereof opposite said handle means with its said surface in a plane tangent to the roller for enabling said roller and pad surface to engage a first wall surface to be coated, said pad having one generally rectilinear edge disposed



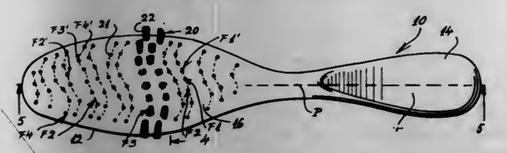
at an outer margin of said pad surface and which is exposed outwardly to closely approach a second wall surface which intersects with said first wall surface engaged in common by said roller and pad surface, and adjustable stop means adjacent said pad and having a stop surface exposed outwardly and extending beyond said pad edge to engage said intersecting second wall surface and thereby positively to prevent the application of said coating compound to the second wall surface.

3,346,900
SHINGLE BRUSH
Willis Lee Stewart, Suffern, N.Y., and John Philip K. Greene, Mountain Lakes, and Gilbert Stanley Elston, Florham Park, N.J., assignors to H & G Industries, Inc., Belleville, N.J., a corporation of New York
Filed Dec. 22, 1966, Ser. No. 603,864
3 Claims. (Cl. 15—160)



1. A shingle brush comprising a rectangular head block having a planar side, a major set of bristles and a minor set of bristles, both sets comprising bristle knots secured in said head block and projecting from said planar side, the bristles being arranged in rows parallel to the edges of the block and there being a space between said sets of bristles, the major set of bristles having their ends in a common plane parallel with said planar side for applying paint to the major portion of a face of a shingle, and the dimensions of the minor set of bristles providing, upon tilting of said head block from said major portion of the shingle face, for insertion of said minor set of bristles between a portion of the face of a second shingle and the end of the first-mentioned shingle that is in spaced overhanging relation to said portion of the second shingle, the sets of bristles being inclined toward opposite edges of the head, respectively, and the knots of bristles of each set being inclined to said planar side of the head, and each set of bristles being approximately rectangular in plan and the rows of bristles of both sets being parallel to opposite edges of the head block.

3,346,901
WAVE HAIR BRUSH
Kenneth C. Fay, 19 Ulster Place, Port Jervis, N.Y. 12771
Filed Jan. 16, 1967, Ser. No. 609,408
10 Claims. (Cl. 15—160)



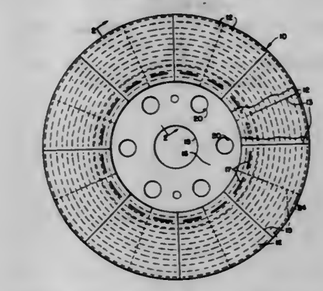
1. A hair brush, comprising an elongated back having a convex side, a plurality of rows of bristle tufts, each of said rows being generally S-shaped and extending transversely of said convex side of the back, all the bristles being substantially equal in length so that the outer free edges of the bristles in each row define a curved line parallel to the convex side of the brush back, and a handle integrally formed with said brush back and extending longitudinally from one end of said brush back, whereby strands of hair engaged transversely of the brush back between successive S-shaped rows of bristles are effectively penetrated and stroked by the bristles for the full depths of the strands while the handle and brush back are rotated axially while being drawn laterally along the hair.

3,346,902
BROOM AND METHOD OF ASSEMBLY
Sheldon Leventhal, 22655 Chagrin Blvd., Cleveland, Ohio 44122
Filed Nov. 23, 1966, Ser. No. 596,539
9 Claims. (Cl. 15—171)



1. A hand broom device comprising, a cap member and a plurality of broom fibers disposed within and projecting downwardly from said cap member, said cap member being of a unitary, one-piece construction made from a flexible polymeric material and including an upper hollow handle portion and a lower hollow, inverted shoulder portion made integral with and extending downwardly from said handle portion, said handle portion being free of any internal support such as plug or the like, said shoulder portion being flared outwardly and downwardly in a direction away from said handle portion and having an opening adjacent its lower end defined by a major axis and a minor axis in transverse cross-section for receiving therethrough said broom fibers, an adhesive material disposed between said broom fibers and the confronting interior surface of said shoulder portion, said shoulder portion having a first set of laterally spaced exterior ribs extending lengthwise around the exterior periphery thereof and a second set of laterally spaced ribs extending lengthwise around the interior periphery thereof, all of said ribs formed from the material of said shoulder portion and converging toward one another in a direction toward said handle portion, and the material of said shoulder portion being yieldably deformable so as to decrease the dimension of said major axis and increase the dimension of said minor axis of said opening upon application of pressure to said shoulder portion to enable free insertion of said broom fibers through said opening and, thereafter, to return to the original shape of said opening as defined by said major and minor axes for tight gripping and confining engagement of said adhesive material with said broom fibers.

3,346,903
BUFFING WHEEL
Michael S. Darak, Jr., Newton Falls, Ohio, assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 18, 1964, Ser. No. 419,543
15 Claims. (Cl. 15—230.1)

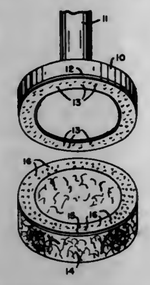


1. A buffing wheel comprising a relatively stiff, thin walled, central support of hard sheet material, two annular rows of side-by-side separate buffing sectors extending radially outwardly from said support on opposite sides thereof, means circumferentially individually fastening all of said sectors of said two rows to said support near its radial outer edge, each of said sectors individually comprising a plurality of separate layers of fibrous material, said layers of fibrous material being closely compressed together across their entire surfaces by rows of tight, closely spaced stitches to rigidify said layers of fibrous material, said sectors remaining separate from each other in assembly.

3,346,904
GLASS POLISHING HEAD HAVING A DETACHABLE FELT PAD
William F. Armstrong, Newburgh, N.Y., assignor to American Felt Company, Glenville, Conn., a corporation of Massachusetts
Filed Feb. 17, 1964, Ser. No. 345,216
2 Claims. (Cl. 15—230.12)

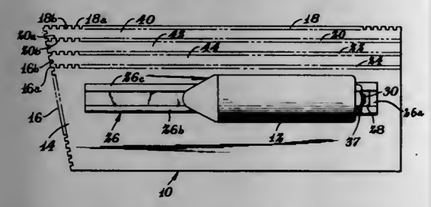
1. A polishing head for glass polishing machines comprising in combination, a flat disk having a spindle attached to one face thereof, a felt polishing pad having substantially the same area as that of said disk, circular ring shaped sheet means conforming to and adhesively secured to each of said disk and pad, said sheet means

having a multiplicity of closely spaced interengageable hooking elements thereon, the hooking elements on one of said sheet means being of flexible resilient material having hooks at the ends thereof and the hooking elements on the other sheet means being in the form of loops, each of said sheet means being open and unattached in the



center thereof whereby when said opposing surfaces of said sheet means are pressed together the hooking elements and loops are interengaged and the unattached center portion of said pad may move relative to said sheet means and disk to provide a pumping action of the felt when the head is raised and lowered on the glass being polished.

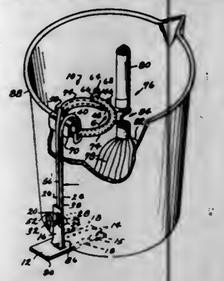
3,346,905
TROWEL
Neil N. Scarpelli, 1234 N. Pulaski Road, Chicago, Ill. 60651
Filed May 17, 1965, Ser. No. 456,376
4 Claims. (Cl. 15—235.6)



1. A trowel for use in spreading an adhesive type material on a planar surface comprising, in combination: a substantially planar blade member and a handle member connected to said blade member, said handle member including a grip portion spaced from said blade member for permitting manual manipulation of said trowel, said blade member having first and second adjacent sides each formed with an undulating peripheral edge that defines a plurality of uniformly spaced teeth and spaces, at least one row of teeth and spaces formed in said blade member without adversely weakening the structure of said blade member, said one row being spaced from said first peripheral edge, said blade member being constructed and arranged so that when said first peripheral edge is damaged, said blade member can be renewed by removing the strip of material between said first peripheral edge and said one row.

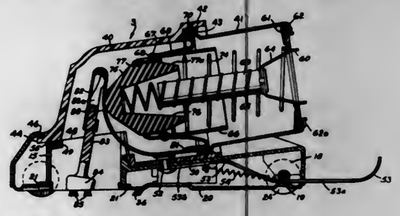
3,346,906
MOP WRINGER
Henry C. Harrison, 94 Bayview Ave., Port Washington, N.Y. 11050, and Henry Harrison, 18 Frost Creek Drive, Locust Valley, N.Y. 11560
Filed June 9, 1965, Ser. No. 463,985
13 Claims. (Cl. 15—262)

1. A mop wringer comprising: a pair of generally complementary arcuate arms disposed with respect to one another so as to define a generally circular opening therebetween; means defining a tubular wringer roller received on each arm; and support means resiliently biasing said arms in such sense as to resist movement of



said arms away from one another thereby resiliently resisting enlargement of said generally circular opening whereby a wet mop drawn between said rollers on said arms is compressed in a generally radially inwardly direction to remove liquid from said mop.

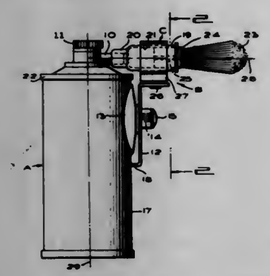
3,346,907
ATTACHMENT MEANS FOR SUCTION ACTUATED DEVICE
Martin V. Groves, Greenwood Lake, and Michael Mastromatteo, Hartsdale, N.Y., assignors to Pul-Vac, Inc., New York, N.Y., a corporation of New York
Original application Feb. 7, 1963, Ser. No. 256,915, now Patent No. 3,204,282, dated Sept. 7, 1965. Divided and this application Mar. 8, 1965, Ser. No. 438,026
2 Claims. (Cl. 15—381)



1. A suction actuated device comprising:
(a) a main body having a passage therethrough, said passage having first and second suction openings, said first suction opening being positioned to communicate with a surface being cleaned and said second suction opening being positioned to communicate with a motor housing;
(b) a motor housing having a drive motor positioned therein and having a suction opening for communication with the second suction opening of the main body;
(c) attachment means detachably securing the motor housing to the main body in such a way that the second suction opening of the main body is in register with the suction opening of the motor housing, such attachment means comprising:
(1) substantially coplanar flange means extending outwardly from the motor housing,
(2) raised lip and depressed recess portions of the surface of the main body positioned for interfitting engagement with said flange means to thereby hold the motor housing against lateral or longitudinal movement with respect to the surface of the main body,
(3) a headed stud carried on the motor housing, an opening in the surface of the main body being in register with said stud when the motor housing is secured to the main body, and

(4) a locking plate mounted beneath the surface of the main body for sliding movement into locking and unlocking positions, said locking plate having a key shaped slot and being positioned so that when the locking plate is in locking position, the stud is in the narow part of the slot with the locking plate engaging the head of the stud and when the locking plate is in the unlocking position, the head of the stud is in register with the enlarged part of the slot to permit removal of the motor unit from the main body;
(d) agitating means positioned within the main body and extending through the second suction opening of the main body and into the suction opening of the motor housing; and
(e) drive means in the motor housing positioned to engage the agitating means upon connection of said main body with said motor housing for driving the agitating means in response to operation of the drive motor.

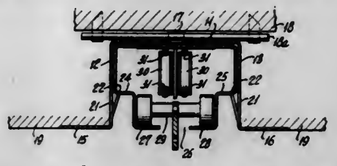
3,346,908
BRUSH ATTACHMENT FOR PRESSURIZED CONTAINER
Clarence Benjamin Johnson, P.O. Box 281, San Bruno, Calif. 94066
Filed Apr. 11, 1966, Ser. No. 541,820
6 Claims. (Cl. 15—552)



1. In a brush attachment for pressurized container:
(a) a bracket having a suction cup secured thereto, this cup being made to be anchored to the exterior surface of a pressurized container;
(b) a brush defining a tubular handle positioned above the bracket, and this handle having an inlet end made to be connected to a discharge spout of the container, whereby contents of the latter may be conveyed to the interior of the handle;
(c) the brush having bristles, and the interior of the handle communicating through a bore with the bristles, whereby the contents of the handle may be transferred to the bristles;
(d) and means securing the brush to the bracket for support thereby.

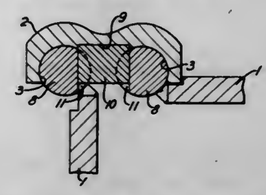
3,346,909
OVERHEAD TRAVERSE FOR SUPPORTING DRAPERIES OR THE LIKE
Leonard Blackburn, Brooklyn, N.Y., assignor of one-half to Karen Corporation, New York, N.Y., a corporation of New York
Filed Mar. 1, 1966, Ser. No. 530,965
3 Claims. (Cl. 16—94)

1. An overhead traverse comprising, a ceiling channel having means for securing said channel in recessed relationship in a room ceiling, said channel having an open bottom side adapted to confront said room upon mounting said channel to said ceiling, said channel also having confronting side walls on either side of its open side, resilient pronglike means extending integrally from respective ones of said side walls wherein, the free ends of said pronglike means from either wall are inclined upwardly and towards the opposite side wall of said channel, a traverse track having joined walls designed for a mounted



fit within said channel upon insertion therein, means on said track for spreading said prong means apart upon insertion of said track into said channel, the free ends of said prongs resiliently returning to a snap-latch relationship with respect to said track means for captivating said track in said channel upon mounted insertion of said track in said channel.

3,346,910
HINGE WITH LATERALLY SPACED BARRELS
Lloyd R. Dickinson and James E. Higginson, Scranton, Pa., assignors to McKinney Manufacturing Company, Scranton, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1966, Ser. No. 525,814
10 Claims. (Cl. 16—163)

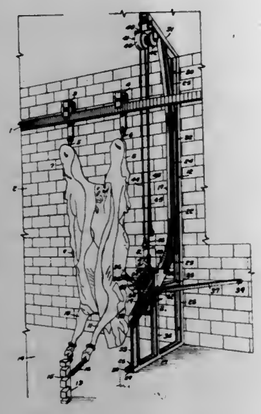


1. A hinge comprising a pivot bar provided in one side with a pair of parallel channels extending lengthwise thereof and spaced apart by a central longitudinal rib, a pair of hinge leaves disposed side by side, a barrel extending along one edge of each leaf and integral therewith, the barrels being disposed in said channels and having cylindrical surfaces, the channels being shaped to fit said barrels and extend around the major portion thereof to embrace and hold them therein, the barrels being rotatable in the channels to permit the leaves to swing away from each other from a substantially parallel position, the barrels having a pair of opposed gaps therein, a separable thrust bearing disposed in each gap, and means engaging the pivot bar and locking the bearings in fixed position in the channels.

3,346,911
METHOD AND APPARATUS FOR PULLING HIDES FROM CARCASSES OF ANIMALS
Richard Bergman, Sr., Griggsville, Ill. (% Bergman Meat Packing Co., Pittsfield, Ill. 62363)
Filed Aug. 19, 1965, Ser. No. 480,901
6 Claims. (Cl. 17—21)

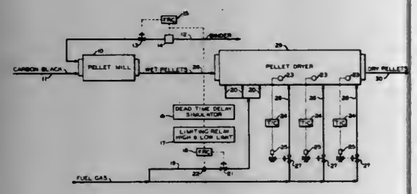
1. An apparatus for pulling the hide from the carcass of a slaughtered animal, including:
means for bodily suspending a carcass by the rear legs thereof
means for engaging the front legs of said carcass to maintain it in a generally linear direction,
a support extending longitudinally of the carcass when carried by said carcass suspending means,
a guide rail carried by said support,
a carriage movable along said guide rail,

a reel rotatably mounted on said support,
means for rotating said reel,
a cable having one end fixed to said carriage and the other to the reel to permit winding of the cable thereon, and



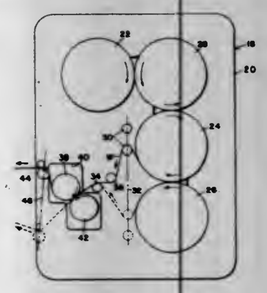
means for connecting a loosened part of the hide with the carriage for pulling the hide loose from the carcass,
said guide rail controlling the angular pull of said connecting means as the hide pulls off of said carcass.

3,346,912
METHOD AND APPARATUS TO CONTROL THE TEMPERATURE OF A WET PELLET DRYER
Robert A. Fewel, Bartlesville, Okla., Jack D. Harbour, Borger, Tex., and Bob L. Whitson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,729
9 Claims. (Cl. 18—1)



8. Apparatus for pelleting carbon black comprising, in combination: an elongated horizontal cylindrical drum rotatable about its horizontal axis; a conduit for adding finely divided carbon black to said drum; a conduit with rate-of-flow measuring device for adding aqueous molasses solution to said drum; a conduit to pass pellets from said drum to the inlet end of a second elongated cylindrical drum having an inlet end and an outlet end and rotatable about its horizontal axis; a dead-time delay simulator to receive a signal from said rate-of-flow measuring device which is proportional to rate-of-flow of aqueous molasses solution flowing into the first-mentioned drum; a limiting relay with predetermined high and low set points to receive a signal from said dead-time delay simulator; and a flow-rate controller receiving a signal from a rate-of-flow measuring device on a conduit for passing combustible gas to burners positioned so as to heat the second-mentioned drum adjacent its inlet end, said limiting relay being adapted to regulate the set point of said flow-rate controller which actuates a flow control valve on said conduit for passing combustible gas to said burners; temperature-measuring control means for measuring the temperature adjacent said outlet end; and means for supplying sufficient heat to said second drum adjacent said outlet end controlled by said temperature-measuring control means to maintain the temperature of the dried pellets adjacent said outlet end at a substantially constant predetermined temperature.

3,346,913
CALENDER WITH ADJUSTABLE STRIPPING ROLLS AND REMOVABLE EMBOSSING ROLLS
Charles G. Lake and Rex C. Seanor, Akron, Ohio, assignors to Adamson United Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 24, 1965, Ser. No. 509,581
5 Claims. (Cl. 18—2)

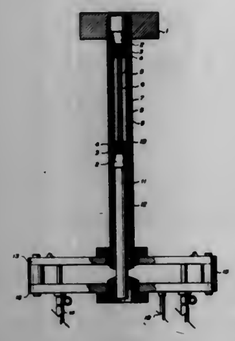


1. The combination in a plastics and rubber calender of a pair of laterally opposed housings, a plurality of calender rolls mounted between the housings, an embossing roll and a companion rubber covered roll, a separate bridge means mounting each of the embossing roll and the rubber covered roll, the ends of each bridge means being received in opposed windows in the housings, means releasably mounting each bridge means and its roll for sliding removal through one of the opposed windows of the housing, stripping roll means extending between the housings downstream from the web discharge bite of the calender rolls and positioned between the embossing roll and the web discharge bite of the calender rolls, and means to adjust the position of the stripping roll means to strip the calendered web from either calender roll forming the discharge bite and after a selected angle of travel on the roll.

3,346,914
DEVICE FOR CONSOLIDATING METAL POWDERS
Donald J. Sandstrom and Charles L. Terrell, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Continuation of application Ser. No. 372,426, June 3, 1964. This application Nov. 10, 1966, Ser. No. 594,319
10 Claims. (Cl. 18—5)

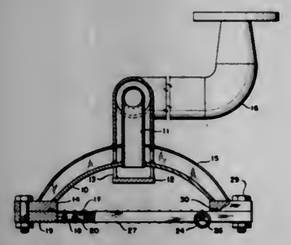
1. A molding device for compacting metal powders into tubular or rod shapes comprising in combination:
(a) an inner electrical conductor which is shaped to provide a molding cavity and having the general shape of the article desired to be produced,

(b) an outer electrical conductor that completely surrounds the said inner conductor and which is electrically insulated from said inner conductor by a thin dielectric material,
(c) said outer conductor being clad with a nonmagnetic metallic sleeve,



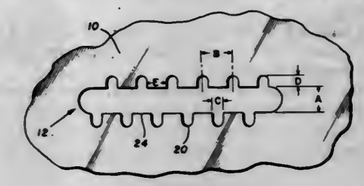
(d) a power supply capable of supplying 10^5 amperes for a period of about 10^{-4} seconds, and
(e) tapered shorting plugs which electrically connect the outer conductor to the inner conductor so as to allow current to pass from the power supply to ground by the triggering of a suitable switching means.

3,346,915
PRILLING NOZZLE
Fritz K. Fleischer, Ventura, and Billy W. Sisk, Ojai, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,854
4 Claims. (Cl. 18—2.7)



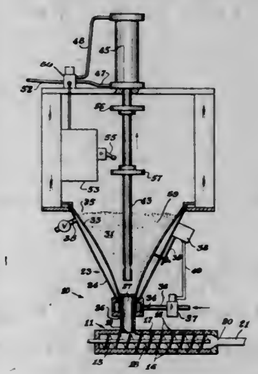
1. A prilling nozzle for producing small liquid droplets of molten material which solidify into uniform prills upon cooling comprising:
(a) a heating chest including a pair of opposed, vertically spaced horizontal walls, closure means for the margins of the chest, and means for flowing a fluid heating medium through said chest;
(b) a plurality of small-diameter tubes having a small internal bore extending vertically through said chest and sealed in vertically aligned pairs of holes in said horizontal walls preventing the escape of heating medium from said chest, said tubes projecting downwardly beyond the lower wall; and
(c) a chamber above the upper wall of said chest having its bottom closed by the exterior of said upper wall of said chest to supply molten material to the top of said tubes which can pass downwardly through said bore of said small diameter tubes for prilling.

3,346,916
SPINNERET FOR PRODUCTION OF SYNTHETIC GRASS YARN
Donald L. Elbert, Gulf Breeze, and Robert T. Wright, Pensacola Beach, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 536,933
2 Claims. (Cl. 18—8)



1. A spinneret for producing delustered monofilament ribbons having novel cross-sections, comprising spinneret retaining means and a spinneret mounted in said retaining means, said spinneret having at least one essentially rectangular slotted orifice, said orifice having opposed profiled walls in close proximity to each other, said walls having a plurality of selectively spaced grooves, said grooves, being staggered on opposite walls whereby each groove faces a flat surface on the other wall, said orifice having dimensions determined by the ratios of B/A ranging from 0.8 to 4.0 and D/C ranging from 1.0 to 4.0 when the ratio of C/A is between 0.25 and 0.90.

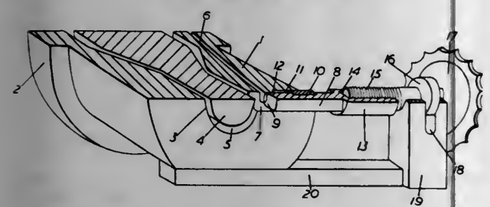
3,346,917
APPARATUS AND METHOD FOR SHAPING LOW DENSITY MATERIALS
Forrest R. Lennox, Coleman, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,091
4 Claims. (Cl. 18—12)



1. An apparatus comprising in cooperative combination
a heat fabricating apparatus for the heat fabrication of thermoplastic resinous material, the heat fabricating apparatus having a feed port,
a feed hopper, the feed hopper having a passageway with an inlet end and an outlet end, the inlet end having an opening substantially greater in diameter than the outlet end, and
the passageway tapering to a smaller dimension adjacent the outlet end, the outlet end of the hopper being in operative connection with the feed port of the heat fabricating apparatus,

a flexible wall disposed over at least a portion of the inner tapering wall of the passageway,
the flexible wall adapted to be flexed inwardly,
means to flex the wall,
the means to flex the wall being controlled by the displacement of the wall, the means being so constructed and arranged so as to force the wall inwardly when a pressure within the passage forces the wall outwardly,
a ram adapted to reciprocally move to and fro within the passage and force material into the outlet end and to enter the outlet end,
the ram provided with means to reverse its travel on reaching predetermined positions within and without the outlet end thereby adapted to force a particulate material disposed between the hopper into the feed port.

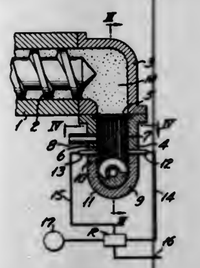
3,346,918
EXTRUSION DIE
Antoine Deleuze, Lyon, and Roger Georges Louis Gulling, Saint-Fons, France., assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France
Filed Oct. 14, 1965, Ser. No. 495,908
Claims priority, application France, Dec. 7, 1964, 997,684
2 Claims. (Cl. 18—12)



1. In a machine for extrusion of a profile of a variable section, an extrusion die comprising a body having a bore passing therethrough and terminating at an end face, said body defining a major portion of an extrusion orifice of said die at said end face, at least one chamber formed in the end face of said body with the inner end of said chamber opening into said extrusion orifice. each said chamber extending transversely of said extrusion orifice, at least ber opening into said extrusion orifice, each said chamber and defining the remainder of said extrusion orifice, and means for displacing said piston in said chamber with respect to the inner end thereof to thereby change the dimensions and cross section of the extrusion orifice.

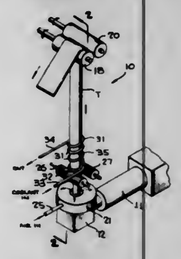
3,346,919
METHOD AND APPARATUS FOR VENTING OF SCREW EXTRUDER
Naotaro Okzaki, 72 Hakuraku, Kanagawa-ku, Yokohama-shi, Japan
Filed Jan. 10, 1966, Ser. No. 519,752
4 Claims. (Cl. 18—12)

1. An improved apparatus for venting a screw extruder of the type having a first cylinder disposed horizontally and a first screw concentrically inserted in said cylinder for kneading material and discharging the same through a discharge outlet in the cylinder, the apparatus comprising a conduit extending downwardly from the discharge outlet of said cylinder, and defining a vertical passage for the material, a breaker plate between said cylinder and passage for dividing the material extruded by said first screw into a large number of fine cords which are dropped through the vertical passage, said breaker plate being tapered in thickness and having one side closer to said first screw which is of greatest thickness and an opposite side furthest from the screw of least thickness so that the amount of material passing through the breaker plate is uniformly distributed on the entire surface of said plate, a secondary extruder including a secondary cylinder disposed horizontally at right angles to said vertical passage and a secondary screw concentrically mounted in said secondary cylinder, said conduit being mounted in airtight



relation on said secondary cylinder so that the material descending through said passage may enter the secondary cylinder and means on said conduit for communicating with a separate vacuum means located outside said conduit, whereby the vertical passage can be subjected to a vacuum and the material passing therethrough can be degassed.

3,346,920
EXTERNAL COOLING DEVICE FOR EXTRUDED TUBING
Charles M. Fields, La Grange, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 26, 1963, Ser. No. 326,121
7 Claims. (Cl. 18—14)

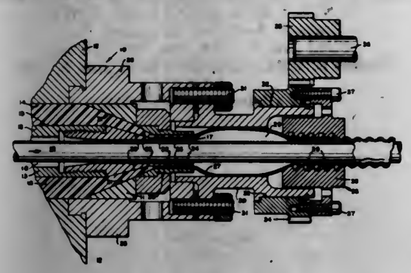


1. Apparatus for cooling and sizing relatively thin-walled tubing comprising means for extruding relatively thin-walled tubing, means for conveying said tubing along a predetermined path, means adjacent said predetermined path for cooling and sizing the extruded tubing, said last-mentioned means comprising an imperforate spiral cooling coil having portions establishing an unbroken surface for continuously contacting exterior wall portions of the tubing transported through said spiral cooling coil.

3,346,921
CORRUGATED PLASTIC COVERING FOR ELECTRICAL CABLES
Steve Bunish, Marion, William A. Beasley, Fairmount, and Ting Hung Ling, Marion, Ind., assignors to Anaconda Wire and Cable Company, New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,575
2 Claims. (Cl. 18—14)

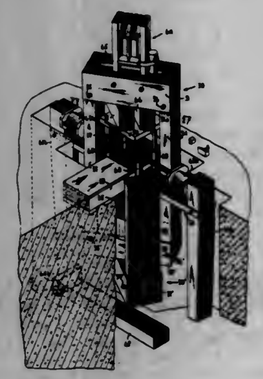
1. An apparatus for providing a flexible protective covering in an electrical cable which comprises:
(a) a continuously operating extruder;

(b) a cross head having therein (i) a central cylindrical bore for receiving a continuous length of said cable at one end of said bore and allowing it to pass through a guide tip at the opposite end of said bore, and (ii) a tubing die surrounding said bore and connected to the extruder for receiving the plastic therefrom to form an extruded tubing around the emerging conductor from the guide tip;



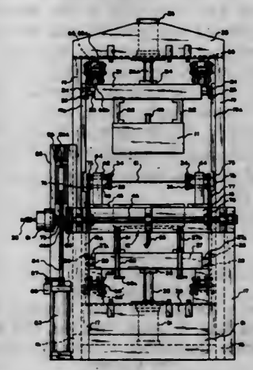
(c) means for maintaining a positive pressure in said bore to separate the conductor and the extruded tubing;
(d) a rotating die with helical embossing tread spaced away and aligned with said central bore for pulling and corrugating said tubing simultaneously at a rate corresponding to the rate of the emerging conductor; and
(e) means for cooling the corrugated tubing to form the protective covering.

3,346,922
PRESS STRUCTURES
Jacob Brayman, White Plains, Mark B. Komorn, Jackson Heights, and Alexander Zeitlin, White Plains, N.Y., assignors to Barogenics, Inc., New York, N.Y., a corporation of New York
Original application Mar. 31, 1964, Ser. No. 356,171, now Patent No. 3,278,993, dated Oct. 18, 1966. Divided and this application June 13, 1966, Ser. No. 571,352
20 Claims. (Cl. 18—16)



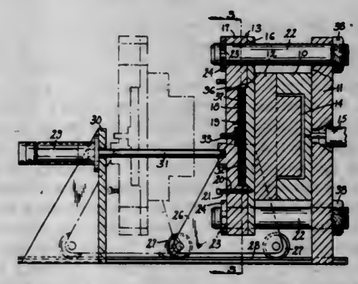
17. A press structure comprising: a pair of vertically spaced heads, at least one of said heads including at least two crossheads arranged in criss-cross relation to define a horizontal X, four vertical tie couplings connecting said heads together, said tie couplings being horizontally disposed to each be at a respective one of the four arm ends of the horizontal X defined by the crossheads of said at least one head, and horizontal support means for said heads and couplings, said support means passing between said tie couplings and through a vertical line passing through the center of the X.

3,346,923
DIFFERENTIAL PRESSURE FORMING MACHINE
Gaylord W. Brown and Donald J. Rise, Beaverton, Mich., assignors to Brown Machine Company of Michigan, Inc., a corporation of Michigan
Filed July 10, 1963, Ser. No. 293,959
12 Claims. (Cl. 18—19)



8. In a differential pressure forming machine for molding articles in thermoplastic material: frame means; a pair of oppositely disposed mold frames mounted thereon; one of said frames including cavity means and the other comprising an air box frame; means connected with at least one of said frames for moving it toward the other frame; means for supporting a web of plastic between said frames; means for applying a vacuum to said cavity means; line means for introducing fluid under pressure into the air box frame at a line pressure greater than that desired in said air box frame; and pressure responsive means, downstream from said line means and sensitive to the pressure in said air box frame, disabling the fluid pressure introducing means when a designated pressure less than said line pressure is reached in said air box frame.

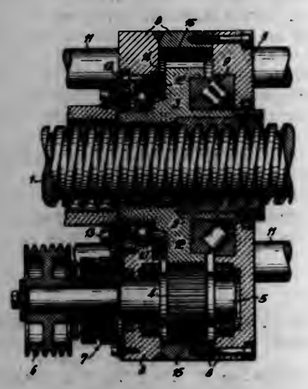
3,346,924
INJECTION MOLD LOCKING DEVICE
Ralph S. Lombard, 176 Pinewood Road, Stamford, Conn. 06903
Filed Jan. 28, 1965, Ser. No. 429,959
9 Claims. (Cl. 18—30)



1. Injection molding apparatus comprising first and second platens, said first and second platens adapted to have mounted thereon complementary facing mold sections,

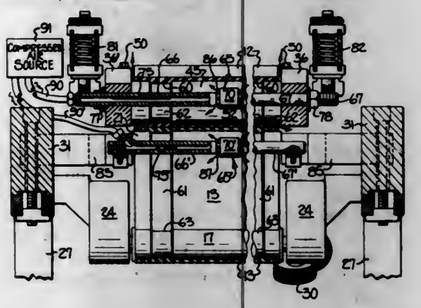
one of said platens comprising first and second generally plate-like members having contacting surfaces, one of said plate-like members defining a substantially shallow cylindrical cavity centrally thereof, the other of said plate-like members having a cylindrical projection extending part way into said cavity, an expansible cell in said cavity, said cell comprising a plate-like member having substantially parallel surfaces on either side thereof and a port defined therein, a fluid pressure conduit communicating with said port and extending from one side thereof, an elastomeric material cast about and enveloping said member and a portion of said conduit, said material being cast in the shape and size of the cavity, said material being bonded to the surface of said member from which said conduit extends and unbonded to the other side thereof, the unbonded side of said member and said material being arranged to receive fluid pressure through said conduit and port to expand said cell and define an expansible pressure chamber, said elastomeric material and said plate-like member volumetrically filling said cavity, means for limiting movement of said platens from each other, and means for introducing fluid under pressure to said conduit to expand said cell and force said first and second plate-like members apart.

3,346,925
LOCKING DEVICES FOR MOULD CLOSING MECHANISM
Anton Maier, Kirchheim-Teck, Lindorf, Germany
Filed Sept. 8, 1965, Ser. No. 485,839
Claims priority, application Germany, Dec. 15, 1964, M 63,498
3 Claims. (Cl. 18—30)



1. In a molding machine having a housing, a threaded spindle rotatably mounted in said housing, a rotatable mold-closing member mounted for axial displacement on said spindle between a first and a second position in response to rotation of said spindle, rotary drive means operative for rotating said spindle, and brake means associated with said drive means and operative for arresting rotation thereof, the improvement consisting in the provision of auxiliary brake means including a first abutment face provided on said member and extending at a right angle to the axis of said spindle facing in a given direction; and a stationary auxiliary braking element carried by said housing and having a second abutment face facing oppositely said given direction in sliding engagement with said first abutment face when said member is in said first position, at least said second abutment face being of material which is softer than the material of said first abutment face, displacement of said member from said first toward said second position resulting in engagement of said abutment faces with increasing pressure, said auxilary brake means affording auxiliary braking action upon said pressure reaching a predetermined value.

3,346,926
TEXTILE APRON STABILIZING AND CLEANING SYSTEM FOR DRAFTING UNITS
Eugenio Andreani, Bergamo, Italy
Filed Jan. 5, 1966, Ser. No. 518,863
Claims priority, application Italy, Jan. 5, 1965, 90/65
9 Claims. (Cl. 19—245)



1. In a textile drafting apparatus having an endless belt drafting apron and a plurality of spaced apart supporting rollers about which the belt is looped for movement therearound, the improvement comprising at least two spaced apart parallel endless ribs formed integral with and projecting inwardly from said apron along its inner surface and said ribs being spaced inwardly from opposite side edges of the apron, said supporting rollers each having annular peripheral grooves therein spaced inwardly of opposite ends of the rollers and being of substantially the same size and configuration as said ribs and mating therewith to prevent sideslipping of the apron relative to the supporting rollers, substantially the remainder of the inner surface of the belt being in contacting engagement with the peripheral surfaces of the supporting rollers as it moves therearound, and pneumatic means associated with said apron and including air directing means positioned near the interior medial portion of the apron for directing air in opposing directions generally toward the opposite side edges of the apron for preventing foreign matter, such as lint and the like, from collecting inside the apron and interfering with the mating relationship of the ribs with the grooves in the supporting rollers.

3,346,927
DETACHABLE RETAINER FOR ARTICLES
Sally D. Tompkins, 5340 Douglas Lane, Yorba Linda, Calif. 92686
Filed July 14, 1965, Ser. No. 471,971
1 Claim. (Cl. 24—245)

In a retainer device for holding together a pair of articles of apparel, the combination of: a flexible part provided with a terminal at each end, one of said terminals having a laterally extending knob and the other of said terminals having a series of connected apertures of decreasing size, so that upon bending of the shank to bring the terminals into juxtaposition said knob may pass laterally into the largest aperture and then move longitudinally into a smaller aperture, the knob having a flange formed of a circumferential series of small lugs with spaces between them, and the knob terminal having



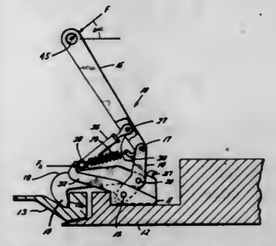
a series of apertures encircling the knob and opposite the said lugs to facilitate drying of the pair of articles when retained by the retainer device.

3,346,928
FABRIC CLASP, HOSE SUPPORTER, GARTER AND THE LIKE HAVING HOOK AND APERTURE CLASPING MEANS
Kenneth D. Lambers, 714 Wildwood Drive, Holland, Mich. 49423
Filed Sept. 8, 1966, Ser. No. 578,942
4 Claims. (Cl. 24—245)



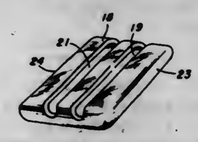
1. In a fabric clasp comprising a first substantially flat member, a second substantially flat member; said members each having an interconnecting end portion, a free end portion, and a body portion therebetween; means interconnection said interconnecting end portions of each of said first and second members and permitting said body portions to be moved relative to each other and lie substantially flat against each other; said first member having an opening at its free end portion; said second member having an integral, substantially rigid, hook-like means at its free end portion; said hook-like means being formed by an offset portion extending away from the plane of said second member toward said first member and arranged to extend through said opening, and a terminal portion integral with said offset portion and arranged to extend in at least one direction beyond the boundary of said opening when said offset portion is located within said opening; and means permitting relative movement between the two free end portions of said members in a direction longitudinally of at least one member to permit insertion of said integral and substantially rigid hook-like means through said opening; the improvement comprising a side edge portion of said body portion of said first flat member extending beyond the marginal side edge of the second flat member and on the opposite marginal side thereof a side edge portion of the body portion of said second flat member extending beyond the marginal side edge of the first flat member, whereby a person can simultaneously grasp the first flat member on its said side edge portion and the second flat member on its said side edge portion for manipulating the same.

3,346,929
LATCHING MECHANISM
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to invention of Earl V. Holman, Whittier, Calif.
Filed Mar. 4, 1966, Ser. No. 534,295
5 Claims. (Cl. 24—263)



5. A latching mechanism having a locked position and a full-open position comprising:
a base;
an operating handle;
means connecting said handle to said base;
hook means connected to said means connecting said handle to said base;
link means slidably mounted on said hook means;
linkage means connecting said link means to said handle means;
spring means connected between said handle and said hook means; and
support means on said base adapted to be engaged by said link means when said operating handle is moved toward said hook means.

3,346,930
BELT TERMINATION
Joseph B. Browning, 323 Paloma Lane, El Cajon, Calif. 92021
Filed May 10, 1965, Ser. No. 454,601
1 Claim. (Cl. 24—265)

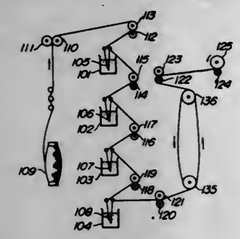


A belt termination comprising:
a flattened cylindrical section of pliable material;
said cylindrical section having one closed end;
said cylindrical section having at least two slots on one side thereof parallel to said closed end;
whereby a belt suitably dimensioned for passage into said cylinder may be passed into said cylinder and through said at least two slots to effect a termination of said belt.

3,346,931
PROCESS AND APPARATUS FOR PRODUCING STRETCHABLE HIGH BULKY YARNS
Hiroshi Kashima and Wataru Kurokawa, Suita-shi, and Shigeto Kai and Kazuhiko Oka, Hirakata-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Sept. 29, 1965, Ser. No. 491,261
Claims priority, application Japan, Oct. 12, 1964, 39/57,824; Oct. 31, 1964, 39/61,486; Nov. 5, 1964, 39/62,302
11 Claims. (Cl. 28—1)

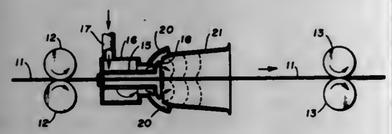
7. An apparatus for producing stretchable bulky yarns by edge crimping, said apparatus comprising a blade-

edge-like part, means to immerse the part in water, and an inlet guide means and an outlet guide means causing



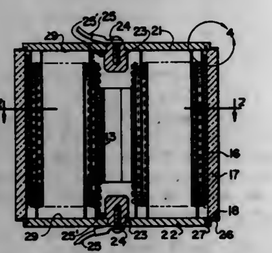
the yarns to make a V-shaped turn around and in contact with the blade-edge-like part.

3,346,932
METHODS FOR RELAXING SYNTHETIC FIBER FILAMENTS
Dudley W. Cheape, Jr., Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,376
1 Claim. (Cl. 28—72)



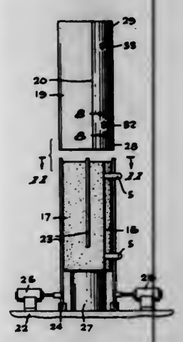
The method of relaxing a bundle of synthetic fiber filaments, comprising advancing the bundle of filaments along a predetermined path, passing a heated gas over the bundle of filaments, creating sonic vibrations in the heated gas to agitate said gas and thereby better dissipate stagnant air inside said bundle, said sonic vibrations being created at points positioned along a circular line concentric with said path so that the bundle of filaments is subjected to sonic vibrations from all sides, and focusing said vibrations onto said path.

3,346,933
METHOD OF ASSEMBLY OF ELECTRONIC COMPONENTS
Wesley N. Lindsay, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Original application Nov. 29, 1963, Ser. No. 326,696. Divided and this application Oct. 21, 1965, Ser. No. 509,249
8 Claims. (Cl. 29—25.41)



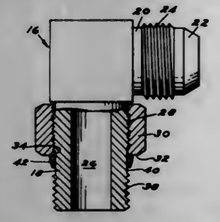
1. The method of assembly of a vacuum electronic component having spaced electrodes enclosed within a tubular dielectric envelope portion by metallic end plates closing opposite ends thereof and electrically connected to the spaced electrodes, consisting of the steps of supporting the tubular dielectric enevlope portion, said electrodes and said end plates in spaced apart relation within a vacuum oven including an energizable heat source with each of said end plates electrically connected to an associated electrode, energizing the oven to preliminarily heat said component to a first temperature, charging said spaced electrodes with electrical charges of opposite sign while said component is held at said first temperature for a time sufficient to produce a predetermined degree of vacuity within the component, removing the electrical charges from said electrodes, raising the temperature of the component to a second predetermined temperature and holding the component at that temperature until a predetermined degree of vacuity within the component is obtained, raising the temperature of said component to a predetermined third temperature past the melting point of brazing material thereon deenergizing the oven heat source, and effecting relative movement of said end plates and tubular dielectric envelope portion until the end plates abut the envelope portion and said electrodes to braze the end plates to the electrodes and to the dielectric portion and hermetically seal the envelope.

3,346,934
HEAD REST
Louis H. Davidson, Beverly Hills, Calif. (7765 Lemona Ave., Van Nuys, Calif. 91405)
Original application Aug. 13, 1964, Ser. No. 389,398, now Patent No. 3,345,719. Divided and this application Apr. 8, 1966, Ser. No. 560,992
2 Claims. (Cl. 29—91.1)



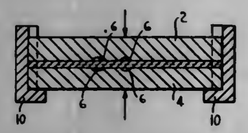
1. A method of manufacture of head rests comprising inserting a plate carrying spaced angular brackets into a slot extending the length of a foam cylinder, radially compressing said foam cylinder to reduce its external diameter, forming a sleeve by heat sealing a pair of plates of heat sealable plastic on the reverse side of a rectangular strip of heat-sealable plastic along a circumambient seal at spaced points on said reverse side aligned longitudinally to the edge of said rectangular strip, heat sealing the strip of plastic along the opposed longitudinal edges of said strip, removing the portion of the strip and plates within the circumambient seal to form a pair of spaced slots, passing the sleeve over the compressed foam cylinder, entering the brackets in said slots, said sleeve extending beyond each end of said cylinder, releasing the compression of said foam cylinder, encasing the cylinder in a metallic cylinder, reversing the extending portions of said sleeve over the ends of said metallic cylinder, to form a cuff at each end of said foam cylinder, heat sealing strips of heat-sealable plastic to the reverse edges of said cuffs to form a circumambient heat seal about the ends of said cylinder and thereby forming end covers for said foam, removing the excess of plastic at said cuff and end strips and removing the encased head rest from said metallic cylinder.

3,346,935
METHOD OF MAKING A FLUID PRESSURE COUPLING
Gilbert T. Lyon, Royal Oak, Mich., assignor to L & L Manufacturing Company, Warren, Mich., a corporation of Michigan
Filed Sept. 27, 1962, Ser. No. 226,510
2 Claims. (Cl. 29—157)



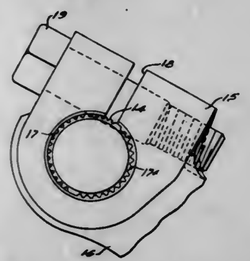
1. That method of manufacturing a fluid pressure coupling for use in an internally threaded port having an outwardly flared entrance portion at its outer end comprising providing a metal tubular member having an externally threaded length spaced from its inner end and a lock nut threadedly engaged thereon and exhibiting a smooth cylindrical external surface adjacent to its inner end and of less external diameter than the threaded outer end thereof, forming a cylindrical continuous sealing ring of hard relatively inflexible and but slightly deformable material and having an inner surface adapted to closely conform to and but slightly greater in diameter than the external surface of the cylindrical tubular member adjacent to its inner end and having an external surface adapted to closely conform to and form intimate contact with the flared entrance portion of the port to sealingly engage the same, positioning said ring over the inner end of the member and advancing the ring thereover to a position thereon spaced from said inner end and adjacent said lock nut, and thereafter by deforming forming an externally threaded length on said member spaced inwardly of said ring for threaded engagement within said port and having a thread crest diameter exceeding the internal diameter of the sealing ring and the external diameter of that portion of the tubular member underlying the ring to secure said ring between said lock nut and said deformed threads.

3,346,936
MANUFACTURE OF INFLATED METAL PRODUCTS
Edwin A. Miller and Robert A. Schultheiss, Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,935
2 Claims. (Cl. 29—157.3)



1. The process of making an inflated composite metal product, comprising interfacially contacting clean metal layers, squeezing the layers together with a thickness reduction to produce a composite sheet having solid-phase green-bonded components, heat-treating the composite sheet to effect a partial improvement in the green bond and to soften said layers, placing the composite sheet between dies at least one of which dies has a recessed pattern, forcing a fluid into the area between the layers outlined by said pattern thereby to inflate and separate portions of at least one of the components from the other component in an area conforming substantially to the pattern and to force said separated portions to conform substantially to said pattern, removing the composite from the dies, and heat-treating the inflated composite further to improve the bonds substantially to full strength.

3,346,937
METHOD OF MAKING AND ASSEMBLING STEERING GEAR PARTS
Walter E. Folkerts, Hazel Park, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Original application Mar. 30, 1964, Ser. No. 355,682, now Patent No. 3,285,638, dated Nov. 15, 1966. Divided and this application May 16, 1966, Ser. No. 550,536
3 Claims. (Cl. 29—159.2)



1. In the method of making a vehicle steering gear, the steps of forming a shaft; rolling a plurality of axially extending serrations into said shaft around the circumference of the latter; forming a pitman with a hub, an axial cylindrical hole through said hub for receiving said serrations snugly therein and comprising a serrate portion having axially extending serrations in the approximate one-half thereof measured circumferentially in one direction from a reference point and comprising a smooth portion of substantially uniform radius for the remainder thereof, and a slot extending radially through said hub into said hole at said reference point and also extending axially of said hole; assembling said shaft and pitman with the serrations of said hole interfitting with the serrations of said shaft; and drawing opposite sides of said slot together to lock said serartions together and cause the smooth portion of said hole to roll against the serrations of said shaft and bind the same.

3,346,938
METHOD OF MAKING A COIL SPRING
Roger T. Becker, Kalamazoo, Mich., assignor to Aero-Motive Manufacturing Company, Kalamazoo, Mich., a corporation of Michigan
Filed Oct. 4, 1965, Ser. No. 492,642
3 Claims. (Cl. 29—173)

1. In a method for making a coil spring from a strip of steel cut from a relatively soft sheet thereof, the steps comprising:

engaging the opposite lateral edges of said strip with abrading instruments for removing a portion of the edge material;

heat treating and thereby hardening the strip material after said abrading;

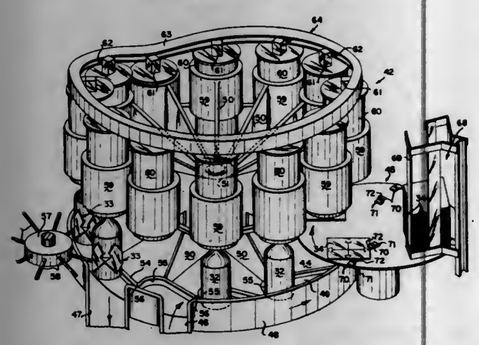
engaging the opposite lateral edges of said strip material with abrading instruments and thereby removing additional material therefrom so that said strip is substantially at its finished width;

cutting said strip into predetermined lengths and loosely coiling each length into substantially concentric loops and fastening said loops together;
forming attachment means on the outer end portion of each loose coil;
forming a relatively tight radius of curvature in the inner end portion of each loose coil;



shot peening at least said inner and outer end portions of each loose coil;
substantially reducing the diameter of the outside loop in each loose coil and the majority of the loops therewithin; and
rigidly connecting the two outermost loops near said outer end portion of each loose coil.

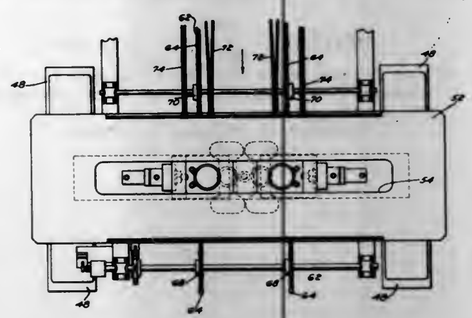
3,346,939
APPARATUS FOR PLACING SEPARATOR CELLS AROUND BOTTLES AND THE LIKE AND FOR PACKAGING SUCH BOTTLES
Melville T. Farquhar, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 14, 1963, Ser. No. 258,578
15 Claims. (Cl. 29—208)



15. Apparatus for placing a separator cell around an object comprising means for continuously moving said object, means for providing a stack of single thickness separator cell blanks, means for taking one blank from said stack, and means for converting said one blank to a separator annulus cell around said object while said object is continuously moving by forcing said blank against said object thereby causing said blank and object to telescope whereby said blank converts to an annulus around said object.

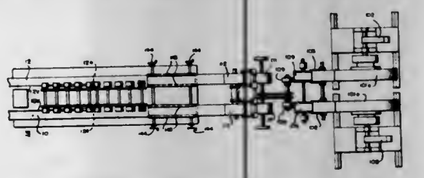
3,346,940
APPARATUS FOR THE ASSEMBLY OF CONCRETE FORM TIES
Dominic J. Agostini, 56 Armistice Blvd., Pawtucket, R.I. 02860, and George L. Agostini, 48 Marlaine Drive, Seekonk, Mass. 02771
Filed June 21, 1965, Ser. No. 465,539
27 Claims. (Cl. 29—208)

1. A snap tie assembly machine comprising a base, means for feeding lengths of rod on said base, means for mounting a pair of washers in spaced relation on each rod, means for mounting a smaller washer adjacent each end of each rod, means for positioning the washers in predetermined position on each rod, means for guiding the washers in predetermined position on each rod during the feeding movement, means for partially severing each rod at spaced points inwardly of the washers, means for pinching each rod inwardly of the larger washers, means for pinching each rod outwardly of the larger washers,



means for roughening each rod adjacent each end, and means for forming an enlarged head at each end of each rod.

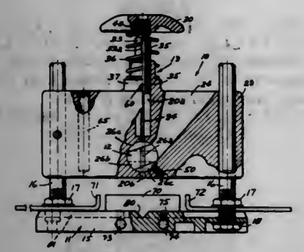
3,346,941
MEANS FOR MANUFACTURING AN EXPANSION JOINT COVER
Harvey L. Patry, Francis J. Patry, and Ernest Patry, Lewiston, and Harold Blair Lamont, Lincolnville, Maine, assignors to Lamont & Riley, Inc., Worcester, Mass., a corporation of Massachusetts
Original application Feb. 5, 1964, Ser. No. 342,766, now Patent No. 3,319,330, dated May 16, 1967. Divided and this application Sept. 19, 1966, Ser. No. 580,310
10 Claims. (Cl. 29—208)



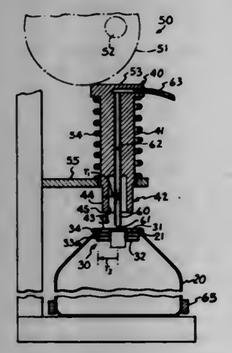
1. In a machine for making an elastic joint member, means for producing two strips each having a first portion spaced from the first portion of the other and in the same plane as the first portion of the other, with each strip having a second portion which extends, from the end of the first portion closest to the other strip, in a common plane in a direction away from the other strip whereby said two second portions form a pair of spaced platforms for receiving elastic material, with said first portion of each strip being wider than the second portion of the strip, with each strip also having a third portion extending transversely from that end of its said second portion which is farthest from the other strip, means for placing a strip of elastic material on the faces of said second portions forming said platform, and means for bending the third portions of each strip to clamp the elastic material between the second and third portions of each strip.

3,346,942
DEVICE FOR POSITIONING COMPONENTS
Henry J. Modrey, Eagle Drive, Stamford, Conn. 06903
Filed Aug. 3, 1965, Ser. No. 476,839
21 Claims. (Cl. 29—212)

1. A device for positioning a body made at least partly of magnetizable material and fed to the device in random position, said device comprising a support means made of substantially non-magnetizable material and having a supporting surface, and means for generating adjacent to one supporting surface portion a higher density of magnetic flux lines per area unit than adjacent to another supporting surface portion, the surface portion having the higher density adjacent thereto constituting a receiver for orienting a body received in random position on said supporting surface into a predetermined position in reference to the support means.

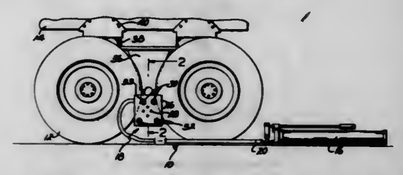


3,346,943
PROCEDURE AND APPARATUS FOR REMOVING VALVE ASSEMBLY FROM PRESSURIZED CONTAINER
Peter J. Nilsen and Merle D. Zamzow, Haines City, Fla., assignors to Nilsen Mfg. Co., Haines City, Fla., a corporation of Florida
Filed July 12, 1965, Ser. No. 471,349
12 Claims. (Cl. 29—213)



11. For use in removing from a pressure container a valve assembly of annular shape having a cylindrical outer wall crimped to the container, a valve removing tool comprising in combination a plunger having an outer surface and an annular engaging tip, means for reciprocating the plunger axially of the container with sufficient force and amplitude so that its tip engages the center portion of the valve assembly and axially deforms it during the inward stroke, the outer surface of the plunger having a diameter which is substantially less than the diameter of the outer wall of the valve assembly so that engagement of the plunger causes elongation of the valve assembly accompanied by the stretching of the outer wall thereof to deform the outer wall from its normal cylindrical shape to frustoconical section substantially removing the crimp and thereby freeing the valve assembly from any obstruction to the endwise removal thereof, and means for removing the freed valve assembly from the container.

3,346,944
FLUID OPERATIVE APPARATUS FOR REPLACING BUSHINGS
William A. West, San Fernando, Calif. (10219 Oro Vista, Sunland, Calif. 91040)
Original application Dec. 31, 1962, Ser. No. 248,404, now Patent No. 3,183,585, dated May 18, 1965. Divided and this application Aug. 18, 1964, Ser. No. 390,437
3 Claims. (Cl. 29—252)



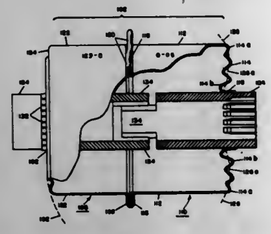
1. A bushing press for replacing center and end bushings in an equalizing beam of a truck suspension having tandem wheels by driving the worn bushings from their respective openings in the beam and driving new bushings into the bushing openings, said press comprising:
a hydraulic ram including a cylinder having front and rear ends, a piston slidable in and extending forwardly from said cylinder, and means for pressurizing said cylinder rearwardly of said piston to drive said piston forwardly relative to said cylinder;
a normally upper pair of pull rods and a normally lower pair of pull rods extending longitudinally of said ram at opposite sides of said piston and having front ends located forwardly of the front end of said piston;
means securing the rear ends of said pull rods to said cylinder to restrain said rods against forward movement relative to said cylinder;
equalizing beam contact means releasably secured to the front ends of said pull rods having a central clearance opening coaxially aligned with said piston and a rearwardly presented thrust face about said clearance opening;
an interchangeable, generally cylindrical bushing replacement tool positioned between said piston and contact means and disposed in coaxial seating engagement with the front end of said piston, said tool having a forward generally circular bushing thrust face and being removable for replacement by a different bushing replacement tool;
said press being adapted for placement in a position of use wherein the front ends of said upper and lower pull rod pairs straddle said equalizing beam in the region of a bushing opening therein, said contact means seat against one side of said beam about the adjacent bushing opening, and said tool is coaxially disposed relative to said adjacent bushing opening; and
said ram being adapted to be pressurized to drive said tool axially toward said contact means.

3,346,945
LOW-COST MANUFACTURE OF FLEXIBLE TORQUE COUPLING
Edward S. Chalpin, Glendora, Calif., and David E. Hanson, Brockton, Mass., assignors to Metal Bellows Corporation, Sharon, Mass.
Original application Mar. 27, 1964, Ser. No. 355,376, now Patent No. 3,301,007, dated Jan. 31, 1967. Divided and this application Apr. 29, 1966, Ser. No. 559,025
4 Claims. (Cl. 29—436)

1. A method for fabricating a flexible torque coupling, said method comprising the steps of
(A) forming a metal sheet into a cup having a flexible diaphram extending radially along the cup bottom and a tubular wall extending axially along the cup

wall from the outer periphery of said diaphragm to a first edge,

(B) providing torque-transferring means on each diaphragm radially spaced inwardly from its outer periphery,



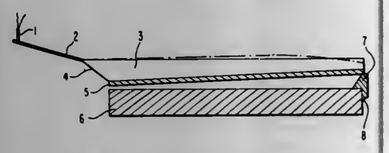
(C) securing together said first edges of first and second cups disposed in opposition to each other so that said torque-transferring means on said two cups are axially spaced apart.

3,346,946

METHOD FOR CONNECTING METAL PLATES

Peter Riegelmayer, Wasserscheide, Kreis Siegen, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Jan. 15, 1965, Ser. No. 425,747
Claims priority, application Germany, Jan. 17, 1964, D 43,373
14 Claims. (Cl. 29—470.1)



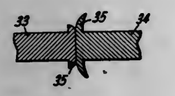
1. A method for surface-connecting metallic plates disposed one above the other by means of explosives, comprising the steps of placing explosives on the upper metal plate in such a manner that the height of the layer of explosives decreases by about 50 to 70% from the ignition place extending over the upper plate and that the height of the layer of explosives decreases in strip-like manner only by about 5 to 20% along the sides thereof adjacent the ignition place.

3,346,947

FRICTION WELDING

Milton Bernard Hollander, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed July 10, 1963, Ser. No. 293,933
2 Claims. (Cl. 29—470.3)



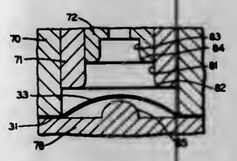
1. The method of friction welding aluminum and copper workpieces comprising the steps of rotating the workpieces relative to each other, forcing the workpieces together so that between 3,000 and 30,000 foot pounds of energy are released in the weld area for each square inch of weld area, and rapidly stopping the relative rotation of the workpieces to complete the weld in less than ten seconds.

3,346,948

METHOD OF FASTENING A TAB TO A METALLIC CONTAINER WALL

George J. Henning, Canton, and Joseph Scalia, Massillon, Ohio, assignors to The Central States Can Corporation, Massillon, Ohio, a corporation of Ohio

Filed Aug. 14, 1964, Ser. No. 389,573
5 Claims. (Cl. 29—509)



1. In a method of fastening a tab to a central portion of a metallic container wall wherein the tab is formed with a hole telescoped over a cup-shaped rivet blank projecting integrally from said container wall and the rivet blank is formed with a rim overlying the tab surface around the hole, the steps of:

forming in a sheet metal wall blank a primary bubble wall portion having a spherically curved shape of predetermined height and a concave open end diameter substantially larger than the diameter of said tab hole while slightly reducing the thickness of the blank over a limited annular area adjacent said primary bubble;

drawing, stretching and thinning the metal in said primary bubble wall portion during formation thereof;

then while confining the blank metal around the primary bubble wall open end, drawing and stretching the metal in the primary bubble wall portion to form a secondary bubble wall portion having a spherically curved shape and an open end of smaller diameter than that of the primary bubble wall portion and having a height reduced from that of the primary bubble wall portion while slightly thinning the metal in the secondary bubble wall portion during said drawing and stretching;

repositioning and reshaping the metal in the secondary bubble wall portion to form a cup-shaped rivet blank having a cylindrical side wall and an end wall defining a rivet blank height slightly less than the height of the secondary bubble wall portion and a cup side wall of smaller diameter than the secondary bubble open end diameter while maintaining the cup end wall metal thickness the same as the thickness of the secondary bubble wall portion during formation of the rivet blank;

telescoping the tab hole over said cup-shaped rivet blank;

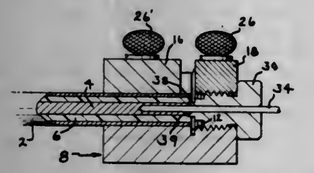
and axially pressing the rivet blank end and side walls and upset folding said side wall outwardly downwardly in the region where said side wall joins the rivet blank end wall to reduce the rivet blank height and to form a rim overlying the tab around the tab hole while internally supporting the cylindrical side wall of the rivet blank and while maintaining said internal support free of rivet blank end wall contact to maintain the end wall thickness of the upset rivet blank the same as the thickness of the rivet blank and wall before upsetting.

3,346,949

CABLE DRESSING MEANS

Armand Samuel Apa, Camp Hill, and George William Ziegler, Jr., Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Feb. 1, 1966, Ser. No. 524,215
8 Claims. (Cl. 29—560)



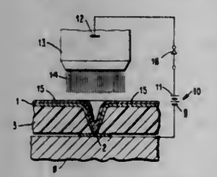
1. A cable cutting and dressing device comprising a block with a longitudinal passageway to receive a cable, means to secure said cable in said passageway, a thin slot in said block transverse to said passageway and extending fully therethrough for guiding a saw blade through cable placed in said passageway to permit an accurate cutting and facing of said cable, said block further including adjacent said slot further means to receive and secure attachments coaxial to said cable in said passageway for use in dressing the end of said cable after cutting and facing.

3,346,950

METHOD OF MAKING THROUGH-CONNECTIONS BY CONTROLLED PUNCTURES

Henry C. Schick, Hopewell Junction, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 16, 1965, Ser. No. 464,467
3 Claims. (Cl. 29—625)



1. A method of forming an electrical connection between a pair of conductive lines adhered to opposite faces of an insulator body comprising:

cleaning one face of said member to remove oxide film accumulations from the outer surfaces of conductive lines adhered thereto, including one line of said pair of lines;

controllably piercing an opening extending through one line of said pair and said insulator body and terminating at but not penetrating the other conductive line of said pair;

employing a perforating instrument dimensioned to cause deformation of the material of said one line in the pierced region beyond the elastic limit of said material thereby deforming said line to form a retaining wall in said opening which will tend to retain its shape upon removal of the instrument; and

depositing additional conductive matter into said opening to provide a permanent electrical connection between said pair of lines;

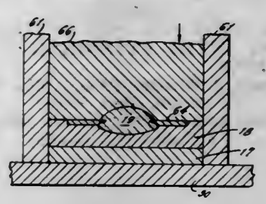
wherein said step of depositing is accomplished by an electroplating process in which the said other conductive line of said pair is connected to one terminal of a source of direct current and the opening region retained by the one line of said pair is controllably exposed through an electroplating solution to an electrode of an electroplating system including said source and said other line.

3,346,951

METHOD OF MAKING ELECTRICAL CONTACT ELEMENTS

Childress B. Gwyn, Jr., Export, Pa., assignor to Talon, Inc., Meadville, Pa., a corporation of Pennsylvania

Filed Feb. 24, 1966, Ser. No. 539,602
8 Claims. (Cl. 29—630)



1. A method of making a projection welding electrical make-and-break contact element comprising,

(a) providing a base contact member having a recess therein for receiving a metallic projection welding composition,

(b) depositing a finely divided metallic projection welding composition in said recess,

(c) forcing a forming member having an outwardly diverging forming contour against said metallic projection welding composition and said base contact member to inwardly deform the walls of said base contact member and simultaneously partially encompass and compact said metallic composition therein, a pre-form thereby being produced in which the remaining portion of said metallic projection welding composition is extruded outwardly of said walls, and

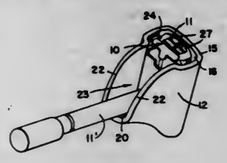
(d) forcing a second forming member having a substantially concave forming contour against the resulting pre-form to force the extruded metallic projection welding composition to envelop at least a portion of the deformed base contact member, the thus deformed compacted metallic projection welding composition interlocking with the previously inwardly deformed walls of said base contact member to thereby define a composite contact element having a projection welding surface formed integrally thereon.

3,346,952

SAFETY RAZOR HOLDER AND CASE

Theodore J. Harris, Greensboro, N.C., assignor of one-half to Michael Boosalis, Fayetteville, N.C.

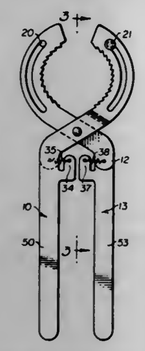
Filed May 11, 1965, Ser. No. 454,775
2 Claims. (Cl. 30—90)



1. A holder for the head of a razor of the Gillette type in a form of a molded, one-piece plastic body formed with a cavity for receiving said head, said cavity extending downwardly in said body to a depth corresponding substantially to the length of said head, said body being further formed with a slot therethrough extending along and communicating with said cavity for on the order of half the length of said cavity and through which the handle of said razor may project, the lower outer wall at the closed end of said cavity being formed with a narrow planar transverse base portion in a plane acute to said cavity, whereby in the razor supporting position

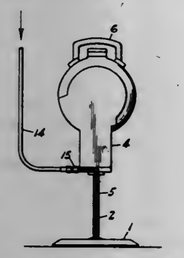
the lowermost surface of the free end of said handle is substantially in the plane of said base portion for increased stability of said holder, said body being formed with wall portions projecting rearwardly from the edges defining said slot which provide a channel for accommodating said handle.

3,346,953
MULTIPLE SECTIONAL PIPE CUTTER WITH THE CUTTING TEETH EXTENDING IN OPPOSITE DIRECTIONS
Charles J. Wheeler, RFD. 2, Box W–23, Burton, Ohio 44021
Filed Aug. 18, 1965, Ser. No. 480,575
6 Claims. (Cl. 30—95)



1. A cutter for tubing comprising:
(a) first and second sectioned cutters, the sections of each cutter being connected together for relative closing movement;
(b) means connected to the sections for causing such closing movements; and,
(c) means interconnecting the cutters to maintain each section of one cutter in juxtaposed close relationship to a corresponding section of the other cutter whereby on closing movement of the cutter sections, each section of the one cutter and the corresponding section of the other cutter are maintained in sufficiently close relationship to simultaneously effect cutting action in a single cut through a workpiece.

3,346,954
CLOTH SPREADING MEANS FOR CUTTING MACHINES
Lester J. Ulrich, Cheektowaga, N.Y., assignor to Eastman Machine Company, Buffalo, N.Y.
Filed May 2, 1966, Ser. No. 547,018
4 Claims. (Cl. 30—273)



1. In a material cutting machine having a base, a standard secured to said base and extending upwardly therefrom, said standard having front and rear edges, and a vertically reciprocating knife mounted on the front edge of said standard, that improvement which comprises primary fluid passage means through said standard from an upper portion thereof substantially to said base, means for supplying fluid under pressure to said primary passage means, and lateral outlet passage means from said primary passage means to the opposite sides of said standard for directing pressure fluid against the severed edges of material being cut and thereby reducing the friction between said standard and such material, wherein the width of said standard is greatest at a zone between said front and rear edges thereof, and wherein said lateral outlet passage means open through said standard substantially at said zone of greatest width thereof.

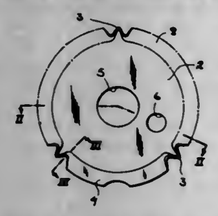
3,346,955
TREE AND HEDGE TRIMMER
Howard E. Beneke, 6988 Clifford Ave., Sylvan Beach, N.Y. 13157
Filed July 15, 1965, Ser. No. 472,216
5 Claims. (Cl. 30—276)



1. A tree trimming tool comprising a prime mover having a rotating output shaft, a rigid tubular casing fixedly secured at one end to said prime mover, the major portion of said casing extending linear from said prime mover, the opposite end portion of said casing being bent to substantially semi-circular form, a housing fixed to the opposite end of said casing and being positioned at one side of the axis of said linear portion, a cutter arbor journalled in said housing, the axis of said arbor extending substantially perpendicular to the axis of said linear portion, a cutter blade fixed to said arbor and being formed at its periphery with circumferentially spaced apart cutting teeth, a plate fixed to said housing and being positioned intermediate said blade and said housing, said plate extending in a direction lengthwise of said linear portion of said casing and in parallel spaced relation to said cutter blade, a pair of arms fixed to each end of said plate end extending laterally from opposite sides thereof, each of said arms including inwardly from its outer end toward said cutter blade and merging with the side edge of said plate at a point spaced from the axis of said arbor comparable to the radius of said cutter blade, a chip deflecting shield fixed to the end of said plate confronting said prime mover, and a flexible shaft extending through said casing and being operatively connected at its ends to said output shaft and said arbor.

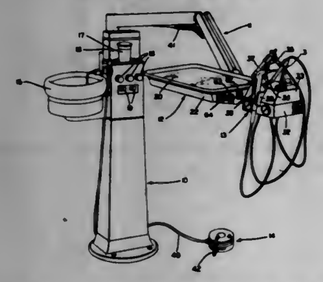
3,346,956
BLADE DISK FOR SKINNING DEVICES AND THE LIKE
Walter Wezel and Hans Wezel, Maulbronn, Wurttemberg, Germany, assignors to Firma Schmid & Wezel, Maulbronn, Wurttemberg, Germany, a corporation of Germany
Filed Sept. 23, 1965, Ser. No. 502,794
Claims priority, application Germany, Feb. 9, 1962, Sch 30,959
5 Claims. (Cl. 30—347)

1. An annular blade disk of generally circular configuration formed with a marginal portion having a peripheral array of generally radially extending teeth and a laterally concavo-convex central portion integral with said marginal portion, said concavo-convex central portion extending substantially up to the roots of said teeth, said marginal portion being of generally arcuate configuration and centered on the axis of said disk, said central portion being generally coaxial with said marginal portion, said teeth having blunt extremities and sharp cutting



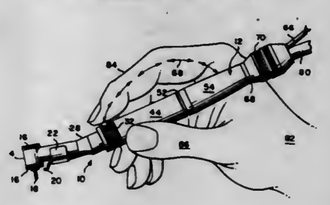
edges flanking said extremities, said teeth being provided with depressions terminating along lines parallel to said edges and inwardly thereof along the concave surface of said disk.

3,346,957
DENTAL INSTRUMENT UNIT CONSTRUCTION
John A. Maurer and Kenneth R. Lappin, Canton, Ohio, assignors to Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Nov. 2, 1964, Ser. No. 408,155
10 Claims. (Cl. 32—22)



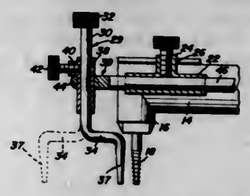
1. Dental instrument unit construction of the type in which tray means is mounted through a pivotal tray arm on a unit base for selected pivotal movement of the tray arm relative to the unit base and thereby movement of the tray means to selected horizontal and vertical locations, and in which dental instruments are operably and selectively removably connected to the unit for selective removal and use by the dentist in performing dental work on a patient positioned adjacent the unit base; the improvements which include a tray positioned on the tray means extending generally horizontally, instrument holder means supported totally on and movable directly with the tray means for removably holding at least one dental instrument, at least one dental instrument removably positioned on the instrument holder means, wall members formed on the tray means positioned underlying the tray and forming an instrument supply and regulation compartment underlying said tray, supply means extending through the supply and regulation compartment of the tray means and movable directly with the tray means and operably connected to the dental instrument for directing at least fluids to the supply and regulation compartment and through said compartment to the instrument holder means and said dental instrument for use in operation of said instrument, and regulation means at least partially in the supply and regulation compartment of the tray means operable connected to the supply means for regulating the flow of fluid to said dental instrument; whereby, the dental instrument when not in use, as well as the fluid regulation means therefor, are always conveniently positioned at and movable directly with the tray means readily accessible by the dentist.

3,346,958
FINGER CONTROL FOR DENTAL HANDPIECE
Charles E. Sinatra, Jamestown, and William Tanaki, Jr., Buffalo, N.Y., assignors to Star Dental Manufacturing Company, Inc. (also known as Star Dental Manufacturing Co., Inc. and Star Dental Mfg. Co., Inc.), Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1963, Ser. No. 328,623
19 Claims. (Cl. 32—28)



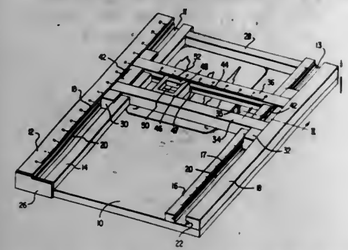
1. A dental handpiece comprising a housing, rotatable chuck means within said housing, a first electrical means associated with said housing, a second electrical means associated with said housing, said first and second electrical means being electrically isolated, said electrical means being electrically connected to switch means, said switch means adapted to stop and start the rotation of said chuck means, said first and second electrical means adapted to be electrically connected by electrical contact with the hand of the user of the handpiece, thereby closing said switch means and starting the rotation of said chuck means.

3,346,959
DENTAL PARALLELING HANDPIECE
David S. Fridge, 1709 Springhill Ave., Mobile, Ala. 36604
Filed Feb. 25, 1964, Ser. No. 347,142
8 Claims. (Cl. 32—67)



1. For use when drilling parallel holes in teeth for insertion of pin-ledge attachments for fixing bridgework or drilling parallel grooves for insertion of other fixed bridgework abutments including three-quarter crowns; a paralleling handpiece comprising: in combination, an elongated housing having a leading end terminating in a drill head rigidly supported from said housing and equipped with a power driven drill operating at right angles to the lengthwise dimension of said head, a complemental elongated paralleling gauge having a terminal end portion constituting a guide and whose longitudinal axis is parallel to the corresponding axis of said drill, a pair of guides rigidly supported on diametrically opposite sides of said head, an elongated extensible and retractible carrier including rigid parallel longitudinal limbs having free rearwardly projecting end portions straddling said head and longitudinally slidingly, guidingly, adjustably and retentively supported from said guides against angular displacement and for longitudinal adjustment of said carrier relative to said head, the forward ends of said limbs being rigidly interconnected by a bight portion extending therebetween forward of the leading end of said head and from which said paralleling gauge is supported.

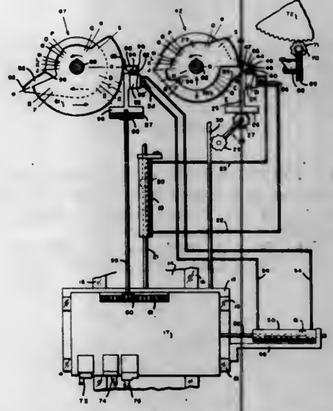
3,346,960
CHART SCANNING APPARATUS
Leon H. Miles, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,949
10 Claims. (Cl. 33—1)



1. A chart scanning apparatus, especially for drill stem test charts, comprising a broad base means; first guideway means secured on the base means disposed along one edge thereof and comprising a first pair of parallel, spaced apart guide rails defining therebetween a first guideway; second guideway means secured on the base means disposed along the edge thereof opposite said one edge and comprising a second pair of parallel, spaced apart guide rails defining therebetween a second guideway; major sliding means comprising a first carriage means movable along the first guideway, a second carriage means movable along the second guideway, and a pair of parallel, first resilient means for applying a force against at least one of said first and second carriage means to cause the one carriage means to normally bear against one of the guide rails spaced apart cross rails secured at the opposite ends thereof to the first and second carriage means and adapted to move therewith along the first and second guideways, said pair of cross rails defining therebetween a third guideway; minor sliding means comprising a third carriage means carrying pointer means movable along said third guideway and second resilient means for applying a force against the third carriage means to cause the third carriage means to normally bear against one of the cross rails; elongated fixed first scales on one rail of each of said pairs of guide rails and on one of said cross rails and extending along, respectively, said first, second and third guideways; vernier scales mounted on each of said first, second and third carriage means close to and parallel to a respective said first scale for accurately reading said first scales; and abutment means adjacent the opposite ends of said first and second guideway means for retaining said first and second carriage means in said first and second guideways and for locating a chart to be worked upon, said vernier scales on said first and second carriage means being movable together longitudinally along said guide rails and said vernier scale on said third carriage means being movable independently of said vernier scales on first and second carriage means along said cross rails whereby said pointer means may be accurately positioned on said chart.

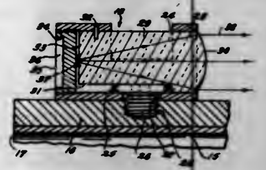
3,346,961
PROGRAM CONTROL
Edward P. Bullard III, Fairfield, Conn., assignor to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed Aug. 18, 1965, Ser. No. 480,748
4 Claims. (Cl. 33—18)

1. A rotatable composite template for controlling the movement of a member along rectilinear intersecting paths comprising a rotatable member having a plurality of separate stylus engaging surfaces formed thereon defining a plurality of separate template components disposed in closely spaced parallel relation and including a pair of template components for each of said rectilinear paths, each of said pairs of components having cooperatively related stylus engaging surfaces defined by polar coordinates proportional to axis coordinates of the desired movement of said member along one of said rectilinear paths, the stylus engaging surfaces of the separate components of each said pair having effective portions defined by the corresponding axis coordinates of said member for movement in oposite directions along the respective rectilinear path, each said pair of stylus engaging surfaces having a predetermined substantially uniform radial spacing therebetween at predetermined polar coordinates



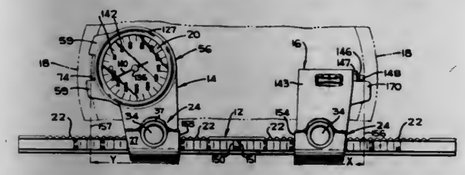
defining the end points of the effective portions thereof whereby said pair of surfaces is adapted to be simultaneously engaged by a pair of stylus members symmetrically mounted on a single stylus support at said predetermined polar coordinates, said stylus engaging surfaces being disposed (and means for supporting all of said components with the stylus engaging surfaces thereof disposed in spaced parallel relation and) in fixed angular position relative to each other such that the polar coordinates of the respective components are correlated to produce the desired movement of said member along said rectilinear intersecting paths.

3,346,962
BINOCULAR FRONT SIGHT
George C. Luebkeman, 115 Mount Nebo Road, Cleves, Ohio 45002
Filed Aug. 25, 1965, Ser. No. 482,520
6 Claims. (Cl. 33—52)



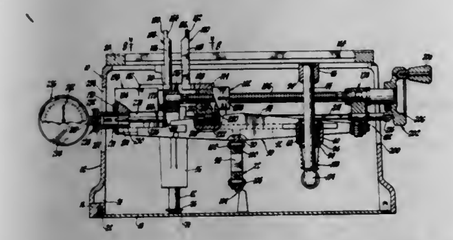
1. A binocular front sight for firearms comprising a sleeve member adapted to be mounted upon a gun barrel, an elongated transparent body member having a hemispherically curved end projecting through the breach end of the sleeve member and having its muzzle end terminated short of the opposed end of the sleeve member, means fixing the body in the sleeve, and an interchangeable spot carrying member mounted within the opposed end of the sleeve member and in front of the muzzle end of the body member.

3,346,963
GAUGE
Melvin H. Lill, Okemos, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,363
5 Claims. (Cl. 33—147)



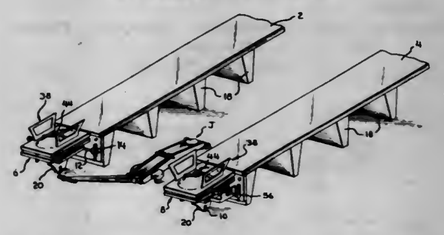
5. In a brake drum measuring gauge, an elongate mounting bar having a series of transverse notches with bottom portions in a common plane, a housing encircling and slidable along said mounting bar, said housing having two diverging planar wall surfaces transversely related to and spaced from said mounting bar to define a wedge-shaped chamber extending across said mounting bar intermediate said housing and said mounting bar, a wedge member slidably mounted in said housing for linear movement in said chamber transversely of said mounting bar between a locking and unlocking position, said wedge member having side walls slidably engaged with said diverging walls of said housing and a toothed bottom wall which is angularly related to the path of movement of said wedge member and parallel to said common plane, said toothed wall being engaged with a selected notch when said wedge member is in said locking position, and out of engagement with a notch when in said unlocking position to release said housing for selective positioning along said mounting bar, and a spring resiliently urging said wedge member toward said locking position.

3,346,964
GAGING DEVICE
James R. Schiller, Grosse Pointe, Eric M. Pohl, Southfield, and Albertus Smeitink, East Detroit, Mich., assignors to Speedring Corporation, Warren, Mich., a corporation of Michigan
Filed Mar. 3, 1966, Ser. No. 531,588
30 Claims. (Cl. 33—147)



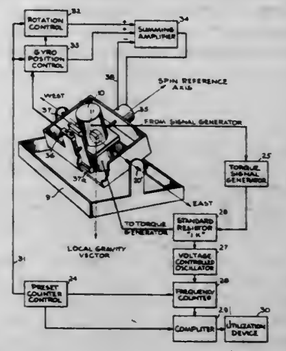
1. A gaging device comprising a housing, said housing including a workpiece supporting surface having an elongated slot therethrough, an elevator member disposed within said housing, means for vertically raising and lowering said elevator member, a first workpiece engaging probe extending through said slot, means for traversing said first probe throughout a substantial part of the length of said slot, a device for rendering inoperative said traversing means, means for supporting said first probe upon said elevator member for limited longitudinal movement within said slot independently of said traversing means, a second workpiece engaging probe extending through said slot, means supporting said second probe upon said elevator for limited longitudinal movement within said elongated slot, an indicator secured to said second probe supporting means and movable with said second probe, a member extending from said first probe supporting means and operatively engaging said indicator to actuate said indicator whenever said traversing means is inoperative and one of said probes moves relative to the other.

3,346,965
METHOD AND APPARATUS FOR ALIGNING THE FRONT WHEELS OF AN AUTOMOBILE
Melvin E. Piper, 2324 Union Ave., Altoona, Pa. 16602
Filed June 26, 1964, Ser. No. 378,270
8 Claims. (Cl. 33—203.14)



1. An alignment device for the front wheels of an automobile comprising spaced parallel tracks, a carrier at the ead of each track, means mounting each carrier for adjustment laterally of the tracks to accommodate the front wheels, a base mounted on each carrier gripping means mounted on each base for gripping a wheel, and means for adjusting each base transversely of the tracks independently of the carrier.

3,346,966
GYRO COMPASS MISALIGNMENT MEASURING APPARATUS AND METHOD
Robert L. Gates, Palos Verdes Estates, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed Mar. 28, 1962, Ser. No. 183,139
6 Claims. (Cl. 33—226)

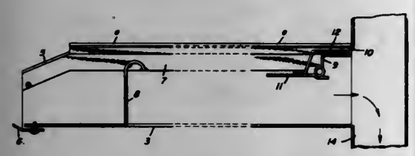


1. In combination,
a single inertial gyro having a spin reference axis and an input axis at right angles to each other,
said spin reference axis and a local gravity vector defining a first plane,
means for supporting said spin reference axis in said first plane at the local latitude angle with respect to a local horizontal plane perpendicular to said local gravity vector and with said first plane in alignment with the local meridian plane,

means for locating said input axis in a first position in said local horizontal plane,
means for locating said input axis in a second position in said local horizontal plane,
means for measuring the total gyro drift rate of said gyro with said input axis in said first position and in said second position,
and means responsive to said gyro drift rate in said first position and said second position for determining the misalignment of said first plane with respect to said local meridian plane.

3,346,967
SHELF CONSTRUCTION FOR A MULTISTAGE DRYER FOR BODIES IN PLATE OR SHEET FORM

Alpo Eino Mäkinen, Ratakatu 5, Jyvaskyla, Finland
Filed Oct. 20, 1964, Ser. No. 405,125
3 Claims. (Cl. 34—239)

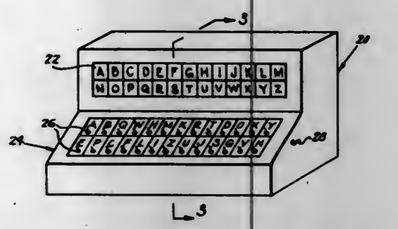


1. A shelf construction for a multistage dryer used for drying pervious bodies such as veneer sheets in plate or sheet form, the shelf being made of sheet material and corrugated to form parallel crests directed alternately upwardly and downwardly, the body being dried resting upon the upwardly directed crests of the shelf, there being an upwardly open channel between successive upwardly directed crests and a downwardly open channel between successive downwardly directed crests, and means extending transversely of the upwardly open channels at a first end thereof for closing the channels at said first end thereof, said upwardly open channels being open in at least the middle portion so as directly to communicate with the lower face of the pervious body which overlies such channels, the second end of each upwardly open channel being adapted to be connected to a collection channel, whereby drying medium fed to the shelf from above a sheet of material resting upon the upwardly directed crests of the shelf passes through the pervious material into the upwardly directed channels of the shelf and thence to the collection channel connected thereto.

3,346,968
ELECTRICAL ALPHABETICAL AND NUMERICAL EDUCATIONAL MACHINES

Basil W. Dellinger, Metairie, La., assignor of fifty percent to L. W. Graham, New Orleans, La.
Filed Feb. 1, 1965, Ser. No. 429,213
6 Claims. (Cl. 35—6)

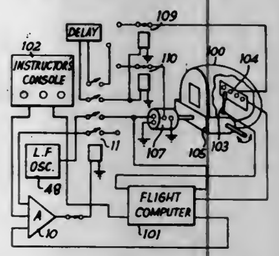
1. An electrical education apparatus permitting visual comparison of indicia arranged in proper sequence with corresponding indicia randomly arranged for teaching the user to compare the two sets of indicia and to make the proper selection from the randomly arranged indicia, comprising:
an enclosure having openings therein;
properly arranged light transmitting sequential indicia mounted in openings in the enclosure;
a plurality of lamps mounted in the enclosure for individually lighting the indicia;
a plurality of switches mounted in enclosure openings;
indicia corresponding to the sequential indicia marking the switches, said switches and associated indicia being randomly arranged;
a circuit interconnecting the first of the sequential indicia lamps and its corresponding switch to energize the first lamp when the first switch is closed and to apply power to the switch corresponding to the second indicia; and



a plurality of circuits individually interconnecting the second and subsequent sequential indicia lamps with the respective switches for energizing the lamp individually and applying power to the switch corresponding to the next sequential indicia lamp for permitting the second and subsequent sequential indicia lamps to be energized only when the next previous sequential indicia lamp has been energized.

3,346,969
HELICOPTER GROUND RESONANCE SIMULATOR

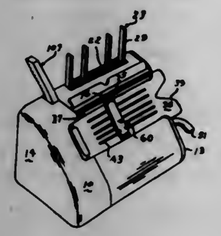
Ronald Arthur Marvin, Horsham, England, assignor to Communications Patents Limited
Filed June 1, 1965, Ser. No. 460,391
Claims priority, application Great Britain, July 1, 1964, 27,265/64
4 Claims. (Cl. 35—12)



1. Helicopter flight simulating apparatus, comprising
means generating a first direct-current signal voltage as a function of simulated aircraft rotor speed, said signal having a peak amplitude between maximum and minimum amplitudes within a simulated critical range of rotor revolutions per minute;
means generating a second signal voltage as a function of a simulated factor affecting ground resonance;
a source of direct-current threshold voltage the polarity of which is opposite that of said first signal voltage;
summing means for adding said first, second and threshold voltages to produce a resultant control voltage;
normally de-activated motion and flight system means including a low frequency oscillator and mechanical vibration means for simulating to a user's perception the physical and visual effects, respectively, of ground resonance; and
means operable only when said control voltage has the same polarity as said first signal voltage for activating said motion and flight simulating system means, said system activating means including in series connection a uni-directional conductive device.

3,346,970
RECORDING APPARATUS

Wilson A. Charbonneaux and George S. Hansley, Dayton, Ohio, assignors to WacLine, Inc., Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 258,986, Feb. 18, 1963. This application May 17, 1965, Ser. No. 464,593
16 Claims. (Cl. 35—48)



1. A unit for scoring tests involving a series of questions the proposed answers to which are represented by perforations on punched cards or the like including a housing having means for comparing each answer on a card to a representation of the correct answer stored in said housing characterized by a scanner, means for moving the scanner from answer to answer to sense the correctness or incorrectness of the answer by comparison thereof with a representation of the correct answer, means in said scanner operative to transmit a signal of the sensing of a correct answer, means in operative connection to said scanner moving means and moving with said scanner to respond to said signal to notch the card accordingly, other means controlled by said scanner independently of the first mentioned notching means and operating on observation of an incorrect answer to notch the card accordingly and means in said scanner operative to induce operation of said second mentioned notching means on observation thereby of multiple perforations indicating an answer recorded in an alternative form.

3,346,971
SHOE ATTACHED WEAPON

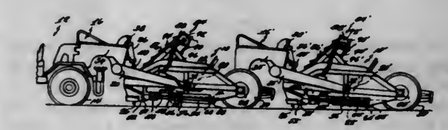
Edward J. Kiwala, 6338 N. Melvina Ave., Chicago, Ill. 60646
Filed May 25, 1966, Ser. No. 552,864
6 Claims. (Cl. 36—2.5)



1. In combination, a heavy duty shoe designed and adapted to be worn by policemen, members of the National Guard, soldiers and other members of an armed force and embodying an upper and complemental underlying bottom including sole, heel and shank portions, and weapon means underlying and fixedly mounted on said sole, heel and shank portions and providing a self-contained part of the over-all shoe, said means being designed and adapted to increase the wearer's offensive capability and defensive skill and to accordingly prepare him for conflict when, for example, battling with and combating an aggressive enemy, said weapon means embodying several cooperating integrated relatively fixed component parts, a first one of said parts comprising a rigid enemy attacking and pain inflicting blade having a leading edge provided from end to end with coplanar rigid teeth, said toothed blade being in a plane with and projecting forwardly beyond the forward toe portion of said sole portion.

3,346,972
HYDRAULIC CIRCUITS FOR EARTH SCRAPING MACHINES

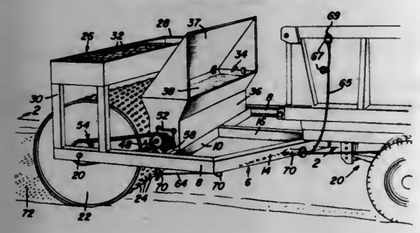
Charles M. Johnson, Lubbock, Tex., assignor to Johnson Manufacturing Company, Lubbock, Tex., a corporation of Texas
Filed Jan. 14, 1965, Ser. No. 425,433
3 Claims. (Cl. 37—8)



1. An earth scraping machine comprising: a mobile dirt-carrying container having upright side walls, a longitudinally movable rear wall and a longitudinally movable bottom wall section at the front of said container, said section carrying a downwardly extending dirt-scraping blade at its forward edge; an endless scraper-type conveyor mounted in said container between said side walls; hydraulic ram means for raising and lowering the front end of said container with respect to the ground; hydraulic ram means for moving said rear wall forwardly and rearwardly; hydraulic ram means for moving said bottom wall section forwardly and rearwardly; rotary hydraulic motor means for operating said conveyor; a power source including two hydraulic pumps and a reservoir of hydraulic fluid; a first hydraulic circuit including conduit means connecting one of said pumps with said motor and a motor flow control valve for controlling the flow of hydraulic fluid in said circuit; a second hydraulic circuit separate from said first circuit and including conduit means connecting the other of said pumps with the hydraulic ram means associated with the front end of said container, said bottom wall section and said rear wall, said second circuit including a lift flow control valve associated with the ram means for moving the front end of the container; a dump flow control valve associated with the ram means for operating the bottom wall section and rear wall; means associated with said dump valve for sequentially operating the last-named ram means; and a trailing scraping machine mechanically coupled to and of the same construction as said first-named scraping machine, said trailing machine having hydraulic ram means for raising and lowering its front end, hydraulic ram means for moving its rear wall, hydraulic ram means for moving its bottom wall section and rotary hydraulic motor means for operating its conveyor and wherein said motor, lift and dump flow control valves are three-position, four-connection spool valves each having two control ports and two work ports, said first hydraulic

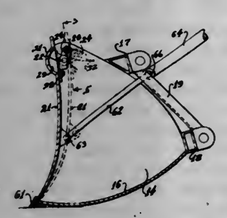
circuit including a second motor flow control valve connected in series with said first-named motor flow control valve, said second hydraulic circuit including a second lift valve in series with said first-mentioned lift valve, a second dump valve in series with said second lift valve, said first-mentioned dump valve being in series with said second dump valve.

3,346,973
SNOW ROLLER
Paul F. Meyer, 2115 Strathmoor Blvd., Louisville, Ky. 40205, and John L. Wolfe, deceased, late of Louisville, Ky., by Victoria V. Wolfe, executrix, 4559½ S. 1st St., Louisville, Ky. 40214
Filed Nov. 10, 1964, Ser. No. 410,317
4 Claims. (Cl. 37—10)



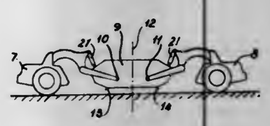
3. A snow treating machine comprising, in combination, a snow compacting roller, a frame mounted on said roller, means on the frame for depositing a melting agent on the snow in the path of the roller to be forced into the snow thereby, said means being characterized by a hopper mounted on said frame for reception and dispensing of the melting agent, said hopper having a discharge opening an agitator for the melting agent operatively mounted within the confines of the hopper, and means for actuating said agitator, said last-named means comprising a chain and sprocket drive operatively connected to said roller, and a clutch device for releasably connecting said sprocket drive to said agitator.

3,346,974
BULLDOZER AND BUCKET
John A. Haynes, 14B Brown Ave., Sylacauga, Ala. 35150
Filed Apr. 7, 1965, Ser. No. 446,284
16 Claims. (Cl. 37—117.5)



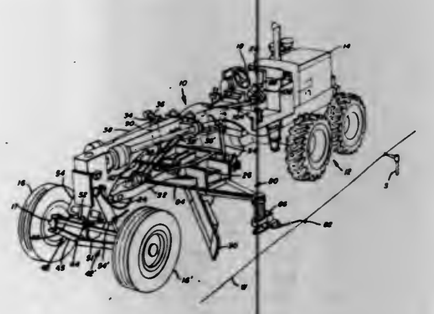
1. In a bulldozer and bucket unit adapated to be supported on a translatable frame,
(a) a pair of horizontally spaced side walls,
(b) a bottom wall extending between and connected to lower portions of said side walls,
(c) a blade pivotally supported between said side walls and adapted for pivotal movement to a first position adjacent the front edge of said bottom wall in position to operate as a buldozer blade and to a second position adjacent the rear edge of said bottom wall in position to define with said side walls and said bottom wall a forwardly opening bucket,
(d) said blade being adapted to move selectively to a lower position with the lower edge thereof below the front edge of said bottom wall and to an upper position with the lower edge thereof above said front edge of said bottom wall,
(e) means to move said blade selectively to said lower position and said upper position while said blade is in said first position adjacent said front edge of the bottom wall, and
(f) means to move said blade while in raised position selectively to said first position and said second position.

3,346,975
MOTOR-SCRAPER
Pierre Lajoye, 40 Rue de la Vacquiniere, Montigny-les-Metz, France
Filed Apr. 12, 1965, Ser. No. 447,460
Claims priority, application France, Apr. 13, 1964, 44,683
1 Claim. (Cl. 37—118)



In a motor-scraper the combination of a loader having a bowl and provided at each end with an earth scraping blade, said loader being similarly pivotally suspended between two independent engine-driven tractors oriented back to back, each tractor being mounted on a single two-wheel axle and each tractor having an articulated connection for suspending said bowl, said connection comprising means providing longitudinally spaced vertical and horizontal pivot connections with an end of said bowl and a respective tractor, and means on said tractors for optionally pivoting the opposite ends of said bowl in a vertical direction with reference to the tractors.

3,346,976
LEVEL CONTROL MECHANISM FOR ROAD BUILDING MACHINES
John Curlett, Los Gatos, and Raymond A. Gurries, San Jose, Calif., assignors to Gurries Manufacturing Co., San Jose, Calif., a corporation of California
Filed Sept. 16, 1964, Ser. No. 396,827
16 Claims. (Cl. 37—156)



15. Level control mechanism for the working implement of a road building machine including a frame having mobile support means and carrying the working implement which level control mechanism comprises frame-adjusting means connected between said frame and said mobile support means for varying the vertical angular relation therebetween in the direction of machine travel and means operatively associated with an external grade reference defining a rectilinear path extending generally along the path of machine travel for actuating said frame adjusting means to maintain the longitudinal disposition of said frame in substantially constant vertical angular relation to such rectilinear path.

3,346,977
IMAGE REPRODUCING DEVICE
Hans Fredrik Rydstrom, Hognasvagen 17, Lidingo 1, Sweden
Filed Apr. 24, 1964, Ser. No. 362,347
Claims priority, application Sweden, Apr. 26, 1963, 4,575/63
1 Claim. (Cl. 40—28)

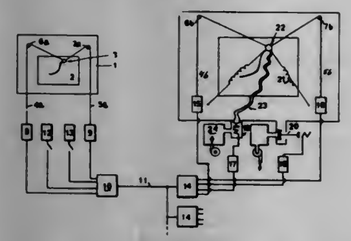
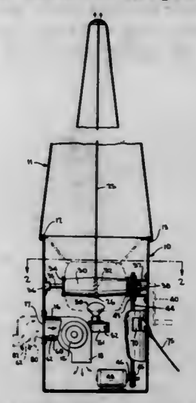


Image reproducing device for remotely controlled presentation of an image comprising in combination a contrast screen having a front surface defined by apertures of recesses arranged in a mosaic pattern and comprising in each of said recesses at least one pressure sensitive contrast means, each of said contrast means comprising a movable non-black contrast element arranged so as to be moved into two different positions, a first position, the bright position, in which said contrast element is located adjacent the screen surface and is visible at said front surface, and a second position, the dark position, in which said contrast element is more remote from the screen surface than in said first position and essentially invisible at the front surface, and means for the controllable application of a pressure on each individual contrast means for bringing said contrast element from one of said positions to the other and vice versa, comprising a source of pressurized air, an air nozzle for generating an air jet, a valve for controlling air flow from said source of pressurized air to said nozzle, means for moving said nozzle in a scanning movement at the rear side of said screen for controllably directing an air jet at the rear of said apertures of said recesses in order to bring said contrast elements from said second position into said first position, and means for controllably exposing said rear apertures of said recesses to a vacuum in order to bring said contrast element from said first position into said second position.

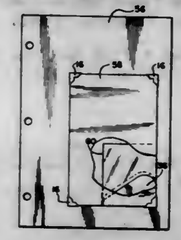
3,346,978
ADVERTISING DEVICE
Thomas N. Letsinger, R.F.D. 2, Bartlett Drive, Newburgh, Ind. 47630
Filed Apr. 19, 1965, Ser. No. 449,260
4 Claims. (Cl. 40—130)

1. An advertising device of the class described which comprises, in combination, a substantially cylindrical barrel-like base structure having an open top, an elongated tubular inflatable fabric structure having a peripheral margin secured to the peripheral upper edge portion of said base structure, gaseous fluid pumping means wholly contained within said base structure for discharging into said inflatable fabric structure, means for retracting said fabric structure in its entirety into said barrel-like base structure, means being provided entirely within said base structure and in association with said pump for generating



colored smoke and injecting it into the flow of said gaseous fluid into said fabric structure, and openings in the top of said faric structure for the emission of a column of the resulting colored gaseous product.

3,346,979
COMBINED NEGATIVE AND PHOTOGRAPH CORNER MOUNTING
Walter A. Milos, 552 Fernwood Terrace, Linden, N.J. 07036
Filed Aug. 2, 1965, Ser. No. 476,403
7 Claims. (Cl. 40—158)



1. A combined negative and photograph corner mounting comprising plural plies of sheet material each having adjacent perpendicularly related edges and a generally triangular configuration, a lower ply, an intermediate ply overlying said lower ply, an upper ply overlying said intermediate ply, the corresponding perpendicularly related edges of said plies being substantially superposed and closed throughout at least a portion of their lengths to form a pair of superposed pockets opening outwardly from said closed edges, said lower and intermediate plies extending further outwardly from said closed edges than the respective immediately overlying ply, each of said pockets being defined in part by said intermediate ply, and adhesive means on said mounting for securing the same to a backing material.

3,346,980
LIVESTOCK EAR TAG
John W. Wallace, 3426 Marysville Blvd., Sacramento, Calif. 95838
Filed Aug. 16, 1965, Ser. No. 479,732
3 Claims. (Cl. 40—302)

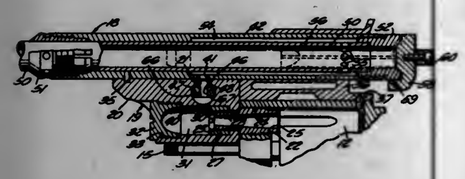
1. A livestock ear tag comprising:
(a) a loop of flat stock engageable with an animal's ear and having at each end a sharply curved portion

between two substantially parallel portions lying on opposite sides of the animal's ear in close juxtaposition thereto, one of said sharply curved portions extending around the edge of the ear, the other of said sharply curved portions having a formation to pierce the ear of the animal and clinch said loop closed; and



(b) a sheet of material including a base support portion interposed between one of said parallel portions of said loop and the underlying surface of the ear, said base portion being pierced by said loop, and an upstanding portion connected to said base portion, said upstanding portion being approximately at right angles to said base portion and bearing an identifying indicium.

3,346,981
BLANK CARTRIDGE PISTOL FOR PROPELLING PROJECTILES
Patrick MacDonald Tabor, Sierra Madre, Calif., assignor to Mercox, Inc., Pasadena, Calif., a corporation of California
Filed May 2, 1966, Ser. No. 546,979
5 Claims. (Cl. 42—1)



1. A hand-held weapon for propelling projectiles including a mechanism for successively firing plural explosive charges to provide gas pressure for propelling projectiles, the improvement comprising

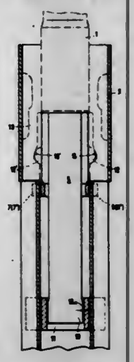
body assembly means secured with said mechanism, said body assembly means having a bore therein for receiving gas from an exploded charge, and having a gas chamber therein communicating with said bore for receiving said gas,

gas pressure selector valve means mounted in said body assembly means and including a plurality of different size orifices communicating with said gas chamber,

a barrel assembly for receiving a projectile, said barrel assembly being secured to said body assembly means and including an annular chamber therein providing a gas flow path from said gas chamber through one of said orifices in said valve means to the bore of said barrel assembly for propelling a projectile, and

said valve means being operable to select any one of said orifices to change the gas pressure applied from said gas chamber through a selected orifice and said annular chamber to the bore of said barrel assembly.

3,346,982
BOLT ASSEMBLY FOR SEMI-AUTOMATIC FIREARMS
Theodor Löffler, Mullheim, Baden, and Gerhard Freudig, Hugelheim uber Mullheim, Baden, Germany, assignors to Rheinmetall G.m.b.H., Dusseldorf, Germany, a German company
Filed Oct. 26, 1965, Ser. No. 505,263
Claims priority, application Germany, Oct. 29, 1964, R 39,130
3 Claims. (Cl. 42—16)



1. In an automatic firearm having a receiver, a straight-pull bolt including a locking end adapted to be locked with the receiver on longitudinal movement relative thereto, a control piece and locking bodies operatively connected to said bolt and said control piece for locking said bolt with said receiver upon actuation thereof by said control piece, the combination therewith of means for supporting the bolt for movement into locked position comprising:

a plurality of pairs of guide lugs fixed on said bolt adjacent the locking end thereof and having a longitudinal dimension which is small in relation to the longitudinal dimension of said bolt,

a plurality of guide tracks within the receiver and extending longitudinally thereof for the entire distance traversed by said guide lugs during movement of said bolt into the locked position,

each pair of guide lugs being spaced a small distance from a corresponding one of said guide tracks and engaging said one guide track so as to be restrained substantially to longitudinal movement only along said one guide track and thus preclude turning movement of said bolt about the longitudinal axis thereof while permitting limited misalignment thereof relative to said receiver, and

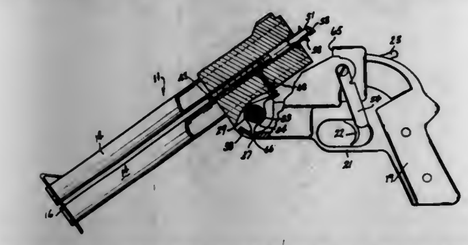
a bolt holder movable longitudinally of the receiver upon firing of the firearm and having a bore therethrough encircling the other end of the bolt with a clearance space being provided therebetween,

said small distances and clearance space between said guide lugs and guide tracks and between said bolt and said bolt holder permitting accommodation of manufacturing tolerances present in the firearm.

3,346,983
AUTOMATIC CARTRIDGE EJECTOR DEVICE
Julius E. Brooks, Branford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Dec. 21, 1965, Ser. No. 515,381
1 Claim. (Cl. 42—47)

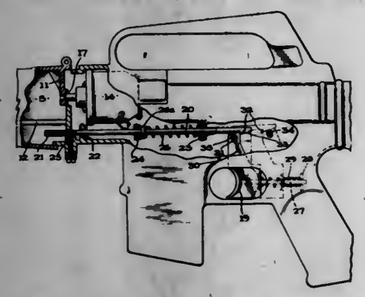
A combined barrel lock and ejector device for a firearm comprising a barrel member pivotally mounted to a receiver member, said barrel member being movable relative to the receiver member from a locked position to a

second position defining an ejection position, bolt means slidably mounted in the barrel member, a counterbore formed in the receiver member operative to receive one end of the bolt means when the barrel member is in the locked position, spring means for urging the bolt means into the counterbore to lock the barrel member, cam means for driving the bolt means out of the counterbore to unlock the barrel member and ejector means carried



by the bolt means and movable relative thereto, automatic sear means cooperating with the bolt means for limiting movement of the bolt means relative to the counterbore, trigger means cooperating with the sear means and the receiver member when the barrel member is in the open position effective to trip the sear means and release the bolt means to permit the spring means to drive the bolt means and the ejector means to effect a cartridge ejection function.

3,346,984
COMBUSTIBLE GAS TOY GUN
Riley Lohr, Lancaster, Pa., assignor to John H. Hartman, Jr., Strasburg, Pa.
Filed Nov. 17, 1965, Ser. No. 508,350
6 Claims. (Cl. 42—55)



1. A combustible gas detonating device, comprising, a fixed housing, a forward assembly slidably mounted with respect to said housing, a combustion chamber between said housing and assembly, said assembly movable from a forward purging position whereby said chamber is open to the atmosphere to a closed firing position whereby said chamber is sealed from the atmosphere by the rear portion of said assembly, metered gas dispensing means mounted in said housing adjacent the rear of said chamber, actuating means carried by the rear portion of said assembly engageable with said gas dispensing means after said assembly is first moved to the closed firing position and subsequently moved rearwardly an additional amount from said firing position to charge said chamber with gas, spring means automatically returning said assembly forwardly to the firing position after release of manual rearward pressure upon said assembly, feed means delivering a constant supply of gas to said dispensing means, and finger-actuated igniting means mounted in said housing and extending into said chamber.

3,346,985
RECOIL ABSORBING MEANS FOR FIREARMS
Val A. Browning, Ogden, Utah, assignor to Browning Industries, Incorporated, Morgan, Utah, a corporation of Utah
Filed Sept. 15, 1966, Ser. No. 579,684
9 Claims. (Cl. 42—74)



1. A firearm including, in combination, a barrel un including a breech; a stock; a resilient, recoil buffer pa disposed between said breech and said stock; and mean securing said stock and breech together for compression loading said buffer pad therebetween.

3,346,986
WEIGHTING MEANS FOR FISHING LINE
Veikko V. Tikkainen, 4604 29th Ave. S., Minneapolis, Minn. 55406
Filed Feb. 3, 1965, Ser. No. 430,011
4 Claims. (Cl. 43—43.12)



3. A weight retaining means for a fishing line comprising

a plurality of elongated flexible strands of relatively small gauge material disposed to form an enclosure when naturally separated,

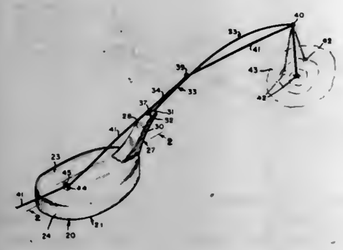
means rigidly securing together in contact relationship adjacent ends of said strands, and

means adjacent said last mentioned means for securing fishing line portions thereto.

3,346,987
SUSPENDED BAIT LURE
Woodrow D. Cornwell, Box 54, Middletown, Va. 22645
Filed Mar. 19, 1965, Ser. No. 441,039
1 Claim. (Cl. 43—43.15)

A suspended bait lure comprising a hollow body member of one-piece molded plastic construction having a flat bottom wall, said body member including a side wall portion and a top wall, a weight mounted in the bottom wall, said body member including an upstanding neck portion that extends upwardly and outwardly from an

end of the body member and wherein the upper outer end portion of the neck portion is offset outwardly and away from the body member, there being a slot in the upper outer end of said neck portion, said neck portion having an opening therein adjacent said slot, a fine springy wire having a portion thereof extending through said slot and said wire having a portion extending through the

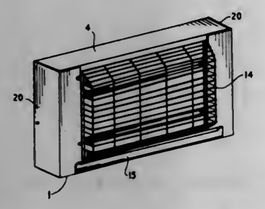


opening in the neck portion, said wire having looped portions providing eyelets, an upwardly extending projection on the top of said body member and said projection having a tapered slot therein, and a fishing line extending through said tapered slot and also extending through said eyelets, and said fishing line adapted to be connected to a fishing reel, and said fishing line adapted to have a hook connected thereto.

3,346,988
ELECTRICAL INSECT CATCHER

Barry Ernest Pickering, Glebe, New South Wales, Australia, assignor to Henry Simon (Australia) Limited, Glebe, New South Wales, Australia, a corporation of Great Britain

Filed Mar. 1, 1965, Ser. No. 436,012
Claims priority, application Australia, Feb. 28, 1964, 41,448/64
4 Claims. (Cl. 43—112)

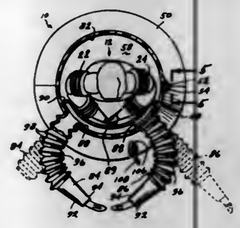


1. An electrical exterminator for flying insects comprising a frame supporting a substantially vertical electrified grid extending over the area bounded by the said frame, a source of light of short-wave characteristics attractive to flying insects but harmless to human beings on one side of the grid, and wherein the said electrified grid and the short-wave light source are supported from elements of the said frame, said frame also supporting both a cowling for housing the electrical activating apparatus and connections associated with the grid and the light source, and a removable tray for collecting insects killed by contact with the grid, said frame also supporting a corrugated sheet aluminum reflective surface on the other side of said grid so shaped and arranged that light from the short-wave light source is reflected and scattered so as to pass through the electrified grid to attract flying insects into physical contact with the grid whereby they will be electrocuted.

3,346,989
PNEUMATIC SPACE CAPSULE

John W. Ryan, Bel Air, Cecil F. Adickes, Jr., Woodland Hills, and Jacob De Gelder, Torrance, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California

Filed Nov. 14, 1966, Ser. No. 594,176
10 Claims. (Cl. 46—44)



1. A pneumatic capsule toy for a doll having a head and a body, said capsule toy comprising:

substantially rigid housing means for encompassing at least a part of said doll;

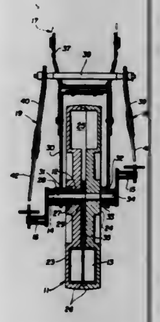
hollow, flexible means extending outwardly from within said housing means, said flexible means having a normal relaxed shape and being affected by air under pressure therein to change to an inflated shape; and

air supply means in fluid communication with the inner ends of said flexible means within said housing for admitting air under pressure only thereto for changing the shape thereof.

3,346,990
UNICYCLE TOY HAVING A WEIGHT SECURED TO A JOURNALED SUPPORT

Charley Holt, 1053 59th St., Oakland, Calif. 94608

Filed Jan. 25, 1965, Ser. 427,790
3 Claims. (Cl. 46—100)



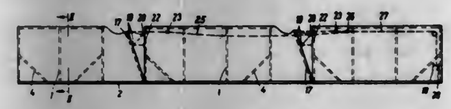
3. A unicycle toy comprising, a hollow wheel having spaced side walls forming an annular recess, a sleeve journalled by one of said side walls axially thereof and having an external portion projecting laterally from said wheel, a weight mounted in said recess and non-rotatably secured to and depending from said sleeve, a crankshaft journalled by said sleeve and secured to the other side wall of said wheel for rotation therewith, said shaft having throws at the ends thereof external to said wheel, rider support means non-rotatably secured to the laterally projecting portion of said sleeve and oriented generally upright with respect to said weight for supporting a rider in superimposed relation over said wheel, the rider's upper body portion secured to said rider support means, and articulated leg mechanism having pairs of

pivotally connected upper and lower leg portions, said lower leg portions being pivotally secured to said throws, said upper leg portions being pivotally secured to said rider support means.

3,346,991
GREENHOUSE

Usko Mikael Leskinen, Alkutie 69A, Helsinki, Finland

Filed Nov. 15, 1965, Ser. No. 507,842
7 Claims. (Cl. 47—29)

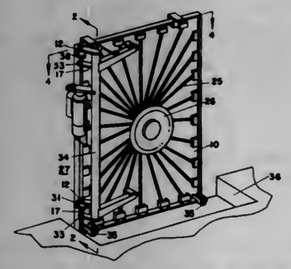


1. A greenhouse comprising: a pair of oppositely disposed, spaced-apart, longitudinally extending ground beams, a plurality of upstanding, longitudinally spaced-apart supporting arches arranged transversely of said beams and being fastened at their lower ends thereto, a ridge pole joining the top portions of said arches together, a plastic membrane covering said arches for forming a roof and side walls for said greenhouse, and a plurality of transversely extending, longitudinally spaced apart pairs of superimposed lists of substantially the same width as said arches fixed to said membrane and being secured to said arches, said membrane being sandwiched between each of said pairs of lists and being spaced from said arches, said pairs of lists being all of substantially equal length and being arranged on said membrane in transversely extending, longitudinally spaced rows with respect to said greenhouse, each of said rows including a plurality of successively spaced-apart pairs of lists and corresponding approximately to the peripheral length of each of said arches, said successive spaces between said lists in each of said transverse rows being in alinement longitudinally of said greenhouse with the spaces between successive lists of adjacent rows thereof, thereby enabling said membrane to be folded longitudinally between said successively spaced lists whereby said membrane may be folded and subsequently rolled transversely into a compact bundle for ease in handling.

3,346,992
MECHANISM FOR SWINGING AND LIFTING DOORS AND THE LIKE

Alvin Lodge, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania

Filed Aug. 26, 1965, Ser. No. 482,765
13 Claims. (Cl. 49—255)



3. In combination, a door and opening means on said door,

said door being adapted to be supported in a pit,

said pit being defined by a side terminating in a top edge disposed at a higher level than the lower edge of said door,

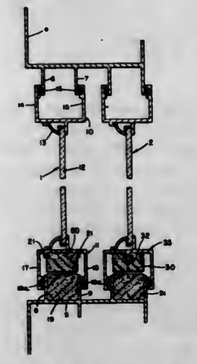
said opening means having means thereon to swing said door into engagement with said side of said pit,

said opening means having further means to lift said door above said top edge of said pit and to then swing said door to full open position.

3,346,993
MAGNETICALLY SUPPORTED SLIDING DOORS AND PANELS

Waldo O. Johnson, Wooster, Ohio, assignor to Weather-Seal, Inc., Barberton, Ohio, a corporation of Ohio

Filed May 18, 1966, Ser. No. 551,005
8 Claims. (Cl. 49—409)



1. In the assembly of a vertically positioned, horizontally sliding door, window, panel or the like, the combination of

frame means defining a vertical plane and having an opening therein,

a panel means slidably engaging said frame means for only horizontal movement, and limited vertical movement, in the vertical plane thereof, said panel means being operatively positioned in said opening and being movable from a position closing at least a part of said opening to a position which does not cover at least such part of said opening,

coacting guide means at the adjacent upper and lower margins of the said frame means and panel, and

elongate permanent magnet means operatively secured to said frame means and said panel means at adjacent vertically opposed portions thereof with the magnet means on said panel means being above the magnet means on said frame means, said magnet means being immediately adjacent in superimposed relation and having longitudinally extending poles extending the lengths thereof, said magnet means on said frame means extending at least substantially the length of said opening and said magnet means on said panel means extending substantially the length thereof and said magnet means all having like poles thereof in adjacent spaced vertical positions to provide a repelling action therebetween to thereby provide a lifting action on said panel means to float said panel with relation to said frame means along its full length of slidable relation therewith.

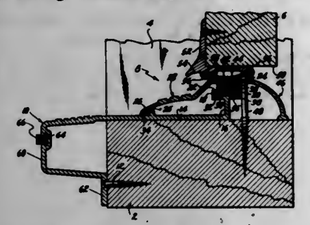
3,346,994
INSULATED THRESHOLD

John M. Kesler, Lafayette, Ind., assignor to National Homes Corporation, Lafayette, Ind.

Filed Aug. 20, 1965, Ser. No. 481,244
8 Claims. (Cl. 49—470)

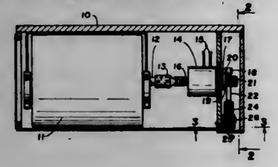
1. A threshold for a doorway, comprising: a generally horizontal metal base plate extending across the bottom of said doorway; an upwardly facing channel at the inner

edge of said base plate, within said doorway; an outer metal trim plate having a first edge flange extending downwardly into the outer edge of said channel, said outer metal trim plate extending downwardly and outwardly from said flange to said base plate; an upwardly open channel shaped body of insulating material in said upwardly facing channel adjacent said first flange; and



an inner metal trim plate having a second downwardly directed flange at its outer edge seated in said upwardly open channel, said outer metal trim plate extending downwardly and inwardly from said second flange to the bottom of said doorway, said inner trim plate being free of direct contact with said base plate, said upwardly facing channel and said outer trim plate.

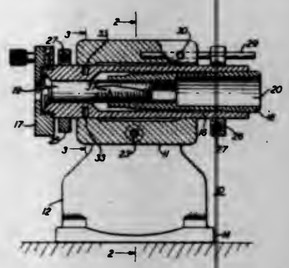
3,346,995
STRIP MARKING APPARATUS
Konrad J. Hofmeister and George R. Swann, Pittsburgh, Pa., assignors to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1964, Ser. No. 412,208
5 Claims. (Cl. 51—156)



1. Apparatus for placing a marking spot on the surface of moving material comprising a continuously rotating motor, a shaft operatively connected to said motor for continuous rotation therewith, a disengageable clutch connected to said shaft and to a slip clutch, said slip clutch including a driving element directly connected to said disengageable clutch and a driven element in abutting relation with the driving element, a crank mounted on said driven element, means for marking the surface of the material upon downward movement of the crank, and means for carrying said marking means pivotally connected to said crank, whereby upon engagement of said disengageable clutch said crank is caused to move downwardly so as to drive said carrying means and marking means substantially vertically downwardly.

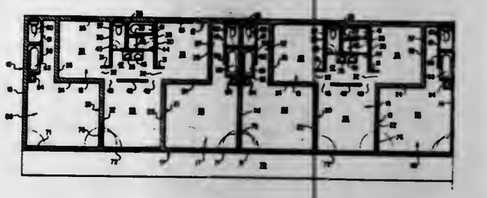
3,346,996
TOOL HOLDING DEVICE
Alfred Gentzel, Murray Hill, N.J.
(R.D. 3, Box 705–A, Flemington, N.J. 08822)
Filed Nov. 10, 1964, Ser. No. 410,320
6 Claims. (Cl. 51—225)

1. A holding device comprising:
a housing having a substantially cylindrical bore;
a cylindrical hollow spindle rotatably mounted within said bore and extending beyond opposite ends of the housing;
means for holding a tool or other attachment comprising a collet contained within said spindle and extending from a front end of the spindle;
a handle attached to a rear end of the spindle;
said housing being rotatably mounted on a support wall which is substantially perpendicular to a flat supporting surface;
means for locking said housing to the support wall of any of a plurality of positions, whereby the housing may be oriented at any of a number of predetermined angles with respect to said flat surface;
a first indexing aperture extending through one side of the housing;
a plurality of second indexing apertures located around the periphery of the spindle;
first means for locking the spindle against rotation within said bore comprising a first indexing pin which is adapted to extend through the first indexing



aperture and any of the second indexing apertures, whereby the spindle may be oriented within said bore at any of a number of angular positions;
means for restricting longitudinal motion of said spindle comprising first and second collars adapted to surround front and rear end regions of said spindle and to abut respectively against front and rear end surfaces of said housing;
a third aperture in the front surface of the housing;
a slot in the first collar;
and second means for locking the spindle against rotational motion within the bore while permitting longitudinal motion of the spindle comprising a second pin adapted to extend through said third aperture and the slot.

3,346,997
MOTEL AND THE LIKE ROOM ARRANGEMENT
Kermit S. Parrish, Winston-Salem, N.C., assignor to Butler Enterprises, Inc., Winston-Salem, N.C., a corporation of North Carolina
Filed Apr. 28, 1965, Ser. No. 456,021
6 Claims. (Cl. 52—34)



6. A motel or like building having front and rear walls, partitions extending between said walls and cooperating therewith to form alternately reversed T-shaped sections, each of said T-shaped sections having a stem and a cross, the end portions of the cross of the T's of alternate sections defining two bedrooms, the stems of the T's of such alternate sections being closed by said front wall and forming with adjacent portions of the adjacent partitions

a living area, the crosses of the T's of the intervening sections remote from the stems thereof being closed by said front wall, and a partition dividing each intervening section centrally of the width thereof between said front and rear walls to from a pair of L-shaped living units, and an L-shaped living unit at each end of the building, each such end L-shaped unit being defined by the adjacent end wall, by the adjacent portions of the front and rear walls and by the adjacent one of said first named partitions.

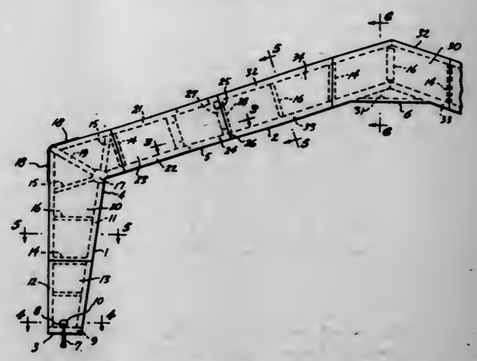
3,346,998
STRUCTURES FORMED EXCLUSIVELY OF FLAT PANELLED RIGHT TRIANGULAR BUILDING COMPONENTS
Donal P. Nelson, 3728 Bryant Ave. S., Minneapolis, Minn. 55409
Filed June 29, 1964, Ser. No. 378,678
4 Claims. (Cl. 52—70)



1. A collapsible enclosed structure constructed by using separate building components, each of said building components being rigid sheet material and right triangular in shape said components comprising first like components and second like components, each of said components having a short side, a long side, and a hypotenuse side, the long side of one of said first components being equal to the hypotenuse side of one of said second components, the sides of the components being attached to each other by connecting the hypotenuse sides of the first like components together in pairs by a fastening means, by connecting the long sides of the second like components together in pairs by a connecting means, by connecting the long side of the first like components to the hypotenuse sides of the second like components by a connecting means, said connecting means being hinge means, and fastening the short sides of the first like components together by a securing means until all sides are thus connected.

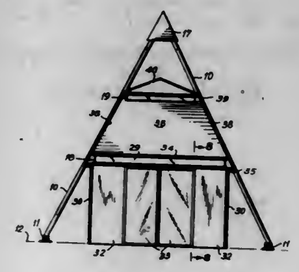
3,346,999
ROOF BOX FRAME
Harvey H. Johnson, 7851 56th Place NE., Seattle, Wash. 98115
Filed Mar. 19, 1965, Ser. No. 441,082
6 Claims. (Cl. 52—90)

2. A roof box frame comprising a beam section including a central crown and portions pitching downward from opposite sides of said crown, two column sections each including an upright and a cantilever arm extending from the upper end of said upright toward said beam section and forming therewith a haunch, said upright including a pair of inner and outer spaced flanges disposed with their corresponding edges substantially coplanar, said cantilever arms and said beam section including a pair of upper and lower spaced flanges, said uprights, said cantilever arms and said beam section including a plurality of spaced web members spanning between each flange pair and cover plate means spanning between and overlying said substantially coplanar flange edges, said web members, flanges and cover plate means being adhesively bonded together, each column section haunch including a diagonal strut and a polygonal compression block having edges abutted by, respectively, the haunch end of said upright inner flange, the haunch end of said cantilever arm lower flange and one end of said diagonal strut, said diagonal strut



having its opposite end portion interposed between the haunch ends of said cantilever arm upper flange and said upright outer flange, and joint means connecting the free ends of the cantilever arms with opposite ends of said beam section, respectively.

3,347,000
PREFABRICATED BUILDING
Ving Smith, 2 Agar Ave., New Rochelle, N.Y. 10801
Filed Jan. 25, 1966, Ser. No. 522,962
10 Claims. (Cl. 52—90)

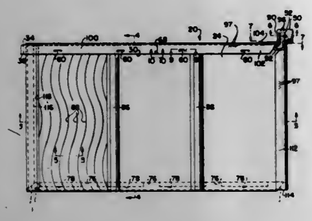


1. A building comprising
(a) a horizontal floor,
(b) column elements pivotally anchored at their lower ends and converging upward to define a pyramidal frame whose apex is above said floor,
(c) beams extending between adjacent column elements in a horizontal plane at a first level above said floor,
(d) vertical walls extending between said beams and floor to form an enclosure,
(e) trapezoidal walls extending in upwardly convergent planes between adjacent column elements above said first level, the upper edges of said trapezoidal walls lying in a horizontal plane at a second level above said floor, and
(f) a roof for said enclosure spanning the upper edges of said trapezoidal walls,
(g) said vertical walls, trapezoidal walls, and roof being composed of separate prefabricated sections.

3,347,001
ROOF SHINGLE WITH INTERLOCKING FLANGES AND LOCATOR

Bryan L. Cosden, 149 Askoran Trail, Medford Lake, N.J. 08055

Filed Mar. 3, 1965, Ser. No. 436,901
17 Claims. (Cl. 52—105)

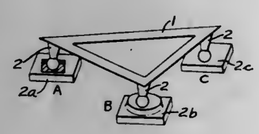


9. A thin sheet metal rectangular interlock shingle with interlocking flanges on all four sides comprising: at least one lanced semi-notch in the edge of one of said flanges which is disposed over the outside surface of the shingle, the semi-notch having a sharp terminal point bent on a bend line at an angle in from the flange edge and up away from the shingle to disposition above the plane of said one flange and so located between the ends of said one flange to constitute a physical as well as a visual locator device for accurately positioning adjacent shingles.

3,347,002
THREE POINT FOUNDATION FOR BUILDING STRUCTURES

Arno L. K. Penkuhn, 3 Holbeinstrasse, 798 Ravensburg, Germany

Continuation of application Ser. No. 344,323, Feb. 12, 1964. This application Nov. 15, 1966, Ser. No. 594,628
Claims priority, application Germany, Sept. 26, 1963, P 32,668
12 Claims. (Cl. 52—167)

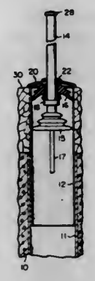


1. A foundation arrangement for supporting structures so as to compensate for shifting movement of the earth comprising; a rigid horizontal base for fixed supporting engagement with the bottom of the structure to be supported, three ground plates spaced in a horizontal plane beneath the base and supported on the earth, three spaced support elements fixed to said base and extending downwardly therefrom and engaging respective ones of said ground plates so as to be supported thereby, at least a first and a second of said support elements being laterally slideable on their respective ground plates, at least a first one of the said ground plates pertaining to said first and second support elements being concave upwardly and the pertaining first supporting element being convex downwardly so as to tend toward a lowermost position on the plate, and at least a second one of said three ground plates comprising means which prevent an unlimited rotation of said base and structure around the first ground plate and provide for automatic self-adjustment of said base and structure to one single and definite final position only in relation to the three ground plates after earth movements.

3,347,003
PROTECTIVE MOUNTING STRUCTURE FOR RETRACTABLE ANTENNA

Rudolph S. Lapp, Le Roy, N.Y., assignor to Lapp Insulator Co., Inc., Le Roy, N.Y., a corporation of New York

Filed Mar. 19, 1965, Ser. No. 441,385
7 Claims. (Cl. 52—169)



1. A protective mounting structure for a radio antenna comprising in vertical orientation:
(a) a support member having a vertical bore;
(b) a tubular protective casing movable axially within said bore between a lower housed position and a raised position;
(c) a cover carried by said casing over the top of said casing and movable relative to said casing;
(d) a rod-like antenna supported coaxially within said casing and extending movably through said cover, said antenna being movable axially relative to said casing and said cover only when said casing is in said raised position, said antenna having a lower retracted position and an upper extended position, and the top of said antenna in said retracted position being substantially flush with the top of said cover;
(e) a lower insulator fixed to said antenna in the region of the bottom thereof and movable axially in said casing to support said bottom of said antenna coaxially within said casing;
(f) an upper insulator disposed in the region of the top of said casing below and adjacent said cover; said upper insulator supporting said antenna coaxially for movement within said casing; and
(g) means movable with said antenna for lifting said cover above the top of said casing when said antenna is in said extended position so that said antenna is supported in said extended position by said upper and lower insulators in insulated relationship with said casing for sending or receiving radio signals.

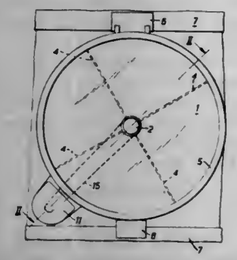
3,347,004
CLEAR VIEW SCREENS

Eric H. Allen, Stopsley, Luton, England, assignor to George Kent Limited

Filed Aug. 13, 1965, Ser. No. 479,501
Claims priority, application Great Britain, Sept. 14, 1964, 37,477/64
16 Claims. (Cl. 52—171)

1. A clear view screen in combination with an unapertured window panel comprising an outer frame, means fixedly supporting hub means within said outer frame, means carried by said hub means for rotatably mounting a disc relative thereto, said hub means being in non-

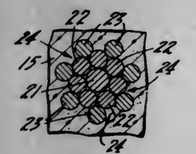
rotatable contacting engagement with a surface of the unapertured window panel to which the screen is attached, and means for securing the frame in position relative to the window panel surface.



3,347,005
PRESTRESSED CONCRETE MEMBERS

Howard Kent Preston, Jr., Morrisville, Pa., assignor to CF&I Steel Corporation, a corporation of Colorado

Filed Feb. 9, 1965, Ser. No. 431,263
3 Claims. (Cl. 52—230)

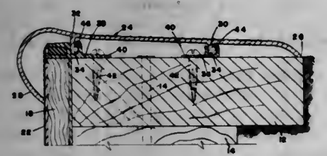


1. An improved prestressed concrete member having at least one tendon strand under tension, said strand having a plurality of interior wires including an outer layer of helically wound wires, and a peripheral layer of wires helically wound in the same direction as the outer layer of wires, each wire of the peripheral layer lying in a groove between adjacent wires of the outer layer providing spaced helically extending trough shaped spaces between the peripheral wires in which each of said trough-shaped spaces is formed by three wires only, the sides of each trough-shaped space being formed by the surfaces of two adjacent wires of the peripheral layer and the bottom thereof by the surface of a wire of the outer layer thereby providing a longitudinal space having a comparatively wide bottom surface and forming a shallow U-shaped trough for the reception of the concrete.

3,347,006
SWIMMING POOL AND COPING STRUCTURE THEREFOR

George C. Fox, R.D. 3, Dover, Pa. 17315

Filed July 20, 1965, Ser. No. 473,320
6 Claims. (Cl. 52—300)

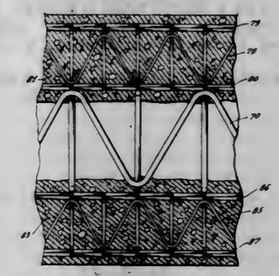


1. Coping means for an outdoor swimming pool having side walls terminating in an upper edge having a wooden rectangular header plank supported horizontally and extending longitudinally therealong and lined with flexible sheet plastic material covering said side walls to render the same waterproof, said coping means comprising in combination, elongated uniformly shaped sections of rigid material of relative uniform thickness arranged in end-to-end abutting relationship and having an upper surface which is exterior in use and an opposite inner surface adapted to be positioned in overlying relationship with said header in use, the intermediate portion of said coping being substantially flat and the opposite edges being curved downwardly below said intermediate portion, one of said edges extending below said intermediate portion a greater extent than the other, and said edges being adapted to be engageable respectively with the upper surface of said header and overlying the upper edge of the side wall of said pool, a pair of parallel rib means depending substantially perpendicularly from said inner surface of said intermediate portion of said coping sections in transversely spaced relationship to each other and to the opposite edges of said coping means, securing means adapted to be connected to the upper surface of said header, and snap-acting fastening means comprising two interengaged members extending longitudinally and being respectively connected to said securing means and the terminal edges of said rib means and spaced from said intermediate portion of said coping, whereby in use the inner surface of said coping is spaced above said header, one of said interengaged members being headed and the other having a longitudinally extending undercut recess and one of said interengaged members being yieldable to permit locking reception of said headed interengaged member within said recess.

3,347,007
EMBEDDED SPACED TRUSS STRUCTURES

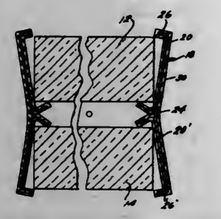
Jesse R. Hale, 14020 Budlong Ave., Gardena, Calif. 90247

Filed Dec. 18, 1964, Ser. No. 419,357
9 Claims. (Cl. 52—380)



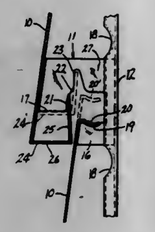
6. A space structure comprising:
a first space truss section having a plurality of pyramidal truss units, said truss units being formed from a plurality of uniplanar substantially sinusoidally shaped wire-like elements joined together at their apices,
a pair of uniplanar mesh units, one of said mesh units being attached to the pyramidal apices on one side of said first space truss section, the other of said mesh units being attached to the pyramidal apices on the side of said first space truss section opposite said one side thereof, and
a second space truss section similar in configuration to said first truss section, said second truss section having pyramidal truss units substantially larger in width and depth than those of said first truss section, the pyramidal apices of one side of said second truss section being attached to one of the mesh units of said first truss section.

3,347,008
SEALED WINDOW CONSTRUCTION
Roy D. Strengholt, Holland, Mich., assignor to Donnelly Mirrors, Inc., Holland, Mich., a corporation of Michigan
Filed Oct. 23, 1964, Ser. No. 406,050
2 Claims. (Cl. 52—398)



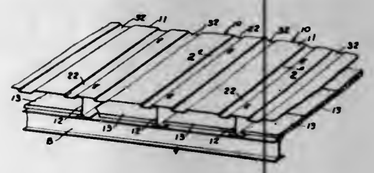
2. A sealed dual pane window comprising: a pair of spaced, like, window panes having inner faces, outer faces, and peripheral edges; a circuitous elongated band around the periphery of said panes; said band having a pair of rigid flanges in fulcrum abutment with each other adjacent said pane edges, and extending between said panes, while diverging from each other toward the inner faces of said panes, to contact the inner pane faces; said band also having clamping portions adapted to overlay the outer faces of said panes when said panes are shifted together; seal means between each of said flanges and said panes and between said flanges to form a sealed space between said panes; said diverging flanges being movable together about their fulcrum abutment with shifting of said panes together, and thereby shifting said clamping portions into overlying relationship with respect to portions of the outer pane faces to retain said panes in shifted together position.

3,347,009
SELECTIVELY REMOVABLE PANEL ASSEMBLY
John W. Meddick, Weston, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 16, 1965, Ser. No. 448,749
5 Claims. (Cl. 52—545)



3. In a building structure, the combination of
(A) a wall member,
(B) a plurality of vertically disposed support members secured to said wall member,
(C) a plurality of clip members secured to each of said support members at predetermined vertically spaced intervals, each of said clip members having
(1) a first retaining portion,
(2) a second retaining portion in spaced, noncontacting relationship relative to said first retaining portion,
(D) a plurality of panel members,
(1) the upper ends of each of said panel members being suspended from a first retaining portion of one of said clip members,
(2) the lower ends of each of said panel members being secured to a second retaining portion of another of said clip members in overlapping relation to the panel end therebelow, thereby selectively blocking removal of the upper ends of the panel member therebelow,
whereby a selected one of said panel members may be removed by moving the panel member next above out of its overlapping relation to the end of the panel to be removed, thereby permitting disengagement of the upper end of the panel to be removed from said first retaining portion on said clip member.

3,347,010
METAL ROOF DECK
Donald L. Richter, Torrance, Calif., assignor to The R. C. Mahon Company, Detroit, Mich., a corporation of Michigan
Filed Feb. 8, 1965, Ser. No. 430,834
17 Claims. (Cl. 52—593)

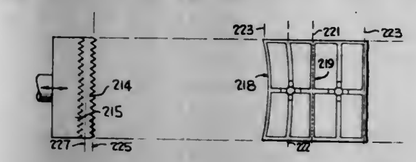


1. In a metal roof deck, the combination comprising a roof deck section including a deck portion and a web portion extending downwardly from one edge of the deck portion at a substantially right angle,
said web portion having horizontally extending flanges along the lower edge adapted to support ceiling tile and the like,
the other edge of said deck section being free and turned downwardly,
said deck portion having a groove therein adjacent to but spaced from said one edge along said web,
the free end of said deck section adapted to extend into the groove of an adjacent roof deck section,
and means on said deck portion spaced from but adjacent to said free edge and extending downwardly for engaging the area of juncture of the deck portion and the web portion of a substantially identical adjacent roof deck section, the distance between said downwardly turned portion of the free end and said downwardly extending means is substantially equal to the distance between the wall of said groove and said web portion and generally conforming said roof deck section laterally with respect to the adjacent roof deck section.

3,347,011
PACKAGING MACHINE AND METHOD OF FORMING PACKAGES
Stephen Lovas, West Hempstead, N.Y., and George S. Di Monico, Waldwick, N.J., assignors to Royal Package Equipment, Inc., Hackensack, N.J., a corporation of New Jersey
Filed Feb. 4, 1964, Ser. No. 342,430
40 Claims. (Cl. 53—22)

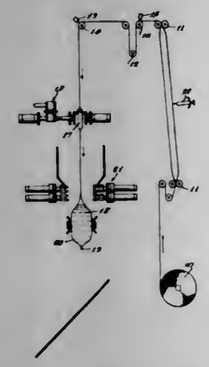
1. A method of forming packages which comprises, feeding a heat sealable web, heating the web to prepare it for molding of pockets therein, successively molding clusters of pockets in the web with each cluster being defined in part by a peripheral wall portion and by other wall portions intersecting centrally to provide contiguous pocket corners and with a depressed portion at each cluster wall portion intersection opening into all pockets of

the particular cluster through the contiguous corners thereof, depositing fill into the pockets of each cluster, applying a heat sealable cover web over the filled pocket clusters to lie flat over and spaced from each said depressed intersecting wall portion, heat sealing the cover



web over each pocket cluster about the peripheral wall portion thereof and over said other wall portions except adjacent each said depressed portion, evacuating the pockets of each cluster simultaneously through an orifice provided in its said depressed portion and then completing the heat sealing at each said depressed portion.

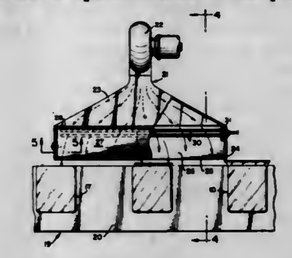
3,347,012
STERILE PACKAGING
William R. Scholle, Long Beach, Calif., assignor to Scholle Container Corporation, Northlake, Ill., a corporation of Illinois
Filed Oct. 11, 1965, Ser. No. 494,760
4 Claims. (Cl. 53—29)



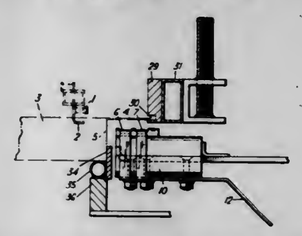
1. A process for internally sterilizing tubular thermoplastic film material which comprises unrolling and moving forwardly said tubular material from a roll thereof in collapsed form, injecting sterilizing gaseous material into said tube at a point spaced from said roll and recollapsing said tubular material at a point spaced from the point of injection, whereby to entrap said gaseous material and to distend said tubular material during passage between said roll and point of second collapse.

3,347,013
METHOD OF FORMING A NEAT APPEARING PACKAGE
Thomas E. Piazze, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 19, 1963, Ser. No. 274,105
5 Claims. (Cl. 53—30)

1. A method of forming a neat appearing package of the type including a product and a flexible bag snugly fitted to the contours of the product, said method comprising the steps of providing a bag formed of a thermoplastic heat shrinkable material and having an open end, inserting a product within the bag open end with the product being snugly received within the bag, heat sealing the bag open end in spaced relation to the product to completely enclose the product within the bag, and then heat treating only the sealed end of the bag to shrink the sealed end of the bag to conform to the contour of an adjacent portion of the product.



3,347,014
SEALING OF CARTONS
Richard Wolfgang Emil Mosse, London England, assignor to The Metal Box Company Limited, London, England, a British company
Filed Jan. 3, 1964, Ser. No. 335,513
Claims priority, application Great Britain, Jan. 11, 1963, 1,461/63
5 Claims. (Cl. 53—141)

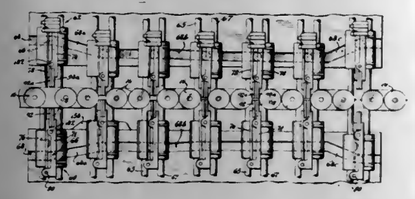


1. Apparatus for preparing heat-sealable flaps of cartons preparatory to movement thereof into heat-sealing relation with the carton body portions to which they are to be sealed, said apparatus comprising conveyor means operable to move cartons in succession in a straight line path, guide means mounted on a hollow support and spaced from and extending lengthwise of said path and engageable with a closure flap of a carton to support the flap substantially at right angles to the carton body portion to which it is to be sealed, at least one radiant heat emitting tape extending lengthwise of said path at a position between said path and said guide means, said tape being spaced from the path of a closure flap supported by said guide means and facing the path of the closure flap so that the intense heat from the tape is localised away from the carton body, tubes connected with said hollow support to supply cooling fluid for circulation through the support.

3,347,015
PAPERMAKING MACHINE
Robert G. Nutting, Glenview, and Richard C. Wagner, Clarendon Hills, Ill., assignors, by mesne assignments, to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed June 17, 1963, Ser. No. 288,291
2 Claims. (Cl. 53—182)

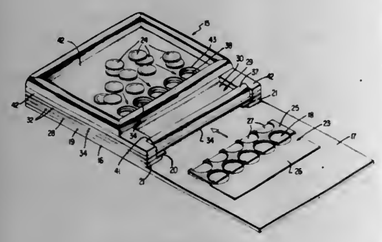
1. In a device of the character described, means for conveying in a downstream direction at a uniform speed an assembly of film entubed spaced articles of generally

cylindrical configuration with the axes thereof disposed in a certain plane along the path of travel, means downstream of said first mentioned means for continuing the conveyance of said assembly at uniform but reduced speed to provide slack in the article bridging portions of the entubing film, means driven through a path from the downstream end of said first means synchronized with the speed of said second mentioned conveying means and operable in said plane to form gussets in article bridging portions of said film as slackened by said reduced speed means, means operable in a plane at right angles to said first named plane for concurrently drawing the gusseted article bridging film portions toward the medial plane of



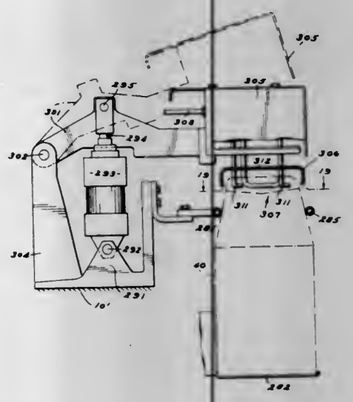
the path of article travel and snugly about portions of the article to complete film enclosure thereof, said film drawing means comprising a pair of pressure elements disposed transversely of and on one side of the path of article travel and a pair of sealing elements disposed transversely of said path and in registry with said pressure elements on the opposite side of said path, cam means for the movement of said paired elements from positions laterally of said path to positions of substantial abutment within said path, and means synchronized with said cam means for spreading said paired elements longitudinally of said path to insure snugness of said film as gusseted and drawn about said articles.

3,347,016
APPARATUS FOR FILLING TRANSIT TOKEN PACKAGES OR THE LIKE
Louis M. Silverman, Brooklyn, N.Y., assignor to Transitoke, Inc., Newark, N.J., a corporation of New Jersey
Filed Sept. 24, 1964, Ser. No. 398,997
9 Claims. (Cl. 53—246)



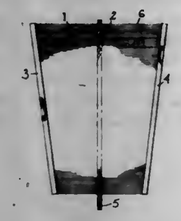
1. An apparatus for delivering tokens in single token layers to token packages having rows of token pockets therein, each token pocket receiving a single token from the apparatus, the apparatus comprising a generally flat base member having a compartment for receiving and aligning a token package while the package rests upon the base member, a stationary plate spaced above the base member and having rows of pockets therein adapted to register with the pockets of said package and receiving tokens and delivering them by gravity to the pockets of the package, the pockets of the stationary plate adapted to receive a single token layer only at each operation, and a reciprocatory slide structure for transferring tokens from a source above the stationary plate to the pockets of the stationary plate, the slide structure including a non-pocketed slide plate arranged immediately below the stationary plate and between the latter and the base member, said slide plate shiftable back and forth into covering and uncovering relationship with the bottoms of the pockets in the stationary plate.

3,347,017
MACHINE FOR FABRICATING CONTAINERS
Robert J. Allen, Farmington, Charles Z. Monroe, Detroit, James F. Earp, Orchard Lake, and Harry B. Egleston, Livonia, Mich., assignors to Ex-Cell-O Corporation, Detroit, Mich
Original application Nov. 1, 1962, Ser. No. 234,709, now Patent No. 3,212,413, dated Oct. 19, 1965. Divided and this application June 4, 1965, Ser. No. 474,533
4 Claims. (Cl. 53—379)



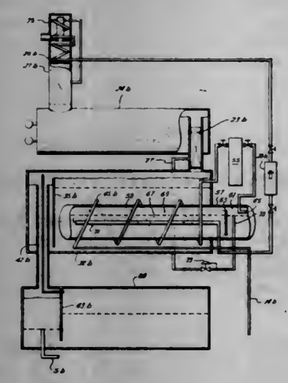
1. In a container fabricating machine a container top heating mechanism comprising:
(a) a support;
(b) a cylinder mounted on said support and having a movable piston rod;
(c) a support arm pivotable by said piston rod;
(d) a top heater mounted on said support arm;
(e) a shield adapted to concentrate heat from said top heater onto the appropriate sealing flaps of a container;
(f) means for conveying containers under said top heater;
(g) gradually converging guide rods adapted to cause said sealing flaps to be brought in close relative proximity;
(h) means adapted to control said cylinder to normally maintain said top heater close to said container sealing flaps;
(i) means adapted to control said cylinder to retract said top heater when said container fabricating machine is stopped; and
(j) said heater comprising:
(1) first heater elements adapted to heat directly the inside surfaces of the outer rib panels of said container; and
(2) second chevron shaped heater elements adapted to heat directly the inside and outside surfaces of the inner rib panels of said container.

3,347,018
HORSE TAIL BRAID
Mark Lamont Laidig, 881 Third Ave., Excelsior, Minn. 55331
Filed Oct. 24, 1965, Ser. No. 505,322
1 Claim. (Cl. 54—78)



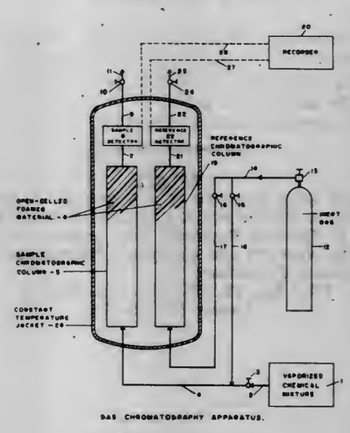
A device adapted to fit about a horse's tail and simulate braiding thereof comprising a central elongated braid member, a pair of edge members, said edge members being disposed on either side of said central braid member and spaced therefrom, a plurality of flexible fibers in substantially parallel spaced relation secured with and extending from either side of said central braid member to said edge members and secured therewith, said edge members being positioned by said fibers a greater distance at an upper portion of the device than at a lower portion of the device to conform with a horse's tail when secured in place, said edge members being fastenable to each other so that said device may be placed longitudinally along the length of a horse's tail, be wrapped thereabout and be fastened longitudinally to each other.

3,347,019
METHOD OF AND APPARATUS FOR DRYING A FLUID STREAM AND RECONCENTRATING THE ABSORBENT
Clifford W. Barnhart, Tulsa, Okla., assignor to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Filed Nov. 6, 1964, Ser. No. 409,466
5 Claims. (Cl. 55—32)



1. The process of reconcentrating a relatively cool solution of glycol, water and hydrocarbon condensate comprising the steps of,
dividing the solution into first and second portions, said first portion consisting primarily of glycol and water,
limiting the said first portion to a substantially constant volume,
boiling the first portion to reconcentrate the glycol by partially boiling off the water,
recombining the first portion of hot reconcentrated glycol with the cooler second portion which includes glycol, water and condensate to flash off the lighter hydrocarbons in the condensate in the second portion thereby preventing foaming of the recombined solution, and
passing the recombined first and second portions in a heat exchange relationship with the cool solution at a point prior to dividing the solution.

3,347,020
PROCESS AND APPARATUS FOR GAS CHROMATOGRAPHY
John J. Van Venrooy, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Oct. 4, 1965, Ser. No. 492,747
5 Claims. (Cl. 55—67)



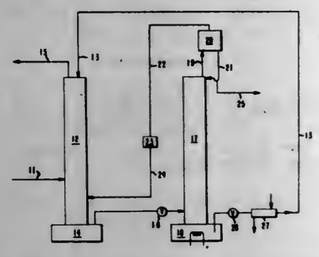
GAS CHROMATOGRAPHY APPARATUS.

1. In a process for separating vaporous mixtures of chemical compounds by passing the vaporous mixtures and an inert carrier gas through an elongated column containing a packing material at temperatures in the range of 20 to 500° C., wherein the improvement comprises having as the packing material an open-celled foamed, high molecular weight polymeric material having polar and non-polar sites therein and having pore size in the range of from 0.05 to 20 millimeters selected from the group consisting of epoxy resin, silicone resin, polyurethane resin, polystyrene resin, urea-formaldehyde resin, phenol-formaldehyde resin, styrene-butadiene copolymer and butadiene-styrene-acrylonitrile copolymer.

3,347,021
SEPARATION OF HYDROGEN CHLORIDE FROM HIGHER BOILING HALOALKANES
David Glenn Hutton, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,071
6 Claims. (Cl. 55—71)

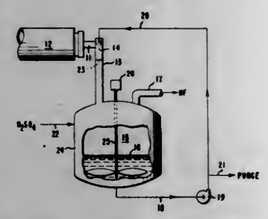
1. A process for separating hydrogen chloride from admixture with a haloalkane having 1 to 2 carbon atoms and selected from the group consisting of fluoroalkanes and chlorofluoroalkanes, said mixture resulting from the fluorination of a chloroalkane, which comprises
(a) contacting said mixture containing hydrogen chloride and haloalkane, in which all of the haloalkane boils in the range of —45° to 140° C. at 760 mm. Hg, as the first process step after fluorination, with 0.1 to 150 parts by weight, per part of said mixture,

of a predominantly paraffinic hydrocarbon oil having a boiling point of at least 200° C. and containing no more than 10% aromatics, the difference between the boiling point of the haloalkane and the hydrocarbon oil being at least 100° C., whereby the haloalkane is dissolved in the hydrocarbon oil,



(b) recovering anhydrous hydrogen chloride essentially free of haloalkane as the undissolved effluent,
(c) separating the haloalkane from the hydrocarbon oil by rectification, and
(d) recovering enriched haloalkane.

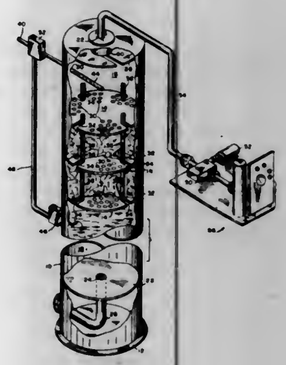
3,347,022
PROCESS FOR REMOVAL OF SOLID PARTICLES FROM A HYDROGEN FLUORIDE REACTOR
Charles C. Quarles, Baytown, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 29, 1965, Ser. No. 428,916
4 Claims. (Cl. 55—71)



1. In a process comprising bringing a calcium sulfate-containing product gas stream taken from a hydrogen fluoride reactor into intimate contact with a sulfuric scrubber acid within a closed chamber, removing said product gas stream from said closed chamber after being contacted with said scrubber acid and recycling said scrubber acid until a substantial amount of calcium sulfate solids accumulates therein, the improvement comprising maintaining said scrubber acid at a temperature within the range of from 80 to 170° C., with the proviso that when said temperature is below 125° C. the water content of said scrubber acid is controlled such that a product of greater than 600 is obtained when said temperature in degrees centigrade is multiplied by the water content in weight percent, and maintaining the calcium sulfate solids content of said scrubber acid such that it does not exceed about 40% by weight.

3,347,023
VACUUM DEAERATOR
Richard L. Scott, Tulsa, Okla., assignor to Forrest L. Murdock, Tulsa, Okla.
Filed Oct. 24, 1965, Ser. No. 504,805
2 Claims. (Cl. 55—193)

1. A deaerator for removing entrained gases from liquids comprising:
an upstanding vessel;
a multiplicity of spaced apart substantially horizontal and paralleled perforated distribution pans supported within said vessel and intermediate the top and bottom thereof, said distribution pans forming percolation areas therebetween, said percolation areas dividing said vessel into an upper fluid inlet portion and a lower fluid storage portion, said vessel having a fluid inlet and a gas outlet opening therein in said upper fluid inlet portion and a fluid outlet in said fluid storage portion, each of said pans having conduit receiving openings therein;
diffusing packing filling said percolation areas through which fluid entering said vessel trickles downwardly therethrough;

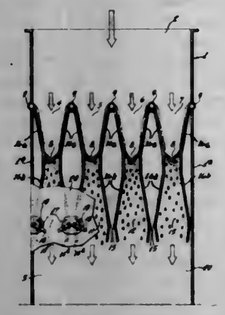


a vacuum pump means communicating with said vessel gas outlet opening for imparting a vacuum to the interior of said vessel and extracting gas therefrom; and
a multiplicity of spaced apart pressure equalizing conduits within said vessel communicating said lower fluid storage area with said upper fluid inlet area, said conduits received by said pan conduit receiving openings, and said conduits having openings therein communicating with each of said percolation areas, said conduits serving to equalize the pressure within all areas of said vessel and provide paths for the flow of gas extracted from liquid within the vessel.

3,347,024
WET SEPARATOR WITH VENTURI-SHAPED GAS CHANNELS
Nils Dock, Saltsjo-Duvnas, and Lennart Erlesand, Huddinge, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Aug. 20, 1965, Ser. No. 481,203
Claims priority, application Sweden, Sept. 8, 1964, 10,782/64
2 Claims. (Cl. 55—241)

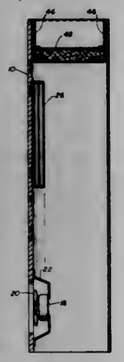
1. A wet separator for cleaning dust-laden gases comprising a casing defining a gas flow path having an inlet for entry of dust-laden gases and an outlet for removal of clean gas; at least one longitudinally extending Venturi-shaped gas channel having converging and diverging side walls positioned respectively between said inlet and said outlet, and a throat in said channel; means connecting said converging side walls to said casing adapted to cause said dust-laden gases to pass into said converging side walls of said channel; liquid supply means for effecting a liquid film at said throat in said channel; longitudinally extending valve blades pivotably connected to and depending from the terminus of said diverging side walls;

and adjusting means connected to said blades to pivot said blades to adjust the flow area whereby a second Venturi



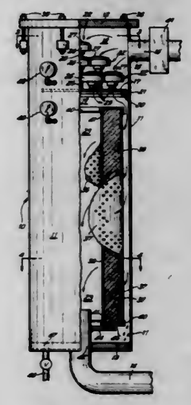
effect may be provided at the outlet portion of said channel formed by said valve blades.

3,347,025
AIR CIRCULATION SYSTEM
Mannie Wiley, 1243 Mabelle Drive, Sapulpa, Okla. 74066
Filed Aug. 12, 1965, Ser. No. 479,239
2 Claims. (Cl. 55—279)



1. A portable air circulation stack comprising:
an enclosed vertical duct comprised of a first and a second vertical panel member adjoining each other along a first edge of each substantially at a right angle, and a vertical front panel adjoining the other edge of each of said first and second panels to form said duct in a triangular configuration, said duct having a closed lower end and an open upper end, and said front panel having an opening in the lower portion thereof,
a removable air filter unit supported across said duct in said open upper end comprising,
a triangular frame portion positioned within said duct, said frame having a first and a second channel member joined at a first end of each to form the back legs of said triangular frame, and two parallel spaced strips disposed between the second ends of each of said channel members to form the front leg of said triangular frame,
a plurality of hanger members securely spacedly on said triangular frame, each of said hanger members having a lip portion in removable contact with the top edge of said vertical panel members,
a filter blanket of interwoven spun glass fibers slidably positioned in said triangular frame,
ultra-violet lamp means positioned within said duct intermediate said open upper end and said opening in said front panel, and
a reversible three-speed motor with fan positioned adjacent said opening in said front panel to circulate air through said stack.

3,347,026
FLUID SEPARATOR
Harry E. Zankey, Pittsburgh, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,454
7 Claims. (Cl. 55—316)

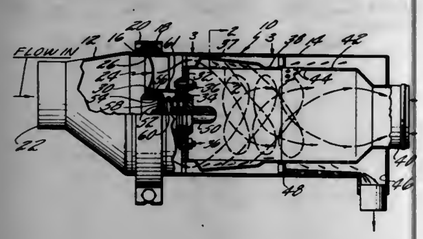


1. A device for the separation of a fluid from a gas stream, comprising a hollow casing having an inlet adjacent its upper end and an outlet adjacent its lower end, means disposed intermediate the ends of said casing for separating said casing into an upper chamber and a lower chamber, a plurality of openings formed in said separating means, a coalescer unit disposed over each of said openings for coalescing the fluid droplets in said gas stream, each of said coalescer units including a body of porous material having relatively small sized pores, said outlet having a conduit extending therethrough into said housing and terminating at a point which is elevated above the lower end of said casing to permit the separated fluid to collect thereat, an adsorption unit disposed in the lower end of said casing and including a body of porous adsorptive material disposed in surrounding relation to said outlet and elevated above the lower end of said casing and deflecting means in the path of the gas stream intermediate said openings and said adsorptive material for diverting said gas stream toward said casing to cause said coalesced fluid droplets carried by said stream to strike said casing.

3,347,027
WATER SEPARATOR CONSTRUCTION
Mark E. Baker, Winsted, and Joseph P. Burger, Torrington, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 28, 1964, Ser. No. 392,747
1 Claim. (Cl. 55—320)

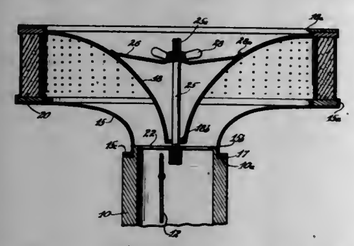
In apparatus for removing particles of liquid entrained in a stream of gaseous fluid, the combination of: a housing adapted to be disposed in a fluid line, an inlet at one end of the housing for receiving liquid entrained gaseous fluid, a coalescer in said housing adapted to agglomerate said entrained liquid for enlarging the size of the liquid

droplets, a vortex generator in said housing downstream of said coalescer having a cylindrically-shaped wall defining a vortex chamber and being coaxially mounted relative to the longitudinal axis of said housing, said cylindrically-shaped wall containing a plurality of openings and adjacent upstanding swirl vanes extending toward but spaced from the inner wall of said housing, each swirl vane having a longitudinal axis angularly disposed relative to the longitudinal axis of said housing, collector means in said housing disposed downstream from said vortex generator having one end connected to said wall and communicating with said vortex chamber, said



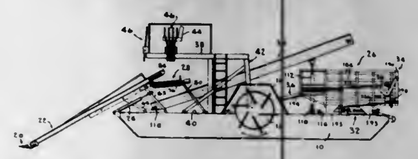
collector having moisture drainage means for collecting moisture from said apparatus dry fluid outlet means communicating internally with said collector means, said collector means formed from a perforated hollow member having a cylindrical section whose diameter is substantially the same as said cylindrically-shaped wall and being spaced from the inner wall of said housing, a reduced cylindrical section, a conical section interconnecting the cylindrical section with a larger diameter, and the reduced cylindrical section, and the diameter of the reduced cylindrical section being in the order of 5/6 of the diameter of said larger cylindrical section.

3,347,028
AIR-FEED DEVICES FOR CARBURETORS
James A. Erbstoesser, 7814 S. Kostner Ave., Chicago, Ill. 60629
Filed Feb. 23, 1966, Ser. No. 529,470
3 Claims. (Cl. 55—510)



1. In an air-feed system comprising an air-intake tube for a carburetor; and an air-feed device for filtering air adapted to be introduced into said device and said tube with minimum back pressure, the improvement wherein:
said air-feed device comprises an impervious, annular tray having an open central tubular neck portion having a longitudinal axis, sealingly engaged on said air-intake tube; said tubular neck portion continuously flaring outwardly and upwardly and merging into a substantially horizontal planar portion disposed normally to the longitudinal axis of said neck;
a hollow cylindrical filter cartridge having side walls and top and hollow walls, said cartridge being removably seated and extending along the outer periphery of said substantially planar portion;
a hollow, substantially conical air-impervious member spaced above said tray and coaxial with said neck, said member having an outer horizontal, peripheral substantially planar portion of substantially the same radial extent as the first mentioned planar portion, the apex of said conical member extending downwardly through said hollow filter element and into said tubular neck and the planar portion thereof positioned on the top wall of said filter element, said tray and said conical member defining with said filter a generally frusto-conical chamber having its largest dimension at the inner surface of the filter and continuously and smoothly converging to its smallest dimension at said apex;
and retaining means operatively connected to said air intake tube clamping said tray, said filter and said member in assembled relationship on said intake tube whereby air is introduced into said frusto-conical chamber and progressively increases in velocity through said chamber and is then introduced directly into said air intake tube.

3,347,029
AQUATIC HARVESTER
Kenneth E. Grinwald, 423 Rte. 3, Mukwanago, Wis. 53149
Filed Aug. 20, 1964, Ser. No. 390,801
15 Claims. (Cl. 56—9)

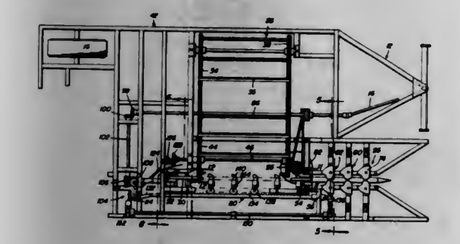


1. An aquatic harvester comprising, a powered barge having a conveyor comprised of a conveyor frame and of powered conveyor means adapted to convey material over and to one end of said frame, a support structure mounted on said barge, said conveyor frame being fixed for limited relative motion to said support structure and being supported thereby in a position so as to place part of the conveyor under the surface of water during use of the barge, said conveyor frame and support structure cooperating to normally position said conveyor in a downwardly extended position and to cause limited motion of said conveyor towards said barge upon encountering an obstruction in the path of the conveyor, said support structure including two arms pivotally connected to said barge and extending forwardly to position the center of gravity of said conveyor means beyond said barge and being movable to a rearwardly extending position to move the conveyor means to a retracted position and position the center of gravity of the conveyor means over the barge.

3,347,030
TOBACCO HARVESTING MACHINE
Allen Woods, Lexington, Ky., assignor of forty-nine percent to Manuel Osborne, Lexington, Ky.
Filed Dec. 1, 1964, Ser. No. 415,037
13 Claims. (Cl. 56—37.5)

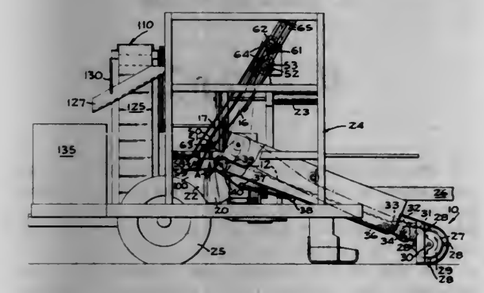
1. A machine for harvesting plants having vertical stalks growing in a row comprising, a frame adapted to be towed in a direction parallel to said row, a spear positioned on said frame for impaling the stalks of said plants in response to forward movement of the frame in said direction, a plurality of retractible devices engageable with the spear for fixed positioning thereof on the frame, means responsive to engagement of said stalks impaled on the spear during said forward movement of the

frame for sequentially retracting said devices to permit passage of the stalks along the spear, positioning means for receiving a stalk holder on the frame extending rearwardly from the spear, drive means mounted by the frame and rendered operative in response to said forward movement, spacing means operatively connected to the drive means and rendered operative to engage said stalks for transmitting spacing movement thereto along the stalk



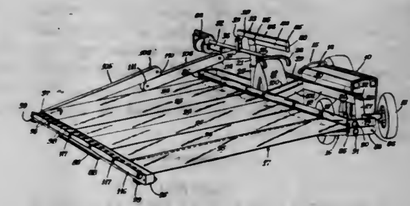
holder, synchronizing means responsive to movement of a stalk past said retractible devices for rendering the drive means operative to impart said spacing movement to the spacing means, and conveyor means simultaneously driven by the drive means for removing the stalk holder from the positioning means after a predetermined number of spacing movements have been imparted to the spacing means, whereby the stalk holder fully loaded with the stalks may be unloaded from the machine.

3,347,031
CUCUMBER HARVESTER
Max M. De Long, Warren, and Bill A. Stout and Stanley K. Ries, East Lansing, Mich., assignors to Board of Trustees of Michigan State University, East Lansing, Mich., a constitutional corporation
Continuation of application Ser. No. 313,529, Oct. 3, 1963. This application Sept. 30, 1966, Ser. No. 583,484
2 Claims. (Cl. 56—327)



1. A machine for harvesting cucumbers growing along the length of the vines comprising a support structure; opposed, normally engaged vine gripping means mounted on said support structure for removing cucumbers from the uprooted vines, said vine gripping means comprising a pair of endless movable members having converging peripheral vine gripping surfaces moving in circular paths that form a nip throat, means for urging said members together to bring said circularly moving surfaces into firm engagement for pinching off cucumbers before they can pass between the surfaces; means on said support structure for removing the green vines from the ground; vine elevating and nip throat feeding means comprising means for conveying the uprooted vines and attached cucumbers to a zone that is spaced from said nip throat and for urging the vines across said space and directly into contact with the vine gripping surfaces of both movable members within said nip throat; said nip throat feeding means being directed for delivering the vines to the nip throat along a trajectory that substantially passes between said vine gripping surfaces at said nip throat; and means for continuing the pull on the vines after they have passed through said nip throat, said latter means comprising a firmly backed-up continuation of one of said vine gripping surfaces to form an additional vine gripping zone, and an opposed vine gripping surface moving in the same direction as that of said continuation surface, and means for bringing said opposed vine gripping surface into firm engagement with said continuation surface over a zone of substantial linear extent downstream of said nip throat.

3,347,032
MOUNTED FRUIT PICKER
Stuart D. Pool and William H. Knapp, Naperville, Ill., assignors to International Harvester Company, a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,021
18 Claims. (Cl. 56—329)

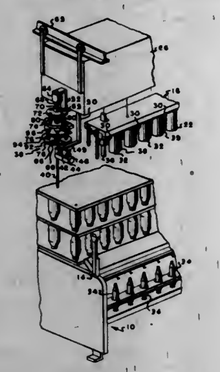


1. In combination with a tractor, a catcher for harvesting fruit and nuts comprising
means providing back and front frame members disposed in parallel relationship to each other;
means mounting the back frame member at one side of said tractor;
means providing driven foldable arms for moving said front frame member toward and away from said back frame member, and
self recoiling means including a fruit catching apron for extension with said frame for positioning the apron beneath a tree and for retraction for holding the apron with attendant positioning of the front frame member alongside the tractor for transport.

3,347,033
AUTOMATIC OBJECT HANDLING APPARATUS
Grady H. Sanders and John K. McCollough, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 428,285
20 Claims. (Cl. 57—53)

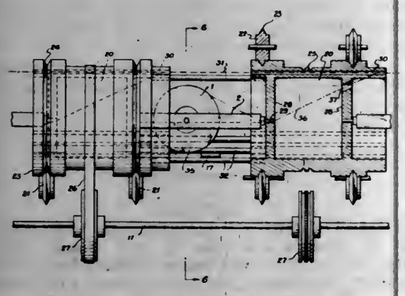
1. An overhead traveling rail system comprising: a movable overhead carriage system, said carriage system including at least two carriages, one of said carriages being movable in a direction normal to the direction of travel of the other of said carriages, drive means to drive said carriages, an object below said carriage system to be treated by said system, a first means operably associated with said object to actuate said carriage system and a second means on said carriage system actuated by said first means to automatically jog said carriages into a predetermined location with respect to said object.

2. An overhead traveling rail system comprising: a movable overhead carriage system, drive means to drive said overhead carriage system, an object below said carriage system to be treated by said system, a first means operably associated with said object to actuate said carriage system and a second means on said carriage system actuated by said first means to automatically position said carriage



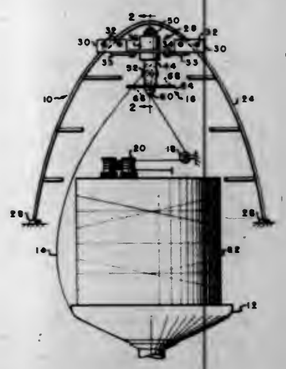
system in a predetermined location with respect to said object, said first means including an upstanding rod like member and said second means including a plurality of plate segments mounted on said carriage system, each of said plate segments being operably associated with carriage drive means to actuate said drive means when contacted by said rod like member.

3,347,034
RAPID CABLE MAKING MACHINE
Alfons Steppuhn, Klaus-Groth-Str. 15, Bad Oldesloe, Germany
Filed Apr. 14, 1965, Ser. No. 448,092
Claims priority, application Germany, June 30, 1964, St 22,330
10 Claims. (Cl. 57—58.36)



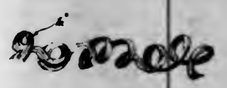
1. In a rapid wire twisting machine for making a cable comprising a plurality of spools aligned along the longitudinal axis of the machine, and frame means for turning the spools at right angles to the direction wire is unwound from the spools, the improvement comprising wire guide support means positioned outwardly of and around said spools for guiding wires coming from preceding spools and passed following spools, and bearing means for holding said frame means and for holding said support means for passing said wire in a substantially straight line outwardly of said frame means.

3,347,035
STRAND TWISTING MACHINE
William M. Ellison, Jr., Spartanburg, and Luther Thomas Fuller and William B. Poston, Central, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 532,977
9 Claims. (Cl. 57—58.65)



1. A strand twisting machine comprising: a take-up package, means supplying cord to said take-up package, cage means surrounding said take-up package and said cord supplying means, said cord supplying means including a flyer and apex guide means spaced from one another to allow said cord to form a balloon, and means mounting said apex guide means to said cage means.

3,347,036
HELICALLY CONVOLUTED STRAND
Benjamin S. Daniel, Columbus, Ohio, assignor, by mesne assignments, to Techniservice Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Original application Jan. 13, 1958, Ser. No. 708,666. Divided and this application Aug. 4, 1961, Ser. No. 132,525
17 Claims. (Cl. 57—140)

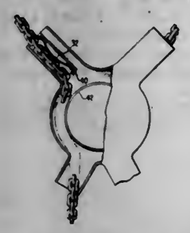


1. Strand comprising at least one crinkled filament composed of linear polymeric material and characterized by having its molecular orientation with respect to the axis of the filament unevenly distributed transversely of the axis of the filament, with the minimum orientation at one side of the filament, the filament being nonrectilinear and curving, in the longitudinal direction, away from that side of the filament.

3,347,037
JEWELRY SLIDE
William Klang, 1371 E. 85th St., Brooklyn, N.Y. 11236
Filed Dec. 9, 1965, Ser. No. 512,697
8 Claims. (Cl. 58—152)

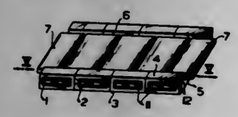
1. A jewelry slide adjustably positionable upon a jewelry chain, comprising:
(a) a slide housing,
(b) at least one enclosed chain passage in the housing,
(c) the passage including openings for the chain to pass through the passage,

(d) an omega (Ω) shaped spring in the passage, the spring including a curved back portion and extending feet portions, the feet portions resting on the surface of an inside wall of the passage, and the curved back portion extending into the passage to



frictionally engage the chain and to force the chain to also frictionally engage an opposite passage wall, and
(e) retaining means for loosely retaining the spring in the passage for longitudinal movement.

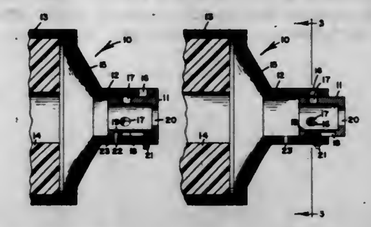
3,347,038
BAND-SHAPED JEWELRY
Anton Teppert, 8 Klarenberg, Schwabisch Gmund, Germany
Filed June 24, 1965, Ser. No. 466,578
11 Claims. (Cl. 59—35)



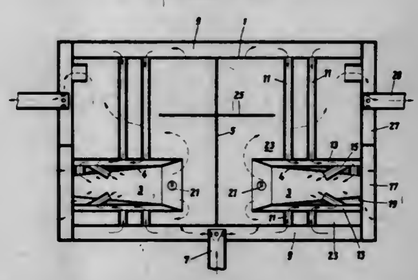
1. A band-shaped jewelry, essentially consisting of substantially flat, tubularly shaped jewelry elements having a bottom side, longitudinal sides and end faces and provided with apertures in the end faces thereof and of flat connecting members having end faces,
the jewelry elements being provided with cut-out portions on the bottom side thereof and in the longitudinal sides thereof transversely to said apertures, the length of said cut-out portions being less than the length of a jewelry element, thereby leaving web portions along the sides of each jewelry element,
each connecting member being inserted with a part thereof having a width up to one-half the width of a jewelry element into a respective cut-out portion, each connecting member being provided at the end faces thereof with apertures which surround the web portions of two adjacent jewelry elements and with extensions on both sides of the apertures thereof, one extension of two adjacent connecting members being inserted in a pair-wise manner into the apertures of the respective jewelry element.

3,347,039
TEMPERATURE COMPENSATING IGNITER
Samuel Zeman, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,671
5 Claims. (Cl. 60—39.82)

1. A temperature compensating igniter comprising a body portion, a throat portion integral with said body portion having a plurality of radially-disposed ports therein, an ignitable pyrotechnic material in said body portion, means for igniting said material mounted in said body portion, a diffuser having radially-disposed ports therein and a fixed orifice in one end thereof mounted for sliding movement in relation to said throat portion, shear pins engaging said throat area and said diffuser for retaining said diffuser adjacent to one end of said throat portion, and means mounted in said throat portion and said diffuser for limiting the sliding movement of said diffuser to a predetermined registry of said diffuser ports with said body ports when said shear pins are destroyed by the increase of pressure in said body during the burning of said pyrotechnic material.



3,347,040
APPARATUS FOR A NONCATALYTIC AFTERBURNING OF EXHAUST GASES OF INTERNAL COMBUSTION ENGINES
Hanskarl Leistritz, 49 Reichenhaller Str., 8228 Freilassing, Germany
Continuation of application Ser. No. 493,479, Oct. 6, 1965. This application Sept. 27, 1966, Ser. No. 582,460
Claims priority, application Germany, Oct. 8, 1964, L 48,975; Jan. 11, 1965, L 49,693; July 26, 1965, L 51,220
26 Claims. (Cl. 60—30)

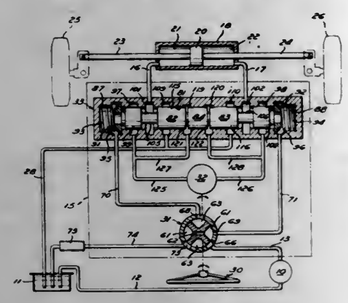


1. Apparatus for a noncatalytic afterburning of exhaust gases of internal-combustion engines, comprising a common shell, a number of afterburner units accommodated in said shell, each of said afterburner units comprising tube means defining an axial flow path, said flow path comprising a combustion chamber, supply means for supplying exhaust gases to said combustion chamber, and vibration reflecting wall means defining vibration reflecting surfaces which are confining said combustion chambers, one of said vibration reflecting surfaces associated with one of said units and one of said vibration reflecting surfaces associated with the other of said units being disposed adjacent to and facing away from each other.

3,347,041
HYDRAULIC STEERING SYSTEM
Eugene Bahniuk, Gates Mills, and Jack L. Thompson, South Euclid, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 23, 1965, Ser. No. 503,808
18 Claims. (Cl. 60—52)

1. A hydraulic steering system comprising a steering actuator motor having first and second fluid chambers adapted to be selectively connected to a source of fluid

pressure for reversible actuation, a rotatable input shaft, a source of fluid pressure, a reservoir, a metering valve operable by said input shaft having first and second outlet ports and operable to selectively connect said fluid pressure source to said first and second outlet ports, a reversible positive displacement feedback motor operable to provide follow-up rotation for said input shaft, and



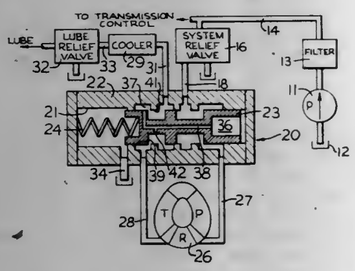
a condition selector valve interconnecting said metering valve and said steering actuator motor and said feedback motor, said selector valve being operable responsive to fluid pressure from said metering valve to direct fluid from said metering valve to said feedback motor and from said feedback motor to said actuator motor and from said steering actuator motor to said reservoir.

3,347,042

TORQUE CONVERTER CHARGING VALVE

Joachim Horsch, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Apr. 11, 1966, Ser. No. 541,781
6 Claims. (Cl. 60—54)



1. A charging valve for a torque converter which receives fluid from a fluid source through an inlet and discharges fluid to a heat exchanger through an outlet comprising in combination;

a valve housing defining a valve bore and a plurality of axially spaced lands in said bore, wherein said valve bore is disposed in a conduit which communicates the outlet of the torque converter with the heat exchanger, and in hydraulic communication with the fluid source; and

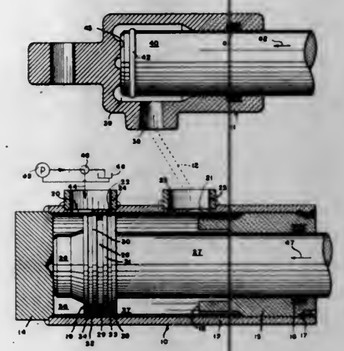
a valve spool having a plurality of spaced apart lands formed thereon slidably disposed in said valve bore and responsive to increased pressure at the heat exchanger inlet to move axially in said valve bore and position valve spool lands relative to valve bore lands and thereby decrease the inlet flow to the torque converter.

3,347,043

MASTER CYLINDER CONSTRUCTION AFFORDING AUTOMATIC RE-PHASING OF MASTER AND SLAVE CYLINDERS

Evans Glenn Freese, Hutchinson, Kans., assignor to The Cessna Aircraft Company, Wichita, Kans., a corporation of Kansas

Filed Nov. 22, 1965, Ser. No. 509,113
6 Claims. (Cl. 60—54.5)



1. A hydraulic actuator assembly comprising:

an elongated cylinder;

a piston having limited reciprocable movement within the cylinder, and dividing the cylinder into first and second chambers;

a first port through a wall of the cylinder affording open exterior fluid communication with said first chamber regardless of piston position in the cylinder;

a first fluid escape orifice through a wall of the cylinder located to afford restricted exterior communication with the second chamber only when the piston is at one end of its permitted stroke;

a second port through a wall of the cylinder affording open exterior communication with said second chamber regardless of piston position in the cylinder; and

a second fluid escape orifice through a wall of the cylinder located to afford restricted exterior communication with the first chamber only when the piston is at the other end of its permitted stroke.

3,347,044

DUAL ENGINE CONTROLS

Jackson C. Medley, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Oct. 19, 1965, Ser. No. 497,952
3 Claims. (Cl. 60—97)



1. Means for actuating the fuel feed controls of two engines from two remote positions comprising a fluid actuated motor operatively associated with the fuel feed control of each engine, a source of fluid under pressure,

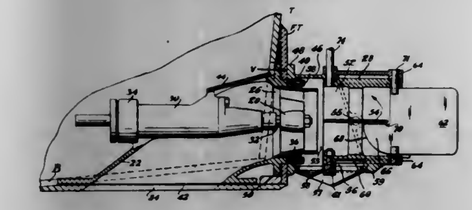
means communicating fluid from said source to both said motors, and two remotely positioned normally closed valves in said communicating means each operable upon opening to admit pressure to both motors.

3,347,045

MARINE JET PROPULSION UNITS

Reginald Warren, London, England, assignor to Cape Marine Propulsion Limited, London, England, a corporation of Great Britain

Filed Apr. 18, 1966, Ser. No. 543,153
Claims priority, application Great Britain, Apr. 27, 1965, 17,746/65
27 Claims. (Cl. 60—222)



1. A jet propulsion unit comprising an axial flow impeller, an impeller duct including a frusto-conical section closely surrounding the impeller, the diameter of the frusto-conical section decreasing in the direction from the leading edges towards the trailing edges of the blades of the impeller, and at least one section selected from an inlet section, extending forwardly from the frusto-conical section, the diameter of the inlet section increasing steeply and uniformly from the frusto-conical section, and an outlet section of substantially uniform cross section extending rearwardly from the frusto-conical section, the individual length of said sections being not greater than that of the frusto-conical section, and that the boss of the impeller increases in diameter from the leading edges to the trailing edges of blades extending from the boss.

12. A jet propulsion unit as claimed in claim 1 in which the thrust face of each impeller blade comprises a plane surface.

14. A jet propulsion unit as claimed in claim 12, including control means comprising a tubular casing adapted to be mounted downstream of and in axial alignment with the outlet of the jet propulsion unit so as to constitute a secondary jet outlet, a steering deflector mounted within the downstream end of the casing for pivotal movement about a vertical axis, valve means pivotally mounted within the casing upstream of the steering deflector for movement between a position in which the tubular casing is substantially unobstructed and a position in which it is substantially obturated, and a forwardly directed auxiliary jet outlet communicating with the tubular casing upstream of the valve means, the auxiliary jet outlet being angularly displaceable in a horizontal plane.

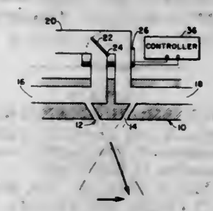
3,347,046

CONTROL OF TRANSVERSE INSTABILITY IN ROCKET COMBUSTORS

Marcus F. Heidmann, 3490 Higley Road, Rocky River, Ohio 44116, and Charles E. Feiler, 4240 Wooster Road, Fairview Park, Ohio 44126

Filed May 9, 1967, Ser. No. 638,194
10 Claims. (Cl. 60—243)

1. Apparatus for stabilizing a rocket combustor by controlling transverse instability during combustion of propellants in a combustion chamber comprising means for sensing the direction of travel of a travelling transverse wave in the combustion chamber, and



means for selectively providing a tangential velocity in the combustion chamber in opposition to the travelling transverse wave.

3,347,047

ELASTOMERIC COMPOSITION FOR USE AS ROCKET INSULATION

Walter A. Hartz, Cuyahoga Falls, and Daniel A. Meyer, Akron, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,195
13 Claims. (Cl. 60—253)

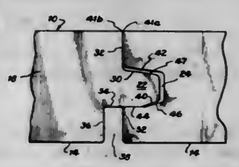
5. In a rocket or jet motor adapted to provide thrust in a desired direction by burning a solid propellant and by discharge of products of combustion thereof from a combustion chamber under pressure through a nozzle, the improvement which comprises a lining over the inner surface of said combustion chamber bearing against the surface of said solid propellant, said lining consisting essentially of a flexible, vulcanized unreclaimed elastomeric composition which prior to vulcanization contained evenly dispersed therein per 100 parts by weight of the elastomer from about 1.0 to about 20 parts by weight of vulcanizing agents and about 3 to 80 parts by weight of abestos fibers which before incorporation in said composition were sufficiently large to be retained on a 325 mesh screen (Tyler Series), said fibers being primarily oriented in a pre-selected direction approximately parallel to the surfaces of said lining, said elastomer being selected from the group consisting of (a) a copolymer derived from about 90 to 99 mol percent isobutylene and 1 to 10 mol percent isoprene, (b) a copolymer derived from at least 50 mol percent butadiene, the remaining component being acrylonitrile, (c) a copolymer derived from at least 50 mol percent butadiene, the remaining component being styrene and (d) a diorganopolysiloxane.

3,347,048

REVETMENT BLOCK

Richard A. Brown and James D. Brown, Glen Burnie, Md., assignors to Coastal Research Corporation, Glen Burnie, Md., a corporation of Maryland

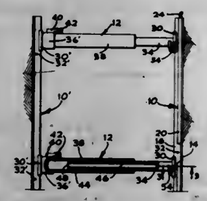
Filed Sept. 27, 1965, Ser. No. 490,203
8 Claims. (Cl. 61—37)



1. A revetment block comprising a flat rectangular body, a tongue on one end of said body, a groove in the opposite end of said body for making a tongue and groove joint with an adjacent block, and said tongue being smaller than said groove and being loosely fittable in the groove

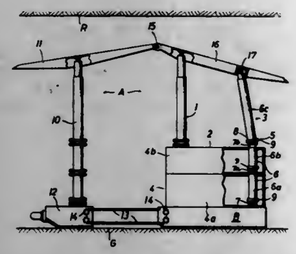
of an adjacent block and having an upper side and a relatively longer lower side for forming a space between bottim faces of adjacent joined blocks and for permitting relative tilting movement in two directions between adjacent joined blocks.

3,347,049
TRENCH SHORING APPARATUS
Richard P. Faltersack and Ernest F. Faltersack, Jr., San Jose, Calif., assignors to The Ernric Company, San Jose, Calif., a corporation of California
Filed May 8, 1964, Ser. No. 365,988
3 Claims. (Cl. 61—41)



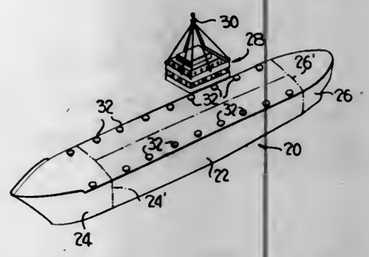
1. Trench shoring apparatus which comprises a pair of elongated shoring rails adapted to engage the opposite sides of a trench, each of said rails constituting an elongated flat plate having integral longitudinally-extending ribs projecting therefrom to form edges arranged in spaced, parallel relation, a pin supported between said ribs on each of said rails, an extensible member extending between said rails and pivotally connected to said pins at its opposite extremities for movement between parallel and perpendicular relation to said rails, said extensible member being arranged to engage said flat plate and having arms engaging the edges of said ribs when disposed in perpendicular relation to said rails.

3,347,050
TRAVELING HYDRAULIC MINE ROOF PROPPING APPARATUS
Günther Dommann, Bergrat, Altlunen, Westphalia, and Manfred Flöter, Lunen, Westphalia, Germany, assignors to Gewerkschaft Eisenhutte Westphalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Filed May 10, 1965, Ser. No. 454,302
Claims priority, application Germany, May 11, 1964, G 40,571
8 Claims. (Cl. 61—45)



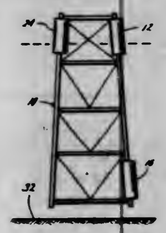
1. A travelling mine roof propping apparatus comprising a base means having at least two propping members extending therefrom and a capping means operatively associated with and connected to said propping means; wherein at least one of said propping members is substantially non-articulatable along the length thereof, is rigidly attached to said base means and is pivotally connected at one end thereof with said capping means; and wherein at least one of said propping members is pivotally connected to said capping means at one end thereof, is rigidly attached to said base means at least one end thereof, and is articulatable at a point along its length of about midway between the ends thereof.

3,347,051
BULKHEAD STRUCTURE AND METHOD OF MAKING THEREOF
John O. Bjerke, Newport News, John Halliday, Hampton, and John L. Stevens, Jr., Samuel A. Mahler, and Donald A. Holden, Newport News, Va., assignors to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed Oct. 16, 1964, Ser. No. 404,433
12 Claims. (Cl. 61—46)



3. The method of making a bulkhead structure comprising providing a ship, removing the bow and the stern portions of the ship as well as the superstructure thereof, cutting the ship substantially in half longitudinally thereof to provide two longitudinally extending halves, sealing each half of the ship so as to be substantially watertight, separating said halves so that the halves each float in the water in such a position that the original side shell portions thereof are disposed downwardly, providing guide means extending down into a water bottom, interconnecting portions of each of said halves of the ship with said guide means, then sinking said halves until the original side shell portions rest upon the water bottom with the halves attached to said guide means for holding the halves in operative relationship.

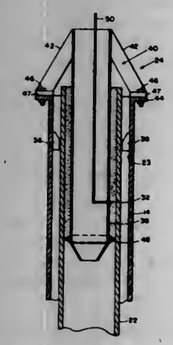
3,347,052
METHOD OF AND APPARATUS FOR TRANSPORTING, ERECTING, AND SALVAGING OFF-SHORE STRUCTURES
James L. Steitle, Lafayette, La., and Robert H. Macy, Pascagoula, Miss., and Maurice B. Thomas, Houston, Tex., assignors to Movible Offshore, Inc., Houston, Tex., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,976
4 Claims. (Cl. 61—46.5)



1. A method of salvaging and transporting a four leg off-shore drilling rig vertically positioned on the floor and extending out of the water comprising,

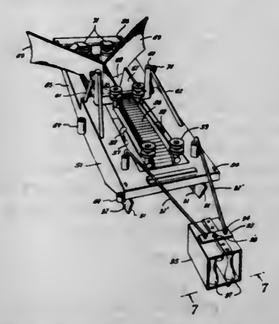
connecting floatable ballasted pontoons to each leg at the top of the rig and extending below the water level,
connecting ballasted floatable pontoons to two of the legs adjacent the bottom of the rig.
filling the floatable pontoons connected to the top of the rig on the side opposite from the side on which the lower floatable pontoons are connected with air thereby causing the rig and the lower pontoons to rotate about the air filled pontoons until the lower pontoons pass beyond a vertical plane through said air filled pontoons,
filling the lower pontoons with air thereby rotating and floating the bottom end of the rig out of the water, and
filling the pontoons at the top of the rig on the same side as the lower pontoons with air thereby horizontally floating the rig out of the water for transporting to a different location.

3,347,053
PARTIALLY SALVAGEABLE JACKET-PILE CONNECTION
William P. Manning, Springdale, Conn., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 28, 1965, Ser. No. 451,428
19 Claims. (Cl. 61—46.5)



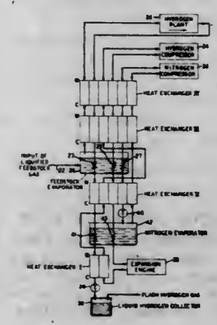
1. A partially salvageable mooring means, for connecting an offshore well servicing facility beneath the surface of a body of water to a mooring element, fixedly positioned in the body of water, comprising: a first connecting element of said mooring means adapted to be permanently fixed to the offshore well servicing facility to be fixedly positioned in a body of water, a second connecting element of said mooring means adapted to be permanently fixed, by an adhesive material, to the mooring element fixedly positioned in the body of water, means for injecting an adhesive material between said second connecting element and the mooring element for permanently fixing said second connecting element to the mooring element fixedly positioned in a body of water, and nondestructive releasable fastener means for coupling and recoupling said first and second connecting elements together at the same point along the length of the fixedly positioned mooring element and said second connecting element beneath a body of water whereby said first connecting element is permanently fixed to the offshore well servicing facility and said first and second connecting elements are releasably coupled together prior to being positioned beneath the surface of a body of water with the offshore well servicing facility, said first connecting element being fully salvageable with the offshore well servicing facility to which it is permanently fixed by the nondestructive uncoupling of said first and second connecting means when the offshore facility is to be removed.

3,347,054
UNDERWATER PIPE TRENCHING DEVICE
Buddy L. Sherrod, P.O. Box 1075, Conroe, Tex. 77301
Filed Apr. 15, 1966, Ser. No. 542,832
8 Claims. (Cl. 61—72.4)



1. In an underwater pipe laying apparatus having means to guide a pipe over a trench, an improved device for forming the trench including:
two adjacent plow members having a common sidewall,
the leading edge of each of said members arranged to cut the trench and being essentially U-shaped,
a rear plate in each of said plow members sloping rearwardly and upwardly from near the leading edge of the bottom thereof,
a spreader at the top and to the rear of each plate and extending laterally outwardly from the common sidewall of each plow member, and
means to pull said device forward whereby the trench is dug by the leading edges of the plow members and the spoil from the trench is forced up said rear wall and along said spreaders away from the trench by the forward movement of the device.

3,347,055
METHOD FOR RECUPERATING REFRIGERATION
Edward R. Blanchard, Summit, and Donald L. Smith, Berkeley Heights, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 26, 1965, Ser. No. 442,917
8 Claims. (Cl. 62—9)



1. The method of producing a desired hydrogen liquid product from a liquid feedstock comprising the steps of (a) evaporating liquid feedstock with heat supplied by the product in the form of a gaseous stream before

liquefication thereof, and with heat supplied by a closed cycle hydrogen gas auxiliary refrigeration system independent of said gaseous product stream; (b) precooling said gaseous product stream and auxiliary hydrogen gas refrigerant from said closed cycle system to a temperature suitably close to the boiling point of the feedstock to efficiently transfer heat to said feedstock, said precooling being effected by countercurrent heat exchange with evaporated feedstock and with work-expanded auxiliary hydrogen gas refrigerant; (c) further cooling said gaseous product stream and said precooled auxiliary hydrogen gas refrigerant by heat exchange with work-expanded auxiliary hydrogen gas refrigerant at a lower temperature than prevailing in step (b); (d) work-expanding auxiliary hydrogen gas refrigerant cooled in step (c); and (e) liquefying said gaseous product stream following cooling thereof in steps (b), (a), and (c) in that order to form said hydrogen liquid product.

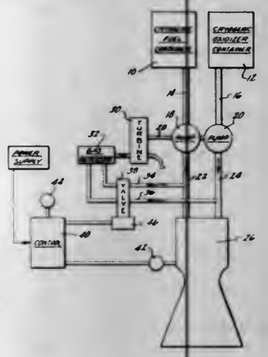
3,347,056
THERMAL INSULATION AND SUPPORT SYSTEM FOR VACUUM-JACKETED CONTAINERS
James M. Lester, Boulder, Colo., assignor to Beech Aircraft Corporation, Wichita, Kans., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,655
8 Claims. (Cl. 62—45)



1. A storage tank for liquified gas comprising:
an inner wall defining a chamber to be maintained at an extremely low temperature;
a laminated skeleton truss encompassing and in continuous direct contact with the exterior surface of said inner wall, the total contact area between the inner wall and the truss being of the order of 3% to 50% of the total exterior surface area of the inner wall, said truss having a low coefficient of solid heat conduction, and defining with the exterior surface of said inner wall a plurality of separate compartments;
a second wall outside and spaced from the inner wall and from said skeleton truss, the space between the two walls being sealed and evacuated; and
spaced means carried by and projecting outward from said truss and rigidly connected to said second wall at spaced locations to maintain the spacing between the outer wall, the truss and the inner wall, and to transmit loads from the truss to the outer wall.

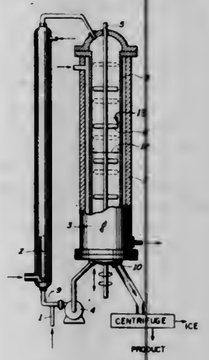
3,347,057
RAPID COOLING METHOD AND APPARATUS
Marvin C. Van Wanderham, West Palm Beach, Warren W. Worthley, North Palm Beach, and Carl R. Comolli, Jupiter, Fla., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 27, 1960, Ser. No. 58,720
3 Claims. (Cl. 62—56)

1. In a rocket propelled missile booster cryogenic liquid propellant flow system for uniformly supplying a cryogenic liquid propellant from a propellant storage tank to the combustion chamber in said rocket engine with minimal delay and waste of said fluid in stabilizing said uniform flow, the combination comprising:
(1) conduit means for containing and directing the flow of said cryogenic liquid propellant from said tank to said rocket engine combustion chamber;
(2) a thin substantially uniform layer of thermal insulating plastic material on the internal surfaces of



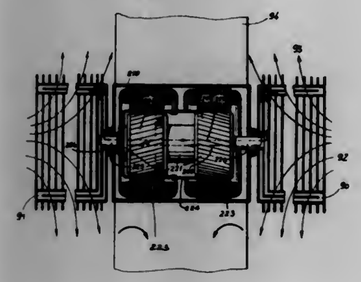
said conduit means in contact with said cryogenic liquid propellant flowing therethrough;
(3) means for producing and maintaining the flow of said cryogenic liquid propellant from said tank to said combustion chamber of said rocket engine;
(4) whereby, the flow of said cryogenic liquid propellant from said tanks to said rocket engine combustion chamber is stabilized.

3,347,058
CONCENTRATION OF EXTRACTS BY FREEZING
Hans Svanoe, Warren, Pa., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 297,498, July 25, 1963. This application June 21, 1966, Ser. No. 559,329
3 Claims. (Cl. 62—58)



1. A process for the concentration of a solute in an aqueous solvent by crystallization of ice therefrom, said process comprising:
(1) continuously cooling in an external jacketed cooling heat exchanger a feed stream and a recycle slurry as a mixture and thereafter contacting the said mixture of recycle slurry and feed containing ice crystals and fresh uncrystallized feed solution with a metal jacketed surface in a crystallizer vessel having a substantially constant internal surface temperature cooled by a circulating refrigerant in indirect heat exchange relation therewith, thereby subcooling said mixture without further crystallization;
(2) continuously, by mechanical agitation, removing sub-cooled mixture from near the metal surface in turbulent action to an internal crystallization zone within said crystallizer without mechanical scraping of said surface, thereby releasing heat of crystallization and forming and growing ice crystals in said internal crystallization zone;
(3) separating a portion of the crystals thus obtained from the slurry; and
(4) recycling a portion of the slurry to the external heat exchanger containing about 15% to 40% crystals.

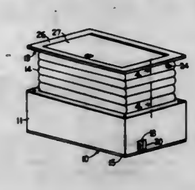
3,347,059
HEAT PUMP
Nikolaus Laing, 7141 Hofener Weg 35–37, Aldingen, Germany
Continuation of application Ser. No. 427,323, Jan. 22, 1965. This application July 18, 1966, Ser. No. 566,088
Claims priority, application Germany, Jan. 22, 1964, L 46,844, L 46,845
17 Claims. (Cl. 62—325)



1. A heat pump comprising, in combination, support means, condenser heat exchanger means for heating a first fluid circuit; evaporator heat exchanger means for cooling a second fluid circuit in communication with said first fluid circuit; compressor means for compressing a coolant leaving said evaporator heat exchanger means in gaseous state and conveying it to said condenser heat exchanger means, said condenser heat exchanger means and said evaporator heat exchanger means being constructed as fan rotors having air revolving means transversed by the coolant, said condenser heat exchanger means, said evaporator heat exchanger means and said compressor means being connected to each other to form a single unit mounted in said support means turnable about an axis; and drive means for rotating said unit about said axis.

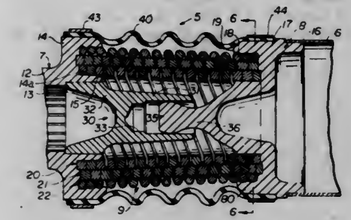
3,347,060
COLLAPSIBLE, PORTABLE FREEZER BOX
Bernard R. Barkan, Leavenworth, Kans.
(2953 S. Keeley Ave., Chicago, Ill. 60608)
Filed Dec. 22, 1965, Ser. No. 515,654
6 Claims. (Cl. 62—457)

1. A collapsible, portable freezer box of the character described, comprising a refrigeration unit encircled by structure supporting a tray on which is placed anything that one desires to preserve by refrigeration, and a hollow collapsible encircling structure which is encircled by the first mentioned encircling structure and extending upward from the first mentioned structure and having a top thereon in which is a lid through which material may be placed in the said freezer box, said top being of a size to cover the first encircling member when the hollow



collapsible structure is collapsed, and means of activating the said refrigeration unit and means of extending the height of the said collapsible structure.

3,347,061
FLEXIBLE DRIVE MECHANISM
Robert E. Stuemky, Royal Oak, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Jan. 11, 1965, Ser. No. 424,785
37 Claims. (Cl. 64—15)

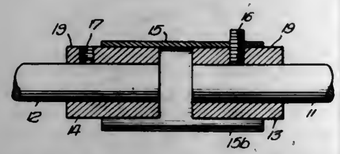


1. A drive mechanism to be positioned between driving and driven members to transmit torque therebetween and permit relative movement therebetween due to external forces acting thereon comprising at least two coil spring sleeves adapted to be connected between said driving and driven members, each coil spring sleeve having a predetermined axial extent in the absence of external forces acting thereon and including a plurality of coil spring members having the coils thereof interdigitated, the coil springs of one sleeve being wound in one direction and the coil springs of the other sleeve being wound in the reverse direction, said sleeves having a nested telescoped relation with coils thereof in radial pressure contact throughout their circumference, and the axially adjacent coils of each sleeve having spaces therebetween at least when said sleeves are at said predetermined axial extent and which spaces extend completely circumferentially around the sleeve.

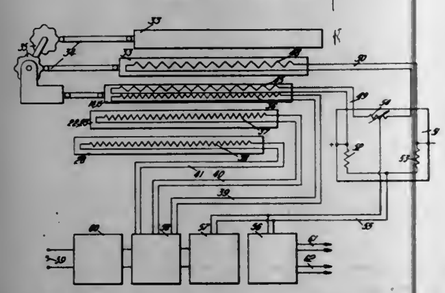
3,347,062
TORQUE LIMITING MECHANISM
Eugene R. Schumann, Franklin Park, and Liudas Vanagas, Chicago, Ill., assignors to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed Sept. 28, 1965, Ser. No. 490,970
4 Claims. (Cl. 64—28)

1. A torque limiting mechanism comprising: a driving shaft and a driven shaft; a pair of members of hexagonal cross section each adapted to be fixedly attached to an end of one or the other of said shafts; and a spring, said spring having a general configuration of an equilateral triangle with one of the apexes of said triangle removed to permit limited resilient movement of two legs of said triangle, said spring being adapted to embrace each of said

hexagonal members simultaneously, with positive planar contact between each of the three legs of said spring and alternate polyganol faces of said hexagonal member, so that torque may be transmitted from said driving shaft to said driven shaft, and said spring having sufficient resiliency such that when the torque reaches a predetermined value, two of the legs of said spring will be forced apart by the hexagonal members, thus destroying said positive planar contact and permitting relative rotation of said driving shaft and said driven shaft.



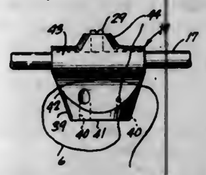
3,347,063
CONTROLLED HEATING OF FLAT WARP KNITTING MACHINES
Allan William Henry Porter and Charles Raymond Austin, Burton-on-Trent, England, assignors to Hobourn Aero Components Limited, Kent, England
Filed Feb. 15, 1965, Ser. No. 432,771
Claims priority, application Great Britain, Feb. 28, 1964, 8,448/64
3 Claims. (Cl. 66—86)



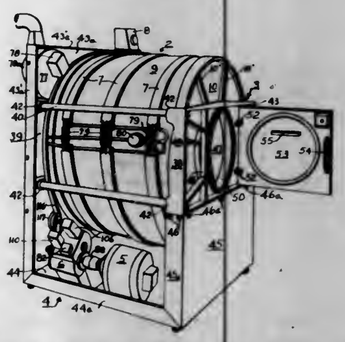
1. A flat warp knitting machine comprising a first set of bars including a needle bar and a sinker bar, electrical heating elements mounted to heat each bar of said first set, a set of guide bars, electrical resistance thermometer wires connected to one guide bar and one of said first set of bars, a Wheatstone bridge circuit, said circuit comprising two arms and one of said resistance wires being connected into each arm, said bridge being adjusted to be balanced when a temperature differential of a predetermined value exists between the two bars to which the electrical resistance thermometer wires are connected, and electrically actuated means for connecting said heating elements to a source of electric power, said electrically actuated means being connected to said Wheatstone bridge to be actuated by current received through said bridge whenever a change in said temperature differential from said predetermined value unbalances said bridge and causes a current to flow therethrough.

3,347,064
THREAD GUIDE FOR KNITTING MACHINE
James Forca, 4901 Hollywood Blvd., Hollywood Hill, Fla. 33021
Filed Dec. 11, 1964, Ser. No. 417,570
5 Claims. (Cl. 66—125)

1. A thread guide to be located in spaced relation to a bobbin, comprising a body having a curved endless side surface and having a bottom surface defined by a closed curved edge to be disposed toward the bobbin, and a top surface defined by a curved edge whose central portion approaches said bottom surface, said body having at least one hole therein extending from said bottom surface to said top surface and through which the bobbin thread is to feed.



3,347,065
COMBINED SELF-HEATING WASHER-DRIERS AND CONTROL APPARATUS THEREFOR
William E. Stilwell, Jr., deceased, late of Glendale, Ohio, by Frances Hunt Stilwell, executrix, 740 Ivy Ave., Glendale, Ohio 45246
Continuation of application Ser. No. 305,242, Aug. 26, 1963, which is a continuation of application Ser. No. 803,418, Apr. 23, 1959. This application Oct. 6, 1965, Ser. No. 497,596
10 Claims. (Cl. 68—12)



1. A washer-drier comprising a single, imperforate, exterior tub, means supporting the tub for rotation about the lengthwise axis thereof, means for rotating the tub during the washing and drying cycles thereof, heating means carried on and encircling the exterior peripheral wall of said tub for heating external and internal surfaces of said tub, means for admitting articles to be washed and dried to the interior of the tub, means for admitting water to the interior of the tub to be heated solely by contact with the heated interior wall of said tub, means for withdrawing water from said tub, air inlet means at one side of the tub for providing continuous communication with ambient air, air outlet means at the other side of the tub for exhausting air from the interior of the tub, and means for causing air to flow through said inlet means and the interior of the tub and thence through said outlet means during the drying cycle.

3,347,066
WASHING MACHINE OR THE LIKE WITH ADJUSTABLE PROGRAMMING CONTROLS
Alvin S. Klausner, 14465 Summerfield Drive, Cleveland, Ohio 44118
Filed Sept. 15, 1966, Ser. No. 579,719
12 Claims. (Cl. 68—12)

1. For laundry apparatus and the like including a liquid containing vessel, an electric motor-driven agitator means mounted in said vessel, and a plurality of solenoidally-controlled liquid inlet valves and a dump valve connected to said vessel, a control system manually programmable at an operator's panel for automatically carrying out an overall cycle sequence of a series pre-selected of operational cycles, a plurality thereof being pre-selectable in respective duration, comprising:

a time control and selection branch including

a set of like time selection rotary switches each serving to select the duration of a corresponding potential operation cycle and having all like positional fixed contacts commonly connected and having respective selector arms;

each contact representing a duration increasing by fixed intervals from zero to a maximum;

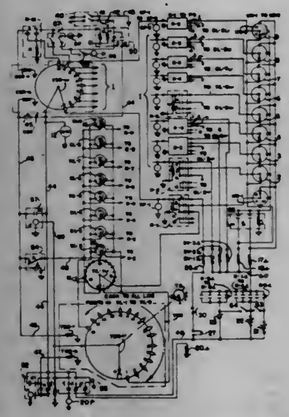
a time stepping relay

having contacts successively connected to successively positioned commonly connected fixed contacts of the time selection switches; and

having a solenoidally stepwise advanced and solenoidally zero reset movable contact arm;

timer means producing when operating timing pulses at constant intervals applied to advance the time stepping relay;

a liquid selection and level controlling circuit branch including



a set of like liquid selection rotary switches each serving to select liquid admitted to the vessel in a corresponding potential operation cycle and having all like positioned fixed contacts commonly connected to respective solenoids controlling said liquid inlet valves and having respective liquid selector arms;

each contact position thereby representing a selection of a distinct liquid charge to the vessel;

and normally-closed liquid level switch means connected in series with said solenoids controlling said liquid inlet valves and responsive, by opening, to attainment of a desired liquid level in said vessel and thereby closing a said inlet valve;

means including

cycle stepping relay means

having successive fixed contact positions corresponding respectively to potential operational cycles plus a last or termination contact position for a termination cycle; and

having a solenoidally advanced, and solenoidally reset, movable contact arm means for power application to each fixed contact position;

and connecting means connecting each said time selector switch arm and also connecting each said liquid selector switch arm to a corresponding fixed contact position of the cycle stepping relay;

whereby, with power applied to said cycle relay arm means, power is available at the time stepping relay arm, for each potential operational cycle represented by a said selector switch, when the time stepping relay reaches a contact position corresponding to the selected operation duration setting of a respective selector switch while the cycle stepping relay arm is at a fixed contact position connected to the arm of the respective selector switch;

relay means energized by power on the time stepping relay arm

effective while energized

to maintain said solenoidally operated dump valve open, to disable said liquid selection and control circuit from operating any liquid inlet valve upon closing of liquid level switch means during dumping; and

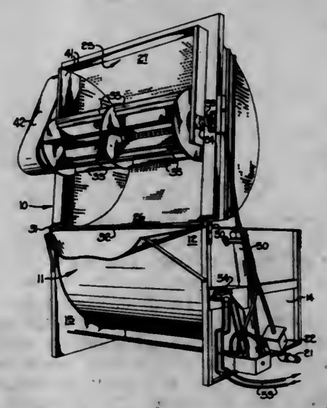
to de-energize and disable said timer means from producing timing pulses at an operational point representing substantially the start of an operational interval upon a resumed operation thereof;

the last said relay means upon de-energization enabling said timer means to operate and said dump valve to close;

dump timer means energized by power on the time stepping relay arm to time and produce a pulse at the end of a pre-determined period allotted for dumping at the end of an operational cycle, the last said pulse applied to a reset solenoid of said time stepping relay and to an advance solenoid of said cycle stepping relay, thereby to begin a succeeding cycle;

a termination circuit branch providing a connection from said termination contact position to a cycle stepping relay reset solenoid and effective to cut off power to said agitator means, when the cycle stepping relay reaches said termination contact position.

3,347,067
PADDLE DYEING APPARATUS FOR TEXTILE GOODS
Thomas Berry, Rome, Ga., assignor to Rome Machine & Foundry Company, Rome, Ga., a corporation of Georgia
Filed Aug. 18, 1965, Ser. No. 480,596
5 Claims. (Cl. 68—135)



1. A textile paddle dyeing apparatus adapted to be readily loaded with undyed textile goods from one side and in which the unloading of goods after dyeing from the opposite side is facilitated, said apparatus comprising:

an open top vat adapted to contain a dye liquor and having front and back walls,

a foraminated basket adapted to contain the goods and having front and back walls, said basket having a shape substantially conforming to the interior configuration of said vat and being pivotally connected at the upper extremity of its front wall to the upper extremity of the front wall of said vat for pivotal movement of said basket over a range of positions from a normal position within said vat to an extended position outside and above said vat,

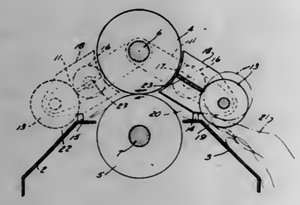
an elongate shaft rotatably mounted on the upper portion of said basket and extending parallel to the front wall thereof,

a plurality of paddles mounted around said shaft for rotation therewith and extending along the longitudinal axis thereof for agitating the goods during dyeing,

a motor carried by said basket for movement therewith and being operatively connected to said shaft for rotating the same, and

fluid pressure operable means operatively connected to said basket and including a fluid cylinder with a piston rod normally positioned in retracted position within the cylinder and adapted to be extended therefrom for pushing said basket upwardly to desired positions between said normal and extended positions, whereby the retracted position of said piston rod protects the same against dye liquor during the dyeing operation.

3,347,068
WRINGER WITH ROTARY GUARD MEANS
Robert A. Brenner, St. Joseph, and Victor W. Cuthbert, Sodus, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Dec. 15, 1964, Ser. No. 418,499
7 Claims. (Cl. 68—266)



3. In a wringer assembly,

a frame,

upper and lower pressure rollers each having a shaft mounted in said frame and said rollers together providing a pressure nip,

first and second drainboard means leading away from opposite sides of said pressure nip,

and rotary guard means comprising,

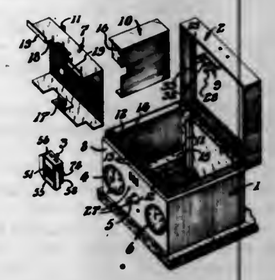
linkage means pivotally connected to said shaft of said upper pressure roller for pivotal movement about the axis of said upper pressure roller,

roller means journalled in said linkage means and disposed to overlie said drainboard means,

and means to form a variable nip between said roller means and an underlying one of said drainboard means comprising friction gear means rotatably carried by said linkage means and interposed between said upper pressure roller and said roller means,

whereby said roller means will advance articles introduced into said variable nip towards said pressure nip and said linkage means will yield pivotally upwardly.

3,347,069
SECURITY CONTAINER
Richard M. Hollingshead, Jr., 1144 Red Rose Lane, Villanova, Pa. 19085
Filed July 9, 1965, Ser. No. 473,560
5 Claims. (Cl. 70—63)



1. In a container having relatively movable components, said components being adapted to be advanced relatively toward each other to close the container and to be retracted relatively from each other to open the container,

(a) a striker plate on one component for engaging with striker plate retaining means on the other component to secure the two components in locked relationship when the container is closed,

(b) a code lock mounted on one of the components,

(c) said code lock having automatic means permitting selectively coding of the lock when the components are relatively retracted from each other,

(d) decoding means in the code lock and

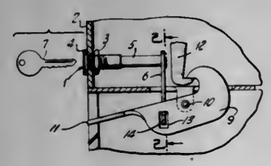
(e) key lock means adapted to unlock the code lock and actuate the decoding means preparatory to selecting the proper unlocking code for the code lock.

3,347,070
EMERGENCY DOOR LATCH
Alden F. Gibson, Preston, Ontario, Canada, assignor to Hahn Brass Limited, New Hamburg, Ontario, Canada, a company of Canada
Filed Aug. 26, 1965, Ser. No. 482,803
14 Claims. (Cl. 70—92)



1. A panic exit device assembly comprising a casing adapted to be secured to a door, said casing having an opening in its side wall through which a pivotally mounted latch bolt is retracted and projected, resilient means for urging said latch bolt towards projected position, a slide mounted in said casing for transverse movement on ways formed in said casing, said slide being connected to said latch bolt and being provided with two integrally connected studs perpendicular thereto, said studs being encased with slide rollers rotatably mounted thereon, said studs containing said rollers are adapted to each cooperate with a link member which is pivotally secured to the top wall of said casing, each link member being jointed to an opposite end of a link bar, said link bar containing a tooth which meshes with a tooth contained on a latch arm pivotally mounted in said casing, said latch arm containing a knuckle joint which is adapted to receive a crash bar and means for positive dogging of said crash bar.

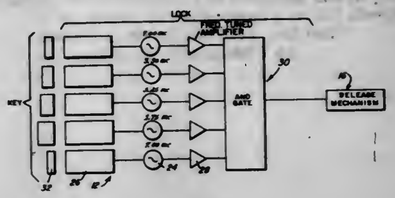
3,347,071
AUTOMOBILE HOOD LOCKING MEANS
Joseph Solow, 1864 Coney Island Ave., Brooklyn, N.Y. 11230
Filed Apr. 1, 1965, Ser. No. 444,582
2 Claims. (Cl. 70—240)



1. In a releasable hood latching assembly having a manually pivotal lever for releasing an automobile hood in closed latch status, the combination comprising, with a hood having a hole adjacent the grille work of the automobile, of means including a cylinder lock mounted in the hole in the hood, said cylinder lock having a keyhole opening at the outerside of said hood, the remainder of said lock extending into the automobile compartment enclosed by said hood, means including a shank carried by said lock and forming an extension thereof for conditionable rotation from one to another of at least two operative positions, and a latching element keyed at one end to and carried by said shank for releasably engaging said latching assembly lever, a first selected actuation of said lock adapted to condition said shank and said latching element to one operative position for causing said element to engage said latching lever to prevent conditioning of same for unlatching said hood, a second selective actuation of said lock adapted to condition said shank and said latching element to disengage from said assembly lever for allowing manual actuation of said lever in order to unlatch said hood from closed status.

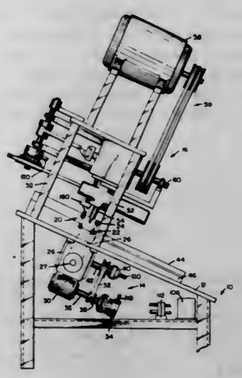
3,347,072
ELECTRONIC SOLID STATE LOCK MECHANISM
Marvin S. Rose, % H. Bretan, 16 SW. 1st Ave., Miami, Fla. 33130
Filed June 28, 1965, Ser. No. 467,253
16 Claims. (Cl. 70—277)

1. A key operated lock combination comprising a fixedly mounted housing having a slot within which a key member is received, a plurality of oscillator components mounted within the housing from which outputs at a fixed operating frequency are obtained, each of said oscillator components having a closed tuning circuit mounted within the housing, tuning means mounted by the key member in operative spaced proximity to each of the tuning circuits for rendering the oscillator components operative at said fixed frequency, gate means mounted in the housing and having a threshold level, a lock release mechanism connected to said gate means, frequency tuned amplifier means operatively connecting the oscillator components to the gate means for supply of amplified oscillator outputs thereto, and means connected to the gate means for operating said lock release



mechanism when the threshold level thereof is exceeded by the combined amplified outputs of all the oscillator components at said fixed frequency.

3,347,073
STRAIGHTENING MACHINE
George A. E. Couture, 1180 Murray Ave., Quebec 6, Quebec, Canada
Filed Apr. 28, 1964, Ser. No. 363,144
10 Claims. (Cl. 72—15)



1. A straightening machine comprising

a frame,

two pairs of spaced rollers on the frame through which articles to be straightened are directed, said rollers describing a course through which straight articles will pass without interruption,

a hammer mounted on the frame for reciprocal movement along a path normal to the course and between the pairs of rollers, said reciprocal movement along the path defining the hammer stroke,

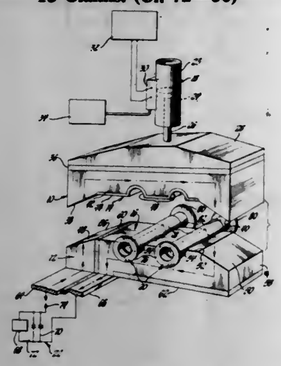
means continuously reciprocating the hammer along the path with the limits of the stroke failing to intersect the course,

drive means for driving the rollers to propel articles along the course,

sensing means responsive to an article leaving the course and connected to the drive means for stopping the rollers to retain the article in a fixed position, said means also being connected to the reciprocating means for moving the reciprocating hammer while it continuously reciprocates so that its stroke intersects the course and strikes the article,

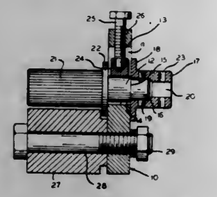
and means operatively connected to the sensing means for returning the reciprocating hammer to a position wherein the hammer stroke fails to intersect the course and it fails to strike the article.

3,347,074
ELECTROMAGNETIC FORMING APPARATUS AND METHOD
Mark A. Eilers, Warren, and Winlaw B. Bramley, Jr., Milford, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,666
13 Claims. (Cl. 72—56)



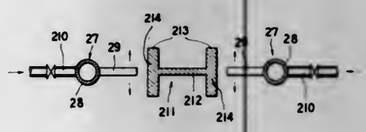
1. Apparatus for electromagnetically forming a metallic workpiece comprising, in combination a pair of relatively movable and engageable dies formed of a conductive material, and so arranged when engaged as to serve as conductors by providing current paths around the workpiece, means maneuvering the dies into and out of engagement, and an energy source connected directly to the dies and operative to supply thereto high amperage current pulses, so that the current flow through the dies creates high intensity magnetic fields for forming the workpiece.

3,347,075
TUBULAR WALL RIDGE REMOVING AND EXPANDING DEVICES OF THE PORTABLE TYPE
Raymond G. Knudsen, Robert E. Badger, and Raymond R. Zuzinec, Kenosha, Wis., assignors to Snap-On Tools Corporation, Kenosha, Wis., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 329,040
7 Claims. (Cl. 72—111)



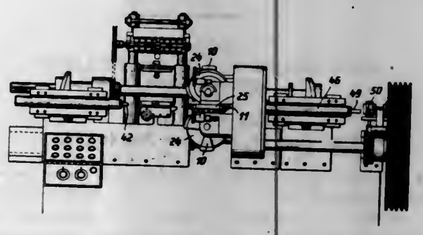
1. In a device of the character described, the combination with a portable frame member adapted to be held manually for insertion and positioning relative to a tubular pipe or stub flange end, of a pair of rollers journalled on said frame member, one of said rollers being a driver and the other a driven roller in spaced relation to receive the wall of a circumferential stub flange or pipe end therebetween, bearings in said frame for the journalled support of each of said rollers, one of said bearings being slidably adjustable in said frame member, adjustable means in said frame member for operative connection with said slidable bearing, said rollers being journalled in said frame at only one end thereof to present a freely accessible other end for the reception of a pipe therebetween with said frame member serving as a manual grasp for insertion of said rollers and for the rotation thereof, and means for enabling the driver roller to be rotated and the driven roller to follow in frictional operative engagement with the wall of a pipe or flange therebetween, whereby continued rotation of the driver roller with the driven roller in frictional contact therewith through the wall end disposed therebetween will expand the pipe or flange end and remove any ridges therein to enable a telescopic fit with a new section of pipe or the like.

3,347,076
METHOD AND APPARATUS FOR MANUFACTURING H-SHAPED STEEL
Ikuya Noda, Akira Yamamoto, Takashi Ueta, Hisao Minami, and Ryo Hirano, Himeji-shi, Fujio Someno, Tokyo, and Koichi Sudo, Kamaishi-shi, Japan, assignors to Fuji Iron & Steel Co., Ltd., Tokyo, Japan
Filed Nov. 3, 1964, Ser. No. 408,559
Claims priority, application Japan, Nov. 5, 1963, 38/59,844; May 22, 1964, 39/28,555; July 7, 1964, 39/38,675, 39/38,676
6 Claims. (Cl. 72—201)



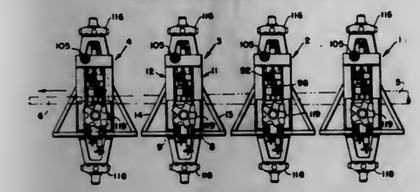
1. A method for manufacturing a steel H-shape having a large ratio of flange thickness to web thickness, or having an extremely thin web, by hot rolling, comprising the steps of shaping a hot steel ingot to form a bloom having roughly an H-shape profile; subjecting said bloom to a hot rolling stage to reduce said profile to the desired H-finished shape; and during such hot rolling stage, subjecting the flanges to a substantially greater cooling than that to which the web is subjected to maintain the temperature difference between the web and the flanges at a minimum.

3,347,077
PROCESS AND MACHINE TO ROLL TAP DRILLS
Ferenc Erdélyi, 3675 Normandy Road, Shaker Heights, Cleveland, Ohio 44120
Filed Jan. 8, 1964, Ser. No. 336,449
Claims priority, application Germany, Jan 9, 1963, E 24,141
8 Claims. (Cl. 72—202)



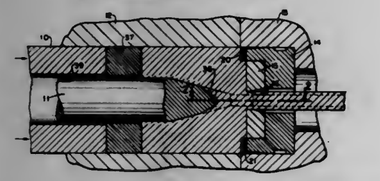
1. A process for forming thread cutting taps by rolling chip grooves and transverse thread teeth on thread lands located between said chip grooves on a bar blank, comprising the sequential steps of heating said blank passing said blank immediately after said heating through a plurality of synchronously driven rolls, rolling chip grooves in said blank and thereafter rolling thread teeth in said lands, said chip grooves and said teeth being formed during one heating of said blank and in one working cycle.

3,347,078
TUBE RESHAPING MACHINE
Kenneth R. Keska, Bay Village, Eugene L. Mackey, Fairview Park, and Benjamin C. Dolphin, Bay Village, Ohio, assignors to The Yoder Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 4, 1965, Ser. No. 430,281
30 Claims. (Cl. 72—225)



1. Apparatus for reshaping elongated round work into multi-faceted work comprising a plurality of roll stands forming work passes, each stand including a roll for each face of the work to be formed, the initial stand comprising rolls having curved work faces with the axis of symmetry of the portion of the work formed therebyy extending transversely of the transaxial center plane of the respective roll, the rolls of the initial stand having work face profiles having a plurality of radii, the centers of which are off-set from the transaxial center plane of the roll.

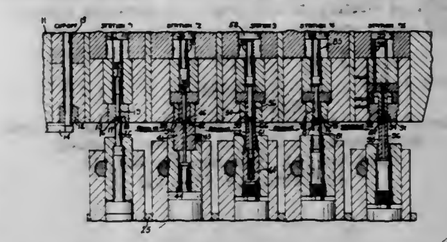
3,347,079
TWO-HOLE EXTRUSION
Douglas W. Rowell, Woodbury, Conn., assignor to Anaconda American Brass Company, a corporation of Connecticut
Filed June 24, 1965, Ser. No. 466,717
8 Claims. (Cl. 72—264)



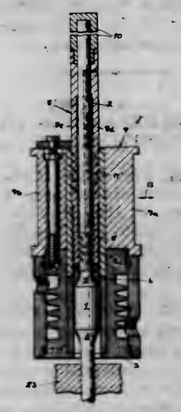
1. In extrusion apparatus for extruding elongated members having at least two longitudinal holes extending therethrough from tubular billets, having a billet chamber, a fixed mandrel extending through the billet chamber, and an extrusion ram, the improvement in combination therewith comprising at least two mandrel nibs fixed to the end of the mandrel and extending therefrom spaced from each other, dummy block means associated with said extrusion ram having an inside diameter slightly larger than the inside diameter of the billet for pressing the billet through the die and shearing a major portion of the billet from an inner shell portion which is retained on the fixed mandrel, and die means in which said nibs are positioned for guiding serveral streams of upset metal to unite between the nibs to form a unitary elongated extruded member with a metal weld between said elongated holes.

3,347,080
METHOD OF FORMING NUTS
William Dunn Bailey and Charles Robert Bradlee, Cheshire, Conn., assignors to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 8, 1963, Ser. No. 257,198
16 Claims. (Cl. 72—334)

1. The method of forming a cup-shaped metal article from a cylindrical workpiece comprising, confining the workpiece in a die having a cavity comprised of a shallow opening of substantially greater diameter than that of the workpiece and a deeper opening concentric with the shallow opening, the deeper opening being of smaller diameter than the workpiece, applying pressure by means of a punch to an end face of the workpiece to radially expand and axially compress the workpiece to fill the cavity, form a peripheral chamfer at one end and an indent in the face within the end, form a substantially flat surface on the other end with an axially extending central cylindrical neck portion and an indent within the face of the neck portion, revolving the workpiece end for end and transferring it to a die having a cylindrical cavity with a concave bottom, the cavity being of smaller diameter than the workpiece, applying pressure on the flat end surface by means of a sleeve whose outside diameter is smaller than the diameter of the cavity, so as to draw a portion of the peripheral edge of the workpiece around the sleeve while maintaining the peripheral chamfer and the indents on opposite sides of the workpiece.



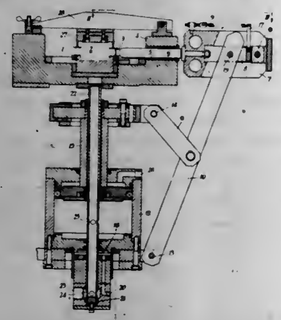
3,347,081
APPARATUS FOR THE HEADING OF ELONGATED WORKPIECES
Horst Bachmann, Haan, Rhineland, Germany, assignor to Maschinenfabrik Hasenclever AG, Dusseldorf, Germany, a corporation of Germany
Filed Aug. 24, 1965, Ser. No. 482,231
15 Claims. (Cl. 72—342)



1. A die assembly for a heading press wherein an elongated workpiece is subjected to localized electrical heating and compression for transverse enlargement of the workpiece in the heated region thereof, said assembly comprising a die-forming member provided with a die cavity for receiving said workpiece; an annular anvil member received in and coaxial with said cavity and adapted to surround said workpiece; a longitudinally split electrically conductive contact sleeve coaxial with and

connected to said anvil member and adapted to surround said workpiece beyond said anvil member while being yieldable transversely to said workpiece for clamping engagement therewith; and electrically conductive electrode-holder means connected with said die-forming member and having a pair of clamping members relatively shiftable transversely to said workpiece for clamping said sleeve thereagainst while permitting axial displacement of said sleeve and the workpiece enclosed thereby with respect to said die-forming member, thereby permitting transfer of electric current from said clamping members to said sleeve and from said sleeve to the workpiece.

3,347,082
GEAR FORGING
Robert C. Clerk, Maidenhead, England, assignor to Clerk, King, Poynter & Co. Ltd., Reading, England
Filed Aug. 14, 1964, Ser. No. 389,545
10 Claims. (Cl. 72—362)



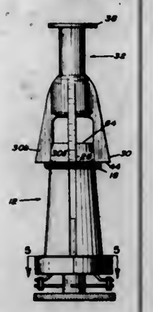
1. A method of forming gear teeth upon metal blanks which comprises subjecting the blank to a simultaneous forging operation by a number, equal to the number of teeth to be formed, of inwardly acting radially disposed tooth ended punches attached to inertia masses to which is applied a penetration velocity high enough to induce radial outwards splash of the deformed metal from the tooth roots of the teeth being formed.

3,347,083
APPARATUS FOR EXPANDING AN ELASTIC LOOP MEMBER AND MOVING THE SAME TO A GIVEN POSITION
William V. Turpin, Rte. 4, and Ollie E. Lotts, Rte. 4, Box 17-B, both of Lexington, Va. 24450
Filed Aug. 25, 1965, Ser. No. 482,570
7 Claims. (Cl. 72—393)

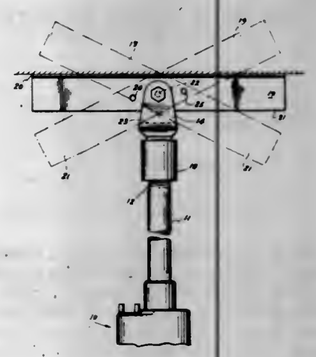
1. Apparatus for expanding an elastic loop member and moving the same to a given position, said apparatus comprising:

(a) support means including a support having a hollow interior and an outwardly tapering exterior surface extending about said hollow interior, said exterior surface being adapted to receive an elastic loop member thereon in surrounding relation thereto, said support means having a plurality of elongated channels extending from said interior through said exterior surface and dividing said exterior surface into a plurality of elongated sections; and,

(b) plunger means including a hub slidably received in said hollow interior of said support means, finger means projecting outwardly of said hub and being dimensioned to be slidably received in said channels, said finger means having at least a base portion projecting outwardly of said exterior surface and operating means extending upwardly from said hub, whereby when an elastic loop member is placed on said exterior surface of said support means, said finger means can be moved in said channels to bring the base portions thereof in engagement with the top of the loop and pressure can be applied to said operating means to force the loop along said exterior surface in the direction of outward taper thereof to expand the loop and move it to a given position.

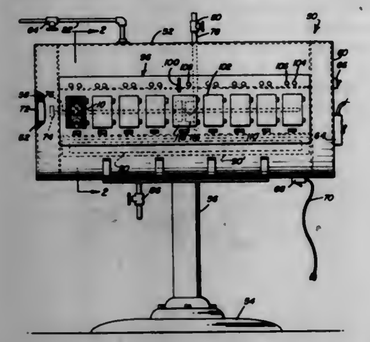


3,347,084
AUTOMOBILE BODY REPAIR TOOL
Richard J. Flower, 106 Canal St., Staten Island, N.Y. 10304
Filed Aug. 24, 1965, Ser. No. 482,107
3 Claims. (Cl. 72—457)



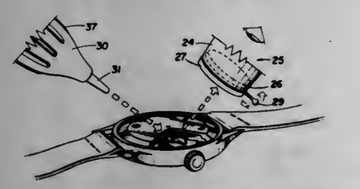
1. In combination with the plunger of a jack used in automobile body repair work, a member including a stem having spaced parallel jaws extending from one end thereof, said jaws having aligned passages therethrough, an elongated plate having a front edge and a rear edge and having a first hole therethrough intermediate the length and width thereof, said plate being mounted between said jaws with said first hole normally aligned with said passages, a removable pivot bolt normally passing through said hole and said passages, said plate having a second hole therethrough similar to said first hole and offset both longitudinally and transversely from said first hole on one side of said first hole, said bolt being selectively insertable through either said first hole or said second hole, the space between said jaws having a floor, the distance between said first hole and said rear edge of the plate and between said second hole and said rear edge of the plate being less than the distance between said passages and said floor, and means for releasably locking said stem on the extremity of said plunger with the stem in alignment with the plunger.

3,347,085
THERMAL BALANCING APPARATUS FOR ADJUSTING AND TESTING THERMOSTAT DEVICES
Sidney F. Harris, 1371 N. Christina St., Sarnia, Ontario, Canada
Filed Dec. 30, 1965, Ser. No. 517,620
10 Claims. (Cl. 73—1)



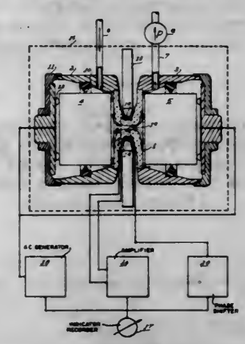
1. Apparatus for adjusting thermostat devices comprising, a container, electrical heating means mounted within the container, insulated housing means mounted on the container for removably receiving a plurality of said thermostat devices, a temperature indicating probe mounted within the container in spaced relation to the thermostat devices, selectively controlled means connected to the heating means for intermittent energization thereof to maintain a predetermined temperature within the container as indicated by the probe, indicator means operatively connected to each of said thermostat devices for signifying a change in condition thereof, and selector means for rendering said indicator means operative to signify a change in condition of a selected thermostat device at said predetermined temperature within the container in response to adjustment of the selected thermostat device.

3,347,086
STROBOSCOPIC WATCH TIMER
Edwin John Pass, 118 Grant Ave., Hamilton, Ontario, Canada
Filed Aug. 17, 1964, Ser. No. 390,045
1 Claim. (Cl. 73—6)



In apparatus for testing the timing of watch movements, a stroboscope comprising: a mercury vapour tube adapted to be connected to an alternating current power source; a rectifier between said tube and power source; a magnetic coil about said tube which, when energized causes said tube to be energized; said coil being included in a circuit; a battery powering said circuit, contacts controlling the completion of said circuit; a synchronous motor adapted to be connected to said power source and having a drive shaft, a cam removably and drivably mounted on said shaft and operatively connected to said contacts; a lens associated with said tube for concentrating light therefrom into a pencil beam adapted to be directed onto the balance wheel of a watch being tested; and an optical viewer including a light polarizing filter for viewing the balance wheel with the beam directed thereon.

3,347,087
DEVICE FOR MEASURING THE CONTENT OF PARAMAGNETIC GASES IN GAS MIXTURES
Heinz Engelhardt, Frankfurt am Main, Praunheim, Helmar Krupp, Frankfurt am Main, Helmut Rabenhorst, Frankfurt am Main, Niederrad, Gottfried Spengler, Hofheim, Taunus, and Harry Wismath, Frankfurt am Main, Germany, assignors to Hartmann & Braun Aktiengesellschaft, a corporation of Germany
Filed June 1, 1964, Ser. No. 371,358
Claims priority, application Germany, June 5, 1963, H 49,362
9 Claims. (Cl. 73—24)



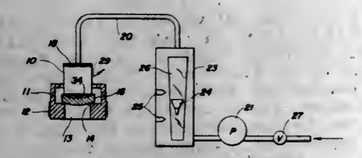
1. An analyzer for measuring the paramagnetic gas content in a sample gas mixture, the analyzer comprising a substantially permanent magnet having opposite poles, means forming a measuring chamber between the poles with inlet and outlet openings for the sample gas to be analyzed, means for determining changes of magnetic flux between the poles in the zone of the chamber in accordance with change in magnetic susceptibility of sample gas within the chamber, and for indicating the changes as a measure of the content of paramagnetic gas in the sample gas, and means for subjecting the gas mixture to be analyzed in the chamber to alternations in pressure to produce standing sound waves in the chamber, the frequency of the alternations in pressure, the dimensions of the chamber and the position of the poles being so chosen that a pressure antinode exists in the chamber in the zone of substantially the strongest magnetic flux.

3,347,088
LENS MOUNTING ALIGNMENT APPARATUS AND METHOD
Edgar S. Barnes, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 10, 1965, Ser. No. 512,938
5 Claims. (Cl. 73—37.5)

1. A lens mounting apparatus for holding and gaging a lens whose refracting faces are surfaces of revolution about the optic axis of the lens, comprising:

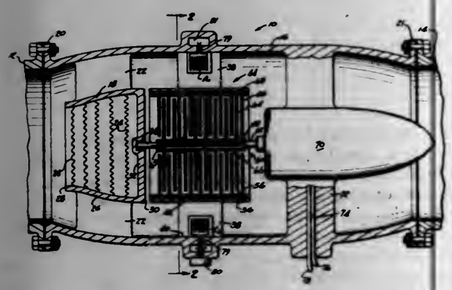
a cup-shaped member having a peripheral flange positionable to engage a peripheral portion of a surface of a lens face, when the lens is centered, said member and the lens surface defining a chamber and said member defining a gaging orifice inlet and an unrestricted exhaust port for the chamber, the orifice being directed toward and spaced from the lens surface in accordance with the curvature thereof for admitting air to the chamber with a predeterminable pressure drop during a certain rate of air flow;

support means having a peripheral flange coaxial with said member flange and co-operating therewith to center the lens;
a conduit means coupled to the gaging orifice in said member;



pump means for pumping air through said conduit means to the gaging orifice; and
an air flow gage coupled in said conduit means to provide a signal information indicative of the curvature of the lens surface adjacent to said member as the lens is centered by said member and said support means.

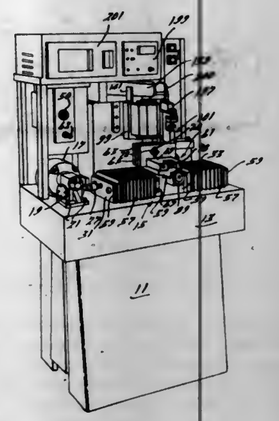
3,347,089
CONTINUOUS IN-LINE VISCOMETER
Charles C. Perry, 9725 Waters Road, Ann Arbor, Mich. 48103
Filed Nov. 9, 1964, Ser. No. 409,820
4 Claims. (Cl. 73—59)



1. A viscometer comprising means forming a passage for a fluid to flow in one direction, tubular stator means disposed in a portion of said passage means in a spaced relation therewith so that the axes of said stator means and said passage means are substantially parallel and so that some of the fluid flowing in said passage means in said one direction will enter one end of said stator means, flexure struts mounting said tube on said passage means, means extending into said stator means for applying a torque to fluid therein to thereby rotate said stator means and bend said struts in a direction transversely of said passage means a distance related to the viscosity of fluid in said stator means, and diffuser means in said passage mean adjacent to said one end of said stator means providing for laminar flow of fluid into said one end of said stator means.

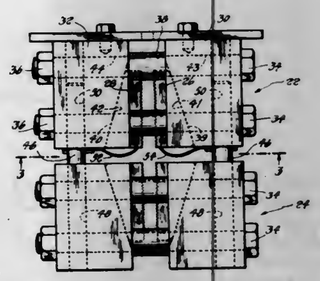
3,347,090
BONDED ABRASIVE GRADE CHECKING APPARATUS
Myron P. Ellis and Randal T. Murphy, Royal Oak, and James F. Horgan, Detroit, Mich., assignors to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 31, 1964, Ser. No. 422,768
8 Claims. (Cl. 73—78)

1. An abrasive grading apparatus comprising
a support having a carriage disposed thereon for longitudinal movement relative thereto,
a fixture carried by said carriage and adapted to receive an abrasive specimen,
dressing tool means on said support adapted to dress an exposed surface of said abrasive specimen during movement of said carriage,
grading means including a tool adapted to interferingly engage said dressed surface of said abrasive specimen during movement of said carriage,
said grading means further including a deflectable beam carried by said support and supporting said grading tool,



said beam having a rigid mounting,
said grading means and said dressing tool being relatively adjustable in a direction transversely of the direction of movement of said carriage whereby the degree of interference of said tool with a specimen surface dressed by said dressing tool may be set, and
whereby said grading tool is deflected during engagement with said abrasive specimen to an extent reflective of the hardness of said specimen.

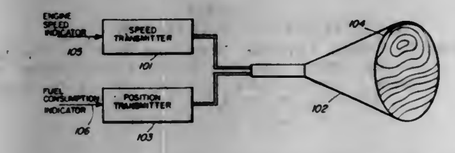
3,347,091
GRIP FOR COMPRESSION TESTING
Thomas Cymmer, Jersey City, N.J., and Nathan Fried, Brooklyn, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 19, 1965, Ser. No. 498,160
2 Claims. (Cl. 73—103)



1. A grip structure for transversely clamping one end of an elongated specimen to be subject to compression test along its longitudinal axis in a load application direction comprising:
a pair of jaw members positioned to receive therebetween said one end of said test specimen,

said jaw members having outwardly facing sides converging toward said longitudinal axis in a direction opposite said load application direction,
a fixture including separate guide members formed with guide surfaces parallel to said jaw member sides to slidably received said jaw members and means fixing the position of said guide members,
said fixing means including stop means comprising a plurality of spacer collars positioned between said guide members for preventing inward movement of said guide means toward said longitudinal axis,
adjustable tension connecting means comprising a plurality of bolts and nuts connected between said guide means, said guide members being apertured transversely to pass said bolts through said guide members and spacing collars and
adjusted in tension to a value greater than the maximum outward transverse thrust developed from said specimen under compression test such that said guide members can have no outward spread during testing of said specimen.

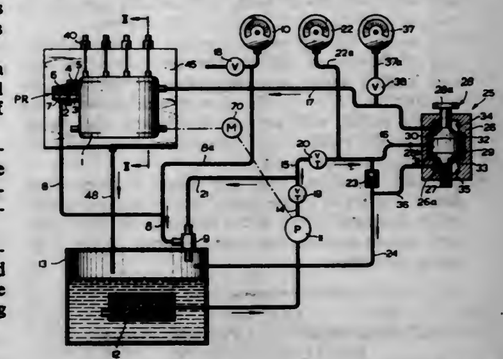
3,347,092
FUEL ECONOMY METER
Alverd C. Stutson, Riverside, Conn., assignor to Mobil Oil Corporation, a corporation of New York
Filed Aug. 19, 1964, Ser. No. 390,679
4 Claims. (Cl. 73—114)



2. In combination with an internal combustion engine, a device for indicating fuel consumption efficiency of said internal combustion engine comprising a graphical means indicating brake specific fuel consumption related to a range of engine speed and a range of engine fuel consumption rate, speed signal means to generate a function representative of instantaneous engine speed, fuel signal means connected to a fuel throttle means of said engine to generate a function representative of instantaneous rate of engine fuel consumption, indicator means responsive to said respective signal means adapted and arranged to designate on said graphical representation a point corresponding to said engine speed signal and said fuel consumption signal, and hence representative of engine efficiency.

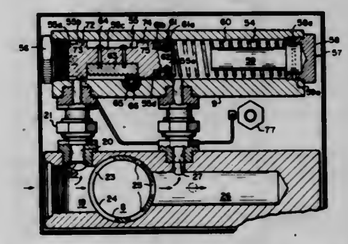
3,347,093
APPARATUS FOR TESTING FUEL INJECTION PUMPS
Franz Hauck, Denkendorf, Kreis Esslingen, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany
Filed Jan. 22, 1965, Ser. No. 427,434
Claims priority, application Germany, Feb. 1, 1964, B 75,270
7 Claims. (Cl. 73—168)

1. An apparatus for testing fluid displacing machines, particularly for testing the start of the effective operation of fuel injection pumps and the quantity of fuel passing through operating fuel injection pumps, comprising a source of testing fluid; supply conduit means connecting said source with a machine to be tested; circulating means provided in said supply conduit means for conveying the fluid from said source to the machine at a pressure which is so high that said circulating means by itself suffices to circulate the testing fluid at pressures required for testing the start of the effective operation of a fuel injection pump and in amounts required for testing the quantity of fuel passing through an operating fuel injection pump; and heating means including adjustable throttle valve



means provided in said conduit means and defining a flow restricting passage for causing turbulent flow of testing fluid whereby such fluid is heated.

3,347,094
HYDRAULIC CIRCUIT TESTER
William E. Schroeder, Fox Chapel, and Herman F. Holl, Pittsburgh, Pa., assignors to Schroeder Brothers Corporation, McKees Rocks, Pa.
Filed Oct. 22, 1965, Ser. No. 500,766
4 Claims. (Cl. 73—168)



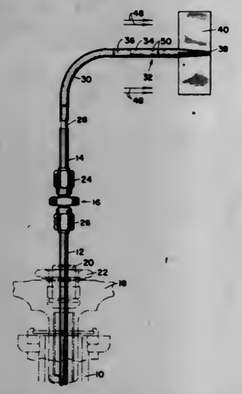
1. A hydraulic tester having a case having an inlet and an outlet adapted to be connected into a hydraulic circuit whereby fluid may be passed from the circuit into the tester through the inlet and returned to the circuit from the tester through the outlet, said tester comprising
(A) means forming a continuous passageway through the tester and connecting the inlet and the outlet, said passageway having an orifice and a loading valve;
(B) a differential pressure gauge connected across the orifice and having
(1) a bore closed at both ends;
(2) a piston within said bore and adapted for travel in response to fluid pressure;
(3) stop means on the end of said bore nearest the downstream pressure end of the piston for limiting travel of the piston;
(4) biasing means between the stop means and the downstream pressure end of the piston for urging the piston toward the end of the bore opposite the stop means, said biasing means including a coil spring secured at one end to the stop means and at the opposite end to one race of a ball bearing thrust bearing, the opposing race thereof being rigidly seated on the foot of said piston, whereby full compression of the spring is possible upon rotation of the first bearing;

(C) a first passageway connecting at one end into said continuous passageway between said inlet and said orifice, and connecting at the opposite end into said bore on the upstream pressure end of said piston, said first passageway being substantially smaller in cross-section than said continuous passageway;
(D) a second passageway connecting at one end into said continuous passageway between said orifice and said loading valve, and connecting at the opposite end into said bore on the downstream pressure end of said piston, said second passageway also being substantially smaller in cross-section than said continuous passageway; and
(E) means associated with said piston for measuring directly the travel of the piston within the bore whereby the indicated travel of the piston under fluid pressure corresponds to the pressure drop of the fluid across the orifice.

3,347,095
ATMOSPHERIC STATIC PRESSURE DETECTION MEANS

Edward W. Strong, Stony Brook, Richard S. Reade, Setauket, James E. Manuel, Belle Terre, and Walter Bastedo, Stony Brook, N.Y., assignors to Gyrodyne Company of America, Inc., St. James, N.Y., a corporation of New York

Filed Feb. 9, 1965, Ser. No. 431,320
13 Claims. (Cl. 73—178)



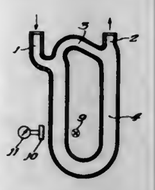
1. In combination with the rotor shaft of a helicopter,
(a) a tube extending upwardly through said rotor shaft, said tube element terminating in a rigid tube element extending above the rotor shaft,
(b) a static pressure tube element,
(c) a flexible resilient tube element interconnecting said rigid tube element and said static pressure tube element, said flexible tube element having a predetermined flexibility and resiliency such that said flexible tube element will hold said static pressure tube element with its axis in a substantially horizontal position when said aircraft is at rest.

3,347,096
METHOD AND A DEVICE FOR SEPARATING GAS BUBBLES FROM A LIQUID FLOW

Tage Harald Person, Vallingby, Sweden, assignor to LKB-Produkter Aktiebolag, Stockholm, Sweden, a joint-stock company of Sweden

Filed Feb. 10, 1964, Ser. No. 343,712
Claims priority, application Sweden, Feb. 18, 1963, 1,774/63
6 Claims. (Cl. 73—200)

1. A method for separating gas bubbles from a liquid flow containing such gas bubbles, particularly with the object of measuring a physical characteristic of the liquid without any disturbance from said air bubbles, comprising the steps of passing the liquid flow containing said gas bubbles adjacent to but below a free liquid surface so that the gas bubbles in the liquid flow are caused to ascend towards said free liquid surface under the influence of their buoyancy in the liquid, passing the liquid flow thus free from said gas bubbles downwardly through a first

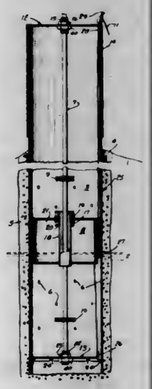


closed conduit and then upwardly to an outlet, and passing simultaneously the gas disengaged from said free liquid surface from a closed space above the liquid surface, upwardly through a second closed conduit high enough to prevent siphoning therethrough, and then downwardly to said outlet, and reinserting the gas into the liquid flow at said outlet, said outlet including a conduit having a cross sectional area sufficiently small that it will be completely filled by a gas bubble after admixture with liquid.

3,347,097
MAXIMUM-MINIMUM DEPTH GAGE

John G. Collins, Corvallis, Oreg., and Beryl G. Stinson, Vicksburg, Miss., assignors to the United States of America as represented by the Secretary of the Army

Filed Feb. 26, 1965, Ser. No. 435,752
2 Claims. (Cl. 73—315)



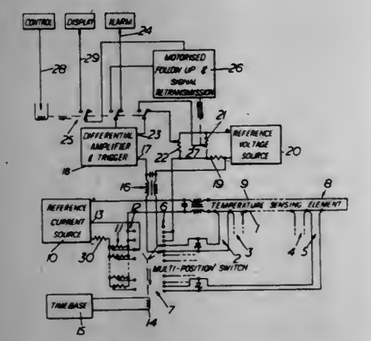
1. A gage for measuring the maximum and minimum levels of a fluctuating body of water in a bore hole comprising:
(a) a well casing inserted in the bore hole extending from a point above the surface of the earth to a point below the minimum level of the water table, said well casing being perforated along the lower portion;
(b) a cylindrical member, closed at its upper end, said member being capable of receiving the upper end of said well casing;
(c) a shaft mounted on said closed upper end of said cylindrical member and extending downwardly along the axis of said cylindrical member;
(d) centering means for centering said shaft within the bore hole;

(e) a float slidably mounted on said shaft;
(f) indicating means mounted on said shaft above and below said float, said indicating means being slidably mounted on said shaft when activated by said float and being incapable of motion when acted on by their own weight; and
(g) releasable locking means for preventing movement of said float on said shaft.

3,347,098
TEMPERATURE SENSING MEANS AND METHOD FOR ELECTRIC CABLES

George Paul Richard Bielstein, London, and Alan Paul Martin, East Grinstead, Sussex, England; said Bielstein assignor to British Insulated Callender's Cables Limited, London, England, and said Martin assignor to Telcon Metals Limited, Crawley, Sussex, England

Filed Jan. 18, 1965, Ser. No. 426,195
Claims priority, application Great Britain, Jan. 23, 1964, 3,016/64
7 Claims. (Cl. 73—342)

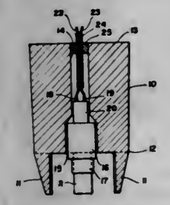


1. A method of surveying the longitudinal temperature distribution in an electric cable in which an elongated resistance element having a temperature coefficient other than zero is so associated with the cable that its resistance is responsive to the temperature to be surveyed, comprising the steps of establishing a reference current in the resistance element, and applying the potential difference between the ends of each of a plurality of different elemental lengths of the resistance element, through tapping leads connected to the ends of the respective elemental lengths, to apparatus responsive to the potential difference.

3,347,099
MOLTEN BATH TEMPERATURE MEASUREMENT

Albin E. Schraeder, Glassport, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 27, 1965, Ser. No. 451,240
5 Claims. (Cl. 73—359)

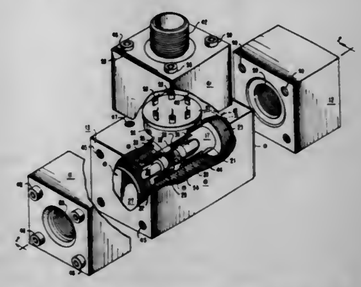


1. Apparatus for measuring the temperature of a molten bath comprising an expendable sinker, the sinker being of a material and shape such that it displaces less than its own weight of the bath when immersed to a depth of about a foot therein, a temperature indicator for noting the temperature of the molten bath, a thermocouple mounted within the sinker for sensing the temperature of the molten bath, a pair of expendable uncompensated lead wires connected to the thermocouple within the sinker to form a pair of junctions, said junctions affecting the temperature noted by the temperature indicator, said lead wires being of a length adapted to extend out of the bath when the apparatus is immersed therein, means for offsetting the effect of said pair of junctions on the temperature noted by the temperature indicator so as to eliminate the error introduced into the temperature measurement by said pair of junctions, said means being connected to the ends of said lead wires remote from the sinker and to the temperature indicator.

3,347,100
DIFFERENTIAL PRESSURE TRANSDUCER

James B. Revelino, Carmichael, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

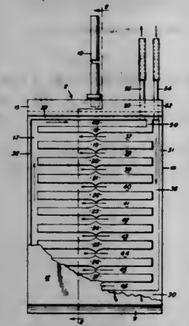
Filed Aug. 12, 1965, Ser. No. 479,118
6 Claims. (Cl. 73—398)



4. A transducer for measuring the difference in pressure between two pressure sources, said transducer comprising:
a housing having an elongated bore therethrough,
an elongated hollow flexure member received in the bore provided in said housing,
said flexure member comprising a relatively thin cylindrical sleeve fixedly secured at each of its ends to said housing and having a thickened internal central portion extending radially inwardly thereof and disposed intermediate its ends,
a pair of pistons respectively extending into said sleeve from the opposite ends thereof,
each of said pistons comprising an elongated piston rod and an enlarged piston head on one end of said piston rod,
the other end of each of said piston rods being fixedly secured to said thickened internal central portion of said sleeve at respective sides thereof,
the enlarged piston heads being disposed outwardly of said sleeve at the respective opposite ends thereof, and
resistance-type strain gage elements mounted on the outer surface of said sleeve in a predetermined array and being variable in resistance in response to distortion of said sleeve, said strain gage elements being connected in a Wheatstone bridge circuit having an output signal proportional to the distortion of said sleeve,
whereby when pressures from the two pressure sources are applied to the outwardly disposed end surfaces of the enlarged piston heads of the respective pistons, the resulting force applied to the thickened internal central portion of said sleeve distorts said sleeve to

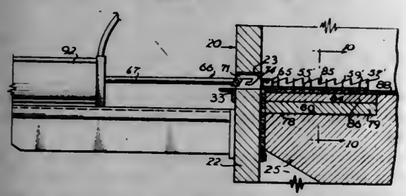
impart stress to said strain gage elements mounted thereon in proportion to the difference between the pressures applied to the said piston heads so as to develop an output signal from the Wheatstone bridge circuit which is proportional to the difference between the pressures applied to said piston heads.

3,347,101
FREEZING-TYPE SEDIMENT SAMPLER
Vance C. Kennedy, Denver, Colo., assignor to the United States of America as represented by the Secretary of the Interior
Filed Sept. 15, 1965, Ser. No. 487,638
6 Claims. (Cl. 73—421)



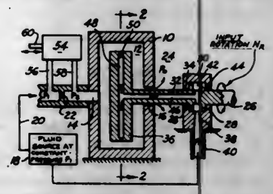
1. A sampling device employing a fluid coolant as an agent to freeze the material of a sample thereon, comprising an enclosure structure wherein a rectangular chamber is formed by an integral assembly of plane walls and including a sample-bearing means having at least one substantially flat outer surface portion adapted to contact said sample material, means to conduct a flow of said fluid coolant through said chamber and upon an inner surface portion opposite said substantially flat outer surface portion of said bearing means, conduits to direct the flow of coolant into and out of said coolant flow-conducting means, and means joined to said structure to situate said device at a sampling location.

3,347,102
METHOD AND APPARATUS FOR SAMPLING COTTON
Rufus K. Phillips, Sugar Land, Tex., assignor to Continental/Moss-Gordin, Inc., Prattville, Ala., a corporation of Delaware
Filed May 6, 1965, Ser. No. 453,653
13 Claims. (Cl. 73—423)



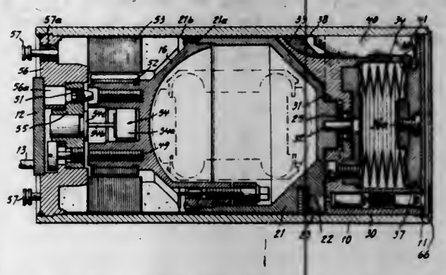
12. Apparatus for taking samples of cotton from a bale of cotton during the baling operation comprising
a baling press including a side wall member defining at least one aperture, sampling means connected to said side wall member and including a sample retrieving member, means for inserting and removing said sample retrieving member through said aperture with a rectilinear movement generally normal to said wall member.

3,347,103
VELOCITY SENSOR
Charles N. High and George R. Howland, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,088
8 Claims. (Cl. 73—502)



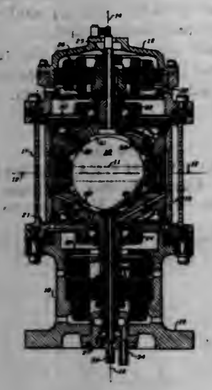
1. Velocity sensing apparatus for measuring the velocity of a rotating member comprising:
a swirl chamber having a fluid inlet and a fluid outlet;
a source of pressurized fluid;
a conduit connected to supply pressurized fluid from said source to said inlet;
said fluid outlet being connected to a relatively low pressure fluid source;
a restriction in said conduit;
rotatable means including passage means connected to receive a pressurized fluid and discharge the same into said chamber to generate a control fluid swirl therein which varies in absolute velocity as a function of the speed of said rotatable means;
said rotatable means being connected to and driven by the rotating member the velocity of which is to be measured;
said control fluid swirl being imposed upon the flow of fluid passing through said chamber from said inlet to said outlet causing the same to acquire a corresponding swirling motion in said chamber with the rate of flow through said restriction and thus the fluid pressure differential across said restriction varying accordingly; and
means responsive to the fluid pressure differential across said restriction.

3,347,104
VERNIER BALANCING AND DAMPING FOR GYRO SYSTEMS
Howard W. Boothroyd, Amherst, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,588
16 Claims. (Cl. 74—5.5)



1. In a fluid damped gyro system having a motor-gyro unit sealed within a gimbal, mounted within a housing containing damping fluid, a coarse adjustment balancing screw in said gimbal at a maximum distance from the axis of rotation, and at least one fine balancing screw in the said gimbal, the radial distance of said fine balancing screw from the axis of rotation of said gimbal being substantially less than that of the coarse adjustment balancing screw.

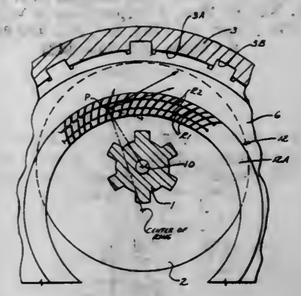
3,347,105
GYROSCOPIC APPARATUS
Andrey Polushkin, Flushing, N.Y., and Gordon J. Watt, Montreal, Quebec, Canada, assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,603
10 Claims. (Cl. 74—5.6)



1. Gyroscopic apparatus including a frame, a rotor case rotatably mounted on the frame, means for rotating the case about an axis at a constant speed, a gyroscopic rotor supported in the case having an axial magnetic flux field, an assembly for coupling the rotor to the case magnetically including a first pair of opposed pole pieces located in 180 degree angular spaced relation about the case axis in normally equidistant axially spaced relation to one side of the axis of the field of the rotor, a second pair of opposed pole pieces located in corresponding angular relation about the case axis and located in equidistant axially spaced relation along the case axis to the other side of the axis of the field of the rotor, and a member with parts arranged in encircling relation to the case axis having a first magnetic flux guiding segment between the pairs of pole pieces, and a corresponding second magnetic flux guiding segment between the pairs of pole pieces, the paired pole pieces and segments normally providing two paths of equal magnetic reluctance on the respective sides of the flux field axis that couple the gyroscopic rotor to the case with the axial flux field rotating in a plane perpendicular to the case axis in synchronized and oriented relation with the case.

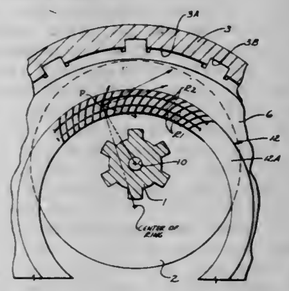
3,347,106
DEVICE HAVING A FRICTION DRIVE BETWEEN TWO SURFACES IN A LIQUID
Jacques Edouard Flichy, Paris, France, assignor to Ateliers Metallurgiques de Saint-Urbain, Fronville, Haute Marne, France, a company of France
Filed Feb. 14, 1967, Ser. No. 615,953
Claims priority, application France, Feb. 14, 1967, 94,917
9 Claims. (Cl. 74—199)

1. A device employing a friction drive comprising:
first and second members having relatively smooth, annular and nonparallel surfaces, portions of said surfaces being adapted to be engaged in a liquid medium;
first and second means respectively supporting said first and second members for relative rotational movement and for relative, substantially linear movement between said members transverse of the direction of said rotational movement while maintaining said engagement, a wedge of said liquid medium being formed between said surfaces by said rotational movement;



means defining in at least one of said members a plurality of relatively small passages adapted to communicate between said liquid wedge and a zone of relatively low pressure during said rotational movement; and
means urging said surfaces together.

3,347,107
DEVICES EMPLOYING A FRICTION DRIVE BETWEEN TWO SURFACES IN A LIQUID MEDIUM
Jacques Edouard Flichy, Paris, France, assignor to Ateliers Metallurgiques de Saint-Urbain, a company of France
Filed Nov. 30, 1964, Ser. No. 414,647
Claims priority, application France, June 8, 1961, 864,314, Patent 1,299,074; Oct. 31, 1961, 877,511; Dec. 2, 1963, 955,733, Patent 1,386,365; Nov. 12, 1964, 994,646 (addition)
14 Claims. (Cl. 74—199)

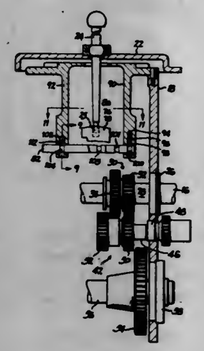


9. A device employing a friction drive comprising:
first and second circular members having relatively smooth, annular and nonparallel surfaces, portions of said surfaces being engaged in a liquid medium, and at least one of said smooth surfaces having a plurality of relatively small grooves disposed along said surface;
first and second means respectively supporting said first and second members for relative rotational movement and for relative, substantially linear movement between said members transverse of the direction of

said rotational movement while maintaining said engagement, a wedge of said liquid medium being formed between said surfaces by said rotational movement; and

means urging said surfaces together.

3,347,108
REVERSE IDLER DRIVE AND INTERLOCK
Jerald D. Hinke, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 26, 1965, Ser. No. 450,896
6 Claims. (Cl. 74—342)



1. In a transmission of the type having a transmission case enclosing said transmission, a drive shaft rotatably supported in said transmission case and having a driving portion, sliding gears mounted on said drive shaft and slidable along said driving portion, said sliding gears including a sliding gear unit, said unit having a first sliding gear, and a second sliding gear rearwardly of and united with and spaced from said first sliding gear, a reverse idler gear shaft supported in said transmission case, a reverse idler gear unit, said unit having a first idler gear mounted on said reverse idler gear shaft and a second idler gear rearwardly of and united with and spaced from said first idler gear, said second idler gear being positioned to mesh with said second sliding gear, a countershaft rotatably supported in said transmission case, and a driven gear rotatably supported on said countershaft, said first sliding gear being positioned to mesh with said driven gear in the forward drive position and said first idler gear being positioned to mesh with said driven gear in the reverse drive position, said sliding gears being so positioned in relation to said driven gear and to said first and said second idler gears that, when shifting into the reverse drive position, said second idler gear meshes with said second sliding gear prior to the meshing of said first idler gear with said driven gear, so that said idler gears may be turned by rotation of said second sliding gear to bring said first idler gear into position to mesh with said driven gear.

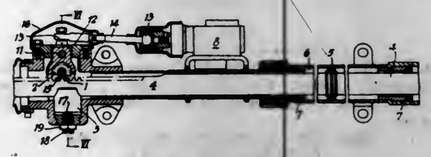
3,347,109
STEERING MECHANISM
Frederick John Adams, Campton, near Shefford, and Howard Kenneth Alderton, Luton, England, assignors to Hydrosteer Limited, Luton, England, a British company
Filed Sept. 27, 1965, Ser. No. 490,394
7 Claims. (Cl. 74—388)

5. Steering mechanism having a rod connected to steerable road wheels;

a rack formed on said rod and engaged by a pinion;

a cylinder enclosing part of said rod so as to form an annular space within which slides

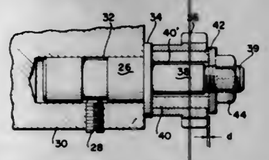
a double-acting piston attached to said part of said rod; and



valve means for controlling the admission of hydraulic fluid on one or other side of said piston so as to provide hydraulic power assistance to said rod,

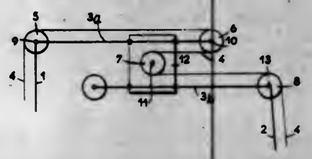
the arrangement being such that the reaction between said rack and said pinion operates said valve means through the action of a rocking lever.

3,347,110
ANTI-BACKLASH GEAR APPARATUS
Jean A. Wilson, Elizabeth, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 10, 1965, Ser. No. 512,912
3 Claims. (Cl. 74—397)



1. Gear apparatus for use in an adjustable train of gears comprising a support member, a bushing adapted to be mounted on a portion of said support member, said bushing having an axial opening sufficiently wide for a loose fit of said bushing on said portion of said support member, a gear rotatably mounted on said bushing, said gear being axially shorter than said bushing, abutment means axially fixed with respect to said support member, and means for use in axially pressing said bushing against said abutment means, whereby said bushing is clamped in place with respect to said member, and whereby the location of the rotary axis of said gear may be adjusted by radially positioning said bushing relatively to its support member prior to clamping it in place on said support member.

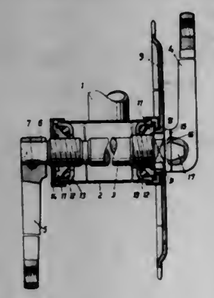
3,347,111
ARTICULATION DEVICES WITH TRANSMISSION OF MOVEMENTS
Joseph Rouillard and Jean Vertut, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Apr. 23, 1964, Ser. No. 361,997
Claims priority, application France, May 10, 1963, 934,492
1 Claim. (Cl. 74—501)



Articulation device providing transmission of movements by cables, belts or chains comprising two members for telescopic movement relative to each other two

separate and parallel arms each articulated to one of said members, a trolley associated in translational motion with said members and maintaining said members and said arms in parallel, articulation pins between said two arms respectively and said two members, at least one freely mounted articulation pulley on said pins, each of said two members terminating on at least one freely mounted end pulley, an axle pin on said trolley, idler pulleys mounted for free rotation on said axle pin, the transmission of movement being provided by at least one first cable passing successively over a first of said articulation pulleys, over one of said end pulleys of the first of said members, one of said idler pulleys and a second of said articulation pulleys, compensation being provided by at least one second cable secured to at least one pulley integral with said first arm and mounted on said pin of the first articulation, said second cable passing in a direction opposite to that of said first cable over a pulley mounted on said axle pin of said trolley, over one of said end pulleys of said second member, said second cable being secured to at least one pulley integral with said second arm and mounted on said pin of the second articulation.

3,347,112
LOW BICYCLE PEDAL
Alfred Thun, Ennepetal-Altenvoerde, Germany, assignor to Firma Alfred Thun & Co. GmbH, Ennepetal-Altenvoerde, Germany
Filed June 8, 1965, Ser. No. 462,306
1 Claim. (Cl. 74—594.2)



A pedal arrangement for a bicycle, mountable within a housing provided on such bicycle, said arrangement comprising, in combination:

(a) means forming a pedal shaft rotatably mounted within such housing, one end of said shaft extending out of said housing so that a pedal crank may be mounted upon it;

(b) a pedal crank positioned at the other end of said shaft, and extending at right angles thereto, said crank constituting a separate element from said shaft;

(c) centering means provided on corresponding portions of the shaft and crank for aligning them for welding, said centering means including:

(1) means forming a blind hole in the surface of the shaft which abuts said crank;

(2) means forming a corresponding blind hole in the surface of the crank which abuts the shaft, said blind holes being arranged to be coaxial when the shaft and crank are properly aligned; and

(3) means forming a pin extending into both of said blind holes for forcing them into coaxial alignment as they are brought together;

(d) means forming a thermal bond permanently securing said crank to said shaft, said thermal bond being a weld;

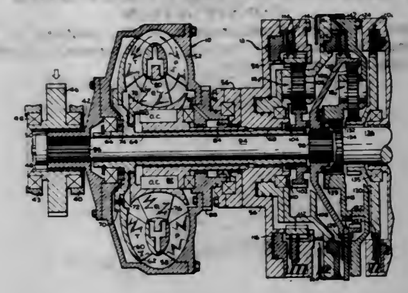
(e) means forming a mounting segment on said shaft in the region of said bond;

(f) a sprocket wheel non-rotatably mounted on said mounting segment for driving such bicycle, the corresponding mounting surfaces of said segment and said sprocket wheel having cross sections which are at least partly polygonal;

(g) a shoulder formed on said shaft adjacent said mounting segment; and

(h) means threadedly engaged with said shaft for holding the sprocket wheel on the mounting segment against the shoulder.

3,347,113
TRANSMISSION
Charles A. Ramsel, Houston, Tex., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 28, 1965, Ser. No. 467,267
5 Claims. (Cl. 74—688)

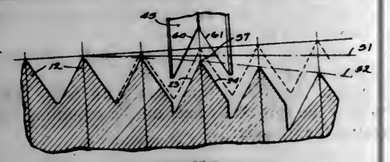


1. A transmission comprising a drive member; a torque converter connected to said drive member; a first planetary gear set including a sun gear connected to the output of said torque converter, a planet carrier, a ring gear, and a brake selectively operable on said ring gear to condition said first planetary gear set for transmitting the torque of said converter to said planet carrier; a second planetary gear set including planet gears, a planet carrier, a friction clutch, and a ring gear; a shaft connecting said ring gear of said second gear set to said drive member; said planet carrier of said first gear set being rigidly connected to the planet carrier of said second gear set to cause rotation of said planet carriers as a unit; and a driven member connected to the planet carrier of said second gear set whereupon actuation of said brake, associated with said first gear set, transmits the torque of said converter to said driven member or actuation of said friction clutch associated with said second planetary set transmits the torque of said drive member to said driven member.

3,347,114
METHOD OF MAKING TAPS
John M. Van Vleet, Hartland, Wis., assignor to Balax, Inc., North Lake, Wis., a corporation of Wisconsin
Continuation of abandoned application Ser. No. 490,340, Sept. 27, 1965, which is a division of application Ser. No. 190,609, Apr. 27, 1962, now Patent No. 3,220,032, dated Nov. 30, 1965. This application Aug. 24, 1966, Ser. No. 575,227
3 Claims. (Cl. 76—101)

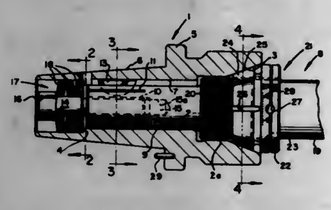
1. A single step method of making a cutting tap having lands and a lead section wherein teeth on such lands are on constant helical pitch in an interrupted spiral path, said method comprising establishing a spiral path irrespective of profile producing relative rotation between a tap blank and a tool for forming teeth thereon, producing relative axial movement between the blank and the

tool on constant pitch, producing relative radial movement between the blank and tool in an outward direction between lands, engaging the tool with each land on said spiral path to initiate tooth-forming removal of metal,



and discontinuing such relative outward radial movement during the tooth-forming removal of metal from each individual land while traversing said tool clear across the land.

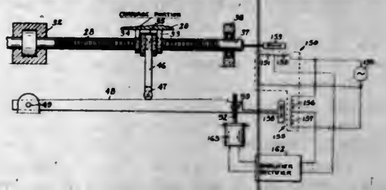
3,347,115
AXIALLY ADJUSTABLE TOOL HOLDER CONSTRUCTION
Roland G. Koch, Frankenmuth, Mich., assignor to Universal Engineering Company, Frankenmuth, Mich., a corporation of Michigan
Filed Aug. 31, 1966, Ser. No. 576,414
3 Claims. (Cl. 77—58)



1. A holder for a tool or the like comprising: a body member having an axially extending bore terminating at one end in a conical seat and at the other end in a radial shoulder; a tool support member having one end thereof extending into said bore from said one end of the body member and terminating in a slotted tubular section with slots open to the said one end thereof; means operative to prevent relative rotational movement between said body member and tool support member; a retaining member extending axially from said one end of said tool support member beyond said shoulder; resilient means interposed between said shoulder and said retaining member and biasing said tool support member in a direction toward said other end of said bore; adjusting sleeve means in threaded engagement with said tool support member and having a slotted tapering surface axially spaced from said slotted tubular section and complemental to and in engagement with said seat, with slots open to an end thereof, whereby rotational movement of said adjusting means relative to said tool support member enables concentric axial adjustment of said tool support member relative to said body member in either direction.

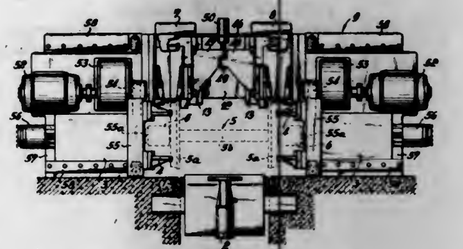
3,347,116
AUTOMATIC MEASURING LEAD SCREW COMPENSATOR
Robert F. Anderson, Simsbury, Allen R. Hollister, East Hartford, and Johann F. Reuteler, Elmwood, Conn., assignors to Pratt & Whitney Inc., West Hartford, Conn., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,298
13 Claims. (Cl. 77—63)

3. In a machine, the combination of a lead screw, a carrier, a first means engaging said lead screw for positioning said carrier along said lead screw, second means for sensing a change of length of said lead screw, a cam, a cam follower coupled to said cam and said first means, and means for generating a signal representative of the



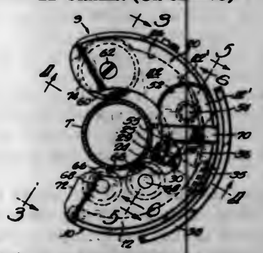
position of the cam and the sensed length of the lead screw to control the position of the cam.

3,347,117
WHEEL LATHE
Max Luzina, Erkelenz, Rhineland, Leo Louis, Altmyhl, and Achim Lison, Erkelenz, Rhineland, Germany, assignors to Wilhelm Hegenscheidt Kommanditgesellschaft, Erkelenz, Rhineland, Germany
Filed Mar. 10, 1966, Ser. No. 533,169
Claims priority, application Germany, Mar. 10, 1965, H 55,424
16 Claims. (Cl. 82—3)



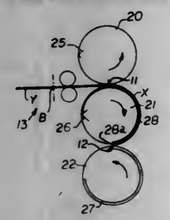
1. In a machine tool, particularly in a lathe for reconditioning the wheels of wheel sets for railway vehicles and analogous pairwise arranged mirror symmetrical workpieces, a frame; drive means including means for engaging and rotating the workpieces about a common axis; a cross slide supported by said frame and movable radially with reference to said axis; a pair of templet holders mounted on said cross slide and being adjustable as a unit in the same direction in parallelism with said axis; and lateral positioning means for simultaneously adjusting both templet holders with reference to said cross slide.

3,347,118
TUBE CUTTER
William C. Gore, Streamwood, and Eugene B. Shapiro, Highland Park, Ill., assignors to Chicago Specialty Manufacturing Co., Skokie, Ill., a corporation of Illinois
Filed Feb. 23, 1966, Ser. No. 529,507
12 Claims. (Cl. 82—75)



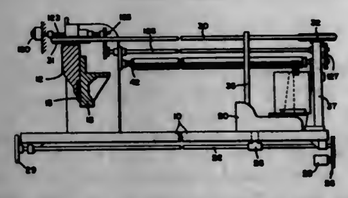
1. A tube cutter comprising a first segment and a second segment with said second segment pivotally connected to the first segment and with both said segments surrounding a portion of the circumference of the tube to be cut, a cutting blade supported on one of said segments, and means supported on one of said segments and engaging the other segment for pivotally moving said pivotal segment in relation to the first segment.

3,347,119
CUTTING METHOD AND APPARATUS
Albert J. Sarka, Cleveland Heights, Ohio, assignor to Harris-Intertype Corporation, Cuyahoga, Ohio, a corporation of Delaware
Filed Mar. 10, 1965, Ser. No. 438,552
28 Claims. (Cl. 83—38)



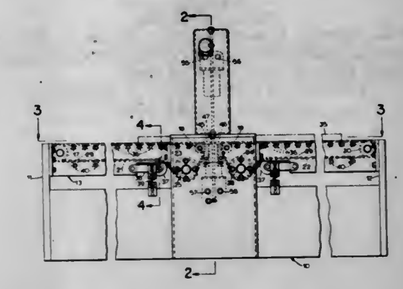
23. A method of working sheet-like material comprising feeding the material at a predetermined speed through a first work station, moving material engaging elements located at the first work station at said predetermined speed to work on the material at first spaced locations thereof as the material is advanced through the first work station, feeding second locations of said material intermediate said first locations past said first work station when said material engaging elements at said first work station are ineffective to engage said material and through a second work station, moving material engaging elements located at the second work station at the speed at which said second locations move through said second work station to work on said second locations thereof as said material is advanced through said second work station, and momentarily changing the speed of movement of said material from said predetermined speed while each of said second alternate locations thereof is advancing toward said second station and after the immediately preceding first location has been worked upon at said first station to effect registry of said second locations with the work engaging elements at said second station and to prevent engagement of said preceding first location by said work engaging elements at said second station.

3,347,120
AUTOMATIC MEMORY STORAGE OF THE OPERATION OF A CUTTING MACHINE
Russell I. Haywood and Leo D. Barley, Dayton, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Original application Oct. 18, 1961, Ser. No. 145,914, now Patent No. 3,183,749, dated May 18, 1965. Divided and this application May 17, 1965, Ser. No. 456,070
5 Claims. (Cl. 83—42)



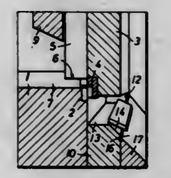
1. In a paper cutting machine adapted to perform successively duplicate cutting operations on different stacks of sheet material such as paper, the method of placing a first such stack of material in said paper cutting machine and performing the cutting operations thereon to cut said first stack in desired locations, simultaneously forming a record of the position of the first stack in the machine at the time each cut is made, and thereafter automatically controlling the position of the additional stacks of material to be cut in duplicate manner by controlling the operation of said cutting machine from the recording.

3,347,121
MACHINE FOR CUTTING MATERIAL
James G. Watt, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 24, 1965, Ser. No. 458,271
8 Claims. (Cl. 83—71)



1. A material cutting machine comprising:
(a) a cutting blade,
(b) an endless band on each side of the cutting blade to receive material,
(c) means to move said bands in either direction to move material longitudinally on the bands relative to the blade,
(d) means to coordinate movement of said bands, and
(e) means to move the cutting blade across the material between the bands, said blade moving in cutting engagement with the material and in coordination with the longitudinal movement of the material.

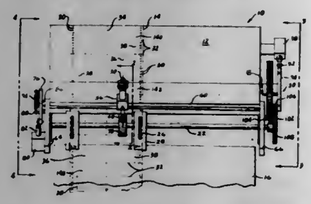
3,347,122
METAL SHEARS
Peter Dahlem, Dusseldorf-Eller, Germany, assignor to Lindemann Maschinenfabrik G.m.b.H., Dusseldorf, Germany
Filed Oct. 21, 1965, Ser. No. 499,623
Claims priority, application Germany, Nov. 18, 1964, L 49,315
3 Claims. (Cl. 83—157)



1. In a shearing machine including a stationary first knife and a reciprocable second knife cooperating with each other in a substantially vertical shearing plane the improvement comprising in combination a machine frame; a tubular surface therein to support a workpiece forwardly fed towards the shearing plane; the said first knife located in the forward edge of said tubular surface in

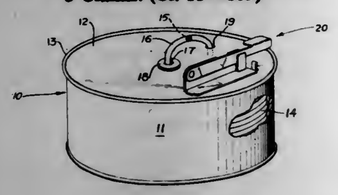
front of and next to the shearing plane; a vertically reciprocable head member beyond the shearing plane including the second knife in its bottom surface in shearing relation to the first knife; a back-up member with tabular top for the operated on workpiece downwardly rigidly extending in spaced relation from the head member to reciprocate therewith and leading a windowlike interspace between said bottom surface and said tubular top, the latter in preshearing condition continuing the said tubular surface to support the introduced workpiece and in depressed position during and after the shearing operation letting the interspace receive and pass therethrough the cut off portion of the workpiece; and a clamping member vertically reciprocable above said tubular surface in front of the shearing plane to stabilize the operated upon workpiece.

3,347,123
PERFORATOR
Jacob E. Worner, Centerville, and Robert C. Edwards, Kettering, Ohio, assignors to Printing Service Company, Dayton, Ohio, a corporation of Ohio
Filed June 21, 1965, Ser. No. 465,440
4 Claims. (Cl. 83—346)



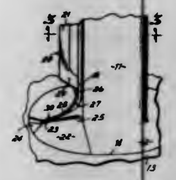
1. For use in a continuous forms printing press having a feed mechanism, the combination comprising: a cam driven by said feed mechanism, a switch controlled by said cam, a solenoid actuator connected in electrical circuit with said switch and controlled by said switch, a perforator wheel for forming a continuous line of perforations when contacting a form drawn through said press, and means connecting said solenoid actuator to said perforator wheel for moving said perforator wheel into and out of perforating contact with a portion of a continuous form drawn through said press depending upon the energized state of said solenoid actuator.

3,347,124
CUTTER FOR PACKING DISPENSER
Steven Domeny, Chicago, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois
Filed Oct. 20, 1965, Ser. No. 498,846
5 Claims. (Cl. 83—609)



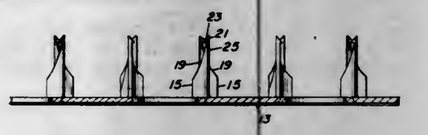
1. In combination, a container for rope-like material and a cutter mechanism for cutting said material, said container having a hard sheet material top, said top having an opening therein through which an end of said material extends, said cutter mechanism comprising a metal sheet bent to form an elongated base and an upstanding support, a metal knife pivoted on said upstanding support in close proximity to said support and forming with an edge of said support a scissors, and an extension on said base sheet bent in the form of a spring clip, said sheet material top having an opening to receive said clip to secure said cutter to said container, said support having one end folded upon itself, and said knife being slidably retained between the fold and support while it is cutting said material.

3,347,125
KNIFE BLADE GUIDE FOR A CLOTH CUTTING MACHINE
Charles F. Shields, Newport, Ky., assignor to The Wolf Machine Company, Cincinnati, Ohio, a corporation
Filed Oct. 22, 1965, Ser. No. 502,129
1 Claim. (Cl. 83—635)



In a cloth cutting machine having a base plate, a standard rising from said base plate, a motor atop said standard, a vertical slot in said standard, liners at the sides of said vertical slot, a knife adapted to reciprocate vertically between said liners, and said knife having a cutting edge projecting substantially outwardly beyond said liners, the improvement comprising a toe portion at the lower end of each liner, said toe portion extending outwardly and terminating adjacent to the line of the cutting edge of said knife, there being a radius for each toe extending through 90° to present a concave edge outwardly and upwardly, a first slot portion in said base dimensioned to receive the lower ends of said liners including said toe portions, a second slot portion in said base joining and immediately outwardly of said first slot portion, and said second slot portion flaring outward from said toe portions and extending completely through said base plate to permit lint collected as a result of cutting operations free passage to the underside of said base plate.

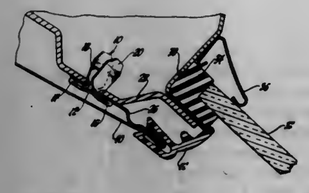
3,347,126
CONNECTOR PLATE FOR WOOD TRUSSES
Gail H. Templin and Wesley A. Mills, both of P.O. Box 917, Vero Beach, Fla. 32960
Filed Oct. 4, 1965, Ser. No. 492,572
1 Claim. (Cl. 85—13)



A connector plate for wood trusses, comprising a substantially flat body having a plurality of longitudinally extending transversely spaced rows of wood penetrating teeth extending in the same direction from said flat body, said teeth being struck from said body in pairs providing an elongated opening between each pair of teeth, and each tooth of each pair of teeth extending from an end of said elongated opening, and each tooth of said pairs of teeth being provided with an arcuately

shaped root portion having a constant radius of curvature, and each of said root portions having a pair of vertical edges, each tooth comprising a curved tooth body extending upwardly from said root portion and said body having a constant radius of curvature, one of the edges of said curved body portion extending upwardly from one vertical edge of said root portion at an inclination to said flat body and terminating in a wood penetrating point, and the other edge of said curved body portion extending from said wood penetrating point to the other vertical edge of said root portion substantially perpendicular with respect to said flat body and each tooth being of sinuous construction longitudinally.

3,347,127
METAL FASTENER
Norman R. Brown, Pontiac, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 14, 1965, Ser. No. 448,112
4 Claims. (Cl. 85—37)



3. A one-piece rivet-like fastener adapted to be inserted through holes in mutually abutting members to join the members together, the fastener being constituted by a single formed strip of ductile material, the fastener comprising:

a head including two shoulder portions defining a dihedral angle,

each shoulder portion having an upper layer and a lower layer,

the upper layers connecting the shoulder portions,

the lower layer being rebent from one of the ends of the upper layer and lying against the lower surface of the upper layer of each shoulder portion,

the lower layers meeting adjacent the said angle and being bent so as to lie in face-to-face abutment defining a pair of legs extending substantially along the bisector of said angle,

the legs being twisted approximately 60 to 90 degrees about the axes of the legs at their junctions with the lower layers so that they move apart edgewise relative to each other, with the faces of the legs moving past each other upon the application of force pressing said head portion against the members to be joined, thereby deforming the head so as to bring the shoulders toward a common plane.

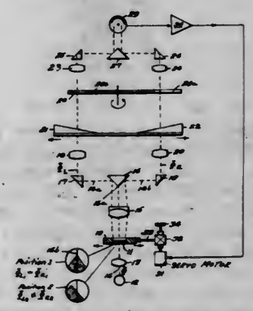
3,347,128
SELF-ADJUSTING RECRIMPING DIE FOR SHOTGUN SHELL RELOADERS
Theodore J. Bachhuber, 725 Dayton St., Mayville, Wis. 53050
Filed July 14, 1966, Ser. No. 565,191
6 Claims. (Cl. 86—39)

1. The combination with means for supporting a shell having residual creases to be recrimped, of a platen having means guiding it for movement to and from said supporting means, a recrimping die having means supporting it from the platen for movement therewith to and from the shell, said supporting means being fixed to the platen and means supporting the recrimping die for free rotation with respect to the supporting means, engagement of the



die with residual creases in the shell to be recrimped effecting such rotation.

3,347,129
PHOTOELECTRIC RANGE FINDER
Wilhelm J. Lohninger, Rockaway, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 29, 1964, Ser. No. 407,590
9 Claims. (Cl. 88—1)

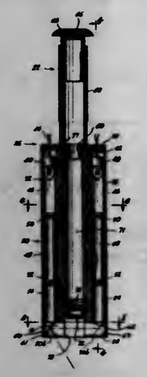


1. A photoelectric range finder comprising a first and second telescope laterally spaced from each other for obtaining light beams containing the image of a target, a target acquisition telescope positioned intermediate said first and second telescopes and movable in the same plane therewith, adjustable optical compensator means in said second telescope for image coincidence, a double beam splitting prism positioned between the exit ends of said first and second telescopes whereby the light beams from said first and second telescopes are each split into a pair of parallel beams, a photoelectric transducer, a light chopper positioned intermediate said prism and photoelectric transducer, means for directing the two pairs of parallel beams formed by said double beam splitting prism to said light chopper and onto said photoelectric transducer, and an electrical bridge having the output of said photoelectric transducer connected across one of its diagonals and a current indicating means connected across its opposite diagonal for indicating photometric coincidence due to optical compensation obtained by means of said adjustable optical compensator, and a range scale mechanically linked to said optical compensator for indicating the range.

3,347,130
OPTICAL MEASURING INSTRUMENTS
Bobly H. Seibel, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed May 2, 1962, Ser. No. 192,305
8 Claims. (Cl. 88—14)

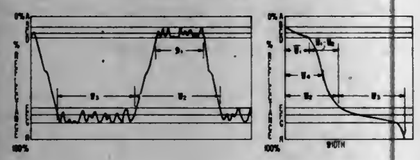
1. Optical measuring apparatus comprising: an optical magnifying system including focusing means and adapted for viewing imaging surfaces spaced different distances

from said system; first and second projection means each including reticle means, light producing means and light collimating means for projecting respective reticle line images in illuminated beams; said projection means being positionally coordinated with said magnifying system and operable respectively to project first and second reticle line images along first and second light paths converging mutually toward a first imaging surface viewable through said magnifying system, with said paths lying substantially contiguous to opposite sides of a common plane of incidence and with said reticle line images



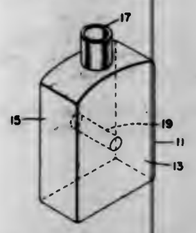
extending oppositely from said common plane in transverse relation thereto; projection adjusting means coupled with at least one such projection means to move the same from a position of mutual end-to-end alignment of the reticle line images on said first imaging surface to a position of mutual end-to-end alignment thereof on a second imaging surface viewable through said magnifying system; and scale means coupled with the projection adjusting means and calibrated to measure such movement and thereby the distance between the respective imaging surfaces.

3,347,131
QUANTITATIVE IMAGE MEASUREMENT PROCESS FOR PRINTED MATERIAL
Calvin K. Clauer and Robert L. Erdmann, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 16, 1963, Ser. No. 302,655
2 Claims. (Cl. 88—14)



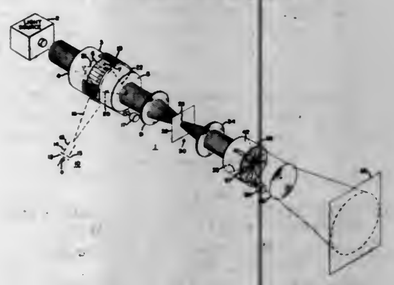
1. A method of generating a graphical representation of print characteristics of an entire image comprising the steps of:
scanning the same path on said image to provide a continuous output which is proportional to the print reflectance of the scanned image,
generating a plurality of output levels,
adding the amplitude of the instantaneous value of said continuous output to the amplitude of said output levels to form a sum,
summing the time that the amplitude of said sum exceeds the amplitude of a predetermined level,
averaging said summations for each output level, and
recording said averaged summation for each output level producing a record representative of the print characteristics of the image.

3,347,132
COLOR COMPARING DEVICE
John R. Conlisk, Darlington, Md., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Continuation of application Ser. No. 251,114, Jan. 14, 1963. This application July 13, 1966, Ser. No. 565,015
2 Claims. (Cl. 88—14)



1. A color comparing device comprising a fluid chamber for observing liquids, said fluid chamber having separate means for ingress and egress of fluid from said chamber and said chamber having two oppositely arranged transparent window members closing sight apertures located in the wall of said chamber through which the liquid can be observed, and a transparent rod member of smaller cross section than the area of either of said sight apertures, said rod member being at least half as long as the distance between said window members and mounted generally normally to the face of said window members whereby an uninterrupted line of sight from one of said window members to the other passes longitudinally through the rod, said rod member having a tinted portion and said tinted portion being directly in an uninterrupted line of sight longitudinally through said rod member and through said window members.

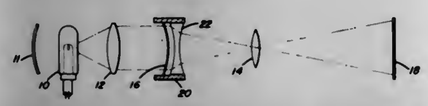
3,347,133
APPARATUS FOR PROJECTING CYLINDRICAL OBJECTS AS CIRCULAR IMAGES
Milton L. Noble, 5 Ilex Lane, Liverpool, N.Y. 13088
Filed June 30, 1966, Ser. No. 561,912
15 Claims. (Cl. 88—24)



1. A projection system for projecting a cylindrical object to a planar surface as a corresponding circular image, comprising:
(a) a light modulating control medium arranged in a cylindrical configuration to which information is applied so as to form said object,

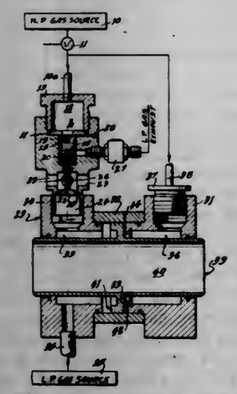
(b) first optical means for directing projected light through said control medium so as to be selectively modulated in accordance with said information,
(c) second optical means responsive to the selectively modulated light for focusing said object as a corresponding conical image, and
(d) further optical means for transforming said conical image into a circular planar image.

3,347,134
SLIDE MOUNT FOR FILM TRANSPARENCIES
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 13, 1965, Ser. No. 495,415
16 Claims. (Cl. 88—26)



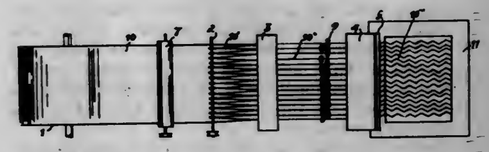
1. A slide mount for film transparencies comprising a frame element having a central viewing area, a masking border area thereabout, a substantially cylindrical optical lens element adapted to be supported within the frame element, and means for securing the frame and optical elements together thereby to hold and locate a film transparency within the frame element and adjacent to the optical element so that the transparency is bowed from its normal plane and substantially cylindrical curvature is imparted thereto for projection.

3,347,135
FAST-ACTING CASCADE VALVE
Donald R. Ahlbeck, Worthington, and Hobart A. Cress, Columbus, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 2, 1966, Ser. No. 577,093
3 Claims. (Cl. 91—47)



1. An assembly comprising:
(a) a body having
(i) a first chamber for fluid under high pressure;
(ii) a space for fluid under low pressure;
(iii) a first annular seat located between one end of the space and the first chamber;
(iv) an opening formed at the other end of the space;
(v) a vent beyond the opening and away from the space;
(vi) a second chamber for fluid under low pressure and being located to the side of the vent away from the space, the second chamber being connected to said vent;
(vii) a second annular seat formed at the end of the second chamber toward the vent;
(b) a first valve having a head located in the second chamber engageable with the second seat so as to seal the second chamber from the vent, the first valve having a stem extending from the head sealingly through said opening into the space;
(c) a piston located in the space so as to leave a small volume available in the space for low-pressure fluid and connected to the stem, said piston being adapted to have a relatively small area exposed to the high-pressure fluid when in seating position with the first annular seat and to have a relatively large area exposed to the high-pressure fluid when not in seating position;
(d) a second valve connected to the space and adapted for releasing low-pressure fluid therefrom, whereby high-pressure fluid when first acting against the relatively small area of the piston moves it off said first seat, and immediately thereafter when acting against the relatively large area of said piston moves it quickly, with the result that the head of the first valve is moved quickly off said second seat and low-pressure fluid in the second chamber may quickly escape through the vent; and
(e) means in said space positioned to exert a force on the piston toward the first chamber;
the first valve having a restricted passageway extending through the valve and having one end opening to the side of the head away from the stem and the other end opening to the exterior of the valve at a region of the stem spaced an appreciable distance from the head, the passageway serving to supply low-pressure gas from the second chamber to the space, the said other end of the restricted passageway being blocked by the said opening when the first valve is out of engagement with the second annular seat.

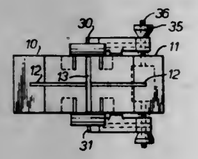
3,347,136
PROCESS AND ARRANGEMENT FOR PRODUCTION AND PLACING OF FILLING MATERIAL IN HOLLOW BUILDING ELEMENTS
Gregers Kure, Setra vei 8, Holmenkollen, Oslo, Norway
Filed Feb. 13, 1964, Ser. No. 344,595
Claims priority, application Norway, Feb. 21, 1963, 147,623
4 Claims. (Cl. 93—1)



2. Apparatus for filling a hollow building element as for example doors or the like with lightweight stiff paper filling material, comprising a combination of a support for said building element, means for continuously leading a web of said material toward the building element over said support, means for slitting the material lengthwise

into parallel strips, means for turning the strips individually ninety degrees longitudinally so that surfaces of adjacent portions of the strips are parallel to each other, means for forming lateral bends in the edgewise oriented strips, means for cutting the individual bent strips into discontinuous bent pieces whereby said pieces may fall edgewise freely into an open face of the building element on said support.

3,347,137
METHODS AND APPARATUS FOR FORMING GUSSETS IN FLEXIBLE TUBULAR MATERIAL
Ronald William Barraclough, Southport, England, assignor to R. W. Barraclough Limited, Southport, England, a British company
Filed July 1, 1965, Ser. No. 468,907
Claims priority, application Great Britain, July 14, 1964, 29,197/64
12 Claims. (Cl. 93—20)



1. Apparatus for forming gussets in a length of flat flexible tubular material comprising a die consisting of first and second members mounted to converge towards one another, said first and said second member having first slots extending inwardly of the members from facing surfaces of said members, the spacing between the blind ends of the slots at the inlet end of said members being substantially equal to the width of the flat tubular material while at the outlet end the facing surfaces of said members converge to form second slots perpendicular to said first slots and on opposite sides of the plane faces of the tubular material, means for drawing the tubular material through said die to deform the plane faces of the material between the facing surfaces of the members into gusset sides extending oppositely from said plane faces and folding means whereby the gusset sides of the tubular material issuing from said die are folded over edge portions of the tubular material to form the gussets.

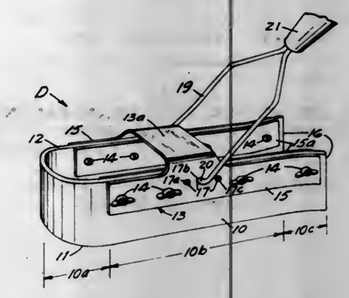
3,347,138
TAR DISTRIBUTOR FOR PAVEMENT
Earl N. Lunde, 103 Como St., Park Rapids, Minn. 56470
Filed June 23, 1965, Ser. No. 466,340
5 Claims. (Cl. 94—39)

1. A tar distributor for spreading and penetrating joints and recesses in pavements with tar and the like comprising:

a distributor member of a material resistant to the adhesion of tar having a continuous pavement engaging edge and including a substantially U-shaped rear tar retaining wall with generally upright side walls co-extensive with the rear tar retaining wall having an inner and outer upright surface and extending longitudinally in the direction of travel of the distributor, each side wall having a forward portion diverging outwardly,

a substantially rigid mounting frame including opposed generally upright side plates disposed longitudinally in the direction of travel of the distributor detachably mounted on the outside surface of the distributor member and having a forward portion diverging outwardly, a plurality of aligned opposed actuating means receiving apertures disposed longitudinally of the direction of travel of the distributor and means connecting the sideplates,

side reinforcing plates detachably mounted on the inner surfaces of the upright walls disposed longitudinally of the direction of travel and having forward portion diverging outwardly,



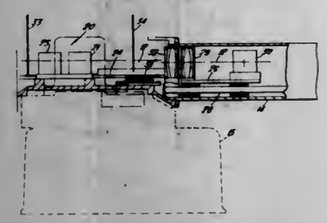
a bifurcated distributor actuating device having a mounting portion on each leg thereof pivotally mounted in the actuating device receiving apertures in the side plates of the mounting frame at a predetermined setting, and

a handle connected to the bifurcated actuating device.

3,347,139
SPREADER AND SLIP-FORM PAVER COMBINATION
Glen E. Perkins, 1428 40th Ave., and George W. Dale, 2900 27th St., both of Rock Island, Ill. 61201
Filed Oct. 18, 1965, Ser. No. 496,898
8 Claims. (Cl. 94—39)

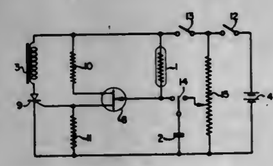
1. The combination of concrete paving vehicles operable directly on a subgraded roadsite comprising a first course spreader and a second course slip-form paver for laying a concrete roadway on such subgrade in two separately placed courses with intermediate reinforcing; said spreader having a carriage including a power driven truck at each side thereof and a first course spreading means intermediate said trucks, said spreader having retaining means between the truck and the spreading means at each side of the spreader; said paver having a carriage including a power driven truck at each side of the carriage, laterally spaced, parallel slip-forms, and concrete spreading and finishing means intermediate said slip-forms, said slip-forms having lead forms connected thereto and extending forwardly thereof and which further extend between the respective retaining means of the spreader and further extend forwardly of the spreader; the sections of said lead forms forwardly of the spreader being disposed to receive therebetween the plastic concrete laid directly on the subgrade for spreading by said first course spreading means, and the sections of said lead forms rearwardly of the spreader being of such length as to allow placing the reinforcing on such first course after spreading and to receive the second course of plastic concrete placed therebetween and ahead of the paver.

3,347,140
PHOTO TYPE SETTING MACHINES
David S. Ritchie, Caxton St., Anniesland, Glasgow W.3, Scotland
Filed Jan. 29, 1965, Ser. No. 429,328
Claims priority, application Great Britain, Feb. 1, 1964, 4,374/64
7 Claims. (Cl. 95—4.5)



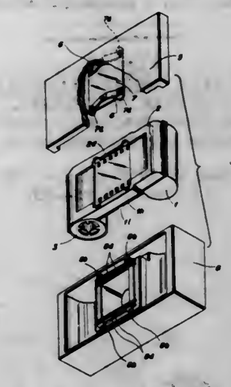
1. A lettering head for a photo-setting machine comprising means for receiving and splitting an image of a character into two optical paths, a carriage movable along said optical paths, means mounted on said carriage for projecting light beams intercepted from said optical paths, means for mounting first and second photosensitive plates to respectively intercept light beams emitted from said projecting means, means for simultaneously moving said mounting means relative to said carriage along two rectilinear lines of travel, rotative drive means connected to the output drive of a letter spacing drive mechanism for simultaneously rotating each of said mounting means identical amount about axes perpendicular to the planes of said plates in accordance with the output of said letter spacing drive mechanism to achieve proper letter spacing and means for shielding one of said mounting means from extraneous light.

3,347,141
CAMERA SHUTTER CONTROL DEVICE
Tsukumo Nobusawa, Asaka-machi, and Naoyuki Uno, Urawa-shi, Japan, assignors to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan
Filed July 23, 1964, Ser. No. 384,638
Claims priority, application Japan, July 27, 1963, 38/56,384, 38/56,385; Nov. 6, 1963, 38/83,875
10 Claims. (Cl. 95—10)



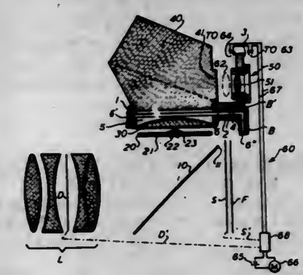
1. A camera shutter control network comprising a voltage source including opposite first and second terminals, a voltage divider connected between said first and second terminals and including a voltage adjustable third terminal between the ends thereof, a photoresistance element, a capacitor, means for connecting said capacitor independently of said photoresistance element between said second and third terminals and means for connecting said capacitor in series with said photoresistance element between said first and third terminals, and a shutter control solenoid responsive to the voltage on said capacitor.

3,347,142
FILM MAGAZINE AND CAMERA FOR USE THEREWITH
Kurt Steisslinger, Stuttgart-Hedelfingen, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of abandoned application Ser. No. 391,370, Aug. 24, 1964. This application Sept. 10, 1965, Ser. No. 486,337
Claims priority, application Germany, Aug. 24, 1963, K 50,634
15 Claims. (Cl. 95—31)



13. A film magazine for use in a camera having pressure plate means for urging the film in the magazine forwardly into an exposure position, said magazine comprising film supply and take-up chambers connected to each other by front and rear walls forming an enclosed passageway for the film, said front wall having an opening therein through which the film is exposed as it is advanced from said supply chamber to said take-up chamber, and said rear wall defining therein opening means in alignment with said front wall opening and large enough for said pressure plate means to pass therethrough and to urge the film forwardly in the area of the front wall opening of the film magazine when the latter is in the camera.

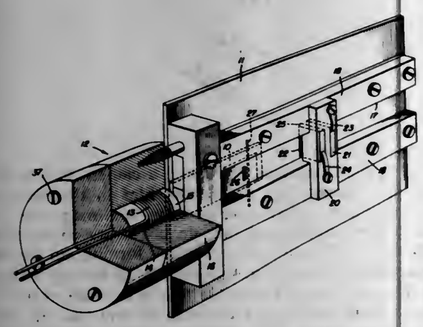
3,347,143
BEHIND-THE-LENS SPOT-METERING IN SINGLE-LENS-REFLEX CAMERAS
Charles T. Jacobs, Box 362, Bernardsville, N.J. 07924
Filed Sept. 6, 1966, Ser. No. 577,286
14 Claims. (Cl. 95—42)



1. The combination, with a single-lens-reflex camera having a mirror positionable in reflecting position, a focusing screen onto a predetermined area of which the mirror when in reflecting position upwardly reflects lens-projected light to form an image on that area, and a viewing prism onto the bottom of which light from the image

is radiated, the viewing light-transmission path of the camera comprising a segment extending from the reflectingly positioned mirror to the viewing prism: of a meter for measuring light reaching the bottom surface of the viewing prism from the focusing screen, the meter being positioned to receive such light from another surface of that prism, and masking means interposed across the viewing light-transmission path in said segment thereof for effecting a predetermined finite attenuation of the light which in the absence of the masking means would reach the bottom surface of the viewing prism from all of said area other than a preselected restricted sub-area therein.

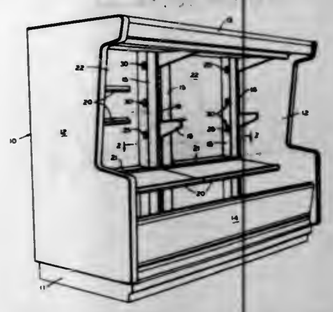
3,347,144
HIGH SPEED ELECTROMECHANICAL SHUTTER FOR SPECTROGRAPHS
Paul A. Kendall, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 29, 1965, Ser. No. 468,173
11 Claims. (Cl. 95—53)



1. A high-speed shutter mechanism comprising:
a freely movable high-speed shutter element having a light aperture therein,
means to support and guide the shutter element during movement thereof having a light aperture therein for instantaneous registration with the light aperture of the shutter element,
a fixed coil adjacent said support and guide means,
a driver ring positioned between said coil and said shutter element in contacting relationship therewith and movable in the direction of the shutter element over a limited range only, and
electrical means for passing a surge of current through the coil to thereby establish opposing magnetic fields in the coil end of the ring so that a propelling force is transmitted to the ring for driving therewith at a high rate of acceleration the juxtapositioned shutter element.

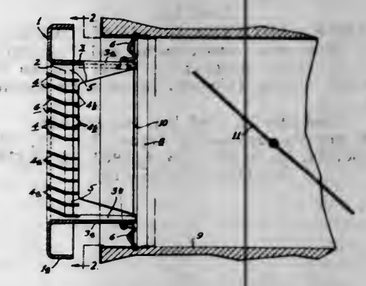
3,347,145
AIR DISTRIBUTION STRUCTURE FOR REFRIGERATED CASE
Melvin W. Steelman, Niles, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Mar. 23, 1965, Ser. No. 442,131
4 Claims. (Cl. 98—36)

1. In a refrigerated merchandise display case having a plurality of hollow vertical laterally spaced posts constituting passages for refrigerating air between the top and bottom portions of the case, at least one shelf supported on said posts forwardly thereof, each pair of adjacent posts defining a doorway therebetween, a door for each doorway, and means for effecting flow of refrigerating air through the posts, the improvement comprising at least one aperture in each of at least one pair of the posts located above the level of a shelf and facing in the direction of the other post of said one pair permitting a portion only of the air flowing in each apertured post to issue outwardly therefrom in a generally horizontal stream op-



positely to the stream issuing from the apertured post paired therewith to effect distribution and flow of refrigerating air over substantially the full length of said shelf and forwardly thereover while the remainder of the air continues its flow, and means for recirculating said issuing air through the posts after said over-shelf flow thereof.

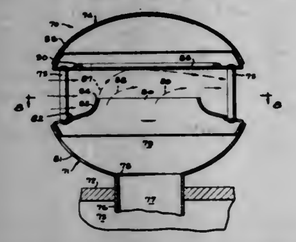
3,347,146
AIR DISTRIBUTOR
Evert Samuelsson and Birger Larkfeldt, Barnarp, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Sept. 17, 1965, Ser. No. 488,114
Claims priority, application Sweden, Sept. 30, 1964, 11,768/64
2 Claims. (Cl. 98—40)



1. An air distributor for insertion into a mounting frame surrounding an outlet for conditioned air, said distributor comprising a circular front plate adapted to cover said outlet and having a circular opening therein, a sleeve merging into said opening and projecting rearwardly therefrom to engage in said frame, and a plurality of annular concentric vanes mounted in said opening, the improvement wherein
the forward part of each of the annular vanes facing the plane of the front plate is in the form of a hollow cylinder, inclined to the plane of the front plate, said forward parts of the annular vanes having a common longitudinal axis disposed at an acute angle with the plane of the front plate and intersecting said plane at the center of the opening to direct the conditioned air outwardly from said outlet in the direction of said common axis with a low pressure drop and low inherent noise; and

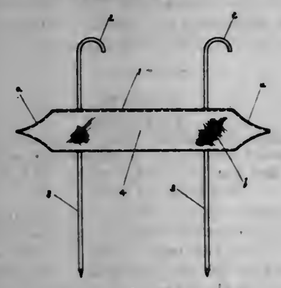
the rearward part of each vane is in the form of a hollow cylinder, said rearward parts having a second common axis perpendicular to the plane of the front plate and offset from the center of said opening.

3,347,147
EXHAUSTER INCLUDING VENTURI MEANS
Ben O. Howard, 431 Homewood Road, Los Angeles, Calif. 90049
Filed Mar. 2, 1967, Ser. No. 620,138
4 Claims. (Cl. 98—78)



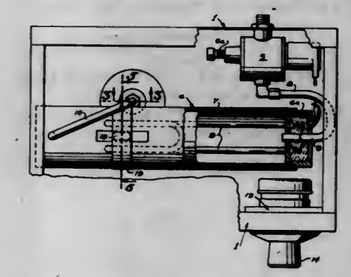
1. An exhaust fixture for an interior chamber comprising an outflow pipe section adapted to connect to said chamber, said pipe section having an outlet opening, a first airfoil surrounding the outlet opening, said first airfoil comprising a housing having a wall on the side of said first airfoil opposite from said pipe section, the exterior of said wall being convex in a direction opposite from the pipe section, said wall having an exhaust aperture therein substantially in alignment with said outlet opening, there being an annular flange around said exhaust aperture, an outermost rim portion of said flange being substantially parallel to the flow path from said outlet opening through said exhaust aperture whereby to direct exterior air endwise relative to said rim portion, a second airfoil comprising a housing mounted at a spaced location from said first airfoil, said second airfoil comprising a relatively flat wall substantially parallel to the transverse plane of said flange and spaced outwardly therefrom, an outer annular portion of said relatively flat wall being spaced from an outer annular portion of the wall of said first airfoil a distance greater than the distance between said rim and said relatively flat wall, said distance being progressively larger toward the outer periphery, whereby to induce passage of air from said exhaust aperture.

3,347,148
SMOKE FLAVORING DEVICE
Theodore M. Williams, Volusia County, Fla. (600 White St., Daytona Beach, Fla. 32014)
Filed June 20, 1966, Ser. No. 558,797
1 Claim. (Cl. 99—259)



A device for imparting smoke flavoring to foods being cooked indoors, comprising a hollow container adapted to contain heat responsive smoke producing means and formed of a fire-proof mesh wire fabric material of a gauge to permit charring of the smoke producing means but to prevent ignition thereof, and two elongated rigid supporting elements extending through and anchored in the container and having support engaging end portions disposed above and beneath the container and adapted to engage supports for supporting the container in close proximity to food being cooked and to a heat source, the upper end portions of the supporting elements comprising rack engaging hooks and the lower end portions of the supporting elements comprising points adapted to be anchored in the food.

3,347,149
COFFEE BREWING APPARATUS
Gail A. Price, Inglewood, Calif., assignor to Farmer Bros. Co., Torrance, Calif., a corporation of California
Filed Oct. 22, 1965, Ser. No. 501,268
4 Claims. (Cl. 99—282)

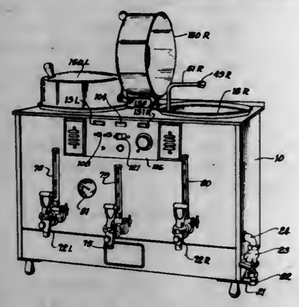


1. A coffee brewing apparatus, comprising:
(a) a flat, essentially rectangular housing adapted for installation under a shelf or the like and having a front side and a back side;
(b) a brewing container slidable under said housing;
(c) a solenoid inlet valve in said housing at the back side thereof;
(d) a flow line communicating between said valve and a discharge point disposed above said container;
(e) a horizontal heater tank extending substantially the width of said housing and occupying substantially the vertical depth of said housing, said heater tank interposed in said flow line and having a heating element therein;
(f) a timer at the front of said housing for said heating element and valve;
(g) and means sensitive to the temperature in said tank for energizing said solenoid valve and timer when the temperature of water in said tank reaches a predetermined value, thereby to cause flow of hot water into said brewing container until terminated by said timer.

3,347,150
SEMI-AUTOMATIC COFFEE URN
Jerry Hrabe, Chicago, Ill., assignor to Superior Tea & Coffee Co., Chicago, Ill.
Filed Sept. 16, 1965, Ser. No. 487,849
3 Claims. (Cl. 99—283)

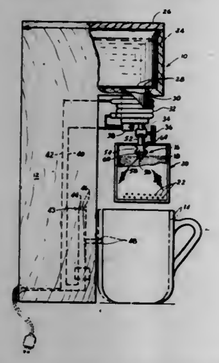
3. Coffee brewing apparatus comprising a reservoir to hold a supply of water, means to maintain the water in heated condition, a coffee brewing vessel to receive a charge of ground coffee, means to transfer hot water from the reservoir for delivery over the coffee to brew the same, means connecting the reservoir to a fresh water supply, pressuring means in operative relation with the supply and reservoir to replenish the volume of water in the reservoir at the same rate as the same is depleted by transfer to

the vessel, and timing means having a cycle proportioned to the rate of delivery of the pressuring means, said tim-



ing means adapted to be initiated into its cycle manually and to be terminated automatically upon transfer to the vessel of a predetermined volume of hot water.

3,347,151
INFUSER AND CONTAINER FOR INFUSION PRODUCTS
Hugh C. Ronalds, 209 Katherine Road, Ridgewood, N.J. 07450
Filed Nov. 22, 1965, Ser. No. 508,932
9 Claims. (Cl. 99—295)



1. An infuser comprising a water holding chamber, an exit nozzle communicating with said water holding chamber, means for heating said water before said water exits from said exit nozzle, said nozzle comprising a tubular portion, the end of said tubular portion being sealed by the base of a conical tip, the base diameter of said conical tip exceeding the diameter of said tube to provide a shoulder, and a unitary container, said container being provided with an entrance hole adapted to encircle said nozzle in engaged relationship with said shoulder, said nozzle being provided with orifices for water flow therethrough, said container being provided with exit orifices for escape of said water after percolating downwardly through the contents of said container.

3,347,152
AUTOMATED FRYER
Henry C. Congelli, Stamford, and Gordon W. Hays, Springdale, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 4, 1965, Ser. No. 492,742
6 Claims. (Cl. 99—334)

1. An apparatus for immersing in a liquid a material contained in discrete compartments comprising:

a generally semi-cylindrical tank for containing liquid;

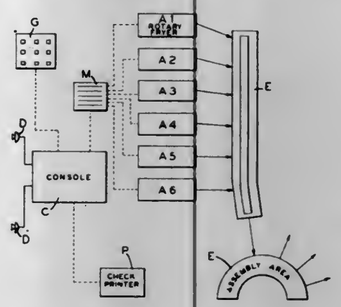
a circular element partially submerged in said tank;

an electric resistance heating element positioned in the tank and arranged so as to be submerged below liquid contained in the tank and between said circular element and the bottom of the tank;

means on said tank adapted to retain, partially submerged therein, on a horizontal axis, said circular element, said circular element having compartments and comprising

(A) a toroidal stator which comprises the inner and outer radial walls, and a connecting side wall for said compartments formed in said element, said outer radial wall provided at a position near, but displaced from the top, with an inlet opening for said compartments, said inner wall provided substantially at the top thereof with an exit opening from said compartments, and

(B) a compartmented rotary element which includes



a rotatable disc mountable on a common axis with said stator and being rotatable with respect thereto and forming the second side wall for said compartments, said disc having removably secured thereto, in substantially equidistant perpendicular relationship, a plurality of compartment separating plates, said rotatable disc having means thereon for separable engagement with a drive means for said rotary element;

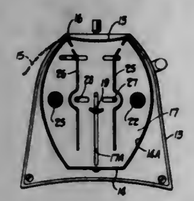
a common central axis for mounting said stator and said rotary element; and

driving means arranged to drive said rotary element in intermittent motion, whereby the dwell in the movement of said rotary element is arranged to align one of said compartments with said inlet opening and to align a second of said compartments with said exit opening, said drive means comprising a driver retractable from engagement with said rotary element thereby permitting said circular compartmented element to be lifted free of interference from said tank.

3,347,153
TOASTER
Earl E. Sutton, Mansfield, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Jan. 26, 1966, Ser. No. 523,105
10 Claims. (Cl. 99—337)

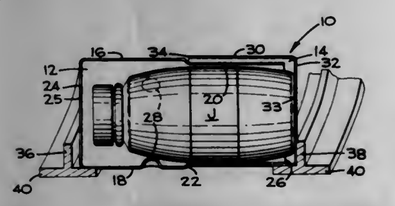
1. A toaster for bread or the like comprising, a supporting shell structure having an upright slot extending downwardly from the upper open end thereof between opposite sides of the shell structure for accommodating therein bread or the like in a generally upright plane, a pair of tubular electrically energizable radiant infrared heaters disposed, respectively, on opposite sides of said slot and extended substantially the full length of

said shell and horizontally along the length of said slot substantially equidistant the top and bottom of said slot, a pair of reflectors disposed, respectively, on opposite sides of said slot, said reflectors each being formed in a modified hyperbolic continuous curve generated about the axis of each said heater, the said axis being spaced toward said slot from the axis of a corresponding true hyperbolic curve, heat energy directly from said heaters and reflected therefrom by said reflectors being directed toward said slot to toast opposite sides of bread or the like in said slot, the modified hyperbolic curve of said reflectors providing that energy reflected thereby diverges away from a horizontal plane through the said heaters to toast by said reflected energy regions of the bread or the like that are more remote than the regions closest to said heaters receiving direct heat energy from



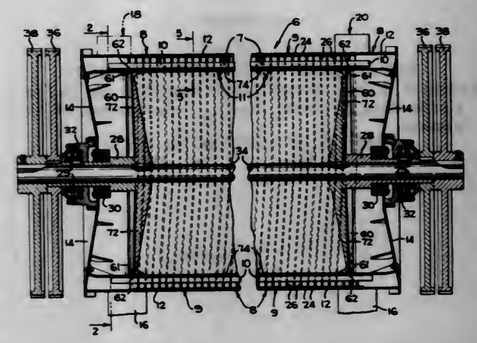
the heaters, the sides of the slot fixing the planes of the sides of the bread or the like to be toasted being closer to said heaters than are the upper and lower boundaries of said reflectors, electric circuit means carried by said shell structure adapted to be connected to a source of electrical energy and connected to said heaters for energizing the same, and a cover hingedly carried by said shell structure and swingable in a direction to closed position for covering said slot and protecting said slot from entry through the upper open end of the shell structure, said cover being swingable in a direction to open position for exposing said slot through said upper open end of the shell structure, said cover being swingable in said opening direction to an extent as to be biased to remain in open position until swung back to closed position.

3,347,154
CONTAINER CONFINING CAPSULE
Allison E. Pech, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 27, 1966, Ser. No. 568,243
7 Claims. (Cl. 99—359)



1. A container encapsulating capsule for confining and moving individual containers through heat treatment mediums comprising a cartridge having one end closed to container entry and one end open, said cartridge including a cylindrical portion of predetermined diameter adjacent said closed end connected by a necked down portion to a cylindrical portion of smaller diameter adjacent said open end, and a cylindrical carrier having a diameter equal to said predetermined diameter and having one end closed to container entry and the other end open and defining an annular edge, said cartridge and carrier being movable between a position spaced from each other for receiving and discharging containers therefrom and an article confining position in telescoping engagement for confining a container therein, said annular edge being scalloped to enable heat treatment liquids to rapidly drain from the capsule.

3,347,155
HEAT-TREATING DEVICE
Samuel A. Meucacci, Wilrijk, Antwerp, Belgium, assignor to International Machinery Corporation S.A., St. Niklaas-Waas, Belgium, a corporation of Belgium
Filed Oct. 28, 1965, Ser. No. 505,499
3 Claims. (Cl. 99—365)



1. In a device for processing material in cylindrical containers the combination of rotatable container support means, means for guiding said containers along a predetermined path, said container guiding means having a first container engaging surface for causing said containers to rotate about their longitudinal axes while moving along a certain portion of said path, rotatable drum means having a second container engaging surface to cause said containers to rotate about their longitudinal axes, and means for rotating said support means and said drum means about the longitudinal axis of the processing device, said support means including a strengthening ring and said drum means including a recess to receive said ring.

3,347,156
APPARATUS FOR PREPARING A TRUSSED BONED FOWL PORTION
Werner Stock, Park Forest, Ill., assignor to Union Carbide Corporation, a corporation of New York
Original application Dec. 14, 1962, Ser. No. 244,719, now Patent No. 3,268,343, dated Aug. 23, 1966. Divided and this application Oct. 23, 1965, Ser. No. 511,016
3 Claims. (Cl. 100—7)

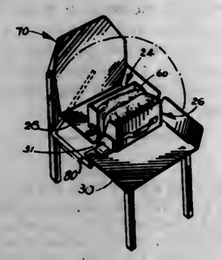
1. In an apparatus for tying meat rolls, the combination of:

(a) an automatic tying machine having flat, horizontal surfaces and equipped with tying means having a twine carrying arm;

(b) split troughs positioned and adapted to be secured on to said flat, horizontal surfaces;

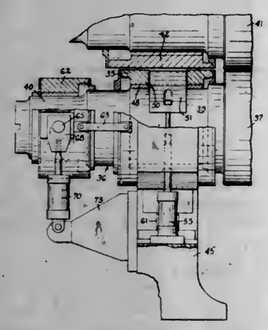
(c) a passage defined between the split troughs and said surfaces positioned in the path of said twine carrying arm so that a meat roll positioned therein can first be tied longitudinally and subsequently be tied transversely;

(d) spatula means to support a meat roll substantially along only the longitudinal axis of said meat roll



such that said twine-carrying arm of said tying means transversely ties a meat roll while supported on said spatula means.

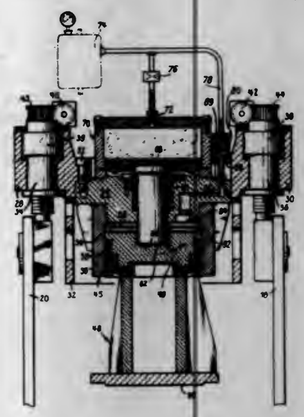
3,347,157
ROLL STRUCTURES AND METHOD
Arthur W. Kemp, Woodbridge, Conn., assignor to Farrel Corporation, Ansonia, Conn., a corporation of Connecticut
Filed Apr. 30, 1965, Ser. No. 452,263
7 Claims. (Cl. 100—41)



7. The method of forming sheet material to a desired gauge in a roller press having a plurality of cooperating rolls in a vertical stack, said rolls having their journals supported in bearing means, comprising the steps of rolling the sheet material between said plurality of rolls, raising the journals of one of said rolls to a distance axially spaced from said bearing means to bend the surface of the roll into an arcuate shape, detecting the seating of the journal of the roll being bent in the bearing means to determine if the journal is unstable within its supporting bearing means, and then forcing the journal of the roll being bent downwardly into the bearing means to stabilize the roll in the bearing means.

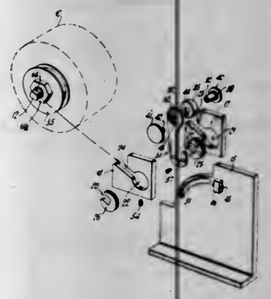
3,347,158
PRESS APPARATUS
Leonhard Peters, Schwabisch Gmund, Germany, assignor to May-Pressenbau GmbH, Schwabisch Gmund, Germany
Filed Dec. 29, 1965, Ser. No 517,243
Claims priority, application Germany, Sept. 4, 1965, M 66,532
9 Claims. (Cl. 100—269)

1. In a mechanical press, plunger means comprising a body portion, pressure transmitting means defining a high pressure chamber with said body portion for cushioning movement of said plunger means to and from a work piece, a transmitting piston member extending with one end thereof into said high pressure chamber, a low pressure chamber, piston means for said low pressure chamber fixedly secured to the other end of said transmitting piston member for movement therewith against a fluid in said



low pressure chamber, means connecting said low pressure chamber to a source of pressurized fluid for supplying said fluid to said low pressure chamber, and a control valve for controlling movement of said fluid to and from said low pressure chamber.

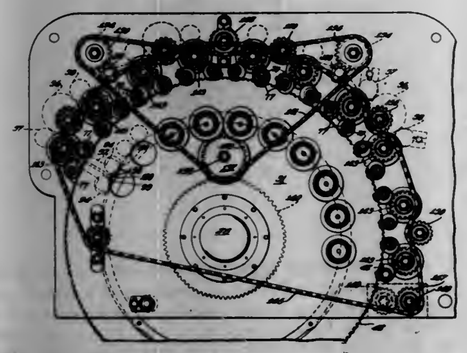
3,347,159
ADJUSTABLE QUICK-RELEASE MECHANISM FOR PRINT DRUM
John A. Altonji, Syosset, and Joseph G. Vaiana, Levittown, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,621
4 Claims. (Cl. 101—93)



1. A high speed printer comprising:
a frame,
a printing hammer module mounted in said frame in a predetermined position,
a print drum mounted rotatably in said frame adjacent to said printing hammer module for rotation about a first axis,
said printing drum being rotatably mounted on a shaft extending along said first axis and extending from each end of said drum,

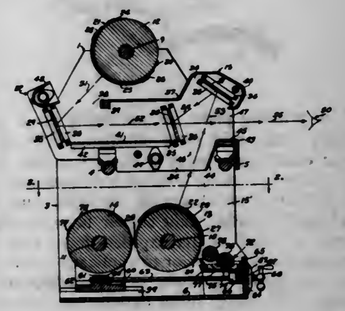
bearing blocks rotatably mounted in said frame about a second axis to receive respectively each end of said shaft, said bearing blocks holding said shaft with said first axis maintained displaced from said second axis within a predetermined range of rotation of said bearing blocks, and means to rotate said bearing blocks within said predetermined range to adjustably position said printing drum with respect to said printing hammer module.

3,347,160
INK ROLL INTERRUPTER FOR A MULTI-COLOR ROTARY OFFSET PRINTING PRESS
James Burton Roozee, Arlington Heights, Ill., assignor to Vandercook & Sons, Inc., Chicago, Ill., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,784
7 Claims. (Cl. 101—209)



1. A multi-color offset press comprising
a plate cylinder rotatably mounted on said press and having a fixed axis of rotation,
the periphery of said plate cylinder being divided into a number of circumferential segmental portions,
a plurality of individual inking systems spaced circumferentially about the periphery of said plate cylinder,
each of said portions having corresponding inking systems and each of said inking systems comprising
first and second rollers extending in parallel relation to said plate cylinder,
means for rotatably mounting said first roller on a fixed axis of rotation, and
an eccentric shaft rotatably mounting said second roller and rotatable to move said second roller between first and second positions, in the first position of which said second roller is in engagement with said first roller and said plate cylinder and in the second position of which said second roller is in engagement only with said first roller,
a plurality of annular cam members corotatably mounted on said plate cylinder in axially spaced relation and having respectively a cam surface residing in a radial plane, and
a plurality of cam followers mounted on said press for radial movement and engageable respectively with one of said cam surfaces and one of said eccentric shafts and operative upon radial movement thereof to rotate said one of said eccentric shafts,
said cam surfaces being arranged to move said cam followers and rotate said eccentric shafts such that the second roller in each of said inking systems engages only its corresponding portion of the periphery of said plate cylinder upon rotation of the plate cylinder.

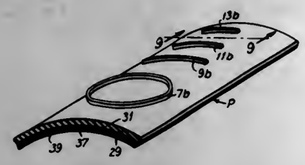
3,347,161
METHOD AND APPARATUS FOR REGISTERING AND MAKING-READY PRINTING PLATES OFF A PRESS
James W. Lenk, Shawnee Mission, and Arthur H. Burnett, Prairie Village, Kans., assignors to Walbert Equipment Company, Kansas City, Mo., a corporation of Missouri
Filed Apr. 5, 1966, Ser. No. 540,304
5 Claims. (Cl. 101—216)



3. An apparatus for registering and making-ready printing plates off a press, said apparatus including,
a main frame, spaced-apart cylinders journalled on the main frame to oscillate on parallel axes, drawsheets,
means for securing a drawsheet in the same relative position upon each of the cylinders,
means for securing a master dummy, which is reverse reading to the plate, to the drawsheet on one of the cylinders on a radius,
means for securing the plate to the drawsheet on the other of the cylinders whereby the plate surface is on an equal radius,
a driving connection between the cylinders to keep the cylinders in the same rotational relation,
an optical system on said frame and interposed within the space between said cylinders, said optical system including a first reflector positioned to reflect an image directly from the dummy to a sight path extending between said cylinders and intersecting the plane containing the axes of said cylinders,
said optical system including a semi-transparent reflector located in said sight path and transmitting said dummy image therethrough,
said optical system including a second reflector positioned to reflect an image directly from the printing plate, when positioned upon the drawsheet on the other cylinder, to said semi-transparent reflector, said semi-transparent reflector being positioned to reflect said last named image into said sight path,
means securing the printing plate to said other drawsheet when the images appear in registry on said path, and
means carried by the main frame near the said other cylinder for applying an ink film to the printing areas of the printing plate, a proofing cylinder mounted on said main frame for movement into engagement with said other cylinder, said optical system being

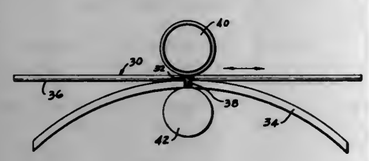
between said one cylinder and said proofing cylinder, whereby the registration of the images may be checked and rechecked during make-ready while the printing plate remains in said other cylinder.

3,347,162
PRINTING PLATES
George Stuart Braznell, Frontenac, and Stuart D. Braznell, Des Peres, Mo., assignors to Braco Engraving Company, St. Louis, Mo., a corporation of Missouri
Filed Dec. 21, 1964, Ser. No. 419,781
8 Claims. (Cl. 101—376)



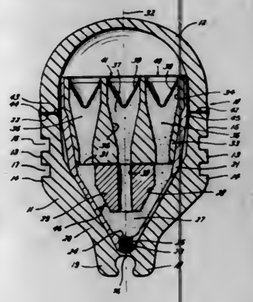
7. A printing plate for mounting on a cylinder of a printing press, said plate consisting only of two layers, one of said layers being a flexible rubber layer and the other being a backing layer of a dimensionally stable flexible nonwoven sheet plastic material, said layers being interfacially bonded, said rubber layer having a printing pattern in relief on its exposed face, said plate, in its unstressed condition prior to application to a cylinder having a curvature generally corresponding to that of the cylinder with the printing pattern on the convex face of the plate.

3,347,163
COMPOSITE PRINTING PLATE PROCESS
Attilio Grandinetti, Villa Park, and Jerome Kuderna, Oak Park, Ill., assignors to Electrographic Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,754
1 Claim. (Cl. 101—401.1)



The process of forming an electrotype shell into a composite arcuate printing plate which comprises surrounding an electrotype shell with a deformable rim, filling the space within the rim with a powdered thermoplastic resinous material, levelling the powder within the rim, covering the powder with a sheet of a compatible thermoplastic resin, preheating the shell, powder and sheet resin, subjecting the shell and resin to an initial pressure between flat heated surfaces to fuse the powdered resin, subjecting the shell and resin to an increased pressure to cause the resinous sheet to flow laterally against the restraint of the deformable rim, chilling the shell and resin filling under pressure, trimming the backed shell, reheating the exterior surface of the resin, machining the filled shell to a uniform thickness, curving and adhesively securing the heat-softened backed shell to the convex surface of a rigid arcuate metal base under heat and pressure, by repeatedly subjecting the backed shell and base member to rolling pressure, starting from an intermediate portion of the shell and working alternately towards the ends of the shell, and cooling the backed shell and base member.

3,347,164
MULTIPLE PERFORATION SHAPED CHARGE
Claude L. Baks, Paris, and Pierre M. A. Chesnel, Savigny-sur-Orge, France, assignors to Societe de Prospection Electrique Schlumberger, S.A., Paris, France, a corporation of France
Filed May 6, 1966, Ser. No. 548,249
Claims priority, application France, May 18, 1965, 17,462/65
7 Claims. (Cl. 102—24)



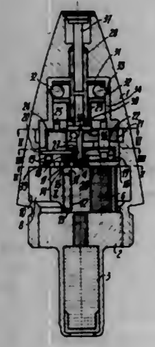
1. Shaped charge apparatus comprising: a case having a cavity therein uniformly disposed about a central axis; explosive-confining means including a body coaxially received in the forward portion of said cavity and having an axial bore and a plurality of longitudinal bores therein symmetrically arranged around said central axis; first and second shaped explosive means having a liner in their forward end and respectively received in said axial bore and in each of said longitudinal bores; means received in the rearward portion of said cavity for initiating detonation of said shaped explosive means; and means between said detonation-initiating means and said first shaped explosive means for retarding its detonation in relation to the detonation of said second shaped explosive means.

3,347,165
FLUX GUIDE FOR A MAGNETIC FUZE
Cletus A. Kessler, Brea, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 28, 1958, Ser. No. 770,233
4 Claims. (Cl. 102—70.2)



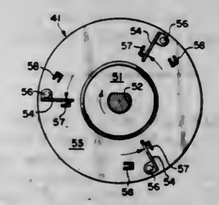
1. In a missile, a magnetic fuze comprising in combination at least one permanent magnet, a sensing means adjacent said permanent magnet and operable to detect a magnetic flux signal from a target, means comprising a soft iron guide mounted on said missile and having a trough portion for mounting said permanent magnet and said serving means in said trough portion flush with the outer surface of the missile and operable to provide a lower reluctance path for said magnetic flux signal than provided by the missile whereby the output signal of said sensing means is increased and the shielding effect of eddy currents in the missile surface skin is substantially eliminated.

3,347,166
FUSE FOR A MISSILE TO BE FIRED BY A GUN WITH RIFLED BORE
Robert Simmen, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Mar. 4, 1966, Ser. No. 531,837
Claims priority, application Switzerland, Apr. 2, 1965, 4,625/65
2 Claims. (Cl. 102—84)



1. In a fuse for a missile adapted to be fired by a gun with a rifled bore, the combination of a detonator at the rear of the fuse, a striker including a collar, located to the front of the fuse and adapted to move axially of the fuse towards the detonator, a detonating primer fitted to the front of the detonator in an inoperative position out of the path of the striker and adapted to be urged centrifugally along a path transversely of the striker path into an operative position for which it is inserted in the path of the striker to allow the latter to impinge on said primer and thereby fire the detonator, means locking the detonating primer in its inoperative position and released upon firing of the missile, means holding the striker at a distance from the path of the detonating primer, said holding means comprising a sector adapted to pivot around an axis parallel with the path of the striker and provided with an arcuate slot coaxial with its pivotal axis, the edges of said arcuate slot engaging the side of the striker collar facing the path of the sector, said sector also provided with a recess at the end of the arcuate slot furthest from the path of the striker and into which the striker collar is urged by inertia during the progression of the missile inside the gun, a mass rigid with said sector and adapted to be urged centrifugally away from the path of the striker during flight to thereby disengage the striker collar with reference to the sector, a clockwork driven by said sector and controlling the speed of the centrifugally shifted mass and sector, a movable support carrying the detonating primer and provided with a bore parallel with the fuse axis, a stationary plate over which said support is adapted to move transversely of the fuse axis under the action of centrifugal force between an inoperative position for which the primer is outside the striker path, and an operative position for which the primer lies on said striker path, said plate being provided with a first and a second recess facing the path of the bore in the movable support, a plunger piston slidably carried in said bore and forming the means for locking the detonating primer in position by engaging said first and second recesses selectively for the inoperative and for the operative position of the support, a spring urging the piston into the first recess until the missile is fired and causes the piston to recede against the action of the spring to thereby release the support and primer and move into the second recess as soon as the missile passes out of the gun and the axial acceleration has ceased, the support having then reached its operative position, and means whereby the piston locks the clockwork when engaging the first recess.

3,347,167
IMPELLER FOR CENTRIFUGAL PUMP
Elmer J. Nelesen, West Allis, Wis., assignor to General Electric Company, a corporation of New York
Filed Feb. 24, 1966, Ser. No. 529,766
4 Claims. (Cl. 103—3)



1. In a centrifugal type pump having a chamber with an axial inlet opening thereto and a peripheral discharge passage therefrom and including a pump plate disposed within said chamber and operatively secured at the center thereof to reversible drive means for selectively rotating said plate in opposite directions relative to said chamber, the improvement comprising:

(a) at least one pump blade pivotally secured to said plate near the outer periphery thereof;

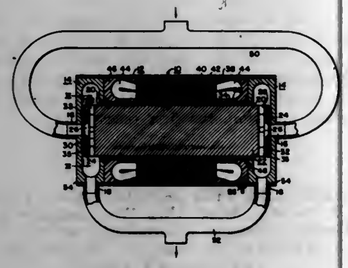
(b) said blade being movable between an operative position when said plate is rotated in one direction and wherein said blade is substantially radially directed and is effective to translate fluid from said inlet opening, through said chamber, and out said discharge passage, and an inoperative position when said plate is rotated in the opposite direction and said blade is substantially tangentially directed and is ineffective to translate fluid through said chamber; and

(c) first and second stop means disposed on said plate in the path of movement of said blade, said first stop means being effective to fix the motion of said blade in its operative position when said plate is rotating in said one direction, and said second stop means being effective to fix the motion of said blade in its inoperative position whereby said blade is substantially ineffective to remove fluid from said chamber when said plate is rotating in said opposite direction.

3,347,168
MOTOR PUMP UNIT
Donald R. Nixon, Monroeville, Pitcairn, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1966, Ser. No. 527,921
8 Claims. (Cl. 103—87)

1. A motor pump unit comprising a tubular enclosure naving an annular stator positioned therein and forming a central rotor bore, a pair of pump casings disposed in said enclosure and mounted respectively adjacent the ends of said stator, enclosure means lining said rotor bore and

hermetically secured at its ends to said enclosure to isolate said stator from said rotor bore, a rotor having a cylindrical surface closely received in said rotor bore and cooperating with said enclosure means to form the sole



rotational bearing for said unit, and said rotor having impeller means thereon adjacent each of the ends thereof, said impeller means respectively extending into said pump casings.

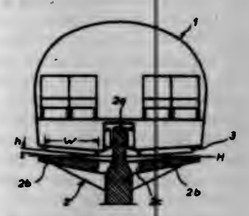
3,347,169
ROTARY WELL PUMP
John W. Cronin, Jr., La Mirada, and Verdi E. Boyer, San Gabriel, Calif., assignors, by mesne assignments, to Sargent Industries, Oil Well Equipment Division, Huntington Park, Calif., a corporation of Delaware
Continuation of application Ser. No. 423,482, Jan. 5, 1965. This application Sept. 26, 1966, Ser. No. 582,170
1 Claim. (Cl. 103—117)



A cable supported and operated rotary pump for use when anchored within the lower end of a tubing string disposed in a well bore, said rotary pump comprising:

(a) latch means within the lower end of the tubing string including at least a pair of arcuate internal ribs separated by axially directed guide channels, the upper ends of said ribs forming helical cam surfaces directed into said channels, the lower ends of said ribs forming latching abutments;
(b) a pump stator having an undulated internal surface;
(c) a sleeve extending downward from said stator and forming an entrance passage;
(d) latch fingers extending from said sleeve, engageable with said cam surfaces, dimensioned to be received in said channels, and rotatable into latching engagement with said abutments;
(e) a sleeve having an outlet port and extending upwardly from said stator, to form an outlet passage, said sleeve having an internal rotary operable separable connector element at its upper end;
(f) a rotor having an external helical surface for cooperation with said stator;
(g) a stem fixed to said rotor, and extending upwardly in said outlet passage and through said connector element when said rotor is received in said stator;
(h) an external separable connector element disposed at the lower end of said stem, said connector elements being mutually engageable to secure said rotor in axially spaced relation to said stator thereby to permit free flow of fluid through said passages and stator;
(i) and means attaching said stem to said supporting and operating cable;
(j) said fingers being engageable with said abutments when said stator is lowered to the bottom of said tubing string and said cable is rotated in a direction intended to cause said rotor and stator to pump fluid thereby to secure said stator;
(k) and said separable connecting elements being disengageable, on rotation of said cable in a direction intended to cause said stator and rotor to pump fluid, to permit lowering of said rotor into said stator.

3,347,170
GUIDING AND SUPPORTING TRACK FOR VEHICLES SUPPORTED BY FLUID CUSHIONS
Jean Henri Bertin, Neuilly-sur-Seine, and Paul Francois Gulenne, Paris, France, assignors, by mesne assignments, to Societe d'Etudes de l'Aerotrain, Plaisir (Seine-et-Oise), France, a corporation of France
Filed Mar. 3, 1965, Ser. No. 436,786
Claims priority, application France, Mar. 5, 1964, 966,287
3 Claims. (Cl. 104—120)

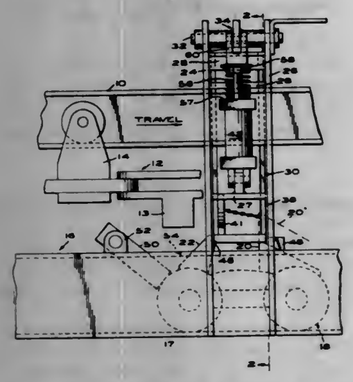


1. A transport system by tracked ground effect vehicle comprising in combination:

a track which is in cross section in the general shape of an inverted T with an upwardly projecting central upright portion comprising two outwardly facing, substantially vertical side surfaces and two lateral wing portions extending sideways from the foot of said central upright portion and comprising each an upwardly facing, generally planar surface having a slant S with respect to the horizontal, and,
a vehicle which comprises inwardly opposite guiding means bearing against said outwardly facing side surfaces, for guiding said vehicle by reaction force thereon, and downwardly projecting seals designed to peripherally bound fluid cushions for bearing said vehicle on both said upwardly facing, slanting surfaces and ending with lower free edges extending in planes generally parallel to and adjacent said slanting surfaces, said fluid cushions being in part defined by a mean leakage gap height h measured between said lower free edges and said slanting surfaces and by a geometric width w measured between points of said free edges which are opposite to each other transversely with respect to the direction of motion of the vehicle, the said slant S, the said height h and the said width w being interrelated by the relation

$$S \leqslant h/w$$

3,347,171
CARRIER STOP AND TRACK HANGAR FOR POWER AND FREE CONVEYORS
Gordon A. Torrance, Taylor, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan
Filed Mar. 23, 1965, Ser. No. 442,083
8 Claims. (Cl. 104—172)



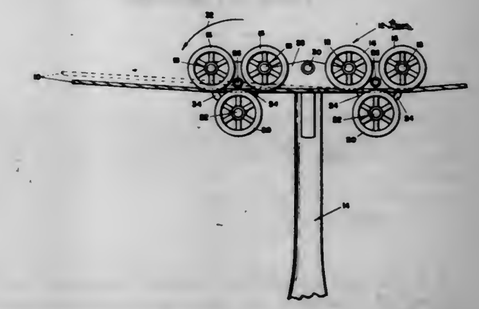
1. A combination track hangar and carrier stopping device for a conveyor of the type having an upper track supporting an endless propelling member and a lower track supporting a carrier equipped with driving and holdback dogs projecting toward the uppet track for engagement by a pusher on the propelling member, said device comprising:

(a) track hangar structure secured to and rigidly interconnecting the upper and lower tracks at a fixed distance from each other;
(b) an arm pivotally suspended on the track hangar structure for rocking movement about an axis extending parallel to the tracks and spaced from the lower track, the arm including a stop plate secured thereto and extending transversely and intermediate the upper and lower tracks; and
(c) actuating means for rocking the arm between a non-blocking position in which the stop plate is spaced from the paths of travel of a pusher and the carrier dogs and a blocking position in which the stop plate extends across the lower track in the path of travel of the carrier dogs and spaced from the path of travel of a pusher for abutting engagement with a carrier holdback dog and simultaneous overlying engagement with a carrier driving dog.

3,347,172
TRAMWAY ROPE DISPLACEMENT INDICATOR
Tony R. Sowder, Spokane, Wash, assignor to Riblet Tramway Company, Spokane, Wash., a corporation of Washington
Filed July 15, 1963, Ser. No. 295,048
2 Claims. (Cl. 104—173)

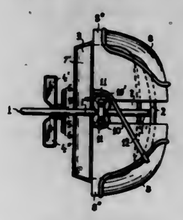
1. In an aerial tramway having an endless circulating traction rope guided by rope supporting sheaves supported on towers, means of the nature aforesaid for indicating displacement of said rope from its predetermined relationship with said rope supporting sheaves, comprising, in combination:

a sheave frame journaled on a substantially horizontal axis on said tower, for tilting in a substantially vertical plane;
more than one rope supporting sheave journaled on said sheave frame for rotation in a plane substantially parallel to the plane of said tilting movement with the axis of at least one of said sheaves laterally offset from a line through said sheave journal and the point of contact of said traction rope with the immediately aforesaid sheave so that force of said traction rope maintains said sheave frame in a first normal pivotal position;



means of yieldably biasing said sheave frame to a second pivotal position comprising a mechanical force existing between said sheave frame and said tower member; and
an annunciator adapted to activate upon tilting movement of said sheave frame from said first normal position to signal such event, characterized by an electrically energized signaling device supplied with energy through a series connected level sensitive switch carried by said sheave frame to interrupt current only when said frame is moved to said second position.

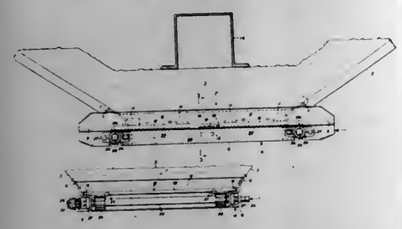
3,347,173
FLOORLESS, TWO SEAT CABIN FOR CABLEWAYS
Ugo Carlevaro, Via San Secondo 43, Turin, Piedmont, Italy
Filed July 19, 1965, Ser. No. 472,996
Claims priority, application Italy, Aug. 12, 1964, 17,850
6 Claims. (Cl. 104—173)



1. A cableway cabin, especially destined to the conveyance of skiers, comprising a central vertical framework, at least one seat secured to said framework, a floorless rear body shell secured to said framework, a first floorless front body shell mounted on said framework for rotation in a horizontal plane, a first toothed wheel solid with said first front body shell, a second floorless front body shell mounted on said framework for rotation in a horizontal plane, a second toothed wheel solid with said second front body shell and engaging with

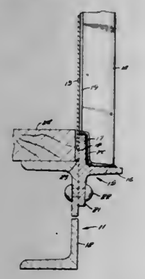
said first toothed wheel, whereby said first and second front body shells perform mutually symmetrical rotations in a horizontal plane with respect to said framework, for opening the cabin to allow at least a skier to enter the cabin and sit down on the seat without taking off the skis, and for closing the cabin after entrance of the skier.

3,347,174
ORE CAR DOUBLE SLIDE GATE ASSEMBLY
Walter L. Floehr, Toledo, Ohio, assignor to Unitcast Corporation, Toledo, Ohio, a corporation of Ohio
Filed Mar. 19, 1965, Ser. No. 441,278
7 Claims. (Cl. 105—282)



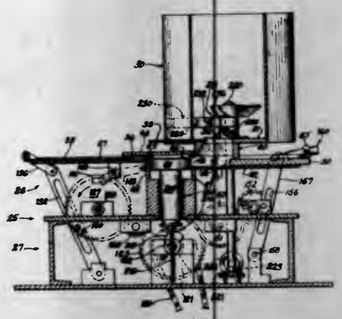
1. A slide gate assembly for a planar bottom discharge opening of a railway car, comprising a planar frame bounding said opening, a pair of coplanar slide gates slideably mounted in said frame and oppositely movable therein for opening and closing said opening, cross means fixed to said frame and centered longitudinally on and spanning said opening, said cross means receiving and supporting inner ends of said gates in a closed position thereof, and means on said cross means and operative during movement of said gates toward said closed position for deflecting any foreign matter pushed thereon by said ends out of the way of closing of said gates.

3,347,175
RAILROAD CAR SIDE SILL CONSTRUCTION
Le Roy C. Butcher, Youngstown, Ohio, assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 9, 1965, Ser. No. 438,357
9 Claims. (Cl. 105—409)



1. A side wall construction for a railroad car comprising:
a side sill extending the length of the car;
a sill member coextensive with said side sill;
means securing said sill member to said side sill;
said sill member being T-shaped in cross-section with the leg of said T being transverse to said side sill;
side wall sheathing secured to said sill member; and
wall posts secured to said side wall sheathing;
the lower ends of said wall posts resting on and being secured to said leg of said T-shaped member.

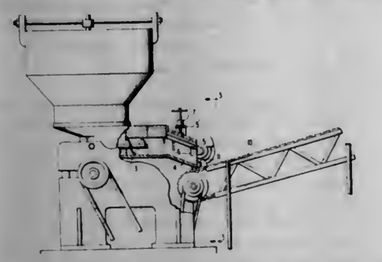
3,347,176
METHOD AND APPARATUS FOR MAKING PATTIES
Robert G. Hall, Villa Park, Ill., assignor to Formatic, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1964, Ser. No. 405,785
23 Claims. (Cl. 107—4)



3. Apparatus for making patties of plastic material comprising:
a support;
a hopper on said support adapted to contain a supply of plastic material, said hopper having an opening in the bottom;
means in said hopper adapted to discharge a quantity of plastic material through said hopper opening;
receiving means beneath said hopper opening adapted to receive a quantity of plastic material;
a hollow cylinder on said support adjacent said receiving means;
a reciprocating mold plate having a mold opening at times in communication with said cylinder and at times exterior of said cylinder;
transferring means adapted to transfer plastic material from said receiving means to said cylinder;
a piston in said cylinder adapted to press plastic material in said cylinder into the opening in said mold plate to insure filling said opening, said piston also effective to discharge excess material laterally from said cylinder;
means actuating said transferring means, said mold plate and said piston in timed relation whereby said mold opening when in communication with said cylinder is filled with plastic material; and
ejecting means adapted to eject plastic material from said mold opening when the latter is exterior of said cylinder.

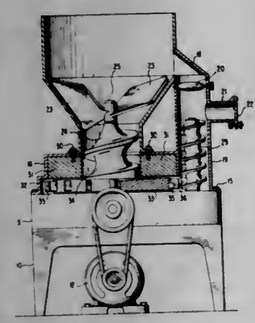
3,347,177
MACHINES FOR PREPARING FOOD PRODUCTS FROM DOUGH
Fausto Celorio Mendoza, Mexico City, Mexico (Calzada San Esteban 57, Naucalpan, Mexico)
Filed Sept. 15, 1964, Ser. No. 396,642
6 Claims. (Cl. 107—14)

1. In a system for use with material having a self-sustaining dough-like consistency comprising, in combination, a proportioning machine and a molding machine for said material spaced at an interval from said proportioning machine with a conveyor therebetween, said proportioning machine comprising a charging bin with an outlet arranged at the lower part of said bin, means for driving said dough-like material from said outlet to a nozzle and a cutting knife, held adjacent the outlet of said nozzle, and being actuatable by a cam having a rotary motion to produce timed vertical strokes, one portion of said conveyor passing underneath said nozzle in position to receive blocks of dough-like material extruded by said nozzle and cut by said knife, said conveyor being provided, in a portion adjacent said molding machine, with a pushing device in order to push said blocks into said molding machine, the improvement which comprises a



single means for driving means for both said reciprocating knife and for said pushing device to assure unloading of the said conveyor in a timed relationship with the cutting.

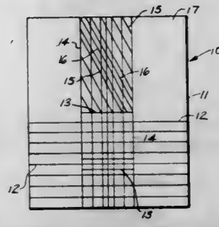
3,347,178
KNEADING MACHINES
Fausto Celorio Mendoza, Mexico City, Mexico (Calzada San Esteban 57, Naucalpan, Mexico)
Filed May 24, 1965, Ser. No. 458,149
8 Claims. (Cl. 107—36)



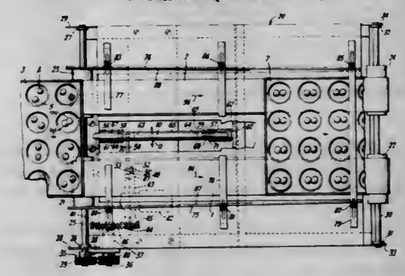
1. A kneading machine for dough, having a hopper, means for forcing dough from said hopper to a gap between the surfaces of milling members, means for adjusting the size of said gap and means for producing relative motion among said milling members in combination with a conduit leading from said gap to said hopper and containing means for forcing dough from said gap toward said hopper through said conduit.

3,347,179
PIE AND PASTRY BOARD
John A. Haidinyak, 3755 W. 69th Place, Chicago, Ill. 60629
Filed Mar. 2, 1966, Ser. No. 531,121
3 Claims. (Cl. 107—46)

1. Pie and pastry board comprising, in combination, a rectangular board, the front side of said board provided with a plurality of straight-line grooves transversely positioned on said board, said grooves are uniformly spaced from each other and extend to the sides of said board, a plurality of longitudinally disposed straight-line grooves adapted to form a perpendicular relationship with said transversely extending grooves, said longitudinally extending grooves terminate at the ends of said board and are positioned near the center portion thereof, a number of transverse groups terminating at the end lines of said longitudinal grooves, a plurality of diagonally spaced grooves intersecting said longitudinal grooves in a non-uniform relationship to each other, the backside of said board is provided with a first circularly disposed groove, a second circular groove of a greater diameter than said first groove is adapted to uniformly enclose said first groove and be uniformly spaced therefrom, a straight-line groove assuming square relationship, a plurality of transverse grooves abutting the longitudinal lines of said squarely disposed groove, a plurality of transverse grooves centrally positioned within said squarely disposed groove and said all straight-lines and circular grooves are adapted to admit a sharp-edge too therein.



3,347,180
ALIGNER FOR BREAD ROLLS
Malcolm E. Phillips, Jr., and Louis C. Zanzola, Richmond, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 12, 1964, Ser. No. 403,238
7 Claims. (Cl. 107—54)

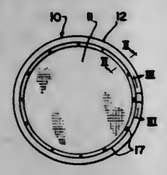


7. The method of aligning, orienting, and co-planarly positioning a plurality of pairs of randomly disposed pieces of dough contained in the respective compartments of multi-compartmented baking pans used in baking twin rolls, comprising the steps of: moving said pans containing said pieces of dough a rectilinear path, and laterally agitating said pans and said pieces of dough in a direction transverse to said rectilinear path to thereby align and orient each of said pairs of pieces of dough within each of said compartments on axes that are oriented parallel to each other and at right angles to the direction of said agitation, said lateral agitation also co-planarly positioning inadvertently superimposed pairs of pieces of dough so that they are beside each other in their respective compartment.

3,347,181
METHOD FOR MAKING PIZZA PIES
Charles Pizzo, 2643 73rd Court, Elmwood Park, Ill. 60635
Filed Sept. 9, 1965, Ser. No. 485,996
4 Claims. (Cl. 107—54)

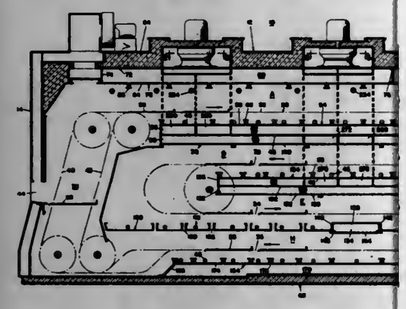
1. In a method of making pizza pies, the steps of making a dough, allowing said dough to set and pounding said dough down at least once, providing a plurality of round flat discs, rolling portions of said dough into round

flat layers, disposing said layers on said discs, allowing said layers to set for a time, applying topping to said layers, immediately placing said discs with said layers



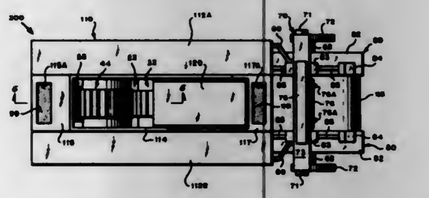
and topping thereon in an oven to bake to form pizza pies and thereafter removing said pizza pies from said discs for serving.

3,347,182
DOUBLE LAP OVEN HEATING SYSTEM
Wayne H. Royer, York, Pa., assignor to Read Corporation, York, Pa., a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,614
8 Claims. (Cl. 107—57)



1. In an atmosphere recirculating system for a double lap oven having an endless tray conveyor including first, second, third and fourth superposed horizontal runs connected at their ends,
means disposed in spaced relation above and below said first run forming longitudinally elongated plenum chambers,
means disposed in spaced relation above and below said second run forming longitudinally elongated plenum chambers,
means disposed in spaced relation above said third run and below said fourth run forming longitudinally elongated plenum chambers,
the confronting faces of each pair of plenum chambers having a multiplicity of apertures directed toward their associated run of said tray conveyor,
first fan means,
valve controlled blowing duct means selectively providing communication between the discharge of said first fan means and one or the other of said upper and lower plenum chambers associated with said first tray conveyor run and valve controlled return duct means selectively providing communication between the intake of said first fan means and one or the other of said upper and lower plenum chambers associated with said first tray conveyor run for selectively recirculating oven atmosphere upwardly or downwardly against the product on said first tray conveyor run,
second fan means,
valve controlled blowing duct means selectively providing communication between the discharge of said second fan means and one or the other of said upper and lower plenum chambers associated with said second tray conveyor run and valve controlled return duct means selectively providing communication between the intake of said second fan means and one or the other of said upper and lower plenum chambers associated with said second tray conveyor run for selectively recirculating oven atmosphere upwardly or downwardly against the product on said second tray conveyor run,
third fan means,
blowing duct means providing communication between the discharge of said third fan means and the lower plenum chamber associated with said fourth tray conveyor run and return duct means providing communication between the intake of said third fan means and the upper plenum chamber associated with said third tray conveyor run for recirculating oven atmosphere upwardly against the product on said third and fourth tray conveyor runs.

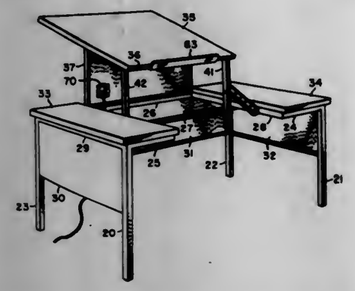
3,347,183
DOUGH METERING APPARATUS
Karl Einstein, 6020 Alma St., Philadelphia, Pa. 19149, and Bernard W. Reiter, 1001 City Ave., Philadelphia, Pa. 19151
Filed May 26, 1965, Ser. No. 458,901
11 Claims. (Cl. 107—69)



1. A dough metering apparatus for providing a serial plurality of equal volume slugs of dough of selected size from a mass of raw dough, comprising (a) a forming section including a pair of opposed initial rollers to take said mass of dough, and a pair of forming rollers, said forming rollers together defining a channel, said initial rollers including one solid roller and one counterrotating roller, said counterrotating roller comprising a central section and two side sections, said central section rotating in one direction and said side sections rotating in the opposite direction, only said rollers forming said mass of dough to a continuous elongated slab of dough, and (b) a cutting section including cutting means, said cutting means being provided with means to pass reciprocatingly through said slab transverse to the direction of movement of said slab, to cut said slab into a serial plurality of slugs.

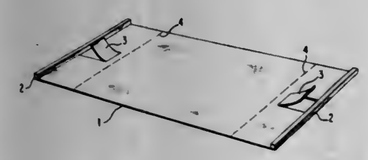
3,347,184
TABLE-LECTERN
Joseph L. Kiraly, 18190 Lovell Road, Spring Lake, Mich. 49456
Filed Feb. 14, 1966, Ser. No. 527,338
4 Claims. (Cl. 108—17)

1. A table-lectern structure, comprising:
a supporting frame; and
a lectern panel and means connecting said lectern panel to said frame for combined vertical and horizontal movement of said lectern panel between raised and lowered positions with respect to said frame, said frame having components thereof extending directly underneath said panel, all of said components being disposed beyond the vertical projection of an elevated position of the rear edge of said lectern panel with respect to the direction of lateral movement thereof to said raised position, said frame including a table structure having a



cut-out area receiving said lectern panel in the lowered position thereof in coplanar relationship with a fixed table surface.

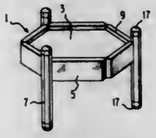
3,347,185
SYSTEM OF GOODS HANDLING BY MEANS OF FLEXIBLE PALLETS USING LIFT TRUCKS OR OTHER LIFTING DEVICES
Francois Jean Paul Marie Colas, Bourg La Reine, France
Filed July 1, 1965, Ser. No. 468,906
Claims priority, application France, July 4, 1964, 980,743
4 Claims. (Cl. 108—51)



1. A flexible pallet for use with a fork lift truck or the like comprising:
(1) a main load-supporting body formed of flexible sheet material sized to underlie the load to be carried and to extend upwardly along opposite vertical sides thereof, said material being folded upon itself at opposite ends thereof with the ends secured to the main body to define a pair of spaced parallel pockets therein;
(2) a pair of rigid reinforcing members one secured in each said pocket;
(3) rigid mandrel means detachably connected to said ends of said sheet, adapted to be positioned on said two vertical sides of the load, and to be engaged by the tines of a lift fork;
(4) and tie means attached to said mandrels for encircling a load and securing it to said pallet.

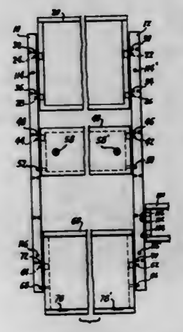
3,347,186
NESTABLE SUPPORTS
Nasri Khattar, Falls Church, Va. (P.O. Box 3259, Beirut, Lebanon)
Filed Mar. 24, 1966, Ser. No. 537,204
8 Claims. (Cl. 108—91)

1. A support comprising a platform, at least three parallel legs supporting the platform, the platform having an outer periphery that is an equilateral polygon having sides equal in number to twice the number of legs, each side of the platform having a said leg at one end and a recess opening outwardly at the other end, the side walls of the recesses being complementary to the outer con-



tour of the legs to receive the legs of identical said supports, the legs extending upwardly to a height at least as great as the height of the recesses.

3,347,187
DEMOUNTABLE SHELF
Edward F. Khoury, Iron Mountain, Mich., assignor to Khoury Bros., Inc., Iron Mountain, Mich., a corporation of Delaware
Filed Apr. 18, 1966, Ser. No. 543,169
3 Claims. (Cl. 108—152)

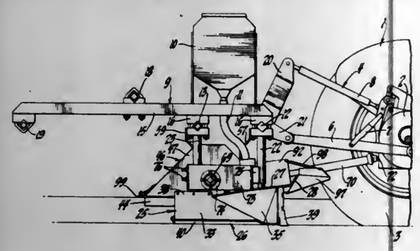


1. A support construction comprising the combination of:
a horizontal supporting shelf-like member;
planar ends perpendicularly secured to the shelf-like member;
a vertical back on the shelf-like member interconnecting the ends;
clips having substantially right angularly disposed portions;
means securing the clips, respectively, to the end and back at each end of the shelf-like member;
a pin extending from each clip substantially perpendicularly outwardly from the ends;
a vertical columnar support disposed at each end of the shelf-like member and having a front surface and a side surface and further including a bayonet slot in the side surface which intersects and extends from the front surface generally inwardly and downwardly, said slots being adapted to receive pins extending, respectively, from the ends for supporting the shelf-like member.

3,347,188
SOIL INCORPORATOR
Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed Feb. 4, 1965, Ser. No. 430,298
17 Claims. (Cl. 111—10)

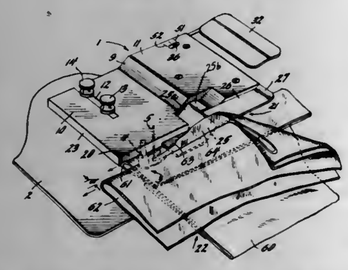
1. Apparatus for incorporating soil treating chemicals in seed beds comprising a frame movable along a seed bed, a transverse rotor shaft supported on said frame, and

a soil working and incorporating tool assembly mounted on said rotor shaft including a plurality of cutters mounted adjacent each other along the axis of the rotor shaft, each of said cutters comprising a hub member non-rotatably mounted on said rotor shaft and a pair of blades projecting radially in opposite directions from the axis of the rotor shaft operable upon rotation of the rotor shaft to work the seed bed soil and incorporate therein soil treating chemicals deposited on the seed bed ahead of



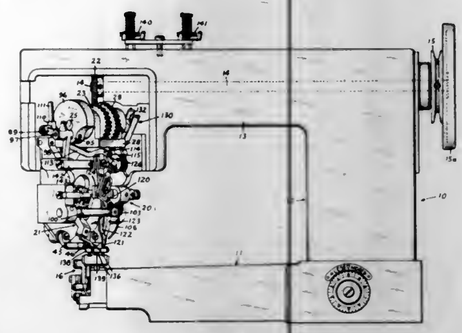
said tool assembly, said pair of blades being spaced from each other on said hub members in an axial direction, and the blades of each adjacent pairs of said cutters projecting radially from said rotor shaft at substantially right angles with respect to each other, said tool assembly further including means engageable with the ground as said frame advances along the seed bed for preventing the soil worked by said blades from spreading laterally outwardly of said tool assembly.

3,347,189
SEWING MACHINE ATTACHMENT
C W Hendrix, R.F.D. 2, Royston, Ga. 30662
Filed May 10, 1965, Ser. No. 454,596
10 Claims. (Cl. 112—153)



1. A combination presser finger and guide assembly for presenting fabric to a sewing station on a sewing machine having a presser foot comprising a body adapted to be mounted on the bed of said sewing machine adjacent said presser foot, said body having an edge extending longitudinally of said assembly for guiding said fabric past said station, a longitudinally extending presser finger mounted on said body juxtaposed to said edge, said presser finger having a surface for engaging fabric aligned with said presser foot, a spring for biasing said finger toward said bed to secure said fabric between said surface and said bed, means on said surface for urging said fabric toward said edge and trigger means pivotally mounted on said body for movement about a horizontal axis for lifting said finger away from said bed against the force of said spring whereby said fabric may be released at will, said trigger means including a lever and a handle portion positioned on the end of said lever and remote from said presser finger for operating the same.

3,347,190
LOOPER MECHANISM FOR BLIND STITCH SEWING MACHINES
Gerald C. Roth, Bethpage, N.Y., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1966, Ser. No. 540,354
12 Claims. (Cl. 112—176)

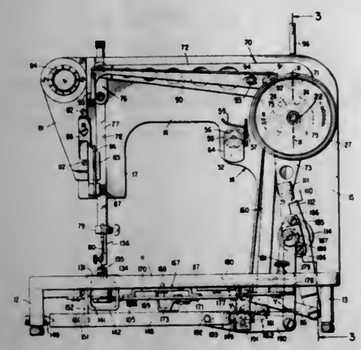


11. A looper mechanism in the form of an adapter for installation on a blind stitch sewing machine having a frame, an oscillating sewing needle whose path of oscillation lies in a substantially vertical plane and having looper driving means, which looper mechanism comprises an adapter plate for securing said mechanism to said frame, a first member providing a bearing secured to said plate and a second member providing a bearing secured to said plate with the central axes of said bearings parallel to each other, a first shaft mounted for rotation in said first bearing, a first shoulder member on said first shaft, a first pivot stud on said first shoulder member extending axially and mounted eccentrically of the axis of rotation of said first shaft, a second shaft mounted for rotation in said second bearing, a second shoulder member on said second shaft, a second pivot stud on said second shoulder member extending axially and mounted eccentrically of the axis of rotation of said second shaft, gear means connecting said first and second shafts rotating said first and second shafts simultaneously, a looper lever having an upper and a lower arm, said lower arm carrying a looper element, said looper lever being pivotally fulcrumed between said arms on said first pivot stud, a slide block pivoted on said second pivot stud and slidable on said upper arm for oscillating said lever on its fulcrum about the axis of said first pivot stud, means for securing said plate to said frame, and means for operatively connecting one of said first and second shafts to the sewing machine looper driving means.

3,347,191
SEWING MACHINE DRIVE MECHANISM
Roger J. Ross, Dover, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 1, 1965, Ser. No. 484,175
5 Claims. (Cl. 112—220)

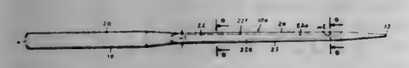
1. In a sewing machine having a frame, and stitch forming instrumentalities carried on said frame including an endwise reciprocatory needle bar, a shiftably supported loop-taker, and a work feeding mechanism, drive means for said stitch forming instrumentalities comprising a shaft journaled in said frame, a single rotary actuator carried on said shaft, a first actuating mechanism including first means directly connected to and driven by said rotary actuator for operating said needle bar and loop-taker in timed relation in the formation of stitches, and a second

actuating mechanism including second means directly connected to and driven by said rotary actuator in approxi-



mately 90° phase angle difference from said first actuating mechanism for operating said work feeding mechanism.

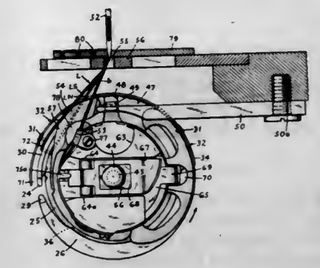
3,347,192
SEWING MACHINE NEEDLE
Richard H. Lukins, Glen Ellyn, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed May 24, 1965, Ser. No. 458,322
9 Claims. (Cl. 112—222)



1. A sewing machine needle which comprises, a conically shaped leading end portion having a sharp point, a shank portion at the butt end of said needle, a blade portion intermediate said leading end portion and shank portion, an eye at the leading end of said blade portion, said blade portion having elongate flats along each side of said blade portion extending from a locus adjacent the base end of said conically shaped leading end portion to said shank portion, said flats lying in parallel planes and being progressively wider in a direction toward the shank portion, and said blade portion gradually increasing in cross-sectional area from its leading end toward said shank portion, and a thread groove on at least one side of said needle which lies between said flats, said thread groove extending from said eye to said shank portion.

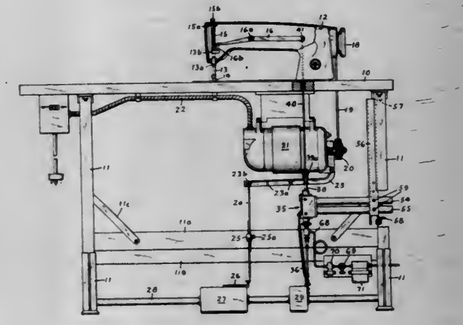
3,347,193
SEMI-DULL FINISH BOBBIN CASE BASKET
Nathan Perri, Northlake, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed July 30, 1965, Ser. No. 476,060
7 Claims. (Cl. 112—228)

1. A rotary hook assembly for a lockstitch sewing machine comprising a hollow cup-shaped rotary component having a rim including a needle thread loop engaging hook means rotatable in a circular path, a stationary bobbin case basket having a central opening and mounted within said cup-shaped rotary component, a bobbin case enclosing a rotatable bobbin mounted in said central opening, said bobbin case having a face portion, said bobbin case basket having a peripherally extending loop thread engaging flange adjacent to and guiding the needle thread loop over said face, guide means for guiding thread from said bobbin over said flange, said hook means carrying said needle thread loop around said bobbin case basket to loop it over said bobbin thread, the surfaces of said bobbin case basket which are engaged by said



loop thread having a semi-dull finish consisting of contiguous minute hills and valleys in random orientation free from sharp peaks jagged projections and sharp edges and having a hard but velvet-like feel, said semi-dull finish being characterized by a coefficient of friction substantially less than that of a smooth, polished finish.

3,347,194
POWER ASSIST MECHANISM FOR SEWING MACHINES
Arthur N. Hale, Park Ridge, and James J. Matias, Hoffman Estates, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 23, 1965, Ser. No. 515,867
18 Claims. (Cl. 112—237)

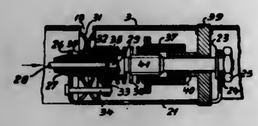


1. In a sewing unit including a sewing machine having a device requiring periodic operation under the direct control of an operator, the combination which comprises a cylinder supported in fixed relation to the sewing machine, a piston arranged for reciprocation within said cylinder, connections from said piston to said device for operating the latter, high force spring means for strongly urging said device in one direction, means for delivering air under pressure to said cylinder for operating said piston and said device against the action of said spring means, a valve member slidably mounted in said piston for controlling the delivery of air from said air delivering means to said cylinder and for controlling the discharge of air from said cylinder to the atmosphere, and means readily operable by the operator for shifting said valve member.

3,347,195
TENSIONING DEVICE FOR A SEWING MACHINE

Fritz Gegauf, Steckborn, Thurgau, Switzerland, assignor to Fritz Gegauf Aktiengesellschaft, Bernina-Nähmaschinen-Fabrik, Steckborn, Switzerland

Filed Aug. 25, 1964, Ser. No. 391,904
Claims priority, application Switzerland, Dec. 20, 1963, 15,559
10 Claims. (Cl. 112—254)



1. A thread tensioning device for a sewing machine comprising, in combination, a thread tensioning pin; at least a pair of cooperating thread tensioning disks on said pin; means operable to feed the thread between said disks and transversely over said pin, with the looping arc of the thread over said pin, when passing between said disks, being less than 90°; and means operable to apply pressure to said disks solely at a zone eccentric to said pin and to the side thereof over which the thread passes.

3,347,196
MOUNTING MEANS FOR BEARINGS FOR SEWING MACHINES

Ivan Alexander Leslie, deceased, late of Nantwich, England, by Catherine M. Leslie, executrix, Hereford, England, assignor to The Singer Company, Elizabethport, N.J., a corporation of New Jersey

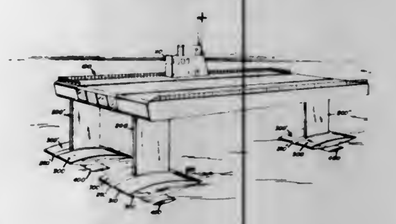
Filed Sept. 1, 1965, Ser. No. 484,477
Claims priority, application Great Britain, Sept. 2, 1964, 35,835/64
1 Claim. (Cl. 112—258)

A mounting means for bearings for a sewing machine having a frame including a base portion, a standard at one end of the base portion, an upper portion at the top of the standard overhanging the base portion and a sewing head at the free end of the upper portion, a needle-actuating mechanism in the sewing head, a substantially horizontal upper drive shaft in the upper portion of the frame connected to the needle-actuating mechanism, a complementary stitch-forming mechanism in the bed portion, and a lower drive shaft in the bed portion substantially parallel to the upper drive shaft and connected to the complementary stitch-forming mechanism, said mounting means for bearings comprising a plate having two circular openings, hemispherically-shaped concavities formed in the plate surrounding and concentric with the openings in the plate, spherical self-aligning bearings mounted in the hemispherically-shaped concavities, two hemispherically-shaped caps, fastening means for connecting the hemispherically-shaped caps to the plate over the spherical self-aligning bearings to house the bearings between the hemispherically-shaped concavities and caps, and means for removably mounting the plate vertically in the standard with the uppermost spherical self-aligning bearing supporting the standard end of the upper drive shaft and the lowermost spherical self-aligning bearing supporting the standard end of the lower drive shaft.

3,347,197
FOIL SYSTEMS

Paul A. Scherer, Bowie, Md., assignor, by mesne assignments, to Paul A. Scherer, Glenn Dale, Md., as agent

Filed Sept. 10, 1964, Ser. No. 396,806
58 Claims. (Cl. 114—66.5)

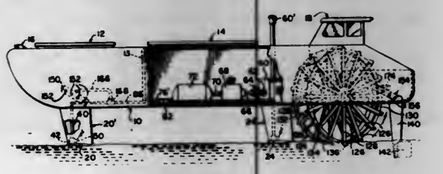


1. A craft comprising.
(A) a body;
(B) body supporting means;
(C) at least one displacement foil engaging body supporting means;
(D) craft thrust producing means in operative engagement with craft;
(E) control means operatively joined to the displacement foil, to control and maintain substantially constant the dynamic lift of the displacement foil relative to the craft, irrespective of variations in the flow of the fluid medium relative to the craft.

3,347,198
HYDROPLANE VESSEL

Samuel C. Collins, 28 Village Hill Road, Belmont, Mass. 02178

Original application Oct. 19, 1965, Ser. No. 497,699, now Patent No. 3,326,165, dated June 20, 1967. Divided and this application Nov. 8, 1966, Ser. No. 592,857
12 Claims. (Cl. 114—66.5)

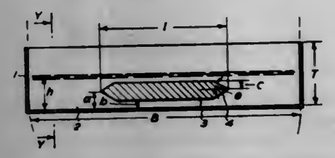


1. A water vessel characterized by a longitudinal axis and at least one generally vertically extending surface which is immersed during at least certain periods when said vessel is water-borne and which is characterized by at least one outlet opening directed essentially normally to the longitudinal axis of said vessel, said vessel including (1) propulsion means, and (2) steering means comprising (i) a source of gas under pressure and (ii) means for releasing separate bursts of gas under pressure substantially in excess of the hydrostatic pressure from said source through the outlet opening in said generally vertically extending surface at regular, controllably timed intervals at least while said vessel is in motion through a water medium.

3,347,199
ROLL STABILIZERS

Geoffrey John Goodrich, Feltham, England, and Robin Andrew Williams, Edinburgh, Scotland, assignors to National Research Development Corporation, London, England, a body corporate of Great Britain

Filed Jan. 28, 1966, Ser. No. 524,658
Claims priority, application Great Britain, Jan. 29, 1965, 4,170/65
7 Claims. (Cl. 114—125)

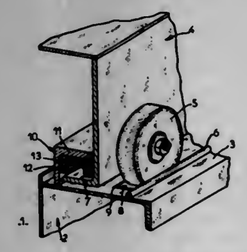


1. A stabilizing system of the kind set forth for a structure floating in a liquid and oscillatable about a horizontal axis comprising a single liquid-containing tank fixed to the structure with substantially free air movement over the liquid, and a plate-like divider of substantial vertical thickness located in the tank with its upper surface substantially below the static level of the liquid, the divider being arranged symmetrically and perpendicularly to the vertical mid-plane of the tank containing or parallel to the axis about which stabilization is to be effected, having a dimension perpendicular to that plane which is from 40 to 60 percent of the dimension of the tank in the same direction, and extending in its horizontal direction parallel with the axis of roll substantially completely across the tank, the arrangement being such that in use the divider is wholly located below the static level of the liquid and during the oscillations of the structure about the axis which stabilization is to be effected, at least at the natural frequency of oscillation of the structure, liquid flows beneath and over the divider at different mass rates.

3,347,200
CONTROLLED SELF-LOCKING SEALING DEVICE FOR THE TIGHTLY LOCKED JUNCTION BETWEEN TWO PARTS OR STRUCTURES AND THE VARIOUS APPLICATIONS THEREOF

Paul André Mege, Paris, France, assignor to Mac Gregor-Comarain, Paris, France, a corporation of France

Filed June 24, 1965, Ser. No. 466,611
Claims priority, application France, June 25, 1964, 979,678
16 Claims. (Cl. 114—202)



1. A simultaneously sealing and locking device for making, between a first part and a second part which are respectively movable with respect to one another, a temporary locked fluid tight seal when said two parts are in a given relative position with respect to one another of the type including a flexible, deformable tubular packing with a chamber inflatable by introduction of a pressure fluid, carried by one of said parts and interposed, at least in said relative position, between a portion of said first part and a portion of said second part, both in tight engagement with said tubular packing in its inflated state, said portion of said first part comprising at least a first wall in tight engagement with said tubular packing in its inflated state and said portion of said second part comprising a member having a wall parallelly disposed with respect to said first wall and in tight engagement with said tubular packing in its inflated state, one wall having secured thereto a face of said tubular packing, said portions also comprising bearing surfaces allowing a direct contact between said two parts along said bearing surfaces when said tubular packing is in its inflated state, said device being characterized in that said member underlies a substantial portion of said first wall and is interposed in the aforesaid relative position between said first wall and a stop element of said portion of said first part, a first of said bearing surfaces pertaining to said stop element and a second of said bearing surfaces pertaining to said member, the distance between said first wall and said stop element being at least equal to the maximum dimension of said tubular packing in a direction substantially normal to said parallelly-disposed wall and said first wall.

3,347,201
POWER VESSELS

Stephen Szabo, 67 The Bulwark, Castlecrag, New South Wales, Australia

Filed Apr. 20, 1966, Ser. No. 543,975
Claims priority, application Australia, May 3, 1965, 58,273/65
2 Claims. (Cl. 114—235)



1. A boat comprising a main hull having a covered compartment open at its aft end adapted to receive and have detachably attached therein an auxiliary craft, propulsion means mounted on said craft for driving said craft and said main hull when said auxiliary craft is attached in said compartment, said hull having a hatch with a removable cover thereon for access from the deck of the boat to said compartment and each compartment extends below the water-line on the main hull whereby the auxiliary craft may be driven part of the way and then by mechanical assistance for the rest of the way for attachment to the main hull.

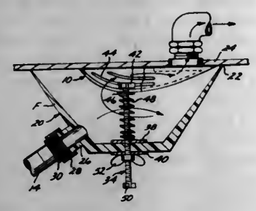
3,347,202
APPARATUS FOR RELEASABLY CONNECTING A BOAT HULL FITTING WITH A SOURCE OF FLUSHING WATER

James E. McCurry, 2171 Nautical St., Anaheim, Calif. 92802

Filed Jan. 21, 1966, Ser. No. 522,102
2 Claims. (Cl. 115—.5)

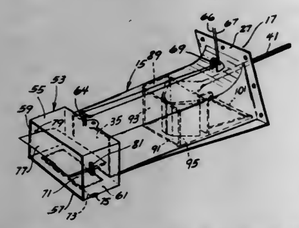
1. Apparatus attachable to a slotted boat hull fitting to direct flushing water through said fitting, comprising:
a resilient inverted suction cup, the upper periphery of which is sealingly engageable with the portion of said boat hull adjacent said hull fitting;
means on said suction cup engageable with a source of flushing water;
an upstanding threaded mounting post vertically slidably supported on said suction cup, the upper end of said post being formed with a T-head removably

insertable within a slot of said fitting, the length of said head being greater than the width of said slot;
a coil spring carried by said post between said T-head and the interior of said suction cup;



a nut threaded upon said post exteriorly of said suction cup; and
indexing means formed on the lower end of said mounting post that indicate the position of said T-head.

3,347,203
BOAT PROPULSION MEANS
Carter K. Starry, 1817 W. 23rd St., Des Moines, Iowa 50321
Filed Dec. 30, 1965, Ser. No. 517,558
7 Claims. (Cl. 115—31)



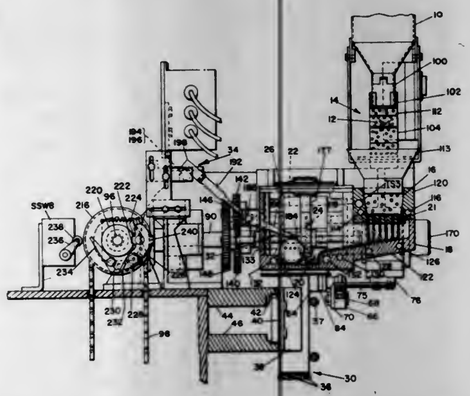
1. A propulsion means for a boat having rearward and forward ends and a bottom,
an elongated hollow shroud operatively secured at one of its ends to the rearward end of said boat and extending rearwardly therefrom and including rearward and forward ends and a bottom portion,
said shroud having a water intake opening formed in its lower portion adjacent its forward end and a discharge opening formed in its rearward end,
a movable piston means reciprocatably mounted in said shroud between the intake and discharge openings therein and adapted to draw water into said shroud through said intake opening and to force water rearwardly from said shroud through said discharge opening,
said piston means being adapted to be operatively secured to a reciprocable power means,
and control means operatively connected to said shroud to selectively deflect the water being discharged from said shroud to change the direction of travel of the boat,
said valve means including first and second valve members pivotally secured to said piston means and movable towards and away from each other, said first and second valve members being normally closed and having tapered inner ends adapted to assist in moving said first and second valve members towards each other when said piston means moves rearwardly with respect to said shroud,
said piston means including a movable valve means which is adapted to open when said piston means moves forwardly with respect to said shroud and adapted to close when said piston means moves rearwardly with respect to said shroud.

3,347,204
INDICIA INDICATOR
Elvyn J. Beall, 1001 Country Club Drive, Modesto, Calif. 95350
Filed May 31, 1966, Ser. No. 554,943
1 Claim. (Cl. 116—133)



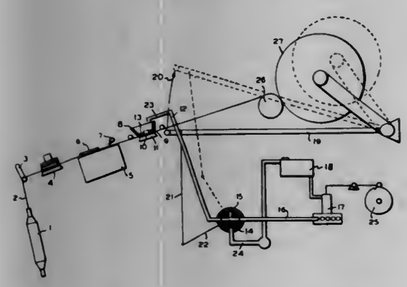
In combination, a telephone directory having a cover providing an edge portion, said edge portion of the cover being folded back upon itself in spaced relation, the bight of the folded back edge portion having slot means therein, a plurality of discs each having a face and being rotatably mounted between said folded edge portion of said cover and being individually extended through said slot means, indicia on the faces of said discs selectively presentable through said slot means for visual inspection by rotational positioning of said discs, means coacting with each disc for visually indicating a single indica thereon upon rotation to a predetermined indexed position, and frictional spacers interposed between each said face of said discs and the juxtaposed folded edge portion to frictionally retain said discs in adjusted positions, the selected rotation of one or more of said discs presenting a visual indicator consisting of a plurality of said indicia in a desired order.

3,347,205
ADHESIVE APPLYING DEVICE
Geoffrey F. Dobbyn, Braintree, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed Sept. 23, 1964, Ser. No. 398,497
5 Claims. (Cl. 118—7)



1. In a packaging machine, in combination, conveying means for supporting and continuously advancing filed cartons having their top flaps arranged to receive adhesive, adhesive applying means for applying a hot melt adhesive to selected of said flaps during the continuous movement of said cartons, said adhesive applying means comprising a continuously rotated and heated adhesive applying roll, a heated supply chamber containing a supply of melted adhesive, means for transferring the melted adhesive from the supply chamber to the applying roll for application to said carton flaps, a heated melting chamber having a perforated bottom wall in communication with said supply chamber, means for feeding hot melt adhesive in solid form to said melting chamber to melt and flow into said supply chamber, and control means including means for detecting a depletion in the amount of adhesive in said supply chamber, and means responsive to said detecting means for actuating said feeding means to restore the amount of adhesive in said supply chamber, said feeding means comprising a vibratory feeder having a vibratory motor, a circuit for said vibratory motor, said control means including a normally open switch in said circuit arranged to be closed upon detection of a depletion in the amount of adhesive in said supply chamber, a relay controlled main motor circuit for the packaging machine, and normally open contacts in said vibratory motor circuit arranged to be closed when the main motor circuit is energized, and a manually operated switch by-passing said normally open main motor circuit contacts for energizing said vibratory motor circuit independently of said main motor circuit.

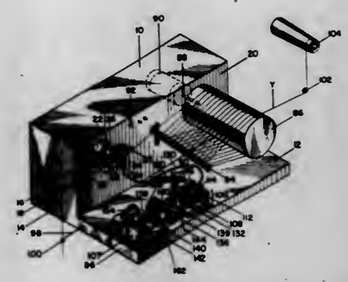
3,347,206
YARN LUBRICATING DEVICE
Walther Schmidt-Salzmann, Salach, Wurttemberg, Germany
Filed May 31, 1963, Ser. No. 284,487
4 Claims. (Cl. 118—8)



1. A device for lubricating yarn comprising at least one pair of superposed discs arranged upwardly inclined to the horizontal plane, said discs having flat opposing surfaces forming between themselves a narrow slot for passage of said yarn, the upper disc being formed as a cup with a perforated bottom, a supply line supplying liquid to the cup of said upper disc and through the bottom of said disc into said slot, the opposing surfaces of said discs being spaced so as to maintain a film of said liquid in said slot, means to take up the liquid-treated yarn, thread sensing means located between said discs and said take-up means, a valve in said supply line, and means actuating said valve and operated by said thread sensing means.

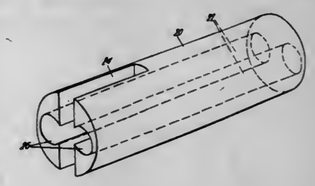
3,347,207
TEXTILE FINISH APPLICATOR
Byron N. Baer, Newark, Del., and William C. Griffin, West Chester, Pa., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,394
2 Claims. (Cl. 118—33)

1. Apparatus for treating running elongated textile material comprising, means for moving said material through said apparatus at controllable variable speeds, means disposed in advance of said moving means for applying tension to said material, means disposed adjacent said material intermediate said moving means and said tensioning means for depositing a fluid on said material, said fluid-depositing means including a tubular element adapted for the flow of fluid therethrough and having a capillary opening at an end thereof proximate to said material adapted to provide a continually reforming droplet of fluid juxtaposed for the passage of said material therethrough, a metering pump connected to said tubular element, said pump including a graduated cylindrical reservoir and a moveable plunger disposed therein, said plunger being arranged to move said fluid from said reservoir into said tubular element and through said capillary opening, said plunger being arranged to indicate by the movement



thereof in said reservoir the quantity of fluid moved through said tubular element and deposited on said material, drive means for moving said plunger in said reservoir at a uniform rate of speed, said drive means including a drive plate adapted to abut an end of said plunger external to said reservoir, a worm shaft disposed adjacent said drive plate, a clamp mounted to said drive plate, said clamp having a pair of threaded jaws arranged for engagement with said worm shaft and an electric motor of constant speed connected to said worm shaft for the rotation thereof.

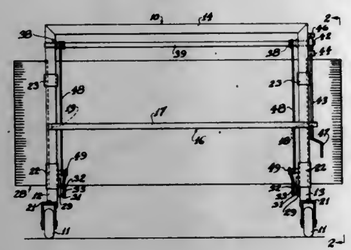
3,347,208
NOZZLES
Robert Graham Chadwick Arridge, Repton, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Oct. 4, 1963, Ser. No. 313,839
Claims priority, application Great Britain, Oct. 29, 1962, 40,886/62
6 Claims. (Cl. 118—420)



1. A nozzle through which molten metal may be uniformly discharged onto a traveling filament, said nozzle comprising: an elongated member having two parallel passageways extending therethrough for the molten metal and a slot defined by spaced parallel walls respectively intersecting said passageways into respective elongated apertures, said slot defining walls being disposed in respective planes which are substantially perpendicular to a plane containing the longitudinal axes of said passageways, and said slot extending completely through said elongated member between said passageways and through

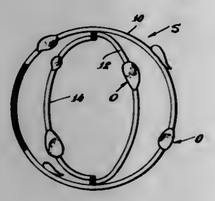
which the filament moves perpendicular to each of the elongated apertures.

3,347,209
APPARATUS FOR HANDLING STACKED ARTICLES
Marshall O. Grost, Fort Payne, Ala., assignor to Kingsberry Homes Corporation, a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,075
3 Claims. (Cl. 118—500)



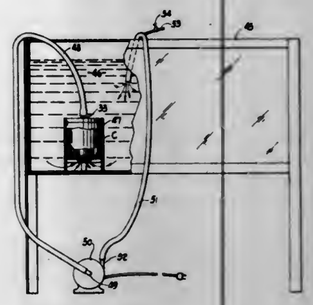
1. In apparatus for supporting stacked plank-like members in position for the edges thereof to receive coatings:
(a) a translatable frame having spaced apart vertically extending guide members,
(b) vertically spaced movable members slidably engaging said guide members and adapted for vertical movement relative thereto,
(c) means to move said movable members to selected positions along said guide members,
(d) laterally projecting support members carried by the lowermost ones of said movable members in position to support said plank-like members,
(e) elongated, vertical members connecting said movable members to each other and disposed to extend transversely of the edges of said plank-like members, and
(f) tapered edges on said elongated, vertical members in position to engage the adjacent edges of said stacked plank-like members and permit application of a coating to substantially the entire surface of said adjacent edges of said plank-like members.

3,347,210
SUPPORT FOR GROWING OYSTERS
Gerald Golub, Orlando, Fla., assignor to AG-Heat Systems, Inc., Orlando, Fla., a corporation of Florida
Filed Jan. 5, 1966, Ser. No. 518,919
7 Claims. (Cl. 119—4)



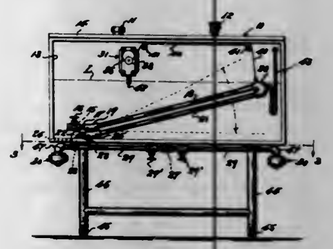
1. A support for growing oysters which comprises: a plurality of contacting intermeshed rings, each of said rings having a surface suitable for the attachment of oyster spat and lying in a substantially different plane from any other ring to form a skeletonized sphere.

3,347,211
THERAPEUTIC TREATMENT OF AQUATIC ANIMAL LIFE IN THEIR HABITAT
Douglass R. Falkenberg, 20997 Westlake Road, Rocky River, Ohio 44116, and Edward L. Sharpe, Elyria, Ohio; said Sharpe assignor to said Falkenberg
Original application Apr. 10, 1963, Ser. No. 272,002, now Patent No. 3,292,792, dated Dec. 20, 1966. Divided and this application Sept. 6, 1966, Ser. No. 577,339
6 Claims. (Cl. 119—5)



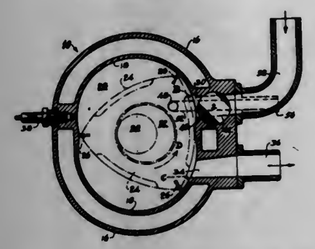
1. A method for therapeutically treating aquatic animal life in an aqueous habitat medium comprising the steps of passing the aqueous medium through a porous melamine-aldehyde resin containing filter medium and contacting the aquatic animal life with the filtered aqueous medium.

3,347,212
TIME CONTROLLED LIQUID DISPENSER
Philip C. Anderson and Frank Lodrop, Crete, Nebr., assignors to Feed Service Corporation, Crete, Nebr., a corporation of Nebraska
Filed Apr. 6, 1966, Ser. No. 540,553
7 Claims. (Cl. 119—51.11)



1. A liquid dispensing apparatus, comprising: a container to hold a supply of liquid; a liquid dispensing tubular control means hingedly connected in communication with the liquid discharge outlet of said container, whereby to swing downward in a vertical plane, under gravity, and having a free end, from an initial top level of the liquid in the container to an ultimate bottom level of the liquid therein; timer control means for regulating the down swing of said control means under timed restraint; liquid feeder means accessible to feeding animals, liquid distributing means connected between the outlet end of said liquid dispensing tubular control means and the feeder means, and anti-syphon means above the liquid level, comprising a flexible tubular connection in flow communication with and between the outlet end of said liquid dispensing control means and the upper interior of the container.

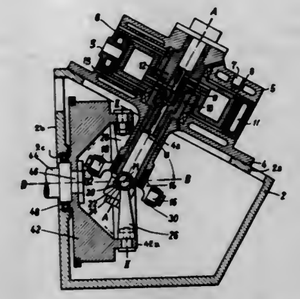
3,347,213
ROTARY COMBUSTION ENGINE
Walter Froede, Neckarsulm, Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, Germany and Wankel G.m.b.H., Bodensee, Germany
Filed Oct. 22, 1965, Ser. No. 500,675
Claims priority, application Germany, Nov. 20, 1964, N 25,839
6 Claims. (Cl. 123—8)



1. A rotary combustion engine having an outer body including a pair of axially spaced end walls interconnected with a peripheral wall to form a cavity, said cavity having a multi-lobed profile; a multi-lobed rotor supported for rotation relative to said outer body, said rotor having a plurality of circumferentially-spaced apex portions disposed in sealing engagement with the inner surface of said peripheral wall to form a plurality of working chambers which during relative rotation of said rotor vary in volume; intake means including a main intake port provided in said peripheral wall for supplying a fresh charge of gas to said working chambers; exhaust means including an exhaust port provided in said peripheral wall for expelling the burnt gases from said working chambers, said main intake port and said exhaust port being in relatively close proximity such that during some positions of rotation of said rotor said spaced apex portions of said rotor span said main intake port and said exhaust port whereby said ports are in communication with one another through a working chamber; and valve means for varying the power output of the engine, said valve means including a main rotary valve body disposed in said main intake port adjacent to the inner surface of said peripheral wall for regulating the flow of gases between said main intake port and said working chambers with said main rotary valve body having an opening therethrough, and said opening being disposed in said main rotary valve body such that at part open positions of said valve body the gas being supplied from said main intake port will be directed substantially tangentially relative to the inner surface of said peripheral wall in the direction of rotor rotation and away from the exhaust port.

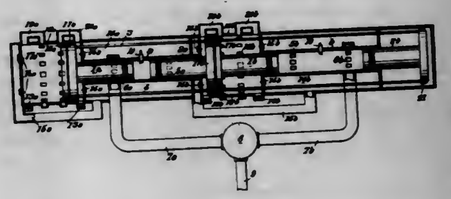
3,347,214
ANGULAR JOINT ARRANGEMENT
Franz Plagmann, Hamburg, Germany, assignor to Motoren Versuchsgesellschaft Witten mbH. & Co. KG., Hamburg, Germany
Filed Jan. 14, 1966, Ser. No. 520,796
Claims priority, application Germany, Jan. 20, 1965, P 35,908
10 Claims. (Cl. 123—11)

1. Angular joint arrangement comprising, in combination, at least first and second rotary means having a common first main axis of rotation; third rotary means having a second main axis of rotation, said first and second axes being located in a plane slanted to each other and having a point of intersection; first pivot means mounted on said first rotary means and having a first pivot axis; second pivot means mounted on said second rotary means and having a second pivot axis, said first and second pivot axes extending through said point of intersection; a plurality of third pivot means mounted on said third rotary means angularly spaced about said second main axis and respectively having third pivot axes extending through said point of intersection; and a plurality of connecting means respectively connecting one of said third pivot means with said first and second pivot means, respectively, whereby said first and second rotary means are connected with said third rotary means for rotation.



4. Angular joint arrangement according to claim 1 wherein said first rotary means include first vane means of a rotary combustion engine, and a hollow first shaft carrying said first vane means; wherein said second rotary means include a second shaft located in said hollow first shaft, and second vane means carried by said second shaft; and wherein said third rotary means include an output shaft driven by said first and second shafts.

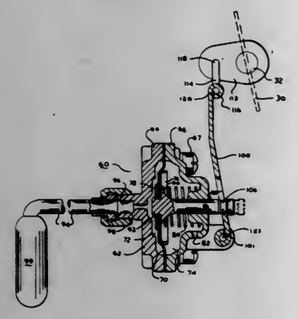
3,347,215
FREE PISTON ENGINES
Raul Pateras Pescara, 3 Square du Roule, Paris, France
Filed Apr. 8, 1965, Ser. No. 446,523
Claims priority, application France, Mar. 17, 1965, 9,622
8 Claims. (Cl. 123—46)



8. A tandem free piston engine comprising a first motor cylinder, first opposite motor pistons reciprocating therein, a second motor cylinder and second opposite motor pistons reciprocating therein, said first and second motor pistons being respectively interconnected in a manner such that said first motor pistons and second motor pistons reciprocate respectively in said first and second motor cylinders in phase opposition with respect to one another, at least one double acting compressor cylinder, a double acting compressor piston rigid with one of said first motor pistons, reciprocating in said double acting compressor cylinder, a casing surrounding said first motor cylinder, valve-controlled connection means between said casing and, respectively, both extremities of said compressor cylinder, said double acting compressor piston having a dead-end center position at each end of the double acting compressor cylinder, and stabilizing means including means responsive to the position of the com-

pressor piston controlling the initial pressure of the air in the double acting compressor cylinder on the side of the compressor piston next to undergo compression to correct for deviations of the compressor piston from its dead-end center position by varying said initial pressure to produce a variation in the stroke of the double acting compressor piston to restore it to its dead-end center positions and thereby stabilize same.

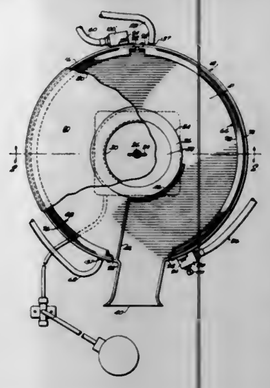
3,347,216
CHOKE CONTROL DEVICE
Thomas C. Schultz, Detroit, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,503
7 Claims. (Cl. 123—119)



3. A choke control device for a carburetor having a body, an induction passage, a shaft and an offset choke valve in said passage mounted on said shaft: comprising a unit responsive to engine temperature for controlling the choke valve, a lever movable angularly by said unit and extending at one end toward said shaft and having a pivot means at the other end thereof, a lever extending radially from and being fixedly secured to said shaft for angular movement, and a member pivotally connected at one end to said first mentioned lever and at the other end to said second mentioned lever, said levers and member being in such relation to one another that the pivotal connections of said member and the pivot means of said first mentioned lever are on a straight line when said choke is in closed position and said unit is in cold engine position, thereby locking said choke in closed position regardless of engine manifold vacuum until said straight line relationship is altered by movement of said stem.

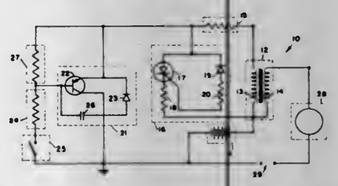
3,347,217
EXHAUST GAS PURIFIER DEVICE
Rocco F. Di Giorgio, 19401 NW. 24th Ave., Miami, Fla.
Filed Oct. 20, 1966, Ser. No. 588,047
9 Claims. (Cl. 123—119)

1. For use on an internal combustion engine including a carburetor, an exhaust system, a closed filter housing having a hole to be connected over the mouth of the carburetor, said housing including a roof, floor, an upstanding connecting wall with a main inlet throat, and an annular filter ring in the housing between the floor and roof and disposed around the hole to filter air passing through the carburetor, the improvement comprising; a purifier device for exhaust gases which includes, a jacket system in the housing in spaced relation from and parallel to the ring length and having spaced inlet and outlet openings, and tubing to connect each of the openings to spaced points in the exhaust system of the internal combustion engine to flow exhaust gases through the housing within the jacket to heat the air passing through the housing, spaced openings in the jacket system to meter a portion of the exhaust gases flowing in the jacket into the housing to be recycled through the carburetor, said jacket system including a closed tubular length spanned by a longitudinally extending septum to separate the jacket into



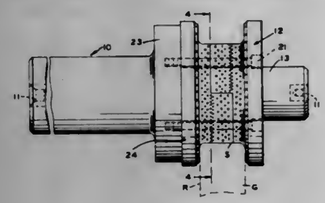
a first and a second cavity, with said spaced openings being along the length of the jacket and communicating between the housing interior and said first cavity, and said openings communicating into both of said cavities and out of just said second cavity, and said jacket including a metering means to flow a predetermined ratio of gases flowing through the tubes into each of the cavities.

3,347,218
TRANSISTORIZED IGNITION SYSTEM
James R. Leftwich, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,409
7 Claims. (Cl. 123—148)



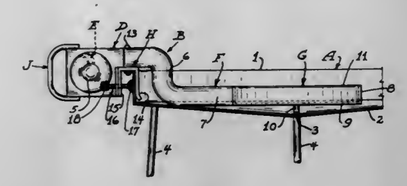
1. An ignition system for an internal combustion engine comprising: a source of direct current; an inductance means having a primary and a secondary winding coupled to said source of direct current, said inductance means for storing a magnetic field; a semiconductor switch means coupled to said inductance means; breaker point means for periodically providing a path for bias current from said source of direct current to said semiconductor switch, said bias current biasing said semiconductor switch to conduction so as to provide a path for current flow from said source of direct current through said inductance means to said semiconductor switch, said current flow producing a magnetic field in said inductance means; a spark gap means coupled to said inductance means such that a collapse of said magnetic field caused by cessation of current flow from said direct current source by opening of said breaker point means produces a spark across said spark gap means; and an overvoltage protection means including a silicon controlled rectifier coupled across said primary winding of said inductance means, said silicon controlled rectifier providing a low impedance shunt path bypassing said semiconductor switch when said collapsing magnetic field exceeds a predetermined magnitude, said silicon controlled rectifier commutated by oscillation of said inductance means.

3,347,219
DIAMOND DRESSING TOOL
William W. Wellborn, Milford, Mich., assignor to Abrasive Dressing Tool Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 30, 1964, Ser. No. 400,367
2 Claims. (Cl. 125—11)



1. The combination comprising
an arbor having opposed centers at opposite ends thereof,
and a rotary dressing tool mounted on said arbor and comprising a pair of telescoping members,
said arbor having an integral radially extending shoulder,
one of said dressing tool members abutting said shoulder,
said dressing tool members having openings extending axially therethrough whereby said members may be positioned on said arbor,
and means extending through the other of said dressing tool members to said first-mentioned dressing tool member into said shoulder to hold said dressing tool in proper relation on said arbor,
each member comprising a body having an annular radially extending dressing surface extending generally transversely to the axis of the arbor,
and a plurality of circumferentially spaced arcuate segments and intervening complementary spaces,
said segments of each member telescoping into the intervening spaces of the other member,
each said segment having an arcuate peripheral dressing surface merging with said radial dressing surface of its respective member whereby when said members are telescoped together, said arcuate peripheral surfaces of said telescoping members are positioned adjacent one another so that a substantially continuous dressing surface is provided by said radial surfaces and said arcuate peripheral surfaces,
each of said dressing surfaces having diamonds embedded therein,
each said member having a substantially flat radially extending seating surface on the end of each segment and a complementary seating surface in aligned relation with the seating surface of the segments on the other member,
said seating surfaces engaging when said members are in telescoping relation,
said segments having adjacent side surfaces which are in contact when said members are in telescoping relation,
whereby upon wear of the arcuate peripheral surfaces and the radial dressing surfaces, said seating surfaces on the ends of the segments can be re-finished to bring the radial dressing surfaces into proper dimensional relation to one another.

3,347,220
PORTABLE AIR BLOWER FOR BARBECUE
Salvatore S. Barbera, Sr., 28611 Venus St., Hayward, Calif. 94544
Filed Jan. 13, 1966, Ser. No. 520,410
3 Claims. (Cl. 126—25)

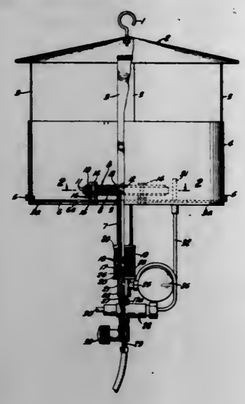


1. In combination with a barbecue bowl having a rim, and comprising a portable air blower:
(a) an air-conveying tube adapted to lie in a radial position in said barbecue bowl;
(b) a clamp carried by said tube for removably securing it to a rim of the bowl in a position where the tube has an outer end extending beyond the rim; said tube having a downwardly extending portion disposed near the inner surface of the bowl rim when said clamp is secured to said rim so that the inner portion of the tube that projects from the downwardly extending portion will lie adjacent to the bottom of the bowl;
(c) an electric motor driven centrifugal blower connected to the outer end of said tube so as to dispose the motor and blower exterior of the barbecue rim; and
(d) a perforated air outlet communicating with the inner end of said tube and being centered in the bowl and lying adjacent to the bottom of it when the device is clamped to the bowl rim.

3,347,221
APPARATUS FOR PRODUCING CARBON DIOXIDE
George H. Maynard, Stanstead Abbots, England, assignor to Scheu Steel Supply Company, a corporation of California
Filed Apr. 13, 1965, Ser. No. 447,858
2 Claims. (Cl. 126—85)

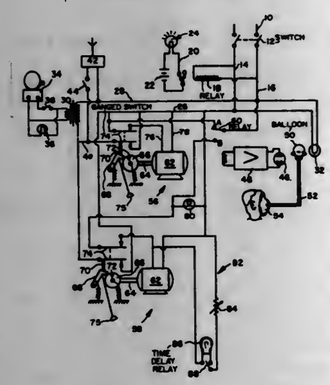
1. Apparatus for increasing the carbon dioxide content of the atmosphere in spaces where plants are grown, such as in glasshouses and other horticultural enclosures and the like, the apparatus comprising
burner means for providing a substantially annular flame,
a skirt surrounding said burner means to assist in protecting the burner means from drafts,
a tray coupled to the lower end of said skirt, said tray being beneath and supporting said burner means and for catching burning foreign matter entering said apparatus, said tray having a large number of small perforations thereover to provide secondary aeration to said flame to cause said flame to curve upward and have a substantially saucer shape to permit substantially complete and controlled burning and to keep said flame from impinging upon said skirt,
said burner means being supplied through a mixing tube extending centrally upwards through the tray and furnished with a jet for the admission of combustible gas and a hole for the admission of air, the jet being

supplied through a substantially clear and unobstructed passage in a block having a filter at the inlet end of said block, and a branch passage in said block coupled with said unobstructed passage and close to said jet, said branch passage leading to a pressure gage responsive to the pressure in said block to provide an indication of the amount of carbon dioxide being generated, and



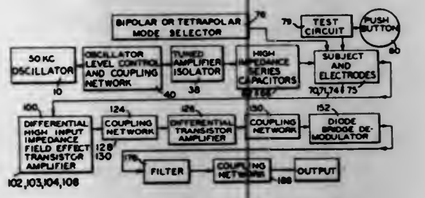
a canopy secured to said skirt to protect the burner from moisture or other matter that may fall on the apparatus, said canopy being substantially spaced above the upper end of said skirt for providing an unrestricted opening for allowing free flow of carbon dioxide from said flame outwards from said apparatus.

3,347,222
RESPIRATION MONITOR
Charles W. Kohrer, 509 3rd Ave., West Haven, Conn. 06516
Filed Nov. 14, 1963, Ser. No. 323,783
3 Claims. (Cl. 128—2)



1. A respiration monitor comprising a power source, a light source and a photo-electric cell connected to said power source, a time delay relay also connected to said power source, a breathing airway adapted to be operatively connected to a patient, an inflatable-deflatable device secured to and in communication with one end of said airway and located in the path of the light from said light source to said photo-electric cell, said time delay relay being operatively connected to said amplifier, an alarm indicator operatively connected to said delay relay, said time delay relay having a motor provided with a rotatable shaft, a notched cam mounted on said motor shaft, a pawl provided with a projection thereon, a switch operatively connected to said alarm indicator and being controlled by said projection, said pawl when engaged in the notch of said cam causing the projection thereon to close said switch and activate said alarm indicator, said pawl being engaged in said notch only when said device remains deflated or inflated over a predetermined period of time.

3,347,223
PNEUMOGRAPH
Allan F. Pacela, Woodland Hills, Calif., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,558
13 Claims. (Cl. 128—2.1)



1. An apparatus for measuring minute changes in the electrical impedance of the tissue of a subject animal, comprising:

a first and a second pair of electrodes, each of said electrodes adapted to be in electrical contact with the tissue of the subject animal;

an A.C. constant current source having a pair of output terminals, neither of said terminals being grounded;

said source having an output impedance which is higher at low frequencies than at high frequencies;

said pair of terminals of said source being coupled respectively to said first pair of electrodes;

a differential amplifier for amplifying A.C. voltage having a pair of input terminals, neither of said terminals being grounded;

said amplifier having an input impedance which is high compared to the impedance of the tissue of the subject animal;

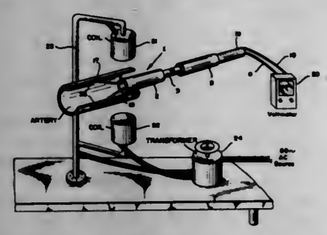
said pair of terminals of said amplifier being coupled respectively to said second pair of electrodes, and

said amplifier having an output pair of terminals coupled to a means for measuring the changes of the amplifier output signal to obtain a measure of the minute changes in the electrical impedance of the tissue of the subject animal.

3,347,224
APPARATUS AND METHOD FOR MEASURING CARDIAC OUTPUT
Brandon L. Adams, 1365 Limit Ave., Baltimore, Md. 21212
Filed May 26, 1964, Ser. No. 370,247
7 Claims. (Cl. 128—2.05)

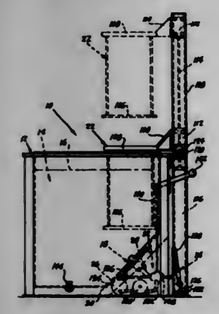
1. An apparatus for measuring cardiac output, comprising a cardiac catheter for insertion into a blood vessel in which the flow of blood is to be measured, a probe slidably positioned within said catheter and comprising a pair of spaced apart electrodes at an end of said catheter, means within said catheter for spacing said electrodes further apart as said probe is advanced outwardly of said catheter end, means for establishing a

electromagnetic field through the blood vessel in which the blood flow is to be measured whereby the flow of blood through said magnetic field will induce and EMF



between said electrodes, and means connected to said probe for measuring an EMF induced between said electrodes.

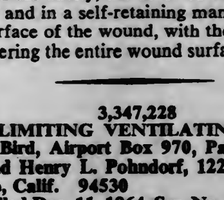
3,347,225
HYDROTHERAPY BATH WITH WAVE PRODUCING DIAPHRAGM
Albert L. Salsbury, 2635-46 SW., Seattle, Wash. 98116
Filed Mar. 10, 1964, Ser. No. 350,785
12 Claims. (Cl. 128—66)



1. A hydrotherapy bath comprising a tank means defining a chamber containing a predetermined volume of liquid material having a predetermined head, said chamber being of size and shape to hold an adult human body in a sitting position substantially submersed in the liquid material, diaphragm assembly means carried by said tank means and having a front surface in contact with said liquid material and a rear surface outside of said chamber, and reciprocating means operatively connected to said diaphragm assembly means for moving said front surface toward and away from said liquid material with a predetermined frequency and length of stroke, the dimensions of said diaphragm assembly means and the frequency and length of stroke of said reciprocating means being correlated with the volume and head of said liquid material within said chamber to minimize movement of said liquid material and to maximize pulsations of small pressure differentials within said liquid material.

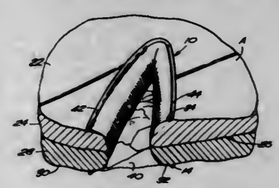
3,347,226
ADJUSTABLE WOUND EDGE PROTECTOR
Harold W. Harrower, 35 Maple Crest Drive, Smithfield, R.I.
Filed Dec. 11, 1964, Ser. No. 417,559
4 Claims. (Cl. 128—132)

3. A wound edge protector comprising a pair of flexible, resilient rod-like elements, each of said elements being bent to endless ring-like form with their free ends in juxtaposition, means for releasably joining the juxtaposed ends of each element, a thin sheet of transparent flexible plastic material of a preselected width and of a length generally equal to the length of said elements, said sheet having its side edges joined to said elements along portions of the lengths of said elements, said side edges of said sheet along the remaining portions of said rod-like elements being free to wrap around the opposing ends of



the rod-like element, said means including cooperative end formations on each of said elements, one of said end formations being telescopically receivable in the other of said formations of each rod-like element, said end formations of each element including a reduced diameter portion at one end and a tubular portion at the opposing end.

3,347,227
WOUND EDGE PROTECTOR
Harold W. Harrower, 35 Maple Crest Drive, Smithfield, R.I.
Filed Dec. 11, 1964, Ser. No. 417,560
9 Claims. (Cl. 128—132)

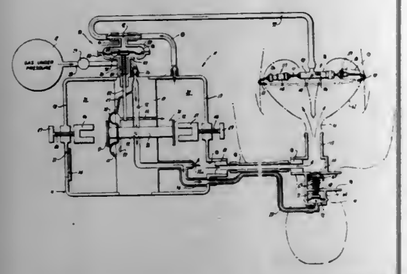


1. A wound cavity and edge protector comprising a pair of flexible and resilient rings preshaped to arcuate form, a sheet of flexible material impervious to body liquids and solids and having a thinness such that it will conform closely to the wound surface and being of open-ended sleeve-like shape having a size such that its end edges can be joined respectively with said rings each end edge of said sheet being joined with a respective one of said rings to provide an endless wall therebetween, one of said rings being compressible and initially insertable into a wound cavity of slightly smaller size than the ring and allowed to expand substantially to its normal form at the base of the cavity, the other of said rings retainable exteriorly of and in a self-retaining manner to overlap the skin edge surface of the wound, with the flexible wall protectively covering the entire wound surface.

3,347,228
VOLUME LIMITING VENTILATING APPARATUS
Forrest M. Bird, Airport Box 970, Palm Springs, Calif. 92262, and Henry L. Pohndorf, 1227 Brewster Drive, El Cerrito, Calif. 94530
Filed Dec. 11, 1964, Ser. No. 417,564
10 Claims. (Cl. 128—145.8)

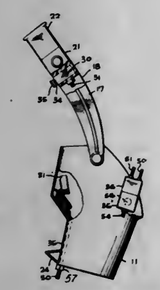
1. In a ventilating apparatus having an inhalation phase and an exhalation phase in its operative cycle, ventilating apparatus comprising a controller having an outlet adapted to be connected to the airway of the patient and an inlet adapted to be connected to a source of gas under pressure, a flow passage formed in said controller for supplying gas from the inlet to the outlet, main control

valve means mounted in said controller and movable between open and closed positions for controlling the flow of gas through said flow passage, said main control valve means during the inhalation phase being in an open position and permitting gas to flow from the inlet to the outlet and during the exhalation phase being closed to prevent the flow of gas from the inlet to the outlet, means for connecting the outlet to the airway of a patient to be venilated, and means for controlling the movement of said main control valve means between open and closed positions, said last named means including means for measuring the thoracic excursion of the patient being ventilated and for causing said main control valve means to



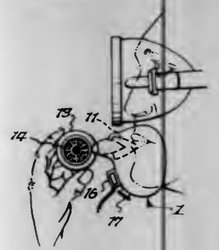
shift from an open position to a closed position when a predetermined thoracic excursion is reached, said last named means also including a sentinel valve connected to said means for measuring the thoracic expansion and movable between first and second positions as the patient exhales and inhales, means for supplying gas under pressure to the sentinel valve, said sentinel valve being constructed so that in the first position the gas supplied thereto is exhausted to the atmosphere and in the second position the gas supplied thereto is prevented from escaping to the atmosphere and means for operating said main control valve means in response to operation of said sentinel valve.

3,347,229
LATCH OPERATED MICROPHONE SWITCH FOR BREATHING MASK
David L. Heitman, Midwest City, Okla., assignor to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California
Filed Feb. 23, 1965, Ser. No. 434,478
4 Claims. (Cl. 128—146.3)



1. An automatic switching system for use with an aviation breathing mask device comprising a mask suspension means therefor, a mask microphone electric connection for the mask and a source of communication having an electric connection therefor, said mask suspension means comprising including a yoke and swivel connections between said yoke and the suspension means, said switching system comprising a catch means on the yoke, complementary catch means on the mask adapted to engage said first catch means and a release knob operably attached to one of said catch means and an electric harness interconnecting said electric connections, an automatic switch unit on said yoke and connected in said electric harness having an element thereof connected to one of said electric connections and an armature connected to the other of said connections, said armature being engageable with said element, and an operator on said armature extending to a position of potential engagement with said mask, said operator having one position of engagement with said mask when the yoke is in latched position of engagement with the mask and the armature is in a position closing a circuit to said electric connections, said operator having a release position out of engagement with the mask when the yoke is released therefrom wherein the armature is in a position opening the circuit to said connections.

3,347,230
UNDERWATER TALKING HOOD
Charles D. Cupp, Lancaster, N.Y., assignor to Scott Aviation Corporation, Lancaster, N.Y.
Filed Sept. 3, 1963, Ser. No. 305,970
4 Claims. (Cl. 128—147)



1. In combination with a mouthbit adapted to be inserted in the mouth, a talking hood of resiliently flexible, fluid impervious material closed at one end about said mouthbit, said hood normally assuming an extended position projecting beyond said mouthbit and being open at its opposite end for engagement against the face, said hood having top and bottom and opposite side walls arranged to extend around the mouth and under the chin when said hood is in place against the face, said walls being of sufficient length to space said mouthbit from its position in the mouth when said walls engage the face of a wearer with said hood in said extended position, said hood walls resiliently yielding for collapsing said hood from said extended position upon insertion of said mouthbit into the mouth with said hood engaged against the face, said walls resiliently restoring said hood to said extended position upon withdrawing said mouthbit from the mouth, said hood thereby maintaining its engagement against the face while providing a large watertight cavity into which said mouthbit is withdrawn for talking.

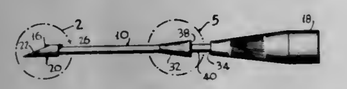
3,347,231
IMITATION CIGARETTE
Chien-Hshuing Chang 152 Ho-Pen St. N., San-Tsuong, Taipei-Hsien, Taiwan
Filed Apr. 14, 1964, Ser. No. 359,595
Claims priority, application Japan, Apr. 17, 1963, 38/28,441
4 Claims. (Cl. 128—201)

1. An artificial cigarette, characterized by the absence of tobacco, which comprises:
an elongate cylindrical member of substantially the same size, shape and appearance of a conventional tobacco cigarette, said member comprising,
a plurality of radially disposed porous sheets, so disposed and arranged to provide substantial longitudinal gas flow therethrough when a pressure differential exists between the ends thereof;
an ampule disposed generally centrally of the cylindrical member, said ampule including,
a weakened portion for being easily broken preferentially to the remainder of the ampule;
a flavor liquid in the ampule, said flavor liquid including,



at least one aromatic material which is highly volatile at ambient room temperature and which possesses a pleasing aromatic flavor; and
a highly liquid absorbent member substantially surrounding the weakened portion of the ampule for preferentially absorbing the liquid therein when said portion is broken and limiting the rate of flow of liquid from said ampule, such that when the ampule is broken air passing through the cylindrical member will carry the vaporized aromatic material to the users mouth for producing flavor and other physiological reactions therein.

3,347,232
HYPODERMIC NEEDLE WITH RETRACTABLE TIP
Abraham Ginsburg, 4031 Sheffield Ave., Philadelphia, Pa. 19136
Filed Apr. 26, 1965, Ser. No. 450,595
5 Claims. (Cl. 128—221)

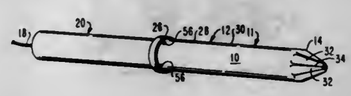


4. A hypodermic needle comprising an elongated hollow substantially cylindrical shank having a non-pointed forward end, a substantially cylindrical hollow retractable tip mounted for sliding movement on said shank, and having a pointed end wall adapted for insertion into a blood vessel, stop means limiting outward movement of said tip to a predetermined position where said pointed end thereof extends beyond said non-pointed end of said shank, and blood soluble adhesive means releasably retaining said tip in said predetermined position.

3,347,233
OCCLUSIVE MEDICATED SHEATH
Joseph Francis Migliarese, Dunellen, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,154
3 Claims. (Cl. 128—260)

3. A medicated occlusive sheath for treatment of a surface portion of a human appendage comprising a pliant, non-adherent, polymeric plastic base material derived from the group consisting of polymers of ethenoid, vinyl and vinylidene monomers, heteropolymers of said monomers, polyamides and polyesters, said plastic base material being impermeable to aqueous fluids, resistant to water and forming a substantially air-tight bond when the portion of the appendage is enclosed thereby; and a coating of a dermatologically active powdered oily material coated on the interior surface of the base material, said powdered material being adapted to be emulsified and solubilized by moisture from the skin to form a lotion.

3,347,234
HYGIENIC DEVICES
Joseph A. Voss, 1223 Race St., Apt. 906, Denver, Colo. 80206
Filed Aug. 5, 1964, Ser. No. 387,590
15 Claims. (Cl. 128—260)

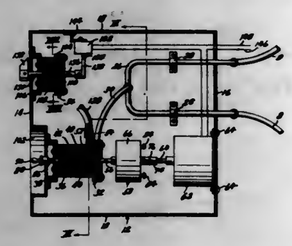


9. An improved suppository applicator for use in a suppository device, said applicator device comprising, in combination, a first generally cylindrical, thin-walled tubular member adapted to contain a suppository, a second substantially cylindrical tubular member coaxially and releasably disposed within said first tubular member and adapted to telescope within said first tubular member to eject a suppository from the forward end of said first tubular member, the inner surface of said first tubular member and the outer surface of said second tubular member being in sliding engagement and readily slidable, whereby the force necessary to eject said suppository is reduced, said first tubular member having a substantially closed, generally conically shaped smooth surfaced forward end formed of a plurality of tightly abutting dovetailed folds adapted to unfold readily into a substantially tubular configuration as a suppository is ejected therefrom while maintaining the suppository in substantially unaltered form, the wall of said first tubular member being sufficiently thin so that normally it is deformable readily inwardly under finger pressure during said ejection whereby binding between said first and said second tubular members increases the degree of force necessary for said ejection, and said wall being sufficiently thin so as to allow said dovetailed folds to unfold readily during said ejection, and a substantially continuous ring disposed around said first tubular member adjacent the rear end thereof, said ring being of sufficient thickness and strength so as to increase substantially the resistance of said first tubular member to said inward deformation during said ejection, said second tubular member having a forward end portion of reduced diameter having an end wall therein formed from a plurality of dovetailed folds, said forward end being adapted to engage the rear end of a suppository for ejection thereof from said first tubular member without binding of the suppository between said first and second tubular members.

3,347,235
PERIODIC VACUUM-BREAKING MOTOR OPERATED ROTARY VALVE IN A SURGICAL DEVICE
Cecil C. Hunnicutt, Sabetha, Kans., assignor to Instrument Research, Inc., Sabetha, Kans., a corporation of Kansas
Filed Nov. 23, 1964, Ser. No. 413,078
10 Claims. (Cl. 128—276)

1. For use in connection with a medical drainage system including a suction line, one end of which is adapted to be inserted into a patient's body and having the opposite end thereof connected to a vacuum pump operable to produce a vacuum therein, a periodic vacuum-breaking device comprising:
(a) a conduit adapted to be interconnected at one end into said suction line and having its opposite end vented to the atmosphere,

(b) a power driven timer valve disposed in said conduit and operable as it is driven to open at periodic intervals in a cyclical operation,
(c) power means operable to drive said valve,



(d) a friction clutch interposed between said power means and said timer valve, and
(e) manually operable means for moving said valve from any position in its cycle of operation to any other position by overpowering said friction clutch.

3,347,236
DISPOSABLE ARTICLE HAVING A LAYER OF ARTIFICIAL ABSORBENT FIBERS AND SUPPORTING SHEET
David Torr, Ripley Lane, Oyster Bay, N.Y. 11771
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,487
5 Claims. (Cl. 128—284)

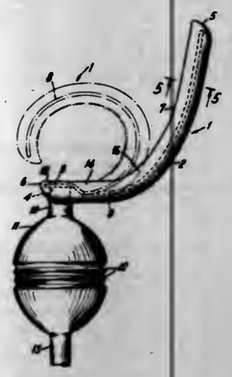
1. A readily disposable, water absorbent product comprised of fibers impressed into a separate supporting sheet capable of being flushed away by a toilet stream, said fibers being of an organic substance selected from the group consisting of blood albumin, egg albumin, starches, pectin, algin, karaya, tragacanth and guar gums, natural and synthetic gums of polysaccharide character, chemically modified starches, and chemically modified natural and synthetic gums of polysaccharide character, said fibers and said supporting sheet being united whereby the fibers are stationary with respect to the carrying sheet.

3,347,237
COMPRESSED CATAMENIAL TAMPON OF REGENERATED CELLULOSE
John Leslie Jones, 1070 Glen Oaks Blvd., Pasadena, Calif. 91105
Filed Mar. 9, 1964, Ser. No. 350,193
4 Claims. (Cl. 128—285)

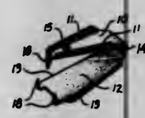
1. A menstrual tampon comprising: a porous, dry, one-piece, regenerated cellulose sponge tampon having a uniform polygonal cross section area and a cylindrical body length, said regenerated cellulose cylindrical tampon being semi-permanently, uniformly radially compressed in cross section area to minimum size pore openings.

3,347,238
FEMALE URINARY DRAIN
Virginia D. Gresham, 84—12 35th Ave., Jackson Heights, N.Y. 11372
Filed Mar. 23, 1965, Ser. No. 442,002
10 Claims. (Cl. 128—295)

1. In a female urinary drain adapted for attachment to the female body, the combination comprising: a receptacle of a pliable relatively thin elastic material providing a cavity for receiving urine voided by the user, said receptacle having spaced-apart openings; a double-ended, flexible, normally curved vaginal insert member having connection with said receptacle at one of said openings; and a flexible drain hose having connection with said receptacle at the other, said member being curved in its axial plane from one of its ends over a major portion of its length and being relatively straight over its remaining minor portion, said member having, in transverse cross-section, a curved bottom and a flat top, said member also having an aperture in said minor portion of its length adjacent the other of its ends, said aperture extending from top to bottom of said member and communicating with said receptacle at said one opening, the portion of the top surface of said member around said aperture providing a pressure ring for forming a water-tight joint with the female body around the urethral orifice thereof.

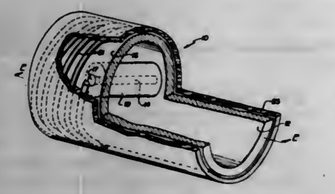


3,347,239
HERMOSTATIC CLASP
John W. Codling, 700 Broadway, Seattle, Wash. 98122
Filed July 13, 1964, Ser. No. 382,079
4 Claims. (Cl. 128—325)



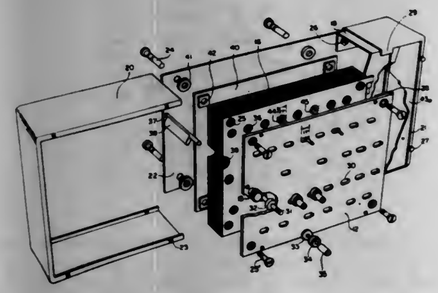
1. A cervical clamp comprising
first and second elongated clamp arms having mutually opposed clamping faces extending lengthwise and widthwise of said arms,
flange members extending along the length of the longitudinal edges of each arm and smoothly curving therefrom to be directed away from the opposing arm,
at least one tissue penetrating element on each arm directed toward the opposing arm, hinge means unitary with said arms and interconnecting said arms at one end thereof with said arms projecting from said hinge means in divergent relationship,
said hinge means comprising a generally U-shaped portion having an inside tissue-engaging face forming a continuation of the clamping faces of said arms,
said first arm being tapered convergently in width from said hinge means to the opposite end of said arm,
whereby a plurality of said clamps may be placed at successive locations around the periphery of a conized cervix with the convergently tapered arms extending into the inwardly tapered cervical canal in side-by-side relationship, said hinge means being operable to maintain the arms of each clamp against separation to effect hemostasis of the cervix.

3,347,240
HEATED MUFF HAND EXERCISER
Ernest M. Rigler, 1717 144th St., White Rock, British Columbia, Canada
Filed Apr. 19, 1965, Ser. No. 449,164
4 Claims. (Cl. 128—363)



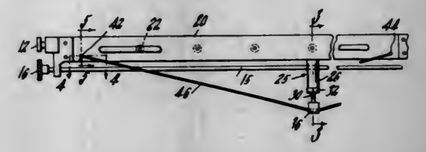
1. Exercising apparatus comprising an elongated muff open at one end and closed at the other, said muff comprising a rigid elongated thermo-conductive inner shell and an outer thermo-insulating cover encasing said shell, a heat generator located between the shell and cover adjacent the closed end of the muff so as to heat said shell, a resiliently compressible handgrip located inside the muff adjacent the closed end of the latter, and a heat conductive element having a high coefficient of thermo-conductivity extending through the walls of the shell and being in direct association with both the heat generator and handgrip so as to conduct the heat from the former to the latter.

3,347,241
INFORMATION STORING AND SORTING DEVICE
Alexander J. Hiller, Sunnybrook, and Rudolph M. Haisfield, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 28, 1960, Ser. No. 39,412
5 Claims. (Cl. 129—16.1)



1. A logical computer comprising, a magazine defining a plurality of apertures in one wal lthereof, a number of information cards disposed to slide horizontally in said magazine each defining a like plurality of cutaway portions, a plurality of spacer means mounted in a fixed position relative to said magazine and located at the corners of said cards to prevent transfer of movement between adjacent ones of said cards, a plurality of movable keys extending through said portions, each key passing through a single cutaway portion on each of said cards, all of said portions each covering a portion on one side of each key with said key maximally displaced toward said one side whereby said cards may be displaced in one direction without disturbing said keys, a selected fraction of said portions closely approaching the opposite side of said keys, whereby displacement of said keys in said one direction also displaces the cards defining said selected portions.

3,347,242
BRIDGE SUPPORT FOR LOAD SUPPORTING LATHS IN VERTICAL STORAGE FILING CABINET
Graham Irving Barker, 208 Golden Oaks, Coriett Drive, Johannesburg, Transvaal, Republic of South Africa
Filed Dec. 1, 1965, Ser. No. 511,292
Claims priority, application South Africa, May 7, 1965, 2,386/65
1 Claim. (Cl. 129—16.7)

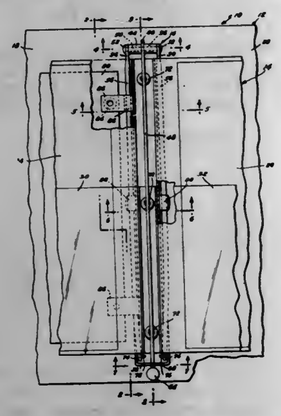


In a vertical storage filing cabinet, a load carrying lath having means at its ends for support thereof, and a plurality of horizontally extending loading pins projecting from a vertical side of said lath, that improvement which comprises:
a bridging member positioned centrally of said lath bearing on the underside thereof, and having a free end spaced vertically from the central portion of said lath;
said lath having a hole at each end extending horizontally therethrough;
a flexible cable threaded through one hole and having its ends secured in the other hole thereby providing an endless loop extending tautly over said bridging member;
said bridging member comprising a lug bearing on said lath having a vertical threaded opening therein;
a threaded spindle in said threaded opening;
a boss rotatably mounted on the end of said spindle remote from said lug over which said flexible cable extends;
said boss having a pair of horizontal channels thereacross spaced substantially the width of said lath;
said looped cable being positioned in said channels;
means for rotating said spindle to adjust the tension on said cable; and
a locking nut being provided on said spindle;
whereby load applied to said lath at the center thereof may be distributed to the ends thereof.

3,347,243
COVER AND BINDER CONSTRUCTION
Earl C. Ravenal, Providence, R.I., assignor to Elbe File & Binder Co., Inc., Fall River, Mass., a corporation of Massachusetts
Filed June 27, 1966, Ser. No. 560,634
3 Claims. (Cl. 129—38)

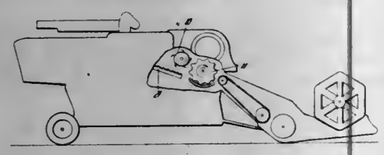
1. In a cover and binder construction, an outer cover including a front member, a rear member and an intermediate spine portion, an inner cover including a front member, a rear member and an intermediate spine portion that are located interiorly of and in corresponding relation to the front and rear members and spine portion of said outer cover, a binder unit comprising an elongated bottom wall having end walls extending upwardly from opposite extremities thereof, said bottom wall being located between the spine portions of said inner and outer members, means fixedly securing said bottom wall and the spine portions of said inner and outer covers to each other, an arm pivotally connected to one of said end walls

and releasably interconnected to the other end wall and substantially centrally positioned with respect to said binder unit for removably holding a paper-bound book within said inner cover, an elongated rod pivotally con-



nected to one of said end walls and releasably interconnected to the other end wall, said rod being located between said outer and inner covers for removably receiving a display sheet therein, whereby said display sheet will be positioned between said inner and outer covers.

3,347,244
ROTARY BEATER FOR COMBINE HARVESTERS
Leslie Lyons Kepkay, Leamington Spa, and Edward Geoffrey Metcalfe, Cubbington, Leamington Spa, England, assignors to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles
Filed Feb. 26, 1965, Ser. No. 435,420
Claims priority, application Great Britain, Mar. 3, 1964, 8,815/64
5 Claims. (Cl. 130—27)



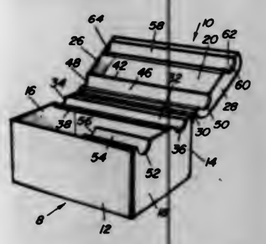
1. In a combine harvester including a threshing cylinder, means for feeding harvested crop material to the threshing cylinder, straw walkers for receiving crop material from the threshing cylinder, and a rotary beater between the threshing cylinder and straw walkers for stripping crop material from the threshing cylinder comprising a shaft, a pair of axially spaced discs mounted on the shaft for rotation therewith, a plurality of circumferentially spaced blades mounted between said discs in radially spaced, parallel relationship with said shaft, each of said blades having a plurality of material engaging edges of different characteristics, and means connecting said blades with said discs for selectively positioning each of said blades on said discs with a selected one of said material engaging edges projecting radically from said shaft beyond the periphery of said discs with the remaining edges disposed between said shaft and said selected material engaging edge such that the selected material engaging edge engages the material on the threshing cylinder.

3,347,245
FILTER CIGARETTE
Edward J. Hawkins, 89 15th St., Hermosa Beach, Calif. 90254
Filed Dec. 27, 1965, Ser. No. 525,004
6 Claims. (Cl. 131—10.7)



1. A filter cigarette comprising a tubular wrapper; a body of tobacco filling said wrapper for a substantial portion of its length; a barrier wad of porous material adjacent one end of said body of tobacco and spaced from the tip end of the wrapper; and a filter comprising molecular sieve granules disposed between said barrier wad and the tip of the cigarette, said molecular sieve granules being in a substantially moisture-saturated state, and containing in the porous structure thereof a liquid-phase silicone material having an affinity for harmful hydrocarbon components of cigarette smoke, wherein said granules are saturated by the silicone liquid and by moisture to an extent of maximum saturation diminished by only sufficient drying to leave the body of granules in a readily pourable state, the silicone and moisture contents collectively being such as to impart to the sieve a selective filtering characteristic in the ability to remove a high percentage of noxious substances from tobacco smoke coupled with a significantly reduced affinity for the normal moisture content of cigarette tobacco, so as to avoid objectionable drying of the tobacco.

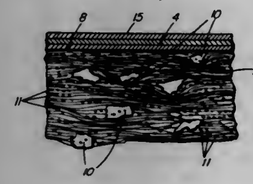
3,347,246
ASH TRAY AND EXTINGUISHER
Joseph H. Mester, 373 S. Seguin Ave., New Braunfels, Tex. 78130
Filed Aug. 11, 1965, Ser. No. 478,935
9 Claims. (Cl. 131—237)



1. A cigarette holding and extinguishing device comprising an ash and butt receiving tray section having a bottom wall, front and back walls and end walls adjoining the ends of said front and back walls, the upper edges of said end walls having upwardly opening semicircular notches aligned with each other, a first elongated open-ended upwardly opening cigarette seating trough spanning the space between said end walls and having its open ends affixed to said end walls and registering and communicating with their respectively cooperable semicircular notches, the exterior surfaces of said trough being freely spaced from said bottom and back walls and providing air circulating spaces, a cover section embodying a lid having marginally depending front, rear and end flanges providing a skirt-like rim, the lower edge of the rear flange being operatively joined to an upper edge of said back wall, said end flanges having semi-circular notches conformable in shape and size with said first named notches and aligned with each other and alignable and registrable with the aforementioned end wall

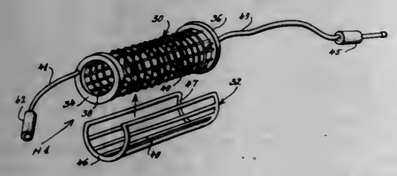
semi-circular notches when said cover is in its closing position atop said tray, and a second open-ended downwardly opening trough conformable in shape and size with and adapted to clampingly cap over and enclose the upwardly opening side of said first trough and providing a cigarette holding and snuffing chamber, said first and second named notches being communicably registrable with each other, whereby to provide selectively usable orifices at both ends of said chamber which allow the mouth end of a clamped and stored cigarette to protrude into the atmosphere to dry, that is, when the extinguishable cigarette is to be saved for re-smoking.

3,347,247
TOBACCO SMOKE FILTER
Wallace G. Lloyd, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed May 14, 1964, Ser. No. 367,446
1 Claim. (Cl. 131—266)



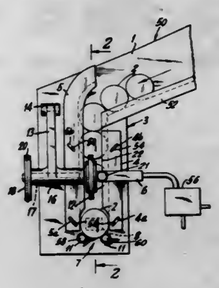
A filter for tobacco smoke consisting essentially of a tow of cellulose acetate filaments, activated coconut type carbon particles preponderantly of a mesh size of about 12 to 30 mesh and a polyalkylene glycol of a molecular weight between 600 and 20,000, said filter containing from 2 to 200 parts by weight of said carbon particles and 2 to 25 parts by weight of said polyalkylene glycol per 100 parts of said filaments, said polyalkylene glycol functioning, to cause adherence of said carbon particles to the cellulose acetate filaments of the tow and further to selectively remove some of the undesirable phenols from the gas phase of the smoke.

3,347,248
ELECTRICALLY HEATED HAIR CURLING DEVICE
Dorothea M. Weltzner, 8 E. 62nd St., New York, N.Y. 10021
Filed Oct. 22, 1964, Ser. No. 405,875
5 Claims. (Cl. 132—40)



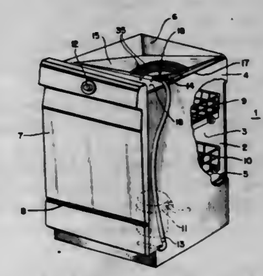
1. An electrically heated hair curler assembly, comprising a cylindrical body member upon which a lock of hair can be wound, said member including a pair of circular end rings, axially extending bars joined at their ends to the rings, an electrical resistance wire element wound around the bars of said body member, a cylindrically curved flexible clamping frame member engageable on said body in coaxial alignment to engage the wound lock of hair therebetween under spring pressure, and means for applying electric energy to said wire element for heating the same.

3,347,249
METHOD AND DEVICE OF COUNTING COINS
Kurt Becker, Berlin-Wilmersdorf, Germany, assignor to Firma F. Zimmerman & Co., Berlin, Germany
Filed Aug. 27, 1965, Ser. No. 483,274
Claims priority, application Germany, Sept. 1, 1964, Z 11,060
8 Claims. (Cl. 133—8)



1. A method of counting coins using a drop shaft having a passage size for a single coin only and an electronic inductive scanning head producing a sensing field in the drop shaft with an aligning bar system below the drop shaft in a position to receive and support the coins in an upright position for assembly into a roll comprising delivering the coins to the drop shaft and permitting them to fall one by one by gravity to the vicinity of the scanning head, and positively advancing the coins past the head and away from the head by frictionally engaging each coin while it is advanced in a manner to keep the coin in the sensing field only for the time necessary to sense its presence and to feed it away from the field and prevent its reentry thereto.

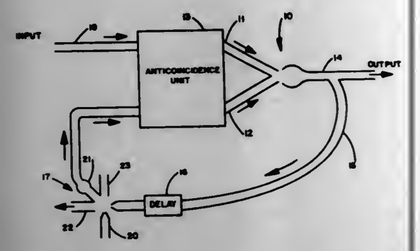
3,347,250
DISHWASHER WITH IMPROVED LIQUID INLET SYSTEM
Leonard J. Martiniak, Waukesha, Wis., assignor to General Electric Company, a corporation of New York
Filed June 14, 1965, Ser. No. 463,606
14 Claims. (Cl. 134—182)



1. A dishwasher comprising:
(a) a washing enclosure formed with a bottom wall, a top wall, and side walls, at least one of said walls being movable to provide access to said enclosure;
(b) said top wall being formed in at least two different levels, with the lower of said levels being adjacent an edge of said top wall, said top wall having an opening formed between said levels;
(c) and a water inlet nozzle positioned outside said washing enclosure on the lower level and adapted to be connected to a source of washing fluid under pressure, said nozzle being in close but spaced horizontal

alignment with said opening and in close but spaced vertical elevated relationship to the bottom edge of said opening.

3,347,251
FLUID LOGIC FREQUENCY TREATMENT DEVICE
Cavas M. Gobhai, Cambridge, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed June 24, 1964, Ser. No. 377,753
1 Claim. (Cl. 137—81.5)



A fluid frequency treatment system wherein input fluid pulse train frequency is fed back on itself to provide functions such as integration, addition, and sampling,

said system comprising, in combination,

a passive fluid "or" gate for receiving and transmitting primary fluid pulse trains, feedback from said pulse trains, and combinations of said primary and feedback pulse trains.

a primary pulse train input to said gate and a feedback pulse train input to said gate as the only inputs to said gate,

anticoincidence means operatively encompassing both said primary pulse train input and said feedback pulse train input,

a feedback connection from the output of said "or" gate to said feedback pulse train input,

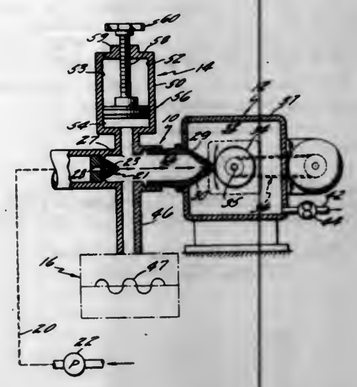
"and" gate means in said feedback connection comprising a vent outlet to which said feedback is directed if undisturbed, a feedback control input to said "and" gate whereby simultaneous signals in said feedback and in said feedback control interact and result in feedback signal continuance to said feedback pulse train input, and another vent outlet to which said control input is directed if undisturbed,

and delay means in said feedback connection between the output of said "or" gate and said "and" gate means,

whereby the input pulse train frequency may be treated through said feedback in functions such as integration, addition, and sample holding.

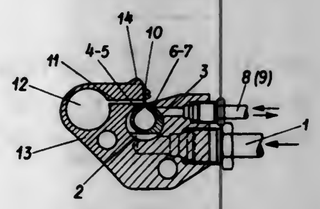
3,347,252
FLUID SIGNAL GENERATOR
Donald B. Hanson, Canton, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 18, 1965, Ser. No. 465,031
3 Claims. (Cl. 137—82)

1. Test apparatus for generating a pulsating fluid signal to be applied to mechanism intended to be tested including an evacuated chamber, a fluid passage terminating in said evacuated chamber, a fixed restriction disposed at the inlet of said fluid passage, a variable restriction disposed at the outlet of said passage, motor driver inluding a rotation member for varying said variable restriction in timed relation corresponding to a predetermined frequency of said pulsating fluid signal, means interconnecting the fluid passage at a point intermediate said fixed and said variable restriction and the mechanism intended to be tested, and amplitude control means including a



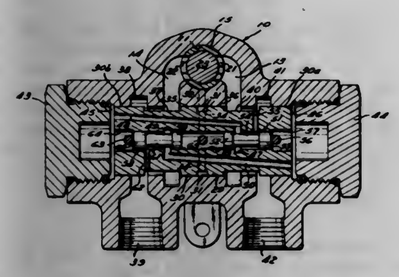
fluid receiving accumulator communicating with said passage intermediate said fixed restriction, said variable restriction for controlling the amplitude and means for varying the volume of said accumulator.

3,347,253
JET CONTROL FOR MACHINE TOOLS OR THE LIKE
Alois Moosmann, 11 Muttergartenweg, Stuttgart-Birkach, Germany
Filed June 16, 1964, Ser. No. 375,606
Claims priority, application Germany, June 19, 1963, M 57,228
1 Claim. (Cl. 137—83)



A pneumatic control comprising a body having two supply nozzles and two receiving nozzles, one of said supply nozzles being in line with its associated receiving nozzle and arranged to direct a fluid stream into its associated receiving nozzle and the other of said supply nozzles being out of line with its associated receiving nozzle and arranged to direct a fluid stream adjacent its associated receiving nozzle, a control vane associated with said body and arranged for simultaneous movement of a pair of control edges between said supply and receiving nozzles, the arrangement being such that initial movement of said control vane in a straight line in a direction normal to said nozzles causes the control vane to act simultaneously on both fluid streams in order to obtain the difference in the control impulses, said supply and receiving nozzles having greater width than height, the control edges having at least the same width as the nozzles and arranged for movement in the direction of the height, said supply and receiving nozzles being arranged tangentially opposite each other on the periphery of a hollow at least partially round nozzle body and the control vane is movable in the space between the supply and receiving nozzles radially to the nozzle body.

3,347,254
PROPORTIONAL FLOW DIVIDER COMBINER
James A. Compton, and John D. Allen, South Euclid, and Ray G. Holt, Westlake, Ohio, assignors to Fawick Corporation, a corporation of Michigan
Filed Feb. 9, 1965, Ser. No. 431,413
9 Claims. (Cl. 137—101)



1. A proportional flow divider/combiner comprising:

means defining a common passage and first and second separate branch passages connected to said common passage;

throttling valve means controlling the respective fluid flows through said branch passages, said throttling valve means being displaceable in one direction to increase the fluid flow through one of said branch passages and decrease the fluid flow through the other of said branch passages, said throttling valve means being displaceable in the opposite direction to decrease the fluid flow through said one branch passage and increase the fluid flow through said other branch passage;

flow restriction means between said common passage and each branch passage;

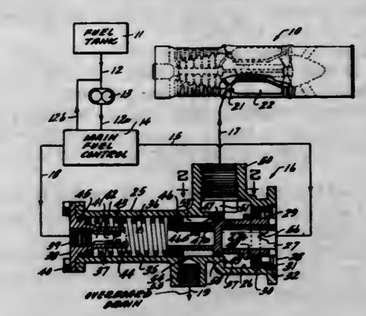
means defining a first working space for pilot fluid pressure acting against said throttling valve means to apply a first pilot fluid force thereon in said one direction;

means defining a second working space for pilot fluid pressure acting against said throttling valve means to apply a second pilot fluid force thereon in said opposite direction;

said throttling valve means being displaceable, in response to an unbalance of the oppositely directed pilot fluid forces in said first and second working spaces, in a direction to eliminate said unbalance by changing the respective fluid flows through said branch passages;

and a pair of pilot valves respectively connected between said branch passages and said working spaces, said pilot valves being fluid pressure unbalanced, when the direction of fluid flow is from said common passage to said branch passages, to connect said first branch passage to said first working space and to connect said second branch passage to said second working space, said pilot valves being fluid pressure unbalanced, when the direction of fluid flow is from said branch passages to said common passage, to reverse the connections of said branch passages to said working spaces.

3,347,255
PRESSURIZING AND DRAIN VALVE
Raymond Leon Williams, Evendale, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 29, 1964, Ser. No. 371,229
3 Claims. (Cl. 137—102)



1. A pressurizing and drain valve for use in a fluid supply system comprising a pressurized fluid source for supplying fluid to a manifold or the like and a reference presssure source, said valve comprising:

a housing having a bore formed in an integral portion thereof,

a piston slidable in said bore and defining, in part, first and second chambers at opposite ends thereof,

a valve guide mounted on said housing and slidably receiving the end of said piston defining said second chamber,

a port for connecting said second chamber to said fluid pressure source and another port for connecting said first chamber to said reference pressure source, whereby the piston is urged toward a first position when the reference pressure force exceeds the pressurized fluid source on said piston,

an annular chamber, within said housing, surrounding said piston and defined in part by the side of said guide towards the other end of said piston,

a pressurized fluid outlet opening into said annular chamber and overlying a portion of the housing in which the bore is formed,

at least one connecting passageway, within the outline of said outlet, connecting said outlet with said bore,

a drain outlet opening into said bore at a point offset from said connecting passageway towards said other end of said piston,

an annular groove formed in said piston and registering both with said connecting passageway and said drain outlet in said first piston position,

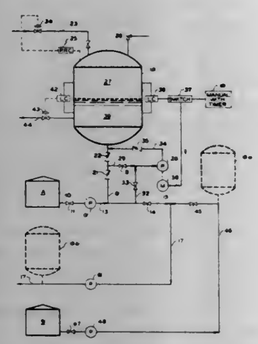
said piston having a recess opening into said second chamber and an opening therethrough, said opening being blocked by said guide in said first piston position and connecting said pressurized fluid source with the outlet therefor when the piston is displaced towards its second position a distance sufficient to remove the piston groove from register with the connecting passageway.

3,347,256
PRESSURE SURGE SUPPRESSION IN PIPE LINES
Phillip S. Massey, Thomas A. Matthews II, and Dennis L. Dutcher, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,785
5 Claims. (Cl. 137—115)

1. Apparatus for absorbing surge pressure in excess of about 100 p.s.i. resulting from a substantially instantaneous change in velocity of liquid being pumped through a

valved 36-inch dimeter pipe line at 25 to 50 p.s.i. which comprises,

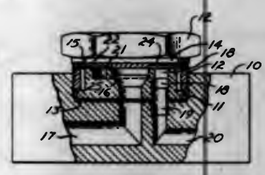
(1) a surge tank having a volume of about 1000 cubic feet located adjacent a pipe line valve downstream from said tank;
(2) a relief valve connected to an outlet in the upper portion of said surge tank to relieve gas pressure in excess of about 100 p.s.i.;
(3) means to supply gas to an inlet in the upper portion of said surge tank at about pipe line pressure to about 5 p.s.i. above pipe line pressure;
(4) a 36-inch diameter first conduit not more than about 10 feet in length connecting said 36-inch diameter pipe line to the lower portion of said surge tank;
(5) at least two check valves in said conduit to prevent liquid passing from said surge tank to said pipe line;
(6) a pump;
(7) a second conduit connected to said pipe line, to said first conduit between said check valves and to the inlet of said pump;



(8) a third conduit connecting the outlet of said pump to said first conduit downstream from said check valves;
(9) a check valve in said third conduit to prevent flow of liquid downstream from said check valves to the outlet of said pump;
(10) a first liquid level controller operatively connected to said surge tank and to said pump to pump liquid from said pipe line and from between said check valves into said third conduit downstream from said check valves when the liquid in the surge tank drops to a preselected level;
(11) a fourth conduit connected to an outlet in the lower portion of said surge tank;
(12) a valve in said fourth conduit; and
(13) a second liquid level controller operatively connected to said surge tank and to said valve in said fourth conduit to dump liquid from said surge tank when the liquid rises to a preselected level.

3,347,257
STEAM TRAP
William J. Gleason, Jr., and Carl W. Zies, Lakewood, Ohio, assignors to International Basic Economy Corporation, New York, N.Y., a corporation of New York
Filed Sept. 22, 1964, Ser. No. 398,195
7 Claims. (Cl. 137—183)

1. A dynamic steam trap comprising a valve body having a valve chamber therein and respective inlet and outlet passages into and out of said valve chamber, an inlet port in a bottom wall of said chamber establishing communication between said inlet passage and said chamber, an outlet port in said bottom wall establishing communication between said chamber and said outlet passage, said inlet port having a fluid transmission area of increased fluid carrying capacity relative to the fluid carrying capacity of said inlet passage, a raised annular land providing a valve seat surrounding said inlet port, a second raised annular land providing a valve seat surrounding said outlet port, a valve disk in said valve chamber

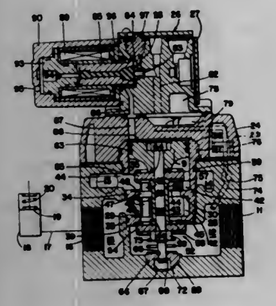


and seatable simultaneously on both said lands and adapted, when so seated, to prevent substantial fluid flow from said inlet port to said outlet port, but, when said valve disk is raised by fluid pressure entering said inlet port to permit condensate liquid to flow beneath said disk and out said outlet port, and a limited capacity vent from the valve chamber above and around said disk to said outlet port.

3,347,258
STEAM TRAP
Nils A. Judsen and Robert T. Kirchner, Three Rivers, Mich., assignors to Armstrong Machine Works, Three Rivers, Mich.
Filed Feb. 4, 1965, Ser. No. 430,341
3 Claims. (Cl. 137—183)

1. A steam trap, comprising:
a first body member having inlet and outlet ports therein adapted to be connected to inlet and outlet conduits respectively, said first body member having a second body member seat and having radially spaced inner and outer valve seat members disposed within and which project above the plane of said second body member seat, there being an annular outlet passage between said valve seat members opening to said outlet port and a centrally disposed valve controlled passage within the inner of said valve seat members, a second body member having a cavity therein, wall means dividing said cavity into a pair of adjacent chambers, one of said chambers defining a closed heating chamber and the other of said chambers opening externally of said second body member and defining a valve chamber, said second body member having a first body member seat surounding the valve chamber, means detachably connecting the two body members in such a manner that their seats mate and the valve chamber is closed by that portion of the first body member having the valve seat members, a first passage in the first body member connected to the inlet port and opening at the second body member seat, a second passage in the second body member connected to the heating chamber and opening at the first body member seat mating with said first passage, a third passage in the first body member connected to said centrally disposed passage and opening at the second body member seat, a fourth passage in the second body member connected to the heating chamber and opening at the first body member seat mating with the third passage, a gasket disposed between the first and second body member seats and having openings therein mating with said passages, and a disk-like valve disposed in said valve chamber for floating movement therein and in coacting relation to said valve seat members of said first body member.

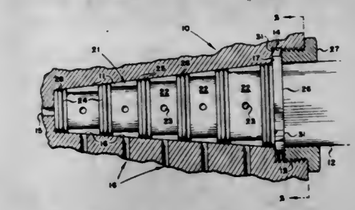
3,347,259
VALVE ASSEMBLY
Zdenek J. Lansky, Winnetka, and Kurt W. Leibfritz, Norridge, Ill., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 10, 1966, Ser. No. 593,445
13 Claims. (Cl. 137—269)



7. A housing assembly for a valve, said assembly including a housing having inlet and outlet chambers within a motor chamber extending therebetween, an inlet port between the inlet and motor chambers and an outlet port between the motor and outlet chambers, a first seat on the inlet chamber side of the inlet port and a second seat on the outlet chamber side of the outlet port, a third seat on the motor chamber side of the inlet port and a fourth seat on the motor chamber side of the outlet port, said first and second seats being cooperable with a first poppet valve element replaceably and movably mountable in said housing for respectively closing and opening said inlet and outlet ports when the element is in a retracted position and respectively opening and closing said inlet and outlet ports when the element is in an extended position, said third and fourth seats being cooperable with a second poppet valve element movably mounted in the housing as a replacement for the first poppet valve element for respectively opening and closing said inlet and outlet ports when the second element is in a retracted position and respectively closing and opening said inlet and outlet ports when the second element is in an extended position, and said housing assembly including means for moving either element between its retracted and extended positions.

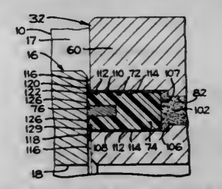
11. A valve assembly comprising a housing having inlet, outlet and motor chambers, an inlet port, between the inlet and motor chambers, a second port between the motor and outlet chambers, a valve element movable in the housing between first and second positions, said element having means thereon for alternately opening and closing said ports when moved to said positions, a cylindrical piston chamber in one end of the housing beyond said chambers, a bored bushing in the other end of the housing beyond said chambers, said valve element having a piston at one end thereof slidably fitted in said piston chamber, and a stem at its other end slidably fitted within said bushing bore, said bushing having a part spherical external surface bearing against a mating part spherical internal surface of said housing whereby said bushing may pivot about its center of sphericity for aligning said bore with said stem.

3,347,260
CARTRIDGE VALVE ASSEMBLY
Frank D. Lewis, Sr., and Edwin W. Rumrill, Jr., Atlanta, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 22, 1964, Ser. No. 398,374
5 Claims. (Cl. 137—315)



1. A fluid system comprising:
a plurality of valve bodies and valve assemblies which respectively are substantially identical in appearances;
a chamber in each valve body individual to each valve assembly for the operative engagement thereof whereby a number of valve sets are produced;
a plurality of circumferential portions in spaced relation along at least some of the length of each valve assembly; and
at least one set of coding elements including a linear slot and a complemental, interengaging tab carried by the valve body and valve assembly respectively of each said valve set establishing a predetermined relative position therebetween, the relative location and dimensions of each slot and tab of each said valve set being different from those of every other valve set and being related to the location and dimensions of the circumferential portions of its particular valve assembly to automatically dispose each of said circumferential portions in sealing engagement with the wall of its associated valve body when operatively engaged therein.

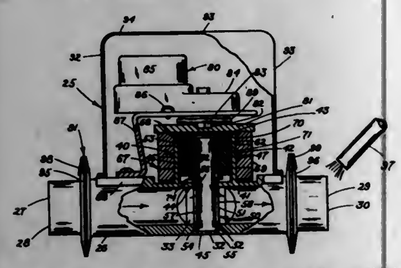
3,347,261
METHOD AND MATERIAL FOR SEAL REPAIR
John R. Yancey, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Continuation of application Ser. No. 171,187, Feb. 5, 1962. This application Oct. 19, 1965, Ser. No. 505,120
4 Claims. (Cl. 137—315)



1. The method of renewing a service-cavitied sealing element that forms a fluid seal between closely fitting members while the sealing element is in place in a recess in one of said members, the sealing element being formed of polymeric material; comprising the steps of injecting a flowable mixture of closely packed, interlaced shreds

of said sealing element material and an interstitial lubricating oil into the seal containing recess, continuing injection of said mixture under pressure sufficient to cause the mixture to flow peripherally around the sealing element and to form a dam between the valve members adjacent the sealing element, and completing the injection by forcing and compacting said mixture into the cavities of the sealing element to recondition sealing faces on the sealing element.

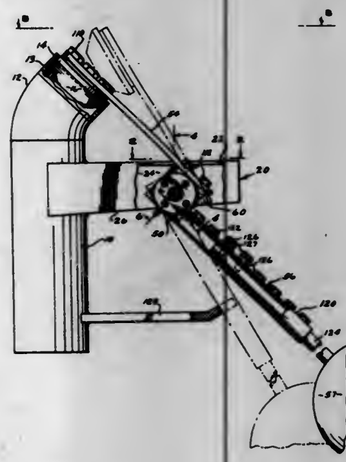
3,347,262
MAGNET ACTUATED SEALED VALVE
Donald F. Gibson, Billerica, Mass., assignor to Mark Associates, Inc., Lowell, Mass.
Filed Sept. 22, 1965, Ser. No. 489,234
8 Claims. (Cl. 137—375)



1. In a packless valve of the concentric cylindrical magnet actuated type, the combination of
a valve casing having influent and effluent ports, a generally cylindrical valve plug seat intermediate of said casing between said ports, the axis of said seat being transverse to the flow path through said casing, and a cylindrical enclosure extending from said casing, coaxially with said seat, said enclosure forming a sealed chamber opening into said casing at said seat;
magnetic rotary coupling means comprising an inner, hollow, cylindrical sleeve rotatable within said sealed chamber and an outer, hollow, cylindrical sleeve rotatable around the exterior of said enclosure, said inner sleeve having an axial bore of predetermined diameter and being of less height than the height of of said chamber to float vertically therein;
an elongated hollow tube mounted within said casing, said tube having an apertured lower portion rotatable in said seat to form a valve plug, and having its upper portion loosely fitted within the axial bore of said inner magnet for slight axial and transverse motion relative thereto, and
loose fit attachment means connecting said inner magnet to the upper portion of said tube for transmitting rotary motion only therebetween,
whereby rotation of said outer magnetic sleeve causes rotation of said inner magnetic sleeve and valve plug to actuate said valve while said inner magnet is free to float axially and free of axially directed forces thereon.

3,347,263
FLOAT VALVE ASSEMBLY FOR A PORTABLE VACUUM TANK
David L. Thompson, Long Beach, Calif., assignor to Thompson Tank and Manufacturing Co., Inc., Long Beach, Calif., a corporation of California
Filed June 28, 1965, Ser. No. 467,474
7 Claims. (Cl. 137—448)

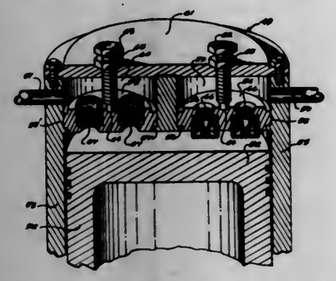
1. A float valve assembly for a portable vacuum tank, comprising:
an upstanding pipe that is mounted in said tank, the upper end of said pipe being formed with a valve seat;
a support extending from said pipe, said support having a pair of vertical side walls;
a pair of horizontally aligned cone set screws carried by said side walls;
a pivot assembly pivotally carried by said set screws that includes a support block formed with a coned pocket that receives one of said set screws and with a horizontal bore coaxial with said coned pocket, said bore opening towards the other of said set screws, said pivot assembly also including a sleeve horizontally slidably disposed within said bore, the end of said sleeve remote from said first-mentioned coned pocket being formed with a second coned pocket that receives said other set screw, and said pivot assembly further including a compression spring interposed between said support block and said sleeve to constantly urge them apart;



an upper arm having its lower portion secured to said pivot assembly;
a closure element secured to the upper end of said upper arm that is sealingly engageable with said valve seat;
a lower arm having its upper end secured to said pivot assembly; and
a float secured to the lower end of said lower arm.

3,347,264
SUCTION AND DISCHARGE VALVE
Stuart E. Bunn, P.O. Box 8871, Prairie Village, Kans. 66208, and Herbert B. Owsley, 8509 W. 70th Terrace, Shawnee Mission, Kans. 66204
Filed Dec. 23, 1963, Ser. No. 332,659
3 Claims. (Cl. 137—512.1)

1. A rapid acting unidirectional positive fluid flow control valve comprising, a valve seat member having an opening through which fluid flows, a coil spring having normally mutually engaging convolutions with means closing one end, said coil spring having an open end oppositely directed to said closed end and having a portion cylindrical in shape extending from said open end, said means closing said one end including a conical spring portion having a shape decreasing in diameter from the diameter of said cylindrical spring portion in a direction away from said open end, means including screw threads at said valve seat member opening and engaged by a plurality of convolutions of the spring adjacent said open end for securing said spring on said valve seat member with said open end communicating with said opening and said closed end free to move resiliently away from said open end, said end closing means and conical spring portion thereof permitting spreading apart only the convolutions in the cylindrical spring portion spaced from



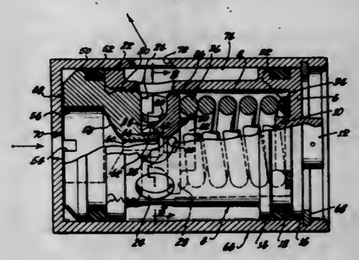
said securing means and said closed end under fluid pressure directed through said opening toward said closed end whereby spreading of said cylindrical spring portion convolutions forms a flow slot therebetween for passage of fluid, and in absence of said fluid pressure said convolutions engaging to form a tight seal therebetween.

3,347,265
ONE WAY VALVE FOR USE WITH CONCRETE FORMS
Richard E. Groh, Citrus Heights, Calif. (764 W. 30th St., Apt. 14, San Pedro, Calif. 90731)
Original application Oct. 8, 1963, Ser. No. 314,802. Divided and this application June 9, 1965, Ser. No. 473,545
1 Claim. (Cl. 137—525.7)



A concrete valve adapted to be positioned in an opening in the lower side portion of form means for enabling pumping of concrete into said form means from the bottom up, comprising, in combination: an elongated housing including an enlarged exit area having a peripheral flange lying in a single vertical plane outlining said exit area and dimensioned to engage the periphery of said opening, said housing having a sloping rear wall extending from an upper portion of said peripheral flange to connect to an end wall in turn connecting to the lower end of said peripheral flange such that said housing defines an elongated triangular shape in cross section, said end wall including an entrance port facing upwardly, said exit area being substantially larger than the area of said entrance port; a flexible flap member adapted to lie within said housing against said end wall in a position covering said entrance port, the periphery of said entrance port being overlapped by said flexible flap member; means securing one edge portion of said flap member to said housing adjacent to the connection of said rear wall to said end wall so that said flap member is free to swing towards said rear wall away from said entrance port; and means for connecting a source of concrete under pressure to said entrance port whereby incoming concrete moves said flap member away from said entrance port so that said concrete can pass through said housing and out said exit area into the bottom of said form means in a stream directed by said sloping rear wall in an inward and upward direction.

3,347,266
SPRING BIASED RELIEF VALVE
Gary L. Hansen, Pomona, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Sept. 19, 1963, Ser. No. 310,175
4 Claims. (Cl. 137—540)



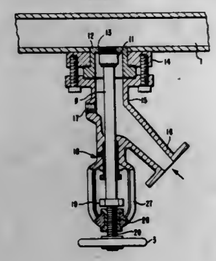
1. A fluid relief valve comprising:
(a) a first body member, said first body member being open at one end thereof to define a chamber therein, said first body member including a flange portion at the open end thereof, and being provided with internal threads and at least one aperture adjacent said flange portion, said first body member additionally including an inwardly extending protuberant portion at the closed end thereof;
(b) a second body member threadedly interconnected with the internal threads of said first body member, said second body member being provided with a protuberane portion extending into said chamber of said first body member and terminating in a circular configuration, said second body member being provided with an aperture extending therethrough, said aperture being coaxial with respect to said protuberant portion of said second body member;
(c) a poppet member movably positioned within said chamber of said first body member, said poppet member including a central portion and reduced diameter portions extending from each side of said central portion, one of said reduced diameter portions being larger in diameter than said protuberant circular end portion of said second body member and provided with a circular tapering cavity, the surface of said tapering cavity functioning as a seat for said circular terminal end of said protuberant portion of said second body member; and
(d) a spring member located within said chamber of said first body member and supported at one end by said inwardly extending portion at the closed end of said first body member and at the other end by the other reduced diameter portion of said poppet member, said spring member being of helical shape with closed substantially flat ends; whereby said poppet member is normally held against said second body member by said spring member, and whereby associated fluid pressure passing through said aperture

in said second body member against said poppet member moves said poppet member away from said second body member thereby providing communication between said aperture of said second body member and said aperture of first body member.

3,347,267
SPRAY VALVE FOR INJECTING A REACTANT LIQUID INTO A STREAM OF ANOTHER REACTANT LIQUID

Byron N. Inman, Memphis, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 15, 1963, Ser. No. 280,697
2 Claims. (Cl. 137—604)



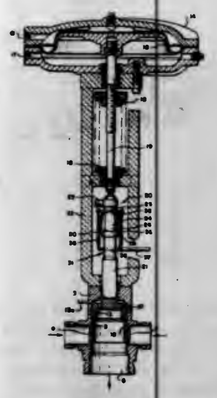
1. The combination of a spray valve and a pipe having a stream of a first reactant liquid flowing continuously therein, said spray valve being mounted on said pipe and comprising: a valve body external of said pipe provided with an inlet for a second reactant liquid which is highly reactive with said first reactant liquid; a seat-sleeve whose forward end penetrates said pipe and is flush with the inner surface thereof, which seat-sleeve bears a valve seat within said valve body; a valve stem extending outwardly through said valve body with its inner end terminating in a valve plug having a cylindrical front portion fitting closely in said seat-sleeve; means for limiting the extent to which said valve can be opened, whereby to prevent complete withdrawal of said cylindrical front portion of said plug from said seat-sleeve; said front portion of said plug having a plurality of grooves extending longitudinally from its front end and equally spaced about its periphery, said grooves constituting essentially the only passages for the flow of said second liquid into the stream of said first liquid when said valve is open; and said grooves being shorter than said cylindrical front portion of said plug and being fully extended into said stream of said first reactant liquid when said valve is closed, whereby when said valve is closed said grooves will extend beyond said valve seat and will be fully exposed to the washing action of said stream of said first reactant liquid in said pipe.

3,347,268
YIELDING SAFETY CONNECTOR AND ANTI-VIBRATION LOCK FOR BLENDING VALVE

John T. Muller, Nutley, and Curt A. Soderberg, Clifton, N.J., assignors to Leslie Co., Lyndhurst, N.J., a corporation of New Jersey

Filed June 11, 1965, Ser. No. 463,232
5 Claims. (Cl. 137—625.17)

1. An anti-vibration lock and yielding safety connector for interposition between a control member and a control element for said member, the connector comprising a control element portion and a control member portion, one of said portions having an axially extending projecting portion and the other portion having an axially positioned recess adapted to receive the projecting portion in axially slidable relation, the portion of the connector having the recess being further provided with a longitudinally extending keyway, a locking element adapted to be secured to the projecting portion and being provided with



a projecting key portion adapted to slidably engage the keyway in the other portion of the connector, and resilient means interconnecting the control element portion and the control member portion of the connector.

3,347,269
SECTIONAL SPOOL LINEAR VALVE

Calice G. Courneya, St. Paul, and Jerry W. Todd, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed June 9, 1964, Ser. No. 373,623
3 Claims. (Cl. 137—625.48)

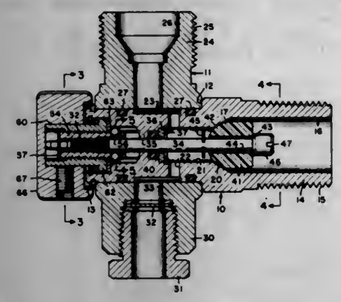


1. In a linear-type, multichamber valve having port openings of a predetermined diameter, a plunger comprising a cylindrical rod having a shoulder on one end and screw threads on the other ends;
- a number of rigid tubular spacers and flexible seals alternately and longitudinally slidably mounted on said rod, said seals being radially expandable upon the application of longitudinally compressive pressure and having outer diameters larger than the outer diameters of said spacers, the edges of said seals being beveled to compensate for cold flow thereof;
- said tubular seals having an outer surface extending lengthwise and parallel to the longitudinal axis if said seal wherein the portion of the said lengthwise dimension which contacts the walls of the valve chamber exceeds the diameter of said port openings;
- a nut engaged with screw threads on said other end of the rod and cooperative with said shoulder to apply axially directed, compressive pressure to the spacers and seals positioned therebetween, thereby causing the outer diameter of said seals to increase by radial expansion, and effecting a gas-tight sealing between the tubular seals and the walls of the valve chamber.

3,347,270
PRESSURE EQUALIZING FLOW CONTROL VALVE

Bidwell C. Cranage, Ferguson, Mo., assignor to Stile-Craft Manufacturers, Inc., St. Louis, Mo., a corporation of Missouri

Filed Mar. 11, 1965, Ser. No. 438,849
11 Claims. (Cl. 137—630.15)

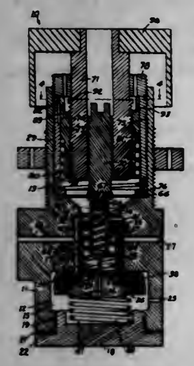


1. A flow control valve comprising:
(a) a body having an inlet opening and an outlet opening,
(b) a main valve means between the openings,
(c) a pilot valve means operatively connected to the main valve means and including a stem movable in one direction to close the pilot valve means and the main valve means under tension of the stem,
(d) actuating means operatively connected to the stem for moving the stem in the valve-closing direction,
(e) a key connection including an element carried by and movable with the stem to prevent rotation of the stem, and
(f) a stop shoulder in the path of the key element engaging the key element to limit the stem stroke in the valve-closing direction so that the only tension applied to the stem is that required to provide effective closure.

3,347,271
BY-PASS VALVE

Max F. Ellerbusch, Mount Healthy, Ohio (6806 Kenbyrne Court, Cincinnati, Ohio 45239)

Filed July 3, 1964, Ser. No. 380,190
11 Claims. (Cl. 137—637.4)

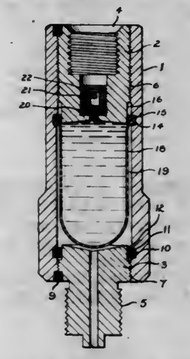


1. A by-pass valve comprising in combination,
a housing having an upper chamber and a lower chamber each communicable with the other,
a flexible diaphragm sealing said chambers from each other,
a valve stem mounted in said upper chamber and adapted to rotate and to reciprocate thereby providing for linear displacement thereof,
means for actuating said valve stem into such displacement, said valve stem engaging said diaphragm,
means mounted in said lower chamber for controlling rate of flow of fluid thorugh said valve, the actuation by rotation determining the rate of flow of fluid through said valve and the actuation by reciprocation of said valve stem removing the effectiveness of said controlling means to so determine,
needle housing means mounted in said lower chamber and having an extension at its one end engageable with said diaphragm and its other end movable into engagement with said controlling means,
a needle in said needle housing means,
an orifice in said controlling means, said needle floatable in said orifice thereby restricting flow of fluid therethrough,
inlet and outlet ports each communicating with said lower chamber, and
means for adjusting the rate of flow of fluid through said orifice,
said controlling means made ineffective upon reciprocation of said valve stem connected to said extension through said diaphragm and said other end of the needle housing means engaging said controlling means, whereby it is by-passed and maximum flow of fluid is realized between said inlet and outlet ports.

3,347,272
PROTECTOR FOR GAUGES AND THE LIKE

Wlodzimierz Rast, Flinders Park, South Australia, Australia, assignor to Rast Industries Limited, Flinders Park, South Australia, Australia

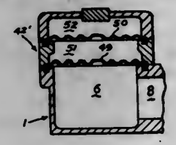
Filed Aug. 11, 1964, Ser. No. 388,805
3 Claims. (Cl. 138—30)



1. A protector for gauges comprising an elongate hollow body, a first hollow connector removably held on one end of said hollow body to connect the hollow body to a pressure line, a second hollow connector removably held on the other end of said hollow body to connect the hollow body to a gauge, a sealing member between the first connector and the body, a sealing member between the second connector and the body, a resilient bag having one end open and the other end closed fitting into and substantially filling the hollow of the said body, said bag having its open end communicating with the second hollow connector but sealed from the first hollow connector, a porous restrictor having a plurality of apertures therein positioned in the hollow of the second connector, between the second hollow connector and the open end of said bag, and a hollow threaded screw engaging in a threaded portion of the hollow of the second connector and securing said restrictor in the hollow of the second connector.

3,347,273
SURGE CHAMBERS EMPLOYING FLEXIBLE MEMBRANES

Linus E. Russell, Springfield, Ohio, assignor to Peters and Russell, Inc., Springfield, Ohio, a corporation of Ohio
Application July 8, 1964, Ser. No. 381,141, now Patent No. 3,255,779, dated June 14, 1966, which is a division of application Ser. No. 45,641, July 27, 1960, now Patent No. 3,149,576, dated Sept. 22, 1964. Divided and this application Oct. 22, 1965, Ser. No. 501,290
2 Claims. (Cl. 138—30)



1. For use with a pump or like structure including a base having a top surface and an interior generally horizontal liquid flow passage opening at one point through one side of said base and at another to a liquid chamber in said base, there being an opening from said chamber through said top surface, apparatus comprising flexible membrane means stretched across said opening with its peripheral edge seated to said top surface, the underside of said membrane being exposed to contact with the liquid in said chamber, a shell-like structure rising vertically from said top surface of said base having a hollow interior aligning with said opening, the bottom of said structure at said hollow interior being open and defining a periphery engaged with and clamping said membrane to said base, the top of said structure at said hollow interior being closed, and another flexible membrane stretched across the hollow interior of said structure at an intermediate location between the top and bottom thereof in vertically spaced parallel relation to the first said membrane, said other membrane connecting to said structure in a fluid tight manner and defining a first air chamber between said membranes and a second air chamber in superposed relation to the first between said other membrane and the top of said shell-like structure.

3,347,274
TUBULAR BODIES, AND METHODS AND APPARATUS FOR MAKING THE SAME

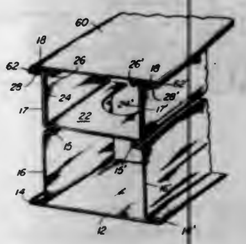
Samuel M. Mills, University Park, and Karel Husar, College Park, Md., assignors to Stone Straw Corporation, a corporation of New Jersey
Filed Feb. 17, 1964, Ser. No. 345,835
8 Claims. (Cl. 138—108)



1. A coil form comprising a tube of insulating material having an inner wall defined by an adhesively bonded wound strip having a helical joint and a stripe of plastic material of less width than the circumference of said tube adhesively attached to said wall throughout the length of and stripe simultaneously with the winding of said tube and intersecting said joint.

3,347,275
RACEWAY

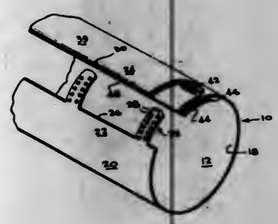
Robert H. Murphy, West Hartford, Conn., assignor to The Wiremold Company, West Hartford, Conn., a corporation of Connecticut
Filed Oct. 7, 1965, Ser. No. 493,749
17 Claims. (Cl. 138—116)



1. A raceway for electric wiring comprising a single piece of material forming an element having a channel shape with parallel side walls joined by an outer transverse wall, a second element formed of one piece of metal bent into channel shape and fitting within said first element, said second element having parallel side walls lying flat against the side walls of said first element and joined by an inner transverse wall spaced from the outer transverse wall of the first element dividing the first element into inner and outer compartments each adapted to receive electrical conductors, the edges of the side walls of the first element being outturned, the edges of the sidewalls of the second element having outwardly extending flanges reversely bent to embrace the outturned edges of the first element and stiffen it, and a cover member engaging the edges of the second element and enclosing said outer compartment.

3,347,276
PIPE JACKET CONSTRUCTION

Victor R. Dunn, P.O. Box 1134, Shreveport, La. 71101
Original application Nov. 29, 1963, Ser. No. 329,340, now Patent No. 3,242,948. Divided and this application Dec. 22, 1965, Ser. No. 515,615
1 Claim. (Cl. 138—166)



In a pipe jacket for use in encasing a pipe and fibrous insulation about the pipe, the jacket being of adjustable diameter:

a cover member of rolled sheet form having interfitting first and second side portions;

the first side portion having a plurality of tongues projecting outwardly therefrom at spaced locations;

a plurality of tabs struck outwardly from each of the tongues, the tabs being arranged in groups, and each group having its tabs disposed in rows, the tabs of adjacent rows of each tongue being staggered;

the tabs extending outwardly from the tongues and including free outer end portions and being outwardly inclined from the tongues in the direction of the first side portion;

the tabs of adjacent rows being struck outwardly on opposite sides of the tongues;

the second side portion of the cover member having an imperforate top section, a reverted section underlying the top section, and a rebent section underlying the top and connected to the reverted section by an interior wall;

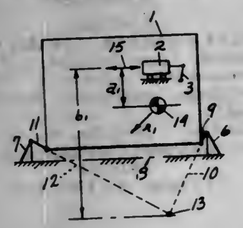
the interior wall having slots formed therein at spaced locations corresponding to the locations of the tongues on the first side portion;

indicia means on the second side portion aligned with the slots in the interior wall for prelocation of the tongues in alignment with the slots thereof; and

the tongues being engaged in the slots with one tab of each group engaging the interior wall, the depth of insertion of the tongues being such that the cover member is tightly engaged about the insulation.

3,347,277
VIBRATION ISOLATING SUPPORT FOR LOOMS

James T. Gwinn, Jr., Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1965, Ser. No. 496,280
9 Claims. (Cl. 139—1)

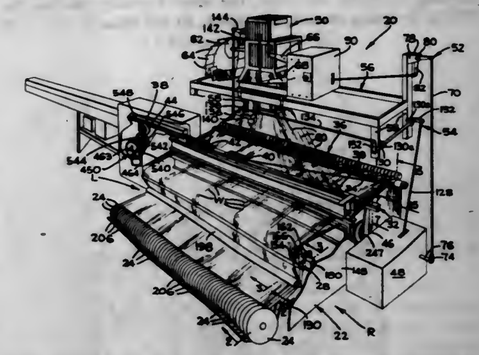


1. In a loom having a frame having supporting feet spaced on opposite sides of the frame at the front and rear and above and out of load carrying relation to a floor and having mounted thereon a warp beam, harness, cloth roll and reciprocating lay mechanism acting lengthwise of the frame, said lay mechanism having a line of action fore and aft of the frame and to one side of the loom center of gravity, a floor supporting bracket associated wtih each foot, said bracket having its lower end in load carrying relation to the floor and its upper end above the associated foot, a universally swingable tension link in load carrying relation between the upper end of each bracket and the associated foot, said links converging toward an axis crosswise of the loom and on the side of the loom center of gravity opposite the line of action of the lay mechanism.

3,347,278
CURVILINEAR LOOM

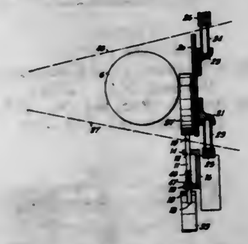
Mathew G. Boissevain, Los Altos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,252
15 Claims. (Cl. 139—11)

1. A loom for producing curvilinear cloth comprising, means mounting a plurality of transversely aligned warp spools providing warp threads, means for withdrawing the warp threads from said spools at a rate which increases between the selvages of such cloth, two rows of narrow heddle frames operable to produce a shed of progressively increasing and decreasing width, a shuttel stroke operating mechanism for progressively increasing and decreasing the stroke of the shuttle in accordance with the width of such shed, and means for maintaining a desired tension on all of the warp threads.



3,347,279
MEANS FOR DRIVING AND BRAKING SHUTTLES FOR CIRCULAR LOOMS

Armand Malchair, Herstal, Belgium, assignor to Societe Anonyme Iwan Simonis, S.A., Verviers, Belgium
Filed Dec. 28, 1964, Ser. No. 421,517
Claims priority, application France, Dec. 30, 1963, 958,819, Patent 1,388,875
5 Claims. (Cl. 139—13)



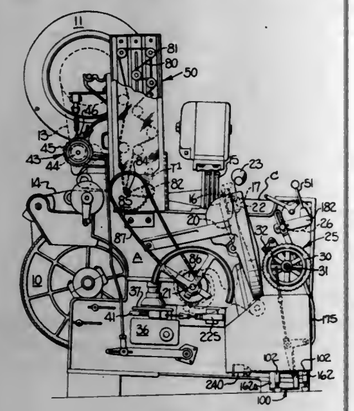
1. In a circular loom having a weaving ring and a plurality of shuttles, a device for driving and braking the shuttles, said device comprising an annular section having two limbs with holes formed therein, a plurality of push rods slidable in said holes, stops carried by said push rods and adapted to engage said limbs, two spaced annular members, pins carried by said annular members and having rounded crests, a shuttle-carrying plate, slides carried by said plate and engaging the crests of said pins, said pins forming a track for the shuttle, means connected with said plate and consecutively engaged by the ends of said push rods for moving said shuttle-carrying plate, and movable means consecutively engaging opposite ends of said push rods for actuating said push rods.

3,347,280
FRINGE MOTION FOR SHUTTLELESS LOOMS

Douglas P. Burgess, Woodleaf, and Gilmer A. Williams, Kannapolis, N.C., assignors to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Dec. 22, 1965, Ser. No. 515,569
9 Claims. (Cl. 139—24)

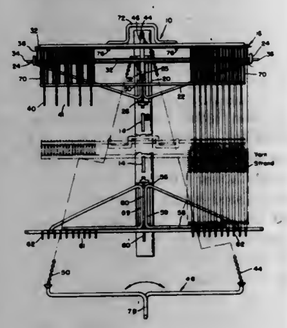
9. In a loom having means for weaving cloth during operation of the loom and including an oscillatable reed, warp shed forming means, filling inserting means, warp

let-off means and cloth take-up means, and a pattern means driven by the loom during operation thereof; the combination therewith of means responsive to said pattern means for stopping the operation of the loom and including stopping the reed, the shed forming means, the filling inserting means, the warp let-off means, the cloth



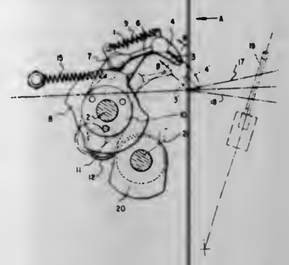
take-up means and the pattern means, means also responsive to said pattern means for driving said cloth take-up means a predetermined amount while the loom operation is stopped, and means for restarting the loom operation in response to said cloth take-up means being driven said predetermined amount.

3,347,281
HAND LOOM
William K. Stars, 1916 Glendale Ave., Durham, N.C. 27701
Filed Aug. 5, 1965, Ser. No. 477,382
10 Claims. (Cl. 139—29)



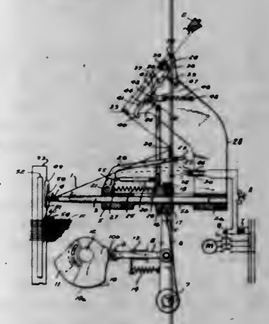
1. A hand loom for weaving material comprising: a loom support rail; an upper warp yarn support assembly carried by said rail having warp yarn-retaining hooks extending downwardly therefrom; a lower warp yarn support member adjustably and releasably secured to said support rail; a reed member contiguous said upper support assembly and movable with respect thereto; and means for tiltably positioning said upper support assembly to form alternate and preselected sheds upon actuation whereby the formed alternate sheds of warp allow a shuttle to be passed therethrough for weaving and forming a woven material.

3,347,282
WEFT THREAD-CUTTING MECHANISM FOR SHUTTLELESS LOOMS
Nikolaus Kokkinis, Eriskirch, Germany, assignor to Lindauer Dornier Gesellschaft m.b.H., Lindau, Bodensee, Germany, a limited-liability corporation of Germany
Filed Dec. 15, 1965, Ser. No. 514,069
Claims priority, application Germany, Jan. 23, 1965, L 49,794
10 Claims. (Cl. 139—116)



1. A weft thread-cutting mechanism for a shuttleless loom which comprises an arm pivotally mounted on a supporting shaft and having a fixed and a movable jaw at one end thereof, means for oscillating the arm so that the jaws are inserted between and retracted from between warp threads of a shed, and means for closing the movable jaw on the fixed jaw while the latter are between warp threads, whereby a weft thread between the jaws is severed.

3,347,283
WEFT CONTROL APPARATUS
Vladimír Bartošek, Vilém Janoušek, and Otto Rotrekl, Brno, Czechoslovakia, assignors to Elitex, Sdružení podniku textilního strojírenství, Barvirska, Liberec, Czechoslovakia
Filed Sept. 7, 1965, Ser. No. 485,251
Claims priority, application Czechoslovakia, Sept. 4, 1964, 4,935/64
14 Claims. (Cl. 139—122)



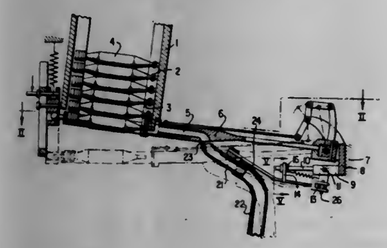
1. In a loom, in combination, a weft control apparatus comprising thread guide means having a first thread guide portion and being movable between an inoperative end position, a thread guiding end position, and an intermediate inserting position for inserting a thread into a shuttle; thread supply means for supplying a weft thread to said first thread guide portion; thread tensioning means having a second thread guide portion and being disposed intermediate said supply means and said thread guide means, and being movable between a tensioning position, and a guiding position in which said second guide portion is substantially aligned with said supply means and with said first guide portion in said thread guiding end position of said thread guide means; and means controlling said thread tensioning means and said thread guide means to be simultaneously in said guiding positions.

3,347,284
WEFT THREAD INSERTING DEVICE FOR SHUTTLELESS LOOMS
Nikolaus Kokkinis, Eriskirch, Germany, assignor to Lindauer Dornier Gesellschaft m.b.H., Lindau (Bodensee), Germany, a limited liability corporation of Germany
Filed Dec. 29, 1965, Ser. No. 517,236
Claims priority, application Germany, May 22, 1965, L 50,782; Aug. 13, 1965, L 51,357
13 Claims. (Cl. 139—122)



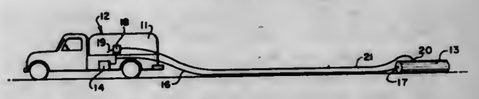
1. A weft thread inserting device for a shuttleless loom in which weft threads are withdrawn from supply spools and inserted in the form of loops into warp sheds, which comprises a pair of reciprocatable grippers and a freely rotatable roller guide mounted on each of the grippers for guiding a weft thread part way through a warp shed during its insertion into said shed.

3,347,285
SUCTION DEVICE FOR DROP BOX LOOM HAVING WEFT REPLENISHMENT MEANS
Josef Birmans, Arbon, Switzerland, assignor to Adolph Saurer Ltd., Arbon, Switzerland, a corporation of Switzerland
Filed Apr. 8, 1966, Ser. No. 541,150
Claims priority, application Switzerland, Apr. 13, 1965, 5,140/65
2 Claims. (Cl. 139—257)



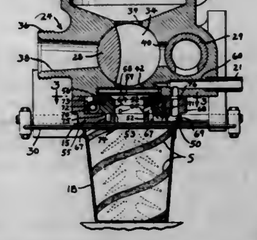
1. A drop box loom comprising a drop box, an operating shuttle, a pirn magazine for delivery of weft pirns, a pivotally mounted movable pirn catcher including a suction race having a mouth opening on the underside of said pirn catcher, a pneumatic transfer device for gripping the end loop of the weft pirn drawn through said suction race including a reciprocably movable pre-guided suction pipe placed directly below the mouth opening of said suction race in said pirn catcher, said pre-guided pipe having a mouth opening which is in the same position relative to the mouth of said suction race during pirn transfer movements of said pirn catcher, and a steering mechanism providing guidance for said pipe, said steering mechanism being operatively connected from said drop box to said suction pipe to guide said pipe reciprocally in accordance with the movement of said drop box.

3,347,286
LOADING OR TRANSFER SYSTEMS FOR FLUIDS
Lawrence W. Smith, Newbury Park, Calif., assignor to Smith Precision Products Company, a corporation of California
Filed May 18, 1964, Ser. No. 368,032
8 Claims. (Cl. 141—39)



1. In a system for transferring fluid from a first container to a second container and having a transfer conduit between said containers, a pump in said transfer conduit, and a recirculating bypass from the pump output to said first container, the combination comprising:
a bypass valve in said recirculating conduit, and
means directly connected and responsive to pressure in said second container for causing said bypass valve to move abruptly from fully closed to fully open position when the pressure in said second container exceeds a predetermined value, and to remain open during recirculation of fluid back to said first container.

3,347,287
NOZZLE APPARATUS
Eugene E. Geber, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois
Filed Mar. 22, 1965, Ser. No. 441,707
18 Claims. (Cl. 141—105)



1. In a material dispensing apparatus, the combination of a first nozzle means having a discharge opening for emitting a stream of plastic material, first material feed means for dispensing said plastic material through said discharge opening, second nozzle means having at least one port adjacent the periphery of said stream of plastic material, second material feed means for dispensing a second material through said port and depositing the same in a stripe on the surface of the stream of plastic material, means for moving said port along the periphery of said stream of plastic material in a direction crosswise of the direction of flow of said stream to deposit the stripe in a generally oblique pattern, and said first and second material feed means each including means for intermittently actuating the same for dispensing discrete charges of said plastic material and said second material respectively.

3,347,288
PASTE CONTAINER AND DISPENSER
Harry T. Rutherford, 5203 Roland Ave., Baltimore, Md. 21210
Filed Jan. 18, 1965, Ser. No. 426,237
4 Claims. (Cl. 141—362)

1. A paste dispensing device comprising in combination:
a supporting member having a back portion adapted to be mounted on a supporting wall,

a first outwardly extending portion adjacent the lower end of the back portion,

a second outwardly extending portion adjacent the upper end of the back portion, and overlying the first outwardly extending portion in spaced relation thereto,

an operating bar slidably supported in said second outwardly extending portion,

a lever arm pivotally mounted on said second outwardly extending portion and pivotable toward and away from said back portion and having means thereon engaging the said operating bar to propel the latter downwardly as the lever is pivoted toward said back portion, said lever arm extending downwardly from said second outwardly extending portion to a point below said first outwardly extending portion and having means at its lower end to be engaged by a paste receiver and be actuated thereby,



a paste container positioned between said first and second outwardly extending portions and supported thereby, said paste container having an outlet at its lower end and a piston therewithin operatively engaged by said operating bar and being propelled downwardly thereby as the lever is pivoted toward said back portion,

and a combined cut-off and closure element for said container outlet pivoted to said first outwardly extending portion and having means thereon engageable by said lever arm when the latter is pivoted toward said back portion to open the outlet and permit the paste to be deposited on the receiver, but release the cut-off and closure element before the lever arm reaches its rearmost position adjacent the back portion, and additional means on said cut-off and closure element to allow the lever arm to pass the lever arm engaging means on said cut-off and closure element as the lever arm is pivoted away from said back portion.

3,347,289
APPARATUS FOR RIP SAWING OF LOGS AND TIMBERS
Vladimir Kotesovec and Jan Zizka, Prague, and Vlastimil Janata, Trutnov, Czechoslovakia, assignors to Vyzkumny a vyvojovy ustav drevarsky, Prague, Czechoslovakia
Original application Aug. 4, 1965, Ser. No. 479,046, now Patent No. 3,304,972, dated Feb. 21, 1967. Divided and this application Oct. 12, 1966, Ser. No. 604,086
Claims priority, application Czechoslovakia, Apr. 5, 1961 712/61
8 Claims. (Cl. 143—36)

1. An apparatus for rip sawing heavy elongated wooden members such as logs and timbers comprising, in combination:

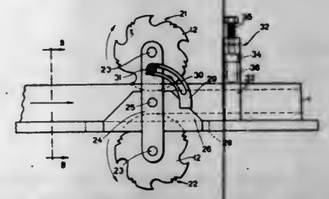
(a) a support;

(b) two sets of saw blades mounted on said support for rotation about two respective spaced axes extending in a common direction,

(1) each saw blade having a plurality of circumferentially spaced chip forming teeth, and a rounded gullet between each pair of circumferentially adjacent teeth,

(2) each chip forming tooth having a cutting edge, a face angle of at least 40°, and a concave face starting from said cutting edge and leading into an associated gullet in said blade,

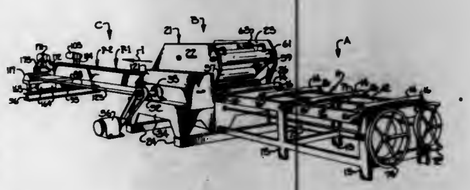
(3) the walls of the gullet defining an enclosed circle in a plane radial relative to the axis of the blade, the circle having a radius between 1/8 and 1/14 of the peripheral diameter of said blade;



(c) means for passing an elongated wooden member longitudinally between said sets of saw blades in a direction transverse of said common direction; and

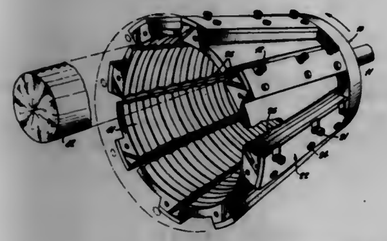
(d) adjusting means for varying the spacing of said axes perpendicular to said transverse direction, whereby said wooden member may be ripped during a plurality of passes between said saw blades by successive saw cuts of progressively increasing depth.

3,347,290
EDGER PICKER
Harold C. Cook, P.O. Drawer 688, Clinton, N.C. 28328
Filed Apr. 27, 1965, Ser. No. 451,182
4 Claims. (Cl. 143—37)



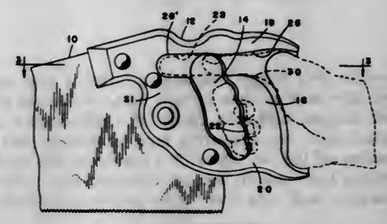
1. An edger picker for processing rough boards of the type cut from a log comprising, in combination, a frame, means on said frame for conveying boards in a path of travel, a fixed saw rotatably mounted on said frame, a movable saw mounted adjacent said fixed saw on said frame for rotation and for movement laterally of said frame, means for rotating said fixed and movable saws for edging a board conveyed in said path of travel, a rotatable control rod mounted on said frame, a pair of drive sprockets mounted on said control rod, a control arm pivotally mounted on said frame, means connecting said control arm to said movable saw, chain means for connecting one of said drive sprockets to said control arm, means for rotating said control rod to pivot said control arm through said sprocket and chain means for shifting said movable saw laterally of said frame to a selected position in laterally spaced relationship with said fixed saw, an elongated picker frame extending in the direction of said path of travel, means for supporting said picker frame at each end for movement laterally of said frame, conveying means supported on said picker frame, means on said picker frame for advancing said conveying means in the direction of said path of travel, said picker frame being centrally positioned relative to said fixed and movable saws for balancing and conveying an edged board from said saws in said path of travel, chain means for connecting the other drive sprocket on said control rod to both ends of said picker frame for shifting said picker frame simultaneouly with the shifting of said movable saw to maintain said picker in said central position relative to said saws in any selected position of said movable saw thereby permitting edging of boards of varying widths and gravity separation of edgings from the edged board conveyed in said path of travel by said picker frame conveying means.

3,347,291
APPARATUS AND KNIFE FOR THE PRODUCTION OF WOOD CHIPS FROM LOGS
Harry Wilhelm Wexell, Gavle, Sweden, assignor to Brandell & Jonsson Aktiebolag, Gavle, Sweden
Filed Jan. 14, 1965, Ser. No. 425,493
20 Claims. (Cl. 144—172)



1. An apparatus for the production of wood chips from logs, said apparatus comprising an elongated hollow drum open at one end, means for mounting said drum for rotation about the longitudinal axis, said drum having a plurality of circumferentially spaced longitudinally extending slots in the peripheral wall, a removable ring secured to said drum and closing said slots at the open end of said drum, one side of each slot being beveled to provide a knife engaging and supporting surface, an elongated multiple unit knife having an obverse and a reverse face disposed in each slot with said reverse face engaging said beveled surface, each knife comprising a blade carrying a plurality of longitudinally spaced cutting components, each component having a shaving edge joined at one end by an angularly related parting edge, the shaving edges of the components being substantially parallel and arranged in echelon with respect to the lines of parallelism of the shaving edges, said shaving and parting edges projecting inwardly of the inner surface of said drum with the distance from the shaving and parting edges to the longitudinal axis of said drum progressively decreasing from the open end of said drum toward the opposite end, adjacent knives being displaced longitudinally with respect to each other a distance less than the distance between adjacent cutting components to provide successive overlapping cutting edges disposed in helical spiral paths longitudinally of said drum, a clamping bar engaging the obverse face of each knife, a clamping jaw pivotally mounted on said drum adjacent each slot, and means for urging each jaw into engagement with each clamping bar to clamp each knife in place in engagement with said beveled surface, whereby upon rotation of said drum and feeding of log longitudinally into the open end of said drum into engagement with said knives, helical chips of substantially uniform thickness will be removed from the log and discharged outwardly through said slots with said shaving edges cutting substantially parallel to the fibers in said log and said parting edges cutting across the fibers at an angle thereto.

3,347,292
HAND SAW AND HANDLE
James P. Morgan, Jr., York, Pa., assignor to Pennsylvania Saw Corporation, York, Pa., a corporation of Pennsylvania
Filed Dec. 30, 1965, Ser. No. 517,718
1 Claim. (Cl. 145—31)



In a hand saw including a handle of substantially uniform thickness throughout and of the type having a closed arcuate finger-receiving slot-like opening extending generally transversely to the longitudinal axis of the saw and defining a curved grip member substantially as thick as said handle and extending between the normally upper and lower extremities of the handle, the improvement comprising similar concavely rounded shallow grooves of equal depth and shape formed directly opposite to each other respectively in the outer surfaces of the upper end of said grip member and extending substantially parallel to each other and the upper surface of said handle, whereby the thickness of the grip member between the bottoms of said grooves is less than the thickness of all other portions of said gripping member, the forward and rearward surfaces of said grip member also being additionally curved in directions transverse to the plane of said handle to provide comfortably rounded gripping surfaces for the hand of the user and the opposite ends of said grooves also being curved inwardly toward the central plane of said handle to merge with said additional curved surfaces of said grip member, and additional shallow concavely rounded grooves of limited length being formed directly opposite each other in the opposite surfaces of the upper portion of the part of said handle immediately forward of said arcuate finger-receiving slot-like opening and in axial alignment with said concavely rounded grooves in said opposite outer surfaces of the grip member to receive the tip portion of the index finger of the user and said grooves all respectively being positioned and serving conveniently to receive the thumb and forefinger of a human hand when gripping the handle selectively either with the right or left hand of the user in normal use of the saw.

3,347,293
REMOVABLE BIT CONSTRUCTION FOR SCREWDRIVERS AND THE LIKE
Frederick G. Clark, Buffalo, N.Y., assignor, by direct and mesne assignments, to Magna Driver Corporation, Buffalo, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,832
2 Claims. (Cl. 145—50)

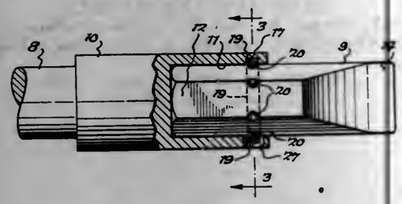
1. An implement including a bit holder having a socket of polygonal cross section in one end thereof,

a bit having a part of polygonal cross section formed to enter into said socket and forming a driving fit

with said socket and having an outer end extending beyond said socket,

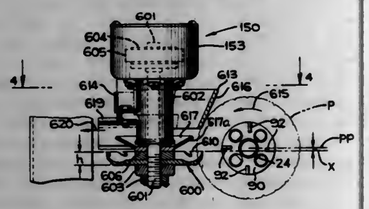
a circumferential groove in the inner wall of said socket adjacent to the outer end thereof,

said bit being provided with notches in circular arrangement about said bit and,



a resilient ring fitting into said groove of said socket and into said notches of said bit to hold said bit in said socket, said ring being of angle-shaped cross section with two convering faces extending into said notches of the bit and with a relatively flat face extending from side to side of said groove to resist discharging said ring from said groove inadvertently.

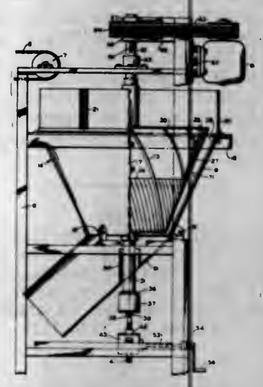
3,347,294
PINEAPPLE PEELING MACHINE
Leslie Vadas, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,441
8 Claims. (Cl. 146—6)



1. A pineapple peeling machine comprising means for rotating a pineapple about its core axis at a peripheral velocity not exceeding 250 feet per minute, a disc-like rotatable peeling cutter having a generally axially extending cutting edge, said cutter having a small arcuate groove formed therein for smoothly curling strips of peel removed by the cutter, means rotatably mounting said cutter for rotation about an axis that is normal to the core axis of the pineapple and with the cutting edge facing in a direction opposite to the direction of motion of the pineapple surface being cut, means for moving said cutter longitudinally along the pineapple, means for urging the cutter into peeling engagement with the pineapple, and means for rotating the cutter at a peripheral speed in the range of six to eight thousand feet per minute.

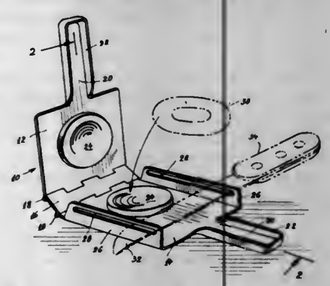
3,347,295
ALMOND HULLER
John M. Feiling, Sacramento, Calif., assignor to California Almond Growers Exchange, a non-profit California agricultural cooperative marketing corporation
Filed Apr. 19, 1965, Ser. No. 449,100
4 Claims. (Cl. 146—8)

1. An almond huller for removing the relatively soft outer hulls from the relatively hard inner shells of almonds comprising a frame, a shaft, means for mounting said shaft on said frame to turn about a vertical axis, a rigid frusto-conical outer casing, means for mounting said outer casing on said frame surrounding and substantially coaxially disposed with respect to said shaft, a plurality of internally projecting rigid rounded ribs on the interior wall of said outer casing, a rigid frusto-conical inner rotor of less abrupt taper than said outer casing, means for mounting said inner casing on said shaft coaxially therewith, a plurality of externally projecting rigid



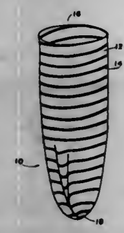
rounded ribs on the exterior wall of said inner rotor, and means for locating said inner rotor axially relative to said outer casing in positions in which the radial space therebetween at one end is approximately the size of said almond shells with said hulls thereon and at the other end is approximately the size of said almond shells without said hulls thereon.

3,347,296
BAGEL SLICER
Alex Rothman, 217 E. Mount Eden Ave., New York, N.Y. 10457
Filed Aug. 27, 1965, Ser. No. 483,246
9 Claims. (Cl. 146—216)



1. Apparatus for supporting bagels in position for slicing into two slices by a reciprocating knife, said apparatus comprising a pair of rectangular shaped plates placed end to end and hinged to each other at the adjacent ends, projecting handles on the plates at the opposite ends thereof, opposed means on the plates for clamping a bagel to be sliced between the plates, means for supporting and clamping a bagel in operative position for slicing through its midsection, means on the opposite side edges of the plate for guiding a manually reciprocating knife blade across a clamped bagel between the plates, the means for supporting and clamping a bagel in operative position including opposed depressed portions on both plates centrally thereof, the peripheral edges of the bases thereof being closer to each other than the remainder of the bases when the plates are in closed operative position.

3,347,297
SELF-DISINTEGRATING BAG
Walter D. Garland, Fort Worth, Tex., assignor to The Western Company of North America, Fort Worth, Tex., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,784
11 Claims. (Cl. 150—1)

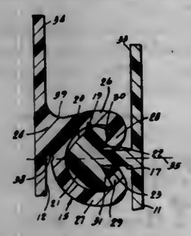


1. A self-disintegrating bag, comprising:

(a) a fabric wall having first and second edges joined together along a seam, and

(b) means forming a part of said seam which disintegrates by galvanic action when subjected to a saline solution to cause the destruction of said seam.

3,347,298
FLEXIBLE FASTENER WITH UNIDIRECTIONAL OPENING
Steven Ausnit, New York, N.Y., and Karel J. Staller, Rutherford, N.J., assignors to Minigrip, Inc., Orangeburg, N.Y., a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,779
9 Claims. (Cl. 150—3)



1. A reclosable flexible container comprising:

a plastic film bag having first and second opposing wall portions,

interlocking rib and groove elements formed integrally at the inner surface of said bag about the opening thereof,

said bag having external flanges extending outwardly of said elements which may be gripped and drawn apart to separate said elements,

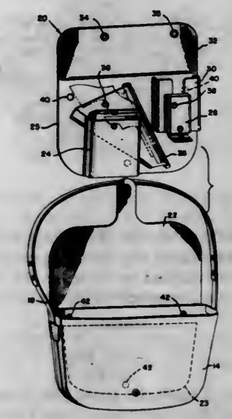
said bag being reclosable by pressing said elements together,

a rib element formed at said first wall portion and a groove element formed at said second wall portion,

a first of said elements defining a cross-sectional centerline extending therethrough from said first wall portion to said second wall portion,

a second of said elements interlockable with said first element and attached to said second wall portion at a base, said base having a point of attachment to said second wall which is inwardly of the outermost point of engagement between said rib elements and having a center displaced outwardly of said centerline of said first element whereby said bag opens relatively easily from the outside and resists opening from the inside.

3,347,299
ARMS AND AMMUNITION HANDBAG
Velda Alexander, Visalia, Calif., assignor to Velda Alexander, Lucie Elmira Melvin & Claude Maurice Feaner, all of Visalia, Calif., a partnership
Filed Oct. 21, 1965, Ser. No. 499,624
9 Claims. (Cl. 150—34)



1. A handbag comprising:

(a) a body defining a receiving cavity having a mouth opening thereinto;

(b) an insert adapted to be confined within the cavity, the insert comprising:

(1) a substantially planar member having upper, lower and lateral edges;

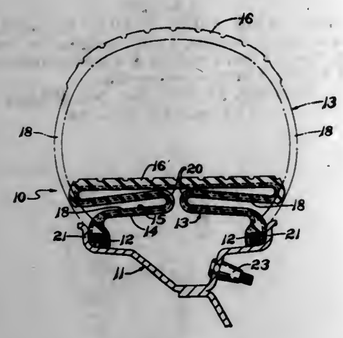
(2) a holster on the member adapted to releasably retain a handgun thereon in substantially upright condition with the grip of the handgun immediately adjacent the upper edge;

(c) cooperating fastening means on the body and member adapted to selectively secure the member in upright position within the receiving cavity of the body against sliding or lifting movement relative thereto with the upper edge closely adjacent the mouth to locate the grip of a handgun retained in the holster in a position accessible through the mouth.

3,347,300
TIRE
James Sidles, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 20, 1965, Ser. No. 473,441
11 Claims. (Cl. 152—352)

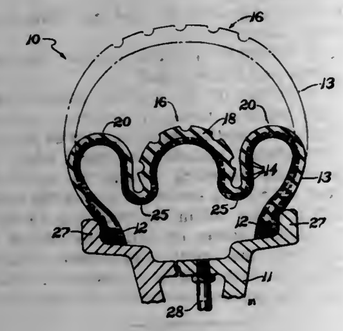
1. A pneumatic tire inflatable to a generally toroidal shape, the tire comprising a pair of laterally spaced annular beads and an annular flexible carcass of elastomer-coated fabric with a circumferential tread region and opposing sidewall regions between said tread region and each bead, at least one sidewall region having a flexible fold permanently set in the sidewall region, the opposing sidewall portions at the fold extending in the same general direction as the rotational axis of the tire and circumferentially of the carcass in a continuous reentrant channel opening to the outside surface of the sidewall in the deflated condition of the tire and adapted to unfold

and assume a generally toroidal shape when the tire is inflated; said tread region having an annular margin adjoining said folded sidewall which normally has a diameter



only slightly larger than the bead diameter when the tire is deflated, and said tread region being elastically distensible when the tire is inflated to increase the diameter of said tread margin to a size much larger than the bead diameter.

3,347,301
TIRE
James Sidles, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 20, 1965, Ser. No. 473,369
10 Claims. (Cl. 152—352)



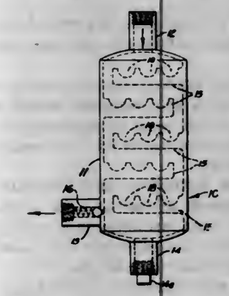
1. A pneumatic tire inflatable to a generally toroidal shape, the tire comprising a pair of laterally spaced annular beads and an annular flexible carcass of elastomer-coated fabric with a circumferential tread region and opposing sidewall regions between said tread region and each bead, at least one of said regions of the carcass having a permanently set flexible fold which, when the tire is deflated, normally extends circumferentially of the carcass in a continuous reentrant channel which is generally radial of the tire and is open to the outside surface of the carcass, the fold having an apex diameter about equal to the bead diameter when the tire is deflated, and the carcass being elastically distensible by an inflation medium to unfold said folded region and increase said apex diameter until it is substantially larger than the bead diameter when the tire is inflated.

3,347,302
TIRE RIM
Paul Lemmerz, Konigswinter, Rhine, Germany, assignor to Lemmerz-Werke G.m.b.H., Konigswinter, Rhine, Germany, a corporation of Germany
Filed Aug. 4, 1965, Ser. No. 477,153
Claims priority, application Germany, Aug. 13, 1964, L 48,537
4 Claims. (Cl. 152—409)



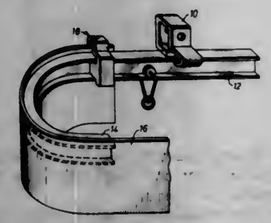
1. In a tire rim of a character described,
an annular axially elongated body portion of relatively thin section,
an integral substantially double thickness fixed terminal flange along one side of the body portion and joined to the body portion by a tire bead seat portion which tapers from the double thickness at the terminal flange to the thinner section of the body portion at juncture therewith,
a lock-in ring retaining flange of substantially twice the thickness of the body portion located along the remaining side of the body portion and defining with an oblique lock-in ring seat portion a lock-in ring groove with the tip of the retaining flange disposed radially inwardly relative to said bead seat whereby to facilitate mounting of a tire onto the rim,
said lock-in ring seat tapering toward thinner section to juncture with the rim body,
a radially outwardly projecting annular reinforcing hollow rib in said body portion adjacent to said ring seat portion, and
a narrow portion of the body portion intervening between the reinforcing rib and the ring seat portion, said rib having a crown sloping obliquely radially and axially inwardly.

3,347,303
MECHANICAL DEVICE TO FACILITATE THE COMBUSTION OF FUEL OIL IN OIL BURNERS
Simon J. Herman, 1165 Clinton Ave., Irvington, N.J. 07111
Filed June 1, 1965, Ser. No. 460,306
6 Claims. (Cl. 158—36)



1. A mechanical device to facilitate the combustion of fuel oil in oil burners, the device comprising an oil container, an inlet for the fuel oil under pressure at one end of the container, the inlet comprising a tube integrally formed at the base with the container and internally threaded, at least one outlet for the fuel oil in the opposite end of the container and internally threaded, at least one outlet for the fuel oil adjacent the first mentioned outlet, means removably closing the outlets, a spring loaded shut off valve disposed in one of the outlets, and means intermediate the inlet and outlets adapted to gather unhomogenized particles and agitate the oil as it passes through the container.

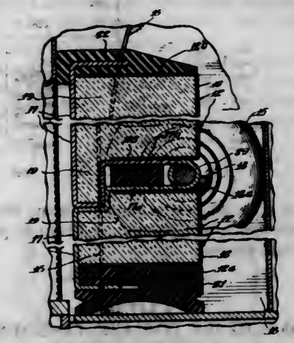
3,347,304
VALANCE AND CURTAIN OR DRAPERY SUPPORTS
Johannes H. Bierlich, 15 Oresundsboj, Copenhagen, Denmark
Filed Sept. 30, 1963, Ser. No. 312,694
5 Claims. (Cl. 160—19)



1. A cornice assembly comprising supporting brackets, a curtain rail of deformable, resilient material, means operative to support said curtain rail on said supporting brackets, said cutain rail having its ends bent to provide resilient heads integral with said curtain rail, an elongated strap defining a cornice board, and means operable to clamp said elongated strap adjacent its ends to said curtain rail in position to follow the configuration of said heads in engagement with the exterior surfaces thereof and to simultaneously bend the same inwardly, whereby the resiliency of said heads will tension said strap in a longitudinal direction.

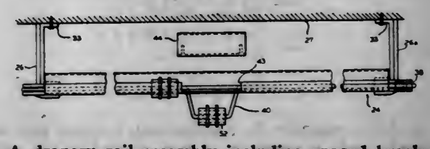
3,347,305
DOOR CONSTRUCTION
Burton A. Urbanick, Chicago, Ill., assignor to Met-L-Wood Corporation, Chicago, Ill., a corporation of Illinois
Filed June 1, 1965, Ser. No. 460,036
2 Claims. (Cl. 160—40)

1. A rollup door which comprises a plurality of door panels; mounting means for said door panels; and a plurality of pairs of rod elements; each of said door panels having a laminated construction and including a thin metallic skin forming an outer planar surface; a thin covering forming an inner planar surface and at least one layer of reinforcing material bonded therebetween; said outer metallic skin of each of said panels having an upper edge portion that constitutes an extension thereof and forms a plurality of spaced apart hinge eyes offset from the plane of said outer metal skin and a lower edge portion that constitutes an extension thereof and forms a plurality of spaced apart hinge eyes offset from the plane of said outer metal skin; said spaced apart hinge eyes formed by said upper and lower edge portions being selectively staggered such that said hinge eyes of immediately adjacent panels coact with a pair of rod elements to pivotally interconnect said panels and form a rollup door; said rod elements extending outwardly through said hinge eyes in opposite directions from the centralmost portion of said panels so that the inner ends of said rod elements are maintained in spaced relation to each other; the centralmost hinge eyes being cut-away and spaced apart from each other when said panels are joined so that said spaced apart inner ends of said rod elements are accessible and selectively removable from said hinge eyes through said cut-away portions without removing said door panels from said mounting means thereby facilitating the dis-



assembly of said panels; said coacting hinge eyes and rod elements being maintained fully within the regions defined between the upper and lower edges of adjacent panels and between the outer and inner planar surfaces of said panels.

3,347,306
DRAPERY RAIL APPARATUS
John J. Potye, 1245 Marengo, Forest Park, Ill. 60130
Filed Oct. 22, 1965, Ser. No. 500,974
18 Claims. (Cl. 160—344)

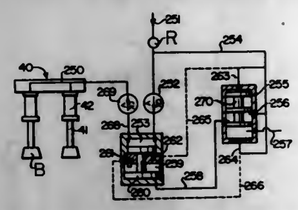


4. A drapery rail assembly including spaced brackets formed and adapted for mounting on a wall, each bracket including a supporting arm portion and upper and lower projections extending laterally from said arm portion, an elongated rail having spaced hollow upper and lower portions, said upper and lower rail portions having the ends thereof engaged with the upper and lower projections of said brackets, drapery supporting slip rings slidably mounted on each of said upper and lower rail portions, and a drapery pull cord passed through one of said brackets, through said hollow upper portion of said rail, reversed through said other bracket and returned through said hollow lower portion of said rail, at least one slip ring on said lower portion being fixed to the length of cord in the portion on which the ring is mounted.

3,347,307
PNEUMATIC SQUEEZE HEAD WITH PRESSURE SUPPLY BOOSTER MEANS
Edmond K. Hatch, Brecksville, and Leon F. Miller, Rocky River, Ohio, assignors to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Original application Dec. 11, 1961, Ser. No. 158,499, now Patent No. 3,234,601, dated Feb. 15, 1966. Divided and this application Dec. 7, 1965, Ser. No. 512,066
3 Claims. (Cl. 164—173)

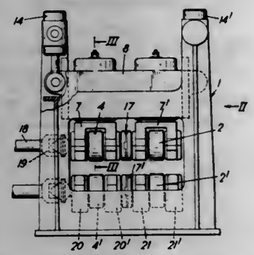
1. A squeeze head for foundry molding machines comprising a plurality of resiliently cooperatively movable sand engaging pneumatic squeeze members, manifold means interconnecting said pneumatic squeeze members operative to maintain the sand squeeze pressure exerted by each member the same, and air pressure booster means

operative to control and maintain the degree of such sand squeeze pressure exerted by said members as a whole, said booster means comprising a ram having two pistons



of different area, and valve control means for said booster means operative to reciprocate said ram to pump air into said manifold means.

3,347,308
MACHINES FOR CONTINUOUSLY CASTING METAL
Charles Wilfrid Saunders, Aspatria, Cumberland, England, assignor to The United Steel Companies Limited, Broomhill, Sheffield, England, a British company
Filed Sept. 10, 1965, Ser. No. 486,294
7 Claims. (Cl. 164—282)



1. In a machine for continuously casting two metal strands each engaged by a pair of withdrawal rolls in which the corresponding rolls of the two pairs are mounted generally coaxially and driven from the same side of the machine, and means mounting one roll in each pair to move towards or away from the other the improvement comprising, an Oldham coupling operativey and rotatably connecting the coaxially adjacent corresponding rolls so that the corresponding rolls may be driven from the same side of the machine and compensate for variations in the thicknesses of the two metal strands being continuously cast.

3,347,309
SELF-ADJUSTING, MULTISEGMENT, DEPLOYABLE, NATURAL CIRCULATION RADIATOR
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Arnold H. Redding, Los Altos Hills, Calif., and Robert A. Markley, Export, and Walter D. Pouchot, Monroeville, Pa.
Filed June 16, 1966, Ser. No. 559,055
6 Claims. (Cl. 165—86)

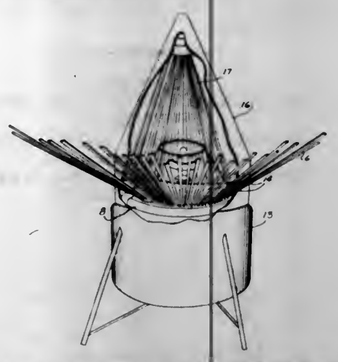
2. A radiator construction for use in combination with a power plant having dual turbine prime movers comprising:

(a) independent vapor manifolds associated with each of said dual turbine prime movers;

(b) a plurality of segmented radiating elements communicating with said independent vapor manifolds;

(c) each of said segmented radiating elements comprising a dual rigid heat exchanger and a movable fluid conducting portion, said heat exchanger and movable portions interconnected by a hollow flexible member and said movable portion closed at the distal end thereof;

(d) each section of said dual, rigid heat exchanger communicating with one of said independent vapor manifolds and said movable portion disposed for selective communication with each section of said dual, rigid heat exchanger;



(e) hinge means spanning said hollow flexible member and including stop means for limiting the travel of said movable portion; and

(f) means for restraining angular deployment of said movable portion relative to said rigid portion.

3,347,310
HEAT EXCHANGERS
William E. Lind and Bert J. Mitchell, Dallas, Tex., assignors to Frigikar Corporation, Dallas, Tex., a corporation of Texas
Filed Oct. 21, 1964, Ser. No. 405,380
10 Claims. (Cl. 165—124)



1. A heat exchanger including: a pair of parallel vertical spaced heat exchanger assemblies providing an elongate space therebetween said assemblies permitting flow of air perpendicularly therethrough between said space and the exterior thereof; means cooperating with said assemblies closing said space to prevent air flow into and from said space except through said assemblies; dividing means extending perpendicularly to and between said assemblies dividing said space into a middle passage and a pair of end passages, said dividing means having apertures permitting air flow between said middle passage and said end passages parallel to said assemblies; and means for moving air between said middle passage and said end passages through said apertures.

3,347,311
UNDERWATER WELL COMPLETION
William W. Word, Jr., Houston, Tex., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Aug. 19, 1963, Ser. No. 302,993
7 Claims. (Cl. 166—.6)

1. In an underwater wellhead construction, the combination of

upright wellhead body means having a vertical through passage accommodating at least one production string, and

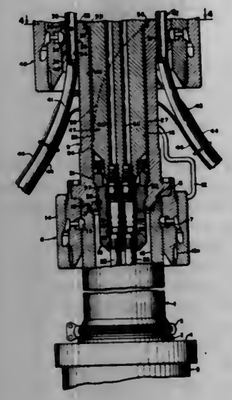
upwardly facing shoulder means disposed at the upper end of said body means;

a Christmas tree assembly comprising a base member seated on said upwardly facing shoulder means and having a vertical through passage,

flow passage means placed in communication with said production string when said base member is seated on said upwardly facing shoulder means,

a plurality of vertical upper flow devices secured to said base member outwardly of said through passage therein, and

production conduit means interconnecting said production string and one of said upper flow devices via said flow passage means;



at least one production flow line for conveying product away from the wellhead,

said production flow line having an end portion secured to said wellhead body means outwardly of said through passage therein and in a location below said upwardly facing shoulder means, said flow line extending downwardly and thence away from said wellhead body means; and

a plurality of vertically disposed lower flow devices secured to said wellhead body means,

one of said lower flow devices communicating with and extending upwardly from said production flow line,

said lower flow devices communicating respectively with said upper flow devices, whereby said production flow line communicates with said production conduit means, and thus with said production string, via said one upper flow device and the corresponding one of said lower flow devices.

3,347,312
UNDERWATER WELLHEAD INSTALLATIONS
Claude R. Nellon, Houston, Tex., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Mar. 9, 1965, Ser. No. 438,258
4 Claims. (Cl. 166—.6)

1. In an underwater well installation, the combination of

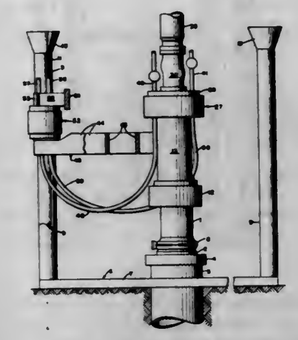
a rigid wellhead structure including an upper upright body member;

a guide means base secured to said wellhead structure below said upper body member and projecting laterally from said wellhead structure, said guide means base being equipped with upright guide members spaced outwardly from said upper body member;

a Christmas tree assembly supported on and secured to said upper body member, said Christmas tree assembly including a production flow conduit communicating with a production string suspended in the well and having a downwardly extending end portion exterior to said upper body member and fixedly supported on said wellhead structure;

an upright connector body having a through passage;

a rigid lateral supporting structure having one end fixed to said upper body member, said connector body being rigidly secured to the other end of said supporting structure;



an interconnecting flow conduit having one end secured to said connector body in communication with said through passage, the other end of said interconnecting flow conduit being connected to said downwardly extending end portion of said production flow conduit and fixedly supported by said wellhead structure, the combination of said upper body member, said supporting structure, said connector body, and said interconnecting flow line constituting a rigid assembly capable of being installed as a unit at the underwater location of said wellhead structure;

a flow line connector structure having passage means including an exterior end and a lower end, said connector structure being seated on said connector body with said lower end of said passage means communicating with said through passage, said connector body and said connector structure having cooperating remotely operated releasable lock means securing said connector structure to said connector body; and

a flow line secured to said connector structure in communication with said exterior end of said passage means, the combination of said connector structure and said flow line being recoverable as a unit when said lock means has been released.

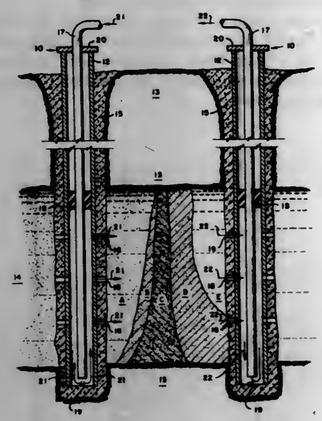
3,347,313
STEAM DRIVE WITH VISCOUS VOLATILE BUFFER
Charles S. Matthews, Houston, and Richard D. Seba, Midland, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,956
6 Claims. (Cl. 166—11)

1. A method of recovering petroleum from subterranean reservoirs using the injection of steam in which high displacement efficiencies of the petroleum are achieved comprising:

(a) penetrating a petroleum-producing reservoir with at least one injection well and at least one production well spaced therefrom;

(b) establishing fluid communication between each of said wells and said petroleum reservoir;

(c) injecting through said injection well a slug of a steam-distillable buffer which is a viscous liquid miscible with and more volatile than the petroleum in the reservoir having a viscosity of not less than 75% of the petroleum in the reservoir;



(d) subsequently injecting through said injection well steam at a temperature sufficient to steam distill at least the trailing edge of said steam-distillable buffer; and

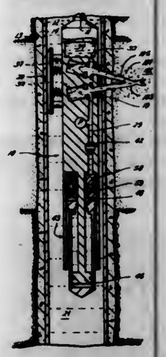
(e) recovering displaced petroleum from said reservoir through said production well as it is flowed into said well by said injection of steam.

3,347,314
METHODS FOR WELL COMPLETION
Nick A. Schuster, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Apr. 29, 1965, Ser. No. 451,787
17 Claims. (Cl. 166—13)



1. A method of completing a well bore traversing an earth formation, comprising the steps of: forming a first passage from the well bore into the formation; forming a second passage from the well bore into the formation in a direction to intersect said first passage to be effectual for establishing fluid communication therebetween; and, thereafter, lowering the pressure in the well bore below that in said passages for withdrawing fluid through said passages to flush debris therefrom into the well bore and enlarge said passages.

3,347,315
METHODS FOR WELL COMPLETION
C. P. Lanmon II, Friendswood, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Apr. 29, 1965, Ser. No. 451,857
5 Claims. (Cl. 166—23)



1. A method of completing a cased well bore containing a column of well control fluids and traversing an earth formation believed to include unconsolidated particles, comprising the steps of: perforating through a casing and into a formation believed to include unconsolidated particles to provide a first passage therein; injecting a formation-consolidating agent into said first passage for consolidating unconsolidated formation particles within a zone contiguous with said first passage; and, when said formation-consolidating agent is calculated to have firmed, perforating through the casing and into said consolidated formation zone to provide a second passage calculated to terminate therein.

3,347,316
METHOD OF TREATING AN UNDERGROUND FORMATION TO PREVENT LIQUID LOSS TO LARGE CAVITIES IN A FORMATION
Izaak Havenaar, Rijswijk, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,259
3 Claims. (Cl. 166—29)



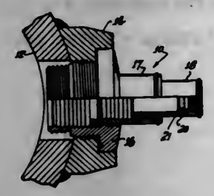
1. A method of treating an underground formation to prevent liquid loss into large cavities in communication with a borehole drilled into the formation comprising;

(a) injecting through a tubing string in the borehole and into the large cavities water containing suspended sand particles, at least 50% of said particles being coarser than 140 mesh but finer than 12 mesh and having a specific gravity greater than that of water and having a gel strength between 0 and 2 dynes per square centimeter, at a flow rate such that the sand particles separate out of the water by gravity and deposit in the large cavities;

(b) stopping the injection of the water containing the sand particles after the cavities and passages thereto have been blocked; and

(c) injecting into the blocked cavities a liquid having plastering properties.

3,347,317
SAND SCREEN FOR OIL WELLS
Solis Myron Zandmer, 111 Glenn Ave., Banff, Alberta, Canada
Filed Apr. 5, 1965, Ser. No. 445,512
6 Claims. (Cl. 166—100)



1. Duct forming means mounted on well casing in a bore-hole traversing fluid bearing formation to establish a fluid duct between the earthen formation and the interior of the casing, comprising

a stationary body on the casing;

a tubular member movably mounted on the body for outward movement to the formation in response to internal fluid pressure received from the casing interior;

a fluid impervious metal closure at the outer end of the tubular member, said closure being of a material dissolvable by a selected chemical reagent and presenting a surface transverse to the axis of the tubular member exposed to fluid pressure internally of the tubular member;

and a sand screen inside the tubular member and closely adjacent the closure, said screen being inert with respect to said chemical reagent.

3,347,318
WELL TOOL WITH ROTARY VALVE
Burchus Q. Barrington, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,487
4 Claims. (Cl. 166—226)



1. An apparatus for controlling passage means in a well bore, said apparatus comprising:

conduit means adapted to be disposed within a well bore and including

a first conduit portion,

movement impeding means connected with said first conduit portion and engageable with a well portion to impede axial movement of said first conduit portion, and

a second conduit portion supported for axial movement relative to said first conduit portion;

means defining a passage extending longitudinally of said conduit means;

first abutment means mounted on said first conduit portion;

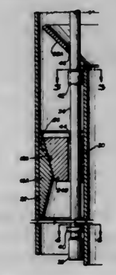
second abutment means mounted for axial movement within said second conduit means;

axially and resiliently compressible means between said first and second abutment means;

valve operating means connected with said second abutment means and operable in response to axial movement of said second conduit portion; and

rotary valve means carried by said conduit means operably connected with said valve operating means, and adapted to control fluid flow through said passage.

3,347,319
LARGE DIAMETER CASING
Robert L. Littlejohn, Las Vegas, Nev., assignor to Fenix & Scisson, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Mar. 15, 1965, Ser. No. 439,760
4 Claims. (Cl. 166—242)



4. A casing string comprising:

a length of large diameter casing positionable in an earth borehole to be cemented in position;

a length of tubing slidably supported to the exterior of said casing and extending to the earth's surface, said tubing affording means of pumping cement in the earth borehole exterior said casing;

a shearable collar of diameter greater than said tubing affixed to the lower end of said tubing;

and a tattletale bracket affixed to the exterior of said casing at the elevation desired for the top of cement to be injected around the casing, said bracket having a diameter to slidably receive said tubing but of smaller diameter than said shearable collar, said bracket serving to retain said tubing as said length of casing and attached tubing are lowered into position, said shearable collar being detachable from said tubing by upward pull on said tubing whereby said tubing may be removed, the engagement of said shearable collar with said tattletale bracket indicating that the lower end of said tubing is adjacent the bracket.

3,347,320
ROTOR SYSTEM
Wesley L. Cresap, Fort Worth, and Robert R. Lynn, Arlington, Tex., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed July 6, 1966, Ser. No. 563,140
4 Claims. (Cl. 170—160.26)

1. In a rotary wing aircraft,

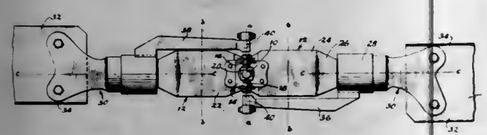
a rotor mast,

an elongate rotor hub having a centrally disposed mounting portion,

means securing the mounting portion of said hub to said mast for rotation therewith and for rocking motion relative thereto about an axis transverse of said hub and normal to the mast,

said hub also including a pair of flexure plate portions projecting in opposite directions from said mounting portion, and a rotor blade mounting portion at the free end of each flexure plate portion, said flexure plate portions being dimensioned to flex about virtual axes parallel to and displaced outwardly from the rocking axis of said hub,

a pair of rotor blades,

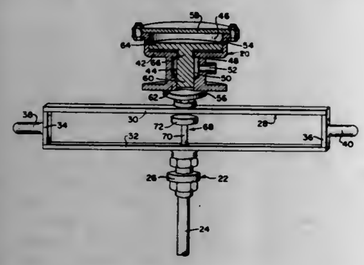


means mounting said rotor blades on respective ends of said blade mounting portions of said hub for pivotal motions about pitch change axes extending longitudinally of the respective blades,

a pitch control lever rigidly secured to each blade and extending inwardly therefrom to lie alongside the central portion of said hub and inwardly of the virtual axis of said flexure plate portion, and

a pair of pitch control actuators pivotally connected to respective ends of said control levers at points lying inwardly of said virtual axes whereby flapping motion of a blade about its virtual axis effects pitch change motion of the blade in such direction as to restore the blade to its initial position prior to such flapping.

3,347,321
VIBRATORY TOOL
Andrew B. Bauer, Orange, Calif., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 20, 1965, Ser. No. 473,419
10 Claims. (Cl. 173—118)



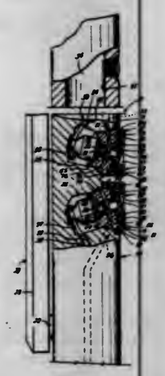
1. A vibratory tool comprising, in combination:

an oscillatory motor;

a driven tool bit; and

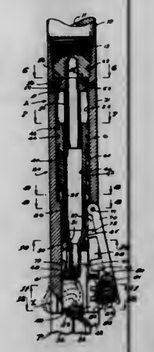
resilient means affixed to both said motor and said bit so as to provide the sole coupling for holding said motor and bit for axially symmetric oscillation at a common natural frequency determined substantially by the masses of said motor and bit and by the mass and spring constant of said resilient means.

3,347,322
APPARATUS FOR WELL COMPLETION
C P Lanmon II, Friendswood, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Apr. 29, 1965, Ser. No. 451,857. Divided and this application May 8, 1967, Ser. No. 637,011
7 Claims. (Cl. 175—4.52)



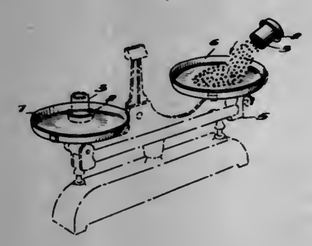
1. As a subcombination, a sealing pad for sealing against the wall of a well bore traversing earth formations comprising: an annular member having inner and outer wall surfaces; inner and outer resilient sealing members respectively disposed on said wall surfaces, said sealing members having forward portions extending beyond a forward portion of said annular member; and means for supporting the rearward portions of said annular member and resilient members.

3,347,323
UNDER REAMER
Carl H. Sharp, 7240 E. Compton, Paramount, Calif. 90723
Filed May 3, 1965, Ser. No. 452,710
8 Claims. (Cl. 175—269)



1. An under reamer of the character referred to including, an elongate vertically extending tubular body, screw threads at the upper end of the body to releasably secure the body with the lower end of an elongate string of fluid conducting drill pipe, a plurality of elongate circumferentially spaced, radially outwardly opening slots extending longitudinally of the body, an elongate arm arranged within each slot to normally occur within the confines of the slot, means pivotally securing the upper end of the several arms to the body, an elongate roller cutter rotatably carried by and projecting radially inwardly from the lower end of each arm to normally occur within the confines of the body and fluid pressure operated actuating means within the body and responsive to fluid pressure within the body and the related string of drill pipe and operable to pivot the arms radially outwardly and upwardly and to shift the cutters radially outwardly from within the confines of the body, each cutter having a plurality of longitudinally spaced annular rows of circumferentially spaced radially outwardly projecting formation engaging teeth, the axial spacing of the rows of teeth and the circumferential spacing of the teeth of said rows of teeth on each cutter being arranged so that when the cutters are shifted outwardly and are rotated into engagement with and about an adjacent annular shoulder in an earth formation surrounding the reamer, the teeth of each cutter engage the formation between the tracks of the teeth of the other cutters and each tooth engages the formation at a point spaced circumferentially from the points of contact by teeth on adjacent tracks.

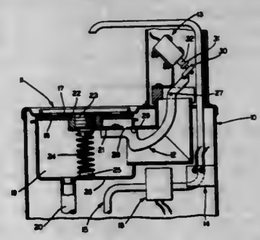
3,347,324
PROCESS OF MEASURING PILLS
Harry D. Stewart, 3507 Kesterwood Drive, Knoxville, Tenn. 37918
Filed Oct. 21, 1965, Ser. No. 499,773
4 Claims. (Cl. 177—1)



1. A process of measuring pills by weight comprising measuring a quantity of the pills in a receptacle having a fixed weight of mass equal to a predetermined volume of pills substantially filling the receptacle, and balancing the receptacle with the volume of pills noting any imbalance in weight, and adding or subtracting any small number of pills to give an exact balance to achieve the desired predetermined volume.

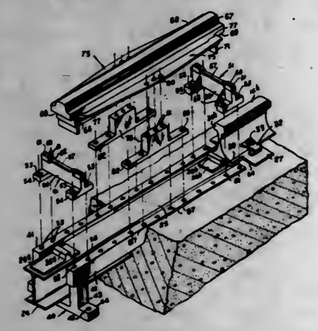
3,347,325
AUTOMATIC CONTAINER FILLERS FOR DENTAL UNITS AND THE LIKE
Wilbur L. Espenschied, Canton, and Glenn E. Wehl, North Canton, Ohio, assignors to The Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Oct. 8, 1965, Ser. No. 494,166
4 Claims. (Cl. 177—117)

1. Automatic container filler construction for dental units and the like of the type in which container platform means upon which a container may be positioned is mounted on a frame with at least a portion thereof engaged by the container movable between an upper first and lower second position; in which the container platform portion is mounted normally biased to upper first position in the absence of the container thereon; in which the container platform portion moves to lower second position as a result of the container being positioned supported on the container platform; in which a water line is positioned for directing water into the container when the container is positioned on the container platform; and in which the flow of water from the water line is controlled by a water valve in the water line normally biased to closed position and electrically actuated to open position; the improvements including, switch means movable between a first position and a second position establishing alternate electrical circuits therethrough in said positions, switch actuating means operably connected between the container platform portion and switch means for positioning the switch means in first position when the platform portion is in upper first position and positioning the switch means in second position when the platform portion is in lower second position, capacitor means, water valve control means having an electrically energized actuating portion and an electrical transmitting portion, the control means transmitting portion interrupting the flow of electricity therethrough when the control means actuating portion is free of electrical energization and transmitting electricity therethrough when the control means actuating portion is electrically energized, a source of electricity, first electrical circuit means established when the platform portion is in upper first position positioning the switch means in first position completing an electrical circuit from the source of electricity through the switch means and through the capacitor



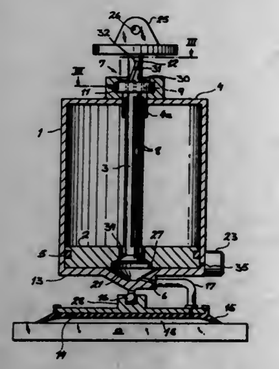
means and back to the source of electricity for building an electrical charge in the capacitor means, second electrical circuit means established when the platform portion is in lower second position positioning the switch means in second position completing an electrical circuit from the capacitor means through the switch means and through the control means actuating portion and back to the capacitor means for discharging the electrical charge in the capacitor means at a predetermined timed rate of discharge through the control means actuating portion to electrically energize said actuating portion and cause the control means transmitting portion to transmit electricity therethrough for a predetermined period of time, the first circuit means being interrupted by the positioning of the switch means in the second position and remaining interrupted as long as said switch means is in said second position, third electrical circuit means established when the control means transmitting portion transmits electricity therethrough completing an electrical circuit from the source of electricity through the control means transmitting portion and through the water valve and back to the source of electricity for actuating the water valve to open position during the predetermined period of time the control means actuating portion is energized by the discharge from the capacitor means, and the third electrical circuit means being interrupted by the control means transmitting portion when the control means actuating portion is no longer energized as the result of the timed discharge of the capacitor means being completed through the second electrical circuit means.

3,347,326
RAILROAD TRACK WEIGHING CELL
Seymour H. Raskin, 6707 Brookshire Drive, Dallas, Tex. 75230
Filed Nov. 17, 1965, Ser. No. 508,301
14 Claims. (Cl. 177—163)



1. For use in a weighing apparatus: an elongate weigh rail having downwardly facing support surfaces at its ends and flexure plates on opposite sides of said weigh rail and secured at their ends to said weigh rail at locations adjacent its ends, said flexure plates being connectable to a support structure at midportions thereof to permit contraction and expansion of said weigh rail and downward deflection of said weigh rail when said weigh rail is supported by means engaging its support surfaces.

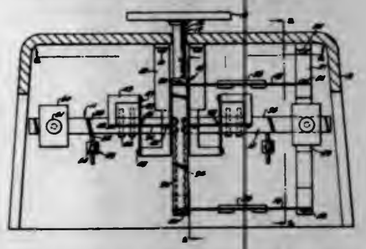
3,347,327
PNEUMATIC LIFTING DEVICE AND WEIGHING MEANS FOR FLAT GOODS
Heinz Eagelen, Duesseldorf, Helmut Dischler, Neuss-Udesheim, and Günter Albert, Duesseldorf, Germany, assignors to Maschinenfabrik Hasenclever AG., Duesseldorf, Germany, a corporation of Germany
Filed Oct. 21, 1964, Ser. No. 405,394
Claims priority, application Germany, May 15, 1964, M 61,015
9 Claims. (Cl. 177—208)



1. A lifting device for flat goods, comprising a cylinder with a substantially vertical axis, a piston head axially movable in said cylinder, suspension means for said cylinder including a rod slidably extending axially into said cylinder from above and engaging said piston head, said cylinder having a bottom provided with an opening, and at least one suction head supported by said cylinder, said suction head communicating with said opening for developing a partial vacuum upon separation of said piston head from said bottom in response to a lifting force exerted upon said rod, said bottom being provided with a depression in line with said rod, said opening terminating in said depression, said rod slidably traversing said piston head and terminating in an enlarged lower extremity engageable with the underside of said piston head, said extremity being receivable in said depression, said piston head being provided with at least one venting channel blocked by said extremity upon contact thereof with said underside and unblocked upon a lowering of said extremity into said depression.

2. A lifting device as defined in claim 1 wherein said cylinder is provided with manometer means communicating with the interior of said cylinder at a level close to said bottom, said manometer means being calibrated in units of weight.

3,347,328
LEAF SPRING SUSPENSION WEIGHING SCALE
Warren J. Schieser, Columbus, William Hecox, Canal Winchester, and Charles F. Peasley, Westerville, Ohio, assignors, by mesne assignments, to Exact Weight Scale Corporation, Columbus, Ohio, a corporation of Ohio
Filed Sept. 15, 1965, Ser. No. 487,551
7 Claims. (Cl. 177—229)



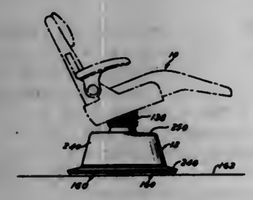
1. A weighing scale comprising a weighing lever having a longitudinal axis extending through the center of mass thereof, fulcrum means for supporting the lever for swinging movement, said means including crossed flexures connected between the lever and a support to permit swinging of the lever relative to the support in response to weight applied to the lever along its axis spaced from said crossed flexures, said crossed flexures providing a fulcrum axis at the point of crossing of the flexures, said fulcrum axis being in the same plane as the axis extending through said lever.

3,347,329
GROUND EFFECT VEHICLES
Richard Stanton Jones, Isle of Wight, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Original application Mar. 22, 1962, Ser. No. 181,758, now Patent No. 3,252,535, dated May 24, 1966. Divided and this application May 5, 1965, Ser. No. 453,253
7 Claims. (Cl. 180—7)



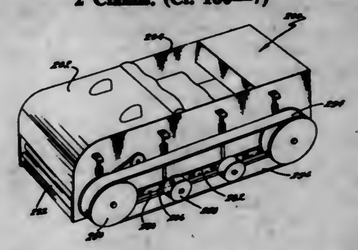
1. In a ground effect vehicle, a base structure, a jet system for generating a pressurized air cushion, said jet system including at least one annular jet orifice on said base, said jet orifice having inner and outer walls and flexible means forming an extension of the inner wall of the jet, the inner wall extending below the outer wall, said flexible means being entirely disposed within the boundary defined by the periphery of the base, the free peripheral end of the jet orifice being flexible permitting the jet system to fold locally to pass over an obstacle.

3,347,330
SELF-LEVELING AIR SUPPORTED MOBILE CHAIR BASE
William R. Heathe, York, Pa., assignor to The Dentists' Supply Company of New York, York, Pa., a corporation of New York
Filed July 12, 1965, Ser. No. 470,984
5 Claims. (Cl. 180—7)



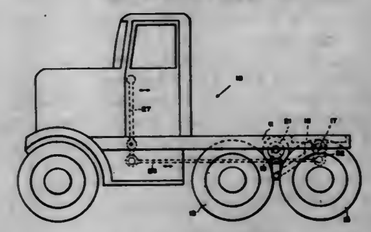
4. Mobile base means for a chair seat comprising;
(a) a base structure normally in supported engagement on a floor surface, a member carried by said base structure for supporting an object,
(b) an air levitation system on said base structure comprising,
(c) a blower assembly mounted on said base structure,
(d) at least two air levitation pads mounted on the under side of said base structure in transversely spaced relationship to each other, each pad having an upper pad body and
(e) an air inlet defining a plenum chamber on each pad and located substantially at the center of each pad body,
(f) an air discharge plate having a plurality of air discharge orifices positioned in said air inlet,
(g) a conduit connecting said blower to each air inlet,
(h) a valve means in each air inlet overlying said discharge plate,
(i) actuating means extending axially through said air discharge plate for axial up and down movement therein and connected at its upper end to each valve means and operable to normally bold the same open to permit the discharge of pressurized air from said plenum chamber into its corresponding pad,
(j) a glide button on the lower end of each actuating means,
(k) a flexible porous cover extending across at least a part of the bottom of each pad and through which the pressurized air is discharged for reaction against said floor surface to form a film of air between said bottom and floor surface upon which said base structure may glide, said cover and pad body of each pad forming an annular chamber, and
(l) the button on each said actuating means engaging said floor surface and responsive to the position its pad assumes with relation to the floor surface so as to control the volume of pressurized air delivered to said pad from the plenum chamber, whereby the discharge of pressurized air from the bottom of the pads will effect a self-equalizing action on the pads and base structure to maintain the same level while the base structure is gliding upon a film of air.

3,347,331
AIR CUSHION VEHICLE
Geoffrey F. Hughes, 1109 Lakeside SE., Grand Rapids, Mich. 49506
Original application Feb. 28, 1964, Ser. No. 348,092, now Patent No. 3,272,270, dated Sept. 13, 1966. Divided and this application June 6, 1966, Ser. No. 566,441
2 Claims. (Cl. 180—7)



1. A land vehicle having a substantial portion of its weight supported on a buoyant force comprising: a vehicle body having transversely spaced depending sides, a front end and a rear end; power motor means supported by said body; said body having a panel means extending between said sides from the front end to the rear end and disposed above the bottom of said sides to form an air cushion chamber therebeneath over a major portion of said body from front to rear; a pair of intermeshed elongated gear wheels in and extending across said front end and constituting an air pressure generating means having one side in communication with the atmosphere and the other side communicating with said chamber, said pair of wheels enclosing the front end of said chamber; drive connection means between said motor means and said gear wheels to operate said wheels and create an air cushion in said chamber; and means enclosing the rear of said chamber to retain the air cushion as a buoyant force; and drive track means on opposite sides of said vehicle to form driving support means to the land surface and partial closure means alongside said chamber.

3,347,332
EQUALIZING DRIVE FOR TANDEM AXLE ROAD VEHICLES
Laurie D. Thompson, 132 W. Woodland Ave., Youngstown, Ohio 44502
Filed Aug. 6, 1965, Ser. No. 477,708
2 Claims. (Cl. 180—22)



1. A road vehicle having a frame including side rails, a motor-driven axle and an adjacent tandem dead axle suspended by said side rails, a tired road-engaging wheel at both ends of said axles, means for selectively coupling the wheels of said motor driven axle to those of said dead axle comprising a pair of drives, one at each side of the vehicle, each drive including yieldable power operating means, a shaft mounted on one of said side rails parallel to said dead axle, a crank connecting said power operating means to said shaft, an arm having one end rigidly connected to said shaft and extending in spaced relationship outside of said last mentioned side rail and

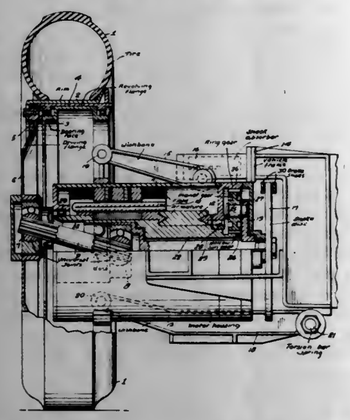
below the top portion thereof, a power-transferring idler wheel pivotally mounted on the other end of said arm and located below the top of the frame and adapted to engage both of the wheels at one side of the vehicle, whereby operation of said yieldable power operating means will effect turning of said crank about said shaft and lowering of said arm about said shaft as a center to effect forcible, equal pressure engagement of said idler wheel with the cooperating vehicle wheels, and whereby said yieldable power operating means will permit lowering of one of said vehicle wheels more than the other.

3,347,333

POWERED VEHICLE WHEEL

Theodoric B. Edwards, deceased, late of Lorton, Va., by Helen M. Edwards, executrix, 467 Buckner Road, Manassas, Va. 22110

Filed July 12, 1965, Ser. No. 471,797
4 Claims. (Cl. 180—65)



1. Individual wheel power apparatus for a vehicle comprising a frame member, a motor housing rigidly mounted on said frame member, a wheel assembly, means mounting said wheel assembly for pivotable movement relative to said frame member, a motor rigidly mounted in said rigidly mounted motor housing, drive means connecting said motor to said wheel assembly, said drive means comprising universal drive members providing a driving connection between said rigidly mounted motor and said pivotable wheel assembly irrespective of relative movement between said motor and said assembly, torsion spring means cushioning movement between said frame member and said wheel assembly, shock-absorbing means reducing shock transmission between said frame member and said wheel assembly, brake means connected to said motor, said rigidly mounted motor comprising an electric field coil rigidly mounted in said rigidly mounted motor housing, an armature rotatable relative to said field coil, and said drive means including gear reduction means.

3,347,334

VEHICLE FRAME WITH BUILT-IN BATTERY COMPARTMENT

Robert J. Schroeder, Deerfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

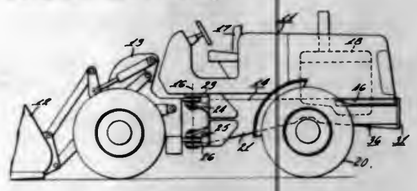
Continuation of application Ser. No. 419,688, Dec. 21, 1964. This application Sept. 16, 1966, Ser. No. 580,130
6 Claims. (Cl. 180—68.5)

1. In a vehicle of the type having a material handling tool at its front end and an engine near its rear end the combination comprising:

a pair of longitudinally extending and transversely spaced frame members supporting said engine therebetween and having transversely outward facing vertical side walls, respectively,

a vertically disposed and transversely extending plate rigidly secured to the rear ends of said frame members, respectively, and having ends extending beyond said frame members, and

a combined bracing and battery receiving structure rigidly interconnecting said plate and one of said frame members including



a vertically disposed and longitudinally extending outer wall rigidly secured to one end of said plate and disposed in transversely outwardly spaced relation to the side wall of said one of said frame members,

a transversely extending vertical front wall rigidly interconnecting said outer wall and side wall, and

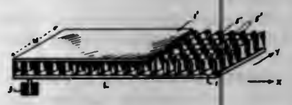
a bottom wall rigidly interconnecting at least said side and outer walls, said walls and plate defining an upward opening battery compartment.

3,347,335

ACOUSTIC-WAVE APPARATUS

Bill G. Watters, Nahant, Mass., and Guenther Kurtze, Mannheim-Kafertal, Germany, assignors to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 801,653, Mar. 24, 1959. This application Apr. 5, 1965, Ser. No. 445,603
10 Claims. (Cl. 181—.5)



1. A broad-band directional structure for transmitting or receiving acoustic waves at an angle ϕ of maximum acoustic response over a band of acoustic frequencies above a crtical frequency f_c, said structure comprising an acoustic panel having a pair of stiff longitudinally extending skin layers spaced apart by an intermediate core, and transducer means coupled to a portion of said panel for interchanging electric and acoustic energy in said band of acoustic frequencies, said panel having a length L extending from said portion and said core having a longitudinal stiffness along said length L which is much less than that of said layers, said core having a shear stiffness S along said length and said panel having a mass per unit area M correlated substantially in accordance with the following expressions:

$$c_b' = c_m/\cos\phi = \sqrt{S/M}$$

whereby c_b' is the velocity of bending waves along the length L over said band and is substantially constant, and c_m is the velocity of acoustic energy in the medium surrounding said structure, and

$$f_c = \frac{1}{2\pi} S/\sqrt{MB}$$

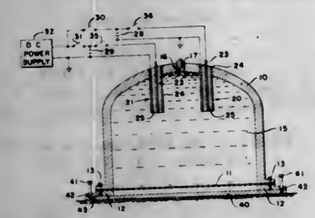
where B is the static bending stiffness of said panel, the length L of said panel being equal at least to c_b'/f_c, and said structure having a directivity pattern with said angle ϕ of maximum acoustic response substantially constant over said band of acoustic frequencies.

3,347,336

SEISMIC WAVE GENERATOR

David M. Nash, Jr., El Paso, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 29, 1965, Ser. No. 467,926
2 Claims. (Cl. 181—.5)



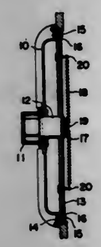
1. In combination with a seismic wave generator of the type including: a heavy, thick-walled dome adapted to be positioned with its open end juxtaposed the surface of the ground, a flexible diaphragm closing the open end of said dome in a fluid-tight manner, a fluid in said dome above said diaphragm, a spark gap device extending into said fluid and a source of high voltage connected to said spark gap capable of creating a discharge across said gap sufficient to create a pressure pulse in said fluid, the improvement comprising: a rigid plate, said rigid plate being mounted across the open end of said dome adjacent the outer surface of said diaphragm, said rigid plate being mounted on said dome by means of a plurality of elongated studs distributed about the periphery of said plate and fixedly secured to said plate, each of said studs extending upwardly through a respective opening in a laterally extending flange on said dome, said studs being free to move along the axis of said openings whereby said rigid plate is free to move in a direction along the vertical axis of said dome.

3,347,337

REVERBERATION LOUDSPEAKER

Yasunori Mochida and Kazukiyo Ishimura, Hamamatsu-shi, Japan, assignors to Nippon Gakki Seizo Kabushiki Kaisha, Shizuoka-ken, Japan

Filed Feb. 24, 1967, Ser. No. 618,492
Claims priority, application Japan, May 16, 1966, 41/31,027
1 Claim. (Cl. 181—31)



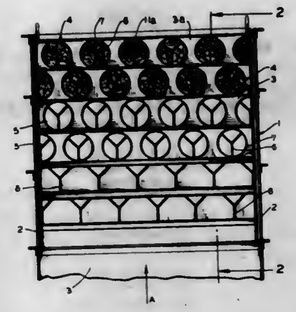
A reverberation flat speaker wherein a flat diaphragm is secured around the periphery thereof to a supporting frame characterized in that one ends of a plurality of springs are connected to the center of said diaphragm while the others to the positions on said diaphragm.

3,347,338

SOUND SUPPRESSOR WITH BAFFLE GRIDS ARRANGED ACROSS FLUID STREAM PASSAGEWAY

Albert F. Childress, 101 W. 5th Ave., Scottsdale, Ariz. 85251

Filed June 28, 1965, Ser. No. 467,292
18 Claims. (Cl. 181—56)



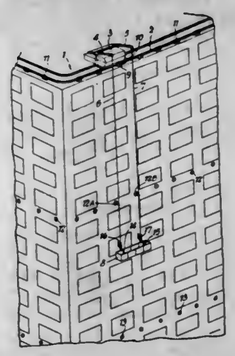
1. An apparatus for suppressing sound carried by a high velocity fluid stream comprising (a) a passageway through which said stream is moving and (b) a detachably removable, sound deadening means positioned within said passageway comprising a plurality of longitudinally extending baffle grids arranged in tiers, said tiers which are contacted first by the fluid stream comprising only the baffle grids, the middle tiers comprising such baffle grids, each of which being enclosed within a sheath having at least one perforation therein and being attached thereto, the last contacted tiers comprising such baffle grids each of which being enclosed within a sound absorbent material-containing sheath and being attached thereto; and said grids being so positioned within said passageway as to be substantially perpendicular to the flow of such stream therethrough.

3,347,339

CRADLES USED ON BUILDINGS AND THE CONTROL AND INSTALLATION THEREOF

Peter J. Coole, Bickley, England, assignor to Cradle Runways Limited, London, England, a British company

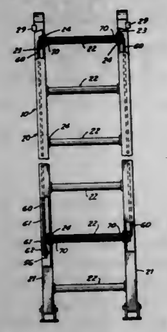
Filed Oct. 18, 1965, Ser. No. 496,946
Claims priority, application Great Britain, Oct. 20, 1964, 42,807/64
14 Claims. (Cl. 182—14)



1. A cable-suspended cradle system for a building, the system comprising a cradle, a suspension cable fixedly attached to said cradle, a plurality of cable-restricting

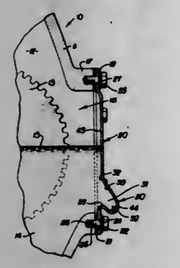
first attachment elements through which said cable passes and which are adapted to stack one upon another on said cable, and a series of complementary second attachment elements fixedly-mounted and vertically-spaced in the face of said building each for complementary engagement and disengagement with one of said cable-restricting first attachment elements.

3,347,340
EXTENSION LADDERS
Harold W. Huska, Greenville, and James C. Redman, Hadley, Pa., assignors to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania
Filed Jan. 20, 1966, Ser. No. 521,972
9 Claims. (Cl. 182—207)



1. An extension ladder of the type described having a base section and a longitudinally slidable fly section, said base section having spaced tubular rungs connecting opposite side rails thereof, said ladder comprising an endless cable means carried by the base section externally of the base on both side rails thereof and by certain of the rungs, means adapted to detachably secure the said cable means to one side rail of the said fly section when said fly section is slidably mounted on said base section whereby said cable means is attached with respect to said one side rail of said fly section and is free running with respect to the other side rail of said fly section, the fly section being hoisted or lowered by the endless cable means carried by said base section and secured to the said fly section.

3,347,341
TRANSMISSION CASE COVER
Walter C. Avrea, 539 Lucerne Ave., Placentia, Calif. 92670
Filed Oct. 24, 1965, Ser. No. 504,809
4 Claims. (Cl. 184—1)



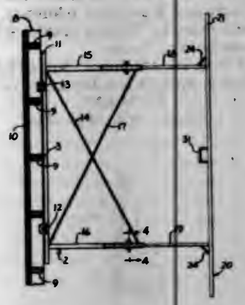
1. In a gear housing having an inspection opening and within which gears operate in a bath of oil, an inspection plate comprising a sheet of substantially transparent material, said sheet having a view portion substantially coinciding with said opening, a sealing flange having a gasket thereon extending around and outside said view portion, a seat on the housing surrounding said opening and adapted to receive said gasket in sealing relationship, attachment means connecting said flange to said seat, and an outwardly projecting protrusion extending substantially horizontally across the lower end of said view portion, said protrusion having a pocket with an inwardly facing opening, said pocket extending outwardly relative to said sealing flange whereby during agitation of oil in said housing oil flows successively over the inner face of said plate and into said pocket.

3,347,342
LIFT INSTALLATION
Ion V. K. Hott, Dayton, Ohio, assignor to The Joyce-Cridland Company, Dayton, Ohio, a corporation of Ohio
Filed July 26, 1965, Ser. No. 474,819
5 Claims. (Cl. 187—8.41)



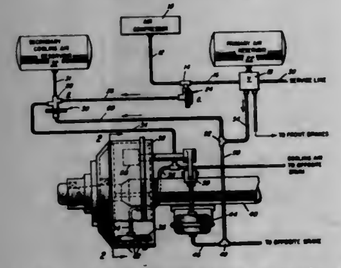
1. For use in a vehicle lift installation having a longitudinal axis lengthwise of vehicles to be supported thereby and lateral axes perpendicular to said longitudinal axis, a bolster having laterally extending channels along its side margins, and a pad assembly slidably mounted on said bolster, said pad assembly including a pad base plate having side edges located in said channels, a pad body mounted on said base plate, and a pad top plate pivotally mounted for pivotal rocking movement in both directions about a laterally extending axis on said pad body, said pad top plate having a planar top surface of substantial support area adapted to engage frame portions of a vehicle.

3,347,343
DEVICE FOR PREVENTING ENGAGEMENT OF VEHICLE BUMPER WITH GARAGE WALL
Alfred L. Lockhart, 4321 N. Melvina Ave., Chicago, Ill. 60634
Filed Oct. 27, 1966, Ser. No. 590,041
7 Claims. (Cl. 188—32)



1. A device for preventing the engagement of a vehicle bumper with the wall of a garage and wherein the vehicle bumper overhangs an adjacent wheel of the vehicle, said device comprising a first frame having an elongated end portion for longitudinal disposition adjacent to the garage wall and the garage floor, a second frame having an elongated abutment portion in generally horizontally spaced relationship to said end portion and the garage wall and adjacent to the garage floor for engagement with the vehicle wheel, cooperating frame members securing the end portion and abutment portion together, the distance of said abutment portion from said end portion being an amount sufficient to permit the vehicle wheel to engage said abutment with the vehicle bumper spaced from the garage wall and between the wall and said abutment, and means for hinging the first frame to the garage for swinging about a horizontal axis toward and away from the garage floor to permit the two frames to be swung as a unit from an operative generally horizontal position adjacent to the garage floor to an upwardly projecting storage position along the garage wall, the hinge means being mounted with the hinge axis above the bottom of the adjacent frame to permit said swinging movement of said frames, the elongated abutment portion being secured to the frame members at a location no higher from the floor than is said hinge axis, and means for releasably holding the frames in their storage position.

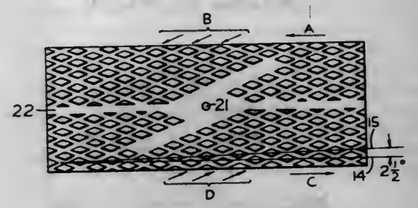
3,347,344
BRAKE COOLING SYSTEM
Leonard Troy, 611 N. Webster Ave., Scranton, Pa. 18510
Filed Sept. 29, 1965, Ser. No. 491,252
9 Claims. (Cl. 188—264)



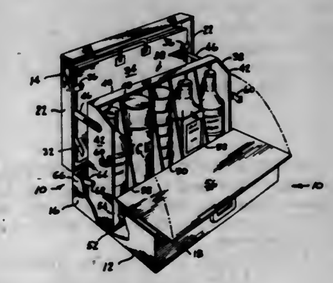
1. In a brake system comprising a brake assembly including a rotor, friction applying means operatively associated with said rotor, control means operatively connected to said friction applying means for engaging said friction applying means with said rotor; the improvement comprising a rotor cooling system including auxiliary cooling-air reservoir means, air compressor means, preference valve means operatively connected between said auxiliary cooling-air reservoir means and said compressor means for permitting a predetermined pressure to first accumulate in said reservoir, relay valve means connected to said auxiliary cooling-air reservoir means, and an outlet nozzle disposed in said rotor and operatively connected to said relay valve means, said control means including a pressure control line operatively connected to said relay valve means for causing said auxiliary reservoir means to communicate with said nozzle means during a brake application for sweeping air across that portion of the rotor engaged by said friction applying means simultaneously as the brakes are applied.

3,347,345
BRAKE LINING AND COOLING MEANS
Charles H. Rogers, East Peoria, Francis E. Kronenberg and Alexius B. Olson, Peoria, and Theodore J. Hebner, Pekin, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 1, 1966, Ser. No. 530,987
1 Claim. (Cl. 188—264)

In a drum type brake including a drum, a brake band encircling the drum, and means to provide a body of liquid coolant for immersing at least a portion of the brake, a lining in the brake band, said lining having grooves arranged in parallel groups which intersect each other at an angle to provide parallel rows of spaced lands extending generally longitudinally of the lining, the rows of lands being at a slight angle to the direction of travel of the surface of the brake drum to avoid the effect of tracking in the contact between the drum and the lands, means including an orifice extending through the band and lining to introduce coolant to the area between the lining and drum, and areas on the lining void of said lands adjacent said orifice and extending longitudinally of the band to provide a reservoir and circumferential path for distribution of the coolant.



3,347,346
ATTACHE CASE-PORTABLE BAR COMBINATION
Jesse R. Young, Hawthorne, Calif., assignor to A & J Manufacturing Company Industries, Inc., a corporation of California
Filed Dec. 20, 1965, Ser. No. 514,810
6 Claims. (Cl. 190—42)

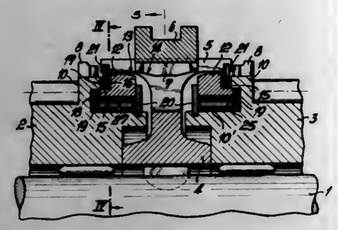


1. Portable bar-attaché case comprising:
attaché case body including a substantially thin-walled base member and a substantially thin-walled case top member hingedly affixed thereto and including latch means for releasably closing together, along a common perimeter, said base and top members in an integral attaché case body configuration,
said base member having side and front walls having a substantially common predetermined height;
combination bottle storage and beverage serving unit having side walls and being of the character to be houseable and carryable totally within said integral case body,
said unit including compartmentizing means and a frontal substantially rigid closure and serving panel member extending thereover and being pivotally affixed thereto, for holding removably a plurality of beverage bottles therewithin;
pivotal fastener means carried by said side walls of said base member and of said unit for removably securing said unit within said base member,
said pivotal fastener means being of the character permitting said unit to lie flat within said case body when the latter is closed and to stand at substantially right angles thereto when the latter is opened.

3,347,347
SYNCHRONIZED CLUTCH WITH MULTIPLE FRICTION MEMBERS

Richard Hetmann, Tamm, Germany, assignor to Firma Dr. Ing. h.c.F. Porsche K.G., Stuttgart-Zuffenhausen, Germany

Filed Feb. 14, 1966, Ser. No. 527,002
36 Claims. (Cl. 192—53)

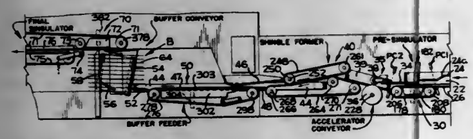


1. In a synchronizing installation for change-speed transmissions, especially motor vehicles, which includes a slotted and springy synchronizing ring that effects synchronism when brought into frictional engagement with the shifting teeth of a shifting sleeve and in which the shifting sleeve, adapted to be connected with the coupling bodies of the gear to be engaged, is axially displaceably supported on guide webs of a carrier which is connected for rotation in unison with the transmission shaft carrying the gears, the improvement comprising a friction member arranged in the plane between the slotted synchronizing ring and the coupling body of the gear to be engaged, said friction member coming into frictional engagement with the adjacent friction surfaces provided at the slotted synchronizing ring and at the coupling body and being supported in the circumferential direction at the carrier of the shifting sleeve.

3,347,348
ARTICLE SINGULATING SYSTEM

Alan George Flint and Laszlo Sipos, San Jose, and Thomas Gutierrez, Santa Clara, Calif., assignors to FMC Corporation, San Jose, Calif. a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,265
14 Claims. (Cl. 198—30)

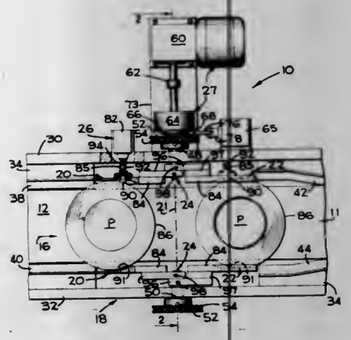


1. A system for singulating a stream of edge supported flat articles such as letter mail, which stream is continuously introduced into the system as randomly formed patterns of the articles; said system comprising a horizontal plane transport conveyor for supporting the random patterns of mail on edge, a flow limiter conveyor in the path of said transport conveyor and having means for converting the random patterns of articles into a substantially continuous, relatively narrow stream of articles, a presingulator conveyor having means for longitudinally spreading out the stream of articles leaving said flow limiter conveyor, a presingulator feed conveyor belt for transporting the stream of articles from said flow limiter conveyor to said presingulator conveyor, a shingle former conveyor, a first accelerator conveyor for longitudinally spreading out the stream of articles received from said presingulator conveyor and delivering the articles to said shingle former conveyor, said shingle former conveyor having means for shifting the trailing portions of articles passing therethrough laterally away from adjacent downstream articles, a buffer conveyor, a buffer feeder conveyor having means for picking up articles leaving said shingle former conveyor, accelerating the articles, and delivering the articles to said buffer conveyor, said buffer conveyor having means for peeling off articles delivered by said buffer feeder conveyor and advancing the articles laterally as an edged stack of articles, a final singulator conveyor, having a stack peeling conveyor for individually picking off articles at the leading end of the stack of edged articles delivered by said buffer conveyor, a final accelerating conveyor for picking up articles from said final singulator conveyor and accelerating the articles so as to completely singulate them for presentation to a take away conveyor with gaps between adjacent articles, and means for driving said conveyors.

3,347,349
PLATE INVERTING APPARATUS

Heinz F. Carlson, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Apr. 28, 1966, Ser. No. 546,032
2 Claims. (Cl. 198—33)

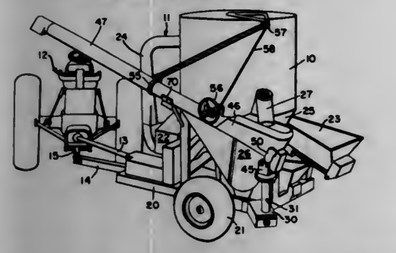


1. Plate inverting apparatus comprising a frame, a conveyor flight movable along said frame for transporting a single file of randomly oriented upright and inverted plates, means defining a substantially horizontal pivot axis above said conveyor flight and normal to the path of conveying movement, first and second plate carriers straddling said conveyor flight and conjointly movable about said axis, said first and second carriers being diametrically opposed relative to said axis, a lost motion drive connection to each of said first and second plate carriers, power means connected to said drive connection for driving said carriers substantially 180 degrees between a plate receiving position in which one of said carriers slidably, supportably receives opposed rim portions of an upright plate, to a plate releasing position in which the same carrier is inverted and the other carrier is in said plate recieving position, and individual plate sensng means mounted in said first and second plate carriers, said sensing means each being operable when the associated plate carrier is in said plate receiving position to actuate said power means to drive said plate carrier toward said plate releasing position, the driving motion of said power means being terminated substantially at 180 degrees from its initial position so that an inverted carrier, due to said lost motion drive connection, is gravity-urged to decline from said axis to interengage a rim portion of the inverted plate with said conveyor flight.

3,347,350
COMBINATION CONVEYOR SUPPORT AND DRIVE

Harold Richard Lindstrom, Rock Island, and Royal Lowell Beldin, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,759
8 Claims. (Cl. 198—119)

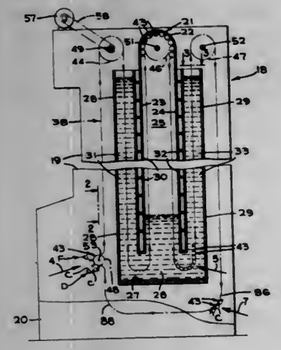


1. For use with a conveyor for moving material including an elongated housing having a material intake end, a conveyance device therein for moving material from the intake end, the improvement residing in a combination drive and support therefor comprising: a base; an upright tubular column fixed at its lower end to the base; a first radial plate fixed to the upper end of the column and having an outer annular edge outward of the column; a second radial plate complementary to and disposed on the upper surface of the first plate with an outer edge substantially aligned with the aforesaid annular edge; an adjustable collar circumscribing the aforesaid edges for retaining the plates together and adapted to engage the plates for resisting swiveling of the second plate relative to the first plate; a vertical drive shaft journaled within the column and having an upper end above the second plate; a drive connection on the lower end of the shaft; means supporting the conveyor on the second plate; and a drive connection between the upper end of the shaft and the conveyance device for operating the latter.

3,347,351
HYDROSTATIC COOKER BARS

Samuel A. Mencacci, Wilrijk, and John G. Hagerborg, Saint-Nicolas, Waas, Belgium, assignors to International Machinery Corporation, Saint-Nicolas, Waas, Belgium, a corporation of Belgium

Filed Aug. 20, 1964, Ser. No. 390,880
Claims priority, application Belgium, June 3, 1964, 648,757
3 Claims. (Cl. 198—131)

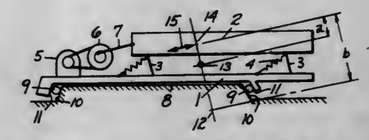


1. In a conveyor for a hydrostatic cooker or the like which includes a pair of spaced chains each of which is defined by a plurality of links pivotally connected together, the improvement which comprises a plurality of carrier bars, each carrier bar being connected between said chains to a pair of corresponding links of said chains and including a first wall supported by and lying in a plane parallel to the longitudinal axis of a pair of corresponding links, a pair of side walls connected to opposite edges of said first wall and diverging outwardly therefrom, and outwardly diverging flanges secured to the outer ends of each of said side walls, each of said side walls and said flanges being provided with a plurality of slots to define container retaining fingers therebetween, the fingers of adjacent side walls of two adjacent carrier bars projecting through the slots in the carrier bar disposed therebetween to define a carrier pocket which positively confine the containers therein when the carriers are moving along a linear path.

3,347,352
VIBRATORY FEEDER AND THE LIKE

James T. Gwinn, Jr., Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania

Filed Nov. 21, 1966, Ser. No. 595,886
12 Claims. (Cl. 198—220)

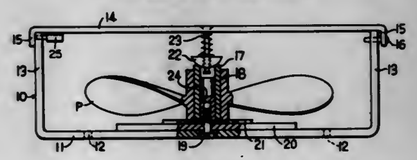


1. A device including base means by which it may be supported and reciprocating means for applying to the device a reciprocating force, said device having a center of gravity and the line of action of the reciprocating force being in a first plane spaced vertically on one side of the center of gravity, a supporting structure, and supporting means in load carrying relation between said base means and said supporting structure for supporting the device to allow free bodily rocking movement of the device as a whole about an axis in a second plane spaced vertically from the first plane and on the other side of the center of gravity of the device and transverse to said resultant line of action, said axis being chosen so the line of action of the reciprocating force is in the region of the center of percussion.

3,347,353
SPARE PROPELLER HOLDER

John Kline, 359 Wentworth Ave., Battle Creek, Mich. 49015

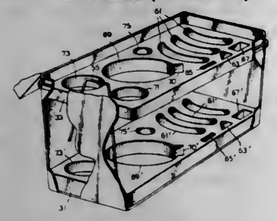
Filed June 25, 1965, Ser. No. 467,062
4 Claims. (Cl. 206—1)



3. A spare propeller holder of the character described comprising a hollow rectangular holder having a bottom adapted to be bolted to a boat; a removable top for said holder; means for fastening said removable top on said holder; said fastening means consisting of a hooking means and a locking means at opposite ends of said top, the ends of said holder having means cooperating with said hooking and locking means of said top; an upwardly extending structure located on said bottom and fastened to same within the said holder and on which a propeller may be placed; means for fastening said removable top on said

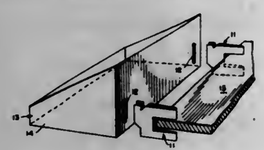
holder; and means for holding the said propeller in place on said upwardly extending structure after the removable top of the said holder has been placed on the said holder and fastened in place, said last named means being a spring-loaded member extending from the inner side of said cover and directly over said propeller holding upwardly extending structure.

3,347,354
BAR CADDY
Richard C. West, 121 12th St. SE., Apt. 105, Washington, D.C. 20003
Filed Oct. 3, 1966, Ser. No. 583,891
2 Claims. (Cl. 206—4)



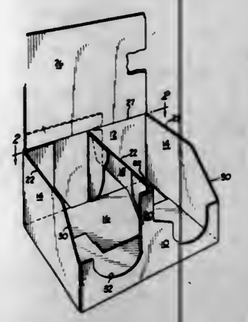
1. A bar caddy having storage provision for a plurality of items including liquor containers, an ice container, napkins, openers, drinking cups, a mixing ingredient container and the like comprising in combination a lunch-type box having a hingeable lid, walls and a bottom; a pair of templates fitted within the box and secured therein in spaced apart relation; each template being apertured in conformance with the shape of the items to be received by it; said templates being oriented in the box relative to each other to dispose conforming apertures in vertical alignment; means maintaining the alignment; said templates being of foamed material several order of thickness greater than the walls of the box to protect and cushion from shock said items; holder means adjacent to a wall of the box and movable therefrom to receive and hold napkins; and a further template of foamed material affixed to the lid of said box and contoured to receive taller ones of said items.

3,347,355
SHIPPING CARTON AND MOUNTING MEANS THEREFOR
Floyd W. Cavender, Melrose Park, Ill., assignor to Alberto-Culver Company, Melrose Park, Ill., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,833
7 Claims. (Cl. 206—45.24)



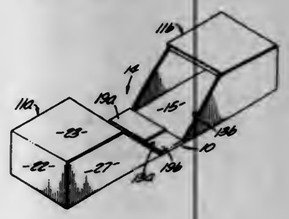
1. A shipping carton for transporting goods selectively convertible to a shelf extender display means comprising carton means for enclosing and protecting the goods to be transported and liner attachment means, said liner attachment means being configured, arranged and located to provide a protective internal liner means for the contents of said shipping carton during transporting thereof, said liner attachment means being selectively removable, foldable and separable into attachment means for locking to said carton means and for releasably coupling said carton means to a shelf.

3,347,356
TWO-CELL DISPLAY CARTON
Dennis Kossnar, West Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,753
11 Claims. (Cl. 206—45.29)



1. A two cell carton for holding and displaying a plurality of thin packages in adjacent upright positions in two parallel rows, comprising:
(a) opposed front and rear walls and opposed end walls hingedly interconnected at their side edges to form a tubular structure open at the top and bottom;
(b) a bottom wall including panels hinged to the lower edges of the tubular structure walls for closing the open bottom of said tubular structure;
(c) the rearward portions of the end walls, the central portion of the front wall, and the rear wall being of equal height to define at the top edges thereof a top edge plane extending parallel to the bottom wall and spaced from said bottom wall by a distance greater than the height of the packages to be displayed;
(d) a partition strap connected between the front wall center portion and the rear wall and extending substantially parallel to the end walls, and having a top edge substantially coplanar with the top edge plane;
(e) the forward portions of the end walls and the end portions of the front wall having top edges disposed below the top edge plane suitable to display and provide for ready removal of the packages from the front of the carton even if a like carton is stacked on said carton.

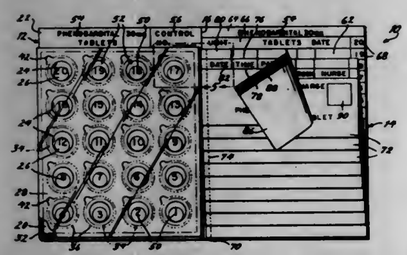
3,347,357
ARTICLE DISPLAY CARTON
Aldo J. De Soto, Whittier, and Arthur Rivera, Montebello, Calif., assignors to Gabriel Container Co., Los Angeles, Calif., a corporation of California
Filed Aug. 8, 1966, Ser. No. 571,052
9 Claims. (Cl. 206—45.31)



1. A one-piece sheet material packaging and display carton for an article, comprising:
(a) a bottom wall panel section;

(b) opposed side wings at one end of the bottom wall section, respectively integrally articulated to opposite side edges of the bottom wall section, each of said wings having side and top wall forming panel sections in right-angled relation joined along a scored bend line, the top wall sections being overlapped;
(c) an end wing integrally articulated to one end edge of the bottom wall section, and having end wall and top wall forming panel sections in right-angled relation joined along a scored bend line; and
(d) a flap carried by the top wall section of the end wing foldable around adjacent edges of the overlapped top wall sections of the side wings, whereby a box-like compartment is provided at said end with an open side for receiving a part of an article therein so as to have a visible portion extending outwardly beyond said open side.

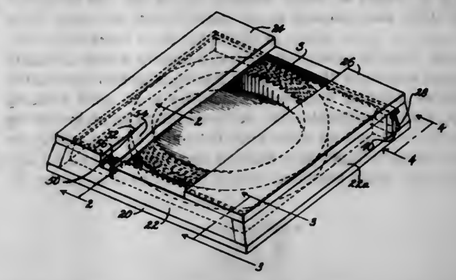
3,347,358
DRUG DISTRIBUTION SYSTEM
Rodney M. Meyers, 1528 Pine St., Philadelphia, Pa. 19102
Filed Oct. 11, 1966, Ser. No. 585,923
10 Claims. (Cl. 206—47)



1. A device for controlling distribution of medicaments, pre-loaded syringes and the like comprising a unit having first and second sections, said first section including a member having spaced wells adapted to contain medicaments or pre-loaded syringes, a transparent covering secured over said member and closing off said wells, means to strip off said covering at each well independently of the other wells for access to the interior thereof, and means on said second section correlated to said first section to keep a record of each medicament or pre-loaded syringe removed from a well, said last-named means including a surface having a vertical series of lined spaces corresponding in number to said wells forming a blank chart, a plurality of stubs corresponding in number to said wells, means securing said stubs in overlapped relation on said surface, each stub including a space adjacent its top edge overlying a corresponding space on said surface, and a duplicating means on the underface of each of said spaces adjacent the top of said stub so that when one records data relative to a medicament or pre-loaded syringe removed from a well in said space of said stub, the data will be transferred to and appear as a permanent record in said lined spaces of said chart.

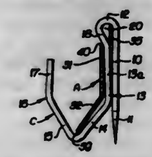
3,347,359
BAND SAW BOX
Victor A. Kolesh, Holden, and Walter E. Lamlein, Leominster, Mass., assignors to Wallace-Murray Corporation, a corporation of Delaware
Filed Mar. 17, 1966, Ser. No. 535,109
4 Claims. (Cl. 206—52)

2. A band saw package comprising a hollow box having a bottom wall, side walls and top covering means, one of said side walls defining an aperture adjacent one corner of said box for exposing the outer end of a flexible band saw length, having upstanding teeth along one edge, spirally coiled within the confines of said hollow box under tension between said side walls, said aperture permitting egress of said band saw linearly from said container by uncoiling rotation of said coil relative to said box with its untoothed bottom edge bearing on the inside surface of the bottom wall of said box and its toothed edge rotating below the



inside of the top covering means, and releasable means movable from a position overlying the top of said spirally coiled band saw length downwardly on top of and into locking engagement with at least some of the upstanding teeth of said band saw length to prevent inadvertent rotation of said coil in said box and maintain the end of said coil accessibly adjacent said aperture until said teeth engaging means is released.

3,347,360
DRAPERY PIN HOOK PACKAGE AND HOLDER
Morris A. Saltz, 1083 S. Ogden Drive, Los Angeles, Calif. 90019
Filed June 24, 1965, Ser. No. 466,631
9 Claims. (Cl. 206—56)



1. In combination a stack of abutting drapery hooks, each hook having a pin portion terminating in a forward point at one end and merging into a curved web at its other end, said web merging into an inner arm portion disposed alongside and lengthwise of said pin portion, said inner arm portion merging into an outer arm portion spaced from and extending lengthwise of said inner arm portion, said inner arm portion at said web being spaced from said pin portion to provide an opening; an elongate holder including a main body portion and a strip at one side of and separate from said body portion along substantially its entire length; said holder receiving said stack of hooks with said strip inserted freely in said openings and with said main body portion lying along one of said portions of said hooks.

3,347,361
LABEL STORAGE AND DISPENSING PACKAGE
Charles B. Lindeke, 2705 University Heights, Boulder, Colo. 80302
Filed Mar. 9, 1966, Ser. No. 533,089
4 Claims. (Cl. 206—56)

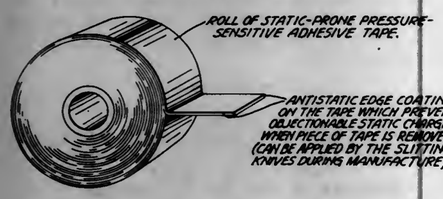
1. A label storage and dispensing package, comprising: an elongate, flat, rectangular envelope having a closed end and an open end; said envelope being formed of a flexible plastic sheet material to enable the envelope and its contents to conform readily to variations in the shapes of con-

tainers in which it may be stored; said envelope having at least a transparent portion to enable ascertainment of the qauntity and condition of the remaining label strips without removal from the envelope; a plurality of elongate, flat, rectangular label strips stacked on each other in face-wise relation and slidably mounted in said envelope for removal from its open end; each label strip including a plurality of labels arranged successively along the length of said strip and adapted to be individually removed from the balance of the labels in said strip; each label strip comprising a backing strip of material having a low adhesion surface and each of said labels having a pressure-sensitive adhesive coating removably securing it to said backing strip; and an elongate, flat, rectangular draw strip having an inner end and an outer end; the outer end of said draw strip having a finger grip portion and the inner end of said draw strip being provided with a pocket to receive the in-



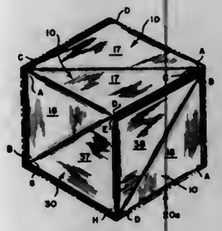
ner end of at least one of said label strips to cause said label strip to move in unison with said draw strip; the face of said draw strip confronting the overlying label strip having an area coated with pressure sensitive adhesive to contact the back of said label strip and removably retain said label strip in aligned relation with said draw strip during removal and reinsertion; said draw strip being adapted to be withdrawn from said envelope to any desired extent to make successive labels available for manual separation from the remainder of the labels in the label strips; and said draw strip being adapted to be fully re-inserted in said envelope together with the label strip to house and protect the remaining labels in said strip; said draw strip being sufficiently longer than the label strips to permit gripping the finger grip portion thereof separately to withdraw the draw strip together with the overlying label strip seated in the pocket.

3,347,362
PRESSURE SENSITIVE ADHESIVE TAPES WITH ANTI-STATIC EDGE COATINGS
George R. Rabuse, Sunfish Lake, Alfred J. Wallner, Roseville, and Craig A. Sterling, North St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,431
9 Claims. (Cl. 206—59)



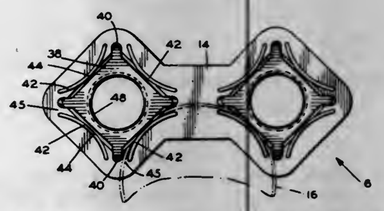
1. A normally tacky adhesive sheet wound upon itself in roll form, having a tacky rubbery adhesive layer whose facing surface is in removable adherent contact with the contiguous opposite facing surface of the sheet, these surfaces being chemically different and force being required to unwind the sheet and effect a separation of the surfaces; each layer of the adhesive sheet being electrically insulative between the side edges and such that without the antistatic means hereafter specified the removal of a piece of the sheet tends to produce objectionable static charging thereof; characterized by having in novel combination therewith antistatic edge coating means consisting of a thin flexible permanent conductive coating covering and firmly bonded to at least one of the side edges of the sheet and which is capable of being retained as the adhesive sheet is unwound from the roll and of substantially reducing static charging even when the adhesive sheet roll is exposed to an atmosphere having a relative humidity as low as about 25%.

3,347,363
TETRAHEDRAL PACKAGING MEANS AND METHOD OF MAKING SAME
Ralph E. Dykes, White Plains, N.Y., and Robert M. Mitchell, South Norwalk, Conn., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,646
10 Claims. (Cl. 206—65)



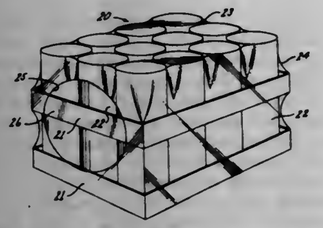
1. A package comprised of a plurality of product-enclosing containers, said package having a rectangular three-dimensional outline, each of said containers being generally of an irregular tetrahedral shape having one edge longer than any other edge thereof, each face of each container being in the general configuration of a right triangle, said containers being oriented in face-to-face relationship within said package with the long edge of the container extending through said package and between two diagonally opposed corners thereof and with each vertex of a container disposed at a corner of said package.

3,347,364
CONTAINER CARRIER
Elwyn R. Gooding, Ann Arbor, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Filed Apr. 2, 1965, Ser. No. 445,062
3 Claims. (Cl. 206—65)



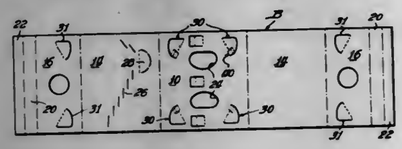
1. A one-piece multiple container carrier for containers having an upwardly and laterally projecting bead at the upper end of the container, said carrier having for association with each container:
(a) an upper member extending across the top of the container,
(b) a rigid tab portion having an arcuate shaped surface integral with said upper member and depending therefrom to a location wherein said surface is symmetrically positioned in close proximity to the interior portion of the bead,
(c) said arcuate surface having a degree of curvature that is slightly greater than the degree of curvature of said bead wherein it provides a lead-in guide for the bead,
(d) a lower member connected in fixed spaced relation to said upper member for engaging the underside of the container bead.

3,347,365
PACKAGE CONSTRUCTION AND METHOD OF MAKING THE SAME OR THE LIKE
Garland B. Funkhouser, Waynesboro, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,852
20 Claims. (Cl. 206—65)



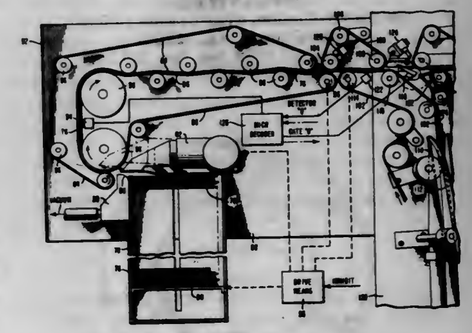
1. In combination, open ended receptacle means filled with product means, and a tubular film-like member receiving said filled receptacle means and being heat shrunk to hold said receptacle means and product together, said tubular film-like member having opposed opened ends at the opposed ends of said receptacle means, said tubular film-like member having a lower percentage of shrinkage in one direction between the opened ends thereof than the percentage of shrinkage in a direction transverse to said one direction.

3,347,366
CAN CARRIER HAVING RETAINING TAB WITH GUSSET
Richard E. De Paul, Norristown, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,784
4 Claims. (Cl. 206—65)



1. In a sleeve-type, wraparound, carrier carton for enclosing a plurality of cylindrical articles each having a recessed end presenting an inner vertical surface, the combination of:
(a) opposed pairs of top and bottom end walls and side walls hingedly attached to form a tubular structure open at the ends;
(b) a plurality of can retaining tabs cut from at least one of said end walls and folded inwardly therefrom about a first hinge line into approximately parallel relation with said one end wall;
(c) each of said tabs including a gusset which serves as an additional connection between said one end wall and said tab;
(d) said gusset being formed partly from material cut from said tab and partly from material cut from said one end wall;
(e) said gusset being hingedly attached to said one end wall and said tab by a pair of second and third hinge lines which lie on opposite sides of said first hinge line;
(f) said gusset projecting into the recessed end of an article and presenting a vertical side edge engageable with the inner vertical surface of said recessed end to prevent movement of the article out of the open end of said tubular structure;
(g) said gusset being divided into two adjacent sections by a fourth hinge line lying between said first and third hinge lines.

3,347,367
DOCUMENT SORTING
Stephen W. Smith, Dallas, Tex., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 28, 1962, Ser. No. 248,090
11 Claims. (Cl. 209—74)

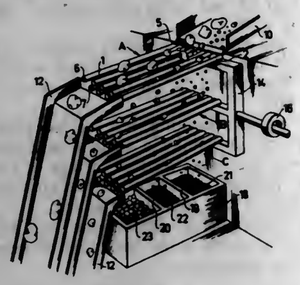


1. A document sorting system for classifying character bearing documents according to the data recorded thereon comprising means for supporting the character bearing documents, means positioned adjacent said means for supporting for extracting and advancing documents along a primary document path, means comprising a belt arrangement forming secondary document paths positioned along the primary document path for transporting and rotating said documents in which said documents are physically transported by said belt arrangement, document diverting means cooperating with said means forming secondary document paths, one diverting means per secondary path, for diverting documents from the primary path to one of the secondary paths, and means connected to each secondary path for receiving the sorted documents.

3,347,368
SCREENING DEVICE
Fredrik Kristian Mogensen, Mjolnartorpsvagen 14, Djursholm, Sweden
Filed June 28, 1965, Ser. No. 467,518
Claims priority, application Sweden, July 1, 1964, 7,984/64
8 Claims. (Cl. 209—99)

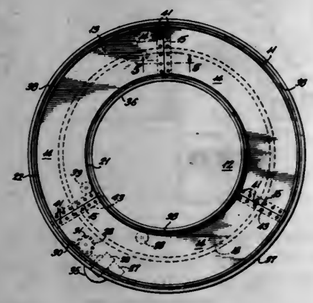
1. A screening device for classifying a mixture of particles of different sizes into fractions as to size, comprising at least one deck of a plurality of principally uni-directionally extending rods placed side by side and

being inclined downwards from their feeding ends to their discharge ends, adjacent rods being differently inclined to the horizontal and each rod being of uniform



cross-section so that the distance between them increases from their feeding ends to the discharge ends, and means below the lowermost deck for separatively collecting at least two fractions.

3,347,369
REVOLVING TABLE CAPABLE OF BEING DISMANTLED
Willard S. Conlon, 6129 Leesburg Pike, Falls Church, Va. 22041
Filed Aug. 17, 1965, Ser. No. 480,281
6 Claims. (Cl. 209—124)

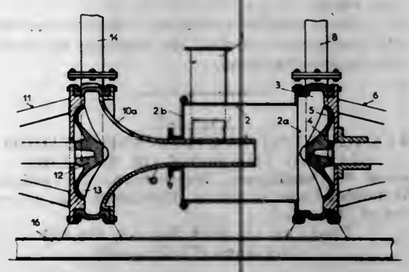


1. A sorting table comprising a horizontal annular planar support, a rail secured to the undersurface of said support, an annular flange extending above and below said support secured to each of the inner and outer circumferences of said support, means engaging said rail to support the table for rotation about a given axis, and roller means engaging at least one of said flanges for guiding and rotating the table about said axis.

3,347,370
PROCESS FOR WASHING AND REMOVING ORGANIC HEAVY LIQUIDS FROM MINERAL PARTICLES
Carl Rampacek, Northport, James S. Browning, Tuscaloosa, and Thomas L. McVay, Skyland Park, Ala., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,577
3 Claims. (Cl. 209—172)

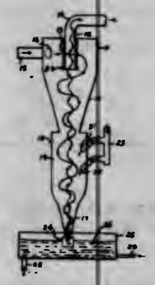
1. In a process for gravity separation of minerals by means of a heavy organic liquid, the improvement which comprises removal of the heavy liquid from the separated mineral particles by treatment of the mineral particles with steam alone.

3,347,371
APPARATUS FOR THE SEPARATION OF MATERIALS OF DIFFERENT DENSITIES
Andre Rene Verbaere, Paris, France, assignor to Societe Anonyme dite: Unitec, Paris, France
Filed Mar. 4, 1965, Ser. No. 437,163
Claims priority, application France, Mar. 9, 1964, 966,685, Patent 1,397,307
5 Claims. (Cl. 209—172)



1. A device for separating particulate solid products of different specific gravities when mixed with a fluid product having a specific gravity intermediate that of said solid products, said device comprising a receiving chamber (2) provided with an inlet (1) for introducing said products into said chamber, a first centrifugal pump (6) at one end (2a) of said receiving chamber having a runner (4) positioned to impart a swirling motion to the products within haid receiving chamber, said first pump being provided with an outlet (8) positioned to receive products driven to the outer portion of said chamber by said swirling motion, and a second centrifugal pump (11) having an axial inlet pipe (10) connected to withdraw through the end (2b) of said chamber opposite said first pump products located in an area within said chamber at the center of the swirling motion caused by said first pump, said second pump being provided with an outlet (14) for receiving products withdrawn from said chamber through said inlet pipe.

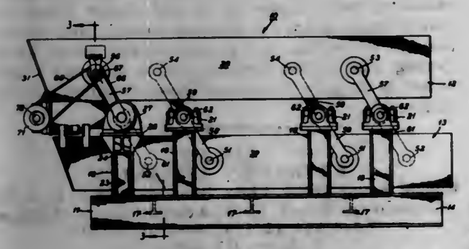
3,347,372
CENTRIFUGAL CLEANER
Charles W. Bouchillon, State College, Miss., assignor to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Continuation of abandoned application Ser. No. 246,211, Dec. 20, 1962. This application May 20, 1966, Ser. No. 560,031
7 Claims. (Cl. 209—211)



1. A hydrocyclone type separator comprising a separating cone formed in mating sections, said sections including at least a base section and a nozzle section having substantially the same angle of slope, means connected to the base end of said base section forming a base closure for said separator having an overflow opening on the

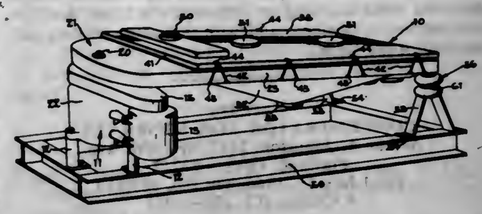
central axis of said cone, means connected to provide for a tangential inflow of a liquid suspension to said base section in a manner to cause the suspension to move through said cone in a vortiginous flow and to create thereby an interior counterflow, a tubular shell positioned intermediately of the mating ends of said base and nozzle sections, said shell being axially elongated to produce a substantial spacing of said base and nozzle sections and having a cylindrical form throughout the major extent of its length which terminates at one end in a relatively short transition section of relatively reducing cross-section, means coupling the one end of said tubular shell remote from said transition section to the reduced end of said base section to position this reduced end in an adjacent but laterally spaced relation to the wall of said tubular shell, the reduced end of said transition section being connected to said nozzle section and defining an opening the cross-section of which corresponds to that of the opening formed at the larger end of said nozzle section, said shell defining thereby an elongated cylindrical elutriation chamber, means provided in connection with said shell for inflow thereto of elutriation fluid at least about the opening from the reduced end of said base cone section and at a downward inclination to the longitudinal axis of said cone to join in the natural flow pattern of the expanding vortex of said suspension created as the suspension exits from said base section to said elutriation chamber with minimum disturbance to said flow pattern, the expanded vortex being maintained thereby in moving the length of the cylindrical elutriation chamber until immediately in advance of said nozzle section it is recompressed in movement through said transition section, in the process of which their occurs a dilution of the suspension in a manner to produce an optimal transition of clean liquid and usable particles of said suspension to said interior counterflow.

3,347,373
OSCILLATING SCREENS
William F. Dahlberg, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 7, 1964, Ser. No. 402,086
8 Claims. (Cl. 209—315)



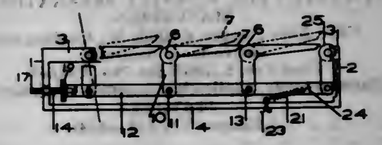
2. In an oscillating screen;
a base;
a pair of at least partially superposed longitndinally extending screen decks spaced vertically from said base;
at least a pair of axially aligned laterally spaced support arms pivotally mounted on said base, each arm connected to a respective screen deck;
drive means connected between said base and one of said decks effective to oscillate said one deck relative to said base; and
torsionally resilient connecting means extending transversely between said pair of support arms in alignment with the pivotal axes thereof having opposite ends connected to respective support arms.

3,347,374
GYRATORY SIFTER MOUNT
Charles H. Frei, Cincinnati, Ohio, assignor to The J. H. Day Company, Cincinnati, Ohio, a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,441
4 Claims. (Cl. 209—332)



1. A sifter construction comprising a screen assembly including a screen cloth, said sifter assembly having a head end and a tail end, means for imparting a gyrating motion in a generally horizontal plane to said head, and means supporting said tail end for oscillatory movement, said last named means comprising an air mount member, means mounting said air mount member to the screen assembly adjacent to the tail end thereof with the axis of said air mount member substantially vertical, a rigid support member, and means interconnecting said rigid support member and said air mount member, said air mount member being interposed between said support member and said sifter assembly, said air mount member supporting said tail end of said sifter assembly for oscillating movements in a generally horizontal plane transverse to the axis of said air mount member, said air mount member comprising a flexible tubular member, liquid partially filling the lower portion of said tubular member and air under pressure above said liquid and in contact therewith.

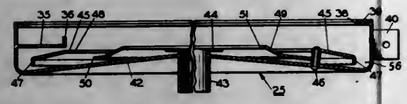
3,347,375
GRAIN SIEVE FOR COMBINE HARVESTERS
Walter David Hofer, Brocket, Alberta, Canada
Filed Apr. 30, 1964, Ser. No. 363,713
1 Claim. (Cl. 209—395)



A grain sieve comprising a resilient, self-supporting rectangular frame having a front wall, a rear wall, said wall having an opening therein, upper side bars, lower connecting bars and a center frame bar, a partial cover at the front of the frame, resilient, semirigid sieve units supported by the upper side bars, each sieve unit including a tubular base extending between the upper side bars with integral parallel teeth spaced at uniform intervals, inserts in the ends of the tubular bases attaching the bases to the upper side bars for pivotal movement, a further resilient, semirigid tubular base without teeth at the rear of the frame and similarly connected between the upper side bars as the sieve units and having an arm depending therefrom, arms depending from the tubular bases, an actuating bar disposed parallel to the lower connecting bars, pivot means for attaching the depending arms of the tubular sieve units and of the tubular toothless base to the actuating bar, a link pin having one end attached to the actuating bar, said link pin adapted to

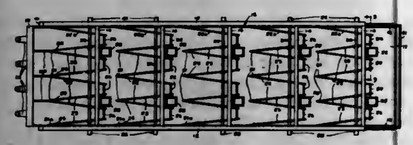
slide in the opening in the front frame wall, an adjusting nut on the shank portion of said link pin, and spring means attached at one end to the bottom actuating bar and its other end to the center frame bar for normally holding the free ends of the teeth on adjoining tubular bases, the free ends of the rear set of teeth resting against the tubular base at the rear wall of the frame whereby said frame and tubular based units being resilient may be distorted when inserting or removing the frame from its housing in the combine and will eliminate cracking and bending of the teeth.

3,347,376
CONCENTRATOR FOR MINERALS
Arthur A. Johnston, 2417 NE. 39th Ave., Portland, Oreg. 97212
Filed July 15, 1966, Ser. No. 565,613
6 Claims. (Cl. 209—444)



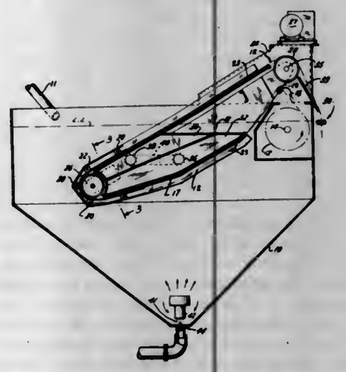
1. In a mineral concentrator of the character described, a separator pan including an outer peripheral wall, a bottom wall having a discharging channel centrally mounted therein, said bottom wall sloping upwardly from said outer peripheral wall to said discharging channel, a receiving chamber mounted on the outside of the upper portion of said peripheral wall and leading into said pan, the bottom wall of said chamber extending into said pan and forming a discharging shelf, an outlet chamber mounted on the outside of the lower portion of said peripheral wall, an annular baffle mounted in said pan spaced above said bottom wall of said pan and extending beneath said shelf, the outer periphery of said baffle spaced inwardly from said peripheral wall of said pan, the top face of said baffle sloping upwardly-inwardly at a greater inclination than said bottom wall of said pan, and the inner periphery of said baffle spaced outwardly from said central discharging channel.

3,347,377
APPARATUS FOR GRAVITY SEPARATION OF MATERIALS
Clive John Foyster, Griffith St., Coolangatta, Queensland, Australia
Filed Feb. 5, 1965, Ser. No. 430,669
Claims priority, application Australia, Feb. 6, 1964, 40,636/64
3 Claims. (Cl. 209—458)



1. Apparatus for the gravity separation of materials suspended in a liquid, including a main inlet for suspended materials, a tray sloping downward from said main inlet to a tailings outlet, a plurality of series of sluice units on said tray, each series comprising a plurality of generally longitudinally aligned units, each series of said sluice units extending generally parallel to the other series of units, each sluice unit having side walls converging towards the outlet of said unit, means for angularly adjusting at least one of said side walls for varying the angle of convergence of said side walls, said tray being formed with an undercut opening near said outlet, said series of sluice units being positioned so that liquid from said main inlet flows successively through the units of the series to said tailings outlet.

3,347,378
FILTER APPARATUS
Orlan M. Arnold, Grosse Pointe Park, Robert G. Millhiser, Detroit, Sark Pashaian, Monroe, and Emil Umbricht, Northville, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed June 14, 1966, Ser. No. 562,060
9 Claims. (Cl. 210—106)

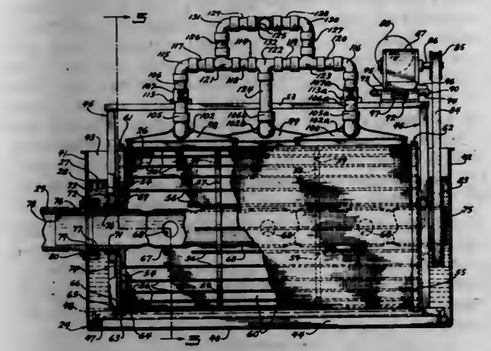


1. A filtration apparatus having a tank for holding a mass of liquid to be filtered, a first suction box within said tank having a first pervious face facing upwards to form a sediment-receiving surface, a second suction box within said tank having a second pervious face of greater area than said first pervious face, said second pervious face facing downward, a strip of filter medium arranged at said pervious faces for serial passage thereover, means, including an endless screen belt disposed between said filter medium and said pervious filter faces, for moving said filter medium across said pervious faces, a suction-producing means connected to said suction boxes, suction-diverting means for changing suction from one suction box to another, and pressure-sensing means for activating said suction-diverting means and said moving means in response to reduced pressure within said first suction box.

3,347,379
FILTRATION APPARATUS
Ronald Junior Miller, Lima, Ohio, assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 12, 1965, Ser. No. 447,500
2 Claims. (Cl. 210—127)

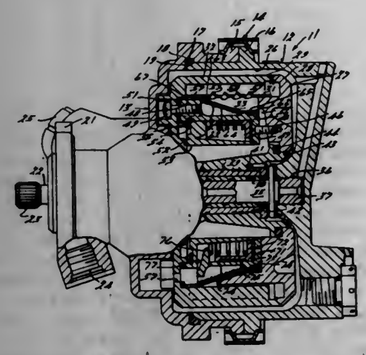
1. A filtration apparatus comprising:
(a) a container adapted to receive a contaminated liquid for filtering;
(b) means for maintaining said liquid at a substantially constant level in said container;
(c) supporting means disposed in said container;
(d) a perforate pipe having an open end and a closed end disposed below the level of said liquid and mounted on said supporting means; the perforations in said pipe defining an inlet means and the outlet means defined as the open end of said pipe;
(e) a rotary filtering means mounted on said perforate pipe for rotation about a substantially horizontal axis;
(f) means for rotating said filtering means;

(g) said rotary filtering means being partially submerged within said liquid and including a frame having imperforate end flanges and a liquid pervious filter element disposed about the periphery of the frame, said rotary filtering means adapted to filter said liquid as it is passed through said filter element into the interior of said frame;



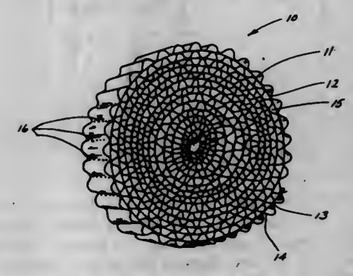
(h) pump means having its intake in communication with said open end of said perforate pipe for evacuating said liquid from said container through said filter element; and
(i) suction means including a plurality of suction heads disposed in overlapping arrangement and engaging a portion of the periphery of said filter element above said level of said liquid for removing filtered material adhering to the surface of said filter element.

3,347,380
CENTRIFUGAL PURIFIER
Darriel L. Alsobrooks, Grosse Ile, Mich., assignor to Michigan Dynamics, Inc., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,722
11 Claims. (Cl. 210—130)



1. A centrifugal purifier for separating contaminants having a size larger than a predetermined size from a fluid comprising housing means defining fluid cavity means, a rotating impeller for imparting a centrifugal force to the fluid and entrained contaminants in said cavity means, fluid inlet means and fluid outlet means opening into said cavity for fluid flow through said cavity, a perforate member interposed between said fluid inlet means and said fluid outlet means for flow of substantially all of the fluid flowing through said cavity means through said perforate member, said perforate member having finely spaced openings sized to exclude particles greater than a predetermined size from the fluid flowing through said perforate member, said impeller and said perforate member being disposed in series flow relationship wherein fluid normally flows first past said impeller and then past said perforate member, and normally closed bypass means for bypassing the fluid flow from said fluid inlet means to said fluid outlet means past only said perforate member when said perforate member becomes clogged with contaminants without effecting the flow past said impeller for removal of contaminants from the fluid by said impeller when said perforate member is bypassed.

3,347,381
WASTE TREATMENT
Virgil A. Minch, Chillicothe, Ohio, and John T. Egan, Yardley, Pa., assignors to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Aug. 26, 1966, Ser. No. 575,324
11 Claims. (Cl. 210—150)

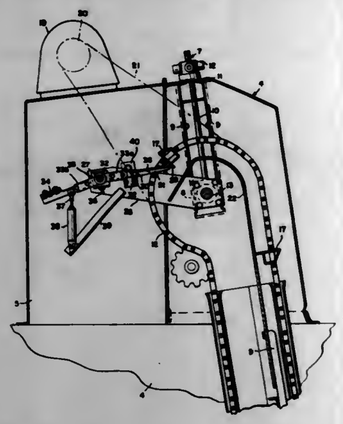


1. A bio-oxidation cell including channel means having surfaces for reducing the bacteriological oxygen demand of a fluent material during the presence thereof within said channel means, said channel means and said surfaces thereof being defined by flat and fluted elements of formable thermoplastic sheet material having hydrophilic surfaces having depressions therein to provide sites for the growth of aerobic bacteria joined together at areas of contact therebetween, and means for supplying aerobic bacteria including an inlet and a discharge opening for receiving and discharging oxygen-containing material and said fluent material to and from said channel means.

3,347,382
BAR SCREEN WITH IMPROVED RAKE WIPING MECHANISM
Gilbert W. Quast, Brookfield, Wis., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 18, 1965, Ser. No. 426,241
7 Claims. (Cl. 210—159)

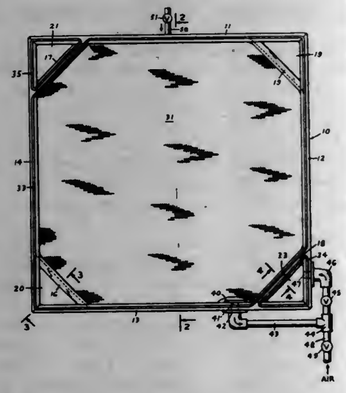
7. In a bar screen for removing debris from a waste stream including a housing having sides each provided with spaced, parallel, vertical guides, bearing blocks movably carried between said guides, a take-up screw and nut supported by said housing and supporting each block between the respective guides, a head shaft journally carried by said bearing blocks, a pair of head sprockets fixed to said head shaft within said housing, endless chains carried by said head sprockets, a rake for cleaning the bar screen and connected to and between said chains; a wiping blade mechanism entirely supported by said bearing blocks comprising a frame having two mounting arms and a cross member, corresponding ends of said mounting arms being fixed to said bearing blocks within the housing, the ends of said cross members having vertically adjustable brackets connecting the cross member to the mounting arms, a wiping blade disposed to be engaged by and move downwardly with said rake as the latter

is carried by said chains over the sprockets downwardly in the inverted position, a pair of spaced lever arms pivotally connected intermediate their ends to said cross member and having corresponding ends carrying said wiping blade, counterweights fitted to the other ends of said lever arms, cushioning means connected between said mounting arms and said lever arms, and adjustable stops connected to each of said mounting arms and disposed to



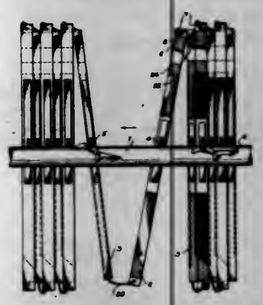
contact said lever arms to provide a positive check on the return movement of said wiping blade effected by said counterweights, said brackets and stops being initially adjustable to locate and dispose the wiping blade in close parallel relation to the rake and said entire rake wiping mechanism being disposed to move vertically as a unit with the bearing blocks to maintain the close parallel relationship notwithstanding any bearing block movement necessary to take-up chain slack.

3,347,383
FILTER PRESS
Bernard J. Augerot, Morris Township, Morris County, N.J., assignor to T. Shriver & Company, Incorporated, Harrison, N.J., a corporation of New Jersey
Filed Nov. 19, 1965, Ser. No. 508,668
2 Claims. (Cl. 210—225)



1. A filter plate comprising a peripheral frame, a partition plate mounted in and spanning said frame and dividing it into filter cake receiving recesses on opposite sides thereof, means containing channels therein for liquid flow therethrough on opposite sides of said partition plate, filter cloths overlying said channel-containing means and supported thereby for filtering out solids and forming filter cakes in said recesses, means for securing the peripheries of said filter cloths to said frame to retain said cloths in said frame, an inlet extending through said frame for communication with a corresponding inlet in an adjacent filter plate and communicating with both of said recesses outwardly of said filter cloths for supplying a solids-containing liquid, an outlet for liquid communicating with said recesses between said partition plate and said filter cloths for discharging liquid flowing through said filter cloths and said channel-containing means, an outlet passage extending through said frame for communication with a corresponding outlet passage in an adjacent filter plate, conduit means connecting said outlet with said outlet passage, an openable and closable valve in said conduit means for connecting and disconnecting said outlet and said outlet passage, and means for supplying gas under pressure through said outlet to said recesses between said partition plate and said filter cloths when said valve is closed for bowing said cloths relatively outwardly from said channel-containing means and discharging filter cake from said recesses.

3,347,384
FILTER PRESS
Lothar Müller, Gartenstrasse 10, Wesseling, Bezirk Cologne, Germany
Filed Nov. 28, 1966, Ser. No. 597,424
Claims priority, application Germany, Dec. 4, 1965, D 48,826
2 Claims. (Cl. 210—225)

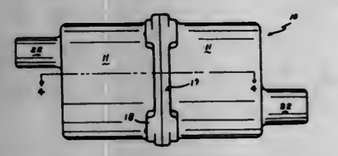


1. In a plate-frame filter press comprising a series of alternately spaced pairs of plates and frames, rod means supporting said plates and frames, means for moving a frame away from a preceding plate of said pairs at a predetermined angle, and coupling means mounted on the upper portion of each pair of plates and frames for holding the upper portion of each pair of plates and frames rotatably together at said angle and for releasing the frame at the point where said angle is exceeded, the improvement further comprising flexible means connecting the bottom of each frame to the bottom of a plate in a preceding pair for pulling the bottom of the frame along with the bottom of the preceding plate.

3,347,385
WATER STRAINER
Linus E. Russell, Springfield, Ohio, assignor to Peters and Russell, Inc., Springfield, Ohio, a corporation of Ohio
Filed Oct. 6, 1964, Ser. No. 401,949
12 Claims. (Cl. 210—232)

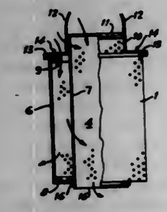
1. A strainer device consisting of a screen means, two cup-like elements of substantially identical form, means interconnecting said elements to form a housing, each

of said elements having means defining an opening in its base, and means interiorly of said elements having in slip fit connection therewith said screen means which bridges said housing in a plane common to said elements and substantially parallel to their longitudinal axes and



said screen means being substantialy equal in length to the combined interior lengths of the cup-like elements and forming with said cup-like elements an entrance chamber and an exit chamber each of which includes one of said openings.

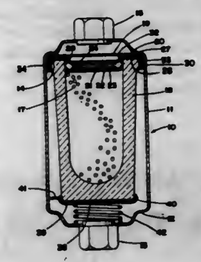
3,347,386
MULTIPLE ELEMENT FILTER ASSEMBLY
Frederick Kraissl, Jr., 244 Kinderkamack Road, North Hackensack, N.J. 07661
Filed Sept. 9, 1964, Ser. No. 395,157
16 Claims. (Cl. 210—238)



1. In a fluid filter or separator having a casing, a filter body therein, inlet and outlet opening in said casing for passage of fluid therethrough, the improvement which comprises said body having an outer cylindrical screen, an adjacent screen concentric therewith and within the same, the top of said adjacent screen extending substantially above said outer screen, an open-ended keeper extending upwardly from the top of said outer screen, an L-shaped latch secured to the top of said inner screen and extending downwardly to the top of said outer screen with its horizontal leg directed outwardly radially and practically in contact with said outer screen, said latch adapted to enter said open end.

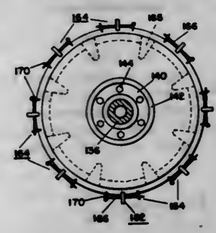
3,347,387
FILTER-DRYER
Stephen Balogh, Lyons, N.Y., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 3, 1965, Ser. No. 461,050
1 Claim. (Cl. 210—266)

In a filter-dryer, a shell having inlet and outlet ports and a transverse wall adjacent one of the ports, a cup-shaped filter block of rigid foraminous material within said shell with its open end facing said transverse wall, a first spring coacting between the other end of said shell and the closed end of said block and urging the block toward said transverse wall, loose desiccant particles within and substantially filling said block, a first perforated plate slidably movable within said block and closely fitting said open end and directly in contact with said particles and retaining the same within said block, a second perforated plate extending across the open end of said block and having its outer margin clamped between said transverse wall and the adjacent end of said block and having an axial flange extending between the block and shell, said first plate being dished to provide a spring chamber within the block and between the two plates,



a second spring substantially centrally disposed within the chamber and compressed between the two plates whereby the first plate exerts substantially uniform pressure against said particles.

3,347,388
WASHING MACHINE
Frank C. Lornitzo, Pawtucket, R.I., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Original application Oct. 8, 1963, Ser. No. 317,865, now Patent No. 3,296,839, dated Jan. 10, 1967. Divided and this application Aug. 18, 1966, Ser. No. 590,119
4 Claims. (Cl. 210—380)

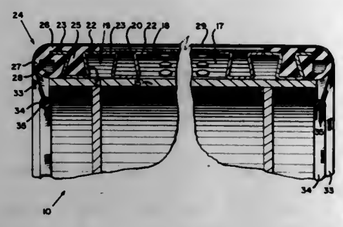


1. In a washing machine, a hollow bulbous basket, means supporting said basket for rotation about a horizontal axis, said basket having a plurality of circumferentially spaced holes therethrough, said holes extending radially with respect to the axis of rotation of said basket, and a separate valve in each of said holes, each of said valves comprising a flexible strap of a resilient material extending across the hole in the basket, means supporting the ends of the strap from said basket, a valve head seated in the outer end of the hole above said strap, means securing said valve head to said strap, said strap being stressed to normally hold said valve head within said hole to close said hole, and said valve head being moved away from said hole by centrifugal force upon rotation of the basket faster than a predetermined speed to open said hole and a stop means secured to said basket and extending over said valve head to limit the movement of the valve head away from the hole.

3,347,389
DRUM FILTER
John E. Krynski, East Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 9, 1965, Ser. No. 486,163
2 Claims. (Cl. 210—401)

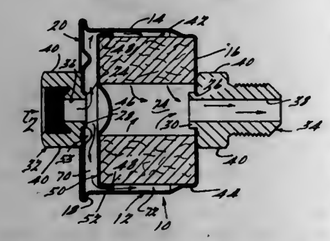
1. In a drum filter, the combination comprising a drum mounted for rotation about a horizontal axis; a discharge roll mounted for rotation about an axis parallel with said drum axis; channel-shaped annular means fixed to

said drum inwardly of the edges thereof, said annular means including flange means parallel with and spaced from the periphery of said drum and forming an annular recess about each edge of said drum; a resilient annular member within said channel-shaped annular means, extending radially therebeyond, said resilient member extending around said flange means, and extending axially beyond the end of said flange means; an endless cloth belt having a width transversely substantially greater than



the width of said drum and roll and having its edges overhanging freely from the edges of said drum, said edges of said belt including seam means therealong; and a resilient tensioning means in said seam means of less length than said belt, whereby said overhanging edges of said belt are drawn radially inwardly in contact with the resilient annular member along a substantial surface area parallel with said drum and a substantial area of the portion within said annular recess.

3,347,390
FILTER
La Vern R. Tietz, Plymouth, Mich., and Louis F. Niebergall, Racine, Wis., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,856
1 Claim. (Cl. 210—448)



A throw away filter for gasoline or the like comprising a two part housing defining a generally cylindrical filtering chamber closed at opposite ends by first and second end walls, fluid inlet passage means formed in said first end wall, fluid outlet passage means formed in said second end wall, an annular depth type filter body consisting essentially of resin coated rayon fibers molded to a predetermined shape and density, said filter body defining radially spaced generally cylindrical inner and outer surfaces over a substantial portion of its length, said inner surface forming a fluid passage opening through one end of said filter body, means bonded to the other end of said filter for forming a closure for the other end of said fluid passage, said outer surface of said filter body being disposed radially inwardly of a major portion of the length of said housing for fluid communication between said filtering chamber and said outer surface of said filter body for radial fluid flow through said filter body between said inner and outer surfaces, said means for forming a closure for said other end of said fluid passage being spaced from one of said housing end walls and having circumferentially spaced peripheral means engaging said housing for centering said filter body within said housing, and means for bonding said one end of said filter body to the other of said housing end walls around the respective fluid passage means therein for a fluid communication between said filter body fluid passage and said end wall fluid passage means, said housing having a radially inwardly extending portion adjacent said end wall in engagement with the adjacent portion of said filter body outer surface for radially locating said filter body within said cylindrical filtering chamber.

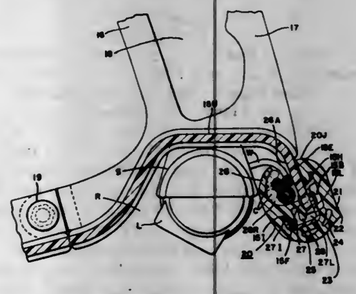
3,347,391
FILTER CARTRIDGE AND METHOD OF MAKING THE SAME
Robert N. Steensen, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,399
8 Claims. (Cl. 210—491)



2. A filter cartridge comprising a hollow cylindrical body of a resin impregnated fibrous material, said resin in said body being uniformly distributed throughout said body, axially spaced apart, radially extending circumferential lands on the outer surface of said body separated from one another by grooves therebetween, and a porous resin layer on said outer surface of a density greater than said resin in said body, said porous layer extending over said outer surface and the faces of said lands and grooves in said outer surface of said body.

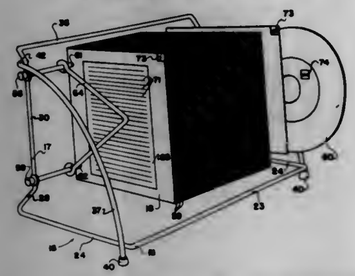
8. A method of producing a filter cartridge of a resin impregnated fibrous material having shaped convolutions on at least one exposed surface thereof, said method comprising the steps of (1) forming a filter body of a fibrous material impregnated with a curable resin, (2) curing the resin in said filter body, (3) forming said shaped convolutions on said exposed surface of said filter body, (4) immersing the body in a resin bath, and (5) post-curing said filter body.

3,347,392
COMBINATION STRUCTURE
Harold P. Gonyea, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,469
7 Claims. (Cl. 211—26)



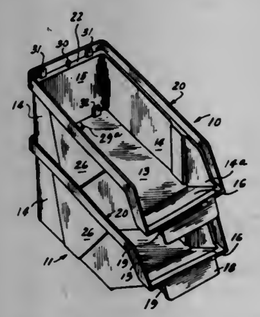
5. Combination structure, comprising, a vehicle shelf having a lamp mounting recess along an underside in a location adjacent to a downward blunt edging, an elastomeric strip means carried by said shelf adjacent to said edging and including an edge trim as well as internal void-forming portion that is a softened crashpad-bumper configuration, and a conductor retaining lip portion integral therewith from which insulated conductor means extend into the lamp mounting recess of the shelf.

3,347,393
RECORD FILING MEANS
Louis E. Frey, Wichita, Kans.
(10940 Bellagio Road, Los Angeles, Calif. 90024)
Filed Feb. 24, 1966, Ser. No. 529,739
4 Claims. (Cl. 211—40)



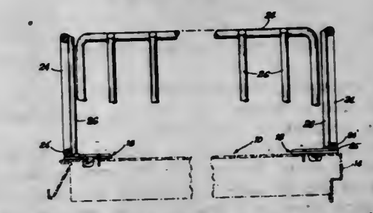
1. A record holder means for storage of records comprising:
(a) a frame member having a base section integral with a pair of upwardly extending shaft sections,
(b) horizontal support means releasably connected to and extending between said shaft sections,
(c) a plurality of record holders slidably connected to said horizontal support means and movable substantially the entire length thereof, and said holders adapted to support records therein, and
(d) abutment means slidably mounted on said support means and movable into binding engagement with said record holders.

3,347,394
STACKED STORAGE BINS
George J. Gould, 791 Meacham, Elmont, N.Y. 11003
Filed Oct. 26, 1966, Ser. No. 589,740
3 Claims. (Cl. 211—126)



1. A plurality of unitary plastic storage bins adapted to be stacked one upon another wherein each of said bins consists of a bottom wall, side walls, a rear wall and an upwardly and forwardly sloping front wall extending upward to approximately one-half the height of said side walls thereby providing an entrance passage into each of the stacked bins which are positioned below the topmost of the stack, a continuous outwardly offset upwardly extending flange on the top edges of said side walls and said rear wall providing a continuous internal shoulder on said side walls and said rear wall, the rear portion of said flange which is on said rear wall being offset a greater distance than the portions of said flange on said side walls whereby the internal shoulder on said rear wall has a greater width than said shoulders on said side walls, said internal shoulder on said rear wall having a pin extending upward therefrom at a position substantially intermediate the length thereof and spaced from said rear portion of said flange, each of said bins having a recess extending upward in the bottom wall thereof adjacent the rear wall thereof and positioned a distance forward of a vertical line through said pin, said pin being complementary to said recess, said bins when stacked as aforesaid having the bottom of one bin resting on said continuous internal shoulder of the next lower bin and the pin on said next lower bin registering in said recess of said one bin.

3,347,395
MEANS FOR BANDING AND BINNING SHELVES
Howard J. Marschak, Evanston, Ill.
(855 W. North Ave., Chicago, Ill. 60622)
Filed Aug. 16, 1965, Ser. No. 479,847
9 Claims. (Cl. 211—184)



4. In means for detachably securing an upright member to a shelf provided with a plurality of spaced openings, said means including a bracket secured to the bottom of said upright, said bracket extending at substantially right angles to said upright, said bracket having a downwardly depending hook member, a spring member secured to said bracket, said spring member having a downwardly extending detent passing through an opening in said bracket and extending below the plane of said bracket, said hook member and said detent adapted to be inserted into the shelf opening, with said hook member engaging the wall of the shelf adjacent the rear of said opening and the detent engaging the wall adjacent the front of said opening in the shelf to thereby lock said bracket to said shelf.

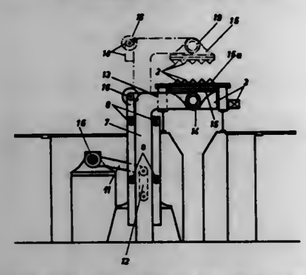
3,347,396
STACKING DEVICE
Frank J. Hohl, Snyder, N.Y., assignor to Hohl Machine & Conveyor Co. Inc., Buffalo, N.Y.
Filed May 4, 1964, Ser. No. 364,435
18 Claims. (Cl. 214—6)



1. A device for stacking sheets of magnetic material comprising a series of rolls adapted to receive successive sheets therealong against the underside thereof, means for delivering successive sheets of magnetic material along said series of rolls on the underside thereof in a direction generally normal to the axes of rotation of said rolls, magnet means positioned between adjacent ones of said

rolls and operable to hold magnetic sheet material against said rolls through magnetic attraction of the sheet to the magnet means independent of the rolls, and means for raising said magnet means relative to said rolls for releasing a sheet from the magnetic hold of said magnet means to drop from said series of rolls wherein said magnet means are maintained out of physical contact with a sheet held against the underside of said rolls.

3,347,397
APPARATUS FOR THE TURNING OVER AND PILING OF ROLLED STOCK
Ewald Hein, Siegen, Germany, assignor to Siegner Maschinenbau G.m.b.H., a corporation of Germany
Filed Mar. 10, 1965, Ser. No. 438,564
4 Claims. (Cl. 214—6)



1. An apparatus for transferring workpieces for arrangement into a compact pile wherein the workpieces have open portions, in combination

a conveyor for transporting a number of the workpieces in group fashion with the open portions always having the same relationship to the conveyor and each other, to a predetermined position and in a manner that a portion of the underneath surfaces of the workpieces are exposed,

a gripping member comprising a workpiece magnetic gripping head having a workpiece engaging surface adapted to be brought beneath the underneath surfaces of the workpiece and being of sufficient dimension transverse of the path of travel of the workpiece to engage a group thereof supported by said conveyor,

a column member arranged on one side of said conveyor and connected to said gripping head for raising said gripping head from a position beneath the workpiece to lift the workpiece off said conveyor,

means for moving said column member vertically relative to said conveyor,

an arm carried by said column member and including a trunnion for rotatably supporting said gripping head, and

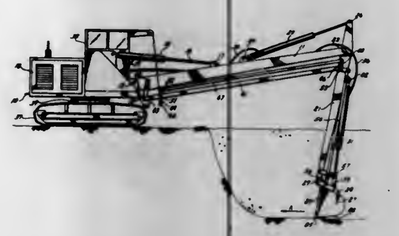
means for selectively positioning said head in a first position wherein a group of workpieces can be removed in the same position the open portions thereof assume when supported by said conveyor and a second position wherein the open portions of a group of workpieces are rotated 180° by the gripping head before piling thereof takes place.

3,347,398
BACKHOE COMBINATION
Edward H. Smith, 110 E. Manhatton, Tempe, Ariz. 85281
Filed Jan. 28, 1966, Ser. No. 523,720
4 Claims. (Cl. 214—138)

1. In a backhoe with a boom pivoted to a vehicle frame, a crowd pivoted to the boom and a curl pivoted to the crowd and means for manipulating said parts to move said curl in an excavation digging action,

(a) a primary indicator rod having one end pivoted to the crowd, an arm pivoted to an opposite end of said rod and to the boom, said rod, arm and contiguous portions of the crowd and boom defining a pantograph,

(b) a second indicator rod, an indicator arm pivoted intermediate its ends to the primary indicator rod with an indicator point at one end and another end pivoted to one end of said second indicator rod, and a bell crank lever pivoted to the crowd with one

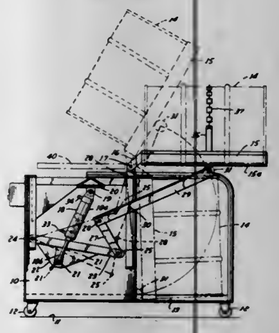


arm thereof pivoted to another end of said second indicator rod, indicator arm, one arm of the bell crank lever and contiguous portions of the primary and secondary indicator rods forming a second pantograph,

(c) a third indicator rod pivoted to a second arm of the bell crank lever and curl at a position spaced from its pivot, and

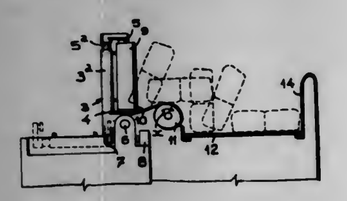
(d) indicator means responsive to the position of said indicator point for showing the depth of a digging edge of said curl in an excavation.

3,347,399
BARREL DUMPER
Earl H. Ensinger, 833 E. 139th St., Cleveland, Ohio 44110
Filed Jan. 17, 1966, Ser. No. 521,080
1 Claim. (Cl. 214—310)



A barrel lifter comprising a stand adapted to rest on a supporting surface, a lifter rack adapted to be attached to a barrel, a pivotal connection between the inner end of said rack and the top of said stand near the rear side thereof, means connected with said strand for swinging said rack about said pivot connection from a starting position where said barrel is resting upon said surface with the open end up through an arc of about 145 degrees with its open end downward above said stand, said means comprising a lifting lever pivoted intermediate its ends to said stand at a point below said pivotal connection, the outer end of said lever positioned to engage said rack, roller means on said outer end of said lever engaging the lower side of said rack, said lever in said rack starting position being substantially vertical adjacent said rear side of said stand, power means operatively connected with the inner end of said lever for causing said swinging movement of said rack comprising a drive lever having one end pivotally mounted on said stand near the front side thereof, a link pivotally connected between the other end of said drive lever and the inner end of said lifting lever, and said power means comprising a cylinder and piston motor having a pivotal connection with said drive lever intermediate the ends of the latter such that the working stroke of said motor is close to a right angle relationship with said drive lever, and the parts being so constructed and arranged that during the mid-portion of the swinging movement of said rack, when the load on said power means is the greatest, said link lies close to a position at right angles to both said drive lever and said lifting lever for efficient application of power between said levers.

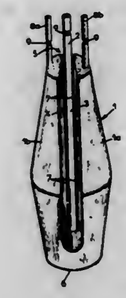
3,347,400
APPARATUS FOR DEPANNING BREAD LOAVES
William de Ridder, Bachlaan 1, Voorschoten, Netherlands
Filed Feb. 25, 1966, Ser. No. 530,000
Claims priority, application Netherlands, Feb. 27, 1965, 65—2,531
5 Claims. (Cl. 214—314)



1. An apparatus for depanning bread loaves, comprising a delivery conveyor for the pans to be emptied, a turnover device in the path of this delivery conveyor adapted to rotate in a vertical plane so as to be swung into a position above a discharge conveyor, means for putting the empty pans on a second discharge conveyor, and an inverter member between the turnover device and said first discharge conveyor adapted to cause the bread loaves, falling on it from the pans in the dumping position of the turnover device, to turn further into their upright position onto the said discharge conveyor, said inverter member being a rotary roller having its axis parallel to the axis of rotation of the turnover device.

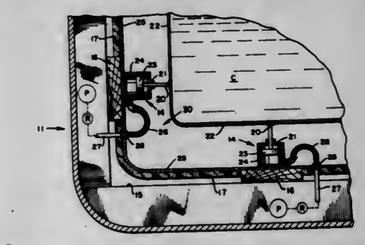
3,347,401
CONTAINER WITH EMBEDDED PIPE
Paul Nataf, 54 rue de Sablonville, Neuilly-sur-Seine, France
Filed Mar. 21, 1966, Ser. No. 535,875
Claims priority, application France, Mar. 24, 1965, 10,512; June 5, 1965, 19,755
8 Claims. (Cl. 215—1)

1. A container comprising a hollow body made of mouldable material, said hollow body having a bottom wall and being formed with at least two recesses welded to each other along at least two parallel weld lines, said recesses extending from the upper portion of said hollow body to a short distance from said bottom wall so as to divided said hollow body into at least two cavities communicating with each other at their lower portions, and an exhaust pipe comprising an outer section projecting



from said upper portion of the hollow body and an inner section embedded in said hollow body and formed between said weld lines.

3,347,402
CRYOGENIC TANK
Charles D. Forman, Elizabeth, and Augustus B. Small, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,658
3 Claims. (Cl. 220—15)



1. In a tanker having a hull, a tank for storing and transporting liquefied gases at cryogenic temperatures and atmospheric pressure comprising

(a) an inner impermeable tank of a material retaining its ductility at cryogenic temperatures,

(b) an outer impermeable tank of a material retaining its ductility at cryogenic temperatures,

(c) means mounting said inner tank in said outer tank for effectively free and independent movement relative thereto, said means comprising fluid actuator means arrayed about said outer tank for limited displacement relative thereto along predetermined axes, actuator piston rods projecting from said actuator means and controllably displaceable along predetermined axes perpendicular to the planes of said last mentioned axes, said rods connected at their distal ends to said inner tank,

(d) said inner and outer tanks defining a chamber therebetween,

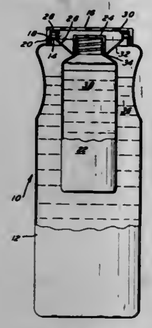
(e) means for evacuating the air in said chamber and for maintaining a vacuum therein,

(f) gas detection means associated with said chamber and adapted to detect the presence of gas therein, and

(g) thermal insulation means covering said outer tank, and

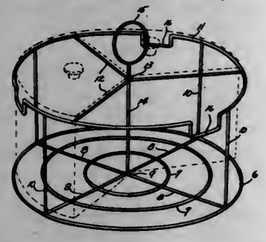
(h) insulating bearing means interposed between said outer tank and the interior of said hull whereby said hull supports said outer tank.

3,347,403
CONTAINER
David Lehrman, Cheltenham, Pa., assignor to The Ironees Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1966, Ser. No. 520,016
6 Claims. (Cl. 220—17)



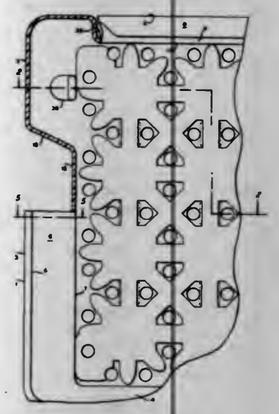
1. A container comprising an inner vessel, an outer vessel, and means for mounting said inner vessel completely within said outer vessel, said inner and outer vessels having caps and cap-receiving neck portions, said cap-receiving neck portion of said inner vessel being substantially smaller than the cap-receiving neck portion of said outer vessel, and said inner vessel being smaller than and completely contained inside of said outer vessel; the means for mounting said inner vessel within said outer vessel comprising an adapter having an upright portion within said outer vessel, a radially outwardly extending flange at the upper end of said upright portion, said adapter being removably attached to said outer vessel by engagement between said flange and the cap-receiving neck portion of said outer vessel, such engagement supporting the adapter within said outer vessel; said upright portion of said adapter containing at its lower end a radially inwardly extending flange which is smaller than the outer periphery of the cap of the inner vessel, said flange being removably attached to said inner vessel by engagement with the bottom horizontal surface of said cap whereby said inner container is supported completely within said outer container.

3,347,404
HOLDER FOR MULTIPLE COOKING CONTAINERS
Thomas M. McIntyre, 11530 S. Kilbourn Ave., Alsip, Ill. 60658
Filed Sept. 30, 1965, Ser. No. 491,787
4 Claims. (Cl. 220—19)



1. A cooking utensil comprising a holder and a plurality of containers,
said holder having a bottom frame for supporting said containers and a top frame,
(i) said frames lying in spaced-apart generally parallel planes,
(ii) said bottom frame formed of a plurality of radially spaced concentric wires and a first set of radially extending wires, said radially extending wires meeting at the center of said bottom frame and connecting said concentric wires,
(iii) said top frame formed by a curved outer wire having approximately the same radius of curvature as the outermost of said concentric wires and a second set of radially inwardly extending wires,
a plurality of wires extending perpendicularly to said bottom frame from the outermost concentric wire to said outer wire,
a center wire extending between the centers of said upper and lower frames and being secured to said first and second sets of radially extending wires,
said upper frame being divided into sectors by said second set of radially extending wires,
each of said containers having a bottom wall supported by said bottom frame and upwardly extending side walls,
(i) one of said side walls being curved and having approximately the same radius of curvature as said outer wire,
(ii) the side walls of each container defining in cross section a sector of substantially the same size as one of said upper frame sectors,
whereby each of said containers may be removably supported in said holder.

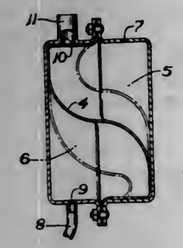
3,347,405
ARTICLE CARRYING CASE
James O. Motsenbocker, Robert W. Matthews, Bill T. Morgan, and Robert A. Carle, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,080
5 Claims. (Cl. 220—21)



1. A one-piece, open top carrier having
(a) end walls, at least one of said end walls having an indented channel extending a portion of the distance of the bottom to the top thereof, the top of the indented channel extending outwardly to meet said end wall, said top of said indented channel having downwardly projecting ridges to assist in gripping,
(b) side walls integrally formed with said end walls, each side wall having an indented portion extending from the bottom to a point below the top of said side wall, the top of said indented portion extending outwardly to meet said side wall,

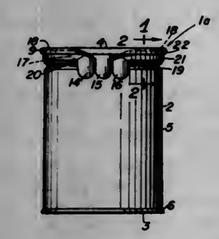
(c) a reinforcing flange around the top of the side and end walls extending inwardly and downwardly, at said side walls said flange extending down to and being integrally fused with said top of said indented side wall portion to form a hollow rigidifying structural member, and
(d) a bottom wall integrally formed with said end walls and said side walls.

3,347,406
FUEL TANK
Edwin B. Katzenmeyer, Akron, Ohio, assignor to B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 15, 1965, Ser. No. 507,815
5 Claims. (Cl. 220—22)



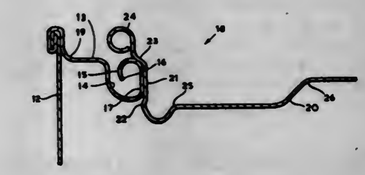
1. A fuel tank for a vehicle comprising a tank for storing liquid for use in powering such vehicle, a flexible diaphragm dividing the interior of said tank into two separate chambers, outlet means connected to one of said chambers to facilitate the filling and removal of fuel therefrom, and vent means connected to the other of said chambers for communicating said other chamber with the atmosphere to provide a positive pressure to said one chamber.

3,347,407
CONTAINER CLOSURE HAVING INTEGRAL TEAR STRIPS
Sollace B. Coolidge, Jr., Chagrin Falls, Ohio, and John Daniel Czarnecki, Downers Grove, Ill., assignors to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio
Filed June 7, 1965, Ser. No. 461,902
5 Claims. (Cl. 220—54)



1. A container comprising
(a) a body portion having
(1) a closed bottom and
(2) an open top,
(b) said body portion having an annular outwardly projecting portion extending around the top edge thereof, and
(c) a cover member disposed in closing relation to said top of said body portion,
(d) said cover member comprising
(1) a substantial disk-shaped central portion,
(2) an annular flange
(a') extending outwardly from said central portion
(b') curving outwardly and downwardly around said annular projecting portion in position to hold said cover member on said body portion, and
(3) tab means for removing said cover from said body portion,
(e) said flange having two score lines extending thereabout from one side of said tab means to the other in laterally spaced relation to each other,
(f) one of said score lines
(1) extending above the lower edge of said flange and inwardly of, and below, the radially outermost portion of said annular projecting portion, and
(2) defining the upper edge of a tear strip extending along the lower edge of said lower edge portion
(g) the other of said score lines
(1) extending above said one score line and outwardly of the radially outermost portion of said annular projecting portion, and
(2) defining the upper edge of another tear strip extending along the upper edge of said first mentioned tear strip,
(h) said tab means comprising
(1) a pull tab on one end of said first mentioned tear strip for pulling the latter off from said flange, and
(2) another pull tab on one end of said other tear strip for pulling the latter off from the remainder of said flange after said first mentioned tear strip has been removed therefrom.

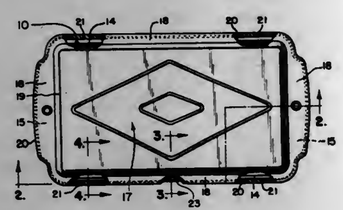
3,347,408
CONTAINER AND LID ASSEMBLY
Harry Baker, Sr., Ancaster, Ontario, Canada, assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed July 6, 1965, Ser. No. 469,705
5 Claims. (Cl. 220—60)



1. A container and lid assembly, the container comprising a bottom portion, a body portion and an inwardly extending annular radial flange at the upper end of the body portion, the inner end of the flange providing an annular upwardly facing channel, the innermost wall of said channel constituting a smooth yieldable friction wall extending upwardly from the bottom of said channel and having upper and lower ends, the upper end being free of securement to any other portion of said flange, the lid comprising a bottom wall and a side wall adapted to snugly engage the friction wall, the side wall having an annular outwardly extending bead which is near the bottom wall of the lid and which causes the friction wall to yield outwardly slightly as the lid is inserted into the container so that the lid snaps in place and is locked against accidental removal after the bead is pushed below the lower end of the friction wall, and the side wall

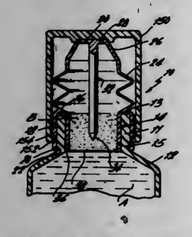
having an annular outwardly extending shoulder for engagement with the upper end of the friction wall to limit the travel of the lid into the container.

3,347,409
CONTAINER AND LID ASSEMBLY
Douglas S. Burns, Des Plaines, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 526,924
3 Claims. (Cl. 220—60)



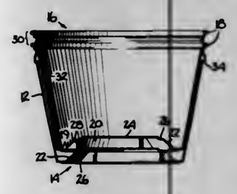
1. A container and lid assembly including a container having a bottom wall and means enclosing the area occupied by said bottom wall to define the mouth of said container including a side wall having an outstanding bead along the upper limits of said side wall, a one-piece semi-rigid lid of such size as to close the mouth of said container, a flange extending downwardly from the peripheral limits of said lid adapted to encompass said bead of the container when said lid is in closed position relative to the mouth of said container, said flange having container bead engaging surfaces confined to portions of the flange offset inwardly of the area bounded by said flange and spaced apart lengthwise of said lid and a lip extending inwardly from the lower edge of said inwardly offset areas with which said container bead has a snap-on fit to releasably secure said lid in closed position relative to the mouth of said container, said lid having an opening intersecting an area of the flange and a portion of the lid extending inwardly from said area of the flange centrally of positions occupied by a pair of said bead engaging surfaces of the flange, said opening providing access to a portion of the container bead bridging said opening for the application of pressure against said latter portion of the bead in a direction bottomward of said container to release said container bead from said latter pair of bead engaging surfaces of the flange and the lip associated with said surfaces.

3,347,410
MIXING ASSEMBLIES FOR APPLICATORS
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Aug. 31, 1966, Ser. No. 576,429
8 Claims. (Cl. 222—80)



1. An applicator for use with a container provided with a neck having an open end and having a first substance disposed therein, said applicator comprising a retainer ring having a projecting portion for reception in said neck, and a portion overlying said open end, said applicator further including a fitting detachably engaging the outer surface of said neck, an applicator head having openings therethrough, a resilient bellows integral with said applicator head and said fitting and connecting said fitting to said applicator head, said projecting portion being provided at the lowermost end thereof with sealing means to hold a second substance within said retainer ring, and a stem integrally depending from said applicator head and being engageable with said sealing means upon depression of said applicator head and bellows to open said sealing means to permit the second substance to mix with the first substance, said bellows normally urging said stem away from said sealing means.

3,347,411
NESTABLE CONTAINERS
Daniel R. Kalata, 58 Pickwick Drive, Commack, N.Y. 11725, and Henry H. Huston, 82 Prospect St., Huntington, N.Y. 11743
Filed Mar. 24, 1965, Ser. No. 442,398
6 Claims. (Cl. 220—97)

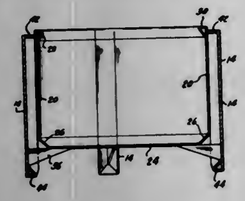


1. A plastic nestable container comprising a sidewall tapering generally downwardly from a larger diameter adjacent its upper open end to a smaller diameter adjacent its bottom, said bottom being recessed inwardly forming a vertically disposed truncated conical depression having upwardly, inwardly sloping sidewalls with respect to the bottom, a plurality of spaced lugs extending upwardly from the bottom of said container, said lugs having semi-cylindrical shaped vertical walls forming interruptions of said sloping sidewalls of the truncated conical depression, a substantially peripherally continuous lug receiving shoulder interrupting said sloping sidewalls of the truncated conical depression, said lug receiving shoulder having a horizontal portion for receiving the bottoms of the lugs and an upwardly extending inner wall portion for engagement with the semi-cylindrical shaped vertical walls of said lugs of an upper nested container.

3,347,412
STACKABLE CONTAINER
Ralph E. McKinney, Beatrice, Nebr., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,509
1 Claim. (Cl. 220—97)

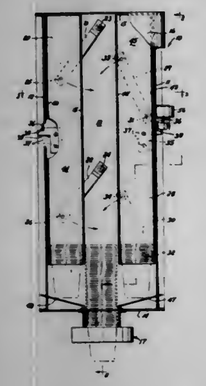
A stackable container comprising a box having bottom and side walls and an open top, said box being substantially rectangular in plan and having corners formed by diagonal wall sections extending between adjacent side walls, upright supporting legs disposed at said corners of said box, each of said legs being of angle shape in horizontal section so that it has a pair of sections arranged at right angles, said sections in each leg being butted against and secured to a diagonal wall section of said box so as to constitute extensions of said side walls, each of said legs having a bottom end and a top surface which extends between said leg sections and the adjacent diagonal wall section so that said top surface is of a size

sufficiently large to support said bottom end, said legs being secured to said box so as to support said box at a position in which the open top thereof is above top surfaces of said legs a predetermined distance so that a portion of each diagonal wall section extends upwardly from the top surface of the adjacent leg, said leg bottom ends



being spaced below said box bottom wall a distance greater than said predetermined distance so that plurality of said containers are stackable one on top the next so that the leg bottom ends of one rest on the leg top surfaces of the container therebelow and are prevented from shifting horizontally by said portions of the diagonal wall sections on the container therebelow.

3,347,413
ARTICLE DISPENSER WITH AUTOMATIC REPLACEMENT OF DEPLETED STACK WITH A SIMILAR STACK
John H. Kopera, Trenton, N.J., assignor to Rudd-Melikian, Inc., Warminster, Pa., a corporation of Pennsylvania
Filed Apr. 25, 1966, Ser. No. 544,762
9 Claims. (Cl. 221—11)



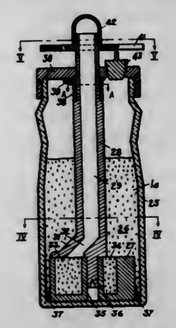
1. A dispenser for sequentially dispensing articles at a central dispensing station, said articles being arranged in vertically oriented columns, a first of said columns being positioned at said central dispensing station and the second and third of said columns being positioned on opposite sides of said station, first and second storage magazines for storing said second and third columns of articles, means mounting said first magazine for movement to the said station when the first column of articles drops to a predetermined level, means mounting said second magazine for movement to said station when the column of articles in the first storage magazine drops to a predetermined level and means to return the first magazine to its position on one side of said dispensing station upon movement of said second magazine to said dispensing station.

3,347,414
AUTOMATIC COIL FEED FOR SEALED BEAM LAMPS
Geoffrey A. Daines, West Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1966, Ser. No. 520,747
4 Claims. (Cl. 221—200)



1. A device for delivering filament coils from a coil forming machine to a machine for mounting said coils in electric lamps comprising:
(a) delivery track means for delivering completed filament coils from a coil forming machine to a first position,
(b) elevator means having an arcuate depression forming a coil seat thereon for sequentially receiving individual coils at said first position,
(c) coil hold down means spring urged to a position overlying said seat and adapted to prevent a coil from being stripped from said seat upon movement of said elevator means, said hold down means being spaced above said seat a distance greater than the diameter of coil,
(d) drive means for moving said elevator means from said first position to a second position, and
(e) releasing means constructed and arranged to remove said coil hold down means from its coil retaining position when said elevator means is at said second position.

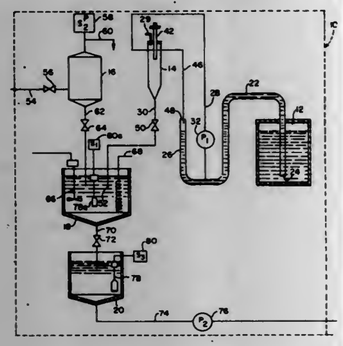
3,347,415
METERING DISPENSER DEVICES FOR FLUIDS
Albert P. Strom, Forest Hills, Pa. (222 Castlegate Road, Forest Hills Borough, Pittsburgh, Pa. 15221)
Filed Oct. 18, 1965, Ser. No. 497,011
9 Claims. (Cl. 222—48)



3. A hand-type metering dispenser comprising a material container, a flowable material to be dispensed and a dispensing mechanism, said mechanism comprising a multiplicity of rotatable metering cavities disposed at the bottom of said container when in its normal upright position refillable from the material in the dispenser chamber by gravity, vertically disposed rotatable selecting means having an indicator to effect rotation of said metering cavities, said selecting means defining a discharge passage open at its upper end in the normal upright at rest position of the device, each cavity having a specific volume and its individual filling opening, means including a stationary plate (6) having a circular slot (44) adapted to at times to register with the filling openings of a plurality of said metering cavities, said selecting means selectng one or more of these volumes to be simultaneously

discharged through said discharge passage, and means for passing the discharged material in said selected volumes through said discharge passage to a location externally of the dispenser by hand inversion of said material container.

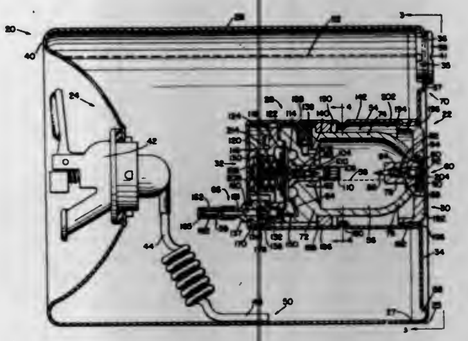
3,347,416
PROPORTIONING APPARATUS
Wallace Hamilton, Chagrin Falls, Ohio, assignor to Lewis Welding and Engineering Corporation, a corporation of Ohio
Filed July 7, 1965, Ser. No. 470,002
8 Claims. (Cl. 222—56)



6. An apparatus for proportioning at least two liquids, comprising in combination:
(a) a first tank having a single compartment whose volume is fixed and unadjustable for measuring a fixed amount of the first of said two liquids;
(b) a second tank having a single fixed compartment for measuring a proportionate amount of the second of said two liquids;
(c) a plunger adjustable in the second tank for varying the amount of liquid therein relative to the fixed amount of liquid in said first tank;
(d) a third tank for receiving by gravity, the liquid from said first and second tanks, said liquids being mixed in said third tank to form a solution;
(e) means for dispensing at least a portion of the solution from said third tank; and
(f) means responsive to said dispensing means (e) for regulating the receiving of liquids into said third tank.

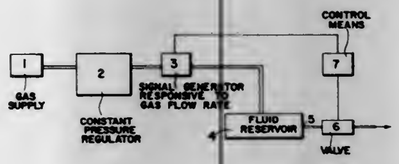
3,347,417
CHARGED LIQUID DISPENSER WITH POCKETED GAS CONTAINER
Louis M. Puster, Knoxville, Tenn., assignor, by mesne assignments, to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,658
20 Claims. (Cl. 222—61)

1. In combination:
a relatively low pressure gas charged liquid containing dispenser shell having a gas charging and liquid filling end wall and a liquid dispensing end wall;
said filling end wall being substantially circular and having an integral substantially cylindrical countersunk pocket with a substantially circular pocket opening and a substantially circular pocket bottom;
said filling end wall having a substantially flat, substantially annular portion surrounding said pocket opening, said annular portion having a liquid filling and emptying opening laterally spaced from said pocket opening;
said liquid dispensing end wall having an inwardly recessed portion with a liquid dispensing faucet in said recessed portion with a liquid conveying tube extending to a normally low position in said charged liquid;
a relatively high pressure charging gas container in said pocket;



said gas container having a gas charging means located adjacent the center of said pocket opening;
said gas container having an automatic gas pressure reducing means with a reduced pressure gas conducting means adjacent said pocket bottom;
and reduced pressure outlet means in said pocket bottom connected to said outwardly conducting means and discharging reduced pressure gas into said gas charged liquid.

3,347,418
LIQUID DISPENSER UTILIZING CONTROLLED GAS PRESSURE
Gerald B. Fefferman, Framingham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,716
4 Claims. (Cl. 222—61)

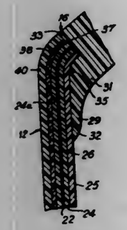


1. Apparatus for dispensing a liquid at a controlled rate of flow comprising:
(a) a closed reservoir for said liquid, said reservoir having an outlet and an inlet port;
(b) valve means coupled with said outlet port to control said rate of flow of said liquid from said reservoir;
(c) gas supply means coupled with said inlet port to force said liquid from said reservoir, said gas supply means having means to regulate the pressure of said gas to a substantially constant value; and
(d) means responsive to the mass flow rate of said gas for adjusting said valve means so that a predetermined mass flow rate of gas is maintained.

ERRATUM

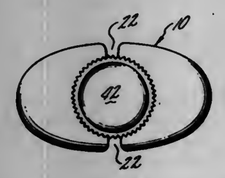
For Class 222—80 see:
Patent No. 3,347,410

3,347,419
COLLAPSIBLE DISPENSING TUBE
Roger Brandt, Short Hills, and Nicholas Michael Mestanas, Jersey City, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 21, 1965, Ser. No. 426,736
7 Claims. (Cl. 222—107)



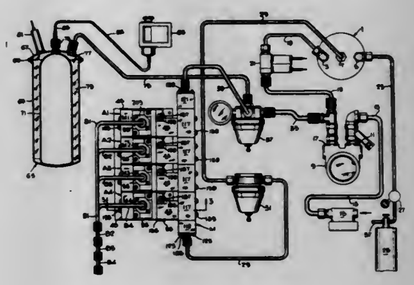
1. In a collapsible dispensing container having a laminated tubular body and a thermoplastic dispensing headpiece fused thereto wherein said body includes a fluid-impervious metal foil lamination, and a lamination of bonding material connecting said headpiece to said body:
the improvement in said bonding material to insure connection of said headpiece to said body without delamination of said bonding material from said foil or disconnection of said headpiece from said bonding material comprising:
a first layer thereof overlying said foil and adhering thereto, said layer comprising a copolymer of ethylene and a member of the group consisting of an acrylic acid and an acrylic acid ester,
a second layer overlying said first layer and adhering thereto on one side thereof, and fused to said headpiece on the other side thereof at one end of said body to form the principal connection thereto, said second layer being a polyolefin.

3,347,420
MULTI-COMPARTMENT CONTAINER FOR DISPENSING MEASURED QUANTITIES OF A PLURALITY OF LIQUIDS
Robert J. Donoghue, 900 Windsor Ave., Windsor, Conn. 06095
Filed Aug. 16, 1965, Ser. No. 479,723
11 Claims. (Cl. 222—129)



1. A container for dispensing measured quantities of different liquids and comprising an integral multi-compartment body formed of flexible wall light-transmitting molded material, two of the said compartments being reservoirs formed with a common generally vertical separating wall which is deeply grooved on opposite sides to connect the two reservoirs by a generally vertical web, at least one other compartment defining a measuring and dispensing chamber formed over the reservoir compartments and having a common generally horizontal separating wall therewith which is provided with an opening on each side of the vertical separating wall to provide communication with the respective reservoirs, the said horizontal separating wall being deeply grooved on opposite sides to connect the two reservoirs to the measuring and dispensing compartment by a generally horizontal web, the said measuring and dispensing compartment being formed with a top wall having a dispensing opening adapted to be closed by a cap and providing access to the openings in the horizontal separating wall for filling the reservoirs, a conduit means for each opening in the horizontal separating wall and insertable therein through the dispensing opening, said conduit means including an upwardly extending transfer spout having a discharge opening at its upper end whereby liquid can be transferred independently from the reservoirs to the measuring and dispensing chamber by squeezing the body walls of the reservoirs and in quantities determined by observing the liquid level in said chamber through the light-transmitting material and in total quantity determined by the liquid level at the discharge openings of said pouring spouts, the transferred liquid being thereafter dispensed from the measuring and dispensing chamber.

3,347,421
PLURAL SOURCE DISPENSER FOR SINGLE MIXED DRINKS
Thomas O. Yingst, Pevely, and Leonard P. Traxel, Affton, Mo., assignors to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Filed July 14, 1965, Ser. No. 471,967
20 Claims. (Cl. 222—129.1)

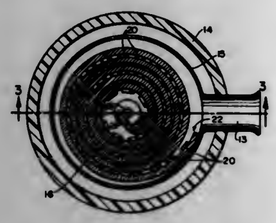


1. A beverage mixing and dispensing system comprising a mixer in which water and syrup may mix to constitute a beverage, a beverage delivery line extending from the mixer, a dispensing valve for said line, a blender for delivering a blend of carbonated water and tap water, or carbonated water per se, or tap water per se to the mixer, means for delivering syrup to the mixer, a carbonator, means for delivering carbonated water from the carbonator to the blender, a tap water pump, a line for delivering tap water from the outlet of the pump to the carbonator, said line having a shut-off valve therein, means defining a tap water chamber in communication with said line between the pump outlet and the shut-off valve, means for pressurizing tap water in said chamber, and a line for delivering tap water from the pump outlet to the blender.

3,347,422
HEAT EXCHANGE DEVICE

Bruce R. Mead, Fairfield, and Leopold Karl Kuhnl, Stratford, Conn., assignors to Eversharp, Inc., Milford, Conn., a corporation of Delaware

Filed July, 20, 1965, Ser. No. 473,421
1 Claim. (Cl. 222—146)



In a heat exchanger for changing the temperature of a substance dispensed from a pressurized container, the heat exchanger having a channel member positioned and convoluted within an enclosure member to form together with said enclosure member a spiral conduit, and the enclosure member having external walls in good thermal contact with an outer portion of said channel member, the improvement which comprises the channel member having a plurality of projections therefrom of material having good heat transfer properties, said projections completely traversing the conduit and contacting an adjacent convolution of said channel member.

3,347,423
CONTAINER AND ITS COMPONENTS FOR AEROSOL PRODUCT

Erwin P. G. Rahn, Pittsford, and Saul A. Babbin, Henrietta, N.Y., assignors to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware

Filed July 7, 1966, Ser. No. 563,502
26 Claims. (Cl. 222—183)

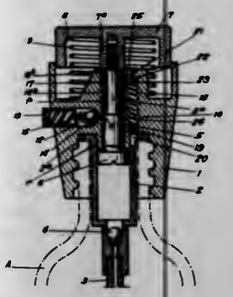


1. An article of manufacture which comprises a tubular shell having
(1) a sidewall with a front segment, a rear segment and side segments,
(2) a top wall
(a) having an opening providing at least part of an opening at the top end of the shell and
(b) extending from the top end of the sidewall toward the longitudinal axis of the shell,
(3) a pair of opposed walls depending from the top wall at the opening,
(4) an intermediate transverse wall extending from and between opposed segments of the sidewall and united to the pair of opposed pendant walls, said transverse wall having an opening below the opening in the top wall, and
(5) a hollow boss having a wall depending from the transverse wall, with
(a) the opening of the transverse wall being above and of smaller transverse dimension than the hollow portion of the boss to provide by the transverse wall adjacent its opening a downwardly-facing stop shoulder and
(b) the downwardly-extending wall of the boss having on its inner surface an upwardly-facing shoulder spaced below the transverse wall to engage an inwardly offset bottom portion of a closure for a container while a top portion of the closure abuts the stop shoulder provided by the transverse wall,
said sidewall of said shell having an opening in its front segment above said transverse wall and said shell having on opposite sides of its longitudinal axis an inner surface that extends horizontally adjacent the periphery of the opening at the top end of the shell and that is shaped to provide at each of said opposite sides one of the two surfaces of a tongue-and-groove locking structure.

3,347,424
VAPORIZING DEVICE

Michel Boris, Paris, France, assignor to Societe Technique de Pulverisation, Boulogne-sur-Seine, France, a corporation of France

Filed Apr. 14, 1965, Ser. No. 448,066
Claims priority, application France, Apr. 20, 1964, 3,122/64
4 Claims. (Cl. 222—263)



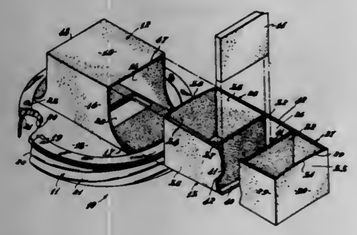
1. A vaporizing device for use with a container holding a liquid to be dispensed therefrom in vapor form, comprising:
a body provided with an annular recess, a central axial bore, a passage communicating with said recess and said container, and a lateral bore,
a pump cylinder secured to the body and aligned with the axial bore,
a pump plunger axially movable within the cylinder and within the axial bore,
manually operable piston means secured to said pump plunger and movable into said recess for generating air pressure in said passage and actuating said plunger,
a spring biasing said piston means out of the recess,
a vaporizing nozzle assembly mounted in the lateral bore,
a tubular extension secured to the pump cylinder and arranged to dip into liquid in the container,
a check valve operable to block communication between the container and the interior of the cylinder,
a spring-biased valve in the passage serving normally to prevent communication through the passage between the container and the atmosphere but permitting such communication when the pressure in the container is below atmospheric pressure, and

a further spring-biased valve operable to block communication between the interior of the cylinder and the nozzle assembly when the pressure of the liquid therein falls below a value sufficient to effect vaporization in the nozzle assembly.

3,347,425
INSTANT COFFEE DISPENSER WITH ADJUSTABLE TRAP CHAMBER

Frederick W. Beushausen, 1142 Burney Lane, Cincinnati, Ohio 45230, and Robert D. Parry, Cincinnati, Ohio; said Parry assignor to said Beushausen

Filed June 16, 1966, Ser. No. 557,955
4 Claims. (Cl. 222—305)

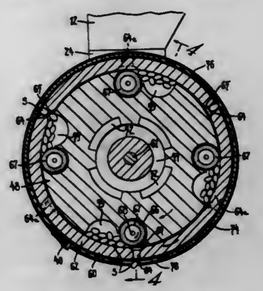


1. A dispenser device for discharging measured amounts of granular material from a closed container comprising
a lid adapted for operable engagement with said container, said lid having structure defining a feed aperture in the top thereof,
a carrier adapted to reciprocate across the top plane of said lid, said carrier including structure defining a carrier chamber, said chamber being open at the top and the bottom with the bottom being alignable with said feed aperture in an operating relationship as said carrier reciprocates across the top of said lid.
a slideway casing integral with said lid and adapted to maintain said carrier in an operable reciprocatory relationship with said lid, said casing being dimensioned so that the top of said casing cooperates with the top of said chamber to close the top of said chamber to the atmosphere when the bottom of said chamber is aligned with said feed aperture and to open the top of said chamber to the atmosphere when the bottom of said chamber is not aligned with said feed aperture,
a stop located at each end of said carrier for cooperation with said slideway casing whereby said carrier may not be inadvertently reciprocated out of the operable relationship with said casing under normal operating circumstances,
a removable partition for reducing the available volume of said chamber for receiving granulated material, and
retainer means for maintaining said removable partition in operating engagement with said chamber, said retainer means including a lip extending from a wall of said chamber for preventing said partition from falling through said feed aperture when the bottom of said chamber is aligned with said feed aperture, and protuberances associated with other walls of said chamber to maintain said partition against the wall from which said lip extends, the position of said removable partition within said chamber being such that said partition is at all times retained within the chamber through cooperation of the top of said slideway casing, said lip, and said protuberances no matter where the carrier is positioned throughout its reciprocatory path.

3,347,426
PRECISION SEED PLANTER

John E. Morrison, Jr., Royal Oak, and John Arzoian and Kenneth M. Hunt, Dearborn, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.

Filed June 15, 1965, Ser. No. 464,117
20 Claims. (Cl. 222—352)

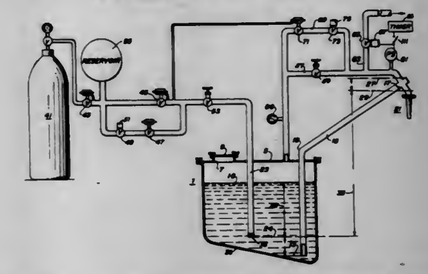


20. A planter comprising means defining a seed release point, at least one seed carrying element movable in a circular path past the seed release point, seed supply means, means for centrifugally moving seeds from the supply to a seed path concentric with the path of the seed carrying element and thereafter move the seeds around said seed path, and means for driving the seed carrying element around its path in the same direction as that of seeds around the seed path at a speed relative to the seeds such that seeds are centrifugally urged into the seed carrying element with a minimum amount of impact force for transport to the seed release point.

3,347,427
PRESSURE POUR APPARATUS

Wilfred Ernest Willis, San Francisco, Calif., assignor to James S. Campbell, doing business as Quality Casting Systems

Filed Nov. 30, 1965, Ser. No. 524,955
14 Claims. (Cl. 222—399)



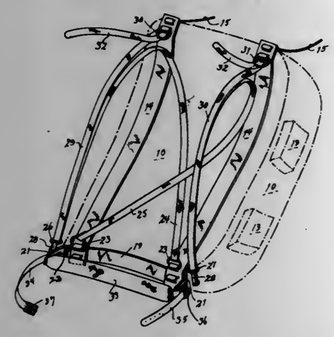
1. Pressure pour apparatus for dispensing of liquid comprising:
a sealable receptacle for holding liquid,
a discharge passageway extending upwardly from said receptacle, with its lower end at a level adjacent the bottom of said receptacle and having at its upper end, a discharge lip,
means for conducting a gas under pressure into said receptacle,
and pressure sensitive means exposed to pressure prevailing in said liquid at a location below the prevailing liquid level and responsive to diminution thereof from a value corresponding to the pressure value of said pressure sensitive means for admitting gas under pressure to maintain pressure at said below level point substantially equal to the pressure value of said pressure sensitive means.

3,347,428
REMOVABLE PADDED COAT HANGER COVER
Katherine M. Gauthier, 1 Leighton Ave., Yonkers, N.Y. 10705
Filed Feb. 23, 1966, Ser. No. 529,316
2 Claims. (Cl. 223—98)



1. In a garment hanger cover, the combination of an upper and lower rectangular panels forming an outer covering for a hanger, a pad enclosed within said covering, means for inserting said hanger cover over a garment hanger, means for securing the ends of said hanger cover to said garment hanger, said means for inserting said cover over the hanger comprising a central opening formed through said cover for insertion of the wire hook of a hanger therethrough, means securing said upper and lower panels and said pad peripherally together, said cover having a pair of elastic tapes stitched thereto while stretched along each longitudinal edge of said panels; said tapes, when at normal rest, gathering said cover in a longitudinal direction, the ends of said hanger cover each being folded upon itself and a vertical line of stitching securing the edges together and forming a pocket at each end thereof.

3,347,429
CONTOUR SHOULDER PACK
Harold Stuart Ruth, Jr., 2784 Jackson St., San Francisco, Calif. 94115
Filed Nov. 7, 1966, Ser. No. 592,508
6 Claims. (Cl. 224—11)



2. In a packsack for campers, hikers and the like, the combination of a packsack for containing articles to be carried, two packsack securing straps sewed in spaced parallel relation to the back of said packsack with free ends extending, a vertically extending rigid stay overlaying each of said straps having a plurality of transverse slots at their ends through which the free ends of said straps are laced to secure said stays to the packsack, a horizontally extending spacing stay at the lower ends of said vertical stays having matching slots through which the extending ends of said spaced vertically extending straps are also threaded, said packsack securing straps after lacing through the transversely extending slots at the upper and lower ends of said stays being secured by buckles to the top and bottom of said packsack, a D-ring secured at the lower ends of each of said vertically extending rigid stays by said strap lacing, a shoulder strap extending upwardly from each of said D-rings and crossed to pass over an opposite shoulder of a user, snap hooks each having a strap accommodating loop through which said shoulder straps may pass from the D-rings at the lower ends of said vertically extending rigid stays, a pair of strap-cinching D-rings secured at the upper ends of said stays by said strap lacing, and characterized by the fact that said shoulder straps after passing over the shoulders of a user are doubled back through the loops of said snap hooks to said strap-cinching D-rings, whereby said pack may be drawn into firm contact with the back of a user while held extended by said verticaly extending stays.

3,347,430
RING OHMIC CONTACT MICROELECTRONIC COMPONENT SEPARATION METHOD
Turner E. Pardue, % Melpar, Inc., 7700 Arlington Blvd., Falls Church, Va. 22046
Filed May 25, 1964, Ser. No. 373,596
3 Claims. (Cl. 225—2)

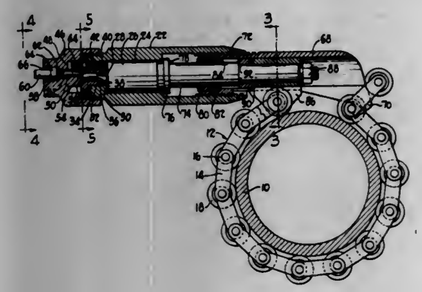


1. The method of separating individual components from an oxide-coated single parent wafer of semiconductor material comprising
removing the oxide layer from the surface of said wafer along substantially closed paths about the perimeter of each component on said wafer,
depositing on each said path a substantially closed ring of ohmic contact material wider than said path so that said material adherently contacts both said wafer and said oxide layer interior to said ring,
scribing lines upon the surface of said wafer between said rings, and
flexing said wafer so as to break said wafer along said lines.

3,347,431
EXPLOSIVE ACTUATED PIPE CUTTER
John H. Breisch, Lakewood, Ohio, assignor to Cleveland-Detroit Corporation, Cleveland, Ohio, a corporation of Delaware
Continuation of application Ser. No. 344,467, Feb. 12, 1964. This application Mar. 7, 1966, Ser. No. 540,132
8 Claims. (Cl. 225—103)

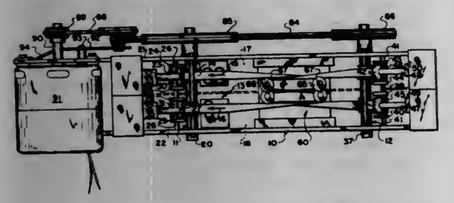
1. A pipe cutter comprising a plurality of sharp edge pressure elements adapted to be disposed in circumferential alignment about the circumference of a pipe,

support means extending around said pipe and supporting said elements for movement simultaneously radially inwardly of said pipe to sever the pipe, first and second members connectable with said support means, means mechanically interconnecting said members to relatively move said members in the one direction to tighten said support means about said pipe and hold said elements in



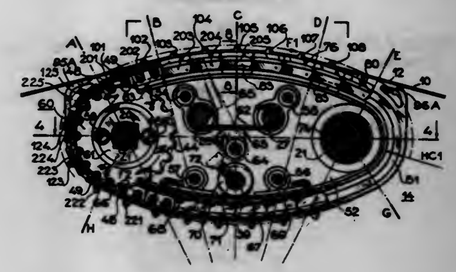
snug engagement with said pipe, and force generating means for applying a momentary impact force to said members with explosive-like suddenness to drive said members relative to each other in said direction to suddenly move said elements radially inwardly of said pipe to fracture said pipe with one sudden impact, and means mounting said first and second members on said force generating means.

3,347,432
ENDLESS TAPE CONTROL DEVICE
Fred C. Bolick, Jr., Atlanta, Ga., assignor to Lanier Electronics Laboratory, Inc., Atlanta, Ga., a corporation of Georgia
Filed July 18, 1966, Ser. No. 565,941
10 Claims. (Cl. 226—50)



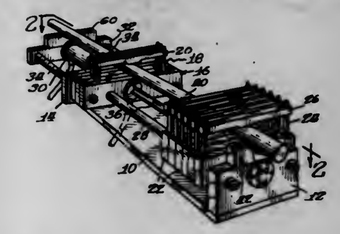
1. In a tape control device for controlling the motion of an endless tape in a recording-reproducing zone through which said tape is moved between a first tape magazine and a second tape magazine positioned side by side adjacent said zone, first tape driving means for moving said tape through said zone toward said first tape magazine along a first path and for separately and independently moving said tape through said zone toward said second tape magazine along a second path which traverses said first path within said zone, and second tape driving means spaced from said first tape driving means for moving said tape through said zone toward said second tape magazine along said first path and for separately and independently moving said tape through said zone toward said first tape magazine along said second path, both said first path and said second path being between said first tape driving means and said second tape driving means within said zone.

3,347,433
PERFORATED WEB DRIVING MECHANISM
Michel Andre Robert Bernard, Asnieres, France, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 2, 1966, Ser. No. 524,566
Claims priority, application France, Feb. 15, 1965. 5,547
5 Claims. (Cl. 226—52)



1. A mechanism for driving a web having perforations regularly spaced along its length, which perforations are adapted to be engaged with sprockets displaceable in a plane perpendicular to the web, comprising two guide members situated on either side of said plane, said members being so formed that each of them provides a guide path which comprises two curved portions of large radius, which are joined to two curved portions of small radius in a common plane, a plurality of driving elements inserted in the guide paths formed between the said two members, each driving element being provided on one side with a sprocket and on the other side with engagement projections, the driving elements having a uniform length and ends of suitable shape to enable two neighbouring elements to remain in contact regardless of the curvature at the point of the guide path at which they are situated, and a driving pinion situated towards one of said portions of small radius and arranged to advance the driving elements by propulsion on the engagement projections of said elements.

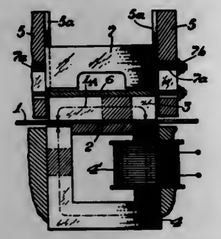
3,347,434
GUIDANCE SYSTEM FOR A BAR FEED MACHINE
Robert G. Bodtke, 1308 E. Selberling, Peoria, Ill. 61614
Filed July 13, 1965, Ser. No. 471,638
7 Claims. (Cl. 226—162)



1. A machine for automatically feeding a bar having flat parallel sides, said machine having a movable member, clamping means on said movable member adapted to engage a bar and move it forwardly with the forward movement of said movable member, said machine having an end member at each of its opposite ends, and means on each said end member to support a bar so that it is supported during its forward movement by said supporting means, said last mentioned means comprising a pair of blocks spaced to support a bar therebetween,

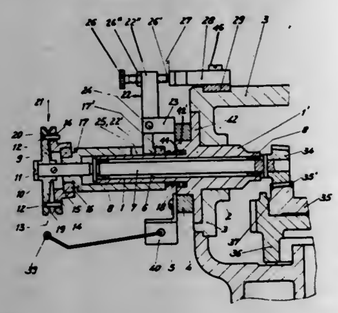
which bar has flat parallel sides, each of said blocks being of a generally rectangular shape and each having a vertical bore adapted to receive a bolt which is in threaded engagement with the end member, each of said blocks having a channeled recess along the bottom thereof so that the block rests on the top of the end member, with the depending sides engaging the side walls of the end member.

3,347,435
BRAKE OR DRIVE UNIT FOR RECORDING TAPE
Stanislav Jura, Prague, Czechoslovakia, assignor to Výzkumný ústav matematických strojů, Prague, Czechoslovakia
Filed Aug. 18, 1965, Ser. No. 480,744
21 Claims. (Cl. 226—176)



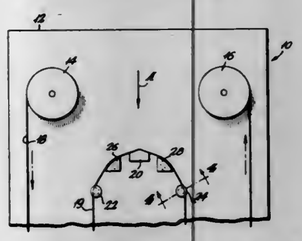
1. In a tape conveying mechanism, in combination:
(a) a friction member having an exposed friction face;
(b) armature means including an armature member having an exposed face opposite said friction face and defining a gap therewith, said armature means being at least partly of magnetic material;
(c) magnetic release means for moving said face of the armature member in a direction away from said friction face;
(d) guide means for guiding a tape of predetermined thickness through said gap; and
(e) abutment means for limiting the movement of said face of the armature member in said direction to a distance not substantially greater than said thickness.

3,347,436
YARN FEED INSTALLATION
Alfred Grassmann, Hechingen, Wurttemberg, Germany, assignor to Firma Mayer & Cie, Tailfingen, Wurttemberg, Germany, a corporation
Filed May 14, 1965, Ser. No. 455,757
Claims priority, application Germany, Feb. 27, 1965, M 64,343
13 Claims. (Cl. 226—177)



1. A yarn feed installation of the character described for feeding yarn thread to a circular knitting machine or the like with central driving means, comprising in combination, first cylinder means removably secured to said machine, a drive shaft rotatably mounted in said first cylinder means, gear means on said drive shaft meshing with said central driving means of said machine, second cylinder means slidably mounted over said first cylinder means, a first disc axially mounted on said drive shaft, a second disc mounted on said second cylinder means adjacent to said second disc, said first and second discs being axially non-aligned with respect to each other, said second disc and said second cylinder being slidably movable towards and away from said first disc, said first and second discs being adapted to engage a yarn thread therebetween and feed said yarn thread to said machine when said first disc is driven by said driving means of said machine via said drive shaft and gear means.

3,347,437
TAPE GUIDANCE SYSTEM
Charles D. Rush, P.O. Box 1183, Stony Brook, N.Y. 11790
Filed July 28, 1965, Ser. No. 475,536
8 Claims. (Cl. 226—198)

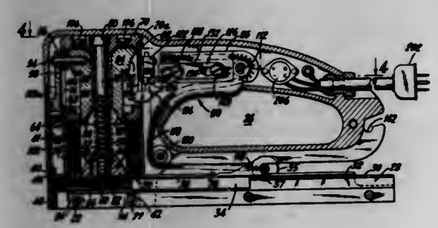


1. A tape guidance system for a tape handling unit comprising
an information processing station,
edge guide means positioned on opposite sides of said station for positioning the tape transversely relative to its direction of travel to guide the tape past said station, and
tensioning means mounted between said edge guide means for tensioning the entire portion of the tape between said edge guide means while leaving the entire portions of said tape between said edge guide means and said information processing station free to shift transversely relative to said tensioning means whereby skewing of the tape relative to said station is minimized by the relatively long distance between the points at which said edge guide means positions the tape and the straightness of the tape when viewed from above as a result of the tensioning of the tape by the tensioning means.

3,347,438
ELECTRICALLY ACTUATED FASTENER DRIVING TOOL
Norman R. Doherty, Farmingdale, N.Y., assignor to Electric Stapler Corp., Farmingdale, N.Y.
Filed Oct. 5, 1964, Ser. No. 401,453
8 Claims. (Cl. 227—131)

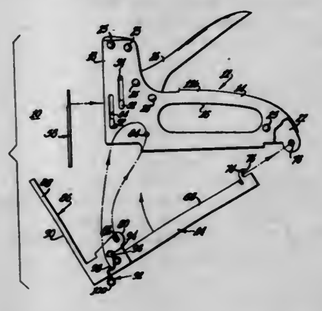
7. An improved electric tacker for driving wire staples into a workpiece, said tacker comprising:
(a) an elongated housing adapted to be handheld and having an enlarged opening proximate one end thereof to accommodate the user's fingers, said housing being further provided with a transverse slot on the underside forward end thereof;
(b) a staple track secured parallel to and in spaced relationship to the underside of said tacker, said track being adapted to slidably support a supply of staples;

(c) a staple follower arranged to slide on said staple track and urge the supply of staples towards the forward end of said housing whereby the forwardmost staple is directly beneath the slot in said housing;
(d) a solenoid having a linearly movable armature disposed in the forward end of said housing and secured to the forward end of said track;
(e) a drive pin secured to the armature of said solenoid and extending outwardly at substantially a right angle thereto, said pin being movable with said armature;
(f) a staple driving blade secured to said drive pin for movement therewith, said blade being disposed proximate the inside surface of forward wall of said housing and directly over the position of the forwardmost staple in the supply;
(g) switch means secured within said housing, said switch means having external means for actuating the contacts thereof;
(h) a trigger assembly mounted in said housing and extending into the enlarged opening provided therein, said trigger assembly comprising:
(1) a trigger bracket pivotally mounted in said housing,



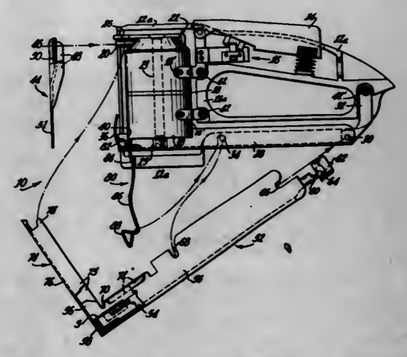
(2) an elongated cutout bar slidably mounted on said trigger bracket between predetermined forward and rearward limits and pivotal together with said trigger bracket, one end of said cutout bar being disposed in close proximity to the switch contact actuating means,
(3) a cam follower formed on the forward projecting end of said cutout bar, and
(4) spring biasing means extending between said cutout bar and said trigger bracket whereby said cutout bar is continuously urged into position defined by its predetermined forward limit;
(i) a cam formed on the outside surface of the armature of said solenoid and arranged for linear movement therewith whereby the cam is brought into engagement with and travels past said cam follower during a portion of the armature stroke to thereby cause said cutout bar to move out of engagement with said switch means;
(j) extensible biasing means extending between said trigger bracket and said staple follower in a serpentine path about an idler roller and the pivot point of said trigger bracket, said biasing means normally urging the staple supply forward to a dispensing position and normally urging said cutout bar away from said switch means;
(k) rectifier means connected to said solenoid to supply direct current to said solenoid from an alternating current source; and
(l) means connecting the switch contacts in series with said rectifier means and the alternating current power source for controlling the energization of the said rectifier means.

3,347,439
COMPRESSION TYPE FASTENING TOOL HAVING INTERCHANGEABLE COMPONENTS
Norman R. Doherty, Farmingdale, N.Y., assignor to Electric Stapler Corp., Farmingdale, N.Y.
Filed Sept. 9, 1965, Ser. No. 486,032
10 Claims. (Cl. 227—109)



1. In a fastener driving tool having interchangeable components for driving any one of a plurality of fasteners having different width, gage and/or leg length into a work piece, the tool having a hand held housing, said driving means slidably enclosed and retained within the housing when said tool is disassembled for interchange of components and means to urge the fasteners towards the forward end of the housing, the combination therewith of:
(a) a fastener blade removably supported on and movable together with the said driving means;
(b) a combination fastener supply magazine and head housing removably secured to the tool housing whereby said head housing is disposed in covering relationship with said driver blade when said tool is assembled; and
(c) retaining means arranged to releasably hold said combination supply magazine and head housing to the tool housing.

3,347,440
ELECTRIC FASTENING TOOL HAVING INTERCHANGEABLE COMPONENTS AND DRIVER BLADE
Norman R. Doherty, Farmingdale, N.Y., assignor to Electric Stapler Corp., Farmingdale, N.Y.
Filed Sept. 9, 1965, Ser. No. 486,034
7 Claims. (Cl. 227—131)



1. An electrically powered tool for driving any one of a plurality of different width fasteners into a workpiece, the combination, with a housing and an externally

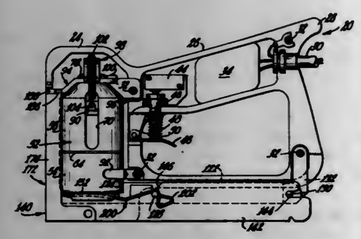
energizable solenoid having an armature provided with a cantilevered arm enclosed in the housing, of:

(a) a fastener driver blade removably supported on the armature arm of the solenoid, said driver blade being disposed on the outside of the solenoid and movable together with the armature;

(b) a readily removable combined fastener supply magazine and head housing, said driver blade being fully exposed and available for removal when said magazine and head housing are removed; and

(c) means to releasably secured said combination magazine and head housing to the tool housing in operative relationship with said driver blade.

3,347,441
ELECTRIC FASTENING TOOL
Norman R. Doherty, Farmingdale, N.Y., assignor to Electric Stapler Corporation
Filed Nov. 24, 1965, Ser. No. 509,475
12 Claims. (Cl. 227—131)



1. An electrically powered tool for driving any one of a plurality of fasteners having unlike configurations into a workpiece, said tool having interchangeable components of the type described, said tool comprising:

(a) a housing open along the length of the bottom thereof and along at least a portion of the front thereof;

(b) a solenoid assembly comprised of a casing having a slot therein, a wound coil having a central bore and a magnetizable armature linearly movable through the bore of said coil, said solenoid being secured within said housing with a portion of said armature extending outwardly through the slot of said casing;

(c) elongated spring means having a portion fixed relative to said casing and at least one free end secured to said armature externally of said casing, said spring means being arranged to return said armature to its original position at the end of each stroke;

(d) a trigger carried by said housing;

(e) switch means contained in said housing in electrical connection with said solenoid, said trigger being arranged to actuate said switch means whereby said solenoid is energized;

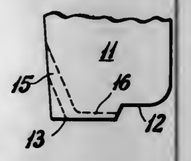
(f) a fastener driver blade loosely secured to the externally extending portion of said armature for movement together therewith, said driver blade being disposed on the outside of said solenoid casing for movement in a plane parallel to that of said armature;

(g) a combination head and fastener supply housing removably mounted on said housing in covering relationship to the open front and bottom surfaces, respectively, thereof, the head portion of said combination housing defining a guide track for said driver blade, the fastener supply portion of said combination housing defining a guide track for the fasteners to be driven;

(h) a fastener pusher bar slidingly disposed in the fastener supply portion of said combination housing; and

(i) retaining means to releasably hold said combination housing on said tool housing.

3,347,442
STEPPED BONDING WEDGE
Robert L. Reber, Eatontown, N.J., assignor to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,762
5 Claims. (Cl. 228—3)



1. A bonding wedge for bonding a wire to semiconductor devices comprising a member having a stepped-end surface, said stepped-end surface including an upper step and a lower step, an angle section connecting said upper and lower steps, a semicircular groove in said lower step, a passageway extending through said member and connecting with said semicircular groove.

3,347,443
CONTAINER CLOSURE
John Joseph Quackenbush, Monroe, and Herbert Oliver Corbett, Bridgeport, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Jan. 3, 1966, Ser. No. 518,085
5 Claims. (Cl. 229—14)

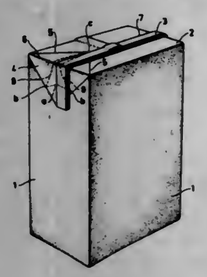


1. A plastic container closure comprising a laminated plastic having an inner layer and an outer layer; the material of said inner layer characterized in having poor self-sealing characteristics under heat sealing; the material of said outer layer characterized in having good self-sealing characteristics under a heat seal extending across an end portion of said container closure sealing said outer layer at said heat seal; said inner layer adjacent said heat sealed portion being collapsed upon itself without sealing under said sealed outer layer whereby said sealed outer layer hermetically seals across said collapsed and unsealed inner layer.

3,347,444
PACKAGE HAVING AN OBLIQUE OPENING INDICATION
Gad Anders Rausing, Lund, and Harald Georg Swede, Malmo, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a company of Sweden
Filed Jan. 3, 1966, Ser. No. 518,236
Claims priority, application Switzerland, Jan. 29, 1965, 1,255/65
4 Claims. (Cl. 229—17)

1. A package, manufactured from a flexible, relatively stiff web material which has been formed into a tube and closed by flat pressing and transverse sealing in transverse narrow zones for forming individual packages

which have thereupon been separated by cuts in said sealing zones, one end of the package having been folded and compressed so as to form a flat, rectangular end wall, from which two substantially triangular flaps project, said flaps having been folded down against the adjacent package side walls and being traversed by a closing fin formed by the transverse sealing, characterized by a



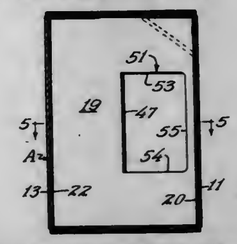
tear-up indication 8 running from near the base line 7 of the fin 3 on the flap 4 obliquely in relation to this line and across to the edges of said flap 4, said tear-up indication facilitating the tearing-up of the portion of the fin 3 running across said flap 4 to form an emptying opening 9, part of the material of the flap 4 proper being also removed.

3,347,445
CONTAINER WITH INNER-CUSHIONING STRUCTURE
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Nov. 1, 1965, Ser. No. 505,949
6 Claims. (Cl. 229—23)



1. End closure structure for a container having top, bottom, and side walls foldably interconnected to form a tubular arrangement, said structure comprising an end panel foldably joined to an end edge of one of said walls, a spacer panel foldably joined to the edge of said end panel remote from said one wall and extending inwardly toward the interior of the container, a cushioning panel foldably joined to the inner edge of said spacer panel and extending in a direction generally parallel to said end panel, a fastening flap secured to said one wall and foldably joined to said cushioning panel along the edge thereof which is remote from said spacer panel, an anchoring panel foldably joined to the end edge of a wall of the container opposite to said one wall and extending into the interior of the container, at least one locking tab disposed on said cushioning panel and engageable with a part of said anchoring panel for holding said end and said cushioning panels in generally normal closed relation to said one wall of the container, and web structure foldably joined respectively to each end edge of said end panel and to the adjacent end edges of the adjacent two container walls, said web structure being collapsible upon closing of said end panel and the end edges of said spacer panel and of said cushioning panel being configured to afford clearance for the collapsing of said web structure.

3,347,446
POUR SPOUT CARTONS
Reynolds Guyer, White Bear Lake, and Thomas G. Mairs, St. Paul, Minn., assignors to Hoerner-Waldorf Corporation, Ramsey County, Minn., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,786
6 Claims. (Cl. 229—27)



1. A paperboard carton blank including:

an outer shell including a series of alternately arranged side and end walls hingedly connected along parallel fold lines,

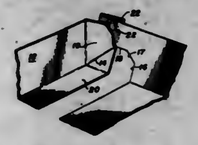
top and bottom closure flaps secured to said walls along parallel lines of fold,

a liner hingedly connected to an end wall of said series and including alternately arranged side and end walls adapted to fold inwardly of the corresponding side and end walls of the outer shell in face contact therewith,

a partition structure formed in one of said side walls of said liner and including a partition panel of a width substantially equal to the width of said liner end walls, and an anchoring flange hinged to the free end of said partition panel,

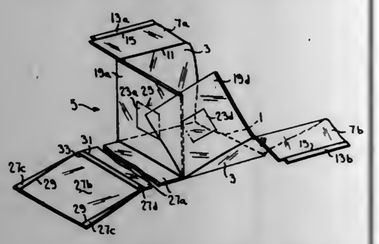
said partition structure being defined by a generally U-shaped cut line having its ends terminating substantially on the vertical center line of the said one side wall, and by a vertical fold line connecting the ends of said U-shaped cut line.

3,347,447
TRAY FOR HOLDING MULTIPLE CARTONS
Warren H. Bates, 7224 Burris, Fort Worth, Tex.
Filed June 17, 1965, Ser. No. 464,720
3 Claims. (Cl. 229—31)



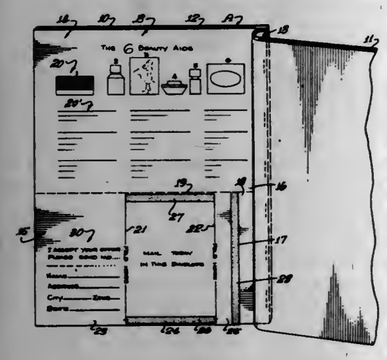
1. In a tray made from a single rectangular blank of fiberboard or the like, said tray being comprised of first score lines extending the full length of said blank parallel with the sides thereof and defining the width of side walls, a transverse cut in said blank parallel with the ends thereof and defining the upper edges of end walls, said transverse cut extending into the defined side walls, diagonal score lines extending inwardly at 45° angles into the widths of said defined side walls from points on said first lines score, which points define the bottom edges of the referred to end walls, and cuts connecting the ends of the first said cuts with the ends of said diagonal score lines, the last said cuts, said diagonal score lines and the first said score lines defining wing areas whereby the latter are positioned adjacent inner surfaces of resulting said side walls for attachment of said wing areas thereto when the outer edges of said transverse cuts are raised relative to the plane of said blank, and means attaching said wing areas to said side walls.

3,347,448
BOX
Leonard F. Taylor, Jr., 4036 Cook, St. Louis, Mo. 63113
Filed Oct. 22, 1965, Ser. No. 502,140
9 Claims. (Cl. 229—34)



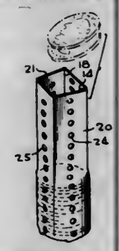
1. A box construction comprising a bottom, a pair of side walls projecting upwardly from the bottom and a pair of ends projecting upwardly from the bottom between the side walls, at least one of said ends of the box comprising two flaps positioned in face-to-face relation and extending across the end of the box from one side to the other side, one flap being attached to one side wall and the other flap being attached to the other side wall, a tab projecting through said flaps for locking the flaps together thereby preventing separation of the side walls and the flaps until the locking tab is unlocked, a panel at said end of the box overlying one of the flaps and the tab to hold the locking tab in its locked position, each of the flaps having an opening through it aligned with an opening of the same size and shape in the other flap, said tab being hinged to the inner one of said flaps along one edge of the opening therein and having a portion positioned against the face of the outer one of said flaps opposite from said inner flap, and a second tab hinged to the outer flap along one edge of the opening therein and having a portion positioned against the face of the inner flap opposite from the outer flap.

3,347,449
COMBINED MAGAZINE AND MAILING ENVELOPE
Ivan Behal, 22954 Ardwick St., Woodland Hills, Calif. 91364
Filed June 14, 1963, Ser. No. 287,915
8 Claims. (Cl. 229—68)



1. In combination: a magazine comprising a plurality of pages and a back binding joining the vertical margins thereof at one side thereof; and an insert leaf comprising a rectangular advertisement section and an envelope blank section, one above the other, and a linear horizontal web of weakened material integrally joining said advertisement and envelope blank sections together and defining an upper margin for one of said sections and a lower margin for the other section, said insert leaf being unfolded and of single sheet thickness throughout its area and having a corner cut-out extending along its vertical margin throughout the height of said envelope blank section whereby to provide an outwardly offset free end margin of said envelope blank section disposed in adjacent parallel spaced relation to said back binding and free of attachment thereto, said advertisement section having an end portion projecting beyond said spaced end margin of said envelope section to provide a flap which is coextensive with said advertisement section and bound into said back binding of the magazine so as to securely support both said advertisement section and said envelope section in said magazine with said insert leaf disposed as one of the leaves of said magazine and having an area corresponding to the area of the magazine pages with the exception of said cut-out.

3,347,450
COIN WRAPPER
Owen L. Godwin, P.O. Box 397, Kissimmee, Fla. 32741
Filed July 27, 1966, Ser. No. 568,294
3 Claims. (Cl. 229—87.2)



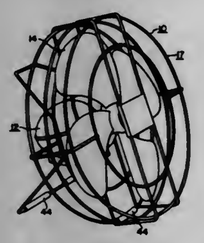
1. A coin wrapper comprising a sleeve member including a first panel and a second panel overlying said first panel, said panels having the side edges thereof adjoining to provide a slit therethrough, said panels being formed of a flexible material whereby the opposite sides of said panels may be moved together to enlarge said slit to receive coins therein and at least one of said panels having means for biasing said panels apart whereby upon moving the opposite sides of said panels toward each other, said panels will be caused to separate enlarging said slit, and said biasing means comprises a longitudinally disposed crease line provided on the interface of at least one of said panels between said side portions thereof.

3,347,451
MOTOR COMPRESSOR PARTICULARLY FOR SMALL REFRIGERATION MACHINES
Holger V. Vind, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a corporation of Denmark
Filed Oct. 26, 1965, Ser. No. 505,255
Claims priority, application Germany, Oct. 31, 1964, D 45,755
5 Claims. (Cl. 230—58)



1. A motor-compressor comprising, a refrigeration compressor, an electric motor having an auxiliary starting phase, coupling means mechanically coupling said motor and said compressor positively for driving said compressor from said motor, said coupling means comprising coupling devices cooperative to allow said motor to rotate free of the machine load of said compressor during each initial starting and accelerating period each corresponding to at least about 300 electrical degrees and effective to cooperatively positively couple said motor and said compressor upon completion of each of said initial starting and accelerating periods, and said motor having the characteristic of being able to accelerate to a speed of rotation in said initial starting and accelerating period effective to achieve a major portion of breakdown torque.

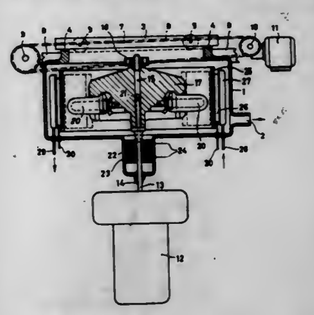
3,347,452
FAN CONSTRUCTION
Remington S. Radcliffe, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1966, Ser. No. 520,715
6 Claims. (Cl. 230—259)



1. Multi-purpose fan structure comprising: air circulating means including a motor, motor housing, a shaft coaxially mounted relative to said motor and adapted to be rotated thereby, said shaft extending forwardly of said motor housing, and air impeller means supported on said shaft for rotation therewith; a cage-like framework having a front and a rear; means forming a part of said framework for supporting said motor housing such that said air impeller is positioned within said framework and said motor housing extends rearwardly thereof; a support for said framework including a pair of divergent bail-shaped leg members each including a bight portion; said support being secured to said framework such that said leg members extend rearwardly of said framework and slightly beyond the rear end of said motor housing and said bight portions lie in the same plane on opposite sides of said motor housing permitting simultaneous contact of a flat surface by said bight portions without contact of said surface by said motor housing.

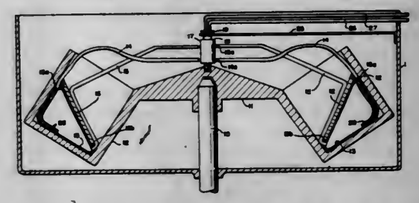
3,347,453
CENTRIFUGES HAVING ROTOR ROTATING IN A VACUUM
Karl Goergen, Basel, Switzerland, assignor to Firma Martin Christ, Gipsmuhlenweg, Harz, Germany
Filed May 13, 1963, Ser. No. 279,952
Claims priority, application Germany, May 12, 1962, C 26,974
3 Claims. (Cl. 233—11)

1. In a centrifuge having a vacuum sealed housing having an air tight and movable cover, a rotor mounted for rotation in said housing, a heat conducting element disposed around said rotor and supporting as sole cooling and heating source a plurality of Peltier elements, measuring means connected to said rotor for measuring the rotor temperature, conducting means connected to said Peltier elements and in receiving relationship to said measuring means for controlling the operation of said Peltier elements, said Peltier elements being adapted to cool the interior of said housing during centrifuging and to heat the



interior of said housing prior to the opening of said cover, thereby avoiding condensation and development of moisture when said cover is opened.

3,347,454
METHOD AND APPARATUS FOR THE CENTRIFUGAL WASHING OF PARTICLES IN A CLOSED SYSTEM
David Bellamy, Jr., and Charles A. Schlutz, Glenview, Ill., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed May 13, 1964, Ser. No. 366,994
9 Claims. (Cl. 233—14)

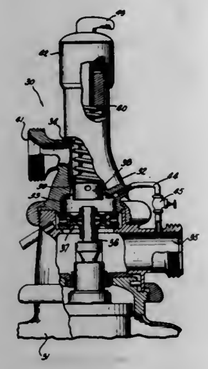


1. The method of washing particles within a substantially closed system which comprises, placing the particles to be washed into a disposable flexible, collapsible, container, placing said container within the container-receiving cup of a centrifuge, and then centrifuging said container and its contents while introducing a wash fluid at the bottom of said container to wash said particles.

3,347,455
LIQUID EXTRACTOR SYSTEM
Alec J. Borden, R.R. 1, Augusta, Mich. 49012
Filed Mar. 16, 1965, Ser. No. 440,109
9 Claims. (Cl. 233—19)

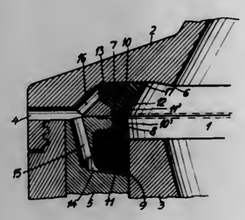
1. An extractor system adapted to process a supplied material and remove a first product containing a first material from the supplied material while leaving a controlled portion of the first material in the processed supplied material having, in combination
(a) an extractor unit as part of said system to separate said first product having substantially a given percentage of said first material from said supplied product,
(b) first and second outlet means as part of said extractor unit,
(c) said first outlet means to remove said processed supplied product from said extractor,
(d) said second outlet means to remove said first product from said extractor,

(e) a control means to open and close said outlet means while said extractor is operating,
(f) a bleed means connecting said first and second outlet means,



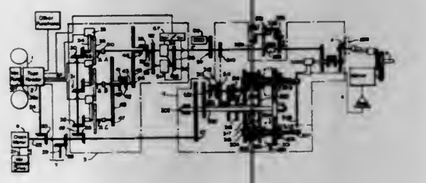
(g) a timing clock as part of said control means, and
(h) said timing clock timing the opening and closing of said second outlet means.

3,347,456
GASKET ARRANGEMENT FOR A CENTRIFUGE BOWL WITH PERIPHERAL EXHAUST OPENING
Ejler Kobbernagel, 21 Ryvej, Virum, Denmark
Filed Sept. 8, 1964, Ser. No. 394,708
Claims priority, application Denmark, Sept. 5, 1963, 4,199/63
4 Claims. (Cl. 233—20)



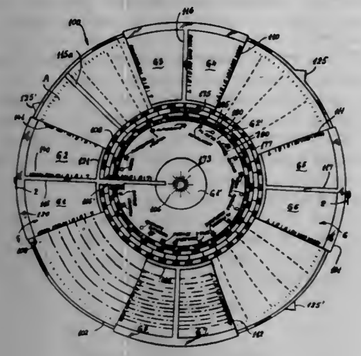
1. Centrifuge bowl means, comprising
upper and lower bowl members having adjacent spaced opposed end surfaces containing cavities that cooperate to define a bowl chamber, the cavity of said upper bowl defining an inner wall surface;
an annular piston member slidably mounted concentrically about said lower bowl member and movable upwardly toward a closed position in which the upper end surface of the piston engages the lower end surface of said upper bowl member to close the space between the upper and lower bowl members, the bore of said piston defining an inner wall surface;
and compressible gasket sealing means arranged for compression between said piston and upper bowl members when the piston is in the closed position to seal the centrifuge bowl chamber, said gasket means comprising a first gasket ring mounted in a radially facing annular recess contained in the inner wall surface of a first one of said upper bowl and piston members and extending axially toward the other of said upper bowl and piston members for compression thereby, said first member containing also a generally radially outwardly extending passage affording communication between the bottom of the annular recess and atmosphere to prevent pressure build-up beneath the gasket ring, said gasket ring having an axially tapered inner circumference that progressively increases in diameter in the direction of the other of said upper bowl and piston members to define a sharp rim portion adjacent said first member that is pressed into tight sealing engagement with the recess wall by pressure fluid in the bowl chamber.

3,347,457
MECHANICAL INTERPOLATOR
Lawrence J. Kamm, San Diego, Calif., assignor to Numerical Control Corporation, San Diego, Calif.
Application Dec. 10, 1964, Ser. No. 419,277, which is a continuation of abandoned application Ser. No. 123,396, July 10, 1961. Divided and this application Dec. 17, 1965, Ser. No. 514,479
13 Claims. (Cl. 235—61)



1. A mechanical interpolating mechanism comprising: supporting means; a plurality of spaced displacement elements carried by said supporting means for individual movements relative thereto; means associated with said supporting means for respectively shifting each of said elements with respect to said supporting means in accordance with sequential increments of data; a flexible interpolating spline disposed adjacent said supporting means; means carried by and moving with said displacement elements engaging the surface of said spline to effect transverse displacement of the spline with shifting of said displacement elements; means for effecting relative movement between said engaging means, displacement elements and supporting means as a unit and said spline longitudinally of the spline so that the shape of the spline is a smooth interpolating curve through the datum points defined by said engaging means, the shifted positions of said curve varying in shape in accordance with the successive increments of data represented by the shifting of said displacement elements relative to said supporting means; a follower disposed adjacent and slaved to the transverse displacement of said spline at a point intermediate its ends; an element whose movements are to be controlled in accordance with the values of said data; means intermediate said follower and controlled element for effecting movement of said controlled element in accordance with movement of said follower caused by the transverse displacement of the spline at the follower during periods in which said displacement elements are not being shifted; means responsive to input of an increment of data whereby movement of said follower caused by displacement of said spline at the time said displacement elements are being shifted is accomplished without movement of said controlled element; and setback means associated with said displacement elements for periodically and sequentially cancelling the cumulative displacement of each of said displacement elements and returning it to unshifted position while its engaging means is substantially remote from the point of follower and spline engagement.

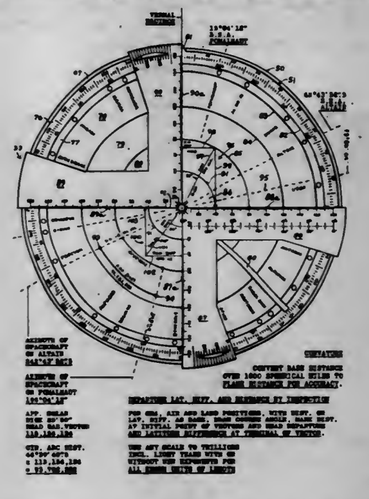
3,347,458
TRIGONOMETRICAL COMPUTER
Walter E. Thiel, 3200 Netherland Ave., New York, N.Y. 10463
Filed Mar. 29, 1966, Ser. No. 538,343
8 Claims. (Cl. 235—88)



1. A computer device of the character described, comprising a plurality of circular disks, pivot means rotatably securing the disks together to constitute a laminated assembly, each of said disk having a radially extending window free of any indicia thereon, the radial windows in the several disks being disposable in registration with each other by rotation of the disks with respect to each other, the two outermost disks on opposite sides of said assembly each having indicia thereon spaced radially of the disk and located adjacent the radial window thereof, each of the inner disks between the outermost disks having tables of trigonometric functions thereon, said tables being arranged in a plurality of concentric tracks, with numbers in each track extending radially of the inner disk and aligned with numbers in each of the other tracks radially of the inner disk, said tracks being aligned with the respective indicia on the outermost disks, whereby a radial line of numbers on any inner disk can be read through registering radial windows of all other overlaying disks, the outermost disks each have a central circular section and a plurality of sectors extending radially outwardly of the central circular section, said sectors being spaced apart circumferentially of the outermost disks exposing adjacent inner disks to facilitate rotation of said inner disks, said inner disks each having a peripheral projection extending radially outwardly and located the same angular distance from the radial window on each of the inner disks to facilitate aligning the radial windows of the inner disks with the radial windows of the outermost disks, said radially outwardly extending sectors having additional indicia for use in increasing and decreasing values exponentially.

3,347,459
SPACE AND TERRESTRIAL COMPUTER
Walter E. Thiel, 3200 Netherland Ave., New York, N.Y. 10463
Filed June 7, 1966, Ser. No. 555,909
8 Claims. (Cl. 235—88)

1. A computer consisting of a flat circular body having a top side and a bottom side, said top side having a plurality of printed concentric circles thereon dividing the same into a first group of annular areas, a printed 360-degree 24-hour hour-angle scale in the radially outermost of said areas, printed symbols for a first plurality of prominent stars in the first next radially inward area, the printed names of said stars in the second next radially inward area, the printed right ascensions of said stars in the third next radially inward area, the printed annual change in right ascension of said stars in the fourth next radially inward area, the name, the right ascension and the annual change in right ascension of each of said stars being positioned in a radial line with the symbol for the star and with a point on the hour portion of said hour-angle scale which reads the same as the time of right ascension of the star, and a flat approximately cross-shaped member comprising a center portion and four arms extending therefrom and spaced ninety degrees from each



other, said member and said body being pivoted together at their common center point, said arms having a length such that they extend at least to said hour-angle scale, each of said arms having one edge thereof a straight edge extending radially from the center point of said member, the straight edges of each pair of diametrically opposed arms being in mutual alignment, said arms having printed scales along said straight edges thereof all having the same number of identical divisions and having their zero points positioned at said center.

3,347,460
GAME BOARD
John Dickson, 3855 Valley Hill Road, Bloomfield Hills, Mich. 48013
Filed June 3, 1965, Ser. No. 460,957
9 Claims. (Cl. 235—90)



1. An overlay adapted to be used in combination with a standard cribbage board, said board having a plurality of apertures therein arranged in parallel rows, said overlay being receivable over said cribbage board and covering a portion of said board to leave some of the apertures in said board exposed, said overlay comprising:
a single aperture in said overlay adjacent the end of the exposed rows of apertures in said cribbage board;

a row of regularly spaced apertures in said overlay and in registry with apertures in said portion of said board covered by said overlay;

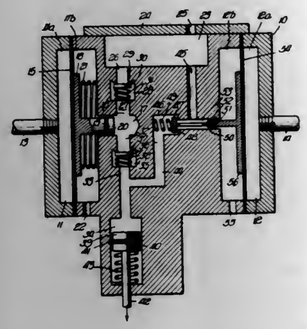
and a plurality of apertures in said overlay adjacent said row of regularly spaced apertures, at least some of said apertures being successively spaced in increasing increments and being aligned with preselected apertures in said row of apertures, said plurality of apertures being in registry with apertures in said portion of said board covered by said overlay, the number of said plurality of apertures in said overlay being fewer than the number of apertures in said row of apertures in said overlay.

3,347,461

PNEUMATIC-HYDRAULIC PULSE ACTUATOR

David H. Thorburn, Oak Park, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois

Filed Oct. 4, 1965, Ser. No. 492,584
9 Claims. (Cl. 236—79)



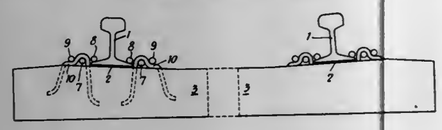
1. An pneumatic-hydraulic actuating device comprising: means responsive to an input signal consisting of one or more pneumatic pulses, said means being adapted to provide successive mechanical displacements, one for each of said pulses; and hydraulic means cumulatively responsive to said mechanical displacements for operating a regulatory instrumentality in accordance with said input signal.

3,347,462

RAILWAY RAIL AND FASTENING ASSEMBLY

Per Pande-Rolfsen, Oslo, Norway, assignor to Lockspike Limited, London, England, a British company

Filed June 10, 1966, Ser. No. 556,718
Claims priority, application Great Britain, June 30, 1965, 27,813/65
2 Claims. (Cl. 238—349)



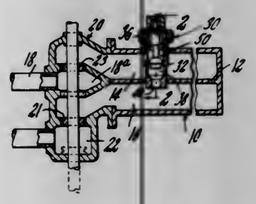
1. A railway rail and fastening assembly comprising two spaced, parallel rails, two pads of resilient material on which the respective rails rest, a concrete railway sleeper extending transversely with respect to the rails with the pads resting on it, four separate sheet metal retaining members which are free from downward pressure due to the weight of the rails and are spaced apart along the sleeper and prevent any substantial movement of the rails along the sleeper, first portions of the retaining members forming four arches above the concrete whereby between the top of the concrete and the arches there are provided four substantially straight passages extending substantially parallel to the rails and one on each side of each rail, close to the rail, second portions of the retaining members each further from the adjacent rail than is the first portion of the same retaining member and each extending at an angle of 0 to 10° to the upper surface of the concrete and spaced from it by from zero to the thickness of the sheet metal of which the retaining member is made, third and fourth portions of the retaining members which extend into the concrete and were incorporated in the concrete before setting of the concrete and which are so positioned that each retaining member has its first and second portions between its third and fourth portions, and four resilient rail-fastening members each having a substantially straight leg inserted in one of said passages, another portion bearing on one of the rails and a further portion bearing on one of said second portions.

3,347,463

SPRAY APPARATUS

Donald B. Baker, Foxboro, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts

Filed Sept. 7, 1965, Ser. No. 485,300
12 Claims. (Cl. 239—113)



1. A self-cleaning spray forming device comprising a nozzle having a cavity therein, a spray outlet from said cavity and a pair of ports opening into said cavity, means for providing a supply of fluid under pressure at both of said ports, means for periodically changing the fluid pressure at one of said ports, a valve member within the cavity of said nozzle member movable in response to fluid pressure changes at said one of said ports to move away from a spraying position to a flushing position and to return to spraying position, a flange in said cavity extending about said valve member between said ports and said outlet, said valve member having portions of different diameter the smaller of which cooperates with said flange to permit relatively free fluid flow into the outlet end of said cavity when said valve member is in spraying position and the larger of which cooperates with said flange to inhibit such fluid flow when said valve member is in flushing position.

3,347,464

WATER DISPERSER

John O. Hruby, Jr., Burbank, Calif., assignor to Rain Jet Corp., Burbank, Calif.

Filed July 6, 1965, Ser. No. 469,422
3 Claims. (Cl. 239—210)

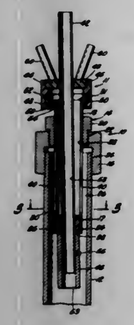
1. A water disperser comprising:

a tube having normally open upper and lower ends,

coupling means for securing said tube to the open upper end of a riser,

said upper tube end being exposed above said coupling means, and

a gyratory disperser head assembly rotatably and gyratably mounted in said tube including a tubular stem of smaller external diameter than the internal diameter of said tube and extending through said tube, the upper end of said stem being exposed above the upper end of said tube, bearing means supporting the lower end of said stem in the lower end of said tube for gyratory movement of said upper stem end about the axis of said tube, a sleeve of appreciably larger internal diameter than the external diameter of said tube coaxially surrounding and secured to the upper end of said stem with the lower end of said sleeve overlapping the upper end of said tube, a cylindrical bushing coaxially mounted in the lower end of said sleeve having an inside bearing surface



larger in diameter than the external diameter of said tube, said bushing engaging and being adapted to roll about the upper end of said tube during gyratory motion of said head assembly, said bearing means and bushing being so dimensioned that said stem remains out of direct wearing contact with said tube during gyratory motion of said head assembly and resultant rolling motion of said bushing about said tube, outlet means on the upper end of said head assembly through which water is adapted to issue from said assembly, and passage means communicating with said outlet means and opening through the inner end of said head assembly through which water is adapted to flow from said riser to said outlet means in such a way as to impart gyratory motion to said head assembly.

3,347,465

PRESTRESSED REFRACTORY STRUCTURE

Herbert Shieber, Beverly Hills, Calif., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 5, 1964, Ser. No. 409,126
2 Claims. (Cl. 239—265.11)

1. A rocket nozzle comprising:

(A) a cylindrical supporting body internally contoured and lined with a plurality of prestressed ceramic rings to form a rocket nozzle,

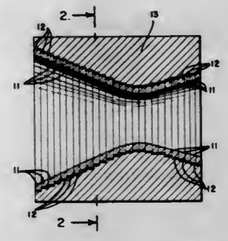
said rings having a frusto-conical shape to limit axial movement in said body;

(B) said prestressed ring including an inner ring of brittle refractory ceramic material with low tensile strength exposed to high operating temperatures and a corrosive atmosphere,

said material consisting of a mixture of ceramic oxides having a relatively low coefficient of thermal expansion;

an outer ring of refractory metallic material with high tensile strength exposed to lower operating temperatures and a noncorrosive atmosphere,

said metallic material consisting of a refractory metal having a coefficient of thermal expansion substantially equal to or greater than said ceramic material,



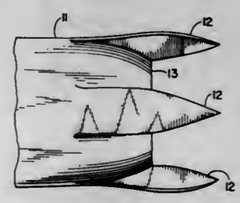
said outer ring surrounding said inner ring with an initial interference fit therebetween such that said outer ring is stressed in tension and said inner ring is stressed in compression throughout the operating temperature range.

3,347,466

NACELLE AFTERBODY FOR JET ENGINES

Mark R. Nichols, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Continuation of application Ser. No. 262,297, Feb. 28, 1963. This application Nov. 15, 1966, Ser. No. 594,587
39 Claims. (Cl. 239—265.19)



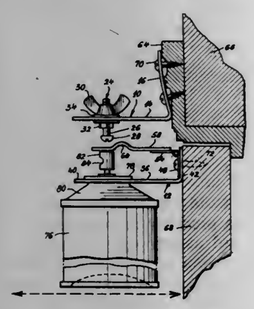
1. In an airplane comprising. a nacelle; a propulsion reaction engine mounted within said nacelle; said nacelle having a bottailed aft end; an exit device through which gases exhausting from said engine are directed toward said aft end; and a plurality of body means spaced about and faired into said nacelle on the exterior of the boattailed aft end extending forwardly and rearwardly of the end of the nacelle forming a generally slotted configuration; said body means extending rearwardly of said nacelle being designed so that all surfaces thereof are exposed to flow thereover permitting simultaneous flow of a radial component of velocity of either external flow or the propulsion engine exhaust gases; said body means forward of the nacelle end effectively increasing the cross sectional area of said nacelle and decreasing its slope angle and rearward of the nacelle aft end and preventing an increase in overall base area due to the forward area and also receiving thrust forces from engine exhaust gases whereby pressure drag is reduced and pressure on the nacelle end is increased while maintaining a fixed structural geometry.

3,347,467
COMBINATION JET EXHAUST NOZZLE AND THRUST REVERSER
Henry Anton Carl, Cincinnati, Ohio, and Robert Cooper Foster, Jr., Kalamazoo, Mich., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 300,534, Aug. 7, 1963. This application Dec. 5, 1966, Ser. No. 599,319
5 Claims. (Cl. 239—265.31)



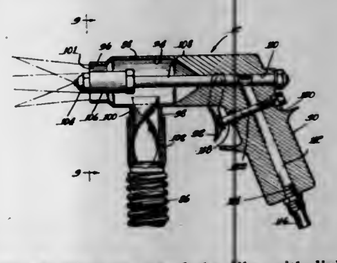
1. In a gas turbine engine for the propulsion of aircraft,
a hot gas stream discharge comprising,
a compositely formed casing defining the outer bounds of the hot gas stream,
a single set of circumferential flaps disposed generally longitudinally of said casing around the interior thereof, said flaps being pivotally mounted at their upstream ends and forming a variable area, convergent, primary discharge nozzle for the hot gas stream,
means for imparting limited pivotal movement to said flaps about their upstream ends to optimize the nozzle area for normal flight conditions,
means for imparting further pivotal movement to said flaps about their upstream ends to bring the nozzle area defined thereby to a minimum value, and
means for discharging at least a portion of said hot gas stream laterally of said casing as said further pivotal movement is imparted to said flaps whereby thrust reversing action is provided by said engine.

3,347,468
WALL MOUNTED SPRAY CAN ACTIVATOR
Lawrence King, 8 Murdock Road, East Rockaway, N.Y. 11518
Filed Feb. 7, 1966, Ser. No. 525,521
6 Claims. (Cl. 239—274)



1. Supporting means for a conventional spray type container having a dome-shaped neck portion provided with an annular bead and with a movable discharge nozzle for actuating the valve mechanism in the container, said supporting means including a bracket in the form of a substantially rectangular plate with means at one end, coacting with the annular bead, on the container, for removably holding the container in upright position, means at the other end of the plate for removably attaching the plate to a vertical support, means hinged to the bracket disposed over the container-holding means for moving the nozzle, means separate from the bracket for actuating said hinged moving means, the means for attaching the plate to a vertical support including an upright flange on said other end of the plate, said flange having spaced vertically disposed slots for receiving fastening elements for fastening the bracket to a door, the hinged means for moving the nozzle of the container including a rectangular shaped arm hinged at one end to the flange on the other end of the plate, said arm having a transverse upwardly bulging portion constituting a cam surface adapted to be engaged by a stationary part of the means for moving the hinged means.

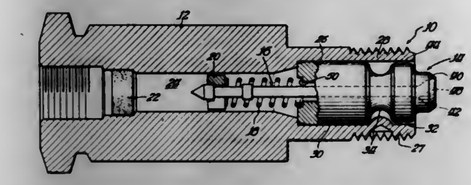
3,347,469
GUN FOR FLOCKING TREES
Ronald A. Ross, Adolph W. Ross, and Marie Eva Ross, Antioch, Ill., assignors, by mesne assignments, to Patent Holding and Development Corporation, a corporation of Illinois
Original application Jan. 16, 1962, Ser. No. 166,480, now Patent No. 3,223,329, dated Dec. 14, 1965. Divided and this application Dec. 13, 1965, Ser. No. 513,499
4 Claims. (Cl. 239—424)



1. For flocking trees and the like with light, random fibrous flock; a flocking gun adapted to be manually supported and continuously moved in relation to a tree, said gun including means defining an air and dry flock flow passage and means defining a supply inlet into the passage for a stream of dry flock suspended and entrained in moving air, said supply inlet defining means including means for connecting said supply inlet with a flexible conduit supplying a stream of flock suspended and entrained in moving air, said gun including air and flock nozzle means forming an air and flock outlet opening outwardly from said flow passage, said gun including liquid atomizing nozzle means disposed in a predetermined position adjacent said air and flock nozzle means so that said air and flock outlet opens outwardly alongside said atomizing nozzle means from said passage to discharge air and flock in a trajectory extending past and beyond said atomizing nozzle means, said gun including water inlet means defining a water inlet for receiving water from a municipal water supply under municipal water pressure, said gun including means forming a passage connecting said water inlet with said atomizing nozzle means, said water inlet means including means for connecting said water inlet with a flexible water supply conduit supplying water from and under the pressure of a municipal water supply, said atomizing nozzle means including means for effecting atomization of the water flowing thereto under the pressure of a municipal water supply, said atomizing nozzle means having water outlet means through which water issues in a trajectory forming a flow pattern of atomized water that diverges away from the nozzle means in interferring relation to the trajectory of flock and air moving beyond said water outlet means from said air and flock outlet to effect wetting of the flock in mid-air, and said atomizing nozzle means being located axially with respect to the trajectory of atomized water from the nozzle

means to position said outlet means axially outward beyond all other structure movable with the gun to thereby preclude, during normal operation of the gun, wetting of any structure of the gun by water issuing from the nozzle means.

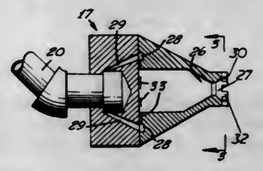
3,347,470
FUEL INJECTION NOZZLE
Edward J. Svoboda, Decatur, Ill., assignor to Borg-Warner Corporation, a corporation of Illinois
Continuation of application Ser. No. 282,934, May 24, 1963. This application Apr. 7, 1965, Ser. No. 449,364
1 Claim. (Cl. 239—453)



A fuel injection nozzle comprising, an elongated body member having a longitudinal passage extending therethrough including an enlarged generally cylindrical bore, a nozzle tip secured to said body member having a longitudinal passage extending therethrough, said passage in said tip including a generally cylindrical portion in communication with said passage of said body member and a generally frusto-conical portion diverging from said cylindrical portion and terminating in an enlarged outer open end, said tip including a first portion surrounding a portion of said cylindrical portion of said passage and a second portion surrounding said conical portion thereof, said first portion of said tip including a generally cylindrical outer surface press fit into said enlarged generally cylindrical bore of said body member and said second portion being disposed substantially within said enlarged cylindrical bore and including a generally cylindrical outer surface spaced from said bore to define an annular space therebetween, said first and second portions of said tip being connected by a reduced portion defining an annular open groove intermediate said portions effective to reduce the transmission of stresses from said first portion to said second portion, said tip further including an external generally conical chamfered portion joining in an acute angle with said conical portion of said passage at said outer open end to define a knife edge therearound, and said nozzle further including a movable valve member disposed within said passage within said tip having an enlarged generally hemispherical head portion disposed entirely within said conical portion of said passage, said head portion being urged into sealing engagement with said conical portion of said passage internally of said knife edge and said head including an outer end disposed approximately flush with said knife edge when said head and said conical portion of said passage are in said sealing engagement.

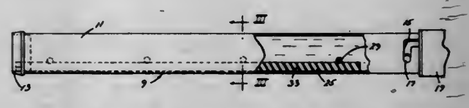
3,347,471
FUEL INJECTOR
Gordon Allan Halls, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed June 1, 1965, Ser. No. 460,292
Claims priority, application Great Britain, July 31, 1964, 30,369/64
3 Claims. (Cl. 239—466)

1. A fuel injector for a gas turbine engine combustion chamber comprising a swirl chamber, means for supplying fuel to the swirl chamber, means for swirling the fuel in the swirl chamber, an outlet chamber which has a frusto-conical internal surface diverging in a downstream direction and which communicates with the swirl chamber so as to receive a swirling supply of fuel therefrom, a peripheral cowling extending downstream of and supported by the downstream end of the outlet chamber and



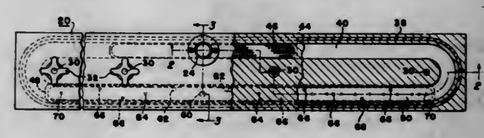
means defining therein a plurality of angularly spaced apart apertures through which the swirling fuel may pass out of the injector, whereby fuel passing through the outlet chamber to the said apertures washes over the whole internal surface of the outlet chamber to tend to prevent the formation of carbon deposits thereon.

3,347,472
FLUID DISTRIBUTOR
Horace P. Fry, Jr., West Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,175
6 Claims. (Cl. 239—543)



1. A fluid distributor including a tube, means for delivering a fluid into said tube, walls defining an elongated slot extending logitudinally of said tube, a cylindrical member having a cross-sectional dimension which is at least equal to the width of said slot and less than the inside dimensions of said tube, said cylindrical member positioned within said tube and seated within said slot, a groove extending around the periphery of said cylindrical member and cooperating with the walls defining said slot to form fluid discharge orifices and means for use in turning said cylindrical member about its longitudinal axis and within said slot and relative to said tube.

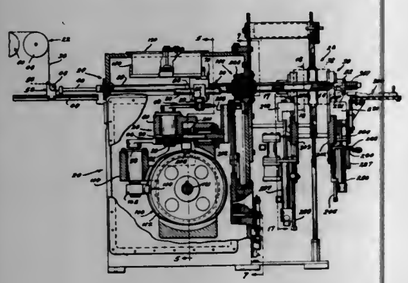
3,347,473
FLUID MANIFOLD
Gail R. Steck, Brookville, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,872
5 Claims. (Cl. 239—553.3)



1. Manifold apparatus for distributing a fluid including a housing having a loop shaped passage therein, said passage being zoned into halves with a middle in one of the halves, said housing also having an entrance passage communicating with the middle of said one half of said loop

passage, the opposite half of said passage being provided with a symmetrically located longitudinally extending partition wall, said partition wall having ends, said housing having a series of discharge outlets communicating with said loop passage on one side of and adjacent to said partition wall, said partition wall having distributed apertures therein which decrease in area toward the ends thereof to improve the distribution of the fluid to said outlets.

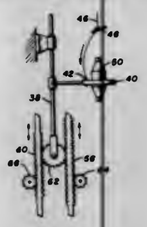
3,347,474
STATOR WINDING MACHINE
Arthur E. Frank, Imperial, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,938
21 Claims. (Cl. 242—1.1)



1. Means for winding stators and the like including a core structure having an opening with spaced winding slots communicating therewith comprising means for supporting the core structure during winding thereof, a source of winding wire, means for directing the winding wire from said source into the slots of the core structure in a predetermined arrangement, said wire directing means including a reciprocating assembly having an inlet end receiving wire from the source and an outlet end including a wire guide member movable back and forth through predetermined core slots in a predetermined arrangement, means for rotating the outlet end of the reciprocating assembly in opposite directions at opposite ends of travel of the reciprocating assembly whereby the outlet end of said assembly alternately moves longitudinally through a different core slot during succeeding reciprocation movements thereof, said means for rotating the outlet end of the reciprocating assembly including means for simultaneously predeterminately moving wire through said assembly and out the outlet end thereof, and guide means positioned adjacent said core structure on opposite ends thereof in position to receive and accurately form and position wire that is fed from the feed assembly during rotations thereof and which extends between succeeding slots being wound.

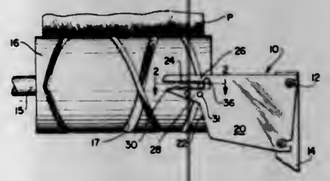
3,347,475
YARN TRAVERSING MECHANISM
Ernest M. Sternberg, Chapel Hill, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Original application Feb. 26, 1965, Ser. No. 435,636. Divided and this application Dec. 20, 1966, Ser. No. 603,331
10 Claims. (Cl. 242—26.1)

5. In a winding mechanism for use in strand winding operations, an improved traversing mechanism comprising a pair of pinion gears mounted in side-by-side relationship, and output gear, a pair of reciprocably mounted rack members, each engaging said output gear and being driven by one of said pinion gears through paths of pre-selected lengths at a pre-determined difference in velocities, a reciprocably mounted strand traversing guide re-



sponsive to movement of said output gear, whereby said guide is caused to move in a direction and at a velocity according to the algebraic sum of the velocities of said rack members.

3,347,476
YARN CONTROL APPARATUS
William H. O'Brien, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed May 31, 1966, Ser. No. 553,853
6 Claims. (Cl. 242—19)

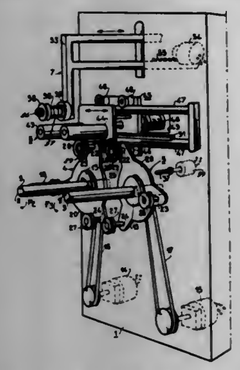


1. Apparatus for controlling an advancing strand of yarn comprising, traversing means for reciprocating said strand, guide means for directing said strand to said traversing means whereby said yarn is traversed in a predetermined plane, said strands, upon a loss of tension therein, being thrown from said plane, yarn receiving means, and mounting means for disposing said yarn receiving means in a position spaced apart from said predetermined plane, said yarn receiving means including an engaging portion arranged to intercept said strand and hold the strand away from said traversing means when the strand moves from said predetermined plane in response to a loss of tension in the strand.

3,347,477
CONTINUOUS WIRE WINDING DEVICE
Pierre Touze, Reims, France, assignor to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France
Filed June 28, 1966, Ser. No. 561,210
Claims priority, application France, June 29, 1965, 22,767
10 Claims. (Cl. 242—25)

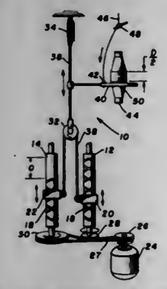
1. Continuous wire winding apparatus, ensuring both the winding and arrangement of the wire on wire receiving reels, the automatic displacement of the wire from a filled reel to an empty reel, the anchoring of said wire on the core or hub of the empty reel and the cutting of the wire in order to separate it from the filled receiving reel, comprising, in combination; at least two reel-carrying spindles which are rotatable and mounted in parallel positions at fixed stations; at least one set of idler pulleys each of which comprises a support rotatable concentrically about the axis of a reel carrying spindle and having the idler pulleys arranged on said support and regularly spaced

about said spindle; a wire moving system provided with at least one smooth cylinder mounted freely on its axis, permitting the wire to be wound to be displaced and permitting it to be hooked to one of the idler pulleys; a wire guiding or traverse system arranged for to and fro move-



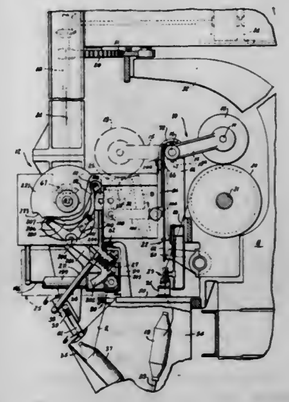
ment at uniform speed and permitting the wire to be wound to be arranged in regular layers on a wire receiving reel and also permitting a cross-over of turns of the wire to be effected at the desired moment on said receiving reel, and a wire cutting component mounted coaxially to one of the idler pulleys.

3,347,478
TRAVERSE WINDING MECHANISM
Ernest M. Sternberg, Chapel Hill, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,636
10 Claims. (Cl. 242—26.3)



1. In a winding mechanism for use in strand winding operations, a traversing mechanism comprising a pair of reciprocably mounted input elements, means to reciprocate said elements through paths of pre-selected lengths at a pre-determined difference in velocities, said means for reciprocating said input elements comprising a pair of rotatably mounted fishing-reel-type winding screws, each characterized by an endless, reverse helical groove formed along its surface, each of said input elements engaging one of said grooves to be urged therealong upon rotation of the screw to thereby describe said reciprocating paths, a reciprocably mounted output element, a reciprocably mounted strand traversing guide responsive to movement of said output element, linkage means interconnecting said output element with each of said input elements and operative to move said output element according to the individual movements of said pair of input elements, whereby said traversing guide is caused to move in a direction and at a velocity according to the algebraic sum of the velocities of said input elements.

3,347,479
MULTIPLE WINDER WITH AUTOMATIC BROKEN THREAD RETRIEVAL
Richard D. Livingston, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 7, 1965, Ser. No. 493,619
43 Claims. (Cl. 242—35.5)

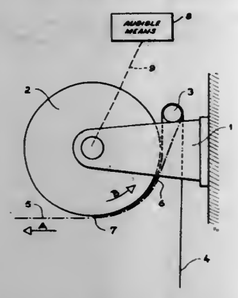


1. For use in a multiple unit thread winding machine including a first frame, a row of winding units thereon each including a thread running upwardly from a supply bobbin through a thread clearer, and an upper clamp for releasably receiving a thread for pick-up and tying to the broken thread of the package being wound, a servicing unit including a second frame, a tying unit and a rotating shaft thereon, and means for moving said winding units and servicing unit relative to each other continuously along a predetermined path to bring each successive winding unit into operative association first with said second frame and then with the tying unit, the combination of, an elongated member mounted on said second frame for movement transversely of said path of relative movement, actuating means driven from said shaft in timed relation to such movement and advancing said member toward the thread of the associated winding unit and then retracting the member away from such thread before becoming associated with the next winding unit, a pick-up device carried by said member, means operated in timed relation to the advance movement of said member to actuate said device and cause the same to engage and grip a broken thread suspended from the clearer of a winding unit and then retract the held end, unwind additional thread from the supply bobbin, and locate the thread in a retrieved position at the completion of the retraction, and mechanism operated from said shaft to grip the retrieved thread, transfer the same upwardly to and hang it up in said upper clamp of the winding unit including release of the retrieved thread from said pick-up device.

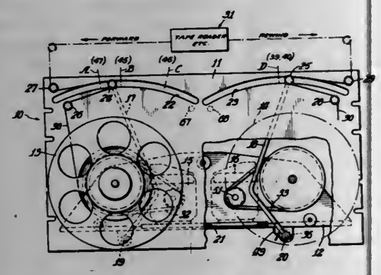
3,347,480
PAPER DISPENSER
Jacques Abramoff, Chemin du Chateau des Baumettes, Villeneuve-Loubet, France
Filed Dec. 7, 1965, Ser. No. 512,052
Claims priority, application France, Dec. 7, 1964, 997,733
8 Claims. (Cl. 242—55.2)

6. A method of tearing a length of material from a rotatable roll thereof, said method comprising drawing a length of material from said roll, passing said length around a fixed member extending parallel to said roll,

and contacting said length with the periphery of the roll of material such that by applying tension to said length, the roll of material is urged to rotate in a direction tending to rewind said length back onto the roll and thereby there is produced a tearing force in the length of material at the line of tangency thereof where said length overlaps said roll and extends therefrom.



3,347,481
TAPE TRANSPORT METHOD
Herman Epstein, Philadelphia, and Samuel Cogan, Huntingdon Valley, Pa., assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 5, 1963, Ser. No. 306,895
2 Claims. (Cl. 242—55.12)



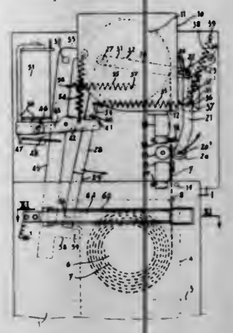
1. The method of controlling a material handling system which includes drive means and brake means for passing a strand of material from a supply reel to a take-up reel during forward operation and for reversing the direction of strand travel during rewind operation, which system includes a separate sensing means adjacent each of the reels to indicate the amount of slack material adjacent each reel, comprising the steps of

selectively energizing and de-energizing both the drive means and the brake means during forward operation in accordance with the respective positions of the two sensing means,

driving the supply reel at a substantially constant speed during rewind operation when there is more tape on the take-up reel than on the supply reel, while selectively energizing and de-energizing the drive means and de-energizing and energizing the brake means for the take-up reel, and

regulating energization and de-energization only of the drive means for the supply reel during rewind operation when there is more tape on the supply reel than on the take-up reel in accordance with the position of the sensing means adjacent the take-up reel.

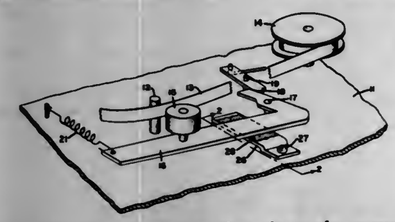
3,347,482
TAPE RECORDER CONTROL DEVICE
Marcel Jules Helene Staar, Rhode-Saint-Genese, Belgium, assignor to Usines Gustave Staar S.A., Brussels, Belgium
Filed Apr. 28, 1965, Ser. No. 451,461
Claims priority, application Belgium, Apr. 29, 1964, 647,272
19 Claims. (Cl. 242—55.12)



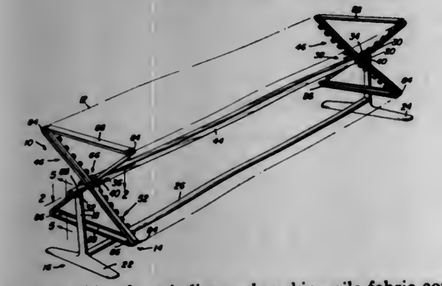
1. In a device for unwinding and rewinding a sound-recording tape of predetermined length from and into a moving cassette for recording or reproduction, the tape being in substantially the same position in the cassette at the end of operation as at the beginning thereof, recording or reproducing being effected half in the direction of tape unwinding and half in the rewinding direction, the device comprising tape-driving means, recording and reproducing heads and elements for detecting the presence of the tape disposed between, on the one hand, the position taken up by the moving cassette in the operative position for recording or reproducing, and, on the other hand, a stationary magazine where the tape is stored during operations, such elements controlling the reversal or the direction of tape movement or the stoppage thereof, the said sound-recording tape driving means being a driving roller, the reproducing and recording heads being disposed one each on either side of said driving roller detector elements and lamps cooperating with said detector elements and so disposed that the latter can be operated only if, the corresponding lamp is lit, and the sound-recording tape does not form an obstacle between such lamp and such element, the arrangement being such that when the cassette is in the operative position the driving roller is between the stationary magazine and the cassette and is disposed between the two reproducing or recording heads whose reproducing faces are aligned with each other in the same plane, and the detecting elements are respectively disposed between the driving roller and the head nearer the stationary magazine and between the other head and the cassette.

3,347,483
MAGNETIC TAPE MECHANISM
Yates M. Hoag, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 23, 1965, Ser. No. 466,152
2 Claims. (Cl. 242—55.12)

1. In a tape mechanism having a capstan for driving a tape, a pinch wheel carried by an arm adapted to move the pinch wheel toward said capstan and against the tape to urge the tape against the capstan so as to be driven thereby, a take-up reel for the tape and means to rotate the take-up reel so as to wind the tape thereon after passing said capstan, there being a period of time required for said take-up reel to acquire operating speed after the mechanism is actuated, the improvement comprising a member in engagement against a side of said pinch-wheel arm so that said arm slides thereagainst when moving the pinch wheel toward said capstan, and a layer of viscous fluid between and in contact with said member and said arm, thereby to slow down the movement of said pinch wheel toward said capstan and delay driving of said tape by the capstan until said take-up reel substantially acquires said operating speed.



3,347,484
REEL FOR PILE FABRICS WITH WOOD SPREADER BAR
Clarence O. Williams, 204 Kirkwood Ave., Rocky Mount, N.C. 27801
Filed June 1, 1965, Ser. No. 460,200
12 Claims. (Cl. 242—62)



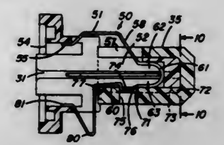
1. A machine for winding and packing pile fabric comprising a base member, said base member including upstanding horizontally spaced apart legs, support means on said legs, a reel supported by said support means, said reel comprising an elongated spreader bar adapted to extend throughout the center of a spirally wrapped fabric roll, an end assembly engaged with each end of said bar, each end assembly including a socket member, a plurality of arms secured to said socket members in generally perpendicular relationship thereto, said arms extending radially outwardly from said socket members, each arm including a reinforcing rib, each arm having a flat portion on the axial inner edge thereof, and hooks formed on said flat portion extending substantially throughout the entire length of the inner edge for engagement with the convolutions of the pile fabric roll, said arms providing substantially V-shaped recess areas adjacent said socket members, said support means comprising a bifurcated rod member rotatably mounted on said legs, said rod member extending into said recess areas and in engagement with said socket member for rotatably supporting said reel in substantially horizontal position.

3,347,485
SPINDLE AND ADAPTER COMBINATION
John J. Bundschuh, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 13, 1966, Ser. No. 520,474
5 Claims. (Cl. 242—68.3)

1. A spindle and adapter combination for selectively accommodating two types of film reels whose cores have different internal diameters and wherein the inner surface of each core is provided with a keyway extending longitudinally thereof and radially therefrom and opening through at least one end of the core, and comprising

(1) a spindle whose outside diameter corresponds to the inside diameter of the smaller of said cores so that the type of reel having said smaller core can be slid onto said spindle;

(2) a tubular adapter slidable onto said spindle and having an outside diameter corresponding to the inside diameter of the larger of said reel cores so that a reel having said larger core can be slid onto said adapter;

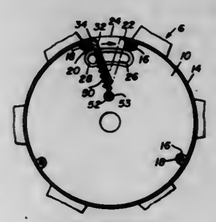


(3) a releasable latch means permitting said adapter to be slid onto said spindle and thereafter holding it from being axially displaced therefrom;

(4) a key member carried by said spindle and movable radially thereof between a normal position, wherein it is adapted to engage the keyway in said reel having the core of larger internal diameter, and a second position, wherein it is adapted to engage the keyway in the core of said other reel; and

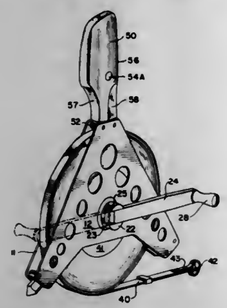
(5) means for moving said key member from said normal position to said second position upon placement of said other reel on said spindle.

3,347,486
FILM REEL
William F. Martin, 808 Scott St., Beaufort, S.C. 29902
Filed Aug. 1, 1966, Ser. No. 569,317
8 Claims. (Cl. 242—74.2)



1. For use in winding and unwinding a strip of thin ribbon-like plastic tape such as, for example, motion picture film: a film reel comprising, a pair of spaced parallel reel heads having centralized hub portions provided with a fixed intervening ring-like band defining a hollow film reeling spool, said band provided with circumferentially spaced terminal end portions directed radially inward into the hollow space between said hub portions and defining selectively usable left and right film-end seating and binding abutments and an intervening elongated film-end inserting and withdrawing slot ranging between said abutments, and a full responsive spring-biased film-end orienting clamping and releasing lever located and having an inner end pivotally supported between said hub portions and an outer trippable free end located within the confines of said slot and adapted to swing toward and from and clampingly engage either one of said abutments in a manner to retentively but releasably clamp the aforementioned film-end between itself and a selected one of said abutments.

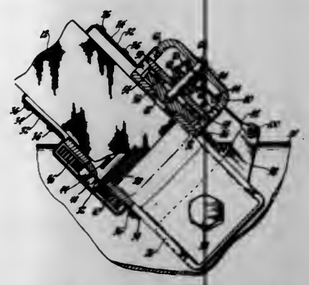
3,347,487
MEASURING TAPE DEVICE
Carl R. Sellen, Paramus, N.J., and Francesco Collura, New York, N.Y., assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,225
12 Claims. (Cl. 242—84.8)



1. A measuring tape comprising a pair of A-shaped plates arranged in side-by-side spaced parallel relation with the apex and legs of each plate registering with the apex and legs of the other plate defining a tape case, a spacer mounted between the plates at the apex and at each leg, a first handle mounted on the spacer at said apex, a spur fixed on the spacer on one leg and projecting outwardly therefrom to support the tape case, a circular disc of a thickness approximately the width of a measuring tape to be wound thereon, said disc being rotatably mounted centrally of said plates, said disc having a recess including a wide mouth communicating with a shallow slot communicating with a circular opening through an outer peripheral portion of the disc, said recess also including an open side pocket communicating with said circular opening, said pocket being defined in part by a wall coincident with one side of the disc, a pin extending axially from said wall toward the open side of the pocket for reception within a small eye on the inner end of a measuring tape whereby a measuring tape may be attached to said pin with the pin passing through the eye or a measuring tape having an enlargement on the inner end may be mounted with the enlargement in the circular opening in communication with said slot thereby providing for selective mounting of measuring tapes, the portion of said recess defining the shallow slot effectively maintaining the measuring tape substantially tangential to the reel preventing winding the tape in the wrong direction.

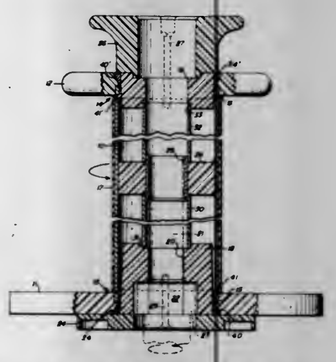
3,347,488
SEAT BELT RETRACTOR
Rudi F. Quinting, Clawson, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,389
2 Claims. (Cl. 242—107.4)

1. In combination with a vehicle body having a safety belt, a retractor for the belt comprising a housing, means pivotally mounting the housing on the vehicle body, a reel rotatably mounted in the housing and having one end of the belt secured thereto, spring means mounted in the housing and urging the reel to rotate in one direction to wind the belt thereon, rotation of the reel in the other direction opposing the spring means and effecting unwinding of the belt from the reel, a ratchet member mounted on the reel, a second ratchet member nonrotatably and slidably mounted on the housing for movement between a first position fully engaging the first ratchet member and a second position disengaging the first ratchet member, the second ratchet member in first position preventing rotation of the reel in the said other direction to unwind the belt therefrom and normally permitting the spring means to urge the reel to rotate in the said one direction to wind the belt thereon, second spring means normally urging the second ratchet member into the first position with sufficient force to prevent the first spring means from urging the reel in the said one direction, selectively actuatable means mounted on the housing for



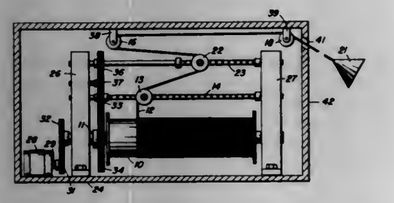
selectively moving the second ratchet member to the second position against the force of the second spring means, and control means interconnecting the vehicle body and the selectively actuable means and operable upon pivotal movement of the housing to cause the selectively actuatable means to move the second ratchet member to the second position, thus enabling the first spring means to rotate the reel in the said one direction to wind the belt thereon.

3,347,489
TEXTILE SPOOL
George A. Poteat, Jr., Greensboro, N.C., assignor to Engineered Plastics, Incorporated, Gibsonville, N.C.
Filed Dec. 18, 1964, Ser. No. 419,421
2 Claims. (Cl. 242—118.61)



1. A spool for textile filaments and the like comprising a cylindrical hollow barrel, a disc-shaped end flange, a split arcuate retaining member, and an end plug, said flange having a central aperture extending therethrough, a portion of the length of the inner surface of said aperture being cylindrical for receiving one end of the barrel therein, said cylindrical portion terminating in a medial inwardly directed ridge for limiting axial movement of the barrel in one direction, the inner surface of the remaining portion of said aperture being frusto-conically shaped in an axially outwardly expanding direction, the inner surface of the barrel being provided with an annular groove spaced from said one end, said split retaining member having a generally cylindrical inner surface, the outer peripheral surface thereof having an annular outwardly directed ridge for engagement with said groove in the barrel and a portion complementary to the frusto-conical portion of the end flange for engagement therewith, the outer diameter of the ridged portion when the retaining member is inwardly contracted being less than the inner diameter of the barrel, said plug being received within said retaining member and said one end of the barrel and having a generally cylindrical peripheral surface for maintaining said retaining member in an expanded position.

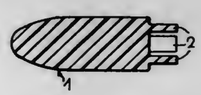
3,347,490
LEVEL WIND FOR AIRBORNE TRAILING WIRE ANTENNA PARALLEL TO THE DRUM AXIS
James N. Browning, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Feb. 16, 1966, Ser. No. 527,883
2 Claims. (Cl. 242—158.3)



1. A reeling mechanism comprising a supporting means, a reel rotatably supported by the supporting means, a drive means connected to drive said reel, a line wound about said reel, a pay out means attached to said supporting means and said line passing through the pay out means, a level wind guide comprising a shaft threaded in both directions with a carrier mounted thereon, said shaft mounted parallel to the axis of rotation of the reel on the supporting means and geared to the reel so that the carrier moves back and forth along the longitudinal axis of the reel as the reel is driven by the driving means, a second guide comprising a second shaft parallel to the first mentioned shaft with a second carrier mounted thereon said second shaft rotatably supported by the support means and geared to the reel and the first mentioned shaft so as to be driven thereby, said second shaft threaded in both directions and the threaded portions being half the length of the threaded portion of the first mentioned shaft and at a pitch so that the carrier on the second shaft moves at one half the speed of the carrier on the first mentioned shaft and the line passing from said reel over the carrier on the first mentioned shaft and over the second carrier and to the pay out means.

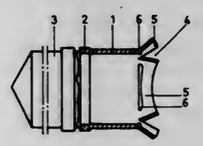
3,347,491
PROJECTILE FOR A FIREARM
Auguste, Jean-Baptiste, Ghislain Pickart, Seraing (Meuse), Belgium, assignor to Fabrique Nationale D'Armes de Guerre, S.A.
Filed Oct. 15, 1965, Ser. No. 496,432
Claims priority, application Belgium, Oct. 30, 1964, 40,301
14 Claims. (Cl. 244—3.27)

1. A projectile for a firearm comprising a resistant body, a slowing-down device in relation with said body, said slowing down device being an increasing means of the surface of friction of said body in the air so as to shorten the range in relation to that of an ordinary projectile of same initial kinetic energy, said increasing means of the surface of friction of said body in the air being composed of at least one member displaceable at the beginning of the trajectory to bring certain of its pieces outside the contour of the projectile, said increasing means of the surface of friction of said body in the air comprising a plurality of small tongue members, said tongue



members being initially parallel to the longitudinal axis of said body, said tongue members being formed of flexible material so they space from each other due to centrifugal force.

3,347,492
PROJECTILE WITH A REARWARDLY DIRECTED STEERING TUBE
Hugo Abramson, Eskilstuna, Sweden, assignor to Försvarets Fabriksverk, Eskilstuna, Sweden, a corporation of Sweden
Filed May 19, 1966, Ser. No. 551,343
Claims priority, application Sweden, June 14, 1965, 7,836/65
4 Claims. (Cl. 244—3.28)

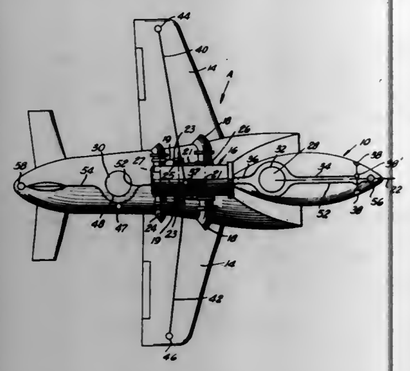


1. A projectile having a rearwardly directed steering tube provided with a plurality of substantially longitudinal and uniformly spaced apart rearwardly directed slots dividing the rear portion of the tube into a plurality of flaps, a plurality of transverse slots extending transversely of the tube and located substantially in line with the inner ends of the longitudinal slots, each of the transverse slots being located at the base of each of the flaps, each of the transverse slots being defined by walls which diverge outwardly from the interior of the tube so that when the projectile leaves the firing tube of a weapon the flaps, under the action of the propelling gases, will be bent out on the line of the transverse slots and have their outward bending action limited by the closing of the transverse slots and the contact between the walls of said slots.

3,347,493
AIRCRAFT
Peter T. Leathley, Ingleby, Stanton-by-Bridge, England, assignor to Rolls-Royce Limited, Derby, England
Filed Sept. 14, 1965, Ser. No. 487,233
Claims priority, application Great Britain, Sept. 16, 1964, 37,928/64
7 Claims. (Cl. 244—12)

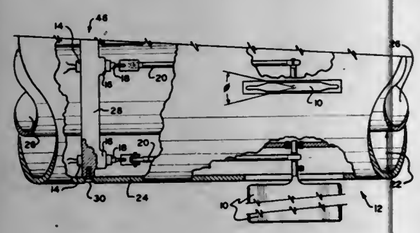
1. An aircraft having aerodynamic surfaces for producing lift forces on the aircraft during forward flight: at least one jet gas turbine forward propulsion engine having compressor means, combustion means and turbine means in flow series, said forward propulsion engine including means for deflecting propulsive gases to produce lift forces on the aircraft; two further jet gas turbine lift propulsion engines, each having compressor means, combustion means and turbine means in flow series; means mounting said two lift propulsion engines in the aircraft with their thrust axes disposed transversely of and through the longitudinal axis of said aircraft, the thrust axes of the respective lift propulsion engines being disposed on

opposite sides of the center of lift of the aircraft to produce lift forces independently of those produced by said aerodynamic surfaces and by said at least one forward engine; a first pair of propulsion nozzles; means for supplying air to said first pair of propulsion nozzles from the compressor means of only one of said lift propulsion engines; means mounting said first pair of propulsion



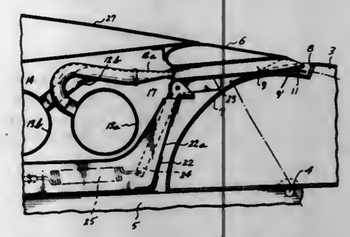
nozzles whereby when air issues therefrom they exert mutually opposed turning moments about an axis of roll of said aircraft; a second pair of propulsion nozzles; means for supplying air to said second pair of propulsion nozzles only from the compressor means of the other of said two lift propulsion engines; means mounting said second pair of propulsion nozzles whereby when air issues therefrom they exert mutually opposed turning moments about an axis of pitch of the aircraft.

3,347,494
CIRCULAR MANIFOLD
Alexander M. Wright, West Hartford, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,459
5 Claims. (Cl. 244—14)



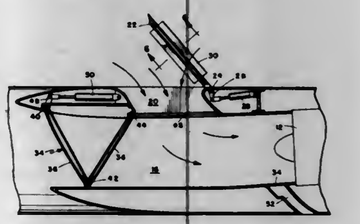
1. In a missile in-flight guidance system, a fluid distribution manifold structure comprising an annular valve housing having a central bore, a sleeve fixed concentrically within said housing, a toroidal passageway formed between said sleeve and said housing, packing means disposed outwardly of said passageway to seal any annular clearance between said sleeve and said housing, a pressure source carried by said housing, a plurality of valve-actuator assemblies substantially equally spaced around said annular housing, conduit means connecting said toroidal passageway to said pressure source and to each of said plurality of assemblies.

3,347,495
AIRPLANE WING FLAP WITH AUGMENTED JET LIFT-INCREASING DEVICE
Donald S. Eberhardt and Louis B. Gratzer, Seattle, and Joe N. Runnels, Jr., Bellevue, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,099
15 Claims. (Cl. 244—42)



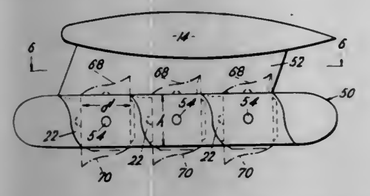
1. Flap jet-blanketing mechanism for an airplane wing trailing edge flap, comprising ejector means carried by the wing adjacent to the flap and including rearwardly directed channel means having a rear discharge end of a depth less than the thickness of the flap and overlying the leading portion of the flap and nozzles located to direct air jets into said channel means but spaced from the walls thereof to leave passages for flow into said channel means of supplemental air for discharge alongside the leading portion of the flap, and supplemental air supply means communicating with the underside of the wing for supplying supplemental air to said channel means from the underside of the wing.

3,347,496
ENGINE AIR INLET SYSTEM FOR SUPERSONIC V/STOL AIRCRAFT
Waldo V. Opfer, Jr., San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed May 3, 1966, Ser. No. 547,316
6 Claims. (Cl. 244—53)



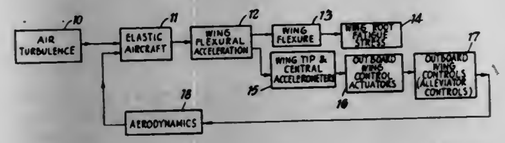
1. In a V/STOL aircraft having a turbojet engine, an engine air inlet system comprising:
- a forwardly opening primary inlet duct leading to said engine;
- a secondary inlet duct communicating with said primary duct and extending upwardly through a portion of the aircraft structure substantially above the primary duct;
- and variable ramp means in said primary duct, said ramp means being movable selectively to a retracted position substantially within a wall portion of the primary duct for blocking off said secondary duct and an extended position for completely blocking the primary duct and for uncovering said secondary duct and to intermediate positions therebetween.

3,347,497
AIRCRAFT
John Albert Mullins, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Oct. 20, 1965, Ser. No. 498,589
Claims priority, application Great Britain, Oct. 24, 1964, 43,459/64; Jan. 27, 1965, 3,719/65
10 Claims. (Cl. 244—54)



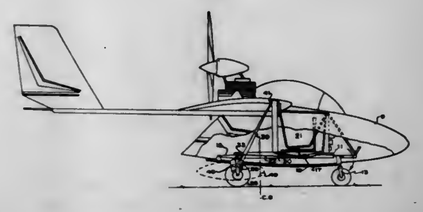
1. Aircraft power plant comprising a pod, a plurality of direct lift gas turbine engines arranged in at least one row extending longitudinally of the pod, and means for moving said engines relative to the pod between operative positions in which the longitudinal axes of the engines are substantially vertical and inoperative positions in which the longitudinal axes of the engines are horizontal, the engines being so arranged that the engines in said at least one row lie with their longitudinal axes aligned and their ends adjacent each other in the inoperative positions of the engines.

3,347,498
AIRCRAFT STRUCTURAL STRESS ALLEVIATORS
Eric Priestley and Anthony E. Hodson, Lewisham, London, England, assignors to Elliott Brothers (London) Limited, Lewisham, London, England, a company of Great Britain
Filed Sept. 13, 1965, Ser. No. 486,699
Claims priority, application Great Britain, Sept. 16, 1964, 37,867/64
12 Claims. (Cl. 244—77)



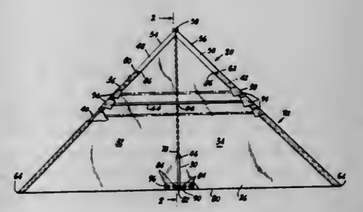
1. In a system for reducing flexure of an aircraft structure to correspondingly reduce stress fatigue damage which would otherwise occur in the structure as a result of repeated stressing thereof, the aircraft including a portion relative to which said structure may flex, and control means operable to oppose such stress-inducing flexure, and there being actuating means for said control means; said system including, in combination, first and second acceleration sensing means, each having an output proportional to the magnitude of acceleration sensed, said first sensing means being positioned to respond to acceleration of said portion relative to which said structure may flex which is along an axis parallel to the direction of such relative flexure, said second sensing means being positioned to respond to acceleration of said structure which is along an axis parallel to and offset from the first mentioned axis, and means connected between said sensing means and said actuating means and having an output to said actuating means which is proportional to the acceleration of said structure relative to said portion to oppose the flexural acceleration of said structure which is implied by such relative acceleration.

3,347,499
LANDING GEAR APPARATUS FOR LIGHT AMPHIBIOUS AIRCRAFT
Wallace K. Larkin, 74 Hollins Drive, Santa Cruz, Calif. 95060
Filed June 17, 1966, Ser. No. 558,429
5 Claims. (Cl. 244—101)



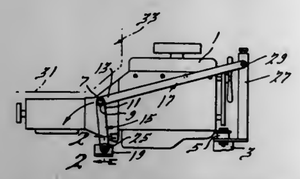
1. Landing gear apparatus for an airplane having a fuselage, the apparatus comprising:
- an aquaskid;
- mounting means attaching the aquaskid longitudinally beneath the fuselage of the airplane with a forward portion of the aquaskid disposed ahead of the center of gravity of the airplane and with a rearward portion disposed to the rear of the center of gravity of the airplane, said mounting means variably extending the aquaskid to a selected position below said fuselage;
- a pair of support elements having hydrofoil shapes; and
- means supporting the inner ends of said support elements on said aquaskid to extend transversely outward and upward therefrom near the center of gravity of said airplane when said aquaskid is extended to a selected position below the fuselage for takeoff or landing in water.

3,347,500
KITE
Alfred E. Hartig, 171 E. 91st St., New York, N.Y. 10028
Filed June 30, 1966, Ser. No. 561,788
13 Claims. (Cl. 244—154)



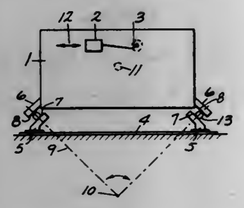
1. Kite comprising, in combination, a main body portion fabricated of flexible material having leading edges diverging generally rearwardly from a forward apex portion, reinforcing means structurally associated with said main body portion adjacent said leading edges and extending generally rearwardly at least from locations along said leading edges spaced apart from said apex portion, and a keel portion depending from and structurally associated with said main body portion along a location substantially bisecting the angle between said leading edges, a portion of the upper edge of said keel portion being free to move relative to said main body portion and adapted to be adjustably positioned relative thereto.

3,347,501
ENGINE SUSPENSION
Eugene Van Eimeren, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 573,630
7 Claims. (Cl. 248—8)



1. In an automotive type vehicle having a chassis means, a body means including a passenger compartment mounted on the chassis means, and an engine located forwardly of the passenger compartment, support members mounting the front end of the engine on the chassis means, and support and guide means mounting the rear of the engine on one of said means, said support and guide means being connected to the engine along a horizontal axis and movable rearwardly with the engine relative to the passenger compartment in the event of front impact and imparting a downward component of movement to the engine during rearward engine movement so that the engine moves substantially beneath the passenger compartment.

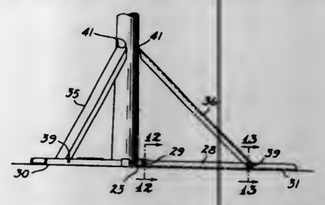
3,347,502
MOUNTING SYSTEM FOR LOOMS AND THE LIKE
James T. Gwinn, Jr., Erie, Pa., assignor to Lord Corporation, a corporation of Pennsylvania
Filed Jan. 18, 1965, Ser. No. 426,224
22 Claims. (Cl. 248—22)



1. A loom having a lay reciprocated in a generally horizontal direction above the center of gravity of the loom, and means for supporting the loom for free rocking movement about an axis below the center of gravity of the loom and crosswise to the direction of reciprocation of the lay, said axis being chosen so the sum of the forces acting on the loom are substantially through the center of percussion of the loom.

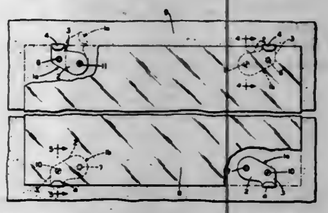
3,347,503
SUPPORT FOR CHRISTMAS TREES
Joseph F. Kortan, 6065 Pearl Road, Parma Heights, Ohio 44129
Filed Sept. 3, 1965, Ser. No. 484,894
5 Claims. (Cl. 248—46)

1. A support for a Christmas tree including a triangularly-shaped base portion having three edges and a pair of flanges integral with the base portion extending upwardly from each of said edges which flanges are spaced from each other at substantially the central portion of each edge to provide an interruption, means providing an apertured support at each edge of each interruption which apertured supports at the opposite sides of each interruption are in alignment with each other, an arm having upwardly extending flanges at its opposite sides and an apertured inner portion extending between the supports adjacent each edge of each interruption, means pivotally connecting the aperture portion at the inner end of each of the respective arms to the apertured supports adjacent the edge of each interruption, a U-shaped brace having



an apertured lower portion extending between the flanges of each of the respective arms at a spaced distance from the end of such arms and the flanges of each of said arms having aligned apertures therein which are aligned with the apertures in the lower portion of the brace associated therewith and means extending through the apertures in the lower portion of each of said braces and the apertures in the flanges of each of the respective arms for pivotally connecting each brace to its respective arm.

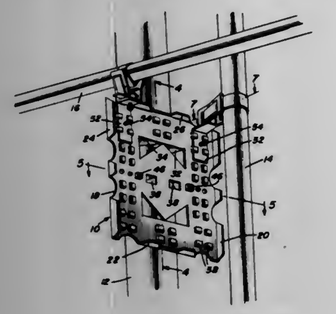
3,347,504
CLIPS FOR MIRRORS
James W. Goss, 410 South St. SW., Warren, Ohio 44483
Filed July 22, 1966, Ser. No. 567,109
4 Claims. (Cl. 248—488)



1. Means for mounting and supporting an object such as a sheet glass mirror, said means comprising a plurality of similar clips adapted to be fastened to a supporting surface such as a wall, each clip being formed of a single piece of sheet metal comprising a flat long leg and an angularly disposed short leg at one end thereof, a channel portion formed upon the short leg, there being an aperture in each end of said long leg, the aperture in the end adjacent said short leg being adapted to receive an attaching means when the short leg is disposed downward with the channel open upward to receive the lower edge of a mirror, and the aperture in the other end being adapted to receive an attaching means when the short leg is disposed upward with the channel open downward to receive the upper edge of a mirror.

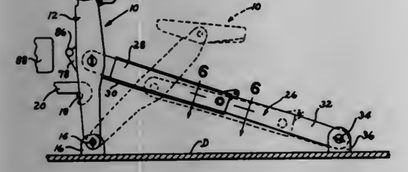
3,347,505
PIPE HANGER BRACKET
Henry E. Menser, Hammond, Ind., assignor of one-eighth to Thomas H. Vance and Margaret C. Vance, jointly, both of Hammond, Ind.
Filed Nov. 17, 1965, Ser. No. 508,256
12 Claims. (Cl. 248—68)

1. A pipe hanger bracket comprising a plate-like panel including portions struck laterally outwardly of one side of said panel and defining a pair of spaced aligned cradle assemblies projecting outwardly of said one side and a channel-shaped recess generally paralleling said plate and extending between said cradle assemblies adapted to embracingly receive therein an elongated support member



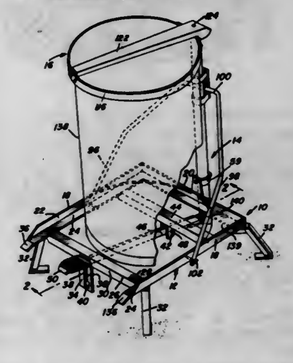
from which said panel is to be supported, said panel including means adapted to be utilized to removably secure said support member in said recess, and means carried by said panel adapted to support at least one pipe member therefrom.

3,347,506
COLLAPSIBLE HITCH
Dallas W. Rollins, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 11, 1966, Ser. No. 533,661
3 Claims. (Cl. 248—119)



1. A collapsible hitch adapted to be mounted on a railway flat car, a generally vertical support member movable between a collapsed position and a generally vertical erect position, means carried by the extending end of the support member adapted to engage the kingpin of a trailer or the like, a diagonal support member connected to the vertical support member on the side thereof adjacent the trailer or the like, said diagonal member having a pair of telescoping portions movable toward each other during substantially the entire movement of the hitch from an erect position to collapsed position and movable away from each other during substantially the entire movement of the hitch from the collapsed position to the erect position, the outer of said telescoping portions having an enclosed space therein forming an air chamber and the inner of said portions being received within the outer portion and having an extending end forming a piston within the air chamber, the movement of the piston when the hitch falls from an erect position to a collapsed position tending to compress air within the outer portion during substantially the entire movement of the hitch to the collapsed position for cushioning the fall of the hitch, means to releasably latch the hitch in erect position, and means to release said latch means for movement of the hitch from erect position to collapsed position.

3,347,507
RACK FOR TRASH BARRELS
Cecil R. Dyer, 602 E. Virginia St., Anadarko, Okla. 73005
Filed Aug. 11, 1966, Ser. No. 571,841
9 Claims. (Cl. 248—147)

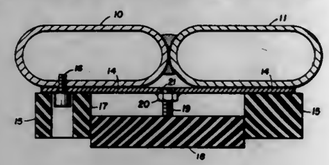


1. A rack for trash cans comprising a base section adapted to removably support an upright trash can from its lower end and including front and rear marginal portions as well as opposite side marginal portions, an upright standard pivot axis defining means pivotally supporting the lower end of said standard from the rear marginal portion of said base section for swinging movement about a generally horizontal axis extending transversely of said standard and between said opposite side marginal portions forwardly and downwardly inclined inverted generally U-shaped, brace means interconnected between said base section and said standard, said brace means including a pair of generally parallel legs interconnected at one pair of corresponding ends by means of a bight portion, the free ends of said legs being pivotally secured to opposite side portions of said base section for rotation about axes extending therebetween, means securing said bight portion to said standard at a location spaced above said axis and for vertical shifting of said bight portion relative to said standard therefore, adjustably securing said standard in adjusted rotated positions relative to said base section, and a cover supported from the upper end of said standard for pivotal movement about a generally horizontal axis between a generally horizontal position projecting forwardly of said standard and an upstanding position with its free edge portion swung upwardly toward an upstanding position.

3,347,508
LEVELING DEVICE FOR GYMNASTIC APPARATUS
George P. Nissen and Harlan J. Kelly, Cedar Rapids, Iowa, assignors to Nissen Corporation, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 4, 1965, Ser. No. 492,637
1 Claim. (Cl. 248—188.4)

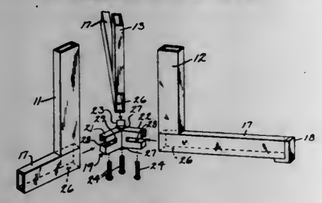
A leveling device for a floor engaging supporting member of gymnastic apparatus, said device including a mounting plate fittable horizontally beneath said supporting member, a fixed base pad secured to and beneath said plate, said fixed pad having a lower floor engaging surface and being provided with a centrally disposed circular aperture therein opening vertically therethrough from said surface thereof to said plate, and a vertically adjustable leveling base pad having a centrally disposed

vertical spindle threadedly engaging said base plate and rotable with respect thereto and to said fixed pad, said leveling pad being circular in shape effective to be rotably received within said fixed pad aperture and having a lower floor engaging surface parallel to said surface of said fixed pad, rotation of said leveling pad and spindle being



effective to continually vary the distance between said pad surfaces from a position wherein said leveling pad surface is above to a position wherein it is below said fixed pad surface, both of said pads being constituted of elastomeric material effective to frictionally engage the floor.

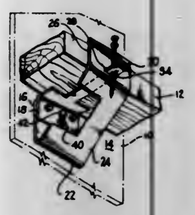
3,347,509
KNOCKDOWN TABLE STRUCTURE
Frederick H. Holz, William C. Lutzke, and Robert O. Blink, Milwaukee, Wis., assignors to Mitchell Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 1, 1966, Ser. No. 569,498
2 Claims. (Cl. 248—188.7)



1. A table structure, comprising: a plurality of leg elements formed of tubular metal stock of rectangular cross section, each of said leg elements being provided with an elongated vertical member having a top and a bottom, and a horizontal base member abutting against and projecting outwardly from the lower end of said vertical member, said base member having an open inner end and there being a bolt-receiving aperture in the lower surface of said tubular base member adjacent said inner end; a connector device having a plurality of radiating horizontal arms, each of said connector arms projecting telescopically into the inner end of one of said leg tubular base members, and there being upwardly-extending tapped bores in the lower surfaces of said connector arms; shoulder means formed on said connector device against which the inner ends of said tubular base members abut to align said base member apertures and connector arm bores; bolts projected upwardly through said aligned base apertures and connector arm bores to secure said base members in position on said connector device and to join said leg elements together to form a pedestal; and means for securing a table top to the top of said pedestal.

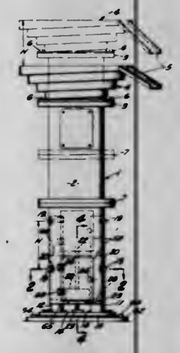
3,347,510
WALER BRACKET
Frank E. Buyken, 1517 Rainier Ave. S., Seattle, Wash. 98144
Filed July 12, 1965, Ser. No. 471,226
13 Claims. (Cl. 248—205)

1. A waler bracket, comprising:
an upright form-engaging member having a rigid ledge member substantially right angularly disposed relative thereto adjacent its upper end, said form-engaging member adapted to receive and engage headed form-tie rod;
a waler-engaging upright wall movably disposed at the outer end of said ledge member and rising thereabove;



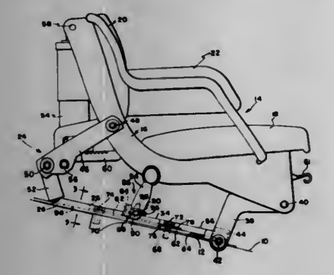
a brace member flexibly integral with and extending between the lower portion of said upright form-engaging member and merging with said movable wall; and
means carried by said ledge member to receive a wedging element to bear against the outer surface of said movable waler-engaging wall.

3,347,511
ADJUSTABLE HEIGHT PEDESTAL
Richard J. Myers, Los Angeles, Calif., assignor to Mansfield Engineering Corporation, Glendale, Calif., a corporation of California
Filed Jan. 14, 1966, Ser. No. 520,723
6 Claims. (Cl. 248—422)



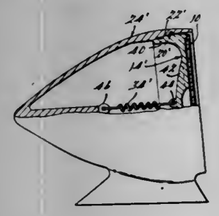
1. An adjustable height pedestal comprising a hollow casing having an upper end acting as a support, a base, a fixed screw arising from said base, said casing having therein a bevel gear acting as a nut for said screw a base plate for said casing and a saddle fixed to said base plate for rotatably supporting said bevel gear in said casing, said saddle and said base plate each having an aperture through which said screw freely passes, means for securing said saddle to said base plate with said bevel gear therebetween and with said saddle resting on the top of said bevel gear, the weight of said casing being borne by said bevel gear, means for operating said bevel gear to raise or lower said casing, means on said base slidably fitting in said casing for supporting said casing for vertical movement and means carried by said casing for securing said casing to said supporting means in adjusted position.

3,347,512
LOCKING DEVICE FOR ADJUSTABLE VEHICLE SEATS
Gary L. Campbell, Waterloo, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,957
10 Claims. (Cl. 248—429)



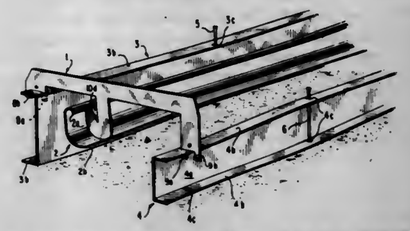
4. A vehicle seat structure comprising: a fore-and-aft supporting structure; a movable member slidably mounted on the supporting structure for limited fore-and-aft movement; a seat disposed above the supporting structure; linkage means connecting the seat to the movable member for movement therewith and also providing seat movement relative to the movable member between a rider-carrying position and a rearward non-operative position; a locking member movable between a locking position wherein it operably connects and locks the movable member to the supporting structure in any of the infinitely variable fore-and-aft positions of the movable member relative to the supporting structure and an unlocking position wherein it permits movement of the movable member on the supporting structure; and manually-actuated cam means operably connected to the locking member for moving it between its alternate positions.

3,347,513
PIVOTABLE MIRROR
Douglas D. Liedel, Belleville, Mich., assignor to C. M. Hall Lamp Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 517,496
15 Claims. (Cl. 248—483)



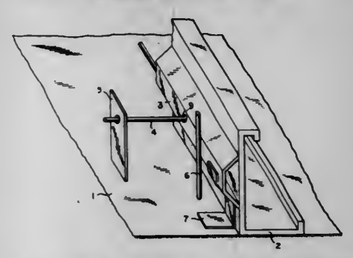
13. A pivotable mirror assembly comprising a relatively stationary hollow mirror head open at one end and having an integral concave spherical surface portion on the inner surface thereof adjacent said one end, a relatively movable mirror-support member for supporting the mirror having an integral convex spherical surface portion cooperable with and conforming to said integral curved surface on said head and forming therewith a ball and socket pivotal connection between said movable mirror-support member and said head, and means for retaining said curved surfaces in cooperating engagement.

3,347,514
CURB AND GUTTER FORM ASSEMBLY
James P. Yates, Silver Hill, Md., assignor to Gly Construction Corporation, Silver Hill, Md.
Filed Mar. 12, 1965, Ser. No. 439,311
7 Claims. (Cl. 249—2)



1. A curb and gutter form of the character described, comprising a curb rail, a gutter rail positioned in spaced, parallel relationship with respect to said curb rail, a bridge extending transversely to and secured to said gutter and curb rails, the ends of said bridge being insertable within said curb and gutter rails, said bridge including a hook member depending therefrom for carrying a face rail, said hook member comprising a shank portion secured to the bridge in the vicinity of the medial portion thereof and disposed at an angle to the vertical, the lower end of the shank portion terminating in a bight portion, said bight portion extending upwardly and terminating in a leg portion, said leg portion being parallel to said shank portion; the face rail being substantially C-shaped in cross-section, the upper edge of said face rail extending over the end of said leg portion, the lower end portion of said rail extending around and engaging said bight portion, and the web portion of the face rail abutting the leg portion, whereby the face rail is disposed at the same angle to the vertical as the shank portion.

3,347,515
RECESS JOINT FOR ROAD CONSTRUCTION
Franklin T. White, Morning Sun, Iowa 52640
Filed Jan. 24, 1966, Ser. No. 523,844
3 Claims. (Cl. 249—9)

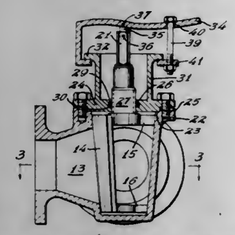


1. A recess joint for road construction having a channel shaped form member adapted to be placed with its recessed side against a road form, said form member having an aperture to receive a bent tie bar with its bent portion adapted to extend longitudinally along said recessed side, a retaining piece fastened on said recessed side and spaced from said aperture to engage said bent portion of said tie bar.

3,347,516
TAPERED PLUG VALVE
Rienard W. Linde, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Feb. 4, 1965, Ser. No. 430,792
2 Claims. (Cl. 251—160)

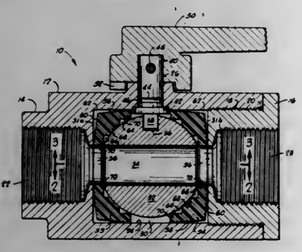
2. A tapered plug valve comprising: a valve housing including inlet and outlet ports, a valve seat tapered at an

oblique angle to the axis of rotation of a tapered arcuate frusto-conical gate, an opening adapted to receive a valve gate assembly and a top flange adapted to receive a bonnet; a rotatable valve gate assembly including a tapered arcuate frusto-conical gate of a width to close a single selected port received in said valve housing to provide surfaces adapted to be in contact, a top guide mounted on the tapered arcuate frusto-conical gate and extending therefrom so that the guide may rest on the tapered valve seat, a bottom guide generally parallel to said top guide and normal to the axis of the gate mounted on a tapered arcuate frusto-conical gate and extending therefrom so that the guide may rest on the tapered valve seat, a valve



stem mounted on the top guide and extending upwardly therefrom, and a valve actuating shaft mounted on the valve stem extending upwardly therefrom and concentric therewith; a bonnet including a top flange and a bottom mounted flange mounted on the top flange of said valve housing, means for attaching said bonnet to said valve housing, an opening surrounding the valve stem, and means for effecting a seal between the valve housing and the opening through which the valve stem protrudes; and a lever arm hinged under the bonnet top flange and linked to the valve actuating shaft to impart force to said surfaces at an angle to said surfaces by an upward movement and rotative movement to the valve actuating shaft.

3,347,517
VALVE AND SEAL
Domer Scaramucci, 3245 S. Hattie Oklahoma City, Okla. 73129
Filed Dec. 9, 1964, Ser. No. 417,111
11 Claims. (Cl. 251—315)



1. A valve comprising:

a valve body having an inlet and an outlet and a valve chamber communicating with the inlet and outlet, said valve chamber having a generally cylindrical outer wall meeting an annular end wall around the outlet;

a valve ball supported in the valve chamber for movement toward the outlet when the valve is closed; and

an annular, resilient material seal in the valve chamber encircling the outlet, said seal having:

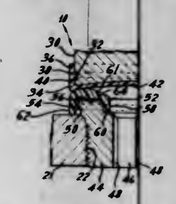
a surface facing the valve ball shaped to engage the valve ball only at a medial portion of said surface when the valve ball is centered in the valve chamber;

an annular end surface facing said end wall; and

a generally cylindrical outer surface facing the outer wall of the valve chamber,

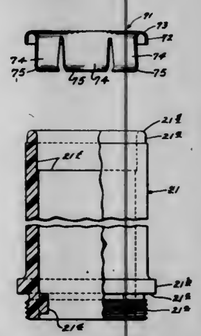
said annular end surface and cylindrical outer surface meeting at an angle greater than the angle between the outer wall and end wall of the valve chamber to provide a chamber into which the seal is distorted by the valve ball when the valve ball is moved toward the outlet, whereby additional portions of the surface of the seal facing the valve ball are brought into engagement with the ball.

3,347,518
FAUCET STRUCTURES
Robert E. Curran, 56 Grandview St., Huntington, N.Y. 11743
Filed Nov. 8, 1962, Ser. No. 236,260
5 Claims. (Cl. 251—333)



1. In a faucet, a valve seat having a groove about its outer periphery, a resilient valve about the outer periphery of said valve seat and having a protrusion thereon extending into said peripheral groove to connect said valve with said valve seat, a shoulder on said valve overlying an end of said valve seat, said valve seat having a fluid opening defined therein and a recess forming a radially directed shoulder between the ends of said opening, and said valve having a leg accommodated in said recess and engaging said shoulder radially outward of said opening and an interior surface positioned over and facing said end of said valve seat.

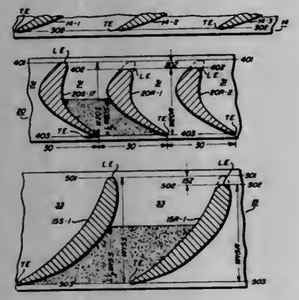
3,347,519
REPLACEABLE VALVE SEAT FOR FLUSH VALVES
Oscar L. Engstrom, 45—54 41st St., Long Island City, N.Y. 11104
Filed Apr. 12, 1965, Ser. No. 447,354
7 Claims. (Cl. 251—365)



1. A replaceable valve seat for tubular valve seat members comprising, in combination, a ring-shaped body member of such axial cross-sectional shape as to define concentrically spaced outer and inner wall portions integrally formed at one end with a rounded annular seat portion,

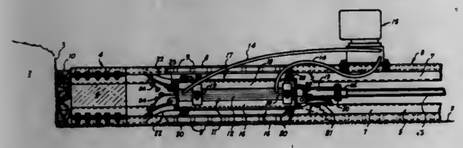
the outer one of said wall portions being in the form of a uniformly straight cylindrical skirt, the inner one of said wall portions being comparatively long and having longitudinal slots defining into a plurality of peripherally-spaced tongues, the terminal ends of said tongues being inwardly turned, said slots extending inwardly to positions laterally opposite said outer wall portion.

3,347,520
TURBOMACHINE BLADING
Jerzy A. Owczarek, 1908 Pinehurst Road, Bethlehem, Pa. 18018
Filed July 12, 1966, Ser. No. 564,685
12 Claims. (Cl. 253—77)



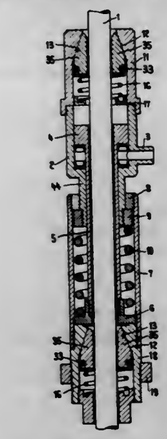
1. In combination in a turbomachine, a casing, a plurality of rows of peripherally spaced stator blades, with stator flow passages therebetween, mounted therein and extending inwardly therefrom, a rotor positioned in said casing for rotation about an axis and having mounted thereon a plurality of rows of peripherally spaced rotor blades, with rotor flow passages therebetween, at least one of said rows of blades comprising first blades, comprising more than 50% of the blades in said row, and second blades, comprising at least 5% of the blades in said row, having at least a portion of the leading edges thereof recessed relative to the leading edges of said first blades whereby pressure waves reflecting in the vicinity of the leading edges of a row of said first blades and said second blades are disrupted by the non-uniformity of the leading edges thereof.

3,347,521
CABLE DUCT INSTALLATION TOOL
William H. Bingham, 8521 Friendship, Houston, Tex. 77055
Filed Feb. 6, 1967, Ser. No. 614,354
2 Claims. (Cl. 254—29)



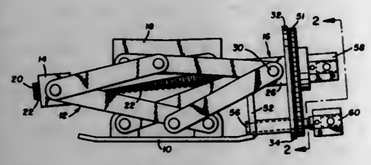
1. In a tool for driving a sectional tubular metal conduit under a paved surface, such as an airport runway, to provide a duct below the pavement extending across it from one side to the other, comprising an integral track unit adapted to be arranged in a trench extending laterally outwardly from the paved surface, perpendicular to the adjacent side thereof, having a pair of elongated rail elements, channel shaped in transverse section, arranged in parallel, spaced apart relation to each other with their side flanges opposed, and having a supporting structure including a plurality of uniformly spaced cross bars whereby the elongated rail elements are connected intermediate their ends, a carriage supported for longitudinal movement relative to the track unit and having wheels engageable between the flanges of the elongated rail elements, a hydraulic ram on the carriage having its cylinder arranged on its side, parallel to the track unit, and having its plunger extending outwardly beyond one end of the carriage, means for removably connecting an adjoining section of a tubular metal conduit to the outer end of the plunger, in axially aligned relation thereto, and pawls pivotally connected to opposite ends of the carriage for selective engagement, respectively, with the cross bars to prevent longitudinal movement of the carriage in one direction while permitting movement of the carriage in the opposite direction in response to the action of the hydraulic ram, the pawls being operable alternatively to thereby control the direction of movement of the carriage, the improvement which comprises a second like track unit arranged in parallel, spaced apart relation to said first mentioned track unit and positioned on the opposite side of the carriage, with its rail elements in opposing relation thereto, other wheels on the carriage in operative engagement with the rail elements of said last mentioned track unit, and one or more other pawls on the carriage engageable with the cross bars thereof.

3,347,522
STEP-BY-STEP DRIVING-JACK
Alfred Reinmann, Niederbipp, Switzerland, assignor to Werkzeugfabrik Selzach A.G., Selzach, Switzerland
Filed Apr. 8, 1966, Ser. No. 541,181
Claims priority, application Switzerland, Apr. 28, 1965, 5,868/65
9 Claims. (Cl. 254—105)



3. A driving-jack equipment for stepwise advancing a load along a support, comprising a cylinder and a piston relatively displaceable by means of pressure fluid, and a gripping head connected to each said cylinder and piston in surrounding relation to said support, each of said gripping heads having at least one set of gripping jaws disposed around said support and having plane-parallel side surfaces, an inner toothed gripping surface and an outer wedging surface, each said gripping head having a conical wedging surface outside said outer wedging surface of the respective gripping jaws, each said head including an annular cage cooperative with said jaws and having radial slots with plane-parallel surfaces, said gripping jaws being movable in said slots with their plane-parallel side surfaces adjacent said slot plane-parallel surfaces to enable said jaws to be radially wedged between said wedging surface and said support.

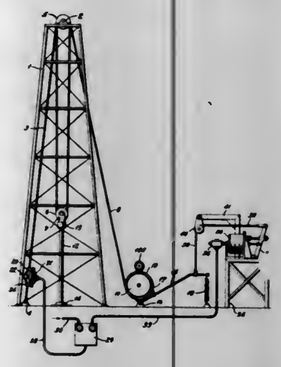
3,347,523
SCISSORS JACK
Herbert E. Hankey, Atwater, and Elmer J. Hamrick, Cuyahoga Falls, Ohio, assignors to Sumco Manufacturing Company, Inc., Mogadore, Ohio, a corporation of Ohio
Filed Oct. 23, 1965, Ser. No. 503,766
2 Claims. (Cl. 254—122)



1. A collapsible jack, comprising;
(A) a base;
(B) a work-engaging pad spaced from said base;
(C) upper and lower sets of opposed crossed links pivotally connected to said pad and to said base respectively;
(D) a drive trunnion having
  (1) a body portion with a through opening;
(E) a draw trunnion having
  (1) a threaded through opening, and
  (2) being spaced from said drive trunnion along a common axis;
(F) an operating screw
  (1) lying on said common axis
  (2) threadably engaged in said draw trunnion and
  (3) passing freely through said opening in said body of said drive trunnion;
(G) opposite adjoining ends of said sets of crossed links having pivotal interconnection to said draw trunnion and body portion of said drive trunnion respectively;
(H) a first plate
  (1) mounted on said body portion of said drive trunnion outside the point of pivotal connection of said links thereto;
(I) a second plate
  (1) mounted on said body portion of said drive trunnion between said opposed links in parallel spaced relationship with said first plate;
(J) a first sprocket and drive connector
  (1) secured to said screw at a point outside said first plate;
(K) a second sprocket and drive connector
  (1) rotatably carried by said first and second plates,
  (2) with said second sprocket lying in a plane common with said first sprocket; and
(L) a sprocket chain in drive-transmitting engagement with said first and second sprockets.

3,347,524
CONTROL DEVICE FOR DRILLING APPARATUS
James O. Melton, Norman, Okla., assignor to The Geolograph Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Mar. 30, 1959, Ser. No. 802,968
17 Claims. (Cl. 254—173)

1. In a drilling rig including a frame, an upper pulley block secured to said frame, a lower movable pulley block, upper and lower pulleys rotatably mounted within said pulley blocks, respectively, a drill string supported from said lower block, a rotatable cable drum, a cable wound on said cable drum passing around said pulleys of said pulley blocks and secured at one end of said frame whereby the unwinding of said cable drum will cause said drill string to descend, and a brake means normally bearing against said cable drum so as to prevent rotation of the same, the improvement which comprises an automatic control system including a weight sensing device containing fluid therein and having a sensing element bearing against said cable, said sensing element being movable in response to the changes in tension in said cable for producing in said sensing device a fluid pressure in said fluid proportional to the tension in said cable, a fluid-pressure responsive actuator attached to said brake means and adapted upon energization to release said brake means, a controller



connected betwen said sensing device and said actuator for increasing the fluid pressure in said actuator for energizing said actuator in response to an increase in fluid-pressure in said sensing device and so as to release said brake when the tension in said cable exceeds a first predetermined value, means for venting the pressure in said actuator to the atmosphere for deenergizing said actuator immediately when the tension in said cable decreases, and means for effecting engagement of said brake means when the tension in said cable exceeds a second predetermined value.

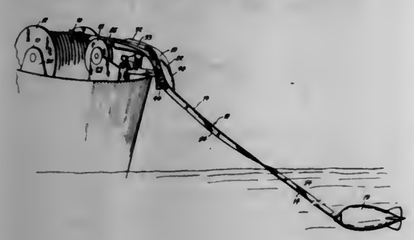
3,347,525
HYDROSTATIC ENGINE AND SHEAVE ASSEMBLY
Charles E. Gregory, Anchorville, Mich., assignor to Jered Industries Inc., Birmingham, Mich., a corporation of Michigan
Filed May 31, 1966, Ser. No. 553,904
13 Claims. (Cl. 254—189)



1. A sheave assembly comprising a hydraulic cylinder and piston assembly having a movable piston defining in part a fluid pressure chamber, a first sheave adapted for rotation about a fixed axis, a second sheave adapted for rotation about an axis that is parallel to the axis of said first sheave, a mechanical connection between said piston and said second sheave whereby said second sheave may be adjusted toward and away from said first sheave and

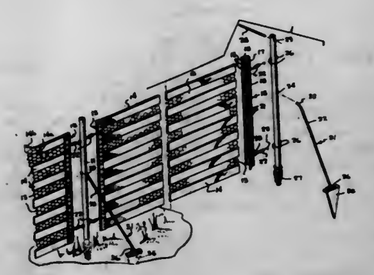
said piston is moved, flexible cables extending from an anchor point around said second sheave and hence around said first sheave to a driven portion of the mechanism, a fluid pressure source, a conduit structure interconnecting said pressure source and said working chamber, flow control valve means in said conduit structure and partly defining the same for controlling the rate of distribution of pressurized fluid to said chamber and for controlling the rate of displacement of said fluid from said pressure chamber, said flow control valve means having a movable valve element adapted to control fluid communication between said pressure source and said pressure chamber and having first and second operating positions on opposed sides of a neutral position, said valve element establishing communication between said source and said pressure chamber when it is advanced to said first position, said valve element establishing communication between said pressure chamber and exhaust region when it is advanced to said second position, a valve control linkage connected to said movable valve element, a feed-back control mechanism having a power input element and a power output element, means for powering said power input element at a constant speed, means for connecting said power output element to said valve linkage, and another element of said feed-back mechanism being connected mechanically to one of said sheaves, said power output element being sensitive to the differential in speed between said power input element and said one sheave whereby appropriate adjustments of said valve are obtained upon a deviation in the speed of said driven member from a predetermined designed speed.

3,347,526
GUIDE FOR FAIRED CABLE
Thomas Cymmer, Jersey City, N.J., and Ralph Raphael, Brooklyn, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 16, 1966, Ser. No. 595,320
5 Claims. (Cl. 254—190)



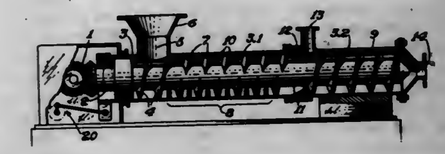
1. A device for erecting and guiding a faired towing cable for storage on a drum, said device comprising:
a generally arcuate elongated guiding member having an operating surface defined by an initial upstanding deflecting portion, an intermediate arcuate portion and a channelled erecting portion distal said deflecting portion, and
means affixed to said member for retaining the length of said member in the direction longitudinal of said faired cable, for yielding rotation of said member about approximately the center thereof in the plane of said cable and in a plane transverse thereto,
whereby when said towing cable is retrieved from the water it will be disposed in a position with the cable upright and said fairing depending therefrom, and as said faired cable is hauled up, said fairing will be then deflected by said initial portion of said member into a lying position and subsequently erected in passing through said channelled portion so as to permit storage.

3,347,527
LIGHTWEIGHT SNOW FENCE
Lamont F. Andrews, 8707 William St., Omaha, Nebr. 68124
Filed Jan. 20, 1966, Ser. No. 521,869
5 Claims. (Cl. 256—12.5)



1. In an easily erectable fence having at least a pair of spaced ground engaging fence posts, flexible planar metal mesh fencing extending between the spaced ground engaging fence posts and having vertical edges adjacent the fence posts, pairs of strips of flexible material placed on the mesh fencing with each separate pair being disposed to one another in spaced relation, each separate strip of each pair of flexible material being placed in registry with the other strip of the pair so that the mesh fencing is flanked therebetween in laminated relation, clamping means positioned along the vertical edges of the mesh fencing, resilient means interconnecting the clamping means and the adjacent fence post thereby providing tension to keep the mesh fencing taut between the spaced pairs of ground engaging fence posts.

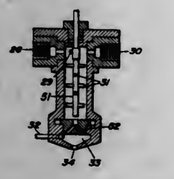
3,347,528
KNEADING AND MIXING APPARATUS
Heinz List, St. Jakobstrasse 43, and Fritz Ronner, St. Albanstrasse 6, both of Pratteln, Switzerland
Filed Jan. 21, 1965, Ser. No. 426,775
Claims priority, application Switzerland, Jan. 23, 1964, 797/64
5 Claims. (Cl. 259—2)



1. A screw type kneading and mixing apparatus having a feeding and a discharge end, and a longitudinal axis, comprising
(a) housing means including at least
  (1) a kneading section mounted for axial reciprocation,
  (2) a discharge section, said kneading section being rearwardly of said discharge section, when viewed toward said discharge end, and
  (3) kneading teeth secured along a helical line to at least a portion of the inner wall of said kneading section,
  (4) means for reciprocating said kneading section, and
(b) a screw rotatably mounted within said housing means, said screw having

(1) thread portions, the axial extend of the area of said thread portions being approximately coextensive with the axial extent of the area of said kneading teeth, said teeth extending into the spaces between said thread portions, and
(2) helical threads approximately coextensive with said discharge section.

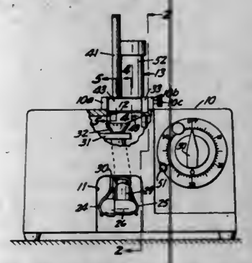
3,347,529
APPARATUS FOR THE MANUFACTURE OF POLYURETHANE PLASTICS
Peter Hoppe, Troisedorf, Erwin Weinbrenner and Cornelius Muhlhausen, Leverkusen-Bayerwerk, and Karl Breer, Cologne-Flittard, Germany, assignors, by direct and mesne assignments, of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany, a corporation of Germany, and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
Original application Aug. 8, 1955, Ser. No. 527,106, now Patent No. 2,764,565, dated Sept. 25, 1956. Divided and this application May 1, 1956, Ser. No. 585,601
Claims priority, application Germany, Dec. 24, 1951, F 7,986, Oct. 29, 1952, F 10,274
2 Claims. (Cl. 259—8)



2. Apparatus for producing porous and homogeneous plastics as desired from components characterized by rapidly forming a solid product upon mixing, comprising in combination, a substantially enclosed mixer containing a stirrer; means for operating said stirrer; means for introducing into said mixer a continuous stream of one of said components; a plurality of means for intermittently injecting under substantial pressure into said mixer and into said continuous stream while operating said stirrer measured amounts of said other components and thereby effecting mixing of all of said components; means for conveying said mixed components from said mixer into another mixing chamber wherein further mixing of said components is effected by tangential injection of compressed air into said chamber and into said mixed components; and discharge means open to the atmosphere for discharging the final mixture while still in a liquid state, said second and third mentioned means opening into the upper portion of said mixer at substantially the same level.

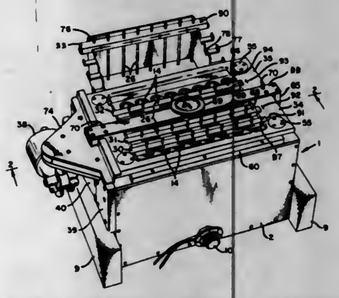
3,347,530
DENTAL AMALGAM MEASURING AND MIXING APPARATUS
William T. Platt, Stillwater, Minn., assignor to General Refineries, Inc., St. Paul, Minn., a corporation of Minnesota
Filed May 12, 1966, Ser. No. 549,505
5 Claims. (Cl. 259—12)

1. A dental amalgam measuring and mixing apparatus, comprising a frame,
a mechanical oscillator on the frame and having an elongate capsule for confining the amalgam components for mixing, the oscillator moving the capsule predominantly longitudinally of the capsule, the capsule having an opening through its side intermediate the ends,
a resilient tube connected with said capsule in communication with said opening and extending obliquely upwardly therefrom, said tube having an upper portion anchored to the frame,



and means for dispensing silver alloy pellets and a predetermined quantity of mercury with each pellet and directing the pellets and mercury into the upper portion of the tube for delivery to the capsule for mixing.

3,347,531
STIRRING APPARATUS FOR PLURAL TEST TUBES
Ira J. Strong, 323 N. Sunnyvale Ave. 94086, and Henry A. Leon, 812 Coventry Court 94087, both of Sunnyvale, Calif.
Filed Mar. 22, 1966, Ser. No. 538,166
8 Claims. (Cl. 259—71)

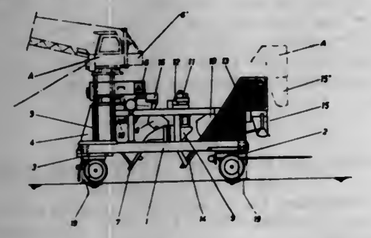


6. Stirring apparatus comprising a container for liquid, means for supporting test tubes vertically in said container, two rod holder frames spaced from each other and positioned above said container, a protective strip covering the space between said holder frames, and a thermometer mounted on said protective strip and projecting down into said container, at least one rod holder mounted on each of said holder frames, stirring rods mounted on said rod holders and arranged to project down into said test tubes, and means for driving said holder frames in opposite directions around closed paths of identical shape 180° out of phase with each other to cause said stirring rods to move inside said test tubes.

3,347,532
MOVABLE APPARATUS FOR THE MANUFACTURE OF CONCRETE
Eckhard Maier, Ettlingen, Baden, Germany, assignor to Elba-Werk Ettlingen Baumaschinen- und Hebezeugfabrik GmbH, Ettlingen, Baden, Germany, a corporation of Germany
Filed Mar. 14, 1966, Ser. No. 533,928
Claims priority, application Germany, Mar. 13, 1965, E 28,875
3 Claims. (Cl. 259—154)

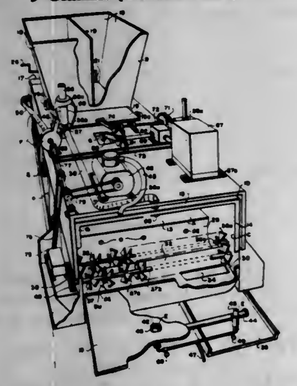
1. A rollable apparatus for the manufacture of concrete, comprising:
a common frame,

means for feeding, distributing, weighing, as well as mixing of concrete ingredients and conveying of the finished concrete,
an elevator mixer constituting said mixing means,
a distributor including expandable and telescoping supports for increase of the working height of the apparatus,
a feeder carried by said distributor,
a mixer frame,



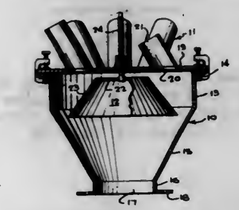
an elevator mixer supported and guided by said mixer frame, an immovable guide path connected with said common frame,
an elevator path disposed behind said guide path and including guides, said elevator mixer including guide rollers running in said elevator path,
said elevator path comprising an immovable part and a displaceable part, lower supports, inclined supports and vertical supports secured to said displaceable part and movable jointly with said displaceable part.

3,347,533
DRIER AND MIXER FOR AGGREGATE AND BINDER
John H. Mauldin, 1606 N. Main St., Greenville, S.C. 29609
Filed Apr. 29, 1963, Ser. No. 276,263
9 Claims. (Cl. 259—156)



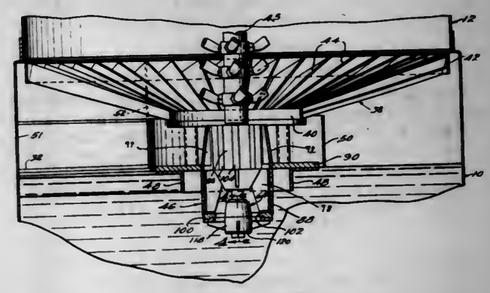
3. In an elongated mixer and drier for mixing aggregate with binder having a mixing chamber and an elongated conduit connected to the mixing chamber on one end of the conduit for communication therebetween, means introducing flame and air in a forced draft within the mixing chamber, and means withdrawing said air from the conduit opposite the end thereof connected to the chamber, the improvement including, a substantially vertical housing, a pipe within said housing opening at the top to the outside air and having an opening in the bottom thereof, means introducing air from the means exhausting air from the chamber into the vertical compartment substantially above the opening adjacent the bottom of the pipe, and means connecting the lower portion of the housing below the bottom of the pipe with the mixing chamber.

3,347,534
SOLIDS FLOW EQUALIZER
James E. Dawson, Williamsport, Pa., assignor to The Young Machinery Company, Inc., Muncy, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1965, Ser. No. 515,319
18 Claims. (Cl. 259—180)



7. A solids flow equalizer comprising a collector member, said collector member having a plurality of inlets for introducing material therein and an outlet for discharging material therefrom, said inlets being spaced circumferentially relative to and equidistantly from a centerline of said collector member, said collector member having a portion thereof disposed between said inlets, a flow restrictor disposed in said collector member, said flow restrictor being disposed in said collector member for intercepting solids introduced into said collector member through said inlets and said restrictor member having a portion thereof cooperable with said collector portion to prevent cross flow of material in said collector member between said inlets.

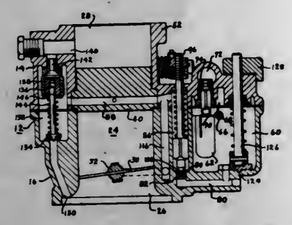
3,347,535
GAS-LIQUID CONTACT APPARATUS
Albert J. Schimpke, 28050 Golden Gate, Lathrup Village, Mich. 48075
Continuation of application Ser. No. 226,492, Sept. 27, 1962. This application June 3, 1966, Ser. No. 555,204
10 Claims. (Cl. 261—29)



1. In gas-liquid contact apparatus, a housing providing a vertical gas flow path with a gas inlet at its lower end, means for effecting the flow of a stream of gas spirally upwardly through said path, and liquid spray generating means operable for creating and discharging a spray of liquid across said path, said spray generating means comprising liquid pumping means arranged to discharge a column of liquid into said gas stream longitudinally thereof, a shaft rotatable about an axis extending longitudinally of said gas path and a series of impellers on said shaft and extending radially outwardly therefrom

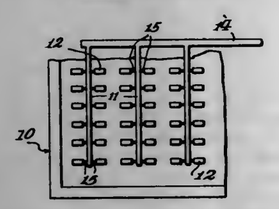
and being spaced along said axis substantially throughout the length of said column, each of said impellers intersecting and acting upon a portion only of said column to permit the remainder of the column to flow past such impeller to other of said impellers, and power means for effecting rotation of said shaft at a speed sufficient to break up the liquid impacted by said impellers into particles and to impart an outward velocity to the liquid particles to form a liquid dispersion which extends in a spiral path across said gas stream throughout a substantial portion of the length of said gas path.

3,347,536
CARBURETOR
Robert W. Sutton, Grosse Pointe Farms, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,499
7 Claims. (Cl. 261—34)



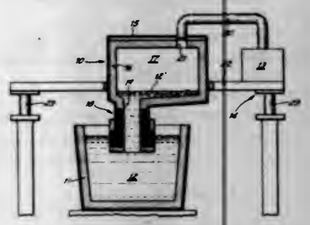
1. In a carburetor having a fuel bowl and an induction passage with an air inlet and a mixture outlet: a throttle in said induction passage, an airfoil bar disposed in said induction passage posterior to said throttle and having a fuel passage in one end and an air passage in the other end and a discharge jet on each side near the center of the bar connected to said fuel and air passages, a main fuel conduit connecting said bowl with said fuel passage, a metering jet in said conduit, a valve for controlling the fuel flow through said metering jet, a linkage connecting said valve with said throttle for regulating the flow of fuel in accordance with throttle position, a passage for impact air connecting the passage in said bar with the induction passage on the air intake side of the throttle, and a valve responsive to manifold vacuum in said impact air passage for closing said air passage when the throttle is in substantially wide open position.

3,347,537
APPARATUS FOR AERATING LIQUID MEDIUMS
Philip F. Morgan, deceased, late of Iowa City, Iowa, by Olive E. Morgan, Iowa City, Iowa, Mrs. John Wicks, nee Nedra A. Morgan, Fort Lee, Va., and Paul F. Morgan, Chicago, Ill., heirs, assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 491,076
9 Claims. (Cl. 261—124)



1. Apparatus for dispersing gas in a liquid medium which comprises a holder for a liquid medium having lateral boundaries and a bottom, means for passing influent liquid medium into said holder, means for discharge of treated liquid from said holder, gas dispersing means spaced from the bottom of said holder a distance constituting between about 10% and 20% of the distance between the bottom and the normal liquid level of said holder, said gas dispersing means consisting of a series of spaced units adapted to discharge gas in bubble form, said units being arranged in a multiplicity of substantially parallel spaced rows, the distance between peripheries of adjacent rows of gas dispersing means being between 40% and 150% of the sum of the effective widths of adjacent rows of gas dispersing means being measured in their projection against a plane positioned at a right angle to the direction of the rows of gas dispersing means and conduit means for conveying gas to said gas dispersing means.

3,347,538
APPARATUS FOR THE VACUUM DEGASSING OF MOLTEN METAL
Walter Sieckman, Canonsburg, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Apr. 28, 1965, Ser. No. 451,449
4 Claims. (Cl. 266—34)

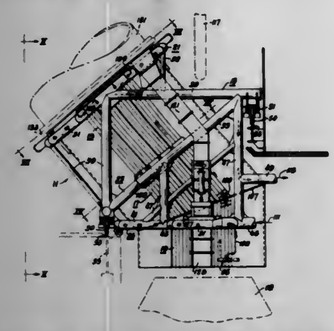


1. In a refractory lined vacuum degassing vessel having a pipe extending downwardly therefrom and opening into the interior thereof for conducting molten metal to and from the interior thereof from a container of said metal disposed therebelow, said pipe having a metallic shell and a refractory lining having a central bore, a refractory jacket surrounding the lower end of said metallic shell, said refractory lining and said refractory jacket forming a continuous ceramic covering about the lower end portion of said metallic shell, and first and second induction coils embedded in, respectively, said lining and jacket and below the surfaces thereof in surrounding relation to said bore and said shell, and said coils being spaced from said metallic shell.

3,347,539
EXHAUST RECEIVING HOOD
Hartman Mitchell and Alexander T. Dortenzo, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 406,114
7 Claims. (Cl. 266—35)

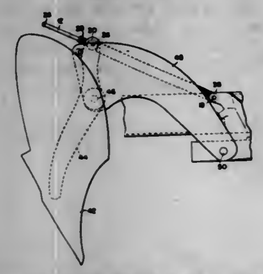
1. A hood for a basic oxygen type furnace comprising:
(a) a frame structure disposed relative to said furnace including a plurality of spaced apart fluid conductive tubular members;
(b) a plurality of closed-ended rectangular hollow members disposed in side-abutting relation forming a panel structure;
(c) fluid inlet and outlet tubular headers disposed adjacent opposite ends of each panel comprising said panel structure;
(d) fluid conduit means communicating said headers to the adjacent panel whereby fluid entering said inlet header courses the hollow members of such panel and flows therefrom via said outlet header;

(e) a plurality of said panels substantially fixed to said frame structure and spaced apart laterally to form an open-ended conduit for the effluent from said furnace;
(f) conduit means fluidly connecting said headers to said tubular frame; and



(g) means for injecting cooling fluid into said tubular frame structure whereby cooling fluid flows thence into each inlet header and courses each panel structure and said fluid flows from each panel via said outlet header whereby said effluent conduit is cooled.

3,347,540
SPRING ASSEMBLY
James F. Sullivan, East Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,877
6 Claims. (Cl. 267—1)



1. An assembly comprising: a stack rod having an apertured first end, an abutment shoulder formed adjacent the first end, a groove disposed adjacent the second end, a snap ring disposed within said groove, and an externally threaded sleeve disposed about said rod between said shoulder and said snap ring, a plurality of conical spring units disposed about said rod between said shoulder and said sleeve and held under load by said shoulder and said sleeve, said sleeve being in contact with said snap ring and a nut threaded about said sleeve, said nut being provided with means engageable by a structure remote from said assembly for securement to the structure.

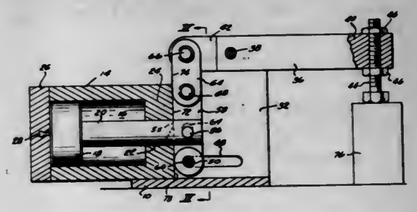
3,347,541
SHOCK ABSORBER BOOSTER
Jerry M. Buccino, 2040 Pelham Ave., Los Angeles, Calif. 90025
Filed June 14, 1965, Ser. No. 463,838
8 Claims. (Cl. 267—34)

1. In a shock absorber assembly: a shock absorber including a cylinder having an end closure provided with a central boss, a piston device telescoped in said cylinder and having a stem portion extending outwardly of said cylinder through said boss, said stem portion having a flange normally spaced longitudinally from said boss; a first spring seat bearing against said end closure and having a central opening through which said boss extends; a



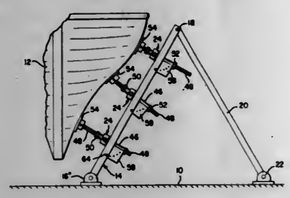
second spring seat bearing against said flange on the side thereof remote from said boss and having a central opening through which said stem portion extends; and a coil spring surrounding said stem portion between said seats and bearing against said seats, the entire length of said spring extending axially outwardly of said end closure.

3,347,542
TOGGLE CLAMP
Boyd Mericle, Jr., Jackson, Mich., assignor, by mesne assignments, to Selzer Power Clamp, Inc., Detroit, Mich.
Filed Apr. 19, 1965, Ser. No. 449,036
7 Claims. (Cl. 269—32)



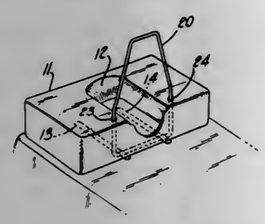
1. A toggle clamp comprising, in combination:
(a) a support plate,
(b) a hold-down lever pivotally mounted on said support plate selectively movable between hold-down and release positions,
(c) an expandable motor mounted adjacent said support plate having a planar reference surface defined thereon and having a reciprocable piston movable between hold-down and release positions,
(d) a first link having first and second pivot means associated therewith and a planar reference surface defined thereon, said first pivot means pivotally connecting said first link to said support plate,
(e) a second link pivotally connected to said hold-down lever by a third pivot means, said first link second pivot means pivotally interconnecting said first and second links,
(f) fourth pivot means interconnecting said piston and said first link adjacent said first link reference surface,
(g) said first link reference surface engaging said motor reference surface positioning said first, second and third pivot means in linear alignment upon actuation of said piston to said hold-down position.

3,347,543
SHORING DEVICE FOR BOATS
Joseph Zak, 2220 Genesee St., Toledo, Ohio 43605
Filed Aug. 27, 1964, Ser. No. 392,419
6 Claims. (Cl. 269—296)



4. A boat hull supporting apparatus comprising:
a pair of elongate mounting frame members;
means pivotally interconnecting one of the respective ends of said elongate mounting frame members, the other ends of said frame members mounted in spaced relation to a supporting surface, said other ends being spaced a distance apart less than the combined length of said frame members thereby causing the pivotally interconnected ends of said frame members to project above the supporting surface;
pad means for contacting the under surface of a boat hull to be supported;
means for universally mounting said pad means to one of said elongate frame members, said means including a socket member connected to said frame member and disposed generally transversely to the longitudinal axis of said frame member, and a rod having one end rotatably mounted in said socket and the other end pivotally connected to said pad means; and
longitudinally extensible means attached to at least one of said frame members for effecting longitudinal movement of said pad means with respect to the boat hull to be supported.

3,347,544
HEADREST FOR EYE SURGERY
Tui Marie Uffenorde, 6515 SW. 26th St., Miami, Fla. 33155
Filed Mar. 1, 1965, Ser. No. 435,865
3 Claims. (Cl. 269—328)



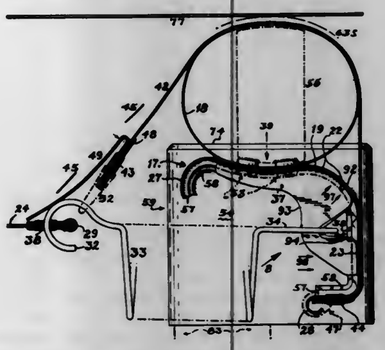
1. In a headrest for surgery the combination of:
a generally rectangular block of resilient material, the top surface of which is provided with a recess to receive and support the head of a patient;
a U-shaped tubular section the ends of which protrude through said rectangular block on each side of said recess and the base of which is flush against the bottom surface of said block; and,
a U-shaped member designed to support a drape above the head of the patient, the ends of said U-shaped member being in registry with and received by said tubular section.

3,347,545
EEL-LIKE AMUSEMENT DEVICE
Joseph Nichols, Princeton, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed July 8, 1965, Ser. No. 470,509
15 Claims. (Cl. 272—8)



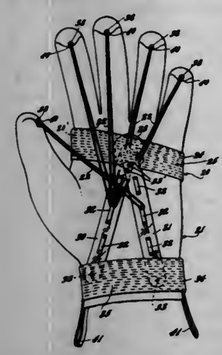
1. An article of manufacture which can be grasped and temporarily supported by the fingers of one hand comprising a section of tubing inverted upon itself and folded to produce an annular cylindrical container having a bottom section formed at the fold, an outer wall formed by the length of the tubing that extends from the fold to one end of the tubing and an inner wall formed by the length of the tubing that extends from the fold to the other end of the tubing; said container being filled with a free-flowing substance more dense than air and the ends of the tubing being joined together by an annular seal.

3,347,546
TRAYLIKE REBOUND UNIT
Nicholas Rippen Abberly, 501 4th Ave. SE., Cedar Rapids, Iowa 52401
Filed Oct. 1, 1965, Ser. No. 491,915
12 Claims. (Cl. 272—65)



1. A rebound bed including: a rebound mat; an endless frame which predominantly extends horizontally and spacedly surrounds the mat and has a plurality of elongated, straight sides and, alternating therewith, a corresponding plurality of stub posts; each straight side including an elongated transversely resiliently yieldable strip spring and an approximately as long angle/rail having an upper leg which is substantially prostrate and inwardly directed, and, descending from it, an outer leg, the angle/rail root confronting the mat, the angle/rail two ends, which are ends of said legs, being rigidly, at least indirectly, affixed to two said stub posts respectively, each strip spring being curved to bring the two long margins thereof into adjacency, thereby forming a "tube," said margins being rigidly held by the angle/rail upper leg; rigidly held by each angle/rail, at the mutually angularly confronting or inner sufaces of the two legs, a plurality of elongated anchoring means disposed transversely to the angle/rail axis and successively parallelwise spaced, whereby each of the two legs is stiffened and both are mutually braced; a mat-supporting means interveningly connecting the mat margins and said anchoring means, and mainly consisting of resiliently stretchable holders in a plurality of groups corresponding to the plurality of said sides of the frame; a plurality of elastic aprons, at least one for each said side, the total apron length in each side approximating that of the respective strip spring, each apron having a mat-distal or outer edge and a mat-proximal or inner edge; an apron outer edge holding means engaging a respective angle/rail outer leg, and an apron inner edge holding means holding the inner edge against substantial movement relative to, while neighboring, the mat; each apron obliquely extending, upwardly and outwardly from the bat, to contiguously traverse, and extend downwardly from, the respective strip spring and terminate in the respective apron outer edge holding means.

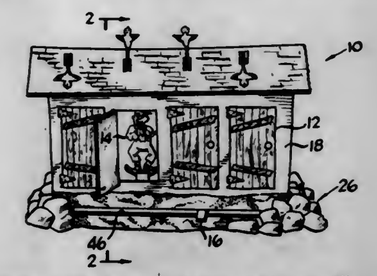
3,347,547
HAND AND FINGER EXERCISING DEVICE
Lee P. Hynes, 36 West End Ave., Haddonfield, N.J. 08033
Filed July 28, 1965, Ser. No. 475,427
5 Claims. (Cl. 272—67)



1. In a hand exerciser, fulcrum means adapted to engage the palm of the hand of a user, elastic means adapted to surround the hand and to firmly secure the fulcrum against the palm, a band adapted to surround the wrist, rigid bar means interconnecting the fulcrum to the band, first anchorage means adapted to be secured at the end of each of the fingers and to the thumb, second anchorage means secured to said bar means, and separate resilient biasing means extending respectively from the first anchorage means to the second anchorage means for urging each finger and thumb in the direction of bending thereof.

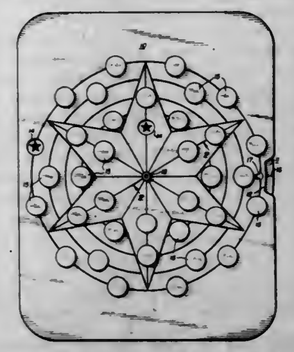
3,347,548
GAME APPARATUS
Marvin I. Glass, Chicago, Anthony T. Janiszewski, Elmwood Park, and Michael W. Furuta, Fox River Grove, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 16, 1965, Ser. No. 432,979
3 Claims. (Cl. 273—1)

1. Game apparatus comprising a housing structure including a pair of spaced-apart, generally parallel side walls, a plurality of openings formed in each of said side walls with the openings in one wall being opposite the openings in the other wall, doors operably mounted on said housing in position for each door to cover one of said openings and openable with respect thereto, a figure within said housing, means mounting said figure for



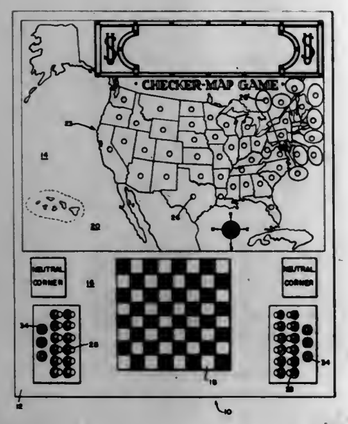
movement along a path between and generally parallel to said side walls, and operating means on each side of said housing structure and engageable with said figure mounting means so that either of said operating means can be operated to effect movement of said figure along said path.

3,347,549
MEMORY GAME HAVING ROTATABLE DISC MEANS FOR VARYING THE SYMBOLS DISPLAYED
Philip S. Jackson, 500 S. Canosa Court, Denver, Colo. 80219
Filed Dec. 3, 1964, Ser. No. 415,772
6 Claims. (Cl. 273—130)



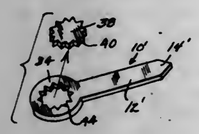
1. A game apparatus comprising a board having a plurality of window openings therein arranged in concentric circles, a disc mounted below said board for rotation about the axis of the common center of said circles, means for selectively locating said disc in any one of a plurality of different predetermined angular positions about said axis with respect to said board, a multiplicity of symbols on said disc including a plurality of different symbols and consisting of a plurality of sets each consisting of the same whole number of equal numbers of matching ones of the symbols and each set having said symbols in a different random arrangement, the number of said window openings being said equal number times the number of different symbols, said symbols of each set being positioned to register with said openings to present different random locations of said different symbols in each of said angular positions whereby the same whole number of equal numbers of matched ones of said symbols is in register with said openings in each position of said disc, and game pieces for covering all of said openings to conceal the symbols registering therewith.

3,347,550
CHECKER MAP GAME
Ralph J. Carboni, 327 Sharon Drive, New Orleans, La. 70124
Filed May 7, 1965, Ser. No. 454,004
5 Claims. (Cl. 273—130)



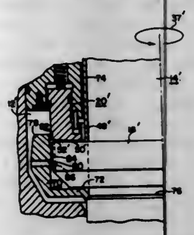
1. A checker map game comprising a two-sided board including a map divided into at least twenty-four localities on the first side of said board, a reverse map in mirror image of said first map on the second side of said board complementary to said first map, at least twenty-four uniformly sized openings disposed in said board passing between said two sides and corresponding to said twenty-four localities, said reverse map only having the name of each said locality adjacent each respective opening; a checkerboard associated with said first side; and at least twenty-four checkers, each having an elongated portion adapted to fit within said uniformly sized openings, each of said checkers having the name of a different said locality thereon, whereby when a checker is inserted into the first side, correctness of location can be verified by reference to the second side of said board.

3,347,551
DIRECTIONAL POINTER FOR A GOLF TEE
Joseph Dreyfus, 730 Fort Washington Ave., New York, N.Y. 10040
Filed July 28, 1964, Ser. No. 385,684
2 Claims. (Cl. 273—183)



1. A device of the kind described comprising an elongated flat body having a pointed end and a round flat solid head at the other end thereof, said head having a substantially circular serrated weakened line, the material of the head inside the line adapted to be dislodged and removed to serve as a ball marker on a green, the head, when said material is removed, having a serrated opening for attachment to the body of a golf tee, the elongated flat body serving as a direction pointer.

3,347,552
CONTROLLED LEAKAGE FACE TYPE SEALS
Erling Frisch, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 4, 1964, Ser. No. 372,518
10 Claims. (Cl. 277—27)

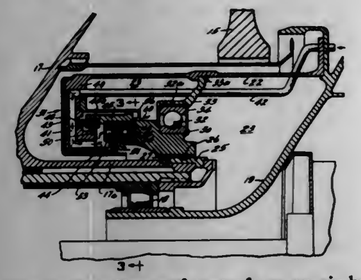


1. A fluid seal assembly comprising a rotatable shaft having a flat radially extending surface thereon, housing means receiving said shaft and having walls thereon defining a pressure chamber therein, a seal ring having a pair of opposed generally radial surfaces thereon, said ring receiving said shaft in the opening thereof and mounted in said housing means in axial floating relationship with said radial shaft surface, one of said radial ring surfaces being exposed during operation of said assembly to said pressure chamber, the other of said radial ring surfaces confronting said radial shaft surface and being spaced therefrom when said chamber is pressurized to form a seal gap therebetween, said other ring surface having one extremity thereof exposed to said pressure chamber and having the other extremity thereof exposed to a relatively low pressure region in said housing means, said other ring surface having a tapered portion intermediate said extremities and extending to said one extremity thereof, said portion being tapered to gradually increase the thickness of said seal gap to a maximum thickness adjacent said one extremity of said ring and the remainder of said other seal ring surface being flat and extending parallel to said shaft radial surface, sealing means disposed between said seal ring and an adjacent stationary wall portion of said chamber at a position on said seal ring intermediate said one radial ring surface and said other radial ring surface, and said sealing means, said seal ring and said housing means walls being relatively positioned to prevent fluid flow from said pressure chamber to said low pressure region except along said seal gap.

3,347,553
FLUID SEAL
Frank A. Schweiger, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 279,473, May 10, 1963. This application May 23, 1966, Ser. No. 552,337
3 Claims. (Cl. 277—27)

1. Means for providing a seal between two relatively rotating members,
said sealing means comprising,
a ring mounted on one of said members for axial movement towards and away from the other of said members,
said ring and the other of said members having opposed radial sealing surfaces,
an annular means defining a chamber on the side of said ring opposite its sealing surface,
inner and outer means for circumferentially sealing said chamber between said ring and said one member so that the chamber may be pressurized and the ring may be axially displaced,

said ring member having interrupted circumferential grooves defining inner and outer annular lands on its sealing surface,
passageway means extending through said ring and connecting said grooves with said chamber,
means for pressurizing said chamber to provide a force yieldingly urging said ring to said other member and further pressurizing the grooves for urging said ring



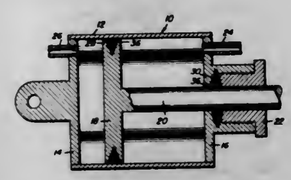
away from said sealing surface to form an air bearing seal between said opposed sealing surfaces,
said inner circumferential sealing means having approximately the same diameter as the diameter of said inner land on which the effective air bearing force is exerted,
whereby the air bearing force is unaffected by changes in pressure radially inwardly of said ring.

3,347,554
SHAFT SEALS
Ernest T. Jagger and Geoffrey W. Halliday, Newcastle-upon-Tyne, England, assignors to George Angus & Company Limited, Newcastle-upon-Tyne, England, a British company
Filed Sept. 8, 1965, Ser. No. 485,709
Claims priority, application Great Britain, Sept. 24, 1964, 38,936/64
3 Claims. (Cl. 277—134)



1. In an engine crankshaft seal comprising a circular ring moulded from a heat-resistant and oil-resistant synthetic rubber, said ring having an outer annular portion and an inner annular flange defining between them an annular channel co-axial with the axis of said ring, said flange having a flexible web portion and a circumferential groove in a surface of said flange in said channel, a garter spring seated in said groove, and the inner periphery of said flange having two frusto-conical surfaces co-axial with and converging towards said axis and meeting at a circumferential lip edge; the improvement which consists in a multi-start screw thread moulded in that one of said frusto-conical surfaces which is further from said channel, said multi-start screw thread consisting of a plurality of parallel helical thread portions, at least two of said thread portions meeting said lip edge and said thread portions having crests of which at least three crests would be intersected by any radial section axially through said ring.

3,347,555
SEAL RINGS FOR PRESSURE CYLINDERS
Orlo C. Norton, 544 Virginia Ave., Erie, Pa. 16505
Filed Aug. 11, 1964, Ser. No. 388,778
3 Claims. (Cl. 277—171)

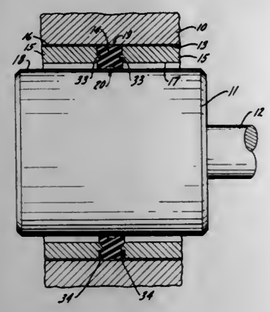


1. A seal for the space between the surfaces of two relatively annular slidable members, the surface of one of said members having an annular groove extending substantially transversely to the direction of relative slide of said members, said groove having inwardly slanted sides terminating in a bottom seat portion having spaced convex shaped sides and a flat bottom face, an annular resilient member having a body portion of substantially rectangular cross section with parallel spaced sides and a flat peripheral contacting top face and a bottom portion with a flat bottom face positioned parallel to said contacting top face and of narrower width than said contacting top face, said bottom portion having spaced concave shaped sides joining said flat bottom face with said parallel spaced sides of said body portion, with said concave shaped sides and bottom face of said bottom portion being formed to mate with said convex shaped sides and flat bottom face of said groove, with the distance between said slanted sides of said annular groove becoming gradually greater than the distance between said parallel sides of said body portion of said annular resilient ring, said annular resilient member being positioned substantially within said groove and retained thereby and having its bottom portion restrained against lateral movement by the bottom seat portion of said annular groove, said flat peripheral contacting top face of said annular resilient member being in full engagement with the surface of the other of said annular slidable members to seal the space between the surfaces of the said two annular slidable members, and with the sides of said annular resilient member being substantially free of contact with the inwardly slanted sides of said groove, said body portion of said annular resilient member flexing laterally to incline said flat peripheral contacting top face with respect to the surface of said other member upon sliding of one of said members relative to the other member, whereby one edge of said flat peripheral contacting top face contacts said surface of said other member and the opposite side of said annular resilient member contacts the corresponding side of said groove.

3,347,556
SEALING RING FOR PISTON AND CYLINDER ASSEMBLIES
Lambert W. Fleckenstein, 4445 N. 135th, and Andrew J. Fleckenstein, 13650 Squirrel Drive, both of Brookfield, Wis. 53005
Filed Feb. 24, 1965, Ser. No. 434,894
2 Claims. (Cl. 277—206)

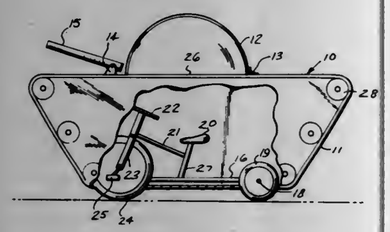
1. A sealing ring including a resilient, circular ring body having inner and outer peripherally extending sealstatic sealing surfaces, the dynamic sealing surface being

defined by a first pair of spaced lobes on the ring body, said lobes being characterized by spaced curvilinear surfaces with a connecting surface between the curvilinear surfaces to define a concavity, said ring body having flat abutment surfaces on the sides thereof and extending around the periphery of the body, said abutment surfaces extending generally parallel to a central axis of the ring body and facing toward said first pair of spaced



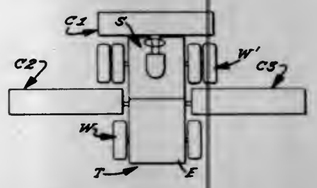
lobes, said ring body having curvilinear lobes defining the static sealing surface of said body, said abutment surfaces extending inwardly from the opposite sides of said body, said body having surfaces connecting said abutment surfaces with said first pair of lobes and extending inwardly from said first pair of lobes in a direction inclined to the general plane of the entire ring body from the sides of said body to define recesses on the opposite sides of said body.

3,347,557
CHILD'S RIDEABLE TANK
Marion J. Cruson, R.R. 1, Marion, Mich. 49665
Filed Oct. 23, 1965, Ser. No. 503,478
1 Claim. (Cl. 280—1.11)



A toy tank comprising a tank body, a dome hingeably attached to the top of said tank body, tricycle drive means inside of said tank body and being firmly secured thereto, steering means locatably secured to said tricycle drive means for directing said toy tank when said tank is being driven by a child located therewithin, said tank body being provided with a circular opening on a top portion thereof, a toy gun pivotably attached to said top portion, openings at the bottom portion of said body for admitting the wheels of said tricycle drive means outwardly therefrom, said tricycle means including a frame connecting support means for a main drive wheel and a pair of auxiliary wheels in parallel relationship to each other and longitudinal relation with said main wheel, a seat provided on the top of said frame, a pair of foot pedals at each side of said main wheel for propelling said tricycle means, said steering means including a steering wheel connected to a steering post, said steering wheel being adapted for turning said tricycle means in any direction and thereby turning said toy tank, and said toy tank body and said dome forming a complete protected enclosure on all sides, top, and bottom for said child riding therewithin.

3,347,558
STEERING MECHANISM
Charles E. Grimes and Ralph W. Speiser, Minneapolis, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 2, 1965, Ser. No. 476,494
11 Claims. (Cl. 280—87)

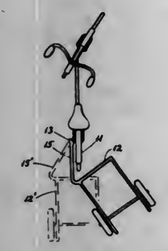


1. In a vehicle adapted to be driven in opposite directions and having steerable traction means for turning said vehicle,
an operator's seat,
a steering column supporting said seat in fixed relationship therewith,
a steering wheel carried by said column and located opposite the font of said seat,
a steering shaft carried by said column,
one end of said steering shaft being operatively connected to said steering wheel,
the other end of said steering shaft having first clutch means mounted thereon,
a latch member carried by said column,
pedestal means supporting said steering column for swinging movement relative thereto,
said steering column and seat being swingable simultaneously relative to said pedestal about a vertical axis between two operational positions in which the operator faces opposite ends of said vehicle,
second clutch means supported by said pedestal means and operatively connected to said traction means,
said second clutch means being engageable by said first clutch means in each of said operational positions,
means carried by said pedestal means and adapted to lockingly engage said latch member in each of said operational positions,
and means carried by said column for simultaneously disengaging said clutch means and said latch member in each of said operational positions to permit movement of said steering column and seat between said operational positions.

3,347,559
TWO-WHEELED UTILITY TRAILERS FOR CYCLES
Russell S. Robinson, Newport Beach, Calif. (51 Walnut Tree Lane, Cold Spring Harbor, N.Y. 11724)
Filed Feb. 23, 1965, Ser. No. 434,267
2 Claims. (Cl. 280—204)

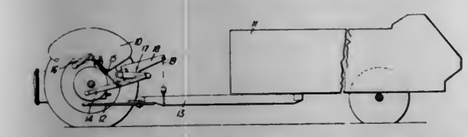
1. In a system for towing a trailer behind a cycle,
a hitch for connecting said trailer to said cycle,
said hitch having a rear end attached to said trailer,
and said hitch having a laterally displaced forward end attached to one side of said cycle,
said forward end including articulated connecting means connecting said hitch to said cycle for allowing freedom of movement of said cycle with respect to said trailer about at least elevation and turn axes,

said articulated connecting means including a first trunnion rigidly connected to said cycle and laterally extending thereof,
a block having one hole slidably disposed on said first trunnion for movement about said elevation axis,



a second trunnion pivotally attached to said trailer,
said block having a second hole slidably disposed on said second trunnion for movement about said turn axis.

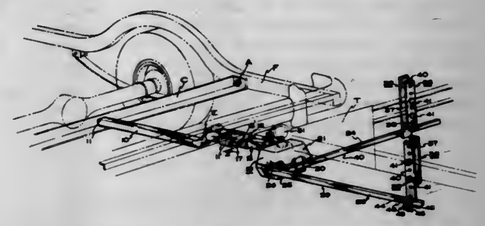
3,347,560
SWINGING BOOM PRESSURE CONTROL HITCH
Leonard S. Hodges, Leamington, and Robert B. Annat, Kenilworth, England, assignors to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles
Filed Sept. 20, 1965, Ser. No. 488,474
Claims priority, application Great Britain, Sept. 25, 1964, 39,101/64
13 Claims. (Cl. 280—405)



1. In a tractor having a rearwardly extending, vertically movable hitch link with hydraulic means for applying raising and lowering forces to the hitch link relative to the tractor, and a drawbar for connection with the tongue of a trailed vehicle; a rearwardly extending boom supported on the hitch link for side to side swinging movement relative to the tractor, and means for connecting the boom with the trailed vehicle tongue to apply a lifting force to the tongue and transfer a portion of the weight of the trailed vehicle to the tractor when the hydraulic means applies a raising force to the hitch link, and wherein the boom swings about an axis which is inclined upwardly and forwardly such that the free end of the boom moves downwardly as the boom moves out of parallel relationship with the longitudinal axis of the tractor to reduce the lifting force on the trailed vehicle tongue when the tractor and trailed vehicle are not in longitudinal alignment.

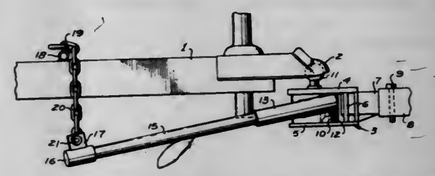
3,347,561
TRAILER HITCH STRUCTURE
Edward B. Hedgepeth, 1132 East 27th South, Salt Lake City, Utah 84108
Filed Jan. 24, 1966, Ser. No. 522,708
2 Claims. (Cl. 280—406)

2. A trailer hitch including, in combination, elongate drawbar means; a head affixed to and rigidly disposed with respect to said elongate drawbar means and including a hitch mounting ball for receiving the mounting socket of a trailer frame; vertical pivot means affixed to said head; a pair of lift arm members mounted to said pivot means, being rotatable thereabout, and frictionally and liftingly engaging said head; and means constructed and arranged for securement to the frame of a trailer to be towed, said securement means slideably and liftingly receiving said lift arm members and constraining the movement of said lift arm members to movements which are



in correspondence with those of said frame when the latter is secured, to said head mounting ball, and wherein said head includes a bar adjustably secured thereto and frictionally engaging said lift arm members upwardly at an area between said pivot means and said trailer frame.

3,347,562
TRAILER HITCH
Joseph E. Bolyard, % Bolyard Distributing Co., 14733 Cohasset St., Van Nuys, Calif. 91405
Filed Oct. 22, 1965, Ser. No. 501,243
3 Claims. (Cl. 280—406)

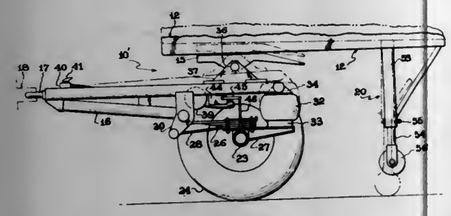


1. A hitch for connecting a trailer having a forwardly converging frame and a hitch socket at the apex thereof, to a towing vehicle, said hitch comprising:
(a) a mounting structure including upper and lower plate members, a cylindrical journal disposed between and joining said plate members, a web at one side of said journal and also joining said plate members;
(b) means for securing said web to said towing vehicle;
(c) a ball member secured to said upper plate member in coaxial relation to said journal and adapted to receive said hitch socket;
(d) a sleeve received on said journal for rotation about an essentially vertical axis passing through the center of said ball member;
(e) a pair of diverging spring arms secured to said sleeve;
(f) and means for applying an upward bias to said spring arms and securing said spring arms to said converging frame.

3,347,563
FIFTH-WHEEL ELEVATING AND LEVEL CONTROLLING AIR JACK FOR SEMI-TRAILER DOLLIES
Henry C. Harbers, Pasadena, Calif., assignor to Western Unit Corporation, City of Industry, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 502,901
4 Claims. (Cl. 280—425)

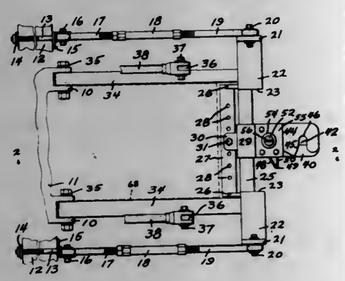
1. In a semi-trailer of the type having the rear end supported by a rear carriage assembly and having vertically adjustable strut means for supporting the front end

thereof when not supported on front carriage means; that improvement which comprises carriage means for supporting the front end of said trailer while in a travel status, said front carriage means including air spring suspension means for imparting a soft ride to the front end of said trailer, pressurized air reservoir means for supplying pressurized air to said air spring means and including automatic constant level valve means responsive to changing load conditions to vary the air pressure in said air spring means to provide a soft ride for the prevailing loading then acting on said front carriage means, manually operable valve means including air conducting passages connected between said reservoir and said air



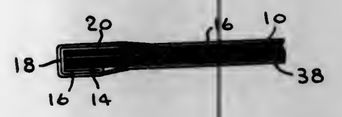
spring means, said manual valve means being normally so positioned that said constant level valve means controls the operation of said air spring means, and said manual valve means being operable in another position thereof to deactivate said constant level means and to supply reservoir air to said air spring means to elevate the front end of said semi-trailer while said adjustable strut means is being extended, and said manual valve means being operable in another position thereof to allow pressurized air to escape to the atmosphere from said elevated air spring means thereby to lower said front carriage means downwardly away from supporting contact with the strut-supported front end of said semi-trailer.

3,347,564
CONSTANT LEVEL ADJUSTABLE TRACTOR HITCH
Edward R. Snoozy, Dell Rapids, S. Dak. 57022
Filed Sept. 13, 1965, Ser. No. 486,858
5 Claims. (Cl. 280—479)



1. A tractor hitch comprising a pair of laterally spaced support arms, means for raising and lowering said support arms, means for pivotally mounting the inner ends of said support arms to a tractor, further arms positioned above said support arms and parallel thereto, means for pivotally mounting the inner ends of said further arms to said tractor, linking means pivotally attached to the outer ends of said support arms and to said further arms forming a parallelogram linkage with said arms, a transverse shaft secured to the outer ends of said support arms, a hitch member mounted on said transverse shaft, a substantially square-in-section tube receiving said shaft and fixed to said linking means, a further square-in-section tube receiving said square-in-section tube, said hitch member being attached to said further square-in-section tube.

3,347,565
METHOD AND APPARATUS FOR BINDING A MANUSCRIPT
Gilbert J. Konkel, 1706 S. Layton Blvd., Milwaukee, Wis. 53215
Filed Oct. 23, 1965, Ser. No. 503,666
5 Claims. (Cl. 281—21)



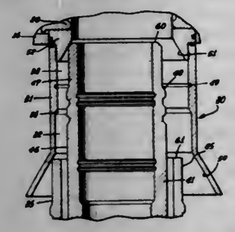
1. An improved binding arrangement for a manuscript comprising:
an elongated binding strip member having four adjacent sections running the length thereof with a first section fastened to one face of the manuscript, a second section folded back against said first section, a third section lying opposite the edge of the manuscript and having a width substantially equal to the thickness of the manuscript, and a fourth section having one face thereof adhered to the opposite face of the manuscript; and
a cover member for said manuscript adhered to the opposite face of said fourth section of said binding strip member.

3,347,566
BREAKAWAY COUPLING ASSEMBLY
James E. Nelson, Williamsville, N.Y., assignor to Scott Aviation Corporation, Lancaster, N.Y., a corporation of New York
Filed Oct. 26, 1964, Ser. No. 406,287
6 Claims. (Cl. 285—1)



5. Life support apparatus for supplying fluid to a user comprising an elastic tubular section, means for connecting one end of said section to a fluid supply line, a disconnect coupling attached to the other end of said section and having a releasable latching means adapted for connection to a user, a flexible coupling means being attached at one end to said connecting means and at its other end to said releasable latching means, said flexible coupling being longer than the unstretched length of said elastic section and having substantial slack when said section is in its normal unstretched condition, said section being capable of elastic elongation between its unstretched length and a predetermined greater length without releasing said latching means, thereby accommodating normal forces on said apparatus, and said flexible coupling means accommodating elastic elongation of said tubular section to said predetermined length and being operable to actuate said releasable latching means only upon elongation of said tubular section beyond said predetermined length and thereby disconnect a user in response to a predetermined abnormal force on said apparatus.

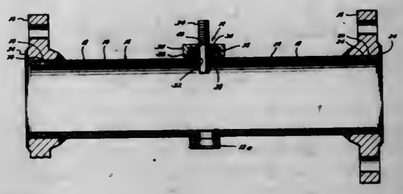
3,347,567
DOUBLE TAPERED GUIDANCE APPARATUS
Bruce J. Watkins, Palos Verdes Estates, Calif., assignor to Regan Forge & Engineering Co., San Pedro, Calif., a corporation of California
Filed Nov. 29, 1963, Ser. No. 326,738
7 Claims. (Cl. 285—24)



1. Apparatus for use in pre-aligning a well head latch means mounted at the lower end of a conductor pipe lowered from a floating vessel to a subsea well head remote from said vessel prior to the complete landing of said latch means on said well head, said apparatus comprising:
a first casing at a subsea well head including a first upwardly facing annular abutment surface at an upper end thereof;
second casing at said well head mounted concentrically within and extending upwardly of said first casing including a second upwardly facing annular abutment surface at an upper end thereof, said first and second casings being mounted against relative axial movement therebetween,
a multi-diameter bore body provided in a well head latch means including a first internal bore portion to receive said first casing and a second upper inner bore portion to receive said second casing when said latch means body is completely landed upon said well head casings;
a first internal guidance surface means on a lower end of said first internal bore portion for guiding said first and second casings into said first internal bore portion by abutment therewith of said casing abutment surfaces;
a second internal guidance surface means between said first and second bore portions for guiding said second casing into said second bore by abutment therewith of said second abutment surface;
said first and second internal guidance surface means being vertically spaced apart within said body a distance substantially equal to the vertical spacing of said first and second casing abutment surfaces prior to assembly thereof whereby said first and second guidance surfaces abut said first and second abutment surfaces respectively and concurrently to pre-align said latch means body to said first and second casings prior to complete landing of said latch means body on said well head casings; and
means for landing said latch means body on said well head casing.

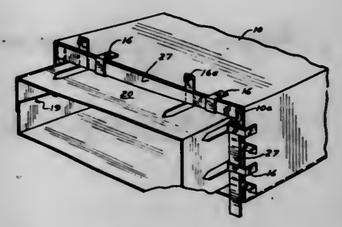
3,347,568
CORROSION PROOF FLOWMETER
Frank G. Weeden, Jr., and Gail W. Graves, Houston, Tex., assignors to John L. Dore Co., Houston, Tex., a corporation of Texas
Filed Oct. 20, 1965, Ser. No. 498,328
2 Claims. (Cl. 285—55)

1. A flowmeter for use in transmission of corrosive substances under positive or negative pressures and in wide temperature ranges comprising,
a tubular joint having flanged ends and an aperture in the side thereof intermediate said flanged ends,
a fluorocarbon liner concentrically disposed within said tubular joint and flared outwardly at said flanged ends of said joint,
female holding means formed on the inner wall of said joint near each end thereof,
male holding means formed on the external surface of said liner opposite said female holding means,
said male holding means and said female holding means being in interlocking engagement whereby said liner is secured to said joint against axial and radial displacement therefrom,



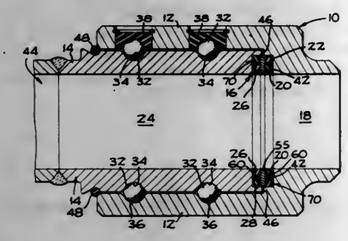
tenon means formed on and projecting beyond the outer surface of the liner for secure engagement with the mortises of the tubular joint,
a flared conical receiver member integrally formed of the liner protruding exteriorly through the aperture of the tubular joint,
a fluorocarbon conical ring having an axial aperture for receiving a probe,
probe means for engaging the axial aperture of the conical ring, and
boss means affixed to the tubular joint for engaging the conical ring and probe with the conical receiver.

3,347,569
CONDUIT CONNECTING STRUCTURE AND METHOD
Wallace I. Lindgren, 3723 Dartmouth Drive, Minnetonka, Minn. 55343
Filed Oct. 4, 1965, Ser. No. 492,797
3 Claims. (Cl. 285—64)



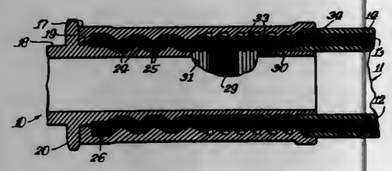
1. A connecting apparatus in connection with relatively soft walled conduit having in combination,
an endless collar of a size and form to be inserted within the abutting ends of a pair of said conduits,
said collar having a plurality of strap members integral therewith and upstanding therefrom spaced apart on a medial line thereabout, alternate of said strap members being oppositely reversely angled to have portions thereof inserted into adjacent wall portions of said conduit, and
a rigid elongated plate member inserted between adjacent of said strap members between the abutting ends of said conduit.

3,347,570
SWIVEL JOINT AND PACKING THEREFOR
Henry W. Roessler, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,920
16 Claims. (Cl. 285—94)



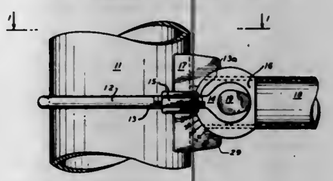
1. In a swivel joint including conduit means providing a flow passage therethrough surrounded by an annular packing chamber defined by a radial wall and an internal wall axially projecting from the radial wall, a packing in said chamber including an inner seal of resiliently compressible and expandable material circumscribing said passage, an outer seal of resiliently compressible and expandable material circumscribing and circumferentially spaced from said inner seal, and means maintaining said outer seal in sealing engagement with said internal and radial walls, said means also maintaining said inner seal in sealing engagement with said radial wall and permitting slidable movement outwardly therealong when subjected to fluid pressure in said passage whereby said inner seal bears against said outer seal thereby urging it against said walls and whereby if fluid escapes past said inner seal it enters the space between said seals and urges the outer seal against said walls.

3,347,571
HOSE FITTING
Truman L. New, Fort Worth, Tex., assignor to Stratoflex, Inc., Fort Worth, Tex., a corporation of Texas
Continuation of abandoned application Ser. No. 187,886, Apr. 16, 1962. This application Aug. 30, 1965, Ser. No. 483,558
3 Claims. (Cl. 285—149)



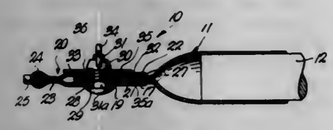
1. The combination of a hose including an inner non-metallic tube surrounded by metallic reinforcement of tubular configuration, a portion of said tubular reinforcement at and adjacent to one end of the hose being bared, and a fitting comprising a socket member and a nipple member secured together and providing an annular opening closed at the forward end and receiving said one end of the hose, said socket member and said nipple member being substantially longer than the length of said bared portion of said tubular reinforcement and including therebetween a gripping section near said forward end with said bared tubular reinforcement portion therein and a sealing section rearward of said gripping section, said annular opening in said sealing section being enlarged in radial width relative to said gripping section to receive both said reinforcement and said inner tube, and means on said socket member and said nipple member in said gripping section providing a sinusoidal form for said annular opening in said gripping section along substantially the length and circumference of said gripping section and clamping said bared tubular reinforcement portion and bending the same into a sinusoidal configuration to prevent a rearwardly directed thrust on the hose relative to the fitting from separating the hose from the fitting, said means comprising at least one circumferentially continuous radially extending preformed annular relatively blunt projection on one of said members, said projection having slanting sides, the other member having at least one circumferentially continuous annular groove radially opposite said projection and having slanting sides generally parallel to the slanting sides of said projection, said projection and said groove having mating configurations and the radial width of said annular opening being substantially constant throughout its length and circumference, whereby said reinforcement is bent into a smoothly curving sinusoidal form by said projection and said groove and the compressive force on said bared reinforcement portion is substantially constant throughout the length and circumference of the gripping section, said bending of said reinforcement into said sinusoidal configuration being effective to establish a firm grip on said hose by said fitting by bending and compressing said bared reinforcement portion and without any substantial biting into said bared reinforcement portion, and each bend of said bared reinforcement portion gradually reducing in the forward direction the amount of the rearwardly directed thrust on said bared reinforcement portion, the portions of the annular opening adjacent both of said slanting sides of said projection extending substantially lengthwise of the fitting and having a radial width substantially equal to the radial width of the portion of said opening between said projection and said groove.

3,347,572
ADJUSTABLE MECHANISM FOR SECURING ARMS TO A POST
Henry C. Pfaff, Jr., Summit, and Francis G. Schlosser, Ridgefield Park, N.J., assignors to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey
Filed Nov. 2, 1964, Ser. No. 408,063
5 Claims. (Cl. 287—14)



1. In an adjustable mechanism for securing an arm member to a post, said post having a longitudinally extending axis, a saddle member positioned on said post transversely to said axis,
said saddle member having an inner and an outer surface, said inner surface being formed complementary to the outer surface of said post and being in adjustable engagement therewith, and
an arm member, said arm member having a pivot end, said pivot end and the outer surface of said saddle member having complementary cylindrical surfaces, so that said pivot end will rotatably adjustably engage said saddle member,
said pivot end having clamp engaging means thereon,
adjustable clamping means engaging the outer surface of the post,
and engaging said means on said pivot end, for positioning the saddle and pivot end longitudinally on the post and for rotatably adjustably positioning said pivot end in said groove.

3,347,573
VARIABLE CONNECTOR
Harry T. Carter, Chanute, Kans. 66720
Filed Aug. 25, 1965, Ser. No. 482,396
1 Claim. (Cl. 287—14)



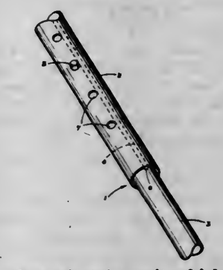
A multi-position connector comprising,
a supporting member having a rectangular slot and a bolt opening in an engaging portion thereof,
said engaging portion having first and second recessed side edge portions,
a clamp having a pair of substantially flat legs adapted to receive therebetween the engaging portion in sliding frictional engagement,
said clamp having a bolt opening through each leg alignable with the bolt opening in the engaging portion,
one leg of said clamp having also a second and a third rectangular slot located on opposite sides of said bolt opening,
a locking flange having an elongate bolt opening therethrough alignable over said other bolt openings,
said flange also having one end extending at 90° to the body thereof engageable and disengageable with one rectangular slot in said clamp leg,
the third rectangular slot positioned outwardly of said recessed edge portions when said bolt openings are aligned, so as to preclude engagement between the angled end of said locking flange and said engaging portion,
a clamping bolt engaging the aligned bolt openings to releasably frictionally secure the said engaging portion, said clamp legs and the locking flange at any desired position within a 90° arc on either side of the longitudinal center line of said supporting member.

3,347,574
CONNECTING ARRANGEMENT FOR FURNITURE PANELS AND THE LIKE
Klaus Strübin, 5 Hebelstrasse, 783 Emmendingen, Germany
Filed Aug. 10, 1964, Ser. No. 388,513
Claims priority, application Germany, Feb. 11, 1964, St 16,885
6 Claims. (Cl. 287—20.92)



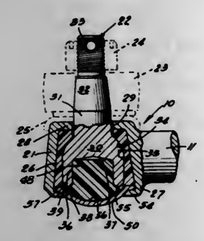
2. In an arrangement for connecting furniture panels and the like, the combination of
(a) a first connecting member consisting of a substantially cylindrical tubular member having an axis,
(1) an axially extending wall defining a substantially cylindrical cavity therein,
(2) a substantially circular end wall extending inwardly from the axially extending wall and bounding the cavity, the end wall being formed with two substantially diametrical slots intersecting each other, and having inner and outer radially extending faces adjacent the diametrical slots, one of the slots having transverse end walls at the ends thereof,
(3) the axially extending wall of the tubular member defining two axial slots communicating with and extending in a common axial plane with respective end portions of the other diametrical slot, each axial slot having two axial walls and a transverse wall connecting portions of said axial walls remote from said other diametrical slot, and
(4) anchoring means on the tubular connecting member for retaining the same in a conforming bore in one of said furniture panels;
(b) a second connecting member having a body portion adapted to be retained in another one of said furniture panels, said body portion having
(5) a hook-shaped free end portion dimensioned for simultaneously conforming engagement with said axial walls and said transverse wall of one of said axial slots while a part of said end portion extends into said cavity and said body portion is outside said tubular member; and
(c) locking means simultaneously engageable with said first connecting member and said second connecting member for securing the connecting members in a fixed spatial relationship.

3,347,575
DETENT GUIDE FOR TELESCOPIC TUBE UNITS
Lowell H. Morris, Dixon, Calif., assignor to Morris Manufacturing Company, Dixon, Calif., a partnership
Filed Sept. 7, 1965, Ser. No. 485,328
3 Claims. (Cl. 287—58)



1. In a telescopic tube unit which comprises an outer cylindrical tube and an inner cylindrical tube slidable and turnable in the outer tube, a longitudinally extending bead projecting radially into the interior of the outer tube and rigid therewith said bead being narrow in circumferential cross section so as to allow relative rotation of said tubes, the outer tube having a row of detent-receiving holes parallel to and immediately adjacent the bead, said bead being of continuous extent throughout the longitudinal extent of the row of said holes, the diameter of the inner tube being such as to have a sliding fit between the radially inner edge of the bead and the opposed surface of said outer tube, and a radially outwardly spring biased detent means mounted in the inner tube and projecting through an aperture therein for radially inward yielding movement from a fully advanced hole-engaging position; the detent, when free of any said hole, being engaged at its outer end with the inner surface of the outer tube and engageable at a side with either side of the bead as a guide.

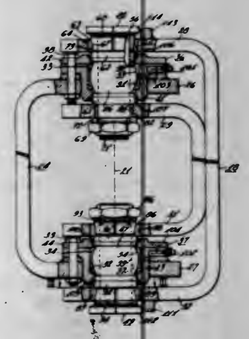
3,347,576
PRELOADED PIVOT JOINT
Herbert W. Templeton, Southfield, Mich., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 13, 1965, Ser. No. 471,596
4 Claims. (Cl. 287—90)



4. A joint adapted to transmit endwise movement in a linkage while accommodating misalignment of the link parts under heavy load which comprises a pin having an enlarged head on the end thereof providing a bearing surface accommodating rotation of the pin about its own axis and an axial recess in the end of the head surrounded by a rim, a socket having an aperture receiving the pin freely therethrough and a chamber receiving the head of the pin, a high density linear ethylene copolymer bearing block in the socket enveloping said head, a high density liner ethylene copolymer plug in said axial recess of the head and projecting therefrom, a closure plate for the socket deforming said bearing block and plug and flowing the material thereof over the rim of the head and into conformity with said plate, and grease trapped between the head and bearing block and between the head and plug by the deformed portion thereof for facilitating rotation of the pin in the bearing block to maintain a constant turning torque for the joint.

3,347,577
PIVOT CONSTRUCTION
Marvin J. Carlson, Round Lake, William J. Dobeus, Chicago, and Norman G. Olsen, Highland Park, Ill., and Tibbets E. Rolls, Genoa City, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 24, 1964, Ser. No. 420,890
14 Claims. (Cl. 287—100)

10. A self-aligning pivot connection between a pair of frame members, comprising:
a pair of socket bushings on one of said frame members aligned on an axis in vertically spaced relation to one another and each presenting a radially inwardly facing spherical bearing surface,
a first pair of walls on the other of said frame members with first and second axially spaced cylindrical bore surfaces, respectively, aligned on said axis and disposed on axially opposite sides of one of said spherical socket bushings,
a second pair of walls on said other frame member with third and fourth axially spaced cylindrical bore surfaces, respectively, aligned on said axis and disposed on axially opposite sides of the other of said spherical socket bushings,
a pair of spaced bearing elements having
central cylindrical bore surfaces aligned on said axis and
radially outwardly facing spherical bearing surfaces complementary to and in thrust transmitting engagement with said spherical bearing surfaces on said bushings, respectively,
a pair of axially spaced and substantially coaxial pins having cylindrical shank portions in axially slidable and radial thrust transmitting engagement with said bore surfaces of said bearing elements, respectively, one of said pins extending through the openings defined by said first and second bore surfaces and the other of said pins extending through the openings defined by said third and fourth bore surfaces,
means establishing radial thrust transmitting connections between opposite ends of one of said pins and said first and second bore surfaces, respectively, including
a split collet having
a cylindrical outer surface complementary to and in radial thrust transmitting engagement with said first bore surface and
a conical thrust surface facing radially inwardly and axially outwardly away from said bearing element on said one pin, and
thrust means on one end of said one pin in radial and axial thrust transmitting relation to said collet including a conical thrust face complementary to and in engagement with said conical thrust surface,

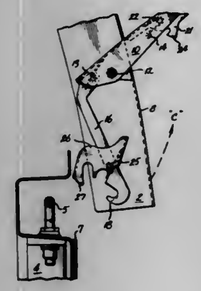


abutment means preventing movement of said collet and said bearing element on said one pin relative to the wall presenting said second bore surface in the axial direction from said one end of said pin toward its other end, said abutment means being independent of said one frame member and said socket bushing associated with said bearing element on said one pin,
adjustable fastening means engaging said other end of said one pin and said wall defining said second bore surface operable upon adjustment to urge said pin in said axial direction thereby radially expanding said collet into firm engagement with said first bore surface and to prevent movement of said bearing element relative to said wall defining said second bore surface in the opposite axial direction and
securing means fixedly fastening the other of said pins to said second pair of walls.

3,347,578
FLUSH-TYPE SAFETY LATCH
Robert W. Sheehan, Bellevue, and Imre A. Szupkay, Issaquah, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 411,983
1 Claim. (Cl. 292—113)

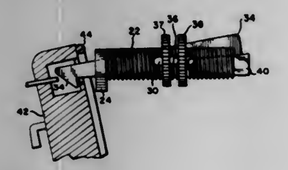
A latch for connecting first and second structures comprising,
(a) pivotable handle means (10) for the first structure (2),
(b) keeper means (5) for the second structure,
(c) latching portion means (14) for said handle means (10),

(d) latching member means (16) having hook means (18),
(e) trigger means (21) for said handle means (10) for connecting with said latching member means (16),
(f) catching member means (26) having hook means (27) for connecting with said keeper means (5),
(g) first spring means (19) for urging said latching member hook means (18) into engagement with said keeper means,



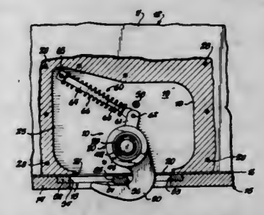
(h) second spring means (23) for urging said trigger means (21) into connection with said latching member means (16), and
(i) third spring means (28) for urging said catching member means (26) unhooked from said keeper means (5),
(j) said handle latching portion means (14) restraining said catching member means (26) against said third spring means (28) to form a curved slot between said catching member hook means (27) and said latching member hook means (18) to retain first keeper (5) when the latch connects the first and second structures.

3,347,579
TRANSLATABLE PIVOT LATCH ASSEMBLY
Frank E. Power, Ashland, Mass., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,878
7 Claims. (Cl. 292—122)



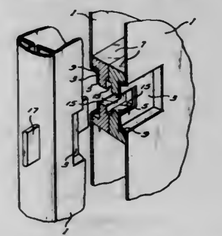
1. An adjustable latch assembly comprising
an externally-threaded housing having a recess therein,
a horizontal slot in said housing,
a latch member pivotally and slidably mounted in said slot,
biasing means placed between said latch member and said recess against which said latch may bear and thus be afforded resilient support, and
internally-threaded adjusting means mounted on the exterior of said housing for movement therealong,
said adjusting means being operably connected with said latch member to provide means for moving said latch back and forth in said housing slot.

3,347,580
LATCH FOR SECURING A TRUCK DOOR
Theo C. Whiting, Akron, N.Y., assignor to T. Whiting Manufacturing, Inc., Akron, N.Y., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,779
2 Claims. (Cl. 292—128)



1. A latch for securing a truck door to its sill, comprising a rotor, a handle fixed to said rotor, means including an attaching plate interposed between said latch and handle for journalling said rotor on said truck door to swing about an axis generally perpendicular thereto and adjacent said sill when the door is closed, a C-shaped latch fixed at one end to said rotor and having a cam face opposing said rotor, a catch fixed to said sill and having a strike face positioned to engage said cam face, said cam face being arranged to draw said rotor toward said catch when said handle is turned to tighten the engagement between said cam face and strike face, and spring means connected at one end to said rotor at a place remote from its axis and adapted to be connected at its other end to said attaching plate, said spring means traveling beyond dead center and in the engaged position of said cam and strike faces biasing said rotor to urge said cam face into firmer engagement with said strike face, whereby latching pressure is increased in response to truck vibrations, and in the opposite extreme position of said rotor biasing it to hold said latch away from said catch, said spring means comprising a first telescopic member, means pivotally attaching said first telescopic member to said rotor, a companion second telescopic member, means pivotally attaching said second telescopic member to said attaching plate, and a helical compression spring surrounding said telescopic members and compressively interposed between both of said pivotally attaching means.

3,347,581
CONCEALED DOOR LATCH
Daniel G. Hann, Lake City, Pa., assignor to General-Erie Corporation
Filed June 14, 1965, Ser. No. 463,691
5 Claims. (Cl. 292—147)



1. A latch for a door comprising:
(a) a two-part latch body to be fixed in position between the sides of a door and having depressions in its remote sides to receive indentations of the sheet metal sides of the door, said body parts being connected together against relative parallel movement, the body parts having a space therebetween for a latch

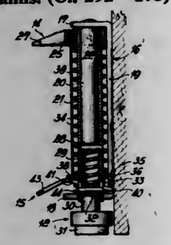
bar and holes extending therethrough for a latch bar actuator,

(b) a latch bar slidably movable endwise in said space and having an aperture aligned with said holes,

(c) means for moving said latch bar endwise into and out of door locking positions, said means including plates disposed in and engaging said indentations in the metal sides of the door, one of said plates having a hollow projection extending into and substantially filling the aperture in said latch bar, one of said plates having an outwardly projecting bar actuating handle, and

(d) means in said hollow projection to lock said plates in assembled position.

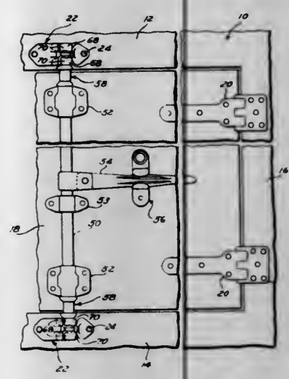
3,347,582
DOOR STAY
Herbert Cleff, Ennepetal-Vorde, Germany, assignor to Dorken & Mankel K.G., Ennepetal-Vorde, Westphalia, Germany
Filed Feb. 4, 1966, Ser. No. 525,155
Claims priority, application Germany, Feb. 17, 1965, D 46,535
6 Claims. (Cl. 292—178)



1. A foot operated door stay comprising, in combination, attachment means for attaching the stay to a door adjacent the lower edge of the latter; an elongated locking bolt comprising a tubular member movable from a retracted position to an extended position in which said elongated locking bolt engages the floor beneath the door to hold the latter in fixed position; guide means for guiding said elongated locking bolt during its movement between said positions thereof and including a fixed plunger slidably extending into said tubular member and having a length sufficient to engage and guide said tubular member in said extended position thereof and a fixed guide plate extending transverse to the axis of said plunger spaced in axial direction from the latter and formed with an aperture through which said tubular member extends to be guided therein; biasing means cooperating with said locking bolt and being biased to urge the same from said extended to said retracted position; an operating foot pedal fixed to said tubular member projecting laterally therefrom so that said locking bolt may be moved against the force of said biasing means from said retracted to said extended to said retracted position; an operating foot said pedal; locking means cooperating with said locking bolt for holding the latter in said extended position; and releasing means cooperating with said locking means to release, when actuated, said locking means to thus free said bolt for return movement into said retracted position under the action of said biasing means.

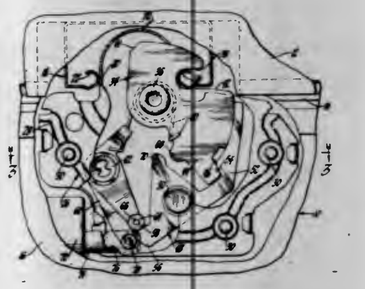
3,347,583
DOOR FASTENING MEANS
John E. Hallberg, Hammond, Ind., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 23, 1965, Ser. No. 489,683
13 Claims. (Cl. 292—194)

11. For use in a door fastener, a carrier member having vertically spaced wing portions with generally horizontally disposed facing cam surfaces on one side of said carrier member, each of said wing portions having a pair of laterally spaced nose sections on the other side of said carrier member, each of said wing portions having



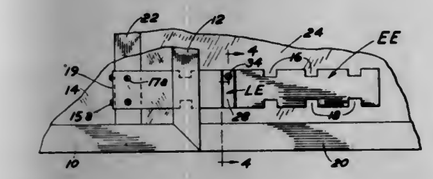
a vertical end surface, said carrier member having a transversely extending center guide portion intermediate of said wing portions, and said center guide portion having an outer cam section extending between said nose sections.

3,347,584
VEHICLE CLOSURE LATCH
Theodore H. Johnstone, New Baltimore, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,037
8 Claims. (Cl. 292—198)



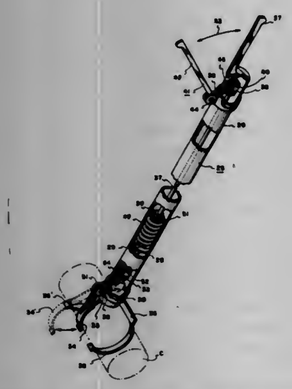
1. A vehicle body closure latch comprising, latch means movable in a direction between latched and unlatched positions and including a first detent shoulder, detent means including a second detent shoulder engageable with said first detent shoulder in the latched position of said latch means, said shoulders being formed for engagement along a line so oriented with respect to the direction of movement of said latch means as to provide for a substantial force component effective to cam said shoulders out of engagement upon forced movement of said latch means from the latched to the unlatched position thereof, and means selectively operable upon said detent means to restrain the latter and positively hold said shoulders in engagement in opposition to said force component and prevent movement of said latch means from the latched position thereof.

3,347,585
SLIDING WINDOW LOCK
Gene Chmura, 8510 Phillips Ave., Chicago, Ill. 60617
Filed June 27, 1966, Ser. No. 560,706
6 Claims. (Cl. 292—294)



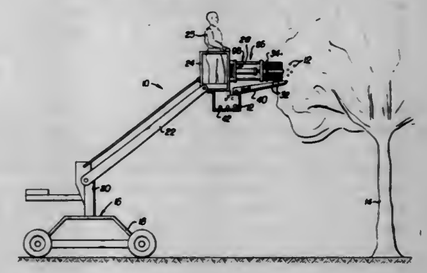
1. A sliding window lock comprising in combination with inner ad outer window sashes, an elongated element adapted to be located between said sashes, and to be secured to the edge of one, said elongated element extending from the point of securement to a position beyond an edge of the other sash, and a U-shaped lock element adapted to be locked to said elongated element to limit relative sliding movement of said sashes to open position by engagement of said edge of said other sash therewith, said elongated element having notches spaced along opposite edges thereof, and said lock element having a solid portion to enter any notch along one edge thereof and a removable portion adapted to enter the companion notch in the opposite edge thereof.

3,347,586
SIPHON AND RELATED STRUCTURE
Edward J. Sharp, Nyssa, Oreg., assignor of one-fourth each to Florence S. Powell, Ogden, Utah, Edna L. Blanch, Nyssa, Oreg., and Margorie Clontz, Kennewich, Wash.
Filed Oct. 7, 1963, Ser. No. 314,331
2 Claims. (Cl. 294—19)



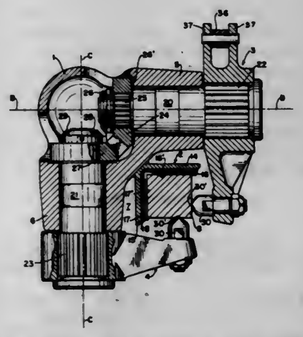
1. A device for medially grasping prime-retaining movable siphons, said device including, in combination, a fixed, concave finger means for selective disposition against one side of an uppermost portion of the siphon; movable, inwardly concave finger means for disposition against the remaining side of an upper portion of said siphon; means pivoting said inwardly concave finger means to said fixed finger means, fixed handle means spaced from said fixed finger means; elongate means for securing said fixed handle means to said fixed finger means; movable handle means proximate said fixed handle means, laterally moveable theretoward, and pivoted to said elongate means; and means coupled to said movable handle means and said movable finger means moving said finger means in response to selective movements of said movable handle means.

3,347,587
ARTICLE HANDLING APPARATUS
James Dahle Frost, P.O. Box 775, Porterville, Calif. 93257
Filed July 23, 1962, Ser. No. 211,682
20 Claims. (Cl. 294—87)



1. Fruit handling apparatus which comprises: an extendable and retractable finger unit which is adapted to transfer fruit from one location to another, said finger unit including a plurality of elongated inflatable fingers which when inflated compressively seize the fruit and when deflated release the fruit, said fingers each having axially spaced constrictions therein which divide each finger into sections; means for inflating said fingers when said finger unit is extended and for deflating said fingers when said finger unit is retracted; a pivotable pneumatic unit, said pneumatic unit embodying a cylinder and piston assembly which is connected to a source of air and which is also connected to and achieves extension and retraction of said finger unit; and another pneumatic cylinder and piston assembly which is also connected to a source of air and which is connected to and achieves pivoting of said pneumatic unit.

3,347,588
BILLET GRAPPLE
Dominik J. Moro, York, Pa., assignor to America Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed May 31, 1966, Ser. No. 553,876
9 Claims. (Cl. 294—88)



1. A billet grapple for holding a free elongated billet disposed in a generally vertical plane for movement in a vertical direction comprising:

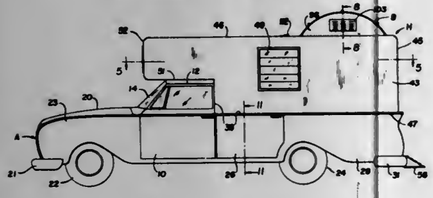
(a) a support member;

(b) a billet backup member having first and second gripping surfaces facing in generally horizontal directions at an angle with respect to each other for respectively engaging a billet at first and second locations spaced laterally of each other;

(c) a first arm pivotally connected to said support for movement about a first axis extending in a downward direction away from said first gripping surface whereby movement of said first arm about said first axis moves an extending portion thereof downwardly and inwardly of said first gripping surface, said extending portion having a third gripping surface opposing said first gripping surface for engaging said billet on the side thereof opposite said first location when said first arm is moved in said downward and inward direction; and

(d) a second arm pivotally connected to said support member for movement about a second axis extending in a downward direction away from said second gripping surface whereby movement of said second arm about said second axis moves an extending portion thereof downwardly and inwardly of said second gripping surface, said extending portion having a fourth gripping surface opposing said second gripping surface for engaging said billet on the side thereof opposite said second location when said second arm is moved in said downward and inward direction.

3,347,589
CAMPER
Harold W. Sirk, 24331 Glenbrook Blvd., Cleveland, Ohio 44117
Filed Dec. 9, 1964, Ser. No. 417,043
8 Claims. (Cl. 296—23)



1. A standard conventional passage car having an enclosed front seat driving compartment, said car having an opened topped rear portion forming a recess behind said compartment and having a rear floor, spaced rear side doors flanking the forward portion of said rear floor and extending upwardly therefrom spaced rear fenders flanking the rearward portion of said floor and extending upwardly therefrom, and a car cabin disposed on the floor of the recess and between said doors and having a forwardly extending portion overlying the front compartment and supported thereon said cabin configured to be further supported on said floor, and on said fenders, said cabin configured to provide storage space exteriorly thereof and interiorly of the doors, said doors providing access to said storage space.

3,347,590
CAMPER BODY STABILIZER
Donald Byron Bowen, 1816 Sherwood, Covina, Calif. 91722
Filed Mar. 28, 1966, Ser. No. 537,880
2 Claims. (Cl. 296—23)

1. In combination with a pickup truck having a cab and a hood and fender portions that extend forwardly from said cab, a camper body supported on said truck, said camper body having a forward portion that extends over said cab and to each side thereof, two laterally spaced stabilizing devices extending between said camper body forward portion and said fender portions for minimizing the vibration of said camper body and movement of said camper body relative to said truck when the same are in motion, said devices including:

(a) two first brackets rigidly secured to the undersurface of said forward portion of said camper body;

(b) two transversely aligned second brackets rigidly secured to said fender portions;

(c) two elongate shock absorber means;

(d) third means for supporting said shock absorber means in depending positions from said first brackets;

(e) two stud bolts rigidly secured to the lower extremities of said shock absorber means;

(f) two annular-shaped bodies of resilient material that encircle the upper portions of said stud bolts;

(g) two rigid washers that encircle said stud bolts and abut against the lower surfaces of said resilient bodies;

(h) two nuts that engage said stud bolts and when tightened move said washers upwardly thereon to compress said resilient bodies and radially expand the same;

(i) two elongate rigid upwardly extending members pivotally supported from said second brackets;



(j) two elongate tubular shells that slidably engage said elongate members, said shells having threads formed on the external surfaces of said first end portions, as well as outwardly tapering internal surfaces adjacent said threads, said shells having second end portions that slidably engage said resilient bodies when said nuts are not in tightened positions on said stud bolts;

(k) two ring-shaped bands at least partially disposed in spaces defined between said outwardly tapering surfaces and the external surfaces of said elongate members; and

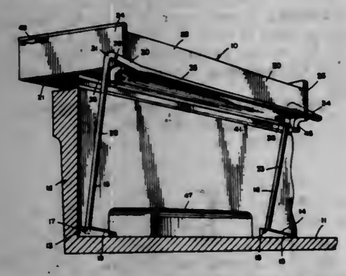
(l) two lock nuts that engage said threads, with said lock nuts when tightened moving said bands upwardly on said elongate members to wedge said bands into gripping engagement with said elongate members and said shells to prevent relative longitudinal movement therebetween, and said nuts when tightened on said stud bolts compressing said resilient bodies to radially expand the same to the degree that said cylindrical shells are held at fixed positions relative to said shock absorber means, and said shock absorber means minimizing relative movement of said camper body relative to said truck when both are in motion.

3,347,591
LIFT AND LOCATOR ASSEMBLY FOR CAMPING TRAILER KITCHEN UNIT
James P. Soroos, Columbus, Ohio, and Patrick J. Regan, Wauwatosa, Wis., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Feb. 20, 1967, Ser. No. 617,407
8 Claims. (Cl. 296—23)

1. In combination with a camping trailer including an interior floor connecting to an upwardly extending side wall having a top and inner and outer sides, a kitchen unit comprising:

(a) counter means providing an upper work area, said counter means having outer and inner portions and being manually moveable between a storage position adjacent said floor and the inner side of said wall and a use position over the top of said wall in which said outer portion of said counter means extends outwardly beyond the outer side of said side wall;

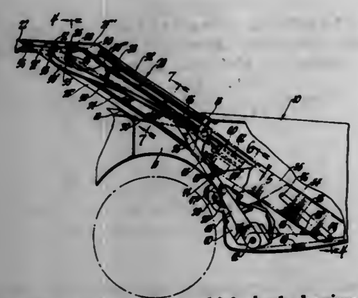
(b) support rail means mounted on the top of said side wall for cooperation with said counter means in said use position;



(c) support leg means extending between the inner portion of said counter means and the area of said trailer interior near the connection between said floor and said side wall, said support leg means being provided with pivot mountings respectively connecting its inner end to said counter inner portion and its outer end to said trailer interior area so that said counter means with its weight partially supported by said leg means can be moved between said storage and use position;

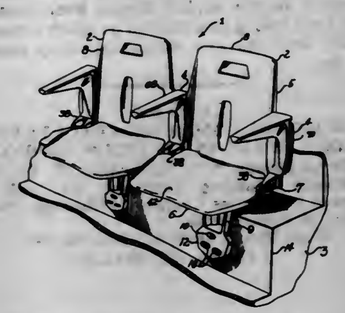
(d) and locator bracket means mounted on the inner side of said counter means and arranged for coaction with said support rail means, said locator bracket means releasably engaging said rail means in said use position to locate and support said counter means.

3,347,592
RETRACTABLE ROOF FOR AUTOMOTIVE VEHICLE
Dennis N. Renneker, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,693
5 Claims. (Cl. 296—107)



1. In combination with a vehicle body having a windshield support, a passenger compartment and a storage compartment located rearwardly thereof, a retractable hardtop for closing the passenger compartment comprising, a rear section including a pair of side panels mounted on the body for reciprocation vertically of the body between a raised position and a stored position within the storage compartment, an upper panel interconnecting the side panels, means for reciprocating the rear section, a forward section mounted on the rear section for movement relative thereto when in raised position between a vertically extending retracted position between the side panels within the rear section and a horizontal extended position engaging the windshield support, the forward section having a greater longitudinal dimension than the rear section upper panel, and means for so moving the front section, the front and rear sections in their respective extended and raised positions closing the passenger compartment.

3,347,593
SPECTATOR SEATING STRUCTURE
Thomas G. Walkinshaw, Mission, Kans., assignor to Cramer Industries, Inc., Kansas City, Kans., a corporation of Missouri
Filed Apr. 18, 1966, Ser. No. 543,121
10 Claims. (Cl. 297—248)



1. A seating arrangement for use in stadiums, theaters and the like comprising:

(a) a plurality of individual seating units, each of said seating units including a supporting pcst with means on said post for mounting the seating unit to a floor structure,

(b) adjustable cooperative means on each of said seating units to interconnect each of said units with the adjoining units to form a seating arrangement,

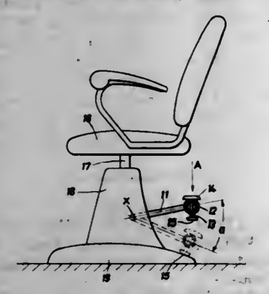
(c) each of the seating units including a back rest, said back rest of each of said seating units having opposed side portions and wherein the adjustable cooperative means is connected to each of the side portions of the back rests of the adjoining seating units, and

(d) each of the side portions of the back rest of each of the individual seating units defining adjustment slots extending inwardly of said side portions, said interconnecting means including means movable in said adjustment slots of each of adjoining seating units, said means being retainable at selected positions along said adjustment slots to interconnect the adjoining seating units whereby the seating units may be spaced at varying selected intervals.

3,347,594
HYDRAULIC MECHANISM
Herbert E. Werner, 21 Jean Paulsweg, Hamburg 39, Germany
Filed Sept. 8, 1966, Ser. No. 578,012
Claims priority, application Germany, Oct. 1, 1965, Sch 37,804
3 Claims. (Cl. 297—347)

1. In a fluid mechanical service chair having a pump installation operated by a lever pivoted at one end, the

improvement comprising, a pin passing loosely through and substantially perpendicular to the free end of said lever, and a disc connected to the upper end of said pin preventing said pin from falling through said lever, said pin providing a stop for the region of movement of said



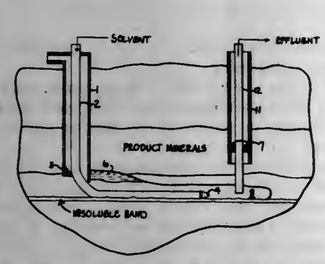
lever which causes upward pumping of the chair when a downward force is applied to said lever through said disc said lever having an extension on which pressure may be applied with the foot without applying pressure to the said disc.

3,347,595

ESTABLISHING COMMUNICATION BETWEEN BORE HOLES IN SOLUTION MINING

James Bowen Dahms, New Martinsville, W. Va., and Byron Priestly Edmonds, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 3, 1965, Ser. No. 452,596
5 Claims. (Cl. 299—4)



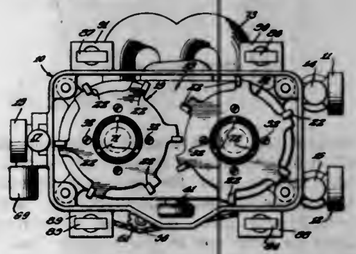
1. In the solution mining of a product stratum located in a soluble deposit which includes strata of varying compositions including strata of soluble non-product minerals beneath said product stratum and relatively thin bands of insoluble material traversing said deposit wherein a plurality of cased bore holes is disposed to communicate with said deposit, a cavity is developed to communicate with an influent bore hole and an effluent bore hole and minerals are extracted from the product stratum by feeding solvent to the cavity through the influent bore hole and withdrawing dissolved product minerals from the cavity through the effluent bore hole, the improvement which comprises selecting a thin insoluble band located in said deposit in the vicinity of the bottom of said product stratum but above non-product minerals and establishing communication between said bore holes in the vicinity of said thin insoluble band while avoiding extraction of extractable non-product minerals located in the deposit below said thin insoluble band by providing a bore hole to the vicinity of and above said thin insoluble band, providing a second bore hole removed from the first named bore hole and communicating with the vicinity of the insoluble band, providing a flexible conduit through one of said bore holes to contact said insoluble band, biasing said flexible conduit in the direction of the second bore hole and urging the conduit along the upper surface of the insoluble band in the direction of the second bore hole while feeding solvent through said flexible conduit to extract soluble material disposed above the insoluble band and withdrawing effluent through the first bore hole thereby developing a passageway in the direction of the second bore hole until communication is effected between the two bore holes.

3,347,596

PORTABLE SURFACING MACHINE FOR TERRAZZO FLOORS

Robert J. Brejcha, Westchester, Narciso G. Modesto, Morton Grove, and Wayne F. Ridenour, Chicago, Ill., assignors, by mesne assignments, to General Stone and Materials Corporation, Roanoke, Va., a corporation of Virginia

Filed Mar. 1, 1965, Ser. No. 435,958
7 Claims. (Cl. 299—10)



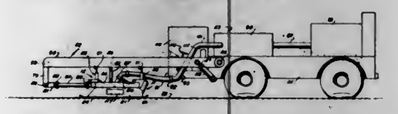
4. The method of surfacing a terrazzo floor or the like which comprises supporting a cutting mechanism on three wheels which define a horizontal datum cutting plane, said cutting mechanism including a pair of counter rotating wheels each having peripherally spaced cutting elements thereon oriented such that each element provides a point cut along the surface, lowering said wheels while rotating the same to cut said floor to a predetermined depth, moving the wheels forwardly to thereby cut a track of said predetermined depth, raising the cutter wheels out of cutting engagement with said floor, moving said cutting mechanism laterally so that at least one of said wheels rests on an uncut surface while the remaining wheels rest on the previously cut track, lowering said remaining wheels by the amount of said predetermined depth of cut, and lowering said cutting wheels and moving said machine forwardly to cut a track parallel to the first track and having substantially the same depth of cut.

3,347,597

JET CLEANING APPARATUS AND GROOVE ROUTER FOR CONCRETE PAVEMENTS

Robert B. Holifield, 5340 Livingston, Dallas, Tex. 75209

Filed Oct. 23, 1965, Ser. No. 503,127
6 Claims. (Cl. 299—36)



1. In apparatus for cleaning and routing out expansion joints and cracks in concrete pavements, such as airport runways, to remove old and decomposed fillers and sealants and accumulated foreign materials from said expansion joints and to enlarge and shape said cracks, preparatory to replacing said fillers and sealants and filling said

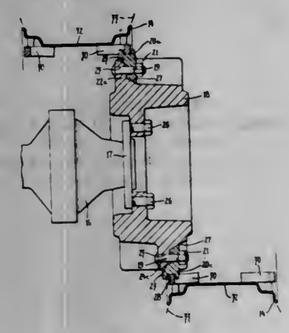
cracks, the combination of an automotive vehicle having a frame, an elongated boom having one of its ends pivotally connected to the frame of said vehicle, forwardly thereof, and normally extending substantially horizontally, forwardly of said vehicle, hydraulically operable means acting on said frame and said boom whereby the inclination of said boom may be adjusted within predetermined limits, an elongated skid below said boom having a pair of supporting runners engageable with a concrete pavement on opposite sides of an expansion joint or crack therein, draft means whereby said skid is connected to said boom, suspension means whereby said skid is connected to said boom rearwardly of said draft connection, a pair of plows on said skid in tandem relation to each other, engageable with an expansion joint or crack in a concrete pavement, a downwardly extending nozzle on said skid, between said plows, arranged to direct a stream of fluid at high velocity against an expansion joint or crack in a concrete pavement in the path of said plows, means on said vehicle for supplying fluid to said nozzle at predetermined superatmospheric pressure and means on said skid enclosing said plows and said nozzle and confining fluid as discharged from said nozzle and such material as may be displaced from an expansion joint or crack in a concrete pavement against which such fluid may be directed.

3,347,598

MEANS FOR VARYING WHEEL SPACING

John D. Carlstrom, Detroit, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich.

Filed Dec. 23, 1965, Ser. No. 515,884
1 Claim. (Cl. 301—9)



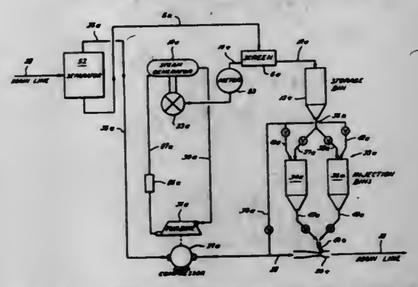
In a wheel spacing means including an axle, an inner wheel portion of substantial width mounted on said axle, an outer wheel portion surrounding said inner wheel portion, said outer wheel portion being comprised of a rim, and a plurality of parallel helical track rails equally distributed circumferentially on the inside of said rim; the combination comprising two axially spaced sets of pads at the inside and at the outside of the periphery of said inner wheel portion without laterally protruding therefrom, said pads having inclined surfaces, and with the distance between said two sets of pads corresponding to the distance between the helical track rails on the rim; and a plurality of shoes adapted to be screw-fastened to said pads, said shoes having inclined surfaces matching the inclined surfaces on said pads and a peripheral groove each, said grooves being adapted for engagement with said rails, whereby the matching surfaces on the pads and the shoes allow sliding engagement between the grooves and the rails for spacing the outer wheel portion as well as firm engagement for driving.

3,347,599

METHOD OF TRANSPORTING GRANULAR SOLIDS IN A GAS

Robert L. Topper and William W. Cofield, Houston, Tex., Raymond C. Foster, Garden City, N.Y., Herman N. Woebcke, Waltham, Mass, and George O. Koehnken, Garden City, N.Y., assignors, by direct and mesne assignments, to Transcontinental Gas Pipeline Corporation, Houston, Tex., a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,804
6 Claims. (Cl. 302—66)



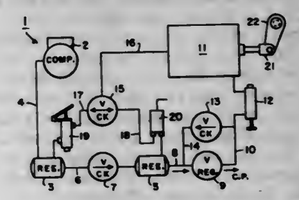
1. In a system of transporting coal in a pipeline in which the major portion of such coal is introduced into a carrier gas, the improvement comprising,
separating the coal and the gas,
compressing the separated gas,
separating the particles of coal smaller than about 300 mesh from the remainder of the coal,
utilizing the separated particles smaller than 300 mesh for at least part of the energy and compressing the gas as aforesaid, and
injecting the coal of a particle size larger than about 300 mesh into the compressed gas.

3,347,600

PRESSURE BALANCED SPRING APPLIED BRAKE SYSTEM

Cyril B. Fites, St. John, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

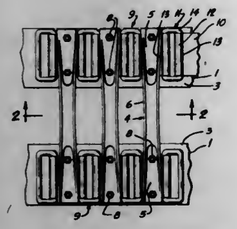
Filed Mar. 11, 1965, Ser. No. 438,860
10 Claims. (Cl. 303—71)



1. A fluid pressure system for a friction device comprising a fluid pressure source, actuator means including resiliently urged means movable therein to control friction device energization, other means for normally supplying fluid pressure from said source to said resiliently urged means at a predetermined magnitude to substantially balance the compressive force of said resiliently urged means and prevent friction device energization, selectively operable means for metering fluid pressure from said source to said resiliently urged means to supplement the compressive force thereof and move said resiliently urged means in a friction device energizing direction, and unidirectional valve means connected in by-pass relation with said other means between said one chamber and source and providing pressure fluid flow from said one chamber

to said source in the event that the contraction of said one chamber upon movement of said resiliently urged means in the friction device energizing direction increases the fluid pressure in said one chamber to a magnitude in excess of that of the fluid pressure at said source.

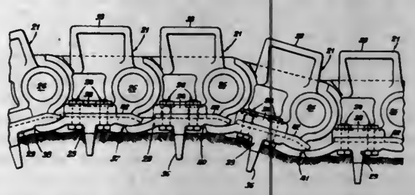
3,347,601
ENDLESS TRACK FOR TRACK-LAYING VEHICLE
Germain Bombardier, Valcourt, Quebec, Canada
Filed Jan. 21, 1966, Ser. No. 522,068
1 Claim. (Cl. 305—35)



In a track assembly for track-laying vehicles, a pair of spaced substantially parallel flexible endless bands, made of rubber or similar rubber-like material, and disposed longitudinally of the track assembly, transversely extending ground- and sprocket-engaging cross bars secured to said rubber bands at their ends and disposed at the outer face of said rubber bands and a metal chain disposed along the outer face of each rubber band and composed of plate links alternating with rod links, each plate link secured to said rubber band and sandwiched between said cross bar and said rubber band, each plate link associated with only one cross bar and only one rod link disposed between two adjacent cross bars, each plate link consisting of a plate with inturned opposed marginal portions extending on both sides of an associated cross bar, each rod link consisting of a loop made of a rod of circular cross-section defining substantially straight parallel side portions freely engaging the inturned marginal portions of said plate links, said side portions and inturned portions arranged transversely of said rubber band, said transverse side portions of said rod links being capable of movement within said inturned portions of said plate links between a limit position in which said rod links abut against the bottom of said inturned portions, and another limit position in which said rod links abut against the adjacent sides of the associated cross bar, the zones of said band in flattened condition causing said rod links to take an intermediate position relative to said plate links, in which said rod links are spaced both from the bottom of said inturned marginal portions and from the adjacent sides of the associated cross bar, so that said chains are free of external force in the flattened zones of said band.

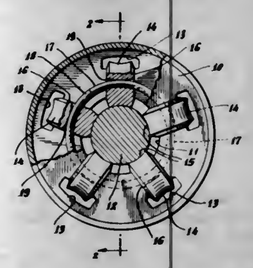
3,347,602
ENDLESS TRACK CONSTRUCTION
Amos E. Rixmann, 2315 NW. 56th St., Oklahoma City, Okla. 73112, and Lyman E. Knapp, Rte. 1, Box 140, Blackwell, Okla. 74631
Filed Oct. 28, 1965, Ser. No. 505,539
2 Claims. (Cl. 305—54)

1. An endless track for an endless track vehicle comprising, a plurality of pairs of links pivotally interconnected to form a pair of transversely spaced apart endless loops, a plurality of track shoes, each of said track shoes comprising transversely extending forward, central and rearward sections, the central sections of each of said track shoes being secured to the underside of a pair of transversely spaced apart links of said endless loops, each of said forward sections being positioned to be inclined downwardly from the central section thereof, the upper surface of each of said forward sections and the underside of each of said rearward sections being curved so that said surfaces are in sliding engagement when adjacent interconnected links are pivoted, said surfaces of said sections of said track shoes further being substantially closed so that said endless track presents a substantially closed surface to any earth upon which said endless track vehicle is moved, wherein the degree of overlap between cooperating forward and rearward sections of adjacent track shoes is substantially one-half of each



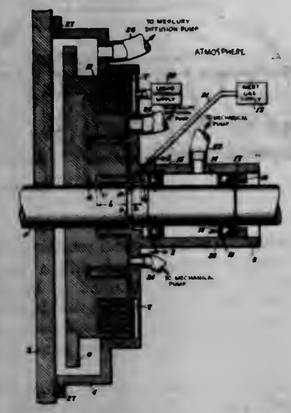
section when the adjacent central sections are in a common plane, the combined length of said forward and rearward sections being substantially greater than the length of said central section of each track shoe, whereby any intermediate portion of the length of said endless track is pivotable in both directions from a flat plane including the central sections thereof, each of said track shoes being provided with a transversely extending and depending grouser which is positioned centrally of and on the underside of said central section of each of said track shoes, and wherein the upper side marginal edges of each of said central and rearward sections of said track shoes are provided with upwardly extending flanges.

3,347,603
AXIAL BEARING
Vladimir Ignatjev, 39 Ledgewood Drive, Norwalk, Conn. 06850
Filed Apr. 12, 1965, Ser. No. 447,290
4 Claims. (Cl. 308—6)



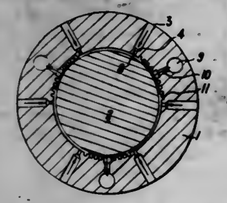
1. A shaft supporting device including in combination, an annular housing, a plurality of chambers formed in said housing and communicating with the core of said annulus, a groove formed within said housing connecting each of said chambers, an axle member disposed within said groove, a bearing member located within each of said chambers, each of said bearing members having a bearing surface extending within said annulus core, an aperture formed through each of said bearing members, said bearing member aperture having a shape defined by the rotation of an arc whose radius of curvature is equal to the radius of curvature of said axle, said axle passing through each of said bearing members aperture and said bearing members rotatively engaging said axle, along radii of said annular housing.

3,347,604
HIGH VACUUM ROTARY SEAL AND BEARING COMBINATION
Joseph E. Lavelle, Wellesley, William J. Courtney, Natick, and Alec S. Denholm, Lexington, Mass., assignors to Ion Physics Corporation, Burlington, Mass., a corporation of Delaware
Filed Feb. 19, 1964, Ser. No. 345,983
3 Claims. (Cl. 308—36.3)



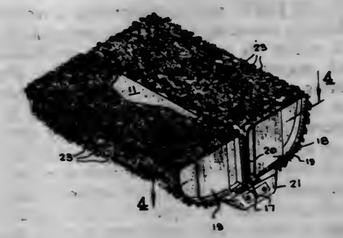
1. In combination, a rotary seal, a rotatable shaft, said rotary seal comprising a housing member encompassing a length of said shaft, a plurality of axially extending rings on said housing concentric with said shaft, a shaft plate affixed to said shaft having a plurality of axially extending concentric rings adapted to mate with the rings affixed to the housing to define a labyrinth therebetween, an extension on said housing in axial opposition to the rings on the housing, said extension encompassing a length of said rotatable shaft, a pair of spaced apart support bearings disposed in said extension, a source containing inert gas, means for directing said gas from said source around said shaft away from said labyrinth and towards said bearings into said extension to immerse said bearings into a flow of said gas, said means including an annular groove on said shaft and stepped annular regions in said housing around said shaft and means for removing said gas from said extension, said removal means being disposed in said extension between said spaced apart bearings thereby preventing vapors from said bearings from entering said labyrinth.

3,347,605
FLUID BEARING
Gaspard Dreyfus, Fresnes, and Marcel Pierre Le Nabour, Maisons Laffitte, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Sept. 28, 1965, Ser. No. 490,809
Claims priority, application France, Oct. 6, 1964, 990,416
2 Claims. (Cl. 308—122)



1. Fluid bearing utilizing low pressures for the supply of fluid and having a substantial clearance between the rotary shaft and the bearing housing, said housing being provided with apertures arranged at intervals in four rows forming a rectangle whereby any cavity between said housing and said rotary shaft is virtually eliminated to within a small tolerance and said housing being provided with successive expansion chambers for said fluid so as to constitute a labyrinth whose efficiency varies with the value of said clearance.

3,347,606
LUBRICATOR PAD
Robert E. Murray, 711 Southhampton Ave., Norfolk, Va. 23510
Filed June 1, 1965, Ser. No. 459,999
2 Claims. (Cl. 308—243)



1. A lubricator pad for use in journal boxes comprising, a pair of resilient core members arranged side-by-side, a separate sheet of textile wicking material wrapped and secured around each of the core members providing a separate covering for each core member with a thickness of wicking material over the tops, sides and bottoms of the core members, the sides of the coverings between the side-by-side core members each being a vertical side having top, bottom, front and rear ends, and means connecting the vertical sides of the adjacent coverings between the core members from the bottom to the top of the lubricator pad at the front end and rear end only, whereby when the pad is inserted into a journal box there is nothing to impede the free flow of oil between the adjacent coverings.

3,347,607
CABINET CONSTRUCTION
Leon J. Knize, Annapolis, Md., assignor, by mesne assignments, to Walter B. Udell, Philadelphia, Pa.
Filed Sept. 12, 1962, Ser. No. 223,110
16 Claims. (Cl. 312—8)

5. A residential music center console comprising in combination,

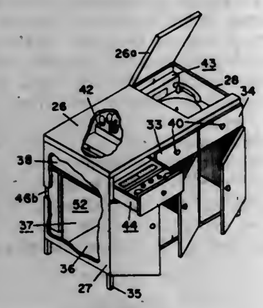
(a) a cabinet for housing the music center components, including a top wall, a bottom wall spaced below said top wall, a pair of spaced apart opposite side walls secured to said top and bottom walls, a divider rear wall secured to and extending between said side walls and upward from said bottom wall, said rear wall being spaced forward from the rear edge of each of said other walls to thereby form a front compartment and a rear compartment therebehind which latter is adapted to house a rear-facing loudspeaker system module and each of which compartments extends substantially the full width of said cabinet, said rear compartment being of smaller volume than said front compartment and being invisible except when the cabinet is viewed from the rear, a plurality of doors and drawer fronts closing the front of the cabinet with said doors being openable to provide access to the entire widthwise interior of said front compartment and with at least one of said drawer fronts including means for connecting the same to an electronic control module carrier, means carried by the cabinet for detachably securing thereto such a control module carrier for drawer-like motion into and out of the

cabinet, and means within a portion of said front compartment for supporting a record player module carrier,

(b) an electronic control module comprising, an electronic control assembly for selecting and modifying program source material, and a carrier for said control assembly, said control assembly having a plurality of coded connectors associated with the circuits thereof, said control assembly carrier being detachably secured for drawer-like motion into and out of the said cabinet by the aforesaid cabinet-carried means and being connected to said at least one drawer front by the aforesaid connecting means associated with the latter so that the drawer front functions as a face for the carrier,

(c) a record player module comprising, a record player mechanism including a turntable and pick-up device, and a carrier for said record player mechanism, said record player carrier including means physically mounting said record player mechanism thereto together with coded terminating connectors to which the record player mechanism energizing circuits and pick-up signal leads are connected, said record player module being removably supported as a unit within the aforesaid cabinet front compartment portion,

(d) a self contained loudspeaker system module comprising, a loudspeager enclosure having front and rear faces, top, bottom and side walls joined together,

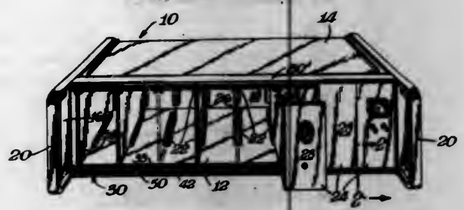


the front-to-rear dimension of the enclosure being substantially equal to the front-to-rear depth of the cabinet rear compartment, the enclosure being positioned within the compartment with its front face proximate the said cabinet rear wall and with its rear face presenting to the open rear of the cabinet, a plurality of loudspeakers carried by the said enclosure rear face so as to direct their sound wave output rearward away from the front of the enclosure and cabinet, a coded connector having conductor leads extending therefrom through said enclosure and by means of which said plurality of loudspeakers are energizable,

(e) an audio power amplifier for raising the power level of signals delivered thereto from the said electronic control assembly for driving the loudspeakers of said loudspeaker system module, said power amplifier having a plurality of coded connectors associated therewith,

(f) a plurality of pre-formed coded cables for interconnecting into an operative unit the aforesaid control module, record player module, loudspeaker system module and audio power amplifier, the coding of each of said cables finding a unique counterpart in the coding of specific ones of the connectors of the several modules so that by code matching the various modules must necessarily be properly interconnected.

3,347,608
INSTRUMENT HOUSING RETAINING MEMBER
Douglas Eugene Ritchie, Chelmsford, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 28, 1966, Ser. No. 590,348
10 Claims. (Cl. 312—216)



1. An instrument housing panel retaining assembly, said housing having a bottom panel with a front edge and a removable sub-assembly adapted to be slidably positioned on said bottom panel within said housing, said sub-assembly having a vertically disposed front panel extending downwardly below said bottom panel, said retaining assembly comprising:

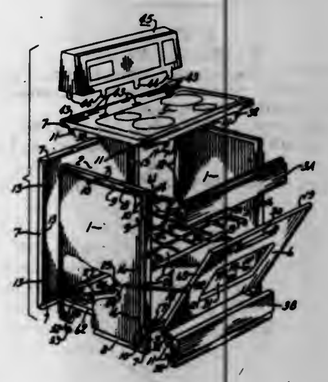
a longitudinally extending strip portion secured to the front edge portion of said bottom panel,

said strip portion having a pair, including outer and inner, of longitudinally extending lips defining an upwardly opening groove,

a longitudinally extending body portion of elastomeric material of uniform cross section,

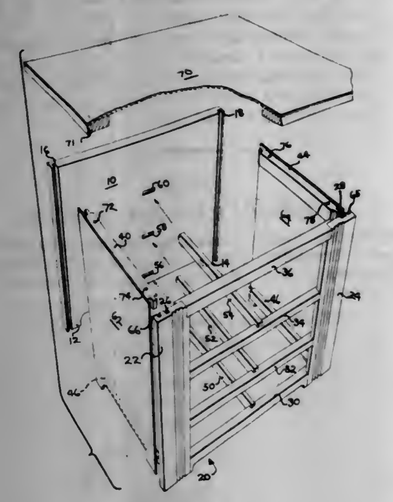
said body portion having a pair, including outer and inner, of longitudinally extending lips along one edge of said body portion defining a second groove, extending substantially throughout the length of said body portion, adapted to engage said outer lip of said strip portion, thereby to retain said sub-assembly within said housing.

3,347,609
CABINET STRUCTURE
Edward J. Mann, Scott Township, Allegheny County, Pa., assignor to Wolverine Toy Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1965, Ser. No. 515,972
15 Claims. (Cl. 312—263)



14. A seam for connection of adjacent panels in a cabinet structure comprising a marginal offset extending along a panel edge, said offset defining a shoulder therealong, a cooperative marginal flange on the mating marginal edge of an adjacent panel, said flange fitting in said offset to provide a smooth cabinet surface at the base of said flange, at least one slot in said shoulder cooperatively receiving a projection pending from said cooperative marginal flange to position and connect said panels together to form a cabinet seam.

3,347,610
CABINET CONSTRUCTION
George L. Pilliod, Swanton, Ohio, assignor to The Pilliod Cabinet Company, Swanton, Ohio, a corporation of Ohio
Filed July 28, 1966, Ser. No. 568,521
4 Claims. (Cl. 312—263)



1. An article of furniture comprising:

a rigid vertical one piece back panel of dimensional stability having a pair of longitudinal frame bar member receiving means on the inner surface thereof, each of said receiving means extending vertically in said back panel adjacent a marginal edge;

a front frame substantially coextensive with said back panel and including a pair of vertically disposed laterally spaced side members interconnected by a plurality of horizontally disposed vertically spaced rails, each side member having at least one longitudinal groove formed on the inner surface thereof and extending vertically and in alignment with respective longitudinal frame bar member receiving means in said back panel;

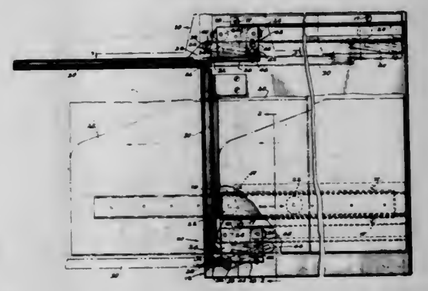
horizontally disposed frame bar members extending between said back panel and said front frame, said frame bar members having portions at each end thereof being received in respective receiving means in said back panel and said front frame whereby said front frame is secured to said back panel;

at least one drawer guide extending horizontally between said back panel and all but the top one of each of the rails of said front frame;

relatively thin and flexible pre-finished side panels extending between vertical edges of said back panel and respective ones of the side members of said front frame and secured to respectively adjacent ones of said bar members;

and a pre-finished top panel overlying the upper horizontal edges of said back panel and said front frame and secured in such a position to adjacent ones of said bar members.

3,347,611
MULTIPLE SUSPENSION DEVICE
John H. Johnson, Jamestown, N.Y., assignor to Art Metal, Inc., Jamestown, N.Y.
Filed Oct. 20, 1965, Ser. No. 498,878
1 Claim. (Cl. 312—311)

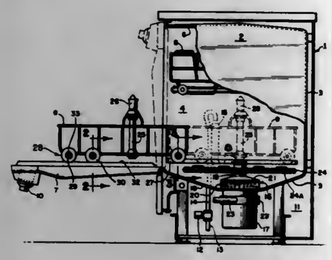


In combination, an enclosure including opposite side walls defining a vertically disposed opening at the front of the enclosure, a platform disposed within said enclosure to be retractable-extendable relative to said enclosure, a closure for said opening, and a suspension system; said suspension system comprising a pair of suspension devices mounted respectively on opposite of said side walls and a cradle device, each of said suspension devices including a pair of vertically separate rail portions, said cradle device traversing the interior of said enclosure and movably engaging at its opposite ends upon corresponding rail portions of said suspension devices, said platform engaging at its opposite sides upon corresponding other rail portions of said devices, said closure being hingedly connected to said cradle to swing thereon between vertically disposed and horizontally extending positions, and a closure motion stop device interconnecting said closure and said cradle at positions offset from the axis of hinging of said closure for holding said closure in horizontal position, said motion stop device including a link pivotally connected to said closure and having a slot, a bracket mounted on said carriage for vertical adjustment thereon, a pin carried by said bracket and engaged in said slot of the link and a fine adjustment screw for vertically positioning said bracket to stop said closure in horizontal attitude.

3,347,612
RACK SUPPORT SYSTEM
Jack E. Bebinger, Brookfield, Wis., assignor to General Electric Company, a corporation of New York
Filed Feb. 14, 1966, Ser. No. 527,232
6 Claims. (Cl. 312—311)

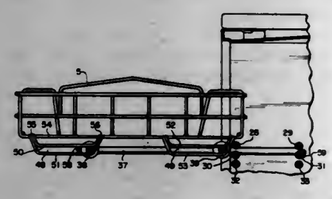
1. In a structure providing a chamber having side walls and a front door pivotable about its bottom edge between a substantially vertical closed position and a substantially horizontal open position, and having an article support rack disposed for movement in a continous horizontal path between the interior of said chamber and a position partly outside said chamber wherein the front end of said rack is supported on said door when said door is in the horizontal open position, support structure for said rack comprising:

(a) a pair of parallel support means within said chamber disposed on said side walls in a position above and substantially parallel to said door when said door is in said open position, said support means and said door providing two support surfaces of different elevations for said rack;
(b) front and rear wheel means secured to each opposite side of said rack parallel to said side walls;
(c) each of said wheel means having a first rolling surface thereon for supporting said rack on said support means when said rack is within said chamber;
(d) said front wheel means having a second rolling surface thereon co-axial with said first rolling surface



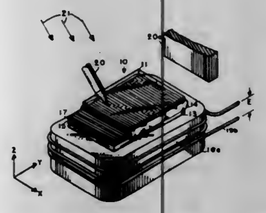
for supporting said rack on said door, the radius of said second rolling surface exceeding the radius of said first rolling surface by a length substantially equal to the difference in elevation between said support means and said door, whereby when said rack is in the partially extended position said second rolling surface of said front wheel means supports the front of said rack on said door while said first rolling surface of said rear wheel means supports the rear of said rack on said support means in said chamber, with said rack being supported in a substantially horizontal plane.

3,347,613
RACK SLIDE STOP
Thomas Krzewina, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1965, Ser. No. 496,000
4 Claims. (Cl. 312—333)



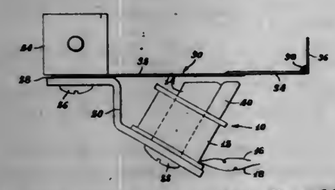
1. In a structure providing a chamber having side walls and a front opening, wherein there is an article-supporting rack, a rack support system comprising;
(a) a pair of elongated track members of uniform cross-section;
(b) support means secured to said walls and respectively supporting said track members for horizontal movement along their axes between positions entirely within said chamber to positions partly outside said chamber;
(c) means securing said rack to said track members for horizontal movement therewith;
(d) at least one of said track members including stop means operatively associated with the inner end thereof;
(e) said stop means being movable to a first operative position wherein said stop means engage said support means upon said track members being moved a predetermined distance out of said chamber, thereby stopping further outward motion of said track members;
(f) said stop means being movable to a second inoperative position which permits said track members and said rack to be moved horizontally until they are removed entirely from within said chamber;
(g) connecting means within said one of said track members extending forwardly from said stop means to the outer end of said track member to a point near the front opening of said chamber; and
(h) said connecting means including a manually operable control member at the front end thereof, whereby adjustment of said stop means between its operative and inoperative positions can be effected from the front of said rack.

3,347,614
MAGNETIC FILM DISPLAY DEVICE
Harrison W. Fuller, Needham Heights, and Robert J. Spain, Brookline, Mass., assignors to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Mar. 13, 1964, Ser. No. 351,693
7 Claims. (Cl. 350—162)



1. Apparatus for forming a desired image by diffraction of electromagnetic energy, comprising:
(a) a ferromagnetic element having a surface exhibiting a domain structure characterized by a plurality of substantially straight and adjacent domains, the width of each one of such domains being in the order of a wavelength of the electromagnetic energy;
(b) particles of a ferromagnetic material, overlying such surface and clustering in the magnetic field linking successive pairs of domains in the plurality of domains, to form lines of particles contiguous to the surface of the ferromagnetic material, such lines constituting a diffraction grating for the electromagnetic energy;
(c) means for modifying, in accordance with the desired image, portions of the micro-domain structure in the ferromagnetic element to change, correspondingly, the position of the lines of particles overlying such changed portions; and,
(d) means for illuminating all the lines of particles with electromagnetic energy to create the desired image in accordance with the diffracted portion of such energy.

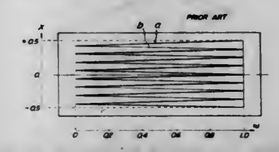
3,347,615
MECHANICALLY STABILIZED LIGHT CHOPPER
John J. J. Staunton, Oak Park, Ill., assignor to Coleman Instruments Corporation, a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,900
12 Claims. (Cl. 350—269)



1. The improvement of a mechanically stabilized light chopper comprising the combination of an electrically energizable solenoid, a source of cyclically pulsating current for energizing said solenoid at a substantially constant frequency rate, an elongated, at least partially magnetic reed positioned within the electromagnetic field of said solenoid, one end of said reed being fixed relative to said solenoid and the other end being free for movement relative to said solenoid at its energizing frequency rate, light chopping blade means at the free end of said reed for periodically interrupting a light beam transmitted through the path of movement of said blade means, and resilient bumper means positioned adjacent the solenoid for stabilizing the starting position and phase of the resilient reed while dissipating the excess excitation energy during each cyclic movement of the reed, the periodic energization of the solenoid by the current pulses causing the reed to bank against said resilient bumper means until the end of the current pulse whereby said reed operates as a captive member which is released periodically to make a single cyclic excursion from said solenoid and then is recaptured when the next current pulse energizes the solenoid.

3,347,616
PHOTOMETRIC COMB MINIMIZING PHOTOMETRIC ERRORS ARISING FROM NON-UNIFORMITY OF ILLUMINATION
Leo Mori, Tokyo, Hideo Ozawa, Yokohama, and Ichiro Fujita, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed May 23, 1963, Ser. No. 282,789
Claims priority, application Japan, May 28, 1962, 37/21,075
1 Claim. (Cl. 350—271)

A photometric comb having at least two light passing windows adapted to be inserted normal to a light beam having rectilinear cross section of illumination, characterized in (I) that the total sum of widths of the windows

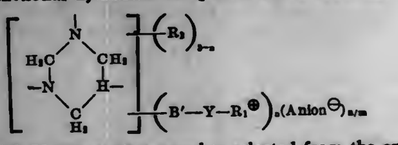


at any position is proportional to the distance from said position to a position where the windows vanish, (II) that the shape of the photometric comb is symmetric with respect to the longitudinal axis of the photometric comb, and (III) that said windows are curvilinear triangles of different shape and have progressively larger areas toward said axis, said triangles having bases extending in directions generally laterally of the axis and sides extending in directions having major components axially of the comb, the sides of said windows other than the bases being convex toward the outside of said photometric comb and the curvatures thereof being such that when the distribution function of the radiant flux is expanded into a power series, the photometric error arising from the lower power terms of said power series amounts to zero.

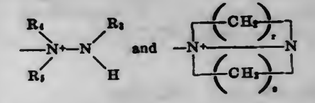
CHEMICAL

3,347,617
PROCESS FOR OPTICALLY BRIGHTENING, DYEING OR PRINTING FIBROUS MATERIALS
Paul Ulrich, Basel, Gerd Hoelzle, Liestal, Peter Stahel, Riehen, and Heinz Peter Schaub, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Nov. 9, 1965, Ser. No. 507,041
Claims priority, application Switzerland, Nov. 13, 1964, 14,697/64
20 Claims. (Cl. 8—42)

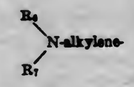
1. A process, wherein fibrous material is treated in the presence of an alkaline reacting substance with a compound A selected from the group consisting of a fluorescent brightener and a dyestuff that is free from fiber-reactive substitutents and that contains a member selected from the group consisting of a reactive hydrogen atom and a group capable of forming a reactive hydrogen atom during the process and a compound B which is a colorless polyfunctional hydrazine compound of the formula



in which Y represents a member selected from the group consisting of a methylene, ethylene and propylene bridging group, B' represents a member selected from the group consisting of an $—SO_2—$ and a —CO— bridge, R_2 represents a member selected from the group consisting of chloracetyl, acryl, chloracryl, bromacryl, crotonyl, chlorocrotonyl, β-chloropropionyl, β-bromopropionyl, β-(epoxy-2,3-propoxy)propionyl, vinylsulfone, 3-chlorethylsulfone and 3-sulfatoethylsulfone, n is a positive whole number up to 3, m is the valency of the anion and the anion$^{\ominus}$ is the negative radical of a monobasic or polybasic acid, and $R_1^{\oplus}$ represents a non-aromatic hydrazine radical of the group consisting of

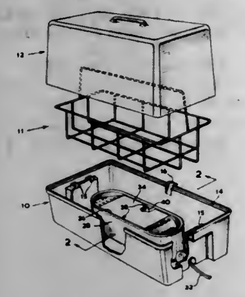


in which R_4 and R_6 represent aliphatic hydrocarbon radicals containing not more than 4 carbon atoms and R_5 represents a member selected from the group consisting of an aliphatic hydrocarbon radical containing not more than 4 carbon atoms, an HS—CS-group, an HO_3S-group, a group of the formula



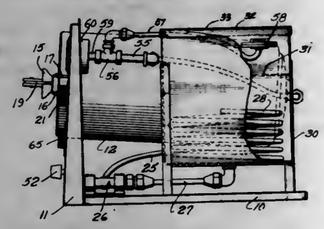
and a hydrogen atom and in which R_4 and R_5 and R_6 and R_7 respectively together with the nitrogen atom can form a 5- or 6-membered ring and r and s are numbers not smaller than 3 and not greater than 4.

3,347,618
STERILIZER
Robert G. V. McKeown, Toronto, Ontario, Canada, assignor to Hankscraft (Canada) Ltd., Toronto, Ontario, Canada
Filed Apr. 6, 1964, Ser. No. 357,395
3 Claims. (Cl. 21—94)



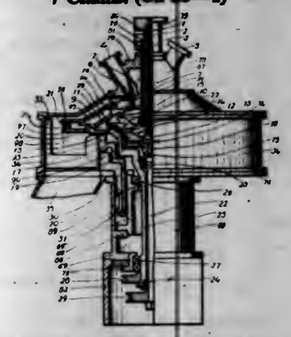
1. A sterilizer for heating articles by steam, said sterilizer comprising a receptacle-like base member, rack means for holding articles to be heated, means for holding said rack means on said base member, a cover member removably carried on said base member and defining a closed space therewith, said rack means being enclosed within said space, a liquid conductor heating device positioned within said base member at the bottom thereof and an upstanding wall surrounding said heating device as to prevent condensate draining downwardly from the walls of said base member and cover from contacting said heating device.

3,347,619
AUTOCLAVE
William Vischer, Palatine, Ill., assignor of 12/30 to Alfred Vischer, Jr., 2/30 to Alfred Vischer III, 2/30 to Peter Vischer, 1/30 to Walter W. Zitzewitz, 4/30 to Elmer K. Zitzewitz, 1/30 to Gertrude J. Zitzewitz, 1/30 to Barbara O. Zitzewitz, and 2/30 to Gertrude V. Bouton
Filed Feb. 25, 1966, Ser. No. 536,523
2 Claims. (Cl. 21—98)



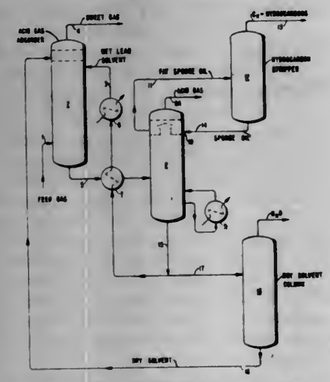
1. Steam autoclave comprising:
a pressure chamber adapted to hold steam under pressure;
a condenser adapted to hold a supply of liquid comprising substantially water for condensing steam supplied thereto;
a first conduit communicating with the interior of said chamber through an opening in the first end of said first conduit;
a second conduit communicating with the interior of said condenser through an opening in the first end of said second conduit;
valve means, communicating with the interiors of said first and said second conduits through the second end of said first conduit and the second end of said second conduit, for connecting said second ends of said first and second conduits when said valve means is in an open position whereby steam and said liquid may pass between said chamber and said condenser and for disconnecting said second ends of said first and second conduits when in a closed position; said valve means comprising:
a housing having an axial aperture extending therethrough, one end of said aperture constituting an outlet and being connected to the second end of one of said first and second conduits;
said outlet having a larger radial size than the remainder of said axial aperture;
said housing having a radial aperture that connects said axial aperture to the second end of the other of said first and second conduits;
first and second seals each engaging the surface of said housing and being of sufficient size to seal said axial aperture;
valve-element means, having a first location and a second location within said housing, for positioning, when in said first location, said first seal on the opposite side of said radial aperture from said outlet and said second seal within said outlet, whereby said outlet and said radial aperture communicate with each other to open said valve means, and for positioning, when said valve-element is in said second location, said first seal within said axial aperture on the opposite side of said radial aperture from said outlet and said second seal within said axial aperture housing between said radial aperture and said outlet, whereby said radial aperture and said outlet are sealed from each other;
said first and second seals being connected to said valve-element to move therewith;
biasing means for exerting force against said valve-element means in the direction of said second location; and
manually operable means, engaged with said valve-element means, for manually moving the same against the action of said biasing means toward said first location, whereby the interiors of said chamber and said condenser may be interconnected.

3,347,620
PROCESS FOR CARRYING OUT A REACTION BETWEEN A PLURALITY OF REACTANTS ON ROTATING SURFACES
Hachiro Yamashita, Omiha, Japan, assignor of one-third to Takara Koki Kabushiki Kaisha, Itabashi-ku, Tokyo, and one-third to Kiyoka Mukai, Mitaka, Tokyo, Japan
Original application Nov. 21, 1963, Ser. No. 325,510. Divided and this application Oct. 22, 1965, Ser. No. 526,637
Claims priority, application Japan, Nov. 22, 1963, 37/51,064
7 Claims. (Cl. 23—1)



1. A reaction method comprising the steps of supplying a plurality of reactants to a plurality of surfaces rotating about an axis so that the reactants are respectively spread in thin layers over said surfaces by the centrifugal force and pass beyond the peripheral edges of said surfaces in thin tangentially moving films; receiving the films formed by the reactants on another surface located opposite and outwardly of said peripheral edges whereby said reactants rapidly react on said other surface; and recovering the reaction mass.

3,347,621
METHOD OF SEPARATING ACIDIC GASES FROM GASEOUS MIXTURES
Michael N. Papadopoulos, Metairie, La., and Carl H. Deal, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 410,819
14 Claims. (Cl. 23—2)



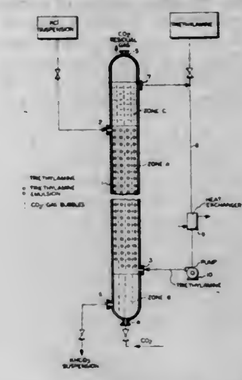
1. The process of separating acidic gases from a gaseous mixture which comprises contacting the mixture with a liquid absorbent comprising a mixture of 15–45% by weight of diisopropanolamine and 55–85% of a cyclotetramethylene sulfone.

3,347,622
METHOD FOR PREPARING $(NH_4)_2Pt(SCN)_6$
Eugene A. Hausman, Cranford, and George R. Pond, Newark, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Apr. 17, 1963, Ser. No. 273,582
3 Claims. (Cl. 23—50)

1. A method for the preparation of $(NH_4)_2Pt(SCN)_6$ which comprises mixing an aqueous solution of chloroplatinic acid and an aqueous solution of ammonium thiocyanate heating the solution and maintaining it at a temperature not exceeding about 75° C., the concentration of the reactants and the rate of mixing being such that undue precipitation of the ammonium salt of chloroplatinic acid does not take place filtering the solution and cooling whereby crystals of $(NH_4)_2Pt(SCN)_6$ are formed and thereafter separating said crystals.

3,347,623
PREPARATION OF POTASSIUM BICARBONATE
Paul Schmid, Heilbronn, Germany, assignor to Kali-Chemie Aktiengesellschaft, Hannover, Germany
Filed Nov. 3, 1966, Ser. No. 591,840
5 Claims. (Cl. 23—64)

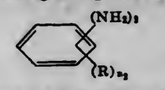
1. A method for the continuous preparation of potassium bicarbonate comprising providing a column consisting essentially of an upper zone, a middle precipitation zone proper, and a lower collecting zone, introducing continuously at the top of said precipitation zone an aqueous saturated potassium chloride solution having a temperature of about 5 to 30° C. and containing at least 20 percent of potassium chloride, calculated on the total potassium chloride present, in solid form in suspension, introducing triethylamine at the bottom of said precipitation zone, adjusting the mole ratio of potassium chloride:triethylamine:water in said precipitation zone within the range between 1:1.2:7.8 and 1:1.5:10.5, maintaining said precipitation zone at a temperature of 20 to 50° C., introducing carbon dioxide in stoichiometric excess over the potassium chloride below the inlet of the



triethylamine, thereby maintaining the downward flowing precipitated crystalline potassium bicarbonate in suspension and purifying it from adhered insoluble triethylamine by converting the same to water soluble triethylamine bicarbonate, withdrawing continuously crystalline potassium bicarbonate and exhausted mother liquor from the bottom of the collecting zone, and separating the potassium bicarbonate from the mother liquor.

3,347,624
METHOD OF PREPARING CALCIUM CARBONATE
Kirman Taylor, Painesville, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed May 26, 1965, Ser. No. 459,104
7 Claims. (Cl. 23—66)

1. In a process for the manufacture of calcium carbonate by reacting an aqueous suspension of calcium oxide with a gas containing carbon dioxide under conditions to effect carbonation, the improvement which comprises effecting the reaction in the presence of about 0.001 to 0.1 gram per gram of calcium oxide of a water soluble diamine compound having the amino groups as terminal groups on opposite ends of the molecule selected from the group consisting of $H_2N(CH_2)_{n_1}NH_2$ and

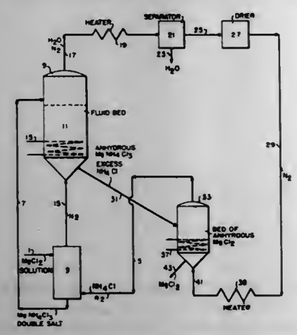


wherein n_1 is an integer selected from 0 and 2 to 6, n_2 is an integer from 0 to 4 inclusive, and R is a lower alkyl radical from 1 to 4 carbon atoms.

3,347,625
DEHYDRATION OF MAGNESIUM CHLORIDE
Charles Newton Kimberlin, Jr., William Floyd Arey, Jr., and Fred J. Buchmann, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 18, 1965, Ser. No. 440,689
8 Claims. (Cl. 23—91)

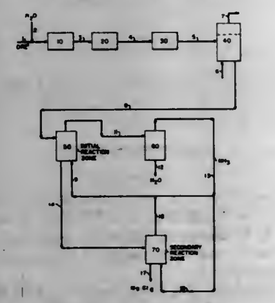
1. Process for the removal of water of hydration from magnesium chloride which comprises preparing an aqueous solution of said magnesium chloride; introducing said

aqueous solution of magnesium chloride into an initial reaction zone and countercurrently contacting the same in said initial reaction zone with a gaseous mixture comprising ammonium chloride and an inert gas under conditions to form a magnesium/ammonium chloride double salt; removing the inert gas overhead from said initial reaction zone and an aqueous solution of the double salt from the lower section of said initial reaction zone; introducing the inert gas into the lower section of a secondary reaction zone under conditions to fluidize anhydrous magnesium/ammonium chloride in said secondary reaction zone and to maintain a fluid bed therein; introducing the aqueous solution of said double salt from said initial reaction zone into said secondary reaction zone which is maintained



under conditions to vaporize the water and which contains an excess of ammonium chloride; removing water vapor and the inert gas overhead from said secondary reaction zone and handling the same in the manner to condense and remove the water therefrom; removing anhydrous magnesium/ammonium chloride from the lower section of said secondary reaction zone and introducing the same into a tertiary reaction zone wherein a fluid bed of anhydrous magnesium chloride is maintained; maintaining said tertiary reaction zone under conditions to decompose the double salt to produce ammonium chloride which is removed overhead from said tertiary reaction zone and anhydrous magnesium chloride which is removed from the lower section of said tertiary reaction zone.

3,347,626
DEHYDRATION OF MAGNESIUM CHLORIDE USING GASEOUS AMMONIA
Eugene Richard Nightingale, Jr., Murray Hill, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,444
3 Claims. (Cl. 23—91)

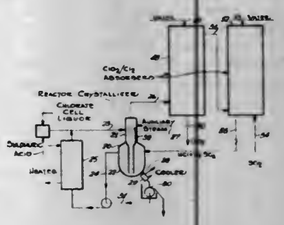


3. Process for the dehydration of magnesium chloride containing about 6 molecules of water of hydration which comprises partially dehydrating the magnesium chloride, thereafter fluidizing the partially dehydrated magnesium chloride with gaseous ammonia in an initial reaction zone maintained at a temperature in the range from about 115° C. to 300° C. whereby the water of hydration is replaced with ammonia, removing the water and excess ammonia from the top of said initial reaction zone, removing the magnesium chloride ammoniate product from said initial reaction zone and passing the same to a secondary reaction zone maintained at a temperature in the range from about 250° to 550° C. whereby the ammonia separates and anhydrous magnesium chloride is produced, removing the anhydrous magnesium chloride from said secondary reaction zone and further processing the same.

3,347,627
PROCESS FOR MANUFACTURING SODIUM TRIMETAPHOSPHATE
Chung Yu Shen, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 20, 1963, Ser. No. 332,239
7 Claims. (Cl. 23—107)

1. A process for manufacturing a substantially water-soluble crystalline sodium trimetaphosphate product, which comprises maintaining the temperature of a mixture of phosphoric acid with at least one sodium halide salt at a temperature below the melting point of said trimetaphosphate product between about 275° C. and about 625° C. for a period of time sufficient to permit at least about half of said phosphoric acid to react with said sodium halide; whereby said sodium trimetaphosphate product crystallizes from the resulting reaction medium; the Na/P ratio in said mixture being between about 0.95 and about 1.4.

3,347,628
PRODUCTION OF CHLORINE DIOXIDE
Ola Sepall and Raoul C. Buser, Quebec City, Quebec, Canada, assignors to Anglo Paper Products, Limited, Quebec City, Quebec, Canada
Filed Dec. 28, 1964, Ser. No. 421,559
12 Claims. (Cl. 23—121)



1. In a process of producing chlorine dioxide by effecting the reaction of sodium chlorate with a chloride selected from the group consisting of sodium chloride and hydrochloric acid and at least one of a group consisting of sulfuric acid and sulfuric dioxide in a solution, the steps which comprise maintaining in said solution a concentration of said chloride exceeding 0.5 and up to about 4.5 molar of said chloride and of said chlorate exceeding 0.5 molar, maintaining the acidity of said solution from about 1.8 to a value less than 6 normal, said reaction resulting in the formation of chlorine, chlorine dioxide and simultaneously therewith neutral sodium sulfate, removing said chlorine and chlorine dioxide as formed in said reaction, and recovering said neutral sodium sulfate directly from the spent liquor of said reaction.

3,347,629
PROCESS AND COMPOSITION FOR CO_2 GENERATION FROM Ag_2CO_3 AND C
Wayne A. Proell, Seymour, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Jan. 29, 1965, Ser. No. 429,108
6 Claims. (Cl. 23—150)

1. A solid composition which when ignited, generates carbon dioxide gas without the formation of water, said generation being self-sustaining, said composition comprising an intimate physical mixture of silver carbonate and carbon, said carbon having an average particle size below about #325 U.S. Standard sieve particle size, said generation obtained from the reaction of Ag_2CO_3 and C in a mole ratio of 2 moles Ag_2CO_3 to at least 7/8 mole C.

3,347,630
HYDROGEN PEROXIDE DECOMPOSITION
Herman J. Baumgartner, Danville, and George C. Hood, Orinda, Calif., and Donald D. Weaver, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,355
9 Claims. (Cl. 23—204)

1. Hydrogen peroxide of at least 80% concentration containing a dissolved salt of a rare earth element in an amount equivalent to at least 0.1 milligram of said element per liter which is effective in reducing the loss of silver during silver-catalyzed decomposition of said hydrogen peroxide.

9. In a method of decomposing hydrogen peroxide of about 80% to 100% wt. concentration by passage through a bed of silver-containing catalyst, the improvement which comprises feeding to said bed hydrogen peroxide having dissolved therein a salt of a rare earth metal whose anion does not form a silver salt having a solubility in water at 20° C. which is less than 3 milligrams per 100 grams of water, said salt being present in an amount equivalent to about 0.1 to about 10 milligrams of rare earth metal per liter of the solution.

3,347,631
BISMUTH DISULFIDE AND A METHOD FOR ITS PREPARATION
Meyer S. Silverman, Norristown, Pa., assignor to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 20, 1963, Ser. No. 332,266
6 Claims. (Cl. 23—206)

1. Bismuth sulfide, having bismuth to sulfur atomic ratio of about 1 to 2.

6. An electrical switch actuated to conduct current by temperatures above about 280° C. which comprises a piece of bismuth sulfide having a bismuth to sulfur atomic ratio of about 1 to 2 connected into an electrical circuit in series with a source of electromotive power and an electrical load.

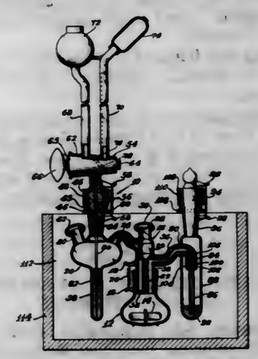
3,347,632
PROCESS OF PRODUCING HYDROPHILIC CARBON BLACK
Lyna Parker, West Monroe, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 23, 1963, Ser. No. 304,226
7 Claims. (Cl. 23—209.1)

1. Method for producing a carbon black having outstanding hydrophilic characteristics which comprises forming a reaction mixture of a carbon black having an average particle size of below about 100 mμ and an aqueous solution of sodium hypochlorite wherein the weight proportion of sodium hypochlorite to carbon black is at least 0.4 and the weight of sodium hypochlorite per square meter of carbon black surface measured by the B.E.T. method is at least 2×10^{-3} g./m.², subjecting the reaction mixture to agitation for a period of time of from about 5 minutes to 2½ hours to effect reaction between the carbon black and the sodium hypochlorite, the reaction mixture upon completion of the reaction having a pH of below about 7, and drying said carbon black to a moisture content below about 2%.

3,347,633
CARBON BLACK MANUFACTURE
Paul H. Johnson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,197
5 Claims. (Cl. 23—209.4)

1. A process for producing carbon black which comprises charging to a carbon black furnace at carbon black forming conditions a fluid hydrocarbon containing the alkali metal sulfonate of a propane-fractionated, solvent-extracted and dewaxed Mid-Continent bright stock of about 200 to 230 SUS at 210° F., having a viscosity index of at least about 90 in an amount sufficient to impart from about 1.5 to 1000 p.p.m. by weight of alkali metal in said fluid hydrocarbon.

3,347,634
METHOD AND APPARATUS FOR DETERMINATION OF ABSORPTION OF A GAS BY A LIQUID
Charles A. Brown, 2537 Benvenue Ave., Apt. 306, Berkeley, Calif. 94704
Filed July 20, 1964, Ser. No. 383,705
10 Claims. (Cl. 23—230)



7. A method for determining the amount of absorption of a gas by a liquid substance in a closed system, said method comprising the steps of providing a closed system having a generating zone, a reacting zone, and a pressure determination zone, introducing a first fluid to said generating zone, filling said system with said gas, introducing said liquid substance to said reacting zone, permitting said gas to be absorbed by said liquid substance thereby reducing the gas pressure in said generating and reacting zones, separating said generating and reacting zones from said pressure determination zone by a fluid seal having an original level which moves to a lower level in said pressure determination zone as said gas is absorbed by said liquid substance, and introducing a displacing liquid, immiscible with and lighter than said first fluid, into said generating zone from a point below the surface of said

first fluid so as to restore the original gas pressure in said generating and reacting zones when said fluid seal is returned to its original level.

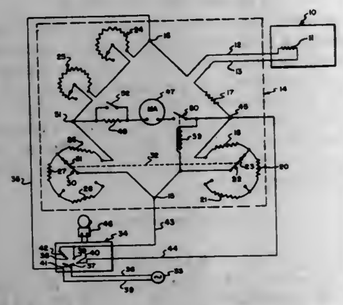
3,347,635

GAS ANALYSIS METHOD

John M. McKee, Armonk, N.Y., assignor to United Nuclear Corporation, White Plains, N.Y., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,716

3 Claims. (Cl. 23—232)



1. The method of detecting the presence of and determining the concentration of a gaseous impurity in a nominally inert gaseous atmosphere, comprising the steps of:
(a) introducing an electrically resistive metallic filament into the nominally inert gaseous atmosphere, said filament being chemically reactive with such gaseous impurity;
(b) heating said filament to accelerate the susceptibility thereof to chemical reaction with such gaseous impurity; and
(c) detecting the rate of change of resistance with respect to time of said filament during the initial minutes of the period of heating the filament, wherein said rate of change is related to and indicative of the concentration of such gaseous impurity.

3,347,636

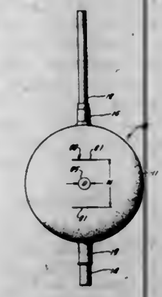
BREATH TESTERS AND METHOD OF USE THEREOF

Manley J. Luckey, San Bernardino, Calif., assignor to Luckey Laboratories, Inc., San Bernardino, Calif., a corporation of California

Filed Nov. 4, 1963, Ser. No. 321,012

6 Claims. (Cl. 23—232)

6. The method of inflating an expansible balloon of a breath alcohol tester to a predetermined size so that the balloon exerts a predetermined pressure upon breath contained therein, said breath in use of the tester being passed from the balloon through a device which passes breath at a predetermined rate at the predetermined pressure, the method comprising the steps of
(a) imprinting upon the balloon indicia which define a selected linear dimension across the balloon surface when the balloon is inflated to said predetermined size,
(b) providing for the tester a container which defines a reference dimension equal to the selected dimension,
(c) inflating the balloon,
(d) comparing the reference dimension to the dimension defined by the indicia by juxtaposing the container with the balloon at the indicia, and



(e) further inflating the balloon and comparing the reference and indicia dimensions until the indicia dimension equals the reference dimension.

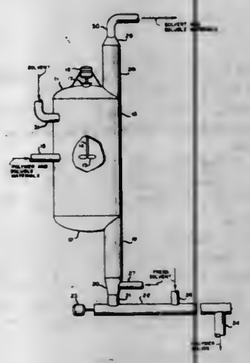
3,347,637

APPARATUS FOR SOLVENT EXTRACTION OF CATALYST FROM POLYMER SOLIDS

Lowell T. Price and Jack S. Scoggin, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Original application June 5, 1961, Ser. No. 114,727, now Patent No. 3,272,787, dated Sept. 13, 1966. Divided and this application Apr. 18, 1966, Ser. No. 543,278

7 Claims. (Cl. 23—270)



1. Contacting apparatus for extraction of soluble matter from particulate solids comprising, in combination:
(a) an upright, elongated vessel having an enlarged center section of substantially uniform cross-section and vertically extended upper and lower sections having uniform cross-sections substantially less than said center section, said upper and lower sections being positioned at the periphery of said center section;
(b) agitation means disposed within said center section;
(c) means for introducing feed material comprising solids and soluble matter to the intermediate portion of said center section;

(d) means for introducing wash liquid to the bottom of said lower section;
(e) means for withdrawing liquid from the top of said upper section;
(f) means for withdrawing solids from the bottom of said lower section said withdrawing means being adapted to maintain a pressure seal within said vessel; and
(g) said upper and lower sections being of sufficient length and diameter to provide volumes so that materials contained therein are substantially uneffected by turbulence created by said agitation means, the minimum diameter of said upper and lower sections being further characterized as being sufficient to permit upward liquid flow at a velocity below the transport velocity of said solids.

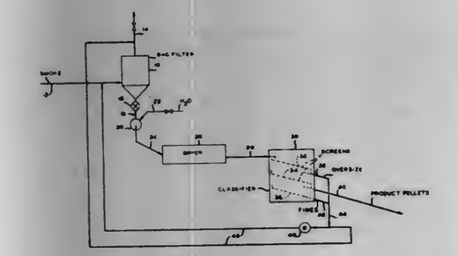
3,347,638

PROCESS FOR PRODUCTION OF CARBON BLACK PELLETS

Charles W. Gerdes, Jr., Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 23, 1963, Ser. No. 332,738

1 Claim. (Cl. 23—314)



In a continuous process comprising recovering in a bag filter flocculent carbon black from a smoke stream from a carbon black reactor, wet pelleting a stream of the recovered black with water, and drying a stream of the wet pellets from the pelleting step, the method of increasing the photelometer of the black in the dried pellets stream comprising the steps of:
(1) screening the dried pellet stream so as to separate a stream of oversize pellets and a stream of undersize pellets and fines, leaving a product stream of intermediate size pellets amounting to from 45 to 75 weight percent of the dried pellet stream;
(2) passing a stream of off-gas from said bag filter thru a blower as a transport gas to the feed inlet of said bag filter;
(3) passing the streams of oversize and undersize pellets of step (1) into the transport gas of step (2) upstream of said blower, thereby disintegrating the pellets of said streams therein and forming a suspension of the resulting fines in said transport gas so as to return same to said bag filter;
(4) recovering said fines along with flocculent black from said smoke stream; and
(5) passing a stream of the recovered fines and black of step (4) to the wet pelleting step, the recovered fines being in the range of 25 to 55 weight percent of the total black feed to said pelleting step, thereby increasing the photelometer of the product black as compared to product black produced by corresponding steps without recycle of comminuted oversize and undersize pellets.

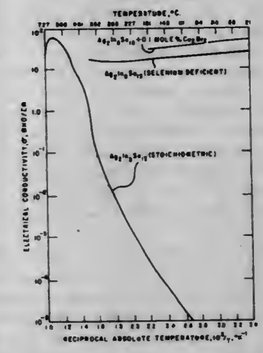
3,347,639

ELECTRICALLY CONDUCTIVE COMPOSITIONS

Daniel F. O'Kane, Dobbs Ferry, N.Y., assignor, by mesne assignments, to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Nov. 20, 1962, Ser. No. 238,913

4 Claims. (Cl. 23—315)



1. The compound $Ag_2In_8Se_{13}$.

3,347,640

MAGNESIA-ALUMINA BUFFER COMPOSITIONS

Takeru Higuchi, Madison, Wis., and Foo Song Hom, Detroit, Mich., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,330

5 Claims. (Cl. 23—315)

1. Compounds having the formula $3MgO \cdot Al_2O_3 \cdot SO_3$ plus water of hydration.

2. A process for preparing the compound having the formula $3MgO \cdot Al_2O_3 \cdot SO_3$ plus water of hydration, which comprises mixing an alkali metal aluminate, a source of magnesium ions and a source of sulfate ions in an aqueous solution buffered to a pH in the range of about 7.0 to about 8.5 and recovering the resulting precipitate.

3,347,641

BUFFER COMPOSITION HAVING HIGH MAGNESIA TO ALUMINA RATIO

Takeru Higuchi, Madison, Wis., and Foo Song Hom, Detroit, Mich., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 267,331

5 Claims. (Cl. 23—315)

1. Compounds having the formula $8MgO \cdot Al_2O_3 \cdot SO_3$ plus water of hydration.

2. A process for forming a hydrated compound having the formula $8MgO \cdot Al_2O_3 \cdot SO_3$ plus water of hydration, which comprises mixing an alkali metal aluminate, a source of magnesium ions and a source of sulfate ions in an aqueous solution having a pH of 7 to 12.5, the atomic ratio of magnesium to aluminum being at least 4:1 and the atomic ratio of sulfur to aluminum being at least 1:2.

3,347,642

PROCESSES FOR THE RECOVERY OF URANIUM

Thomas Garfield Thomas, Lea, near Preston, and Stanley George Wilson, Frodsham, near Chester, England, assignors to United Kingdom Atomic Energy Authority, London, England

No Drawing. Continuation of application Ser. No. 790,396, Feb. 2, 1959. This application Sept. 3, 1964, Ser. No. 394,315
Claims priority, application Great Britain, Feb. 17, 1958, 5,043/58
4 Claims. (Cl. 23—342)

1. A method of leaching uranium from a fluoride slag arising from the production of uranium from uranium tetrafluoride using nitric acid alone as the leaching agent said method comprising the steps of providing a stainless steel container, mixing nitric acid with slag in the container, the nitric acid being used in predetermined amounts adapted to achieve a final and total acidity of ½ normal to 5 normal in respect of nitric acid only, and heating the slag and acid in contact with the container to a temperature in the range 40° C. to 60° C. thereby bringing uranium into aqueous solution with acceptable corrosion of the stainless steel container.

3. A method of leaching uranium from a fluoride slag arising from the production of uranium from uranium tetrafluoride using nitric acid alone as the leaching agent said method comprising the steps of providing a stainless steel container, mixing nitric acid with slag in the container, the nitric acid being used in predetermined amounts adapted to achieve a final and total acidity of ½ normal to 5 normal in respect of nitric acid only, and heating the slag and acid in contact with the container to a temperature in the range 40° C. to 60° C. thereby bringing uranium into aqueous solution with acceptable corrosion of the stainless steel container at fluoride levels of about 4 grams of fluorine per liter of said aqueous solution.

3,347,643

PHOSPHORUS-NITROGEN COMPOUNDS

Morris L. Nielsen, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

Filed Dec. 2, 1959, Ser. No. 856,710
4 Claims. (Cl. 23—357)

1. Process for the production of the trimer of phosphonitrilic chloride which comprises reacting phosphorus pentachloride with ammonium chloride, the ammonium chloride being dispersed in a liquid chlorinated solvent, non-reactive with the said phosphorus pentachloride and ammonium chloride and boiling in the range of from 130° C. to 150° C., and with the phosphorus pentachloride being gradually added thereto to reduce the formation of higher polymers, the rate of addition of the said phosphorus pentachloride being controlled so that the amount of the phosphorus pentachloride which is dissolved in the reaction mixture is not greater than 5% by weight in excess of the theoretical amount reacting with the ammonium chloride.

3,347,644

ISOCYANATOSULFUR AND ISOTHIOCYANATOSULFUR PENTAFLUORIDES AND THEIR PREPARATION

Charles W. Tullock, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 27, 1962, Ser. No. 205,555
9 Claims. (Cl. 23—357)

1. Compounds having the formula SF_5NCX wherein X is selected from the group consisting of oxygen and sulfur.

4. The process of preparing the compounds of claim 1 which comprises reacting SF_5NHCF_3 and a member of the group consisting of carboxylic acids of the formula RCOOH, R being alkyl or aryl, and carbothiolic acids of the formula RCOSH, R being as above, in the presence of an alkali metal fluoride.

3,347,645

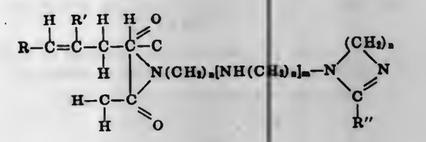
MULTIPURPOSE GASOLINE ADDITIVE

Gerhard J. Pietsch, Elizabeth, and John D. Turner, North Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,233
10 Claims. (Cl. 44—63)

1. A multipurpose gasoline additive blend that does not significantly promote a dispersion of water in gasoline; said blend consisting essentially of:

from 90 to 95 parts by weight of a multipurpose derivative of an alkenylsuccinic anhydride having the following formula:



wherein R and R' are selected from the group consisting of hydrogen and hydrocarbon radicals provided that at least one of said R and R' is a hydrocarbon radical and the total number of carbon atoms in R and R' combined is in the range of about 40 to 250; R'' is an aliphatic hydrocarbon radical having in the range of 1 to 30 carbon atoms; *n* is 2 to 3 and *m* is 0 to 10; and

from 10 to 5 parts by weight of the following combination:

an alkyl benzene sulfonic acid wherein the alkyl group contains in the range of from 1 to 30 carbon atoms; and

the reaction product of a polyalkylene glycol of a molecular weight in the range of about 200 to 800 with an amber-colored viscous residue containing long chain polycarboxylic acids, having an acid number between 140 and 165, an iodine number of between 30 and 60, said residue being the nonvolatile material remaining from vacuum distilling at 270° C. under 4 mm. Hg pressure, the by-product acids obtained in the preparation of sebacic acid from castor oil by treatment with an alkali;

said alkyl benzene sulfonic acid constituting from 30 to 90 weight percent of said combination of alkyl benzene sulfonic acid and reaction product.

3,347,646

PRESERVATION OF KEROSINE DURING DISTRIBUTION AND STORAGE

Richard J. De Gray, South Euclid, Ohio, and Lawrence N. Killian, Pleasantville, N.J., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 16, 1967, Ser. No. 619,111
18 Claims. (Cl. 44—76)

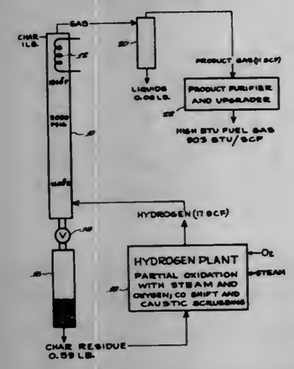
1. A composition for controlling the growth in hydrocarbons boiling in the kerosine range of lyophilic hydrocarbon-ingesting microbes indigenous to water and present in water comprising in combination a mixture of alkylene glycol borates, one of which has a partition coefficient below about 1000, and the other of which has a partition coefficient above about 50, in amounts to give a weighted average partition coefficient within the range from about 180 to about 260.

3,347,647

CONVERSION OF SOLID FOSSIL FUELS TO HIGH-B.T.U. PIPELINE GAS

Harlan L. Feldkirchner, Oak Park, Henry R. Linden, Hinsdale, and Eugene J. Pyrcioch, Chicago, Ill., assignors, by mesne assignments, to American Gas Association, Inc., New York, N.Y., a not-for-profit corporation of New York

Filed Aug. 21, 1963, Ser. No. 303,640
7 Claims. (Cl. 48—197)



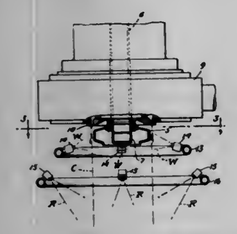
4. A continuous method for producing a methane-rich fuel gas which comprises charging particulate solid fossil fuel selected from the group consisting of bituminous coal char, lignite char, and nonagglomerating coal into a stream of hydrogen-rich gas flowing countercurrent to the fuel to form a moving bed, maintaining said bed at the point where the fuel is introduced at 1200 to 1300° F, to rapidly hydrogasify the raw feed fuel, and maintaining said bed at the point where the hydrogen-rich gas is introduced at more than 1550° F. to hydrogasify the partially-gasified fuel, a pressure of at least 1000 p.s.i.g. being maintained in said bed, thereby producing a fuel gas rich in methane.

3,347,648

SPINNING GLASS FILAMENTS

Sidney Krakauer, Solomon Musikant, and David J. Rosenberg, Mountaintop, Pa., assignors to Certain-Teed Fiber Glass Corporation, Ardmore, Pa., a corporation of Maryland

Filed Aug. 19, 1964, Ser. No. 390,654
4 Claims. (Cl. 65—3)



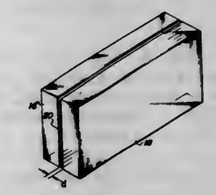
1. A process for preparing glass filaments which comprises projecting small streams of molten glass generally horizontally, directing a gaseous blast against the glass streams in a generally downward direction to downwardly attenuate the glass streams and thereby form filaments, spraying water against the attenuating filaments in a direction transverse the direction of attenuation, and spraying liquid binder resin against the filaments in a zone below the water spray, the water spray serving to cool the gaseous blast and the fibers above the binder spray, to thereby minimize precuring of the binder in the zone in which it is sprayed against the attenuating filaments.

3,347,649

METHOD OF FUSING SINGLE LAYER FIBER OPTIC STRIP

Joseph Singer, Jr., Arlington Heights, Ill., assignor to Chicago Aerial Industries, Inc., Barrington Village, Ill., a corporation of Delaware

Original application Aug. 13, 1962, Ser. No. 216,646, now Patent No. 3,272,063, dated Sept. 13, 1966. Divided and this application Apr. 28, 1966, Ser. No. 560,024
8 Claims. (Cl. 65—4)



1. A process for manufacturing supported fiber optic strips, comprising the steps of

arranging two support members each of which has a surface identical to a surface of the other, with their identical surfaces adjacent one another, locally parallel and defining a space of predetermined width *w* and thickness *t*, where the ratio *w:t* is at least 20:1, therebetween,

positioning a plurality of optical fibers in a single layer in said space in tangentially contiguous relationship with their axes parallel to each other and to the surfaces which define said space, and

fusing said support members to said plurality of optical fibers by heating said members and fibers to a temperature between their annealing and softening temperatures.

3,347,650

LUBRICANT COATING FOR GLASSWARE MOLDS AND EQUIPMENT

Marvin L. Barkhau, Elmore, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed July 30, 1963, Ser. No. 298,566
11 Claims. (Cl. 65—26)

1. A method of lubricating the cast iron surfaces of a glassware mold that comes into intermittent contact with molten glass, comprising applying a lead compound selected from the group consisting of lead monoxide and an organic lead compound capable of pyrolysis to lead oxide to the said cast iron surface and subjecting said surface to elevated temperature for a sufficient length of time to form an adherent coating comprising lead oxide.

11. An article having a cast iron surface which comes into contact with molten glass, said surface having a film comprising lead oxide formed thereon and tenaciously bonded to said surface.

3,347,651

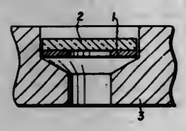
METHOD FOR FORMING A LENS ON A METAL RING

Arthur M. Lueck, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 28, 1963, Ser. No. 268,626
2 Claims. (Cl. 65—39)

1. A method of making a lens device of the type utilized for light-sensitive electronic components comprising the steps of providing a generally flat circular metal mem-

ber having a central circular opening therein, the member being composed of a nickel-iron-cobalt glass-sealing metal alloy which is oxidized, placing a body of borosilicate glass on one side of said member, melting said glass while the assembly of the glass body and the metal member is maintained in a structure which prevents the molten glass



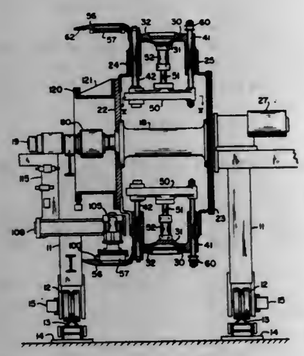
from contacting material other than said member, the glass being maintained in a molten state only long enough to permit a portion of the glass to flow through said opening to form a convex lens on the opposite side of said member but not to flow laterally along said opposite side away from the opening, the remainder of the glass forming a convex lens on said one side of the member.

3,347,652

APPARATUS FOR FORMING ARTICLES FROM OVERLAPPING GLASS SHEETS

James W. Giffen, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed May 11, 1964, Ser. No. 366,474
7 Claims. (Cl. 65—152)



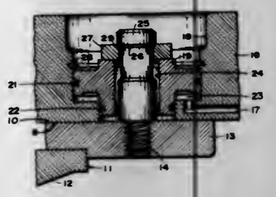
1. Apparatus for forming hollow articles from thermoplastic sheet material which comprises, a turret rotatable about a central axis, a plurality of molds positioned about the periphery of said turret, each said mold having a pair of laterally separable mold sections provided with contoured cavities which complement one another when said mold sections are in axial alignment, means for providing a first sheet of thermoplastic material over a lower mold section while a complementary upper mold section is laterally displaced, means for vacuum forming said first sheet of thermoplastic material to conform to the contoured cavity of said lower mold section, means for providing a second sheet of thermoplastic material over said first sheet of thermoplastic material, means for moving relationship with said lower mold section, means for press-said upper mold section into cooperative axially aligned sealing portions of said first and second sheets of thermoplastic material together, means for vacuum forming said second sheet of thermoplastic material to conform to the contoured cavity of said upper mold section, and means for removing the thus formed hollow article from said mold.

3,347,653

CLAMPING DEVICE

Arieh Carmi and Thomas J. Rayeski, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Sept. 4, 1964, Ser. No. 394,460
3 Claims. (Cl. 65—307)



1. In combination with a cylindered body member 16 and a slidable contact member 13 with such body member,

(A) a hollow type piston 19 or 31 within said body member,

(B) a headed piston rod 25 or 39 secured to said contact member and extending through the hollow 24 or 37 in said piston,

(C) means 27, or 36 and 41 for detachably coupling the head of said piston rod with said piston, and

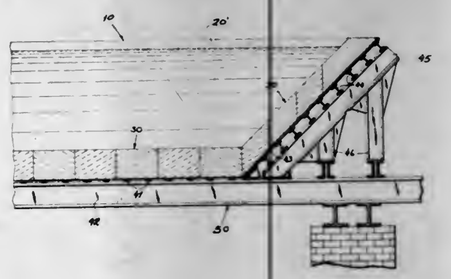
(D) means including at least one conduit 17 for supplying pressurized fluid to said body member to actuate said piston to draw said contact member into contact with said body member.

3,347,654

GLASS TANK FURNACE WALL STRUCTURE

Jean Wins, Marcinelle, Belgium, assignor to G.B.D. Societe Anonyme Holding, Luxembourg, a corporation of Luxembourg

Filed Nov. 10, 1966, Ser. No. 593,373
Claims priority, application France, Nov. 5, 1962, 914,332
7 Claims. (Cl. 65—347)



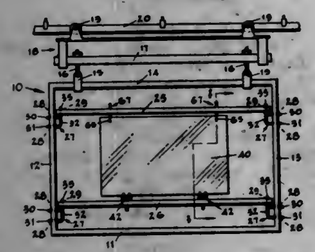
1. In a tank furnace a vessel for molten glass, said vessel comprising a floor of refractory material, means forming flat, continuous supporting surfaces rising inclinedly outwardly from said floor on opposite sides thereof, and walls composed of refractory tiles with beveled lower faces alignedly resting on said supporting surfaces and together defining a flat, continuous outer surface for each of said walls, said tiles adjoining one another along vertical contact surfaces from the level of said floor to the top of each wall.

3,347,655

GLASS SHEET SUPPORT FRAME

Eugene W. Babcock, Perrysburg, and Richard A. Vascik, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed July 10, 1964, Ser. No. 381,787
5 Claims. (Cl. 65—375)



1. In a support frame for supporting a glass sheet in a vertical position during thermal treatment, means for supporting said sheet in said support frame including a block-like foot member positioned to contact an edge of said glass sheet, at least the sheet contacting surface of said foot member being of glass and having heat absorbing and dissipating properties substantially the same as those of the supported glass sheet and providing glass-to-glass contact therebetween, and means engaging an opposite edge of the glass sheet to maintain said sheet in a vertical position on said foot member.

3,347,656

PRODUCTION OF POTASSIUM AMMONIUM POLYPHOSPHATE SOLUTION

John M. Potts, Florence, and Archie V. Slack, Sheffield, Ala., assignors to Tennessee Valley Authority, a corporation of the United States

Filed May 28, 1964, Ser. No. 371,152
6 Claims. (Cl. 71—36)

1. A process for the production of an aqueous high-analysis, potassium ammonium polyphosphate liquid-mixed fertilizer solution containing substantial quantities of the three major plant nutrients (N-P_2O_5-K_2O) which comprises the steps of reacting potassium chloride and phosphoric acid, proportioned to give a P_2O_5:K_2O weight ratio in the ultimate product of about 2:1, and at a temperature in the range of about 500° F. to about 600° F. and for a period of time in the range from about 15 minutes to about 90 minutes, said temperature and time ranges being dependent and inversely proportional to one another; cooling the resulting mixture of potassium polyphosphate and phosphoric acid down to a temperature in the range of about 300° F. to about 400° F., adding water at a temperature in the range from about 150° F. to about 212° F. to said resulting mixture of potassium polyphosphate and phosphoric acid; subsequently further cooling the resulting aqueous solution of potassium polyphosphate and phosphoric acid; ammoniating said resulting cooled aqueous solution of said potassium polyphosphate and phosphoric acid to a pH in the range from about 6.5 to about 7 and at a temperature in the range from about 150° F. to about 200° F.; and withdrawing as product from said ammoniated aqueous solution of potassium polyphosphate and phosphoric acid a high-analysis, liquid-mixed potassium ammonium polyphosphate fertilizer solution.

6. A stable substantially noncorrosive liquid mixed fertilizer of low viscosity having a pH range of about 6.5 to about 7, containing less than about 2 percent chlorine, and containing from about 40 weight percent to about 65 weight percent total plant nutrients ($N+P_2O_5+K_2O$), the number of units of available K_2O being equal to about one-half the number of units of P_2O_5 and the number of units of nitrogen being equal to about one-sixth of the number of units of P_2O_5 and consisting essentially of an aqueous solution of ammonium and potassium salts of superphosphoric acid in which the total P_2O_5 content is distributed in the following proportion: less than about 50 percent as potassium ammonium orthophosphate, and greater than about 50 percent as potassium ammonium polyphosphates.

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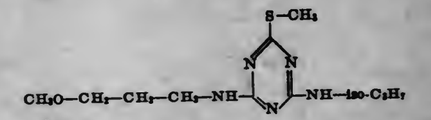
HERBICIDAL COMPOSITIONS CONTAINING 2-METHYLTHIO - 4 - (γ - METHOXYPROPYLAMINO)-6-ISOPROPYLAMINO-s-TRIAZINE

Enrico Knusli, Rieben, and Hans Gysin, Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Continuation of application Ser. No. 377,447, May 28, 1964, which is a division of application Ser. No. 330,582, Dec. 6, 1963. This application July 26, 1966, Ser. No. 568,060
2 Claims. (Cl. 71—93)

1. A herbicidal composition for the control of tenacious weeds in wheat fields, consisting essentially of

(a) 1 part by weight of a compound of the formula



and

(b) about 0.5 to 99 parts by weight of an agriculturally acceptable, non-herbicidal carrier.

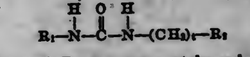
3,347,658

HERBICIDAL COMPOSITION AND METHOD EMPLOYING DICYCLOALKYLUREAS

Raymond W. Luckenbaugh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,691
10 Claims. (Cl. 71—119)

1. A plant growth retardant composition comprising a major amount of an inert diluent and an annual grass growth retardant amount of a compound of the formula:



wherein R_1 and R_2 are separately selected from the group consisting of saturated cycloalkyl of 5 through 8 carbon atoms, saturated bicycloalkyl of 7 through 8 carbon atoms, monomethyl, dimethyl, monohalo, dihalo and monomethyl-monohalo substituted saturated cycloalkyl and bicycloalkyl where the cycloalkyl has 5 through 8 carbon atoms and the bicycloalkyl has 7 through 8 carbon atoms; and

t is selected from the group consisting of 0 and 1; with the limitation that when t is 0, R_1 and R_2 must be different and when t is 0 and additionally R_1 and R_2 are both unsubstituted cycloalkyl the ring size must differ by more than one carbon atom.

3,347,659

PROCESS OF REDUCING IRON OXIDE

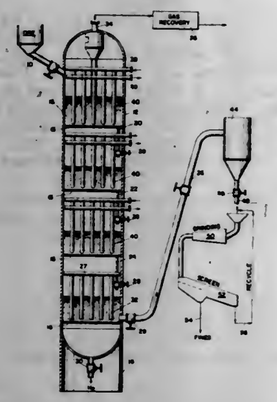
William Volk and Clarence A. Johnson, Princeton, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed May 19, 1965, Ser. No. 457,048
2 Claims. (Cl. 75—.5)

1. The method of making high yields of high quality fines of controlled volume-weight ratio for powder metallurgy from an iron oxide from the group of hematite, magnetite and mill scale which comprises:

(a) grinding the iron oxide to all pass 20 mesh (Tyler) with about 25 percent passing 325 mesh and between about 25 percent and about 40 percent being larger than 100 mesh;

(b) reducing said iron oxide in a fluidized bed at a temperature in the range of 600° F. to 1100° F., and at a pressure in the order of 200 to 650 p.s.i.g., with a hydrogen rich reducing gas by passing the reducing gas upwardly through the iron oxide at a velocity to establish fluidization;



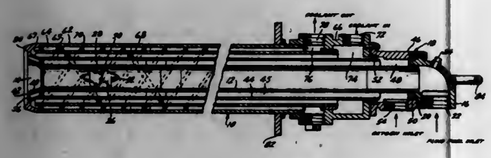
(c) removing a pyrophoric reduced iron powder from said fluidized bed;

(d) grinding said pyrophoric reduced iron powder without prior passivation to all pass 100 mesh and with 60–80% passing 325 mesh;

(e) sintering said ground powder from step (d) at a temperature in the range of 1600 to 2200° F.;

(f) and regrinding said sintered material from step (e) to size.

3,347,660
METHOD FOR REFINING METALS
George H. Smith, Berkeley Heights, and Raymond E. Armstrong, Jr., Clark, N.J., assignors to Union Carbide Corporation, a corporation of New York
Original application Nov. 28, 1960, Ser. No. 72,034, now Patent No. 3,175,817, dated Mar. 30, 1965. Divided and this application July 1, 1964, Ser. No. 379,654
7 Claims. (Cl. 75—43)



1. In a process of refining a metal bath in a metallurgical furnace by injecting streams of a treating gas into said bath from the exposed face of a discharge nozzle positioned at the forward end of an injection lance, the improvement for protecting said nozzle from the thermal and chemical effects of said bath during such injection which comprises introducing a high velocity flow of treating gas into said lance, aspirating into said gas flow, a coolant fluid to form a composite stream therewith, deflecting said stream near the forward end of said lance into a swirling path to cause said coolant fluid to be deposited against the forward wall of said lance and thence be urged along said wall and onto said exposed face of said injection nozzle, while the stream of treating gas is directed toward the metal bath, whereby said coolant will effect a cooling and wetting of the nozzle face exposed to the high temperature metal bath.

3,347,661
CYCLIC LEACHING PROCESS EMPLOYING IRON OXIDIZING BACTERIA
Albert A. Mayling, Kingston, Ontario, Canada, assignor, by mesne assignments, to Bio Metals Corporation Ltd. (N.P.L.), Vancouver, British Columbia, Canada, a body corporate of British Columbia
No Drawing. Filed Feb. 15, 1965, Ser. No. 432,860
Claims priority, application Canada, July 29, 1964, 908,279
18 Claims. (Cl. 75—104)

1. A cyclic leaching process comprising: leaching an ore with a lixiviant solution comprising an acid ferric chloride solution essentially free of ferric sulphate and containing an effect quantity of motile, non-spore forming oxidizing autotrophic rod bacteria which are tolerant to the constituents of said lixiviants, whereby, during said leaching, said ferric chloride is reduced to ferrous chloride; and regenerating said lixiviant oxidizing said solution by aeration in the presence of said bacteria.

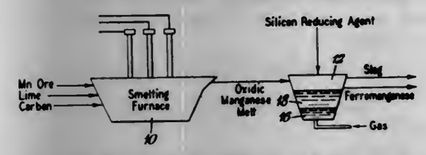
3,347,662
PROCESS FOR EXTRACTION OF METALS
James M. Snyder, Memphis, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 22, 1965, Ser. No. 427,463
6 Claims. (Cl. 75—106)

1. A process for treating mineral particles containing copper values which comprises contacting said mineral particles with an aqueous leaching solution of hydrogen cyanide in the presence of a compound selected from the group consisting of (a) alkali metal and ammonium carbonates and bicarbonates and (b) alkaline earth metal carbonates for a sufficient period of time to cause a substantial portion of the copper to dissolve in the solution, and separating the undissolved solids from the solution.

3,347,663
PRECIPITATION HARDENABLE STAINLESS STEEL
Clarence George Bieber, Suffern, N.Y., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 20, 1967, Ser. No. 617,070
33 Claims. (Cl. 75—124)

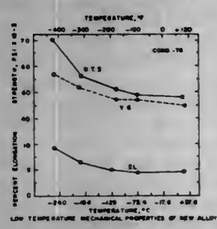
33. A precipitation hardenable stainless steel characterized by a good combination of strength and toughness and consisting essentially of about 11.5% to 15.5% chromium, about 9% to about 12% nickel with the proviso that the sum of 0.8 times the chromium content plus the nickel content is at least about 19% and not more than about 22%, at least one metal selected from the group consisting of titanium and columbium, the titanium being from about 0.1% to not more than 0.5% and the columbium being from 0.05% to 1%, about 0.2% to 1.6% aluminum with the proviso that the sum of the aluminum and any copresent titanium does not exceed 1.9% and with the further proviso that the ratio of nickel to the sum of aluminum and any copresent titanium is at least 5 to 1, carbon in an amount up to 0.03%, up to 0.2% manganese, up to 0.2% silicon, up to 0.5% vanadium, up to 1% tantalum, up to 0.5% copper, up to 0.1% beryllium, up to 0.01% boron, up to 0.05% zirconium and the balance essentially iron.

3,347,664
PROCESS FOR THE PRODUCTION OF LOW SILICON, MEDIUM-TO-LOW CARBON FERROMANGANESE
Edwin F. Bauer, Jr., Niagara Falls, and Kurt O. Rieder, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Mar. 23, 1965, Ser. No. 442,019
2 Claims. (Cl. 75—133)



1. A process for the production of manganese-containing alloys which comprises providing in a ladle a melt of oxidic manganese-containing material in which the amount of oxygen combined with manganese is no greater than about that represented by the formula Mn_2O_3 together with a silicon reducing agent to thereby provide a molten metal phase in the lower portion of the ladle and molten oxidic manganese-containing material floating on and covering the metal phase, and reacting the molten metal and oxidic material by introducing gas under pressure into the molten metal phase to cause turbulence in the metal phase the pressure of the gas being sufficient to cause intermittent passage of gas through the molten metal and oxidic phase and being at a rate sufficient to cause a portion of molten metal to be continually forced upward through the oxidic phase in a steady, rapid, but not unbroken succession and to fall back downward through the oxidic phase.

3,347,665
LOW TEMPERATURE ALUMINUM ALLOY
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Philip C. Miller, Huntsville, Ala., and Horace R. Ogden, Dean N. Williams, and Richard A. Wood, all of Columbus, Ohio
Filed June 24, 1965, Ser. No. 466,873
6 Claims. (Cl. 75—142)



1. A casting alloy consisting essentially of from 3.90 to 4.50% of copper, from 0.08 to 0.12% of cadmium, from 0.06 to 0.10% of magnesium, and from 0.02 to 0.05% of titanium, the balance being aluminum.

3,347,666
COPPER-BASE ALLOY AND CASTINGS THEREOF
Frank Arthur Badia, Ringwood, N.J., and Gary Nell Kirby, Ann Arbor, Mich., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 613,695
10 Claims. (Cl. 75—157.5)

1. A shock resistant cast metal article having a chill cast microstructure comprising a copper-zinc solid solution and a refined distribution of complex phosphides of at least one metal from the group consisting of copper, zinc and nickel and formed of an alloy consisting essentially of 2% to about 6.8% phosphorus, about 20% to about 40% zinc, up to about 1% lead, up to 8% nickel with balance essentially copper and having the aforesaid composition correlated with respect to phosphorus, zinc and nickel to characterize the alloy with a balance factor V which, in accordance with the relationship

$$V = \text{percent P} + 0.16\ (\text{percent Zn})$$

is from about 5.2 to about 10.5 and to provide that the amount of nickel is not greater than twice the phosphorus content but is at least 1.1% when the balance factor V exceeds 8.9 and is at least 1.1% when the phosphorus content exceeds 5%.



10. An alloy consisting essentially of 4% to 5% phosphorus, about 24% to about 27% zinc, up to about 4% nickel, up to about 1% lead with balance essentially copper and having the amounts of phosphorus and zinc in the alloy correlated to characterize the alloy with a balance factor V, which is in accordance with the relationship

$$V = \text{percent P} + 0.16\ (\text{percent Zn})$$

not greater than about 8.9 and with a room temperature yield strength of at least about 27,500 pounds per square inch when in the chill cast condition.

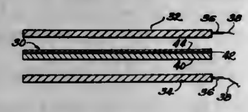
3,347,667
CHROMIUM BASE ALLOY
Carl S. Wukusick, and James A. McGurty, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
No Drawing. Filed May 21, 1964, Ser. No. 369,283
4 Claims. (Cl. 75—176)

2. A chromium base alloy of improved ductility and resistance to oxidation-nitrification consisting essentially of by weight, 0.1–0.3% Y, 0.03 to less than 0.7% Th, 0.1–0.3% Hf, up to about 10% Re with the balance essentially chromium.

3,347,668
METHOD OF MAKING FUEL CELL ELECTRODES
Milton B. Clark, North Royalton, and William G. Darland, Jr., Parma, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Original application Jan. 11, 1963, Ser. No. 250,939. Divided and this application May 25, 1966, Ser. No. 569,776
9 Claims. (Cl. 75—201)

1. A method of making fuel cell electrodes comprising the steps of mixing together a finely divided activated carbon and a substantially inert metallic powder selected from the groups consisting of nickel, iron, cobalt, titanium and silver, milling and blending said resultant mixture, compacting said mixture into a plaque at a pressure of from about 2 tons per square inch to about 6 tons per square inch, sintering said compacted plaque in a hydrogen containing atmosphere and allowing said plaque to be cooled in said atmosphere.

3,347,669
PHOTOCONDUCTIVE COPY SYSTEM
Peter G. Kalman, London, England, assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Mar. 27, 1964, Ser. No. 355,168
22 Claims. (Cl. 96—1)

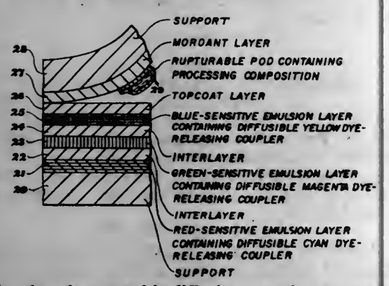


1. A method for producing copy comprising the steps of providing an electrically luminescent material, generating a high intensity DC field in the presence of said material, locating a layer of chargeable material in the area of said luminescent material, reducing the numerical value of the intensity of said field whereby the intensity is changed to the extent that luminescence is generated and wherein said luminescence is effective to electrostatically activate the said layer, exposing the activated layer to radiations in selected areas whereby the charge is removed from the exposed areas to leave a latent electrostatic image in the non-exposed areas, developing the image with a pigment which is held by the charged areas of the latent electrostatic image and then setting the developed image.

3,347,670
RECORDING ELEMENTS FOR ELECTROSTATIC PRINTING
George R. Nelson and Lee A. Carlson, Framingham, Mass., assignors to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
No Drawing. Filed June 19, 1963, Ser. No. 288,905
3 Claims. (Cl. 96—1.5)

1. An electrostatic recording element for electrophotography comprising a support member coated with finely divided photoconductive particles suspended in an insulating film forming binder, said binder consisting essentially of a mixture of from about 33 to 80% by weight of a polar, styrenated-alkyd resin and the remainder a nonpolar polystyrene-butadiene copolymer.

3,347,671
PREPARATION OF PHOTOGRAPHIC DIRECT POSITIVE COLOR IMAGES AND PHOTOGRAPHIC ELEMENTS THEREFOR
Wilho M. Salminen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 20, 1963, Ser. No. 310,424
20 Claims. (Cl. 96—3)



8. A color photographic diffusion transfer process which comprises exposing to a visible subject a photographic element comprising a support with superposed red, green and blue light-sensitive direct positive hydrophilic colloid silver halide emulsion layers wherein the silver halide forms latent images predominantly inside the silver halide grains and having disposed integral with said element and contiguous to said emulsions a cyan-forming coupler, a magenta-forming coupler and a yellow-forming coupler, said couplers being nondiffusible during development in the presence of an alkaline color developing composition containing an aromatic primary amino color developing agent, capable of forming diffusible acid dyes substantially complementary to the color of the spectral sensitivity of the respective contiguous light-sensitive layers in said alkaline color developing composition by reaction with color development oxidation product of said color developing agent and having a formula selected from the group consisting of

$$\text{DYE—LINK—(COUP—BALLS)}_n$$

and

$$\text{BALL—LINK—(COUP—SOL)}_n$$

wherein:

(1) DYE is a dye radical exhibiting selective absorption in the visible spectrum and containing an acidic solubilizing group;
(2) LINK is a connecting radical selected from the group consisting of an azo radical, a mercuri radical, an oxy radical, an alkylidene radical, a thio radical, a dithio radical and an azoxy radical;
(3) COUP is a coupler radical selected from the group consisting of a 5-pyrazolone coupler radical, a phenolic coupler radical and an open-chain ketomethylene coupler radical, said COUP being substituted in the coupling position with said LINK;
(4) BALL is a photographically inert organic ballasting radical of such molecular size and configuration as to render said couplers nondiffusible during development in said alkaline color developing solution;
(5) SOL is selected from the group consisting of a hydrogen atom and an acidic solubilizing group when said color developing agent contains an acidic solubilizing group, and SOL is an acidic solubilizing group when said color developing agent is free of an acidic solubilizing group; and
(6) n is an integer of 1 to 2 when said LINK is an alkylidene radical, and n is 1 when said LINK is a radical selected from the group consisting of an azo radical, a mercuri radical, an oxy radical, a thio radical, a dithio radical and an azoxy radical;

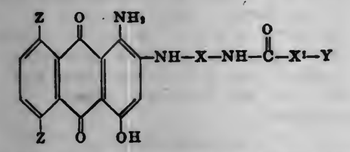
wetting said element with said alkaline color developing composition and developing said emulsions in the presence of a reductone derivative, said couplers coupling with oxidation product of said color developing agent during said color development and thereby cleaving said LINK in said couplers releasing diffusible acid dye images in areas of the said development, during the course of said color development said dye images diffusing imagewise in register to a juxtaposed reception layer containing a mordant for acid dyes and thereby producing a positive color reproduction of said subject, said reductone derivative being selected from the group consisting of an amino hexose reductone and an anhydro amino hexose reductone wherein the amino moiety has the formula

$$\begin{array}{l} R^1 \\ | \\ R^1\text{—}N\text{—} \end{array}$$

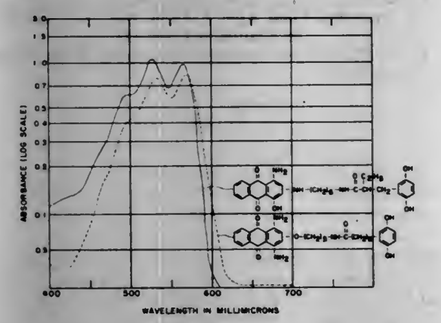
wherein R^1 and R^2 are selected from the group consisting of alkyl radicals and together with the nitrogen atom the necessary atoms to make a heterocyclic radical.

3,347,672
PHOTOGRAPHIC PRODUCTS, PROCESSES AND COMPOSITIONS
John F. Downey, Burlington, and Myron S. Simon, Newton Center, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,721
32 Claims. (Cl. 96—29)

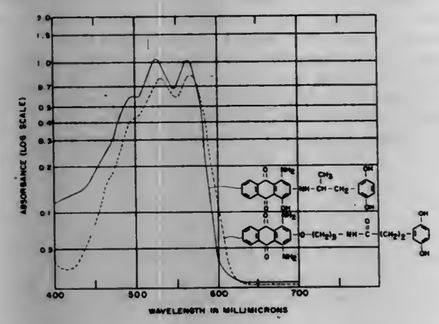
17. In a process of forming a photographic image in color, the steps which comprise contacting an exposed silver halide emulsion with an aqueous alkaline solution containing an anthraquinone dye developer of the formula:



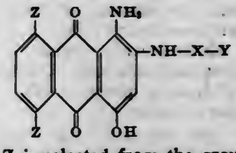
wherein each Z is selected from the group consisting of hydrogen, hydroxy and amino groups; X and X^1 are alkylene radicals; and Y is a dihydroxyphenyl silver halide developing radical; oxidizing said dye developer in developed areas to provide in said emulsion a predetermined distribution of unoxidized dye developer and transferring at least part of said distribution of said unoxidized dye developer by imbibition from said emulsion to an image-receiving element in superposed relationship with said emulsion to impart to said image-receiving element a positive dye image.



3,347,673
PHOTOGRAPHIC PRODUCTS, PROCESSES AND COMPOSITIONS
John F. Downey, Burlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,817
8 Claims. (Cl. 96—29)



5. In a process of forming a photographic image in color, the steps which comprise developing a latent image contained in an exposed silver halide emulsion by contacting said emulsion with an aqueous alkaline solution containing an anthraquinone dye developer of the formula:

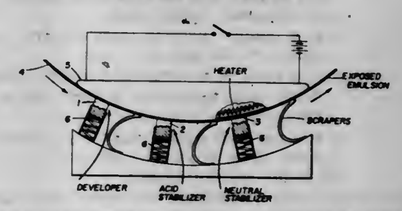


wherein each Z is selected from the group consisting of hydrogen, hydroxy and amino groups; X is an alkylene radical; and Y is a dihydroxyphenyl silver halide developing radical; oxidizing said dye developer in developed areas to provide in said emulsion a predetermined distribution of unoxidized dye developer and transferring at least part of said distribution of said unoxidized dye developer by imbibition from said emulsion to an image-receiving element in superposed relationship with said emulsion to impart to said image-receiving element a positive dye image of the developed image.

3,347,674
PROCESS OF FORMING IMAGES ACCORDING TO THE SILVER COMPLEX DIFFUSION TRANSFER PROCESS
Louis Maria De Haes, Edegem, and Fernand Henri Deschamps, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Feb. 4, 1966, Ser. No. 525,127
4 Claims. (Cl. 96—29)

1. In a process of forming images according to the silver complex diffusion transfer process by the steps comprising image-wise exposing a light-sensitive silver halide material, developing said material by means of a developing solution containing hydroquinone as a developing agent and a sulfite preservative compound in sufficient amount to normally preserve said hydroquinone, keeping the wet light-sensitive material in contact with an image-receiving material in the presence of a solvent for silver halide and separating the light-sensitive and image-receiving materials from each other, and in which process the said developing solution is repeatedly used for developing fresh material, the improvement of incorporating in said image-receiving material an additional amount of hydroquinone together with a bisulfite compound to preserve said additional hydroquinone, said bisulfite compound being selected from the group consisting of an alkali metabisulfite, a water-soluble inorganic bisulfite and a water-soluble organic bisulfite.

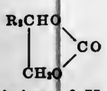
3,347,675
SOLID HOMOGENEOUS COMPOSITIONS CONTAINING SILVER HALIDE PROCESSING AGENTS
Richard W. Henn and David W. Miller, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 18, 1965, Ser. No. 465,081
16 Claims. (Cl. 96—61)



14. A method of processing an exposed silver halide emulsion comprising contacting said emulsion with a homogeneous composition comprising a water-miscible

organic compound carrier selected from the group consisting of alkylene oxide polymers, hydroxyethyl cellulose, monostearin, beeswax, mixtures of alkylene oxide polymers with propylene oxide and mixtures of alkylene oxide polymers with ethylene oxide, organic acids, and polar compounds having high dielectric constants containing the electron withdrawing groups $-SO_2-$ and $-CO-$ represented by the formulas:

(I) $XCONRR'$ (II) YSO_2NH_2 and (III)



wherein X is selected from the group consisting of H and alkyl groups of 1 to 4 carbon atoms, R'NH—, R''O— and $—(CH_2)_nCONRR'$ and radicals

$—(CH_2)_aCO—$ and $—(CH_2)_b—$

forming a diradical with R'; *a* is 2 to 3 and *b* is 3 to 5; *n* is 1 to 4; R is selected from the group consisting of H, $—CH_3$ and $HOCH_2CH_2—$; R' is selected from the group consisting of H, $—CH_3$ and radicals forming a heterocyclic ring with R; R_2 is selected from the group consisting of H and CH_3; R'' is selected from the group consisting of lower alkyl radicals and radicals forming a heterocyclic ring with X; and Y is selected from the group consisting of alkyl radicals having 1 to 4 carbon atoms, $NH_2—$, R''O— and aryl radicals; a silver halide photographic processing agent; and about 2% to about 30% by weight of said carrier, of water, said composition being solid at about 20° C. and melting at a temperature below about 115° C., at a temperature at which said homogeneous composition is liquid.

3,347,676
PHOTOPOLYMERIZABLE COMPOSITIONS AND PROCESS
Harry N. Cripps, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 30, 1964, Ser. No. 364,006
13 Claims. (Cl. 96—115)

1. A photopolymerizable composition comprising

(A) a metal salt selected from the group consisting of

(1) fluorinated alkanesulfonic acid salts of the formula RSO_3M wherein M is a cation of the group consisting of silver(I) and thallium(I) and R is a group selected from the class consisting of perfluoroalkyl of at most 7 carbon atoms and β-hydroperfluoroalkyl of at most 7 carbon atoms;

(2) a metal salt of a polyboron acid of the formula $M'_3(B_nH_{n-p-q}X_pY_q)_{m'}$ wherein

M' is a cation selected from the class consisting of silver(I) and cerium(III);

X is halogen;

Y is of up to 12 carbon atoms and is selected from the class consisting of hydroxyl, hydrocarbyloxyalkoxy free of aliphatic unsaturation, and hydrocarbylcarbonyl free of aliphatic unsaturation;

n is a number selected from the group consisting of 10 and 12;

p is a cardinal number of 1 to 12, inclusive, being equal to *n* minus *q* when *q* is greater than zero;

q is a cardinal number of 0 to 2, inclusive; $p+q$ being at most equal to *n*; and

m' is the valence of M';

(B) a halide promoter which is dissociable by actinic light of wave lengths between about 2500 A. and 7000 A. and which is selected from the class consisting of

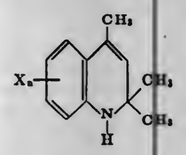
(1) silver halides in which the halogen is of atomic number of at least 17, and

(2) a nonpolymerizable organic aromatic halide of the formula ArZ_a wherein Z is a halogen of atomic number of at least 17, *a* is the number of Z groups, and Ar is an aromatic organic group of up to 18 carbon atoms; and

(C) at least one substance capable of cationic polymerization.

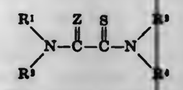
3,347,677
ACTIVATED DIHYDROQUINOLINES
Ernest G. Jaworski, Olivette, and Gino J. Marco, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Apr. 1, 1966, Ser. No. 539,305
36 Claims. (Cl. 99—2)

1. Antioxidant composition comprising an antioxidant of the formula



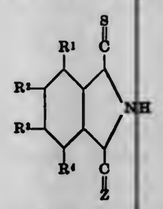
wherein *n* is an integer from 0 to 2 inclusive and X is selected from the group consisting of chlorine, bromine and RO—, wherein R is selected from the group consisting of hydrocarbyl and substituted hydrocarbyl wherein the hydrocarbyl is selected from the class consisting of alkyl of not more than 12 carbon atoms, alkenyl of not more than 12 carbon atoms, alkynyl of not more than 12 carbon atoms, cycloalkyl having at least 4 and not more than 7 carbon atoms, benzyl and phenyl, and wherein the substituents of not more than 4 carbon atoms on the hydrocarbyl are selected from the class consisting of alkyl, alkynyl and alkoxy and a compound present in an amount sufficient to provide an enhanced antioxidant property, said compound having a formula selected from the group consisting of

(A)



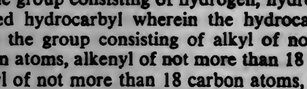
wherein Z is selected from the group consisting of oxygen, sulfur and imino, and R^1, R^2, R^3 and R^4 are each selected from the group consisting of hydrogen, hydrocarbyl and substituted hydrocarbyl wherein the hydrocarbyl is selected from the group consisting of alkyl of not more than 18 carbon atoms, alkenyl of not more than 18 carbon atoms, alkynyl of not more than 18 carbon atoms, phenyl and cycloalkyl of at least 4 and not more than 7 carbon atoms, and wherein the substituents on the hydrocarbyl are selected from the group consisting of nitro, hydroxyl, cyano, carboxyl, amino, phenyl, alkyl, alkylamino, dialkylamino, alkyloxy and alkylthio, the alkyl moieties of said substituents having not more than 4 carbon atoms,

(B)

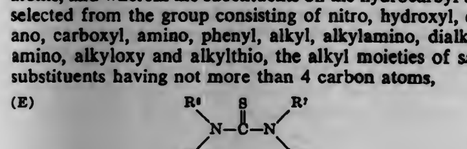


wherein Z is selected from the group consisting of oxygen, imino and sulfur, and R^1, R^2, R^3 and R^4 are each selected from the group consisting of hydrogen, hydrocarbyl and substituted hydrocarbyl wherein the hydrocarbyl is selected from the group consisting of alkyl of not more than 18 carbon atoms, alkenyl of not more than 18 carbon atoms, alkynyl of not more than 18 carbon atoms, phenyl and cycloalkyl of at least 4 and not more than 7 carbon atoms, and wherein the substituents on the hydrocarbyl are selected from the group consisting of nitro, hydroxyl, cyano, carboxyl, amino, phenyl, alkyl, alkylamino, dialkylamino, alkyloxy and alkylthio, the alkyl moieties of said substituents having not more than 4 carbon atoms, *m* is an integer from 2 to 3, *n* is an integer from 0 to 10 inclusive and *p* is an integer from 1 to 2,

(C)

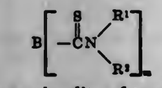


wherein Z contains a plurality of terminal nitrogen bonds and is selected from the group consisting of

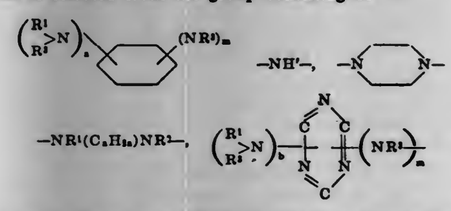


wherein *q* and *t* are each integers from 1 to 6 inclusive, *s* is an integer from 1 to 3 inclusive and *a* is an integer from 2 to 12; R^1, R^2, and R^3 are each selected from the group consisting of hydrogen, hydrocarbyl and substituted hydrocarbyl wherein the hydrocarbyl is selected from the group consisting of alkyl of not more than 18 carbon atoms, alkenyl of not more than 18 carbon atoms, alkynyl of not more than 18 carbon atoms, phenyl and cycloalkyl of at least 4 and not more than 7 carbon atoms, and wherein the substituents on the hydrocarbyl are selected from the group consisting of nitro, hydroxyl, cyano, carboxyl, amino, phenyl, alkyl, alkylamino, dialkylamino, alkyloxy and alkylthio, the alkyl moieties of said substituents having not more than 4 carbon atoms, *m* is an integer from 2 to 3, *n* is an integer from 0 to 10 inclusive and *p* is an integer from 1 to 2,

(D)

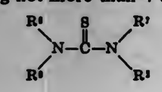


wherein B contains a plurality of terminal nitrogen bonds and is selected from the group consisting of



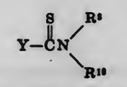
wherein *m* is an integer from 2 to 3, *e* is an integer from 0 to 4 inclusive, *b* is an integer from 0 to 1, *a* is an integer from 2 to 12 inclusive; and R^1, R^2 and R^3 are each selected from the group consisting of hydrogen, hydrocarbyl and substituted hydrocarbyl wherein the hydrocarbyl is selected from the group consisting of alkyl of not more than 18 carbon atoms, alkenyl of not more than 18 carbon atoms, alkynyl of not more than 18 carbon atoms, phenyl and cycloalkyl of at least 4 and not more than 7 carbon atoms, and wherein the substituents on the hydrocarbyl are selected from the group consisting of nitro, hydroxyl, cyano, carboxyl, amino, phenyl, alkyl, alkylamino, dialkylamino, alkyloxy and alkylthio, the alkyl moieties of said substituents having not more than 4 carbon atoms,

(E)

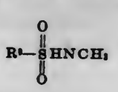


wherein R^5, R^6, R^7 and R^8 are each selected from the group consisting of hydrogen, hydrocarbyl and substituted hydrocarbyl wherein the hydrocarbyl is selected from the group consisting of alkyl of not more than 12 carbon atoms, alkenyl of not more than 12 carbon atoms, alkynyl of not more than 12 carbon atoms, phenyl, cycloalkyl of at least 4 and not more than 7 carbon atoms, and wherein the substituents on the hydrocarbyl are selected from the group consisting of alkyl, nitro, hydroxyl, cyano, carboxyl, amino, alkyamino, dialkylamino, phenyl, alkoxyl and alkylthio, the alkyl moieties of said substituents having not more than 4 carbon atoms, provided that not more than one of R^5 and R^6 and not more than one of R^7 and R^8 are selected from the group consisting of phenyl, substituted phenyl, benzyl, cyclohexyl and substituted cyclohexyl, and

(F)



wherein R^9 and R^{10} are each selected from the group consisting of hydrogen, hydrocarbyl and substituted hydrocarbyl wherein the hydrocarbyl is selected from the group consisting of alkyl of not more than 12 carbon atoms, alkenyl of not more than 12 carbon atoms, alkynyl of not more than 12 carbon atoms, phenyl and cycloalkyl of at least 4 and not more than 7 carbon atoms, and wherein the substituents on the hydrocarbyl are selected from the group consisting of alkyl, nitro, hydroxyl, cyano, carboxyl, amino, alkylamino, phenyl, dialkylamino, alkoxy and alkylthio, the alkyl moieties of said substituents having not more than 4 carbon atoms, provided that not more than one of R^9 and R^{10} is selected from the group consisting of phenyl, substituted phenyl, benzyl, cycloalkyl and substituted cycloalkyl; and Y is selected from the group consisting of R^9,—SH,



and the heterocyclic groups



wherein K is a heteronucleus selected from the group consisting of oxygen, sulfur, nitrogen and imino (—NH—) and D is a divalent hydrocarbon of at least three and not more than seven carbon atoms.

3,347,678
PROCESSING CITRUS FRUITS
Karl Johan Stampe Villadsen, Arhus, Denmark, and Knud Julius Möller, Bellinzona, Switzerland, assignors to Aktieselskabet Grindstedvaerket, Arhus, Denmark, a Danish company
No Drawing. Filed Dec. 17, 1962, Ser. No. 244,881
Claims priority, application Great Britain, Dec. 27, 1961, 46,276/61
9 Claims. (Cl. 99—103)

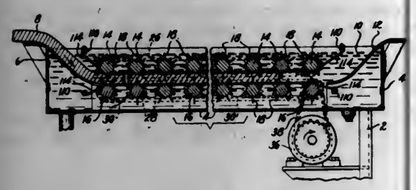
1. Method of processing citrus fruits, comprising dividing the fruits in at least two pieces cutting the flesh from the shell parts, pressing juice from the flesh, subjecting the remaining pulp to the action of pectolytic enzyme in an amount corresponding to 0.02 to 0.5% by weight of single strength pectolytic enzyme as calculated upon the weight of the pulp, for a period of 1 to 48 hours at a temperature in the range between ambient temperature and a temperature not exceeding 55° C., and separating the liberated juice, the operation being carried out before any substantial deterioration of the juice by natural deterioration and any enzymatic treatment being terminated by heat.

3,347,679

MEAT TREATING METHOD AND APPARATUS

Henry R. Nordin, Maple, Ontario, Canada, assignor to Canada Packers Limited, Toronto, Ontario, Canada

Filed July 21, 1964, Ser. No. 384,059
6 Claims. (Cl. 99—107)



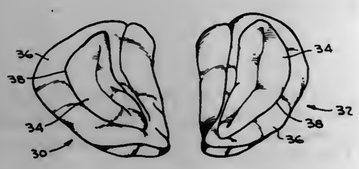
1. A method for incorporating treating solution in a piece of meat, comprising: submerging said piece of meat in a body of said treating solution beneath the liquid level thereof and, while said piece of meat is submerged in said body of solution, causing relative movement between said piece of meat and at least one spiked roll to thereby mechanically form multiple perforations in said piece of meat while crowding the meat material of the piece away from each perforation so as to admit treating solution into said perforations from the body of solution and applying pressure to at least one spiked roll to exert a rolling pressure on said meat piece as it is being perforated.

3,347,680

METHOD OF PREPARING TURKEY PRODUCT

Herbert H. Rambold, 2105 Brandywood Drive, Wilmington, Del. 19803

Filed Oct. 24, 1966, Ser. No. 588,995
4 Claims. (Cl. 99—107)



1. A method of preparing a turkey or other fowl of the type having a breast bone with a pair of breast halves disposed on opposite sides thereof, each of said breat halves including a filet portion contiguous with a side of the breast bone, to form a plurality of flat slices, said method comprising the steps of:

removing the skin from a fowl;

centrally severing the fowl medially of its breats section and axially along the center of the breast bone;

slicing along one side of the breast bone to remove one entire breast half therefrom;

slicing along the opposite side of the breast bone to remove the other entire breast half therefrom;

separating the filet portion from each entire breast half, thereby leaving two remaining breast half portions;

removing the tendons from said remaining breast half portions;

longitudinally slicing each remaining breast half portion into a plurality of flat slices; and

severing the filet portions to first remove the tendons therefrom and thereafter to form additional slices.

3,347,681

PROCESS FOR PREPARING A LEMON FLAVORING OIL COMPOSITION

William C. Platt, Ventura, Calif., assignor to Ventura Processors, Ventura, Calif., a corporation of California

Filed Aug. 27, 1962, Ser. No. 222,752
3 Claims. (Cl. 99—140)

3. In the process for removing gamma terpinene from a lemon oil fraction containing alcohol-aldehyde-ester group ingredients and containing small proportions of gamma-terpinene, the steps of repeatedly adding pure d-limonene to said fraction, and fractionally vacuum co-distilling off a distillate of gamma-terpinene and some d-limonene until substantially all of the gamma-terpinene has been removed.

3,347,682

COLORANT TABLET

Hyman Rosenstein, New York, N.Y., and Harry J. Prebluda, Trenton, N.J., assignors to Lancet Laboratories Inc., New York, N.Y., a corporation of New York

No Drawing. Filed June 23, 1965, Ser. No. 559,718
14 Claims. (Cl. 99—148)

1. A colorant tablet substantially instantly dispersible in water formed from a minor amount of a finely divided colorant, a minor amount of an edible organic acid, about 0.05 to 0.5% by weight of a high molecular weight polyethylene glycol melting above about 50° C., about 0.5 to 8% by weight of an agglomerated sugar, and the remainder of the tablet comprising a finely divided inert carrier selected from the group consisting of sucrose, glucose, lactose, sorbitol, Methocel and guar gum.

3,347,683

TREATMENT OF FRUITS AND THE LIKE TO INHIBIT DECAY

Albert J. Kraght, Glendora, Calif., and Henry C. Marks, Glen Ridge, N.J., assignors to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,832
21 Claims. (Cl. 99—156)

1. A method of treating raw fruit and the like to inhibit decay during shipment and/or storage which comprises contacting the same with an aqueous wash containing a cobalt compound.

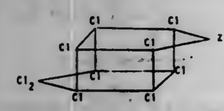
3,347,684

DECORATIVE FIRE RETARDANT PAINTS

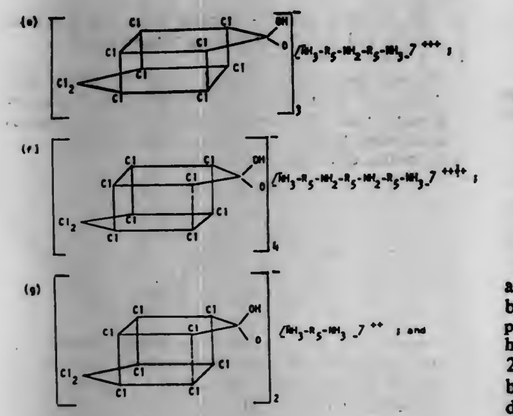
Noel D. Blair, Tonawanda, and Joseph A. Pawlak, Cheektowaga, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No drawing. Filed Sept. 13, 1963, Ser. No. 308,687
12 Claims. (Cl. 106—15)

1. In a fire retardant paint comprised of a vehicle component selected from the group consisting of oil base and water base vehicles, and an inert pigment the improvement which comprises a fire retarding amount from about 20 to about 80 percent of the total pigment of a fire retarding pigment selected from the group consisting of (a) bis(pentachlorocyclopentadienyl, (b) 2,2',3,3',4,4',5,5',7,7,7',7'-dodecachloro-1,1',2,2',5,5',6,6'-octahydro-2,2',5,5'-methanobiphenyl, (c) the reaction product of bis(pentachlorocyclopentadienyl) with ethylene glycol, (d) compounds having the formula



wherein Z is selected from the group consisting of $(OH)_2 \cdot xH_2O$, S, and $(OH)[O][NH(R_4)_3]^+$;



(h) mixtures thereof, wherein R_4 is selected from the group consisting of hydrogen, alkyl containing from 1 to 20 carbon atoms, and monohydroxy alkyl containing from 1 to 20 carbons atoms; each R_5 is an alkyl having 2 to 6 carbon atoms; and x is an integer from zero to 5.

3,347,685

FIRE RETARDANT BITUMINOUS COMPOSITIONS

Noel D. Blair, Tonawanda, and Claude Thomas Bean, Jr., Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,494
16 Claims. (Cl. 106—15)

13. A fire retardant bituminous composition comprising (1) a bituminous material, (2) from between about two and about fifty percent by weight of a halogenated cyclopentadiene compound selected from the group consisting of

(a) bis(dichloroheptafluorocyclopentane),

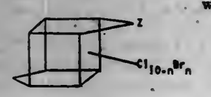
(b) bis(pentachlorocyclopentadienyl),

(c) perchlorofulvalene,

(d) dodecachlorodihydrotrindene,

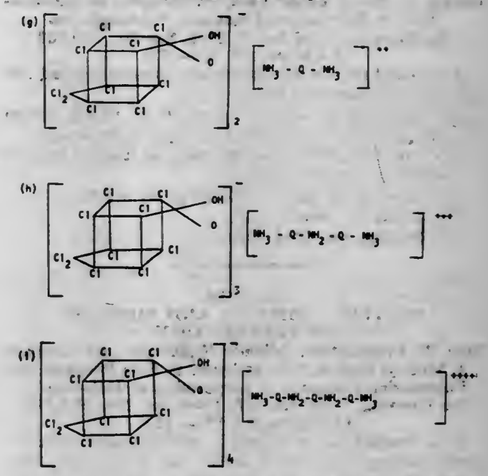
(e) the reaction product of bis(pentachlorocyclopentadienyl) and ethylene glycol,

(f) compounds having the formula



wherein Z is selected from the group consisting of Cl_2, and

$(OH)[O]^-[NHT_3]^+$



(j) bis(trichlorophenyl) perchlorocyclopentadiene and (k) mixtures thereof,

and (3) from between about one and about ten percent by weight of an antimony compound, wherein T is independently selected from the group consisting of alkyl, hydrogen and alkylmonohydroxy; Q is alkyl containing 2 to 6 carbon atoms and n is a number from 0 to 2 with n being 1 to 2 when Z is Cl_2, said halogenated cyclopentadiene compound and said antimony compound being present in sufficient proportion to improve the fire retardancy of the bituminous material.

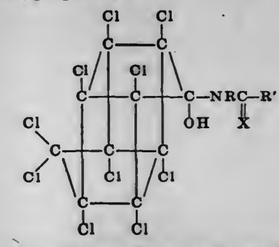
3,347,686

ANTI-FOULING PAINT

Edward D. Weil, Lewiston, and Keith J. Smith, Lockport, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Mar. 23, 1961, Ser. No. 97,771, now Patent No. 3,281,453. Divided and this application Nov. 30, 1965, Ser. No. 510,682
10 Claims. (Cl. 106—15)

1. An anti-fouling marine paint comprising paint constituents and containing as an active component thereof an anti-fouling proportion of



where R is selected from the group consisting of hydrogen, unsubstituted alkyl, substituted alkyl, unsubstituted aryl, substituted aryl and organocyclic conjoined to R', R' is selected from the group consisting of hydrogen, unsubstituted alkyl, substituted alkyl, unsubstituted aryl, substituted aryl, amino, substituted amino, alkoxy, aryloxy, alkylene, substituted alkylene and organocyclic conjoined to R and X is selected from the group consisting of sulfur and oxygen, together with a resin selected from the group consisting of rosin and chlorinated rubber, and a paint thinner.

3,347,687
ZIRCON REFRACTORY

George R. Henry, Bethel Park, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa.

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,007
2 Claims. (Cl. 106—57)

2. Method of making ceramically bonded pressed zircon shapes comprising the steps of:

(1) preparing a batch of about 95 to 99.5% zircon and about 0.5 to 5% alkali phosphate, by weight;

(2) tempering with sufficient water so that the batches obtain a pressable character;

(3) forming the batches into shape by pressing;

(4) drying the shapes; and

(5) burning the dried shapes.

3,347,688
PROTEIN ADHESIVE AND METHOD OF PREPARATION

John W. Frankenfeld, Atlantic Highlands, and Carleton J. McCoy, Linden, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

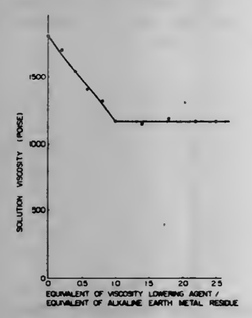
No Drawing. Filed July 27, 1964, Ser. No. 385,496
11 Claims. (Cl. 106—124)

7. A method of producing a proteinaceous adhesive paper coating composition which comprises lysing harvested *Micrococcus cerificans* cells, conducting a basic extraction on said lysed cells at a pH ranging from 8 to 12 to obtain *Micrococcus cerificans* protein extract, precipitating said extract at an acid pH ranging from 5.2 to 3.2, mixing said protein extract with water at a basic pH ranging from 8 to 13, separately mixing an inert filler with an additional amount of water at a pH ranging from 10 to 12.5 and then mixing the separately prepared protein extract water mixture and inert filler-water mixture.

3,347,689
METHOD OF REDUCING THE VISCOSITY OF A SOLUTION OF CELLULOSE DERIVATIVE

Atsushi Futami and Kazushige Hayashi, Matsuyama-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

Filed Aug. 2, 1965, Ser. No. 476,636
Claims priority, application Japan, Aug. 24, 1961, 36/30,683; May 8, 1962, 37/17,861; May 24, 1962, 37/20,495; May 28, 1962, 37/21,066
1 Claim. (Cl. 106—178)



In a process for the preparation of a acetyl cellulose solution for shaping, the improvement which comprises adding from 2–50 milligrams equivalents based on 100 grams of said acetyl cellulose a compound selected from the group consisting of ethylene diaminetetraacetic acid, oxalic acid, maleic acid, picrolonic acid, salicyclic acid, nitrilotriacetic acid, orthochlorobenzoic acid, malonic acid, ethyl malonic acid and the alkali metal salts and ammonium salts thereof, to a solution containing 5 to 60% by weight of acetyl cellulose dissolved in acetone and from 0.3% to not more than 2% by weight of water, said acetyl cellulose containing from 2 to 50 milligram equivalents of alkaline earth metal salts based on 100 grams of acetyl cellulose.

3,347,690
ASPHALT COMPOSITIONS

Thomas J. Galvin and Francis A. Hughes, Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,121
7 Claims. (Cl. 106—273)

1. An asphaltic mixture comprised of

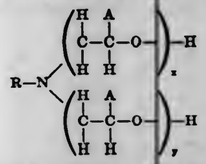
asphalt, and

an anti-stripping additive selected from the group of amines and amine derivatives consisting of

(1) a reaction product of

an aminating agent selected from the group consisting of ammonia, alkyl unsubstituted primary amines, and alkyl unsubstituted secondary amines containing from 1 to 6 carbon atoms, with

a compound of the general formula

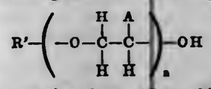


wherein R is selected from the group consisting of alkyl and alkylene radicals containing between 12 and 20 carbon atoms, A is selected from the group consisting of H and CH_3, and in which x and y are integers one of which may be 0 and x plus y equals from about 7 to about 27, said reaction product being prepared in the presence of a hydrogenation catalyst and at a temperature from about 150° C. to about 275° C.,

(2) a reaction product of

an aminating agent selected from the group consisting of ammonia, alkyl unsubstituted primary amines and alkyl unsubstituted secondary amines containing from 1 to 6 carbon atoms, with

a hydroxy-containing material of the general formula



wherein R′ contains from 12 to 20 carbon atoms and is selected from the group consisting of alkyl, alkylene and alkaryl radicals, A is selected from the group consisting of H and CH_3, and n is a number from about 3 to about 16, said reaction product being prepared in the presence of a hydrogenation catalyst and at a temperature from about 150° C. to about 275° C.,

(3) salts of (1) with an organic acid selected from the group consisting of acetic, oleic, lauric, stearic, propionic, naphthenic and resin acids, and;

(4) salts of (2) with an organic acid selected from the group consisting of acetic, oleic, lauric, stearic, propionic, naphthenic and resin acids.

3,347,691
XEROGRAPHIC DEVELOPMENT

James M. Lyles, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 499,291
17 Claims. (Cl. 117—17.5)

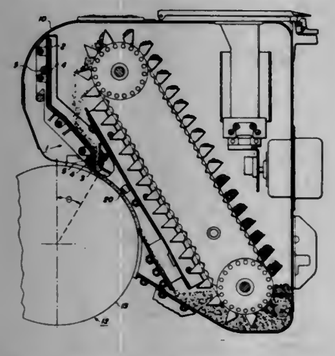
1. Apparatus for suppressing background development in a xerographic developing system including

a chute of conductive material positioned to be adjacent to a latent image-bearing photoconductive member to introduce developer material onto the photoconductive member, and

means to apply an electrical charge to said chute of a similar polarity as the latent image of the photoconductive member and of a sufficient magnitude to allow development of the latent image substantially free of background.

13. In a xerographic developing system wherein developer material flows onto a photoconductive member having electrostatic charges in image and non-image configuration, a method of developing only the latent electrostatic charges in image configuration comprising the steps of

placing a chute of electrically conductive material for flowing developer material onto a photoconductive member to be adjacent to a photoconductive member



having latent electrostatic charges in image and non-image configuration,

applying an electrical charge to said chute of a polarity similar to the latent electrostatic charges of the photoconductive member and of a magnitude sufficient to allow development of only the latent electrostatic charges in image configuration,

flowing developer material onto said photoconductive member by means of said chute thereby developing the latent electrostatic charges in image configuration,

placing an electrically conductive electrode to be adjacent to the developed electrostatic image-bearing photoconductive member, and

applying an electrical charge to said electrode of a polarity similar to the polarity of the latent image of the photoconductive member and of a magnitude sufficient to remove development in non-image configuration from said photoconductive member.

3,347,692
METHOD OF COATING ARTICLES WITH GRAFT COPOLYMERS OF POLYPROPYLENE AND ACRYLIC ACID

Lewis J. Young, Sanford, and Joseph E. Burkholder, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,272
5 Claims. (Cl. 117—21)

1. The method of forming adherent, corrosion resistant coatings to solid particles which comprises the sequential steps of:

(1) forming a fluidized bed of a finely divided material consisting essentially of a thermoplastic graft copolymer of (a) 75 to 98 percent by weight of polypropylene and (b) 25 to 2 percent by weight of acrylic acid;

(2) preheating said solid article to a temperature between about 250° C. to 400° C.;

(3) placing said solid article in said fluidized bed for a period of up to about 7 seconds;

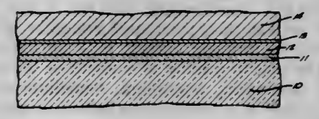
(4) removing said solid article from said fluidized bed; and

(5) post-heating said solid article at a temperature between about 150° C. and 180° C. for a period of between about 5 and 10 minutes to provide uniformly smooth, adherent coatings of said thermoplastic graft copolymer on said solid article.

3,347,693
HIGH BRIGHTNESS LUMINESCENT EVAPORATED FILM

Paul H. Wendland, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed July 7, 1964, Ser. No. 380,884
5 Claims. (Cl. 117—33.5)



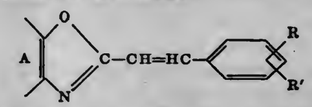
1. A method for preparing a luminescent film which comprises the steps of evaporating a layer of cadmium chloride onto a substrate, evaporating a layer of cadmium sulfide over the cadmium chloride layer, evaporating silver activator onto the resulting layer, heating the resulting layer in an inert atmosphere, evaporating a layer of zinc sulfide over the resulting layer, and heating the resulting layer in an inert atmosphere.

3,347,694
METHOD FOR OPTICAL BRIGHTENING OF POLYMERIC SUBSTRATES UTILIZING 2-STYRYLOXAZOLE COMPOUNDS

Ichiro Okubo and Michihiro Tsujimoto, Tokyo, Japan, assignors to Mitsui Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan

No Drawing. Original application Aug. 31, 1962, Ser. No. 220,904, now Patent No. 3,262,929, dated July 26, 1966. Divided and this application Oct. 22, 1965, Ser. No. 502,414
Claims priority, application Japan, Sept. 12, 1961, 36/33,302, 36/33,303; July 21, 1962, 37/29,641
21 Claims. (Cl. 117—33.5)

1. A method for optical brightening of soild polymeric materials comprising treating said materials with an oxazole compound of the formula



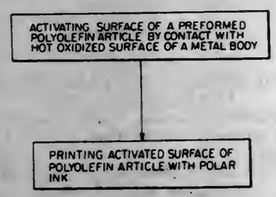
I

wherein A is a member selected from the group consisting of substituted benzene rings and an unsubstituted naphthalene ring, A being condensed with the oxazole ring, substituents of said benzene rings being selected from the group consisting of alkyl-, aryl-, and alkylene-groups, and, when A is said unsubstituted naphthalene ring, R and R′ are selected from hydrogen, halogen, cyano group, carboxyl group and its ester residue, alkyl group and aryl group, R being a cyano group when A is said benzene ring with R′ being selected as aforesaid, said treating being effected by contacting the said materials with an aqueous dispersion containing said oxazole in an amount sufficient to impart optical brightening effects to the material undergoing treatment.

3,347,695
METHOD OF SURFACE ACTIVATION OF NON-POLAR HYDROCARBON RESIN AND PRINTING

Arnold F. Stancell, New Brunswick, and George Brecht, Metuchen, N.J., and Andrew J. Foglia, Brooklyn, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

Filed Mar. 27, 1964, Ser. No. 355,458
18 Claims. (Cl. 117—38)

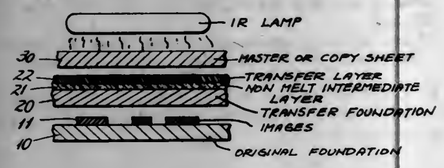


1. A surface conditioning process which comprises heating a surface of a preshaped nonpolar hydrocarbon resin article in intimate contact with an oxidized metal surface adherent to a body of a metal of the group consisting of chromium, aluminum, vanadium and copper and maintained at a temperature between about 330 and 800° F. for a period sufficient to substantially improve the wettability of said article surface with polar liquids and removing said article from contact with said oxidized metal surface while the temperatures throughout at least half of the thickness of said article are below the crystalline melting point of said resin to substantially maintain the form and thickness of said article, whereby the bonding characteristics of said article surface with materials having polar characteristics are substantially improved.

3,347,696
THERMOGRAPHIC METHOD OF IMAGING A COPY SHEET

Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N. Y., a corporation of New York

Filed May 18, 1965, Ser. No. 456,800
4 Claims. (Cl. 117—38)

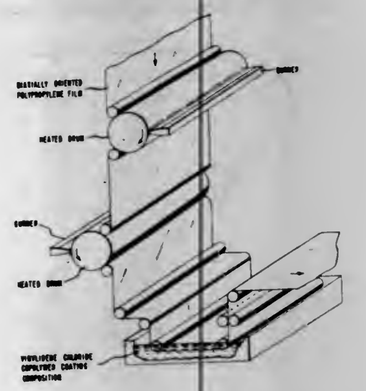


1. In the thermographic method of imaging a copy sheet in areas corresponding to the location of infrared radiation-absorbing images on an original sheet by means of a transfer sheet carrying a layer of heat-transferable imaging composition, the improvement which comprises using a translucent transfer sheet which does not absorb infrared radiation to any substantial extent comprising a translucent flexible plastic film foundation sheet having on one surface thereof a heat-insulation layer of plastic binder material having a thickness of from about ¼ to about 7 points and containing from about ½ to about 10 parts by weight of an infrared radiation nonabsorbing finely divided filler material per part of binder material and selected from the group consisting of silica, kaolin, calcium carbonate, barium sulfate, titanium dioxide, zinc oxide and clay, said layer having a rough outer surface, and having integrated with said rough outer surface a layer of heat-transferable imaging composition having a thickness of from about ½ to about 6 points, whereby under the effects of heat generated by the heated original images those portions of the imaging layer integrated with the rough surface of the heat-insulation layer remain integrated therewith while overlying portions of the imaging layer transfer to the copy sheet in areas corresponding to the location of the original images.

3,347,697
COATED POLYOLEFIN FILM

Thomas Michael Gmitro, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 10, 1965, Ser. No. 478,613
4 Claims. (Cl. 117—46)

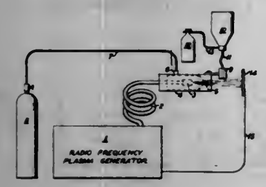


1. The process which comprises in combination the steps of passing one surface (A) of a continuous biaxially oriented polypropylene film through a flame emanating from the discharge opening of a burner supplied with a gaseous mixture of hydrocarbon fuel and oxygen-enriched air, the fuel equivalence ratio of the gaseous mixture being between 0.95 and 1.10, the oxygen ratio being between 0.25 and 0.30, the surface on which the film is supported as it traverses the flame being heated and maintained at a temperature between 30° C. and 80° C.; passing the other surface (B) of said film through a flame emanating from the discharge opening of a burner supplied with a gaseous mixture of hydrocarbon fuel and oxygen-enriched air, the fuel equivalence ratio of the gaseous mixture being between 1.15 and 1.30 and at least 0.10 greater than the fuel equivalence ratio of the first named gaseous mixture, the oxygen ratio being between 0.25 and 0.30, the surface on which the film is supported as it traverses the flame being heated and maintained at a temperature between 30° C. and 80° C., the path of the film as it traverses the flame from each burner being located at a distance from the burner less than the length of the unimpeded primary envelope of the flame but not less than the distance below which the velocity of the burning gases escaping from the immediate vicinity of the discharge opening of the burner exceeds the burning velocity of the flame, the exposure of the film to the action of each flame being from a time between 0.0005 and 0.1 second; thereafter coating each side of said film with an aqueous dispersion of a copolymer of vinylidene chloride and at least one ethylenically unsaturated monomer copolymerizable therewith, said copolymer containing between 70 and 95% by weight of vinylidene chloride, and drying said film.

3,347,698
RADIO FREQUENCY PLASMA FLAME SPRAYING

Herbert S. Ingham, Jr., Northport, N.Y., assignor to Metco Inc., Westbury, N.Y., a corporation of New Jersey

Filed Jan. 10, 1964, Ser. No. 337,018
20 Claims. (Cl. 117—47)

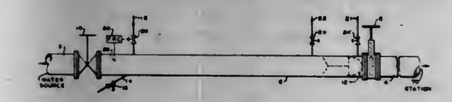


1. A method for flame spraying with a radio frequency plasma which comprises flowing a gas and generating a radio frequency plasma flame from a radio frequency generator against a surface to be sprayed, introducing heat-fusible material to be sprayed into the radio frequency plasma flame, and coupling the surface to the generator through a path having an effective length approximately equal to a multiple of ¼ of the wave length of the radio frequency of the generator to form a secondary out of phase sympathetic oscillating circuit causing diffuse RF arcing against the surface thereby depositing the heat-fusible material on the surface.

3,347,699
CORROSION PROTECTION

Donald O. Hitzman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 9, 1964, Ser. No. 336,834
9 Claims. (Cl. 117—97)



1. A method for providing a corrosion-protective coating on the internal surfaces of a hollow object, having a negative ionic charge thereon, while in place comprising:
(a) injecting a bituminous emulsion containing a cationic emulsifying agent in said object, the quantity of said emulsion being sufficient to provide a continuous coating on the internal surfaces of said object; and
(b) moving said emulsion inside said object so that said emulsion intimately contacts the entire internal surface of said object and deposits a continuous coating thereon.

3,347,700
COATED CONTAINERS

Stewart W. Gloyer and Henry A. Vogel, Gibsonia, Pa., and Conrad L. Lynch, Wethersfield, Conn., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 30, 1964, Ser. No. 379,336
11 Claims. (Cl. 117—97)

1. A metal container having its internal surface coated with an adherent layer of a coating composition in which the film-forming component consists essentially of (1) a liquid butadiene polymer containing a major proportion of butadiene in polymerized form, and (2) a water-insoluble, ungelled interpolymer of an ethylenically unsaturated carboxylic acid amide and at least one other monomer having a $CH_2=C<$ group, said interpolymer being characterized by having amido hydrogen atoms replaced by the structure:

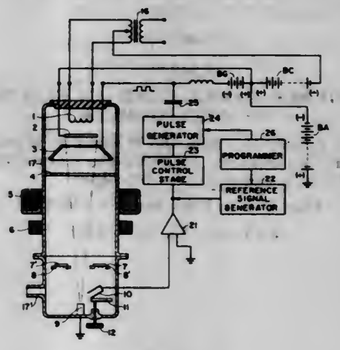
$$-\mathrm{CHOR_1}$$
(R above)

where R is selected from the group consisting of hydrogen and a saturated lower aliphatic hydrocarbon radical having its free valences on a single carbon atom, and R_1 is a radical derived by removing the hydroxyl group from a monohydric alcohol.

3,347,701
METHOD AND APPARATUS FOR VAPOR DEPOSITION EMPLOYING AN ELECTRON BEAM

Kazuo Yamagishi, Yokohama-shi, and Masashi Nakamura, Tokyo, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Feb. 3, 1964, Ser. No. 342,203
Claims priority, application Japan, Feb. 5, 1963, 38/5,439
10 Claims. (Cl. 117—106)



1. The method of depositing solid layers from vapor of the layer-forming material, which comprises directing an electron beam from a grid-controlled electron gun within a processing vessel onto a body of material to produce the vapor, subjecting a substrate to the vapor in the vessel for deposition of condensing material on the substrate, impressing during vaporization a pulsating grid voltage upon the electron gun to make the electron-beam current pulsate accordingly, sensing a given vaporization quantity in the vessel, and controlling the pulse voltage in dependence upon the sensed quantity to maintain substantially uniform quality of the precipitating material.

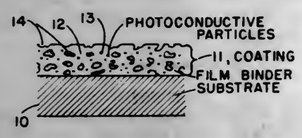
3,347,702
METHOD OF FORMING AN ELECTROSTATIC PRINTING BASE

John J. Clancy, Westwood, Mass., assignor to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts

Original application Apr. 16, 1963, Ser. No. 273,404. Divided and this application Sept. 12, 1966, Ser. No. 594,300
10 Claims. (Cl. 117—201)

1. Method of forming a printing base suitable for electrostatic printing, comprising the steps of
(a) dissolving a film-forming photoconductive material in a solvent having sufficient volatility to permit its subsequent removal by evaporation from the resulting solution;

(b) introducing into said solution a volatile liquid immiscible with said solvent thereby to form an emulsion in which said solution of said film-forming photoconductive material is the continuous phase;
(c) applying a film of said emulsion to the surface of a substrate thereby to deposit a coating on said surface; and



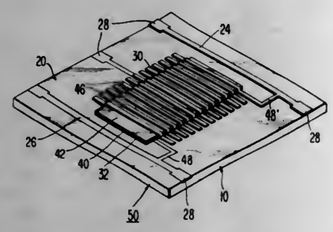
(d) drying said coating while retaining the structure of said emulsion to remove said solvent and said volatile liquid thereby to form a photoconductive coating characterized as being a substantially continuous film containing air voids essentially corresponding in size and location to the globules of the discontinuous phase of said emulsion, substantially all of said air voids being at least 0.5 micron in size.

3,347,703

METHOD FOR FABRICATING AN ELECTRICAL MEMORY MODULE

Joseph H. Engelman, Paoli, and William A. Witsell, West Chester, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 5, 1963, Ser. No. 256,377
8 Claims. (Cl. 117—212)



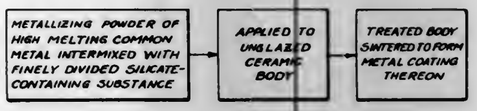
1. A method of fabricating an electrical memory module comprising the steps of:
(a) providing a dielectric high heat resistant substrate,
(b) applying conductive material to said substrate in a prearranged pattern thereby to form electrical conductors thereon,
(c) applying an insulating layer to said conductive pattern,
(d) firing said insulating layer to a fire polished glass-like pore free surface,
(e) depositing a thin magnetic film of material over said fire polished surface,
(f) applying an insulating layer over said thin film, and
(g) applying conductive material to said last named insulating layer in a prearranged pattern forming electrical conductors interconnecting with said first electrical conductors thereby completing an electrically conducting pathway encircling said thin film.

3,347,704

METHOD OF METAL-COATING CERAMIC BODIES

Andreas Meyer, Munich-Allach, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Dec. 6, 1963, Ser. No. 328,761
Claims priority, application Germany, Dec. 7, 1962, S 82,754
4 Claims. (Cl. 117—227)



1. A method of forming upon an unglazed ceramic body a solderable metal coating for use in producing a vacuum tight metal ceramic connection for electrical discharge vessels and the like, comprising the steps of applying on an unglazed ceramic body a metalizing powder consisting of molybdenum powder mixed with at least 20% by weight of a compound selected from the group consisting of manganese silicates and iron silicates, and heating the applied metalized powder to a temperature between 1250° C. to 1350° C. in a relatively weak oxidizing atmosphere.

3,347,705

PRODUCTION OF JUICE FROM SUGAR-CONTAINING PLANT MATERIAL

Erland Viktor Jung, Landskrona, Sweden, assignor to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,329
Claims priority, application Germany, Oct. 11, 1963, J 24,545; Oct. 28, 1965, J 29,268
6 Claims. (Cl. 127—44)

1. In the process for the production of juice from starting material including a sugar containing plant material comminuted into chips and an extracting liquid formed of at least one member selected from the group consisting of polyphosphoric acid and polyphosphoric acid in combination with a dicarboxylic acid, the improvement which comprises adding colloidal silicic acid to at least one of the said starting materials.

3,347,706

GALVANIC BATTERY COMPRISING A POSITIVE ACTIVE MASS CONSISTING ESSENTIALLY OF NICKELIC OXIDE

Frank J. Krivanek, Parma, and Nelson C. Cahoon, Fairview Park, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,025
2 Claims. (Cl. 136—28)

1. A galvanic battery comprising a positive and a negative electrode, both in contact with an alkaline electrolyte, said positive electrode comprising a positive active mass consisting essentially of a stable nickelic oxide composition in the form of very poorly crystallized hexagonal platelets having the formula $Ni_2O_x \cdot YH_2O$, wherein x is a value of from about 2.8 to about 3.3 and Y is from 1 to 6; the X-ray diffraction pattern of said composition being characterized by at least the following d values: 4.68, 2.35 and 1.41; the line intensity for each smaller d value being substantially less than 80 percent of the strongest line which falls at a d value of about 4.68.

3,347,707

CHARGED SECONDARY CELL

James Southworth, Jr., Rocky River, and Robert E. Stark, Avon Lake, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 336,043, Jan. 6, 1964. This application June 23, 1966, Ser. No. 560,012
5 Claims. (Cl. 136—28)

1. A chemically-charged secondary cell which comprises, in combination, a container; a means for hermetically sealing said container; at least one pressed-powder positive electrode comprising a mixture of a positive active powder, a cathodically reducible powder, and an inert conductive powder compressed into a metal grid and a pressed-powder negative electrode comprising a mixture of a negative active powder with an inert conductive powder compressed into a metal grid, both positive and negative electrodes situated within the container and juxtaposed relative to each other; a tough, resilient separator resistant to electrolyte deterioration interposed between the electrodes and in intimate contact with the lateral faces thereof; and an electrolyte which is an aqueous solution of an alkali metal hydroxide substantially held within the electrodes and the separator; the positive active powder consisting essentially of a stable nickel oxide having a composition represented by the formula

$$Ni_2O_x \cdot YH_2O$$

wherein x has a value from about 2.8 to about 3.9 and wherein Y has a value of from about 1 to about 6, and nickelous oxide, said stable nickel oxide and nickelous oxide being in relative amounts such that from about 10 to about 100 percent of the useful capacity of the electrode is represented by said stable nickel oxide and the remainder by the nickelous oxide, the cathodically reducible powder being finely-divided cadmium hydroxide and the negative active powder consisting essentially of cadmium and cadmium hydroxide; the cadmium powder within the negative electrode being present in an amount such that the useful capacity of the cadmium powder at least equals that of said stable nickel oxide present in the positive electrode and the amount of cadmium hydroxide powder in the negative electrode being such that its charge accepting capacity exceeds that of the nickelous oxide present in the positive electrode by at least about 10 percent; and the positive electrode being at all times under compression to the extent of at least about 300 p.s.i., but not exceeding about 700 p.s.i.

3,347,708

FUEL CELL BATTERY CONTAINING METAL COATED CARBON ELECTRODES

George R. Drengler, North Olmsted, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed June 15, 1965, Ser. No. 469,038
3 Claims. (Cl. 136—86)

1. A fuel cell battery comprising a plurality of pairs of substantially flat, gas permeable carbon electrodes, each electrode having an electrolyte face and a gas face; the gas faces of said electrodes being arranged in juxtaposition with a gas impervious metal conductor element therebetween; said metal conductor element being in electrical contact with said gas faces and defining gas spaces between said gas faces and the surfaces of said metal conductor element, said electrodes having on said gas faces thereof a gas permeable discontinuous metal coating having a plurality of protuberances in low electrical resistance contact with said metal conductor element; said metal coating being applied to said electrode surfaces by molten metal spray techniques, and said coating being present in an amount between about 0.009 gram and about 1.2 grams of metal per square inch of electrode surface.

3,347,709

LAYER TYPE BATTERY HAVING BOTH TERMINALS AT ONE END

Roy P. Taylor, Erith, Kent, England, and David Robb, Dundee, Scotland, assignors to Burndept Limited, a British company

Filed Feb. 27, 1964, Ser. No. 347,943
2 Claims. (Cl. 136—108)

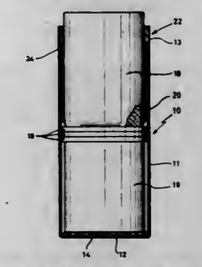
1. A battery of layer type cells comprising a stack of cells; a metal sleeve with open ends, in which the said stack is contained; plates of dielectric material closing the said open ends of the sleeve two terminals carried on one of the said plates; a conductor strip connected to one of said terminals, insulated from said container and the side of said stack, and passing alongside said stack to the end thereof remote from said plate carrying said terminals and a second conductor strip connected to the other of said terminals and in contact with the end of stack adjacent said plate; the said open ends of the sleeve being curled over the edges of said plates and said conductor strips being urged thereby into good electrical contact with ends of said stack, said stack being wrapped in a sheet paper and wherein said terminal plate, terminals, conductor strips and said sheet of paper form a subassembly; the said terminals, strips and sheet of paper all being rivetted to the said plate.

3,347,710

METHOD OF MAKING SEALED ELECTRIC BATTERIES

Josef M. Strobel and Bernhard Haas, Pforzheim, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut

Filed July 1, 1965, Ser. No. 468,773
Claims priority, application Germany, Nov. 4, 1964, U 11,181
2 Claims. (Cl. 136—175)



1. The process of sealing a battery consisting of an outer metal cylindrical cup closed at one end, an inner metal cylindrical cup closed at one end, chemically reactive battery material, and a plastic tubular sealing and insulating member whose outer diameter is greater than the inner diameter of the outer can; the steps consisting of forming a vacuum around the parts to be assembled, placing the chemical material in the inner can, placing the tube over the inner can, and forcing the outer can over the tube by pressure on the said cans.

3,347,711

RADIO-ISOTOPE THERMOELECTRIC APPARATUS AND FUEL FORM

Hampden O. Banks, Jr., Redondo Beach, Eugene T. Teatum, Berkeley, and Ian R. Jones, Livermore, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed July 25, 1963, Ser. No. 297,728
8 Claims. (Cl. 136—202)

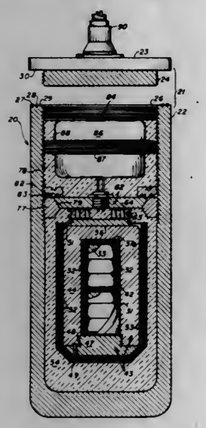
1. A thermoelectric generator comprising:
(a) a dense insoluble solid fuel form material including an energetic gamma emitting radioisotope se-

lected from the group consisting of strontium-90, cesium-137 and cerium-144;

(b) a metallic cladding disposed in heat conductive relation to enclose said fuel form material;

(c) a generally cylindrical radiation shield having a planar end face and defining a cavity, the walls of which are in close-fitting heat conductive relation to said cladding of said fuel form, said shield constructed of a heavy metal selected from the group consisting of tungsten and depleted uranium so as to absorb and convert the energetic radiation emitted by said radioisotope into heat therein; said shield having a polished reflective metal surface plating to minimize radiative heat loss therefrom;

(d) a radiant heat shield including at least two coextensive polished thin wall heat reflective metallic members supported in insulated spaced concentric



relation, and with the innermost member in spaced insulated relation to said radiation shield, said radiant heat shield defining an opening coextensive with said planar end face of said radiation shield and otherwise enclosing said radiation shield so that flow of heat conducted from said fuel form and produced in said shield is concentrated at said planar end face;

(e) thermal insulation disposed outwardly from said heat shield;

(f) generator means including thermoelectric elements having hot junction portions disposed in heat conductive relation with said planar end face, and cold junctions extending outwardly therefrom; and

(g) heat dissipator means arranged in heat conductive relation with the cold junction portions of said generator elements, establishing a thermal gradient therein to generate an electrical potential therein.

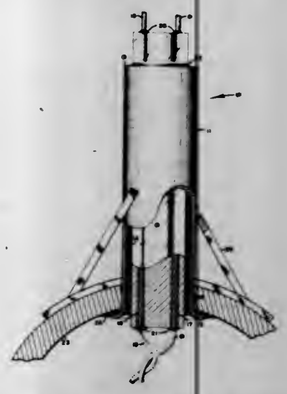
3,347,712

MEANS FOR DETERMINING THE TEMPERATURE OF THE SOLID PROPELLANT IN A TEST ROCKET MOTOR CASE

Oscar M. Hawkins, Victor E. Heaton, and John S. Epps, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed May 19, 1964, Ser. No. 368,624
1 Claim. (Cl. 136—230)

An expendable thermocouple for use in indicating the temperature of the solid propellant in a motor case having a mounting opening therein, comprising a tubular metal body having an annular flange at one end thereof and a straight transversely extending cut at the opposite end, a glass rod having longitudinally extending, spaced parallel bores therein, conductor wires positioned in said bores and extending outwardly of the end of said glass rod and the end of said tubular metal body having the flange thereon to be embedded in the solid propellant, an epoxy resin for sealing the conductor wires in the bores and the glass rod in the metal body, an epoxy resin for bonding the flange to the motor after the tubular body has been inserted through the mounting opening in said



motor case so that said annular flange engages the inner surface of the motor case and the end having the straight transversely extending cut thereon extends outwardly of the motor case, and a quick detachable spring clip engaging said metal body outwardly of said motor case for retaining said metal body in fixed relation to said motor case.

3,347,713

PROCESS FOR FORMING CHROMATE COATINGS ON ALUMINUM

Herman J. Lodeesen, Clawson, and William S. Russell, Warren, Mich., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,275
16 Claims. (Cl. 148—6.2)

1. A method for forming a protective coating on the surfaces of aluminum and aluminum alloys which comprises treating the surface thereof with an aqueous acidic solution consisting essentially of about 0.5 to about 10 grams/liter CrO_3, at least 0.1 gram per liter of the tungsten anion, about 2.2 to about 32 grams per liter of an aluminum fluoride complex ion and sufficient fluoride ion to cause said solution to coat said aluminum surface.

3,347,714

METHOD OF PRODUCING ALUMINUM-MAGNESIUM SHEET

Irwin Broverman, Cheshire, and Michael J. Pryor, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 27, 1963, Ser. No. 334,038
7 Claims. (Cl. 148—11.5)

1. A method of producing aluminum-magnesium sheet having magnesium present in the form of at least one precipitated intermetallic compound uniformly dispersed in fine particle size throughout the bulk of said sheet, said method comprising the steps of:

(A) providing a mass of aluminum-magnesium alloy having magnesium present in the form of at least one intermetallic compound as a soluble constituent of said alloy, said alloy containing from 0.2 to 3.2% magnesium, balance essentially aluminum,

(B) heating said mass to a temperature within the range of 750° to 950° F. thereby dissolving said constituent into solid solution in said alloy,

(C) rapidly cooling said mass at a rate which removes heat at a coefficient of from 3,000 to 10,000 B.t.u.'s per hour per square foot per degree Fahrenheit to a temperature within the range of 450° to 700° F., and

(D) pressure rolling said mass to effect a reduction in the thickness thereof while said mass is at said cooled temperature, whereby said constituent is precipitated throughout the reduced thickness of said mass as a fine particle size uniform dispersion of said constituent.

3,347,715

HEAT TREATMENT OF STEEL

Peter Charles Leslie Pfeil, Boar's Hill, near Oxford, England, assignor to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Apr. 8, 1964, Ser. No. 358,380
Claims priority, application Great Britain, Apr. 10, 1963, 14,352/63
6 Claims. (Cl. 148—12)

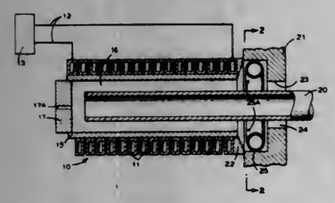
1. A method of heat treating an austenitic stainless steel to reduce the tendency of said steel to undergo a reduction in high temperature ductility on irradiation comprising the steps of cold working the steel, annealing the cold worked steel at a temperature in the range 800–900° C., and repeating said cold working step and said annealing step at least once.

3,347,716

METHOD OF AND APPARATUS FOR INHIBITING SCALE FORMATION

Sidley O. Evans, Beaver Falls, Pa., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 15, 1964, Ser. No. 418,521
5 Claims. (Cl. 148—13.1)



2. The method of inhibiting the formation of scale in the heating of a metallic workpiece in an induction furnace, which method comprises introducing under pressure into the free space of the furnace a volatile compound of boron at a temperature below the melting point of boric oxide, and inducing heat in the workpiece by subjecting the workpiece to the effects of an alternating magnetic field whereby sufficient heat is generated in the workpiece to raise the temperature of the volatile compound of boron in the immediate vicinity of the workpiece to above the melting point of boric oxide.

3,347,717

HIGH STRENGTH ALUMINUM-BRONZE ALLOY

George H. Eichelman, Jr., Cheshire, Conn., and Irwin Broverman, Chicago, Ill., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Continuation of application Ser. No. 457,897, Apr. 23, 1965, which is a division of application Ser. No. 328,184, Dec. 5, 1963, now Patent No. 3,287,180. This application Oct. 4, 1966, Ser. No. 584,096
3 Claims. (Cl. 148—32)

1. A high strength cold worked and heat treated aluminum bronze alloy consisting essentially of from 9.0 to 11.8 percent aluminum and the balance essentially copper, said alloy having a metallographic structure containing from about 85 to 95 percent beta phase, wherein the beta phase has a martensitic structure, and the remainder alpha phase and having a uniformly fine metallographic grain structure with a grain size less than 0.065 mm., said alloy having a tensile strength of at least 110,000 p.s.i. and yield strength of at least 44,000 p.s.i.

3,347,718

METHOD FOR IMPROVING THE MAGNETIC PROPERTIES OF FERROUS SHEETS

Victor W. Carpenter, Chester E. Ward, and Martin F. Littmann, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,572
1 Claim. (Cl. 148—111)

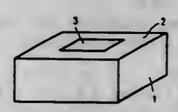
A process of cold rolling ferrous magnetic sheet stock selected from the group consisting of magnetic ingot iron, low alloy steel, non-oriented silicon-iron, silicon-iron having a cube-on-edge type of orientation, nickel-iron magnetic alloys, and oriented aluminum-iron alloys containing up to about 20% aluminum, to a final thickness of about 10 mils or greater, and a smoothness of no more than about 5 microinches, and then heat treating the stock to produce therein an improved core loss and permeability at high inductions from about the knee of the magnetization curve up to saturation.

3,347,719

METHOD OF PRODUCING SEMICONDUCTOR COMPONENTS

Walter Heywang, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Aug. 10, 1964, Ser. No. 389,519
Claims priority, application Germany, Aug. 12, 1963, S 86,695
10 Claims. (Cl. 148—187)



1. A method for producing semiconductor components having limited regions of respectively different conductances produced by diffusing doping material into the oxide-coated semiconductor crystals, which comprises depositing, in the areas that are to be subsequently subjected to diffusion, at least one additional substance upon the oxide coating of the semiconductor crystal so that the addition substance forms with the oxide coating a system which forms at the diffusion temperature a phase permeable to the diffusion material, preferably a vitreous melt, without exposing the semiconductor surface, heating the coated semiconductor surface to produce said vitreous melt, and diffusing doping substance through the melt at diffusion temperature into said semiconductor crystal.

3,347,720

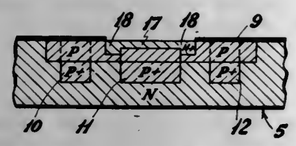
METHOD OF FORMING A SEMICONDUCTOR BY MASKING AND DIFFUSION

William S. Bryan, Deal, and Gerald S. Worchel, Eatontown, N.J., assignors to The Bendix Corporation, a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 500,071
6 Claims. (Cl. 148—187)

1. A method of making a semiconductor device comprising the steps of masking and providing openings in the mask on a wafer of a predetermined type of conductivity, diffusing impurities of an opposite type conductivity in predetermined locations to a predetermined

depth, a second masking and providing an opening and diffusing an additional amount of said opposite type impurities to overlap said first diffusion and to a depth less than said first diffusion, and a third masking and



providing openings and diffusing an impurity of said predetermined type of conductivity to overlap one of said first diffusing and to a depth less than said second diffusing.

3,347,721

DRY EXOTHERMIC COMPOSITION CONTAINING FIBROUS MATERIAL HAVING OXIDIZER SALT ABSORBED THEREIN

Edward John Jago, Cleveland, Ohio, assignor to Foseco Trading A.G., Graubunden, Switzerland, a Swiss company

No Drawing. Filed July 3, 1963, Ser. No. 292,715
Claims priority, application Great Britain, July 10, 1962, 26,552/62
10 Claims. (Cl. 149—2)

2. An exothermic composition comprising in intimate admixture an oxidizable element selected from the class consisting of aluminum, magnesium, carbon and silicon, a water-soluble oxidizing agent therefor selected from the class consisting of nitrates and chlorates, and an organic water-permeable fibrous material, at least a portion of said oxidizing agent being absorbed in said fibrous material.

3,347,722

THICKENED AMMONIUM NITRATE BLASTING COMPOSITION CONTAINING ALUMINUM AND UREA

William E. Gordon, Pittsburgh, Pa., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,190
12 Claims. (Cl. 149—41)

1. A detonatable wet blasting agent in the form of a cohesive mass, comprising

(a) a mixture of ammonium nitrate and sodium nitrate, in which said sodium nitrate is present in an amount up to about 25% by weight of said mixture, as an oxidizer;

(b) urea as a primary fuel;

(c) aluminum as a secondary fuel;

(d) water; and

(e) a thickening agent;

characterized in that at least portions of said ammonium nitrate-sodium nitrate mixture and of said urea are in solution in said water whereby they form an association complex, and the undissolved portion of said blasting agent is retained substantially uniformly distributed throughout the cohesive mass.

3,347,723

LAMINATING PROCESS AND APPARATUS

Dale H. Hill, Farmington, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Apr. 25, 1963, Ser. No. 275,610
7 Claims. (Cl. 156—103)

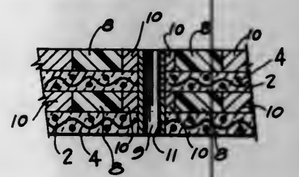
1. A continuous multistage process for laminating an assembly composed of a pair of matched glass sheets and a thermoplastic interlayer comprising enclosing the periphery of the assembly with an endless grooved evacuation ring that has the groove thereof extending lengthwise of and in open communication with the end edge of the assembly, placing said ringed assembly in a closed container, as the first stage connecting said evacuating ring to an evacuation source and withdrawing air so as to reduce the pressure about the periphery of said assembly to less than atmospheric, pressurizing the fluid medium within said container to a first relatively low pressure head, and applying heat to the fluid medium within said container for a predetermined time to heat said fluid medium to a first predetermined temperature sufficient to create a bond between said interlayer and said glass sheets, then as the second stage discontinuing the evacuation at the end edges of the ringed assembly, increasing the pressure of the fluid medium in the container to a second relatively high value, and at the same time increasing the temperature of the fluid medium in the container to a second temperature sufficient to cure the bond between the glass sheets and the thermoplastic interlayer, and as the third stage relieving the pressure head in said container and discontinuing the heating of the fluid medium in the container.

3,347,724

METALLIZING FLEXIBLE SUBSTRATA

Frederick W. Schneble, Jr., Oyster Bay, Joseph Poilchette, South Farmingdale, and Edward J. Leech, Locust Valley, N.Y., assignors to Photocircuits Corporation, Glen Cove, N.Y., a corporation of New York

Filed Aug. 19, 1964, Ser. No. 390,623
19 Claims. (Cl. 156—151)



10. A method for forming multilayered printed circuits which comprises impregnating a plurality of separate, flexible and foraminous insulating panels with a resinous adhesive having dispersed therein an agent catalytic to the reception of electroless metal, establishing apertures in the impregnated panels so as to leave catalytic agent exposed on the walls of the apertures, masking a portion of the surface of each impregnated panel to leave exposed conductor patterns, depositing ductile metal on the exposed conductor patterns and the walls of the apertures of each panel by contacting each impregnated and masked panel with an electroless metal deposition solution capable of autocatalytically depositing ductile metal, stacking at least two of the resulting flexible panels together, such that the apertures therein are aligned; and subjecting the stacked panels to heat and pressure to bond them together.

3,347,725

METHOD OF MAKING TUBULAR THERMAL INSULATION

Frederick N. Stephens, Leawood, Kans., Stuart J. Burhans, Kansas City, Mo., and Joseph T. Warkoczewski, Overland Park, and Jack M. Taylor, Kansas City, Kans., assignors, by mesne assignments, to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland

Filed Feb. 27, 1963, Ser. No. 261,408
3 Claims. (Cl. 156—184)

1. In a method of manufacturing tubular articles from a flexible mat of fibers and intermixed uncured heat reactive binder, the steps of rapidly rotating a highly heated mandrel about its longitudinal axis, advancing said mat laterally toward and into contact with said mandrel, adhering a portion of the mat to said mandrel by the binder

in said mat whereupon said mat is wrapped rapidly and tightly about the mandrel by the rotation of the mandrel to form a tubular build-up, maintaining said build-up on the mandrel a period of time sufficient to form a cured,



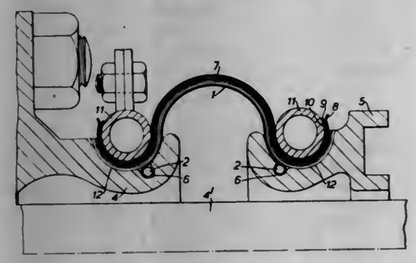
dimensionally stable skin on the interior surface of the build-up, withdrawing the mandrel from the build-up, and further heating the mandrel-free build-up to cure the remainder of the binder.

3,347,726

METHOD OF FORMING A FLEXIBLE SEAL CONNECTION BETWEEN LARGE DIAMETER SHAFTS

Samuel Clifford Walter Wilkinson, Cookham, England, assignor to Crane Packing Limited, Slough, England, a British company

Filed Jan. 25, 1966, Ser. No. 522,910
Claims priority, application Great Britain, May 21, 1965, 21,711/65
7 Claims. (Cl. 156—190)



1. A method of forming an axially flexible fluid-tight bellows connection between first and second mutually axially spaced substantially co-axial hollow cylindrical bodies of similar diameters comprising the steps of forming at least one composite flexible strip in the form of a ladder structure by taking individual transversely extending strips and joining them together in a longitudinal row to form said ladder structure composite flexible strip, shaping said individual strips to an arcuate shape, wrapping said composite flexible strip, after its formation, circumferentially around said bodies so as to bridge between them with the lateral edges of said composite flexible strip overlying circumferentially extending surfaces of said first and second bodies, applying separable axially spaced hoop sections over each of said edges to press said edges against the respective bodies, and circumferentially tensioning said hoops.

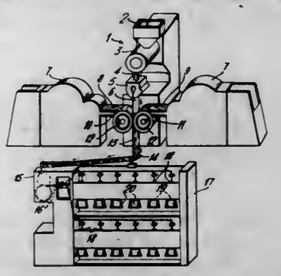
3,347,727

TEXTURED FILAMENT YARNS

Emilian Bobkowicz, 364 Redfern Ave., Westmount, Quebec, Canada, and Andrew John Bobkowicz, Westmount, Quebec, Canada; said Andrew John Bobkowicz assignor to said Emilian Bobkowicz

Filed May 27, 1963, Ser. No. 283,389
Claims priority, application Great Britain, May 29, 1962, 20,617/62
14 Claims. (Cl. 156—244)

1. A continuous method of making textured filament yarn comprising: extruding a soft layer of resin through an extrusion head; stretching said layer of resin in the longitudinal direction to cause orientation of the resin molecules; contacting said soft layer of resin, on at least one side thereof, with a fibrous material, compressing said resin and fibrous material together with cooling thereby



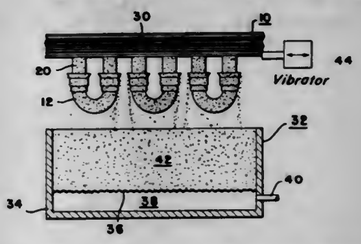
forming a composite web; dividing said composite web longitudinally into a plurality of ribbons of predetermined width; and transforming said ribbons into yarns by means of a twisting operation.

3,347,728

METHOD FOR FORMING JOINTS IN TUBES

John J. Preotle and Fred I. Payne, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 29, 1964, Ser. No. 385,908
4 Claims. (Cl. 156—283)



1. In a method for forming a plurality of fluid tight joints simultaneously between a plurality of U-shaped tubular return bends and a plurality of generally straight tube sections extending from the ends of the return bend sections wherein the ends of one of said tube sections is cup-shaped to receive the ends of the other of said tube sections snugly while providing clearance therebetween at the outer ends of the cup portions thereon with respect to the tube sections received therein, the steps of, providing a fluidized bed of sealing agent particles, immersing the assembly of the U-shaped tubular sections and the straight tubular sections within said bed with the cupped ends extending upwardly, holding the assemblies in said fluidized bed for a predetermined period of time until the clearance portions of said cup ends are filled with said particles, removing the assembly from said bed, heating the assembly to melt said particles and cooling said particles to produce a fluid tight seal at the joints between the tube sections.

3,347,729

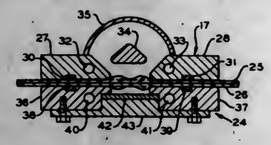
APPARATUS FOR SEALING THERMOPLASTIC MATERIALS INCLUDING A RADIANT HEATER AND A REFLECTOR

Charles L. Seefluth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 23, 1964, Ser. No. 406,116
3 Claims. (Cl. 156—380)

1. Apparatus for sealing thermoplastic materials which are at least partially transparent to radiant heat, comprising first and second retaining means spaced from one an-

other and adapted to engage materials to be bonded so that such materials extend between said retaining means, a radiant heater positioned between said retaining means at a location on one side of the materials to be bonded when such materials extend between said retaining means so that radiant heat is directed into such materials, a



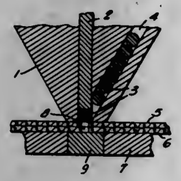
radiation reflector positioned between said retaining means at a location on the opposite side of the materials to be bonded when such materials extend between radiation means so that radiation transmitted from said heater through the material extending between said radiation means strikes said reflector and is reflected back into the material, and means to cool said retaining means.

3,347,730

PRODUCTION OF SEAM-LIKE CONNECTIONS BETWEEN FLAT FABRIC MEMBERS BY MEANS OF THERMOPLASTIC MATERIALS

Siegfried Keller, Munich-Solln, and Kurt Brandt, Augsburg, Germany, assignors to Messerschmitt A.G., Augsburg, Germany, a corporation of Germany

Original application Dec. 9, 1958, Ser. No. 779,145, now Patent No. 3,122,465, dated Feb. 25, 1964. Divided and this application Feb. 21, 1964, Ser. No. 346,535
8 Claims. (Cl. 156—423)



1. A supply device for introducing a mass of thermoplastic material into each of a succession of recesses in a plurality of superimposed fabric members comprising in combination a housing with a bore therethrough, a ram mounted for reciprocation in said bore, means for supplying a discrete mass, such as a shaped solid plug, of thermoplastic bonding material to said bore for ejection by said ram support means positioned adjacent the outlet end of said bore and slightly spaced therefrom and means connected to said ram for heating said thermoplastic material.

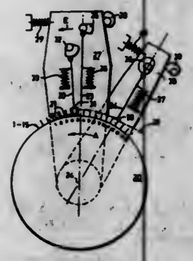
3,347,731

DEVICE FOR MANUFACTURING PILE PRODUCTS

Erich Lüthy, Naarden, Netherlands, assignor to Tapijtfabriek Noordster N.V., Loosdrecht, Netherlands, a limited-liability company of the Netherlands

Filed Jan. 6, 1964, Ser. No. 335,788
Claims priority, application Netherlands, Jan. 10, 1963, 287,626
6 Claims. (Cl. 156—435)

1. A device for the manufacture of a pile product comprising a rotatable drum, uniformly spaced radial blades mounted on the drum at the periphery thereof, for receiving pile material in the form of tensioned mutually parallel threads which are fed circumferentially over the blades, inserting means mounted outside said drum for reciprocal radial movement for entering the spaces between adjacent blades to form loops in the threads extending thereon and draw the material from a supply thereof, first clamping means for acting on the blades bounding the space ahead of the space in which the inserting means is inserted to clamp the threads against such blades and prevent disturbance of the loops formed therein, and second clamping means for acting on a pair of blades behind the inserting means to clamp the threads against such blades after each formation of loops in a space and when the



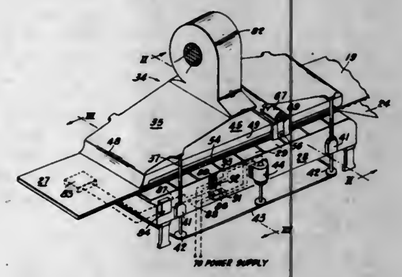
insertion means has been removed from between the blades to prevent windback of the material to the supply thereof, and means supporting the inserting means for oscillating circumferential movement about an axis coincident with the axis of the drum over a distance equal to the spacing between adjacent blades in synchronism with the rotation of the drum to enable operation of the inserting means while the drum is rotating.

3,347,732

APPARATUS FOR THE MANUFACTURE OF CORRUGATED PAPERBOARD

Warren A. Stewart, Monkton, Md., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 17, 1965, Ser. No. 514,617
8 Claims. (Cl. 156—497)



1. Apparatus for producing a double-face corrugated board web by bonding a single-face board having glue thereon to a liner so that said web has first and second outer faces separated by a fluted inner strip comprising:
a base,
a heating surface supported by said base for contacting one face of said web for applying heat thereto,
a housing supported by said base and juxtapositioned over said heating surface to define a plenum therewith,
supply means for supplying gas under pressure to said plenum whereby said gas exerts a substantially uniform pressure on said web to urge said one face against said heating surface, and

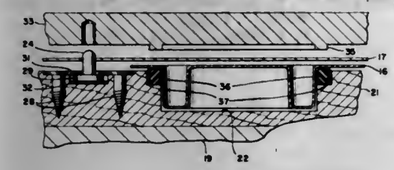
positioning means for adjusting the position of said housing relative to said web to control the rate of escape of gases from between said housing and said web.

3,347,733

APPARATUS FOR PRODUCING CONTAINERS

Lowell E. Elver, Janesville, Wis., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin

Filed Apr. 20, 1964, Ser. No. 361,150
4 Claims. (Cl. 156—515)



1. An apparatus for producing a container from a sheet of substantially flat thin plastic material with a raised box-like portion formed thereon and a paperboard card coated with a heat responsive bonding material and provided with printed indicia in a region bearing a predetermined relationship to at least one edge surface of said card, said apparatus comprising: a stationary cavity plate including wall means defining a cavity adapted to receive said raised box-like portion of said sheet and a substantially flat surface surrounding said cavity and adapted to engage the substantially flat portion of said sheet in an area surrounding said raised portion, card locating means associated with said cavity plate and bearing the same relationship to said cavity as said region bears to said edge surface, said locating means being engageable with said edge surface on said card when said card is adjacent said sheet with the raised portion thereof received in said cavity and with the coated surface of said card adjacent said sheet, whereby said card is located with said region in alignment with said raised box-like portion of said sheet, a movable heating platen, means for moving said movable heating platen toward and away from said cavity plate, said movable platen including a ridge disposed in alignment with said flat surface surrounding said cavity and adapted to engage said card so located to heat said card and squeeze said card and said sheet together against said surface as said movable platen is moved toward said cavity plate, thereby bonding said sheet and said card about said raised box-like portion, and a blade surrounding said cavity and spaced therefrom, said blade being adapted to sever both said sheet and said card along a common line as said sheet and said card are forced against said blade by said ridge.

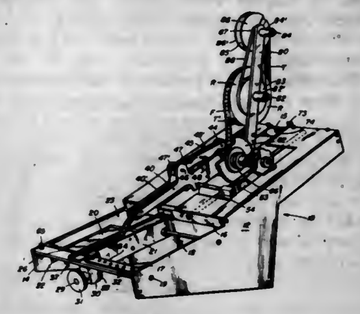
3,347,734

APPARATUS FOR MAKING MICROFICHE

Peter H. Covert, Pomona, and Jack J. Gilbert, Suffern, N.Y., assignors to Atlantic Microfilm Corporation, Spring Valley, N.Y., a corporation of New York

Filed Mar. 13, 1964, Ser. No. 351,714
14 Claims. (Cl. 156—562)

1. A machine for measuring out and applying to transparent sheets strips of microfilm having double-coated narrow strips of pressure sensitive adhesive tape adhering to and extending only along the edges of said microfilm and protective strips on said narrow strips, comprising a support on the machine, a film reel on said support, a take-off reel on the machine to receive and wind up such protective strips leaving said narrow strips exposed, means connecting said take-off reel to said film reel and causing rotation of said take-off reel as said film reel rotates, means on said machine to support a transparent sheet, movable means on said machine to



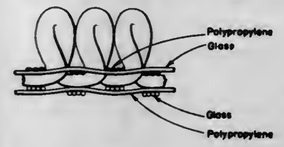
guide film from said film reel across a transparent sheet on said supporting means in position to be applied to a supported sheet, and means to move film along said guide means.

3,347,735

DOUBLE BACKED PILE CARPETS OF GLASS-PLASTIC BACKINGS

Ara T. Dildilian, Fonda, N.Y., assignor to Fiber Glass Industries, Inc., Amsterdam, N.Y., a corporation of New York

Filed Nov. 2, 1964, Ser. No. 408,208
4 Claims. (Cl. 161—66)



1. A tufted pile fabric comprising a primary backing woven of strands of a synthetic plastic in one direction and strands of glass in the other direction, pile projections piercing said primary backing, and a secondary backing woven of strands of glass in one direction and strands of a synthetic plastic in the other direction adhesively secured to the back nonpile side of said primary backing, the fiber glass strands in the primary backing and secondary backing being at right angles to each other, said fiber glass strands rendering the fabric substantially incapable of stretching or shrinking.

3,347,736

REINFORCED NEEDLED PILE FABRIC OF POTENTIALLY ADHESIVE MULTI-COMPONENT FIBERS AND METHOD OF MAKING THE SAME

Christopher Robert Sissons, Raglan, England, assignor to British Nylon Spinners Limited, Pontypool, Monmouthshire, England

Filed Nov. 27, 1964, Ser. No. 414,243
Claims priority, application Great Britain, Nov. 29, 1963, 47,218/63
16 Claims. (Cl. 161—67)



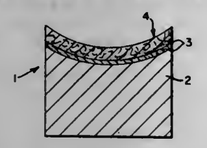
1. A pile fabric in the form of an integrated structure comprising a stratum of fibre tufts, a base stratum in the form of a fibrous web and a reinforcing fabric coextensive with said fibrous web base stratum and in contact

with a planar surface thereof, said base stratum containing at least a proportion of composite fibres comprising at least two fibre-forming synthetic polymeric components arranged in distinct zones across the cross-section of each fibre, each component being continuous along the length of each fibre and at least one, and less than all, of the components being potentially adhesive and located so as to form at least a portion of the peripheral surface of each fibre and said base stratum containing fibres located in planes at least substantially normal to the planar surfaces of the stratum, which fibres project beyond a planar surface of the base stratum and through the reinforcing fabric as fibre tufts, thereby providing the fabric with its pile surface, said composite fibres being adhesively bonded to contiguous fibres in the structure through the agency of said potentially adhesive component thereby securing the tufts in the structure.

3,347,737
BEARING SURFACE

Edward F. Harford, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 18, 1966, Ser. No. 573,309
The portion of the term of the patent subsequent to Oct. 10, 1978, has been disclaimed
6 Claims. (Cl. 161—150)

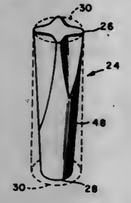


1. A bearing surface comprising an air-pervious fibrous nonwoven sheet adhesively bonded to a rigid support by a binder hardened in the interstices in the said sheet, said sheet consisting essentially of from about 50–100% by weight of fibers of a polymer selected from the group consisting of polytetrafluoroethylene, polyhexafluoropropylene, polychlorotrifluoroethylene, and tetrafluoroethylene/chlorotrifluoroethylene interpolymer and up to about 50% by weight of a material selected from the group consisting of asbestos fibers, glass fibers, rock wool, and flake mica, the components of the said sheet being randomly intermingled in multicontact relationship, with at least some of the fibers being bonded at the contact points by portions of the organic polymeric fibers which have been sintered by heating said sheets to between about 350° C. and 370° C.

3,347,738
TEXTILE FILAMENT HAVING APPARENT VARIABLE DENIER

James G. Sims, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Original application Nov. 21, 1962, Ser. No. 239,189, now Patent No. 3,138,516, dated June 23, 1964. Divided and this application Mar. 9, 1964, Ser. No. 350,443
6 Claims. (Cl. 161—179)



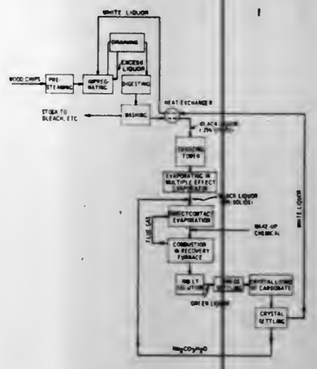
1. A continuous filament of substantially constant denier, said filament comprising in combination:

(a) a plurality of portions of varying length integrally connected by transition regions which are asymmetrical with respect to the axis of said filament;
(b) adjacent portions along the length of said filament having different dye receptivities.

3,347,739
CONTINUOUS SODIUM SULFIDE PULPING OF CELLULOSIC MATERIAL

George H. Tomlinson II, Long Sault, Ontario, Canada

Filed Sept. 13, 1963, Ser. No. 308,777
Claims priority, application Canada, Sept. 15, 1962, 858,073, Patent 725,072
11 Claims. (Cl. 162—30)



8. A process for continuously producing pulp from cellulosic raw material comprising: introducing a digestion liquor containing an alkali metal sulphide as substantially the only active digestion chemical into an impregnation zone, maintaining a body of said liquor at a temperature below digestion temperature and at superatmospheric pressure in said impregnation zone, introducing said cellulosic raw material into said impregnation zone and maintaining said material in said impregnation zone whereby said material retains a quantity of digestion liquor carrying sufficient chemical for subsequent digestion, conducting said cellulosic raw material substantially free of excess digestion liquor into a digestion zone, digesting said material in said digestion zone at a digestion temperature by means of the digestion liquor retained therein to form a pulp and thereby reducing the odor from said digestion.

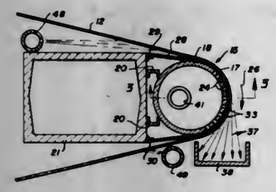
3,347,740
METHOD AND APPARATUS FOR PURGING TRAVELLING FELTS

Gleb I. Goumenlouk, West Vancouver, British Columbia, Canada, assignor to Rice Barton Corporation, Worcester, Mass.

Filed Oct. 14, 1963, Ser. No. 316,044
10 Claims. (Cl. 162—199)

1. The method of removing foreign substance, such as water and particles, from dewatering and transporting felts used in paper making and other machines, which comprises moving the felt around a curved surface of sufficiently small radius at the operating speed of the machine to fling the foreign substance from the felt under the action of centrifugal force, and simultaneously supplying air to the underside of the felt to assist the flinging of the foreign substance by preventing the creation of a low pressure in the felt thereby reducing the suction action resulting from the removal of the foreign substance.

3. Apparatus for removing foreign substance, such as water and particles, from dewatering and transporting felt used in paper making and other machines, comprising at least one member providing a curved surface of small radius, means for moving the felt angularly over at least a portion of said surface, the radius of the curved sur-



face being sufficiently small to cause at the operating speed of the machine the foreign substance to be flung under the action of centrifugal force from the felt during passage of the latter around the small-radiused curves, and means simultaneously making air available to the underside of the felt at said curved surface to replace the foreign substance flung therefrom.

3,347,741
FEEDER FOR SOLID MATERIALS

Gibson T. Hutchison, Maple Glen, Pa., assignor to Crane Co., Chicago, Ill., a corporation of Illinois

Filed Jan. 13, 1964, Ser. No. 337,458
3 Claims. (Cl. 162—241)

3,347,746

INJECTABLE SOLUTION OF AN AMINE SALT OF A RADIOPAQUE IODINATED ORGANIC ACID CONTAINING CALCIUM IONS

Hugo Holtermann, Baerum, and Sigbjorn Salvesen, Oslo, Norway, assignors to Nyegaard & Co., A/S, Oslo, Norway, a corporation of Norway

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,356

Claims priority, application Great Britain, Oct. 23, 1963, 41,842/63

11 Claims. (Cl. 167—95)

1. A parenterally injectable X-ray contrast composition containing all of its components in aqueous solution, comprising a salt of a radiopaque iodinated organic acid with an amine selected from the group consisting of N-methylglucamine, ethanolamine and diethanolamine and from 0.02 to 1.00 mg./ml. of calcium ions.

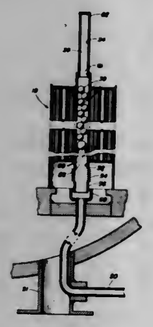
3,347,747

CONTROL ORGANIZATION AND METHOD FOR A NUCLEAR REACTOR

John M. West, Dunedin, and Frank Bevilacqua, Clearwater, Fla., and Albert R. Snider, Windsor, Conn., assignors, by mesne assignments, to Combustion Engineering, Inc., a corporation of Delaware

Filed Dec. 15, 1960, Ser. No. 75,959

12 Claims. (Cl. 176—35)



1. In a thermal nuclear reactor a core disposed within a suitable vessel and through which a cooling fluid is directed, a plurality of elongated housing members in the core and extending thereabove providing a plurality of independent passageways having a lower portion in the region of the core and an upper portion above the core, separate means operative to convey a fluid up through each passageway, each of said separate means including means effective, per se, to control this fluid flow through each passageway, this last named means having a first position wherein it is effective to establish a full flow of the fluid up through the passageway and a second position where it is effective to provide only a much decreased flow of the fluid up through the passageway, movable means confined in each of said passageways but movable between the upper and lower portion thereof and being capable of being generally wholly contained in either the upper or lower portions, said movable means containing a material that has a high neutron absorption cross section and being moved by gravity into said lower portion when said decreased flow condition prevails but moved into said upper portion when said full flow condition prevails.

3,347,748

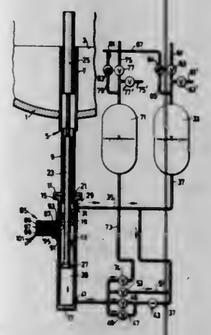
DEVICE FOR CONTROLLING A CONTROL ROD IN A NUCLEAR REACTOR

Curt Sigvard Olsson, Bandhagen, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden, a company of Sweden

Filed Mar. 3, 1966, Ser. No. 531,394

Claims priority, application Sweden, Mar. 25, 1965, 3,902/65

5 Claims. (Cl. 176—36)



1. Apparatus for controlling a control rod in a nuclear reactor comprising a nuclear reactor having a reactor tank, a cylinder open at its upper end and closed at its lower end extending upwardly through the bottom of said tank, a slide axially displaceable in said cylinder, a control rod carried by one end of said slide within said tank, a first sealing means between said slide and said cylinder dividing said cylinder into an upper chamber subject to the pressure in said reactor tank, a second sealing means between said slide and said cylinder and spaced from said first sealing means dividing the remainder of said cylinder into a space between said first and second sealing means and a lower chamber, a pressure container containing control fluid connected to the space in said cylinder between said first and second sealing means, means for maintaining the pressure in said pressure container substantially equal to the pressure in said reactor tank, a conduit connecting said pressure container to said lower chamber and pressure generating means in said conduit.

3,347,749

MODIFIED CARBIDE FUELS

Kenneth R. Jordan, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

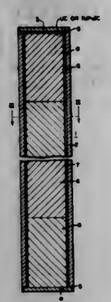
Filed Sept. 7, 1965, Ser. No. 485,374

25 Claims. (Cl. 176—69)

1. A ternary alloy consisting essentially by weight of 4.56 to 4.85% carbon, 0.40 to 5.17% chromium, and the balance consisting of an element selected from the group consisting of uranium metal, plutonium metal, and uranium-plutonium alloy.

11. A mixture containing, by weight, 4.56 to 4.85% carbon, 0.40 to 5.17% chromium, and the balance essentially M, composed of intimately intermixed particles selected from the group consisting of chromium, carbon, and compounds and alloys thereof, wherein M, represents one metal selected from the group consisting of U, Pu, and UPu.

20. A fuel element for a nuclear reactor comprising an elongated tube composed of a high temperature ferrous-base alloy, a plurality of pellets within the tube and having a composition of MC, Cr, and $Cr_{23}C_6$, where-



in M denotes the heavy metal atoms of U, Pu, and UPu, the pellets having a diameter slightly less than and forming a clearance with the inner surface of the tube, and liquid metal occupying the clearance.

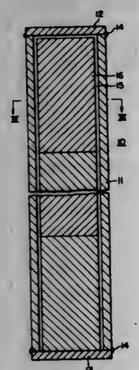
3,347,750

HIGH TEMPERATURE NUCLEAR FUEL ELEMENTS

Donald E. Thomas, Mount Lebanon Township, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 16, 1965, Ser. No. 508,042

12 Claims. (Cl. 176—69)



1. A fuel element for use in a nuclear reactor comprising a tube having an internal hollow space of predetermined dimensions and being composed of at least one metal selected from the group consisting of molybdenum, niobium, tungsten, tantalum, and base alloys thereof, a plurality of pellets of sintered fissionable material disposed in end-to-end abutment within the space, the pellets having a diameter slightly less than that of the inner surface of the tube whereby a gap is present between the pellets and the inner surface, and the fissionable material being a solid solution composed of from 5 to 90 mol percent uranium monocarbide and the balance being at least one of the compounds selected from the group consisting of niobium carbide, tantalum carbide, titanium carbide, molybdenum carbide, tungsten carbide, and zirconium carbide.

3,347,751

BOROHYDRIDE AND BATING TREATMENT OF HIDES

Thomas C. Thorstensen, Chelmsford, Mass., assignor to Metal Hydrides Incorporated, Beverly, Mass., a corporation of Massachusetts

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,306

12 Claims. (Cl. 195—6)

1. In a process for tanning cattle, calf, goat and sheep hides to form high quality, full grain leather, the method for removing fine hair from the hides comprising subjecting the hides containing fine hair to a washing operation in an aqueous medium, adding to the aqueous washing medium an amount of a borohydride between about 0.001 percent and about 0.02 percent by weight based upon the weight of the hides and an amount of a base sufficient to establish a pH greater than about 9.5 and thereby stabilize the borohydride, and thereafter subjecting the hides to a bating operation in said aqueous medium containing said hides in which sufficient bating materials are added to establish a pH between about 8.0 and 9.0, said borohydride being selected from the group consisting of alkali metal borohydrides and water-soluble quaternary ammonium borohydrides.

3,347,752

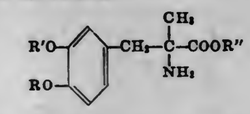
MICROBIOLOGICAL CLEAVAGE PROCESS FOR RESOLVING RACEMIC α-METHYL-β-(3,4,-DIHYDROXYPHENYL)-ALANINE

Erich Rauenbusch and Werner Frommer, Wuppertal-Elberfeld, Germany, assignors, by mesne assignments, to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,093

7 Claims. (Cl. 195—29)

1. A process for resolving racemic α-methyl-β-(3,4-dihydroxyphenyl)-alanine into its optical antipodes which comprises causing a substance selected from the group consisting of stereo-selective desterifying fungi and extracts prepared therefrom to act in aqueous medium on a derivative of the formula:



wherein R and R′ are each selected from the group consisting of hydrogen, alkyl of 1 to 4 carbon atoms, R and R′ linked together to form a single alkylene chain, acyl of 1 to 18 carbon atoms, acyl of 1 to 18 carbon atoms which is carboxy substituted and acyl of 1 to 18 carbon atoms which is carboalkoxy substituted, and R″ is selected from the group consisting of straight and branched alkyl chains of 1 to 6 carbon atoms.

3,347,753

GEOTHERMAL MEANS FOR DESALINATING SEA WATER

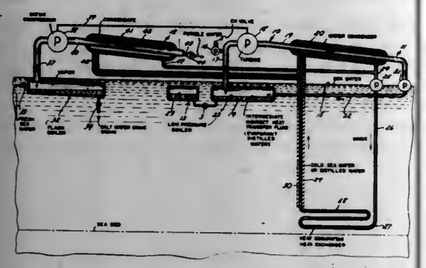
Milton Morse, 1 Horizon Road, Fort Lee, N.J. 07024

Filed Aug. 13, 1964, Ser. No. 389,443

3 Claims. (Cl. 202—185)

1. Means for desalinating sea water comprising: a power element and a still element; said power element including a low pressure, a high volume turbine, a boiler immersed in sea water substantially at the surface thereof, but isolated therefrom, and having a vapor output connected to said turbine, an evaporable liquid in said boiler, an indirect condenser connected to the turbine exhaust and to said boiler via a first pump, and heat exchanger means disposed at sea bottom connected in series with said condenser via a second pump; said still element including a second boiler immersed in sea water substantially at the

surface thereof, said second boiler having sea water inlet means and brine drain means, a low pressure high volume vacuum pump driven by said turbine connected to the vapor space of said second boiler, and having an exhaust conduit, an indirect vapor condensing means surrounding the output of said vacuum pump, said vapor condensing means being connected in series with said exchanger means, and a pump in the heat exchanger means connecting between the condensers and the heat exchanger means.

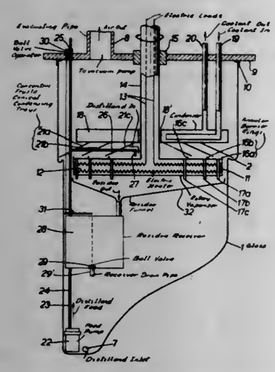


3,347,754

HIGH VACUUM DISTILLATION

William Llewelyn Thomas, Sunbury-on-Thames, Middlesex, England, assignor to British Petroleum Company Limited, London, England, a corporation of England

Filed June 3, 1964, Ser. No. 372,170
Claims priority, application Great Britain, June 21, 1963, 24,778/63
6 Claims. (Cl. 202—186)



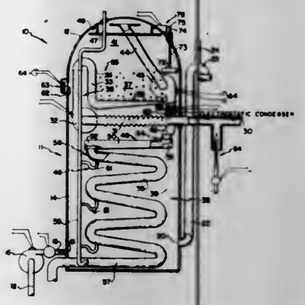
1. A high vacuum centrifugal distillation apparatus comprising a rotatable vaporiser having a vaporising surface, a condenser and an inlet conduit for introducing distilland to said vaporising surface, said vaporiser and condenser being separated by substantially unobstructed space, and wherein said vaporising surface is divided into a series of concentric vaporisation zones, each zone being provided with a drainage conduit situated near its outer periphery and adapted to remove surplus liquid from the zone, and wherein said inlet conduit is positioned so as to introduce distilland near the inner boundary of the inner zone and the condenser comprises a series of condensing trays, one for each vaporising zone, the trays sloping downwardly towards the outer circumference of the vaporiser and having an outer edge positioned, in the case of all trays except the last, over the next succeeding vaporisation zone near its inner boundary and, in the case of the last tray over a collecting zone, each tray being adapted, in the use of the apparatus, to condense vapor from its associated vaporising zone and to deposit the condensed vapor from its outer edge.

3,347,755

TEMPERATURE CONTROLLED CONVECTIVE DISTILLATION AND VAPOR EVACUATION

Frederick J. Brooks, 114 15th St. W., North Vancouver, British Columbia, Canada

Filed Feb. 24, 1964, Ser. No. 346,782
1 Claim. (Cl. 202—206)



Distillation apparatus for producing purified water from salt water comprising a vertically elongated vessel, means for injecting a heated gas into an upper portion of an elongated body of salt water contained in the vessel to thereby heat said portion and cause evaporation therefrom thereby increasing the density of the remaining solution in said heated portion, a storage chamber above the body of water for collecting heated gas and water vapor, evacuating means to evacuate the heated gas and water vapor from the storage chamber, a vertically elongated vapor condensing unit located centrally of the vessel and extending from said heated portion of the body of water to the bottom of the vessel and having a connection at its upper end with the evacuating means, said condensing unit presenting a plurality of heat transferring surfaces to a central columnar portion of said body of salt water to transfer heat energy of the heated gases and water vapor to the latter, to thereby cause circulatory movement of the water in the vessel upwardly through said columnar portion into said heated portion and downwardly from the latter in a passage defined by the columnar portion and the walls of the vessel, salt water injection means at the bottom of the vessel arranged to inject fresh salt water into the upwardly moving column of water, outlet means formed in the wall of the vessel near the bottom thereof to remove the downwardly moving dense salt water, and temperature control means to maintain said heated portion at a predetermined temperature, said last-mentioned means including a heat responsive electrical switch at said heated portion arranged to control the flow of water vapor and heated gases through the evacuating means thereby increasing or decreasing the rate of evaporation from the body of salt water.

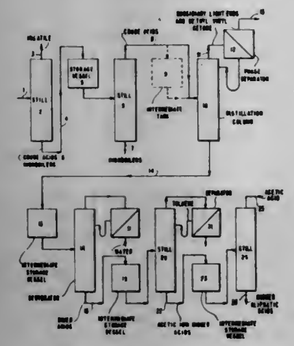
3,347,756

PRODUCTION OF PURE ACETIC ACID FROM METHYL VINYL KETONE BY DISTILLATION

Ronald Charles Snell, Stoneleigh, Surrey, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

Filed Oct. 23, 1963, Ser. No. 318,416
Claims priority, application Great Britain, Nov. 8, 1962, 42,204/62
14 Claims. (Cl. 203—32)

1. In a process for the recovery of pure acetic acid from acetic acid containing mixtures obtained from the liquid phase oxidation of paraffin hydrocarbons with molecular oxygen, the improvement which comprises liberating by heat or distillation a mixture of methyl vinyl ketone and acetic acid from the resultant oxidation product which contains methyl vinyl ketone condensation product and separating by distillation the methyl vinyl ketone from the acetic acid mixture therewith such that the time and



temperature between the liberation step and the separation step are:

(a) acetic acid mixture at a temperature of from 80° C. to 100° C. for not more than 5 minutes; or
(b) acetic acid mixture at a temperature of from 0° C. to 40° C. for not more than 1 hour.

3,347,757

ELECTROLYTES FOR THE ELECTRODEPOSITION OF PLATINUM

Roger Lacroix, Suresnes, and Charles Becker, Paris, France, assignors to Comptoir Lyon-Alemand, Louyot & Cie, Paris, France

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,933
Claims priority, application France, Feb. 12, 1963, 924,431
10 Claims. (Cl. 204—47)

1. An aqueous acidic electrolytic bath for electroplating platinum consisting essentially of platinum II diaminodinitrite and at least one compound which provides sufficient fluoborate ions in solution to complex said platinum compound.

3,347,758

ELECTROCHEMICAL PREPARATION OF AROMATIC ESTERS

William J. Koehl, Jr., Yardley, Pa., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,370
18 Claims. (Cl. 204—59)

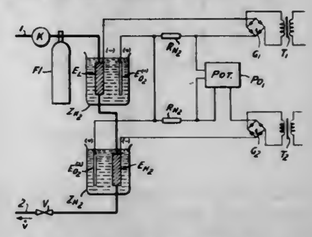
1. Method for the electrochemical preparation of a monoacyloxy derivative of a substituted benzene compound which comprises electrolyzing an anhydrous solution comprising said compound, an alkanoic acid, an alkali metal salt of an alkanoic acid, and an alkanoic acid anhydride by passing up to 1.3 faradays of electricity per mole of said compound through said solution from an anode of lead dioxide to a cathode to convert said compound to a monoacyloxy derivative, said compound comprising benzene having a substituent selected from the class consisting of alkyl, mononuclear aryl, alkoxy, mononuclear aryloxy, acyloxy, and acylamido groups, said quantity of electricity being used up to attack said compound and convert the same to said derivative, said derivative being substantially the only acyloxy derivative that is formed, then ceasing the electrolysis, and removing said derivative from the solution.

3,347,759

ELECTROCHEMICAL METHOD AND APPARATUS FOR PRODUCING A PROTECTIVE GAS MIXTURE CONSISTING OF NITROGEN AND HYDROGEN

Eduard Justi and August Winsel, Braunschweig, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Germany, and Varta Aktiengesellschaft, Erlangen, Germany, both corporations of Germany

Filed Oct. 7, 1964, Ser. No. 402,258
Claims priority, application Germany, Oct. 9, 1963, S 87,775
16 Claims. (Cl. 204—129)



1. The method of producing a protective gas mixture consisting of nitrogen and hydrogen electrochemically derived from air and water, respectively, said method comprising the steps of

causing atmospheric air to flow through a gas diffusion cathode which cooperates with an oxygen liberating anode of an electrochemical cell said cathode causing oxygen in said air to form OH-ions and recovering a gas consisting essentially of nitrogen as effluent from said cathode,

cathodically evolving hydrogen from water in a hydrogen cathode,

feeding said nitrogen gas effluent into said hydrogen cathode and there mixing it with the cathodically evolved hydrogen, and

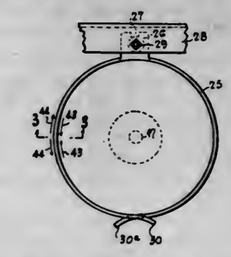
recovering said mixture of nitrogen gas and hydrogen as effluent from said hydrogen cathode.

3,347,760

METHOD OF ELECTROPOLISHING METALLIC SECTIONS FOR BALLOON CONTROL RINGS AND THE LIKE

Henry R. McKelvie, Kings Mountain, N.C. (P.O. Box 878, Gastonia, N.C. 28052)

Filed Mar. 7, 1967, Ser. No. 621,226
12 Claims. (Cl. 204—140.5)

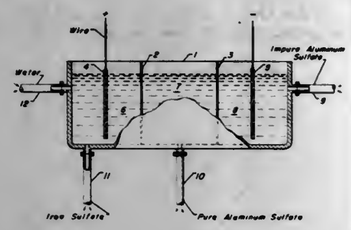


1. That method of making metal articles having a concavo-convex shape which comprises the steps of: forming a cold drawn spring wire of a predominantly ferrous metal composition into a ring while subjecting the inside annular metallic surface particles of the latter to compressive stresses in excess of their elastic limit, removing said excessively stressed particles to expose an underlying rough but substantially undamaged surface, and then electropolishing said underlying surface.

3,347,761
ELECTROPURIFICATION OF SALT SOLUTIONS

Edward J. Bicek, La Grange, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Jan. 22, 1964, Ser. No. 339,501
8 Claims. (Cl. 204—151)



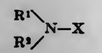
1. A process for removing an electrolytically reducible metallic contaminant from a raw aqueous liquor containing a major proportion of electrolytically stable cations and a minor proportion of said contaminant in ionic form which comprises: maintaining spaced electrodes including a sacrificial metal anode and a cathode immersed in an aqueous electrolyte and separated by a first cation impervious barrier and a second neutral semipermeable barrier interposed between said first barrier and said cathode whereby to form anodic, intermediate and cathodic zones; introducing said raw liquor to the cathodic zone and passing it first into contact with the cathode and then through said second barrier into the intermediate zone; applying an electric potential to said electrodes thereby electrolytically reducing said contaminant to the metallic state in the cathodic zone and oxidizing said sacrificial anode in the anodic zone, the potential migration into said intermediate zone of cations thus liberated in the anodic zone being substantially impeded by said first barrier; and withdrawing from said intermediate zone purified liquor of reduced contaminant content.

3,347,762
PROCESS FOR THE PRODUCTION OF IMIDOCARBONYL CHLORIDES AND SIMILAR ORGANIC COMPOUNDS CONTAINING NITROGEN AND CHLORINE COMBINED IN AN —N=CCL— RADICAL

Hans Holtschmidt and Wilfried Zecher, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

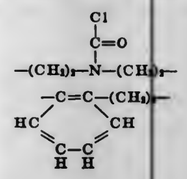
No Drawing. Filed Aug. 28, 1962, Ser. No. 220,054
Claims priority, application Germany, Sept. 13, 1961, F 34,920; Nov. 9, 1961, F 35,319
8 Claims. (Cl. 204—158)

1. A process for the production of an organic compound containing chlorine and nitrogen combined in the —N=CCl— radical which comprises reacting a compound having the formula



wherein R^1 and R^2 when taken alone are each selected from the group consisting of lower alkyl, phenyl and halogen-substituted, cyano-substituted, lower alkyl-substituted, phenyl-substituted, amino-substituted and imino-substituted lower alkyl and phenyl radicals, and R^1 and R^2 when taken together with the N— to which each is attached stands for a 5 or 6 membered heterocyclic radical, R^1 and R^2 together in said heterocyclic radical being selected from the group consisting of alkylene, dialkylene ether, dialkylene thioether,

and



X stands for an acyl radical of the group consisting of —COCl, —COBr, —COF, —COR in which R stands for an alkyl radical, —COR in which R stands for an aryl radical, CN, $—SO_2Cl$, $—SO_2R$ in which R stands for an alkyl radical, and $—SO_2R$ in which R stands for an aryl radical, with chlorine, while it is irradiated with ultraviolet light at a temperature below 140° C. for such a period that replaceable hydrogen atoms of the compound are replaced by chlorine atoms, and then treating the resulting chlorine-containing compound with additional chlorine at a higher temperature between 140° and 300° C. while it is irradiated with ultraviolet light and subsequently recovering the latter compound.

3,347,763
PRODUCTION OF OXYGEN-CONTAINING ORGANIC COMPOUNDS

Robert Stevenson Coffey and Herbert George Lawley, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, SW. 1, England, a corporation of Great Britain

No Drawing. Filed July 1, 1963, Ser. No. 292,145
Claims priority, application Great Britain, July 2, 1962, 25,219/62
12 Claims. (Cl. 204—158)

1. A process for the production of olefine oxides and carboxylic acids which comprises the step of contacting a liquid mixture containing an olefinic compound having at least four carbon atoms, the double bond in said olefinic compound being in a non-terminal position, at a temperature in the range of 60° C. to 150° C. with a gas-containing molecular oxygen and continuously introducing into said liquid mixture an aldehyde having at least two carbon atoms.

11. A process as claimed in claim 1 in which the reaction is operated under the influence of ultra-violet light.

3,347,764
METHOD OF PRODUCING POLYOXYMETHYLENE USING TRIOXANE, A SOLVENT AND IONIZING RADIATION

Toyokazu Matsumoto, Miyakojima-ku, Osaka, Saburo Ohara, Sakyo-ku, Kyoto, Shigeru Kawase, Mishima-gun, Osaka, and Hisako Sakurai, Fuse, Japan, assignors to Kanegafuchi Spinning Co., Ltd., Tokyo, Japan

No Drawing. Filed Mar. 9, 1962, Ser. No. 178,546
Claims priority, application Japan, Mar. 16, 1961, 36/9,555
2 Claims. (Cl. 204—159.21)

2. A method of producing polyoxymethylene which comprises subjecting a mixture to ionizing radiation at a temperature of below 30° C. and heating the irradiated product at a temperature between 50° and 60° C., the mixture containing from about 0.1 to about 10 parts by weight of halogenated aliphatic hydrocarbon solvent per 100 parts by weight of solid trioxane.

3,347,765
INTRODUCTION OF POLYFLUOROALKYLTHIO GROUPS INTO HYDROCARBONS

John F. Harris, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 24, 1967, Ser. No. 625,573
16 Claims. (Cl. 204—162)

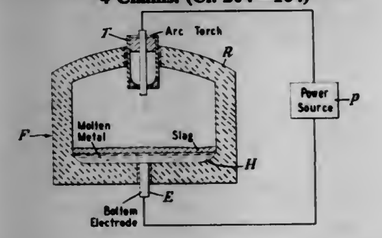
1. The process which comprises reacting in the presence of a free-radical initiating source, a polyfluoroalkanesulfenyl chloride in which the carbon bonded to the sulfur atom of said sulfenyl chloride bears at least two fluorines with a substantially aliphatically saturated hydrocarbon that contains at least one aliphatic carbonhydrogen group.

2. The process of claim 1 wherein the free-radical initiating source is ultraviolet radiation.

3,347,766
METHOD OF CONTACTING SLAG WITH A REDUCING ARC ATMOSPHERE TO REDUCE THE METAL OXIDES CONTAINED THEREIN

Frank S. Death, Tonawanda, and Joseph A. Morcio, Cheektowaga, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Oct. 1, 1963, Ser. No. 312,900
4 Claims. (Cl. 204—164)



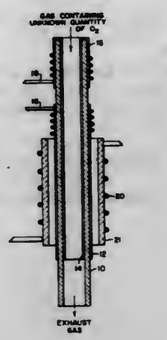
1. A method for reduction of metal oxides which comprises providing and maintaining a molten metallic bath, providing a molten electrically conductive slag layer substantially completely covering said bath, said slag layer containing at least one metal oxide selected from the group consisting of iron oxide, manganese oxide, chromium oxide and mixtures thereof establishing an electric arc between the non-consumable electrode and said bath, passing an arc gas taken from the class consisting of hydrocarbon gases, argon, helium, nitrogen, hydrogen, carbon monoxide and mixtures thereof through a nozzle having at least a central orifice the longitudinal axis of which is in alignment with said arc, and introducing a hydrocarbon gas into the arc column to thereby become at least part of the arc plasma, with the proviso that if the arc gas be a hydrocarbon gas the introduction of a hydrocarbon gas into the arc column may be eliminated, transporting the hydrocarbon reaction products in a highly reactive state in the arc plasma, impinging the arc plasma onto the surface of said slag layer where reduction products are formed while maintaining said substantial complete slag layer covering said bath, and then collecting the reduced metal values in the molten metallic bath.

3,347,767
DEVICE FOR MONITORING OXYGEN CONTENT OF GASES

William M. Hickam, Churchill Borough, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 10, 1963, Ser. No. 279,466
6 Claims. (Cl. 204—195)

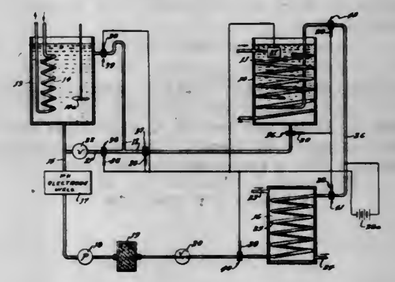
1. An electrochemical device capable of providing an electrical signal indicative of the oxygen pressure in a gas comprising: a tubular electrolyte member of a solid material conductive of oxygen ions with negligible electronic conductivity; a first electronically conductive electrode disposed in direct contact with the outer surface of said tubular electrolyte member; a second electronically conductive electrode disposed in direct contact with the inner surface of said tubular electrolyte member and extending around one end of said tubular electrolyte member to also be in direct contact with the outer surface thereof; first and second conductive lead members in conductive contact with said first and second electronically conductive electrodes, respectively.



3,347,768
ANODIC PROTECTION FOR PLATING SYSTEM

Wesley I. Clark, Kennewick, Bruce Griggs, Richland, Darrell D. Hays, Kennewick, and Germaine F. Jacky, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 29, 1965, Ser. No. 429,187
6 Claims. (Cl. 204—196)



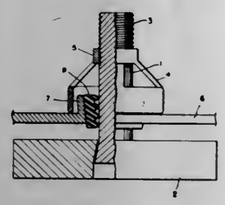
1. In a continuously regenerated system for depositing nickel plate by chemical reduction in an aqueous solution, comprising a metal plating tank, a cooler regenerator tank, a heat exchanger, and metal pipes for conveying the solution from the plating tank to the cooler regenerator tank, from the cooler regenerator tank to the heat exchanger, and from the heat exchanger to the plating tank; the combination therewith, of a metal sheet immersed in the plating tank, a plurality of metal ring inserts applied to the pipes so as to be insulated therefrom, two inserts being applied adjacent to the inlet and outlet of the plating tank, another insert being applied adjacent the inlet to the cooler regenerator tank, still another insert being applied between the last-mentioned insert and the insert adjacent the outlet of the plating tank, two inserts being applied adjacent the inlet and outlet of the heat exchanger, means for connecting the negative

side of a direct-current source to the metal sheet and to the ring inserts, and means for connecting the positive side of the direct-current source to the pipes and thereby also to the metal plating tank.

3,347,769
MEANS FOR ADJUSTING ANODES IN ELECTROLYTIC CELLS HAVING HORIZONTAL CATHODES

Werner Honsberg, Bad Durkheim, and Heinrich Mueller, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Apr. 21, 1964, Ser. No. 361,495
Claims priority, application Germany, May 24, 1963, B 72,039
8 Claims. (Cl. 204—225)

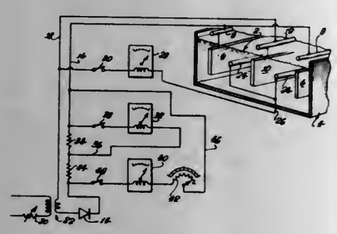


1. In an electrolytic cell having a substantially horizontal cathode, a cover enclosing said cell, an anode plate arranged within said cell on a vertical shaft extending through an opening in said cover and means for adjustably mounting said anode plate, the improvement wherein said means for mounting said anode plate comprises a support member resting loosely on said cell cover and carrying a rotatable nut threadably engaging the upper portion of said shaft for axial adjustment thereof, and an elastomeric plug inserted in the opening of said cell cover around said shaft to maintain said shaft in its vertical position, said plug being grooved radially outwardly on its inner surface which is in sealing contact with said shaft.

3,347,770
AREA MEASUREMENT AND CURRENT DENSITY CONTROL DEVICE

Anthony G. Valles and Francis A. Schreihans, Pomona, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware

Filed Sept. 3, 1964, Ser. No. 394,233
8 Claims. (Cl. 204—228)

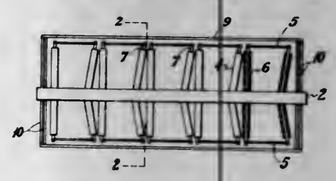


2. A device for determining area and controlling density in the electrodeposition of metallic coatings from electrolytes comprising: a container adapted for containing an electrolyte, means for supporting associated material to be plated, which functions as cathode means when immersed in electrolyte contained in said container, means for supplying electric current through the associated electrolyte, sensing means positioned on opposite sides of the cathode means, means for determining the potential between the cathode means and said sensing means for determining the area of associated material to be plated, the potential between the cathode means and said sensing means varying non-linearly with the area of the associated material to be plated, means for determining the current supplied to the associated electrolyte, means for controlling the current supplied to the associated electrolyte, and means for controlling the power supplied to the current controlling means.

3,347,771
LEAD-TIN ALLOY PLATING FIXTURE FOR SILICON

Frank Joseph Reznick, Neptune, and James A. Noddings, Matawan, N.J., assignors to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware

Filed Jan. 25, 1965, Ser. No. 427,675
8 Claims. (Cl. 204—297)

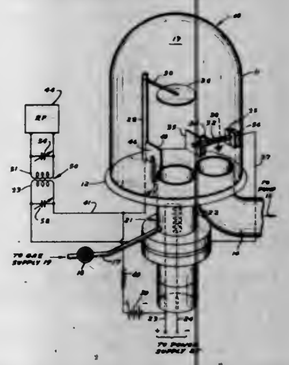


1. A fixture for holding semiconductor wafers for plating comprising a multisided frame generally defining a plane, said frame being of a material having good electrical conductivity, a plurality of groups of axially parallel resilient control wires secured to said frame and generally perpendicular to said plane, said groups including three wires providing a three-point contact for supporting each wafer substantially axially parallel to said frame, insulating means for insulating said frame and a portion of said contact wires, and means for connecting said frame to the negative side of a source of electrical current.

3,347,772
RF SPUTTERING APPARATUS INCLUDING A CAPACITIVE LEAD-IN FOR AN RF POTENTIAL

Nils Laegreid, Minneapolis, Minn., and Roger M. Moseson, Rochester, N.Y., assignors to G. T. Schjeldahl Company, a corporation of Minnesota

Filed Mar. 2, 1964, Ser. No. 352,415
(Filed under Rule 47(a) and 35 U.S.C. 116)
5 Claims. (Cl. 204—298)

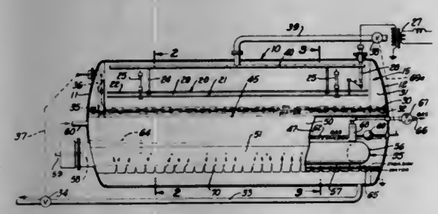


1. In a deposition system utilizing a low pressure supported gas discharge plasma for maintaining an enclosure fabricated at least in part from a dielectric material, an inert gaseous atmosphere of low pressure maintained within said enclosure, a plurality of working stations disposed within said enclosure, and means for establishing a gas discharge plasma therewithin, said working stations including an electron emitting electrode, a plurality of electrodes including an anode for said electron source disposed in spaced relationship from said electron emitting electrode and biased electrically to attract said electrons and defining a reaction zone for said electrons and the gas molecules comprising said atmosphere, and at least one target electrode disposed in said reaction zone, certain of said gaseous molecules being adapted to bombard the surface of said target to remove atoms therefrom, means for collecting said removed atoms, and field generating means for establishing a RF field generating means including capacitive means having a pair of electrically coupled electrode plates disposed in spaced apart relationship on opposite surfaces of the dielectric of said enclosure and including an inner and an outer plate, and coupling means for locating and isolating said RF potential on the target surface disposed within said enclosure and in spaced relationship from said enclosure surface, said coupling means including an electrical conductor extending from said inner plate to said target and a shield disposed about said conductor and generally coextensive with said conductor to electrically isolate the field created along the extent of said conductor from said plasma.

3,347,773
GAS-WATER SEPARATOR FOR EMULSIONS

Delber W. Turner, Houston, Tex., assignor, by mesne assignments, to National Tank Company, a corporation of Nevada

Filed Apr. 20, 1964, Ser. No. 361,118
19 Claims. (Cl. 204—302)



1. A gas-water separator for oil-continuous emulsions containing gases and a dispersed water phase, said separator including in combination:

a closed horizontally-elongated container providing a long main treating chamber in the upper interior thereof occupying a major portion of the length thereof;

means for establishing a high-voltage electric field substantially throughout the length of said main treating chamber, said field-establishing means including a long electrode means and means for electrically insulating same from said container;

a baffle structure extending longitudinally of said container below said electrode means throughout substantially the entire length of said main treating chamber, the space within said container below said baffle structure forming an inlet chamber, said baffle structure providing a pretreating chamber opening downwardly on the lower interior of said chamber;

conduit means for delivering a pressured stream of said emulsion directly to said inlet chamber;

conduit means opening on said inlet chamber for withdrawing separated gas therefrom;

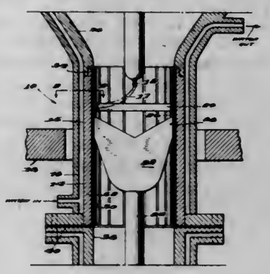
means for withdrawing from the bottom of said container water separating in said inlet chamber and said main treating chamber; and

means for delivering to said electric field emulsion from said inlet chamber from which gas and free water have separated.

3,347,774
ARC FURNACE FOR PYROLYSIS OF HYDROCARBON TO ACETYLENE

Arthur F. Myers, Louisville, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 24, 1964, Ser. No. 377,640
8 Claims. (Cl. 204—311)



1. In an electric arc furnace for the pyrolysis of hydrocarbons to acetylene by passage of a hydrocarbon containing gas stream through an arc furnace including a reaction chamber, a generally cylindrical anode having an inner surface defining a reaction zone in said chamber, a rod cathode extending coaxially into said cylinder, a source of electricity connected across said anode and said cathode causing an arc to span said cathode and said anode, means for rotating said arc electromagnetically so the path of said arc defines an axial contact zone at the inner surface of the said anode, means for feeding said gas stream through the reaction zone whereby acetylene is produced, and means for withdrawing said acetylene, the improvement wherein said anode is composed of a material selected from the group consisting of copper and copper alloys, the inner surface thereof exposed at said contact zone being substantially composed of an integrally bonded refractory metal.

3,347,775
SEPARATION OF WAXY HYDROCARBONS FROM OILS BY FLOTATION

Paul Albert Tritsmans, Antwerp, Belgium, assignor to Societe Industrielle Belge des Petroles S.A., Antwerp, Belgium, a Belgian joint-stock company

Filed Feb. 16, 1965, Ser. No. 432,960
Claims priority, application Belgium, Aug. 21, 1964, 43,901
3 Claims. (Cl. 208—28)

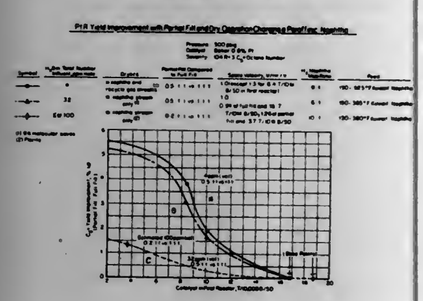
1. A continuous process for the flotation separation of waxy hydrocarbons from waxy oil to produce dewaxed oil having reduced cloud and pour points which comprises passes fresh waxy oil into a flotation zone at a temperature above its cloud point, withdrawing a portion of oil from said flotation zone at a point remote from the fresh oil inlet of the flotation zone, passing the withdrawn oil through heat exchanger means at a rate of flow to minimize any wax deposition thereon and to cool the withdrawn oil to a temperature at which when recycled for admixture with fresh oil, the resulting mixture will be at a temperature at which wax separation will occur, recycling the cooled oil back to the flotation

zone at a point to the fresh oil inlet to cool the oil present therein to a temperature below the cloud point of the oil, the ratio of recycled cool oil to fresh oil into said flotation zone being at least 5:1, passing a flotation gas upwardly through the cooled waxy oil in said flotation zone to separate the mixture into a top waxy froth layer and a bottom dewaxed oil layer, and withdrawing the dewaxed oil from the separation system by bleeding same off said recycle stream in an amount to keep a constant quantity of oil in said flotation zone.

3,347,776
COKING A MIXTURE OF A HYDROCARBON AND QUINONE
Charles V. Mitchell, Shaker Heights, and Irwin C. Lewis, Lakewood, Ohio, assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 17, 1963, Ser. No. 288,458
12 Claims. (Cl. 208—46)

1. In a process for making carbon by coking a hydrocarbonaceous material normally of low coking value and liquefiable below coking temperatures and reactive with a quinone, the improvement which comprises mixing a quinone with said hydrocarbonaceous material prior to coking in an amount sufficient to improve the coking value of said hydrocarbonaceous material, and then coking the mixture.

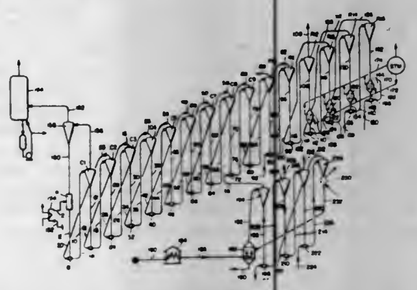
3,347,777
REFORMING OF PARAFFINIC NAPHTHAS
Francis E. Davis, Jr., Westville, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed Mar. 30, 1966, Ser. No. 538,703
10 Claims. (Cl. 208—65)



1. A method for reforming a paraffin rich naphtha feed which comprises contacting a paraffin rich naphtha feed with a platinum group reforming catalyst under reforming conditions of temperature and pressure wherein the moisture content of the influent to the first reactor and catalyst loading of the first reactor of a multiple reactor reforming process is correlated in accordance with the curves of FIGURES 1 and 2 to achieve at least a 2 volume percent yield improvement in C_5+ reformate yields.

3,347,778
METHOD AND SYSTEM FOR CRACKING HYDROCARBONS
Thomas Dill, Westport, Conn., and John G. Mitchell, Larchmont, N.Y., assignors to Mobil Oil Corporation, a corporation of New York
Filed Mar. 12, 1965, Ser. No. 439,209
2 Claims. (Cl. 208—74)

1. A method for converting hydrocarbons boiling above gasoline boiling range hydrocarbons with an aluminosilicate cracking catalyst which comprises passing a hydrocarbon feed with an aluminosilicate cracking catalyst through a first conversion zone maintained under conditions to effect not more than partial conversion of said hydrocarbon feed, separating catalyst from hydrocarbon product of said first conversion zone, stripping and regenerating said separated catalyst under conditions to effect not more than a partial removal of carbonaceous deposits on said separated catalyst, returning sufficient catalyst thus regenerated to said initial conversion zone to furnish a substantial portion of the heat required therein to vaporize said hydrocarbon feed and effect partial conversion thereof, passing another portion of said partially regenerated catalyst through a plurality of sequentially connected dilute catalyst phase regeneration zones maintained under regeneration conditions to effect substantially complete



removal of carbonaceous deposits on said partially regenerated catalyst, passing catalyst thus regenerated through a sequence of separate dilute phase second conversion zones of increasing temperature in the direction of catalyst flow therethrough and passing vaporous hydrocarbons from said first conversion zone through said dilute phase conversion zones generally countercurrent to said catalyst flow and at a temperature matched to the activity of the catalyst to substantially inhibit undesired over cracking of hydrocarbon conversion products recovered from said previous conversion steps, recovering desired conversion products and catalyst from said dilute phase conversion steps and passing catalyst thus recovered to said first conversion zone.

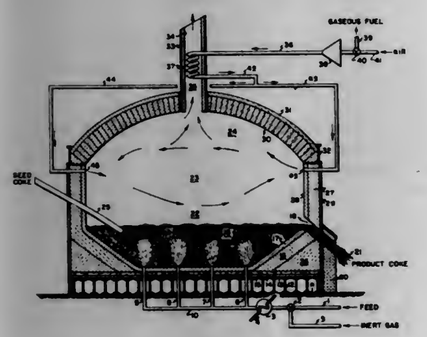
3,347,779
MANUFACTURE OF PETROLEUM DISTILLATES BY HYDRODESULFURIZATION AND HYDROGENATION
Willem Groenendaal, The Hague, and Willem H. Logman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 23, 1965, Ser. No. 450,516
Claims priority, application Netherlands, Apr. 28, 1964, 64—4,715
7 Claims. (Cl. 208—89)

1. A process for the preparation of a petroleum distillate having an improved smoke point comprising the sequential steps:
(a) partially hydrodesulfurizing a petroleum distillate fraction having a smoke point lower than desired;
(b) fractionating the partially desulfurized petroleum distillate into two fractions of different boiling ranges, both of which have atmospheric boiling ranges at least as high as the boiling range of kerosene, and at least one of which boils substantially within the kerosene boiling range;
(c) hydrogenatively dearomatizing said fraction boiling substantially within the kerosene boiling range; and
(d) blending the dearomatized kerosene boiling range fraction with the remaining un-dearomatized fraction having an atmospheric boiling range at least as high as the boiling range of kerosene to recover a petroleum distillate having a higher smoke point than the feed.

3,347,780
NAPHTHA HYDROCONVERSION TO PRODUCE LOWER BOILING HYDROCARBON PRODUCTS
Robert H. Lindquist, Berkeley, and Clark J. Egan, Piedmont, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Feb. 4, 1966, Ser. No. 525,150
5 Claims. (Cl. 208—111)

1. A process for converting petroleum naphtha having a maximum end point of 385° F. to light hydrocarbons having 3 to 5 carbon atoms which comprises contacting said naphtha as feed, along with at least 1500 s.c.f. of hydrogen per barrel of said feed with a consumption of at least 500 s.c.f. of hydrogen per barrel of feed converted to lower boiling products, at more than 350 p.s.i.g. hydrogen partial pressure and below 800° F. at more than 0.2 v./v./hour liquid hourly space velocity over a presulfided hydrocracking catalyst prepared by chemisorbing a fluoride of a hydrogenating metal of the iron transition group on an active cracking catalyst support containing at least 10% of alumina or magnesia in substantially dehydrated state, said catalyst having a hydrogenating metal content of 3–40% on a dry weight basis and sulfiding the resulting catalyst, and maintaining a sulfur content of at least 10 p.p.m. in the naphtha feed being brought into contact with said catalyst, the operating conditions including temperature being sufficient to convert at least 30% of said naphtha feed to products boiling below the initial boiling point of said feed.

3,347,781
FLUID BED PROCESS FOR COKING HYDROCARBONS
William Claus Behrmann and Robert O. Maak, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,853
6 Claims. (Cl. 208—127)

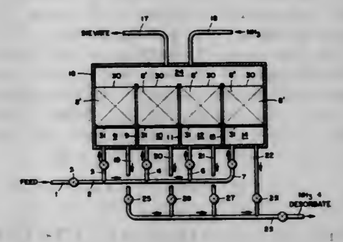


1. In a process for the production of high temperature fluid coke wherein hydrocarbon feed in injected into a fluidized bed of coke particles to crack the hydrocarbon feed to coke and hydrogen, coke depositing on the hot coke particles and the hot hydrogen gas proceeding upwardly to fluidize the coke particles and thence ascend into a vapor space above the bed, the improvement comprising injecting an oygen-containing gas into the vapor space to admix with the hot hydrogen gas, burning the hydrogen gas, and radiating heat from the combusting gas to the fluid coke bed.

3,347,782
METHOD OF STABILIZING PLATINUM GROUP METAL REFORMING CATALYST
Leon M. Capsuto, Woodbury Heights, and Francis E. Davis, Jr., Westville, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,297
1 Claim. (Cl. 208—138)

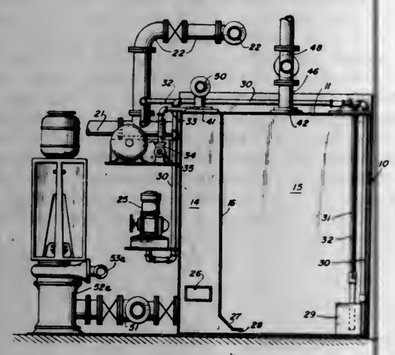
The method of stabilizing the selectivity of platinum-group metal reforming which comprises for at least 90 days contacting conditioned platinum-group metal reforming catalyst comprising platinum-group metal on refractory oxide support having acid sites with charge naphtha containing innocuous concentrations of not more than 20 p.p.m. of sulfur, not more than 1 p.p.m. nitrogen and not more than $1/10^9$ parts of arsenic at least fifteen percent by volume of naphthenes in the presence of hydrogen-containing gas in a reforming zone comprising a plurality of reactors, at a pressure in excess of 400 p.s.i.g., maintaining a partial pressure of water in excess of 0.4 mm. Hg but not greater than about 20 mm. of Hg as measured in the effluent of the tail reactor, admixing at least one nitrogen compound yielding ammonia under said reforming conditions at the rate of at least 2 p.p.m. by weight of ammonia based upon the charge naphtha, said hydrogen-containing gas being present in the ratio of about three to about twenty mols of hydrogen per mol of charge naphtha, employing a reforming temperature in the range of about 900° to about 1,050° F. and a liquid hourly space velocity in the range of 0.5 to 2.

3,347,783
REGENERATION OF INDIVIDUAL MOLECULAR SIEVE COMPARTMENTS
George F. Feldbauer, Jr., Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,049
12 Claims. (Cl. 208—310)



1. In a molecular sieve separation process wherein a feedstock, at least a portion of which is adsorbable, is passed through a molecular sieve separation zone whereby the said adsorbable portion is adsorbed onto the molecular sieve, halting the flow of said feedstock, then desorbing the said adsorbed component by means of a displacing agent and the cycle continued until the said molecular sieve contains a deactivating amount of a strongly adsorbed contaminant which serves to reduce its adsorptive capacity, the improvement which comprises compartmentalizing the said molecular sieve bed, halting the flow of feed to at least one of the said compartments in the said molecular sieve bed zone while passing feed into the remaining compartments to adsorb the adsorbable components of the feed in said beds, passing the said displacing agent through all of said compartmentalized zones and continuing this procedure for at least 5 cycles until the deactivating amount of contaminant is removed.

3,347,784
SEWAGE TREATMENT PROCESS AND APPARATUS
Stanley E. Kappe, Bethesda, Md., assignor to FMC Corporation, a corporation of Delaware
Filed May 5, 1965, Ser. No. 453,353
17 Claims. (Cl. 210—6)

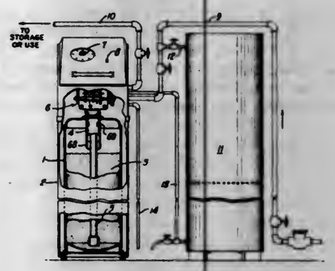


8. The method of treating sewage which comprises establishing aeration, settling, sludge re-aeration and effluent storage zones, said aeration and settling zones being contiguous and communicating at a point below the normal liquid level of said zones, said settling and sludge re-aeration zones being contiguous and communicating in the lower portions of said zones, establishing a mixture of sewage and sludge in said aeration zone, passing air into said mixture in said aeration zone in quantities to satisfy a major proportion of the BOD, flowing aerated mixture from said aeration zone to said settling zone in liquid level maintaining response to liquid level differential between said zones, flowing settled sludge from said settling zone to said re-aeration zone as a consequence of liquid level maintaining response to discharge of sludge from said re-aeration zone, passing air into said sludge in said re-aeration zone, discharging aerated sludge from said re-aeration zone to said aeration zone for introduction of sludge in the establishing of said mixture in said aeration zone, discharging clarified liquor from said settling zone to said effluent storage zone and thereafter discharging stored liquor to a receiving body.

3,347,785
METHOD AND APPARATUS FOR ION EXCHANGE REGENERATION
William A. Staats, Torrance, Calif., assignor, by mesne assignments, to Culligan, Inc., North Brook, Ill., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,555
12 Claims. (Cl. 210—35)

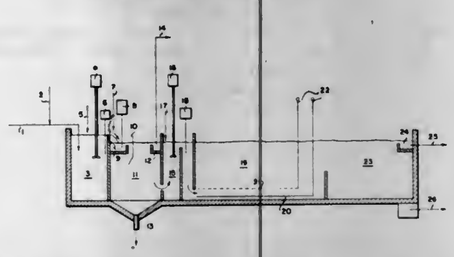
4. In an ion exchange process wherein an ion-carrying granulated bed carries a concentration of replacement ions to be exchanged for displaceable ions in a liquid passed through the bed, the regeneration process for periodically regenerating the bed to remove the displaceable ions and provide a new concentration of said replacement ions, comprising

(a) backwashing said bed with fresh water,
(b) a first pulse brining of said bed with a fresh concentrated brine solution for a selected period,
(c) fresh water rinsing of said bed for a selected period,
(d) a second pulse brining of said bed with a concentrated brine solution corresponding to the first pulse brining,
(e) a second fresh water rinsing of said bed,
(f) a third pulse brining of said bed with a concentrated brine solution corresponding to the first pulse brining,
(g) a third fresh water rinsing of said bed,



(h) a fourth pulse brining of said bed with a concentrated brine solution corresponding to the first pulse brining, and
(i) a fourth fresh water rinse of said bed for a substantially longer period than any one of said other rinses.

3,347,786
PROCESS FOR PURIFYING WATER USING REFORMING OF METAL HYDROXIDE FLOCCULATION AGENT
Erhardt Baer, Sophienstr. 52, and Kurt Xylander, Libellenweg 56, both of Frankfurt am Main, Germany
Filed June 25, 1965, Ser. No. 510,995
Claims priority, application Germany, June 30, 1964, Z 10,946
10 Claims. (Cl. 210—45)



1. A process for purifying water which comprises providing a metal hydroxide in flocculated form in said water thereby causing a portion of the impurities contained in said water to separate therefrom, adjusting the pH value of the water to dissolve said hydroxide, removing the separated impurities from said water, readjusting the pH value of said water to reform said metal hydroxide flocculate thereby causing an additional portion of the remaining impurities of said water to separate therefrom, and removing said additional separated impurities from said water.

3,347,787
PROCESS OF PURIFYING OR RECOVERING MINE DRAINAGE WATERS AND THE LIKE
John Cecil Rhodes, Old Limekiln Road, R.D. 1, Doylestown, Pa. 18901
No Drawing. Filed Aug. 30, 1965, Ser. No. 483,829
8 Claims. (Cl. 210—50)

1. The process of purifying mine drainage water and the like containing sulphates of iron dissolved therein and containing sulphuric acid, which comprises neutralizing the sulphuric acid content of such water with metallic iron and converting the iron sulphates originally contained in such water and also the iron sulphates resulting from the aforementioned acid-neutralization to insoluble iron compounds, by adding metallic iron and oxygen to such water in amounts substantially in excess of the stoichiometric proportions thereof in relation to the iron content and sulphuric acid content of the water and concurrently subjecting such water to the action of such metallic iron and oxygen until the acidity of the water has been reduced to a point approcahing neutrality and the original iron content and sulphate ion content of the water have been converted to insoluble basic iron sulphates.

3,347,788
PROCESS FOR THE PREPARATION OF PRODUCTS USED FOR THE CONTROL OF VISCOSITY AND WATER ABSORPTION OF DRILLING FLUIDS
August Wilhelm Sohn, Mannheim, and Albert Erasmus, Mannheim-Waldhof, Germany, assignors to Zellstoffabrick Waldhof, Mannheim-Waldhof, Germany, a corporation of Germany
No Drawing. Continuation of application Ser. No. 395,572, Sept. 10, 1964. This application Dec. 20, 1966, Ser. No. 603,391
Claims priority, application Germany, Sept. 24, 1963, Z 10,373
4 Claims. (Cl. 252—8.5)

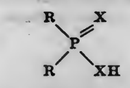
1. A drilling fluid consisting essentially of a hydratable swelling clay and an amount sufficient to control viscosity and water absorption of a pretreated sulfite liquor in aqueous dispersion, said pretreated sulfite liquor being the product formed by reacting waste sulfite liquor, said liquor being freed of sugars by fermentation, at temperatures of between about 50 and 100° C., with 5 to 12 parts by weight per 100 parts by weight of said liquor of chromium-III sulfates and 0.5 to 3 parts by weight per 100 parts by weight of said liquor of a sulfate selected from the group consisting of iron-II and iron-III sulfates and mixtures of said iron sulfates, the amount of cationic iron in the sulfite liquor product being 1 to 2.7% Fe_2O_3 based on the dry product, drying and pulverizing said product, and reheating at a temperature between about 100 and 200° C.

3,347,789
TREATMENT OF OIL WELLS
Woodrow J. Dickson, La Habra, and Fred W. Jenkins, Buena Park, Calif., assignors to Petrolite Corporation
No Drawing. Application May 24, 1965, Ser. No. 458,373, which is a continuation of application Ser. No. 115,884, June 9, 1961, and is also a division of application Ser. No. 47,387, Aug. 4, 1960. Divided and this application Mar. 4, 1966, Ser. No. 531,794
5 Claims. (Cl. 252—8.55)

1. A process for injecting water into an underground formation characterized by employing an aqueous solution of a linear polymer of a 1,2-alkyleneimine, said polymer having a molecular weight of at least 800, each alkylene unit therein having 2 to 20 carbon atoms.

3,347,790
LUBRICATING COMPOSITIONS CONTAINING METAL SALTS OF ACIDS OF PHOSPHORUS
Norman A. Meinhardt, Lyndhurst, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed July 1, 1965, Ser. No. 468,965
13 Claims. (Cl. 252—32.5)

1. A lubricating composition comprising a major proportion of a mineral lubricating oil and from about 0.001% to about 5% by weight of a metal salt prepared by the process comprising the reaction of a Group II metal base with a phosphorus acid of the structural formula



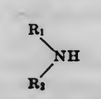
wherein one R is selected from the class consisting of hydrocarbon and hydrocarbon-oxy radicals and the other R is a hydrocarbon radical, each of the foregoing radicals having up to about 200 carbon atoms in the hydrocarbon group and X is oxygen or sulfur in the presence of a catalyst selected from the class consisting of carboxylic acids having up to about 10 aliphatic carbon atoms and salts thereof with a metal selected from the class consisting of Group I metals, Group II metals, aluminum, iron, nickel, cobalt, and copper.

3,347,791
ANTIOXIDANT COMPOSITION AND ESTER LUBRICATING OIL CONTAINING IT
John W. Thompson and Thomas G. Davis, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Feb. 26, 1964, Ser. No. 347,391
25 Claims. (Cl. 252—33.6)

1. A normally liquid composition useful as a lubricant which consists essentially of (a) a synthetic ester oil portion and (b) at a protective concentration a mixture consisting essentially of (1) an arylamine antioxidant portion consisting essentially of an arylamine selected from the group consisting of diphenylamines, N-phenylnaphthylamines, dinaphthylamines, phenothiazines, phenylenediamines and diphenylphenazasilines and (2) an alkali metal salt portion consisting essentially of at least one alkali metal salt selected from the group consisting of alkali metal salts of hydrocarbon carboxylic acids, alkali metal salts of an imide-amide reaction product of a hydrocarbon aminocarboxylic acid and an alkyl amine, alkali metal salts of carboxy terminated polyesters and alkali metal salts of hydroxy aromatic compounds selected from the group consisting of naphthols and hydroxyanthraquinones, the concentration of the alkali metal salt portion being such that the alkali metal concentration is in a range from about 0.001 to about 0.5% by weight of said synthetic ester oil portion and the weight ratio of alkali metal to said arylamine antioxidant is in a range from about 1:30 to about 1:1000.

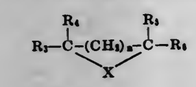
3,347,792
NITROGEN-, SULFUR- AND OXYGEN-CONTAINING COMPOUNDS AND THEIR LUBRICANT COMPOSITIONS
William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 10, 1964, Ser. No. 410,289
14 Claims. (Cl. 252—47.5)

1. A lubricating composition comprising a major amount of a lubricating oil and from about 0.01% to about 10% by weight of a nitrogen- and sulfur-containing composition prepared by the process comprising reacting at a temperature of from about —50° C. to about 100° C. an amine having the structural formula

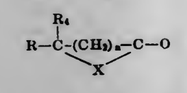


wherein R_1 and R_2 are hydrogen, hydrocarbon radicals selected from the class consisting of alkyl, aralkyl, cycloalkyl, aryl, or alkaryl having up to about 30 carbon atoms each, or said hydrocarbon radicals having a halo, nitro,

ether, or ester substituent; with about one equivalent of carbon disulfide and at least about one equivalent of an epoxide having the structural formula



or



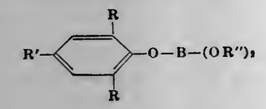
wherein X is 0 or S, n is 0–2, R_3, R_4, R_5, and R_6 are hydrogen, hydrocarbon radicals selected from the class consisting of alkyl, alkenyl or aryl having a total of up to about 30 carbon atoms, or said hydrocarbon radicals having a halo, nitro, ether, or ester substituent and wherein R_1, R_2, R_3, R_4, R_5, and R_6 have a combined total of from about 11 to about 74 aliphatic carbon atoms.

3,347,793
BORATE ESTERS AND GASOLINE OR LUBRICATING OIL COMPOSITIONS

Robert M. Washburn, Whittier, and Franklin A. Billig, Los Angeles, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

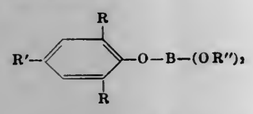
No Drawing. Filed Apr. 23, 1956, Ser. No. 579,916
14 Claims. (Cl. 252—49.6)

1. A borate ester of the formula:



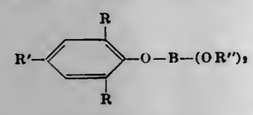
where R represents a tertiary alkyl radical, R′ is selected from the group consisting of hydrogen and lower alkyl radicals and R″ represents a lower alkyl radical.

13. As a composition of matter, gasoline containing a borate ester of the formula:



where R represents a tertiary alkyl radical, R′ is selected from the group consisting of hydrogen and lower alkyl radicals, and R″ represents a lower alkyl radical.

14. As a composition of matter, lubricating oil containing a borate ester of the formula:



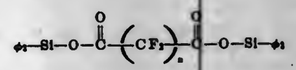
where R represents a tertiary alkyl radical, R′ is selected from the group consisting of hydrogen and lower alkyl radicals, and R″ represents a lower alkyl radical.

3,347,794
LUBRICANT GREASE

Fred K. Kawahara, Cincinnati, Ohio, assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Sept. 15, 1966, Ser. No. 584,041
11 Claims. (Cl. 252—49.6)

5. A lubricant grease composition comprising (a) a thickener; (b) a silicone polymer oil in the lubricating oil viscosity range; and (c) from about 0.1 to 50 percent by weight of a bis(triphenyl silyl) perfluorodicarboxylic acid ester having the formula



wherein n is 1–8, and ϕ is phenyl.

3,347,795
IRIDIUM AND CHROMIUM DOPED LEAD ZIRCONATE TITANATE PIEZOELECTRIC CERAMIC COMPOSITION

Tsuneo Akashi, Masao Takahashi, Fumio Yamauchi, Norio Tsubonchi, and Tomeji Ohno, Shikokumachi, Japan, assignors to Nippon Electric Company, Limited, Minato-ku, Tokyo, Japan

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,457
Claims priority, application Japan, Mar. 12, 1963, 38/12,952
2 Claims. (Cl. 252—62.9)

1. A piezoelectric ceramic composition having a basic composition of the formula:

$$(Pb_uA_v)(Zr_xTi_ySn_z)O_3$$

wherein A is at least one member selected from the group consisting of calcium, strontium, and barium and u, v, x, y, and z are given by

u=0.75–1.00,
v=0.00–0.25,
$u+v$=1.00,
x=0.00–0.90,
y=0.10–0.60,
z=0.00–0.65, and
$x+y+z$=1.00,

and incorporating iridium dioxide and chromium sesquioxide in amounts of from 0.02 to 0.30 weight percent iridium dioxide and from 0.01 to 0.50 weight percent chromium sesquioxide.

3,347,796
BRAKE FLUID

George L. Doelling, St. Louis, Mo., Joseph A. Siefker, Quincy, Ill., and Edward J. Schwoegler, Munster, and Richard E. Putscher, Hammond, Ind., assignors, by mesne assignments, to Tung-Sol Electric Inc., Newark, N.J., a corporation of Delaware

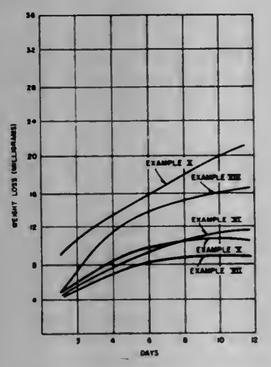
No Drawing. Filed Oct. 27, 1964, Ser. No. 406,909
8 Claims. (Cl. 252—75)

1. A non-petroleum base hydraulic brake fluid, having superior anti-corrosive properties in a vented type of corrosion test, consisting essentially of, per 100 parts by weight, at least 20 parts of a lubricant, consisting of a ricinoleate of a lower aliphatic glycol, and a polypropylene glycol having a molecular weight of 1000 to 3000, from 50–75 parts of at least one diluent selected from the group consisting of methoxybutanol, N-butanol, and the lower (C_1 to C_4) mono-alkyl ethers of diethylene glycol, from 5–25 parts of a glycol chosen from the group consisting of propylene glycol, butylene glycol and hexylene glycol, together with from about .4% to about 2% by weight of potassium ricinoleate, and from about 0.05% to about 2% by weight of a compound selected from the group consisting of tetramethyl diamino diphenylmethane, p,p′-benzylidene bis (N,N-dimethyl aniline), and p,-p′-[p-hydroxy benzylidene bis (N,N-dimethyl aniline)].

3,347,797
COMPOSITION AND METHOD FOR TREATING FRESH COOLING WATER

Victor E. Kuegemann, Culver City, Calif., and Wayne L. Denman, Oak Park, and Charles B. Friedman, Chicago, Ill., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Aug. 3, 1966, Ser. No. 569,879
4 Claims. (Cl. 252—181)



3. A composition for treating fresh water flowing in an open recirculating cooling water system consisting essentially of a mixture of a sodium zinc polyphosphate and at least one water-soluble surface active agent selected from the group consisting of

(a) aliphatic esters of a polyethylene glycol,
(b) condensate of at least 5 moles of ethylene oxide with the amide nitrogen of an aliphatic amide, and
(c) condensate of at least 5 moles of ethylene oxide with an aliphatic alcohol,

the aliphatic groups in each agent being a fatty alkyl group having from 10 to 24 carbons, and the amount of surface active agent constituting from 1 to 10 wt. percent of the mixture.

3,347,798
PRODUCTION OF CATALYSTS OR CATALYST CARRIERS IN THE FORM OF HOLLOW BEADS

Karl Baer, Weinheim, Heinrich Sperber, Ludwigshafen (Rhine), Otto Goehre, Heidelberg, and Gerhard Leibner, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 10, 1964, Ser. No. 374,179
Claims priority, application Germany, June 14, 1963, B 72,282; May 13, 1964, B 76,739
8 Claims. (Cl. 252—448)

1. A process for production of catalysts and catalyst carriers in the form of hollow beads having cavities communicated with the outer sides of said beads by passages in said walls of said beads, which process comprises spraying into a spray-drying tower through at least one nozzle opening of 0.5–4 mm. at a spray pressure of 10–100 atmospheres a composition forming said beads upon drying in said tower, said composition being a hydrogel containing at least 30% water, a suspension of a metal compound in water or an organic, volatile liquid, a solution of a metal compound having thixotropic properties, or a hydrogel in admixture with a metal compound; concurrently introducing into said tower a gas heated to 300° C.–700° C. in an amount of 4 to 18 cubic meters of said gas per kilogram of said composition; incorporating into said composition prior to spraying thereof an expanding agent which is vaporizable or decomposable into vapor or gas at the temperaaure of the sprayed droplets of said composition in said tower; providing in said tower a mean temperature drop of at least 50° C. per meter from said nozzle to the middle of said tower; forming in the neighborhood of said nozzle an extensible but tough skin on the sprayed droplets; forming said droplets into hollow beads in which at least 80% have diameters of more than 90 microns; and bursting said skin of said beads in at least one place to provide passage to the inside of said hollow beads.

3,347,799
GOLD-PALLADIUM CONDUCTOR COMPOSITIONS AND CONDUCTORS MADE THEREFROM

Charles W. Wagner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 16, 1964, Ser. No. 383,053
10 Claims. (Cl. 252—514)

1. A composition adapted to be applied to and fired on a dielectric ceramic base to form thereon an electrically conductive, adherent and solderable fired on film, said composition consisting essentially of 8 to 25% finely divided palladium, 55 to 84% finely divided gold and 8 to 37% finely divided vitreous binder.

3,347,800
SUBSTITUTED PHOSPHINOBORINE POLYMERS

Marvin H. Goodrow, Claremont, Ross I. Wagner, Whittier, and Frederick F. Caserio, Jr., Pasadena, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,351
6 Claims. (Cl. 260—2)

1. A B-functionally substituted phosphinoborine polymer $[R_4R_3PB(E)_2]_n$ wherein

E is independently selected for each position on each monomeric unit from the group consisting of hydrogen, phenyl, lower alkyl substituted phenyl, lower alkyl, cycloalkyl substituents having from 5 to 6 annular carbon atoms and Y substituents, at least one of said E substituents being Y in said polymer;

Y is independently selected for each position on each monomeric unit from the group consisting of —CN, —NCO, —NCS, $-N(C_2H_5)_2$, $-NHC_6H_{11}$, $-NH_2$, —SH, $-SCH_3$, $-SC_2H_5$, $-PH(CH_3)$, $-P(CH_3)_2$, $-SO_3C_6H_5$, $-NO_2$, $-N_3$, —SCN, $-As(CH_3)_2$, $-OC_2H_5$, $-OC_6H_5$, —OH, $-OCH_3$, $-SeCH_3$, $-TeC_6H_5$, $-SO_3CH_3$ and $-SO_3C_6H_4Br$ substituents;

R_3 and R_4 are selected for each monomeric unit from the group consisting of two independently selected phenyl, lower alkyl substituted phenyl, lower alkyl and cycloalkyl substituents having from 5 to 6 annular carbon atoms, and taken together, one single bivalent lower alkylene, phenylene, lower alkyl substituted phenylene, and cycloalkylene substituents containing from 5 to 6 annular carbon atoms; and

n is an integer ranging from about 2 to 3,000 and is indicative of the degree of polymerization of said polymer.

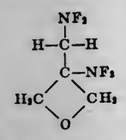
3,347,801
3-DIFLUOROAMINOMETHYL-3-DIFLUOROAMINO-OXETANE AND POLYMERS THEREOF

Eugene L. Stogryn, Fords, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

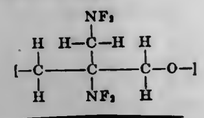
No Drawing. Filed Nov. 16, 1962, Ser. No. 239,102
9 Claims. (Cl. 260—2)

1. 3 - difluoraminomethyl 3 - difluoramino oxetane

having the composition $C_4H_6ON_2F_4$ and the structural formula:



2. Polymers of 3 - difluoraminomethyl 3 - difluoramino oxetane having the recurring unit:



3,347,802

WATER SOLUBLE POLYMER OF DIGLYCIDYL ETHER AND AN ALKYLENEDIAMINE HYDROHALIDE

Theodore L. Ashby and Clarence R. Dick, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 31, 1964, Ser. No. 386,731
3 Claims. (Cl. 260—2)

1. A water soluble, cross-linked polymer consisting essentially of the reaction product of approximately equal molecular quantities of diglycidyl ether and an alkylene diamine adduct having the general formula:

$$H_2N—R—NH_2 \cdot HX$$

where X is selected from the group consisting of chlorine, bromine and iodine, and R is a divalent hydrocarbon radical containing from 2 to 4 carbon atoms said polymers produced by adding said diglycidyl ether to an aqueous solution of said alkylenediamine adduct at a rate approximately equal to that at which said diglycidyl ether reacts with said alkylenediamine adduct while maintaining the reaction system at a temperature between about 25° C. to 80° C.

3,347,803

PROCESS FOR THE PRODUCTION OF HARDENABLE SYNTHETIC RESINOUS PRODUCTS CONTAINING HALOHYDRIN GROUPS

Herbert Frotscher, Langenfeld, Rhineland, and Manfred Petzold, Dusseldorf-Holthausen, Germany, assignors to Bohme Fettchemie G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed May 13, 1965, Ser. No. 455,611
Claims priority, application Germany, Jan. 16, 1959, B 51,767; Mar. 5, 1959, B 52,370; Feb. 27, 1960, B 56,853
6 Claims. (Cl. 260—2)

1. A process for the preparation of hardenable water-soluble synthetic resinous products containing halohydrin groups which comprises reacting at a temperature from 50 to 100° C. (A) a member selected from the group consisting of polyamines, aqueous ammonia and mixtures thereof with (B) a polylower alkylene oxide derivative having 3 to 70 alkylene oxide units and having more than one halohydrin group in the molecule, the molar ratio of A to B being selected so that the number of halohydrin groups to the number of reactive hydrogen atoms attached to a nitrogen atom is 4:5 to 7:5 in the presence of acid binding agents selected from the group consisting of alkali metal hydroxides, alkali metal carbonates and alkali metal bicarbonates. and alkaline earth metal carbonates, continuing said reaction until the reaction mixture reached a pH of between 7 to 7.5, and thereafter discontinuing said reaction by acidification to a pH of less than 6, whereby stabilized, incompletely condensed, water-soluble resins are obtained which are readily hardenable in an alkaline medium.

3. A finishing process for producing antistatic properties on synthetic organic materials having low electrical conductivity which comprises treating said materials with an aqueous alkaline solution of an incompletely condensed, readily hardenable water-soluble synthetic resin produced by the process of claim 1.

3,347,804

MIXTURES OF TIN, LEAD AND ZINC NAPHTHENATES AND OCTOATES AS CATALYSTS FOR POLYURETHANE FOAMS

Robert A. Buckley, Solon, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 24, 1963, Ser. No. 282,851
4 Claims. (Cl. 260—2.5)

1. In the method of producing a polyurethane foam by reacting a polyhydroxy compound selected from the group consisting of a polyester containing at least two hydroxyl groups prepared by the esterification of a dicarboxylic acid with a polyhydric alcohol and a polyether having a molecular weight from about 500 to about 5000 with an organic polyisocyanate selected from the group consisting of alkylene and arylene polyisocyanates, water, and a catalyst, the improvement consisting of the step of including in said reaction in synergistic relationship tin, lead and zinc salts, said salts being selected from the group consisting of the respective naphthenates and octoates in amounts to contribute:

(a) from about 0.006 part to about 0.085 part tin cation per 100 parts polyhydroxy compound,
(b) lead and zinc cations in a ratio of from about 1.5:1 to about 4.5:1 lead to zinc, said combined lead and zinc cations present in an amount equivalent to from about 66% to about 250% of said tin cation.

3,347,805

PROCESS FOR PRODUCING SYNTHETIC POLYVINYL ESTER LATICES, PARTICULARLY SUITABLE FOR WATER PAINTS AND LATICES THUS OBTAINED

Massimo Scatena, Mestre, and Mauro Grazia, Milan, Italy, assignors, by mesne assignments, to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

Filed Feb. 21, 1963, Ser. No. 260,221
Claims priority, application Italy, Feb. 27, 1962, 3,961/62; Nov. 23, 1962, 29,256/62
5 Claims. (Cl. 260—17)

1. A process for producing polyvinyl-ester synthetic latexes, suitable for water thinnable paints, which comprises polymerizing vinyl esters, in an aqueous dispersion, in the presence of a protective colloid, and of an emulsifying agent of a composition selected from the group consisting of compositions (a), (b) and (c) wherein said composition (a) is a compound having the general formula:

$$CH_3—(CH_2)_m—CH_2(OCH_2—CH_2)_nOSO_3Me$$

in which m ranges from 4 to 20, n is a whole number in the range from 10 to 30 and Me is an alkaline metal, or ammonium ion; composition (b) is a mixture consisting of 50 to 90 parts by weight of a compound having the general formula:

$$R(OCH_2CH_2)_nOCH_2CH_2OH$$

and 50 to 10 parts by weight of a compound having the general formula:

$$R_1OSO_3Me$$

in which R and R_1 may be identical or different from one another, and represent saturated or unsaturated hydrocarbon radicals with a carbon number ranging from 4 to 30, n is a whole number ranging from 10 to 30, and Me is an alkaline metal or ammonium ion; and composition (c) is the product obtained by the sulfonation and subsequent neutralization of a mixture consisting of 50 to 90 parts by weight of a compound having the general formula:

$$R(OCH_2CH_2)_nOCH_2CH_2OH$$

and 50 to 10 parts by weight of a compound having the general formula:

$$R_1OH$$

wherein R, R_1 and n have the same meanings as stated above.

4. A process according to claim 1, wherein the protective colloid is selected from the group consisting of polyvinyl alcohol and a cellulose derivative.

3,347,806

NEW DICYCLOPENTADIENE MODIFIED UNSATURATED POLYESTERS AND PROCESS FOR PREPARING THEM

Rolf Zimmermann, Wiesbaden-Biebrich, Germany, assignor to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,564
Claims priority, application Germany, Feb. 17, 1961, C 23,429; Dec. 8, 1961, C 25,697
13 Claims. (Cl. 260—22)

1. In a process for the production of unsaturated polyester resins by reacting in several steps a mixture consisting of

(A) at least one compound selected from the group consisting of (A_1) α,β-ethylenically unsaturated dicarboxylic acids, (A_2) anhydrides thereof, (A_3) mixtures of any one of the said unsaturated compounds (A_1) and (A_2), with up to an equal equivalent amount of at least one polybasic carboxylic acid containing no polymerisable aliphatic unsaturation, (A_4) mixtures of any one of the said unsaturated compounds (A_1) and (A_2) with up to an equal equivalent amount of at least one anhydride of a polybasic carboxylic acid containing no polymerisable aliphatic unsaturation, and (A_5) mixtures of any one of the said unsaturated compounds (A_1) and (A_2) with up to an equal equivalent amount of a mixture of (a) at least one polybasic carboxylic acid containing no polymerisable aliphatic unsaturation and (b) at least one anhydride thereof, with

(B) at least one dihydric alcohol in which the hydroxyl groups will be esterified by (A) component,

(C) dicyclopentadiene,

(D) 0 to 60% by weight based on the total weight of polybasic acids of at least one monocarboxylic acid having 7 to 18 carbon atoms,

(E) 0 to 25% by weight, based on the total weight of polybasic acids, of at least one monohydric alcohol, having 3 to 18 carbon atoms,

(F) 0 to 25% by weight, based on the total weight of polybasic acids, of at least one ester of a fatty acid and a polyhydric alcohol and when (F) is other than 0,

(G) a combination of one of the components (D) and (E) with component (F), the weight of such combination however not exceeding 60% by weight, based on the total weight of polybasic acids; the improvement which comprises reacting 0.05 to 1 mole of dicyclopentadiene per mole of the polybasic carboxylic acid with the said starting materials in a first stage at a temperature in the range from 100 to 140° C. until a major portion of the dicyclopentadiene has been reacted, the reaction mixture being thereafter heated in a second stage to a temperature in the range from 160° to 220° C. and maintained thereat until the acid value is less than 60.

3,347,807

FIRE RETARDANT BITUMINOUS COMPOSITIONS

Noel D. Blair, Tonawanda, and Claude Thomas Bean, Jr., Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,493
16 Claims. (Cl. 260—28.5)

3. A fire retardant bituminous composition comprising (a) a bituminous material and (b) a Diels-Alder adduct of a polyunsaturated aliphatic diene having from 4 to 14 carbon atoms or polymer thereof and hexachlorocyclopentadiene and the Diels-Alder adduct contains at least about 0.6 mole of hexachlorocyclopentadiene per mole of polyunsaturated aliphatic compound, said adduct being present in sufficient proportion from about 2 to about 50 percent by weight to improve the fire retardancy of the bituminous material.

3,347,808

COATING COMPOSITIONS

Edward Lavin, Longmeadow, and Albert H. Markhart, Wilbraham, Mass., and Robert E. Kass, Simsbury, Conn., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 5, 1966, Ser. No. 562,458
12 Claims. (Cl. 260—29.1)

1. A composition comprising a 3–75% by weight solution of a polyamine and a tetracarboxylic compound present in a proportion selected from the range of about 70% molar excess of the polyamine to about 5% molar excess of the tetracarboxylic compound; wherein the polyamine is selected from the class consisting of aliphatic primary diamines of from 2 to about 6 carbon atoms, aromatic primary diamines of from 6 to about 36 carbon atoms, aliphatic-aromatic primary diamines, triamines and mixtures thereof; wherein the tetracarboxylic compound is selected from the group consisting of benzophenone tetracarboxylic acid and alkyl diester derivatives of benzophenone tetracarboxylic acid, wherein the alkyl group contains from 1 to 6 carbon atoms.

3,347,809

WATER DILUTABLE COMPOSITION COMPRISING A MIXTURE OF A PROPYLENE OXIDE ADDUCT OF HEXANE TRIOL AND AN ALKYL ESTER OF SULFOSUCCINIC ACID

Paul B. Tomaino, Needham, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Original application Apr. 4, 1961, Ser. No. 100,487, now Patent No. 3,154,436, dated Oct. 27, 1964. Divided and this application Jan. 31, 1964, Ser. No. 341,729
9 Claims. (Cl. 260—29.3)

7. An impregnating solution for impregnating fibrous webs which contains a water solution of a phenol formaldehyde resin and from about one half to about five percent by weight based on the weight of the resin in the resin solution, of an essentially water insoluble propylene oxide adduct of hexane triol said adduct having a molecular weight between 700 and 4000 and a hydroxyl number between 42 and 240, said adduct having been rendered water dilutable by mixing therewith, prior to the addition of the resin solution, an alkyl ester of sulfosuccinic acid in a ratio of at least about three-fourths part by weight of the alkyl ester to one part by weight of the adduct.

3,347,810

PROCESS FOR PREVENTING SULFUR LOSS FROM CHLOROSULFONATED POLYETHYLENE

Paul Robert Johnson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,822
5 Claims. (Cl. 260—29.6)

1. A process for the prevention of serious sulfur loss from a chlorosulfonated polyethylene polymer during the preparation of an aqueous latex of said polymer by dissolving the chlorosulfonated polyethylene in a water-immiscible solvent, adding water and emulsifying the mixture, and removing the solvent by distillation of the emulsion at a temperature from about 50 to 100° C.; which process comprises adding at least about 0.1% based on the weight of the chlorosulfonated polyethylene of a stabilizer from the group consisting of mono- and di-alkyl-substituted phenols and cresols wherein alkyl is C_1 to C_8, alkali metal nitrites, 2-mercaptobenzothiazole, 2,2'-benzothiazyl disulfide, thiuram mono- and polysulfides, dinitrotoluenes, and quinone dioxime prior to removing the solvent.

3,347,811

PROCESS FOR PREPARING AQUEOUS DISPERSIONS OF ETHYLENE COPOLYMERS

Thomas C. Bissot, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 2, 1965, Ser. No. 429,909
3 Claims. (Cl. 260—29.6)

1. The process for preparing a storage-stable aqueous dispersion of an ethylene copolymer comprising:

(a) dissolving a copolymer comprising 30 to 95% by weight copolymerized ethylene and 5 to 70% by weight of at least one copolymerized polar monomer in a sufficient amount of a water-immiscible organic solvent having a boiling point of 40° to 160° C. to form a solution having a viscosity of 10 to 5000 centipoise measured at 60° C.;

(b) emulsifying said solution in a mixture of water containing a dissolved surfactant having an HLB number of at least 18, the amount of surfactant being 1 to 5% based on the weight of said copolymer; and thereafter,

(c) evaporating said solvent from the resulting emulsion.

3,347,812

NOVEL WATER- AND OIL-RESISTANT FIBROUS STRUCTURES, PROCESSES AND COMPOSITIONS THEREFOR

Carlo G. De Marco, Cochituate, and Gil M. Dias, Fall River, Mass., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed June 25, 1965, Ser. No. 467,146
25 Claims. (Cl. 260—29.6)

19. A liquid composition for rendering fibrous structures permanently water- and oil-resistant even after repeated wettings or launderings, comprising an aqueous dispersion of (a) at least 1% by weight of a pyridinium compound having the general formula:

$$R—A—CH_2—Y$$

wherein R is an aliphatic hydrocarbon radical having from 12 to 22 carbon atoms, A is selected from —O— and —CONH—, and Y is a pyridinium halide and (b) at least 0.5% by weight of a fluoro-polymer mixture selected from (1) a composition consisting of (A) about 3% to about 25% by weight of a polymer prepared only from compounds of the following structure:

$$C_nF_{2n+1}CH_2CH_2O_2CC(CH_3)=CH_2$$

in which n is an integer from 3 to 14 and (B) about 75% to about 97% by weight of a polymer prepared from at least one polymerizable vinyl monomer other than monomers of part (A) above, (2) a polymer mixture containing (A) at least one copolymer consisting of about 25% to about 99% by weight of at least one polymerizable fluorine-containing compound of the following structure:

$$C_nF_{2n+1}CH_2CH_2O_2CC(CH_3)=CH_2$$

in which n is an integer of from 3 to 14 and from 1% to about 75% by weight of at least one other polymerizable vinyl monomer derivative and (B) a polymer prepared from at least one polymerizable vinyl monomer other than the monomer of part (1)(A), whereby the weight proportion between the said copolymer and said vinyl derived polymer is such that the mixture contains at least 12% by weight of said copolymer containing fluorine, and (3) a mixture of (1) and (2).

3,347,813

DISSOLVING POLYACROLEINS AND AQUEOUS SALT SOLUTIONS THEREOF

Ilse Ursula Nebel, Oberlar, and Gerhard Bier, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, near Cologne, Germany, a corporation of Germany

No Drawing. Filed July 8, 1965, Ser. No. 470,575
Claims priority, application Germany, Aug. 5, 1964, D 45,115
11 Claims. (Cl. 260—29.6)

1. The method of forming a solution of polyacrolein polymer which comprises dissolving the polymer in an aqueous solution of a compound selected from the group consisting of lithium bromide, zinc chloride and calacium thiocyanate, the solution being at least 90% saturated with said compound.

3,347,814

FREEZE-THAW STABLE AQUEOUS POLYMER DISPERSION CONTAINING A WATER-MISCIBLE AMIDE

Robert J. Hatala, St. Petersburg, Fla., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 6, 1964, Ser. No. 387,987
10 Claims. (Cl. 260—29.6)

1. A stable freeze-thaw tolerant film-forming composition consisting essentially of an aqueous dispersion of a water-insoluble vinyl addition polymer and a water-miscible amide, said amide selected from the group consisting of formamide, N-methyl formamide, N-methyl acetamide and N-methyl propionamide, and said amide being in an amount of about 0.1 to about 5% based on polymer weight.

3,347,815

MAGNETIC INK

Oliver A. Short and Jerome R. White, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 16, 1963, Ser. No. 316,542
4 Claims. (Cl. 260—33.4)

1. A heat generating magnetic ink that is printable on a rubber roll press and adheres well to paper and the like and also to wax-containing heat-sealable coatings, said ink consisting essentially of 1 part by weight of a 20% to 40% solution of polyvinyl acetate in a lower alcohol solvent and 1 to 3 parts by weight of a finely divided ferrite having a particle size of between 0.5 and 5 microns.

3,347,816

PIGMENTED POLYSILOXANE SURFACE COATING COMPOSITIONS FOR GLOSSY COATINGS OF INCREASED THERMAL STABILITY

Walter Krauss, Cologne-Stammheim, and Reinhard Hebermehl, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 19, 1963, Ser. No. 303,131
Claims priority, application Germany, Apr. 3, 1963, F 39,394/63
5 Claims. (Cl. 260—37)

1. Surface coating compositions comprising a resinous organo polysiloxane as binder and a titanium dioxide pigment, wherein said organo polysiloxane has the formula $R_nSiO_{4-n/2}$ in which n has a value in the range between 1 and 2 and each substituent R is selected from the group consisting of methyl, phenyl, hydroxyl, alkoxyl, co-condensed radicals of a polyepoxide and co-condensed radicals of a polyester including polycarbonate, said organo polysiloxane being composed of difunctional siloxane units and trifunctional siloxane units in a ratio of from 40:60 to 64:36, the sum of SiO_2, Si bonded methyl and Si bonded phenyl amounting to at least 50 percent by weight of said organo polysiloxane, the ratio of phenyl to methyl therein being from 40:60 to 57:43 and the ratio of organic radicals to silicon atoms amounting to less than 1.90:1, which surface coating composition contains for every 100 grams of the said binder at least 250 grams of titanium dioxide pigment of rutile structure and at most a total of 350 grams of heat stable pigment.

3,347,817

ADHESIVE FOR BONDING ALPHA-OLEFIN COPOLYMERS OR NATURAL RUBBER COMPRISING A DISPERSION OF AN INTERPOLYMER OF ETHYLENE AND 1,4 HEXADIENE, CARBON BLACK AND A SULFUR CURING SYSTEM

Edward Karcher Gladding, New Castle, and Donald Nellis Robinson, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 27, 1962, Ser. No. 219,750
1 Claim. (Cl. 260—41.5)

An adhesive composition suitable for bonding sulfur-curable normally solid, chain-saturated copolymers of ethylene, propylene and 1,4-hexadiene to neoprene, SBR, or natural rubber which comprises a 10 to 20% by weight dispersion in a volatile, inert organic liquid of: (a) an interpolymer of 30 to 60% ethylene 1 to 5% 1,4-hexadiene, and the remainder being monomer units containing side-chain substituted bromine, said interpolymer containing from about 30 to 45% bromine by weight; (b) from about 30 to 45 parts of carbon black per part of interpolymer; and (c) a sulfur curing system comprising from about 0.2 to 2 parts of sulfur and from about 2 to 10 parts of zinc oxide per 100 parts of interpolymer.

3,347,818

METHYL METHACRYLATE COMPOSITIONS CONTAINING HALOGEN SUBSTITUTED ACID ALKYL ESTERS OF ORTHOPHOSPHORIC ACID

King Lau Howe, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 30, 1962, Ser. No. 241,134
9 Claims. (Cl. 260—41)

1. A composition comprising a methacrylate of the class consisting of methyl methacrylate monomer, polymer-in-monomer solution of polymethyl methacrylate in methyl methacrylate monomer, and solid polymethyl methacrylates; and at least one halogenated phosphorus compound selected from the class consisting of halogen substituted acid alkyl esters of orthophosphoric acid formula

$$(RO)_n—P(=O)—(OH)_{3-n}$$

where n is 1 to 2 and R is a halogenated alkyl group having 1 to 6 carbon atoms, and neutral halogen substituted organo phosphorus compounds, the total amount of phosphorus compound present being from 10 to 35% by weight of the acrylate, at least 1% by weight of the total phosphorus compound present being halogen substituted acid alkyl esters of orthophosphoric acid.

3,347,819

POLYOLEFINES STABILIZED BY DIBORANES

Gerhard Meyer, Obernburg, Erhard Siggel, Seckmauern uber Hochst im Odenwald, Albert Schöpf, Hering uber Hochst im Odenwald, and Helmut Mägerlein, Erlenbach, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal, Elberfeld, Germany

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,240
Claims priority, application Germany, Jan. 31, 1964, V 25,293
14 Claims. (Cl. 260—45.7)

1. A process for improving the stability of a high molecular weight poly-α-monoolefine of a 2 to 8 carbon atom monomeric α-monoolefine which comprises: dispersing said poly-α-monoolefine as a finely divided powder in an inert organic liquid selected from the group consisting of hydrocarbons and chlorinated hydrocarbons containing a small amount of a boron compound of the formula $(R_1R_2BH)_2$, wherein R_1 and R_2 each represents a substituent selected from the group consisting of hydrogen and alkyl, cycloalkyl, aryl and aralkyl of 1 to 18 carbon atoms; heating said dispersion with agitation at a temperature from about room temperature up to the boiling point of said inert dispersing liquid; and separating the poly-α-monoolefine from said dispersion.

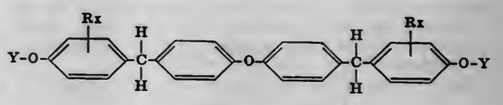
3,347,820

THERMALLY STABILIZED HALOGENATED POLYOLEFIN COMPOSITIONS

Leo S. Chang, Florham Park, Edith Turi, Livingston County, and Neil A. Lindo, New Providence, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,248
7 Claims. (Cl. 260—45.8)

1. A composition comprising a chlorinated polyethylene and a stabilizing compound having the formula:



where each R is independently an alkyl substituent, and where x is a number from 0 to 2 inclusive with any unspecified valences being satisfied by hydrogen, and where each Y is independently a substituent of the group consisting of hydrogen and alkylene oxide.

3,347,821

CHLORINE-CONTAINING POLYMERS STABILIZED WITH ANTIMONYL COMPOUNDS

Hugo Malz, Leverkusen, and Wilhelm Gobel, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Original application June 18, 1963, Ser. No. 288,635, now Patent No. 3,317,576, dated May 2, 1967. Divided and this application Oct. 21, 1966, Ser. No. 588,334

Claims priority, application Germany, June 20, 1962, F 37,118, F 37,119

4 Claims. (Cl. 260—45.75)

1. A composition comprising a chlorine-containing polymer having a hydrocarbon backbone stabilized with a stabilizing amount of an organic antimony compound which is the reaction product, in an aqueous medium, of at least one member selected from the group consisting on antimony trihalide and antimony trioxide with at least one member selected from the group consisting of thioglycollic acid and 1-mercapto-2-hydroxy-alkane containing from 2 to 3 carbon atoms, said organic antimony compound containing per antimony atom, one member selected from the group consisting of 2 mols of thioglycollic acid, 2 mols of said 1-mercapto-2-hydroxy-alkane and 1 mol each of thioglycollic acid and said 1-mercapto-2-hydroxy-alkane.

3,347,822

FLAMEPROOFED SYNTHETIC RESINS

Herbert Jenkner, Cologne-Bruck, Germany, assignor to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,544

Claims priority, application Germany, Nov. 12, 1962, C 28,388

4 Claims. (Cl. 260—45.75)

1. A flame resistant synthetic resin composition comprising a polyolefin and a quantity of a bromination product of a mixture of 10 to 90% by weight of diphenyl and 90 to 10% by weight of diphenyl ether having a bromine content of 50 to 85% by weight sufficient to provide a bromine content of 3 to 20% by weight with reference to the polyolefin uniformly distributed in said polyolefins.

4. A flame resistant polyethylene resin composition comprising polyethylene and a quantity of a bromination product of a mixture of 10 to 90% by weight of diphenyl and 90 to 10% by weight of diphenyl ether having a bromine content of 75 to 85% by weight sufficient to provide a bromine content of 5 to 15% by weight with reference to the polyethylene and 3 to 15% by weight of antimony trioxide uniformly distributed in said polyethylene.

3,347,823

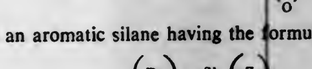
TRANSPARENT COMPOSITIONS COMPRISING VINYL CHLORIDE POLYMER AND UNSATURATED DICARBOXYLIC ACID

Robert A. Buckley, Solon, Ohio, and Frank C. Russo, deceased, late of Parma, Ohio, by Nadine Russo, representative, Parma, Ohio, assignors to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 4, 1966, Ser. No. 584,274

8 Claims. (Cl. 260—45.85)

1. A composition comprising about 100 parts by weight of a polymer selected from the group consisting of polyvinyl chloride resins, and co-polymers of vinyl chloride with vinyl acetate and vinylidene chloride wherein at least 75% of the monomeric units were vinyl chloride, about 0 to 100 parts by weight of plasticizer per 100 parts by weight of said polymer, and about 0.005 to about 0.50 part by weight per 100 parts of said polymer, of an acid represented by the following structure:



wherein X is a member of the group consisting of alkylene, alkylidene and cycloalkylidene radicals containing 1 to 15 carbon atoms.

3,347,824

REACTION BETWEEN AROMATIC DIACYL COMPOUNDS AND AROMATIC SILANES AND THE POLYMERS PRODUCED THEREFROM

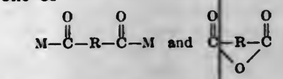
Robert M. Washburn and Kendrick R. Eilar, Whittier, Calif., assignors to American Potash and Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,351

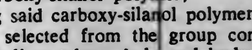
6 Claims. (Cl. 260—46.5)

1. Process for producing a carboxy-silanol polymer comprising

admixing and reacting at a temperature within the range of from about 20° C. to 300° C. an aromatic diacyl compound selected from the group consisting of at least one of



with an aromatic silane having the formula



to produce a carboxy-silanol polymer;

and recovering said carboxy-silanol polymer;

said M being selected from the group consisting of hydroxy, alkali metaloxy, halo and hydrocarbyloxy substituents;

said R being an arylene substituent;

said *n* being an integer indicative of the number of Z substituents in said aromatic silane and being at least 2 and no more than 3;

said Z being selected from the group consisting of hydroxy, halo, and hydrocarboyloxy substituents, M and Z being chosen so that a by-product is selected from the group consisting of carboxylic acid ester, carboxylic acid salt, carboxylic acid chloride, carboxylic acid, carboxylic acid anhydride, hydrohalogen acid, inorganic salt and water is produced; and

said R_1 being an aryl substituent.

2. The carboxy-silanol polymer produced by the process of claim 1.

3,347,825

PROCESS FOR COPOLYMERIZATION OF BIS-(α-HALOALKYL)AROMATIC COMPOUNDS WITH VINYL COMPOUNDS IN THE PRESENCE OF A COUPLING AGENT

John M. Hoyt and Cornelius A. Sprang, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 3, 1964, Ser. No. 357,303

18 Claims. (Cl. 260—47)

1. A copolymerization process which comprises reacting at least one bis-(α-haloalkyl) aromatic compound, capable of copolymerization, having the formula

$$X—CR_1R_2ArCR_3R_4—X'$$

wherein X and X' are selected from the group consisting of chlorine, bromine, iodine, fluorine and mixtures thereof;

R_1, R_2, R_3, and R_4 are selected from the group consisting of hydrogen, fluorine, lower alkyl group having from 1 to 3 carbon atoms, aryl group having from 6 to 10 carbon atoms, and mixtures thereof;

Ar is an aromatic substituent selected from the group consisting of arenes, aromatic reterocyclics, and fused ring aromatics with a lower valent transition metal salt, and with an olefinic compound having the formula

$$R_5CH=CH_6R_7$$

wherein R_5 is selected from the group consisting of hydrogen, cyano and aryl radicals;

R_6 is selected from the group consisting of hydrogen, at lower alkyl group having from 1 to 6 carbon atoms, and a COOR radical wherein R is an alkyl group having from 1 to 12 carbon atoms;

R_7 is selected from the group consisting of hydrogen, a CN radical, a NO_2 radical, a COOH radical, a lower alkyl having from 1 to 6 carbon atoms, CH_2COOR, a COOR radical, wherein R is a lower alkyl having from 1 to 12 carbon atoms, a $CONH_2$ radical, a CONHR' radical, and a $CONR'_2$ radical wherein R' is a lower alkyl group having 1 to 6 carbon atoms, at a temperature within the range of about −30° to 300° C.

3,347,826

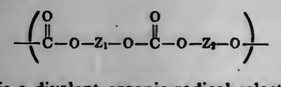
POLYMERIC COMPOSITION DERIVED FROM OXABICYCLONONANES

August Henry Frazer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

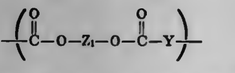
No Drawing. Filed Sept. 16, 1964, Ser. No. 397,010

7 Claims. (Cl. 260—47)

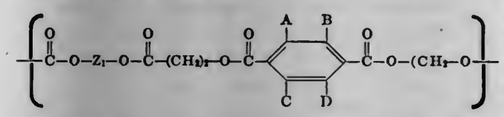
1. A polymer selected from the group consisting of (1) a polycarbonate having a recurring structural unit of the formula:



wherein Z_2 is a divalent organic radical selected from the group consisting of Z_1, p-phenylene, m-phenylene, isopropylidene, di-p-phenylene and sulfonyl di-p-phenylene; (2) a polyurethane having a recurring structural unit of the formula:



wherein Y is a divalent organic radical selected from the group consisting of 1,4-piperazinylene, methylenebis(1,4-cyclohexyleneimino) and methylenebis(1,4 - phenyleneimino); (3) a polyestercarbonate having a recurring structural unit of the formula:



wherein A, B, C, and D are members selected from the group consisting of hydrogen and lower monovalent alkyl radicals and (4) a polyester having a recurring structural unit selected from the group consisting of (a)

and (b)

wherein Z_3 is a divalent organic radical selected from the group consisting of p-phenylene, m-phenylene and mixtures thereof containing up to about 90% by weight p-phenylene; Z_1 being



said Z_1, when in the monomeric form, 2,6-dihydroxy-9-oxabicyclo(3.3.1) nonane, having a melting point from about 115° C. to about 129° C.

3,347,827

EPOXIDE RESIN COMPOSITION CONTAINING AN AMINE BORANE ACCELERATOR

Henry L. Lee, Jr., San Marino, Calif., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,569

4 Claims. (Cl. 260—47)

1. A heat curable resin composition comprising

(1) 100 parts by weight of

(a) a polyglycidyl ether having a 1,2 epoxy equivalency greater than 1.0 and

(b) a polycarboxylic acid anhydride in the proportions of between about 0.85 and 1.1 moles of anhydride carboxyl per epoxy group, and

(2) between about 0.01 to 3 parts by weight of an amine borane selected from the group consisting of lower alkylamine boranes, cyclic amine boranes, and arylalkylamine boranes.

3,347,828

PROCESS FOR PRODUCING POLYTRIMELLITIMIDES WITH ALKYLENE OXIDE AS HYDROGEN HALIDE SCAVENGER

James R. Stephens, Gary, and Richard E. Van Strien, Griffith, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 7, 1967, Ser. No. 621,152

16 Claims. (Cl. 260—47)

1. In a process for producing a polyamide-imide for use as a wire enamel from an acid halide of a benzene tricarboxylic acid anhydride and an aromatic primary diamine, wherein the aromatic radical consists essentially of divalent mono and polyaromatic hydrocarbons containing 1 to 4 aromatic rings wherein said multiple rings are joined directly or by members selected from the group consisting of oxy, sulfonyl, carbonyl and lower alkylene groups, in which hydrogen halide is produced, said tricarboxylic acid halide and diamine being reacted at a first lower temperature below 150° C. effective to produce a polyamide soluble in N,N,-dimethylacetamide which polyamide is then heated at a second higher temperature above 150° C. effective to produce said polyamide-imide insoluble in N,N-dimethylacetamide, said acid halide being selected from the group consisting of acid chloride and acid bromide, the improvement in said process comprising scavenging the entrained hydrogen halide with an alkylene oxide containing 2 to 4 carbon atoms in a straight chain and capable of forming a halohydrin boiling below about 300° C. thus reducing the corrosive tendencies of said hydrogen halide and improving the properties of said polyamide-imide.

3,347,829

COPOLYMERS OF FORMALDEHYDE WITH N-FLUOROIMINO-α-CYANO COMPOUNDS

Robert N. MacDonald, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 28, 1965, Ser. No. 505,463

9 Claims. (Cl. 260—64)

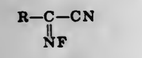
1. The polymerization process for preparing a copolymer which comprises reacting,

at a temperature in the range of about −80° to −70° C. and

in the presence of about 0.0003 to 1 percent, by weight, based on the weight of formaldehyde used, of a formaldehyde polymerization initiator selected from the group consisting of triarylphosphines, -stibines and -bismuthines, tertiary aliphatic amines and onium compounds claimed in U.S. Patent No. 2,994,687,

(1) between about 1 and 55 moles of liquid formaldehyde, per mole of coreactant, and

(2) as coreactant, an N-fluoroiminocyano compound of the formula



wherein:

R is selected from the group consisting of cyano; alkoxy of up to 18 carbons; cycloalkoxy of up to 6 carbons; aryl or alkaryl of up to 10 carbons; SF_5—; $ArSO_2$—, Ar being aryl or alkaryl of up to 10 carbons; N_3—; and R'OCO—, R'CO—, R'COO—, $R'COOCH_2$—, and R'S—, R' being alkyl of up to 18 carbons or cycloalkyl of up to 6 carbons.

6. A polymerization process of claim 1 in which the N-fluoroiminocyano compound is methyl 2-(N-fluoroimino)-2-cyanoacetate.

3,347,830

PROCESS OF POLYMERIZING FORMALDEHYDE

Nobuyuki Nakajima, Pompton Lakes, N.J., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed July 30, 1964, Ser. No. 386,423

14 Claims. (Cl. 260—67)

1. Process comprising:

(a) polymerizing substantially anhydrous monomeric formaldehyde to a high molecular weight, solid polyoxymethylene polymer in a reaction medium consisting essentially of (1) an anhydride of a saturated monocarboxylic acid and (2) a catalytic amount of a metal alcoholate having the general formula

$$(RO)_nM$$

where:

R represents radicals selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl and alkaryl:

n is an integer of from one to three corresponding to the valence of M; and

M is a metal selected from the metals in Groups 1A, 1B, 2A, 2B and 3A of the Periodic Table of elements,

while maintaining said reaction medium at temperatures in the range of from about −50° to about 40° centigrade:

(b) separating the polymer from the reaction medium;

(c) forming a mixture consisting essentially of the said separated polymer and sufficient amounts of an anhydride of a saturated monocarboxylic acid to provide at least about 1.5 parts by weight of said anhydride per part by weight of said polymer;

(d) heating the said mixture to temperatures in the range of from about 80° centigrade to the boiling point thereof for a period of time sufficient to substantially completely esterify the terminal hydroxyl groups of said polymer; and

(e) recovering the said esterified polymer.

3,347,831

POLYMERIZATION OF ALDEHYDES WITH A METAL PHOSPHATE CATALYST

Paul A. Naro, West Trenton, and Robert D. Offenhauer, Pennington, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,126

14 Claims. (Cl. 260—67)

1. A process which comprises contacting a saturated aldehyde with a metal phosphate catalyst which has a surface area in the range from about 275 to about 600 square meters per gram, wherein the metal portion of said metal phosphate is selected from Group III*b* of the Periodic Table; for a period of time sufficient to produce a solid polymer.

3,347,832

CATIONIC HYDROXY-CONTAINING TERPOLYMERS, PREPARATION AND USE

Alan R. Mills, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,573

19 Claims. (Cl. 260—72)

1. A cationic hydroxy-containing terpolymer of (1) 1% to 50% by weight of an ester of an alkenoic acid containing from 3 to 6 carbon atoms and glycidyl trialkylammonium salt wherein each alkyl group contains from 1 to 20 carbon atoms, (2) 3% to 45% by weight of an ethylenically unsaturated monomer of the group consisting of acrolein and methyl vinyl ketone, and (3) 1% to 45% by weight of a dissimilar ethylenically unsaturated monomer, the total amount of monomer making up 100% by weight and said terpolymer having an intrinsic viscosity between 0.5 dl./g. and 5.0 dl./g.

3,347,833

EPOXY ORGANO-TIN COMPOUNDS

George Smith, Richmond, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,881

7 Claims. (Cl. 260—78.4)

1. Per(β-carboglycidoxyethyl)mono- to di-tin.

3,347,834

POLYMERS CONTAINING A MULTIPLICITY OF SULFINO OR DITHIOCARBOXY GROUPS, AND METHODS OF PREPARATION

Floyd E. Naylor, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,228

14 Claims. (Cl. 260—79.3)

1. A method for producing a polymer containing acidic groups which comprises contacting a polymer containing aliphatic double bonds in the polymer chain with an organometal hydride represented by the formula R_xMH_y where R is selected from the group consisting of saturated aliphatic, saturated cycloaliphatic, and aromatic radicals and combinations thereof, containing from 1 to 20 carbon atoms per molecule, M is a metal selected from the group consisting of aluminum, gallium, indium and thallium, H is hydrogen, *x* and *y* are integers selected from the group consisting of 1 and 2 and the sum of *x* and *y* equals the valence of the metal; contacting the resulting reaction mixture with a treating agent selected from the group consisting of sulfur dioxide and carbon disulfide; adding an acidifying agent to the thus treated reaction mixture; and recovering an acidic polymeric material containing acidic groups selected from the class consisting of —SOOH and —CSSH.

3,347,835

PROCESS FOR THE CHLOROSULFONATION OF POLYETHYLENE

John Clark Lorenz, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,842

6 Claims. (Cl. 260—79.3)

1. A process for chlorosulfonating polyolefins which are solid at 70° C. which comprises (a) forming a homogeneous mass consisting essentially of the polyolefin and sulfuryl chloride in a weight ratio of at least 25 parts of sulfuryl chloride per 100 parts of polyolefin, (b) thereafter adding a free-radical generating catalyst, and (c) initiating chlorosulfonation by generating free radicals within the mass.

3,347,836

THERMOSETTING METHYLOLATED ACRYLIC POLYMER

Nobuyoshi Nagata, Hirakata-shi, Japan, assignor to Nippon Paint Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Aug. 20, 1963, Ser. No. 303,406

Claims priority, application Japan, Aug. 22, 1962, 37/36,369

8 Claims. (Cl. 260—80.73)

1. A process for producing a thermosetting copolymer comprising copolymerizing at a temperature of about 100° C. 0.5 to 20% by weight of allyl alcohol in solution with 1 to 30% by weight of N-methylol acrylamide or N-methylolmethacrylamide and with 50 to 98.5% by weight of at least one polymerizable monomeric compound selected from the group consisting of acrylic esters, methacrylic esters, acrylonitrile, α-β-ethylenically unsaturated carboxylic acids, styrene, vinyl toluene and vinyl acetate.

3,347,837

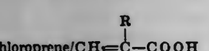
PROCESS FOR ISOLATING CARBOXYLIC ACID-BEARING CHLOROPRENE POLYMERS

John Frederick Smith, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 17, 1964, Ser. No. 411,729

7 Claims. (Cl. 260—87.5)

1. In a process for isolating a



copolymer, wherein R is hydrogen or C_1 to C_4 alkyl, said copolymer prepared by polymerization in an acidic aqueous dispersion, the improvement comprising adjusting the pH value of said dispersion to between about 7 and 12 with an aqueous solution of an alkali metal hydroxide prior to removal of unreacted chloroprene by distillation.

3,347,838

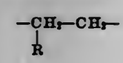
POLYMERS AND ARTICLES

Keith Jasper Clark, Welwyn Garden City, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

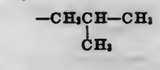
No Drawing. Filed Apr. 7, 1966, Ser. No. 540,818

2 Claims. (Cl. 260—93.7)

1. A melt-shaped article of sufficient sectional thickness to be rigid comprising a solid crystalline polymer of 4-methyl-pentene-1 having an ash content of less than 0.02% by weight, a melt flow index (measured by ASTM Method 1238–57T using a 5 kg. weight at 260° C.) of between 0.01 and 1000 and a density of 0.82 to 0.86 gram per cc. and the recurring structural unit



where R stands for the radical



said article being further characterized by high clarity such that when expressed in terms of loss of angular resolution through an ⅛" section the loss does not exceed 0.0025° (semi-angle), and a low haze value not exceeding 15% when the intensity of light scattered from 2½ to 90° to the incident beam through an ⅛" section is integrated and compared with total transmittance (0 to 90°).

3,347,839

POLYMERIZATION OF CONJUGATED DIOLEFINS

Evalds Lasis, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,367

Claims priority, application Canada, Jan. 5, 1963, 865,866

5 Claims. (Cl. 260—94.3)

1. A process of producing a trans-1,4 polymer of isoprene having more than about 20 percent of X-ray crystallinity and a trans-1,4 content of at least 90 percent, which comprises polymerizing at a temperature of from 0° C. to 100° C. isoprene whilst dispersed in an inert organic liquid, in the presence of a catalyst comprising (a) vanadium tetrachloride, (b) a titanium tetrahalide selected from titanium tetrachloride and titanium trichloro-monoiodide, and (c) an alkyl lithium having one to twelve carbon atoms in the alkyl group, the alkyl lithium and vanadium tetrachloride being admixed in the presence of isoprene in a molar ratio of from 1:1 to 5:1, and the molar ratio of the titanium tetrahalide to vanadium tetrachloride being from 0.01:1 to 1:1.

3,347,840

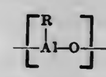
POLYMERIZATION PROCESS

Robert M. Manyik, St. Albans, and Wellington E. Walker and Thomas P. Wilson, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

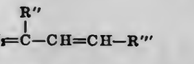
No Drawing. Filed June 16, 1964, Ser. No. 375,644

9 Claims. (Cl. 260—94.9)

1. A process for producing polyethylene by the polymerization of ethylene in contact with a catalyst complex consisting of the reaction product of a poly(hydrocarbylaluminum oxide) containing units of the formula:



and a transition metal compound selected from the group consisting of the transition metals of Groups IV–A, V–A, and VI–A wherein R is a member selected from the group consisting of alkyl and aryl radicals having from 1 to 12 carbon atoms, and an oligomer retardant selected from the group consisting of (a) a compound of the formula:



wherein R'' is selected from the group consisting of hydrogen, halogen, alkoxyl containing from 1 to about 5 carbon atoms, aryl, and alkyl containing from 1 to about 5 carbon atoms and R''' is selected from the group consisting of hydrogen, aryl, and alkyl containing from 1 to about 6 carbon atoms, with the proviso that said compound contains only one of said R' and R'' substituents

in the molecule, (b) cyclohexadiene-1,3, and (c) 3-ethylidenecyclohexene; said retardant being at a concentration of from about 1 to about 1500 parts per million based on the total reaction mixture.

3,347,841

METHOD OF PREPARING POLYOLEFINS

Leo E. Rademacher, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,629
7 Claims. (Cl. 260—94.9)

1. A method of preparing a finely divided polyolefin comprising:

contacting a polyolefin with a vinyl halide monomer, heating the resultant mixture to a temperature between about 75–125° C. in the absence of an initiator, cooling the mixture to a temperature substantially below 75° C. and recovering the polyolefin in finely divided form.

3,347,842

STYRENE OXIDE-LIGNOSULFONATE PRODUCTS AND PROCESS OF MAKING SAME

Paul Melnychyn, Arcadia, Calif., assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,291
18 Claims. (Cl. 260—124)

1. The process of modifying a sulfonated lignin-containing material which comprises admixing the sulfonated lignin-containing material with styrene oxide and maintaining said admixture for a period of time long enough to permit reaction of said styrene oxide with said sulfonated lignin-containing material to an extent sufficient to reduce the phenolic hydroxyl content thereof to an extent of at least about 5%.

16. The product resulting from the process of claim 1.

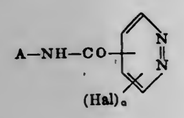
3,347,843

WATER-SOLUBLE REACTIVE DYESTUFFS CONTAINING HALOPYRIDAZINE CARBOXAMIDE GROUPS

Heinz Bender, Bergen-Enkheim, Kreis Hanau, Richard Fleischhauer, Frankfurt am Main, Fechenheim, and Rudi Beyerle, Bruchkobel, Kreis Hanau, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main, Fechenheim, Germany, a company of Germany

No Drawing. Filed June 18, 1964, Ser. No. 376,268
Claims priority, application Germany, July 2, 1963, C 30,319
7 Claims. (Cl. 260—154)

1. A water-soluble reactive organic dyestuff of the formula:



wherein Hal is a member selected from the group consisting of chlorine and bromine, *n* is an integer from 1 to 3, and A is the residue of an organic dyestuff selected from the group consisting of azo dyestuff, anthraquinone dyestuff, phthalocyanine dyestuff, and nitro dyestuff, said A containing an aryl nucleus and —NH—CO— being bonded directly to a carbon atom of said nucleus, said dyestuff containing at least one water solubilizing group.

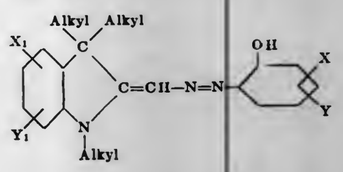
3,347,844

WATER-INSOLUBLE INDOLINE MONOAZO DYESTUFFS

Paul Rhyner and Visvanathan Ramanathan, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed June 25, 1964, Ser. No. 378,069
Claims priority, application Switzerland, July 10, 1963, 8,585/63
6 Claims. (Cl. 260—165)

1. A water insoluble monoazo dyestuff of the formula



in which X, Y, X_1 and Y_1 each represents a member selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, cyano and nitro and "Alkyl" represents lower alkyl.

3,347,845

SHOCK STABLE AZODIFORMATE ESTERS

Chester S. Sheppard, Kenmore, H. Norman Schack, Buffalo, and Orville L. Magell, Kenmore, N.Y., assignors to Wallace and Tiernan Inc., Buffalo, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,301
7 Claims. (Cl. 260—192)

1. A shock stable solution composition consisting essentially of inert organic liquid solvent for hereinafter said diester and a normally shock sensitive diester of azoformic acid where the ester groups are selected from the class consisting of methyl, ethyl, allyl, alkylene, oxyalkylene, thioalkylene, said alkylene group having 2–4 carbon atoms; said solvent and said diester being present in weight proportions ranging between about 15:85 and about 65:35.

3,347,846

METHOD OF PREPARING 5'-RIBONUCLEOTIDE

Masaharu Yoshikawa, 1155 Nakamaruko, Kawasaki-shi; Koji Kusashio, 29 2-chome, Nishiuraga-machi, Yokoshuka-shi; and Tetsuya Kato, 69–2, Ise-cho, Kawasaki-shi, all of Kanagawa-ken, Japan; and Tadao Takenishi, 13 Tamagawanoge-machi, Setagaya-ku, Tokyo, Japan

No Drawing. Filed June 23, 1965, Ser. No. 466,432
Claims priority, application Japan, June 26, 1964, 39/36,029
7 Claims. (Cl. 260—211.5)

1. A method of preparing a 2',3'-O-protected 5'-ribonucleotide from a corresponding 2',3'-O-protected nucleoside which comprises reacting said 2',3'-O-protected ribonucleoside with a phosphorylating agent selected from the group consisting of phosphoryl chloride and tetrachloropyrophosphate in the presence of a trialkyl phosphate, and hydrolyzing the 2',3'-O-protected ribonucleoside phosphorodichloridate so formed to the corresponding 2',3'-O-protected-5'-ribonucleotide, the alkyl radicals of said trialkyl phosphate having not more than ten carbon atoms each.

3,347,847

PROCESS FOR THE PURIFICATION OF WATER-SOLUBLE HYDROXYETHYL CELLULOSE

Konrad Engelskirchen, Lank, and Joachim Galinke, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,612
Claims priority, application Germany, May 2, 1964, H 52,574
5 Claims. (Cl. 260—232)

1. A process for the purification of a hydroxyethyl cellulose which comprises reacting an acidified hydroxyethyl cellulose which may contain a substituent selected from the group consisting of hydroxy lower alkyl and lower alkyl having a sulfate ash content in excess of 2% with 0.25 to 2% by weight of glyoxal at an acid pH and at a temperature between 40 and 90° C., separating and drying the reaction product, washing the dried reaction product with water having a pH of 2 to 6 at a temperature of 0 to 30° C. to wash out salts and recovering the purified hydroxyethyl cellulose having a low sulfate ash content.

3,347,848

PROCESS FOR THE PRODUCTION OF SUCROSE ESTERS OF FATTY ACIDS

Roshdy Ismail, Taunusstr. 38, Offenbach (Main), Horst Corseplus, Schumannstr. 9, Frankfurt am Main, and Herbert Simonis, Wiesbadener Str. 40a, Konigsstein, Taunus, Germany

No Drawing. Filed July 7, 1965, Ser. No. 470,196
Claims priority, application Germany, July 8, 1964, Z 10,963
10 Claims. (Cl. 260—234)

1. A process for the production of sucrose mono-esters of fatty acids having from 12 to 22 carbon atoms by transesterification of sucrose with a lower alkyl ester of a fatty acid in inert solvents, which comprises (1) forming a liquid two-phase system, a first phase of this system consisting of a solution of said fatty acid alkyl ester in an aliphatic or aromatic hydrocarbon non-polar solvent having a boiling point above 100° C., and a second phase of this system containing said sucrose and potassium carbonate catalyst dissolved in a polar solvent at from 70–90° C., said sucrose and said lower alkyl ester of a fatty acid being present in about a 1:1 mole ratio, (2) stirring the said two phases at a temperature of between 40–180° C. while distilling off lower alcohol liberated by the transesterification reaction, and (3) distilling off the remaining solvents.

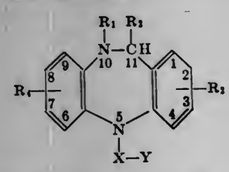
3,347,849

5-(BASIC SUBSTITUTED)-DIBENZODIAZEPINES

Jean Schmutz, Muri, near Bern, and Fritz Hunziker, Bern, Switzerland, assignors to Dr. A. Wander, S.A., Bern, Switzerland, a corporation of Switzerland

No drawing. Filed Jan. 2, 1964, Ser. No. 335,403
Claims priority, application Switzerland, Sept. 22, 1959, 78,518/59; 78,520/59
11 Claims. (Cl. 260—239)

1. A compound selected from the group consisting of a 5-(basic substituted)-10,11 - dihydro-5H-dibenzo[b,e][1,4]diazepine of the formula:



wherein X represents alkylene having between 2 and 3 inclusive carbon atoms; Y is a member of the class consisting of dialkylamino having between 2 and 4 inclusive carbon atoms, pyrrolidino, piperidino, morpholino, piperazino, (4'-methyl)piperazino, and (4'-ethyl)piperazino; R_1 is a member of the class consisting of hydrogen, methyl, ethyl, formyl, acetyl, benzyl, and benzoyl; R_2 is a member of the class consisting of hydrogen, methyl, ethyl, and phenyl; and R_3 and R_4 represent, interchangeably, a member of the class consisting of hydrogen, chlorine, methyl, ethyl, methoxy, ethoxy, methylthio, and ethylthio; and non-toxic therapeutically useful acid addition salts and lower alkyl quaternary ammonium halides, sulfates, and sulfonates thereof.

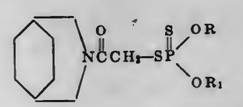
3,347,850

CERTAIN 3-DITHIOPHOSPHORYLACETYL-3-AZA BICYCLO[3,2,2]NONANE COMPOUNDS

Don R. Baker, Pinole, Mervin E. Brokke, Richmond, and Duane R. Arneklev, Sunnyvale, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,786
4 Claims. (Cl. 260—239)

1. A compound of the formula



wherein R and R_1 are selected from the group consisting of lower alkyl and lower alkoxyalkyl.

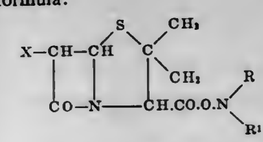
3,347,851

DERIVATIVES OF 6-AMINOPENICILLANIC ACID

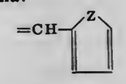
Kenneth David Hardy, Horsham, England, assignor to Beecham Group Limited, Brentford, England, a British company

No drawing. Filed July 1, 1966, Ser. No. 562,129
Claims priority, application Great Britain, July 8, 1965, 28,965/65
9 Claims. (Cl. 260—239.1)

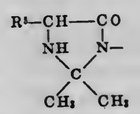
7. An injectable compound suitable for depot therapy having the formula:



wherein R is benzoyl and R^1 is phenyl, or R and R^1 together are alkylidene having 1 to 6 carbon atoms, α-(alkylcarbonyl)alkylidene having 1 to 6 carbon atoms in the alkyl moiety and 1 to 6 carbon atoms in the alkylidene moiety, cycloalkylidene having 3 to 6 carbon atoms, aralkylidene of the formula:

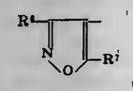


wherein Z is O, S or N, succinyl or phthaloyl;
and X is:

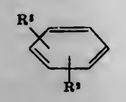


wherein R^5 is phenyl or 2-thienyl;
or X is Y.CO.NH—, wherein Y is benzyl; a 2,6-di(lower-alkoxy)-phenyl group in which each lower alkoxy group is methoxy or ethoxy; a 2-alkoxy-1-naphthyl group in

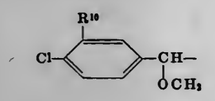
which the alkoxy group has 1 to 4 carbon atoms; a 3,5-disubstituted-4-isoxazolyl group of the formula:



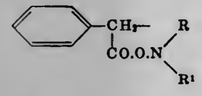
wherein one of R^6 and R^7 is a lower alkyl group of 1 to 4 carbon atoms and the other is



wherein R^8 and R^9 are each hydrogen, chlorine or fluorine; an α-(phenoxy)alkyl group wherein the alkyl group has 1 to 4 carbon atoms; 3-thenyl; 2-thenyl; furfuryl; α-sulphamoyl-benzyl; a group of the formula:



where R^{10} is hydrogen or chlorine; α-aminobenzyl; or a group of the formula:



wherein NRR^1 is the same as the other —NRR^1 group defined above.

3,347,852

PROCESS FOR REFINING CRUDE LACTAMS

Mitsuo Ishikawa, Shijyo-machi, Shunsuke Yonehara, Mizuho-ku, Nagoya, and Takanobu Godo, Komaki-shi, Aichi-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 29, 1964, Ser. No. 378,999

Claims priority, application Japan, July 3, 1963, 38/34,310

11 Claims. (Cl. 260—239.3)

1. A process for refining crude lactams characterized by treating a crude lactam by at least one method selected from an extracting operation and recrystallizing operation using liquid ammonia.

2. The process for refining crude lactams as described in claim 1, in that said lactam is the one selected from the group consisting of ε-caprolactam, η-capryllactam and ω-lauryllactam.

3,347,853

1'H-PYRAZOLO [3',4':17,16]-$\Delta^{4,9,11}$-ESTRATRIENE-3-ONE AND PROCESS FOR PREPARATION THEREOF

Robert Bucourt, Clichy-sous-Bois, and Andre Pierdet, Noisy-le-Sec, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,825

Claims priority, application France, Apr. 10, 1964, 970,541

7 Claims. (Cl. 260—239.5)

1. 1'H-pyrazolo [3',4':17,16]-$\Delta^{4,9,11}$-estratriene-3-one.

3,347,854

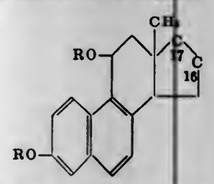
PREPARATION OF 11β-HYDROXY-19-NOR STEROIDAL-$\Delta^{1,3,5(10),6,8}$-PENTAENES

Robert Herman Lenhard, Ridgefield Park, N.J., and Milton Heller and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,522

10 Claims. (Cl. 260—239.55)

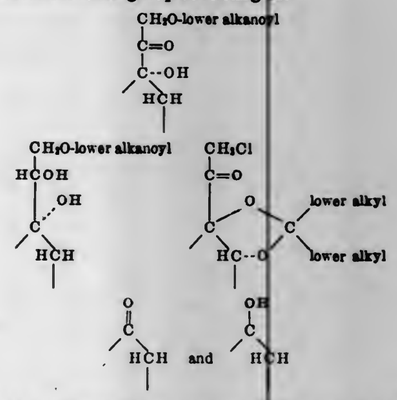
1. A pentaene steroid of the formula:



wherein R is selected from the group consisting of hydrogen and lower alkanoyl and



is selected from the group consisting of:



8. A compound in accordance with claim 1 wherein the pentaene steroid is 3,11β-diacetoxy-21-chloro-16α,17α-isopropylidenedioxy - 19 - norpregna-1,3,5(10)-6,8-pentaen-20-one.

3,347,855

ACETONE SLURRY PROCESS FOR THE PREPARATION OF SOLUBLE CARBOXYMETHYL CELLULOSE

Russell Nelson, Memphis, Tenn., assignor to The Buckeye Cellulose Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 4, 1964, Ser. No. 387,378

6 Claims. (Cl. 260—231)

1. In a slurry process for the production of carboxymethyl cellulose wherein cellulose is slurried in an aqueous solution of acetone and contacted in a first step with a water-soluble alkali metal hydroxide and the resulting alkali cellulose is contacted with monochloroacetic acid and etherified in a second step while still slurried in an aqueous solution of acetone, the improvement which consists of maintaining a total liquid-to-cellulose ratio in said steps of about 15 to about 35 to 1 while contacting the cellulose and the alkali cellulose in said steps with about 2 to about 2.5 moles of a water-soluble alkali metal hydroxide per mole of monochloroacetic acid and using about 0.4 mole to about 2.5 moles of monochloroacetic acid per mole of cellulose while further maintaining as liquid ratios in said first step, a water-to-cellulose ratio of about 1.85 to about 8.75 to 1 and an acetone-to-water ratio of about 3 to about 7 to 1, while contacting the slurried cellulose with the sodium hydroxide at a slurry temperature of about 0° C. to about 30° C. for a period of about 0.1 to about 1 hour and altering said liquid ratios in said second step to a water-to-cellulose ratio of about 1.15 to about 3.85 to 1 and an acetone-to-water ratio of about 8 to about 12 to 1 while contacting the alkali cellulose with the monochloroacetic acid at a slurry temperature of about 40° C. to about 100° C. for a period of about 0.3 hour to about 10 hours, whereby carboxymethyl cellulose exhibiting high substitution uniformity and improved clarity in aqueous solutions is produced in an efficient manner with regard to the amount of etherifying agent used in said second step.

3,347,856

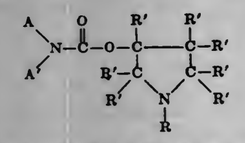
1 - LOWER - ALKYL - 3 - PYRROLIDYL N - LOWER-ALKYL- AND LOWER - CYCLOALKYL - N - ARYLCARBAMATE ANTISPASMODICS AND ANTIDEPRESSIVES

Carl D. Lunsford, Richmond, Va., assignor to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,440

21 Claims. (Cl. 260—243)

20. A compound selected from (a) those having the formula:



wherein R is a lower-alkyl radical having 1 to 4 carbon atoms, inclusive,

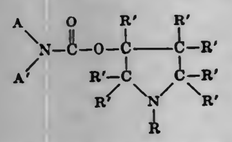
wherein R' is selected from the group consisting of methyl and hydrogen, a maximum of two R' being methyl, and

wherein



forms a member having 4 to 12 carbon atoms, inclusive, selected from the group consisting of indolino, tetrahydroquinolino, phenothiazino, octahydroquinolino, morpholino, thiamorpholino, pyrrolidino, piperidino, piperazino, and lower-alkylpiperazino, and (b) pharmaceutically acceptable acid addition salts thereof.

21. A compound selected from (a) those having the formula:



wherein R is selected from the group consisting of a lower-alkyl radical having 1 to 4 carbon atoms, inclusive, and pyridyl,

wherein R' is selected from the group consisting of methy and hydrogen, a maximum of two R' being methyl,

wherein A is selected from the group consisting of hydrogen, lower-alkyl having 1 to 6 carbon atoms, inclusive, and lower-cycloalkyl having 3 to 9 carbon atoms, inclusive, and

wherein A' is selected from the group consisting of a monocarbocyclic aryl group containing a maximum of fifteen carbon atoms selected from the group consisting of phenyl, trifluoromethylphenyl, lower-alkoxyphenyl, dilower - alkylaminophenyl, lower-alkylphenyl, halophenyl and naphthyl, and, when A is lower-cycloalkyl, lower-alkyl having 1–6 carbon atoms inclusive, and lower-cycloalkyl having 3–9 carbon atoms, inclusive,

and wherein A and A' together with the nitrogen atom forms a member having 4–12 carbon atoms inclusive, selected from the group consisting of indolino, tetrahydroquinolino, phenothiazino, octahydroquinolino, morpholino, thiamorpholino, pyrrolidino, piperidino, piperazino, and lower-alkylpiperazino, and (b) pharmaceutically acceptable acid addition salts thereof.

3,347,857

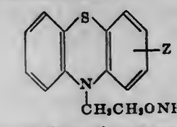
ORGANIC COMPOUNDS

Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 365,477, May 6, 1964, now Patent No. 3,317,515, dated May 2, 1967. This application Feb. 21, 1967, Ser. No. 617,489

3 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of (1) a compound of the formula:



wherein Z is selected from the group consisting of hydrogen, halogen, trifluoromethyl, alkylthio wherein the alkyl group contains from 1 through 5 carbon atoms, alkanoyl wherein the alkyl group contains from 1 through 5 carbon atoms, alkyl of from 1 through 5 carbon atoms, and alkoxy where in the alkyl group contains from 1 through 5 carbon atoms, and (2) an acid addition salt thereof.

3,347,858

TERTIARY AMINOETHYL [-BETA-(1-NAPHTHYL)-BETA'-TETRAHYDROFURYL ISOBUTANE] AND ALPHA LOWER ALKENYL ETHERS

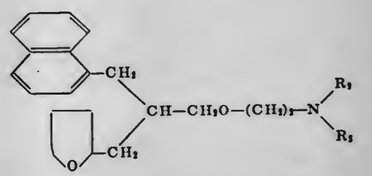
Etienne Szarvasi and Michel Bayssat, Lyon, France, assignors to Lipha, Lyonnaise Industrielle Pharmaceutique

No Drawing. Filed Nov. 8, 1966, Ser. No. 592,730

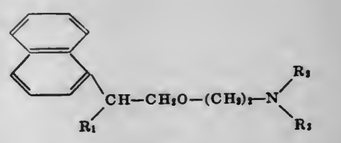
Claims priority, application France, Mar. 28, 1963, 929,519

11 Claims. (Cl. 260—247.7)

1. A compound of the formula



or

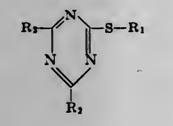


wherein R_1 is alkenyl having 3 to 4 carbon atoms; and R_2 and R_3 are selected from the group consisting of methyl, ethyl, and together with the nitrogen atom, piperidino, pyrrolidino and morpholino.

6. N-(β-morpholinoethoxy(- β - tetrahydrofuryl-β'-(1-naphthyl)isobutane, in accordance with claim 1.

3,347,859
2-MERCAPTO-s-TRIAZINES
Hans-Georg Schmelzer, Cologne, Stammheim, and Eberhard Degener, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 1, 1965, Ser. No. 460,548
Claims priority, application Germany, July 17, 1964, F 43,475/64
6 Claims. (Cl. 260—248)

1. A compound of the formula



in this formula

R_1 being a member selected from the group consisting of alkyl radicals with 1 to 12 carbon atoms, cyclohexyl, benzyl, mono-, di- and trichlorobenzyl, phenyl and mono-, di-, tri-, tetra- and pentachlorophenyl radicals and

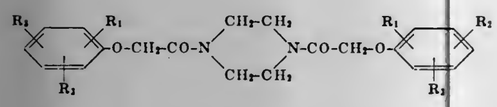
R_2 being a member selected from the group consisting of the groupings $R_3—CCL_2—$ and $R_4—O—CO—$, wherein

R_3 represents a member selected from the group consisting of hydrogen, chlorine, alkyl radicals with 1 to 6 carbon atoms and chlorinated alkyl radicals with 1 to 6 carbon atoms and

R_4 represents a member selected from the group consisting of alkyl radicals with 1 to 6 carbon atoms, phenyl and mono-, di-, tri-, tetra- and pentachlorophenyl radicals.

3,347,860
BIS-(PHENOXYACETYL)-PIPERAZINES
Tsutomu Irikura, Kuniyasu Masuzawa, and Keigo Nishino, Tokyo, Japan, assignors to Kyorin Seiyaku Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed Jan. 27, 1965, Ser. No. 428,545
Claims priority, application Japan, July 31, 1964, 39/43,700
4 Claims. (Cl. 260—268)

1. A compound of the formula



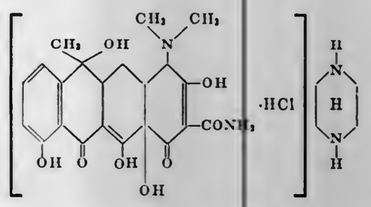
in which R_1, R_2 and R_3 are each selected independently from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, carbamoyl and carbalkoxy in one of the following combinations:

$R_1=R_2=R_3=H$
$R_1=R_2=H$ and $R_3=CONH_2$
$R_1=H$, $R_2=OR$ and $R_3=COOR'$
$R_1=R_2=H$ and $R_3=OH$
$R_1=R_2=H$ and $R_3=R$
$R_1=R_2=H$ and $R_3=OR$; and
$R_1=R_2=R_3=OR$

in which each of R and R' is lower alkyl.

3,347,861
TETRACYCLINE HYDROCHLORIDE-PIPERAZINE COMPLEX
Samuel S. M. Wang, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 7, 1966, Ser. No. 525,365
1 Claim. (Cl. 260—268)

The tetracycline hydrochloride-piperazine complex corresponding to the formula



3,347,862
PIPERAZINE 2,6-DIIODO-4-NITROPHENYL PHOSPHATE
Samuel S. M. Wang, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 7, 1966, Ser. No. 525,373
1 Claim. (Cl. 260—268)

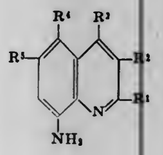
Piperazine 2,6-diiodo-4-nitrophenyl phosphate.

3,347,863
PROCESS FOR BASIC ALUMINUM SALT OF PYRIDINETHIONE
Gerhard F. Ottmann, Hamden, and Irene M. Voynick, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed June 29, 1964, Ser. No. 379,003
5 Claims. (Cl. 260—270)

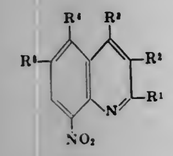
1. A process for preparing the basic aluminum salt of 1-hydroxy-2-pyridinethione which comprises adding 1-hydroxy-2-pyridinethione to an aqueous slurry of freshly prepared aluminum hydroxide, wherein the molar ratio of said 1-hydroxy-2-pyridinethione to said aluminum hydroxide is in the range between about 1.1:1 and about 2.9:1, and recovering the basic aluminum salt produced thereby.

3,347,864
PRODUCTION OF AMINOQUINOLINES
Ronald William Hinde, Ashwood, Victoria, and William George Clive Raper, Moorabbin, Victoria, Australia, assignors to Monsanto Chemicals (Australia) Limited, West Footscray, Victoria, Australia, a company of Australia
No Drawing. Filed Jan. 12, 1967, Ser. No. 608,757
Claims priority, application Australia, Sept. 27, 1962, 22,633/62
6 Claims. (Cl. 260—288)

1. The method of preparing an aminoquinoline of the formula:



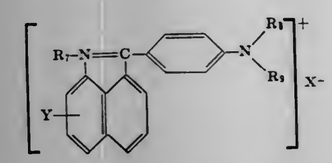
wherein R^1, R^2, R^3, R^4 and R^5 are substituents each selected from the group consisting of hydrogen, alkyl of not more than four carbons, phenyl, tolyl and xylyl with a maximum of two of the substituents being phenyl, tolyl and xylyl; provided that when the substituents are alkyl or hydrogen the carbon atoms of the substituents total a maximum of 14; provided that when any of the substituents is tert-butyl the substituents on adjacent carbons of the aminoquinoline are hydrogen; and provided that when the substituents are phenyl, tolyl and xylyl the remaining substituents are hydrogen; which comprises reacting a nitroquinoline of the formula



wherein R^1, R^2, R^3, R^4 and R^5 are as defined above, with a sulfide selected from the group consisting of ammonium hydrogen sulfide, alkali metal hydrogen sulfide and alkaline earth metal hydrogen sulfide, in a solvent medium comprising water and an alkyl or alkenyl alcohol having a maximum of four carbon atoms, at a pH from about 8.0 to about 9.5.

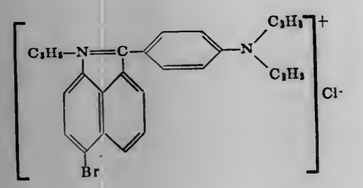
3,347,865
1-HYDROCARBON-2-TERTIARY AMINO CARBOCYCLIC ARYL BENZ-[c,d]-INDOLES
Alfred Brack and Dieter Kutzschbach, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Continuation of application Ser. No. 221,437, Sept. 5, 1962. This application May 13, 1966, Ser. No. 550,056
Claims priority, application Germany, Sept. 20, 1961, F 34,954; June 19, 1962, F 37,101, F 37,104
10 Claims. (Cl. 260—313.1)

1. A dyestuff free of sulfonic and carboxylic acid groups, said dyestuff having the formula



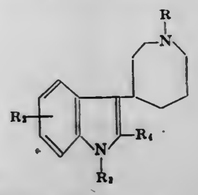
wherein R_7, R_8 and R_9 stand for members selected from the class consisting of methyl and ethyl, and Y stands for a member selected from the class consisting of bromine and chlorine, and X^- is an anion.

4. The dyestuff of claim 1 of the formula



3,347,866
4-(INDOL-3-YL)-HEXAHYDRO-1H-AZEPINES AND THEIR METHOD OF PREPARATION
Jackson B. Hester, Jr., Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No drawing. Filed June 22, 1965, Ser. No. 466,102
6 Claims. (Cl. 260—326.15)

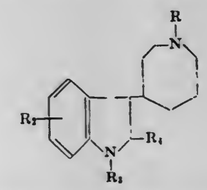
1. A member of the group consisting of compounds of the formula:



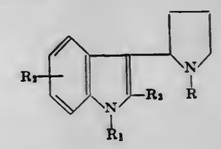
I

wherein R, R_3, and R_4 are members of the group consisting of hydrogen and alkyl of not more than 4 carbon atoms, and R_2 is a member of the group consisting of hydrogen, alkyl of not more than 4 carbon atoms, alkoxy of not more than 4 carbon atoms, and halogen, and the acid addition salts thereof, the N-oxides where R is alkyl and the acid addition salts thereof, and the alkyl quaternary ammonium salts where R is alkyl.

4. A process for making a compound of the following formula:

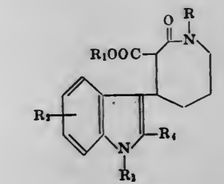


wherein R, R_3, and R_4 are hydrogen or alkyl of not more than 4 carbon atoms, and R_2 is hydrogen, alkyl of not more than 4 carbon atoms, alkoxy of not more than 4 carbon atoms, or halogen, which comprises reacting with a dialkyl malonate in the presence of a strong base a compound of the formula:



IV

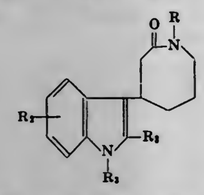
wherein R, R_2, R_3, and R_4 are as given above, to form a compound of the following formula:



III

wherein R, R_2, R_3, and R_4 are as given above, and R_1 is alkyl, subjecting the resulting compound to alkaline hydrolysis followed by neutralization to form a compound of Formula III wherein R, R_2, R_3, and R_4 are as given above and R_1 is hydrogen, heating the resulting

compound as required to effect decarboxylation to form a compound of the following formula:



II

wherein R, R_2, R_3, and R_4 are as given above, and subjecting the resulting compound to lithium aluminum hydride reduction.

3,347,867

CATALYTIC PROCESS FOR THE PREPARATION OF VICINAL EPISULFIDES

Stephen W. Osborn, Yardley, and Edward Broderick, Perkasie, Pa., and José L. Villa, Cream Ridge, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,261
29 Claims. (Cl. 260—327)

1. A process for the preparation of at least one alkylene sulfide which comprises reacting at a temperature of from about 50° C. to 500° C., in the presence of, as a catalyst, at least one metallic halide selected from the group consisting of alkali metal halides and alkaline-earth metal halides, at least one alkylene oxide with at least one sulfur donating compound, at least one of said sulfur donating compounds being different from said alkylene sulfide, and, further, being a compound which exists in the vapor state under the above stated reaction conditions and which is capable of donating sulfur under such conditions.

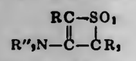
3,347,868

METHOD OF PREPARING 3-THIETANONE 1,1-DIOXIDES

James C. Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 274,850, Apr. 22, 1963. This application Apr. 28, 1966, Ser. No. 546,105
4 Claims. (Cl. 260—327)

1. The method of preparing a 3-thietanone 1,1-dioxide compound which comprises subjecting to acid hydrolysis a compound of the formula



wherein the substituents R are each selected from the group consisting of hydrogen and hydrocarbon radical free of ethylenic and acetylenic unsaturation and having 1 to 8 carbon atoms and the substituent R'' of the amino group, taken singly, represent alkyl radicals of 1 to 8 carbon atoms and, taken collectively with the nitrogen atom to which they are attached, represent a member of the group consisting of morpholino, thiamorpholino, pyrrolidinyl and piperidino groups.

3,347,869

PROCESS FOR PRODUCING TRIOXANE

Per G. M. Flodin, Per Kornfeldt, and Jonn Inge Gardshol, Perstorp, Sweden, assignors to Skanska Attikfabriken AB, Perstorp, Sweden

No Drawing. Filed July 6, 1964, Ser. No. 380,689
Claims priority, application Sweden, July 15, 1963, 7,822/63
7 Claims. (Cl. 260—340)

1. A process for the preparation of trioxane which comprises bringing gaseous formaldehyde at a temperature of 60°–150° C. into contact with a Lewis acid catalyst to produce primarily trioxane, and recovering trioxane.

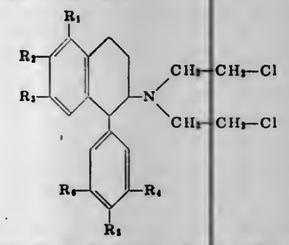
3,347,870

ARYL-TETRALYL COMPOUNDS AND A PROCESS FOR THEIR PRODUCTION

Jürg Rutschmann, Oberwil, Basel-Land, and Emil Schreier, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,185
Claims priority, application Switzerland, Aug. 30, 1962, 10,318/62
6 Claims. (Cl. 260—340.5)

1. A compound selected from the group consisting of compounds of the formula



wherein when R_1 is hydrogen, R_2, R_3, R_4, R_5 and R_6 are each hydrogen when R_1 is hydrogen, R_2 and R_3 are each methoxy or together methylenedioxy, R_4 and R_5 are each methoxy and R_6 is hydrogen or methoxy, when R_1, R_2 and R_3 are each methoxy R_4 and R_5 are methoxy and R_6 is hydrogen, and their pharmaceutically acceptable acid addition salts.

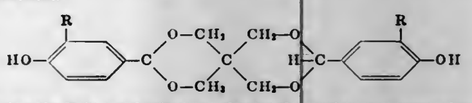
3,347,871

NOVEL BISPHENOLS OF SPIROBI(META-DIOXAN) AND THEIR PREPARATION

James Harding, Dunellen, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,410
4 Claims. (Cl. 260—340.7)

1. The bisphenol of spirobi(meta-dioxan) having the formula



wherein R is a substituent selected from the group consisting of hydrogen, chlorine and methyl.

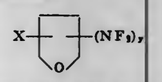
3,347,872

DERIVATIVES OF FURAN

Anthony J. Passannante, Metuchen, John R. Lovett, Edison, and Perry A. Argabright, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,462
13 Claims. (Cl. 260—347.3)

1. NF_2 adduct of furan containing a functional substituent as in the formula:



wherein X is a monofunctional group of the class consisting of carbomethoxy, carbonyl halide, isocyanate, carboxy, carboxaldehyde and carbonitrile linked to a carbon atom in the furan nucleus and y indicating the number 4 to 6 of NF_2 groups linked to carbon atoms in said nucleus.

3,347,873

SEPARATION OF ORGANIC COMPOUNDS

Ralph J. Leary, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,468
6 Claims. (Cl. 260—347.7)

3. Method of separating a saturated higher NF_2 adduct of an unsaturated organic compound from a lower NF_2 adduct of said compound having a remaining double bond, said adducts being in a mixture and said higher NF_2 aduct being distillable under vacuum at 0° C. to 100° C., comprising the steps of reacting at about −10° to +10° C. the lower NF_2 adduct in the mixture with liquid N_2O_4 to form a nitrogen- and oxygen-containing product that is less volatile than the saturated higher NF_2 adduct, and distilling said higher NF_2 adduct under vacuum from the less volatile nitrogen- and oxygen-containing product.

5. The method of claim 3, in which the higher NF_2 adduct is tetrakis NF_2 adduct of furan and the lower NF_2 adduct is bis NF_2 adduct of furan leaving a remaining double bond.

3,347,874

5-NITROFURYL-2-AMIDOXIMES

Fernand Eloy, Brussels, Belgium, and Chester J. Mirocha, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 9, 1963, Ser. No. 250,240
6 Claims. (Cl. 260—347.7)

3. 5-nitrofuryl-2-N-allylamidoxime.
4. 5-nitrofuryl-2-N-phenylamidoxime.
6. 5-nitrofuryl-2-acrylamidoxime.

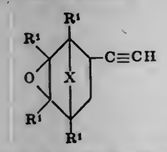
3,347,875

ACETYLENIC EPOXIDES AND DIENES

Donald J. Foster, South Charleston, and Denvil E. Reed, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,120
11 Claims. (Cl. 260—348)

1. An epoxide of the formula:

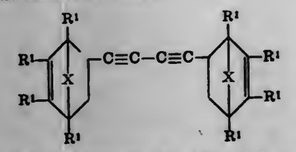


wherein X is a bivalent radical selected from the group consisting of —CH_2—, —CH_2CH_2—, —O—, —S—, and



wherein R is selected from the group consisting of hydrogen and alkyl radicals of from 1 to 4 carbon atoms; and wherein each R^1 individually is selected from the group consisting of hydrogen and alkyl groups of up to 6 carbon atoms.

4. A diene of the formula:

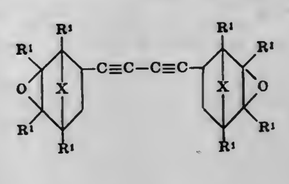


wherein X is a bivalent radical selected from the group consisting of —CH_2—, —CH_2CH_2—, —O—, —S—, and



wherein R is selected from the group consisting of hydrogen and alkyl radicals of from 1 to 4 carbon atoms; and wherein each R^1 individually is selected from the group consisting of hydrogen and alkyl groups of up to 6 carbon atoms.

7. A novel diepoxide of the formula:

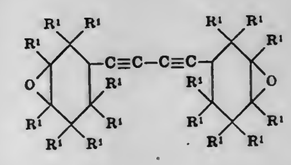


wherein X is a bivalent radical selected from the group consisting of —CH_2—, —CH_2CH_2—, —O—, —S—, and



wherein R is selected from the group consisting of hydrogen and alkyl radicals of from 1 to 4 carbon atoms; and wherein each R^1 individually is selected from the group consisting of hydrogen and alkyl groups of up to 6 carbon atoms.

10. A diepoxide of the formula:



wherein R^1 is a radical selected from the group consisting of hydrogen and alkyl groups containing up to 6 carbon atoms.

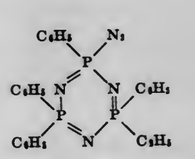
3,347,876

AZIDOPENTAPHENYLPHOSPHONITRILE TRIMER

Clay M. Sharts, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,583
1 Claim. (Cl. 260—349)

The compound of the formula



having a melting point of 153.5–155.5° C.

3,347,877

CIS- AND TRANS-DIAZIDOHEXAPHENYLCYCLOPHOSPHONITRILE TETRAMER

Clay M. Sharts, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,585
2 Claims. (Cl. 260—349)

1. The compound trans-diazidohexaphenylphosphonitrile tetramer having a melting point of 206–208° C.

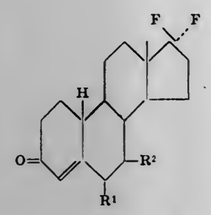
3,347,878
SELECTED 17,17-DIFLUORO STEROIDS OF THE ESTRANE SERIES

George A. Boswell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,422
9 Claims. (Cl. 260—397.3)

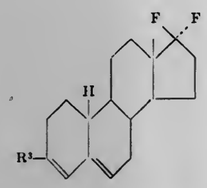
1. A steroid selected from the class consisting of

(1)



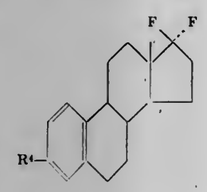
wherein R^1 is selected from the group consisting of hydrogen, chlorine and bromine; R^2 is selected from the group consisting of hydrogen, lower alkyl and thioacetyl; and R^1 and R^2 together can be an additional bond between carbon atoms 6 and 7 of the steroid nucleus;

(2)



wherein R^3 is selected from the group consisting of O-lower alkyl, O-cycloalkyl of 5–6 carbon atoms and O-lower alkanoyl; and

(3)



wherein R^4 is selected from the group consisting of hydroxyl, O-lower alkyl, O-cycloalkyl of 5–6 carbon atoms, and O-lower alkanoyl.

3,347,879
4α,8,14-TRIMETHYL-18 NOR-5α,8α,9β,13α,14β ANDROSTANE-3,11,16,17-TETRONE

Imre Bacso, Somerset, and Patrick A. Diassi, Westfield, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 9, 1965, Ser. No. 486,213
3 Claims. (Cl. 260—397.3)

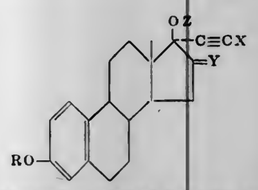
1. 4α,8,14 - trimethyl - 18 - nor - 5α,8α,9β,13α,14β-androstane-3,11,16,17-tetrone.

3,347,880
17α-HALOGENOETHINYLESTRANES

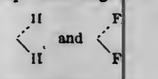
Cecil H. Robinson, Cedar Grove, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 5, 1962, Ser. No. 228,748
19 Claims. (Cl. 260—397.5)

1. A compound selected from the group consisting of a 17α-halogenoethinylestradiol of the following general formula:



wherein R is a member selected from the group consisting of H, lower alkyl, and an acid residue of a hydrocarbon carboxylic acid having up to 8 carbon atoms; Z is a member selected from the group consisting of H and an acid residue of a hydrocarbon carboxylic acid having up to 8 carbon atoms; X is a halogen having an atomic weight greater than 19 and less than 100; and Y is a member selected from the group consisting of

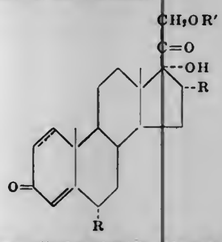


3,347,881
6α,16α-DIALKYL STEROIDS AND INTERMEDIATES

Meyer Sletzinger and Donald F. Reinhold, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application Sept. 12, 1958, Ser. No. 760,562, now Patent No. 3,094,523, dated June 18, 1963. Divided and this application July 16, 1962, Ser. No. 210,184
3 Claims. (Cl. 260—397.47)

3. A compound of the formula:



wherein R is lower alkyl and R' is selected from the group consisting of hydrogen and lower alkanoyl and the dotted line between carbon 1 and 2 indicates that a double bond may be present in this position.

3,347,882
AMINO-AMIDE REACTION PRODUCTS OF HYDROXYACIDS, EPOXY COMPOUNDS AND POLYAMINES

Paul Zuppinger, Arlesheim, Ulrich Niklaus, Basel, Kurt Brügger, Munchenstein, and Heinrich Zwicky, Therwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,815
Claims priority, application Switzerland, Apr. 5, 1962, 4,183/62
7 Claims. (Cl. 260—404.5)

1. An amino-amide, which is obtained by reacting without external heating a hydroxy compound selected from the group consisting of aliphatic monocarboxylic acids having 1 to 2 alcoholic hydroxyl groups and 12 to 18 carbon atoms, and esters of aliphatic monocarboxylic acids having 1 to 2 alcoholic hydroxyl groups and 12 to 18 carbon atoms, with a saturated aliphatic alcohol having 1 to 3 hydroxyl groups and 1 to 6 carbon atoms, in a first stage in the presence of a Lewis acid with a 1,2-epoxy compound, in which first reaction stage the alcoholic hydroxyl group(s) of the said hydroxy compound are etherified, and by heating the resulting etherified product in a second stage with a saturated aliphatic diprimary polyamine having at least 2 primary amino groups, in which second reaction stage the group selected from the class consisting of carboxyl group and carboxylic acid ester group is converted into a carboxylic acid amide group at a temperature sufficient to eliminate a compound selected from the group consisting of water and aliphatic saturated alcohol having 1 to 3 hydroxyl groups and 1 to 6 carbon atoms.

3,347,883
ω-HALOGENO VINYL KETO FATTY ACID ESTERS

Masao Ohara, Ibaraki, Kiyotsugu Yamamoto, Osaka, Takashi Kamiya, Sakai, Kunihiko Tanaka, Nara, Akira Sugihara, Osaka, and Masumi Ito, Kyoto, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan, a Japanese company

No Drawing. Original application Sept. 28, 1959, Ser. No. 842,589, now Patent No. 3,132,152, dated May 5, 1964. Divided and this application May 5, 1964, Ser. No. 365,147
Claims priority, application Japan, Oct. 4, 1958, 33/28,412
4 Claims. (Cl. 260—408)

3. The lower alkyl ester of 8-chloro-6-oxo-7-octenoic acid.

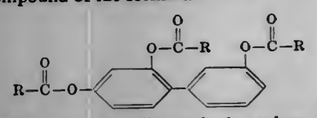
4. The lower alkyl ester of 6-chloro-4-oxo-5-hexenoic acid.

3,347,884
ESTERS OF 2,3',4-TRIHYDROXYDIPHENYL

William H. Voris, Mars, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Sept. 17, 1964, Ser. No. 397,155
15 Claims. (Cl. 260—410.5)

1. A compound of the formula



R may be the same or different hydrocarbon groups selected from the group consisting of alkyl groups having from 1–20 carbon atoms and cyclohexyl.

3,347,885
COTTONSEED OIL DIRECT EXTRACTION METHOD

Odell J. Jones, Phoenix, Ariz., and Bentley H. Page and David F. Dubbs, Lubbock, Tex., assignors to Anderson, Clayton & Co., Inc., Houston, Tex., a corporation of Delaware

Filed Jan. 3, 1966, Ser. No. 518,173
5 Claims. (Cl. 260—412.4)

1. An improved method for directly solvent extracting oil from prepared cottonseed meats, comprising,

mildly cooking cottonseed meat flakes having a thickness not exceeding 0.025 inch so that in the early stages of cooking the meats contain about 14 to 16% by weight moisture and in the final stages of cooking they contain about 13 to 15% by weight moisture, using an overall cooking time of from about 30 to 40 minutes, and increasing the cooking temperature from an initial temperature of from about 160° F. to 185° F. to a final temperature of from about 210° F. to 230° F.,

compressing the cooked cottonseed meat between smooth flaking rolls to a thickness of from about 0.005 to 0.008 inch, and

extracting the oil from the compressed meat particles by contact with an oilseed extracting solvent in gravity percolation flow.

3,347,886
PROCESSES FOR REMOVING THE HALPHEN-TEST RESPONSE FROM REFINED AND BLEACHED COTTONSEED OIL

Eric T. Rayner, New Orleans, Paul H. Eaves, Metairie, and Harold P. Dupuy, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed July 11, 1966, Ser. No. 564,007
2 Claims. (Cl. 260—424)

1. A process for removing positive Halphen-test response from a refined and bleached cottonseed oil containing cyclopropenoids, which comprises heating and steam sparging the cottonseed oil at a temperature of about from 400° to 500° F. and at a reduced pressure of at least about 100 mm. of mercury until the Halphen response of the cottonseed oil being treated becomes negative by test.

2. A process for removing positive Halphen test response from a refined and bleached cottonseed oil containing cyclopropenoids, which comprises heating and steam sparging the cottonseed oil at a temperature of about from 400° to 500° F. and at a reduced pressure of at least about 100 mm. of mercury and in the presence of cottonseed oil fatty acids which are present in a molar excess relative to the cottonseed oil cyclopropenoids, until the Halphen response of the cottonseed oil being treated becomes negative by test.

3,347,887
PROCESS OF PREPARING TITANOXANE METALOXANE POLYMERS

Sydney Arthur Giddings, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Aug. 5, 1963, Ser. No. 300,070. Divided and this application Mar. 31, 1965, Ser. No. 444,457
1 Claim. (Cl. 260—429.5)

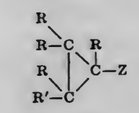
The method of preparing a synthetic polymer which comprises reacting a bis(cyclopentadienyl)titanium dihalide with silver oxide in an inert, anhydrous liquid solvent selected from the group consisting of inert anhydrous liquid ethers and ketones and separating the precipitated polymer product from the reaction mixture.

3,347,888
CYCLOPROPYL TIN COMPOUNDS

Dietmar Seyferth, Arlington, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 27, 1963, Ser. No. 283,586
12 Claims. (Cl. 260—429.7)

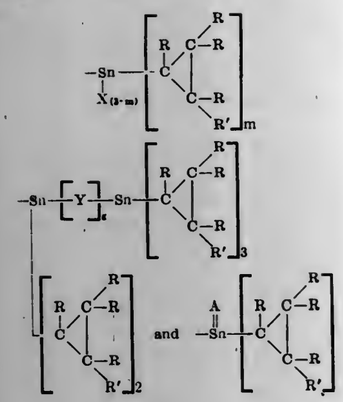
1. A cyclopropyltin compound having the formula



wherein each R independently represents a member selected from the group consisting of hydrogen and methyl;

each R' independently represents a member selected from the group consisting of hydrogen and lower-alkyl having from 1 to 4, inclusive, carbon atoms; and

Z represents a radical selected from the group consisting of



wherein R and R′ in each of the radicals are as hereinbefore defined;

m is an integer of from 0 to 3, inclusive;

each X is independently selected from the group consisting of alkyl, alkenyl, alkynyl, phenyl, substituted phenyl wherein substituents are selected from the group consisting of halogen and loweralkyl having from 1 to 4, inclusive, carbon atoms, alkanoate, alkoxy, hydroxy, hydrogen, thiocyanate;

Y is a bivalent linking radical selected from the group consisting of —O—, —S—, and hydrocarbonylene being of from 1 to 12 carbon atoms, inclusive;

g is an integer selected from the group consisting of 0 and 1;

and A is a divalent radical selected from the group consisting of oxygen, sulfur, and cyclic dicarboxylate of a dicarboxylic acid having from 2 to 3, inclusive, carbon atoms.

3,347,889

HEXAORGANOTRITIN COMPOUNDS AND THE PREPARATION THEREOF

Albert K. Sawyer, Durham, N.H., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 31, 1963, Ser. No. 299,103

15 Claims. (Cl. 260—429.7)

1. The method of preparing $R_3Sn—SnR'_2—SnR_3$ which comprises reacting as reactants two moles of R_3SnZ and one mole of R'_2SnX_2 wherein one of Z and X is hydrogen and the other of Z and X is a proton acceptor selected from the group consisting of ½ O, OH, and OR″, and R, R′, and R″ are each hydrocarbon radicals, free of olefinic and acetylenic unsaturation, selected from the group consisting of alkyl, alkaryl, aralkyl, aryl, and cycloalkyl, maintaining said reactants together in a reaction mixture, and separating $R_3Sn—SnR'_2—SnR_3$ from said reaction mixture.

3,347,890

TRIORGANOTIN CARBODIIMIDES AND ISOUREAS AND THE PREPARATION THEREOF

Alwyn G. Davies, London, England, assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,571

18 Claims. (Cl. 260—429.7)

1. A novel organotin compound selected from the group consisting of $R_3Sn—N=C(OR')—R''$ and

$$R_2Sn—NR''—C(OR')=NR''$$

wherein R and R″ are independently selected from the group consisting alkyl, aryl and alkenyl; R′ is selected from the group consisting of alkyl, aryl, alkenyl, hydrogen and —SnR_3.

3,347,891

PROCESS FOR PURIFYING ORGANO-TIN HYDRIDES

Wilhelm Paul Neumann, Giessen (Lahn), and Horst Niermann, Cologne-Stammheim, Germany, assignors to Studiengesellschaft Kohle m.b.H.

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,435

Claims priority, application Germany, Oct. 19, 1962, St 19,869

6 Claims. (Cl. 260—429.7)

1. A process for the purification of impurity containing organo-tin hydrides of the formula

$$R_mSnH_{4-m}$$

wherein R is selected from the group consisting of alkyl and aryl and *m* is an integer from 1 to 3, said impurity being a halogen containing compound, which comprises subjecting said hydride to hydrolysis and neutralizing the hydrohalic acid formed thereby.

3,347,892

PROCESS FOR PREPARING DIORGANOBISMUTH HALIDES

John J. Ventura, East Brunswick, N.J., assignor to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 29, 1965, Ser. No. 517,462

8 Claims. (Cl. 260—447)

1. The process for preparing R_2BiX, wherein R is an aromatic hydrocarbon radical and X is an active halogen selected from the group consisting of chlorine, bromine, and iodine which comprises reacting R_3Bi with BiX_3 in the presence of an inert aromatic hydrocarbon diluent thereby forming product R_2BiX, and recovering said R_2BiX product.

3,347,893

ADDUCTS

John N. Hogsett, Charleston, Albert Khuri, South Charleston, and Helmut W. Schulz, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 27, 1961, Ser. No. 162,183

20 Claims. (Cl. 260—448)

1. An adduct of a metal borohydride of the group consisting of aluminum borohydride, beryllium borohydride, and zirconium borohydride, with a ligand of the group consisting of tetra(hydrocarbylamino)diboron, tetra(dihydrocarbylamino)diboron, tris(hydrocarbylamino)diborane, and tris(dihydrocarbylamino)borane, said adduct possessing at least one coordinate bond between an amino nitrogen atom and the metal moiety of said metal borohydride.

11. A process which comprises contacting a metal borohydride of the group consisting of aluminum borohydride, beryllium borohydride, and zirconium borohydride; with a ligand of the group consisting of tetra(hydrocarbylamino)diboron, tetra(dihydrocarbylamino)diboron, tris(hydrocarbylamino)borane, and tris(dihydrocarbylamino)borane; under an inert, anhydrous atmosphere, and recovering a metal borohydride adduct of said ligand, as the resulting product, from the reaction medium said adduct possessing at least one coordinate bond between an amino nitrogen atom and the metal moiety of said metal borohydride.

3,347,894

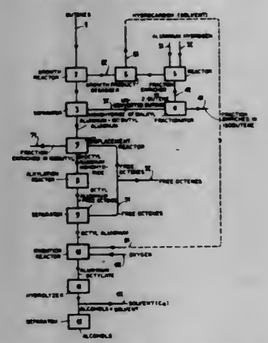
PREPARATION OF ALUMINUM TRIOCTYL FROM BUTENE VIA GROWTH, DISPLACEMENT AND ALKYLATION REACTIONS WITH RECYCLE OF OLEFINS

Emile Trebillon, Paris, and Georges Wetroff, Le Thillay, France, assignors to Pechiney—Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Sept. 19, 1962, Ser. No. 224,647

Claims priority, application France, Sept. 20, 1961, 873,659

11 Claims. (Cl. 260—448)



1. The process for preparing essentially aluminum trioctyl in which a hydrocarbon formed principally of butenes, including 1-butene, is a reactant consisting of:

(1) the steps of bringing the hydrocarbon into reactive relationship with an aluminum alkyl derivative consisting principally of aluminum butyls in a growth reaction at a temperature within the range of 130–280° C. and at a pressure within the range of 20–400 kg./cm.², the ratio between the number of gram valances fixed in the aluminum alkyl derivative and the number of gram molecules of total 1-butene fixed in the aluminum and in a free state being within the range of 0.18 and 2.1;

(2) distilling out unconverted butenes from the product of the growth reaction at a temperature between about 50–200° C. and at a pressure between about 0.2–10 kg./cm.²;

(3) reacting the product of the growth reaction after unconverted butenes have been distilled out with olefins consisting of alpha-octenes in a displacement reaction at a temperature within the range of 90–220° C. and in the weight ratio of olefins to the resulting product of the growth reaction in a range of 0.02 to 1;

(4) alkylating the product of the displacement reaction with alpha-octenes at a temperature within the range of 75–140° C. to produce aluminum trioctyls;

(5) maintaining the pressure during the displacement reaction and the alkylation reaction within the range of 0.5 to 10 kg./cm.²; and

(6) distilling octenes from the product of the alkylation reaction at a temperature below 100° C. to leave a product containing aluminum trioctyls.

3,347,895

PROCESS FOR PREPARING CYCLIC ORGANOSILOXANES

George M. Omietanski, Tonawanda, and Thomas C. Williams, Lancaster, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,152

12 Claims. (Cl. 260—448.2)

1. A process for the production of cyclic organosiloxanes of specific desired composition having mixed organosubstituents which comprises reacting in the presence of an inert solvent (1) an organosilicon diol compound selected from the class consisting of siloxane compounds having the formula $HO(R_2SiO)_nH$ and silane compounds having the formula $R_a^1R_b^2Si(OH)_2$ wherein R, R^1 and R^2 are selected from the class consisting of monovalent hydrocarbyl radicals connected to silicon through a carbon-silicon bond and monovalent substituted hydrocarbyl radicals containing substituents free of active hydrogen, said monovalent substituted hydrocarbyl radicals connected to silicon through a carbon-silicon bond and having the substituents located at least two carbon atoms from the silicon atoms said substituents being selected from the class consisting of alkyl, cyano and nitro groups and wherein R^1 and R^2 can be the same or different radicals but at least one R^1 or R^2 radical is different from R, *a* is an integer having a value from 0 to 2 inclusive, *b* is an integer having a value from 0 to 2 inclusive, the sum of $a+b$ is 2, and *n* is an integer having a value from 2 to 4 inclusive with (2) an organosilicon compound selected from the class consisting of siloxane compounds having the formula $X(R_2SiO)_mSiR_2X$ and silane compounds having the formula $R_a^1R_b^2SiX_2$ wherein R, R^1, R^2, *a* and *b* are the same as defined above, X is a chloro radical, the sum of $a+b$ is 2 and *m* is an integer having a value from 1 to 3 inclusive, wherein one of the reactants must be a siloxane and the other reactant must be a silane, and recovering the desired cyclic organosiloxane product.

3,347,896

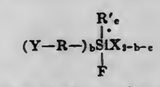
AMINO-ORGANOFLUOROSILANES

Bernard Kanner, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 3, 1963, Ser. No. 313,420

5 Claims. (Cl. 260—448.2)

1. Amino-organofluorosilanes represented by the formula



wherein R is a divalent hydrocarbon group free of aliphatic unsaturation and containing from 3 to 10 carbon atoms, R′ is a monovalent hydrocarbon group free of aliphatic unsaturation and containing from one to 10 carbon atoms, X is selected from the class consisting of fluorine and hydrocarbyloxy groups —OR′, Y is selected from the class consisting of —NHG and —$NHC_dH_{2d}NG_2$, G is selected from the class consisting of hydrogen, R′ groups and —$C_dH_{2d}OH$, *b* is an integer having a value from 1 to 2, *c* is an integer having a value from zero to 1, and *d* is an integer having a value from 1 to 6, provided that (a) any nitrogen atom in the Y group is separated from silicon by at least 3 carbon atoms of an R group and (b) when 3 fluorine atoms are bonded to silicon, the nitrogen atom of any



moiety in the Y groups is bonded to a carbon atom of an aromatic ring system.

3,347,897

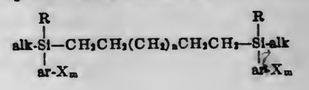
HALOARYL ORGANODISILAALKANE COMPOUNDS AND USE THEREFOR

James A. Webster, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,166

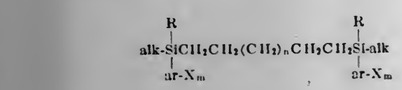
10 Claims. (Cl. 260—448.2)

1. A compound of the formula



wherein alk denotes an alkyl radical of from 1 to 6 carbon atoms, ar denotes an aromatic hydrocarbon radical of 6 to 12 carbon atoms which is free of olefinic and acetylenic unsaturation and is linked through nuclear carbon to the remainder of the molecule, X is halogen, *m* is a number of from 1 to 5, *n* is a number of 0 to 6, R is selected from the class consisting of alk, ar and ar-X_m, and the total number of carbon atoms in the entire molecule is from 20 to 36.

7. A hydraulic system containing as the operative fluid a composition having a kinematic viscosity of less than 20,000 centistokes at 0° F. and comprising essentially a compound of the formula



wherein alk denotes an alkyl radical of from 1 to 6 carbon atoms, ar denotes an aromatic hydrocarbon radical of 6 to 12 carbon atoms which is free of olefinic and acetylenic unsaturation and is linked through nuclear carbon to the remainder of the molecule, X is halogen, *m* is a number of from 1 to 5, *n* is a number of 0 to 6, R is selected from the class consisting of alk, ar and ar-X_m, and the total number of carbon atoms in the entire molecule is from 20 to 36.

3,347,898

2,3-BIS(DIFLUORAMINO)-1,4-DICYANOBUTANE

Marvin L. Peterson, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 16, 1962, Ser. No. 211,471

3 Claims. (Cl. 260—465.5)

1. 2,3-bis(difluoramino)-1,4-dicyanobutane.

3,347,899

CATALYTIC PROCESS FOR THE PREPARATION OF NITRILES

Giorgio Caporali, Nicola Giordano, and Natale Ferlazzo, Milan, and Quintino Ottaviani, Senago, Milan, Italy, assignors, by mesne assignments, to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,489

11 Claims. (Cl. 260—465.3)

1. A process for converting propylene or isobutylene to acrylonitrile or methacrylonitrile, respectively, comprising contacting a mixture of said propylene or isobutylene, ammonia and a gas containing elemental oxygen at a temperature in the range of 300°–600° C. and contact time in the range of 0.05–20 seconds with a catalyst having a formula selected from the group consisting of:

$$Me_xA_{10}Mo_{120}O_y$$

and

$$Me_xB_{10}Mo_{90}O_z$$

in which Me represents an atom of an element selected from the group consisting of bismuth and tellurium; A represents an atom chosen from the group consisting of titanium, zirconium and tin; B represents an atom of an element selected from the group consisting of manganese, cobalt and nickel; *x* represents a number between 1 and 180; *y* represents a number between about 380 and 740 and *z* represents a number between about 290 and 650.

3,347,900

PROCESS FOR PREPARING UNSATURATED NITRILES

Helmut Gössel and Rudolf Wirtz, Frankfurt am Main, and Hans Fernholz, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 21, 1965, Ser. No. 449,865

Claims priority, application Germany, May 9, 1964, F 42,838

9 Claims. (Cl. 260—465.3)

1. A process for preparing acrylonitrile which comprises reacting ethylene with hydrogen cyanide and oxygen at a temperature of 0 to 200° C. and a pressure of 2 to 300 atmospheres in the presence of a noble metal as catalyst.

3,347,901

PERFLUORINATED MONOMERS

Charles Gerhard Fritz and Joseph Leo Warnell, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Nov. 23, 1962, Ser. No. 239,823. Divided and this application Aug. 2, 1966, Ser. No. 569,602

5 Claims. (Cl. 260—465.6)

1. A perfluoroether dinitrile having a structure;

(A) $N\equiv C(CF_2)_nCF_2OCFCN$ (X)

where *n* is an integer of from 0 to 12 and X is F or CF_3;

(B) $N\equiv CCFO(CF_2)_mOCFC\equiv N$ (X, X)

where *m* is an integer of from 2 to 12 and X is F or CF_3;

(C) $N\equiv C(CF_2)_nCF_2O\left(CFCF_2O\right)_yCFC\equiv N$ (X, X)

where *n* is an integer of from 0 to 12, *y* is an integer of from 0 to 100, and X is F or CF_3; and

(D) $N\equiv CCF(OCF_2CF)_uO(CF_2)_mO\left(CFCF_2O\right)_wCFC\equiv N$ (X, X, X)

where *m* is an integer of from 2 to 12 and *u* plus *w* is an integer of from 0 to 100, and X is F or CF_3.

3,347,902

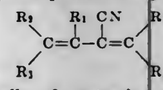
PROCESS FOR PRODUCING 2-CYANO-BUTADIENES

Robert K. Grasselli, Garfield Heights, Janice L. Greene, Warrensville Heights, and Nancy R. Gray, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

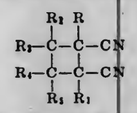
No Drawing. Filed Apr. 12, 1965, Ser. No. 447,533

6 Claims. (Cl. 260—465.9)

1. The vapor phase process for preparing



consisting essentially of contacting a cyclic 1,2-dicyanocyclobutane compound of the formula



wherein R, R_1, R_2, R_3, R_4 and R_5 are each hydrogen or alkyl of 1 to 6 carbon atoms, and wherein at least one of R and R_1 must be hydrogen, with a basic solid oxidation catalyst at a temperature of from 200 to 600° C. and at a partial pressure of the 1,2-dicyanocyclobutane of 1 to 100 mm.

3,347,903

DIFLUOROAMINO ALKYL NITRATE PREPARATION

Robert A. Smiley, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 8, 1961, Ser. No. 115,822

4 Claims. (Cl. 260—467)

1. A process for the preparation of difluoroamino-substituted alkyl nitrates which comprises reacting a difluoroamino-substituted alkyl formate with a nitrating acid at a temperature within the range of about 0° C. to about 100° C.

3,347,904

DIFLUOROAMINO ALIPHATIC DINITRATES

Robert A. Smiley, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 6, 1961, Ser. No. 137,939

7 Claims. (Cl. 260—467)

1. A process for the preparation of aliphatic dinitrates having the nitrate groups on adjacent carbon atoms and containing difluoramino substituents which comprises reacting a nitrating acid with a 1,3-dioxolane having only hydrogen atoms on the carbon atom in the 2-position of the dioxolane ring, a difluoramino-substituted alkyl group attached to at least one of the carbon atoms of the dioxolane ring in the 4- and 5-positions, and at least one pair of difluoramino substituents, the two substituents of said pair being attached to adjacent carbon atoms, both of which are members of said alkyl group.

5. Difluoramino-substituted saturated aliphatic dinitrates having the nitrate groups on adjacent carbon atoms and at least one pair of difluoramino substituents, the two substituents of said pair being attached to adjacent carbon atoms, and the carbon atoms to which the difluoramino substituents are attached being distinct from the carbon atoms to which the nitrate groups are attached.

3,347,905

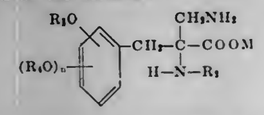
2-SUBSTITUTED-2-AMINOMETHYL-3-SUBSTITUTED PHENYLALANINE

Meyer Sletzinger, North Plainfield, Raymond A. Firestone, Westfield, and Donald F. Reinhold, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,081

6 Claims. (Cl. 260—471)

1. A compound of the formula:



in which:

M is selected from the group consisting of hydrogen, alkali metal cation, lower alkyl and ar-lower alkyl;

n is a number from 0 to 2;

R_2 is selected from the group consisting of hydrogen, acetyl and formyl; and

R_3 and R_4 are selected from the group consisting of hydrogen, lower alkyl and together, methylene and the mineral acid addition salts thereof.

3,347,906

7-(2,6,6,8-TETRAMETHYL-4-OXA-3-OXO-NONYL)-BENZYL PHTHALATE

Dale Robert Dill, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,518

1 Claim. (Cl. 260—475)

7-(2,6,6,8 - tetramethyl-4-oxa - 3 - oxo - nonyl)benzyl phthalate.

3,347,907

5-CARBAMYLOXY-3a,4,5,6,7,7a-HEXAHYDRO-4,7-METHANOINDAN

Burton Kendall Wasson, Valois, Quebec, and John M. Parker, Montreal, Quebec, Canada, assignors to Charles E. Frosst & Co., Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed May 19, 1964, Ser. No. 368,701

1 Claim. (Cl. 260—482)

5-carbamyloxy - 3a,4,5,6,7,7a - hexahydro - 4,7 - methanoindan.

3,347,908

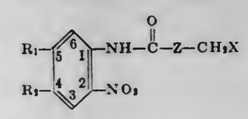
N-LACTOYL AND N-HALOPYRUVOYL-2-NITROANILIDES

Karl Pfister and Janos Kollonitsch, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application June 24, 1963, Ser. No. 290,257. Divided and this application Oct. 31, 1966, Ser. No. 590,477

7 Claims. (Cl. 260—488)

1. A compound of the formula:



where R_1 and R_2 are each hydrogen, lower alkyl, lower alkoxy or the trifluoromethyl group, Z is



or



where R_4 is lower alkanoyl, X_1 is chloro or bromo and X is hydrogen, chloro or bromo.

3,347,909

METABOLIC PRODUCT ISOLATED FROM CULTURES OF *ASPERGILLUS WENTII*

David Lowe, Geoffrey Lightfoot Floyd Norris, and William Brian Turner, Welwyn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,495

Claims priority, application Great Britain, Dec. 12, 1962, 47,001/62

3 Claims. (Cl. 260—514)

1. A compound selected from the group consisting of: a metabolic product having the molecular formula

$$C_6H_{10}N_2O_4$$

and the salts and esters thereof, said product having the form of colorless crystals which decompose above 150° C. without melting and which are characterized by one or the other of two crystalline forms present in predominant amount and represented by the following infrared spectra as determined on Nujol mulls:

Form (a) with bands at 3530, 3350, 3140(sh), 3050(br), 2700–2500 (series of bands), 2040(w, br), 1675, 1620(br), 1570, 1525(m), 1446(m), 1397(s), 1316(s), 1305(s), 1240(w), 1193(w), 1117(w), 1071(m), 1029(w), 1020(sh), 988(m), 925(w), 876(w), 842(m), 804(m), 792(s) and 760(w),

Form (b) with bands at 3500(w, br), 3100–2450, 2000(w, br), 1625(br), 1550(br), 1305(s), 1060(w), 1025(w), 920(w), 830, 805(m) and 787(m),

said product being further identified by (a) the following crystal data:

	Form (a)	Form (b)
Symmetry	Monoclinic	Monoclinic.
Cell dimensions:		
a	5.73±0.05 A.	5.73±0.05 A.
b	11.95±0.10 A.	22.59±0.20 A.
c	12.63±0.10 A.	12.86±0.10 A.
sin β		
Volume (U)	890 A.³	1711 A.³
Average density	1.43±0.05	
Cell weight (ZM)	766±40	1474±80.

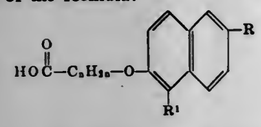
and (b) yielding on complete hydrolysis with mineral acid glutaric acid, carbon dioxide and ammonia.

3,347,910
CYCLOALIPHATIC SUBSTITUTED NAPHTHYL-OXY-ALKANOIC ACIDS AND A METHOD FOR THEIR PREPARATION

William A. Bolhofer, Frederick, and John J. Baldwin, Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 10, 1964, Ser. No. 417,477
14 Claims. (Cl. 260—520)

1. A member selected from the group consisting of a compound of the formula:



wherein R is a cycloaliphatic radical which may either be unsubstituted or contain one or more nuclear substituents selected from the group consisting of methylene, cyanomethylene, hydroxy, halogen, lower alkyl, lower alkenyl, lower alkynyl, cyano, hydroxy-alkyl, lower alkanoyl, polyfluoro substituted alkenyl, lower alkanoyloxy and oxo; R^1 is a member selected from the group consisting of hydrogen and halogen; and $—C_nH_{2n}—$ is a lower alkylene radical containing from one to four carbon atoms; and the nontoxic, pharmacologically acceptable acid addition salts thereof.

3,347,911
(DIFLUOROAMINODIFLUOROMETHYL) FLUOROCYANAMIDE $NF_2CF_2NFC{\equiv}N$

Douglas A. Rausch, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 9, 1962, Ser. No. 173,610
6 Claims. (Cl. 260—551)

1. (Difluoroaminodifluoromethyl)fluorocyanamide.

3,347,912
NOVEL GRIGNARD REAGENTS

Charles A. Rowe, Jr., Roselle, Alan Schriesheim, Berkeley Heights, and Shelton Bank, Watchung, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,573
5 Claims. (Cl. 260—551)

1. In a process for preparing a Grignard reagent wherein magnesium and a hydrocarbon halide, the hydrocarbon being selected from the group consisting of C_1–C_{10} alkyl, aryl, and an arylalkyl radical, are first reacted in a liquid solvent for a Grignard reaction selected from the group consisting of an ether, a tertiary amine, and a heterocyclic amine, whereby a Grignard reagent is formed, the improvement which comprises a second liquid phase reaction of the Grignard reagent in an inert atmosphere and with about 1–100 mol percent, based on the Grignard reagent, of a phosphoramide having the formula

$$(NR_2)_3P{=}O$$

wherein R is a methyl radical.

3,347,913
FLUORINATION OF NITROGEN COMPOUNDS

Ralph J. Leary, Elizabeth, James R. Michael, Roselle, and Jack Rockett, Metuchen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 27, 1959, Ser. No. 816,335
6 Claims. (Cl. 260—553)

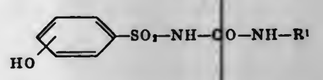
1. A process for fluorinating urea which comprises contacting and reacting urea in liquid phase with 2 equivalents of a metal fluoride selected from the group consisting of silver difluoride, cobalt trifluoride, and mercuric fluoride for each N—H bond of the urea reacted in the presence of an inert halogenated C_4 to C_{12} organic liquid diluent at a temperature of 15° to 250° C. until perfluorourea is formed by substitution of F for H in each N—H bond of the urea reacted.

3,347,914
HYDROXY-BENZENESULFONYL-UREAS AND PROCESS FOR THEIR MANUFACTURE

Heinrich Ruschig and Gerhard Korger, Bad Soden, Taunus, Walter Aumüller, Kelkheim, Taunus, and Werner Schmidt, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 12, 1963, Ser. No. 272,519
Claims priority, application Germany, Apr. 21, 1962, F 36,621
9 Claims. (Cl. 260—553)

1. A compound of the group consisting of (1) hydroxy-benzenesulfonyl-ureas of the formula



in which R^1 is a cycloalkyl radical having 5 to 8 carbon atoms and (2) pharmaceutically acceptable basic salts thereof.

3,347,915
PRODUCTION OF UREA

Giacomo Fauser, Novara, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

Filed July 12, 1962, Ser. No. 209,372
Claims priority, application Italy, July 14, 1961, 13,110/61
2 Claims. (Cl. 260—555)

1. In the process of producing urea from NH_3 and CO_2, wherein the unconverted reactants, present in the aqueous urea solution leaving the urea reactor, are separated as vapors from the aqueous urea solution by a two stage distillation and recycled into said reactor as an aqueous carbamate solution, the improvement which comprises

(a) carrying out the first distillation stage at a pressure from 25 to 50 absolute atmospheres and the second distillation stage at a pressure from 1 to 3 absolute atmospheres,

(b) absorbing the vapors separated in the first distillation stage in the aqueous solution of vapors separated in the second distillation stage, and

(c) utilizing the heat of absorption of (b) in the second distillation stage.

3,347,916
PROCESS FOR PREPARING N-FORMYL COMPOUNDS USING BORIC ACID AS CATALYST

Ludwig Konrad Huber, Philadelphia, Pa., assignor to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,944
7 Claims. (Cl. 260—561)

1. A process for the preparation of N-formyl compounds which comprises reacting formamide with a compound selected from the class consisting of primary alkyl amines having up to 12 carbon atoms, secondary alkyl amines having up to 6 carbon atoms, aromatic amines selected from the group consisting of aniline, benzylamine, phenetylamine and o-toluidine, and substituted hydrazines selected from the group consisting of N-methylhydrazine, N,N-dimethylhydrazine and N,N-dimethyl-N'-ethylhydrazine, in the presence of a catalytic amount of boric acid catalyst.

3,347,917
PROCESS FOR THE PREPARATION OF DI(PARA-AMINOCYCLOHEXYL)METHANE

Wilfred J. Arthur, Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 11, 1964, Ser. No. 374,297
4 Claims. (Cl. 260—563)

1. A process for the preparation of di(para-aminocyclohexyl)methane, consisting of at least 45% by weight of the trans,trans-stereoisomer, from di(para-aminophenyl) methane, comprising admixing di(para-aminophenyl) methane with hydrogen in the presence of from .01 to 10 weight percent of a ruthenium catalyst based on the weight of di(para-aminophenyl)methane, and from about 5 to about 40 weight percent of ammonia based on the weight of di(para-aminophenyl)methane, and heating said admixture for from 1 to 30 minutes at a temperature of from 180° C. to 300° C. and at a pressure of from 500 to 15,000 pounds per square inch.

3,347,918
PRODUCTION OF CYCLODODECYLAMINE

Ludwig Schuster and Paul Raff, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No drawing. Filed July 13, 1964, Ser. No. 382,402
Claims priority, application Germany, July 24, 1963, B 72,815
6 Claims. (Cl. 260—563)

1. A process for the production of cyclododecylamine which comprises mixing cyclododecene and hydrogen cyanide in a molar ratio of from 1:5 to 1:15 at a temperature of from 0° to 50° C. with sulfuric acid of a concentration of 80 to 96% by weight in an excess of 3 to 10 moles with reference to cyclododecene, saponifying the N-cyclododecylformamide intermediately formed and liberating the cyclododecylamine from the cyclododecylamine salt.

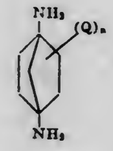
3,347,919
POLYCYCLIC DIAMINES

Elmore Louis Martin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

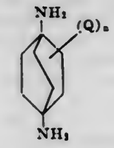
No Drawing. Filed Nov. 30, 1966, Ser. No. 597,884
5 Claims. (Cl. 260—563)

1. A polycyclic diamine selected from the class consisting of:

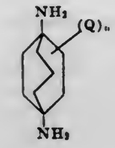
(1)



(2)

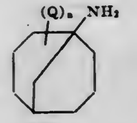


(3)



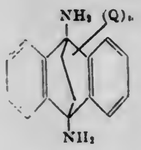
and

(4)



and

(5)



wherein Q is a monovalent organic radical selected from the class consisting of lower alkyl, cycloalkyl, aryl, lower alkyl substituted aryl, and aryl substituted lower alkyl and *n* is 0, 1 or 2.

3,347,920
PURIFICATION OF CYCLOHEXYLAMINE

Wayne E. Trussell, Gurnee, and Vipin D. Shah, Waukegan, Ill., assignors to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 1, 1964, Ser. No. 371,793
6 Claims. (Cl. 260—563)

1. The process of removing cyclohexylamine sulfate from a solid composition containing cyclohexylamine sulfate, cyclohexylammonium-N-cyclohexylsulfamate, and cyclohexylamine, comprising

slurrying said mixture in y parts of water and removing the liquid phase from the solid phase, said y being calculated according to the equation $y=(A+B)z$ wherein z is selected between $15/x$ and $25/x$ with x representing the percentage of cyclohexylamine in the initial composition, and wherein $A+B$ represents the combined amounts of cyclohexylamine sulfate and cyclohexylammonium-N-cyclohexylsulfamate.

3,347,921

PREPARATION OF ANILINES FROM OXYGENATED CYCLOHEXANES

Robert V. Carrubba, Yonkers, N.Y., and Richard L. Golden, Teaneck, N.J., assignors to Halcon International, Inc., a corporation of Delaware

Filed Apr. 6, 1964, Ser. No. 357,585
5 Claims. (Cl. 260—581)

1. A process for the preparation of aniline by dehydrogenative amination which comprises heating a mixture comprising from 0.2 to 25 mole percent of cyclohexanol, from 5 to 80 mole percent of hydrogen and from 0.5 to 40 mole percent of ammonia at temperatures of from 250° C. to 500° C. and at pressures of from 10 to 1000 p.s.i.a., thereby forming a mixture containing aniline and heavy ends, treating said mixture to recover aniline, separating from the heavy ends after recovery of aniline a fraction having a boiling point of less than 400° C. at 25 mm. Hg, and recycling at least a portion of the fraction.

3,347,922

TETRAKIS-(DIFLUOROAMINO) BUTANE

Richard P. Rhodes, Newark, and Donald A. Guthrie, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No drawing. Filed Dec. 1, 1959, Ser. No. 856,614
1 Claim. (Cl. 260—583)

1,2,3,4 tetrakis-(difluoroamino) butane.

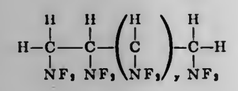
3,347,923

DIFLUOROAMINO COMPOUNDS AND THE PREPARATION THEREOF

Bernard Freedman, New Brunswick, and Leland K. Beach, Westfield, N.J., and Arthur E. Messner, deceased, late of Roselle Park, N.J., by Marilyn Messner, administratrix, Roselle Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 1, 1959, Ser. No. 856,615
6 Claims. (Cl. 260—583)

1. Compounds having the formula:



wherein y is a number selected from the group consisting of 0, 2, and 3.

3. Process for making a difluoroamino compound which comprises reacting with tetrafluorohydrazine an allyl halide group-containing unsaturated acyclic organic compound containing 3 to 6 carbon atoms and 1 to 2 double bonds in the molecule, at least one of the double bonds being in an allyl halide group, the tetrafluorohydrazine being reacted in a proportion for substituting an NF_2 group for a halogen atom in the allyl halide group and for addition to the double bonds at a reaction temperature in the range of about −100° to 300° C., and recovering a resulting product having an NF_2 group attached to each carbon of the unsaturated cyclic organic compound reacted.

3,347,924

ALLYL DIFLUOROAMINE

Anthony J. Passannante, Metuchen, Richard P. Rhodes, Newark, and Leland K. Beach, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 1, 1959, Ser. No. 856,616
1 Claim. (Cl. 260—583)

Allyl difluoroamine.

3,347,925

DIFLUOROAMINO-SUBSTITUTED NITRAMINES AND METHOD OF PREPARATION

William E. Tyler III, New Providence, and John R. Lovett, Edison, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 11, 1962, Ser. No. 224,884
8 Claims. (Cl. 260—583)

1. A compound having the formula:

$$R(NF_2)_a(NHNO_2)_2$$

wherein R represents the nucleus of a substituted organic compound from the group consisting of alkanes having 2 to 6 carbon atoms, cyclohexane and tetrahydrofuran, with difluoramino (NF_2) and nitramino ($NHNO_2$) substituent groups; the subscript a signifying the number of at least 2 to the total number of carbon atoms in the nucleus to which the NF_2 substituent groups are linked, the two ($NHNO_2$) groups being linked to 1 to 2 of the carbon atoms of the organic compound nucleus.

3,347,926

AMMONOLYSIS PROCESS FOR PRODUCING ALIPHATIC AMINES

John D. Zech, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,130
5 Claims. (Cl. 260—585)

1. In a process for producing aliphatic amines by ammonolysis the steps of reacting an hydroxy-containing compound selected from the group consisting of primary alcohols and secondary alcohols with an aminating agent selected from the group consisting of ammonia, primary amines, and secondary amines, said primary and secondary amines containing from 1 to 6 carbon atoms in the presence of an active metal hydrogenation catalyst the improvement which comprises conducting the ammonolysis reaction in the presence of a Raney nickel catalyst containing a minor amount of chromium and at a temperature from about 150° C. to about 275° C.

3,347,927

16-KETO-17α-HYDROXY-A-NOR PROGESTERONE AND INTERMEDIATES FOR THE PREPARATION THEREOF

Saul L. Neidleman, Lawrence Township, Samuel C. Pan, Metuchen, and Patrick A. Diassi, Westfield, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 26, 1965, Ser. No. 443,080. Divided and this application Dec. 19, 1966, Ser. No. 602,476
2 Claims. (Cl. 260—586)

1. The compound having the name 16-keto-17α-hydroxy-A-norprogesterone.

3,347,928

PROCESS OF OXIDIZING HYDROXY PHENYL ALANINES TO HYDROXY BENZYL ALKYL KETONES

David Taub, Metuchen, and Norman L. Wendler, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,643
9 Claims. (Cl. 260—590)

1. A process for converting an α-lower alkyl-3,4-dihydroxyphenylalanine to a 3,4-dialkoxy benzyl lower alkyl ketone which comprises, in combination, the steps of:

(a) Admixing said alanine with a compound selected from the group consisting of the anhydrides and halides of an acid selected from the group consisting of alkanoic acids having up to 5 carbon atoms, acrylic acid, crotonic acid, benzoic acid, toluic acid, phenylacetic acid and cinnamic acid to form an O,O,N-triacyl derivative;

(b) contacting said O,O,N-triacyl derivative with an aqueous alkali under an inert atmosphere to form an N-monoacyl derivative;

(c) contacting said N-monoacyl derivative in an alkaline solution with a compound selected from the group consisting of a lower alkyl halide and a lower alkyl sulfate to form an N-acyl dialkoxy alanine ester;

(d) heating to reflux said ester with an aqueous acid, said acid having at least one ionization constant greater than 10^{-5}, to form a di (lower alkoxy) phenylalanine compound; and

(e) admixing said phenylalanine compound with a reagent selected from the group consisting of sodium hypochlorite, sodium hypobromite, calcium hypochlorite, and t-butyl hypochlorite in an aqueous alkali to form the desired ketone.

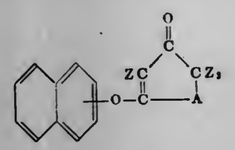
3,347,929

HALOGENATED PHENOXYCYCLOPENTENONES AND PROCESSES THEREFOR

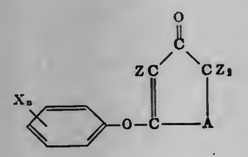
Edward D. Weil, Lewiston, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,873
20 Claims. (Cl. 260—590)

1. A compound selected from the group consisting of compounds of the formula:

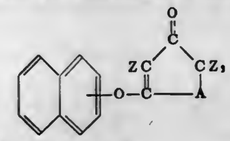


and compounds of the formula:

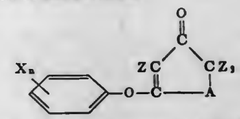


wherein Z is a halogen of atomic weight between 35 and 81, A is selected from the group consisting of CZ_2 and C═O, X is selected from the group consisting of halogen, nitro, alkyl, phenyl, alkoxy and carboxy and n is from zero to five.

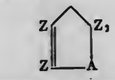
12. A process for preparing a compound selected from the group consisting of compounds of the formula:



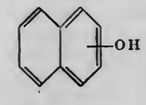
and compounds of the formula:



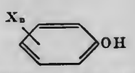
wherein Z is a halogen of atomic weight between 35 and 81, A is selected from the group consisting of CZ_2 and C═O, X is selected from the group consisting of halogen, nitro, alkyl, phenyl, alkoxy and carboxy and n is from zero to five, which comprises reacting in the liquid phase a ketone of the structure



with a phenol of structure selected from the group consisting of:



and



respectively, in the presence of a base and separating the product from the reaction mixture.

3,347,930

PRODUCTION OF DERIVATIVES OF OMEGA-HYDROXYTIGLALDEHYDE

Herwig Freyschlag, Horst Pommer, and Werner Reif, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 31, 1963, Ser. No. 284,357
Claims priority, application Germany, June 1, 1962, B 67,508
7 Claims. (Cl. 260—602)

1. A process for the production of derivatives of omega-hydroxytiglaldehyde wherein a member selected from the group consisting of 2-formyl-2-hydroxybutene-(3), di-lower alkyl acetals thereof and lower fatty acid acylates thereof is halogenated with a halogenation agent selected from the group consisting of thionyl chloride, thionyl bromide and phosgene in the presence of a member selected from the group consisting of N,N-dialkyl substituted amides of low molecular weight fatty acids, pyrrolidones and N-alkyl caprolactams.

3,347,931

PREPARATION OF ORGANOBORON COMPOUNDS

Paul R. Wunz, Jr., Richland Township, and Albert F. Stang, Harmony, Pa., assignors to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 14, 1958, Ser. No. 756,058
17 Claims. (Cl. 260—606.5)

1. A method of preparing hydrocarbon substituted higher volatile boron hydrides which comprises reacting a compound of the group consisting of halogenated hydro-

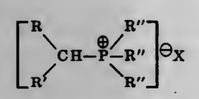
carbons and alkenes with a boron hydride containing 4 to 12 boron atoms per molecule in the presence of an aluminum halide, and recovering the resulting organoboron compound formed.

3,347,932
SYNTHESIS OF QUATERNARY PHOSPHONIUM SALTS

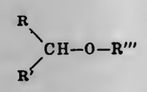
Albert J. Chechak, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,965
14 Claims. (Cl. 260—606.5)

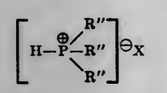
1. A process for making a quaternary phosphonium salt represented by the Formula I:



wherein R is selected from the group consisting of hydrogen and methyl radicals, R′ is selected from the group consisting of (1) aliphatic, carbocyclic and carbocyclic-aliphatic radicals, each of which has olefinic unsaturation at least at the α carbon atom, and (2) carbalkoxy radicals wherein the alkoxy moieties have 1–8 carbon atoms, each R″ is independently selected from the group consisting of substituted and unsubstituted, saturated and unsaturated, aliphatic, carbocyclic and carbocyclic-aliphatic radicals, and X is an anion of a strong acid, which comprises: admixing (A) an ether represented by the formula:



wherein R and R′ have the same significance as in Formula I and R‴ is selected from the group consisting of aliphatic hydrocarbon radicals and the tetrahydropyranyl radical, and (B) a tertiary phosphine salt represented by the formula:



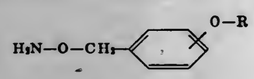
wherein R″ and X have the same significance as in Formula I, whereby a reaction product consisting essentially of a quaternary phosphonium salt represented by Formula I is formed.

3,347,933
O-MONOALKOXYBENZYLHYDROXYL AMINES

Edward L. Schumann, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,829
3 Claims. (Cl. 260—612)

1. Compounds selected from the group consisting of (1) O-monoalkoxybenzylhydroxylamines of the formula



wherein R is alkyl of from 1 to 6 carbon atoms, inclusive, and (2) acid addition salts thereof.

3,347,934
PROCESS FOR THE PREPARATION OF ALKOXYMETHOXYALKANOLS

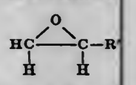
Sheldon N. Lewis, Willow Grove, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,399
12 Claims. (Cl. 260—615)

1. A process which comprises reacting at a temperature in the range of 0 to 250° C. in the presence of an effective amount of a basic catalyst

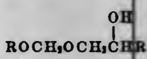
(1) a compound of the formula ROH where R is alkyl of 1 to 8 carbon atoms or aralkyl of 7 or 8 carbon atoms with

(2) a 1,2-epoxide of the formula



where R′ is hydrogen, methyl, ethyl or phenyl, and

(3) formaldehyde in a molar ratio of 15–1:1:8–1 respectively, so as to result in an hydroxy formal of the formula



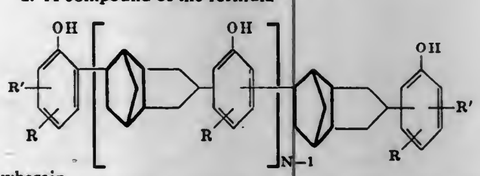
wherein R and R′ are as hereinabove described.

3,347,935
TERPENE PHENOLIC RESINS

Josef Kaupp and Kurt Blaettner, Gersthofen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 29, 1963, Ser. No. 283,955
7 Claims. (Cl. 260—619)

1. A compound of the formula



wherein

R is a terpene hydrocarbon radical of 10 carbon atoms in o- or p-position with respect to the hydroxyl group of each phenol radical;

R′ is a member selected from the group consisting of a hydrogen, terpene hydrocarbon radical having 10 carbon atoms, alkyl having 1–5 carbon atoms and hydroxyl, the R′ radical being in o- or p-position to the hydroxyl group of the phenol radical when defined as a terpene hydrocarbon; the tricyclodecane moiety being linked to the phenol radicals in o- or p-position with respect to the hydroxyl groups; and

n is an integer of 1–4.

3,347,936
PROCESS FOR THE CONDENSATION OF PHENOL WITH METHANOL

Max Froitzheim, Castrop-Rauxel, Karl Friedrich Lang, Ruppertshain, Taunus, Ludwig Rappen, Duisburg-Meiderich, and Johannes Turowski, Castrop-Rauxel, Germany, assignors to Rutgerswerke und Teerverwertung Aktiengesellschaft, Frankfurt am Main, Germany

Filed Nov. 8, 1965, Ser. No. 506,714
Claims priority, application Germany, Sept. 23, 1965, R 41,592
3 Claims. (Cl. 260—621)

1. A process for the condensation of phenol (C_6H_5OH) with methanol with favored formation of 2,6-dimethylphenol and o-cresol, consisting essentially of heating a mixture of phenol and methanol at a temperature in the

range between 400° and 500° C. in the presence of a catalyst composed essentially of oxides selected from the group consisting (a) of a mixture of UO_3 with MgO and (b) a mixture of UO_3, with MgO and B_2O_3.

3,347,937
CONTINUOUS PROCESS FOR MANUFACTURE OF TRIHALOPHENOLS

Charles H. Carr, Grand Island, and Joy E. Beanblossom, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed June 4, 1965, Ser. No. 461,319
4 Claims. (Cl. 260—623)

1. A continuous process for the production of trichlorophenol which comprises: passing preheated reactants comprising alkali metal hydroxide, methanol and a separate stream of tetrachlorobenzene in the mole ratio of one part tetrachlorobenzene, one to four parts alkali metal hydroxide and six to 100 parts methanol, through a series of reaction zones, while maintaining each of said reaction zones under agitation at a temperature of from about 170 degrees centigrade to about 220 degrees centigrade and at a pressure above the autogenous pressure of the reacting mixture and below about 1500 pounds per square inch absolute for a residence time up to about 60 minutes, so that there is a conversion to a reaction mixture comprising crude trichlorophenol material in the form of alkali metal trichlorophenate, alkali metal chloride and organics, adding water to the said reaction mixture at a point after the first reaction zone in an amount sufficient to dissolve a substantial amount of alkali metal chloride in said mixture but insufficient to precipitate the organics, the total amount of water being added in the process being defined as in the range between the limiting values of Y_1 and Y_2 whose equations are:

$$Y_1 = 0.8184X + 0.2136Z - 60.48$$
$$Y_2 = 0.8184X + 0.2448Z - 51.36$$

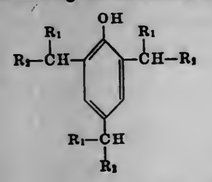
where Y_1 and Y_2 are the limiting mole ratios of total water added in the process per mole of tetrachlorobenzene fed, X is the mole percent conversion of the tetrachlorobenzene to phenols in the reaction and limited to the range of from about 75 to about 100 mole percent conversion, and Z is the mole ratio of methanol to tetrachlorobenzene fed and limited to values between about six and about 100 mole parts methanol per mole part of tetrachlorobenzene fed, and recovering the trichlorophenol material therefrom.

3,347,938
ANTIOXIDANT COMPOSITION

Alan Bell and Gerald R. Lappin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 23, 1964, Ser. No. 362,197
6 Claims. (Cl. 260—624)

1. A new class of chemical compounds having antioxidant properties having the structural formula:



wherein

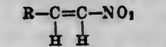
$R_1 = CH_3$, C_2H_5, C_3H_7 straight chain alkyl groups and $R_2 = C_{10}H_{21}$, $C_{11}H_{23}$, $C_{12}H_{25}$, $C_{13}H_{27}$, $C_{14}H_{29}$, $C_{15}H_{31}$, $C_{16}H_{33}$, $C_{17}H_{35}$, $C_{18}H_{37}$ straight chain alkyl groups and wherein the sum total of the carbon and hydrogen atoms of the R_1+R_2 moieties is in the range of from $C_{11}H_{24}$ to $C_{19}H_{40}$.

3,347,939
CONVERSION OF NITROOLEFINS TO NITROALCOHOLS

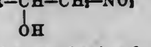
Giovanni A. Bonetti, Wilmington, Del., and Rudolph Rosenthal, Broomall, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 21, 1965, Ser. No. 457,818
8 Claims. (Cl. 260—641)

1. A method for converting 1-nitro-1-olefins having the formula

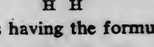


to 1-nitro-2-alkanols having the formula

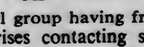


wherein R is an alkyl group having from 2 to 22 carbon atoms, which comprises contacting said 1-nitro-1-olefin with water at a temperature in the range of from 25° C. to 130° C. and at a pH in the range of from 7.1 to 11.5 in the presence of a mutual solvent for the water and said 1-nitro-1-olefin and recovering said 1-nitro-2-alkanol.

3. A method for converting 1-nitro-1-olefins having the formula



to 1-nitro-2-alkanols having the formula



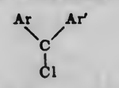
wherein R is an alkyl group having from 2 to 22 carbon atoms, which comprises contacting said 1-nitro-1-olefin with an aqueous solution of sodium acetate at a temperature in the range of from 25° C. to 130° C. in the presence of para-dioxane and recovering said 1-nitro-2-alkanol.

3,347,940
CHLORINATED AROMATIC FREE RADICALS AND THEIR PREPARATION

Manuel Ballester and Juan Riera, Barcelona, Spain, assignors, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,245
5 Claims. (Cl. 260—649)

1. A composition of the formula

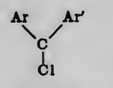


wherein:

C represents a neutral trivalent carbon atom;

Ar and Ar′ each represent perchlorophenyl or perchlorobiphenylyl.

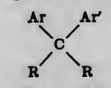
3. The process for preparing compositions of the formula



wherein:

C represents a neutral trivalent carbon atom;

Ar and Ar′ each represent perchlorophenyl or perchlorobiphenylyl which comprises reacting in an inert atmosphere a compound of the formula



wherein Ar and Ar′ are defined as above, with stannous chloride or ferrous chloride present in a minimum proportion of one equivalent for each mole of the above compound, in a diluent medium selected

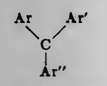
from the group consisting of ethyl ether, tetrahydrofuran, dioxane and mixtures of chloroform with dimethyl sulfoxide.

3,347,941
TRIPHENYL METHANE FREE RADICALS AND THEIR PREPARATION

Manuel Ballester, Juan Castaner, and Juan Riera, Barcelona, Spain, assignors, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del.

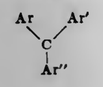
No Drawing. Filed Oct. 8, 1965, Ser. No. 494,169
6 Claims. (Cl. 260—649)

1. A composition of the formula

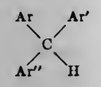


wherein C represents a neutral trivalent carbon atom and Ar, Ar' and Ar'' separately each represent perchlorophenyl or perchlorobiphenylyl; and Ar and Ar', when joined together, represent perchloro-2,2'-biphenylylene.

4. A process for preparing compositions of the formula



wherein C represents a neutral trivalent carbon atom and Ar, Ar' and Ar'' separately each represent perchlorophenyl or perchlorobiphenylyl; and Ar and Ar', when joined together, represent perchloro-2,2'-biphenylylene, which comprises reacting in an inert atmosphere a compound of the formula



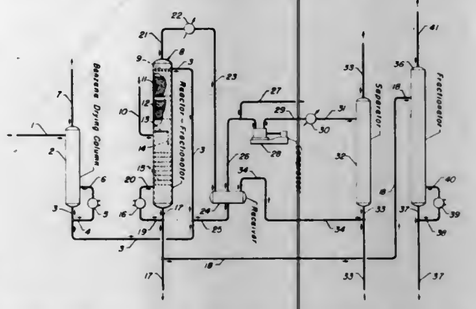
wherein Ar, Ar' and Ar'' are defined as above, with a base in a diluent medium selected from the group consisting of dimethyl sulfoxide and dimethyl formamide, in admixture with an ether selected from the group consisting of ethyl ether, tetrahydrofuran and dioxane followed by treatment with an oxidizing agent selected from the group consisting of iodine and oxygen while maintaining the inert atmosphere.

3,347,942
HALOGENATION OF AROMATIC HYDROCARBONS

William K. Hunter, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,258
3 Claims. (Cl. 260—650)

1. A process for the continuous chlorination of benzene which comprises continuously introducing liquid benzene into the upper portion of a combination reactor fractionator zone maintained at a top temperature of from about 150° to about 250° F., a bottom temperature of from about 200° to about 400° F. and a pressure of from atmospheric to about 50 pounds per square inch, passing the benzene downwardly through a bed of a nuclear chlorinating catalyst disposed in the upper portion of said zone, continuously introducing gaseous chlorine into the mid-portion of said zone, reacting benzene and chlorine in contact with said catalyst in the upper portion of said zone to form chlorobenzene, passing liquid chlorobenzene and unreacted benzene downwardly from said catalyst bed into the lower portion of said combination zone while diverting the same from contact with the chlorine being introduced into the mid-portion of said zone, heating the lower portion of said zone to vaporize and separate benzene from chlorobenzene, commingling the resultant benzene vapors with said gaseous chlorine in the mid-portion of said zone, the mole ratio of benzene to chlorine being within the range of from about 10:1 to about 50:1, and



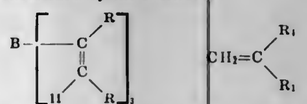
passing the mixture of chlorine and benzene vapors upwardly into said catalyst bed in the upper portion of said zone, continuously withdrawing chlorobenzene from the lower portion of said combination zone, and continuously withdrawing hydrogen chloride formed in said reaction from the upper portion of said combination zone.

3,347,943
NOVEL PROCESS FOR THE PREPARATION OF OLEFINIC COMPOUNDS AND DERIVATIVES THEREOF

André Jule Hubert, Brussels, Belgium, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 15, 1964, Ser. No. 396,738
5 Claims. (Cl. 260—666)

1. A process for the preparation of unsaturated compounds characterized by the formulae:



which comprises heating to a temperature of from about 125° C. to about 250° C. a mixture of a disubstituted acetylenic compound and a trihydrocarbylborane of the respective formulae:



wherein R represents a hydrocarbyl group attached to the acetylenic carbon atoms through a saturated carbon to carbon bond with the proviso that both R's when taken together can form a cycloaliphatic ring with the acetylenic carbon atoms to which they are attached; R_1 represents a member selected from the group consisting of hydrogen and hydrocarbyl groups; and thereafter recovering said unsaturated compounds.

3,347,944
PRODUCTION OF ALKYLIDENEBICYCLOHEPTENES

Henry E. Fritz, Charleston, Kenneth E. Atkins, South Charleston, and George L. O'Connor, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 16, 1966, Ser. No. 550,120
14 Claims. (Cl. 260—666)

1. The process for producing 5-alkylidenebicyclo-[2.2.1]hept-2-ene comprising isomerizing 5-alkenylbicyclo[2.2.1]hept-2-ene in contact with a base catalyst selected from the group consisting of

(a) an alkali metal deposited on a support having a surface area of at least about 30 square meters per gram;
(b) an admixture of
  (1) a strong base of an alkali metal, and
  (2) a dipolar aprotic solvating agent which is liquid at the process conditions; and
(c) an admixture of
  (1) an alkali metal amide, and
  (2) a nitrogen base containing at least one hydrogen bonded to nitrogen and which is liquid at the process conditions.

3,347,945
HYDRODIMERIZATION OF BENZENE

Lynn H. Slaugh, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,246
6 Claims. (Cl. 260—668)

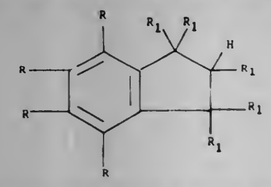
1. The process of producing phenylcyclohexane by intimately contacting benzene with molecular hydrogen in the presence of (1) alkali metal catalyst, said catalyst comprising at least one alkali metal of atomic number from 19 to 55 inclusive, and (2) a calcined alumina or activated carbon catalyst support, at a temperature of from about 100° C. to about 250° C. and at a hydrogen pressure of from about 50 p.s.i.g. to about 1500 p.s.i.g.

3,347,946
DERIVATIVES OF HYDRINDACENE AND PROCESS FOR PREPARING SAME

Thomas F. Wood and John T. Angiolini, Wayne, N.J., assignors to Givaudan Corporation, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,086
13 Claims. (Cl. 260—668)

1. The process for preparing hydrindacenes, which comprises reacting a material selected from the group consisting of isoprene and 2,3-dimethyl-1,3-butadiene with at least one bicyclic hydrocarbon having the formula:



wherein R is a member selected from the group consisting of H and a lower alkyl group having up to five carbon atoms, provided that at least two adjacent R's are H except that where only one R is H it is adjacent to a labile tertiary alkyl group, R_1 is a member selected from the group consisting of H and CH_3, the R's may be the same or different, and the R_1's may be the same or different, in the presence of an acid catalyst useful in bringing about Friedel-Crafts reactions, at a temperature within the range from about −30° to about 150°.

13. 5-isopropyl-3,3,8,8-tetramethyl-as-hydrindacene.

3,347,947
INHIBITION OF CORROSION DURING CATALYTIC REACTIONS

Robert T. Adams, Lafayette, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed May 27, 1965, Ser. No. 459,438
4 Claims. (Cl. 260—671)

1. In the process of alkylating an aromatic hydrocarbon compound with an alkyl chloride by contacting the hydrocarbon compound and alkyl chloride with preformed red oil alkylation catalyst complex under alkylation conditions, the improvement of inhibiting corrosion, which comprises carrying out the alkylation in the presence of water in an amount within about the range 0.4% to 2%, by weight, based on red oil catalyst.

3,347,948
HYDROCARBON SEPARATION PROCESS

William Featherstone, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

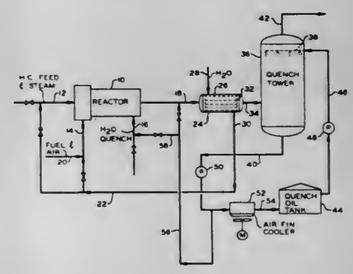
No Drawing. Filed Apr. 21, 1964, Ser. No. 361,536
Claims priority, application Great Britain, May 1, 1963, 17,220/63
10 Claims. (Cl. 260—674)

1. A process for the extraction of olefinic and aromatic hydrocarbons from liquid or gaseous hydrocarbon mixtures containing dienes comprising treating the hydrocarbon mixture to remove substantially completely the dienes and contacting the substantially diene-free hydrocarbon mixture with an aqueous solution of a salt selected from the group consisting of silver fluoborate, silver fluosilicate and mixtures thereof whereby complexes thereof are formed to remove the olefines and aromatic hydrocarbons from the said hydrocarbon mixture.

3,347,949
HEAT RECOVERY IN THERMAL CONVERSION PROCESS

Robert E. Dollinger, Phillips, Tex., and Lawrence V. Wilson and Fred T. Sherk, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed June 15, 1965, Ser. No. 464,108
8 Claims. (Cl. 260—679)



1. A process for the thermal conversion of hydrocarbon material ranging from methane to naphtha to less saturated hydrocarbons which comprises the steps of:
(1) feeding said hydrocarbon material into a thermal conversion zone in admixture with steam and O_2-containing gas of less than stoichiometric O_2 content for burning all of said material and burning a portion of said material so as to heat said material to a conversion temperature in the range of 1500 to 3500° F. and convert another portion of said material to less saturated hydrocarbons;
(2) water-quenching the effluent product stream produced in step (1) to a temperature in the range of 1000 to 1300° F. to terminate conversion;
(3) passing the quenched product stream from step (2) thru a waste-heat boiler containing indirect heat exchange tubes and heat exchanging same with water therein to form steam and reduce the product stream temperature to a temperature in the range of 500 to 750° F., tars formed in step (1) having a tendency to deposit on the walls of said tubes;

(4) dispersing a stream of oil into the product stream of step (2) so as to wash off any tars which condense on the tubes in step (3) and prevent tar deposition thereon;
(5) oil quenching the product stream from step (3) to a substantially lower temperature; and
(6) recovering product hydrocarbon material from the stream of step (5).

3,347,950

ADHESIVE COMPOSITION

Louis Robert Mazurk, Glenview, Ill., assignor to The Tapecoat Company, Inc., a corporation of Delaware

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,655
7 Claims. (Cl. 260—737)

1. A pressure sensitive adhesive composition consisting essentially of a major amount of chlorinated biphenyl, and minor amounts of high molecular weight chlorinated rubber, pitch having a softening point in the range of 130 to 200° F., and a tackifying resin having a cyclic hydrocarbon structure.

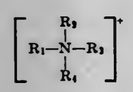
3,347,951

COATING COMPOSITIONS

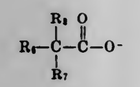
Joseph A. Vasta, Sharon Hill, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,207
9 Claims. (Cl. 260—837)

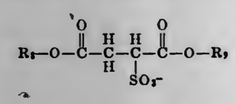
1. A coating composition having (I) a binder consisting essentially of, a blend of (*a*) a carboxy-containing addition oplymer having an acid number of about 10–150 and (*b*) a vic-epoxy resin having an average of more than one 1,2-oxirane moieties per molecule and a 1,2-oxirane equivalent weight of up to 1500, wherein the proportions of (*a*) and (*b*) are such that the mole ratio of carboxy groups to 1,2-oxirane moieties is in the range from 0.1 to 4; and (II) 0.1 to 1.0 weight percent based on the binder of a synergistic curing catalyst consisting essentially of a mixture of two quaternary ammonium salts each having a cation of the structure:



wherein R_1 is a C_{12} to C_{20} straight chain alkyl group and R_2, R_3, and R_4 are individually selected from the group consisting of hydrogen and C_1 to C_8 alkyl groups, one of the organic anions of said salts being (A), an anion of a tertiary carboxylic acid having the structure:



wherein R_5 is methyl and R_6 and R_7 are individually C_1 to C_{12} alkyl groups, and the other being (B) an anion of a dialkyl sulfosuccinate having the structure:



wherein R_8 and R_9 are C_3 to C_9 alkyl groups, the synergistic curing catalyst mixture having from one to three parts by weight of the quaternary ammonium salt of anion (A) to one part by weight of the quaternary ammonium salt of anion (B).

3,347,952

PROCESS FOR THE MANUFACTURE OF LIQUID HEAVY AROMATIC HYDROCARBON - FORMALDEHYDE RESINS AND THEIR CURED RESINS

Sanae Tanaka, Katsura Yokoyama, and Asao Seki, Tokyo, Japan, assignors to Mitsubishi Petrochemical Company Limited, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Dec. 10, 1963, Ser. No. 329,356
Claims priority, application Japan, Dec. 12, 1962, 37/54,999; Feb. 13, 1963, 38/5,877
2 Claims. (Cl. 260—838)

2. A process for the manufacture of liquid heavy aromatic hydrocarbon-formaldehyde resins comprising reacting heavy mononuclear aromatic hydrocarbon having at least eight carbon atoms with formaldehyde in presence of acidic catalyst at a temperature of about 80° C. under a pressure of 1 to 100 atmospheric pressure, the quantity of hydrocarbon to formaldehyde being in a ratio of 1:1.1–1.4, then condensing the formed resin with an aromatic hydrocarbon having electron donative group in presence of acidic catalyst to obtain a material having a melting point of 30°–200° C., and thereafter heat curing under elevated pressure the material in the presence of hexamethylenetetramine.

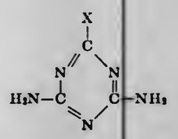
3,347,953

METHOD OF PREPARING A BLEND OF A MELAMINE FORMALDEHYDE RESIN AND A DIAMINOTRIAZINE FORMALDEHYDE RESIN

Franz Kaess, Traunstein, and Horst Michaud and Josef Seeholzer, Trostberg, Germany, assignors to Suddeutsche Kalkstickstoff - Werke Aktiengesellschaft, Bavaria, Germany

No Drawing. Filed Dec. 17, 1963, Ser. No. 331,131
Claims priority, application Germany, Dec. 20, 1962, S 82,985
2 Claims. (Cl. 260—849)

1. A method of making a resinous composition suitable for decorating the surface of wallboards and the like comprising condensing a 2,4-diaminotriazine of the general formula



wherein X is a member of the group consisting of hydrogen and alkyl containing 1 to 4 carbon atoms, with formaldehyde in a molar ratio of from about 1:1.5 to about 1:5 at a pH of 3.0 to 6.3 and at a temperature of 70 to 90° C., adding to the thus obtained precondensate a member of the group consisting of (*a*) a melamine-formaldehyde resin solution condensed at a pH of 7.5 to 10 and a temperature of 70 to 95° C., and (*b*) the unreacted ingredients of (*a*), in such an amount that in the end product said diaminotriazine-formaldehyde condensation product constitutes 1 to 30 percent by weight of the total resin content, and continuing the condensation at said temperature of 70 to 95° C. and said pH of 7.5 to 10 until one part of the resin solution on admixture of 1 part of water just develops cloudiness at 20° C.

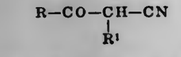
3,347,954

POLYMERIZATION OF VINYL COMPOUNDS AND UNSATURATED POLYESTERS USING BARBITURIC ACIDS AND ALPHA ACYL NITRILES AS CATALYSTS

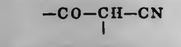
Hellmut Bredereck, Stuttgart, Baldur Föhlisch, Stuttgart-Weilimdorf, and Raimund Franz, Neuhausen, Filder, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler and W. C. Heraeus G.m.b.H., Frankfurt am Main, Germany, and Hanau am Main, Germany

No Drawing. Filed Apr. 27, 1965, Ser. No. 451,350
Claims priority, application Germany, May 2, 1964, D 44,322
8 Claims. (Cl. 260—864)

1. In a process for the polymerization of a polymerizable composition containing as essential polymerizable component at least one polymerizable compound selected from the group consisting of lower alkyl esters of acrylic and methacrylic acid, acrylonitrile, styrene and vinyl acetate and unsaturated polyesters obtained from polycarboxylic acids and polyhydric alcohols, at least one of the carboxylic acids and alcohol components being ethylenically unsaturated, in the presence of at least one oxidizing catalyst selected from the group consisting of molecular oxygen and organic peroxides, the step which comprises carrying out such polymerization with the polymerizable component in contact with an effective amount to catalyze such polymerization of at least one catalytic compound selected from the group consisting of (1) a barbituric acid compound selected from the group consisting of barbituric acid, 5 substituted, 1,5 substituted and 1,3,5 substituted barbituric acids in which the substituents are selected from the group consisting of alkyl, cycloalkyl and phenyl and (2) α acyl nitriles of the formula



wherein, taken singly, R is selected from the group consisting of alkyl, aryl, cycloalkyl, aralkyl and alkaryl and R^1 is selected from the group consisting of hydrogen and alkyl and R and R^1, taken together, are an alkylene chain of 3 to 4 carbon atoms and form a ring with the

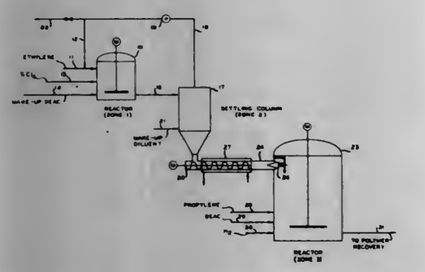


3,347,955

PROCESS FOR MAKING BLOCK POLYMERS OF OLEFINS

Samuel Renaudo, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 24, 1964, Ser. No. 384,870
3 Claims. (Cl. 260—878)



1. A method of making a block copolymer of ethylene and a higher mono-1-olefin wherein each monomer is polymerized in the substantial absence of the other which comprises contacting ethylene in a first reaction zone with a coordination catalyst system formed from a Group IV–B metal halide and a Group III–A metal organometallic reducing agent in the presence of an inert liquid hydrocarbon diluent under polymerization conditions thereby forming a slurry containing solid polyethylene, unreacted ethylene and said diluent, passing said slurry to a settling zone, adding diluent near the bottom of said settling zone, withdrawing diluent and ethylene from the upper portion of said settling zone, recycling thus withdrawn diluent and ethylene to said first reaction zone, passing polyethylene solids from the lower portion of said settling zone into a compression zone, to remove diluent and unreacted monomer, maintaining a back pressure at the outlet of said compression zone to form a relatively solid polymer plug in the downstream portion of said compression zone, passing polyethylene substantially free of diluent and ethylene from said conveyor into a second reaction zone, contacting said polyethylene in said second reaction zone with liquid higher mono-1-olefin and added organometallic reducing agent without additional metal halide under polymerization conditions, and withdrawing a polymer product of polymerized ethylene and higher mono-1-olefin from said second reaction zone.

3,347,956

GRAFT BLENDS AND METHOD OF PREPARING SAME

Leo E. Rademacher, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,641
10 Claims. (Cl. 260—878)

1. A process for the preparation of polyolefinvinyl halide graft copolymers which comprises contacting a polyolefin of the ethylene series with a vinyl halide monomer, heating the resultant mixture to a temperature between about 75 to 125° C. in the absence of an initiator, cooling the mixture to a temperature substantially below 75° C. to produce finely divided particles of said polyolefin, and thereafter polymerizing the vinyl halide monomer in the presence of an initiator and said polyolefin particles at a temperature substantially below 75° C. to form a graft copolymer.

3,347,957

HIGH-IMPACT POLYPROPYLENE COMPOSITION CONTAINING ETHYLENE/CARBOXYLIC ACID SALT COPOLYMERS

Domas Adomaitis, Chicago, and Paul E. Sellers, Oak Forest, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

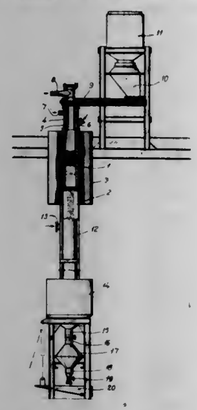
No Drawing. Filed June 18, 1965, Ser. No. 465,149
9 Claims. (Cl. 260—897)

1. A high-impact resistant polymeric composition consisting essentially of a homogeneous blend of about 70–99% by weight of isotactic polypropylene and about 1–30% by weight of an alkali metal-containing ionic copolymer; said ionic copolymer consisting of the reaction product obtained by the free radical polymerization of about 80–99 mole percent of 1-monoolefin containing 2–10 carbon atoms per molecule and about 1–20 mole percent of at least one unsaturated monocarboxylic acid selected from the group consisting of acrylic acid and methacrylic acid wherein at least 10% of the carboxylic acid groups of the copolymer are neutralized with an alkali metal ion.

3,347,958
PROCESS FOR PREPARING GRANULAR FERROSELENIUM

Hans Torbjörn Lundström and Sven Johan Wallden, Skelleftehamn, and Karl Axel Melkersson, Halsingborg, Sweden, assignors to Bolidens Gruvaktiebolag, Stockholm, Sweden, a joint-stock company limited of Sweden

Filed Sept. 18, 1964, Ser. No. 397,534
Claims priority, application Sweden, Sept. 20, 1963, 10,305/63
7 Claims. (Cl. 264—13)



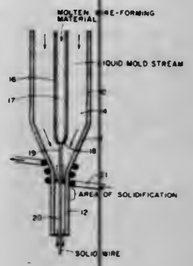
1. The method for the production of ferrolsenium in granulated form comprising in order, the steps
(a) feeding a powdered mixture of selenium and iron, said mixture having a selenium content of about 40–60%, to a sintering zone;
(b) heating said mixture to a temperature at which the mixture sinters;
(c) further heating the sintered material in a melting zone to cause the same to melt; and
(d) causing the thereby formed molten ferroselenium to fall freely as discrete droplets from said melting zone a distance of from 3–12 meters into a body of aqueous liquid, whereby said droplets when striking the surface of the liquid are split up into smaller granules and thereafter solidified,
said heating and falling steps being performed in an atmosphere which is inert to ferroselenium.

3,347,959
METHOD AND APPARATUS FOR FORMING WIRE FROM MOLTEN MATERIAL

John L. Engelke, Arlington, Philip C. Johnson, Belmont, and Barry A. Stein, Brookline, Mass., assignors to Arthur D. Little, Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 8, 1964, Ser. No. 402,394
10 Claims. (Cl. 264—37)

5. A method of casting a continuous solid filament, comprising the steps of
(a) ejecting a molten stream of a filament-forming material from a nozzle and imparting to the resulting molten liquid filament a forward velocity;
(b) completely surrounding said molten liquid filament with a liquid mold stream in laminar flow in surface-to-surface contact therewith and having a forward velocity greater than that of said moving molten filament;
(c) increasing said forward velocity of said liquid mold stream thereby, through the viscous shear forces developed at the interface between said molten filament and said mold stream, to reduce the diameter of said filament to a predetermined value;
(d) cooling said molten filament thereby to solidify it to form said continuous solid filament; and
(e) separating said filament from said liquid mold stream.

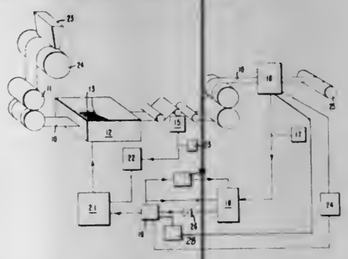


8. A method in accordance with claim 5 further characterized by recycling said liquid mold stream.

3,347,960
PROCESS AND APPARATUS FOR CONTROLLED PREPARATION OF A WEB

Thomas D. Fenley, Hightstown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 20, 1964, Ser. No. 368,813
7 Claims. (Cl. 264—40)



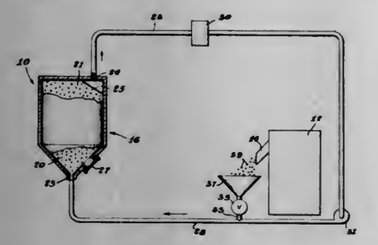
1. A process for preparing a web which comprises
(A) casting said web;
(B) stretching said web while heat is being applied to said web by a plurality of heaters;
(C) measuring the web tension during said stretching;
(D) detecting said web thickness after said stretching by periodically measuring the thickness of traverse segments of said web;
(E) changing the output of all of said heaters to produce a desired tension on said web;
(F) forming a signal by comparing a signal for the thickness of said traverse segments with a reference signal;
(G) changing the output of individual heaters of said plurality in response to said comparison signal; and
(H) removing said stretched web upon a windup reel.

3,347,961
METHOD AND APPARATUS FOR THE TREATMENT OF EXPANDABLE RESINOUS PARTICLES

David L. Russell, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 28, 1964, Ser. No. 370,957
9 Claims. (Cl. 264—53)

1. A method of preparing stable low density particulate synthetic resinous material comprising heating a particulate synthetic thermoplastic resinous material containing a blowing or expanding agent to form a fully expanded product having a density of from about 0.3 to about 0.8 pound per cubic foot, the expanding agent having a diffusion rate through the resinous material which is from about 0.75 to 6 times the diffusion rate of air through the resinous material, subjecting the expanded particles, immedi-

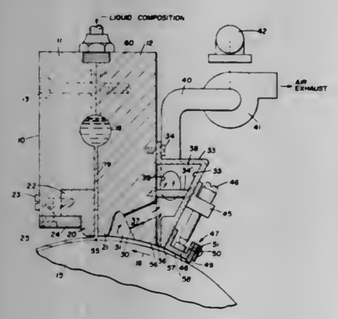


ately after the expansion thereof and before the particles can cool sufficiently to collapse, to air at a temperature of from about 80° Fahrenheit to 200° Fahrenheit for a period of time of from about 10 to 50 hours which is sufficient to prevent collapse of the expanded particles on cooling to 60° Fahrenheit, and subsequently cooling the particles.

3,347,962
METHOD AND APPARATUS FOR CASTING A LIQUID COMPOSITION

William W. Dieck, Joseph S. Rengert, and Dean E. Winkler, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 2, 1965, Ser. No. 476,401
10 Claims. (Cl. 264—90)

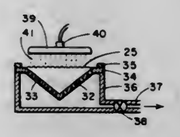


1. In a method of casting wherein a continuous stream of liquid composition is applied to a moving receiving member, and the side of said stream, which becomes contiguous to said receiving member, is subjected to a gas pressure that is less than that at the other side of said stream to provide a pressure differential for increasing the intimacy of contact between said stream and said receiving member, the improvement which comprises:
establishing said pressure differential by serially reducing the gas pressure at the first-mentioned side by at least two zones in the vicinity of the first-mentioned side and spaced in the direction of movement of said receiving member for decreasing the turbulence and vibration of the gas in the zone adjacent the first-mentioned side.

3,347,963
METHOD OF STRETCH FORMING RAYONS

Phillip W. Estes, Lexington, and Alfred R. Johnson, Reading, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 28, 1964, Ser. No. 421,449
8 Claims. (Cl. 264—90)

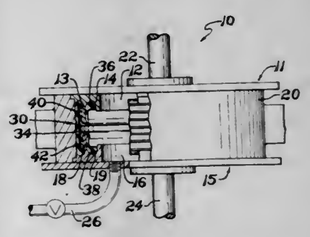


1. A method of imparting a permanent contoured configuration to rayon fabrics, comprising the steps of
(a) wetting rayon fabric with a liquid ammonia treating agent; and
(b) forcing the treated rayon fabric to conform to the contoured surface of a form while said rayon fabric is wet with said treating agent, whereby said fabric acquires the contour of said surface.

3,347,964
METHOD AND APPARATUS FOR MAKING A PNEUMATIC TIRE

James Sidles, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Jan. 19, 1966, Ser. No. 521,671
11 Claims. (Cl. 264—94)



1. A method of making a pneumatic tire comprising:
(a) providing an annular green tire carcass of substantially cylindrical shape with coaxial bead portions at the opposing open ends of the carcass, a tread portion on the outside of the carcass, and sidewall portions extending from the tread portion to each bead portion;
(b) folding one of the sidewall portions into a channel extending axially of the carcass and concentrically inside the tread portion;
(c) constraining the tread portion of said green carcass during said folding to limit circumferential expansion of the tread to a diameter only slightly larger than the diameter of the bead portion of the folded sidewall and significantly smaller than the eventual inflated operating diameter of the tread portion; and
(d) curing the carcass with said sidewall portion so folded and said tread portion so constrained to provide a permanently set fold in said sidewall extending circumferentially to the carcass in a continuous reentrant channel open to the outside surface of the sidewall.

11. An apparatus for making a pneumatic tire comprising:

(a) means for supporting an annular green tire carcass of substantially cylindrical shape with coaxial bead portions at the opposing open ends of the carcass, a tread portion on the outside of the carcass, and sidewalls extending from the tread portion to each bead portion, said supporting means including oppositely facing end mold plates which are engageable with the opposing bead portions of the said green tire carcass, at least one of said end mold plates being movable toward and away from the other;

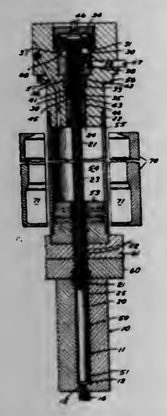
(b) means for folding said sidewall portion into a channel extending axially of the carcass and concentrically inside the tread portion comprising an annular rigid folding ring on each end mold plate which is engageable with the outside surfaces of the sidewall portions of the tire carcass adjoining the bead portion engaged by the ring and over which said sidewalls are deflected as said movable end mold plates are moved toward each other;

(c) means for moving at least one of said movable end mold plates toward and away from the other to effect said folding and subsequently to allow release of the cured casing;

(d) means positioned between said end mold plates for constraining the tread portion of said green tire carcass during said folding to limit circumferential expansion of the tread to a diameter only slightly larger than the diameter of the bead portions of said folded sidewalls but significantly smaller than the eventual inflated operating diameter of the tread portion comprising an annular rigid tread molding part for encircling the tread portion of said tread carcass and constraining circumferential expansion of said carcass; and

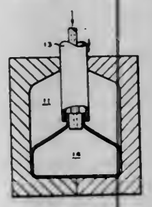
(e) means on one of said mold plates for pressurizing said tire carcass to circumferentially expand said tread portion against said tread constraining means during said folding.

3,347,965
METHOD AND APPARATUS FOR MOLDING PLASTIC BOTTLES
Emery I. Valyi, 5200 Sycamore Ave., Bronx, N.Y. 10471
Filed July 8, 1964, Ser. No. 381,174
6 Claims. (Cl. 264—97)



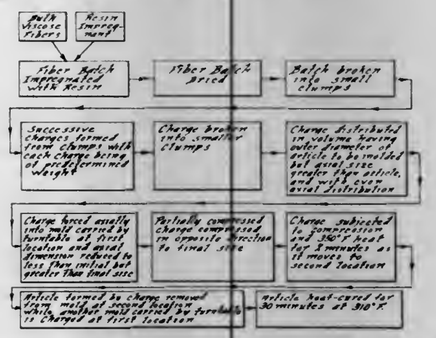
1. The method of molding a parison or the like of organic plastic material in a mold composed of an outer member, a blow core having a free end projecting into said outer member and having a blow port adapted to supply fluid pressure for expanding the parison into a blow mold cavity and having sides spaced from said outer member to form a mold cavity therebetween and a neck ring disposed to form an extension of the mold cavity which comprises introducing into said mold cavity a sleeve adapted to center and support said core therein, injecting said organic plastic material into said cavity at the free end of said sleeve and retracting said sleeve along said core as said material is injected, while causing said sleeve to maintain a predetermined pressure upon the injected plastic material as the mold is filled and shifting the blow core and neck ring with the formed parison into a blow zone wherein the parison is expanded to form a hollow object.

3,347,966
METHOD FOR FORMING BIAXIALLY ORIENTED THERMOPLASTIC ARTICLES
Charles L. Seefluth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 437,175
6 Claims. (Cl. 264—97)



4. A method for blow molding a hollow article having an oriented bottom and oriented sides, said method comprising placing near the bottom of a hollow mold a heated conical parison having an open end and a closed end and being tapered in wall thickness from said open end to said closed end, applying a differential pressure so that expansion of said parison takes place at an area of minimum wall thickness and said parison sequentially expands against said mold walls as expansion continues, and withdrawing said open end away from said bottom of said mold as expansion continues.

3,347,967
MANUFACTURE OF FILTERS
John D. Hopkins and David J. Whittingham, Franksville, and Frederick H. Bultman, Racine, Wis., and Paul K. Krause, Arlington Heights, Ill., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,487
27 Claims. (Cl. 264—115)



1. In a method for forming fibrous articles in a circular mold, the steps of distributing a charge of resin coated fibers in a volume having an outer diameter approximating the final outer diameter of the final molded article but with an axial size substantially greater than that of the final molded article, the fibers having substantially even distribution in a circular direction, forcing the distributed fibers axially into the mold in one direction and reducing the axial dimension to a size substantially less than the initial size but still substantially greater than the final article size, compressing the partially compressed charge of fibers in the opposite direction to its final size, and curing the resin to bond the fibers together.

3,347,968
METHOD OF SEPARATING CATIONS FROM SOLUTIONS CONTAINING THE SAME AND FOR INCORPORATING CATIONS INTO BODIES OF REGENERATED CELLULOSE
Rainer Thomas and Paul Weber, Siegburg, Germany, assignors to Phrix-Werke Aktiengesellschaft, Hamburg, Germany
No Drawing. Filed June 7, 1965, Ser. No. 462,056
Claims priority, application Germany, Oct. 21, 1960, P 25,897; Oct. 20, 1961, P 28,062
14 Claims. (Cl. 264—195)

1. A method of producing a metal sulfide-containing shaped body of regenerated cellulose, comprising the steps of extruding into an acid bath viscose having dissolved therein a compound selected from the group consisting of thioarsenite, thioarsenate, thioantimonite and thioantimonate so as to form a shaped body of regenerated cellulose containing a sulfide of at least one chemical element selected from the group consisting of arsenic and antimony; and treating the thus formed shaped body with a water soluble salt of a metal having a greater affinity to ionic sulfide radicals than said chemical element, and the sulfide of which is at most slightly soluble in water, so as to replace said chemical elements of the sulfide contained in said shaped body of regenerated cellulose with said metal, thereby forming a shaped body of regenerated cellulose having distributed therethrough the sulfide of said metal.

3,347,969
A METHOD OF MAKING CRIMPED POLYOXYMETHYLENE FILAMENTS
Gregory M. Moelter, Basking Ridge, N.J., assignor to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Aug. 1, 1962, Ser. No. 213,882
2 Claims. (Cl. 264—210)

1. A process comprising melt spinning a copolymer of trioxane with from 0.5 to 25 mol percent of a cyclic ether having adjacent carbon atoms at a temperature of from about 190° C. to 220° C. to form filaments, drawing said filaments to about 3 to 20 times their original length at a temperature between about 60 and 155° C. to obtain filaments which are shrinkable in the relaxed state within a range of from 10 to 35% of their total length was subjected to a temperature of from 140 to 170° C. for 0.1 to 10 minutes, annealing a portion of said drawn filaments by heating them at constant length to a temperature in the range of 150 to 170° C. for 0.1 to 10 minutes and blending the annealed and unannealed filaments into a composite product.

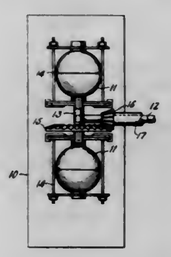
3,347,970
METHOD OF FORMING DUPLICATE BOTTLES BY HEAT SHRINKING
Russell D. Hanna, Hockessin, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Aug. 19, 1964, Ser. No. 390,523
2 Claims. (Cl. 264—230)

1. A process for the manufacture of plastic squeeze tubes which comprises providing a pair of mandrels each having a cylindrical body portion of substantially uniform diameter, an externally threaded neck portion of a diameter less than the diameter of the body portion, and a shoulder portion intermediate said body and neck portions, said pair of mandrels being arranged in axially aligned relation with the neck portions thereof opposed, placing onto said mandrels a tube of circumferentially oriented plastic material having an internal diameter slightly larger than the diameter of the body portion of said mandrels whereby said tube conforms closely to the periphery of said mandrels in that portion of the tube that surrounds said body portion and is spaced from said mandrels in that portion of the tube that surrounds said neck



and shoulder portions, heating said tube to shrink the same against the mandrels and thereby to shape the same into a pair of squeeze tubes having elongated body portions surrounding the body portions of said mandrels and having dispenser portions integral with the body portions at the inner ends thereof and surrounding the neck and shoulder portions of the mandrels and including apertured externally-threaded nozzles, removing said mandrels from said squeeze tubes after cooling the tubes below the shrink temperature, and severing said tube in a plane normal to the axis thereof and between the opposed ends of the dispenser portions.

3,347,971
ROTATIONAL MOLDING
Ivan Mankowich, Cheshire, Andrew D. Varenelli, Stratford, and Alfred J. Heinrichs, New Haven, Conn., assignors to Uniroyal, Inc., a corporation of New Jersey
Filed June 17, 1963, Ser. No. 288,500
The portion of the term of the patent subsequent to Dec. 20, 1983, has been disclaimed
5 Claims. (Cl. 264—310)



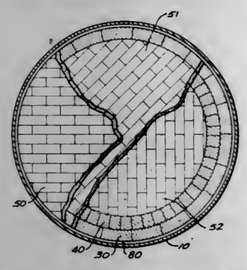
1. A method of making hollow articles of plasticized thermoplastic resin comprising, depositing in a mold a fluent measured charge of fragments of a fluxed compound of a thermoplastic resin of which vinyl chloride is at least 50% by weight of the monomer system and a plasticizer therefor, said charge being less in volume than the volume of said mold, said fragments having a maximum volumetric size of less than .125 in.^{3} but not less than about .000244 in.^{3}, rotating the mold in a plurality of planes while heating the fragments to distribute the compound, and coalesce the fragments into a layer over the surface of the mold in the form of the object to be molded, cooling the compound in the layer beneath the melting temperature thereof, and removing the article from the mold.

ELECTRICAL

3,347,972
INDUCTION FURNACE CONSTRUCTION

Albert Lajos Renkey, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1965, Ser. No. 442,363
9 Claims. (Cl. 13—35)

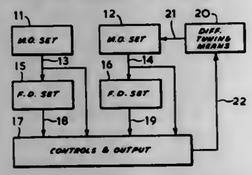


1. A coreless induction furnace consisting essentially of an outer metal shell in the form of an open-topped tubular vessel, a primary coil disposed adjacent the interior surfaces of said shell, and a composite lining of refractory material, said refractory lining consisting essentially of a plurality of preformed refractory shapes, a first group of said refractory shapes forming a first independent wall about the interior of said outer shell contiguous to said primary coil, a second group of said refractories forming a second independent wall contiguous to said first wall, the preformed shapes of said second wall being arranged to substantially eliminate continuous direct communication between joints in the first and second wall, the joints in at least said second wall being no more than about ⅛" in vertical extent and being filled with refractory mortar compatible with the refractory of which the second wall is constructed, additional refractory forming a plurality of successive and contiguous layers across the bottom of said shell, an uppermost of said bottom courses constructed of preformed refractory shapes and arranged to cooperate with said second wall to form an open-topped, refractory-lined well for containing molten metal, said outer metal shell further including inwardly-extending flange means abutting against and substantially completely overlying all the upper surfaces of the uppermost shapes forming said first and second walls whereby when said furnace is exposed to operating temperatures a limited expansion thereof causes reaction against said flange and commensurate tightening up of the lining.

3,347,973
CHORUS EFFECTS SYSTEMS

Alfred B. Freeman, North Bergen, N.J. (8720 Skokie Blvd., Skokie, Ill. 60076)

Filed Sept. 18, 1964, Ser. No. 397,517
16 Claims. (Cl. 84—1.24)

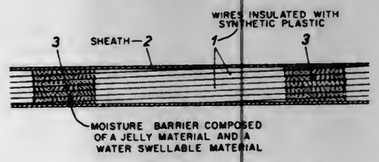


3. In an electronic musical instrument, a first set of tone generators, a second set of tone generators including master oscillators non octave frequency divider stages, means for shifting the tuning of one of said sets of tone generators by the same percentage responsive to the player, and means for translating the outputs of said generators into sound.

3,347,974
MOISTURE PROTECTION IN COMMUNICATION CABLES WHOSE CORES ARE COMPOSED OF CONDUCTORS INSULATED WITH SYNTHETIC PLASTIC, AND METHOD OF PRODUCING SUCH MOISTURE PROTECTION

Ilse Arendt and Heinz Puell, Berlin, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a German corporation

Filed July 15, 1965, Ser. No. 472,204
Claims priority, application Germany, July 29, 1964, S 92,314; Apr. 26, 1965, S 96,764
5 Claims. (Cl. 174—23)

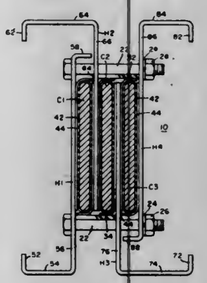


1. A communication cable, comprising a core having conductors insulated with synthetic plastic, a sheath enveloping said core, and moisture barriers axially spaced in said core, said barriers being formed of a paste composed of a hydrophobic jelly material and a normally dry swelling medium having a multiple of its dry volume when exposed to moisture, said swelling medium filling only part of the free cross-sectional core space when dry and filling all of said space when moist.

3,347,975
BUS DUCT HAVING HEAT DISSIPATING PARTS

Bill M. Shannon, Rochester, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 14, 1966, Ser. No. 542,537
7 Claims. (Cl. 174—70)



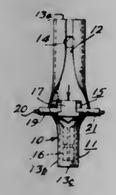
6. A bus duct comprising a plurality of longitudinally extending, electrically insulated bus bars disposed in closely spaced side-by-side relation, a pair of generally L-shaped outer housing members formed from thermally conducting material and disposed on opposite sides of the plurality of bus bars, each of the outer housing members having a long side disposed in heat conducting relation with the outer surface of the adjacent outside insulated bus bar and a short transverse side, and an intermediate generally L-shaped housing member having a long side

disposed between each outside bus bar and the next adjacent bus bar in heat conducting relation with both of the adjacent bus bars and a short transverse side, the short side of each outer housing member being disposed away from the short side of the adjacent intermediate housing member and means for securing said bus bars and said housing members together in tightly assembled relationship.

3,347,976
TERMINAL SHEATH

George B. Marks, 205 S. Trooper Road, Norristown, Pa. 19401

Filed Oct. 23, 1965, Ser. No. 504,043
10 Claims. (Cl. 174—71)

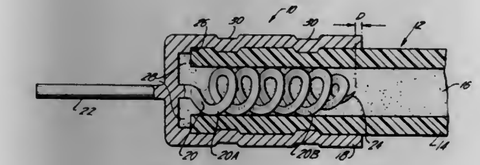


1. An insulator for a terminal, said terminal having at least one portion for connecting a wire thereto, said insulator comprising: an open ended tube having means defining a slit extending longitudinally from one end thereof, and a circumferentially closed portion adapted to receive said portion of said terminal, said slit length less than the tube length and greater than the length of said portion of said terminal to be enclosed by said circumferentially closed portion of said tube, at least one aperture in the wall of said tube adjacent to and spaced from said one end, said aperture circumferentially positioned substantially opposite said means defining a slit, said one end adapted to be placed in circumferential overlapping relation with said circumferentially closed portion of said tube.

3,347,977
HOMOGENEOUS SODIUM CONDUCTOR CONNECTIONS

Johannes Hus, Trumbull, Eugene Scoran, Fairfield, and Edward Zurhellen, Norwalk, Conn., assignors to Burndy Corporation, a corporation of New York

Filed Dec. 1, 1965, Ser. No. 510,771
18 Claims. (Cl. 174—74)

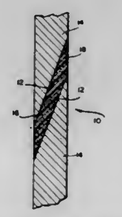


1. An electrical connector adapted to be electrically coupled to the end of an electrical cable having a homogeneous central core of highly ductile metal enclosed within a substantially tubular insulating jacket, said connector comprising:
an end cap member capable of telescopically receiving the end of an insulated cable;
an inner contact member mounted substantially coaxially within said end cap member and having an outermost diameter not substantially less than the inner diameter of the cable jacket;
an insulation support portion on said inner contact member including a longitudinally extending section having the outermost diameter thereof substantially coincident with a theoretical cylindrical surface of given uniform diameter; and
external contact means electrically coupled to said inner contact member, including a conductive surface accessible from the exterior of said cap member;
said inner contact member having a shape which presents a relatively high ratio between the theoretical volume enclosed within said theoretical surface and the actual physical volume of said inner contact member.

3,347,978
ELECTRICALLY CONDUCTIVE JOINTS AND GASKETS

Eli Simon and Myron Levine, Los Angeles, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed June 3, 1963, Ser. No. 284,922
5 Claims. (Cl. 174—84)

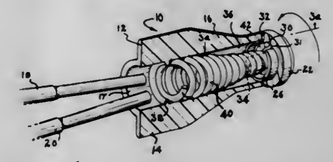


4. An electrically conductive gasket which comprises:
a. an adhesive dielectric matrix material conformed to a desired gasket shape for filling a space and relatively sealing between two spaced-apart parallel surfaces; and
b. a mass of electrically conductive fibers contained within said matrix material in contact with one another and extending to and exposed at the surfaces of said material so as to provide electrical paths between such surfaces, at least some of said fibers being of a length exceeding the thickness of said gasket.

3,347,979
ELECTRICAL CONNECTOR WITH AUDIBLE INDICATOR MEANS

Norman E. Hoffman, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Continuation of application Ser. No. 286,652, June 10, 1963. This application Jan. 20, 1966, Ser. No. 521,773
8 Claims. (Cl. 174—87)



1. An improved electrical connector for interconnecting the stripped ends of a plurality of conductors including an insulating cap having a central bore, a tapered coil spring member secured in said bore having spaces between spring turns to permit axial compression, means including a first axially extending surface positioned within said bore adapted to lock said spring member against relative rotation thereto during a given number of turns of cap and spring member in one direction as the plurality of conductors are threaded within said spring and

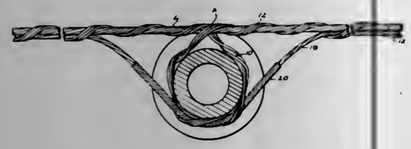
adapted to release said spring member for rotation relative to said cap following said given number of turns of the cap in said one direction and further means in said bore including an inclined surface operable to lift an end of said spring member following the release thereof to further compress said spring member, said inclined surface terminating in a further axially extending surface positioned to engage said end of said spring member to produce a series of audible clicks as said cap is rotated following release of said spring member to thereby provide a tactile and audible certification of proper interconnection of said conductors in said cap.

3,347,980

TIE ARMOR SUSPENSION

Robert L. Reese, Rocky River, Ohio, assignor to The Fanner Manufacturing Company, a Division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island

Filed Feb. 1, 1966, Ser. No. 524,296
9 Claims. (Cl. 174—173)



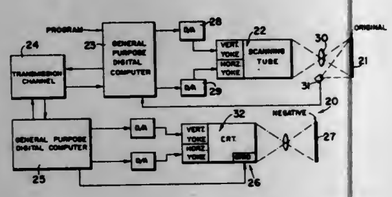
1. A tie and line suspension comprising a primary element and a secondary element, said secondary element having a central portion and resilient portions extending from opposite sides of said central portion for engagement in side-by-side relationship with a line, said primary element being formed from at least one open helical wire of resilient material having a pitch such that it may be applied to a line from the side of the line without permanent deformation, said wire being bent intermediate its ends to provide a bight portion for circumferential engagement with a support and having a crossover point from which extend leg portions for wrapping engagement around the line and the resilient portions of said secondary element, said secondary element engaged with the bight portion of said primary element at its apex.

3,347,981

METHOD FOR TRANSMITTING DIGITAL DATA IN CONNECTION WITH DOCUMENT REPRODUCTION SYSTEM

Sholly Kagan, Natick, and Franklin A. Rodgers, Arlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 18, 1964, Ser. No. 352,822
3 Claims. (Cl. 178—5)



1. A method for reproducing at a remote location the contents of an original document that contains "N" different elemental areas each of which has an address corresponding to its location in the document, and wherein each area either contains or does not contain indicia, comprising the steps of:

(a) sequentially examining the contents of each area of a first group of areas constituting a first portion of said document and ascertaining each element of the sequence, termed a transition element of the first sequence for reference, at which the contents of the area corresponding thereto differs from the contents of the area corresponding to the preceding element in the sequence;

(b) sequentially examining the contents of each area of a second group of areas constituting a second portion of said document and ascertaining each element of the sequence, termed a transition element of the second sequence for reference, at which the contents of the area corresponding thereto differs from the contents of the area corresponding to the preceding element in the sequence;

(c) ascertaining each element of the second sequence, termed an exclusive transition element for reference, at which either it or the corresponding element of the first sequence, but not both, is a transition element;

(d) transmitting to said remote location the address of the area of said second group corresponding to each exclusive transition element of said second sequence; and

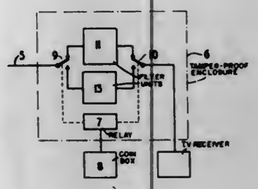
(e) using the addresses transmitted in accordance with step (*d*) above the reproduce said second portion of said original document at said remote location.

3,347,982

SUBSCRIPTION TELEVISION DISTRIBUTION WITH CONTROLLED REJECTION FILTERS FOR CARRIER AND INTERFERENCE SIGNALS

Patrick Bass and John Maurice Cooper, London, England, assignors to R. & R. Research Limited

Filed Apr. 10, 1964, Ser. No. 358,843
Claims priority, application Great Britain, Apr. 16, 1963, 14,809/63
7 Claims. (Cl. 178—5.1)



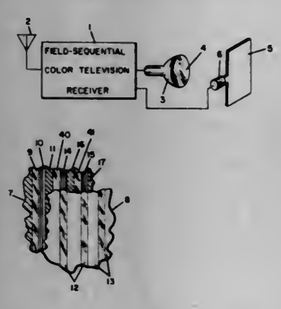
1. A television system comprising at a transmitting station video generator means producing a program picture signal modulated upon a video carrier of predetermined frequency and occupying a predetermined frequency band, audio generator means producing a program sound signal modulated upon a sound carrier wave having a frequency outside said frequency band, interference generator means producing an interference signal having a selected frequency within said frequency band, further interference signal generator means producing a further interference signal having a further selected frequency within said frequency band and adjacent said sound carrier, together with means for transmitting all said signals to a receiving station; and comprising at a co-operative station first receiver means operable by said modulated sound signals to reproduce said sound program, second receiver means operable by said modulated program picture signal to reproduce said picture, circuit means operable to receive said transmitted signals and to apply them to said receiver means by way of switch means and filter means, wherein in said one switch position said filter means operates to attenuate signals of said selected frequency and of said further selected frequency more than signals of said video carrier frequency and of sound carrier frequency, and operates in said other condition of said switch to attenuate signals of said video carrier frequency and of said sound carrier frequency more than signals of said selected frequency and of said further selected frequency, whereby said picture and sound programs may be reproduced intelligibly when and only when said switch is in said one condition, means for establishing a fee demand in respect to said program, and control means operated when said fee demand is set to adjust said switch to said one position.

3,347,983

COLOR FILTER APPARATUS FOR TELEVISION

Richard E. Williams, Fairfax, Va., assignor to Scope Incorporated, Falls Church, Va., a corporation of New Hampshire

Filed June 18, 1963, Ser. No. 288,818
7 Claims. (Cl. 178—5.4)



1. In a color television display system comprising a cathode-ray tube having a target area, and scanning means associated with said tube to scan said target area successively and cyclic, the combination of a color mask interposed in a light path which includes the target area of said tube, a first rigid member of said mask having two colored stripes with primary colors light transmissions centered substantially at 500 millimicrons and 605 millimicrons, respectively, a second flexible member having alternate opaque and clears stripes, a third rigid light-transmitting member fixedly positioned relative to said first member to captivate said flexible member, driving means to cause cyclic movement of said second member in the space between said first member and said third member, and mechanical restrictive means to limit said cyclic movement to that required for bringing the color filter stripes of said first member successively and alternately in register with the light-transmitting stripes of said second-named member.

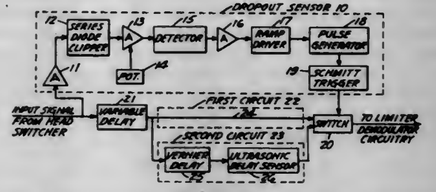
3,347,984

ELECTRONIC DROPOUT SUPPRESSOR

Berten A. Holmberg, Hutchinson, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed June 22, 1962, Ser. No. 204,568
17 Claims. (Cl. 178—6.6)

1. A device for suppressing defects in a radio frequency signal, said device comprising: means for sensing defects in said radio frequency signal; first and second circuits for carrying said radio frequency signal; means for delaying the radio frequency signal in one of said circuits with respect to the signal in the other of said circuits for a time such that the delay signal is essentially equivalent to the relatively undelayed signal; means for normally transmitting only the radio frequency signal carried by said first circuit; and switching means controlled by said defect sensing means for transmitting only the radio frequency signal carried by said second circuit when a defect is sensed.

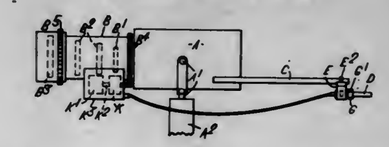


3,347,985

CONTROL MECHANISMS FOR ADJUSTING THE OBJECTIVES OF TELEVISION OR CINEMATOGRAPH CAMERAS

John D. Barr and Richard F. Clifford, Oadby, England, assignors to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company

Filed Mar. 23, 1964, Ser. No. 353,897
Claims priority, application Great Britain, Mar. 28, 1963, 12,342/63
10 Claims. (Cl. 178—7.92)



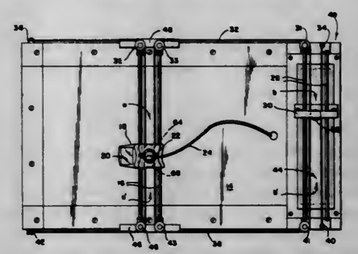
1. A control mechanism for a camera which has an adjustable objective and is movably mounted so that the orientation of such camera can be angularly adjusted on its mounting, said control mechanism comprising a hand grip rotatable about its axis, means whereby bodily movement of the hand grip effects adjustment of the orientation of the camera, a control element carried by the hand grip to rotate therewith and being movable relatively to such hand grip under digital pressure, and transmission means whereby relative movement between the hand grip and the control element controls the movement of a movable part of the objective of the camera.

3,347,986

DATA CODER AND INPUT DEVICE

Ernest E. Gilbert, Garden Grove, Calif., assignor to Bolt Beranek and Newman, Inc., Cambridge, Mass.

Filed Oct. 28, 1966, Ser. No. 590,430
3 Claims. (Cl. 178—18)



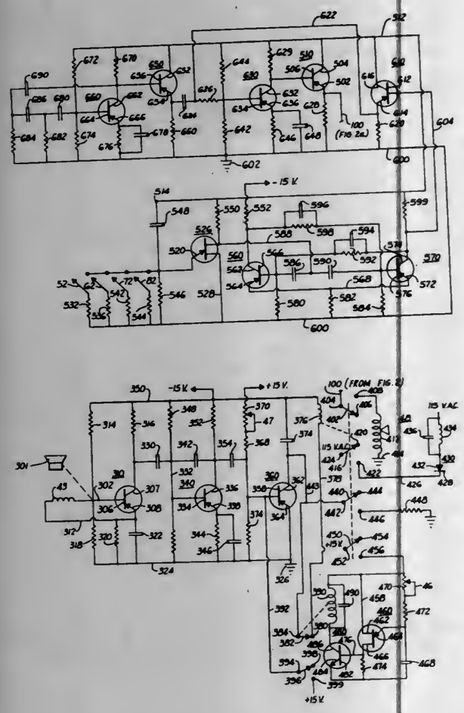
1. Data encoding apparatus comprising cursor means supported for reciprocative movement along a predetermined coordinate of an information display, code producing means separated from said cursor means and having

a fixed part and a movable part arranged to reciprocate with espect to said fixed part, and means coupling said movable part to said cursor means for responsive movement, said coupling means comprising cable means defining a pair of lateral pockets, one of said pockets being coupled to said cursor means and the other of said pockets being coupled to said movable part, and means for causing said one pocket to expand when said cursor means is moved in a predetermined direction and causing said other pocket to contract and move said movable part in a predetermined direction.

3,347,987
TELEPHONE CALL-RESPONSIVE AUTOMATIC TELEMETERING SYSTEM

Miloslav J. Chaloupka, Houston Tex., assignor to Odex Engineering Company, Houston, Tex., a corporation of Texas

Filed June 10, 1964, Ser. No. 373,939
1 Claim. (Cl. 179—2)



A circuit adapted for use with a conventional telephone device, said apparatus including in combination

a power supply,

circuit means coupled to said power supply and responsive to a call signal transmitted to said telephone device, said circuit means including a free running phase shift oscillator, flip-flop circuit means coupled to said free running phase shift oscillator, first timer means coupled to said flip-flop circuit means, said circuit means providing a coded signal,

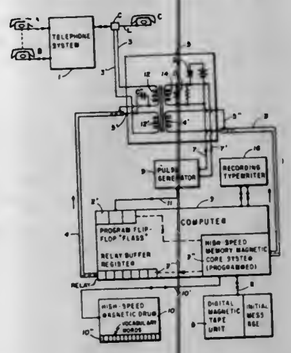
audible signal means coupled to said circuit means and responsive to said call signal, and

second timer means coupled to said circuit means and to said audible signal means for providing a transmission signal for a selected time duration.

3,347,988
METHOD OF AND SYSTEM FOR REMOTE-LOCATION COMPUTER COMMUNICATION VIA TELEPHONE

Thomas M. Marill, Cambridge, and Daniel J. Edwards, North Reading, Mass., assignors to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts

Filed June 17, 1963, Ser. No. 288,398
5 Claims. (Cl. 179—2)



1. A remote-location computer communication system having, in combination, a telephone system provided with line-interconnected dial and ring telephone instruments; a computer provided with stored messages and a predetermined program responsive to different sets of input pulses; pulse-generating means having means for connecting an input thereof with at least one predetermined telephone line associated with said computer and provided with an output for producing pulses in response to the ring signal initiated from a remote calling telephone instrument and for producing different sets of pulses in response to the dial signals of said calling telephone instrument; and means connected with the said output for applying the produced pulses as an input to the computer; the computer being provided with means responsive to the produced pulses corresponding to the ring signal for connecting it through the said one line to said remote calling telephone instrument for the reception of dial signals and the transmission of messages, means for thereupon transmitting an initial message along the said one line, and means responsive to the produced pulses corresponding to said dial signals for transmitting different messages along said one line corresponding to the dial signals in accordance with the said computer program.

3,347,989
STOCK QUOTATION SWITCHING SYSTEM UTILIZING SWITCHING MEANS FOR ALTERNATING THE CONNECTION OF A REGISTER AND ITS ASSOCIATED TRUNK

George Riddell, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1963, Ser. No. 333,000
16 Claims. (Cl. 179—6)

10. In a stock quotation system,

a computer operative to provide output signals indicating the current status of a stock in response to input signals identifying the stock,

a voice-answer-back unit controlled by said output signals for providing an audible manifestation of said stock status,

a switching network,

a station terminated on one side of said network,

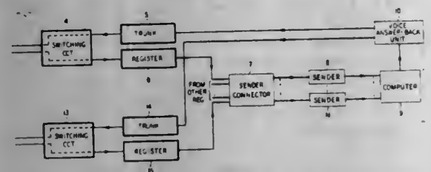
a register terminated in a first appearance on the other side of said network,

a trunk terminated in a second appearance on said other side of said network,

means for establishing a connection between said station and said register via said first appearance,

said register comprising means controlled by said station for registering the identity of a requested stock,

means controlled by said register for informing said computer of said identity,



means responsive to the enabling of said voice-answer-back unit for connecting said voice-answer-back unit to said trunk, and

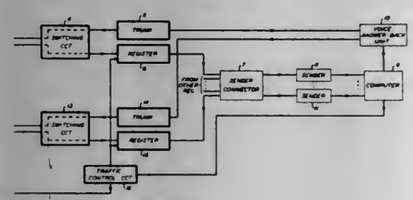
switching means responsive to said connection of said voice-answer-back unit to said trunk for transferring said first appearance from said register to said trunk and

means for transferring said second appearance from said trunk to said register.

3,347,990
STOCK QUOTATION SWITCHING SYSTEM UTILIZING CALLING RATE DETECTION MEANS

James J. Doyle, Suffern, August J. Sarka, Baldwin, and Frederick C. Tancredi, White Plains, N.Y., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Dec. 24, 1963, Ser. No. 333,001
13 Claims. (Cl. 179—6)



9. In a telephone system,

a trunk,

a register,

a pair of network appearances associated with said register and said trunk,

means for connecting said register and said trunk individually and in sequence to each of said appearances,

means operative in response to a predetermined traffic rate in said telephone system for varying the interval of time said trunk is connected to one of said appearances,

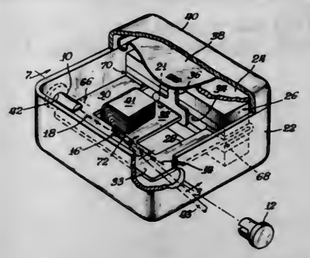
and means for blocking the connection of said register to said other appearance until a predetermined portion of said interval of time has elapsed.

3,347,991
SHOCK RESISTANT TRANSDUCER

Elmer V. Carlson, Prospect Heights, Ill., assignor to Industrial Research Products, Inc., Elk Grove Village, Ill., a corporation of Delaware

Filed Mar. 17, 1964, Ser. No. 352,462
10 Claims. (Cl. 179—114)

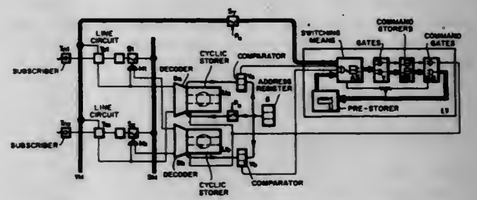
1. A transducer comprising a motor, an armature having a pair of substantially flat opposite surfaces, said armature having one end fixedly mounted on said motor and having another end vibratable along an axis normal to a portion of said flat opposite surfaces, and resilient means fixedly mounted in relation to the transducer and engaging both of said flat opposite surfaces of the armature in its vibratable portion between said fixed end and said vibratable end for holding movement of the armature in a plane substantially perpendicular to said axis within fixed limits.



3,347,992
CIRCUIT ARRANGEMENT CONTROLLING THE RELEASE OF LINES IN A COMMUNICATION SYSTEM

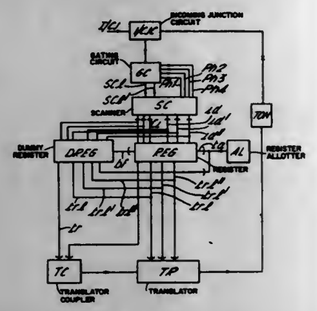
Dieter Von Sanden, Munich-Solln, Germany, and Hubert Suckfüll, Phoenix, Ariz., assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Sept. 18, 1963, Ser. No. 309,658
Claims priority, application Germany, Sept. 19, 1962, S 81,521
24 Claims. (Cl. 179—15)



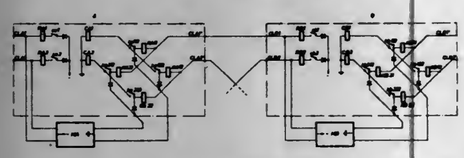
1. A circuit arrangement for controlling switching operations in a switching system, particularly a telephone system, in which the lines leading to individual subscribers are periodically successively tested in pulse-wise fashion as to the operating condition thereof, so as to ascertain whether the respective subscriber line loops are closed or open, wherein criteria produced in such testing in the respective subscriber line circuits are fed to said circuit arrangement and wherein a criterion received is evaluated with respect to the switching operations to be effected; comprising means for received a criterion indicating an open line loop in connection with a read subscriber line, pre-storer means, means for storing the received criterion in said pre-storer means at a point corresponding to the respective subscriber address, as a function of further information taken from said pre-storer, means in the absence of the storage of such a criterion in said pre-storer means responsive to the preceding reading of the respective subscriber, and means responsive to the occurrence of the criterion indicating the open loop and the storage of such a criterion in said pre-storer means resulting from the preceding reading of the respective subscriber, for imparting a command to effect release of the corresponding connection.

3,347,993
AUTOMATIC TELEPHONE EXCHANGE SYSTEMS WITH REGISTERING OF CALLED LINES
Bloomfield James Warman and John Herbert Marshall, Charlton, London, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed June 15, 1964, Ser. No. 375,009
Claims priority, application Great Britain, July 2, 1963, 26,268/63
8 Claims. (Cl. 179—18)



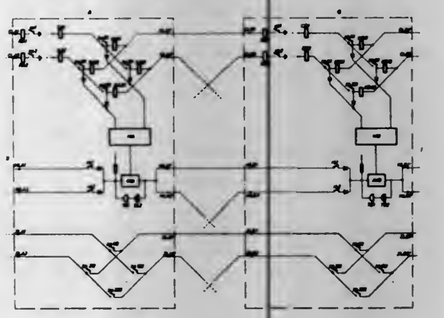
1. An automatic telephone exchange system comprising an exchange; incoming junction lines connected to said exchange; normal registers at said exchange for registering called lines' identities in response to the receipt of dial impulses over said calling incoming lines; an additional register constituting a dummy register comprising means for rendering said dummy register effective only when all of said normal registers are engaged and means for storing within itself the identity of a calling incoming junction for which the dummy register is taken into use; a busy tone circuit; and means for coupling up said busy tone circuit to the calling junction identified within the dummy register for returning busy tone to the calling incoming junction.

3,347,994
SWITCHING REED RELAY MATRIX HAVING UNIQUE RELEASING MEANS
Heinz Schlüter, Kornwestheim, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,298
Claims priority, application Germany, July 24, 1963, St 20,898
3 Claims. (Cl. 179—18)



1. A network of cascaded relay contact matrices comprising crosspoint reed relay contact devices having sufficient remanence to remain magnetized to a current pulse passing through the winding of said relay devices, means responsive to a request for switch path condition for extending a pulse stage-by-stage through said network, means responsive to said pulse for causing the contacts of one of said crosspoint reed relay contact devices in each of said stages to close and adhere thereby completing a switch path through said network, means responsive to the closure of each crosspoint for opening a point in a control conductor associated with said switch path, and means for releasing said switch path by energizing said control conductor to remove said remanent magnetism from said contacts, whereby each crosspoint releases and extends said control conductor to release the next crosspoint in said switch path.

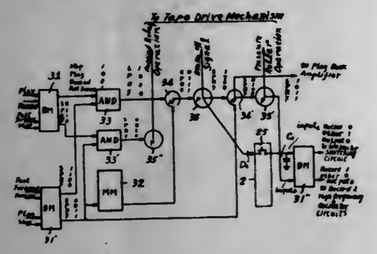
3,347,995
MAKE BEFORE BREAK BALL TYPE ARMATURE REED RELAY SWITCHING NETWORK
Heinz Schlüter, Kornwestheim, Wurttemberg, and Hilmar Schönemeyer, Ditzingen, Wurttemberg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 22, 1964, Ser. No. 384,354
Claims priority, application Germany, Aug. 3, 1963, St 20,945
2 Claims. (Cl. 179—18)



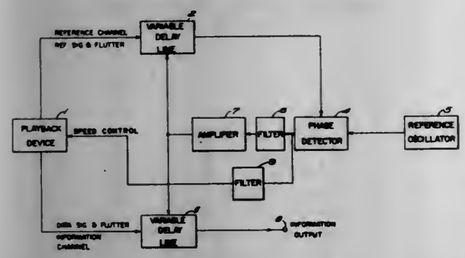
1. A switching network comprising a plurality of cascaded switching stages joined by interstage wirings including control wires and speech wires, reed switches at each cross-point in said network for switching said wires, marker means in each stage for providing marking signals to select the desired reed relay cross-point under the control of signals received over said speech wires, and means comprising ball armature contacts in the reed switches for selectively connecting individual ones of said speech wires either to said marker means in the switching stage or through said network thereby reusing said wires to perform different functions at different times during the establishment and control of a switch path.

3,347,996
CONTROL SYSTEM FOR A MAGNETIC RECORDER
Goji Uchikoshi, 582—33 Gakuen Higashi-machi, Kodaira, Tokyo, Japan
Filed Oct. 25, 1963, Ser. No. 319,057
Claims priority, application Japan, Oct. 27, 1962, 37/47,829
3 Claims. (Cl. 179—100.2)

1. A control device for a magnetic recorder which comprises a key board having five push button type keys, said keys being designed to develop "play back," "record," "fast forward," "rewind" and "stop" signals, respectively, a pair of bistable multivibrators memorizing signals developed by said key board other than a "record" signal and developing binary signals at the output terminals of said multivibrators, and a logical circuit assembly applying said binary signals from said bistable multivibrators to its logical circuits and selecting a desired output signal, said logical circuit assembly comprising first and second AND circuits, means applying the output signal from said first AND circuit to the input terminal of a first power transistor circuit which energizes a rewind relay, means applying the output signal from said second AND circuit to the input terminal of a second power transistor circuit which energizes a brake off solenoid through a first NOR circuit, means applying portion of the output signal of said second power transistor circuit to the input terminal of a second NOR circuit which actuates a play back amplifier, means applying the output signal of said second NOR circuit to the input terminal of a third power transistor circuit which energizes a pressure roller solenoid, a third bistable multivibrator memorizing "record" signals developed by said key board and having two input terminals, and means applying the output signal of said third power transistor circuit to one input terminal of said third bistable multivibrator and applying a portion of the output signal of said second power transistor circuit to the other input terminal of said third bistable multivibrator through a diode and said record key.



3,347,997
PLAYBACK SYSTEM UTILIZING VARIABLE DELAY AND SPEED CONTROL MEANS FOR FLUTTER AND WOW COMPENSATION
Thomas E. Woodruff, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,558
12 Claims. (Cl. 179—100.2)



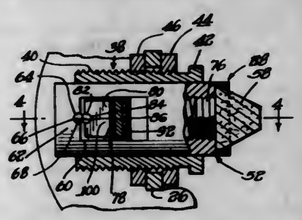
1. Flutter compensating apparatus comprising:
(a) a playback device for simultaneously providing a reference signal and an information signal,
(b) a time error detector, the reference signal output of the playback device being coupled to the time error detector to cause the time error detector to provide an output signal related to the flutter of the reference signal,
(c) a variable delay device having its delay time controlled by only the high frequency component of the output of the time error detector,
(d) means for feeding the information signal from the playback device into the delay device, and
(e) said delay device and said time error detector comprising a closed loop feedback system whereby the high frequency output of said time error detector is continuously fed back to the delay device.

3,347,998
TELEPHONE HANDSET HOLDER
Zed Cunningham, 2696 E. 55th St., Cleveland, Ohio 44104
Filed Aug. 16, 1966, Ser. No. 572,750
4 Claims. (Cl. 179—157)



1. A shoulder attached holder for a telephone handset or the like, the holder comprising:
a main saddle element adapted for engagement over the shoulder and having first and second leg portions;
a secondary saddle element, including an arm member, the arm being pivotally secured to the first saddle element whereby the secondary saddle element is adapted for positioning in opposite locations with respect to the main saddle element;
a handset support secured to the main saddle element and holding a handset in either of two opposite positions; and
a chin assembly, including a support pivotally secured to the holder.

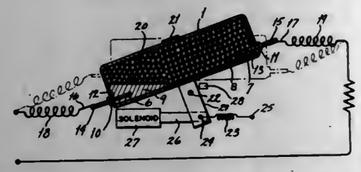
3,347,999
IGNITION BREAKER POINTS
John F. Penrose, 1027 12th St., Boulder, Colo. 80302
Filed Nov. 26, 1965, Ser. No. 509,851
8 Claims. (Cl. 200—30)



1. An ignition breaker point assembly for use in the distributor of an internal combustion engine said breaker point assembly comprising: a base means for mounting the breaker point assembly radially outwardly of a cam in the distributor of an engine, said base means at least partially defining a first passage and a second passage extending transversely to and intersecting said first passage; a carriage member mounted in said first passage for reciprocation relative to said base means, said carriage member at least partially defining a slot located adjacent to a first end portion of said carriage member; a cam follower means mounted on a second end portion of said carriage member for engaging the cam of a distributor to reciprocate said carriage member relative to said base means as the cam is rotated during operation of the engine; first contact means fixedly mounted on an outer end portion of the slot in said carriage member for movement relative to said base means when said carriage member is reciprocated by rotation of said cam means; second contact means connected to said base means and extending through the first and second passages in said base means into the slot in said carriage member for engagement with said first contact means; and spring means engaging said carriage member for urging said carriage

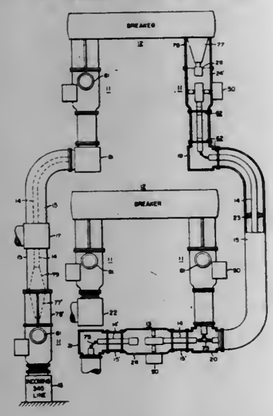
member into a first position in which said first contact means is in engagement with said second contact means to interconnect ignition circuitry for the engine, said carriage member being movable in said first passage against the urging of said spring means to move said first and second contact means into a spaced apart relationship to interrupt the ignition circuitry for the engine.

3,348,000
LIQUID CONDUCTOR TYPE ELECTRIC SWITCH
Emil S. Tamm, Fort Smith, Ark., assignor to Baldor Electric Company, Fort Smith, Ark., a corporation of Missouri.
Filed Oct. 13, 1965, Ser. No. 495,497
9 Claims. (Cl. 200—33)



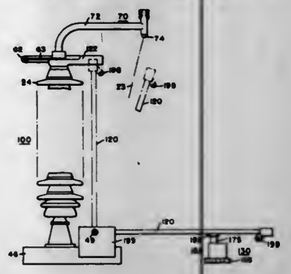
1. An electric switch comprising a pivotally mounted enclosure, a pair of electrodes secured to said enclosure, a multiplicity of freely movable obstructing members contained within said enclosure, and a conductive fluid disposed for impeded flowing within said enclosure for providing electrical conduction between said electrodes when said enclosure is pivoted into operative position.

3,348,001
ELECTRIC DISTRIBUTION SYSTEM
Chester W. Upton, Jr., Penn Township, Trafford, and George Sivly, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1965, Ser. No. 474,755
8 Claims. (Cl. 200—48)



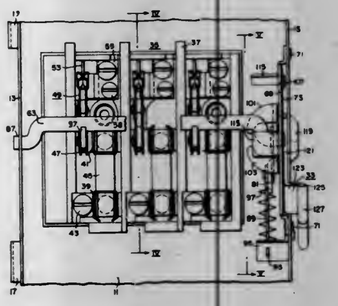
8. In a combined disconnect switch and bus structure, in combination, two spaced sections of bus conductor housing, a bus conductor in each housing, a generally cylindrical, hollow switch housing connected between the bus conductor housings in sealed relation therewith, two spaced switch conductors inside the switch housing, combined insulators and gas barriers disposed at the opposite ends of the switch housing for supporting the switch conductors and for sealing off the gas space within the switch housing, a reciprocating switch blade connecting the two switch conductors, means for actuating the switch blade, and said switch housing having a flexible portion at at least one end to take care of expansion of the housing.

3,348,002
ELECTRIC SWITCH
Chester W. Upton, Jr., Penn Township, Trafford, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1965, Ser. No. 489,972
9 Claims. (Cl. 200—48)



5. A switch comprising a stationary contact, a rotatable shaft, a switch blade mounted on the shaft and movable with the shaft in an arcuate path between closed and open position into and out of engagement with the stationary contact, and releasable stored energy means disposed adjacent to the blade for applying an impulse of force to the blade transversely substantially at the center of percussion to actuate the blade toward the stationary contact, said stored energy means being disengaged from the blade when the blade is in closed position.

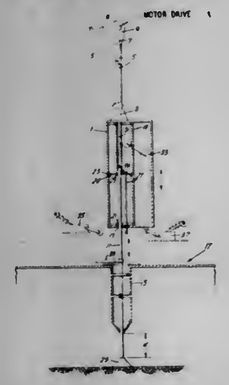
3,348,003
SWITCH HOUSING INCLUDING IMPROVED DEFEATABLE COVER LATCH MEANS
Stephen A. Mrenna, Beaver, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 2, 1966, Ser. No. 546,950
12 Claims. (Cl. 200—50)



1. In combination, an enclosure comprising a receptacle and a cover, said receptacle comprising a generally planar base and sidewall means extending from said base normal to said base to form a receptacle-opening at the front of said receptacle, said sidewall means comprising a first generally planar sidewall normal to said base, a cover supported on said receptacle and movable to open and close said receptacle-opening, said cover having a cover-opening therein, a switch structure supported in said receptacle, said switch structure comprising a stationary contact structure and a movable contact structure cooperable with said stationary contact structure,

a manually operable operating member supported within said receptacle and extending upward along said first sidewall to said receptacle-opening, said operating member extending through said receptacle-opening and through said cover-opening when said cover is in the closed position and comprising an external part to permit manual operation of said switch when said cover is in the closed position, said operating member being movable between two operating positions in directions parallel to the plane of said planar first sidewall to open and close said contacts, said cover comprising a latch part, said operating member comprising a latching part, and in the closed position of said operating member said latching part being in the path of movement of said latch part to prevent opening of said cover.

3,348,004
LEVEL INDICATOR FOR DETERMINING HEIGHT OF SOLID MATERIAL IN A STORAGE VESSEL
John H. Carroll, Ashtabula, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 25, 1966, Ser. No. 522,886
3 Claims. (Cl. 200—61.2)



1. Apparatus for determining the level of solid material which comprises:
- (a) a support means adapted to be reciprocally driven in a vertical direction
- (b) means for reciprocally driving said support means
- (c) transducer means extending below and supported by said support means and slidably engaged therewith and being relatively vertically movable with respect thereto when downward movement of said transducer means is restrained by contact with solid material
- (d) switch means mounted on said support means and actuated by said transducer means when said transducer means is in contact with solid material at a predetermined level.

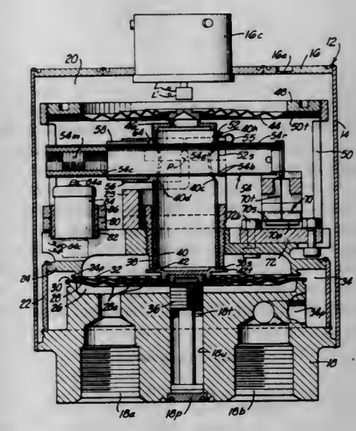
3,348,005
CALIBRATABLE PRESSURE-SENSITIVE ACTUATOR
David R. Mowry and Kenneth M. Clark, Riverside, Calif., assignors to Bourns, Inc.
Filed June 3, 1966, Ser. No. 555,086
9 Claims. (Cl. 200—83)

7. A pressure-sensitive snap-acting mechanism adapted to actuate an operable device such as an electric switch, said mechanism comprising:

first means, including means defining a substantially closed chamber and means for admitting fluid under pressure to the chamber and said chamber-defining means including resilient diaphragm means forming at least a portion of the wall of the chamber and said diaphragm means having a central portion movable in the direction of and about an axis of movement incident to change of pressure exhibited in said chamber;

second means, including integral rigid reciprocable means substantially coaxial with said axis and connected to said diaphragm to move with the central portion thereof, said second means comprising diaphragm-like spring means affixed to said reciprocable means and arranged generally transverse to said axis and arranged to exert compressive force on said rigid reciprocable means;

third means, including elongate lever means disposed along a lever axis transverse to said axis of movement and having a pivot axis and means to support the lever means for rocking movement about the pivot axis;



fourth means, including means positively connecting said rigid reciprocable means to said lever means at a location away from said pivot axis whereby to translate axial movement of said rigid reciprocable means to rocking movement of said lever means;

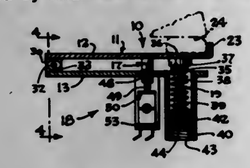
fifth means, including snap-acting spring means, connected to said lever means at a location away from said pivot axis and effective to restrain rocking motion of said lever means until a determined value of force is applied thereto by said lever means and responsive to application of such determined value of force to cause breakdown of said snap-acting spring means and permit rapid rocking movement of said lever means; and

sixth means, including switch operating means arranged to be actuated by said lever means incident to breakdown of said snap-acting spring means and rocking of said lever means.

3,348,006
COMBINED TELEPHONE AND CONTROL SWITCH FOR STERILIZER LAMP
Paul M. Brand, Fort Lauderdale, Fla., assignor to Dryster Corporation, Boca Raton, Fla., a corporation of Florida
Continuation of application Ser. No. 420,497, Dec. 23, 1964. This application Aug. 3, 1966, Ser. No. 570,086
1 Claim. (Cl. 200—85)

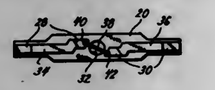
In combination with a dial telephone and a weight differentiating switch mechanism, said telephone having a removable hand set and having a dialing mechanism, said weight differentiating switch mechanism adapted to distinguish between normal dialing pressure and removal and

replacement of said hand set on said telephone, said switch mechanism comprising: a base means, supporting means pivotally mounted on said base means for supporting only a portion of the weight of said telephone, said supporting means engageable with said telephone set at the rear portion thereof rearwardly of said dialing mechanism, pivot means for pivotally mounting said supporting means on said base means, said pivot means being located beneath the dialing mechanism of said telephone set, coil spring biasing means for biasing said supporting portion upwardly and engaging said supporting means rearwardly of said dialing mechanism of said telephone set, snap switch means carried by said base means and disposed adjacent



said spring biasing means, and actuating means comprising a plunger of adjustable length on said supporting means contacting and actuating said switch means upon pivotal movement of said supporting means for adjusting the length of said actuating means to operate said switch means and means for adjusting the force of said coil spring biasing means to assure actuation of said switch means when said hand set is replaced and being unresponsive to said switch means when said telephone is being dialed, and guide means fitted into the ends of said coil spring means with a slight clearance therefor to retain a centered position while permitting the coils of said spring means to expand and contract.

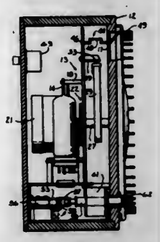
3,348,007
PROTECTORS FOR ELECTRIC CIRCUITS
Angelo Urani, St. Louis, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Nov. 7, 1966, Ser. No. 592,423
12 Claims. (Cl. 200—131)



8. An electric fuse which comprises:
an insulating support,
a conductor on said support,
a second conductor on said support,
said conductors being spaced apart but having confronting faces,
a fusible element secured to said confronting faces of said conductors, and
layers of arc-resistant material overlying portions of said conductors to help extinguish any arc that may form as said fusible element fuses, said layers of arc-resistant material being spaced outwardly of said confronting faces and being spaced outwardly of the fusible portion of said fusible element.

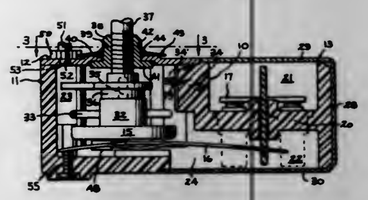
3,348,008
TIMER CLOCK WITH IMPROVED RESET MECHANISM
Clifford E. Miller, 5307 E. 14th St., Oakland, Calif. 94601
Filed Oct. 23, 1965, Ser. No. 503,898
7 Claims. (Cl. 200—136.3)

1. A clock having a carrier rotated by a clock mechanism, normally open switch contacts carried by said carrier, a cam arrangement associated with said contacts for actuating said contacts into electrical conducting engagement by engagement of the cam with a plurality of actuators in the path of travel of the cam arrangement during rotation of said carrier, said actuators arranged in a circle and normally out of the path of travel of said cam arrangement, and means on each actuator for selectively moving it into the path of travel of said cam arrangement to engage same, normally open main con-



tact means for controlling energization of an electrical circuit, means coupling said switch contacts to said main contact means for closing the latter in response to closure of the former, and means for resetting said main contact means to open position irrespective of the position of said switch contacts, whereby said electrical circuit may be opened without movement of said actuators out of the path of travel of said cam arrangement.

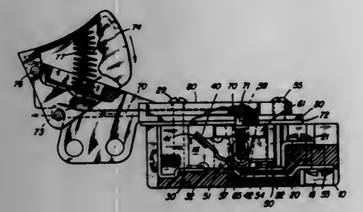
3,348,009
CALIBRATION MEANS FOR TEMPERATURE RESPONSIVE DEVICE
Paul R. Staples, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 27, 1965, Ser. No. 490,239
4 Claims. (Cl. 200—140)



1. A thermostatic control device comprising a housing enclosing a temperature responsive expansible member, a snap-acting spring mechanism, and an electrical switching means, the expansible member bearing upon the spring mechanism for changing the loading thereon as a function of temperature, the spring mechanism being connected to the switching means and serving as a switch actuator for making and breaking an electrical circuit in which the control device is adapted to be installed, the expansible member being carried on an adjustable shaft which extends outwardly of the housing and serves as a manually settable means for varying the average temperature control point of the device, adjustable means for mounting the said shaft in and through one wall of the housing, said adjustable means including a shouldered bushing located within an opening in said one wall, the shaft being threaded through the bushing, and a deformable annular clip member fixed to the outer end of the bushing for holding the bushing in the wall opening and preventing the bushing from turning, the annular clip member having an outer periphery with spaced teeth, and an indexing means for engaging and turning the clip member so as to turn the bushing while the shaft is adapted to

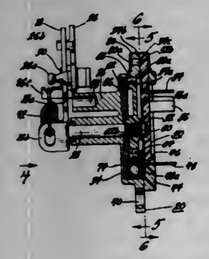
be held from turning so as to move the shaft throught the supporting wall of the housing, the indexing means being a pinion that has a pilot pin seated in a wall of the housing, the pinion being adapted to mesh with the said teeth for turning the clip and bushing as a unit.

3,348,010
TRIGGER OPERATED TOOL HANDLE SWITCH
David W. Johnson, Newington, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Oct. 24, 1965, Ser. No. 509,256
15 Claims. (Cl. 200—157)



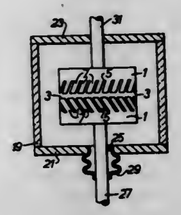
1. In an electric switch, an insulating casing, fixed contact means in said casing, movable contact means engageable and disengageable with said fixed contact means, a slidable operating members engaging with said movable contact means, a manually operable actuating member movable to and fro, and U-shaped spring means having arms engaged with said slidable operating member and engageable selectively by said actuating member as the latter is moved to and fro, said spring means being stressed by manual movement of said actuating member which causes engagement of one spring arm or another, said spring means upon becoming sufficiently stressed causing said movable contact means to engage or disengage said fixed contact means.

3,348,011
SELF-ADJUSTING ELECTRIC SWITCH
Donald A. Long, Willard C. Shaw, and Marvin T. Carlson, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,662
15 Claims. (Cl. 200—166)



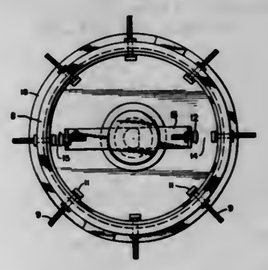
1. A self-adjusting control switch comprising, an insulator member carrying at least one fixed contact, a shiftable member carrying an electrical contact which is engageable with said fixed contact, means connecting said shiftable member and said insulator member whereby said shiftable member and said insulator member move together when said shiftable member is moved a predetermined amount, and means for maintaining said insulator member in a fixed position once it has been shifted to this position.

3,348,012
CONTACT STRUCTURE FOR AN ELECTRIC VACUUM SWITCH
Arthur George Knapton, Sale, and Michael Peter Reece, London, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Feb. 14, 1966, Ser. No. 527,124
Claims priority, application Great Britain, Feb. 16, 1965, 6,674/65
13 Claims. (Cl. 200—166)



1. A contact member suitable for use in a vacuum switch comprising:
(a) a conductive member;
(b) an annular ridge on the conductive member providing an annular contact surface;
(c) a plurality of substantially radial slots extending into the ridge from the annular contact surface to divide the annular contact surface into discrete contact areas, the slots being inclined to the longitudinal axis of the ridge; and
(d) at least that part of the conductive member forming the annular ridge having a resilient skeleton permitting relative displacement of the contact areas to accommodate surface irregularities in a cooperating contact surface against which the annular contact surface is pressed.

3,348,013
SPARK-CHECK
Paul H. Waggoner, P.O. Box 113, Brown City, Mich. 48416
Filed May 19, 1966, Ser. No. 552,382
4 Claims. (Cl. 200—168)

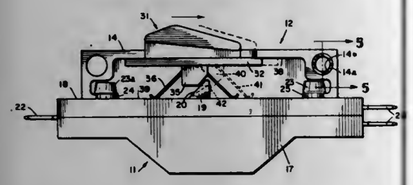


1. A distributor cover and rotor for an ignition distributor comprising in combination a rotor mounted on a distributor shaft and projecting each way from its center, a transparent cover having spaced high tension terminals extending through the walls with contact studs on the inner ends of the terminals, said cover enclosing the rotor and forming an adjustable working gap and a safety gap with respective opposite ends of the rotor; the working gap being spaced from the studs of the cover by a shorter distance than said safety gap.

3,348,014
SWITCH ADAPTER FOR PROVIDING SELECTIVE OPERATING CONDITIONS FOR THE SWITCH

William Ray Brown, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Oct. 6, 1966, Ser. No. 584,768
8 Claims. (Cl. 200—172)

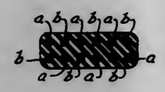


1. An adapter means for a switch providing selective operating conditions for said switch comprising: an apertured housing, an actuator bar seated in said aperture including means positioned without said housing and cam means positioned within said housing, said cam means adjacent a switch button of said switch means, spring bias means seated between said switch and said actuator bar for biasing said actuator bar away from said switch button, displacement of said actuator bar along one path causing said cam to engage with and displace said switch button, said actuator bar locked in position by the interaction between said housing and said actuator bar and said switch button when displaced along said one path providing a selective operating condition for said switch, displacement of said actuator bar along a different path causing said actuator bar to displace said spring bias means storing energy therein and said cam to engage with and displace said switch button providing another selective operating condition for said switch, release of said stored energy of said spring biasing means displacing said actuator bar to said position adjacent said switch button.

3,348,015
APPARATUS FOR MACHINING BY ELECTRO EROSION

Heinz Rhyner and Rene Vors, Geneva, Switzerland, assignors to Ateliers des Charmilles S.A., Geneva, Switzerland, a corporation of Switzerland

Continuation of application Ser. No. 236,313, Nov. 8, 1962. This application Mar. 24, 1965, Ser. No. 442,468
6 Claims. (Cl. 219—69)

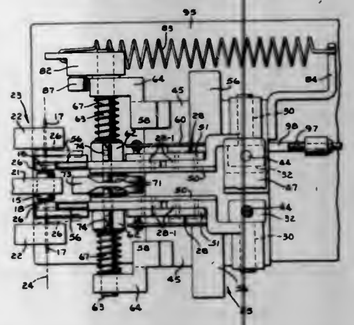


1. In an electrical discharge machining apparatus for machining a conductive workpiece by a tool electrode across a dielectric coolant filled gap, a power supply having a pair of terminals each connectible to a different terminal of said gap, a low self-inductance conductor arrangement for providing short duration machining pulses of sharp rise and fall characteristic comprising a first group of conductors connected between one of said power supply terminals and one terminal of said gap to conduct power in one direction, a second group of conductors connected between the other of said power supply terminals and the other terminal of said gap to conduct power in the opposite direction, said conductors electrically insulated one from the other and arranged in substantially parallel spaced relationship in a plurality of rows, each of said conductors in one group being axially aligned proximate with a conductor of the other group on at least one side in its own row and proximate with a conductor of the other group in each adjacent row.

3,348,016
APPARATUS FOR ATTACHING LEADS TO ELECTRICAL COMPONENTS

Thomas C. Fitzgerald, Chicago, and George P. McGraw, Jr., Downers Grove, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 29, 1964, Ser. No. 363,426
5 Claims. (Cl. 219—107)



4. An apparatus for attaching leads to electrical components which comprises:

means for supporting a component and a pair of headed leads and with the heads of the leads adjacent to and at opposite ends of the component;

a first pair of electrodes movable from an open position to a closed position about one lead;

a second pair of electrodes movable from an open position to a closed position about the other lead;

a carrier for supporting said first pair and said second pair of electrodes for pivotal movement of said electrodes of each pair to open and closed positions and for pivotal movement of said pairs of electrodes toward and away from each other axially of the leads;

means for supporting said carrier for movement from a retracted position with the electrodes spaced from the leads to a forward position with said electrodes straddling the leads and adjacent the heads thereof;

resilient means for urging said pairs of electrodes for movement toward each other to effect the movement thereof from a normal position into engagement with the heads on the leads and the movement of the heads into engagement with the component;

a member mounted on said carrier for oscillatory movement and having first cams for effecting the pivotal movement of said electrodes to and from closed and open positions and having second cams for effecting the pivotal movement of said pairs of electrodes axially of the leads to and from the normal position;

resilient means on said carrier for urging said oscillatory member in one direction from a first position to a second position to effect the movement of said electrodes to their open position and the movement of said pairs of said electrodes to their normal position;

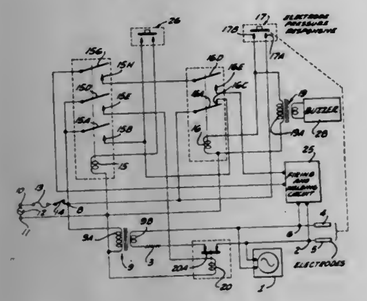
means for sequentially actuating said carrier to and from said forward and retracted positions and said oscillatory member to and from said first and second positions to effect the movement of said electrodes into straddling relation with the leads and into closed position about the leads and the movement of said pairs of electrodes toward each other to press the lead heads into engagement with the ends of the component; and

means for electrically heating said electrodes.

3,348,017
WELDING CONTROL SYSTEM

Lee M. Griswold, Pasadena, James F. Shiells, Jr., La Canada, and Thomas G. Uter, Alhambra, Calif., assignors to Digital Sensors Inc., Los Angeles, Calif., a corporation of California

Filed May 22, 1963, Ser. No. 282,355
12 Claims. (Cl. 219—109)

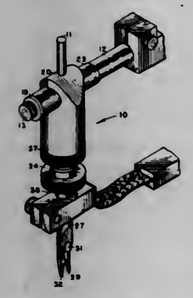


1. In a welding system of the character described, welding electrodes, first means for indicating electrical resistance between said electrodes, signalling means responsive to pressure between said electrodes for developing a signal, said signalling means incorporating a pressure responsive element, second means for applying a welding current between said electrodes and for disabling said first means, said second means incorporating said pressure responsive means and a manually operable element normally effective when operated to render said second means effective to supply welding current to said electrodes and to disable said first means, and means operated in response to actuation of said pressure responsive element for preventing operation of said second means by said manually operable element.

3,348,018
RESISTANCE WELDING ASSEMBLY

Arthur F. Wood, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed July 13, 1964, Ser. No. 382,094
12 Claims. (Cl. 219—119)

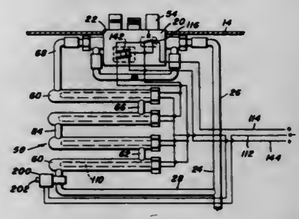


3. A resistance welding assembly for microwelding of electronic modules or the like comprising: a first electrode extending from a welding horn and terminating in a tip portion, said first electrode held in place by said welding horn and an interfitting means, said interfitting means comprising a cylindical metal piece positionable within said horn to frictionally couple said first electrode to said horn, when said piece is in a first position, and when said piece is in a second position allowing regulation of the position of said first electrode; a second electrode concentric with said first electrode and held in position in a horizontal direction by an electrode support means, said second electrode being axially slidable with respect to said first electrode and terminating in a tip portion, said second electrode electrically coupled to electrical ground; said tip portions of said first and second electrodes formed by passing a plane through the longitudinal axis of each of said electrodes such that the spacing between said tip portions of said first and second electrodes is varied by rotating said first electrode about its longitudinal axis; means insulating said first and second electrodes from one another; a spring bias means retained within said electrode support means, said spring bias means urging said tip of said second electrode to a predetermined vertical position with respect to said tip of said first electrode, said spring bias means establishing predetermined pressure relationship between said tips of said electrodes and a workpiece so that welding is accomplished without distorting said workpiece; and means comprising a bushing and a cooperating locknut positioned on the bushing for regulating said predetermined pressure relationship to a desired pressure relationship by altering said position of said locknut on said bushing.

3,348,019
PUSH BUTTON FAUCET WITH HEATER

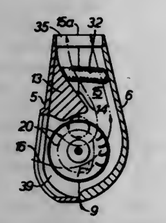
Richard P. Miller, 7222 Shannon Road, and Berton G. Miller, 2010 Eastern Ave., both of Verona, Pa. 15147

Filed Dec. 2, 1965, Ser. No. 511,169
7 Claims. (Cl. 219—309)



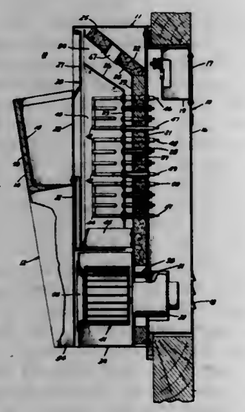
1. A combined faucet and heater construction comprising a hollow body having one end thereof provided with an adapter for connection with a cold water line and the other end provided with an adapter connected with a hot water line, said hollow body provided with means defining a water path from the hot and cold water line adapters to an outlet carried by said body member, a water heating assembly connected with the hot water line, an inlet valve located within said hollow body and associated with the cold water line, an inlet valve located within said hollow body and associated with the hot water line, push button members located within said hollow body and operatively connected to each of said inlet valves, said water heating assembly including a plurality of serially connected tubes for flow of water therethrough, a heating element in each tube, said heating elements being incorporated into an electric circuit having a first switch therein for controlling all of said heating elements, said push button member operating the hot water inlet valve provided with means for mechanically closing the switch when the valve is opened thus heating water flowing through the hot water inlet valve, said push button members also including a warm water push button member including means for actuating the hot water inlet valve and a switch associated with at least one but less than the total number of heating elements for heating water to a warm temperature less than all of the heaters combined.

3,348,020
HAND-HELD ELECTRIC HAIR DRYER
Brian Cooper, Ascot, England, assignor to Firth Cleveland Limited, London, England
Filed Jan. 25, 1965, Ser. No. 427,577
Claims priority, application Great Britain, Jan. 24, 1964, 3,262/64
8 Claims. (Cl. 219—370)



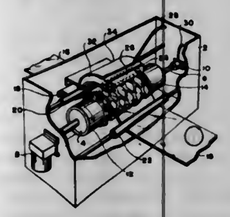
1. A hand-held hair dryer for use with alternating current line voltage of nominally at least 110 volts, comprising a casing of a size to be held in the palm of the hand of the user, said casing having an inlet and an outlet, an electric heater element mounted in said casing and connected to be energized by line voltage, a fan to cause a flow of air between inlet and outlet over said heater element, permanent magnet, direct current motor of minimum nominal speed in the order of 6,000 r.p.m. and directly driving said fan and operating at a small fraction only of the line voltage and in the order of 6–24 volts, and a rectifier connected with said motor and across a portion of said heating element, said heating element acting as a voltage dropper for the motor.

3,348,021
ELECTRIC HEATER ASSEMBLY FOR A SAUNA ROOM
Thorbjorn Skogland, Shelbyville, Ind., and David M. Checkley, Seattle, Wash., assignors to General Electric Company, a corporation of New York
Filed Feb. 15, 1965, Ser. No. 432,708
5 Claims. (Cl. 219—370)



1. A heater assembly comprising: a case including a rear wall, and a front wall with an air outlet and an air inlet, a back pan supported in spaced relation to said rear wall, said back pan having a skewed portion extending at the top toward said front wall, a front pan supported on said rear wall and in spaced apart relation with said back pan to define a low temperature heating chamber therebetween, said front pan having a skewed portion at the top extending toward the front wall and defining a high temperature heating chamber between said front wall and said front pan, a plurality of electrical resistance heating elements disposed in said high temperature heating chamber, means for energizing said electric resistance heating elements from an alternating source, means for circulating air through said high and low temperature chambers, a stone tray supported at the front wall of said case and adjacent to at least a portion of said outlet opening to allow heated air discharging from at least a portion of the air outlet to pass into the stone tray, and means disposed in said low temperature heating chamber and responsive to the temperature in said low temperature heating chamber for preventing the temperature of the air in said low temperature heating chamber from exceeding predetermined limits by deenergizing said heating elements when said predetermined limits are reached.

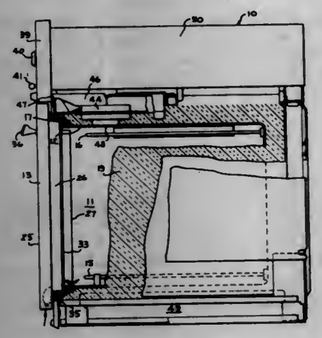
3,348,022
PERFORATING FILM BY ELECTRICAL DISCHARGE
Henry G. Schirmer, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed Aug. 26, 1964, Ser. No. 392,168
7 Claims. (Cl. 219—384)



1. Apparatus for uniformly perforating a moving film of thermoplastic material comprising, in combination, a charging blade electrode transverse said film, a discharging electrode spaced apart from said blade electrode having a continuous surface, a source of high voltage alternating current in communication with said blade electrode so as to apply a potential across the space between said electrodes and produce a corona and distinct areas of concentrated electrical energy therebetween, means for continuously passing a dielectric film between said electrodes, an electrically insulative, discontinuous, dielectric spacing means positioned between said film and a protective continuous dielectric material disposed on the continuous surface of said discharging electrode and said spacing means having means for periodically disrupting said corona longitudinally by alternately exposing and covering said discharge electrode surface.

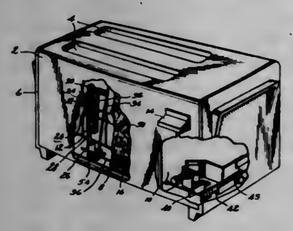
3,348,023
AIR INLET MEANS FOR SELF-CLEANING OVEN
Walter E. Lewis and Roy D. Chisholm, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed May 6, 1965, Ser. No. 453,638
6 Claims. (Cl. 219—391)

1. A self-cleaning cooking apparatus comprising walls forming an oven cavity, one wall of the cavity including an opening that is fitted with a door for gaining access thereto, heating means supplied for the cavity, and cleaning means operable for the automatic cleaning of the inner walls of the cavity by causing the heating means to raise the temperature of the cavity to a maximum temperature in the range of from about 750° F. to about 950° F. and thereby degrade food soil adhering to the cavity walls, and gasket means cooperating with the access door to substantially prevent any air leakage between the door and the door opening, oven venting means adjacent the top portion of the oven, the door including an



air inlet means through the lower portion thereof and in communication with the oven cavity, said air inlet means including a flame-arrester means that serves in the event of an accelerated combustion due to an overloaded amount of food soil within the oven cavity.

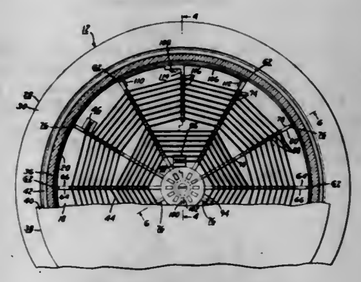
3,348,024
TOAST TEMPERATURE DETECTOR
Paul V. Snyder, Fullerton, Pa., assignor to General Electric Company, a corporation of New York
Filed Oct. 8, 1964, Ser. No. 402,467
14 Claims. (Cl. 219—413)



1. In an electric toaster having a supporting structure, means defining a space for receiving a slice of bread to be toasted, and heating means positioned adjacent said space, a bread temperature detecting device comprising: an elongated ribbon located between said heating means and said space; an elongated support positioned in closely spaced substantially parallel relation to said ribbon and having one end attached to said support structure; means attaching the ends of said ribbon to the support including means for maintaining said ribbon under tension; and means attached to said tensioning means for multiplying the movement of said ribbon and utilizing the movement to initiate termination of a toasting cycle.

3,348,025
SPIDER SUPPORTED ELECTRIC HEATER
Arthur T. Bassett, Jr., and Donald C. Siegle, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 24, 1965, Ser. No. 466,659
4 Claims. (Cl. 219—467)

1. In an infrared electrical surface heating unit, the combination of, an outer envelope including a base member and an upper utensil supporting plate for transmitting infrared energy, said base member and upper support plate being located in spaced relationship with one another, an infrared emissive resistance element located in the space between said base member and said support plate, support means for supporting said infrared emissive resistance element throughout the planar extent of said upper support plate out of direct heat transfer contact with both said base member and said upper support plate, said support means including a first plurality of separate support arms having depending portions on the opposite ends thereof supportingly received by said base member to locate the remainder of each of said arms out of direct heat transfer contact with said base member and a plurality of spaced apart grooves in the upper edge thereof throughout the length of each of said arms between the opposite ends thereof, said support means including a second plurality of separate support arms, each of said second plurality of arms being located between a pair of said

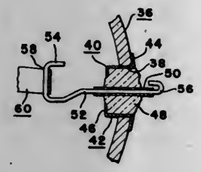


first plurality of arms and including depending portions on the opposite ends thereof supported by said base member for locating the remainder of each of said second plurality of arms out of direct heat transfer contact with said base member and said upper utensil supporting plate, each of said second plurality of arms having a plurality of spaced apart grooves formed throughout only a portion of the length between the ends of each of said second plurality of arms, said arms having an undercut portion therein located between the grooved portion thereof and the opposite end thereof, and means for connecting each of said arms together as a unit including a disc located centrally of said base member and coacting means on said disc and the inner end of each of said first and second plurality of arms for fixedly securing each of said arms to said disc.

3,348,026
RADIANT HEATER UNIT HAVING IMPROVED FILAMENT SUPPORT
Arthur T. Bassett, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 22, 1965, Ser. No. 489,157
5 Claims. (Cl. 219—467)

1. In an infrared surface heating unit for association with an electrical range or the like, the combination of, an upper utensil supporting plate of infrared transmissive material, a lower plate having an infrared reflective surface, means on said upper and lower plates for maintaining a predetermined space therebetween, an annular ring located within said space, a continuously formed electrically energizable high temperature resistance element looped between the opposite sides of said ring throughout the planar extent of said upper support plate, and means for suspending said looped electrically energizable element on said ring to maintain said filament in a plane located in spaced parallelism with said upper utensil supporting plate and out of direct heat transfer contact with

both said plates, said looped resistance element including return bend portions, said means for connecting said looped filament to said ring including a plug inserted



through said ring and a heat resistant member on said plug having a flexible bent end located inside said ring about which one of said return bend portions pass.

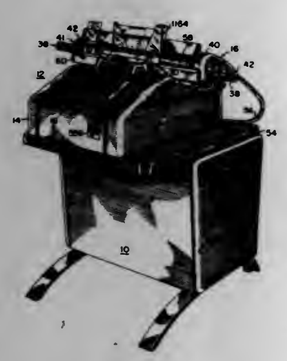
3,348,027

AUTOMATIC ACCOUNTING MACHINE

Richard A. Wallace, Norristown, and William W. Deighton, Glen Mills, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Original application July 17, 1956, Ser. No. 598,454. Divided and this application Mar. 8, 1963, Ser. No. 263,788

20 Claims. (Cl. 235—61.9)



8. In combination with an accounting machine having cycles of operation controlled by a record member having both a portion to be printed upon and a magnetizable portion thereon, a carriage on said machine, a platen rotatable in said carriage, means engageable with said platen for retaining said record member thereagainst, means for printing a line on such a retained record member, a record member receiving chute disposed in said carriage, record member feed rollers disposed in said chute, drive means for said feed rollers, gate means disposed in said chute and adapted to contact the leading edge of said record member to align and square the record member with respect to said chute, accounting machine cycle selection means, cycle initiating means associated with said chute and adapted to be contacted by the leading edge of said record member upon insertion of said member within said chute thus to initiate said cycle, first switch means operated by said record member to de-energize said drive means thereby to cause said record member to be halted with the first printing line on said record member beyond its printing position and subsequently to reverse the direction of movement of said record member, second switch means to halt said record member with the first printing line in printing position, and means for applying suitable electrical potential to said apparatus for producing said results.

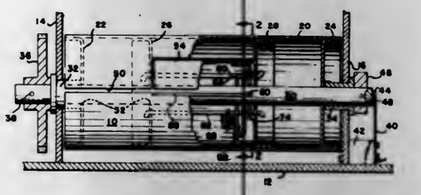
3,348,028

CARD-RETAINING MATRIX DRUM FOR STATISTICAL MACHINES

Ward Leathers, Massapequa Park, N.Y., assignor to Education Methods Council, Inc., Sea Cliff, N.Y.

Filed May 17, 1963, Ser. No. 281,208

7 Claims. (Cl. 235—61.11)



1. A rotatable card-retaining matrix drum assembly for use in connection with a card-controlled statistical machine or the like, said assembly comprising a tubular cylinder about which the card is adapted to be wrapped in circumferential fashion, the wall of said cylinder being formed with a first opening therein which radially underlies a portion of the card when the latter is wrapped on the cylinder, and with a second opening which is exposed when the card is wrapped on the cylinder, a manually engageable, diametrically slidable pusher member in radial register with said second opening and accessible through said latter opening for manipulation, a diametrically slidable ejector member in radial register with said first opening, said ejector member being movable in a generally radial direction between a retracted position wherein it is disposed wholly within the confines of the cylinder and an advanced position wherein a portion thereof is projected outwardly through said first opening for forcing the adjacent portion of the wrapped card radially outwardly and away from the wall of the cylinder, said pusher member being movable in a generally radial direction between an outer retracted position wherein it lies within the confines of the cylinder and in close proximity to the second opening and an advanced inner position wherein it is forced radially inwardly of the cylinder an appreciable distance, interengaging means extending between the pusher and ejector members constraining the same to move in unison and in opposite radial directions, and spring means yieldingly maintaining said members in their respective retracted positions.

3,348,029

SELECTABLE VALUE COUNTER

Zeljko Krokar, Karlsruhe, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, Germany, a corporation of Germany

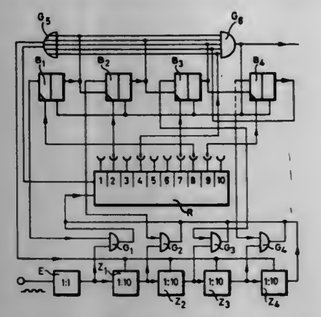
Filed June 26, 1964, Ser. No. 378,337

Claims priority, application Germany, July 1, 1963, S 85,942

6 Claims. (Cl. 235—92)

1. A counting device for delivering at selectable intermediate values an output impulse, and which may be settable to arbitrary starting values, comprising a magnetic core ring counter having a plurality of counting stages, each of which has an output, a plurality of bistable flip flop stages, means for selectively connecting outputs of said counting stages with flip flop stages, a plurality of successively arranged impulse reducers, means operatively connected to said flip flop stages and said impulse reducers

for successively connecting the respective impulse reducers to the counter in predetermined ratios following shifting over of the corresponding flip flop stage, means for feed-



ing the impulses to be counted to said impulse reducers, and means operatively connected to the outputs of said flip-flop stages for receiving the impulses therefrom operative to supply an output impulse.

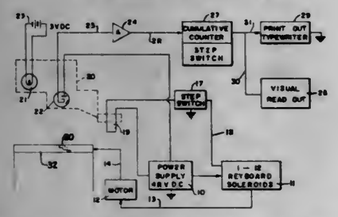
3,348,030

APPARATUS FOR PHOTO-ELECTRICALLY SCANNING AND COUNTING PHYSICAL INVENTORY

Stephen R. Krause, Baltimore, Md., assignor to K & M Electronics Company, Baltimore, Md., a corporation of Maryland

Filed Dec. 22, 1964, Ser. No. 420,283

11 Claims. (Cl. 235—92)



1. An apparatus for photo-electrically scanning and counting inventory to determine predetermined characteristics and number of units stored comprising

(a) inventory storage means divided into sub-sections for storing inventory of differing characteristics in each sub-section;

(b) photo-electric scanning means positioned above said inventory storage means for traversing the inventory storage area;

(c) control means for preselecting a specific sub-section area for scanning and counting units of inventory stored within the sub-section;

(d) and visual read-out means in circuitry with said control means and photo-electric scanning means to give a visual read-out of the number of inventory units stored within the interrogated sub-section.

3,348,031

PROBABILITY ANALYZER

Roger B. Russell, Jr., Williamsville, and Martin R. Bates, Buffalo, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 5, 1963, Ser. No. 328,440

7 Claims. (Cl. 235—150.5)

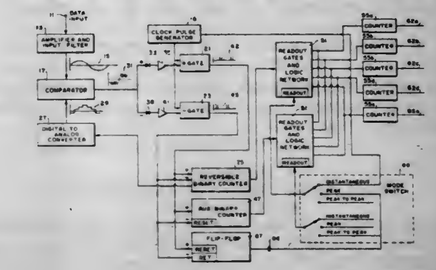
1. A probability analyzer comprising:

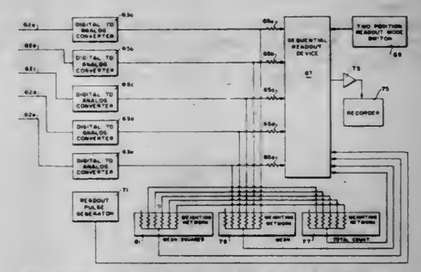
analyzer input-terminal means for receiving data of a cyclic nature in the form of electrical voltages;

measuring means, electrically connected to said input-terminal means, for determining the amplitude of said cyclic data at predetermined intervals of time;

a plurality of classification terminals arranged so that each terminal corresponds to a range of amplitudes;

selection means, electrically connected to said measuring means and to said plurality of classification terminals, for pulsing the classification terminal that corresponds to the range of amplitudes within which





the amplitude of said cyclic data falls as determined by said measuring means during a plurality of said predetermined intervals of time; and

computer means, electrically connected to said plurality of classification terminals, for providing a voltage output in which the amplitude of the voltage varies in proportion to the sum of said classification-voltage output pulses provided at each of said plurality of classification terminals by said selection means.

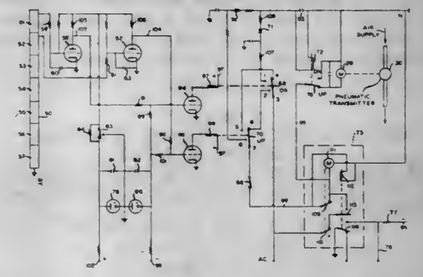
3,348,032

DIGITAL COMPUTER SET POINT CONTROL SYSTEM

Edwin K. Clardy and Richard W. Michael, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 11, 1963, Ser. No. 294,275

6 Claims. (Cl. 235—151.1)



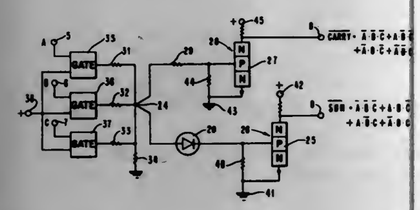
1. Apparatus comprising, in combination, a motor means, means for producing a first discrete signal when it is desired to cause said motor means to move in a first

direction and for producing a second discrete signal when it is desired to cause said motor means to move in the direction opposite said first direction, reversing means associated with said motor means to connect said motor means to move in said first direction upon the occurrence of said first signal and to connect said motor means to move in said opposite direction upon the occurrence of said second signal, a source of power, timing means for connecting said motor means to said source of power for a predetermined period of time upon the occurrence of one of said first and second signals to thus limit the degree of movement of said motor means for each occurrence of one of said first signal and said second signal, and means for applying said first and second signals from said means for producing to said reversing means and said timing means.

3,348,033
SWITCHING CIRCUITS EMPLOYING ESAKI DIODES

Algirdas J. Gruodis, East Haven, Conn., and Lawrence K. Lange, Wappingers Falls, and William H. McAnney, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Original application Apr. 17, 1961, Ser. No. 103,374, now Patent No. 3,230,387, dated Jan. 18, 1966. Divided and this application Aug. 10, 1965, Ser. No. 478,585
3 Claims. (Cl. 235—175)



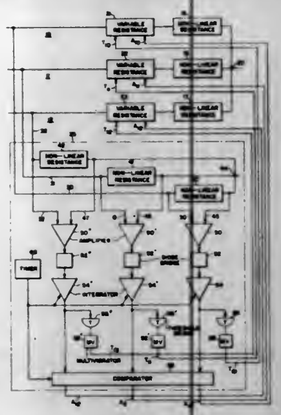
1. A switching circuit comprising: a transistor amplifier including a base terminal; a signal source capable of supplying signals of a first, a second, and a third increasing degree of magnitude; a negative resistance diode having a high conductivity state for a low applied voltage and a low conductivity state for a high applied voltage connected between said base terminal and said signal source, whereby signals of said first magnitude switch said negative resistance diode to said high conductivity state and are sufficient to cause said transistor to conduct, signals of said second magnitude switch said negative resistance diode to said low conductivity state and are insufficient to cause said transistor to conduct, and signals of said third magnitude switch said negative resistance diode to said low conductivity state and are sufficient to force enough current through said diode in said low conductivity state to cause said transistor to conduct.

3,348,034
DECISION CIRCUIT FOR USE IN SIGNAL PROCESSING SYSTEMS

Paul A. Jensen, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 13, 1964, Ser. No. 351,694
9 Claims. (Cl. 235—193)

1. A decision circuit comprising:
a plurality of input lines for providing an output signal in response to a plurality of input signals;
means responsive to said input signals for deriving a median signal;
means for comparing said input signals with said median signal over a predetermined period of time

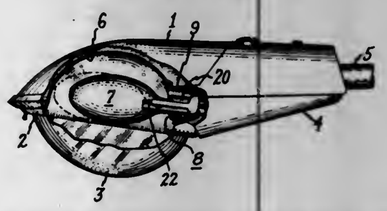


for governing which of said input signals appears as said output signal over a subsequent period of time.

3,348,035
ADJUSTABLE LUMINAIRE LAMP SUPPORT

John Stuart Franklin, Hendersonville, and Samuel Leon Baldwin, Flat Rock, N.C., assignors to General Electric Company, a corporation of New York

Filed Feb. 25, 1966, Ser. No. 530,213
7 Claims. (Cl. 240—25)



1. A luminaire comprising, in combination, a reflector, and adjustable lamp support means for supporting a lamp adjacent said reflector and for moving the lamp along a first axis and a second axis transverse to each other for selectively positioning the lamp relative to said reflector, said second axis intersecting said reflector, said lamp support means comprising first supporting means fixed relative to said reflector, lampholder means, second supporting means fixed to said lampholder means, said first and second supporting means being slidable relative to one another along said first axis and being attachable to one another in different positions along a direction substantially parallel to said second axis, and securing means for releasably attaching said first and second supporting means in selected positions relative to each other.

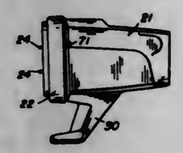
3,348,036
EXAMINATION LIGHT

Marcus Bodian, Los Angeles, and Frederick J. Wellhouse, Menlo Park, Calif., assignors to Sunbeam Lighting Co. Inc., a corporation of California

Filed Oct. 15, 1965, Ser. No. 496,631
6 Claims. (Cl. 240—41.35)

1. An examination light comprising
a molded synthetic resin boxlike housing having a back wall, two side walls, top wall, bottom wall, and a front opening defined by said top wall, bottom wall

and two side walls, said housing having vents for air circulation therethrough;
a removable front closure having an optical opening for a light beam generated by a lamp and reflector means enclosed within said housing;
a lamp-enclosing metallic frame mounted on said side walls within said housing, said frame having air-coolng fins disposed on its exterior surface, said fins extending into the space between said frame and said housing;

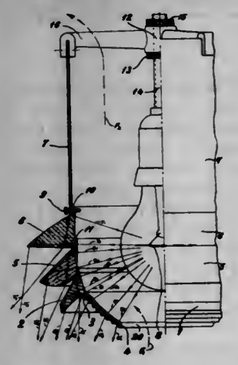


a high-intensity compact filament gas-filled lamp operatively mounted concentrically within said frame adjacent its rear portion;
a light reflector means for the light from said lamp mounted within said frame, said means generally surrounding said lamp, and adapted to direct the light therefrom into a conical beam having a sharp cut-off at the margins; and
means for attaching said housing to a supporting arm.

3,348,037
CATOPTRICAL-DIOPTRICAL DEVICE FOR ELECTRIC LIGHTING

Ignacio Goytisolo Taltavull, Calle Madrazo 83, Barcelona, Spain

Filed Aug. 3, 1965, Ser. No. 476,867
Claims priority, application Spain, Nov. 30, 1964, 306,890
4 Claims. (Cl. 240—41.38)

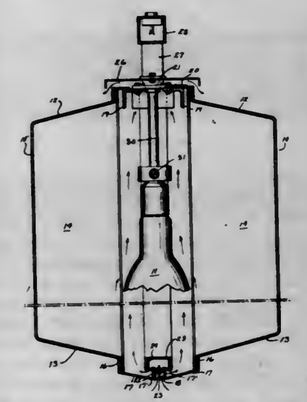


1. A catoptrical-dioptrical device having a lamp bulb, a support for said bulb, and an enclosure for said bulb of transparent material comprising a system of stepped prisms arranged in parallel planes to that of the equatorial plane of said bulb consisting of a plurality of intercoupled moulded prisms located in contiguous zones to said equatorial plane, the inner sectional surfaces of said prisms on which the luminous rays from said bulb fall having a straight generatrix and being essentially parallel to the vertical axis of said bulb, the outer upper surfaces of said prisms from which the luminous rays are totally reflected being flat and inclined to the vertical, and the outer lower surfaces of said prisms being of convex formation, so that the rays reflected from said upper surfaces emerge from said lower surfaces to cross one another and deviate from the longitudinal axis of said bulb without incidence on said prisms located on a lower plane, the lowest part of said enclosure forming an annular body of substantially concave form comprising two superimposed zones, the upper zone of said zones being a single prism whose inner sectional surface constitutes a surface recording a straight generatrix inclined to the vertical and whose outer upper surface is straight and inclined to the vertical, and the outer lower surface of said single prism follows a partially straight and partially concave generatrix, from which the rays emerge to the exterior in divergent directions, the lower zone of said zones having a slightly sinuous inner surface and its outer surface comprising a group of small parallel and successive prisms through which the luminous rays are refracted to form a divergent beam.

3,348,038
ILLUMINATABLE DISPLAY SIGN DRUMS WITH VENTILATING MEANS THEREFOR

Gilbert C. Jacobs, Milwaukee, Wis., assignor to Everbrite Electric Signs, Inc., South Milwaukee, Wis., a corporation of Wisconsin

Filed July 2, 1965, Ser. No. 469,198
5 Claims. (Cl. 240—47)



1. In an illuminatable display sign construction, a pair of hingedly associated, companion pan-like members arranged with their open faces in adjacency to form a hollow drum, margins of the walls adjacent the open face of one pan-like member being separated from the corresponding margins of said walls of the companion pan-like member to provide an elongated peripheral vent, an elongated baffling belt mounted within the drum co-extensive with said vent and spaced inwardly thereof, means directly connecting the belt to the bands, and high heat generating illuminating means housed within the drum.

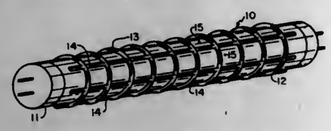
3,348,039
PLASTIC LIGHT DIFFUSER AND COLLIMATOR

Albert Schrage, East Orange, and Karl F. Koch, Berkeley Heights, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 24, 1965, Ser. No. 482,048
1 Claim. (Cl. 240—51.11)

In combination, a cylindrical lighting tube and a device for diffusing and collimating beams of light emanating from said tube; said device comprising a plurality of resilient thermoplastic ring members encompassing the

periphery of said tube in parallel spaced relationship, and a plurality of thermoplastic strand members integrally molded with and transversely interconnecting said ring members, said strand members extending substantially



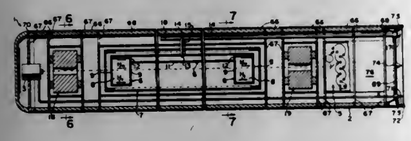
parallel to the longitudinal axis of said tube, said ring and strand members forming a net-like sleeve contacting and completely surrounding said tube and having a multiplicity of generally rectangular openings therein which protects said tube during storage and in transit.

3,348,040

ATOMIC BEAM TUBE APPARATUS WITH TRANSVERSE HEADERS AND SPACERS TO POSITION THE COMPONENTS IN THE HOUSING

Robert F. C. Vessot, Marblehead, Mass., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed July 27, 1964, Ser. No. 385,202
4 Claims. (Cl. 250—41.3)



1. An atomic beam tube apparatus including means forming a source of beam particles for forming and projecting a beam of atomic particles over a predetermined elongated beam path, means forming a detector disposed along the beam path for detecting resonance of the beam particles, means forming a pair of state selector magnets disposed along the beam path for deflecting the beam particles and selecting their energy states, means for applying microwave radiation to the beam between said pair of state selector magnets for producing resonance of the beam particles, means forming an elongated tubular support structure surrounding all of said aforementioned means for supporting same, and means forming a plurality of transverse headers, all of said supported means being operatively supported from and deriving their axial alignment from said tubular support means via the intermediary of said header means, a plurality of said header means being axially movable relative to said tubular support means to accommodate differential axial expansion therebetween and to facilitate assembly of the tube apparatus, and means forming a plurality of spacer members disposed between adjacent transverse header means for determining the proper axial spacing of said supported means within the tube apparatus.

3,348,041

APPARATUS FOR THE CORONA DISCHARGE TREATMENT OF PLASTIC SURFACES HAVING AN ADJUSTABLE LENGTH ELECTRODE ASSEMBLY

Louis A. Rosenthal, Highland Park, N.J., assignor to Union Carbide Corporation, a corporation of New York

Filed Dec. 30, 1964, Ser. No. 422,253
10 Claims. (Cl. 250—49.5)

1. An adjustable length electrode assembly for corona discharge treatment of plastic surfaces comprising a longitudinally flexible conductive member having a plurality of edges of small radius of curvature projecting from the longitudinal axis thereof, to define a substantially uniform periphery on at least one longitudinal side of said member, said member adapted to be positioned in close proximity with the plastic surface to be treated for creating an ionizing gap between said surface and said periphery, a current conducting material on the reverse side of said plastic surface in proximity therewith and electrically isolated from said member, means for adjusting the longitudinal extension of said member and thus the separation of said edges and means for delivering a high potential to said member for ionizing the atmosphere in said gap for corona discharge treatment of said surface.

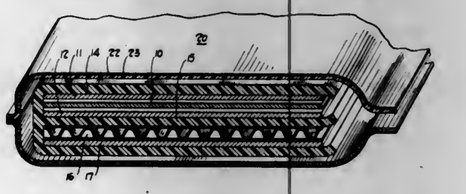


3,348,042

FLEXIBLE, LIGHT-IMPERVIOUS, FLUID-TIGHT X-RAY FILM PACK

Frank H. Umberg, Montreal, Quebec, and Cecil K. Bridgeman, Islington, Ontario, Canada, assignors to Picker X-Ray Mfg. Limited, Rexdale, Canada

Filed Feb. 10, 1965, Ser. No. 433,251
18 Claims. (Cl. 250—68)



1. An X-ray film pack comprising a sheet of X-ray film, an intensifier screen on each side of the sheet of film, an X-ray transparent wrapping covering the outer surface of each of the intensifier screens, a sheet of cardboard adjacent the wrapping, a lead coating adhered to one surface of the sheet of cardboard, said sheet of cardboard being constructed and arranged in a corrugated configuration to act as a vacuum reservoir, the film, screen and cardboard sheet being similar in length, width and shape, and an outer protective covering surrounding the film, screens, wrapping and cardboard sheet, said covering being X-ray transparent, flexible and essentially empty of gas and constructed of two plys adhered together, an outer ply being highly fluid-impervious and tear-resistant and an inner ply being light-opaque and a thermoplastic bond material.

3,348,043

FLUORESCENT DISPLAY SIGN COMPOSED OF ROTATABLE TRIANGULAR PRISMS

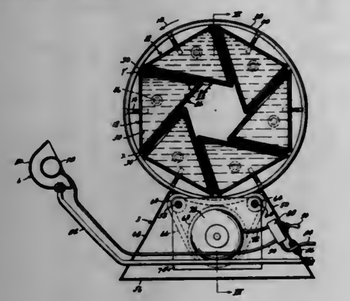
Orion M. Mehus, 3517 Main St., Kansas City, Mo. 64111

Filed Sept. 23, 1964, Ser. No. 398,728
14 Claims. (Cl. 250—77)

1. A display sign comprising:
(a) a triangular prism,
(b) means for rotating said prism about an axis parallel to its geometric axis, and
(c) a pair of sign panels having indicia imprinted thereon overlying and facing two of the three faces of said prism, the third face of said prism being unobstructed

and constituting a viewing face through which said sign panels may be observed.

6. A display sign as recited in claim 1 wherein said sign panels are imprinted with a fluorescent material and



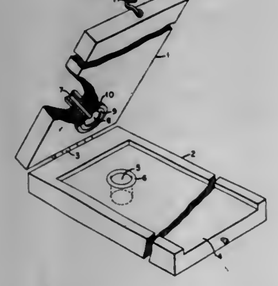
said prism is formed of material transparent to ultraviolet radiant energy, and with the addition of:
(a) a source of ultraviolet radiant energy positioned to direct said energy toward said prism.

3,348,044

AIR SAMPLING METHOD AND APPARATUS

Merwyn Sanders, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 29, 1965, Ser. No. 429,186
3 Claims. (Cl. 250—83)



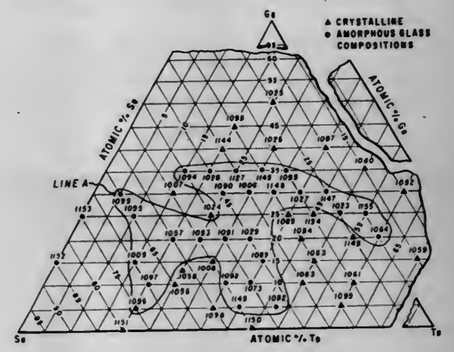
1. A method for correlating the collection of samples collected at different times and places on separate filter papers with the display of data derived from the automatic analysis of such samples comprising the steps of:
(a) mounting each of said filter paper within an aperture in a corresponding data processing card;
(b) precoding said cards with information identifying the time and place of sampling;
(c) mounting said cards within holders to maintain said filter paper in a taut condition;
(d) drawing gaseous samples through said filter papers to collect a separate particulate matter sample in each card aperture;
(e) moving said cards from their holders to an automatic analyzer for analysis;
(f) keypunching said cards to indicate the results of said analysis;
(g) duplicating said cards in uncontaminated form; and
(h) tabulating said uncontaminated cards in a computer to provide therefrom a display of correlated sample locations, times, and analysis of particulate matter.

3,348,045

Ge-Se-Te GLASS AND INFRARED DETECTION SYSTEM

Maurice J. Brau, Richardson, and Rowland E. Johnson and Robert J. Patterson, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 22, 1965, Ser. No. 450,125
2 Claims. (Cl. 250—83)



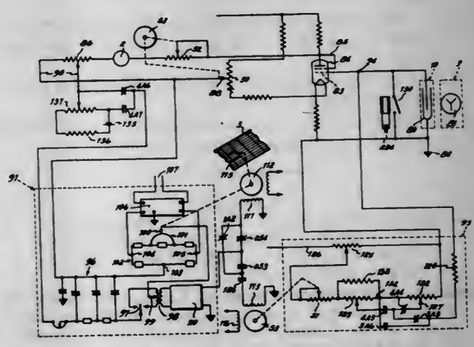
2. An infrared detection system comprising a detector sensitive to infrared energy and a transmitting element in optical contact with said detector, said transmitting element comprising a ternary glass composition consisting essentially of germanium, selenium and tellurium and lying within Line A in FIGURE 1.

3,348,046

SELF-CONTROLLED SEQUENCE FOR AUTOMATIC STANDARDIZING AND CALIBRATION OF NUCLEAR GAUGES

Walter B. Lloyd, Cincinnati, Ohio, assignor to The Ohmart Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 1, 1963, Ser. No. 313,113
6 Claims. (Cl. 250—83.3)



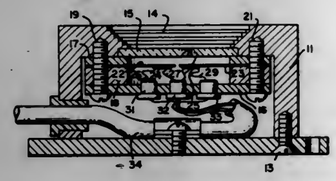
1. Apparatus for standardizing a gauge having a meter, a radiation source, a cell spaced from said source, and circuit means connected to said meter for determining the absorption characteristic comprising,
means for connecting said cell to ground,
means for correcting an unbalance in said circuit when said cell is connected to ground,
means for standardizing said gauge on air in said air-gap after said unbalance has been corrected,

means for calibrating said circuit after it has been standardized on air,
a single servomotor selectively connectable to each of said correcting, standardizing and calibrating means,
said servomotor having a control winding,
means for selectively and sequentially applying a potential to said control winding from each of said correcting, standardizing and calibrating means,
means connected to said control winding for detecting a predetermined voltage condition on said control winding,
and means initiated by said detector for initiating the operation of said standardizing means and said calibrating means in sequence immediately upon attaining a proper adjustment in the preceding operation.

3,348,047
DIFFERENTIAL RADIOMETER HAVING HIGH AND LOW ABSORPTION CHARACTERISTICS

Richard P. Clifford, Tarzana, Calif., assignor to TRW Inc., a corporation of Ohio

Filed July 7, 1964, Ser. No. 380,835
4 Claims. (Cl. 250—83.3)



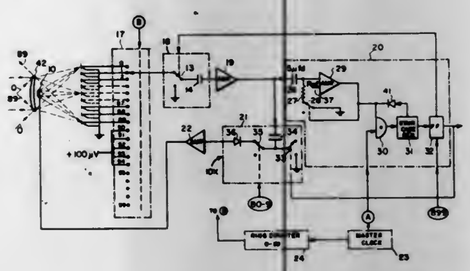
1. A differential radiometer comprising:
(A) a hollow cylindrical body having an axial opening in one end thereof for admitting radiation;
(B) a pair of thin metallic half discs positioned in said opening with their peripheral portions contacting said body, one of said half discs being coated with a material having a high absorptance and high emissivity, the other of said half discs being coated with a material having a low absorptance and high emissivity;
(C) means for resistively sensing the temperature adjacent the center of curvature of each of said half discs;
(D) a quartz window positioned in said opening before said half discs;
(E) electric circuit means connected to said sensing means for providing an output signal.

3,348,048
HORIZON SENSOR WITH A PLURALITY OF FIXEDLY-POSITIONED RADIATION-COMPENSATED RADIATION SENSITIVE DETECTORS

John M. McLauchlan, Pasadena, Calif., and Monty M. Merlen, Stamford, Conn., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 23, 1964, Ser. No. 406,097
14 Claims. (Cl. 250—83.3)

6. A horizon sensor comprising:
at least one multidetector head fixedly positioned with respect to a reference axis, said head including a plurality of radiation detectors, each adapted to receive radiation energy or radiate energy into space, and providing a potential output as a function thereof;
first means for controlling the radiation surfaces of said detectors whereby the outputs of detectors radiating energy into space are substantially equal to zero, and below a predetermined threshold level;
second means for providing a sequence of control pulses defining a scanning cycle;
third means responsive to said control pulses for sequentially sensing the outputs of said detectors;

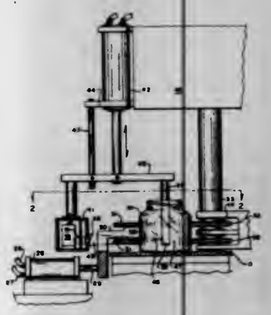


fourth means coupled to said third means and responsive to the sequentially sensed outputs for providing a horizon sensing signal when the sensed outputs of a predetermined number of successive detectors are above a preselected threshold level; and
fifth means responsive to said third means for controlling said first means as a function of the output of at least one of said detectors radiating energy into space.

3,348,049
HIGH SPEED ULTRAVIOLET THIN SPOT DETECTOR

David Stearns Stacey, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado

Filed Dec. 31, 1964, Ser. No. 422,816
11 Claims. (Cl. 250—83.3)

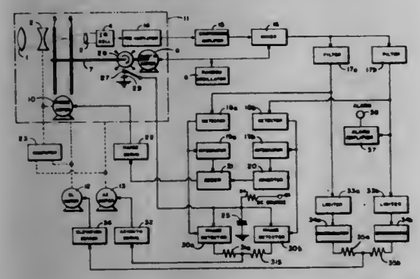


4. A method for detecting a thin spot in transparent and semi-transparent material comprising the steps of directing an ultraviolet light beam toward said material, creating relative motion between said material and said light beam so as to completely scan a surface of said material with said beam, receiving a substantially fixed portion of said light beam which passes through said material, converting the received portion of said light beam into a first voltage having an amplitude indicative of the instantaneous intensity of said received portion, amplifying said first voltage, generating a second voltage having an amplitude indicative of the average intensity of said received portion over a previous preselected period of time, comparing said second voltage with a fixed voltage so as to generate a difference voltage, amplifying said difference voltage, controlling the conversion of said received portion into said first voltage with said amplitude difference voltage, and monitoring said amplified first voltage to determine whether it falls outside of a preselected range thereby indicating the presence of a thin spot.

3,348,050
PASSIVE INFRARED TRACKING AND RANGING SYSTEM

Robert V. Bez, Cincinnati, Ohio, assignor to Avco Manufacturing Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed July 15, 1957, Ser. No. 672,542
12 Claims. (Cl. 250—83.3)



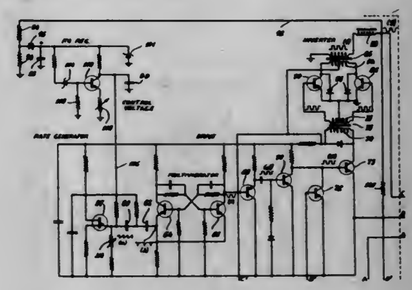
4. In an optical tracking system, the combination comprising: a lens for focusing rays of light to a focal point; first and second opaque chopper grids fixedly spaced on a rotatable shaft, each of said chopper grids comprising at least one segment, the segments of said first and second grids being alternately disposed around the periphery of said shaft, each of said segments having a plurality of axially spaced rows of slots, each of said rows having a predetermined different number of slots; means rotatably mounting said shaft so that the segments of said first grid traverse the optical axis of said lens before said focal point, and so that said segments of said second grid traverse said optical axis after said focal point, whereby said rays of light will be interrupted by the opaque portions of said grids and will be permitted to pass through said slots, thereby producing alternate series of pulses of light; means for comparing the average intensities of said alternate series of pulses of light to locate said focal point along said optical axis; means for determining the phase with respect to a reference of said alternate series of pulses of light to locate the position of said focal point in one direction perpendicular to said axis; and means responsive to the number of pulses of light in each series for determining the location of said focal point in a second direction mutually perpendicular to said axis and said first direction.

3,348,051
POWER SUPPLY FOR AN X-RAY TUBE HAVING A FREQUENCY RESPONSIVE FEEDBACK MEANS FOR A VARIABLE FREQUENCY CONVERTER

Frederick Gordon Weighart, Brookfield, and Ramon F. Forlastro, Newton, Conn., assignors to Automation Industries, Inc., El Segundo, Calif., a corporation of California

Continuation of application Ser. No. 280,936, May 16, 1963. This application Nov. 22, 1965, Ser. No. 508,960
5 Claims. (Cl. 250—103)

1. An X-ray apparatus including the combination of:
an X-ray tube having a cathode and a high voltage anode,
a battery power supply effective to provide a direct current,
variable frequency converter means coupled to the power supply, said converter means being effective to convert the direct current from said supply into an alternating current,



an anode transformer having a primary and a secondary, said secondary being coupled to the high voltage anode of said X-ray tube, and
frequency responsive means coupling the primary of the anode transformer to the converter means, said frequency responsive means being effective to supply a voltage to the primary that is a function of the frequency.

3,348,052
MONITORING CORROSION RATES BY MEANS OF RADIOACTIVE TRACERS

Philip J. Raifsnider, Oklahoma City, Okla., and Vincent P. Guinn, La Jolla, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 203,958, June 20, 1962. This application June 24, 1965, Ser. No. 469,054
2 Claims. (Cl. 250—106)

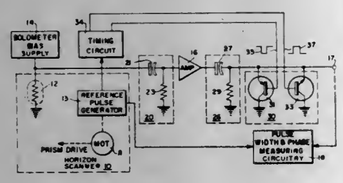


1. A process for controlling the rate of corrosion in a corrosion-sensitive conduit during an extended period of the production of fluids flowing therethrough from a producing well comprising the steps of:
(a) incorporating from ½ to 1% of a radioactive material of relatively high radioactive intensity having a substantially long half-life into a specimen, said specimen having corrosion characteristics corresponding to said corrosion-sensitive conduit;

(b) exposing the resulting specimen to the fluid steam flowing through said corrosion-sensitive conduit during the passage of said fluid through said conduit;
(c) monitoring said fluid stream exposed to said resulting specimen to determine the counting rate of the radioactive material entrained therein; and
(d) injecting a corrosion inhibitor into said conduit at a sufficient rate to maintain the counting rate below a prescribed level which is proportional to an acceptable corrosion rate of both said resulting specimen and said corrosion-sensitive conduit.

3,348,053
AMPLIFIER CLAMPING CIRCUIT FOR HORIZON SCANNER

Clarence Cantor, Rockville, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 14, 1964, Ser. No. 396,444
6 Claims. (Cl. 250—206)

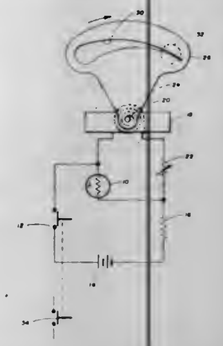


1. Electrical apparatus including in combination, sensing means for generating periodic pulses, a parameter of which pulses is to be measured, said pulses being superimposed on a steady state signal subject to variations large compared to the amplitude of the pulses to be measured, signal amplification means having an input and an output, a first filtering network coupled between said sensing means and the input of said amplification means, output terminal means for connection to pulse detection means, a second filter network coupled between the output of said amplification means and said output terminal means, said first filter network having a time constant at least ten times greater than the time constant of said second filter network, and circuit means for clamping said output terminal means to a reference potential during a portion of the interval between pulses to thereby provide a zero reference level for measurement of a parameter of said pulses.

3.348,054
PHOTOELECTRIC EXPOSURE CONTROL SYSTEM FOR CAMERAS

Allen G. Stimson and Gerald F. Pickens, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of abandoned application Ser. No. 359,283, Apr. 13, 1964. This application Jan. 18, 1967, Ser. No. 610,202
2 Claims. (Cl. 250—206)

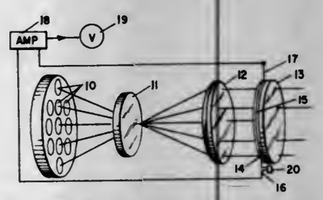
1. In a photoelectric exposure control system for a camera having a movable diaphragm vane and an electric measuring instrument for positioning said vane in accordance with energization of said instrument, and being adapted to take photographs by flash illumination, said vane providing minimum aperture when said instrument is unenergized, the combination comprising: a closed series loop comprising a photo-resistive element illuminatable by scene light, a battery, a switch and a resistor connected in series with said element effective, upon closure of said switch, for applying across said element a voltage inversely related to illumination of said element; and circuit means connecting said element across said instrument, for energizing said instrument in direct proportion to the voltage across said element, so that said diaphragm



vane is at its minimum exposure position at the beginning of an exposure, and tends to proceed toward a greater exposure, thus insuring against overexposure if the flash illumination is bright.

3,348,055
APPARATUS FOR MONITORING THE INTENSITY OF A BEAM OF RADIANT ENERGY

Thomas H. Bulpitt, Sylmar, Calif., assignor, by mesne assignments, to Textron Electronics, Inc., a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,178
5 Claims. (Cl. 250—212)



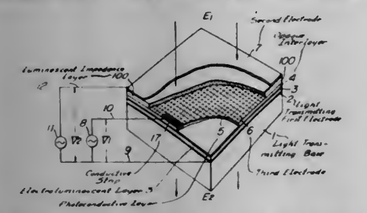
1. An apparatus for monitoring the intensity of a radiant energy beam while in use comprising: a transparent optical element adapted to constitute part of an optical system such that said beam passes through said element; first and second thin, dissimilar metal films deposited on said optical element in superimposed relationship and in direct contact with each other such that each intercepts at least a portion of said beam without appreciably attenuating the intensity of said beam; electrical output leads extending from said films respectively; and voltage measuring apparatus connected to said output leads for measuring voltage signals developed as a consequence of thermal effects resulting from the intensity of said beam on said films.

3,348,056
WAVELENGTH CONVERTING TYPE RADIANT ENERGY RESPONSIVE DISPLAY DEVICE

Tadao Kohashi, Yokohama, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed May 20, 1964, Ser. No. 368,906
Claims priority, application Japan, May 22, 1963, 38/27,248
16 Claims. (Cl. 250—213)

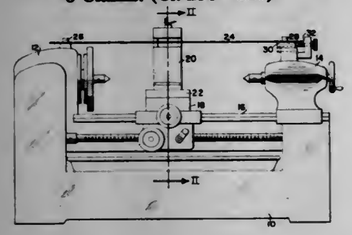
1. A radiant energy responsive display device of the type including a photoconductive layer, an electroluminescent layer lying on one surface of said photoconductive layer, an impedance layer lying on the other surface of

said photoconductive layer, a first electrode arranged on the outer surface of said electroluminescent layer, a second electrode arranged on the outer surface of said impedance layer, a third electrode interposed between said electroluminescent and impedance layers in electrical contact with said photoconductive layer, electric power supply means for applying a first voltage between said first and third electrodes and second voltage between said first and second electrodes, an means for electrically controlling the luminescent intensity of said electroluminescent layer through the variation in impedance under the excitation effect of radiant energy on said photoconductive layer to thereby convert a radiant energy image into visible form on said electroluminescent layer, in which said impedance layer is an energy converting luminescent layer having a radiant energy response to a first spectral distribution and having a luminescence characteristic with a second energy distribution different from the first and at least partly overlapping the spectral photoconductivity distribution of the photoconductive layer whereby, when excited with radiant energy, said luminescent impedance layer produces luminescent light energy to which said photoconductive layer is responsive.



3,348,057
METHOD AND APPARATUS FOR CHECKING THE STRAIGHTNESS OF MACHINE TOOL WAYS AND THE LIKE

Robert K. Burroughs, Batavia, Ohio, assignor to The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio, a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,188
8 Claims. (Cl. 250—215)



3. An apparatus for checking the straightness in a vertical plane of machine tool ways over which a moving member is guided comprising; a filament fixed in a direction which is parallel to the direction of the ways being checked, means for tensioning said filament to insure its straightness in a vertical plane, a housing adapted to be secured to said moving member and moved thereby over said ways, said housing also having a slot therein to receive said filament, illuminating lamp means positioned in said housing for casting a beam of light in a vertical direction on said filament, photocells positioned in side by side relation on the side of said filament opposite said lamp means and secured in said housing to receive the lights and shadows cast respectively by said lamp means and said filament, and means for detecting the change in illumination of said photocells as said housing and moving member are moved over said ways.

3,348,058
RADIATION DETECTION SYSTEM HAVING WIDE FIELD OF VIEW

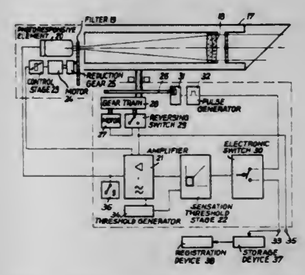
Gerald Falbel, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,939
3 Claims. (Cl. 250—216)



1. A radiation detection system for gathering radiation from a large field of view on a relatively small radiation detector, comprising
(a) a radiation detector mounted on a substrate which is transparent to the radiation being measured,
(b) a primary optical means having said detector positioned in its focal plane for applying radiation to the front of said detector,
(c) a wide field stop positioned in the focal plane of said primary optical means which defines the system's wide field of view, and
(d) a field element positioned behind said detector for imaging radiation from the wide field of view of said primary optical means which passes the front of said detector onto the back of said radiation detector.

3,348,059
VISIBILITY TESTER WITH COMPENSATION FOR THE THRESHOLD LEVEL OF THE HUMAN EYE

Rolf Schellhase and Gerhard-Helferich Ruppersberg, Munich, Germany, assignors to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany
Filed Apr. 6, 1965, Ser. No. 446,037
Claims priority, application Germany, Apr. 7, 1964, L 47,510, L 47,511
13 Claims. (Cl. 250—229)



1. In an apparatus for measuring the visibility of luminous or non-luminous auxiliary objects, including a telephotometer for scanning a chain of such objects extending substantially in a line, and for measuring, with respect to its own location, the intensity of the illumination produced by each auxiliary object, as well as the background luminous intensity in the vicinity of such objects, so as to provide a measure of visibility which accounts for the inherent sensation threshold of the human eye: comparison means coupled to said telephotometer for comparing the measured illumination intensity of each such object with a threshold value which varies as a function of the background luminous intensity, which function approximates the sensation threshold of the human eye; and means coupled to said comparison means for measuring the angle, with respect

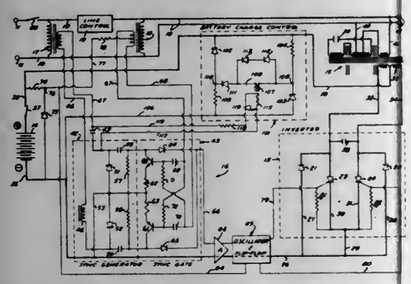
to a fixed reference, corresponding to the most distant of such auxiliary objects from the telephotometer whose measured illumination intensity exceeds the threshold value existing at the corresponding measured background illumination intensity.

3,348,060

CONTINUOUSLY-OPERATING STANDBY POWER-SUPPLY AND BATTERY-CHARGING APPARATUS AND METHOD

Robert S. Jamieson, San Juan Capistrano, Calif., assignor, by mesne assignments, to Lorain Products Corporation, Lorain, Ohio, a corporation of Ohio

Filed Jan. 14, 1964, Ser. No. 337,621
15 Claims. (Cl. 307—66)



1. Apparatus for effecting a controlled exchange of power between a storage battery and a source of power producing an alternating voltage wave, which comprises:
an inverter adapted to permit flow of current in both directions therethrough,
means to connect said inverter to said source and to a storage battery in such manner that flow of current through said inverter in one direction effects feeding of power from said battery to said source, and flow of current through said inverter in the opposite direction effects charging of said battery from said source,
means to synchronize the frequency of the voltage wave generated by said inverter to the frequency of said source voltage wave, and
means to shift the phases of said voltage waves relative to each other to regulate the net power exchange between said inverter and said source,
said phase-shift means including control means sensitive to the condition of said battery to provide a continuous phase control effect maintaining said battery at a predetermined condition of charge.

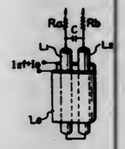
3,348,061

PARAMETRON ELEMENT USING CONDUCTIVE WIRE WITH FERRO-MAGNETIC THIN-FILM DEPOSITED THEREON

Shintaro Oshima, Higashi-machi, Musashino-shi, Tetsusaburo Kamibayashi, Kitaadachi-gun, Saitama-ken, and Keigo Komuro, Toshima-ku, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha (also known as Kokusai Denshin Denwa Co., Ltd.), Tokyo-to, Japan, a joint-stock company of Japan

Filed Aug. 13, 1963, Ser. No. 301,758
Claims priority, application Japan, Aug. 18, 1962, 37/34,153
1 Claim. (Cl. 307—88)

A parametron element comprising a resonant circuit composed of two linear conductors disposed parallel and each having a ferromagnetic thin film deposited thereon and a tuning capacitor, terminals on said two linear conductors at one end of each conductor directly connected to each other, terminals on the other end of each conductor connected to each other through said tuning capacitor, exciting means to apply to said resonant circuit an exciting signal current having a frequency twice the resonant frequency of said resonant circuit and a bias current and comprising a band conductor loop wound concurrently on said two linear conductors so as to be orthogonal to the lengthwise direction of the linear conductors, input means coupled to the resonant circuit to apply thereto an



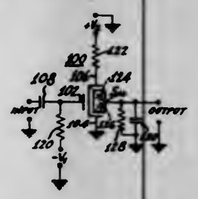
odd number of input information signals, and output means for deriving from the resonant circuit an output current having a frequency equal to one half the frequency of the exciting current and assuming one of two possible phase positions which differ by 180° from each other.

3,348,062

ELECTRICAL CIRCUIT EMPLOYING AN INSULATED GATE FIELD EFFECT TRANSISTOR HAVING OUTPUT CIRCUIT MEANS COUPLED TO THE SUBSTRATE THEREOF

David J. Carlson, Princeton, and Gerald E. Theriault, Hopewell, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 2, 1963, Ser. No. 248,947
20 Claims. (Cl. 307—88.5)



1. An electrical circuit comprising:
an insulated gate field effect semiconductor device having first, second and gate electrodes formed on a semiconductor substrate, a pair of rectifying junctions respectively between said first and second electrodes and said substrate, and intrinsic capacitance between said gate electrode and said substrate,
means connecting said first, second and gate electrodes to condition said semiconductor device to operate as the active element of said circuit,
signal supply means coupled to one of said first, second and gate electrodes for supplying signals of a magnitude sufficient to forward bias at least one of said rectifying junctions to provide current flow therethrough,
deriving means coupled to said substrate for deriving a signal voltage in response to said current flow,
and signal utilization means coupled to receive said derived signal voltage.

3,348,063

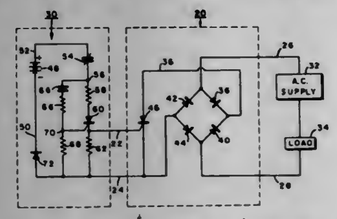
SOLID STATE A-C CONTACTOR WITH MOMENTARY START-STOP BUTTONS

John R. Bray, Pensacola, Fla., assignor to Monsanto Company, a corporation of Delaware

Filed Sept. 16, 1963, Ser. No. 309,249
4 Claims. (Cl. 307—88.5)

1. AC switching apparatus comprising in combination:
(a) a first diode having an anode connected to a first conductor and a cathode connected to a second conductor,

(b) a second diode having its cathode connected to said second conductor and its anode connected to a third conductor,
(c) a third diode having its cathode connected to said third conductor and its anode connected to a fourth conductor,
(d) a fourth diode having its anode connected to said fourth conductor and its cathode connected to said first conductor,
(e) an AC power supply connected in series with a load impedance across said first and third conductors,
(f) a first silicon controlled rectifier having a first anode connected to said second conductor, a first cathode connected to said fourth conductor, and a first gate electrode,
(g) and manual signal generating means for selectively applying a triggering potential between said first



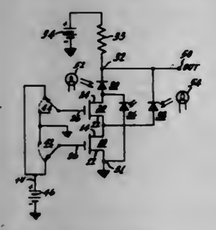
gate and said first cathode electrodes, said signal generating means including:
(1) a second silicon controlled rectifier having a second anode, a second cathode and a second gate electrode,
(2) a DC power supply having positive and negative terminals,
(3) means including a normally closed switch and a resistance connected in series with said DC power supply and the anode-to-cathode circuit of said second silicon controlled rectifier,
(4) circuit means including a normally open switch and an impedance connected between said positive terminal of said DC power supply and said second gate electrode,
(5) and means for applying the potential appearing across said resistance to said gate and cathode electrodes of said first silicon controlled rectifier.

3,348,064

FLEXIBLE LOGIC CIRCUIT UTILIZING FIELD EFFECT TRANSISTORS AND LIGHT RESPONSIVE DEVICES

Robert A. Powlus, Yardley, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 14, 1963, Ser. No. 323,821
8 Claims. (Cl. 307—88.5)



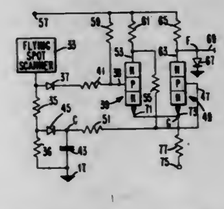
1. The combination comprising:
a pair of junction points;
a plurality of devices, each device having first and second electrodes defining a current carrying path and having a control electrode for controlling the impedance of the path;
means connecting the circuit paths of said devices in a series chain between said junction points;
means for applying an energizing potential across said junction points;
means for selectively varying the voltage at the control electrodes of said devices individually;
a number of light responsive elements each connected between a different pair of points on said chain and across at least one of said current carrying paths; and
means for applying light selectively to said elements to control the conductivity thereof.

3,348,065

DATA ANALYZING CIRCUIT EMPLOYING INTEGRATOR HAVING FIRST AND SECOND DISCHARGE PATHS WITH RESPECTIVELY FIRST AND SECOND DISCHARGE RATES

Herbert R. Schmidt, Minneapolis, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 14, 1964, Ser. No. 382,587
7 Claims. (Cl. 307—88.5)



1. A data analyzing circuit comprising:
means for generating a composite signal,
said composite signal including a variable analog signal having relatively fast changes about its mean voltage level and a second signal superimposed upon said analog signal having relatively slow changes in mean voltage level,
means including an integrator for generating a reference voltage proportional to said analog signal,
means for defining a first discharge path having a first rate of discharge for said integrator,
means for defining a second discharge path having a second rate of discharge for said integrator,
means responsive to said composite signal for connecting said first discharge means to said integrator,
said last-mentioned means responsive to said relatively fast changes and said reference voltage for connecting said second discharge means to said integrator, and
said integrator being discharged at a slower rate by said first discharge means than by said second discharge means.

3,348,066

ARRANGEMENTS OF ONE-TRANSISTOR BISTABLE CIRCUITS

Bruce E. Briley, La Grange Park, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Mar. 17, 1965, Ser. No. 440,370
4 Claims. (Cl. 307—88.5)

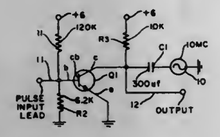
4. A bistable flip-flop device comprising:
an amplifying circuit including a transistor having a base, emitter and collector, as well as emitter-base and collector-base junctions, said transistor being connected in grounded emitter configuration and having minority carrier storage capability;

signal input connections to said transistor for momentarily applying predetermined signals which initiate a change of state of said transistor from cutoff to conduction and vice versa;

first D.C. biasing means permanently connected to said collector;

a sinusoidal signal source in circuit connection with said collector;

said collector-base junction forming a gate between said sinusoidal signal source and said base, said first D.C. biasing means normally reverse biasing said gate so as to normally keep said gate open;



said gate being closed in response to the transistor assuming said conducting state upon said first momentary signal application, to effectively connect said sinusoidal signal source to said base, and said transistor thereupon being maintained in said conducting state due to the injection into said emitter-base junction of minority carriers in response to said connection of said sinusoidal signal source;

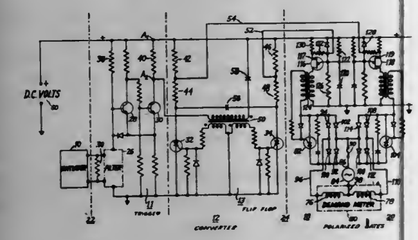
and second D.C. biasing means permanently connected to said base and effective in response to said transistor assuming said cutoff state upon said second-mentioned momentary signal application, to maintain said transistor in said cutoff state.

3,348,067

SOLID STATE IMPULSE GENERATOR USING SILICON CONTROLLED RECTIFIERS FOR SWITCHING

Richard E. Whipple, Rochester, N.H., and Bernard J. Rothmel, Lexington, Mass., assignors to General Electric Company, a corporation of New York

Continuation of application Ser. No. 191,620, May 1, 1962. This application Mar. 17, 1965, Ser. No. 445,830
4 Claims. (Cl. 307—88.5)



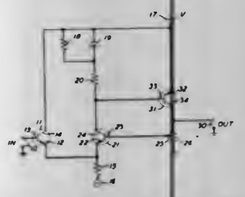
1. A solid state impulse generator for operating a control device comprising, an electrical converter having an input and an output for converting variable voltage inputs to polarized voltage outputs, said converter including a trigger circuit electrically connected to the input of said converter, said trigger circuit including a transistor rendered conducting and non-conducting in response to the voltage level of variable voltage inputs, said converter also including a pair of silicon controlled rectifiers, means coupling said rectifiers together to form a flip-flop circuit, said flip-flop circuit electrically connected to said transistor and responding to the conducting state of said transistor to provide a first polarized output signal from said converter and responding to the non-conducting state of said transistor to provide a second polarized output signal, an electrical gate circuit including a second pair of silicon controlled rectifiers electrically connected to the output of said converter, said second pair of rectifiers being connected in parallel circuit relation, one of said second pair of rectifiers rendered conducting in response to said first polarized output signal and the other of said second pair of rectifiers rendered conducting in response to said second output signal.

3,348,068

THRESHOLD DISCRIMINATOR AND ZERO-CROSSING DETECTOR

Gabriel L. Miller, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 29, 1965, Ser. No. 451,731
9 Claims. (Cl. 307—88.5)



4. In a bistable multivibrator having a first and second transistor wherein the potential of an input pulse applied to the base of said first transistor must exceed a predetermined value in order to transfer conduction from said second transistor to said first transistor, tunnel diode means connected as the collector impedance of said second transistor to a source of potential, a third transistor having its base-emitter junction connected in parallel with said tunnel diode means, a potentiometer having its ends connected between the collector of said third transistor and a reference potential, and means connecting the movable arm of the potentiometer to the base of said second transistor.

3,348,069

REVERSIBLE SHIFT REGISTER WITH SIMULTANEOUS RECEPTION AND TRANSFER OF INFORMATION BY EACH STAGE

Richard J. Petschauer, Minneapolis, Minn., assignor to Fabri-Tek Incorporated, Hopkins, Minn., a corporation of Wisconsin

Filed May 7, 1965, Ser. No. 454,132
17 Claims. (Cl. 307—88.5)



1. A shift register comprising:

a plurality of serially related bistable circuits, each of said bistable circuits being a stage of the shift register;

each of said bistable circuits having means for receiving impulses from a right adjacent stage and means receiving impulses from a left adjacent stage;

means including time delay means connected to said bistable circuits for simultaneous reception and transmission of information thereby;

left shift pulse means connected by a common output bus to said bistable circuits, and

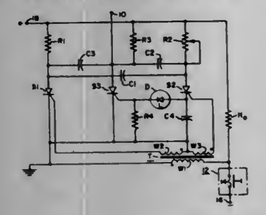
right shift pulse means connected by another common output bus to said bistable circuits, said left shift pulse means and said right shift pulse means adapted to serially shift information stored in the shift register left and right, respectively.

3,348,070

TIME DELAY COMPUTER ELEMENT FOR INDICATING INPUT CONDITIONS

Wayne E. Arnold, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 20, 1965, Ser. No. 457,412
6 Claims. (Cl. 307—88.5)



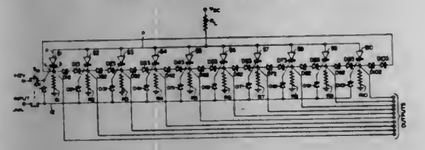
1. A time delay circuit comprising, a plurality of controlled rectifier devices, input means for turning on a first of said devices when a first input condition exists and turning on a second of said devices when a second input condition exists, means to turn off said first device when said second device is turned on, means having a time delay instigated by the turning on of a second device to turn on a third of said devices after a predetermined time delay, means to turn off said second device when said third device is turned on, and output means operatively connected to said third device to provide an output signal indicative of the input condition existing at said input means.

3,348,071

RING COUNTER USING SEMICONDUCTOR SWITCHING DEVICES

Richard S. Chamberlin, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 24, 1965, Ser. No. 458,239
5 Claims. (Cl. 307—88.5)



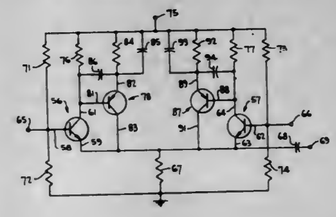
1. A ring counter comprising: a plurality of switching elements each having first and second terminals connected across a source of D.C. potential, the current-voltage characteristic across said first and second terminals of each element exhibiting an "off" state of high resistance and an "on" state of low resistance with a transition region of negative resistance therebetween, each switching element also having a third terminal for the application of signals to effect switching between said off and on states; conductive means connecting each of said first terminals together; said second terminals being serially interconnected in a closed loop with at least one diode rectifier directly connected between each adjacent pair of said second terminals with all of said diode rectifiers being poled in the same direction; said third terminals each being connected through a respective impedance means to a source of input signals; means to place a first switching element in said "on" state so that the second terminal of said first switching element assumes a first potential and the second terminal of each succeeding switching element assumes a potential less than that of the second terminal of the preceding switching element by the forward voltage drop of said at least one diode rectifier connected therebetween; means to apply input signals to said third terminals to sequentially turn "on" said switching elements and produce a staircase waveform at each of said second terminals.

3,348,072

LOW - VOLTAGE WIDE - RANGE COMPARATOR AND RECTIFIER USING A PLURALITY OF EMITTER - FOLLOWER CIRCUITS WITH THE COLLECTOR CURRENT OF THE CONDUCTING EMITTER-FOLLOWER MAINTAINED CONSTANT

Ira R. Marcus, Wheaton, Md., and Joseph W. Miller, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army

Filed May 26, 1965, Ser. No. 459,134
8 Claims. (Cl. 307—88.5)



1. A low-voltage, wide-range comparator comprising:

(a) a first transistor having a base, an emitter, and a collector,

(b) a second transistor having a base, an emitter, and a collector,

(c) a common load resistance connected to the emitters of said first and second transistors,

(d) a first resistor connected to the collector of said first transistor and to a source of supply voltage,

(e) a second resistor connected to the collector of said second transistor and to a source of supply voltage,

(f) a first current amplifier having its input connected to the collector of said first transistor and its output connected to the common emitter junction of said first and second transistors, said first resistor serves to establish the operating point of said first current amplifier, and

(g) a second current amplifier having its input connected to the collector of said second transistor and its output connected to the common emitter junction of said first and second transistors, said second resistor serves to establish the operating point of said second current amplifier.

3,348,073

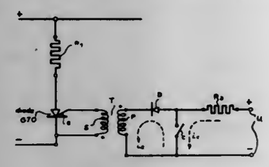
GATE CONTROLLED ELECTRONIC SWITCH

Albert Oudard, Grenoble, Isere, France, assignor to Etablissements Merlin & Gerin, Societe Anonyme, Grenoble, Isere, France

Filed June 21, 1965, Ser. No. 465,511
Claims priority, application France, June 25, 1964, 979,689
2 Claims. (Cl. 307—88.5)

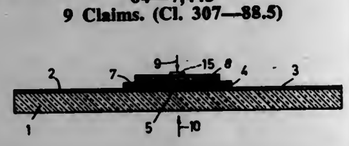
1. An electronic switch comprising a pulse transformer having a primary winding and a secondary winding, a first circuit comprising said secondary winding and a gate

controlled semi-conductor device operatively connected thereto to be alternately turned on and turned off by application of trigger pulses of opposite polarity applied to the gate of said device by said secondary winding, a sec-



ond circuit comprising, successively connected in a closed series loop, a supply source of direct current, a resistor, a diode, and said primary winding; and means for selectively short circuiting said diode and said primary winding for producing said trigger pulses.

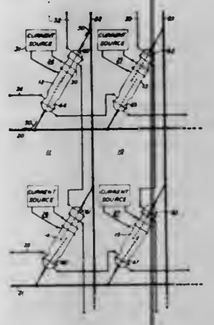
3,348,074
PHOTOSENSITIVE SEMICONDUCTOR DEVICE EMPLOYING INDUCED SPACE CHARGE GENERATED BY PHOTOSENSOR
Gesinus Diemer, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,537
Claims priority, application Netherlands, July 1, 1964, 64—7,445
9 Claims. (Cl. 307—88.5)



1. A photosensitive semiconductor device comprising a semiconductor body, spaced contacts to the semiconductor body, means for applying a voltage across the contacts to establish in the body in a direction substantially parallel to a surface of the body a potential gradient and a flow of current therethrough, a body of photosensitive material located adjacent the said surface of the body and separated threfrom by a blocking layer, said body of photosensitive material having a high dark sheet resistance and a thickness at which, at least in the photosensitive material portion adjacent the junction and substantially parallel thereto, there appears a potential gradient corresponding to that which exists in the semiconductor body when the voltage is applied, means for irradiating the photosensitive body with radiation which increases its conductivity without directly varying the conductivity of the semiconductor causing a reduction in the potential gradient in the photosensitive body producing by capacitive action an increased space charge in the semiconductor body which decreases the current therein, and means connected to the semiconductor contacts for utilizing the decrease in current through the semiconductor body.

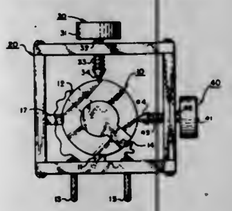
3,348,075
CIRCUIT IDENTIFIER
Harold N. Wagar, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., corporation of New York
Filed July 22, 1964, Ser. No. 384,466
8 Claims. (Cl. 307—113)

4. In a switching device the combination comprising:
electrically conducting means arranged in substantially column and row formation;
a plurality of switches for electrically interconnecting row and column portions of said electrically conducting means, each of said switches including a source of operative magnetic flux and a pair of overlapping magnetic contacts sealed in a vessel, said contacts being arranged to close in response to the application of operative magnetic flux from said source, to conduct an electrical current and to conduct an annular magnetic flux induced when said electrical current flows; and



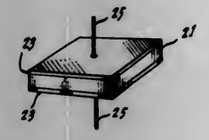
an identifier for indicating the state of connection between interconnected portions of said electrically conducting means, said identifier comprising a plurality of detectors wherein each detector includes a plurality of serially connected coils individually coupled to separate switches and arranged to inductively respond to flux changes produced in said separate switches by the interaction between said operative magnetic flux and said annular magnetic flux.

3,348,076
PIEZOELECTRIC ACCELEROMETER
Eduard A. Gerber, West Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed May 10, 1965, Ser. No. 454,754
2 Claims. (Cl. 310—8.4)



1. An accelerometer comprising a piezoelectric crystal having opposing surfaces and a peripheral edge; a first and second electrodes contacting said opposing surfaces of said crystal; a mounting frame; a mounting bracket connecting said crystal to said mounting frame; a first and second electrical terminals projecting from said mounting frame; means for connecting said first terminal to said first electrode; means for connecting said second terminal to said second electrode; a first inertial mass movably mounted in said frame, one portion of said first inertial mass making contact with said crystal at a first point along said peripheral edge of said crystal, said first inertial mass having a direction of motion parallel to one of the axes of said crystal; and a second inertial mass, movably mounted in said frame; one portion of said second inertial mass making contact with said crystal at a second point along said peripheral edge of said crystal, said second inertial mass having a direction of motion parallel to one of the axes of said crystal.

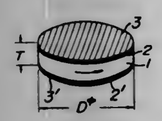
3,348,077
FERROELECTRIC CIRCUIT ELEMENT MATERIAL AND TRANSDUCER UTILIZING SAME
Rudolf Nitsche, Hedingen, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 6, 1963, Ser. No. 328,653
17 Claims. (Cl. 310—8.5)



6. A device comprising a thin flat body having a pair of opposed substantially-parallel major surfaces, said body being constituted of a binder-free compact mass of small adjacent acicular crystals with their long axes in a common direction substantially normal to said major surfaces, a pair of electrodes contacting said major surfaces, and a band around said body on the minor surfaces of said body, said body having the molar composition V–VI–VII where:

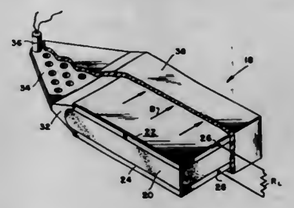
V is at least one member of the group consisting of As, Sb and Bi
VI is at least one member of the group consisting of O, S, Se, and Te
VII is at least one member of the group consisting of Cl, Br and I.

3,348,078
PIEZOELECTRIC CERAMIC RESONATOR DEVICES
Takashi Nagata, Ikeda-shi, Hyogo Hirohata, Neyagawa-shi, Michio Ishibashi, Kadoma-shi, and Shizuo Arimura, Neyagawa-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed May 26, 1965, Ser. No. 459,064
Claims priority, application Japan, May 30, 1964, 39/30,807; June 4, 1964, 39/31,977; July 14, 1964, 39/40,225; Oct. 27, 1964 (utility model), 39/84,520; Oct. 28, 1964, 39/61,924
6 Claims. (Cl. 310—9.5)



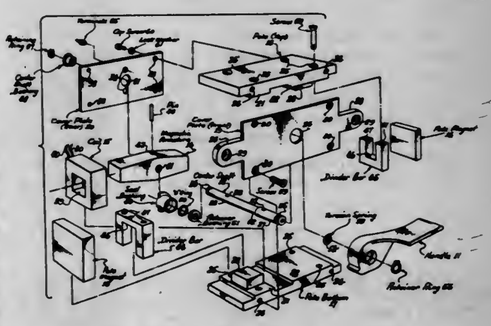
1. A piezoelectric ceramic resonator element comprising a thin flat circular disk of polarized ferroelectric ceramic material, said disk having substantially parallel major surfaces, said major surfaces having thereon electrodes of copper and silver disposed in superposed relation one on the other, said copper electrodes being formed by the electrodeless copper plating method and at least covering the entire major surfaces including pin holes existing on said surfaces and said silver electrodes being deposited by the chemical displacement of a silver salt solution on the surfaces of said copper electrodes, said disk being polarized unidirectionally in parallel to said major surfaces and being adapted to make a piezoelectric response to electrical potential gradients across said electrodes in a manner that the thickness-shear vibration mode is predominant while the flexural vibration mode and the subresonant vibration modes are negligible, and said disk having a thickness dimension so determined that resonance of vibration in said thickness-shear vibration mode takes place at a particularly selected frequency and having a diameter dimension so determined that the resonant impedances of the flexural vibrations and subresonant vibrations are at least ten times larger than the resonant impedance of the fundamental thickness-shear vibration in a range of the diameter-thickness ratio of from 7 to 15.

3,348,079
PULSE MAGNETOHYDRODYNAMIC GENERATOR
Charles N. McKinnon, Columbia, Mo., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 23, 1965, Ser. No. 442,219
11 Claims. (Cl. 310—11)



1. A pulse magnetohydrodynamic generator comprising:
conductor means;
a composite of magnetic and explosive materials disposed adjacent to and in contact with said conductive means, said magnetic material being polarized;
means for retaining the disposed relationship of the conductor means and said composite,
whereby upon progressive detonation of said composite a traveling gas front region adjacent an undetonated composite region induces a current in said conductor means.

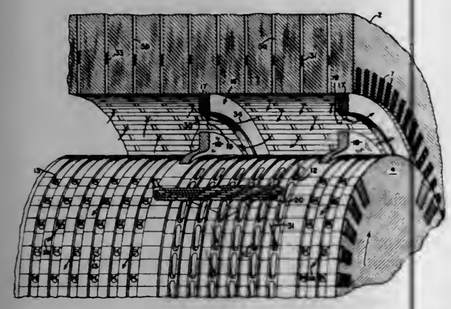
3,348,080
IMPULSE GENERATOR
Clair K. Lair, Pomona, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,862
16 Claims. (Cl. 310—29)



1. An impulse generator comprising, in combination: a housing, a pair of magnetic members positioned in said housing, such that one of said pair of magnetic members is positioned in each end of said housing, a stationary coil means in said housing positioned intermediate said magnetic members, an armature means within said housing, said armature means being intermediate said

magnetic members and having a portion thereof movably positioned within said stationary coil means, one of said pair of magnetic members functioning as a north pole for said armature means and the other of said pair of magnetic members functioning as a south pole for said armature means, said armature means being normally held by magnetic attraction intermediate said pair of magnetic member, and means for moving said armature means with respect to said coil means and said magnetic members for inducing electrical energy in said coil means.

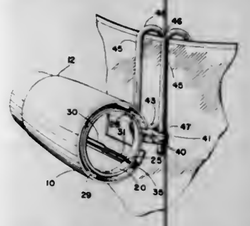
3,348,081
GAP PICKUP ROTOR WITH GAS SEGREGATING BAFFLES
David M. Willyoung, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 16, 1965, Ser. No. 487,798
9 Claims. (Cl. 310—55)



1. In a dynamoelectric machine of the type having an air tight casing filled with cooling gas, a stator core, a rotor defining an air gap with the stator core, and means for recirculating and cooling said gas inside the casing, the combination comprising:
means defining a plurality of gas inlet ducts along an intake zone on the rotor arranged to scoop gas from the air gap due to rotation of the rotor,
means defining a plurality of gas outlet ducts along an adjacent outlet zone on the rotor and connected by means of passages inside the rotor with said inlet ducts so as to discharge gas into the air gap,
means defining a plurality of first radial ducts in the stator core furnishing gas to said inlet zone,
means defining a plurality of second radial ducts in the stator core for conducting gas away from the air gap along the outlet zone, and
a partially open baffle disposed between the inlet and outlet zones having radially extending portions defining a restricted annular opening for accelerating a stream of cool gas to flow through said opening from inlet zone to outlet zone, whereby said radial portions and said accelerated stream impede backward flow along the air gap from rotor outlet ducts to rotor inlet ducts.

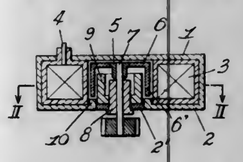
3,348,082
ELECTRIC MOTOR HOUSING AND SUPPORT
Rand H. Martin, Monterey Park, Calif., assignor to HPE Inc., El Monte, Calif., a corporation of California
Filed May 5, 1965, Ser. No. 453,288
1 Claim. (Cl. 310—85)

A splash proof housing for an electrical motor comprising:
(1) a cylindrical housing surrounding the electrical motor in the axial direction;
(2) an adjustable mounting ring means for clamping said housing in a spaced relation to the electrical motor;
(3) a mounting bracket attached to said adjustable ring;
(4) vertical hanger bars having hook means at the upper end for hooking over a support wall;



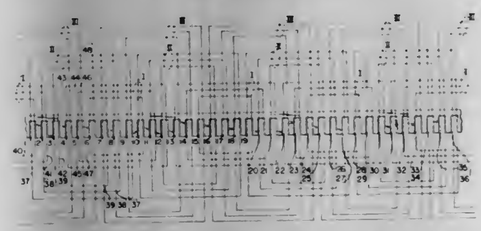
(5) clamp means on said bracket for clamping said bracket and ring means to said hanger bars; and
(6) a spacer on the said bracket extending away from said ring means to contact the support wall and keep said hanger bars and bracket spaced from the wall.

3,348,083
MINIATURE ELECTRIC SYNCHRONOUS MOTOR
Tokuzo Inariba, Kata-Machi, Nishikasugai-gun, Aichi Prefecture, Japan, assignor to Kabushiki-Kaisha Tokai Rika Denki Seisakusho, Nishikasugai-gun, Aichi Prefecture, Japan
Filed Oct. 6, 1964, Ser. No. 401,804
Claims priority, application Japan, Oct. 10, 1963, 38/54,124; Sept. 19, 1964, 39/53,797, 39/53,798
6 Claims. (Cl. 310—164)



1. A miniature synchronous electric motor comprising, in combination, a casing; a bearing carried by said casing; a shaft rotatable in said bearing and having an inner end within said casing, and an outer end; a stationary circular cross section annular permanent magnet fixed non-rotatable within said casing and concentric with said shaft, said permanent magnet being magnetized radially to provide north and south poles alternating therearound at equal angular spacings; an annular exciting winding concentric with said shaft and arranged for connection to a source of A.C. potential; annular magnetic yoke means concentric with said shaft and embracing said winding; a non-magnetic spacer secured to the inner end of said shaft to rotate with the latter; a magnetic material rotor secured to said non-magnetic spacer, said rotor including a circular body portion lying in a radial plane through said shaft and a plurality of pole teeth projecting from the periphery of said body portion at uniform angular spacings therearound; the number of said poles being an even multiple of the number of said pole teeth; said winding, when energized, producing an alternating magnetic field in an alternating magnetic flux path including said winding, said yoke means, said rotor and an air gap between the free ends of said pole teeth and said yoke means; said pole teeth extending in overlapping spaced relation to said permanent magnet poles to provide direct magnetic flux paths each including a respective north pole, a respective pole tooth, and a respective south pole angularly adjacent the respective north pole; said alternating and direct magnetic flux paths interlinking in said air gap; each pole tooth, upon de-energization of said winding, lying angularly intermediate a respective north pole and a respective south pole; all of said pole teeth, upon energization of said winding, being magnetized with the same instantaneous polarity whereby, upon such energization of said winding, all of said poles are attracted in the same angular direction toward the associated respective permanent magnet pole having the opposite polarity and repulsed in such same angular direction, by the associated respective pole having the same polarity.

3,348,084
GRADED CONCENTRIC WINDING DYNAMOELECTRIC MACHINE
Howard E. Jordan, Euclid, Ohio, assignor to The Reliance Electric and Engineering Company, a corporation of Ohio
Filed June 24, 1965, Ser. No. 466,686
9 Claims. (Cl. 310—202)



1. A polyphase dynamoelectric machine having P poles including a core having S slots and teeth between said slots, and a graded winding on said core in said slots composed of m phase windings equal to the number of phases and formed into coils arranged in like groups of concentric coils providing mP phase pole groups of u coils each, where u is an integer not lower than three and is equal to the slots S per phase m per pole P, and each said phase pole group of u coils having the winding turns distributed so that for a given total effective conductors per phase Ck_w, the following equations are substantially satisfied:

$$C_1 \sin\left[\left(\frac{mu-1}{mu}\right)(90°)\right]+ C_2 \sin\left[\left(\frac{mu-3}{mu}\right)(90°)\right]\cdots+ C_u \sin\,[K(90°)]=\frac{Ck_wQR}{2P}$$

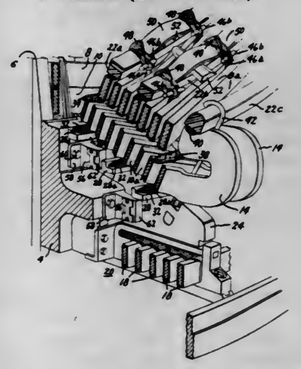
$$C_1 \sin\left[(n_1)\left(\frac{mu-1}{mu}\right)(90°)\right]+ C_2 \sin\left[(n_1)\left(\frac{mu-3}{mu}\right)(90°)\right]\cdots+ C_u \sin\,[(n_1)K(90°)]=0$$

$$C_1 \sin\left[(n_{u-1})\left(\frac{mu-1}{mu}\right)(90°)\right]+ C_2 \sin\left[(n_{u-1})\left(\frac{mu-3}{mu}\right)(90°)\right]\cdots+ C_u \sin\,[(n_{u-1})K(90°)]=0$$

where:
Q is the number of parallel circuits in each phase winding;
R is 1.0 for a Y-connected winding or two phase winding, and is $\sqrt{3}$ for a delta-connected winding;
n is the order of a possible harmonic designated by the equation $n=2ma\pm1$, where a is any integer;
C_1 is the number of winding turns of the outer coil in each phase pole group;
C_2 is the number of winding turns of the next inward coil in each phase pole group;
C_u is the number of winding turns of the innermost coil in each phase pole group; and

$$K=\begin{cases}\left(\frac{u+1}{mu}\right) \text{ for 3 phase,}\\ \left(\frac{2a\pm1}{mu}\right) \text{ for 2 phase, where } a \text{ is any integer.}\end{cases}$$

3,348,085
SPRING TIGHTENED GENERATOR END TURN SUPPORT CONSTRUCTION
Almy D. Coggeshall, Leo A. Mailhotte, and Robert L. Winchester, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 20, 1965, Ser. No. 473,356
5 Claims. (Cl. 310—260)

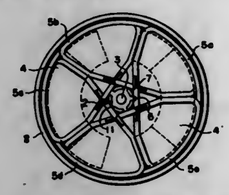


1. In a dynamoelectric machine including a stator winding having end turns, and a support means radially displaced from the end turns for supporting the end turns by engaging the radially outer portions thereof, a resilient arrangement for securing the end turns to the support means comprising:
(a) a ring abutting the radially inner portions of the end turns which are opposite the radially outer portions,
(b) a spring strip circumferentially secured to said ring on a side thereof opposite the end turns,
(c) a plurality of tension members for securing said spring strip and said ring to the support means, so as to secure the ends turns between the support means and said ring,
(d) a plurality of fulcrum blocks interposed between said ring and said spring strip intermediate said tension members, so as to cause said spring strip to be lifted from said ring under said tension members, whereby said spring strip is deflectable to maintain a resilient force on said tension members, said ring, and the stator winding end turns.

3,348,086
FLAT CORELESS DIRECT CURRENT MOTOR
Hiroshi Monma, Tokyo, Japan, assignor to Fujiya Denki Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 10, 1964, Ser. No. 410,054
Claims priority, application Japan, Nov. 20, 1963, 38/62,074; Apr. 21, 1964, 39/22,163; Apr. 27, 1964, 39/32,620
6 Claims. (Cl. 310—268)

1. A flat coreless direct current motor comprising, in combination, a substantially flat and substantially planar core assembly including five truncated-sector-shape substantially flat coils each having an angular extent of substantially 144° and a pair of radial legs, said coils being arranged in arcuately overlapping relation with each coil arcuately overlapping adjacent coils to an angular extent of substantially 72°; a pair of truncated-sector-shape field

magnets arranged in diametrically opposed symmetrically arcuately spaced relation and substantially concentric with said coil assembly; a commutator substantially concentric with said coil assembly; means mounting said coil assembly as said commutator for conjoint rotation relative to said field magnets; magnetic yoke means defining, with said field magnets, an air gap in which said coil assembly



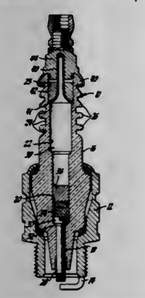
is positioned; the leading end of each coil, considered in the direction of coil assembly rotation, being connected to the trailing end of an adjacent coil at a respective junction point, and each junction point being connected to a respective commutator segment; and a pair of diametrically opposite brushes engaged with said commutator, the relative angular position of said brushes being such that commutation of each coil is effected when its bisecting radius coincides with the bisecting radius of a field magnet.

3,348,087

VISUAL INDICATING SPARK PLUG WITH AN INTEGRAL GAS LAMP

Robert W. Smith, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 12, 1965, Ser. No. 447,318
9 Claims. (Cl. 313—1)



1. A spark plug having means which serve as a visual indicator during sparking operations comprising an insulator having a centerbore therethrough and having translucent wall portions thereof, a terminal positioned above said insulator, a center electrode positioned in the lower portion of said centerbore, two hermetically sealed electrodes in spaced relationship in said centerbore, said two hermetically sealed electrodes and insulator walls forming a chamber in said centerbore, said insulator translucent wall portions forming a portion of said chamber, said chamber containing an inert gas, one of said sealed electrodes connected with said terminal and the other said sealed electrode connected with said center electrode.

3,348,088

ELECTRON TUBE APPARATUS

Stanley E. Allen, Jr., Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Sept. 8, 1964, Ser. No. 394,906
5 Claims. (Cl. 313—30)

1. In a microwave tube apparatus, means forming an electron gun for projecting a beam of electrons over an elongated predetermined beam path, means forming an elongated hollow beam collector structure disposed at the terminal end of the beam path for collecting and dissipating the energy of the beam, means disposed along the beam path intermediate said electron gun and said beam collector for electromagnetic interaction with the beam to produce an output microwave signal, means forming an elongated evacuated envelope enclosing said electron gun, the beam path and said collector structure, means for electrically insulating and supporting said hollow beam collector structure from said enclosing envelope structure, said insulating and supporting means including



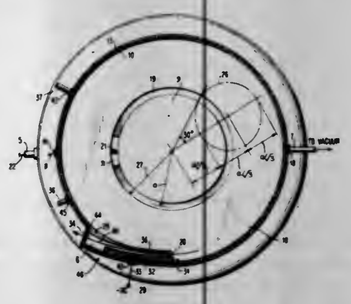
a ceramic insulating ring having an axis of revolution transversely directed to the direction of elongation of said hollow beam collector, sealing means at one end of said ceramic ring for sealing said ring to said enclosing vacuum envelope, and sealing means at the other end of said ring for sealing and connecting said insulating ring to said elongated beam collector structure for supporting the weight of said beam collector structure from said vacuum envelope structure with the supporting forces being exerted in shear on said insulative ring when the tube is positioned with its elongated envelope directed in the vertical direction.

3,348,089

CYCLOTRON ACCELERATOR HAVING THE ELECTROSTATIC FIELD APPEARING ACROSS A NON-LINEAR GAP

Llewellyn H. Thomas, Leonia, N.J., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 29, 1963, Ser. No. 298,022
10 Claims. (Cl. 313—62)



1. A particle accelerator comprising, in combination:
a vacuum chamber;
means for applying a magnetic field across the chamber;

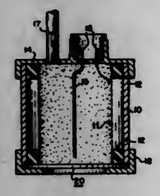
and means for applying an alternating electric field whose equipotential contours are conic sections.

3,348,090

44–60 ANGSTROM PHOTOMETER HAVING AN ALUMINUM COATED MYLAR WINDOW

Randolph G. Taylor, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 21, 1965, Ser. No. 500,444
1 Claim. (Cl. 313—93)



An improved 44–60 Angstrom unit photometer tube which comprises:
a cylindrical housing opaque to radiation,
said housing being closed at one end and open at the opposite end,
a cylindrical anode within said housing coaxial therewith and insulated therefrom,
a pin type electrical connector insulated from said closed end extending therefrom and connected electrically to said cylindrical anode,
a cathode extending along the axis of said housing coaxial with said anode,
a second pin type electrical connector insulated from said closed end, extending therefrom and connected electrically to said cathode on the inside of said housing,
a radiation permeable Mylar window secured over the closed end of said housing in a gas tight manner,
said Mylar having a thickness of about 0.25 mil,
gas leakage prevention means coated onto said Mylar window,
said gas leakage prevention means comprising an aluminum coating,
said aluminum coating having a thickness of about 1500 Angstrom units,
a gaseous filling of helium within said housing,
said helium gaseous filling having a pressure of about 400 torr, and
means secured to said housing for admitting said helium gaseous filling into said housing.

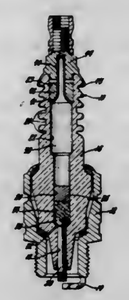
3,348,091

SPARK PLUG SEAL HAVING A LOWER COEFFICIENT OF EXPANSION THAN THE CERAMIC INSULATOR CORE

Harold H. Abdella, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 12, 1965, Ser. No. 447,135
7 Claims. (Cl. 313—136)

1. A spark plug comprising an insulator having a centerbore therethrough, a fused hermetic metal-glass seal of high electrical conductivity in said centerbore, said seal being positioned perpendicularly to the longitudinal axis of said centerbore and bonded to the insulator walls to prevent the flow of gas through the centerbore, said seal having a coefficient of expansion lower than said insulator which is sufficient for said insulator to exert a compressive force on said seal, said seal containing metal powder having metal particles having a size smaller than 10 mesh



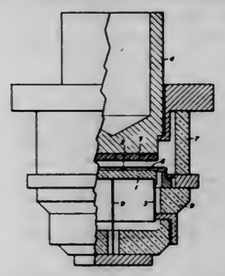
and larger than 100 mesh, said metal particles ranging from 35 weight percent to 100 weight percent of the metal powder.

3,348,092

ELECTRON DISCHARGE DEVICE HAVING A BARIUM DISPENSING ANODE STRUCTURE

James E. Beggs, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 4, 1965, Ser. No. 423,108
6 Claims. (Cl. 313—346)



1. An electron discharge device comprising a cathode having a thin stable oxide coating which is normally non-emissive at the temperature of operation of the said cathode, means for heating said cathode to its operating temperature, and an anode juxtaposed with respect to said cathode which anode is formed of a refractory metal material residing at a temperature somewhat less than said cathode during operation of said device, wherein said anode is provided with barium oxide material reduced very gradually to barium at the operating temperature of said anode for dispensing said barium on to the oxide coating of said cathode for enhancing the electron emission thereof.

3,348,093

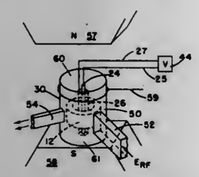
METHOD AND APPARATUS FOR PROVIDING A COHERENT SOURCE OF ELECTROMAGNETIC RADIATION

Sandor Holly, Cambridge, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts.

Filed June 14, 1963, Ser. No. 287,937
9 Claims. (Cl. 315—3)

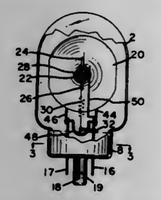
1. An electromagnetic radiation source, comprising in combination
(a) a dielectric ring resonator in the form of a hollow cylindrical body defining within it an evacuatable space;

(b) means for supplying electrons in said space, the velocities of said electrons thus supplied having no axial components;
(c) means for sustaining a radial electrostatic field within said space;
(d) means for sustaining an axial direct current magnetic field within said space;
(e) means, in conjunction with said means for sustaining said electrostatic and said direct current magnetic fields, for supplying an electromagnetic field, the electric field component of which is perpendicular to said axial direct current magnetic field and equal to the cyclotron frequency of said supplied electrons (as specified by the intensity of said direct current magnetic field), said means for sustaining



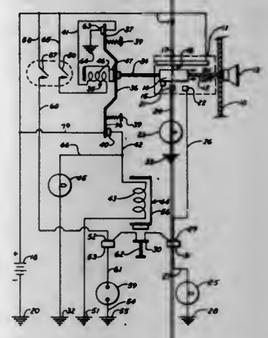
said axial direct current magnetic field and said means for supplying said electromagnetic field in combination with said means for sustaining said radial electrostatic field being adapted to impart orbital motion to said supplied electrons whereby they remain in an orbit adjacent the side wall of said cylindrical body at an angular velocity greater than the velocity of light in said dielectric, thereby to generate Cerenkov radiation in said dielectric resonator; the pumping signal level of said supplied electromagnetic field of cyclotron frequency and at a level sufficient to impart to said electrons energy equivalent to that lost through said Cerenkov radiation and operational inefficiencies; and
(f) means for extracting a portion of said Cerenkov radiation.

3,348,094
PROJECTION LAMP INCLUDING A BLACKENING CONTROL DEVICE
Richard E. Smith, Lexington, Ky., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 28, 1965, Ser. No. 516,991
5 Claims. (Cl. 315—71)



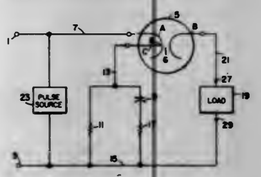
1. A projection lamp comprising: an hermetically sealed glass envelope; a plurality of lead-in wires sealed in said envelope; a filament disposed in said envelope and connected to two of said lead-in wires; a reflector disposed in said envelope and spaced from the inner wall thereof, said reflector being further disposed in light-reflecting relationship with respect to said filament; means for supporting said reflector disposed as aforesaid; a probe mounted on one of said lead-in wires and extending substantially parallel to and close to said filament; and high resistance means connecting said probe to a voltage source.

3,348,095
VEHICLE BATTERY POWER PROTECTION SYSTEM INCLUDING LIGHT SWITCHING MEANS
Howard M. Gold, 1155–100 St., Bay Harbor Island, Miami Beach, Fla. 33139
Filed Aug. 30, 1965, Ser. No. 483,614
7 Claims. (Cl. 315—80)



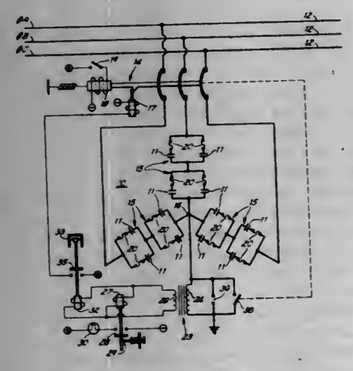
6. In an ignition system for an automotive vehicle having a battery, an ignition switch, a start switch, a start solenoid, a light switch, wire means connecting the positive pole of said battery to said start switch, said ignition switch and said light switch, a headlight, the combination comprising control relay means connected to said ignition switch, power relay means connected to said control relay means whereby upon energizing said control relay means said power relay means remains non-energized, relay operated switch means connected to said start switch and said light switch, terminals positioned normally in contact relation with said relay operated switch means connected to said start solenoid and said headlight and means mounted on said light switch operatively connected to said control relay means whereby upon actuation of said light switch said control relay operates to energize said control relay and effect the actuation of said relay operated switch means to prevent energizing said solenoid and said headlight.

3,348,096
VARIABLE PULSE ENERGY DISCRIMINATOR
James B. Wright and James Darryl Holder, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 25, 1964, Ser. No. 392,377
10 Claims. (Cl. 315—109)



1. A variable pulse energy discriminator device including: an input terminal; common terminal; a spark gap device including first, second and third electrodes, said first and third electrodes forming an ignition gap, said first and second electrodes forming a discharge gap; means connecting the first electrode to the input terminal; storage and discharge means connected in parallel to said third electrode and the common terminal; and a load means connected to said second electrode and said common terminal, whereby when sufficient energy with reference to a preset potential is impressed across the input and common terminals, the ignition gap is caused to conduct thereby applying a maximum current through the ignition gap into said storage means and simultaneously injecting ions into the discharge gap causing conduction across the discharge gap to the load means.

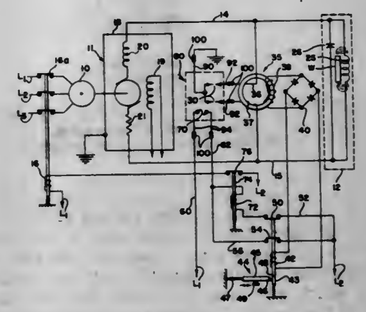
3,348,097
CAPACITOR BANK HAVING UNBALANCE DETECTING PROTECTIVE MEANS
Donald J. Lemens, Fort Atkinson, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,059
5 Claims. (Cl. 317—12)



1. In a three phase capacitor bank comprising a plurality of capacitor units and having three phase switch means for connecting said capacitor units in star to a polyphase power system, means including a potential transformer having its primary winding connected between the neutral of said star-connected capacitor units and ground for detecting unbalance in the phases of said polyphase capacitor bank, and means for preventing the voltage of said neutral from exceeding a predetermined magnitude relative to ground during normal operation and during switching of said bank including a spark gap connected between said neutral and ground and a normally open switch also connected between said neutral and ground and constructed and arranged to be closed when said three phase switch means is being operated between open and closed positions.

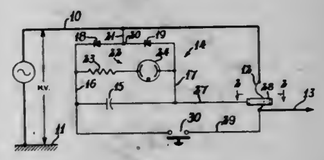
3,348,098
SURGE PROTECTOR FOR HIGH FREQUENCY POWER SYSTEM
Howard D. Hausenfleck, Southfield, Mich., and Gary M. Brittain, Cleveland, and Peter J. Tsivitse, Euclid, Ohio, assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 26, 1965, Ser. No. 435,590
5 Claims. (Cl. 317—13)

1. In a high frequency power system including a high frequency power source having a frame, a load circuit connected onto said power source by a pair of power leads and means for preventing damage from over-voltage between said leads and said frame, said means comprising elements forming a spark gap between each of said leads and said frame and a means responsive to current flow across at least one of said spark gaps for de-energizing said power source, the improvement comprising: a disposable container removably secured with respect to said power source, said spark gap forming elements being permanently housed within said container, a destructive fuse means for blocking energization of said power source when said fuse means is destroyed, means for destroying said fuse means in response to current flow across one or more of said spark gaps and said fuse means being permanently affixed with respect to said



container, said destroying means including an actuable means operated in response to current flow across one or more of said spark gaps, a line connected across points of high potential, and circuit means connecting said high potential line directly across said fuse means upon operation of said actuable means whereby said fuse means is destroyed.

3,348,099
ELECTRIC CIRCUIT CONTROL SYSTEM EMPLOYING CAPACITOR STORAGE AND DISCHARGE
Edmund O. Schweitzer, Jr., 1002 Dundee Road, Northbrook, Ill. 60062, and Robert R. Lockwood, 312 S. Derbyshire Lane, Arlington Heights, Ill. 60604
Filed Mar. 26, 1965, Ser. No. 443,005
44 Claims. (Cl. 317—22)

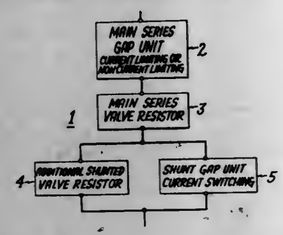


1. In an electric power system, the combination with a line conductor energized at a relatively high alternating voltage connected by circuit interrupter means to a load conductor, and operating means for said circuit interrupter means to disconnect said load conductor from said line conductor; of means for initiating the functioning of said operating means including: capacitor means, rectifier means, conductive circuit means directly interconnecting said capacitor means and one of said conductors through said rectifier means to charge one side of said capacitor to one polarity during those half cycles of the alternating voltage of said one polarity and to charge the other side of said capacitor to the opposite polarity during those half cycles of the alternating voltage of said opposite polarity whereby said capacitor means is charged to a unidirectional voltage, and circuit means for interconnecting said capacitor means and said operating means.

3,348,100
SPARKOVER CONTROL CIRCUIT FOR LIGHTNING ARRESTER SHUNT GAP UNIT

James S. Kresge, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Mar. 22, 1965, Ser. No. 441,682
15 Claims. (Cl. 317—70)

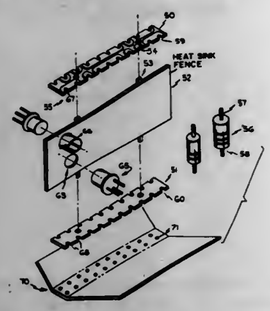


1. A valve resistor shunting current switching gap unit for a lightning arrester comprising, in combination, at least two main spark gaps, a magnetic coil, said main gaps and coil being serially connected with the coil in the middle, a spark gap connected across said coil, said spark gaps all having about the same individual sparkover voltage, and means for sequentially sparking over said gaps at an applied voltage across the series circuit which is between the individual sparkover voltage of said gaps and the sum of the sparkover voltages of all said gaps, the sequence being such that one main gap sparks over before the coil shunting gap sparks over.

3,348,101
CORDWOOD MODULE WITH HEAT SINK FENCE

Robert E. Klein and Jack Gammon, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware

Filed May 27, 1964, Ser. No. 370,480
1 Claim. (Cl. 317—100)

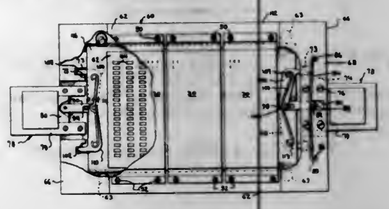


A high density cordwood module comprising a heat sink fence, said fence including a rectangular flat plate of good thermal conductivity having essentially straight edges, a staking pin fastened along each of two parallel edges of said flat plate, a pair of printed circuit boards, each of said boards including at least one staking hole, each of said boards being mounted over one of said staking pins and aligned in spaced parallel relation to the other board, said printed circuit boards having printed circuitry on at least one side, said printed circuit boards including serrated edges, a plurality of electrical components having terminals mounted on the serrated edges of said printed circuit boards, and said fence incorporating a hole and a collar to fit around an additional electrical component, said hole and collar thereby providing means for removing heat from said component.

3,348,102
ASSEMBLY AND DRIVE MECHANISM FOR ELECTRICAL SWITCHES AND CONNECTORS

Cornellus William Bosland, Bruce Richard McFadden, and Ronald John Brookman, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Sept. 7, 1966, Ser. No. 577,744
12 Claims. (Cl. 317—112)

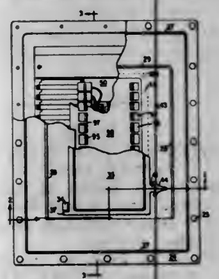


1. In an assembly for use in switching or connecting electrical circuit paths the combination comprising a frame member of rigid construction having an opening therein, a plate member of rigid construction positioned in said opening and dimensioned to be displaced therein, means to engage opposite edges of said plate member to confine said plate against movement along the width axis of said frame member and to permit movement along the length axis of said frame member, means attached to said frame extending over the major surfaces of said plate member and spaced therefrom, said means including an array of spring members extending inwardly to engage the opposing major surfaces of said plate member, said spring members being deflected to be spring loaded under substantial pressure against said plate member to center said plate member in said frame member and to support said plate member against movement along an axis transverse to the said width and length axes of said frame member and means connected to said plate member to drive said plate member along said length axis to cause said spring members to engage different portions of the major surfaces thereof.

3,348,103
CLASS 1, DIVISION 2, PANEL BOARD

Richard C. Berry, Camillus, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York

Filed Sept. 12, 1966, Ser. No. 578,661
3 Claims. (Cl. 317—120)

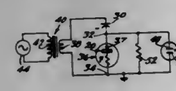


1. An electrical distribution panel comprising a cabinet, a plurality of individual circuit controllers mounted in said cabinet, each of said circuit controllers comprising a flame tight explosion proof enclosure formed of heat conducting material having a thermal conductivity greater than about 50 B.t.u. per hour, per foot square, per foot thick, per degree Fahrenheit, a switching device mounted in said enclosure and having arc producing contacts connected to terminals, the inner surface areas of said enclosure being shaped and dimensioned to closely follow the contours of said switching device in heat exchanging relation thereto, an actuator mounted in flame tight relation in said enclosure and being operable externally thereof for moving the contacts of said switching device into and out of engagement, conductors connected to the terminals of said switching device and extending externally of said enclosure, said conductors being sealed in flame tight relation in said enclosure.

3,348,104
BIAS-CONTROLLED A.C.-OPERABLE VOLTAGE THRESHOLD CIRCUIT, AND SYSTEMS EMPLOYING SAME

Robert J. Zielinski, Mayfield Heights, and Frederick W. Westberg, North Olmsted, Ohio, assignors to American Gas Association, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 14, 1964, Ser. No. 417,960
23 Claims. (Cl. 317—130)



1. An electrical circuit for detecting the presence or absence of a flame, comprising:

a pair of flame electrodes positioned adjacent a source of a flame of rectifying characteristics so as to provide electrical contact to spaced regions of said flame when said flame is present;

a source of an alternating voltage of predetermined maximum peak-to-peak amplitude;

capacitive means connected in common series circuit with said source and said flame electrodes; and

voltage-breakdown means having a pair of discharge-electrode means connecting said voltage-breakdown means in parallel with said flame electrodes, said voltage-breakdown means being characterized by a firing voltage which, when applied between said discharge-electrode means while said voltage-breakdown means is in its low-conduction state will change said voltage-breakdown means to its high-conduction state, and also characterized by an extinction voltage which when applied between said discharge-electrode means while said voltage-breakdown means is in its high-conduction state will change said voltage-breakdown means to its low-conduction state;

said common series circuit being responsive to said alternating voltage when said flame is present to charge said capacitive means with a direct-voltage component of a given sign in response to one polarity of said alternating voltage and to add to said direct-voltage component a varying component of the same sign during the occurrence of the opposite polarity of said alternating voltage, whereby the total voltage applied between said discharge-electrode means during said occurrence of said opposite polarity rises to a value greater than that of either polarity of said alternating voltage alone and greater than said firing voltage of said gas-discharge means, said common series circuit being responsive to said alternating voltage in the absence of said flame to generate a voltage for application between said discharge-electrode means which is no greater than the peak value of either polarity of said alternating voltage;

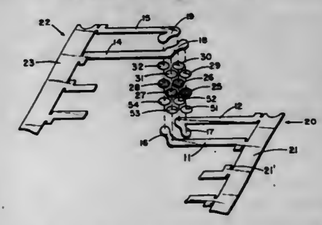
said firing voltage being greater than the zero-to-peak value of either polarity of said alternating voltage but less than the peak-to-peak value thereof, whereby said voltage-breakdown means is changed to its high-conduction state only when said flame is present;

said common series circuit having sufficiently low inductance reactance to permit said capacitive means to discharge through said voltage-breakdown means, when said voltage-breakdown means is in said high-conduction state, until said voltage applied to said discharge-electrode means falls below said extinction voltage and said capacitive means recharges, whereby said voltage-breakdown means alternates between said high-conduction state and said low-conduction state when said flame is present but is in its low-conduction state whenever said flame is absent.

3,348,105
PLASTIC PACKAGE FULL WAVE RECTIFIER

George Allen Doyle, North Palm Beach, Fla., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Continuation of application Ser. No. 255,824, Feb. 4, 1963. This application Sept. 20, 1965, Ser. No. 493,608
7 Claims. (Cl. 317—234)



1. A bridge rectifier assembly, comprising four flat metal strips having overlapping mounting portions with a first pair of said strips having lead portions projecting in one direction and a second pair of said strips having lead portions projecting in the opposite direction, the mounting portions of said first pair of strips extending parallel to each other and at an angle relative to the lead portions thereof, and the mounting portions of said second pair of strips extending parallel to each other and at right angles to said first-mentioned mounting portions, semiconductor material soldered between the mounting portions of said pairs of strips, said semiconductor material containing four PN junctions, two of said junctions having a common cathode connection to the mounting portion of one of said first pair of strips and having individual anode connections to the mounting portions of separate ones of said second pair of strips, and the other two of said junctions having a common anode connection to the mounting portion of the other of said first pair of strips and having individual cathode connections to the mounting portions of separate ones of said second pair of strips, and insulating material encapsulating said semiconductor material and the mounting portions of said strips.

3,348,106
TUBULAR CONDENSER OF VARIABLE CAPACITY

Ottmar Vinz, Landshut, Germany, assignor to JENAer Glaswerk Schott & Gen., Mainz, Germany, a corporation of Germany

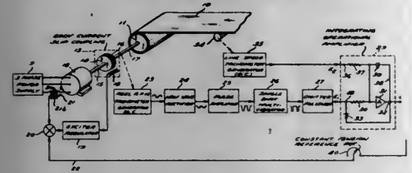
Filed June 15, 1966, Ser. No. 557,792
Claims priority, application Germany, June 16, 1965, J 28,354
3 Claims. (Cl. 317—249)

1. A tubular condenser of variable capacity comprising a dielectric in the form of a tubular member, an exterior electrode fixedly mounted on the outer circumference of said tubular member, a slidably mounted inner electrode within said tubular member, said slidable electrode comprising a piston axially slidably arranged in said tubular member and attached to an axially extending threaded spindle threadedly supported in a mounting flange at one

end of said tubular member, the thread on said threaded spindle having flattened crests to have a trapezoidal profile which reduces at high frequencies the supply conductor resistance for the electric current passing from the spindle to the piston by reducing the length of the current path.

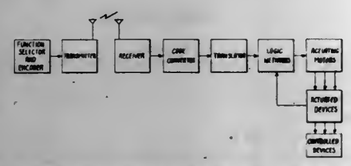


3,348,107
TENSION CONTROLLED WEB DRIVE
Russell S. Hamby, Cleveland, Ohio, assignor to The Reliance Electric and Engineering Company, a corporation of Ohio
Filed July 1, 1964, Ser. No. 379,479
13 Claims. (Cl. 318—6)



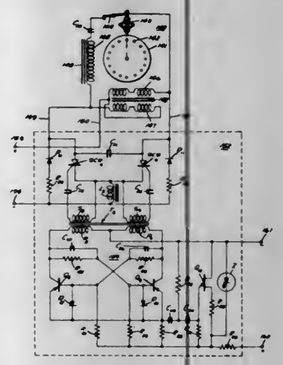
1. A control for regulating the tension on a web wound on a rotatable reel comprising, a variable speed arrangement for the reel, said variable speed arrangement having a normally constant torque,
means for sensing the torque of said variable speed arrangement,
means for generating a reel speed signal,
means for generating a line speed signal,
an integrating operational amplifier, means applying said reel speed signal and said line speed signal to said integrating operational amplifier of opposite polarity for obtaining a control signal directly proportional to said line speed signal and inversely proportional to said reel speed signal,
and means responsive to said torque sensing means and responsive to said control signal for regulating the torque of said variable speed arrangement.

3,348,108
SYSTEM FOR REMOTELY CONTROLLING THE OPERATION OF A PLURALITY OF MOTORS
Anthony D'Onofrio, West Hartford, Conn., assignor to Pratt & Whitney Inc., Hartford, Conn.
Filed May 13, 1963, Ser. No. 279,962
27 Claims. (Cl. 318—16)



11. A system for controlling the position of a plurality of actuated devices with respect to a reference position comprising, means for selecting one of said devices for operation in a desired direction, means responsive to said selecting means for reiteratively generating a pulse code pattern indicative of the selected device and the desired direction of operation thereof, means for varying the amplitude of the pulses of the generated pulse code pattern, means responsive to the generated pulse code pattern for generating an actuating signal proportional in magnitude to the amplitude of the pulses of the generated pulse code pattern, means responsive to the generated pulse code pattern for selecting the desired device and its direction of operation and means for operating the actuated device to a position proportional in displacement from a reference position to the magnitude of the actuating signal.

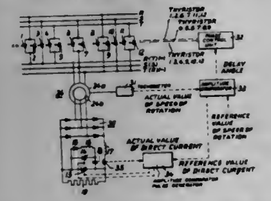
3,348,109
ELECTRIC MOTOR WINDING ARRANGEMENTS
Floyd H. Wright, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed May 1, 1964, Ser. No. 364,105
8 Claims. (Cl. 318—220)



1. In an alternating current motor for operation from a semiconductor switching network energized from a direct current source for supplying current thereto in predetermined time-phase relation, a magnetic core having a plurality of slots, at least one pair of main windings positioned in slots to form at least two primary magnetic running poles, said main windings being inductively coupled in the slots of the magnetic core, one of the main windings of said pair of poles producing one instantaneous polarity of said primary magnetic running poles and the other main winding producing the opposite instantaneous polarity of said primary magnetic running poles, said main windings comprising a number of bifilar wound coils, means electrically joining one end of one main winding in circuit with one end of the other main winding for providing a tap connection and including leads brought out from the other ends of said main windings in order to alternately energize the main winding through said tap connection thereby to cause the polarity of said primary magnetic running poles to alternate with said main windings alternately operating as a primary winding and a secondary winding to produce a voltage across said leads greater than the voltage of the source.

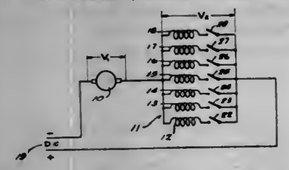
3,348,110
ELECTRONIC CONTROL OF MOTORS
Floris Koppelmann, Berlin, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 23, 1964, Ser. No. 406,084
Claims priority, application Germany, Nov. 8, 1963, L 46,295
5 Claims. (Cl. 318—227)

1. In combination with a three phase power supply mains and an asynchronous motor including a three-phase stator and a rotor having slip rings connected thereto, a control circuit for controlling said motor in such a manner as to cause it to be rotated in either direction over a wide range of speeds and to be braked by a direct current for either direction of rotation, said circuit comprising:
(a) stator side control means consisting of a first pair of thyristors connected in parallel opposition between a first phase of said mains and a first phase of said stator, a first individual thyristor connected between a second phase of said mains and said first phase of said stator in such a manner as to conduct in a forward direction toward said stator, a second pair of thyristors connected in parallel opposition between a third phase of said mains and said first phase of said stator, a third pair of thyristors connected in parallel opposition between said second mains phase and a second phase of said stator, a fourth pair of thyristors connected in parallel opposition between said second mains phase and a third phase of said stator, a second individual thyristor connected between said second mains phase and said third stator phase in such a manner as to conduct in a forward direction away from said stator, and a fifth pair of thyristors connected in parallel opposition between said third mains phase and said third stator phase;



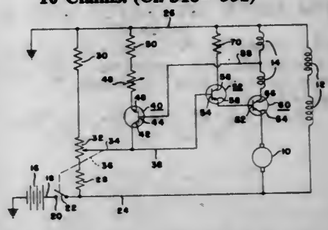
(b) resistor means connected between said slip rings; and
(c) electronic switching means connected in parallel with said resistor means for periodically short circuiting said resistor means.

3,348,111
DIRECT CURRENT MOTOR WITH MULTIPLE FIELD WINDINGS CONNECTED IN PARALLEL
Vernon Harold Woehler, 2007 S. Gladys Ave., Appleton, Wis. 54911
Continuation of application Ser. No. 308,125, Sept. 11, 1963. This application May 5, 1967, Ser. No. 636,552
3 Claims. (Cl. 318—252)



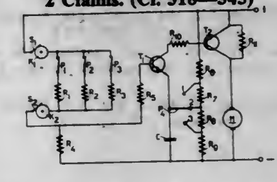
1. In a direct current motor having an armature, a series wound field and a torque-speed controller, the improvement in said controller for providing motor torque and speed control in a full range of steps from low speed to high speed, said improvement comprising said series wound field having a plural number of field coils equal to the number of torque-speed steps in said full range, and a manually actuated switch for each coil to selectively disconnect one or more coils from the field or connect one or more of said coils in the field directly in a series with the armature and in parallel with any other coil so connected so that for each said step there is a different number of coils in parallel with each other but in direct series connection with the armature and the resistance of the field decreases and the voltage drop across the armature increases as said switches are successively closed.

3,348,112
TRANSISTORIZED D.C. MOTOR SPEED CONTROL SYSTEM
John J. Saeli, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,039
10 Claims. (Cl. 318—332)



1. A motor speed control system including, a direct current electric motor having an armature circuit, a series field winding and a shunt field winding, an electric power source, an energizing circuit for said motor and a control circuit for said energizing circuit including a potentiometer connected with said power source and said armature circuit for adjusting the voltage applied across said armature circuit, power transistor means operating in the emitter-follower mode connected in said armature circuit and with said potentiometer, and means responsive to current flow through said armature circuit for controlling said armature circuit voltage to regulate the speed of said motor under varying load conditions.

3,348,113
SPEED CONTROL CIRCUIT FOR A MULTISPEED ELECTRIC COMMUTATOR MOTOR
Radek Vichr, Brno, Czechoslovakia, assignor to Presna mechanika narodny podnik, Stara Tura, Czechoslovakia
Filed May 4, 1965, Ser. No. 452,970
Claims priority, application Czechoslovakia, May 7, 1964, 2,660/64
2 Claims. (Cl. 318—345)



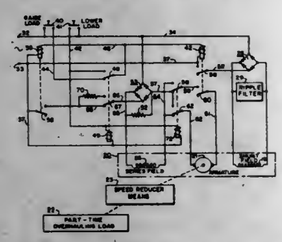
1. A speed control circuit for a multi-speed electric commutator motor comprising a first transistor, a complementary second transistor, a first voltage divider, a second voltage divider, both said voltage dividers connected to a source of supply voltage, a number of contacts controlled by centrifugal force due to rotation of the electric motor, said contacts adapted to adjust the distribution of voltage on said first voltage divider, parts of said first voltage divider and said contacts arranged on the rotating part of the electric motor, a couple of slip ring conacts adapted to connect the elements on the rotating part of the electric motor with the remaining stationary elements, a change-over switch adapted to select the required tap on said second voltage divider, the tap of the first voltage divider connected by way of a limiting resistor to the base electrode of the first transistor, the emitter electrode of the first transistor connected by way of said change over switch to the second voltage divider, the collector electrode of the first transistor connected by way of a resistor to the base electrode of the second transistor, the emitter electrode of the second transistor connected to one pole of the supply voltage, its collector

electrode connected by way of the controlled electric commutator motor to the second pole of the supply voltage, a resistor connected between the emitter and collector electrodes of the second transistor.

3,348,114
MOTOR DRIVE APPARATUS WITH DYNAMIC BRAKING

Robert L. Wright, Jr., N. Linthicum, and Harry E. Koerner, Catonsville, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 11, 1964, Ser. No. 366,538
4 Claims. (Cl. 318—369)

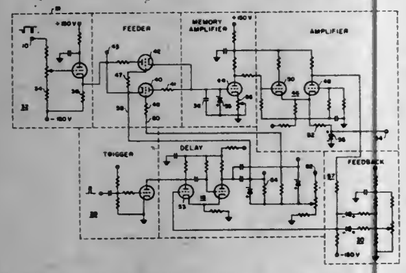


1. A drive system comprising alternating current line conductors; a direct current motor having an armature in mechanical torque-coupled connection to a part-time overhauling load and having a shunt field; means supplying energizing direct current to said shunt field during operation of the system including at times both load actuation and load braking; full-wave bridge rectifier means having input terminals and output terminals; and circuit means connecting the rectifier input terminals to said alternating current line conductors, and connecting said armature and said dynamic braking current absorbing means simultaneously across the rectifier output terminals, during both load actuation and load braking.

3,348,115
TRACKING AUTOMATIC GAIN CONTROL CIRCUIT

Criley Orton, Arlington, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 26, 1964, Ser. No. 392,351
3 Claims. (Cl. 320—1)



2. An automatic gain control circuit for a pulse energy receiver comprising:

(a) a storage device,

(b) a charging circuit connected in series with said storage device including a normally non-conducting switching circuit,

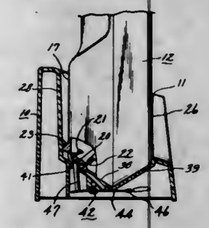
(c) a variable width periodic pulse generating means coupled to said charging circuit for turning on said normally non-conducting switching circuit and allowing a charge to flow to said storage device,

(d) and feedback circuit means connecting said charge storage means to said periodic pulse generating means for controlling the width of the pulse supplied to said switching circuit.

3,348,116
ELECTRIC KNIFE STORAGE CASE AND BATTERY CHARGER

Arthur H. Freeman, Brockport, N.Y., and Hugh M. Forman, Wauwatosa, Wis., assignors to General Electric Company, a corporation of New York

Filed Oct. 2, 1964, Ser. No. 401,155
6 Claims. (Cl. 320—2)



1. A storage rack and battery charger for a motorized electric knife handle containing a rechargeable battery comprising:

(a) a housing;

(b) electrical means in said housing for charging said battery;

(c) a pair of contacts having portions disposed on the exterior of and mounted on said handle and connected to said battery;

(d) a socket formed in said housing substantially conforming to a portion of said handle to fix said handle with respect thereto;

(e) said socket including a wall portion having a pair of apertures therein;

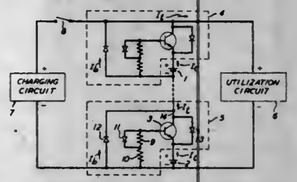
(f) a pair of terminal means included within said electrical means, each of said terminal means extending through a respective one of said apertures into said socket and positioned to slidingly engage the surface of a respective one of said contacts so as to insure wiping of said contacts on insertion of said handle into said socket; and

(g) cooperating alignment means formed on said handle and on said socket for insuring electrical contact between said contacts and said terminal means when said handle is positioned in said socket.

3,348,117
CELL ANTI-REVERSAL PROTECTION NETWORK

William E. Howden, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 28, 1964, Ser. No. 407,034
6 Claims. (Cl. 320—18)

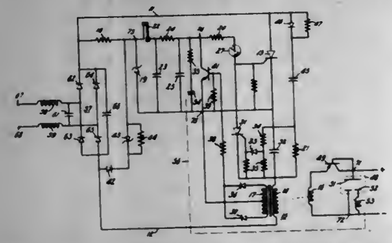


1. A plurality of cell protection networks serially connected with a plurality of serially connected cells and a utilization circuit, each of said cells being subject to overdischarge destruction when the polarity across the cell reverses, each of said protection networks comprising a normally conductive transistor having base, collector, and emitter electrodes, and a normally nonconductive semiconductor diode, means connecting the said cell individually associated with each of said protection networks to the emitter-collector path of said transistor of the said protection network associated therewith in each of said plurality of said protection networks, means connecting the emitter-base path of said transistor in each of said plurality of protection networks to said individual cell associated therewith so that the emitter-collector path of said transistor is normally conductive in response to the potential across said cell and nonconductive when the potential across said cell falls below a predetermined magnitude greater than the magnitude at which polarity reversal occurs, and means connecting in each of said plurality of protection networks said normally nonconductive diode in parallel with, and in the same forward conductivity direction as, the emitter-collector path of said transistor to render said diode conductive in the forward conductivity direction before the emitter-collector path of said transistor becomes nonconductive so as to provide a bypass path around said cell before the potential across said cell reaches said predetermined magnitude.

3,348,118
BATTERY CHARGING CIRCUITS

Donald L. Watrous, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 14, 1964, Ser. No. 396,006
5 Claims. (Cl. 320—40)

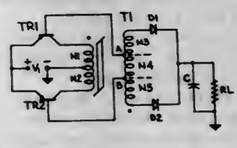


1. A charging circuit for charging an energy storage device to a predetermined energy level including in combination a pair of power supply terminals adapted to be connected across a source of electric potential, a conductivity controlled conducting device operatively connected in series circuit relationship with the primary winding of a transformer having inductively coupled primary and secondary windings, the series circuit thus comprised being connected across a pair of power supply terminals, turn-on means for turning on said conductivity controlled conducting device to cause it to conduct, turn-off means for turning off said conductivity controlled conducting device after a desired interval of conduction, rectifying means for coupling the secondary winding of the transformer across the energy storage device, sensing means for sensing the energy level of the energy storage device, and means operatively intercoupling the output from such sensing means to said turn-on means for rendering said turn-on means inoperative to turn-on said conductivity controlled conducting device upon said energy storage device reaching a predetermined energy storage level, wherein said conductivity controlled conducting device comprises a gate turn-off silicon controlled rectifier device, and wherein the circuit is further characterized by current diverting circuit means operatively connected in parallel circuit relationship with the gate turn-off silicon controlled rectifier device for supplying a holding current to the device during its initial turn-on, and for diverting current from the device upon its being turned off and returned to its blocking or non-conducting condition.

3,348,119
DC/DC TRANSFORMER WITH CURRENT FEEDBACK

Earle Lester Robert Webb, Ottawa, Ontario, Canada, assignor to National Research Council, Ottawa, Ontario, Canada, a body corporate of Canada

Filed May 1, 1964, Ser. No. 364,162
1 Claim. (Cl. 321—2)



A DC/DC converter comprising:

(a) a transformer having a saturable magnetic core,

(b) a first transistor having its collector connected to one end of the primary winding on said transformer,

(c) a second transistor, having its collector connected to the other end of the primary winding and its emitter connected to the emitter of the first transistor,

(d) input DC voltage connections between the common emitters and the mid-point on the said primary winding, said mid-point being grounded,

(e) connections from the ends of the secondary winding of the said transformer through diodes to a common point,

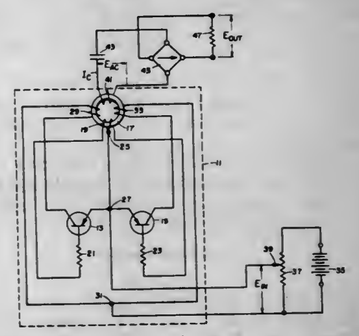
(f) load connections between the said common point and ground,

(g) feedback connections from the bases of said transistors to taps connected symmetrically about the untapped center of the secondary winding of the said transformer, said taps encompassing only a minor proportion of the total number of turns on the secondary winding.

3,348,120
SQUARE-LAW CIRCUIT

William A. Geyger, deceased, late of Takoma Park, Md., by Ella Geyger, executrix, 8510 Flower Ave., Takoma Park, Md. 20012

Filed Oct. 1, 1964, Ser. No. 400,964
2 Claims. (Cl. 321—2)



1. A circuit for performing a square-law function,

a switching-transistor magnetic-core multivibrator having a first transistor having a collector, an emitter, and a base,

a second transistor having a collector, an emitter, and a base,

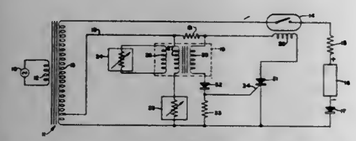
a saturable core,

first winding means on said core and having a center tap,

second winding means on said core and having a center tap,

means connecting said bases to said first winding means,
means connecting the collectors of said first and second transistors to said second winding means,
an output winding means on said core,
a source of D.C. voltage having a positive terminal and a negative terminal,
means connecting said positive terminal to the emitters of said first and second transistors and to the center tap of said first winding means,
means connecting said negative terminal to the center tap of said second winding means whereby said transistors may be energized,
a square-law output circuit comprising a capacitor, a diode bridge rectifier having input terminals and output terminals, means serially connecting said capacitor and said output winding to said input terminals, load means connected to said output terminals whereby an output voltage may be produced across said load means which is proportional to the square of the magnitude of the input voltage from said D.C. voltage source.

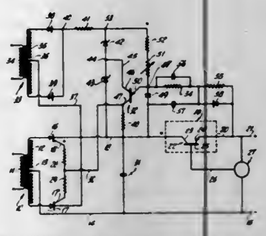
3,348,121
HIGH VOLTAGE SYNCHRONOUS SWITCH
Nanjundiah N. Murthy, Norwalk, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed July 11, 1963, Ser. No. 294,300
4 Claims. (Cl. 321—16)



1. A switching system for supplying adjustable amounts of current from a high voltage AC supply to a load without interrupting a current carrying circuit, comprising in combination:
a pair of switch contacts coupled to interrupt all current fed to said load from said AC supply;
synchronizing means coupled to actuate said pair of switch contacts;
switch means conditioned to pass alternate half-cycles of said AC supply coupled to energize said synchronizing means; and
adjustable switch actuating means coupled to inhibit said switch means for passing to said synchronizing means a desired portion of each of said alternate half-cycles;
whereby said switch contacts open only at the end of a half-cycle of said AC supply when the current in said circuit interrupted by said contacts is substantially zero.

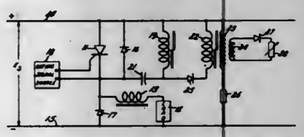
3,348,122
REGULATED POWER SUPPLY
Paul G. Todd, Great Neck, N.Y., assignor to Trygon Electronics, Inc., Roosevelt, N.Y., a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,379
3 Claims. (Cl. 321—18)

1. A regulated power supply comprising a first center-tapped source of alternating current, a pair of silicon controlled rectifiers interconnected with said source to produce full wave rectified alternating current, a filter condenser connected at one side to said rectifiers and at the other side to said centertap, a pair of output terminals, a series regulator connecting one side of said condenser to one of said output terminals, a connection between the other side of said condenser and the other of said output terminals, voltage sensing means connected between said output terminals and said series regulator to control the magnitude of the output voltage, a reference source of full wave unfiltered rectified alternating current, a connection between one side of said reference source and one side of said condenser to connect said voltages in additive relationship, a voltage divider comprising series connected impedances connected between the other side of said reference source and the output side of said series regulator, said voltage divider having at least one tap thereon, a control condenser connected between the input of said series regulator and said tap on said voltage divider, a unijunction transistor having an emitter and two bases, a



connection between said emitter and said tap on the voltage divider, means connected with said reference source and one of said transistor bases to provide a fixed voltage to said base, and a connection between the other of said bases and said silicon controlled rectifiers, said control condenser upon being charged to a predetermined value causing said unijunction transistor to fire and apply a pulse to fire said silicon controlled rectifiers, said predetermined value being attained at approximately the midpoint of each half cycle when the voltage drop across the series regulator is low and at points beyond the midpoint of each half cycle as the voltage drop across the series regulator increases.

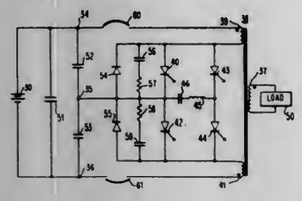
3,348,123
INHIBIT CONTROL FOR POWER CIRCUITS
Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 17, 1964, Ser. No. 360,557
12 Claims. (Cl. 321—44)



1. An inhibit control for a power circuit including a saturable reactor winding wound on a common saturable core member with a reset winding, a first inhibit winding wound in common on the saturable core member with the saturable reactor winding and the reset winding, first circuit means connected in series circuit relationship with the first inhibit winding to form a passive closed series circuit loop energized by the first inhibit winding, first control means included in the first circuit means for controlling current flow through the closed series circuit loop to thereby control the operation of the saturable reactor winding, at least one additional take-over inhibit winding wound in common on the saturable core member with the saturable reactor winding, the reset winding, and the first inhibit winding, additional circuit means connected in series circuit relationship with the additional inhibit winding to form a passive closed series circuit loop energized by the additional take-over inhibit winding, and additional control means included in the additional circuit means

for controlling current flow through the additional closed series circuit loop to thereby control the operation of the saturable reactor winding.

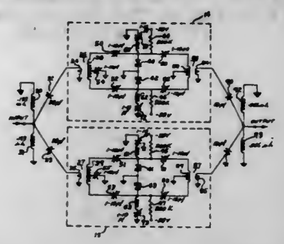
3,348,124
SPLIT PRIMARY INVERTER
John R. Cielo, West Hurley, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,681
3 Claims. (Cl. 321—45)



1. An inverter circuit comprising
an output transformer having first and second primary windings,
power source means having first, second and third terminals with the potential at said first terminal being positive with respect to said second terminal and the potential at said second terminal being positive with respect to said third terminal,
a first main controlled rectifier connected in series with said first primary winding across said first and second terminals for providing a forward conduction path therebetween,
a second main controlled rectifier connected in series with said second primary winding across said second and third terminals for providing a forward conduction path therebetween,
a series resonant circuit means connected on one side to said second terminal,
first and second commutating controlled rectifiers commonly connected to the other side of said resonant circuit means for providing first and second commutating circuits, said first and second commutating circuits being coupled across said first and second main controlled rectifiers, respectively, in the same current conduction relation as the said main controlled rectifier thus associated therewith,
first and second diode means connected across said first and second main controlled rectifiers, respectively, for presenting low impedance discharge paths for said series resonant circuit, and
means for initiating operation of said inverter circuit by introducing a conduction gate to one of said commutating control rectifiers and for thereafter cyclically applying and removing conduction gates to said controlled rectifiers so that operation of said resonant circuit means will alternately extinguish conduction of said main controlled rectifiers.

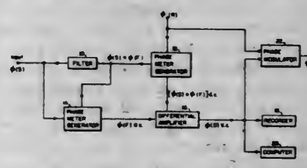
3,348,125
HIGH POWER FREQUENCY MULTIPLIER
Francis Wieman, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,270
8 Claims. (Cl. 321—69)

7. A frequency multiplying system comprising in combination: first and second variable capacitance diodes; first and second transformers; circuit means connecting said first diode in series circuit with one half of the secondary winding of said first transformer and in series circuit with one half of the primary winding of said second transformer to define first and second resonant circuits respectively resonant at first and second frequencies; circuit means connecting said second diode in series circuit with the other half of the secondary winding of said first transformer and in series circuit with the other half of the primary winding of said second transformer to define third and fourth resonant circuits respectively resonant at said first and second frequencies; third and fourth variable capacitance diodes; third and fourth transformers; circuit means connecting said third diode in series circuit with one half of the secondary winding of said third transformer and in series circuit with one half



of the primary winding of said fourth transformer to define fifth and sixth resonant circuits respectively resonant at said first and second frequencies; circuit means connecting said fourth diode in series circuit with the other half of the secondary winding of said third transformer and in series circuit with the other half of the primary winding of said fourth transformer to define seventh and eighth resonant circuits respectively resonant at said first and second frequencies; signal input circuit means coupled with the primary windings of said first and third transformers for applying input signals at said first frequency thereto; and signal output circuit means coupled with the secondary windings of said second and fourth transformers.

3,348,126
PHASE RATE COMPENSATOR
Maxime G. Kaufman, Camp Springs, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 25, 1964, Ser. No. 399,416
9 Claims. (Cl. 332—18)



1. An electrical filtering system wherein the effects of phase distortion caused by filtering are automatically and immediately removed from the filtered signal comprising:
Filter means connected to receive and pass an electrical input signal;
First generator means connected to said filter means to produce a first signal proportional to the phase distortion caused to said input signal in passing through said filter means;
Reference means to produce a reference phase signal;
Second generator means connected to said filter means and to said reference means to produce a second signal proportional to the phase difference between the filtered input signal and said reference phase signal and

Differential amplifier means connected to receive and differentially combine said first and second signals

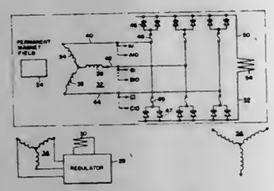
Whereby the resultant of the differentially combined first and second signals is proportional to the phase of said input signal but not to the phase distortion caused by said filter means.

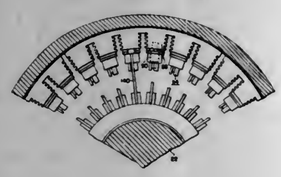
3,348,127

SUPPORT ARRANGEMENT FOR DIODES IN A ROTATING RECTIFIER EXCITER

Sigrud R. Petersen, North Huntingdon Township, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 20, 1964, Ser. No. 390,897
11 Claims. (Cl. 322—59)





3. In a rotating rectifier exciter for a brushless AC generating system, a diode support arrangement comprising a component wheel having a hub mounted on a shaft, said wheel having a rim portion, heat sink means disposed on an inwardly facing peripheral surface of said wheel rim portion and radially extending between said portion and said shaft, a plurality of semiconductor diodes disposed circumferentially about said rim portion and inwardly thereof on said heat sink means, each of said diodes having a heat sink terminal secured to a portion of said heat sink means, each of said diodes having further terminal and connecting means extending therefrom at a point radially inwardly from the diode heat sink terminal, insulative support means secured to said heat sink means and surrounding each of said diodes, said connecting means and said diodes supportingly engaged by said support means in proximity to the associated diode against radially outward force, said connecting means having a portion thereof extending generally radially outwardly for excitation circuit connection in said system, and means for connecting said heat sink means in the excitation circuit of said system.

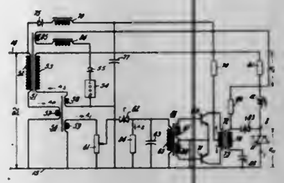
3,348,128

PHASE CONTROLLED ALTERNATING CURRENT POWER CIRCUITS USING BIDIRECTIONAL CONDUCTING DEVICES

Herbert F. Storm, Delmar, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 26, 1964, Ser. No. 378,378
9 Claims. (Cl. 323—4)

1. An alternating current power circuit including in combination a supply transformer having an undesired direct current component flowing in the secondary winding thereof during one phase of an alternating current supply potential applied to the supply transformer, current sensing means comprising a current transformer operatively coupled to the supply transformer for sensing the undesired direct current component and deriving an output control signal which has a polarity, magnitude, and phase dependent upon the polarity, magnitude, and phase of the undesired direct current component flowing in the secondary winding of the supply transformer, a conductivity controlled solid state bidirectional conducting de-



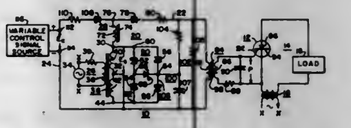
vice operatively coupled with the secondary windings of the supply transformer, firing circuit means therefor responsive to the control signal derived from said sensing means for cyclically turning on the bidirectional conducting device at different phases of the positive and negative half cycles of the alternating current supply potential to thereby derive a compensating direct current component for minimizing the undesired direct current component flowing in the secondary winding of the supply transformer, and means for applying said compensating direct current component to the supply transformer.

3,348,129

APPARATUS FOR PRODUCING PHASE-SHIFTABLE PULSES

Emil T. Schonholzer, Depew, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 19, 1964, Ser. No. 376,422
13 Claims. (Cl. 323—22)



1. A pulse forming circuit comprising: alternating current power supply means having first and second alternating current terminals; saturable core means; a winding inductively coupled to said core means; means connecting one end of said winding to said first terminal; a saturable transformer having input means and output means; a load branch connected between the other end of said winding and said second terminal, said load branch including in series a first asymmetric current conducting device and said transformer input means, said first asymmetric device being poled to conduct during a particular half cycle of said alternating current, said load branch being adapted during said particular half cycle of said alternating current to set said core means to magnetic saturation in one sense and after a predetermined interval to set said transformer to magnetic saturation in a particular sense to produce in said transformer output means a pulse which is initiated by said core means saturation and is ended by said transformer saturation; a control branch connected between the other end of said winding and said second terminal, said

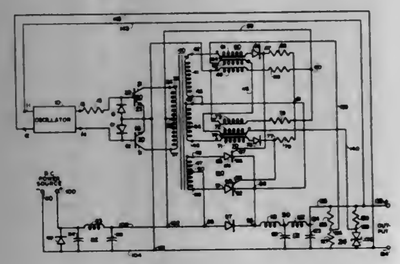
control branch including in series a second asymmetric current conducting device and a control signal source, said second asymmetric device being poled to conduct during the opposite half cycle of said alternating current, said control signal source being adapted to supply control signals of opposite polarity relative to said opposite half cycles of said alternating current, said control branch being adapted during said opposite half cycles of said alternating current to reset said core means to a flux level dependent on the value of said control signal; and bias means operably connected to said alternating current power supply means for applying to said transformer during both said half cycles of said alternating current a magnetic bias in the reset direction to reset said transformer, said bias means comprising means for supplying a direct current voltage component across said transformer input means oppositely poled relative to voltage applied across said transformer input means due to said particular half cycles of alternating current, said direct current voltage component supplied by said bias means to said transformer input means being not greater than the combined forward threshold voltage values of said asymmetric current devices.

3,348,130

CONTROL APPARATUS

James Lee Jensen, Frankfurt am Main, Germany, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 27, 1964, Ser. No. 385,214
4 Claims. (Cl. 323—22)



1. A D-C voltage regulating apparatus comprising:

a pair of input terminals adapted for connection to a direct current potential source;

a pair of output terminals;

an oscillator means energized from said potential source;

a silicon controlled rectifier, said rectifier having an anode connected to receive the signal from said oscillator means, a cathode, and a gate electrode;

control means, including magnetic switching means, adapted to receive a control signal responsive to the voltage from said output terminals and a further signal from said oscillator means and having an output connected to said gate electrode of said silicon controlled rectifier to render said rectifier conductive for at least a fraction of a cycle of said oscillator, the fraction of the cycle during which said controlled rectifier is conductive depending on the magnitude of the voltage signal between said output terminals;

adding means for receiving and adding the signals from said potential means and said rectifier and providing an output which is a function of the sum of the two; and

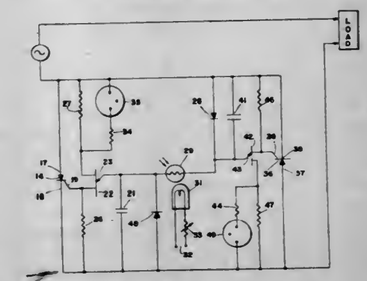
a filter means connected to receive the signal from the output of said adding means, said filter means having its output connected to said output terminals of the voltage regulator apparatus.

3,348,131

A-C POWER CONTROL CIRCUIT HAVING A TRIGGER MEANS WITH A VOLTAGE BREAKDOWN DEVICE CONNECTED TO THE BASE OF A UNIJUNCTION TRANSISTOR

James Randle Banks, Cleveland Heights, Ohio, assignor to Encore Manufacturing Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 11, 1964, Ser. No. 388,822
12 Claims. (Cl. 323—22)



1. An A-C control circuit for controlling power from an A-C voltage source to a load comprising:

solid state switching means for connection between said A-C voltage source and said load;

trigger means for initiating conduction in said switching means, said trigger means including

a unijunction transistor having two base electrodes and an emitter electrode,

a first resistor connected in series with said base electrodes for connection in electrical circuit across said solid state switching means,

a second resistor and voltage breakdown means connected in series across said first resistor, and

a capacitor connected to said transistor emitter electrode, and

unidirectional conducting means in circuit with said capacitor for permitting charging thereof in one direction only; and

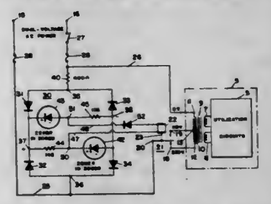
controllable variable resistance means connected in series with said capacitor for connection in electrical circuit across said solid state switching means for varying the charging rate of said capacitor and thereby determining the time at which said transistor and said solid state switching means become conductive.

3,348,132

AUTOMATIC FAIL-SAFE DUAL-VOLTAGE POWER SUPPLY CIRCUIT

Lando K. Moyer, Bedminster, and Garvin B. Van Waldron, Jr., Lansdale, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Nov. 2, 1964, Ser. No. 408,434
4 Claims. (Cl. 323—43.5)



1. A power supply system for applying operating currents to power utilization circuits of alternating-current equipment at substantially fixed voltage levels in response to power-supply voltage at two different higher and lower voltage levels comprising, a power supply transformer

having a secondary winding adapted to be connected with said utilization circuits to apply said operating currents thereto and having a primary winding with tap connections thereon for operation at said different power input-voltage levels, a tap-changing relay having a direct-current operating coil and contacts connected with the primary winding to provide the higher-level tap connection with the coil deenergized and the lower-level tap connection with the coil energized above a predetermined direct-current operating level, a pair of alternating-current supply leads for said system connected with said primary winding and the tap connections thereon through said relay contacts, rectifier means connected between said supply leads and said relay coil for energizing said coil in response to alternating-current supply voltage at the lower voltage level, voltage-dropping resistor elements connected serially in circuit between said relay coil and said rectifier means, and zener diode elements connected with the resistor elements to draw reverse current therethrough from said rectifier and thereby reduce the voltage on the coil below the said operating level in response to supply voltages at the higher voltage level, thereby to provide the higher-level tap connection, and protect said utilization circuits from over-voltage operation.

3,348,133

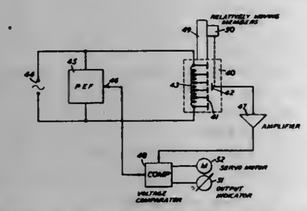
POSITION RESPONSIVE APPARATUS INCLUDING A CAPACITIVE POTENTIOMETER

Caleb Frederick Wolfendale, Great Brick Hill, near Bletchley, England, assignor to Sogenique (Electronics) Limited

Original application Oct. 25, 1962, Ser. No. 232,949. Divided and this application Oct. 18, 1965, Ser. No. 496,933

Claims priority, application Great Britain, Oct. 27, 1961, 38,527/61

4 Claims. (Cl. 323—93)



1. In a position responsive apparatus for deriving an output alternating signal having an amplitude which is a function of the relative positions of two relatively movable members, a potentiometer including relatively movable first and second electrode means and guide means, said first electrode means including a line of at least three similar electrically separate electrically conductive plates presenting respective first electrode surfaces aligned in at least one dimension and in edge to edge relation, said second electrode means including a pick-off plate presenting a pick-off electrode surface spaced from said first electrode surfaces, and said guide means defining a path for movement of said pick-off electrode surface parallel to said first electrode surfaces, said surfaces having transverse edges which extend transverse to said path, at least one transverse edge of said pick-off electrode surface being disposed in such relation to said path as to pass over a transverse edge of said first electrode surfaces during movement along said path, said apparatus also including an alternating supply for establishing a reference potential, individual connection means for connection between said supply and respective plates of said line for establishing potentials on those plates which vary progressively along said line with respect to said reference potential, whereby to establish an electric field directed along said path of movement which induces a potential on said pick-off plate which is a function of its position with respect to said line of plates, mechanical coupling means for coupling said electrode means respectively to said members, and output means coupled to said pick-off plate for deriving said output signal, wherein the improvement comprises choosing the configuration of the transverse edges of said pick-off electrode surface to be dissimilar to the configuration of the transverse edges of each said first electrode surface whereby to reduce irregularities in the output characteristics of the apparatus.

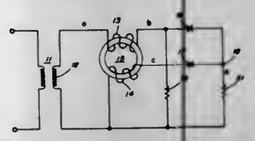
3,348,134

SATURATED PHASE SHIFT CIRCUIT

Henri H. Hoge, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 25, 1965, Ser. No. 442,834

4 Claims. (Cl. 323—126)



1. A half cycle phase shift circuit for shifting the positive portion only of an alternating voltage and attenuating the negative portion thereof comprising:

a magnetic core characterized by binary stages of saturation;

a first and a second coil wound about said core wherein said first coil sets said magnetic core to one of its binary stages of saturation and said second coil resets said magnetic core to its other binary stage of saturation;

means for applying an alternating voltage to said coils; and

first and second unidirectional current devices each having two terminals, said unidirectional current devices being connected to said first and second coils, respectively, at one terminal and in common together at the other terminal; and an output resistor coupled to said common connection of said first and second unidirectional current devices.

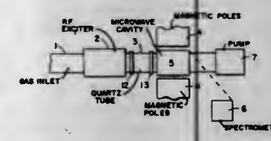
3,348,135

METHOD AND APPARATUS FOR ANALYSIS OF GASEOUS DISCHARGE PRODUCTS FROM FLAMES BY ELECTRON-PARAMAGNETIC RESONANCE

David W. Howgate, Athens, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed June 3, 1964, Ser. No. 372,437

10 Claims. (Cl. 324—.5)



1. A gas analyzer comprising a gas inlet line, an electromagnetic exciter for energizing gases to an increased state of excitation within said line, a quartz tube attached to said inlet line, a microwave cavity surrounding a portion of said quartz tube, means for providing a magnetic field of variable strength within said cavity, means for supplying microwave energy to said microwave cavity, means for detecting in relation to the strength of the magnetic field the amount of energy absorbed by gases within said cavity and means for drawing gases through said inlet and tube at pressures below atmospheric.

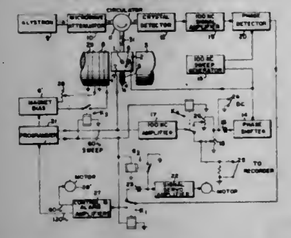
3,348,136

GYROMAGNETIC RESONANCE APPARATUS UTILIZING TWO-SAMPLE SIGNAL COMPARISON

Forrest A. Nelson, Palo Alto, and George A. Baker, San Carlos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Continuation of abandoned application Ser. No. 198,898, May 31, 1962. This application May 5, 1965, Ser. No. 453,441

18 Claims. (Cl. 324—.5)



1. Apparatus for measuring the concentration of a paramagnetic species in an unknown sample, comprising: means for accommodating said unknown sample in a microwave excitation structure; means for accommodating a paramagnetic reference sample in a microwave excitation structure in electromagnetic coupling relation relative to the microwave structure of said unknown sample; means for producing a D.C. polarizing magnetic field enveloping both samples; means for effecting an electron paramagnetic resonance signal of said reference sample and of said unknown sample simultaneously; a means for simultaneously comparing the amplitude of said reference and unknown sample signals; and means for balancing such compared signals to provide a null whereby an indication of the concentration of unknown sample is obtained.

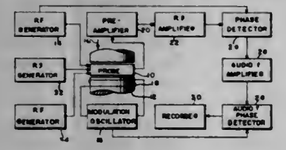
3,348,137

SPIN DECOUPLING IN GYROMAGNETIC RESONANCE APPARATUS

Forrest A. Nelson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Apr. 24, 1964, Ser. No. 362,509

9 Claims. (Cl. 324—.5)



1. A gyromagnetic apparatus comprising: a probe containing a sample of a first group of atom portions to be observed and a second group of atom portions; means for applying a polarizing magnetic field to said sample; first radio frequency field means for applying to said sample an alternating magnetic field at a frequency ω_1, substantially equal to the Larmor frequency of said first group in said polarizing field for aligning the first group in an orbital plane substantially perpendicular to the polarizing field; means including a modulation oscillator for modulating the polarizing field; means including amplifying means coupled to the probe for obtaining a resonance signal from said probe; phase detector means coupled to said amplifier means and to said first radio frequency field means to provide an audio frequency output signal as a measure of said resonance signal; an audio frequency phase detector coupled to said phase detector means and to said modulation oscillator for producing a D.C. voltage; means for recording said D.C. voltage; second radio frequency field means for applying to said sample an alternating magnetic field at a frequency ω_2 substantially equal to the Larmor frequency of said second group in said polarizing field for spin decoupling the atom portions of the second group from the atom portions of the first group; and third radio frequency field means for applying to said sample an alternating magnetic field at a frequency ω_3 for compensating for the tilting effect of the second radio frequency decoupling means on the first group, and for preventing recoupling of the spins of said two groups said frequencies ω_2 and ω_3 being selected so that ω_1 is between ω_2 and ω_3.

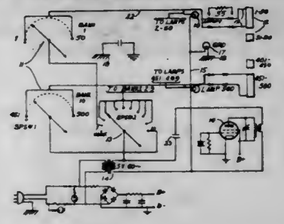
3,348,138

ELECTRICAL WIRING FAULT DETECTOR INCLUDING CIRCUIT MEANS TO VARY THE BRILLIANCE OF SELECTED LAMP INDICATORS

Anthony D. Palmentiero, 2223 Dogwood Lane, Westbury, N.Y. 11590

Filed Aug. 23, 1963, Ser. No. 304,193

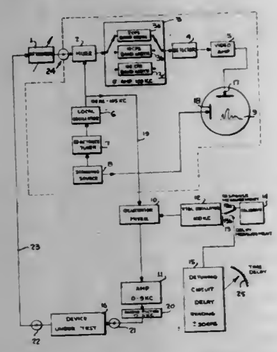
4 Claims. (Cl. 324—51)



1. Wiring testing apparatus for testing the rear interconnection wiring between an array of plug-in receptacles each having a plurality of electrically conducting points, each point so disposed as to appear at both the rear and front of said receptacles comprising, connector means for insertion in mating relationship with the plug-in receptacles and having a plurality of electrically conducting points corresponding to the plurality of points in said plug-in receptacles and so arranged that when in said relationship, each point of the connector means is in electrical contact with the front of each corresponding point of the plug-in receptacles, an array of power sensitive lamps of a type capable of varying in brilliance in proportion to the power dissipated therein and having a first lead of each lamp electrically connected to a corresponding one of the plurality of said points in said connector means and a second lead of each lamp connected to a lamp common point, selector switch banks having a plurality of points each of which is electrically connected to a corresponding one of the plurality of points in said connector means together with said first lamp leads, forming thereby two parallel electrical paths, the first a local complete short path from each point of the selector switch banks through the one lamp connected thereto, and the second a conditionally complete and more extensive long path from the same point of the selector switch banks through the connection to a corresponding point in said connector means, a further conditional electrical path of at least one conductor between points of the plug-in receptacle comprising the tested wiring connected thereto, at least one of the connections between the connector means and the selector switch banks corresponding to the tested wiring connection assignments and thence through at least one other corresponding lamp connected

thereto, a selector switch armature means including armature drive means so arranged as to sequentially connect electrically to each one of said plurality of points on said selector switch banks, a power supply connected between said selector switch armature and said lamp common point, said power supply providing two voltage components superimposed on its output, the first being of a frequency low enough to cause the relative reactive impedances presented to it by the shortest path as compared to any other path to be negligible, and the second being of a frequency high enough to cause the relative impedances presented to it by the shortest path as compared to any other path to be significantly different such that any lamp illuminated by the combination of the two voltage components through the shortest path would be visibly brighter than other lamps illuminated through the longer paths, a light transmitting panel having a plurality of groups of markings thereon, each group separately distinguishable from the other groups and so positioned as to be proximately in front of the lamp panel with each said group in turn coincident with a corresponding pattern of properly illuminated lamps.

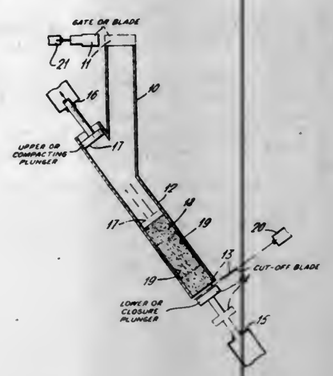
3,348,139
TIME DELAY AND FREQUENCY SPECTRUM ANALYZER
Bela Ranky, Flushing, N.Y., assignor to The Singer Company, a corporation of New Jersey
Filed Dec. 31, 1963, Ser. No. 334,869
11 Claims. (Cl. 324—57)



8. In combination, in a system for measuring delay time in a test circuit, a scanning spectrum analyzer, an accessory device responsive to a scanned frequency derived from said scanning spectrum analyzer for generating a test signal, means applying said test signal to said test circuit and deriving a response therefrom, said accessory device including a device adjustable to provide said response only when adjusted to correspond with said delay time.

3,348,140
MEASUREMENT OF MOISTURE CONTENT IN SAND AND LIKE MATERIALS
Ronald G. Godding, West Heath, Birmingham, England, assignor to The British Cast Iron Research Association, Birmingham, England, a British company
Filed Jan. 30, 1963, Ser. No. 255,032
Claims priority, application Great Britain, Feb. 3, 1962, 4,234/62
9 Claims. (Cl. 324—58.5)

1. The continuous method of determining the water content of granular material such as moulding sand which comprises extracting successive samples from a body of the granular material, successively adding said samples individually onto a previously compressed charge of material, compressing the samples onto the charge material in quick succession to a predetermined pressure at least sufficient to ensure approximately constant packing density of the charge of material notwithstanding variations in water



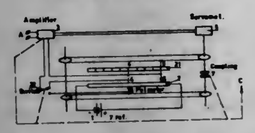
content, feeding the charge at said density through a measuring cell affording a measurement zone and continuously measuring an electrical characteristic of said material in said zone which is variable as a known function of the water content of the compressed material.

3,348,141
TIME INTERVAL MEASUREMENT UTILIZING A TUNNEL DIODE SWITCHED BY REFLECTED PULSES FROM TRANSMISSION LINES
Hartley J. Jensen, Davis, and Elmer E. Smith, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 6, 1966, Ser. No. 548,330
9 Claims. (Cl. 324—68)



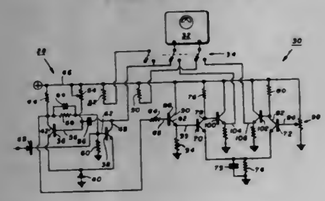
1. Apparatus for ascertaining the time interval between a plurality of events displaced in time comprising in combination, tunnel diode means for generating a voltage pulse upon being switched from a low state to a high state, means for biasing the diode means to a predetermined operating point, input means to apply to said diode means input pulses spaced in time with respect to each other for switching the diode means from a low state to a high state, electrically short transmission line means connected to the diode means for conducting a pulse generated by the diode means, means associated with the short transmission line means for returning the generated pulse to the diode in reversed polarity for switching the diode from a high state to a low state, electrically long transmission line means connected to the diode means for conducting a pulse generated by the diode means, means associated with the long transmission line means for returning the generated pulse to the diode in the same polarity as it was generated for switching the diode from a low state to a high state, and readout means for ascertaining the length of time the diode means is in a particular state.

3,348,142
DEVICE FOR MEASURING TWO CONSECUTIVE MAGNITUDES AS ELECTRICAL SIGNALS
Frederik Arend Gerhardus Timmermans, Rotterdam, and Albert Snel, Delfgauw, Netherlands, assignors to Nederlandse Organisatie voor Toegepast-Natuur-Wetenschappelijk Onderzoek ten Behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands, a corporation of the Netherlands
Filed Feb. 27, 1963, Ser. No. 261,536
Claims priority, application Netherlands, Mar. 2, 1962, 275,501
2 Claims. (Cl. 324—99)



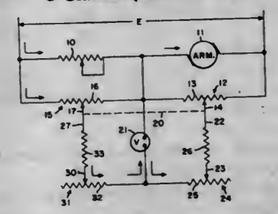
1. Apparatus for measuring the average of two signals comprising, a potentiometer supplied by reference voltage, a zero position tap on the potentiometer, a first movable contact on the potentiometer, a second movable contact on the potentiometer normally set at the zero point of the potentiometer, first servo-rebalance means for positioning the first contact in relation to the zero position tap until the potential drop between the first contact and zero position tap has a pre-determined relation to a first signal, means including the first servo-rebalance means for driving the first and second contacts in equal but opposite directions until the potential drop across the first and second contacts has a pre-determined relation to a second signal, whereby the position of the first contact represents the average of the first and second signals.

3,348,143
DIFFERENTIAL ELECTRONIC TACHOMETER
Charles William Young, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,685
1 Claim. (Cl. 324—70)



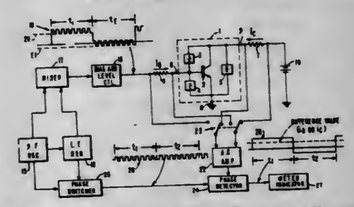
A differential tachometer, comprising:
(a) a differential amplifier having first and second input terminals and first and second output terminals, said amplifier having a substantially constant impedance regardless of amplification and frequency variations,
(b) a meter having one side thereof connected to said first output terminal and the other side thereof connected to said second output terminal,
(c) a source of DC reference potential connected to said first input terminal, said DC reference potential being infinitely variable between predetermined limits, said reference potential being fed through the differential amplifier to said one side of said meter, and
(d) signal means actuated by a rotating body for supplying to said second input terminal discrete unintegrated pulses of constant amplitude and duration and at a repetition rate proportional to the angular velocity of said rotating body, said pulses being fed through the differential amplifier to the meter in discrete unintegrated form in such a manner that said pulses retain on entering the meter a uniform and unchanging configuration regardless of changes in said repetition rate.

3,348,144
SYSTEM FOR MEASURING SPEEDS OF WORK-PIECES ROTATED BY MOTOR
G B. Jennings, Shrewsbury, Mo., assignor to The Pandjiris Weldment Co., St. Louis, Mo., a corporation of Missouri
Filed Jan. 27, 1965, Ser. No. 428,342
5 Claims. (Cl. 324—70)



1. A system for measuring the peripheral speeds of workpieces having different diameters rotated at variable speeds by a motor having an armature subject to a variable voltage to control thte armature speed, comprising:
(a) an impedance means connected in series with the motor armature to simulate the impedance of the armature,
(b) a first voltage divider including a resistance element and a coacting slider, the resistance element of the first voltage divider being connected in parallel with the motor armature, the first voltage divider providing a voltage proportional to a workpiece diameter,
(c) a second voltage divider including a resistance element and a coacting slider, the resistance element of the second voltage divider being connected in parallel with said impedance means, the second voltage divider providing a voltage proportional to the same workpiece diameter, and
(d) an indicating means having a first input terminal connected between the motor armature and the impedance means, and having a second input terminal connected to both sliders of the voltage dividers.

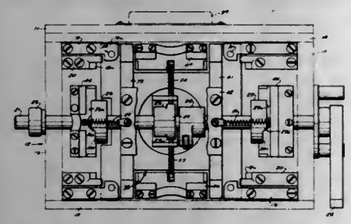
3,348,145
APPARATUS FOR TESTING AND MEASURING A.C. PARAMETERS OF ACTIVE ELEMENTS CONNECTED IN CIRCUIT
Louis W. Erath, Houston, Tex., assignor to Test Equipment Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 18, 1963, Ser. No. 317,246
12 Claims. (Cl. 324—158)



1. In apparatus for measuring the true AC current flow through an active element connected in a circuit with unknown passive impedances, the combination of
a signal generator for providing
a first AC signal, and

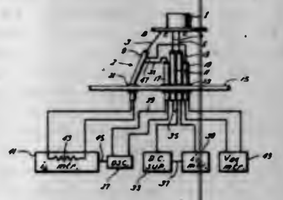
a second AC signal which is periodically phase switched so that it is in-phase with said first signal during a first time interval and 180 degrees out-of-phase during a second time interval;
circuit means for rendering the active element operative at a different bias level during said first time interval as compared to said second time interval;
a phase detector circuit;
circuit means for applying one of said AC signals to said phase detector circuit as a synchronizing signal and for applying the other one of said AC signals to the active element as a test signal;
circuit means responsive to the AC current flow through the active element and unknown impedances as a result of said test signal, and operative to provide a signal to said phase detector corresponding to said AC current flow;
said phase detector being operative to provide an output signal of one polarity if the signals applied thereto are essentially in-phase, and an output signal of the opposite polarity if the signals applied thereto are essentially 180 degrees out-of-phase, to thereby derive a bipolar output signal; and
circuit means responsive to the average value of said bipolar signal.

3,348,146
TEST FIXTURE FOR PRINTED CIRCUIT BOARDS HAVING CAM CONTROLLED SEQUENTIAL OPERATORS
Paul W. Freund, Irvington, and Harold C. Trotman, Westfield, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 6, 1964, Ser. No. 349,995
8 Claims. (Cl. 324—158)



5. A test fixture for generally rectangular printed circuit boards having terminated circuit paths thereon comprising:
a frame,
means rigidly mounted to said frame for supporting the corners of a board against downward movement,
means for engaging the periphery of said board to clamp said corners down against said supporting means,
a vertically movable plate positioned below said supporting means and said engaging means, said plate including a patterned array of electrical contacts for engaging predetermined terminations of said circuit paths,
connector means for establishing electrical continuity between said contacts and an electrical testing means,
means for moving said plate upwardly to engage said predetermined terminations with said contacts,
said engaging means comprising a plurality of generally vertical members having claws at the tops thereof, said members being pivotally mounted to said frame to selectively engage the periphery of said board with said claws,
said plate moving means further including means for sequentially pivoting said pivotal members and then moving upwardly said plate to first engage the periphery of said boards with said claws, to clamp said corners down against said supporting means and then to engage said terminations with said contacts, and
said plate moving and member pivoting means includes a plurality of cams fixed to a shaft mounted rotatably on said frame, said cams both moving upwardly said plate and permitting pivoting of said members upon rotation of said shaft.

3,348,147
HIGH FREQUENCY SEMI-CONDUCTOR DEVICE TEST FIXTURE HAVING INDUCTIVE LOOP SIGNAL INJECTION MEANS
Louis W. Erath, Houston, Tex., assignor to Test Equipment Corporation, Houston, Tex., a corporation of Texas
Filed Apr. 1, 1965, Ser. No. 444,596
15 Claims. (Cl. 324—158)

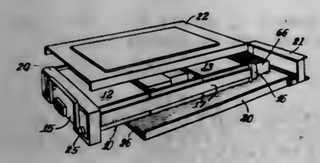


8. In a testing device suitable for measuring parameters in a semiconductor device under high frequency conditions, the combination of
conductive shields adapted to surround all the leads from the device, and having means therein for supporting each of said leads in insulated relationship to said shields, the receiving ends of said shields being substantially contiguous with the device, all but at least one of said shields being connected together at the end of said shields receiving the leads from the device,
all of said shields being connected together at a point removed from the device so that an inductance loop is formed including the one of said shields not connected to the others at their receiving ends, the connection connecting all shields together, and the shields of those being connected at their receiving ends,
said inductance loop being suitable for having impressed therein a driving test current by transformer action from an exciting source,
a DC bias source adapted to be connected to the appropriate one of the leads from the device at the end opposite from the receiving end to condition the device for operation, and
current metering means adapted to be connected to the appropriate ones of the leads from the device at the ends opposite from their receiving ends.

3,348,148
ELECTRONIC APPARATUS PROVIDING HEAT CONDUCTION MOUNTING AND ELECTRICAL CONNECTIONS FOR POWER TRANSISTORS IN A MOBILE COMMUNICATION DEVICE
George M. Parsons, Rolling Meadows, and William R. Harrer, Park Ridge, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed May 15, 1964, Ser. No. 367,630
13 Claims. (Cl. 325—15)

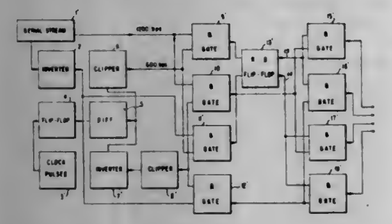
1. A communication unit including in combination, a rectangular chassis including transistors and other electrical components and having a front plate and side strips

secured thereto, a rectangular mounting base for supporting said chassis, a top cover plate, said chassis including a heat conducting structure at the rear end thereof having a horizontally extending portion for mounting transistors thereon and a vertically extending portion forming a rear closure, said heat conducting structure



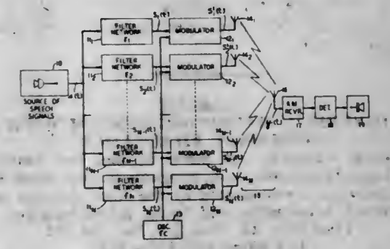
having fins extending from said vertically extending portion for conducting heat from transistors mounted on said horizontally extending portion, said mounting base and said top cover plate cooperating with said front plate, said side strips and said heat conducting structure of said chassis to form an enclosure for the communication unit.

3,348,149
SERIAL TO DIPLEX CONVERSION SYSTEM
Cecil Annand Crafts, Santa Ana, and Robert L. Carlson, Fullerton, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed May 24, 1963, Ser. No. 283,045
14 Claims. (Cl. 325—30)



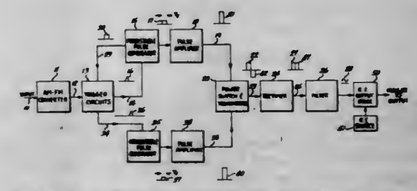
1. A phase shift communication transmitter for non-synchronous operation wherein a single frequency carrier is transmitted in five discrete phases shifted according to a four level data signal, comprising
means supplying a series of mark and space signals in the form of a serial binary signal train,
means generating an inverted replica of said signal train,
clock signal generating means having a repetition rate equal to the maximum rate of said mark and space signals,
combining means operating to derive from said clock signal and said generated and supplied trains two simultaneous mark and space data signals of half said rate, of which a first includes the mark and space information at alternate clock signal intervals in said serial train and a second includes the remaining mark and space signals in said serial train,
means operative to combine said simultaneous signals to produce phase shifts of said carrier at half said maximum rate in which each phase shift approximates an integral multiple of one-fifth cycle of the carrier, selected according to the four possible combinations of mark and space in said two channels, and
transmitter output means in which said phase shift modulations are applied to said communication wave as a four level signal.

3,348,150
DIVERSITY TRANSMISSION SYSTEM
Bishnu S. Atal, Murray Hill, and Manfred R. Schroeder, Gillette, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 27, 1964, Ser. No. 385,134
10 Claims. (Cl. 325—56)



4. A transmission system which comprises, a plurality of spaced transmitters operating on the same carrier frequency, at least one receiver separated from said transmitters tuned to said carrier frequency, a source of signals, means for simultaneously supplying signals from said source to each of said transmitters, and network means in circuit relation with each of said transmitters, each of said networks being characterized by a truncated irregular frequency response, the truncated response of each of said networks being different from all others.

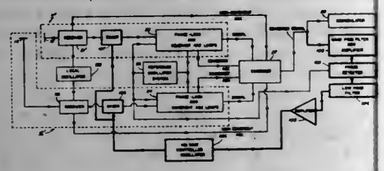
3,348,151
DC POWER SUPPLY AND AMPLITUDE MODULATOR
James F. Holmes, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,931
9 Claims. (Cl. 325—185)



5. A radio frequency transmission system comprising in combination: trigger circuit means responsive to applied information signals to provide a series of trigger signals separated in time in proportion to the modulation of said information signals applied thereto; first and second monostable pulse generators each responsive to an applied control signal to change to an unstable condition for a constant time interval and to then revert to its stable condition; circuit means coupling said trigger circuit means with said first monostable pulse generator for coupling said trigger signals to said first monostable pulse generator as control signals; circuit means coupling said second monostable pulse generator with said first monostable pulse generator for coupling a control signal to said second monostable pulse generator each time said first monostable pulse generator reverts to its stable condition; power switching and pulse amplifier means coupled with said first and second monostable pulse generators for providing high voltage output signals each having substantially identical waveshape, each lasting for the same constant time, and each spaced from a preceding output signal by a time equal to the time between reversion of said second monostable pulse generator to its stable condition and the triggering of said first monostable pulse generator

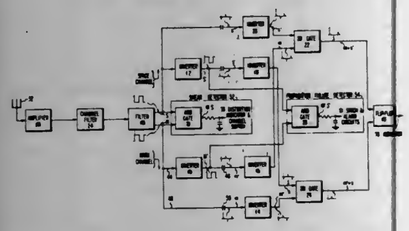
to its said unstable condition; a radio frequency transmitter having first signal input circuit means for the application of carrier frequency energy thereto and second signal and power input circuit means for the application of operating power and modulation information thereto; and circuit means coupling the output of said power switching and pulse amplifier means to the said second signal and power input circuit means of said radio frequency transmitter for applying simultaneously to said radio frequency transmitter operating power and modulation information.

3,348,152
DIVERSITY RECEIVING SYSTEM WITH DIVERSITY PHASE-LOCK
Charles R. Laughlin, Jr., Silver Spring, and Vincent J. Di Losa, Hyattsville, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 23, 1964, Ser. No. 354,182
13 Claims. (Cl. 325—305)



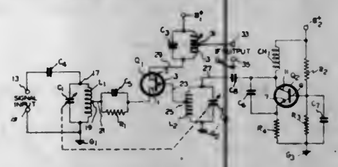
9. In diversity receiving systems having a plurality of receiving channels and a combining means having applied thereto the signals from said receiving channels and having as an output therefrom a combined signal, the improvement comprising: a phase-locking means connected to said combining means and to said plurality of receiving channels, said phase-locking means having said combined signal applied thereto and having as an output therefrom, coupled to said plurality of receiving channels, a signal relating to the phase of said combined signal to insure phase lock of said system.

3,348,153
FREQUENCY-SHIFT RECEIVER INSENSITIVE TO DISTORTION AND SELECTIVE FADING
John R. Featherston, Tucson, Ariz., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 17, 1964, Ser. No. 345,234
8 Claims. (Cl. 325—320)



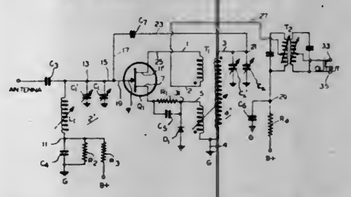
1. In an FSK receiver having mark and space channels each connected to an input of a decision bistable state circuit, means connected in the channels to provide signals for the decision circuit in the absence of either mark or space signals, comprising:
a first circuit responsive to the mark signal to generate its complement;
a second circuit responsive to the space signal to generate its complement;
a first gate responsive to the mark signal and the complement of the space signal to generate a signal when either appears;
a second gate responsive to the space signal and the complement of the mark signal to generate a signal when either appears;
means to connect the output from said first gate to one input of the decision circuit;
and
means to connect the output from said second gate to the other input of the decision circuit.

3,348,154
SIGNAL MIXING AND CONVERSION APPARATUS EMPLOYING FIELD EFFECT TRANSISTOR WITH SQUARE LAW OPERATION
Lawrence W. Fish, Jr., Hudson, and Daniel R. von Recklinghausen, Arlington, Mass., assignors to H. H. Scott, Inc., Maynard, Mass., a corporation of Massachusetts
Filed Dec. 14, 1965, Ser. No. 513,768
10 Claims. (Cl. 325—451)



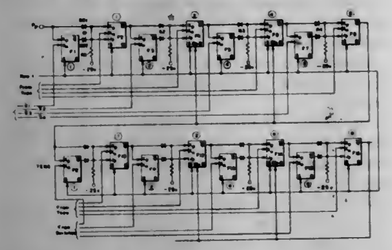
1. Signal mixing apparatus having, in combination, field-effect transistor means provided with source, drain and gate electrode means and a substantially square-law characteristic extending over the predetermined voltage range between zero bias voltage and pinch-off voltage of said transistor means, a pair of input circuits connected with the source and gate electrode means for respectively applying to and mixing within the field-effect transistor means a pair of alternating-current voltages of peak-to-peak values the sum of which lies substantially within said range, means for establishing a D.C. bias for said transistor means of the order of substantially one-half the pinch-off voltage, and an output circuit connected with said drain electrode means for withdrawing the resultant of the said mixing.

3,348,155
OSCILLATOR-CONVERTER APPARATUS EMPLOYING FIELD EFFECT TRANSISTOR WITH NEUTRALIZATION AND SQUARE LAW OPERATION
Daniel R. von Recklinghausen, Arlington, Mass., assignor to H. H. Scott, Inc., Maynard, Mass., a corporation of Massachusetts
Filed Feb. 10, 1966, Ser. No. 537,253
10 Claims. (Cl. 325—451)



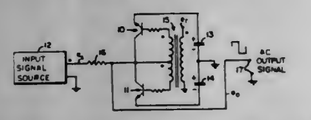
1. A multi-signal circuit having, in combination, field-effect transistor means provided with gate, source and drain electrodes, a relatively low impedance source of alternating-current signals connected to the source electrode, a relatively high impedance source of alternating-current signals connected to the gate electrode, means for producing signals substantially out-of-phase with those of the relatively low impedance source, and a neutralizing feedback path connected between the producing means and the gate electrode and of impedance such that the out-of-phase signals are substantially equal in amplitude to the signals fed from the source electrode to the gate electrode through the inherent interelectrode capacitance therebetween.

3,348,156
DIGITAL NUMBER REGISTER
Esteban J. Toscano, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Original application Dec. 3, 1962, Ser. No. 241,630, now Patent No. 3,218,532, dated Nov. 16, 1965. Divided and this application Apr. 15, 1965, Ser. No. 448,524
6 Claims. (Cl. 328—42)



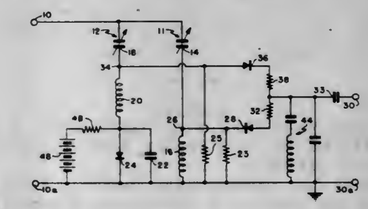
1. A counter, comprising:
a plurality of counter flip flops, each having an input circuit and an output circuit;
respective gate circuits coupling the output circuit of each flip flop, except the last, to the input circuit of the next higher order flip flop;
a plurality of control flip flops, each, except the lowest order control flip-flops, having an input circuit coupled to an output circuit of a counter flip flop and each having an output circuit coupled to the gate circuit to which that counter flip flop output circuit is connected;
and means for coupling signals to that gate circuit coupled to the lowest order counter flip-flop and to the input circuit for the lowest order control flip-flop, for operating said counter.

3,348,157
QUADRATURE AND HARMONIC SIGNAL ELIMINATOR FOR SYSTEMS USING MODULATED CARRIERS
Gerald L. Sullivan, Georgetown, and John W. Clayton, Jr., North Reading, Mass., assignors to General Electric Company, a corporation of New York
Filed Aug. 28, 1964, Ser. No. 392,855
20 Claims. (Cl. 329—50)



1. A quadrature signal eliminator comprising,
first and second switching means each comprising two current-conducting electrodes and a control electrode, said switching means presenting a low resistance between said current-conducting electrodes when said control electrode has a voltage signal of a given polarity applied between said control electrode and one of said current-conducting electrodes,
means adapted to be energized with modulated carrier input signals containing a preferred phase component bearing modulation information, an undesired phase component in quadrature therewith and harmonic noise components for connecting said input signals between one of the current-conducting electrodes of each of said switching means and a fixed reference potential,
a source of said voltage signals connected to apply said voltage signals between the control electrode and said one current-conducting electrode of each of said switching means so that said switching means are alternately in said low resistance state, said voltage signals being phased with respect to said preferred phase so that every polarity reversal of said voltage signal coincides with a polarity reversal of said preferred phase component, and
means coupled between the other conducting electrodes of each of said switching means and said fixed reference potential for providing a voltage which varies in response to the modulation information present upon said preferred phase component.

3,348,158
TEMPERATURE-COMPENSATED DISCRIMINATOR PROVIDING AMPLIFICATION
John L. Dennis, Lexington, Ky., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,154
6 Claims. (Cl. 329—141)

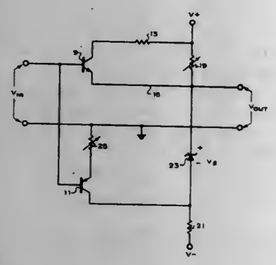


1. In a discriminator circuit, the combination comprising:
a source of signal modulated carrier frequencies;
a load;
first and second semiconductor devices;
first and second resonant circuits supplied with said signal modulated carrier frequencies for supplying said load through said first and second semiconductor devices, respectively;
means for amplifying said signal, said means comprising a third semiconductor device connected in a series loop including said first and second semiconductor devices, said third semiconductor device being oppositely poled with respect to said first and second semiconductor devices;
and a source of direct currents connected in said loop, said source forwardly biasing each of said devices.

3,348,159
AMPLIFIER HAVING POLARITY INSENSITIVE OUTPUT VOLTAGE
James F. Kistler, Loveland, Colo., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 8, 1965, Ser. No. 494,000
1 Claim. (Cl. 330—13)

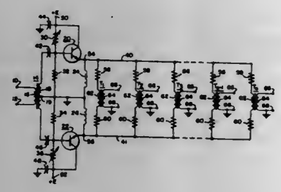
An amplifier circuit comprising:
a pair of complementary conductivity type transistors, each having base, emitter and collector electrodes;
an input terminal for receiving an applied signal with respect to a reference potential;
means connecting the base electrodes of said transistors to receive applied signal appearing at said input terminal;

a power supply having positive and negative output potentials with respect to said reference potential;
means connecting the collector of one transistor to one output of said supply;
a resistor connecting the collector of the other transistor to another output of said power supply;
an output terminal connected to the emitter of said one transistor;



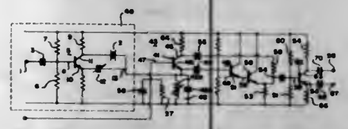
a Zener diode connecting the output terminal to the collector of said other transistor;
a resistor connecting the emitter of said other transistor to said source of reference potential; and
another resistor connecting said output terminal and said one output of said power supply.

3,348,160
ISOLATOR NETWORK FOR PROVIDING A PLURALITY OF OUTPUT SIGNALS FROM A SINGLE SIGNAL SOURCE
Franklin G. Lee, Baltimore, and Harold A. Male, Glen Burnie, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 19, 1964, Ser. No. 412,369
6 Claims. (Cl. 330—15)



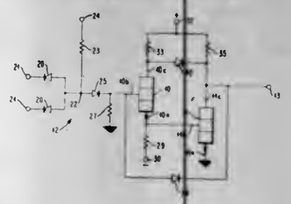
1. A solid state isolator network for providing a plurality of output signals from a single signal source, comprising in combination: a first and a second transistor emitter follower circuit coupled together in push-pull circuit relationship, said first and said second emitter follower circuit each having a base input circuit and an emitter output circuit; input means for coupling said single signal source to said base input circuit of said first and said second emitter follower circuit; and a plurality of output circuits coupled in parallel circuit combination across said emitter output circuit of said first and said second emitter follower circuit connected in push-pull circuit combination, said plurality of output circuits each comprising a transformer having a primary and a secondary winding and resistance means coupled in series with said primary winding across said emitter output circuits for providing an isolated output signal across each said secondary winding.

3,348,161
VARIABLE RESOLUTION CONSTANT AMPLITUDE FILTER
Bela Ranky, Flushing, N.Y., assignor to Analyzer Design, Inc., Flushing, N.Y., a corporation of New York
Filed May 19, 1965, Ser. No. 457,130
18 Claims. (Cl. 330—21)



1. A system for varying the selectivity of a bandpass filter system while maintaining gain of the filter system substantially constant, comprising
a bandpass passive filter having an input circuit and an output circuit,
an amplifier device having a control electrode and a charge source electrode and a charge collector electrode,
a tank circuit connected between said output circuit and a point of reference potential, said tank circuit being tuned to a frequency within the passband of said passive filter,
means connecting said output circuit to said charge source electrode,
a load impedance connected in series with said charge collector electrode,
means for applying a variable control potential to said control electrode, said amplifier device having internal resistance and gain variable in opposite senses in response to variations in said control potential, and
means for additively combining signals at said charge collector electrode and at said charge source electrode to provide an output signal for said bandpass filter system whereby said changes in gain tend to compensate the amplitude of said output signal for changes of loading due to said changes in internal resistance, and said changes in internal resistance vary the selectivity of said bandpass passive filter.

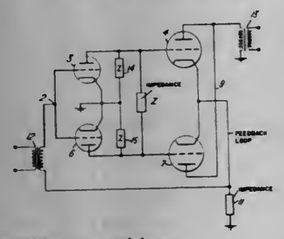
3,348,162
CIRCUIT WITH SELECTIVE NONLINEAR FEEDBACK
James B. Atkins, Pleasant Valley, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 26, 1965, Ser. No. 435,466
9 Claims. (Cl. 330—28)



1. A circuit comprising:
first and second stages of amplifying devices connected to produce at an output terminal of said second stage a signal that is inverted with respect to a signal at an input terminal of said first stage;
circuit means connected between said output terminal and input terminal for negative feedback and tending to produce unwanted oscillations;
means in said first stage providing negative feedback tending to slow the response of the circuit; and

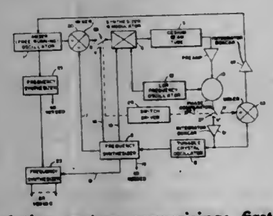
means connected to control said negative feedback means of said first stage in response to the voltage level at said output terminal to make said negative feedback selective within the oscillatory cycle to oppose the unwanted oscillation.

3,348,163
REDUNDANT AMPLIFIER CIRCUIT
Ian Johnson Hirst, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 11, 1965, Ser. No. 424,613
Claims priority, application Great Britain, Jan. 16, 1964, 1,973/64
3 Claims. (Cl. 330—84)



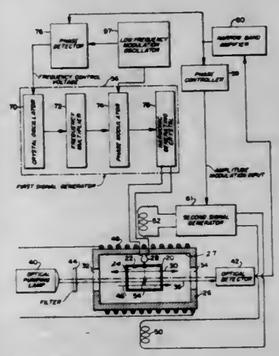
1. An amplifier comprising:
a source of input signals;
means for dividing said signals;
at least two amplifying paths connected in parallel with each other to receive said divided signals;
each path having an input and an output and at least two stages of amplification;
a feedback path connecting the output to the input of both of the amplifying paths; and
a bridging impedance connecting an interstage coupling circuit in one amplifying path to a corresponding coupling circuit in another amplifying path;
said bridging impedance serving to divert all of said signals to a single amplifying path in the event of failure in the parallel amplifying path.

3,348,164
AFC FOR DIVERSE FREQUENCY SOURCES
Guntis Brunins, Hyattsville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed June 28, 1966, Ser. No. 561,300
6 Claims. (Cl. 331—2)



1. A regulating system comprising: first and second controllable frequency generating means having outputs of different frequencies, frequency error detecting means being constructed such that an error correcting voltage will be produced upon receipt of an input voltage of a frequency other than a predetermined frequency, said controllable frequency generating means each having an output and a frequency correcting input, a frequency changing means connected to and supplied by said second frequency generating means, first switching means adapted to selectively connect the outputs of said generating means to an input of said detecting means by way of said frequency changing means, second switching means adapted to selectively connect said error correcting voltage to the frequency correcting input of the generating means, and switch driving means for driving said switches such that said first and second controllable frequency generating means will time share said frequency error detecting means and be corrected thereby.

3,348,165
GAS CELL FREQUENCY STANDARD
George T. Inouye, Gardena, John M. Andres, Rolling Hills Estates, and Glenn L. Brown, Granada Hills, Calif., assignors to TRW Inc., a corporation of Ohio
Filed Nov. 9, 1964, Ser. No. 409,925
6 Claims. (Cl. 331—3)

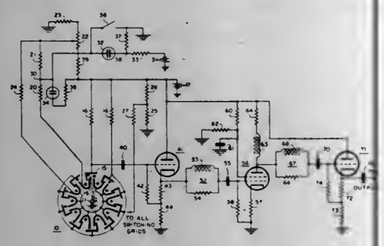


1. In combination:
an atomic resonant gas;
means for optically pumping said gas;
means for applying a weak, magnetic field to said gas;
means for applying to said gas a first signal having a resonance frequency which is characteristic of transitions between two energy levels of said gas;
means for applying to said gas a second signal which is characteristic of transitions between one of said two energy levels and an additional adjacent energy level of said gas;
means for periodically modulating the frequency of said first signal;
means coupled to said gas cell for detecting deviations of the frequency of said first signal from said resonance frequency and for deriving an alternating signal which bears phase and amplitude relations indicative of said frequency deviations;
means for modulating the amplitude of said second signal with said alternating signal;
means for deriving an error signal from said alternating signal;
and means for applying said error signal to said first signal means in a sense to oppose said frequency deviations.

3,348,166
WIDE BAND NOISE GENERATOR
Fred T. Griffin, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 26, 1959, Ser. No. 823,268
3 Claims. (Cl. 331—78)

1. A noise generator comprising a magnetron having a cathode and a plurality of individual anode systems substantially uniformly disposed in coplanar relation with respect to each other and disposed about said cathode in concentric relation thereto, each of said anode systems

including a beam target and, at least one beam forming means interposed said cathode and its respective target, and magnetic field means disposed to produce a magnetic field in transverse relation with respect to the plane of said anode systems; means connected to said beam forming means in at least one of said anode systems for producing at least one electron beam between said cathode

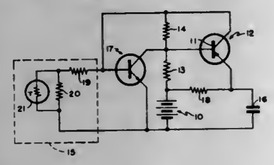


and said anode systems; and means connected to said beam forming means in the remainder of said anode systems maintaining each respective anode system at a positive potential with respect to said cathode, the magnitude of the potential difference between said cathode and said remainder of said anode systems being in the vicinity of and less than that magnitude required to produce an electron beam therebetween.

3,348,167
RELAXATION OSCILLATOR REQUIRING LOW CURRENT

Godfrey R. Gauld, Richmond, Ind., assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 543,997
4 Claims. (Cl. 331—111)



1. In combination:

a source of current having high and reference potential terminals;

a voltage divider comprising a series chain of resistances connected to said terminals and providing two taps;

a first transistor having a first emitter, a first base, and a first collector, said first transistor being connected in the common-emitter configuration and being of one conductivity type;

a second transistor having a second emitter, a second base, and a second collector, said second transistor being of the conductivity type opposite to that of the first;

and a resistance-capacitance energy storage circuit coupled to said source,

said second emitter being connected to said capacitor and said first and second bases being connected to the taps on said divider, to provide a threshold and to keep said second transistor non-conductive by reverse bias until a predetermined charge is attained on said capacitor, and

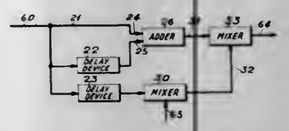
the collector of the first transistor being connected to the base of the second transistor, and the collector of the second transistor being connected to the base of the first, so that each transistor is in regenerative relation to the other,

said series chain including resistance means connected between said first base and said first emitter for stabilizing said first transistor.

3,348,168
FM/AM CONVERTERS

Gérard Melchior and Pierre Cassagne, Levallois, France, assignors to Compagnie Francaise de Television, a corporation of France

Filed Nov. 30, 1964, Ser. No. 414,814
Claims priority, application France, Dec. 3, 1963, 955,788
4 Claims. (Cl. 332—1)



1. An FM/AM converter for converting a wave modulated in frequency by a signal $M(t)$ in an amplitude modulated suppressed carrier wave of the type

$$k.M(t) \sin (w_1 t+P)$$

wherein k, w and P are constants, said converter comprising a first general input for receiving said frequency-modulated wave; a first channel coupled to said general input; said second channel coupled to said general input; said second channel comprising means for impressing on a signal propagating therethrough a delay s equal to the duration of a whole number N of half cycles of a wave at the carrier frequency Fo of said frequency modulated wave; a third channel comprising means for impressing on a signal propagating therethrough a delay equal to $s/2$; said channels having respective outputs; means for performing an algebraical addition, said means having two inputs, respectively coupled to the outputs of said first and second channels, and having a further output; a second general input; means for feeding to said second general input a sinusoidal oscillation having an angular frequency w, and a circuit having three inputs, respectively coupled to said further output, to the output of said third channel and to said second general input, said circuit including frequency converting means for combining the signals fed thereto to provide said amplitude modulated wave.

ERRATUM

For Class 332—118 see:
Patent No. 3,348,126

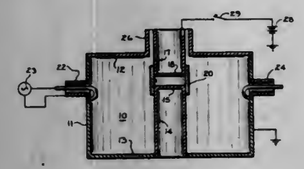
3,348,169
CONTROLLABLE MICROWAVE IMPEDANCE UTILIZING MULTIPACTION

Kiyo Tomiyasu, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 4, 1962, Ser. No. 185,007
8 Claims. (Cl. 333—13)

1. A microwave system comprising a source of microwave energy, load means to utilize the microwave energy from said source, waveguide means interconnecting said source and said load means, a microwave switching device disposed in the path of said microwave energy between said source and said load and comprising a pair of opposing electrodes having an evacuated region therebetween, each of said opposing electrodes so spaced that upon the incidence of microwave energy of a given frequency, oscillatory motion of electrons occurs between said electrodes with a transit time from one to the other of said pair of electrodes of substantially one-half the

period of the incident microwave energy and with sufficient energy to cause secondary electron emission from at least one of said electrodes at a ratio with respect to incident primary electrons of greater than unity, a direct current potential source connected across said electrodes

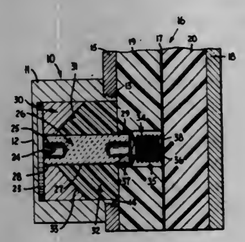


and means to apply a direct current potential from said direct current potential source across said electrodes to permit the passage of the microwave energy through said switching device and to prevent the establishment of a discharge between said electrodes.

3,348,170
MICROWAVE TERMINATION

Lester R. Barker, New Brunswick, N.J., assignor to Electronic Standards Corp. of America, Plainfield, N.J., a corporation of New Jersey

Filed Feb. 1, 1965, Ser. No. 429,466
4 Claims. (Cl. 333—22)



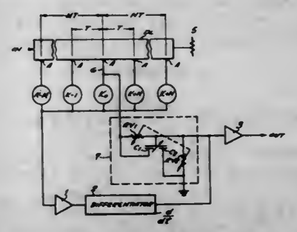
1. A microwave termination comprising a housing having a generally cylindrical hollow interior, electrically conductive sleeve means having an inwardly extending tapered surface disposed within the housing, insulative ring means having a complementary tapered surface disposed within the housing with the complementary tapered surface engaging the tapered surface of the sleeve means, resistor means centrally disposed within the housing and electrically connected at one end to the sleeve means and projecting resilient conductive means connected to the other end of the resistor means and projecting outside the housing to engage a conductor held in spaced relation to the housing.

3,348,171
EQUALIZATION CIRCUITS

Masao Kawashima, Yokohama-shi, and Tsukumo Higeta, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Feb. 12, 1963, Ser. No. 258,087
Claims priority, application Japan, Feb. 13, 1962, 37/5,372
10 Claims. (Cl. 333—28)

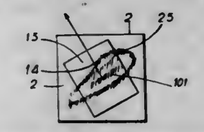
1. An equalization circuit comprising delay means having an input terminal and a main output terminal, echo output means on said delay means, junction means, first circuit means connecting said main output terminal to said junction means, and second circuit means connecting said echo output means to said junction means, said second circuit means including a differentiating circuit, said first circuit means including a low-frequency equalizer network.



3,348,172
SHEAR-WAVE STEEL ULTRASONIC DELAY LINE

Louis Dubard, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed June 22, 1965, Ser. No. 465,898
Claims priority, application France, June 23, 1964, 979,397
3 Claims. (Cl. 333—30)

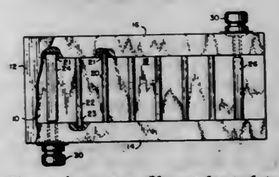


1. An ultrasonic delay line, comprising an elongated steel guide having two ends, said steel having a non-homogeneous zone having a smaller and a greater transverse dimension; two piezoelectric shear wave transducers respectively coupled to said two ends, having respective parallel transverse vibration axes, perpendicular to the greater transverse dimension of said zone.

3,348,173
INTERDIGITAL FILTERS WITH CAPACITIVELY LOADED RESONATORS

George L. Matthaei, Menlo Park, and Lloyd A. Robinson, Mountain View, Calif., assignors to the United States of America as represented by the Secretary of the Army

Filed May 20, 1964, Ser. No. 369,031
4 Claims. (Cl. 333—73)



1. A strip-line microwave filter adapted to pass a prescribed band of frequencies comprising a pair of spaced parallel ground planes, spaced parallel metallic blocks intermediate said ground planes and in electrical contact therewith, an interdigital line comprising two interleaving sets of parallel arranged metallic bars, one set of said bars at one end being affixed to one of said metallic blocks and extending toward the other said metallic block and into recesses formed therein, the other set of said bars at one end being affixed to said other metallic block and extending towards said one metallic block and extending into recesses formed therein, the walls of said recesses being separated from said other end of said bars a slight

distance to form a narrow gap whereby said gap defines a capacitive coupling, each of said metallic bars being less than one-quarter wavelength of the mid-band frequency of said band-pass, and microwave energy coupling means at respective ends of said interdigital line.

3,348,174
BLADE ARMATURE CONTACT IN SEALED HOUSING
Rudolf Scheidig, Stuttgart-Feuerbach, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 1, 1966, Ser. No. 530,879
Claims priority, application Germany, Mar. 16, 1965, St 23,519
3 Claims. (Cl. 335—153)



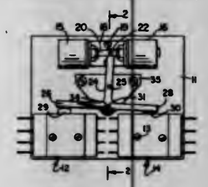
1. A multiple contact comprising:
a sealed housing formed by two hollow parts,
each hollow part including an opening bounded by a a pair of parallel flat surfaces spaced apart by means of a fixed step,
said flat surfaces on one part of the housing mating with similar flat surfaces on the second part of the housing to form two parallel boundaries for said housing separated by said fixed step,
a plurality of ribs supported within each hollow part and having faces parallel to one of said boundaries, and
a plurality of flat contact blades sealed through said housing and positioned to fit along the flat surfaces of said ribs,
whereby said contact blades are paired off and the spacing between each pair of contact blades is a fixed gap determined by the size of said step and the thickness of the contact blades.

3,348,175
NORMALLY CLOSED REED SWITCH
Anthony J. Wilkis, Downers Grove, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,386
3 Claims. (Cl. 335—154)



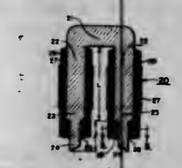
1. A reed switch comprising:
a sealed envelope of insulating material having first and second magnetic reeds extending thereinto with one surface of their respective inner ends facing each other in an overlapping, normally spaced relation;
insulating means on said surface of the overlapping inner end of at least one of said reeds;
a non-magnetic, metallic member secured to said first reed near said inner end thereof, and bent to extend in spaced parallel relationship to said insulating means to normally make both mechanical and electrical contact with the surface of the overlapping inner end of said second reed opposite said one surface; and
magnetic actuating means arranged outside said envelope and operative upon actuation to cause the inner ends of said first and second reeds to be attracted towards one another to thereby break contact between said metallic member and the inner end of said second reed.

3,348,176
SELF-LATCHING RELAY
Robert C. Gullett, Lockport, Ill., assignor to Packard Instrument Company, Inc., Brookfield, Ill., a corporation of Illinois
Filed June 15, 1965, Ser. No. 463,991
9 Claims. (Cl. 335—181)



1. A bistable self-latching relay comprising:
two snap-action switches, each of said switches comprising:
(a) a pair of fixed contact members,
(b) a movable contact member movable to make contact with one of said fixed contact members and to break contact with the other of said fixed contact members, and vice versa,
(c) a first spring means urging said movable contact member from a metastable intermediate position into snap contact with either of said fixed contact members,
(d) a second spring means overcoming said first spring means and urging said movable contact member into contact with only one of said fixed contact members,
(e) and armature engaging means for actuating said movable contact member,
an armature cooperating with said switches and movable from a first stable position engaging one switch and disengaging the other switch, and to a second stable position disengaging said one switch and engaging the other switch, said armature being maintained in each of said stable positions by said first spring means;
and electromagnetic means for moving said armature from each of said positions to the other of said positions.

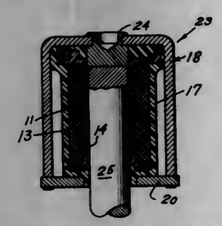
3,348,177
CONVERGENCE DEVICE FOR COLOR TELEVISION
Frank A. Wood, Elmhurst, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,356
9 Claims. (Cl. 335—213)



1. In a convergence apparatus for use with a multibeam cathode ray tube having a pole piece pair associated with each electron beam, an electromagnetic device for selectively positioning one of said beams comprising:
a core of magnetic material having a pair of legs;
each said leg comprising a first section of predetermined cross-sectional area and a contiguous second section of reduced cross-sectional area relative to that of said first section;

the extremities of said second sections remote from said first sections being disposed in a spaced apart relation and adapted to confront an assigned pair of said pole pieces when said convergence apparatus is mounted on said tube;
a pair of horizontal convergence windings individually mounted upon and encompassing an assigned one of said reduced leg sections;
a pair of vertical convergence windings individually mounted upon and encompassing substantially the entire length of an assigned one of said first leg sections and overlapping one of said horizontal convergence windings;
means for serially connecting each of said horizontal convergence windings in a flux-aiding relation;
and means for serially connecting each of said vertical convergence windings in a flux-aiding relation.

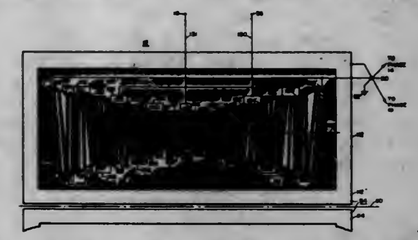
3,348,178
SOLENOID ACTUATED DEVICE
Howard L. Erickson, Bensenville, and William Raymond McCarty, Jr., Skokie, Ill., assignors to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Continuation of application Ser. No. 417,375, Dec. 10, 1964. This application Sept. 20, 1966, Ser. No. 587,359
4 Claims. (Cl. 335—251)



1. A solenoid actuated device comprising:
a solenoid having an axial bore therethrough;
a soft ferromagnetic frame extending from across one end of said solenoid externally to a position across the other end of said solenoid;
said frame member being apertured opposite said one end of said solenoid;
a soft ferromagnetic plunger having a flat end thereof slidably mounted in said bore of said solenoid and extending through said aperture;
the improvement therein comprising:
a stop member of non-magnetic material disposed in said bore of said solenoid at its said other end,
said stop member having a flat surface so as to provide a continuous mating surface with the flat end of said plunger when said solenoid is energized.

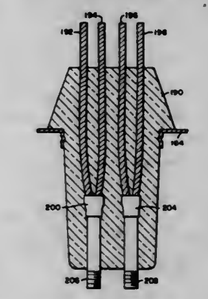
3,348,179
WINDING HAVING IMPROVED SURGE POTENTIAL DISTRIBUTION
Robert A. Veitch, Burlington, Ontario, Canada, assignor to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada
Filed Mar. 8, 1966, Ser. No. 532,641
8 Claims. (Cl. 336—58)

1. An electrical winding having a line end adapted for connection to a source of electrical potential, a neutral end, and an opening for receiving a magnetic core, comprising a plurality of electrically connected pancake coils each having two major opposed surfaces and an opening which extends between the major opposed surfaces; said plurality of pancake coils being disposed in spaced side-by side relation with their openings in substantial alignment, forming the opening in the electrical winding; solid electrical insulating means having a first predetermined dielectric constant disposed in the space between the major surfaces of each pair of adjacent coils; said solid electrical insulating means forming ducts between each pair of spaced coils; fluid electrical insulating means having a second dielectric constant, different than the dielectric constant of said solid electrical insulating means, disposed in the ducts formed between each pair of spaced coils; the ratio of the electrical insulating means having the



higher dielectric constant to the electrical insulating means having the lower dielectric constant, taken along a plane which passes through all of the coils in a direction substantially parallel with the opening in the winding, decreasing from coil to coil across the winding from the line to the neutral end in a predetermined manner, providing a predetermined effective dielectric constant which decreases from coil to coil, to provide an improved distribution of surge potentials across the winding from the line to the neutral end.

3,348,180
ELECTRICAL INDUCTIVE APPARATUS HAVING A MULTI-CONDUCTOR BUSHING
Merrill G. Leonard, Fowler, Ohio, and Leonard L. Wright, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 18, 1964, Ser. No. 376,193
2 Claims. (Cl. 336—90)



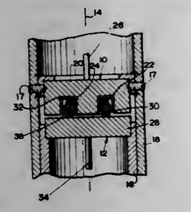
1. Electrical inductive apparatus comprising a casing having:
at least one opening therein for receiving an electrical bushing,
at least one electrical winding disposed within said casing having at least first and second electrical terminals connected to electrically different portions of the winding,
an electrical insulating bushing disposed in said at least one opening, said electrical insulating bushing including a generally cylindrical body member having first and second ends, formed of solid electrical insulating means,
at least first and second electrically conductive members, each having first and second ends, with their first ends being embedded in said body member and

their second ends extending outwardly from the second end of said body member into said casing, means connecting the second ends of each of said first and second electrically conductive members with the first and second terminals on said electrical winding, respectively,

a plurality of stranded electrically conductive members having first and second ends, with their second ends being embedded in said body member and their first ends extending outwardly from the first end of said body member, and

connector means embedded in said body member which electrically connect certain of said plurality of stranded electrically conductive members to the first end of said first electrically conductive member, and electrically connect the remaining stranded electrically conductive members to the first end of said second electrically conductive member.

3,348,181
BROADBAND ROTARY TRANSFORMER
Chester Stromswold, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,980
7 Claims. (Cl. 336—120)



1. A rotary transformer comprising

(A) a substantially circular single turn primary conductor having

(1) a tubular cross-section, and

(2) a longitudinal slot,

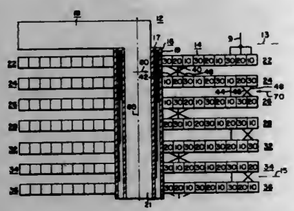
(B) a substantially circular single turn secondary conductor

(1) disposed within said primary conductor, and

(2) extending longitudinally therein,

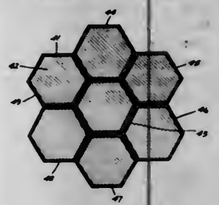
(C) means for mounting said primary and secondary conductors for continuous relative rotation about the axis of the circle defined by said primary conductor.

3,348,182
WINDING TRANSPOSITION
Edward P. Baker, Hartford, Burghill, Ohio, and Herbert E. Forsha, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 13, 1965, Ser. No. 495,492
4 Claims. (Cl. 336—187)



1. An electrical conductor comprising at least three insulated conductive strands disposed in side-by-side relation to form a conductor having first and second outer edges, said conductive strands being transposed with only first and second transpositions, at first and second spaced transposition points, respectively, the sequence of said conductive strands being reversed at said first transposition point, the conductive strand at the first outer edge of the conductor occupying the same strand position before and after said second transposition point, the sequence of the remaining strands being reversed at said second transposition point, said first and second transpositions being repeated sequentially, at least as many times as there are conductive strands, to dispose each conductive strand in each strand position.

3,348,183
ELECTRICAL COILS AND METHODS FOR PRODUCING SAME
Ralph D. Hodges and Francisco C. Avila, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed May 2, 1966, Ser. No. 554,244
7 Claims. (Cl. 336—223)



1. An electrical coil comprising: a plurality of turns of conductor wire forming a winding symmetrically disposed with respect to a central axis with more than two layers of conductors, said turns of conductor wire having a coating comprising a continuous layer of synthetic resin, preselected of said turns of conductor wire having at least five sides in cross section formed by compressive forces thereagainst by other of said turns of conductor wire in the range of 10,000 to 40,000 pounds per square inch, and at least some of said other turns having less than five sides in cross section, said coating conforming to said five sides of said preselected turns and to the sides of said other turns.

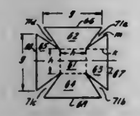
4. A method of producing an electrical coil comprising the steps of: forming a winding of a plurality of turns of conductor wire having a circular cross section with a diameter D_o and coated with an essentially uniform layer of synthetic resin having a radial thickness h_o, the ratio D_o/h_o being not less than 18, with preselected turns being encircled by other turns, and compressing at least a portion of said coil at a pressure between 10,000 and 40,000 pounds per square inch wherein at least said preselected turns are deformed from said circular cross section to a multi-sided cross section by the pressure of said other turns.

3,348,184
HALL GENERATOR
Ottokar Halla, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin and Erlangen, Germany, a corporation of Germany
Filed Oct. 24, 1965, Ser. No. 504,504
Claims priority, application Germany, June 1, 1965, S 97,403
16 Claims. (Cl. 338—32)

15. A Hall generator comprising

a Hall plate of semiconductor material having four extending portions of trapezoidal configuration, each of said extending portions extending from a corresponding side of a central square and each having an outer side having a determined length, an inner side coincident with the corresponding side of the central rectangle and parallel to and spaced from the outer side and a pair of spaced extending sides joining the outer and inner sides, the ratio of the altitude of each of said extending portions to the length of each of said inner sides having a value at least equal to 1.2;

a Hall voltage electrode extending along the entire determined length of the outer side of a first of said extending portions;

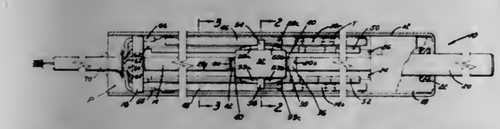


another Hall voltage electrode extending along the entire determined length of the outer side of a second extending portion opposite said first extending portion;

a control current electrode extending along the entire determined length of the outer side of a third of said extending portions; and

another control current electrode extending along the entire determined length of the outer side of a fourth extending portion opposite said third extending portion.

3,348,185
INEXPENSIVE SLENDER LINEAR MOTION POTENTIOMETER
Robert C. Parkinson, Eugene A. Marks, and Donald L. Gaa, Riverside, and Lewis J. De Back, Bloomington, Calif., assignors to Bourns, Inc., a corporation
Filed Oct. 5, 1966, Ser. No. 584,505
6 Claims. (Cl. 338—183)



1. An elongate slender linear potentiometer characterized by small maximum transverse dimension and inexpensive construction, said potentiometer comprising:

first means, including housing means formed principally as an elongaate cylinder and a bearing in a first end thereof;

second means, including an elongate support means having an elongate exterior surface complementary with and closely fitting a portion of the elongate interior surface of said cylinder, said support means presenting along its exterior an elongate groove and presenting further an elongate guideway;

third means, including a resistance element supported in said elongate groove with a contact surface exposed for brushing of a contact thereon, an elongate return conductor supported on the exterior of said support means generally parallel to said resistance element, and terminal means for said element and said conductor;

fourth means, including rectilinearly movable means comprising a slider device operable along and engaging in said guideway to be guided thereby, and said slider device comprising a conductive contact device having a first contact in brushing engagement with said elongate conductor and a second contact in brushing engagement with the said contact surface of said resistance element;

and fifth means, including reciprocatory actuator rod means extending through said bearing and connected to said slider device for reciprocation of the latter along said guideway;

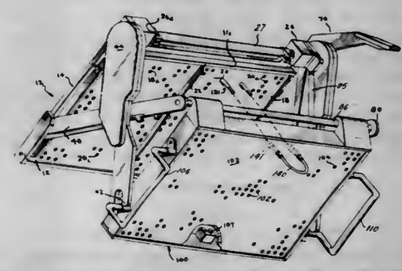
whereby said second, third, fourth and fifth means can be assembled to form an operable subassembly and subjected to operating and electrical tests with the components thereof exposed for visual inspection and access, prior to incorporation of said second, third and fourth means in said cylinder and assembly with said first means to form a complete potentiometer.

3,348,186
HIGH RESISTANCE CABLE
Samuel R. Rosen, Lorain, Ohio, assignor to Nordson Corporation, Amherst, Ohio, a corporation of Ohio
Filed Nov. 16, 1964, Ser. No. 411,251
15 Claims. (Cl. 338—214)



1. A flexible, high-resistance, low-capacitance, electrical cable comprising a plurality of rigid, high-resistance segments axially spaced from each other throughout the length of the cable and having small metallic conductors at their opposite axial ends in said cable, and alternately disposed flexible, non-metallic, conductive segments axially aligned with and axially longer than said high-resistance segments and conductors, and electrically connected to said high-resistance segments through said conductors, all of said segments having about the same external diameter and being closely contained in air-free engagement in an insulating sheath.

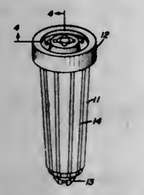
3,348,187
MULTIPLE SWITCH
Lindsay Carlton Friend, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 25, 1964, Ser. No. 391,934
13 Claims. (Cl. 339—18)



1. A plugboard device including a rear board having an array of first contactors secured therein and projecting outwardly therefrom, a front board having an array of second contactors secured therein and projecting outwardly therefrom in positions to mate with said array of first contactors in said rear board, a carriage including means connected to said rear board to support and position said front board with the second contactors facing the said first contactors in spaced apart relationship and further means to drive said front board and said second contactors relative to said rear board to drive said first and second contactors into and out of engagement under substantial force to effect good contact, the said front board including handle members secured to each side of said front board to facilitate handling of said front board and to facilitate insertion and withdrawal thereof from said carriage, said handle members being of a material of substantial rigidity and strength and being attached to said front board through a connection sufficiently rigid and strong to withstand substantial forces applied thereto

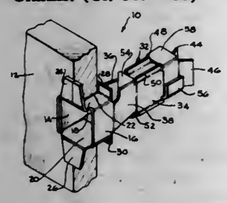
and the said carriage including further means being positioned to effect said drive of said front board and second contactors by a direct engagement with said handle members.

3,348,188
FLASH EXTENDER
Lawrence M. Wood, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 28, 1965, Ser. No. 467,278
2 Claims. (Cl. 339—32)



1. For use with a multilamp flash package, including a plurality of flash lamps with individual reflectors and a connecting base with a pair of depending lead-in wires from each lamp, together with a camera having socket means to receive such package for sequentially placing said lamps in a photoflash synchronizing circuit: the improvement of a flash extender comprising a retaining base portion identical to the package connecting base and insertable into t he camera socket means; a receiving socket portion defining an annular groove and a central access opening for receiving and detachably retaining the connecting base of an inserted package, with the depending lead-in wires from the lamps positioned in the annular groove; an elongate vertical extender column connecting the base portion and socket portion to separate the package from the camera socket means by a predetermined distance; and a plurality of electrically conductive contact strips, each contact strip extending vertically from the base portion to the socket portion, with an end of the contact strip positioned within the annular groove for engagement with a selected one of the lead-in wires of an inserted lamp, and the other end of the contact strip positioned at the base portion for selective engagement with an electrical terminal of the camera socket means for flashing the corresponding lamp in timed relation with camera operation.

3,348,189
ELECTRICAL CONNECTOR
Daniel Russell Coldren, Enola, and Ralph Rupp Lau, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 24, 1965, Ser. No. 509,519
9 Claims. (Cl. 339—32)



1. A female contact having a longitudinal passageway extending completely therethrough for the reception of a male tab member, said contact comprising a generally rectangular strap portion, an elongated spring member extending from each of opposite sides of said strap portion and defining opposite side walls of said longitudinal passageway, said spring members converging inwardly from said strap portions and diverging outwardly at their free ends, said spring members having a portion lying between said convering and diverging ends which lies substantially parallel to the longitudinal extent of said passageway, a pair of wings extending from the central portion of each of said spring members and substantially perpendicularly to the longitudinal extent thereof, said wings being flared outwardly to permit insertion of a male tab through said spring members and at substantially right angles to said longitudinal passageway, an ear extending from each of said spring members substantially perpendicularly to the longitudinal extent thereof, each said ear having a first portion defining a wall of said longitudinal passage and a second portion overlying the opposite spring member to which said ear is attached to thereby limit the outward movement of said spring member due to insertion of a male tab member, and means extending from said contact for securing said contact to an electrical conductor.

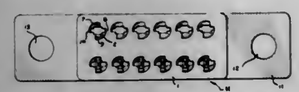
3,348,190
TEST CLIP
William C. Hartman, South Plainfield, and John H. King, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 2, 1966, Ser. No. 546,686
8 Claims. (Cl. 339—75)



1. A test clip for contacting an insulated connector from which wires protrude at one end and which has an opening at the other end, comprising insulating cradle means for receiving the wires emerging from one end of the connector and for abutting aganst the one end of said connector, insulating block means made of the same material as said cradle means, conductive prong means projecting from said block means toward caid cradle means, variable means for establishing a predetermined spacing betwen said cradle means and said block means when said variable means are unstressed, said variable means including a pair of outwardly-bowing resilient insulating arms extending from said cradle means to said block means and being integral with both of said last-named means, said prong means being retractable from said cradle means by squeezing said arms inwardly, said spacing being small enough so that when said cradle means abuts against the end of the connector to be contacted said arms resiliently urge said prong means into said opening.

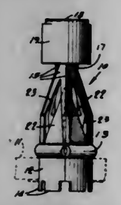
3,348,191
ELECTRICAL CONNECTOR ELEMENTS
Robert John Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 349,565, Mar. 5, 1964. This application Feb. 3, 1967, Ser. No. 613,966
9 Claims. (Cl. 339—176)

1. In combination, a housing member having an opening in one surface to receive a printed circuit board, at least one row of passageways disposed in one side of said opening and extending through said housing member in an equally spaced and parallel manner, an electrical connector element defining an elongated metallic member disposed in each passageway and including a contact section, securing section and conductor-receiving section, said contact section being disposed in said opening and defining a curved contact-engaging surface for engaging a circuit path on said printed circuit board, said securing section including a stabilizing portion and a locking portion spaced therefrom and both portions interconnected by a portion having a width less than the width of said stabilizing and locking portions, said housing member having a recess in which said locking portion is disposed,



said recess including surfaces on opposite sides of a plane containing the longitudinal axis of each passageway, said surfaces being equally spaced from and parallel to said plane, said locking portion being twisted with respect to said stabilizing portion so that said locking portion engages said surfaces and the twist being located in said interconnecting portion within the passageway thereby locking said connector element within the passageway, said conductor-receiving section extending outwardly from said housing member to receive conductor means thereon.

3,348,192
ELECTRICAL TERMINAL WITH MULTIPLE SETS OF RETAINING FINGERS
Charles P. De Vito, Park Ridge, Ill., assignor to Alcon Metal Products, Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,340
6 Claims. (Cl. 339—258)

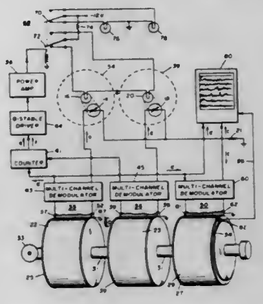


2. In an electrical connector of the character described:
a tubular body having an intermediate annular outwardly projecting peripheral reinforcing and stop shoulder rib,
a first set of retaining prong fingers convergently related and extending from one end of said body, and a second set of convergently related prong retaining fingers each struck in part from the body and in part from a respective one of said first set of fingers and extending angularly from said rib in the same direction as said first set of fingers.

3,348,193
SYSTEM FOR THE ELECTRONIC SPLICING OF SIGNALS
Robert B. Kerr, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed May 27, 1965, Ser. No. 459,169
7 Claims. (Cl. 340—15.5)

1. The method of electronically splicing portions of seismic traces, comprising the steps of:
(a) reproducing a first group of traces and a second group of traces with a common time reference,
(b) adjusting the amplitude of said first group to a level desirable for recording,

(c) adjusting the amplitude of said second group to a level substantially below said level desirable for recording,
(d) simultaneously adding individual traces of said first group and the corresponding individual traces of said second group to form a first composite group of traces,
(e) recording said first composite group,



(f) at a predetermined time following said common time reference, reducing the amplitude of said first group continuously over a finite period of time to a level substantially below said level desirable for recording while simultaneously increasing the amplitude of said second group continuously over the same period of time to said level desirable for recording,
(g) simultaneously adding individual traces of said first group and the corresponding individual traces of said second group to form a second composite group of traces, and
(h) recording said second composite group.

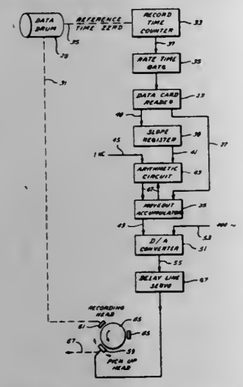
3,348,194
APPARATUS FOR TIME-CORRECTING SEISMIC DATA
William W. Witt, Houston, and Robert E. Williams, Pearland, Tex., assignors to Geo Space Corporation, a division of Western Equities, Inc., Houston, Tex., a corporation of Nevada
Filed Oct. 15, 1965, Ser. No. 496,365
3 Claims. (Cl. 340—15.5)

1. Apparatus for correcting recorded traces in accordance with curved line information stored in digital data form such that the initial amplitude value thereof is stored and slope values are stored for predetermined sequential segmental time conditions, comprising
data means on which a recorded trace appears, said means producing a pulse at the beginning of the trace,
a record time counter connected to said data means for receiving said beginning pulse and producing timing signals at successive substantially equal incremental times,
rate time gate means triggered by the timing signals from said record time counter,
digital data reader means for initially interrogating the stored curved line information for the initial amplitude value and for the initial slope value thereof,
said rate time gate means producing signals to said digital data reader means at the beginning pulse and at the predetermined sequential segmental times, said segmental times being integer multiples of said incremental times,
accumulator means connected to said data reader means for initially storing the initial amplitude value of the stored curved line information,

slope register means connected to said data reader means for initially storing the initial slope value of the stored curved line information,

said rate time gate means causing said data reader to change the clope value in the slope register means in accordance with the stored slope value at the predetermined sequential segmental time conditions,

arithmetic means triggered by said slope register at incremental times for changing the stored amplitude value in the accumulator by the slope value in the slope register means,



A digital-to-analog converter coupled to said accumulator means for converting the output from said accumulator means to analog form,

servo drive means driven at a rate proportional to the value in said accumulator,

a constantly moving recording medium,

recording means receiving the recorded traces from said data means and recording said traces on said constantly moving recording medium, and

pickup means for detecting the traces from said recording medium as positioned by said servo drive means so that the output produced is the recorded traces corrected by the stored curved line information.

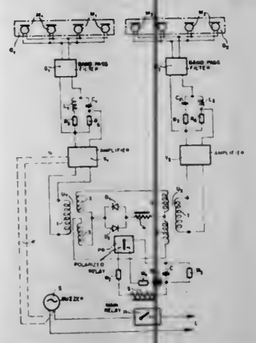
3,348,195

DEVICE FOR INDICATING MOTIONAL DIRECTION OF A RADIATOR IN SPACE

Friedrich Spandöck, Karlsruhe, Germany, assignor to Siemens Aktiengesellschaft, Munich and Berlin, Germany, a corporation of Germany

Filed Nov. 12, 1954, Ser. No. 468,430
Claims priority, application Germany, Nov. 12, 1953, S 36,295
20 Claims. (Cl. 340—16)

1. A device for indicating the presence of and the direction of motion of a sound producing object passing through air space, comprising directional detector means for receiving sound and producing alternating control voltages corresponding thereto, means for creating a phase shift of 90° between said voltages, phase comparison means, means for conducting said voltages to said phase comparison means, a polarized element operatively connected to said phase comparison means, said polarized element being operatively responsive to current from said phase comparison means depending upon alternating voltages produced by said detector means responsive to sound from an object moving in a predetermined direction through said space, a signalling device responsive to predetermined sequence of operation of said polarized element for producing a signal to indicate the passage of said object, and control means operatively interconnecting said signalling device and said polarized element and including a time constant circuit operatively responsive to the actuation of said polarized element in accordance with the time interval between a first and a second sound received from said object upon passing through said space within a predetermined range of speed, whereby actuation of said signalling device is suppressed by the operation of said control means responsive to detection of objects moving through said space at speeds outside of said predetermined range of speed.

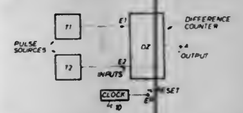


3,348,196

PULSE SOURCE CONTROL CIRCUIT USING MAGNETIC COUNTERS

Helmut Willrett, Ditzingen, Württemberg, and Ulrich Kuhl, Munchingen, Württemberg, Germany, assignors to International Standard Electric Corporation, a corporation of Delaware

Filed Aug. 6, 1963, Ser. No. 300,255
Claims priority, application Germany, Aug. 28, 1962, St 19,642
10 Claims. (Cl. 340—146.1)



1. A supervision control circuit for detecting the failure of pulse sources comprising a plurality of pulse sources, difference counting means comprising a circuit energized individually and alternately from said sources for detecting a predetermined difference in the output of said sources, said predetermined difference resulting from a failure of one of said sources, means responsive to the detection of said failure difference for providing an output fault signal, and means for periodically resetting said difference counter before a cumulative long term drift type of non-fault difference reaches the level of said predetermined fault difference.

3,348,197

SELF-REPAIRING DIGITAL COMPUTER CIRCUITRY EMPLOYING ADAPTIVE TECHNIQUES

Sheldon B. Akers, Jr., Syracuse, and George H. Coddington, Brewerton, N.Y., assignors to General Electric Company, a corporation of New York

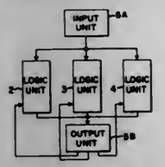
Filed Apr. 9, 1964, Ser. No. 358,456
7 Claims. (Cl. 340—146.1)

1. Electrical logic circuitry which employs redundancy in combination with adaptation for extending its period of continuous operation, comprising:

(a) a logic unit characterized by an ability to adapt itself to perform a logical operation in response to external stimuli, said stimuli being applied upon said unit generating an incorrect output,

(b) said logic unit including at least two sets of corresponding logic performing component parts of similar characteristics,

(c) means for coupling corresponding component parts in parallel arrangement so that for each parallel arrangement only a single part is in an operative condition at any one time and the remaining parts are in a standby state,



(d) adaptive means for adjusting said logic performing component parts in response to a succession of applied inputs and said external stimuli to generate a correct output for a given input each time a stimulus is applied, said adjustment continuing until a correct output is generated for any input, said adaptive means including

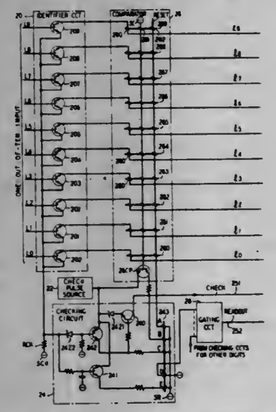
(e) further means for replacing a previously operating component part which has failed with a corresponding standby part.

3,348,198

CODE-CHECKING COMPARATOR CIRCUIT

Harry Winter, Franklin Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 4, 1964, Ser. No. 387,293
16 Claims. (Cl. 340—146.1)



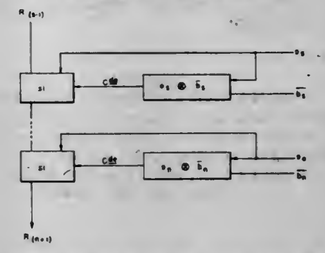
1. A code-checking circuit comprising identification means for initially registering an input digit in a first code, means for translating said first code digit to a second code, storage means for storing said digits, checking means for transferring said translated digit from said translating means to said storage means, a check element coupled to said checking means, pulsing means for furnishing an inhibit signal to inhibit said checking means and for furnishing check signals to energize said translating means and said check element, comparator means responsive to a first of said check signals to control the passage of said inhibit signal to said checking means and responsive to a second of said check signals for preventing the passage of said inhibit signal to said checking means if said identification means is successively energized by identical input digits, and means in said checking means responsive to the energization of said check element for precluding the transfer operation of said checking means when said identification means is simultaneously energized by more than one digit.

3,348,199

ELECTRICAL COMPARATOR CIRCUITRY

Pierre Jörgensen, L'Hay-les-Roses, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Seine, France

Filed Apr. 1, 1965, Ser. No. 444,642
Claims priority, application France, Apr. 3, 1964, 969,694
14 Claims. (Cl. 340—146.2)



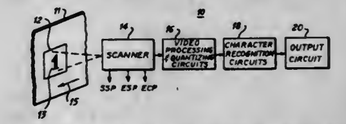
11. In an electronic device for determining the similarity or dissimilarity of two binary numbers, the combination of a voltage comparator circuit having two input terminals and an output terminal and a commutator circuit having two input terminals, a control voltage terminal and an output terminal, means for applying a voltage symbolically representative of a digit of given rank in one of said numbers to one input terminal of each of said circuits, means for applying to the other input terminal of the comparator circuit a voltage representative of the contrary of the digit of corresponding rank in the other of said numbers, means connecting the output terminal of said comparator circuit to the control voltage terminal of said commutator circuit, means for generating a voltage symbolically representative of the carry-over resulting from the addition of digits of lower rank than the aforesaid digits of said numbers, and means for applying said last-named voltage to the other input terminal of said commutator circuit.

3,348,200

CHARACTER READER THAT QUADRANTIZES CHARACTERS

Edward C. Ross, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,343
5 Claims. (Cl. 340—146.3)



1. In a character reader for reading characters from a document, different ones of said characters being formed of different outline traces, the outline traces of said characters including a plurality of topographical features including strokes, comprising the combination of:

means for scanning a character by a plurality of vertical scan lines to produce video signals serially representing the features of said character,

means for causing said scanning means to successively divide each of said characters into quadrants,

first and second delay lines, each exhibiting a delay of one scan time, for delaying the video signals on each scan line,

means for comparing delayed and undelayed scan lines to generate a valid stroke signal when valid strokes are detected in said scanlines,

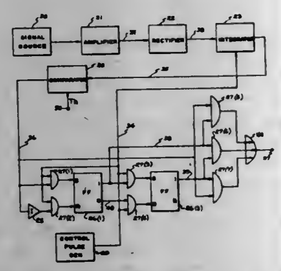
means for detecting when a stroke forks into two strokes,

means for recording the quadrant in which said fork is detected only when a valid stroke signal is generated in the same quadrant within two scan times after said fork is detected,

means for detecting a pair of strokes joined into one stroke only when a valid stroke signal has been generated for said strokes, and

means for recording the quadrant in which said join is detected only when a valid stroke occurs in the same quadrant.

3,348,201
SIGNAL DETECTION CIRCUIT
James H. Colburn, Los Altos, Calif., and Leland J. Hanchett, Jr., Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,882
8 Claims. (Cl. 340—146.3)



2. A signal detection circuit for detecting a signal having a predetermined normal time of occurrence, comprising: means for receiving a signal to be detected; means for integrating a plurality of successive portions of said signal to be detected during said normal time of occurrence of said signal; means providing a threshold signal; comparator means for comparing the integrated signal from each of said successive portions with said threshold signal and for producing a comparison signal when said integrated signal exceeds said threshold signal; and analyzing means for receiving comparison signals from said comparator means and for producing an output signal indicative of the occurrence of said signal to be detected when at least a predetermined number of a successive predetermined plurality of successively integrated portions of said signal to be detected exceed said threshold signal.

3,348,202
LINKING CIRCUITS FOR TELEPHONE SYSTEMS COMPRISING TRANSFORMERS UTILIZING ONLY THE LINEAR WORKING RANGE THEREOF
Max Schlichte, Munich, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany
Continuation of application Ser. No. 216,769, Aug. 14, 1962. This application May 2, 1966, Ser. No. 547,126
Claims priority, application Germany, Aug. 18, 1961, S 75,352; Sept. 19, 1961, S 75,824
8 Claims. (Cl. 340—166)

1. A linking circuit comprising:

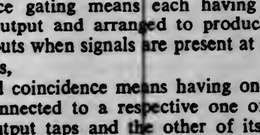
(a) an input transformer having a primary winding,

(b) an output transformer having a pair of primary windings wound in opposition to one another,

(c) means connecting a readout pulse to the primary winding of said input transformer,

(d) means connecting an input pulse to the primary windings of said output transformer,

(e) means coupled with said input transformer and said primary windings of said output transformer for additively coupling said readout pulse to the input pulse in one of the primary windings of said output transformer and subtractively coupling said readout pulse to the input pulse in the other primary winding of output transformer, and



(f) output means connected to said output transformer for producing an output pulse in response to the simultaneous application of a readout pulse and an input pulse and having a polarity indicative of the polarity of said input pulse.

3,348,203
SCANNED TIME COMPRESSOR
Willard B. Allen, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 23, 1963, Ser. No. 304,288
4 Claims. (Cl. 340—167)

1. Apparatus for time compressing digital data signals comprising:

an input terminal for receiving serial digital data signals,

a serial digital shift register having n stages and an input,

gating means connected between said input terminal and said register input and arranged to pass signals at said terminal to said register when energized by a control signal,

delay means having an input and n equally spaced output taps and being arranged to produce signals at each of said output taps in sequentially-timed relationship in response to receipt of a signal at its said input,

a pulse generator arranged to periodically and simultaneously supply said gating means with a control signal and said delay means with an input,

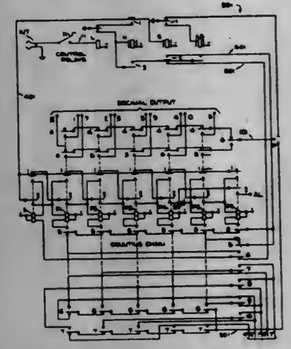
said delay means having a total delay time equal to or less than the period of said pulse generator,

n coincidence gating means each having two inputs and an output and arranged to produce signals at their outputs when signals are present at both of said two inputs,

each of said coincidence means having one of its two inputs connected to a respective one of said delay means output taps and the other of its two inputs to a respective one of said shift register stages,

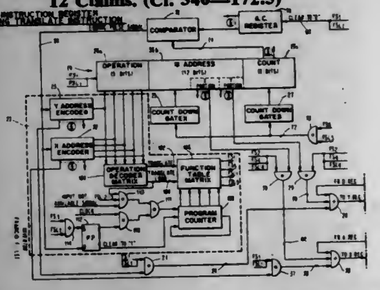
all of said coincidence means outputs being connected to a common output terminal whereby all data in said register is read out at said common output terminal during each period of said pulse generator.

3,348,204
HIGH-SPEED ALL-RELAY PULSE COUNTER
Roy Prichard, Lockport, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 30, 1963, Ser. No. 334,248
12 Claims. (Cl. 340—168)

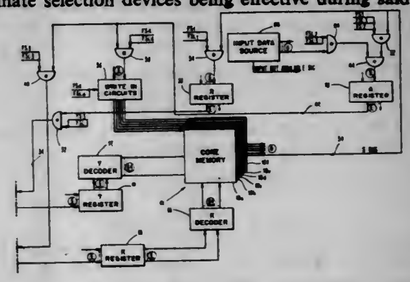


1. An impulse counting circuit for counting the number of impulses in a series of received impulses, a chain of counting relays, means for operating and restoring said relays in response to said received series of impulses with only one counting relay being operated at the beginning and only one being released at the end of any received impulse series, the operate time of any relay being determinative of the shortest impulse capable of being counted by said circuit and the release time of any relay being determinative of the shortest inter-impulse interval of any series of impulses capable of being counted by said circuit.

3,348,205
UNIVERSAL CODE TRANSLATOR
Francis F. Lee, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 6, 1963, Ser. No. 256,612
12 Claims. (Cl. 340—172.5)



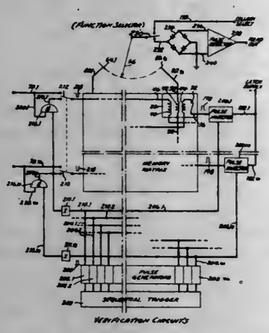
11. A universal code translator for translating a plurality of input characters, each presented sequentially from an external source, prior to storage comprising: an addressable storage means for storing at discrete addresses coded data characters and equivalents of said input characters in a plurality of output codes; a controllable source of input characters, capable of presenting individual characters in a sequential fashion, first register means coupled to and adapted to receive and store said input characters; a first coordinate selection device coupled to said addressable storage means, and adapted to receive and store data defining a first coordinate of said discrete addresses of said storage means; a second coordinate selection device coupled to said addressable storage means and adapted to receive and store data defining a second coordinate of said discrete addresses of said storage means; a multi-section instruction register, having at least a first, a second and a third section for receiving and storing the values contained in the first, second and third portions of an instruction respectively; the second and third sections of said instruction register further having gates coupled thereto to permit the values originally set into said second and third sections to be increased or decreased; a switching network responsive to the value stored in said first section during a first time period, to set first coordinate values into said first and second coordinate selection devices, said selection devices being effective to cause the value stored in the addressable storage means at the discrete address, defined by the first coordinate values, to be read out; second register means coupled to said addressable storage means and adapted to receive and store the value read from said addressable store in response to said first coordinate values; means coupling said first register means to said second coordinate selection device to permit the value stored in said first register means to be transferred to said second coordinate selection device, as a second coordinate value, during a second time period; means coupling said second register means to said first coordinate selection device to permit the value stored in said second register means to be transferred to said first coordinate selection device, as a second coordinate value during said second time period; said first and second coordinate selection devices being effective during said second time period to cause the equivalent value stored in the addressable storage means at the discrete address defined by said second coordinate values to be read out; means coupling said addressable storage means and said first register means to permit said first register means to receive the equivalent read from said addressable storage means at the discrete address established by said second coordinate value; said switching network responsive to the value stored in said second section of said instruction register, during a third time period to set third coordinate values into said first and second coordinate selection devices, said coordinate devices being effective to select a further discrete address in accordance with said third coordinate value; means coupling said first register means to said addressable storage means to permit the contents of said first register means to be placed in said addressable storage means at the discrete address defined by said third coordinate value; a control means coupled to said switching network, and said first and second register means to provide timing signals and further responsive to the completion of the insertion of said equivalent at the location defined by said third coordinate value to cause said gates to decrease the value stored in said second and third instruction register sections by one, said reduction by one occurring for each one of said characters translated; said control means further controlling said source of input characters to apply a further input character to said first register means; and means responsive to a value of zero in said third section of said instruction register to terminate further translation.



3,348,206
RELAY STORAGE UNITS

Hugh St. L. Dannatt, Rowayton, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 25, 1963, Ser. No. 311,380
9 Claims. (Cl. 340—172.5)

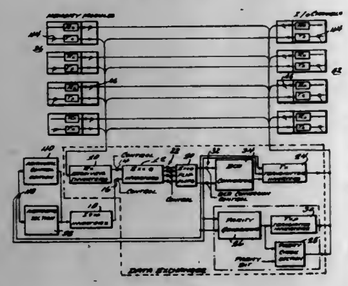


8. A memory comprising: at least one relay; said relay including at least one set coil adapted to participate in closing the relay and a latching coil connected to hold the relay closed; means for applying a pulse to a first one of said coils; said coils being in inductive relationship whereby said first coil induces a pulse in a second one of said coils; and means connected to said second coil to detect pulses induced therein; said relay including a pair of contacts connected in series with said latching coil and representing by their open or closed condition the information stored in said relay whereby the pulses passed through said contacts represent that information.

3,348,207
DATA EXCHANGER

Donald H. Malcolm, Brooklyn Center, and Frederick Marvin Green, Bloomington, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Dec. 20, 1963, Ser. No. 332,045
4 Claims. (Cl. 340—172.5)

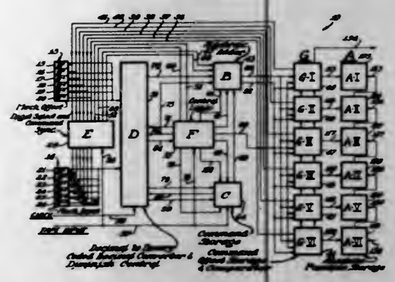


1. In a computer system wherein information is selectively transferred among computer components, a data exchanger interconnecting said components, said data exchanger comprising: a plurality of receiver means each receiving a separate portion of said information and applying its received information portion to an individual transfer path associated therewith; a separate transmitter means in each of said transfer paths; and simultaneously operative means for selectively and directly interconnecting each transfer to any other transfer path to permit an information portion to pass from a given receiver to any one of the transmitters.

3,348,208
NUMERICAL POSITIONING CONTROL SYSTEM

Harvey J. Rosener, Dayton, Ohio, assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Apr. 1, 1964, Ser. No. 356,437
16 Claims. (Cl. 340—172.5)

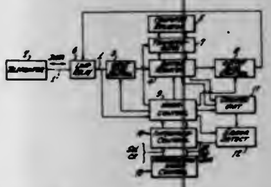


1. In a numerical control system,
means for receiving a command input number having a plurality of digit positions and for receiving a zero offset input number having a plurality of digit positions,
arithmetic processing means for selectively adding the command input number to the zero offset input number as one alternative and selectively subtracting said command input number from said zero offset number as a second alternative, and in both of said alternatives processing said input numbers digit by digit beginning with the most significant digit positions of said numbers and storing the resultant number,
means for receiving sign information concerning said command input number and controlling said arithmetic processing means to carry out an addition operation of said input numbers in response to positive sign information and to carry out a subtraction operation in response to negative sign information,
means for receiving a position feedback number in accordance with the position of an output, and
means for comparing said resultant number stored by said arithmetic processing means with said position feedback number to provide a positioning signal for said output while completely discarding said command input number to prevent positioning of the output in accordance with the received command input number.

3,348,209
BUFFER

Forrest E. Brooks, Moorestown, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,194
10 Claims. (Cl. 340—172.5)



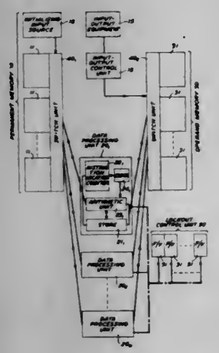
1. A buffer for controlling the transfer of data between a data handling device and a transmission line comprising:
(a) a storing means,
(b) means for transferring data in either direction between said storing means and said device,

(c) means for transferring data in either direction between said transmission line and said storing means, and
(d) control means arranged and operated to place said transferring means and said storing means in one of three modes including a first mode enabling the transfer of data from said transmision line to said device through said storing means, a second mode enabling the transfer of data from said device to said transmission line through said storing means, and a third mode enabling said transferring means and said storing means to be switched to either said first or said second mode.

3,348,210
DIGITAL COMPUTER EMPLOYING PLURAL PROCESSORS

Brandt P. Ochsner, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 7, 1964, Ser. No. 416,502
17 Claims. (Cl. 340—172.5)



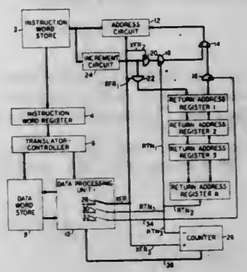
1. In combination, first storage means for storing a plurality of functional routines, second storage means for storing digital data words and task assignment digital words, said task assignment words including a data word address portion and a functional routine address portion, a plurality of substantially identical data processors, and means for enabling each of said processors in accordance with a different one of said task assignment words for operating on the digital data identified by said task word in the manner determined by the routine identified by said task word.

3,348,211
RETURN ADDRESS SYSTEM FOR A DATA PROCESSOR

Hugo Ghiron, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 10, 1964, Ser. No. 417,336
18 Claims. (Cl. 340—172.5)

1. A data processor comprising a memory containing a plurality of instructions, each of said instructions being contained at a respective address in said memory, means for representing an instruction to control a data processing operation, means for transmitting successively addressed instructions to said instruction representing means, a plurality of registers arranged in ascending order of significance, said register storing return addresses only, first means for controlling said transmitting means to transmit an instruction whose address is out of sequence, means for storing a return address in the most significant one of said registers when an out-of-sequence instruction is transmitted to said instruction representing means and for shifting all return addresses stored in said registers to the respective succeeding registers of lesser significance, second means for controlling said transmitting means to

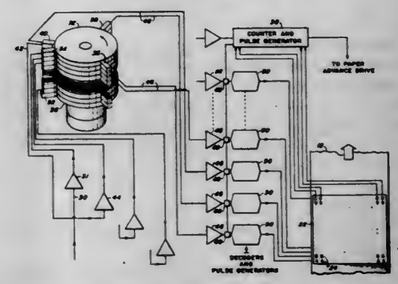


transmit the instruction at the address contained in said most significant register, and means for shifting all return addresses stored in said registers to the respective succeeding registers of higher significance responsive to the operation of said second controlling means.

3,348,212
PRINTER CONTROL SYSTEM

Matthew P. Tubinis, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

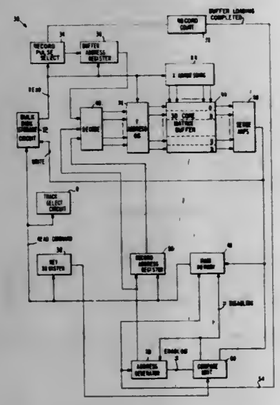
Filed Dec. 18, 1964, Ser. No. 419,391
7 Claims. (Cl. 340—172.5)



1. Apparatus for controlling a printer in response to electrical signals, the printer being of the type wherein an image receiving member is moved past an array of printing elements, the elements being arranged in columns and rows with each column extending in the direction of movement of the image receiving member and having elements representing each of the characters to be printed and each row extending transversely to the direction of movement of the image receiving member and having elements representing one of the characters to be printed, including:
storage means to store signals received according to their column position in a printed line, the storage means being arranged in tracks and being of a size sufficient to store signals representing a number of printed lines equal to the number of rows of printing elements,
means operatively associated with said storage means for transposing the signals received in each track to the next adjacent track,
signal detecting means operatively associated with the storage means to simultaneously detect all signals in the same column position in the storage means and to detect each column sequentially,

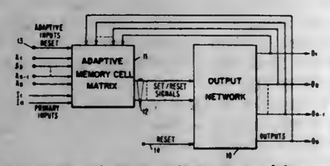
and means operatively associated with the detecting means to determine the presence of pre-determined signals in the storage means and to actuate the elements in the proper columns and rows of the printer according to the column being detected and the rows represented by the signals detected.

3,348,213
RECORD RETRIEVAL CONTROL UNIT
James R. Evans, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,238
20 Claims. (Cl. 340—172.5)



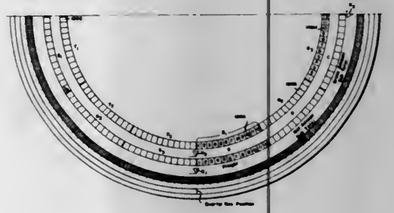
1. In combination with a data processor operating in response to a stored program and a random access storage unit having a plurality of storage locations and means coupled to the random access storage unit for selecting a location in response to signals furnished by the data processor, a record retrieval control unit comprising,
a memory unit having a plurality of addressable positions,
each of the locations being employed for storing a plurality of records and each of said records having individual identifying indicia, and
means responsive to respective identifying indicia from one of said locations for transferring said records from said one location to respective positions in said memory unit.

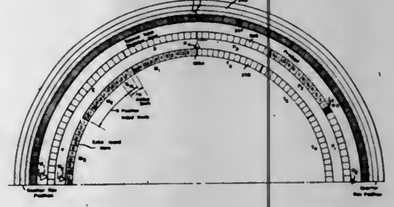
3,348,214
ADAPTIVE SEQUENTIAL LOGIC NETWORK
Raymond J. Barbetta, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 28, 1965, Ser. No. 467,315
9 Claims. (Cl. 340—172.5)



1. A device of the class described comprising:
a plurality of output devices, each producing an output signal in response to a set input;
input signalling means;
a plurality of normally ineffective set signalling means each connected and responsive to the output of one of said output devices and said input signalling means for producing a set input to a particular one of said output devices;
and means connected to each of said set signalling means, operative to selectively render said set signalling means effective to produce a selectable and repeatable sequence of set signals to said particular output device in response to a repeatable sequence of said input signalling means.

3,348,215
MAGNETIC DRUM MEMORY AND COMPUTER
Winsor Soule, Jr., Berkeley, and Eugene P. Binnall, El Cerrito, Calif., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Original application Dec. 27, 1961, Ser. No. 162,526, now Patent No 3,265,874. Divided and this application Apr. 29, 1966, Ser. No. 546,290
23 Claims. (Cl. 340—172.5)

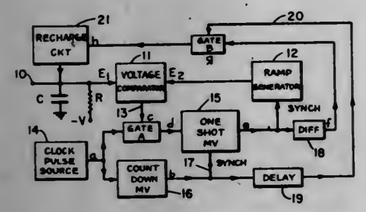




22. In an electronic computer, a memory unit of the revolving type containing an information track divided into register areas into which information may be selectively recorded, a boundary between two register areas corresponding to an index position of the memory unit; a recording head associated with said track for writing information into said register areas; a delay register; a reproducing head associated with said memory unit; clock means for generating timing pulses at times corresponding to index position and to a pre-index position of the memory unit corresponding in time prior to the index pulse by amount substantially equal to the time delay provided by said delay register; a first gating circuit including a toggle stage which when set, gates said recording head on and which is reset by a clock pulse at pre-index position to thereby prevent recording between occurrence of the pre-index and index clock pulses; and an extension circuit including a further toggle stage which is set when the computer is so addressed as to require recording in the register area which passes in operative relation to the recording head during the time between occurrence of the pre-index and index clock pulses and which is reset by the clock pulse at index position; and circuits for connecting said extension circuit to cause said recording head to continue recording in said last mentioned register when the computer is so addressed until the clock pulse at

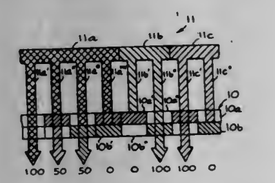
index time is received to thereby prevent non-recordation of information received from the delay circuit between pre-index and index times.

3,348,216
METHOD AND CIRCUITS FOR STORING ELECTRICAL ENERGY
Billy H. Vinson, Granada Hills, Calif. (640 Jordan St., Escondido, Calif. 92025)
Filed Dec. 9, 1963, Ser. No. 328,926
7 Claims. (Cl. 340—173)



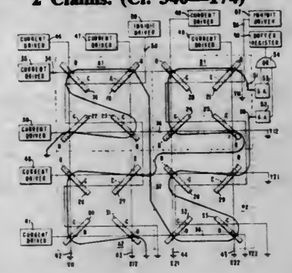
5. A method of holding an arbitrary voltage at a given value corresponding substantially to its value at a given instant, comprising the steps of: storing said voltage at said given instant; periodically providing a time period constituting a function of said stored voltage; providing a number of time intervals during said period so that when said stored voltage changes, said number of said time intervals in said time period changes; and adding an increment of voltage to said stored voltage only when said number of time intervals in said time period changes by at least one time interval, to restore the value of said stored voltage to said given value.

3,348,217
ELECTRO-OPTICAL COMPUTER OR DATA PROCESSING SYSTEM USING SUPERIMPOSED POLARIZERS
Alvin A. Snaper, P.O. Box 83, Burbank, Calif. 91503
Filed May 1, 1964, Ser. No. 364,083
7 Claims. (Cl. 340—173)



1. Optical apparatus by means of which binary computations are made and data processed, said apparatus comprising: a layer of material whose opposing surfaces have been processed to pass only light polarized in certain directions, the unit areas on one of said surfaces and those on the other of said surfaces being polarized in one of two directions and unpolarized in accordance with a predetermined pattern, the unit areas on one surface respectively being in registration with the unit areas on the other of said surfaces; and means for selectively projecting unpolarized light and light polarized in one of said two directions against the unit areas of said surfaces, whereby a pattern of light passes through said layer of material that corresponds to the polarized patterns on the surfaces thereof and to the pattern of the projected light.

3,348,218
REDUNDANT MEMORY ORGANIZATION
Albert W. Vinal, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 3, 1963, Ser. No. 292,596
2 Claims. (Cl. 340—174)



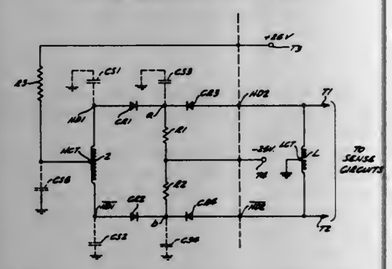
1. A redundant magnetic storage system for storing binary information bits having at least one storage plane, said system comprising:
first, second, third and fourth redundant arrays of magnetic core elements in said plane, each of said arrays having corresponding similar row and column coordinate locations, said core elements being further arranged in redundant sets, each of said sets including a mutually exclusive core element from each of the four arrays, the core elements included in a respective set being located at the same coordinate locations in each of their respective arrays, and each of said core elements being settable to either of two magnetic states representing the binary information bits "1" and "0," respectively;
coincident-current selection means for redundantly setting the respective core elements in each of the particular sets to the same magnetic state of said either of two magnetic states, each particular set of core elements being set by said selection means to the predetermined one of said two magnetic states which represents the binary information bit to be stored in the particular set, said coincident-current means comprising a plurality of half-current select windings and mutually exclusive current drivers coupled thereto, each of the core elements of said first and second arrays located in the same column coordinate locations being commonly linked by a mutually exclusive one of said plurality of half-current select windings, each of the core elements of said third and fourth arrays located in the same column coordinate locations being commonly linked by a mutually exclusive one of said plurality of half-current select windings, each of the core elements of said first and third arrays located in the same row coordinate locations being commonly linked by a mutually exclusive one of said plurality of half-current select windings, and each of the core elements of said second and fourth arrays located in the same row coordinate locations being commonly linked by a mutually exclusive one of said half-current select windings;
first and second sense windings, each of said core elements of said first and fourth arrays being commonly linked by said first sense winding, and each of said core elements of said second and third arrays being commonly linked by said second sense winding; and
output means for receiving the indication of said first and second sense windings to provide respective output signals indicative of the particular magnetic states of said sets, said output means having first and second sense amplifiers and OR circuit means, said first and second sense amplifiers having first and

second input terminals coupled to said first and second sense windings, respectively, and further having first and second output terminals, said OR circuit means having a pair of third and fourth input terminals coupled to said first and second output terminals, respectively, and said OR circuit means having an output terminal at which said output signals are provided.

3,348,219
MAGNETIC HEAD TRANSIENT MINIMIZATION CIRCUITRY

Ray L. Riley, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 13, 1963, Ser. No. 330,287
3 Claims. (Cl. 340—174.1)



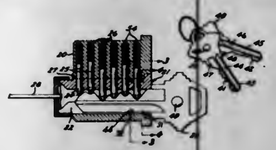
1. A magnetic transducer circuit, comprising:
a magnetic device having a coil and a core;
an electrical impedance circuit;
connections substantially at the electrical centers of said coil and said electrical impedance circuit for receiving electrical energy;
a first pair of diodes having corresponding electrodes connected to respective points on said coil on opposite sides of the electrical center thereof and having the remaining corresponding electrodes connected to respective points on said electrical impedance circuit on opposite sides of the electrical center thereof;
a second pair of diodes having electrodes corresponding to the electrodes of said first pair of diodes coupled to respective points on said electrical impedance circuit on opposite sides of the electrical center thereof; and
a second impedance circuit having spaced points connected to the remaining electrode of each of said second pair of diodes and having a connection substantially at the electrical center thereof for receiving an electrical potential.

3,348,220
SELECTIVELY SIGNALLING DEVICE FOR PIN-TUMBLER LOCK

Tony J. Luna, 2031 W. Washington, Santa Ana, Calif. 92706, Seymour J. Fallick, 5045 Rosemead Blvd., Pico Rivera, Calif. 90660, Norman Charles Luna, 2031 W. Washington, Santa Ana, Calif. 92706, and Donald Lee Fallick, 5045 Rosemead Blvd., Pico Rivera, Calif. 90660

Filed Dec. 21, 1964, Ser. No. 419,783
4 Claims. (Cl. 340—274)

1. In combination with a pin-tumbler lock having a cylinder and a core rotatable relative to said cylinder, said core having a key-receiving aperture therein, an arrangement for selectively signalling the condition of said lock comprising: a switch in said cylinder, having an actuating arm and a pole and at least one contact; first means operable upon rotation of said core in one direction starting from the initial key insertion position for moving said actuating arm to establish a signal path between said pole and said contact, said first means being also operable upon rotation of said core in a direction opposite to said one direction starting from said initial key insertion position to release said actuating arm; and second means for defining a selective operation of said lock whereby separate keys may be used to actuate or release said actuating arm and thereby actuate or release said switch, said second means comprising a duality of stop members carried by said cylinder, said stop members being axially

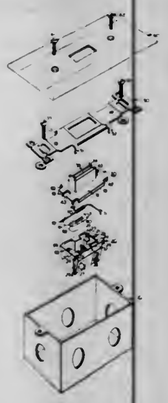


spaced with respect to said cylinder, said core having a duality of circumferentially extending grooves in the periphery thereof, the first of said grooves being aligned with the first of said stop members, and the second of said grooves being aligned with the second of said stop members, each stop member extending into the groove aligned therewith, the first of said stop members, being positioned on one side of said key-receiving aperture, and the second of said said stop members being positioned on the opposite side of said key-receiving aperture.

3,348,221
INDICATOR LIGHT ASSEMBLY

Joseph F. Duffield, Georgetown, Ontario, Canada, assignor to Smith & Stone Limited, Toronto, Ontario, Canada

Filed Dec. 14, 1964, Ser. No. 418,177
Claims priority, application Canada, Nov. 9, 1964, 915,996
17 Claims. (Cl. 340—381)



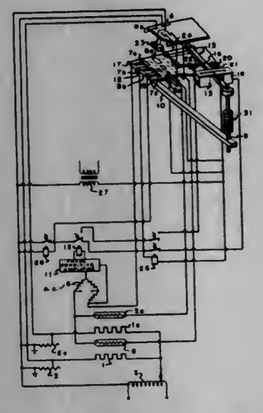
1. In an electrical connector formed by a pair of insulated body members to be assembled, including an electrical element having a plurality of leads emanating therefrom, said element being disposed within a cavity in the assembled body members, said leads being positioned in at least one of said insulated body members, and being connected to complete an electrical circuit, the improvement comprising:
locating elements for positioning and retaining the leads of said electrical element in one of said associated body members prior to assembly of said body members,

including means to retain said electrical element in said body member during assembly of said body members, and
means to make electrical connections to said leads upon assembly to said body members.

3,348,222
SCANNING TYPE MONITORING AND CONTROL APPARATUS

Philip N. Smith and Weir E. Wharton, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Continuation of application Ser. No. 267,742, Mar. 25, 1963. This application Sept. 1, 1966, Ser. No. 576,772
6 Claims. (Cl. 340—413)



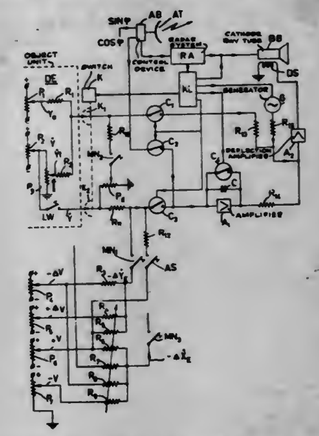
1. An apparatus for monitoring units of the on-off adjustable type comprising a plurality of bistable switch means in circuit with said units, said plurality of bistable switch means being arranged in a circular path and each having a set of fixed contacts, detection means operably associated with each of said units, actuation means operably associated with said bistable switch means to actuate said bistable switch means, said actuation means having a plurality of contact members, means rotating said contact members around said circular path to contact said sets of fixed contacts to sequentially actuate said detection means and said actuation means, said detection means including means to preset said actuation means to a predetermined position and means to determine the position of said bistable switch means and to actuate said actuation means when said bistable switch means is in a predetermined position.

3,348,223
AUTOMATIC COURSE PREDICTION NAVIGATIONAL DISPLAY

Corstiaan le Comte, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 4, 1965, Ser. No. 461,411
Claims priority, application Netherlands, June 5, 1964, 64—6,358
7 Claims. (Cl. 343—5)

1. A navigational radar arrangement comprising means for transmitting and receiving radar echo pulses, a cathode ray display tube, first deflection means for producing a first deflection potential coupled to said cathode ray tube and responsive to the reception of said echo pulses for displaying marking pulses on said tube corresponding to coordinate information represented by the said echo pulses, second deflection means for producing a second deflection potential and coupled to said cathode ray display tube for displaying marking pulses corresponding to a simulated coordinate image, said second deflection means comprising first means for providing a signal corresponding to a deflection potential for an initial coordinate position of one of said marking pulses displayed on said tube, second means for providing a signal corresponding to a deflection potential for the coordinate position of a subsequently displayed marking pulse, and third means

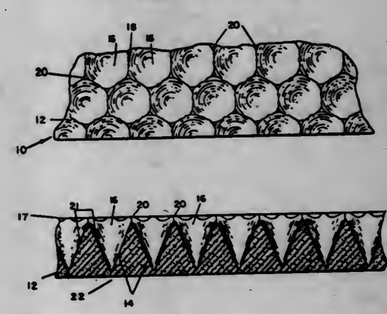


for combining the signals of said first and second means to form said second deflection potential, said third means including means for varying the said second deflection potential from a minimum level to a maximum level over a constant time period, the time rate of change of said second deflection potential thereby being proportional to the time rate of change of said first deflection potential from said initial coordinate position.

3,348,224
ELECTROMAGNETIC-ENERGY ABSORBER AND ROOM LINED THEREWITH

Edward B. McMillan, Topsfield, Mass., assignor to The McMillan Corporation of North Carolina, Raleigh, N.C., a corporation of North Carolina

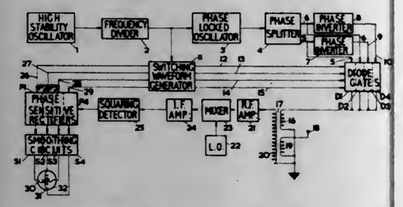
Filed Jan. 20, 1964, Ser. No. 341,162
9 Claims. (Cl. 343—18)



1. An absorber for electromagnetic waves in the microwave portion of the frequency spectrum, said absorber comprising: a sheet of impedance-matching dielectric material having spaced generally parallel front and rear surfaces, said front surface being flat and continuous, said front surface being so oriented, when said absorber is in operation, that it is the first portion of said absorber to be penetrated by the arriving waves to be absorbed, said sheet having a plurality of regularly spaced open-ended conical recesses formed therein, said recesses being de-

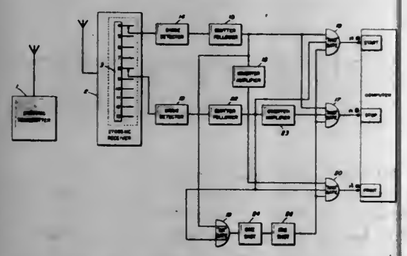
fined by conical surfaces which extend from said rear surface convergently toward said front surface; and a coating of energy-absorbing material extending continuously over each of said conical surfaces and adhering thereto to define a plurality of hollow forwardly convergent conical absorbing bodies behind said front surface.

3,348,225
RADIO PHASE-COMPARISON RECEIVERS
Charles Reginald Nowell Barnard, Farnborough, England, assignor to Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Nov. 12, 1963, Ser. No. 323,002
13 Claims. (Cl. 343—112)



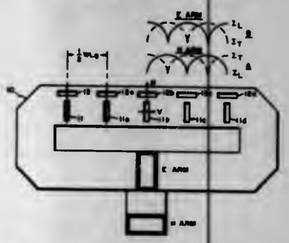
1. A radio phase-comparison receiver comprising a source of continuous wave signals, a stable oscillator independent of said source, means connected to said stable oscillator for deriving therefrom continuous wave signals of the same frequency as continuous wave signals from said source, phase shift means connected to receive one of said signals for varying the phase of said one of said signals, vectorial adder means connected to said phase shift means and to receive the other of said signals for adding vectorially the said other of said signals to the phase-varied signal to produce a resultant continuous wave signal the amplitude of which is varied due to the phase variations of the phase-varied signal, a waveform generator connected to control said phase shift means, and phase comparison means operatively connected to the output of said vectorial adder and to said waveform generator for comparing the phase of the said resultant amplitude varied continuous wave signal with the timing of said waveform generator.

3,348,226
AUTOMATON COMMAND CIRCUIT
Edgar H. Fischer, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 12, 1963, Ser. No. 301,685
9 Claims. (Cl. 343—225)



9. In a multiple command system, apparatus for providing command signals to remote locations, including:
means for transmitting a plurality of discrete signals,
means for receiving said transmitted discrete signals,
responder means for each discrete signal,
means for detecting signals from said responder means,
means for inverting signals from said detecting means,
first transmission means connected to said detecting means for passing signals therefrom,
second transmission means connected to said inverting means for passing signals therefrom, and
output means for receiving signals from said first and second transmission means and for issuing a response thereto, said output means having the capability of issuing a response only upon the receipt of two or more signals from said first and second transmission means, and thereby providing a plurality of discrete output control signals greater than the number of responder means.

3,348,227
CROSS-POLARIZED MICROWAVE ANTENNA
John C. Rolfs, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,045
2 Claims. (Cl. 343—768)



1. A cross-polarized linear array microwave antenna for radiating microwave energy in one polarized plane for receiving microwave energy in two different polarized planes including,
a rectangular waveguide having an input end and an output end for transmission of microwave energy,
a hybrid junction coupled to said input end and said output end,
means for providing microwave energy to said waveguide to establish standing wave patterns therein comprising first and second waveguide wall currents, said currents having values which are substantially 90° offset with respect to each other at a common point in said waveguide,
a first plurality of elements in the wall of said waveguide for effectively radiating and receiving microwave energy in a first polarized plane when said first current is substantially maximum at said common point,
a second plurality of elements in the wall of said waveguide for effectively radiating and receiving microwave energy in a second polarized plane when said second current is substantially maximum at said common point,
said means to establish said standing wave patterns comprising,
a first arm associated with said hybrid junctions and operative to provide a first standing wave pattern whereby said first current is substantially maximum at said common point and said second current is substantially minimum at said common point and said first current is coupled to said first plurality of elements,
a second arm associated with said hybrid junction and operative to provide for providing a second standing wave pattern whereby said second current is substantially maximum at said common point and said first current is substantially minimum at said common point and said second current is coupled to said second plurality of elements, and

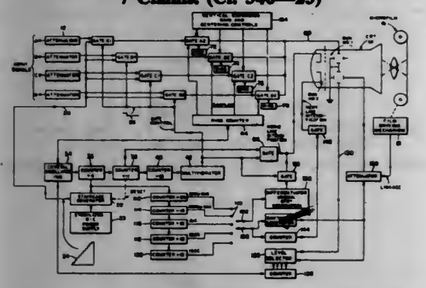
means for selectively applying microwave energy to said first arm for providing said first standing wave pattern and for alternately applying microwave energy to said second arm for providing said second standing wave pattern.

3,348,228
CIRCULAR DIPOLE ANTENNA ARRAY
Leo Melancon, Dover, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,522
6 Claims. (Cl. 343—799)



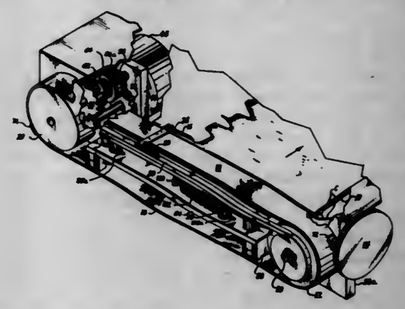
1. An antenna device adapted for use with a coaxial transmission line providing electromagnetic energy thereto and having inner and outer conductors, comprising:
a circular disc having a predetermined dielectric constant;
first and second means, each being deposited on a different side of said disc around the center thereof and being adapted to be connected to a different one of said coaxial conductors;
three curved dipoles uniformly spaced around the periphery of said disc, each of said dipoles including a pair of dipole sections, one section being deposited on one side of said disc and the other section being deposited upon the other side of said disc; and,
means for exciting each of said dipoles, each of said exciting means including a pair of lines, each of said lines extending from one of said first and second means to one of said dipole sections and being deposited upon a different side of said disc.

3,348,229
RECORDING OF ANALOG DATA ON PHOTOGRAPHIC FILM
Robert R. Freas, 3871 Topanga Lane, Malibu, Calif. 90265
Filed Nov. 29, 1965, Ser. No. 510,480
7 Claims. (Cl. 346—23)



1. Apparatus for photographically recording on a sensitized medium the visual representation of an electrical signal, such signal varying in analog fashion over a period of time, said apparatus comprising:
means for developing a visual representation of said signal;
a light-sensitive medium arranged to be exposed to such visual representation;
means for producing a positional displacement between said light-sensitive medium and said signal-developing means, said positional displacement occurring continuously at a constant rate, whereby changes in the characteristics of said signal are sequentially recorded on different portions of said medium;
further means, including a portion of said signal-developing means, for developing a visual presentation in the form of a set of reference indicia, such indicia also being recorded on said medium and in effect superimposed on said recorded signal;
both the development and recording of said signal and the development and recording of said reference indicia occurring in a cyclically-repetitive time-shared manner, with the signal development and recording intervals alternating time-wise with the reference indicia development and recording intervals;
said light-sensitive medium being in the form of a microfilm, and said means for producing a positional displacement between said light-sensitive medium and said signal developing means including a camera of the continuously-running type;
said means for developing a visual representation of said electrical signal including a cathode-ray tube having at least one electron scanning beam and a face plate coated with a short-persistence phosphor; and
said means for developing a visual presentation in the form of a set of reference indicia including means for causing the electron scanning beam of said cathode-ray tube to trace a series of spaced-apart points on the screen of said tube, said series of points being laid down in linear fashion and normal to the direction in which the positional displacement between said light-sensitive medium and said signal-developing means occurs.

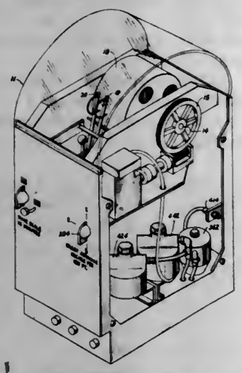
3,348,230
RECORDING INDICATORS FOR PULSE-ECHO TYPE DETECTION SYSTEMS
Wayne M. Ross, Seattle, Wash., assignor to Ross Laboratories, Inc., Seattle, Wash., a corporation of Washington
Filed Jan. 13, 1964, Ser. No. 337,428
11 Claims. (Cl. 346—33)



1. A recording indicator for use with a pulse-echo type detection system having a periodically pulse-operated transmitter and a cooperable receiver, mutually opposing recording electrodes and means to advance a recording medium between said electrodes, one of said electrodes comprising a point stylus, an endless carrier belt for said stylus including means to drive the belt lengthwise, spaced belt sheaves guiding said belt with one stretch thereof movable along the recording medium surface, an elongated belt-supporting member extending between said guide sheaves along said stretch and slidably contacted by the belt to stabilize the same during movement along said stretch, means for mounting and electrically energiz-

ing said stylus on said belt, permanent magnet means secured to said belt at a location spaced lengthwise thereon from the stylus, and magnetic induction coil means mounted in stationary position to be traversed by magnetic field from said permanent magnet means when passing said coil means, said coil means having output connections adapted to deliver induced trigger pulses for application to the transmitter.

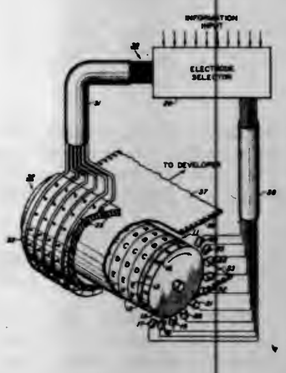
3,348,231
PNEUMATIC WELL DEPTH RECORDER
William L. Lankford, Jr., Howard E. Mathis, Jesse Clifton Keller, Larry G. Bowman, and Roy L. Van Winkle, Oklahoma City, Okla., assignors to The Geolograph Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Sept. 13, 1965, Ser. No. 486,957
9 Claims. (Cl. 346—33)



9. A pneumatic recorder comprising a chart, chart advance means for moving said chart within said recorder, a stylus mounted in said recorder and movable over said chart for marking a record thereon, a pneumatic motor having a pneumatic input and a mechanical output operatively connected to said stylus for moving said stylus relative to said chart, a pneumatic transmitter having a mechanical input and a pneumatic output, means within said transmitter for converting a variable change in value in said mechanical input into a corresponding variable change in value in pneumatic pressure at its output, means responsive to a change in value of a measured variable for driving the mechanical input for said pneumatic transmitter so as to produce a pneumatic pressure at the output of said transmitter commensurate with the change in value of said measured variable, and intermittently operable connecting means responsive to the completion of a measuring interval of predetermined duration for connecting the output of said transmitter with the input of said pneumatic motor and for applying the output pneumatic pressure from said transmitter to said pneumatic motor so as to move said stylus to a position on said chart representing the relative value of said variable at the end of said measuring interval.

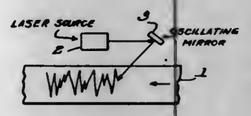
3,348,232
ASYNCHRONOUS PAGE-AT-A-TIME PRINTER
Paul F. King, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 5, 1962, Ser. No. 221,471
4 Claims. (Cl. 346—74)

1. A high-speed, electrostatic printing apparatus comprising, a cylindrical alphanumeric wheel having a bank of like character rings on its surface, each ring containing a series of conductive electrodes with character shaped end faces in a circumferential arrangement around said wheel, means to rotate said wheel at a high uniform velocity, a backing electrode shroud concentric with and spaced slightly from said wheel, said electrode shroud containing a plurality of rows and columns of relatively flat surfaced backing electrodes, each electrode being electrically separated from every other electrode, said columns of electrodes being spaced opposite and corresponding to the rings of said alphanumeric wheel, means to intermittently feed an insulating printing web through the curved gap formed by said alphanumeric wheel and said electrode shroud a distance equal to the length of said shroud and then hold said web in stationary contact with the entire portion of said rotating wheel which defines said gap, signal generating means for generating a signal analog of the angular position of said wheel, comparator means connected to said signal generator and



to a source of coded electrical input printing signals and responsive to coincidence between coded electrical input signals and input signal analogs of the angular position of said alphanumeric wheel to apply voltage pulses between selected backing electrodes and said wheel at any time when a character on said wheel corresponding to said coded input signal is opposite said selected backing electrode, said voltage pulses being of a magnitude sufficient to initiate ionizing field discharges across the gap between said pulsed backing electrodes and said alphanumeric wheel so as to form selected, character shaped, latent electrostatic images in selected positions on said printing web and means to activate said web feeding means all printing on the printing web portion then opposite said electrode shroud is completed whereby high-speed page-at-a-time printing is achieved.

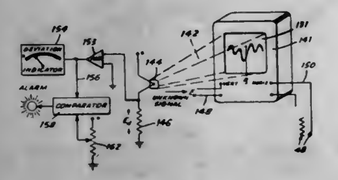
3,348,233
LASER OSCILLOGRAPH
Hellmuth Hertz, Slattervagen 27 F, Lund, Sweden
Filed July 10, 1963, Ser. No. 294,039
Claims priority, application Germany, Aug. 14, 1962, H 46,644
5 Claims. (Cl. 346—76)



1. In a light beam oscillograph, the combination of a movable recording medium comprising an unprepared paper, a laser light source operable to provide a light

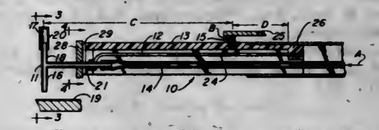
beam of substantially constant intensity, and an oscillating system, responsive to the criteria to be recorded, for training said light beam of constant intensity emanating from said laser onto said recording medium to trace a record thereon, in the form of a burn trace, as a function of the position of the light beam on said recording medium.

3,348,234
PRODUCTION LINE OPERATION MONITOR AND RECORDER
George B. Foster, Worthington, Ohio, assignor, by mesne assignments, to Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Original application Mar. 20, 1962, Ser. No. 181,009, now Patent No. 3,257,652, dated June 21, 1966. Divided and this application Oct. 22, 1965, Ser. No. 501,917
7 Claims. (Cl. 346—110)



1. An operation monitor comprising a machine for operating on a plurality of products in time sequence to produce a change in the physical characteristics of the products, an electrical transducer connected to said machine for producing and electrical output signal representative of the function of said machine during a work cycle, means for visually displaying the information contained in said output signal as a waveform trace, photographic means for recording said trace on a photographic print, the center of said trace having different optical transmission properties gradually diminishing as the distance from the centerline of said trace increases, means for incorporating said print on the face of a cathode ray oscilloscope, and means for applying the information contained in a later transducer output signal similarly derived from said machine to the vertical deflection plates of said oscilloscope whereby the differences between said trace and said later signal appear as variations in the amount of light passed by said print.

3,348,235
RECORDING PEN ASSEMBLY
Susumu Kawase, Junjiro Kubota, and Haruo Soma, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed June 17, 1966, Ser. No. 558,294
Claims priority, application Japan, Jan. 18, 1966, 41/5,680; Feb. 25, 1966, 41/5,682
7 Claims. (Cl. 346—140)

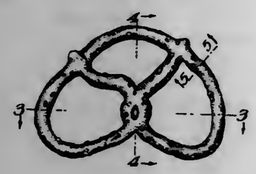


1. A recording pen assembly for recording data on a recording medium, using fluid ink, in a graphic communication system recorder or like recording apparatus in which the pen moves substantially omnidirectionally across the recording medium, under substantial and varying acceleration, and in which the pen moves rapidly and frequently into and out of contact with the recording medium, said pen assembly comprising: an elongated housing mounted for transverse movement relative to said recording medium; a T-shaped tubular recording pen, the leg of the T constituting an ink conduit portion extending longitudinally into one end of said housing and having a writing nib portion projecting from one end of said ink conduit portion toward said recording medium and an ink reservoir portion projecting from the same end of said ink conduit portion away from said recording medium; a single resilient cantilever support member extending longitudinally through said housing, one end of said support member being anchored in a retaining wall of said housing and the free end being firmly connected to and supporting said recording pen at a predetermined non-recording position with said nib portion spaced from said recording medium; a flexible ink tube connected to said ink conduit portion of said pen and permitting substantially unrestricted movement of said pen in a direction normal to said recording medium; and releasable deflecting means for deflecting said resilient support member, at a deflection point intermediate its ends, toward said recording medium, to maintain said nib portion of said pen in a recording position in substantially constant resilient pressure contact with said recording medium, the resiliency of said support member restoring said pen to its non-recording position upon release or said deflecting means.

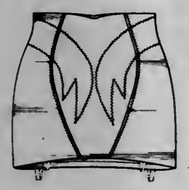
DESIGNS

OCTOBER 17, 1967

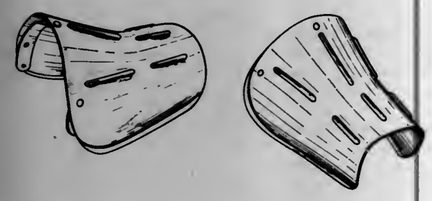
208,899
PRETZEL
Howard Reisman, Philadelphia, Pa., assignor to J. Reisman & Sons, Inc., Pennsauken, N.J., a corporation of Pennsylvania
Continuation of design application Ser. No. 81,171, Aug. 5, 1964. This application Nov. 30, 1965, Ser. No. 371
Term of patent 14 years
(Cl. D1—13)



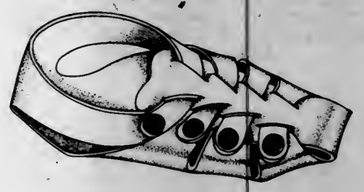
208,900
GIRDLE
Sallyann Z. Salisky, Garfield, N.J., assignor to Sarong, Inc., Dover, Del., a corporation of Delaware
Filed Apr. 13, 1966, Ser. No. 1,872
Term of patent 14 years
(Cl. D2—2)



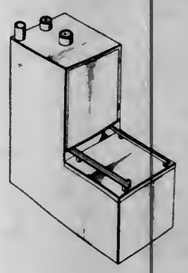
208,901
FLIGHT INSTRUMENT TRAINING HOOD FOR PILOTS
Frederick E. Urben, Englewood, Colo., assignor to Jeppesen and Company, Denver, Colo., a corporation of Colorado
Filed July 18, 1966, Ser. No. 3,248
Term of patent 14 years
(Cl. D2—232)



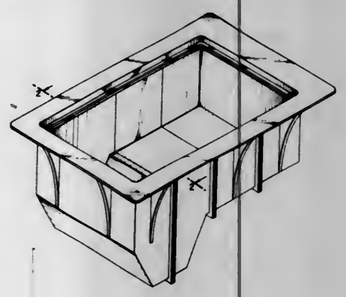
208,902
SLIPPER
Basil D. Huff, Wilkes-Barre, Pa. (% Charles Sonnereich, 1501 Broadway, New York, N.Y. 10036)
Filed Dec. 6, 1966, Ser. No. 4,942
Term of patent 7 years
(Cl. D2—293)



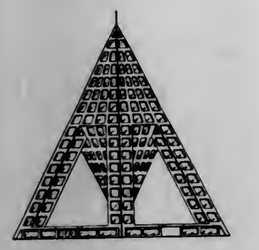
208,903
CLEANING DEVICE FOR AUTOMOBILE ENGINES AND COMPONENTS THEREOF OR THE LIKE
Emil Zadron and Alton S. Kenmonth, Los Angeles, Calif., assignors to Jet-Clean Co., Los Angeles, Calif., a partnership
Filed Sept. 30, 1966, Ser. No. 4,099
Term of patent 14 years
(Cl. D9—2)



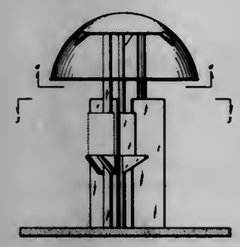
208,904
SWIMMING POOL
Alex Gersh, 20 Dietz Court, Kingston, N.Y. 12401, and Ted H. Gersh, 30 Edgar St., Poughkeepsie, N.Y. 12603
Filed Aug. 1, 1966, Ser. No. 3,295
Term of patent 14 years
(Cl. D13—1)



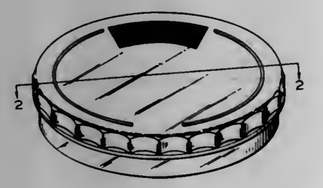
208,905
BUILDING
Resta S. Gregoire, Rte. 3, Newport, Pa. 17074
Filed Nov. 9, 1966, Ser. No. 4,594
Term of patent 14 years
(Cl. D13—1)



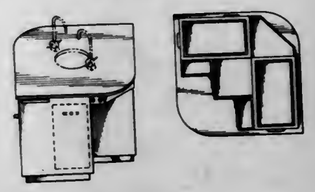
208,906
OUTDOOR TELEPHONE BOOTH
Luis F. Villa, 1727 Moravian St., Philadelphia, Pa. 19103
Filed Dec. 7, 1966, Ser. No. 4,958
Term of patent 14 years
(Cl. D13—1)



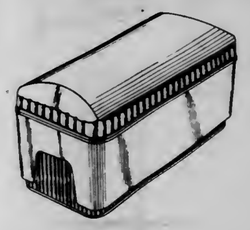
208,907
PETRI DISH
Kenneth Dale Collister, Charles Henry Patteson, and Robert Mallen Thorson, Chicago, Ill., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
Filed June 8, 1966, Ser. No. 2,607
Term of patent 14 years
(Cl. D16—1)



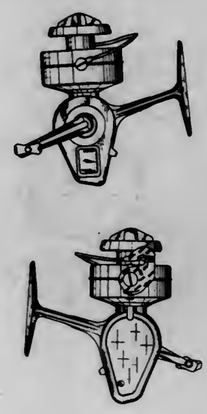
208,908
LABORATORY TABLE UNIT
Charles G. Wall, Bala-Cynwyd, Pa., assignor to Wood-Metal Industries, Inc., Kreamer, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1966, Ser. No. 3,943
Term of patent 14 years
(Cl. D16—2)



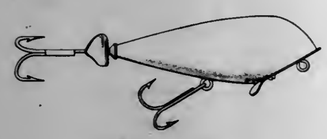
208,909
BURIAL VAULT
Wesley M. Chandler and Paul F. Heuser, St. Paul, and Bernard T. Juba, White Bear Lakes, Minn., assignors to Wilbert W. Haase Co., Broadview, Ill., a corporation of Illinois
Filed Aug. 3, 1966, Ser. No. 3,329
Term of patent 14 years
(Cl. D19—1)

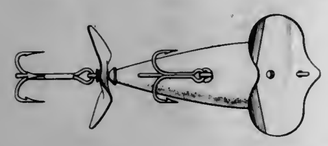


208,910
FISHING REEL
Robert Mimeur, Cluses, France, assignor to Carpano & Pons, Cluses, France, a French company
Filed Mar. 3, 1966, Ser. No. 1,281
Claims priority, application France Sept. 4, 1965
Term of patent 14 years
(Cl. D22—25)



208,911
FISHING LURE
James Clayton Pedigo, 535 W. Main St., Glasgow, Ky. 42141
Filed Sept. 7, 1966, Ser. No. 3,761
Term of patent 14 years
(Cl. D22—28)



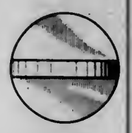


208,912
MODEL FOR ATOMIC DISPLAY
Fred M. Siptrott, 3011 Hardies Lane, Santa Rosa, Calif. 95401
Filed Aug. 22, 1966, Ser. No. 3,545
Term of patent 14 years
(Cl. D25—1)

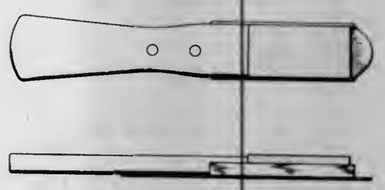


208,913
SEPARABLE MAGNETIC HOLDER FOR SECURING FABRIC AND PATTERN
Anna M. Techtmann, 77 NE. 100 St., Miami Shores, Fla. 33153
Filed Aug. 22, 1966, Ser. No. 3,557
Term of patent 3½ years
(Cl. D26—1)

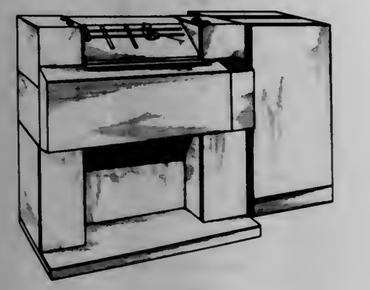




208,914
TOOL FOR MAGNETIZING AND DE-MAGNETIZING
Cloyd D. Smith, 13805 Rancheros Drive, Reno, Nev. 89502
Filed Feb. 1, 1967, Ser. No. 5,651
Term of patent 14 years
(Cl. D26—1)



208,915
COMBINED PRINTING MACHINE AND CONTROL CABINET
Ettore Sottsass, Jr., Milan, Italy, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 13, 1967, Ser. No. 5,778
Claims priority, application France Oct. 17, 1966
Term of patent 14 years
(Cl. D26—5)



208,916
CENTRAL CONTROL UNIT FOR A DATA PROCESSOR
Ettore Sottsass, Jr., Milan, Italy, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 13, 1967, Ser. No. 5,782
Claims priority, application France Oct. 12, 1966
Term of patent 14 years
(Cl. D26—5)

208,917
INTEGRALLY HINGED WEATHERPROOF RECEPTACLE COVER
Lawrence P. Mellyn, Glocester, R.I., assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1966, Ser. No. 3,668
Term of patent 14 years
(Cl. D26—13)



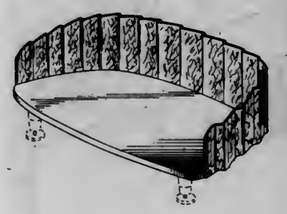
208,918
CONTROL KNOB OR SIMILAR ARTICLE
Charles M. Dole, Jr., Mount Kisco, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 23, 1967, Ser. No. 5,926
Term of patent 14 years
(Cl. D26—13)



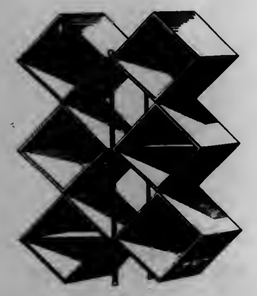
208,919
SPEAKER ENCLOSURE
Aston L. Moore, South Bend, Ind., assignor to Venture II Corporation, South Bend, Ind., a corporation of Indiana
Filed Apr. 20, 1967, Ser. No. 6,770
Term of patent 14 years
(Cl. D26—14)



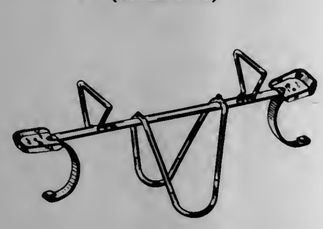
208,920
ANIMAL BED
Christian Dvore, Box 104, McHenry, Ill. 60050
Filed Nov. 2, 1966, Ser. No. 4,510
Term of patent 14 years
(Cl. D30—41)



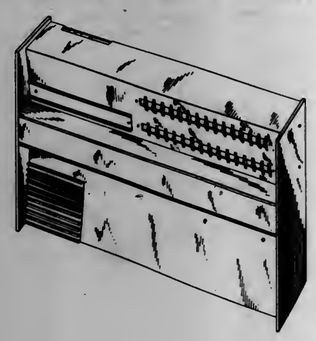
208,921
OPEN SHELF STORAGE UNIT
John W. Tapert, Detroit, Mich., assignor to Design Workshop, Inc., Detroit, Mich., a corporation of Michigan
Filed July 11, 1966, Ser. No. 3,022
Term of patent 14 years
(Cl. D33—3)



208,922
TEETER-TOTTER
Daniel P. Grudoski, Hartstown, Pa., assignor to Blazon, Inc., Akron, Ohio, a corporation of Ohio
Filed Mar. 21, 1966, Ser. No. 1,569
Term of patent 14 years
(Cl. D34—5)



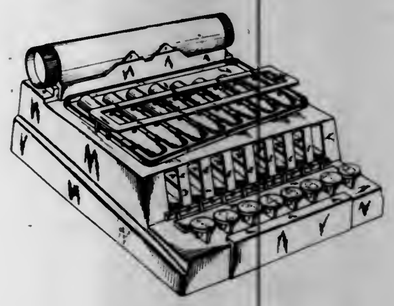
208,923
COMBINED SCOREBOARD AND ADVERTISING SIGN
Gustave F. Falkenberg, Brookfield, Wis., assignor to Dimensional Products, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 18, 1966, Ser. No. 1,909
Term of patent 14 years
(Cl. D34—5)



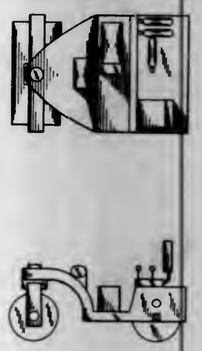
208,924
EXERCISER
Robert R. Brenner, 2451 Brickell Ave., Apt. 8M, Miami, Fla. 33129
Filed Feb. 15, 1967, Ser. No. 5,889
Term of patent 14 years
(Cl. D34—5)



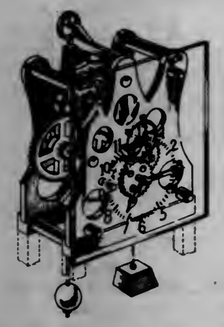
208,925
MUSICAL TOY TYPEWRITER
Laurie Jay Campbell, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Apr. 13, 1967, Ser. No. 6,740
Term of patent 14 years
(Cl. D34—15)



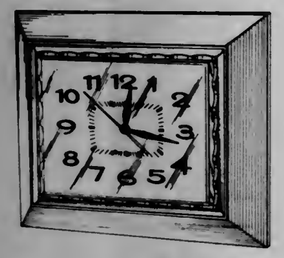
208,926
SOD ROLLER
Kenneth B. Dice, 218 5th St., and Richard M. Maas, 1303 Jackson St., both of Millard, Nebr. 68043
Filed July 27, 1966, Ser. No. 3,227
Term of patent 14 years
(Cl. D40—1)



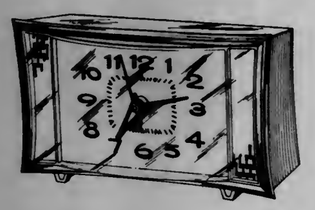
208,927
COMBINED FRAME, DRIVE MECHANISM AND FACE AND HANDS FOR A CLOCK
Ralph D. Thomas, 1412 Drumcliffe Road, Winston-Salem, N.C. 27103
Filed June 17, 1965, Ser. No. 85,787
Term of patent 14 years
(Cl. D42—7)



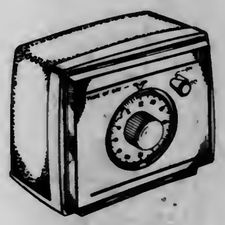
208,928
CLOCK OR SIMILAR ARTICLE
William V. Judson, Westport, and Theodore G. Daher, Stratford, Conn., assignors to General Electric Company, a corporation of New York
Filed May 4, 1966, Ser. No. 2,162
Term of patent 7 years
(Cl. D42—7)



208,929
CLOCK OR SIMILAR ARTICLE
Carl N. Johnson, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed June 1, 1966, Ser. No. 2,502
Term of patent 3½ years
(Cl. D42—7)



208,930
TIMER OR SIMILAR ARTICLE
Carl N. Johnson, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed June 2, 1966, Ser. No. 2,519
Term of patent 14 years
(Cl. D42—7)



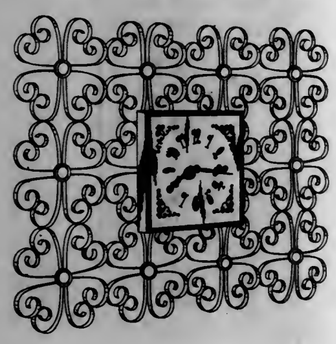
208,931
CLOCK OR SIMILAR ARTICLE
William V. Judson, Westport, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 7, 1966, Ser. No. 4,960
Term of patent 7 years
(Cl. D42—7)



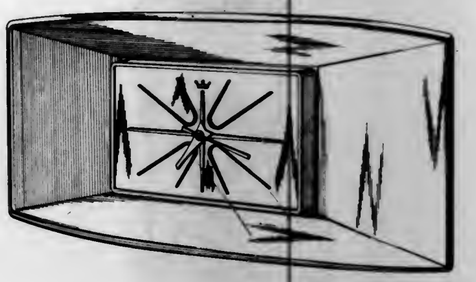
208,932
CLOCK OR SIMILAR ARTICLE
William V. Judson, Westport, Conn., assignor to General Electric Company, a corporation of New York
Filed Jan. 12, 1967, Ser. No. 5,393
Term of patent 3½ years
(Cl. D42—7)



208,933
CLOCK OR SIMILAR ARTICLE
William V. Judson, Westport, Conn., assignor to General Electric Company, a corporation of New York
Filed Jan. 12, 1967, Ser. No. 5,395
Term of patent 7 years
(Cl. D42—7)



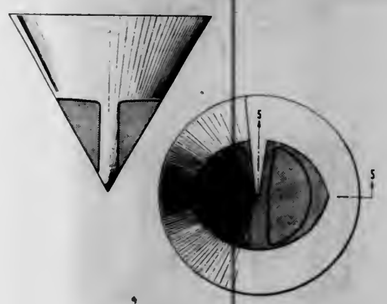
208,934
CLOCK OR SIMILAR ARTICLE
William V. Judson, Westport, Conn., assignor to General Electric Company, a corporation of New York
Filed Jan. 27, 1967, Ser. No. 5,591
Term of patent 7 years
(Cl. D42—7)



208,935
COMBINED PITCHER AND COVER THEREFOR
Henry J. Marien, Warwick, and James B. Swett, Barrington, R.I., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed May 3, 1965, Ser. No. 85,079
Term of patent 14 years
(Cl. D44—21)



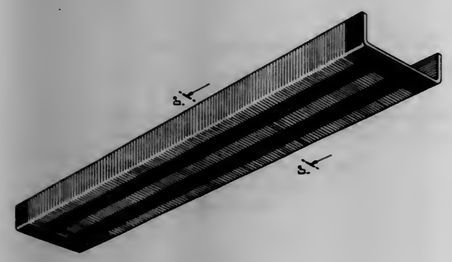
208,936
DISPOSABLE FILTER
Lawrence Caprio, Whitman, and Israel Nesson, Brookline, Mass., assignors to Louis M. Gerson Co., Inc., Mattapan, Mass., a corporation of Massachusetts
Filed July 1, 1966, Ser. No. 2,905
Term of patent 14 years
(Cl. D44—29)



208,937
LIGHTING FIXTURE
Roger F. De Merritt, St. Clairsville, Ohio, assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 16, 1966, Ser. No. 2,699
Term of patent 14 years
(Cl. D48—4)



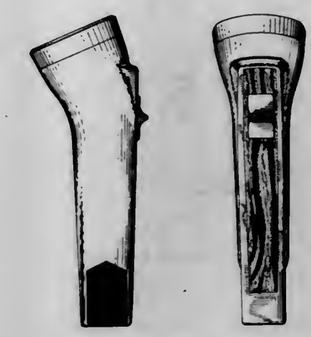
208,938
LUMINAIRE LENS
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 7, 1966, Ser. No. 4,191
Term of patent 14 years
(Cl. D48—16)



208,939
LIGHT DIFFUSER FOR A NIGHT LIGHT
Lawrence P. Mellyn, Glocester, R.I., assignor to General Electric Company, a corporation of New York
Filed Sept. 20, 1966, Ser. No. 3,928
Term of patent 14 years
(Cl. D48—20)



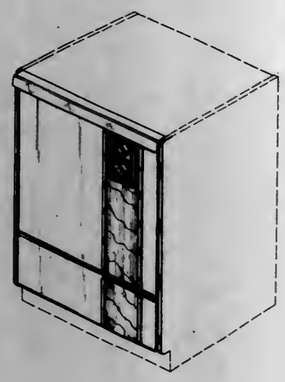
208,940
FLASHLIGHT OR SIMILAR ARTICLE
Walter E. Moore, Trumbull, Conn., assignor to General Electric Company, a corporation of New York
Filed July 1, 1966, Ser. No. 2,908
Term of patent 14 years
(Cl. D48—24)



208,941
LAMP
Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Co., Antioch, Ill., a corporation of Illinois
Filed Feb. 14, 1967, Ser. No. 5,812
Term of patent 14 years
(Cl. D48—31)



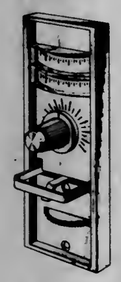
208,942
DISHWASHER
Raymond C. Sandin, Winnetka, Ill., assignor to General Electric Company, a corporation of New York
Filed June 30, 1966, Ser. No. 2,888
Term of patent 14 years
(Cl. D49—1)



208,943
BUCKLE LOCKS FOR LUGGAGE OR THE LIKE
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Mar. 3, 1966, Ser. No. 1,280
Term of patent 14 years
(Cl. D50—7)



208,944
FACE PANEL FOR A CONTROL INSTRUMENT
Ronald C. Miller, Norristown, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 3,428
Term of patent 14 years
(Cl. D52—6)



208,945
ROOM THERMOSTAT OR SIMILAR ARTICLE
Albert E. Baak, 640 Ocampo Drive, Pacific Palisades, Calif. 90272
Filed Jan. 13, 1967, Ser. No. 5,413
Term of patent 14 years
(Cl. D52—7)



208,946
MASONRY DRILL
John Wolfe St. Alban, 942 Main North East Road, Modbury, South Australia, Australia
Filed Nov. 21, 1966, Ser. No. 4,757
Term of patent 3½ years
(Cl. D54—6)



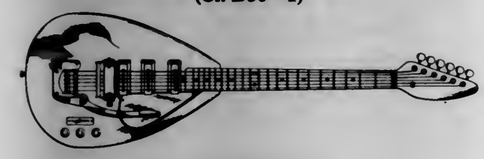
208,947
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to General Mills, Inc., a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 3,541
Term of patent 14 years
(Cl. D54—12)



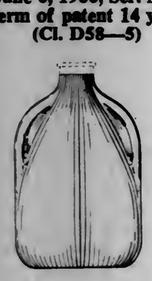
208,948
GUITAR
Thomas W. Jennings, Bexleyheath, Kent, England, assignor to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed June 27, 1966, Ser. No. 2,819
Term of patent 14 years
(Cl. D56—1)



208,949
GUITAR
Thomas W. Jennings, Bexleyheath, Kent, England, assignor to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed June 27, 1966, Ser. No. 2,820
Term of patent 14 years
(Cl. D56—1)



208,950
JUG
Raymon E. Hobbs and James A. Shepler, Toledo, Ohio, assignors to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed June 6, 1966, Ser. No. 2,581
Term of patent 14 years
(Cl. D58—5)



208,951
JUG
Leo Sorenson, Manitowoc, Wis., assignor to Northern Laboratories, Manitowoc, Wis., a corporation of Wisconsin
Filed July 1, 1966, Ser. No. 2,901
Term of patent 14 years
(Cl. D58—5)



208,952
JUG
James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo Ohio, a corporation of Ohio
Filed Oct. 3, 1966, Ser. No. 4,147
Term of patent 14 years
(Cl. D58—5)



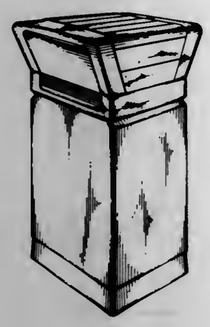
208,953
BOTTLE
Samuel L. Belcher, Toledo, Ohio, and Thomas C. Sanderson, Westmont, Ill., assignors to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Nov. 18, 1966, Ser. No. 4,736
Term of patent 14 years
(Cl. D58—6)



208,954
BOTTLE
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Nov. 14, 1966, Ser. No. 4,636
Term of patent 14 years
(Cl. D58—8)



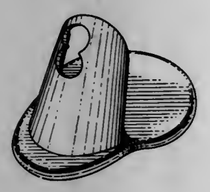
208,955
WASTE RECEPTACLE
William J. McAllister, Arlington Heights, Ill., and John A. Keown, Worthington, Ohio, assignors to William J. McAllister, Arlington Heights, Ill.
Filed July 18, 1966, Ser. No. 3,101
Term of patent 14 years
(Cl. D58—17)



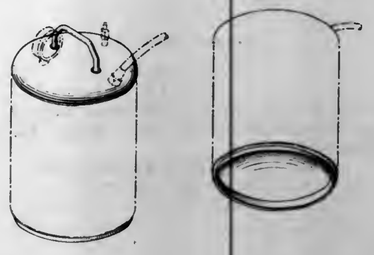
208,956
RECEPTACLE FOR WASTE PAPER OR THE LIKE
John P. Murray, Jr., Princeton, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed Dec. 28, 1965, Ser. No. 354
Term of patent 14 years
(Cl. D58—17)



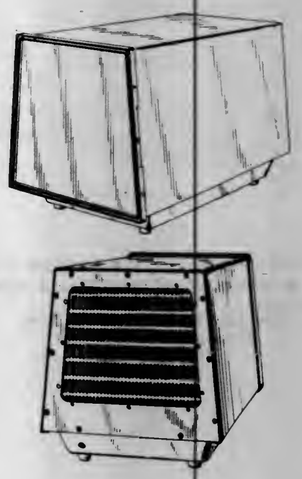
208,957
BOTTLE HOLDER
Paul J. Himler, Sr., 2033 N. 7th St., Phoenix, Ariz. 85006
Filed Jan. 6, 1966, Ser. No. 492
Term of patent 14 years
(Cl. D58—26)



208,958
AIR TANK
Columbus P. Christopher, 2 Spruce St., Woodville Heights, Greenville, S.C. 29611
Continuation of design application Ser. No. 85,727, June 14, 1965. This application Aug. 8, 1966, Ser. No. 3,394
Term of patent 14 years
(Cl. D62—2)



208,959
BEER KEG COOLER
Herbert J. Zeller, Dundee, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 26, 1966, Ser. No. 4,010
Term of patent 14 years
(Cl. D67—3)



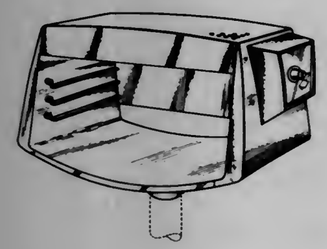
208,960
HOUSING FOR A WRITING INSTRUMENT
Helmut Bross, Weichselgartenstrasse 40, Altenberg, Germany
Filed Aug. 30, 1965, Ser. No. 86,766
Claims priority, application Germany Mar. 4, 1965
Term of patent 14 years
(Cl. D74—17)



208,961
HOUSING FOR A WRITING INSTRUMENT
Helmut Bross, Weichselgartenstrasse 40, Altenberg, Germany
Filed Sept. 7, 1965, Ser. No. 86,867
Claims priority, application Germany June 1, 1965
Term of patent 14 years
(Cl. D74—17)



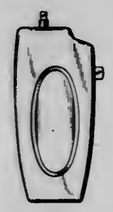
208,962
OUTDOOR BROILER GRILL OR THE LIKE
George M. Charbonneau and Frank J. Chiappetta, Elmira, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 16, 1966, Ser. No. 2,324
Term of patent 14 years
(Cl. D81—10)



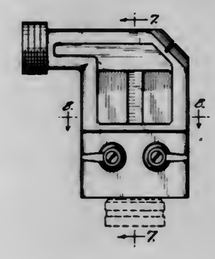
208,963
SNUFF BOX
Stuart M. Lenz, Scarsdale, N.Y., and John Roy Parcels, Bordentown, N.J., assignors to Helme Products, Inc., Plaza, N.Y., a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 32
Term of patent 14 years
(Cl. D85—2)



208,964
POWER UNIT FOR AN ELECTRIC MANICURE SET OR SIMILAR ARTICLE
John G. Maxim, Mamaroneck, N.Y., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Aug. 10, 1966, Ser. No. 3,404
Term of patent 14 years
(Cl. D86—10)



208,965
COMBINED VALVE CASING AND SPRINKLER
Mario Anesi, % Ansan Tool and Manufacturing Co. Inc., 4750 N. Ronald St., Chicago, Ill. 60631
Filed Apr. 1, 1966, Ser. No. 1,726
Term of patent 14 years
(Cl. D91—1)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Beale, Julian R. A., and A. F. Beer (by North American Philips Co., Inc., assignee). Method of making semiconductor device. Re. 26,282, 10–17–67, Cl. 29—583.

Beer, Andrew F.: *See*—
Beale, Julian R. A., and Beer. Re. 26,282.

Clark, Charles W., Jr., to Sweden Freezer Mfg. Co. Mix- and air-feeding device for dispensing freezers. Re. 26,282, 10–17–67, Cl. 137—589.

Eastman Kodak Co.: *See*—
Gerlach, Erwin. Re. 26,283.

Gerlach, Erwin, to Eastman Kodak Co. Device for controlling the image frequency during the projection of a motion picture film. Re. 26,283, 10–17–67, Cl. 226—50.

Golde, H. T., G.m.b.H. & Co., K.G.: *See*—
Werner, Johannes. Re. 26,281.

Harmon, William C., to Republic Steel Corp. Method and apparatus for inspecting work-pieces which are relatively independent of probe motion. Re. 26,286, 10–17–67, Cl. 324—37.

Homanick, George: *See*—
O'Neill, Joseph V., and Homanick. Re. 26,284.

Hostetter, John L. Self-adjusting plier-type toggle locking wrench. Re. 26,280, 10–17–67, Cl. 81—379.

Laky, Tibor: *See*—
Neitzel, Joseph C., and Laky. Re. 26,289.

Leyman Corp.: *See*—
O'Neill, Joseph V., and Homanick. Re. 26,284.

Martin-Marietta Corp.: *See*—
Wasilisin, Michael E., and Wernz. Re. 26,287.

Murray Co. of Texas, Inc.: *See*—
Neitzel, Joseph C., and Laky. Re. 26,289.

Neitzel, Joseph C., and T. Laky, to Murray Co. of Texas, Inc. Apparatus for banding bales. Re. 26,289, 10–17–67, Cl. 100—4.

North American Philips Co., Inc.: *See*—
Beale, Julian R. A., and Beer. Re. 26,282.

O'Neill, Joseph V., and G. Homanick, to Leyman Corp. Portable drill rig methods and apparatus. Re. 26,284, 10–17–67, Cl. 175—57.

Republic Steel Corp.: *See*—
Harmon, William C. Re. 26,286.

Stafford, Robert R. Traveling-while-sprinkling irrigation apparatus and system. Re. 26,285, 10–17–67, Cl. 239—212.

Sweden Freezer Mfg. Co.: *See*—
Clark, Charles W., Jr. Re. 26,288.

Wasilisin, Michael E., and D. E. Wernz, to Martin-Marietta Corp. Core manufacture. Re. 26,287, 10–17–67, Cl. 219—83.

Werner, Johannes, to H. T. Golde G.m.b.H. & Co., K.G. Motor vehicle door window control. Re. 26,281, 10–17–67, Cl. 49—352.

Wernz, Donald E.: *See*—
Wasilisin, Michael E., and Wernz. Re. 26,287.

LIST OF PLANT PATENTEES

Gavello, Louis E. Veronica plant. 2,772, 10–17–67, Cl. 54.

Kern County Land Co.: *See*—
Mugg, Leland O. 2,771.

Lee, Walter S., to Monrovia Nursey Co. Juniper plant. 2,773, 10–17–67, Cl. 50.

Monrovia Nursey Co.: *See*—
Lee, Walter S. 2,773.

Mugg, Leland O., to Kern County Land Co. Almond. 2,771, 10–17–67, Cl. 30.

LIST OF DESIGN PATENTEES

Anesi, Mario. Combined valve casing and sprinkler. 208,905, 10–17–67, Cl. D91—1.

Atlantic Products Corp.: *See*—
Murray, John P., Jr. 208,956.

Baak, Albert E. Room thermostat or similar article. 208,945, 10–17–67, Cl. D52—7.

Blazon, Inc.: *See*—
Grudoski, Daniel P. 208,922.

Brenner, Robert R. Exerciser. 208,924, 10–17–67, Cl. D34—5.

Bross, Helmut. Housing for writing instrument. 208,960, 10–17–67, Cl. D74—17.

Bross, Helmut. Housing for writing instrument. 208,961, 10–17–67, Cl. D74—17.

Campbell, Laurie J., to Louis Marx & Co., Inc. Musical toy typewriter. 208,925, 10–17–67, Cl. D34—15.

Caprio, Lawrence, and I. Nesson, to Louis M. Gerson Co., Inc. Disposable filter. 208,936, 10–17–67, Cl. D44—29.

Carpano & Pons: *See*—
Mimeur, Robert. 208,910.

Chandler, Wesley M., P. F. Heuser, and B. T. Juba, to Wilbert W. Haase Co. Burial vault. 208,909, 10–17–67, Cl. D19—1.

Charbonneau, George M., and F. J. Chiapetta, to Corning Glass Works. Outdoor broiler grill or the like. 208,962, 10–17–67, Cl. D81—10.

Charmglow Mfg. Co.: *See*—
Koziol, Walter. 208,941.

Chiapetta, Frank J.: *See*—
Charbonneau, George M., and Chiapetta. 208,962.

Christopher, Columbus. Air tank. 208,958, 10–17–67, Cl. D62—2.

Collister, Kenneth D., C. H. Patteson, and R. M. Thorson, to Miles Laboratories, Inc. Petri dish. 208,907, 10–17–67, Cl. D16—1.

Corning Glass Works: *See*—
Dole, Charles M., Jr. 208,918.
Charbonneau, George M., and Chiapetta. 208,962.

Daher, Theodore G.: *See*—
Judson, William V., and Daher. 208,928.

Dimensional Products, Inc.: *See*—
Falkenberg, Gustave F. 208,923.

Demerritt, Roger F., to Sylvania Electric Products Inc. Lighting fixture. 208,937, 10–17–67, Cl. D48—4.

Design Workshop, Inc.: *See*—
Tapert, John W. 208,921.

Dice, Kenneth B., and R. M. Maas. Sod roller. 208,926, 10–17–67, Cl. D40—1.

Dole, Charles M., Jr., to Corning Glass Works. Control knob or similar article. 208,918, 10–17–67, Cl. D26—13.

Dvore, Christian. Animal bed. 208,920, 10–17–67, Cl. D30—41.

Empire Brushes, Inc.: *See*—
Maxim, John G. 208,964.

Falkenberg, Gustave F., to Dimensional Products, Inc. Combined scoreboard and advertising sign. 208,923, 10–17–67, Cl. D34—5.

Gehrie, Charles S., to Presto Lock Co., Inc. Buckle locks for luggage or the like. 208,943, 10–17–67, Cl. D50—7.

General Electric Co.: *See*—
Johnson, Carl N., and Judson. 208,929.
Johnson, Carl N., and Judson. 208,930.
Judson, William V., and Daher. 208,928.
Judson, William V. 208,931.
Judson, William V. 208,932.
Judson, William V. 208,933.
Judson, William V. 208,934.
Meilyn, Lawrence P. 208,917.
Meilyn, Lawrence P. 208,939.
Moore, Walter E. 208,940.
Sandin, Raymond C. 208,942.

General Mills, Inc.: *See*—
Perry, Frank R. 208,947.

Gersh, Ted H.: *See*—
Gersh, Alex and T. H. 208,904.

Gersh, Alex and T. H. Swimming pool. 208,904, 10–17–67, Cl. D18—1.

Gerson, Louis M., Co., Inc.: *See*—
Caprio, Lawrence, and Nesson. 208,936.

Gregoire, Resta S. Building. 208,905, 10–17–67, Cl. D18—1.

Grudoski, Daniel P., to Blazon, Inc. Teeter totter. 208,922, 10–17–67, Cl. D34—5.

Haase, Wilbert W., Co.: *See*—
Chandler, Wesley M., Heuser, and Juba. 208,909.

Helme Products, Inc.: *See*—
Lens, Stuart M., and Parcels. 208,963.

Heuser, Paul F.: *See*—
Chandler, Wesley M., Heuser, and Juba. 208,909.

Himler, Paul J., Sr. Bottle holder. 208,957, 10–17–67, Cl. D58—26.

Holophane Co., Inc.: *See*—
Wince, Vearl S. 208,938.

Honeywell Inc.: *See*—
Miller, Ronald C. 208,944.

Huff, Basil D. Slipper. 208,902, 10–17–67, Cl. D2—293.
Jennings, Thomas W., to Warwick Electronics Inc. Guitar. 208,948, 10–17–67, Cl. D56—1.
Jennings, Thomas W., to Warwick Electronics Inc. Guitar. 208,949, 10–17–67, Cl. D56—1.
Jeppesen and Co.: *See*—
Urben, Frederick E. 208,901.
Jet-Clean Co.: *See*—
Zadron, Emil, and Kenmonth. 208,903.
Johnson, Carl N., and W. V. Judson, to General Electric Co. Clock or similar article. 208,928, 10–17–67, Cl. D42—7.
Johnson, Carl N., and W. V. Judson, to General Electric Co. Timer or similar article. 208,930, 10–17–67, Cl. D42—7.
Juba, Bernard T.: *See*—
Chandler, Wesley M., Heuser, and Juba. 208,909.
Judson, William V., and T. G. Daher, to General Electric Co. Clock or similar article. 208,928, 10–17–67, Cl. D42—7.
Judson, William V.: *See*—
Johnson, Carl N., and Judson. 208,929.
Judson, William V.: *See*
Johnson, Carl N., and Judson. 208,930.
Judson, William V., to General Electric Co. Clock or similar article. 208,931, 10–17–67, Cl. D42—7.
Judson, William V., to General Electric Co. Clock or similar article. 208,932, 10–17–67, Cl. D42—7.
Judson, William V., to General Electric Co. Clock or similar article. 208,933, 10–17–67, Cl. D42—7.
Judson, William V., to General Electric Co. Clock or similar article. 208,934, 10–17–67, Cl. 42—7.
Kenmonth, Alton S.: *See*—
Zadron, Emil, and Kenmonth. 208,903.
Keown, John A.: *See*—
McAllister, William J., and Keown. 208,955.
Koziol Walter, to Charmglow Mfg. Co. Lamp. 208,941, 10–17–67, Cl. D48—31.
Lenz, Stuart M., and J. R. Parcels, to Helme Products, Inc. Snuff box. 208,963, 10–17–67, Cl. 85—2.
Maas, Richard M.: *See*—
Dice, Kenneth B., and Maas. 208,926.
Marien, Henry J., and J. B. Swett, to Rexall Drug and Chemical Co. Combined pitcher and cover therefor. 208,899, 10–17–67, Cl. D44—21.
Marx Louis, & Co., Inc.: *See*—
Campbell, Laurie J. 208,925.
Maxim, John G., to Empire Brushes, Inc. Power unit for an electric manicure set or similar article. 208,964, 10–17–67, Cl. D86—10.
McAllister, William J., and J. A. Keown, to W. J. McAllister. Waste receptacle. 208,955, 10–17–67, Cl. D58—17.
McAllister, William J.: *See*—
McAllister, William J., and Keown. 208,955.
Mellyn, Lawrence P., to General Electric Co. Integrally hinged weatherproof receptacle cover. 208,917, 10–17–67, Cl. D26—13.
Mellyn, Lawrence P., to General Electric Co. Light diffuser for a night light. 208,939, 10–17–67, Cl. D48—20.
Miles Laboratories, Inc.: *See*—
Collister, Kenneth D., Patteson, and Thorson. 208,907.
Miller, Ronald C., to Honeywell Inc. Face panel for a control instrument. 208,944, 10–17–67, Cl. D52—6.
Mimeur, Robert, to Carpano & Pons. Fishing reel. 208,910, 10–17–67, Cl. D22—25.
Moore, Aston L., to Venture II Corp. Speaker enclosure. 208,919, 10–17–67, Cl. D26—14.
Moore, Walter E., to General Electric Co. Flashlight or similar article. 208,940, 10–17–67, Cl. D48—24.
Motorola, Inc.: *See*—
Zeller, Herbert J. 208,959.
Murray, John P., Jr., to Atlantic Products Corp. Receptacle for waste paper or the like. 208,956, 10–17–67, Cl. D58—17.
Nesson, Israel: *See*—
Caprio, Lawrence, and Nesson. 208,936.
Northern Laboratories: *See*—
Sorenson, Leo. 208,951.
Owens-Illinois, Inc.: *See*—
Belcher, Samuel L., and Sanderson. 208,953.
Hobbs, Raymon E., and Shepler. 208,950.
Roberts, Bruce L. 208,954.
Shepler, James A. 208,952.
Parcels, John R.: *See*—
Lenz, Stuart M., and Parcels. 208,963.
Patteson, Charles H.: *See*—
Collister, Kenneth D., Patteson, and Thorson. 208,907.
Pedigo, James C. Fishing lure. 208,911, 10–17–67, Cl. D22—28.
Perry, Frank R., to General Mills, Inc. Spoon or similar article. 208,947, 10–17–67, Cl. D54—12.
Presto Lock Co., Inc.: *See*—
Gehrle, Charles S. 208,943.
Reisman, J. & Sons, Inc.: *See*—
Reisman, Howard. 208,899.
Reisman, Howard, to J. Reisman & Sons, Inc. Pretzel. 208,899, 10–17–67, Cl. D1—13.
Rexall Drug and Chemical Co.: *See*—
Marien, Henry J., and Swett. 208,899.
Roberts, Bruce L., to Owens-Illinois, Inc. Bottle. 208,954, 10–17–67, Cl. D58—8.
Salisky, Sallyann Z., to Sarong, Inc. Girdle. 208,900, 10–17–67, Cl. D2—2.
Sanderson, Thomas C.: *See*—
Belcher, Samuel L., and Sanderson. 208,953.
Sandin, Raymond C., to General Electric Co. Dishwasher. 208,942, 10–17–67, Cl. D49—1.
Sarong, Inc.: *See*—
Salisky, Sallyann Z. 208,900.
Shepler, James A., to Owens-Illinois, Inc. Jug. 208,952, 10–17–67, Cl. D58—5.
Siptrott, Fred M. Model for atomic display. 208,912, 10–17–67, Cl. D25—1.
Smith, Cloyd D. Tool for magnetizing and de-magnetizing. 208,914, 10–17–67, Cl. D26—1.
Societe Industrielle Bull-General Electric (Societe Anonyme): *See*—
Sottsass, Ettore, Jr. 208,915.
Sottsass, Ettore, Jr. 208,916.
Sorenson, Leo, to North Laboratories. Jug. 208,951, 10–17–67, Cl. D58—5.
Sottsass, Ettore, Jr., to Societe Industrielle Bull-General Electric (Societe Anonyme). Combined printing machine and control cabinet. 208,915, 10–17–67, Cl. D26—5.
Sottsass, Ettore, Jr., to Societe Industrielle Bull-General Electric (Societe Anonyme). Central control unit for a data processor. 208,916, 10–17–67, Cl. D26—5.
St. Alban, John W. Masonry drill. 208,946, 10–17–67, Cl. D54—4.
Swett, James B.: *See*—
Marien, Henry J., and Swett. 208,899.
Sylvania Electric Products Inc.: *See*—
Demerritt, Roger F. 208,937.
Tapert, John W., to Design Workshop, Inc. Open shelf storage unit. 208,921, 10–17–67, Cl. D33—3.
Techtmann, Anna M. Separable magnetic holder for securing fabric and pattern. 208,913, 10–17–67, Cl. D26—1.
Thomas, Ralph D. Combined frame, drive mechanism and face and hands for a clock. 208,927, 10–17–67, Cl. D42—7.
Thorson Robert M.: *See*—
Collister, Kenneth D., Patteson, and Thorson. 208,907.
Urben, Frederick E., to Jeppesen and Co. Flight instrument training hood for pilots. 208,901, 10–17–67, Cl. D2—232.
Venture II Corp.: *See*—
Moore, Aston L. 208,919.
Villa, Luis F. Outdoor telephone booth. 208,906, 10–17–67, Cl. D13—1.
Wall, Charles G., to Wood-Metal Industries, Inc. Laboratory table unit. 208,908, 10–17–67, Cl. D16—2.
Warwick Electronics Inc.: *See*—
Jennings, Thomas W. 208,948.
Jennings, Thomas W. 208,949.
Wince, Vearl S., to Holophane Co., Inc. Luminaire lens. 208,938, 10–17–67, Cl. D48—16.
Wood-Metal Industries, Inc.: *See*—
Wall, Charles G. 208,908.
Zadron, Emil, and A. S. Kenmonth, to Jet-Clean Co. Cleaning device for automobile engines and component or the like. 208,903, 10–17–67, Cl. D9—2.
Zeller, Herbert J., to Motorola, Inc. Beer keg cooler. 208,959, 10–17–67, Cl. D67—3.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Tetra Pak: *See*—
Rausing, Gad A., and Swede. 3,347,444.
ACF Industries, Inc.: *See*—
Rollins, Dallas W. 3,347,506.
AG-Heat Systems, Inc.: *See*—
Golub, Gerald. 3,347,210.
A & J Mfg. Co. Industries, Inc.: *See*—
Young, Jesse R. 3,347,346.
AMP Inc.: *See*—
Apa, Armand S., and Ziegler. 3,346,949.
Bosland, Cornelius W., McFadden, and Brookman. 3,348,102.
Coldren, Daniel R., and Lau. 3,348,189.
Friend, Lindsay C. 3,348,187.
Hoffman, Norman E. 3,347,979.
Kinkaid, Robert J. 3,348,191.
Abberly, Nicholas R. Traylike rebound unit. 3,347,546, 10–17–67, Cl. 272—65.
Abbott Laboratories: *See*—
Trussell, Wayne E., and Shah. 3,347,920.
Abdella, Harold H., to General Motors Corp. Spark plug seal having a lower coefficient of expansion than the ceramic insulator core. 3,348,091, 10–17–67, Cl. 313—136.
Abramoff, Jacques. Paper dispenser. 3,347,480, 10–17–67, Cl. 242—55.2.
Abramson, Hugo, to Forsvarets Fabrikavark. Projectile with a rearwardly directed steering tube. 3,347,492, 10–17–67, Cl. 244—328.
Abrasive Dressing Tool Co.: *See*—
Wellborn, William W. 3,347,219.
Adams, Brandon L. Apparatus and method for measuring cardiac output. 3,347,224, 10–17–67, Cl. 128—2.05.
Adams, Frederick J., and H. K. Alderton, to Hydrosteer Ltd. Steering mechanism. 3,347,109, 10–17–67, Cl. 74—388.
Adams, Robert T., to Chevron Research Co. Inhibition of corrosion during catalytic reactions. 3,347,947, 10–17–67, Cl. 260—671.
Adamson United Co.: *See*—
Lake, Charles G., and Seanor. 3,346,913.
Adickes, Cecil F., Jr.: *See*—
Ryan, John W., Adickes, and De Gelder. 3,346,989.
Adomaitis, Domas, and P. E. Sellers, to Continental Can Co., Inc. High-impact polypropylene composition containing ethylene/carboxylic acid salt copolymers. 3,347,957, 10–17–67, Cl. 260—897.
Advance Machine Co.: *See*—
Arones, Daniel A. 3,346,896.
Aerojet-General Corp.: *See*—
Revelino, James B. 3,347,100.
Aero-Motive Mfg. Co.: *See*—
Becker, Roger T. 3,346,938.
Agostini, Dominic J. and G. L. Apparatus for the assembly of concrete form ties. 3,346,940, 10–17–67, Cl. 29—208.
Agostini, George L.: *See*—
Agostini, Dominic J. and G. L. 3,346,940.
Ahlbeck, Donald R., and H. A. Cress, to United States of America, Atomic Energy Commission. Fast-acting cascade valve. 3,347,135, 10–17–67, Cl. 91—47.
Air Reduction Co., Inc.: *See*—
Blanchard, Edward R., and Smith. 3,347,055.
Ajem Laboratories, Inc.: *See*—
Arnold, Orlan H., Millhiser, Pashaian, and Umbricht. 3,347,378.
Akashi, Tsuneo, M. Takahashi, F. Yamauchi, N. Tsubouchi, and T. Ohno, to Nippon Electric Co., Ltd. Iridium and chromium doped lead zirconate titanate piezoelectric ceramic composition. 3,347,795, 10–17–67, Cl. 252—62.9.
Akers, Sheldon B., Jr., and G. H. Coddington, to General Electric Co. Self-repairing digital computer circuitry employing adaptive techniques. 3,348,197, 10–17–67, Cl. 340—146.1.
Albert, Gunter: *See*—
Engelen, Heinz, Dischler, and Albert. 3,347,327.
Alberto-Culver Co.: *See*—
Cavender, Floyd W. 3,347,355.
Alcon Metal Products, Inc.: *See*—
De Vito, Charles P. 3,348,192.
Alderton, Howard K.: *See*—
Adams, Frederick J., and Alderton. 3,347,109.
Alexander, Velda, to V. Alexander, L. E. Melvin, and C. M. Feaner. Arms and ammunition handbag. 3,347,299, 10–17–67, Cl. 150—34.
Allen, Eric H., to George Kent Ltd. Clear view screens. 3,347,004, 10–17–67, Cl. 52—171.
Allen, John D.: *See*—
Compton, James A., Allen, and Holt. 3,347,254.
Allen, Robert J., C. Z. Monroe, J. F. Earp, and H. B. Egleston, to Ex-Cell-O Corp. Machine for fabricating containers. 3,347,017, 10–17–67, Cl. 53—379.
Allen, Stanley E., Jr., to Varian Associates. Electron tube apparatus. 3,348,088, 10–17–67, Cl. 313—30.
Allen, Willard B., to United States of America, Navy. Scanned time compressor. 3,348,203, 10–17–67, Cl. 340—167.
Allied Chemical Corp.: *See*—
Chang, Leo S., Turi, and Lindo. 3,347,820.
Allis-Chalmers Mfg. Co.: *See*—
Carlson, Marvin J., Dobeus, Olsen, and Rolls. 3,347,577.
Schroeder, Robert J. 3,347,334.
Alsobrooks, Darriel L., to Michigan Dynamics, Inc. Centrifugal purifier. 3,347,380, 10–17–67, Cl. 210—130.
Altonji, John A., and J. G. Valana, to Potter Instrument Co., Inc. Adjustable quick-release mechanism for print drum. 3,347,159, 10–17–67, Cl. 101—93.
American Can Co.: *See*—
Baker, Harry, Sr. 3,347,408.
Brandt, Roger, and Mestanas. 3,347,419.
American Chain & Cable Co., Inc.: *See*—
Moro, Dominik J. 3,347,588.
American Cyanamid Co.: *See*—
Giddings, Sydney A. 3,347,887.
Lenhard, Robert H., Heller, and Bernstein. 3,347,854.
American Felt Co.: *See*—
Armstrong, William F. 3,346,904.
American Gas Association, Inc.: *See*—
Feldkirchner, Harlan L., Linden, and Pyrcioch. 3,347,647.
Zielinski, Robert J., and Westberg. 3,348,104.
American Home Products Corp.: *See*—
Burns, Douglas S. 3,347,409.
American Machine & Foundry Co.: *See*—
Congelli, Henry C., and Hays. 3,347,152.
Hollander, Milton B. 3,346,947.
Murthy, Nanjundiah N. 3,348,121.
Phillips, Malcolm E., Jr., and Zanzola. 3,347,180.
American Potash & Chemical Corp.: *See*—
Goodrow, Marvin H., Wagner, and Caserio. 3,347,800.
Washburn, Robert M., and Billig. 3,347,793.
Washburn, Robert M., and Eilar. 3,347,824.
American Sterilizer Co.: *See*—
Lodge, Albin. 3,346,992.
American Telephone and Telegraph Co.: *See*—
Doyle, James J., Sarka, and Tancredi. 3,347,990.
Ametek, Inc.: *See*—
Krynski, John E. 3,347,389.
Lornitzo, Frank C. 3,347,388.
Anaconda American Brass Co.: *See*—
Rowell, Douglas W. 3,347,079.
Somer, Fritz. 3,346,887.
Anaconda Wire and Cable Co.: *See*—
Bunish, Steve, Beasley, and Ling. 3,346,921.
Analyzer Design, Inc.: *See*—
Ranky, Bela. 3,348,161.
Anderson Bros. Mfg. Co.: *See*—
Geber, Eugene E. 3,347,287.
Anderson, Clayton & Co., Inc.: *See*—
Jones, Odell J., Page, and Dubbs. 3,347,885.
Anderson, Philip C., and F. Lothrop, to Feed Service Corp. Time controlled liquid dispenser. 3,347,212, 10–17–67, Cl. 119—51.11.
Anderson, Robert F., A. R. Hollister, and J. F. Reuteler, to Pratt & Whitney Inc. Automatic measuring lead screw compensator. 3,347,116, 10–17–67, Cl. 77—63.
Andreani, Eugenio. Textile apron stabilizing and cleaning system for drafting units. 3,346,926, 10–17–67, Cl. 19—245.
Andres, John M.: *See*—
Inouye, George T., Andres, and Brown. 3,348,165.
Andrews, Lamont F. Lightweight snow fence. 3,347,527, 10–17–67, Cl. 256—12.5.
Angiolini, John T.: *See*—
Wood, Thomas F., and Angiolini. 3,347,946.
Anglo Paper Products, Ltd.: *See*—
Sepall, Ola, and Buser. 3,347,628.
Angus, George, & Co. Ltd.: *See*—
Jagger, Ernest T., and Halliday. 3,347,554.
Annat, Robert B.: *See*—
Hodges, Leonard S., and Annat. 3,347,560.
Apa, Armand S., and G. W. Ziegler, Jr., to AMP Inc. Cable dressing means. 3,346,949, 10–17–67, Cl. 29—560.
Arendt, Ilse, and H. Puell, to Siemens & Halske Aktiengesellschaft. Moisture protection in communication cables whose cores are composed of conductors insulated with synthetic plastic, and method of producing such moisture protection. 3,347,974, 10–17–67, Cl. 174—23.
Arey, William F., Jr.: *See*—
Kimberlin, Charles N., Jr., Arey, and Buchmann. 3,347,625.
Argabright, Perry A.: *See*—
Passannante, Anthony J., Lovett, and Argabright. 3,347,872.
Arimura, Shizuo: *See*—
Nagata, Takashi, Hirohata, Ishibashi, and Arimura. 3,348,078.
Armco Steel Corp.: *See*—
Carpenter, Victor W., Ward, and Littmann. 3,347,718.
Nellon, Claude R. 3,347,312.
Word, William W., Jr. 3,347,311.
Armstrong Machine Works: *See*—
Judsen, Nils A., and Kirchner. 3,347,258.

Armstrong, Raymond E., Jr.: *See*—
Smith, George H., and Armstrong. 3,347,660.
Armstrong, William F., to American Felt Co. Glass polishing head having a detachable felt pad. 3,346,904, 10–17–67, Cl. 15—230.12.
Arnekiev, Duane R.: *See*—
Baker, Don R., Brokke, and Arnekiev. 3,347,850.
Arnold, Orlan H., R. G. Millhiser, S. Pashaian, and E. Umbricht, to Ajem Laboratories, Inc. Filter apparatus. 3,347,378, 10–17–67, Cl. 210—106.
Arnold, Wayne E., to Westinghouse Electric Corp. Time delay computer element for indicating input conditions. 3,348,070, 10–17–67, Cl. 307—88.5.
Arones, Daniel A., to Advance Machine Co. Carpet and floor-scrubbing machine. 3,346,896, 10–17–67, Cl. 15—50.
Arridge, Robert G., to Rolls-Royce Ltd. Nozzles. 3,347,208, 10–17–67, Cl. 118—420.
Arrow-Hart & Hegeman Electric Co., The: *See*—
Johnson, David W. 3,348,010.
Art Metal, Inc.: *See*—
Johnson, John H. 3,347,611.
Arthur, Wilfred J., to E. I. du Pont de Nemours and Co. Process for the preparation of di(para-aminocyclohexyl) methane. 3,347,917, 10–17–67, Cl. 260—563.
Arzoian, John: *See*—
Morrison, John E., Jr., Arzoian, and Hunt. 3,347,426.
Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Kashima, Hiroshi, Kurokawa, Kai, and Oka. 3,348,931.
Asahi Kogaku Kogyo Kabushiki Kaisha: *See*—
Nobusawa, Tsukumo, and Uno. 3,347,141.
Ashby, Theodore L., and C. R. Dick, to The Dow Chemical Co. Water soluble polymer of diglycidyl ether and an alkylenediamine hydrohalide. 3,347,802, 10–17–67, Cl. 260—2.
Associated Electrical Industries Ltd.: *See*—
Knapton, Arthur G., and Reece. 3,348,012.
Warman, Bloomfield J., and Marshall. 3,347,993.
Atal Bishnu S., and M. R. Schroeder, to Bell Telephone Laboratories, Inc. Diversity transmission system. 3,348,150, 10–17–67, Cl. 325—56.
Ateliers Des Charmilles S.A.: *See*—
Rhyner, Heinz, and Vors. 3,348,015.
Ateliers Metallurgiques de Saint-Urbain: *See*—
Flichy, Jacques E. 3,347,106.
Flichy, Jacques E. 3,347,107.
Atkins, James B., to International Business Machines Corp. Circuit with selective nonlinear feedback. 3,348,162, 10–17–67, Cl. 330—28.
Atkins, Kenneth E.: *See*—
Fritz, Henry E., Atkins, and O'Connor. 3,347,944.
Atlantic Microfilm Corp.: *See*—
Covert, Peter H., and Gilbert. 3,347,734.
Atlantic Refining Co., The: *See*—
Bonetti, Giovanni A., and Rosenthal. 3,347,939.
Atlas Chemical Industries, Inc.: *See*—
Baer, Byron N., and Griffin. 3,347,207.
Conlisk, John R. 3,347,132.
Galvin, Thomas J., and Hughes. 3,347,690.
Zech, John D. 3,347,926.
Atomenergi Aktiebolaget: *See*—
Olsson, Curt S. 3,347,748.
Augerot, Bernard J., to T. Shriver & Co., Inc. Filter press. 3,347,383, 10–17–67, Cl. 210—225.
Aumuller, Walter: *See*—
Ruschig, Heinrich, Korger, Aumuller, and Schmidt. 3,347,914.
Ausnit, Steven, and K. J. Staller, to Minigrip, Inc. Flexible fastener with unidirectional opening. 3,347,298, 10–17–67, Cl. 150—3.
Austin, Charles R.: *See*—
Porter, Allan W. H., and Austin. 3,347,063.
Automatic Electric Laboratories, Inc.: *See*—
Briley, Bruce E. 3,348,066.
Wilkis, Anthony J. 3,348,175.
Automation Industries, Inc.: *See*—
Weighart, Frederick G., and Forlastro. 3,348,051.
Avco Mfg. Corp.: *See*—
Bez, Robert V. 3,348,050.
Avila, Francisco C.: *See*—
Hodges, Ralph D., and Avila. 3,348,183.
Avco Corp.: *See*—
Dennis, John L. 3,348,158.
Gauld, Godfrey R. 3,348,167.
Avrea, Walter C. Transmission case cover. 3,347,341, 10–17–67, Cl. 184—1.
Babbih, Saul A.: *See*—
Rahn, Erwin P. G., and Babbin. 3,347,423.
Babcock, Eugene W., and R. A. Vascik, to Libbey-Owens-Ford Co. Glass sheet support frame. 3,347,655, 10–17–67, Cl. 65—375.
Babcock & Wilcox Co., The: *See*—
Evans, Sidley O. 3,347,716.
Bachhuber, Theodore J. Self-adjusting recrimping die for shotgun shell reloaders. 3,347,128, 10–17–67, Cl. 86—39.
Bachmann, Horst, to Maschinenfabrik Hasenclever A.G. Apparatus for the heading of elongated workpieces. 3,347,081, 10–17–67, Cl. 72—342.
Bacso, Imre, and P. A. Diassi, to E. R. Squibb & Sons, Inc. 4a,8,14-trimethyl-18 nor-5α,8α,9β,13α,14β androstane-3,11, 16,17-tetrone. 3,347,879, 10–17–67, Cl. 260—397.3.
Badger, Robert E.: *See*—
Knudsen, Raymond G., Badger, and Zuzinec. 3,347,075.
Badia, Frank A., and G. N. Kirby, to The International Nickel Co., Inc. Copper-base alloy and castings thereof. 3,347,666, 10–17–67, Cl. 75—157.5.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Baer, Karl, Sperber, Goehre, and Leibner. 3,347,798.
Freyschlag, Herwig, Pommer, and Reif. 3,347,930.
Honsberg, Werner, and Mueller. 3,347,769.
Schuster, Ludwig, and Raff. 3,347,918.
Baer, Byron N., and W. C. Griffin, to Atlas Chemical Industries, Inc. Textile finish applicator. 3,347,207, 10–17–67, Cl. 118—33.
Baer, Erhardt, and K. Xylander. Process for purifying water using reforming of metal hydroxide flocculation agent. 3,347,786, 10–17–67, Cl. 210—45.
Baer, Karl, H. Sperber, O. Goehre, and G. Leibner, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Production of catalysts or catalyst carriers in the form of hollow beads. 3,347,798, 10–17–67, Cl. 252—448.
Balniuk, Eugene, and J. L. Thompson, to The Weatherhead Co. Hydraulic steering system. 3,347,041, 10–17–67, Cl. 60—52.
Bailey, William D., and C. R. Bradlee, to Textron Inc. Method of forming nuts. 3,347,080, 10–17–67, Cl. 72—334.
Baker, Don R., M. E. Brokke, and D. R. Arnekiev, to Stauffer Chemical Co. Certain 3-dithiophosphorylacetyl-3-aza bicyclo [3,2,2] nonane compounds. 3,347,850, 10–17–67, Cl. 260—239.
Baker Donald B., to Bird Machine Co. Spray apparatus. 3,347,463, 10–17–67, Cl. 239—113.
Baker, Edward P., and H. E. Forsha, to Westinghouse Electric Corp. Winding transposition. 3,348,182, 10–17–67, Cl. 336—187.
Baker, George A.: *See*—
Nelson, Forrest A., and Baker. 3,348,136.
Baker, Harry, Sr., to American Can Co. Container and lid assembly. 3,347,408, 10–17–67, Cl. 220—60.
Baker, Mark E., and J. P. Burger, to United Aircraft Corp. Water separator construction. 3,347,027, 10–17–67, Cl. 55—320.
Baks, Claude L., and P. M. A. Chesnel, to Societe DeProspection Electrique Schlumberger, S.A. Multiple perforation shaped charge. 3,347,164, 10–17–67, Cl. 102—24.
Balax, Inc.: *See*—
Van Vleet, John M. 3,347,114.
Balder Electric Co.: *See*—
Tamm, Emil S. 3,348,000.
Baldwin, John J.: *See*—
Bolhofer, William S., and Baldwin. 3,347,910.
Baldwiu, Samuel L.: *See*—
Franklin, John S., and Baldwin. 3,348,035.
Ball Brothers Research Corp.: *See*—
Stacey, David S. 3,348,049.
Ballester, Manuel, and J. Riera, to E. I. du Pont de Nemours and Co. Chlorinated aromatic free radicals and their preparation. 3,347,940, 10–17–67, Cl. 260—649.
Ballester, Manuel, J. Castaner, and J. Riera, to E. I. du Pont de Nemours and Co. Triphenyl methane free radicals and their preparation. 3,347,941, 10–17–67, Cl. 260—649.
Balogh, Stephen, to Parker-Hanifin Corp. Filter-dryer. 3,347,387, 10–17–67, Cl. 210—266.
Bank, Shelton: *See*—
Rowe, Charles A., Jr., Schriesheim, and Bank. 3,347,912.
Banks, Hampden O., Jr., E. T. Teatum, and I. R. Jones, to United States of America, Atomic Energy Commission. Radioisotope thermoelectric apparatus and fuel form. 3,347,771, 10–17–67, Cl. 136—202.
Banks, James R., to Encore Mfg. Corp. A-C power control circuit having a trigger means with a voltage breakdown device connected to the base of a unijunction transistor. 3,348,131, 10–17–67, Cl. 323—22.
Barber-Colman Co.: *See*—
Livingston, Richard D. 3,347,479.
Barbera, Salvatore S., Sr. Portable air blower for barbecue. 3,347,220, 10–17–67, Cl. 126—25.
Barbetta, Raymond J., to International Business Machines Corp. Adaptive sequential logic network. 3,348,214, 10–17–67, Cl. 340—172.5.
Barkan, Bernard R. Collapsible, portable freezer box. 3,347,060, 10–17–67, Cl. 62—457.
Barker, Graham I. Bridge support for load supporting laths in vertical storage filing cabinet. 3,347,242, 10–17–67, Cl. 129—16.7.
Barker, Lester R., to Electronic Standards Corp. of America. Microwave termination. 3,348,170, 10–17–67, Cl. 333—22.
Barkhau, Marvin L., to Owens-Illinois, Inc. Lubricant coating for glassware molds and equipment. 3,347,650, 10–17–67, Cl. 65—26.
Barley, Leo D.: *See*—
Haywood, Russell I., and Barley. 3,347,120.
Barnard, Charles R. N., to Minister of Aviation, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland. Radio phase-comparison receivers. 3,348,225, 10–17–67, Cl. 343—112.
Barnes, Edgar S., to Eastman Kodak Co. Lens mounting alignment apparatus and method. 3,347,088, 10–17–67, Cl. 73—37.5.
Barnes Engineering Co.: *See*—
Faibel, Gerald. 3,348,058.
Barnhart, Clifford W., to Black, Sivalls & Bryson, Inc. Method of and apparatus for drying a fluid stream and reconcentrating the absorbent. 3,347,019, 10–17–67, Cl. 55—32.
Barogenics, Inc.: *See*—
Brayman, Jacob, Komorn, and Zeitlin. 3,346,922.
Barr, John D., and R. F. Clifford, to Rank Precision Industries Ltd. trading as The Organisation Rank Taylor Hobson Division. Control mechanisms for adjusting the objectives of television or cinematograph cameras. 3,347,985, 10–17–67, Cl. 178—7.92.
Barraclough, R. W., Ltd.: *See*—
Barraclough, Ronald W. 3,347,137.
Barraclough, Ronald W., to R. W. Barraclough, Ltd. Methods and apparatus for forming gussets in flexible tubular material. 3,347,137, 10–17–67, Cl. 93—20.
Barrington, Burchus Q., to Halliburton Co. Apparatus for use in well bores. 3,347,318, 10–17–67, Cl. 166—226.

Bartosek, Vladimir, V. Janousek, and O. Rotrekl, to Elitex Sdruzeni Podniku Textilniho Strojirenstvi. Weft control apparatus. 3,347,283, 10–17–67, Cl. 139—122.
Bass, Patrick, and J. M. Cooper, to R & R Research Ltd. Subscription television distribution with controlled rejection filters for carrier and interference signals. 3,347,982, 10–17–67, Cl. 178—5.1.
Bassett, Arthur T., Jr., and D. C. Siegla, to General Motors Corp. Spider supported electric heater. 3,348,025, 10–17–67, Cl. 219—467.
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Bastedo, Walter: *See*—
Strong, Edward W., Reade, Manuel, and Bastedo. 3,347,095.
Bates, Martin R.: *See*—
Russell, Roger B., Jr., and Bates. 3,348,031.
Bates, Warren H. Tray for holding multiple cartons. 3,347,447, 10–17–67, Cl. 229—31.
Bauer, Andrew B., to Arthur D. Little, Inc. Vibratory tool. 3,347,321, 10–17–67, Cl. 173—118.
Bauer Bros. Co., The: *See*—
Bouchillon, Charles W. 3,347,372.
Bauer, Edwin F., Jr., and K. O. Rieder, to Union Carbide Corp. Process for the production of low silicon, medium-to-low carbon ferromanganese. 3,347,664, 10–17–67, Cl. 75—133.
Baumgartner, Herman J., G. C. Hood, and D. D. Weaver, to Shell Oil Co. Hydrogen peroxide decomposition. 3,347,630, 10–17–67, Cl. 23—204.
Baxter Laboratories, Inc.: *See*—
Bellamy, David, Jr., and Schluts. 3,347,454.
Bayssat, Michel: *See*—
Szarvasi, Etienne, and Bayssat. 3,347,858.
Beach, Leland K.: *See*—
Freedman, Bernard, Beach, and Messner. 3,347,923.
Beach, Leland K.: *See*—
Passannanta, Anthony J., Rhodes, and Beach. 3,347,924.
Beall, Elvyn J. Indicia indicator. 3,347,204, 10–17–67, Cl. 116—133.
Bean, Claude T., Jr.: *See*—
Blair, Noel D., and Bean. 3,347,685.
Blair, Noel D., and Bean. 3,347,807.
Beanblossom, Joy E.: *See*—
Carr, Charles H., and Beanblossom. 3,347,937.
Beasley, William A.: *See*—
Hunish, Steve, Beasley, and Ling. 3,346,921.
Bebinger, Jack E., to General Electric Co. Rack support system. 3,347,612, 10–17–67, Cl. 312—311.
Becker, Kurt, to F. Zimmerman & Co., Firma. Method and device of counting coins. 3,347,249, 10–17–67, Cl. 133—8.
Becker, Roger T., to Aero-Motive Mfg. Co. Method of making a coil spring. 3,346,938, 10–17–67, Cl. 29—173.
Beclier, Charles: *See*—
Lacroix, Roger, and Beclier. 3,347,757.
Beech Aircraft Corp.: *See*—
Lester, James M. 3,347,056.
Beecham Group Ltd.: *See*—
Hardy, Kenneth D. 3,347,851.
Beggs, James E., to General Electric Co. Electron discharge device having a barium dispensing anode structure. 3,348,092, 10–17–67, Cl. 313—346.
Behal, Ivan. Combined magazine and mailing envelope. 3,347,449, 10–17–67, Cl. 229—68.
Behrmann, William C., and R. O. Maak, to Esso Research and Engineering Co. Fluid bed process for coking hydrocarbons. 3,347,781, 10–17–67, Cl. 208—127.
Beldin, Royal L.: *See*—
Lindstrom, Harold R., and Beldin. 3,347,350.
Bell Aerospace Corp.: *See*—
Cresap, Wesley L., and Lynn. 3,347,320.
Bell, Alan, and G. R. Lappin, to Eastman Kodak Co. Antioxidant composition. 3,347,938, 10–17–67, Cl. 260—624.
Bell Telephone Laboratories, Inc.: *See*—
Atal, Bishnu S., and Schroeder. 3,3478,150.
Ghiron, Hugo. 3,348,211.
Hartman, William C., and King. 3,348,190.
Howden, William E. 3,348,117.
Miller, Gabriel L. 3,348,068.
Ochsne, Brandt P. 3,348,210.
Riddell, George. 3,347,989.
Wagar, Harold N. 3,348,075.
Winter, Harry. 3,348,198.
Bellamy, David, Jr., and C. A. Schluts, to Baxter Laboratories, Inc. Method and apparatus for the centrifugal washing of particles in a closed system. 3,347,454, 10–17–67, Cl. 233—14.
Bender, Heinz, R. Fleischhauer, and R. Beyerle, to Cassella Farbwerke Mainkur Aktiengesellschaft. Water-soluble reactive dyestuffs containing halopyridazine carboxamide groups. 3,347,843, 10–17–67, Cl. 260—154.
Bendix Corp., The: *See*—
Bryan, William S., and Worchel. 3,347,720.
High, Charles N., and Howland. 3,347,103.
Reber, Robert L. 3,347,442.
Reznick, Frank J., and Noddings. 3,347,771.
Schultz, Thomas C. 3,347,216.
Sutton, Robert W. 3,347,436.
Beneke, Howard E. Tree and hedge trimmer. 3,346,955, 10–17–67, Cl. 30—276.
Bergman, Richard, Sr. Method and apparatus for pulling hides from carcasses of animals. 3,346,911, 10–17–67, Cl. 17—21.
Bernard, Michel A. R., to Societe Industrielle Bull-General Electric. Perforated web driving mechanism. 3,347,433, 10–17–67, Cl. 226—52.
Bernstein, Seymour: *See*—
Lenhard, Robert H., Heller, and Bernstein. 3,347,854.
Berry, Richard C., to Crouse-Hinds Co. Class 1, division 2, panel board. 3,348,103, 10–17–67, Cl. 317—120.
Berry, Thomas, to Rome Machine & Foundry Co. Paddle dyeing apparatus for textile goods. 3,347,067, 10–17–67, Cl. 68—135.
Bertin, Jean H., and P. F. Guienne, to Societe d'Etudes De L'Aerotrain. Guiding and supporting track for vehicles supported by fluid cushions. 3,347,170, 10–17–67, Cl. 104—120.
Beushausen, Frederick W., and E. D. Parry, said Parry assor. to said Beushausen. Instant coffee dispenser with adjustable trap chamber. 3,347,425, 10–17–67, Cl. 222—305.
Bevilacqua, Frank: *See*—
West, John M., Bevilacqua, and Snider. 3,347,747.
Beyerle, Rudi: *See*—
Bender, Heinz, Fleischbauer, and Beyerle. 3,347,843.
Bez, Robert V., to Avco Mfg. Corp. Passive infrared tracking and ranging system. 3,348,050, 10–17–67, Cl. 250—83.3.
Bicek, Edward J., to Universal Oil Products Co. Electropurification of salt solutions. 3,347,761, 10–17–67, Cl. 204—151.
Bieber, Clearance G., to The International Nickel Co., Inc. Precipitation hardenable stainless steel. 3,347,663, 10–17–67, Cl. 75—124.
Bielstein, George P. R., and A. P. Martin, said Bielstein assor. to British Insulated Callender's Cables Ltd. and said Martin assor. to Telcon Metals Ltd. Temperature sensing means and method for electric cables. 3,347,098, 10–17–67, Cl. 73—342.
Bier, Gerhard: *See*—
Nebel, Ilse U., and Bier. 3,347,813.
Bierlich, Johannes H. Valance and curtain or drapery supports. 3,347,304, 10–17–67, Cl. 160—19.
Billig, Franklin A.: *See*—
Washburn, Robert M., and Billig. 3,347,793.
Bingham, William H. Cable duct installation tool. 3,347,521, 10–17–67, Cl. 254—29.
Binnall, Eugene P.: *See*—
Soule, Winsor, Jr., and Binnall. 3,348,215.
Bio Metals Corp. Ltd.: *See*—
Maylang, Albert A. 3,347,661.
Bird, Forrest M., and H. L. Pohndorf. Volume limiting ventilating apparatus. 3,347,228, 10–17–67, Cl. 128—145.8.
Bird Machine Co.: *See*—
Baker, Donald B. 3,347,463.
Birmans, Josef, to Adoph Sauerer, Ltd. Suction device for drop box loom having weft replenishment means. 3,347,285, 10–17–67, Cl. 139—257.
Bissot, Thomas C., to E. I. du Pont de Nemours and Co. Process for preparing aqueous dispersions of ethylene copolymers. 3,347,311, 10–17–67, Cl. 260—29.6.
Bjerke, John O., J. Halliday, J. L. Stevens, Jr., S. A. Mahler, and D. A. Holden, to Newport News Shipbuilding and Dry Dock Co. Bulkhead structure and method of making thereof. 3,347,051, 10–17–67, Cl. 61—46.
Black, Sivalls & Bryson, Inc.: *See*—
Barnhart, Clifford W. 3,347,019.
Blackburn, Leonard, ½ to Karen Corp. Overhead traverse for supporting draperies or the like. 3,346,909, 10–17–67, Cl. 16—94.
Blaettner, Kurt: *See*—
Kaupp, Josef, and Blaettner. 3,347,935.
Blair, Noel D., and J. A. Pawlak, to Hooker Chemical Corp. Decorative fire retardant paints. 3,347,684, 10–17–67, Cl. 106—15.
Blair, Noel D., and C. T. Bean, Jr., to Hooker Chemical Corp. Fire retardant bituminous compositions. 3,347,685, 10–17–67, Cl. 106—15.
Blair, Noel D., and C. T. Bean, Jr., to Hooker Chemical Corp. Fire retardant bituminous compositions. 3,347,807, 10–17–67, Cl. 260—28.5.
Blanch, Edna L.: *See*—
Sharp, Edward J. 3,347,586.
Blanchard, Edward R., and D. L. Smith, to Air Reduction Co., Inc. Method for recuperating refrigeration. 3,347,055, 10–17–67, Cl. 62—9.
Blink, Robert O.: *See*—
Hols, Frederick H., Lutzke, and Blink. 3,347,509.
Board of Trustees of Michigan State University: *See*—
De Long, Max M., Stout, and Ries. 3,347,031.
Bobkowics, Andrew J.: *See*—
Bobsowicz, Emilian and A. J. 3,347,727.
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Bodian, Marcus, and F. J. Wellhouse, to Sunbeam Lighting Co., Inc. Examination light. 3,348,036, 10–17–67, Cl. 240—41.35.
Bodtke, Robert G. Guidance system for a bar feed machine. 3,347,434, 10–17–67, Cl. 226—162.
Boeing Co., The: *See*—
Eberhardt, Donald S., Gratzer, and Runnels. 3,347,495.
Holmes, James F. 3,348,151.
Seibel, Bobly H. 3,347,130.
Sheehan, Robert W., and Szupkay. 3,347,578.
Wieman, Francis. 3,348,125.
Bohme Fettchemie G.m.b.H.: *See*—
Frotscher, Herbert, and Petzold. 3,347,803.
Boissevain, Mathew G., to FMC Corp. Curvilinear loom. 3,347,278, 10–17–67, Cl. 139—11.
Bolhofer, William S., and J. J. Baldwin, to Merck & Co., Inc. Cycloaliphatic substituted naphthyloxy-alkanoic acids and a method for their preparation. 3,347,910, 10–17–67, Cl. 260—520.
Bolick, Fred C., Jr., to Lanier Electronics Laboratory, Inc. Endless tape control device. 3,347,432, 10–17–67, Cl. 226—50.
Bolidens Gruvaktiebolog: *See*—
Lundström, Hans T., Wallden, and Melkersson. 3,347,968.

Bolt Beranek and Newman Inc.: *See*—
Gilbert, Ernest E. 3,347,986.
Marill, Thomas M., and Edwards. 3,347,988.
Watters, Bill G., and Kurtze. 3,347,335.

Bolyard, Joseph E. Trailer Hitch. 3,347,562, 10–17–67, Cl. 280—406.

Bombardier, Germain. Endless track for track-laying vehicle. 3,347,601, 10–17–67, Cl. 305—35.

Bonetti, Giovanni A., and R. Rosenthal, to The Atlantic Refining Co. Conversion of nitroolefins to nitroalcohols. 3,347,939, 10–17–67, Cl. 260—641.

Boosalic, Michael: *See*—
Harris, Theodore J. 3,346,952.

Boothroyd, Howard W., to Sanders Associates, Inc. Vernier balancing and damping for gyro systems. 3,347,104, 10–17–67, Cl. 74—5.5.

Borden, Alec J. Liquid extractor system. 3,347,455, 10–17–67, Cl. 233—19.

Borg-Warner Corp.: *See*—
Epstein, Herman, and Cogan. 3,347,481.
Svoboda, Edward J. 3,347,470.

Boris, Michel, to Societe Technique de Pulverisation. Vaporizing device. 3,347,424, 10–17–67, Cl. 222—263.

Bosch, Robert, G.m.b.H.: *See*—
Hauck, Frans. 3,347,093.

Bosland, Cornelius W., B. R. McFadden, and R. J. Brookman, to AMP Inc. Assembly and drive mechanism for electrical switches and connectors. 3,348,102, 10–17–67, Cl. 317—112.

Boswell, George A., to E. I. du Pont de Nemours and Co. Selected 17,17-difluoro steroids of the estrane series. 3,347,878, 10–17–67, Cl. 260—397.3.

Bouchillon, Charles W., to The Bauer Bros. Co. Centrifugal cleaner. 3,347,372, 10–17–67, Cl. 209—211.

Bourns, Inc.: *See*—
Mowry, David R., and Clark. 3,348,005.
Parkinson, Robert C., Marks, Gaa, and De Back. 3,348,185.

Bouton, Gertrude V.: *See*—
Vischer, William. 3,347,619.

Bowman, Larry G.: *See*—
Lankford, William L., Jr., Mathis, Keller, Bowman, and Van Winkle. 3,348,231.

Bowen, Donald B. Camper body stabilizer. 3,347,590, 10–17–67, Cl. 296—23.

Boyer, Verdt E.: *See*—
Cronin, John W., Jr., and Boyer. 3,347,169.

Brack, Alfred, and D. Kutzschbach. 1-hydrocarbon-2-tertiary amino carbocyclic aryl benz-[c,d]-indoles. 3,347,865, 10–17–67, Cl. 260—313.1.

Braco Engraving Co.: *See*—
Branznell, George S. and S. D. 3,347,162.

Bradlee, Charles R.: *See*—
Bailey, William D., and Bradlee. 3,347,080.

Bramley, Winlaw B., Jr.: *See*—
Eilers, Mark A., and Bramley. 3,347,074.

Brand, Paul M., to Dryster Corp. Combined telephone and control switch for sterilizer lamp. 3,348,006, 10–17–67, Cl. 200—85.

Brandt, Kurt: *See*—
Keller, Siegfried, and Brandt. 3,347,730.

Brandt, Roger, and N. M. Mestanas, to American Can Co. Collapsible dispensing tube. 3,347,419, 10–17–67, Cl. 222—107.

Branznell, George S. and S. D., to Braco Engraving Co. Printing plates. 3,347,162, 10–17–67, Cl. 101—376.

Brau, Maurice J., R. E. Johnson, and R. J. Patterson, to Texas Instruments Inc. Ge-Se-Te glass and infrared detection system. 3,348,045, 10–17–67, Cl. 250—83.

Bray, John R., to Monsanto Co. Solid state A-C contactor with momentary start-stop buttons. 3,348,063, 10–17–67, Cl. 307—88.5.

Brayman, Jacob, M. B. Komorn, and A. Zeitlin, to Barogenics, Inc. Press structures. 3,346,922, 10–17–67, Cl. 18—16.

Branznell, Stuart D.: *See*—
Branznell, George S. and S. D. 3,347,162.

Bredereck, Hellmut, B. Fohlisch, and R. Franz, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler and W. C. Heraeus G.m.b.H. Polymerization of vinyl compounds and unsaturated polyesters using bartituric acids and alpha acyl nitriles as catalysts. 3,347,954, 10–17–67, Cl. 260—864.

Breisch, John H., to Cleveland-Detroit Corp. Explosive actuated pipe cutter. 3,347,431, 10–17–67, Cl. 225—103.

Brejcha, Robert J., N. G. Modesto, and W. F. Ridenour, to General Stone and Materials Corp. Portable surfacing machine for terrazzo floors. 3,347,596, 10–17–67, Cl. 299—10.

Brenner, Robert A., and V. W. Cuthbert, to Whirlpool Corp. Wringer with rotary guard means. 3,347,068, 10–17–67, Cl. 68—266.

Bridgeman, Cecil K.: *See*—
Umberg, Frank H., and Bridgeman. 3,348,042.

Bridgeport Brass Co.: *See*—
Somer, Fritz. 3,346,887.

Briley, Bruce E., to Automatic Electric Laboratories, Inc. Arrangements of one-transistor bistable circuits. 3,348,066, 10–17–67, Cl. 307—88.5.

British Cast Iron Research Association: *See*—
Godding, Ronald G. 3,348,140.

British Nylon Spinners Ltd.: *See*—
Sissons, Christopher R. 3,347,736.

British Petroleum Co. Ltd.: *See*—
Thomas, William L. 3,347,754.

Brittain, Gary M.: *See*—
Hausenfleck, Howard D., Brittain, and Tsivitse. 3,348,098.

Brecht, George: *See*—
Stancell, Arnold F., Brecht, and Foglia. 3,347,695.

Breer, Karl: *See*—
Hoppe, Peter, Weinbrenner, Muhlhausen, and Breer. 3,347,529.

Broderick, Edward: *See*—
Osborn, Stephen W., Broderick, and Villa. 3,347,867.

Brokke, Mervin E.: *See*—
Baker, Don R., Brokke, and Arneklev. 3,347,850.

Brookman, Ronald J.: *See*—
Bosland, Cornelius W., McFadden, and Brookman. 3,348,102.

Brooks, Forrest E., to Radio Corp. of America. Buffer. 3,348,209, 10–17–67, Cl. 340—172.5.

Brooks, Frederick J. Temperature controlled convective distillation and vapor evacuation. 3,347,755, 10–17–67, Cl. 202—206.

Brooks, Julius E., to Olin Mathieson Chemical Corp. Automatic cartridge ejector device. 3,346,983, 10–17–67, Cl. 42—47.

Broverman, Irwin: *See*—
Eichelman, George H., Jr., and Broverman. 3,347,717.

Broverman, Irwin, and J. M. Pryor, to Olin Mathieson Chemical Corp. Method of producing aluminum-magnesium sheet. 3,347,714, 10–17–67, Cl. 148—11.5.

Brown, Charles A. Method and apparatus for determination of absorption of a gas by a liquid. 3,347,634, 10–17–67, Cl. 23—230.

Brown, Gaylord W., and Donald J. Rise, to Brown Machine Co. of Michigan, Inc. Differential pressure forming machine. 3,346,923, 10–17–67, Cl. 18—19.

Brown, Glenn L.: *See*—
Inouye, George T., Andres, and Brown. 3,348,165.

Brown, James D.: *See*—
Brown, Richard A., and J. D. 3,347,048.

Brown Machine Co. of Michigan, Inc.: *See*—
Brown, Gaylord W., and Rise. 3,346,923.

Brown, Norman R., to General Motors Corp. Metal fastener. 3,347,127, 10–17–67, Cl. 85—37.

Brown, Richard A. and J. D., to Coastal Research Corp. Revetment block. 3,347,048, 10–17–67, Cl. 61—8.

Brown, William R., to P. R. Mallory & Co. Inc. Switch adapter for providing selective operating conditions for the switch. 3,348,014, 10–17–67, Cl. 200—172.

Browning Industries, Inc.: *See*—
Browning, Val A. 3,346,985.

Browning, James N., to Collins Radio Co. Level wind for airborne trailing wire antenna parallel to the drum axis. 3,347,490, 10–17–67, Cl. 242—158.3.

Browning, James S.: *See*—
Rampacek, Carl, Browning, and McVay. 3,347,370.

Browning, Joseph B. Belt termination. 3,346,930, 10–17–67, Cl. 24—265.

Browning, Val A., to Browning Industries, Inc. Recoil absorbing means for firearms. 3,346,985, 10–17–67, Cl. 42—74.

Brugger, Kurt: *See*—
Zuppinger, Paul, Niklaus, Brugger, and Zwicky. 3,347,882.

Brundell & Jonsson Aktiebolag: *See*—
Wexell, Harry W. 3,347,291.

Brunins, Guntis, to United States of America, Army. AFC for diverse frequency sources. 3,348,164, 10–17–67, Cl. 331—2.

Bryan, William S., and G. S. Worchel, to The Bendix Corp. Method of forming a semiconductor by masking and diffusion. 3,347,720, 10–17–67, Cl. 148—187.

Buccino, Jerry M. Shock absorber booster. 3,347,541, 10–17–67, Cl. 267—34.

Buchmann, Fred J.: *See*—
Kimberlin, Charles N., Jr., Arey, and Buchmann. 3,347,625.

Buckeye Cellulose Corporation, The: *See*—
Nelson, Russell. 3,347,855.

Buckley, Robert A., to Ferro Corp. Mixtures of tin, lead and zinc naphthenates and octoates as catalysts for polyurethane foams. 3,347,804, 10–17–67, Cl. 260—2.5.

Buckley, Robert A., and F. C. Russo, deceased (by N. Russo, representative), to Ferro Corp. Transparent compositions comprising vinyl chloride polymer and unsaturated dicarboxylic acid. 3,347,823, 10–17–67, Cl. 260—45.85.

Bucourt, Robert, and A. Pierdet, to Roussel-UCLAF. 1'H-pyrazolo [3',4'; 17,16]-$\Delta^{4,9,11}$-estratriene 3-one and process for preparation thereof. 3,347,853, 10–17–67, Cl. 260—239.5.

Bullard Co., The: *See*—
Bullard, Edward P., III. 3,346,961.

Bullard, Edward P., III, to The Bullard Co. Program control. 3,346,961, 10–17–67, Cl. 33—18.

Bulpitt, Thomas H., to Textron Electronics, Inc. Apparatus for monitoring the intensity of a beam of radiant energy. 3,348,055, 10–17–67, Cl. 250—212.

Bultman, Frederick H.: *See*—
Hopkins, John D., Whittingham, Bultman, and Krause. 3,347,967.

Bundschuh, John J., to Eastman Kodak Co. Spindle and adapter combination. 3,347,485, 10–17–67, Cl. 242—86.3.

Bunish, Steve, W. A. Beasley, and T. H. Ling, to Anaconda Wire and Cable Co. Corrugated plastic covering for electrical cables. 3,346,921, 10–17–67, Cl. 18—14.

Bunker-Ramo Corp.: *See*—
Rosener, Harvey J. 3,348,208.

Bunn, Stuart E., and H. B. Owsley. Suction and discharge valve. 3,347,264, 10–17–67, Cl. 137—512.1.

Burger, Joseph P.: *See*—
Baker, Mark E., and Burger. 3,347,027.

Burgess, Douglas P., and G. A. Williams, to Cannon Mills Co. Fringe motion for shuttleless looms. 3,347,280, 10–17–67, Cl. 139—24.

Burhans, Stuart J.: *See*—
Stephens, Frederick N., Burhans, Warkoczewski, and Taylor, 3,347,225.

Burkholder, Joseph E.: *See*—
Young, Lewis J., and Burkholder. 3,347,692.

Burndept, Ltd.: *See*—
Taylor, Roy P., and Robb. 3,347,709.

Burndy Corp.: *See*—
Hus, Johannes, Scoran, and Zurheller. 3,347,977.

Burnett, Arthur H: *See*—
Lenk, James W., and Burnett. 3,347,161.

Burns, Douglas S., to American Home Products Corp. Container and lid assembly. 3,347,409, 10–17–67, Cl. 220—60.

Burroughs Corp.: *See*—
Engelman, Joseph H., and Witsell. 3,347,703.
Wallace, Richard A., and Deighton. 3,348,027.

Burroughs, Robert K., to The E. K. LeBlond Machine Tool Co. Method and apparatus for checking the straightness of machine tool ways and the like. 3,348,057, 10–17–67, Cl. 250—215.

Buser, Raoul C.: *See*—
Sepall, Ola, and Buser. 3,347,628.

Butcher, Le Roy C., to The Youngstown Steel Door Co. Railroad car side sill construction. 3,347,175, 10–17–67, Cl. 105—409.

Butler Enterprises, Inc.: *See*—
Parrish, Kermit S. 3,346,997.

Buyken, Frank E. Waler bracket. 3,347,510, 10–17–67, Cl. 248—205.

Buzzelli, Frank D Garment construction and hanger for such garment. 3,346,879, 10–17–67, Cl. 2—90.

CF & I Steel Corp.: *See*—
Preston, Howard K., Jr. 3,347,005.

CSF—Compagnie Generale de Telegraphic sans Fil: *See*—
Dubard, Louis. 3,348,172.

Cahoon, Nelson C.: *See*—
Krivanek, Frank J., and Cahoon. 3,347,706.

California Almond Growers Exchange: *See*—
Feiling, John M. 3,347,295.

Callender's Cables Ltd.: *See*—
Bielstein, George P. R., and Martin. 3,347,098.

Callery Chemical Co.: *See*—
Lee, Henry L., Jr. 3,347,827.
Wunz, Paul R., Jr., and Stang. 3,347,931.

Calumet & Hecla, Inc.: *See*—
Somer, Fritz. 3,346,887.

Campbell, Gary L., to Deere & Co. Locking device for adjustable vehicle seats. 3,347,512, 10–17–67, Cl. 248—429.

Campbell, James S.: *See*—
Willis, Wilfred E. 3,347,427.

Canada Packers Ltd.: *See*—
Nordin, Henry R. 3,347,679.

Canadian Westinghouse Co., Ltd.: *See*—
Veitch, Robert A. 3,348,179.

Cannon Mills Co.: *See*—
Burgess, Douglas P., and Williams. 3,347,280.

Cantor, Clarence, to United States of America, National Aeronautics and Space Administration. Amplifier clamping circuit for horizon scanner. 3,348,053, 10–17–67, Cl. 250—206.

Cape Marine Propulsion Ltd.: *See*—
Warren, Reginald. 3,347,045.

Caporali, Giorgio, N. Giordano, N. Ferlazzo, and Q. Ottaviani, to Montecatini Edison S.p.A. Catalytic process for the preparation of nitriles. 3,347,899, 10–17–67, Cl. 260—465.3.

Capsuto, Leon M., and F. E. Davis, Jr., to Mobil Oil Corp. Method of stabilizing platinum group metal reforming catalyst. 3,347,782, 10–17–67, Cl. 208—138.

Carboni, Ralph J. Checker map game. 3,347,550, 10–17–67, Cl. 273—130.

Carl, Henry A., and R. C. Foster, Jr., to General Electric Co. Combination jet exhaust nozzle and thrust reverser. 3,347,467, 10–17–67, Cl. 239—265.31.

Carle, Robert A.: *See*—
Motsenbocker, James A., Matthews, Morgan, and Carle. 3,347,405.

Carlevaro, Ugo. Floorless, two seat cabin for cableways. 3,347,173, 10–17–67, Cl. 104—173.

Carlson, David J., and G. E. Theriault, to Radio Corp. of America. Electrical circuit employing an insulated gate field effect transistor having output circuit means coupled to the substrate thereof. 3,348,062, 10–17–67, Cl. 307—88.5.

Carlson, Elmer V., to Industrial Research Products, Inc. Shock resistant transducer. 3,347,991, 10–17–67, Cl. 179—114.

Carlson, Heins F., to FMC Corp. Plate inverting apparatus. 3,347,349, 10–17–67, Cl. 198—33.

Carlson, Lee A.: *See*—
Nelson, George R., and Carlson. 3,347,670.

Carlson, Marvin J., W. J. Dobeus, N. G. Olsen, and T. E. Rolls, to Allis-Chalmers Mfg. Co. Pivot construction. 3,347,577, 10–17–67, Cl. 287—100.

Carlson, Marvin T.: *See*—
Long, Donald A., Shaw, and Carlson. 3,348,011.

Carlson, Robert L.: *See*—
Crafts, Cecil A., and Carlson. 3,348,149.

Carlstrom, John D., to Massey-Ferguson, Inc. Means for varying wheel spacing. 3,347,598, 10–17–67, Cl. 301—9.

Carmi, Arieh, and T. J. Rayeski, to Corning Glass Works. Clamping device. 3,347,653, 10–17–67, Cl. 65—307.

Carpenter, Victor W., C. E. Ward, and M. F. Littmann, to Armco Steel Corp. Method for improving the magnetic properties of ferrous sheets. 3,347,718, 10–17–67, Cl. 148—111.

Carpenter, William T., to Gaston County Dyeing Machine Co. Method the continuous fluid treatment of running web material. 3,346,893, 10–17–67, Cl. 8—151.

Carr, Charles H., and J. E. Beanblossom, to Hooker Chemical Corp. Continuous process for manufacture of trihalophenols. 3,347,937, 10–17–67, Cl. 260—623.

Carro Copper & Brass Co.: *See*—
Somer, Fritz. 3,346,887.

Carroll, John H., to Union Carbide Corp. Level indicator for determining height of solid material in a storage vessel. 3,348,004, 10–17–67, Cl. 200—61.2.

Carrubba, Robert V., and R. L. Golden, to Halcon International, Inc. Preparation of anilines from oxygenated cyclohexanes. 3,347,921, 10–17–67, Cl. 260—581.

Carter, Harry T. Variable connector. 3,347,573, 10–17–67, Cl. 287—14.

Case, J. I., Co.: *See*—
Hinke, Jerald D. 3,347,108.

Caserio, Frederick F., Jr.: *See*—
Goodrow, Marvin H., Wagner, and Caserio. 3,347,800.

Cassagne, Pierre: *See*—
Melchior, Gerard, and Cassagne. 3,348,168.

Cassella Farbwerke Mainkur Aktiengesellschaft: *See*—
Bender, Heinz, Fleischhauer, and Beyerle. 3,347,843.

Castaner, Juan: *See*—
Ballester, Manuel, Castaner, and Riera. 3,347,941.

Caterpillar Tractor Co.: *See*—
Horsch, Joachim. 3,347,042.
Medley, Jackson C. 3,347,044.
Ramsel, Charles A. 3,347,113.
Rogers, Charles H., Kronenberg, Olson, and Hebner. 3,347,345.

Cavender, Floyd W., to Alberto-Culver Co. Shipping carton and mounting means therefor. 3,347,355, 10–17–67, Cl. 206—45.24.

Celanese Corp.: *See*—
Moelter, Gregory M. 3,347,969.

Celorio Mendoza, Fausto. Machines for preparing food products from dough. 3,347,177, 10–17–67, Cl. 107—14.

Celorio Mendoza, Fausto. Kneading machines. 3,347,178, 10–17–67, Cl. 107—36.

Central States Can Corp., The: *See*—
Henning, George J., and Scalia. 3,346,948.

Certain-Teed Fiber Glass Corp.: *See*—
Krakauer, Sidney, Musikant, and Rosenberg. 3,347,648.
Stephens, Frederick N., Burhans, Warkoczewski, and Taylor. 3,347,725.

Cessna Aircraft Co., The: *See*—
Freese, Evans G. 3,347,043.

Chaloupka, Miloslav J., to Odex Engineering Co. Telephone call-responsive automatic telemetering system. 3,347,987, 10–17–67, Cl. 179—2.

Chalpin, Edward S., and D. E. Hanson, to Metal Bellows Corp. Low-cost manufacture of flexible torque coupling. 3,346,945, 10–17–67, Cl. 29—436.

Chamberlin, Richard S., to Westinghouse Electric Corp. Ring counter using semiconductor switching devices. 3,348,071, 10–17–67, Cl. 307—88.5.

Chandler Evans Inc.: *See*—
Wright, Alexander M. 3,347,494.

Chang, Chien-Hshuing. Imitation cigarette. 3,347,231, 10–17–67, Cl. 128—201.

Chang, Leo S., E. Turi, and N. A. Lindo, to Allied Chemical Corp. Thermally stabilized halogenated polyolefin compositions. 3,347,820, 10–17–67, Cl. 260—45.8.

Charbonneaux, Wilson A., and G. S. Hansley, to WacLine, Inc. Recording apparatus. 3,346,970, 10–17–67, Cl. 35—48.

Chase Brass & Copper Co.: *See*—
Somer, Fritz. 3,346,887.

Cheape, Dudley W., Jr., to Monsanto Co. Methods for relaxing synthetic fiber filaments. 3,346,932, 10–17–67, Cl. 28—72.

Chechak, Albert J., to Eastman Kodak Co. Synthesis of quaternary phosphonium salts. 3,347,932, 10–17–67, Cl. 260—606.5.

Checkley, David M.: *See*—
Skogland, Thorbjorn, and Checkley. 3,348,021.

Chemische Fabrik Kalk G.m.b.H.: *See*—
Jenkner, Herbert. 3,347,822.

Chemische Werke Albert: *See*—
Zimmermann, Rolf. 3,347,806.

Chesnel, Pierre M. A.: *See*—
Baks, Claude L., and Chesnel. 3,347,164.

Chevron Research Co.: *See*—
Adams, Robert T. 3,347,947.
Lindquist, Robert H., and Egan. 3,347,780.

Chicago Aerial Industries, Inc.: *See*—
Singer, Joseph, Jr. 3,347,649.

Chicago Specialty Mfg. Co.: *See*—
Gore, William C., and Shapiro. 3,347,118.

Childress, Albert F. Sound suppressor with baffle grids arranged across fluid stream passageway. 3,347,338, 10–17–67, Cl. 181—56.

Chisholm, Roy D.: *See*—
Lewis, Walter E., and Chisholm. 3,348,023.

Chmura, Gene. Sliding window lock. 3,347,585, 10–17–67, Cl. 292—294.

Christ, Martin: *See*—
Goergen, Karl. 3,347,453.

Chrysler Corp.: *See*—
Folkerts, Walter E. 3,346,937.
Hill, Dale H. 3,347,723.

Ciba Ltd.: *See*—
Rhyner, Paul, and Ramanathan. 3,347,844.
Ulrich, Paul, Hoelzle, Stahel, and Schaub. 3,347,617.
Zuppinger, Paul, Niklaus, Brugger, and Zwicky. 3,347,882.

Cielo, John R., to International Business Machines Corp. Split primary inverter. 3,348,124, 10–17–67, Cl. 321—45.

Cincinnati Milling Machine Co., The: *See*—
Wiatt, Jame G. 3,347,121.

Clancy, John J., to Arthur D. Little, Inc. Method of forming an electrostatic printing base. 3,347,702, 10–17–67, Cl. 117—201.

Clardy, Edwin K., and R. W. Michael, to Phillips Petroleum Co. Digital computer set point control system. 3,348,032, 10–17–67, Cl. 235—151.1.

Clark Equipment Co.: *See*—
Steelman, Melvin W. 3,347,145.

Clark, Frederick G., to Magna Driver Corp. Removable bit construction for screwdrivers and the like. 3,347,293, 10–17–67, Cl. 145—50.

Clark, Keith J., to Imperial Chemical Industries Ltd. Polymers and articles. 3,347,838, 10–17–67, Cl. 260—93.7.

Clark, Kenneth M.: *See*—
Mowry, David R., and Clark. 3,348,005.

Clark, Milton B., and W. G. Darland, Jr., to Union Carbide Corp. Method of making fuel cell electrodes. 3,347,668, 10–17–67, Cl. 75—201.

Clark, Wesley I., B. Grigg, D. D. Hays, and G. F. Jacky, to United States of America, Atomic Energy Commission. Anodic protection for plating system. 3,347,768, 10–17–67, Cl. 204—196.

Clauer, Calvin K., and R. L. Erdmann, to International Business Machines Corp. Quantitative image measurement process for printed material. 3,347,131, 10–17–67, Cl. 88—14.

Clayton, John W., Jr.: *See*—
Sullivan, Gerald L., and Clayton. 3,348,157.

Cleff, Herbert, to Dorken & Mankel K.G. Door stay. 3,347,582, 10–17–67, Cl. 292—178.

Clerk, King, Poynter & Co. Ltd.: *See*—
Clerk, Robert C. 3,347,082.

Clerk, Robert C., to Clerk, King, Poynter & Co. Ltd. Gear forging. 3,347,082, 10–17–67, Cl. 72—362.

Cleveland-Detroit Corp.: *See*—
Breisch, John H. 3,347,431.

Clifford, Richard F.: *See*—
Barr, John D., and Clifford. 3,347,985.

Clifford, Richard P., to TRW Inc. Differential radiometer having high and low absorption characteristics. 3,348,047, 10–17–67, Cl. 250—83.3.

Clontz, Magorie: *See*—
Sharp, Edward J. 3,347,586.

Coastal Research Corp.: *See*—
Brown, Richard A. and J. D. 3,347,048.

Coddington, George H.: *See*—
Akers, Sheldon B., Jr., and Coddington. 3,348,197.

Codling, John W. Hemostatic clasp. 3,347,239, 10–17–67, Cl. 128—325.

Coffey, Robert S., and H. G. Lawley, to Imperial Chemical Industries Ltd. Production of oxygen-containing organic compounds. 3,347,763, 10–17–67, Cl. 204—158.

Cofield, William W.: *See*—
Topper, Robert L., Cofield, Foster, Woebcke, and Koehnken. 3,347,599.

Cogan, Samuel: *See*—
Epstein, Herman, and Cogan. 3,347,481.

Coggeshall, Almy D., L. A. Mailhotte, and R. L. Winchester, to General Electric Co. Spring tightened generator end turn support construction. 3,348,085, 10–17–67, Cl. 310—260.

Colas, Francois J. P. M. S=stem of goods handlings by means of flexible pallets using lift trucks or other lifting devices. 3,347,185, 10–17–67, Cl. 108—51.

Colburn, James H., and Hanchett, Leland J., Jr., to General Electric Co. Signal detection circuit. 3,348,201, 10–17–67, Cl. 340—146.3.

Goldren, Daniel R., and R. R. Lau, to AMP Inc. Electrical connector. 3.348,189, 10–17–67, Cl. 339—32.

Coleman Co., Inc., The: *See*—
Soroos, James P., and Regan. 3,347,591.

Coleman Instruments Corp.: *See*—
Staunton, John J. J. 3,347,615.

Colgate-Palmolive Co.: *See*—
Migliarese, Joseph F. 3,347,233.

Collidge, Sollace B., Jr., and J. D. Czarnecki, to The Sherwin-Williams Co. Container closure having integral tear strips. 3,347,407, 10–17–67, Cl. 220—54.

Collins, John G., and B. G. Stinson, to United States of America, Army. Maximum minimum depth gage. 3,347,097, 10–17–67, Cl. 73—315.

Collins Radio Co.: *See*—
Browning James N. 3,347,490.

Collins, Samuel C. Hydroplane vessel. 3,347,198, 10–17–67, Cl. 114—66.5.

Collura, Francesco: *See*—
Sellen, Carl R., and Collura. 3,347,487.

Columbia Ribbon and Carbon Mfg. Co., Inc.: *See*—
Newman, Douglas A. 3,347,696.

Columbian Carbon Co.: *See*—
Parker, Lynn. 3,347,632.

Combustion Engineering, Inc.: *See*—
West, John M., Bevilacqua, and Snider. 3,347,747.

Commissariat a l'Energie Atomique: *See*—
Dreyfus, Gaspard, and Le Nabour. 3,347,605.
Rouillard, Joseph, and Vertut. 3,347,111.

Communications Patents Ltd.: *See*—
Marvin, Ronald A. 3,346,969.

Comolli, Carl R.: *See*—
Van Wanderham, Marvin C., Worthley, and Comolli. 3,347,057.

Compagnie de Saint-Gobain: *See*—
Jorgensen, Pierre. 3,348,199.

Compagnie Francaise de Television: *See*—
Melchior, Gerard, and Cassagne. 3,348,168.

Compagnie Francaise Thomson Houston-Hotchkiss Brandt: *See*—
Touze, Pierre. 3.347,477.

Comptoir Lyon-Alemand, Louyot & Cie: *See*—
Lacroix, Roger, and Beciler. 3,347,757.

Compton, James A., J. D. Allen, and R. G. Holt, to Fawick Corp. Proportional flow divider combiner. 3,347,254, 10–17–67, Cl. 137—101.

Congelli, Henry C., and G. W. Hays, to American Machine & Foundry Co. Automated fryer. 3,347,152, 10–17–67, Cl. 99—334.

Conlisk, John R., to Atlas Chemical Industries, Inc. Color comparing device. 3,347,132, 10–17–67, Cl. 88—14.

Conlon, Willard S. Revolving table capable of being dismantled. 3,347,369 10–17–67, Cl. 209—124.

Consolo, Ralph, G. Wheel and tire washing apparatus. 3,346,-895, 10–17–67, Cl. 15—21.

Container Corp. of America: *See*—
De Paul, Richard E. 3,347,366.
Kossnar, Dennis. 3,347,356.

Continental Can Co., Inc.: *See*—
Adomaitis, Domas, and Sellers. 3,347,957.
Fields, Charles M. 3,346,920.
Piazze, Thomas E. 3,347,013.

Continental/Moss-Gordin, Inc.: *See*—
Phillips, Rufus K. 3,347,102.

Control Data Corp.: *See*—
Malcolm, Donald H., and Green. 3,348,207.

Cook, Harold C. Edger picker. 3,347,290, 10–17–67, Cl. 143—37.

Coole, Peter J., to Cradle Runways Ltd. Cradles used on buildings and the control and installation thereof. 3,347,-339, 10–17–67, Cl. 182—14.

Coolidge, Sollace B., Jr., and J. D. Czarnecki, to The Sherwin-Williams Co. Container closure having integral tear strips. 3,347,407, 10–17–67, Cl. 220—54.

Cooper, Brian, to Firth Cleveland Ltd. Hand-held electric hair dryer. 3,348,020, 10–17–67, Cl. 219—370.

Cooper, John M.: *See*—
Bass Patrick, and Cooper. 3,347,982.

Corbett, Herbert O.: *See*—
Quackenbush, John J., and Corbett. 3,347,443.

Corning Glass Works: *See*—
Carmi, Arieh, and Rayeski. 3,347,653.
Giffen, James W. 3,347,852.

Cornwell, Woodrow D. Suspended bait lure. 3,346,987, 10–17–67, Cl. 43—43.15.

Corseplus, Horst: *See*—
Ismail, Roshdy, Corseplus, and Simonis. 3,347,848.

Cosden, Bryan L. Roof shingle with interlocking flanges and locator. 3,347,001, 10–17–67, Cl. 52—105.

Courneya, Calice G., and J. W. Todd, to Minnesota Mining and Mfg. Co. Sectional spool linear valve. 3,347,269, 10–17–67, Cl. 137—625.48.

Courtney, William J.: *See*—
Lavelle, Joseph E., Courtney, and Denholm. 3,347,604.

Couture, George A. E. Straightening machine. 3,347,073, 10–17–67. Cl. 72—15.

Covert, Peter H., and J. J. Gilbert, to Atlantic Microfilm Corp. Apparatus for making microfiche. 3,347,734, 10–17–67, Cl. 156—562.

Cowley, Clement W.: *See*—
Rinfret, Arthur P., Cowley, and Doebbler. 3,347,745.

Cradle Runways Ltd.: *See*—
Coole, Peter J. 3 347,339.

Crafta, Cecil A., and R. L. Carlson, to Robertshaw Controls Co. Serial to diplex conversion system. 3,348,149, 10–17–67, Cl. 325—30.

Cramer Industries, Inc.: *See*—
Walkinshaw, Thomas G. 3,347,593.

Cranage, Bidwell C., to Stile-Craft Manufacturers, Inc. Pressure equalizing flow control valve. 3,347,270, 10–17–67, Cl. 137—630.15.

Crane Packing Co.: *See*—
Domeny, Steven. 3,347,124.

Crane Co.: *See*—
Hutchinson, Gilbson T. 3,347,741.

Crane Packing Ltd.: *See*—
Wilkinson, Samuel C. W. 3,347 726.

Cresap, Wesley L., and R. R. Lynn, to Bell Aerospace Corp. Rotor system. 3,347,320, 10–17–67, Cl. 170—160.26.

Cress, Hobart A.: *See*—
Ahlbeck, Donald R., and Cress. 3,347,135.

Cripps, Harry N., to E. I. du Pont de Nemours and Co. Compositions and process. 3,347,676, 10–17–67, Cl. 96—115.

Cronin, John W., Jr., and V. E. Loyer, to Sargent Industries, Oil Well Equipment Division. Rotary well pump. 3,347,169, 10–17–67, Cl. 103—117.

Crouse-Hinds Co.: *See*—
Berry, Richard C. 3 348,103.

Cruson, Marion J. Child's rideable tank. 3,347,557, 10–17–67, Cl. 280—1.11.

Culligan, Inc.: *See*—
Staats, William A. 3,347,785.

Cundiff, Kenneth K. Tape-type bed springs. 3,346,891, 10–17–67. Cl. 5—220.

Cunningham, Zed. Telephone handset holder. 3,347,998, 10–17–76, Cl. 179—157.

Cupp, Charles D., to Scott Aviation Corp. Underwater talking hood. 3,347,230, 10–17–67, Cl. 128—147.

Curlett, John, and R. A. Gurries, to Gurries Mfg. Co. Level control mechanism for road building machines. 3,346,976, 10–17–67, Cl. 37—156.

Curran, Robert E. Faucet structures. 3,347,518, 10–17–67, Cl. 251—333.

Cuthbert, Victor W.: *See*—
Brenner, Robert A., and Cuthbert. 3,347,068.

Cymmer, Thomas, and N. Fried, to United States of America, Navy. Grip for compression testing. 3,347,091, 10–17–67, Cl. 73—103.

Cymmer, Thomas, and R. Raphael, to United States of America, Navy. Guide for faired cable. 3,347,526, 10–17–67, Cl. 254—190.

Czarnecki, John D.: *See*—
Collidge, Sollace B., Jr., and Czarnecki. 3,347,407.

Dahlberg, William F., to Goodman Mfg. Co. Oscillating screens. 3,347,313, 10–17–67, Cl. 209—315.

Dahlem, Peter, to Lindemann Maschinenfabrik G.m.b.H. Metal shears. 3,347,122, 10–17–67, Cl. 83—157.

Dahms, James B., and B. P. Edmonds, to Pittsburgh Plate Glass Co. Establisuing communication between bore holes in solution mining. 3,347,595, 10–17–67, Cl. 299—4.

Daines, Geoffrey A., to Westinghouse Electric Corp. Automatic coil feed for sealed beam lamps. 3,347,414, 10–17–67, Cl. 221—200.

Dale, George W.: *See*—
Perkins, Glen E., and Dale. 3,347,139.

Danfoss A/S: *See*—
Vind, Holger V. 3,347,451.

Daniel, Benjamin S., to Techniservice Corp. Helically convoluted strand. 3,347,036, 10–17–67, Cl. 57—140.

Dannatt, Hugh St. L., to Sperry Rand Corp. Relay storage units. 3,348,206, 10–17–67, Cl. 340—172.5.

Darak, Michael S., Jr., to Rockwell-Standard Corp. Buffing wheel. 3,346,903, 10–17–67, Cl. 15—230.1.

Darland, William G., Jr.: *See*—
Clark, Milton B., and Darland. 3,347,668.

Davidson, Louis H. Head rest. 3,346,934, 10–17–67, Cl. 29—91.1.

Davies, Alwyn G., to M & T Chemicals, Inc. Triorganotin carbodiimides and isoureas and the preparation thereof. 3,347,890, 10–17–67, Cl. 260—429.7.

Davis, Francis E., Jr.: *See*—
Capsuto, Leon M., and Davis. 3,347,782.

Davis, Thomas G.: *See*—
Thompson, John W., and Davis. 3,347,791.

Dawson, James E., to The Young Machinery Co., Inc. Solids flow equaliser. 3,347,534, 10–17–67, Cl. 259—180.

Day, J. H., Co., The: *See*—
Frei, Charles H. 3,347,374.

Deal, Carl H.: *See*—
Papadopoulos, Michael N., and Deal. 3,347,621.

Death, Frank S., and J. A. Morcio, to Union Carbide Corp. Method of contacting slag with a reducing arc atmosphere to reduce the metal oxides contained therein. 3,347,766, 10–17–67, Cl. 204—164.

De Back, Lewis J.: *See*—
Parkinson, Robert C., Marks, Gaa, and De Back. 3,348,185.

Deere & Co.: *See*—
Campbell, Gary L. 3,347,512.
Lindstrom, Harold R., and Beldin. 3,347,350.
Sullivan, James F. 3,347,540.

Deering Milliken Research Corp.: *See*—
Ellison, William M., Jr., Fuller, and Poston. 3,347,035.
Sanders, Grady H., and McCollough. 3,347,033.
Smith, Philip N., and Wharton. 3,348,222.

De Gelder, Jacob: *See*—
Ryan, John W., Adickes, and De Gelder. 3,346,989.

Degener, Eberhard: *See*—
Schmelzer, Hans-Georg, and Degener. 3,347,859.

De Gray, Richard J., and L. N. Killian, to The Standard Oil Co. Preservation of kerosine during distribution and storage. 3,347,646, 10–17–67, Cl. 44—76.

De Haes, Louis M., and F. H. Deschamps, to Gevaert Photo-Producten N.V. Process of forming images according to the silver complex diffusion transfer process. 3,347,674, 10–17–67, Cl. 96—29.

Deighton, William W.: *See*—
Wallace, Richard A., and Deighton. 3,348,027.

Deleuze, Antoine, and R. G. L. Gulling, to Rhone-Poulenc S.A. Extrusion die. 3,346,918, 10–17–67, Cl. 18—12.

Dellinger, Basil W., 50% to L. W. Graham. Electrical alphabetical and numerical educational machines. 3,346,968, 10–17–67, Cl. 35—6.

De Long, Max M., B. A. Stout, and S. K. Ries, to Board of Trustees of Michigan State University. Cucumber harvester. 3,347,031, 10–17–67, Cl. 56—327.

De Marco, Carlo G., and G. M. Dias, to United States of America, Army. Novel water and oil-resistant fibrous structures, processes and compositons therefor, 3,347,812, 10–17–67, Cl. 260—29.6.

Denholm, Alec S.: *See*—
Lavelle, Joseph E., Courtney, and Denholm. 3,347,604.

Denman, Wayne L.: *See*—
Koegemann, Victor E., Denman, and Friedman. 3,347,797.

Dennis, John L., to Avco Corp. Temperature-compensated discriminator providing amplification. 3,348,158, 10–17–67, Cl. 329—141.

Dennison Mfg. Co.: *See*—
Nelson, George R., and Carlson. 3,347,670.

Dentists' Supply Co. of New York, The: *See*—
Heathe, William R. 3,347,330.

De Paul, Richard E., to Container Corp. of America. Can carrier having retaining tab with gusset. 3,347,366, 10–17–67, Cl. 206—65.

De Ridder, William. Apparatus for depanning bread loaves. 3,347,400, 10–17–67, Cl. 214—314.

Deschamps, Fernand H.: *See*—
De Haes, Louis M., and Deschamps. 3,347,674.

De Soto, Aldo J., and A. Rivera, to Gabriel Container Co. Article display carton. 3,347,357, 10–17–67, Cl. 206—45.31.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler and Heraeus, W. C. G.m.b.H.: *See*—
Bredereck, Hellmut, Fohlisch, and Franz. 3,347,954.

De Vito, Charles P., to Alcon Metal Products, Inc. Electrical terminal with multiple sets of retaining fingers. 3,348,192, 10–17–67, Cl. 339—258.

Diamond Alkali Co.: *See*—
Taylor, Kirman. 3,347,624.

Dias, Gil M.: *See*—
De Marco, Carlo G., and Dias. 3,347,812.

Diassi, Patrick A.: *See*—
Bacso, Imre, and Diassi. 3,347,879.
Neidleman, Saul L., Pan, and Diassi. 3,347,927.

Dick, A. B., Co.: *See*—
Kalman, Peter G. 3,347,669.

Dick, Clarence R.: *See*—
Asuby, Theodore L., and Dick. 3,347,802.

Dickinson, Lloyd R., and J. E. Higginson, to McKinney Mfg. Co. Hinge with laterally spaced barrels. 3,346,910, 10–17–67, Cl. 16—163.

Dickson, John. Game board. 3,347,460, 10–17–67, Cl. 235—90.

Dickson, Woodrow J., and F. W. Jenkins, to Petrolite Corp. Treatment of oil wells. 3,347,789, 10–17–67, Cl. 252—8.55.

Dieck, William W., J. S. Rengert, and D. E. Winkler, to Eastman Kodak Co. Method and apparatus for casting a liquid composition. 3,347,962, 10–17–67, Cl. 264—90.

Diemer, Gesinus, to North American Philips Co., Inc. Photosensitive semiconductor device employing induced space charge generated by photosensor. 3,348,074, 10–17–67, Cl. 307—88.5.

DiGiorgio, Rocco F. Exhaust gas purifier device. 3,347,217, 10–17–67, Cl. 123—119.

Digital Sensors Inc.: *See*—
Griswold, Lee M., Shiells, and Uter. 3,348,017.

Dildilian, Ara T., to Fiber Glass Industries, Inc. Double backed pile carpets of glass-plastic backings. 3,347,785, 10–17–67, Cl. 161—66.

Dill, Dale R., to Monsanto Co. 7-(2,6,6,8-tetramethyl-4-oxa-3-oxo-nonyl)-benzyl phthalate. 3,347,906, 10–17–67, Cl. 260—47.

Dill, Thomas, and J. G. Mitchell, to Mobil Oil Corp. Method and system for cracking hydrocarbons. 3,347,778, 10–17–67, Cl. 208—74.

Di Losa, Vincent J.: *See*—
Laughlin, Charles R., Jr., and Di Losa. 3,348,152.

Di Monico, George S.: *See*—
Lovas, Stephen, and Di Monico. 3,347,011.

Dischler, Helmut: *See*—
Engelen, Heinz, Dischler, and Albert. 3,347,327.

Distillers Co., Ltd., The: *See*—
Snell, Ronald C. 3,347,756.

Dobbyn, Geoffrey F., to Pneumatic Seale Corp. Adhesive applying device. 3,347,205, 10–17–67, Cl. 118—7.

Dobeus, William J.: *See*—
Carlson, Marvin J., Dobeus, Olsen, and Rolls. 3,347,577.

Dock, Nils, and L. Erlesand, to Aktiebolaget Svenska Flaktfabriken. Wet separator with venturi-shaped gas channels. 3,347,024, 10–17–67, Cl. 55—241.

Doebbler, Gerald F.: *See*—
Rinfret, Arthur P., Cowley, and Doebbler. 3,347,745.

Doelling, George L., J. A. Siefker, E. J. Schwoegler, and R. E. Putscher, to Tung-Sol Electric, Inc. Brake fluid. 3,347,796, 10–17–67. Cl. 252—75.

Doherty, Norman R., to Electric Stapler Corp. Electrically actuated fastener driving tool. 3,347,438, 10–17–67, Cl. 227—131.

Doherty, Norman R., to Electric Stapler Corp. Compression type fastening tool having interchangeable components. 3,347,439, 10–17–67, Cl. 227—109.

Doherty, Norman R., to Electric Stapler Corp. Electric fastening tool having interchangeable components and driver blade. 3,347,440, 10–17–67, Cl. 227—131.

Doherty, Norman R., to Electric Stapler Corp. Electric fastening tool. 3,347,441, 10–17–67, Cl. 227—131.

Dole Valve Co., The: *See*—
Erickson, Howard L., and McCarty. 3,348,178.

Dollinger, Robert E., L. V. Wilson, and F. T. Sherk, to Phillips Petroleum Co. Heat recovery in thermal conversion process. 3,347,949, 10–17–67, Cl. 260—679.

Dolphin, Benjamin C.: *See*—
Keska, Kenneth R., Mackey, and Dolphin. 3,347,078.

Domeny, Steven, to Crane Packing Co. Cutter for packing dispenser. 3,347,124, 10–17–67, Cl. 83—609.

Dominon Electric Corp.: *See*—
Sutton, Earl E. 3,347,153.

Dommann, Günther, and M. Floter, to Gewerkschaft Eisenhutte. Traveling hydraulic mine roof propping apparatus. 3,347,050, 10–17–67, Cl. 61—45.

Donnelly Mirrors, Inc.: *See*—
Strengholt, Roy D. 3,347,008.

D'Onofrio, Anthony, to Pratt & Whitney Inc. System for remotely controlling the operation of a plurality of motors. 3,348,108, 10–17–67, Cl. 318—16.

Donoghue, Robert J. Multi-compartment container for dispensing measured quantities of a plurality of liquids. 3,347,420, 10–17–67, Cl. 222—129.

Dore, John L., Co.: *See*—
Weeden, Frank G., Jr., and Graves. 3,347,568.

Dorken & Mankel K.G.: *See*—
Cleff, Herbert. 3,347,582.

Dortenzo, Alexander T.: *See*—
Mitchell, Hartman, and Dortenzo. 3,347,539.

Dow Chemical Co., The: *See*—
Ashby, Theodore L., and Dick. 3,347,802.
Lennox, Forrest R. 3,346,917.
Rausch, Douglas A. 3,347,911.
Russell, David L. 3,347,961.
Seyferth, Dietmar. 3,347,888.
Wang, Samuel S. M. 3,347 861.
Wang, Samuel S. M. 3,347,862.
Young, Lewis J., and Burkholder. 3,347,692.

Downey, John F., and M. S. Simon, to Polaroid Corp. Photographic products, processes and compositions. 3,347,672, 10–17–67, Cl. 96—29.

Downey, John F., to Polaroid Corp. Photographic products, processes and compositions. 3,347,673, 10–17–67, Cl. 96—29.

Doyle, George A., to Motorola, Inc. Plastic package full wave rectifier. 3,348,105, 10–17–67, Cl. 317—234.

Doyle, James J., A. J. Sarka, and F. C. Tancredi, to American Telephone and Telegraph Co. Stock quotation switching system utilizing calling rate detection means. 3,347,990, 10–17–67, Cl. 179—6.

Drengler, George R., to Union Carbide Corp. Fuel cell battery containing metal coated carbon electrodes. 3,347,708, 10–17–67, Cl. 136—86.

Dreyfus, Gaspard, and M. P. Le Nabour, to Commissariat a l'Energie Atomique. Fluid bearing. 3,347,605, 10–17–67, Cl. 308—122.

Dreyfus, Joseph. Directional pointer for a golf tee. 3,347,551, 10–17–67, Cl. 273—183.

Dryster Corp.: *See*—
Brand, Paul M. 3,348,006.

Dubard, Louis, to CSF-Compagnie Generale de Telegraphic sans Fil. Shear-wave steel ultrasonic delay line. 3,348,172, 10–17–67, Cl. 333—30.

Dubbs, David F.: *See*—
Jones, Odell J., Page, and Dubbs. 3,347,885.

Duffield, Joseph F. to Smith & Stone Ltd. Indicator light assembly. 3,348,221, 10–17–67, Cl. 340—381.

Dunn, Victor R. Pipe jacket construction. 3,347,276, 10–17–67, Cl. 138—166.

Du Pont de Nemours and Co., E. I.: *See*—
Arthur, Wilfred J. 3,347,917.
Ballester, Manuel, Castaner, and Riera. 3,347,941.
Ballester, Manuel, and Riera. 3,347,940.
Bissot, Thomas C. 3,347,811.
Boswell, George A. 3,347,878.
Cripps, Harry N. 3,347,676.
Fenley, Thomas D. 3,347,960.
Frazer, August H. 3,347,826.
Fritz, Charles G., and Warnell. 3,347,901.
Gladding, Edward K., and Robinson. 3,347,817.
Gmitro, Thomas M. 3,347,697.
Harford, Edward F. 3,347,737.
Harris, John F., Jr. 3,347,765.
Hatala, Robert J. 3,347,814.
Howe, King L. 3,347,818.
Hutton, David G. 3,347,021.
Inman, Byron N. 3,347,267.
Johnson, Paul R. 3,347,810.
Lorenz, John C. 3,347,835.
Luckenbaugh, Raymond W. 3,347,658.
MacDonald, Robert N. 3,347,829.
Martin, Elmore L. 3,347,919.
Myers, Arthur F. 3,347,774.
Peterson, Marvin L. 3,347,898.
Quarles, Charles C. 3,347,022.
Short, Oliver A., and White. 3,347,815.
Smiley, Robert A. 3,347,903.
Smiley, Robert A. 3,347,904.
Smith, John F. 3,347,837.
Snyder, James M. 3,347,662.
Tullock, Charles W. 3,347,644.
Wagner, Charles W. 3,347,799.
Vasta, Joseph A. 3,347,951.

Du Priest, Florence. Pillow and pillow holder. 3,346,892, 10–17–67, Cl. 5—325.

Dupuy, Harold P.: *See*—
Rayner, Eric T., Eaves, and Dupuy. 3,347,886.

Dutcher, Dennis L.: *See*—
Massey, Phillip S., Matthews, and Dutcher. 3,347,256.

Dyer, Cecil R. Rack for trash barrels. 3,347,507, 10–17–67, Cl. 248—147.

Dykes, Ralph E., and R. M. Mitchell, to General Foods Corp. Tetrahedral packaging means and method of making same. 3,347,363, 10–17–67, Cl. 206—65.

Dynamit Nobel Aktiengesellschaft: *See*—
Riegelmayer, Peter. 3,346,946.
Nebel, Ilse U., and Bier. 3,347,813.

Earp, James F.: *See*—
Allen, Robert J., Monroe, Egleston, and Earp. 3,347,017.

Eastman Kodak Co.: *See*—
Barnes, Edgar S. 3,347,088.
Bell, Alan, and Lappin. 3,347,938.
Bundschub, John J. 3,347,485.
Chechak, Albert J. 3,347,932.
Dieck, William W., Rengert, and Winkler. 3,347,962.
Henn, Richard W., and Miller. 3,347,675.
Martin, James C. 3,347,868.
Nerwin, Hubert. 3,347,134.
Salminen, Wilho M. 3,347,671.
Steisslinger, Kurt. 3,347,142.
Stimson, Allen G., and Pickens. 3,348,054.
Thompson, John W., and Davis. 3,347,791.
Wood, Lawrence M. 3,348,188.

Eastman Machine Co.: *See*—
Ulrich, Lester J. 3,346,954.

Eaton Yale & Towne Inc.: *See*—
Stuemky, Robert E. 3,347,061.

Eaves, Paul H.: *See*—
Rayner, Eric T., Eaves, and Dupuy. 3,347,886.

Eberhardt, Donald S., L. B. Gratzer, and J. N. Runnels, Jr., to The Boeing Co. Airplane wing flap with augmented jet lift-increasing device. 3,347,495, 10–17–67, Cl. 244—42.

Edmonds, Byron P.: *See*—
Dahms, James B., and Edmonds. 3,347,595.

Education Methods Council, Inc.: *See*—
Leathers, Ward. 3,348,028.

Edwards, Daniel J.: *See*—
Marill, Thomas M., and Edwards. 3,347,988.

Edwards, Helen M.: *See*—
Edwards, Theodoric B. 3,347,333.

Edwards, Robert C.: *See*—
Worner, Jacob E., and Edwards. 3,347,123.

Edwards, Theodoric B., deceased, by H. M. Edwards, executrix. Powered vehicle wheel. 3,347,333, 10–17–67, Cl. 180—65.

Egan, Clark J.: *See*—
Lindquist, Robert H., and Egan. 3,347,780.

Egan, John T.: *See*—
Minch, Virgil A., and Egan. 3,347,881.

Egleston, Harry B.: *See*—
Allen, Robert J., Monroe, Egleston, and Earp. 3,347,017.

Eichelman, George H., Jr., and I. Groverman, to Olin Mathieson Chemical Corp. High strength aluminum-bronze alloy. 3,347,717, 10–17–67, Cl. 148—32.

Ellar, Kendrick R.: *See*—
Washburn, Robert M., and Ellar. 3,347,824.

Ellers, Mark A., and W. B. Bramley, Jr., to General Motors Corp. Electromagnetic forming apparatus and method. 3,347,074, 10–17–67, Cl. 72—56.

Elnstein, Karl, and B. W. Reiter. Dough metering apparatus. 3,347,183, 10–17–67, Cl. 107—60.

Elba-Werk Ettlinger Baumaschinen- und Hebezeugfabrik G.m.b.H.: *See*—
Maier, Eckhard. 3,347,532.

Elbert, Donald L., and R. T. Wright, to Monsanto Co. Spinneret for production of synthetic grass yarn. 3,346,916, 10–17–67, Cl. 18—8.

Electric Stapler Corp.: *See*—
Doherty, Norman R. 3,347,438.
Doherty, Norman R. 3,347,439.
Doherty, Norman R. 3,347,440.
Doherty, Norman R. 3,347,441.

Electrographic Corp.: *See*—
Grandinetti, Attilio, and Kuderna. 3,347,163.

Electronic Standards Corp. of America: *See*—
Barker, Lester R. 3,348,170.

Elitex Sdruzeni Podniku Textilniho Strojirenstvi: *See*—
Bartosek, Vladimir, Janousek, and Rotrekl. 3,347,283.

Ellerbusch, Max F. By-pass valve. 3,347,271, 10–17–67, Cl. 137—637.4.

Elliott Brothers (London) Ltd.: *See*—
Priestley, Eric, and Hodson. 3,347,498.

Ellis, Myron P., R. T. Murphy, and J. F. Horgan, to Micromatic Hone Corp. Bonded abrasive grade checking apparatus. 3,347,090, 10–17–67, Cl. 73—78.

Ellison, William M., Jr., L. T. Fuller, and W. B. Poston, to Deering Milliken Research Corp. Strand twisting machine. 3,347,035, 10–17–67, Cl. 57—58.65.

Eloy, Fernand, and C. J. Mirocha, to Union Carbide Corp. 5-nitrofuryl-2-amidoximes. 3,347,874, 10–17–67, Cl. 260—347.7.

Elston, Gilbert S.: *See*—
Stewart, Willis L., Greene, and Elston. 3,346,900.

Elver, Lowell E., to The Parker Pen Co. Apparatus for producing containers. 3,347,733, 10–17–67, Cl. 156—515.

Encore Mfg. Corp.: *See*—
Banks, James R. 3,348,131.

Engelen, Heinz, H. Dischler, and G. Albert, to Maschinenfabrik Hasenclever A.G. Pneumatic lifting device and weighing means for flat goods. 3,347,827, 10–17–67, Cl. 177—208.

Engelhard Industries, Inc.: *See*—
Hausman, Eugene A., and Pond. 3,347,622.

Engelhardt, Heinz, H. Krupp, H. Rabenhorst, G. Spengler, and H. Wismath, to Hartmann & Braun Aktiengesellschaft. Device for measuring the content of paramagnetic gases in gas mixtures. 3,347,087, 10–17–67, Cl. 73—24.

Engelke, John L., P. C. Johnson, and B. A. Stein, to Arthur D. Little, Inc. Method and apparatus for forming wire from molten material. 3,347,959, 10–17–67, Cl. 264—37.

Engelman, Joseph H., and W. A. Witsell, to Burroughs Corp. Method for fabricating an electrical memory module. 3,347,703, 10–17–67, Cl. 117—212.

Engelskirchen, Konrad, and J. Gallnke, to Henkel & Cie, G.m.b.H. Process for the purification of water-soluble hydroxyethyl cellulose. 3,347,847, 10–17–67, Cl. 260—232.

Engineered Plastics, Inc.: *See*—
Poteat, George A., Jr. 3,347,489.

Engstrom, Oscar L. Replaceable valve seat for flush valves. 3,347,519, 10–17–67, Cl. 251—365.

Ensinger, Earl H. Barrel dumper. 3,347,399, 10–17–67, Cl. 214—314.

Epps, John S.: *See*—
Hawkins, Oscar M., Heaton, and Epps. 3,347,712.

Epstein, Herman, and S. Cogan, to Borg-Warner Corp. Tape transport method. 3,347,481, 10–17–67, Cl. 242—55.12.

Erasmus, Albert: *See*—
Sohn, August W., and Erasmus. 3,347,788.

Erath, Louis W., to Test Equipment Corp. Apparatus for testing and measuring A.C. parameters of active elements connected in circuit. 3,348,145, 10–17–67, Cl. 324—158.

Erath, Louis W., to Test Equipment Corp. High frequency semi-conductor device test fixture having inductive loop signal injection means. 3,348,147, 10–17–67, Cl. 324—158.

Erbstoesser, James A. Air-feed devices for carburetors. 3,347,028, 10–17–67, Cl. 55—510.

Erdelyi, Ferenc. Process and machine to roll tap drills. 3,347,077, 10–17–67, Cl. 72—202.

Erdmann, Robert L.: *See*—
Clauer, Calvin K., and Erdmann. 3,347,181.

Erickson, Howard L., and W. R. McCarty, Jr., to The Dole Valve Co. Solenoid actuated device. 3,348,178, 10–17–67, Cl. 335—251.

Erlesand, Lennart: *See*—
Dock, Nils, and Erlesand. 3,347,024.

Ernric Co., The: *See*—
Faltersack, Richard P. and E. F. Faltersack, Jr. 3,347,049.

Ersek, Robert A., 50% to L. Sandler. Receptacles. 3,346,883, 10–17–67, Cl. 4—1.

Espenschied, Wilbur L., and G. E. Wehl, to The Weber Dental Mfg. Co. Automatic container fillers for dental units and the like. 3,347,325, 10–17–67, Cl. 177—117.

Esso Research and Engineering Co.: *See*—
Behrmann, William C. and Maak. 3,347,781.
Feldbauer, George F., Jr. 3,347,783.
Forman, Charles D., and Small. 3,347,402.
Frankenfeld, John W., and McCoy. 3,347,688.
Freedman, Bernard, Beach, and Messner. 3,347,923.
Kimberlin, Charles N., Jr., Arey, and Buchmann. 3,347,625.
Leary, Ralph J. 3,347,873.
Leary, Ralph J., Michael, and Rockett. 3,347,913.
Nightingale, Eugene R., Jr. 3,347,626.
Passannante, Anthony J., Lovett, and Argabright. 3,347,872.
Passannante, Anthony J., Rhodes, and Beach. 3,347,924.
Pietsch, Gerhard J., and Turner. 3,347,645.
Rhodes, Richard P., and Guthrie. 3,347,922.
Rowe, Charles A., Jr., Schriesheim, and Bank. 3,347,912.
Stogryn, Eugene L. 3,347,801.
Tyler, William E., III, and Lovett. 3,347,925.

Establissements Merlin &-Gerin, Societe Anonyme: *See*—
Oudard, Albert. 3,348,073.

Estes, Phillip W., and A. H. Johnson, to Arthur D. Little, Inc. Method of stretch forming rayons. 3,347,963, 10–17–67, Cl. 264—90.

Evans, James R., to International Business Machines Corp. Record retrieval control unit. 3,348,213, 10–17–67, Cl. 340—172.5.

Evans, Sidley O., to The Babcock & Wilcox Co. Method of and apparatus for inhibiting scale formation. 3,347,716, 10–17–67, Cl. 148—13.1.

Everbrite Electric Signs, Inc.: *See*—
Jacobs, Gilbert C. 3,348,038.

Eversharp, Inc.: *See*—
Mead, Bruce R., and Kuhnl. 3,347,422.

Ex-Cell-O Corp.: *See*—
Allen, Robert J., Monroe, Earp, and Egleston. 3,347,017.
Gooding, Elwyn R. 3,347,364.
Miller, Ronald J. 3,347,379.

Exact Weight Scale Corp.: *See*—
Schieser, Warren J., Hecox, and Peasley. 3,347,328.

FMC Corp.: *See*—
Boissevain, Mathew G. 3,347,278.
Carlson, Heins F. 3,347,349.
Flint, Alan G., Sipos, and Gutierrez. 3,347,348.
Fry, Horace P., Jr. 3,347,472.
Kappe, Stanley E. 3,347,784.
Lill, Melvin H. 3,346,063.
Morgan, Philip F., and Wicks. 3,347,537.
Pech, Allison E. 3,347,154.
Roessler, Henry W. 3,347,570.
Vadas, Leslie. 3,347,294.
Yancey, John R. 3,347,261.

Fabri-Tek Inc.: *See*—
Petschauer, Richard J. 3,348,069.

Fabrique Nationale d'Armes de Guerre, S.A.: *See*—
Pickart, Auguste J.-B. 3,347,491.

Faibel, Gerald, to Barnes Engineering Co. Radiation detection system having wide field of view. 3,348,058, 10–17–67, Cl. 250—216.

Falkenberg, Douglass R., and E. L. Sharpe; said Sharpe assor. to said Falkenberg. Therapeutic treatment of aquatic animal life in their habitat. 3,347,211, 10–17–67, Cl. 119—5.

Fallick, Donald L.: *See*—
Luna, Tony J., S. J. Fallick, N. C. Luna, and D. L. Fallick. 3,348,220.

Fallick, Seymour J.: *See*—
Luna, Tony J., S. J. Fallick, N. C. Luna, and D. L. Fallick. 3,348,220.

Faltersack, Ernest F., Jr.: *See*—
Faltersack, Richard P., and E. F. 3,347,049.

Faltersack, Richard P., and E. F., Jr., to The Ernric Co. Trench shoring apparatus. 3,347,049, 10–17–67, Cl. 61—41.

Fanner Mfg. Co., The: *See*—
Reese, Robert L. 3,347,980.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Holtschmidt, Hans, and Zecher. 3,347,762.
Hoppe, Peter, Weinbrenner, Muhlhausen, and Breer. 3,347,529.
Krauss, Walter, and Hebermehl. 3,347,816.
Malz, Hugo, and Gobel. 3,347,821.
Schmelzer, Hans-Georg, and Degener. 3,347,859.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Gössel, Helmut, Wirtz, and Fernholz. 3,347,900.
Kaupp, Josef, and Blaettner. 3,347,935.
Ruschig, Heinrich, Korger, Aumüller, and Schmidt. 3,347,914.

Farmer Bros., Co.: *See*—
Price, Gail A. 3,347,149.

Farquhar, Melville T., to Reynolds Metals Co. Apparatus for placing separator cells around bottles and the like and for packaging such bottles. 3,346,939, 10–17–67, Cl. 29—208.

Farrel Corp.: *See*—
Kemp, Arthur W. 3,347,157.

Fauser, Giacomo, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Production of urea. 3,347,915, 10–17–67, Cl. 260—555.

Fawick Corp.: *See*—
Compton, James A., Allen, and Holt. 3,347,254.

Fay, Kenneth C. Wave hair brush. 3,346,901, 10–17–67, Cl. 15—160.

Featherston, John R., to International Business Machines Corp. Frequency-shift receiver insensitive to distortion and selective fading. 3,348,153, 10–17–67, Cl. 325—320.

Featherstone, William, to Imperial Chemical Industries Ltd. Hydrocarbon separation process. 3,347,948, 10–17–67, Cl. 260—674.

Feed Service Corp.: *See*—
Anderson, Philip C., and Lothrop. 3,347,212.

Fefferman, Gerald B., to Polaroid Corp. Liquid dispenser utilizing controlled gas pressure. 3,347,418, 10–17–67, Cl. 222—61.

Feiler, Charles E.: *See*—
Heidmann, Marcus F., and Feiler. 3,347,046.

Felling, John M., to California Almond Growers Exchange. Almond huller. 3,347,295, 10–17–67, Cl. 146—8.

Feldbauer, George F., Jr., to Esso Research and Engineering Co. Regeneration of individual molecular sieve compartments. 3,347,783, 10–17–67, Cl. 208—310.

Feldkirchner, Harlan L., H. R. Linden, and E. J. Pyrcioch, to American Gas Association, Inc. Conversion of solid fossil fuels to high-BTU pipeline gas. 3,347,647, 10–17–67, Cl. 48—197.

Feniz & Scisson, Inc.: *See*—
Littlejohn, Robert L. 3,347,319.

Fenley, Thomas D., to E. I. du Pont de Nemours, and Co. Process and apparatus for controlled preparation of a web. 3,347,960, 10–17–67, Cl. 264—40.

Ferlazzo, Natale: *See*—
Caporali, Giorgio, Giordano, Ferlazzo, and Ottaviani. 3,347,899.

Fernholz, Hans: *See*—
Gossel, Helmut, Wirtz, and Fernholz. 3,347,900.

Ferro Corp.: *See*—
Buckley, Robert A. 3,347,804.
Buckley, Robert A., F. C. and N. Russo. 3,347,823.

Fewel, Robert A., J. D. Harbour, and B. L. Whitson, to Phillips Petroleum Co. Method and apparatus to control the temperature of a wet pellet dryer. 3,346,912, 10–17–67, Cl. 18—1.

Fiber Glass Industries, Inc.: *See*—
Dildilian, Ara T. 3,347,735.

Fields, Charles M., to Continental Can Co., Inc. External cooling device for extruded tubing. 3,346,920, 10–17–67, Cl. 18—14.

File, Elbe, & Binder Co., Inc.: *See*—
Ravenal, Earl C. 3,347,243.

Firestone, Raymond A.: *See*—
Sletzinger, Meyer, Firestone, and Reinhold. 3,347,905.

Firma Mayer & Cie: *See*—
Grassmann, Alfred. 3,347,436.

Firth Cleveland Ltd.: *See*—
Cooper, Brian. 3,348,020.

Fischer, Edgar H., to United States of America, Navy. Automation command circuit. 3,348,226, 10–17–67, Cl. 343—225.

Fish, Lawrence W., Jr., and D. R. Von Recklinghausen, to H. H. Scott, Inc. Signal mixing and conversion apparatus employing field effect transistor with square law operation. 3,348,154, 10–17–67, Cl. 325—451.

Fites, Cyril B., to Wagner Electric Corp. Pressure balanced spring applied brake system. 3,347,600, 10–17–67, Cl. 303—71.

Fitzgerald, Thomas C., and G. P. McGraw, Jr., to Western Electric Co., Inc. Apparatus for attaching leads to electrical components. 3,348,016, 10–17–67, Cl. 219—107.

Fleckenstein, Andrew J.: *See*—
Fleckenstein, Lambert W. and A. J. 3,347,556.

Fleckenstein, Lambert W. and A. J. Sealing ring for piston and cylinder assemblies. 3,347,556, 10–17–67, Cl. 277—206.

Fleischer, Fritz K., and B. W. Sisk, to Shell Oil Co. Prilling nozzle. 3,346,915, 10–17–67, Cl. 18—2.7.

Fleischhauer, Richard: *See*—
Bender, Heinz, Fleischhauer, and Beyerle. 3,347,843.

Flichy, Jacques E., to Ateliers Metallurgiques de Saint-Urbain. Device having a friction drive between two surfaces in a liquid. 3,347,106, 10–17–67, Cl. 74—199.

Flichy, Jacques E., to Ateliers Metallurgiques de Saint-Urbain. Devices employing a friction drive between two surfaces in a liquid medium. 3,347,107, 10–17–67, Cl. 74—199.

Flint, Alan G., L. Sipos, T. Gutierrez, to FMC Corp. Article singulating system. 3,347,348, 10–17–67, Cl. 198—30.

Flodin, Per G. M., P. Kornfeldt, and J. I. Gardshol, to Skanska Attikfabriken AB. Process for producing trioxane. 3,347,869, 10–17–67, Cl. 260—340.

Floehr, Walter L., to Unitcast Corp. Ore car double slide gate assembly. 3,347,174, 10–17–67, Cl. 105—282.

Floter, Manfred: *See*—
Dommann, Günther, and Floter. 3,347,050.

Flower, Richard J. Automobile body repair tool. 3,347,084, 10–17–67, Cl. 72—457.

Foglia, Andrew J.: *See*—
Stancell, Arnold F., Borecht, and Foglia. 3,347,695.

Fohlisch, Baldur: *See*—
Bredereck, Hellmut, Fohlisch, and Franz. 3,347,954.

Folkerts, Walter E., to Chrysler Corp. Method of making and assembling steering gear parts. 3,346,937, 10–17–67, Cl. 29—159.2.

Forca, James. Thread guide for knitting machine. 3,347,064, 10–17–67, Cl. 66—125.

Forlastro, Ramon F.: *See*—
Weighart, Frederick G., and Forlastro. 3,348,051.

Forman, Charles D., and A. B. Small, to Esso Research and Engineering Co. Cryogenic tank. 3,347,402, 10–17–67, Cl. 220—15.

Forman, Hugh M.: *See*—
Freeman, Arthur H., and Forman. 3,348,116.

Formatic, Inc.: *See*—
Hall, Robert G. 3,347,176.

Forsha, Herbert E.: *See*—
Baker, Edward P., and Forsha. 3,348,182.

Forsvarets Fabrikavark: *See*—
Abramson, Hugo. 3,347,492.

Foseco Trading A.G.: *See*—
Jago, Edward J. 3,347,721.

Foster, Donald J., and D. E. Reed, Jr., to Union Carbide Corp. Acetylenic epoxides and dienes. 3,347,875, 10–17–67, Cl. 260—348.

Foster, George B., to Reliance Electric and Engineering Co. Production line operation monitor and recorder. 3,348,234, 10–17–67, Cl. 346—110.

Foster, Raymond C.: *See*—
Topper, Robert L., Cofield, Foster, Woebcke, and Koehnken. 3,347,599.

Foster, Robert C., Jr.: *See*—
Carl, Henry A., and Foster. 3,347,467.

Fox, George C. Swimming pool and coping structure therefor. 3,347,006, 10–17–67, Cl. 52—300.

Foxboro Co., The: *See*—
Gobhai, Cavas M. 3,347,251.

Foyster, Clive J. Apparatus for gravity separation of materials. 3,347,377, 10–17–67, Cl. 209—458.

Frank, Arthur E., to Wagner Electric Corp. Stator winding machine. 3,347,474, 10–17–67, Cl. 242—1.1.

Frankenfeld, John W., and C. J. McCoy, to Esso Research and Engineering Co. Protein adhesive and method of preparation. 3,347,688, 10–17–67, Cl. 106—124.

Franklin, John S., and S. L. Baldwin, to General Electric Co. Adjustable luminaire lamp support. 3,348,035, 10–17–67, Cl. 240—25.

Franz, Raimund: *See*—
Bredereck, Hellmut, Fohlisch, and Franz. 3,347,954.

Fraser, August H., to E. I. du Pont de Nemours, and Co. Polymeric composition derived from oxabicyclononanes. 3,347,826, 10–17–67, Cl. 260—47.

Freas, Robert R. Recording of analog data on photographic film. 3,348,229, 10–17–67, Cl. 346—23.

Freedman, Bernard, L. K. Beach, and A. E. Messner, deceased, by Marilyn Messner, to Esso Research and Engineering Co. Difluoroamino compounds and the preparation thereof. 3,347,923, 10–17–67, Cl. 260—583.

Freeman, Alfred B. Chorus effects systems. 3,347,973, 10–17–67, Cl. 84—1.24.

Freeman, Arthur H., and H. M. Forman, to General Electric Co. Electric knife storage case and battery charger. 3,348,116, 10–17–67, Cl. 320—2.

Freese, Evans G., to The Cessna Aircraft Co. Master cylinder construction affording automatic re-phasing of master and slave cylinders. 3,347,043, 10–17–67, Cl. 60—54.5.

Frei, Charles H., to The J. H. Day Co. Gyratory sifter mount. 3,347,374, 10–17–67, Cl. 209—332.

Freund, Paul W., and H. C. Trotman, to Western Electric Co., Inc. Test fixture for printed circuit boards having cam controlled sequential operators. 3,348,146, 10–17–67, Cl. 324—158.

Freudig, Gerhard: *See*—
Löffler, Theodor, and Freudig. 3,346,982.

Frey, Louis E. Record filing means. 3,347,393, 10–17–67, Cl. 211—40.

Freyschlag, Herwig, H. Pommer, and W. Reif, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of derivatives of omega-hydroxy tigialdehyde. 3,347,930, 10–17–67, Cl. 260—602.

Fridge, David S. Dental paralleling handpiece. 3,346,959, 10–17–67, Cl. 32—67.

Fried, Nathan: *See*—
Cymmer, Thomas, and Fried. 3,347,091.

Friedman, Charles B.: *See*—
Koegemann, Victor E., Denman, and Friedman. 3,347,797.

Friend, Lindsay C., to AMP Inc. Multiple switch. 3,348,187, 10–17–67, Cl. 339—18.

Frigikar Corp.: *See*—
Lind, William E., and Mitchell. 3,347,310.

Frisch, Erling, to Westinghouse Electric Corp. Controlled leakage face type seals. 3,347,552, 10–17–67, Cl. 277—27.

Fritz, Charles G., and J. L. Warnell, to E. I. du Pont de Nemours and Co. Perfluorinated monomers. 3,347,901, 10–17–67, Cl. 260—465.6.

Fritz, Henry E., K. E. Atkins, and G. L. O'Connor, to Union Carbide Corp. Production of alkylidenebicycloheptenes. 3,347,944, 10–17–67, Cl. 260—666.

Froede, Walter, to NSU Motorenwerke Aktiengesellschaft, and Wankel G.m.b.H. Rotary combustion engine. 3,347,213, 10–17–67, Cl. 123—8.

Froitzheim, Max, K. F. Lang, L. Rappen, and J. Turowski, to Rutgerswerke und Teerverwertung Aktiengesellschaft. Process for the condensation of phenol with methanol. 3,347,936, 10–17–67, Cl. 260—621.

Frommer, Werner: *See*—
Rauenbusch, Erich, and Frommer. 3,347,752.

Frosst, Charles E., & Co.: *See*—
Wasson, Burton K., and Parker. 3,347,907.

Frost, James D. Article handling apparatus. 3,347,587, 10–17–67, Cl. 294—87.

Frotscher, Herbert, and M. Petsold, to Bohme Fettschemie G.m.b.H. Process for the production of hardenable synthetic resinous products containing halohydrin groups. 3,347,803, 10–17–67, Cl. 260—2.

Fry, Horace P., Jr., to FMC Corp. Fluid distributor. 3,347,472, 10–17–67, Cl. 239—543.

Fuji Iron & Steel Co., Ltd.: *See*—
Noda, Ikaya, Yamamoto, Ueta, Minami, Hirano, Someno, and Sudo. 3,347,076.

Fujita, Ichiro: *See*—
Mori, Leo, Osawa, and Fujita. 3,347,616.

Fujisawa Pharmaceutical Co., Ltd.: *See*—
Ohara, Masao, Yamamoto, Kamiya, Tanaka, Sugihara, and Ito. 3,347,883.

Fujitsu Ltd.: *See*—
Kawashima, Masao, and Higeta. 3,348,171.
Yamagishi, Kazuo, and Nakamura. 3,347,701.

Fujiya Denki Kabushiki Kaisha: *See*—
Monma, Hiroshi. 3,348,086.

Fuller, Harrison W., and R. J. Spain, to Laboratory for Electronics, Inc. Magnetic film display device. 3,347,614, 10–17–67, Cl. 350—162.

Fuller, Luther T.: *See*—
Ellison, William M., Jr., Fuller, and Poston. 3,347,035.

Funkhouser, Garland B., to Reynolds Metals Co. Package construction and method of making the same or the like. 3,347,365, 10–17–67, Cl. 206—65.

Furuta, Michael W.: *See*—
Glass, Marvin I., Janiszewski, and Furuta. 3,347,548.

Futami, Atsushi, and K. Hayashi, to Teijin Ltd. Method of reducing the viscosity of a solution of cellulose derivative. 3,347,689, 10–17–67, Cl. 106—178.

G.B.D. Societe Anonyme Holding Luxembourg: *See*—
Wins, Jean. 3,347,654.

Gaa, Donald L.: *See*—
Parkinson, Robert C., Marks, Gaa, and De Back. 3,348,185.

Gabriel Container Co.: *See*—
DeSoto, Aldo J., and Rivera. 3,347,357.

Galinke, Joachim: *See*—
Engelskirchen, Konrad, and Galinke. 3,347,847.

Gammon, Jack: *See*—
Klein, Robert E., and Gammon. 3,348,101.

Gardshol, Jonn I.: *See*—
Flodin, Per G. M., Kornfeldt, and Gardshol. 3,347,869.

Garland, Walter D., to The Western Co. of North America. Self-disintegrating bag. 3,347,297, 10–17–67, Cl. 150—1.

Gaston County Dyeing Machine Co.: *See*—
Carpenter, William T. 3,346,893.

Gates, Robert L., to TRW Inc. Gyro compass misalignment measuring apparatus and method. 3,346,966, 10–17–67, Cl. 33—226.

Gauthier, Katherine M. Removable padded coat hanger cover. 3,347,428, 10–17–67, Cl. 223—98.

Galvin, Thomas J., and F. A. Hughes, to Atlas Chemical Industries, Inc. Asphalt compositions. 3,347,690, 10–17–67, Cl. 106—273.

Gauld, Godfrey R., to Avco Corp. Relaxation oscillator requiring low current. 3,348,167, 10–17–67, Cl. 331—111.

Geber, Eugene E., to Anderson Bros. Mfg. Co. Nozzle apparatus. 3,347,257, 10–17–67, Cl. 141—105.

Gegauf, Fritz, to Fritz Gegauf Aktiengesellschaft. Tensioning device for a sewing machine. 3,347,195, 10–17–67, Cl. 112—254.

Gegauf, Fritz Aktiengesellschaft: *See*—
Gegauf, Fritz. 3,347,195.

Geigy, J. R., A.-G.: *See*—
Knusli, Enrico, and Gysin. 3,347,657.

General Dynamics Corp.: *See*—
Hansen, Gary L. 3,347,266.
Lair, Clair K. 3,348,080.
Valles, Anthony G., and Schreihans. 3,437,770.

General Electric Co.: *See*—
Akers, Sheldon B., Jr., and Coddington. 3,348,197.
Bebinger, Jack E. 3,347,612.
Beggs, James E. 3,348,092.
Carl, Henry A., and Foster. 3,347,467.
Coggeshall, Almy D., Mailhotte, and Winchester. 3,348,085.
Colburn, James H., and Hanchett. 3,348,201.
Franklin, John S., and Baldwin. 3,348,035.
Freeman, Arthur H., and Forman. 3,348,116.
Hoag, Yates M. 3,347,483.
Hodges, Ralph D., and Avila. 3,348,183.
Kresge, James S. 3,348,100.
Krzewina, Thomas. 3,347,613.
Lewis, Walter E., and Chisholm. 3,348,023.
Martiniak, Leonard J. 3,347,250.
Morgan, Raymond E. 3,348,123.
Nelesen, Elmer J. 3,347,167.
Saeli, John J. 3,348,112.
Schweiger, Frank A. 3,347,553.
Skogland, Thorbjorn, and Checkley. 3,348,021.
Snyder, Paul V. 3,348,024.
Staples, Paul R. 3,348,009.
Storm, Herbert F. 3,348,128.
Sullivan, Gerald L., and Clayton. 3,348,157.
Tomiyasu, Kiyo. 3,348,169.
Watrous, Donald L. 3,348,118.
Whipple, Richard E., and Rothmel. 3,348,067.
Williams, Raymond L. 3,347,255.
Willyoung, David M. 3,348,081.
Wright, Floyd H. 3,348,109.
Wukusick, Carl S., and McGurty. 3,347,667.

General-Erie Corp.: *See*—
Hann, Daniel G. 3,347,581.

General Foods Corp.: *See*—
Dykes, Ralph E., and Mitchell. 3,347,363.

General Motors Corp.: *See*—
Abdella, Harold H. 3,348,091.
Bassett, Arthur T., Jr. 3,348,026.
Bassett, Arthur T., Jr., and Siegla. 3,348,025.
Brown, Norman R. 3,347,127.
Eilers, Mark A., and Bramley. 3,347,074.
Gonyea, Harold P. 3,347,392.
Johnstone, Theodore H. 3,347,584.
Long, Donald A., Shaw, and Carlson. 3,348,011.
Preotle, John J., and Payne. 3,347,728.
Quinting, Rudi F. 3,347,488.
Renneker, Dennis N. 3,347,592.
Steck, Gail R. 3,347,473.
Smith, Robert W. 3,348,087.

General Precision, Inc.: *See*—
Rolfs, John C. 3,348,227.

General Refineries, Inc.: *See*—
Platt, William T. 3,347,530.

General Stone and Materials Corp.: *See*—
Brejcha, Robert J., Modesto, and Ridenour. 3,347,596.

General Tire & Rubber Co., The: *See*—
Hartz, Walter A., and Meyer. 3,347,047.

Geo Space Corp.: *See*—
Witt, William W., and Williams. 3,348,194.

Geolograph Co., The: *See*—
Lankford, William L., Jr., Mathis, Keller, Bowman, and Van Winkle. 3,348,231.
Melton, James O. 3,347,524.

Georgia-Pacific Corp.: *See*—
Melnychyn, Paul. 3,347,842.

Gentzel, Alfred. Tool holding device. 3,346,996, 10–17–67, Cl. 51—225.

Gerber, Eduard A., to United States of America, Army. Piezoelectric accelerometer. 3,348,076, 10–17–67, Cl. 310—8.4.

Gerdes, Charles W., Jr., to Phillips Petroleum Co. Process for production of carbon black pellets. 3,347,638, 10–17–67, Cl. 23—314.

Gevaert Photo-Producten N.V.: *See*—
De Haes, Louis M., and Deschamps. 3,347,674.

Gewerkschaft Eisenhutte: *See*—
Dommann, Günther, and Floter. 3,347,050.

Geyger, Ella: *See*—
Geyger, William A. 3,348,120.

Geyger, William A., deceased, by E. Geyger, executrix. Square-law circuit. 3,348,120, 10–17–67, Cl. 321—2.

Ghiron, Hugo, to Bell Telephone Laboratories, Inc. Return address system for a data processor. 3,348,211, 10–17–67, Cl. 340—172.5.

Gibson, Alden F., to Hahn Brass Ltd. Emergency door latch. 3,347,070, 10–17–67, Cl. 70—92.

Gibson, Donald F. Magnet actuated sealed valve. 3,347,262, 10–17–67, Cl. 137—375.

Giddings, Sydney A., to American Cyanamid Co. Process of preparing titanoxane metaloxane polymers. 3,347,887, 10–17–67, Cl. 260—429.5.

Giffen, James W., to Corning Glass Works. Apparatus for forming articles from overlapping glass sheets. 3,347,652, 10–17–67, Cl. 65—152.

Gilbert, Ernest E., to The Bolt Beranek and Newman Inc. Data coder and input device. 3,347,996, 10–17–67, Cl. 178—18.

Gilbert, Jack J.: *See*—
Covert, Peter H., and Gilbert. 3,347,734.

Ginsburg, Abraham. Hypodermic needle with retractable tip. 3,347,232, 10–17–67, Cl. 128—221.

Giordano, Nicola: *See*—
Caporali, Giorgio, Giordano, Ferlazzo, and Ottaviani. 3,347,899.

Givaudan Corp.: *See*—
Wood, Thomas F., and Angiolini. 3,347,946.

Gladding, Edward K., and D. N. Robinson, to E. I. du Pont de Nemours and Co. Adhesive for bonding alpha-olefin copolymers or natural rubber comprising a dispersion of an interpolymer of ethylene and 1,4 hexadiene, carbon black and a sulfur curing system. 3,347,817, 10–17–67, Cl. 260—41.5.

Glass, Marvin I., A. T. Janiszewski, and M. W. Furuta, to Marvin Glass & Associates. Game apparatus. 3,347,548, 10–17–67, Cl. 273—1.

Gleason, William J., Jr., and C. W. Zies, to International Basic Economy Corp. Steam trap. 3,347,257, 10–17–67, Cl. 137—183.

Gloyer, Stewart W., H. A. Vogel, and C. L. Lynch, to Pittsburgh Plate Glass Co. Coated containers. 3,347,700, 10–17–67, Cl. 117—97.

Gly Construction Corp.: *See*—
Yates, James P. 3,347,514.

Gmitro, Thomas M., to E. I. du Pont de Nemours and Co. Coated polyolefin film. 3,347,697, 10–17–67, Cl. 117—46.

Gobel, Wilhelm: *See*—
Mals, Hugo, and Gobel. 3,347,821.

Gobhai, Cavas M., to The Foxboro Co. Fluid logic frequency treatment device. 3,347,251, 10–17–67, Cl. 137—81.5.

Godding, Ronald G., to British Cast Iron Research Association. Measurement of moisture content in sand and like materials. 3,348,140, 10–17–67, Cl. 324—58.5.

Godo, Takanobu: *See*—
Ishikawa, Mitsuo, Yonehara, and Godo. 3,347,852.

Godwin, Owen L. Coin wrapper. 3,347,450, 10–17–67, Cl. 229—87.2.

Goehre, Otto: *See*—
Baer, Karl, Sperber, Goehre, and Leibner. 3,347,798.

Goergen, Karl, to Martin Christ Firma. Centrifuges having rotor rotating in a vacuum. 3,347,453, 10–17–67, Cl. 233—11.

Gold, Howard M. Vehicle battery power protection system including light switching means. 3,348,095, 10–17–67, Cl. 315—80.

Golden, Richard L.: *See*—
Carrubba, Robert V., and Golden. 3,347,921.

Golub, Gerald, to AG-Heat Systems, Inc. Support for growing oysters. 3,347,210, 10–17–67, Cl. 119—4.

Gonyea, Harold P., to General Motors Corp. Combination structure. 3,347,392, 10–17–67, Cl. 211—26.

Gooding, Elwyn R., to Ex-Cell-O Corp. Container carrier. 3,347,364, 10–17–67, Cl. 206—65.

Goodman Mfg. Co.: *See*—
Dahlberg, William F. 3,347,373.

Goodrich, B. F., Co., The: *See*—
Katsenmeyer, Edwin B. 3,347,406.
Sidles, James. 3,347,300.
Sidles, James. 3,347 301.
Sidles, James. 3,347,964.

Goodrich, Geoffrey J., and R. A. Williams, to National Research Development Corp. Roll stabilisers. 3,347,199, 10–17–67, Cl. 114—125.

Goodrow, Marvin H., R. I. Wagner, and F. F. Caserio, Jr., to American Potash & Chemical Corp. Substituted phosphinoborine polymers. 3,347,800, 10–17–67, Cl. 260—2.

Gordon, William E., to Arthur D. Little, Inc. Thickened ammonium nitrate blasting composition containing aluminum and urea. 3,347,722, 10–17–67, Cl. 149—41.

Gore, William C., and E. B. Shapiro, to Chicago Specialty Mfg. Co. Tube cutter. 3,347,118, 10–17–67, Cl. 82—75.

Goss, James W. Clips for mirrors. 3,347,504, 10–17–67, Cl. 248—488.

Gössel, Helmut, R. Wirts, and H. Fernhols, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing unsaturated nitriles. 3,347,900, 10–17–67, Cl. 260—465.3.

Gould, George J. Stacked storage bins. 3,347,394, 10–17–67, Cl. 211—126.

Goumeniouk, Gleb I., to Rice Barton Corp. Method and apparatus for purging travelling felts. 3,347,740, 10–17–67, Cl. 162—199.

Goytisolo, Taltavull. Catoptrical-dioptrical device for electric lighting. 3,348,037, 10–17–67, Cl. 240—41.38.

Grace, W. R., & Co.: *See*—
Koegemann, Victor E., Denman, and Friedman. 3,347,797.
Nakajima, Nobuyuki. 3,347,330.
Schirmer, Henry G. 3,348,022.
Tomaino, Paul B. 3,347,809.

Graham, L. W.: *See*—
Dellinger, Basil W. 3,346,968.

Gran, Norman J. Sofa bed. 3,346,889, 10–17–67, Cl. 5—12.

Grandinetti, Attilio, and J. Kuderna, to Electrographic Corp. Composite printing plate process. 3,347,163, 10–17–67, Cl. 101—401.1.

Grasselli, Robert K., J. L. Greene, and N. R. Gray, to The Standard Oil Co. Process for producing 2-cyano-butadienes. 3,347,902, 10–17–67, Cl. 260—465.9.

Grassmann, Alfred, to Firma Mayer & Cie. Yarn feed installation. 3,347,436, 10–17–67, Cl. 226—177.

Gratzer, Louis B.: *See*—
Eberhardt, Donald S., Gratzer, and Runnels. 3,347,495.

Graves, Gail W.: *See*—
Weeden, Frank G., Jr., and Graves. 3,347,568.

Gray, Nancy R.: *See*—
Grasselli, Robert K., Greene, and Gray. 3,347,902.

Grasia, Mauro: *See*—
Scatena, Massimo, and Grasia. 3,347,805.

Green, Frederick M.: *See*—
Malcolm, Donald H., and Green. 3,348,207.

Greene, Janice L.: *See*—
Grasselli, Robert K., Greene, and Gray. 3,347,902.

Greene, John P. K.: *See*—
Stewart, Willis L., Greene, and Elston. 3,346,900.

Gregory, Charles E., to Jered Industries Inc. Hydrostatic engine and sheave assembly. 3,347,525, 10–17–67, Cl. 254—189.

Gresham, Virginia D. Female urinary drain. 3,347,238, 10–17–67, Cl. 128—295.

Griffin, Fred T., to United States of America, Navy. Wide band noise generator. 3,348,166, 10–17–67, Cl. 331—78.

Griffin, William C.: *See*—
Baer, Byron N., and Griffin. 3,347,207.

Griggs, Bruce: *See*—
Clark, Wesley I., Griggs, Hays, and Jacky. 3,347,768.

Grimes, Charles E., and R. W. Speiser, to Toro Mfg Corp. Steering mechanism. 3,347,558, 10–17–67, Cl. 280—87.

Grindstedvaerket Aktieselskabet: *See*—
Villadsen, Karl J. S., and Moller. 3,347,678.

Grinwald, Kenneth E. Aquatic harvester. 3,347,029, 10–17–67, Cl. 56—9.

Griswold, Lee M., J. F. Shiells, Jr., and T. G. Uter, to Digital Sensors Inc. Welding control system. 3,348,017, 10–17–67, Cl. 219—109.

Groat, Marshall O., to Kingsberry Homes Corp. Apparatus for handling stacked articles. 3,347,209, 10–17–67, Cl. 118—500.

Groenendaal, Willem, and W. H. Logman, to Shell Oil Co. Manufacture of petroleum distillates by hydrodesulfurization and hydrogenation. 3,347,779, 10–17–67, Cl. 208—89.

Grob, Richard E. One way valve for use with concrete forms. 3,347,265, 10–17–67, Cl. 137—525.7.

Groves, Martin V., and M. Mastromatteo, to Pul-Vac, Inc. Attachment means for suction actuated device. 3,346,907, 10–17–67, Cl. 15—381.

Gruodis, Algirdas J., L. K. Lange, and W. H. McAnney, to International Business Machines Corp. Switching circuits employing esaki diodes. 3,348,033, 10–17–67, Cl. 235—175.

Guienne, Paul F.: *See*—
Bertin, Jean H., and Guienne. 3,347,170.

Guinn, Vincent P.: *See*—
Raifsnider, Philip J., and Guinn. 3,348,052.

Gullett, Robert C., to Packard Instrument Co., Inc. Self-latching relay. 3,348,176, 10–17–67, Cl. 335—181.

Gulling, Roger G. L.: *See*—
Deleuze, Antoine, and Gulling. 3,346,918.

Gurries Mfg. Co.: *See*—
Curlett, John, and Gurries. 3,346,976.

Gurries, Raymond A.: *See*—
Curlett, John, and Gurries. 3,346,976.

Gutierres, Thomas: *See*—
Flint, Alan G., Sipos, and Gutierres. 3,347,348.

Guthrie, Donald A.: *See*—
Rhodes, Richard P., and Guthrie. 3,347,922.

Guyer, Reynolds, and T. G. Mairs, to Hoerner-Waldorf Corp. Pour spout cartons. 3,347,446, 10–17–67, Cl. 229—27.

Gwinn, James T., Jr., to Lord Corp. Vibration isolating support for looms. 3,347,277, 10–17–67, Cl. 139—1.

Gwinn, James T., Jr., to Lord Corp. Vibratory feeder and the like. 3,347,352, 10–17–67, Cl. 198—220.

Gwinn, James T., Jr., to Lord Corp. Mounting system for looms and the like. 3,347,502, 10–17–67, Cl. 248—22.

Gwyn, Childress B., Jr., to Talon, Inc. Method of making electrical contact elements. 3,346,951, 10–17–67, Cl. 29—630.

Gyrodyne Co. of America, Inc.: *See*—
Strong, Edward W., Reade, Manuel, and Bastedo. 3,347,095.

Gysin, Hans: *See*—
Knusli, Enrico, and Gysin. 3,347,657.

H & G Industries, Inc.: *See*—
Stewart, Willis L., Greene, and Elston. 3,346,900.

HPE Inc.: *See*—
Martin, Rand H. 3,348,082.

Haas, Bernhard: *See*—
Strobel, Josef M., and Haas. 3,347,710.

Hagerborg, John G.: *See*—
Mencacci, Samuel A., and Hagerborg. 3,347,351.

Hahn Brass Ltd.: *See*—
Gibson, Alden F. 3,347,070.

Haidinyak, John A. Pie and pastry board. 3,347,179, 10–17–67, Cl. 107—46.

Haisfield, Rudolph M.: *See*—
Hiller, Alexander J., and Haisfield. 3,347,241.

Halcon International, Inc.: *See*—
Carrubba, Robert V., and Golden. 3,347,921.

Hale, Arthur N., and J. J. Matias, to Union Special Machine Co. Power assist mechanism for sewing machines. 3,347,194, 10–17–67, Cl. 112—237.

Hale, Jesse R. Embedded spaced truss structures. 3,347,007, 10–17–67, Cl. 52—380.

Hall, C. M., Lamp Co.: *See*—
Liedel, Douglas D. 3,347,513.

Hall, Robert G., to Formatic, Inc. Method and apparatus for making patties. 3,347,176, 10–17–67, Cl. 107—4.

Halla, Ottokar, to Siemens-Schuckertwerke Aktiengesellschaft Berlin and Erlangen. Hall generator. 3,348,184, 10–17–67, Cl. 338—32.

Hallberg, John E., to W. H. Miner Inc. Door fastening means. 3,347,583, 10–17–67, Cl. 292—194.

Halliburton Co.: *See*—
Barrington, Burchus Q. 3,347,318.

Halliday, Geoffrey W.: *See*—
Jagger, Ernest T., and Halliday. 3,347,554.

Halliday, John: *See*—
Bjerke, John O., Halliday, Stevens, Mahler, and Holden. 3,347,051.

Halls, Gordon A., to Rolls-Royce Ltd. Fuel injector. 3,347,471, 10–17–67, Cl. 239—466.

Hamby, Russell S., to The Reliance Electric and Engineering Co. Tension controlled web drive. 3,348,107, 10–17–67, Cl. 318—6.

Hamilton, Wallace, to Lewis Welding and Engineering Corp. Proportioning apparatus. 3,347,416, 10–17–67, Cl. 222—56.

Hamrick, Elmer J.: *See*—
Hankey, Herbert E., and Hamrick. 3,347,523.

Hanchett, Leland J., Jr.: *See*—
Colburn, James H., and Hanchett. 3,348,201.

Hankey, Herbert E., and E. J. Hamrick, to Sumco Mfg. Co., Inc. Scissors jack. 3,347,523, 10–17–67, Cl. 254—122.

Hankscraft (Canada) Ltd.: *See*—
McKeown, Robert G. V. 3,347,618.

Hann, Daniel G., to General-Erie Corp. Concealed door latch. 3,347,581, 10–17–67, Cl. 292—147.

Hanna, Russell D., to Hercules Inc. Method of forming duplicate bottles by heat shrinking. 3,347,970, 10–17–67, Cl. 264—230.

Hansen, Gary L., to General Dynamics Corp. Spring biased relief valve. 3,347,266, 10–17–67, Cl. 137—540.

Hansley, George S.: *See*—
Charbonneaux, Wilson A., and Hansley. 3,346,970.

Hanson, David E.: *See*—
Chalpin, Edward S., and Hanson. 3,346,945.

Hanson, Donald B., to United Aircraft Corp. Fluid signal generator. 3,347,252, 10–17–67, Cl. 137—82.

Harbers, Henry C., to Western Unit Corp. Fifth-wheel elevating and level controlling air jack for semi-trailer dollies. 3,347,563, 10–17–67, Cl. 280—425.

Harbison-Walker Refractories Co.: *See*—
Renkey, Albert L. 3,347,972.

Harbour, Jack D.: *See*—
Fewel, Robert A., Harbour, and Whitson. 3,346,912.

Harder, John R.: *See*—
Mahaffy, Reid A., Harder, and Pinney. 3,343,333.

Harding, James, to Union Carbide Corp. Novel bisphenols of spirobi(meta-dioxan) and their preparation. 3,347,871, 10–17–67, Cl. 260—340.7.

Hardy, Kenneth D., to Beecham Group Ltd. Derivatives of 6-aminopenicillanic acid. 3,347,851, 10–17–67, Cl. 260—239.1.

Harford, Edward F., to E. I. du Pont de Nemours and Co. Bearing surface. 3,347,737, 10–17–67, Cl. 161—150.

Harrer, William R.: *See*—
Parsons, George M., and Harrer. 3,348,148.

Harris, John F., Jr., to E. I. du Pont de Nemours and Co. Introduction of polyfluoroalkylthio groups into hydrocarbons. 3,347,765, 10–17–67, Cl. 204—162.

Harris, Sidney F. Thermal balancing apparatus for adjusting and testing thermostat devices. 3,347,085, 10–17–67, Cl. 73—1.

Harris, Theodore J., to M. Boosalic. Safety razor holder and case. 3,346,952, 10–17–67, Cl. 30—90.

Harris-Intertype Corp.: *See*—
Haywood, Russell I., and Barley. 3,347,120.
Sarka, Albert J. 3,347,119.

Harrison, Henry: *See*—
Harrison, Henry C. and H. 3,346,906.

Harrison, Henry C. and H. Mop wringer. 3,346,906, 10–17–67, Cl. 15—262.

Harrower, Harold W. Adjustable wound edge protector. 3,347,226, 10–17–67, Cl. 128—132.

Harrower, Harold W. Wound edge protector. 3,347,227, 10–17–67, Cl. 128—132.

Hartig, Alfred E. Kite. 3,347,500, 10–17–67, Cl. 244—154.

Hartman, John H., Jr.: *See*—
Lohr, Riley. 3,346,984.

Hartman, William C., and J. H. King, to Bell Telephone Laboratories, Inc. Test clip. 3,348,190, 10–17–67, Cl. 339—75.

Hartmann & Braun Aktiengesellschaft: *See*—
Engelhardt, Heinz, Krupp, Rabenhorst, Spengler, and Wismath. 3,347,087.

Hartz, Walter A., and D. A. Meyer, to The General Tire & Rubber Co. Elastomeric composition for use as rocket insulation. 3,347,047, 10–17–67, Cl. 60—253.

Hatala, Robert J., to E. I. du Pont de Nemours and Co. Freeze-thaw stable aqueous polymer dispersion containing a water-miscible amide. 3,347,814, 10–17–67, Cl. 260—29.6.

Hatch, Edmond K., and L. F. Miller, to The Osborn Mfg. Co. Pneumatic squeeze head with pressure supply booster means. 3,347,307, 10–17–67, Cl. 164—173.

Hauck, Franz, to Robert Bosch G.m.b.H. Apparatus for testing fuel injection pumps. 3,347,091, 10–17–67, Cl. 73—168.

Hausenfleck, Howard D., G. M. Brittain, and P. J. Teivitse, to The Ohio Crankshaft Co. Surge protector for high frequency power system. 3,348,098, 10–17–67, Cl. 317—13.

Hausman, Eugene A., and G. R. Pond, to Engelhard Industries, Inc. Method for preparing $(NH_4O)_2Pt(SCN)_6$. 3,347,622, 10–17–67, Cl. 23—50.

Havenaar, Izaak, to Shell Oil Co. Method of treating an underground formation to prevent liquid loss from large cavities penetrating the formation. 3,347,316, 10–17–67, Cl. 166—29.

Hawkins, Edward J. Filter cigarette. 3,347,245, 10–17–67, Cl. 131—10.7.

Hawkins, Oscar M., V. E. Heaton, and J. S. Epps, to Thiokol Chemical Corp. Means for determining the temperature of the solid propellant in a test rocket motor case. 3,347,712, 10–17–67, Cl. 136—230.

Hayashi, Kazushige: *See*—

Haynes, John A. Bulldozer and bucket. 3,346,974, 10–17–67, Cl. 37—117.5.

Hays, Darrell D.: *See*—
Clark, Wesley I., Griggs, Hays, and Jacky. 3,347,768.

Hays, Gordon W.: *See*—
Congelli, Henry C., and Hays. 3,347,152.

Haywood, Russell I., and L. D. Barley, to Harris-Intertype Corp. Automatic memory storage of the operation of a cutting machine. 3,347,120, 10–17–67, Cl. 83—42.

Heathe, William R., to The Dentists' Supply Co. of New York. Self-leveling air supported mobile chair base. 3,347,330, 10–17–67, Cl. 180—7.

Heaton, Victor E.: *See*—
Hawkins, Oscar M., Heaton, and Epps. 3,347,712.

Hebermehl, Reinhard: *See*—
Krauss, Walter, and Hebermehl. 3,347,816.

Hebner, Theodore J.: *See*—
Rogers, Charles H., Kronenberg, Olson, and Hebner. 3,347,345.

Hecox, William: *See*—
Schleser, Warren J., Hecox, and Peasley. 3,347,328.

Hedgepeth, Edward B. Trailer hitch structure. 3,347,561, 10–17–67, Cl. 280—406.

Heidmann, Marcus F., and C. E. Feiler. Control of transverse instability in rocket combustors. 3,347,046, 10–17–67, Cl. 60—243.

Hein, Ewald, to Siegner Machinenbau G.m.b.H. Apparatus for the turning over and piling of rolled stock. 3,347,397, 10–17–67, Cl. 214—6.

Heinrichs, Alfred J.: *See*—
Mankowich, Ivan, Varenelli, and Heinrichs. 3,347,971.

Heltman, David L., to Sierra Engineering Co. Latch operated microphone switch for breathing mask. 3,347,229, 10–17–67, Cl. 128—146.3.

Heller, Milton: *See*—
Lenhard, Robert H., Heller, and Bernstein. 3,347,854.

Hendrix, C. W. Sewing machine attachment. 3,347,189, 10–17–67, Cl. 112—153.

Henkel & Cie, G.m.b.H.: *See*—
Engelskirchen, Konrad, and Galinke. 3,347,847.

Henn, Richard W., and D. W. Miller, to Eastman Kodak Co. Solid homogeneous compositions containing silver halide processing agents. 3,347,675, 10–17–67, Cl. 96—61.

Henning, George J., and J. Scalia, to The Central States Can Corp. Method of fastening a tab to a metallic container wall. 3,346,948, 10–17–67, Cl. 29—509.

Henry, George R. Zircon refractory. 3,347,687, 10–17–67, Cl. 106—57.

Hercules Inc.: *See*—
Hanna, Russell D. 3,347,970.

Herman, Simon J. Mechanical device to facilitate the combustion of fuel oil in oil burners. 3,347,303, 10–17–67, Cl. 158—36.

Hertz, Hellmuth. Laser oscillograph. 3,348,233, 10–17–67, Cl. 346—76.

Hester, Jackson B., Jr., to The Upjohn Co. 4-(indol-3-yl)-hexahydro-1H-azepines and their method of preparation. 3,347,866, 10–17–67, Cl. 260—326.15.

Hetmann, Richard, to Dr. Ing. Porsche, h.c.F., K.G., Firma. Synchronized clutch with multiple friction members. 3,347,347, 10–17–67, Cl. 192—53.

Hewlett-Packard Co.: *See*—
Kistler, James F. 3,348,159.
Ritchie, Douglas E. 3,347,608.
Vessot, Robert F. C. 3,348,040.

Heywang, Walter, to Siemens & Halske Aktiengesellschaft Berlin and Munich. Method of producing semiconductor components. 3,347,719, 10–17–67, Cl. 148—187.

Hickam, William M., to Westinghouse Electric Corp. Device for monitoring oxygen content of gases. 3,347,767, 10–17–67, Cl. 204—195.

Higeta, Tsukumo: *See*—
Kawashima, Masao, and Higeta. 3,348,171.

Higginson, James E.: *See*—
Dickinson, Lloyd R., and Higginson. 3,346,910.

High, Charles N., and G. R. Howland, to The Bendix Corp. Velocity sensor. 3,347,103, 10–17–67, Cl. 73—502.

Higuchi, Takeru, and F. S. Hom, to Warner-Lambert Pharmaceutical Co. Magnesia-alumina buffer composition. 3,347,640, 10–17–67, Cl. 23—315.

Higuchi, Takeru, and F. S. Hom, to Warner-Lambert Pharmaceutical Co. Buffer composition having high magnesia to alumina ratio. 3,347,641, 10–17–67, Cl. 23—315.

Hill, Dale H., to Chrysler Corp. Laminating process and apparatus. 3,347,723, 10–17–67, Cl. 156—103.

Hill, George N.: *See*—
Reuter, Gerald L., and Hill. 3,347,743.

Hiller, Alexander J., and R. M. Haisfield, to United States of America, Navy. Information storing and sorting device. 3,347,241, 10–17–67, Cl. 129—16.1.

Hinde, Ronald W. and W. G. C. Raper, to Monsanto Chemicals, (Australia) Ltd. Production of aminoquinolines. 3,347,864, 10–17–67, Cl. 260—288.

Hinke, Jerald D., to J. I. Case Co. Reverse idler drive and interlock. 3,347,108, 10–17–67, Cl. 74—342.

Hirohata, Hyogo: *See*—
Nagata, Takashi, Hirohata, Ishibashi, and Arimura. 3,348,078.

Hirst, Ian J., to International Standard Electric Corp. Redundant amplifier circuit. 3,348,163, 10–17–67, Cl. 330—84.

Hitzman, Donald O., to Phillips Petroleum Co. Corrosion protection. 3,347,690, 10–17–67, Cl. 117—97.

Hoag, Yates M., to General Electric Co. Magnetic tape mechanism. 3,347,483, 10–17–67, Cl. 242—55.12.

Hobourn Aero Components Ltd.: *See*—
Porter, Allan W. H., and Austin. 3,347,063.

Hodges, Leonard S., and R. B. Annat, to Massey-Ferguson Services N.V. Swinging boom pressure control hitch. 3,347,560, 10–17–67, Cl. 280—405.

Hodges, Ralph D., and F. C. Avila, to General Electric Co. Electrical coils and methods for producing same. 3,348,183, 10–17–67, Cl. 336—223.

Hodson, Anthony E.: *See*—
Priestley, Eric, and Hodson. 3,347,498.

Hoelzle, Gerd: *See*—
Ulrich, Paul, Hoelzle, Stahel, and Schaub. 3,347,617.

Hoerner-Waldorf Corp.: *See*—
Guyer, Reynolds, and Mairs. 3,347,446.

Hofer, Walter D. Grain sieve for combine harvesters. 3,347,375, 10–17–67, Cl. 209—395.

Hoffman, Norman E., to AMP Inc.. Electrical connector with audible indicator means. 3,347,979, 10–17–67, Cl. 174—87.

Hofmeister, Konrad J., and G. R. Swann, to Jones & Laughlin Steel Corp. Strip marking apparatus. 3,346,995, 10–17–67, Cl. 51—156.

Hoge, Henri H., to United States of America, Navy. Saturated phase shift circuit. 3,348,134, 10–17–67, Cl. 323—126.

Hogsett, John N., A. Khuri, and H. W. Schulz, to Union Carbide Corp. Adducts. 3,347,893, 10–17–67, Cl. 260—448.

Hohl, Frank J., to Hohi Machine & Conveyor Co., Inc. Stacking device. 3,347,396, 10–17–67, Cl. 214—6.

Hohl Machine & Conveyor Co., Inc.: *See*—
Hohl, Frank J. 3,347,396.

Holden, Donald A.: *See*—
Bjerke, John O., Halliday, Stevens, Mahler, and Holden. 3,347,051.

Holder, James D.: *See*—
Wright, James B., and Holder. 3,348,096.

Hollfield, Robert B. Jet cleaning apparatus and groove router for concrete payments. 3,347,597, 10–17–67, Cl. 229—36.

Holl, Herman F.: *See*—
Schroeder, William F. and Holl. 3,347,094.

Hollander, Milton B., to American Machine & Foundry Co. Friction welding. 3,346,947, 10–17–67, Cl. 29—470.3.

Hollingshead, Richard M., Jr. Security container. 3,347,069, 10–17–67, Cl. 70—63.

Hollister, Allen R.: *See*—
Anderson, Robert F., Hollister, and Reuteler. 3,347,116.

Holly, Sandor, to Arthur D. Little, Inc. Method and apparatus for providing a coherent source of electromagnetic radiation. 3,348,093, 10–17–67, Cl. 315—3.

Holman, Earl V.: *See*—
Webb, James E. 3,346,929.

Holmberg, Berten A., to Minnesota Mining and Mfg. Co. Electronic dropout suppressor. 3,347,984, 10–17–67, Cl. 178—6.6.

Holmes, James F., to The Boeing Co. DC power supply and amplitude modulator. 3,348,151, 10–17–67, Cl. 325—185.

Holt, Charley. Unicycle toy having a weight secured to a journaled support. 3,346,990, 10–17–67, Cl. 46—100.

Holt, Ray G.: *See*—
Compton, James A., Allen, and Holt. 3,347,254.

Holtermann, Hugo and S. Salvesen, to Nyegard & Co. A/S. Injectable solution of an amine salt of a radiopaque iodinated organic acid containing calcium ions. 3,347,746, 10–17–67, Cl. 167—95.

Holtschmidt, Hans, and W. Zecher, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of imodocarbonyl chlorides and similar compounds containing nitrogen and chlorine combined in an—N=CCL—radical. 3,347,762, 10–17–67, Cl. 204—158.

Holz, Frederick H., W. C. Lutzke, and R. O. Blink, to Mitchell Mfg. Co. Knock-down table structure. 3,347,509, 10–17–67, Cl. 248—188.7.

Hom, Foo S.: *See*—
Higuchi, Takeru, and Hom. 3,347,640.
Higuchi, Takeru, and Hom. 3,347,641.

Honeywell Inc.: *See*—
Jensen, James L. 3,348,130.

Honsberg, Werner, and H. Mueller, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Means for adjusting anodes in electrolytic cells having horizontal cathodes. 3,347,769, 10–17–67, Cl. 204—225.

Hood, George C.: *See*—
Baumgartner, Herman J., Hood, and Weaver. 3,347,630.

Hooker Chemical Corp.: *See*—
Blair, Noel D., and Bean. 3,347,685.
Blair, Noel D., and Bean. 3,347,807.
Blair, Noel D., and Pawlak. 3,347,684.
Carr, Charles H., and Beanblossom. 3,347,937.
Lodeesen, Herman J., and Russell. 3,347,713.
Weil, Edward D., and Linder. 3,347,929.
Weil, Edward D., and Smith. 3,347,686.

Hoover Ball and Bearing Co.: *See*—
McKinney, Ralph E. 3,347,412.

Hopkins, John D., D. J. Whittingham, F. H. Bultman, and P. K. Krause, to Walker Mfg. Co. Manufacture of filters. 3,347,967, 10–17–67, Cl. 264—115.

Hoppe, Peter, E. Weinbrenner, C. Muhlhausen, and K. Breer, ½ to Farbenfabriken Bayer Aktiengesellschaft and ½ to Mobay Chemical Co. Apparatus for the manufacture of polyurethane plastics. 3,347,529, 10–17–67, Cl. 259—8.

Horgan, James F.: *See*—
Ellis, Myron P., Murphy, and Horgan. 3,347,090.

Horsch, Joachim, to Caterpillar Tractor Co. Torque converter charging valve. 3,347,042, 10–17–67, Cl. 60—54.

Hott, Ion V. K., to The Joyce-Cridland Co. Lift installation. 3,347,342, 10–17–67, Cl. 187—8.41.

Howard, Ben O. Exhauster including venturi means. 3,347,147, 10–17–67, Cl. 98—78.

Howe, King L., to E. I. du Pont de Nemours and Co. Methyl methacrylate compositions containing halogen substituted acid alkyl esters of orthophosphoric acid. 3,347,818, 10–17–67, Cl. 260—45.7.

Howden, William E., to Bell Telephone Laboratories, Inc. Anti-reversal cell protection network. 3,348,117, 10–17–67, Cl. 320—18.

Howgate, David W., to United States of America, Army. Method and apparatus for analysis of gaseous discharge products from flames by electron-paramagnetic resonance. 3,348,135, 10–17–67, Cl. 324—.5.

Howland, George R.: *See*—
High, Charles N., and Howland. 3,347,103.

Hoyt, John M., and C. A. Sprang, to National Distillers and Chemical Corp. Process for copolymerization of bis-(a-haloalkyl) aromatic compounds with vinyl compounds in the presence of a coupling agent. 3,347,825, 10–17–67, Cl. 260—47.

Hrabe, Jerry, to Superior Tea & Coffee Co. Semi-automatic coffee urn. 3,347,150, 10–17–67, Cl. 99—283.

Hruby, John O., Jr., to Rain Jet Corp. Water disperser. 3,347,464, 10–17–67, Cl. 239—210.

Huber, Ludwig K., to Pennsalt Chemical Corp. Process for preparing N-formyl compounds using boric acid as catalyst. 3,347,916, 10–17–67, Cl. 260—561.

Hubert, Andre J., to Union Carbide Corp. Novel process for the preparation of olefinic compounds and derivatives thereof. 3,347,943, 10–17–67, Cl. 260—666.

Hughes Aircraft Co.: *See*—
Riley, Ray L. 3,348,219.
Toscano, Esteban J. 3,348,156.
Wendland, Paul H. 3,347,693.

Hughes, Francis A.: *See*—
Galvin, Thomas J., and Hughes. 3,347,690.

Hughes, Geoffrey F. Air cushion vehicle. 3,347,331, 10–17–67, Cl. 180—7.

Hunnicutt, Cecil C., to Instrument Research, Inc. Periodic vacuum-breaking motor operated rotary valve in a surgical device. 3,347,235, 10–17–67, Cl. 128—276.

Hunt, Kenneth M.: *See*—
Morrison, John E., Jr., Arzoian, and Hunt. 3,347,426.

Hunter, William K., to Universal Oil Products Co. Halogenation of aromatic hydrocarbons. 3,347,942, 10–17–67, Cl. 260—650.

Hunziker, Fritz: *See*—
Schmutz, Jean, and Hunziker. 3,347,849.

Hus, Johannes, E. Scoran, and E. Zurheller, to Burndy Corp. Homogeneous sodium conductor connections. 3,347,977, 10–17–67, Cl. 174—74.

Husar, Karel: *See*—
Mills, Samuel M., and Husar. 3,347,274.

Huska, Harold W., and J. C. Redman, to R. D. Werner Co., Inc. Extension ladders. 3,347,340, 10–17–67, Cl. 182—207.

Huston, Henry H.: *See*—
Kalata, Daniel R., and Huston. 3,347,411.

Hutchinson, Gibson T., to Crane Co. Feeder for solid materials. 3,347,741, 10–17–67, Cl. 162—241.

Hutton, David G., to E. I. du Pont de Nemours and Co. Separation of hydrogen chloride from higher boiling haloalkanes. 3,347,021, 10–17–67, Cl. 55—71.

Hutton, Willis L. Anti-glare visors. 3,346,876, 10–17–67, Cl. 2—10.

Hydrocarbon Research, Inc.: *See*—
Volk, William, and Johnson. 3,347,659.

Hydrosteer Ltd.: *See*—
Adams, Frederick J., and Alderton. 3,347,109.

Hynes, Lee P. Hand and finger exercising device. 3,347,547, 10–17–67, Cl. 272—67.

Ignatjev, Vladimir. Axial bearing. 3,347,603, 10–17–67, Cl. 308—6.

Imperial Chemical Industries Ltd.: *See*—
Clark, Keith J. 3,347,838.
Coffey, Robert S., and Lawley. 3,347,763.
Featherstone, William. 3,347,948.
Lowe, David, Norris, and Turner. 3,347,909.

Inariba, Tokuzo, to Kabushiki-Kaisha Tokai Rika Denki Seisakusho. Miniature electric synchronous motor. 3,348,083, 10–17–67, Cl. 310—164.

Industrial Research Products, Inc.: *See*—
Carlson, Elmer V. 3,347,991.

Ingham, Herbert S., Jr., to Metco, Inc. Radio frequency plasma flame spraying. 3,347,698, 10–17–67, Cl. 117—47.

Inman, Byron N., to E. I. du Pont de Nemours and Co. Spray valve for injecting a reactant liquid into a stream of another reactant liquid. 3,347,267, 10–17–67, Cl. 137—604.

Inouye, George T., J. M. Andres, and G. L. Brown, to TRW Inc. Gas cell frequency standard. 3,348,165, 10–17–67, Cl. 331—3.

International Standard Electric Corp.: *See*—
Schluter, Heins. 3,347,994.

International Basic Economy Corp.: *See*—
Gleason, William J., Jr., and Zies. 3,347,257.

International Business Machines Corp.: *See*—
Atkins, James B. 3,348,162.
Barbetta, Raymond J. 3,348,214.
Cielo, John R. 3,348,124.
Clauer, Calvin K., and Erdmann. 3,347,131.
Evans, James R. 3,348,213.
Featherston, John R. 3,348,153.
Gruodis, Algirdas J., Lange, and McAnney. 3,348,033.
Schick, Henry C. 3,346,950.
Schmidt, Herbert R. 3,348,065.
Thomas, Llewellyn H. 3,348,089.
Vinal, Albert W. 3,348,218.

International Harvester Co.: *See*—
Pool, Stuart D., and Knapp. 3,347,032.

International Machinery Corp. S.A.: *See*—
Mencacci, Samuel A. 3,347,155.

International Machinery Corp.: *See*—
Mencacci, Samuel A., and Hagerborg. 3,347,351.

International Nickel Co., Inc., The: *See*—
Badia, Frank A., and Kirby. 3,347,666.
Bieber, Clarence G. 3,347,663.

International Standard Electric Corp.: *See*—
Hirst, Ian J. 3,348,163.
Scheidig, Rudolf. 3,348,174.
Schluter, Heins, and Schonemeyer. 3,347,995.
Willrett, Helmut, and Kuhl. 3,348,196.

International Telephone and Telegraph Corp.: *See*—
Klein, Robert E., and Gammon. 3,348,101.
Prichard, Roy. 3,348,204.

Instrument Research, Inc.: *See*—
Hunnicutt, Cecil C. 3,347,235.

Irikura, Tsutomu, K. Masuzawa, and K. Nishino, to Kyorin Seiyaku Kabushiki Kaisha. Bis-(phenoxyacetyl)-piperazines. 3,347,860, 10–17–67, Cl. 260—268.

Ironees Co., The: *See*—
Lehrman, David. 3,347,403.

Ishibashi, Michio: *See*—
Nagata, Takashi, Hirohata, Ishibashi, and Arimura. 3,348,078.

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Ishimura, Kazukiyo: *See*—
Mochida, Yasunori, and Ishimura. 3,347,337.

Ismail, Roshdy, H. Corsepius, and H. Simonis. Process for the production of sucrose esters of fatty acids. 3,347,848, 10–17–67, Cl. 260—234.

Ito, Masumi: *See*—
Ohara, Masao, Yamamoto, Kamiya, Tanaka, Sugihara, and Ito. 3,347,883.

Jackson, Philip S. Memory game having rotatable disc means for varying the symbols displayed. 3,347,549, 10–17–67, Cl. 273—130.

Jacky, Germaine F.: *See*—
Clark, Wesley I., Griggs, Hays, and Jacky. 3,347,768.

Jacobs, Charles T. Behind-the-lens spot-metering in single-lens-reflex cameras. 3,347,143, 10–17–67, Cl. 95—42.

Jacobs, Gilbert C., to Everbrite Electric Signs, Inc. Illuminatable display sign drums with ventilating means therefore. 3,348,038, 10–17–67, Cl. 240—47.

Jagger, Ernest T., and G. W. Halliday, to George Angus & Co. Ltd. Shaft seals. 3,347,554, 10–17–67, Cl. 277—134.

Jago, Edward J., to Foseco Trading A.G. Dry exothermic composition containing fibrous material having oxidiser salt absorbed therein. 3,347,721, 10–17–67, Cl. 149—2.

Jamieson, Robert S., to Lorain Products Corp. Continuously-operating standby power-supply and battery-charging apparatus and method. 3,348,060, 10–17–67, Cl. 307—66.

Janata, Vlastimil: *See*—
Kotesovec, Vladimir, Ziska, and Janata. 3,347,289.

Janiszewski, Anthony T.: *See*—
Glass, Marvin I., Janiszewski, and Furuta. 3,347,548.

Janousek, Vilem: *See*—
Bartosek, Vladimir, Janousek, and Rotrekl. 3,347,283.

Jaworski, Ernest G., and G. J. Marco, to Monsanto Co. Activated dihydroquinolines. 3,347,677, 10–17–67, Cl. 99—2.

Jenaer Glaswerk Schott & Gen: *See*—
Vinz, Ottmar. 3,348,106.

Jenkins, Fred W.: *See*—
Dickson, Woodrow J., and Jenkins. 3,347,789.

Jenkner, Herbert, to Chemische Fabrik Kalk G.m.b.H. Flame-proofed synthetic resins. 3,347,822, 10–17–67, Cl. 260—45.75.

Jennings, G. B., to The Pandjiris Weldment Co. System for measuring speeds of workpieces rotated by motor. 3,348,144, 10–17–67, Cl. 324—70.

Jennings Radio Mfg. Corp.: *See*—
Lindsay, Wesley N. 3,346,933.

Jensen, Hartley J., and E. E. Smith, to United States of America, Atomic Energy Commission. Time internal measurement utilizing a tunnel diode switched by reflected pulses from transmission lines. 3,348,141, 10–17–67, Cl. 324—68.

Jensen, James L., to Honeywell Inc. Control apparatus. 3,348,130. 10–17–67, Cl. 323—22.

Jensen, Paul A., to Westinghouse Electric Corp. Decision circuit for use in signal processing systems. 3,348,034, 10–17–67, Cl. 235—193.

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Jered Industries Inc.: *See*—
Gregory, Charles E. 3,347,525.

Johnson, Alfred R.: *See*—
Estes, Phillip W., and Johnson. 3,347,963.

Johnson, Charles M., to Johnson Mfg. Co. Hydraulic circuits for earth scraping machines. 3,346,972, 10–17–67, Cl. 37—8.

Johnson, Clarence A.: *See*—
Volk, William, and Johnson. 3,347,659.

Johnson, Clarence B. Brush attachment for pressurised container. 3,346,908, 10–17–67, Cl. 15—552.

Johnson, David W., to The Arrow-Hart & Hegeman Electric Co. Trigger operated tool handle switch. 3,348,010, 10–17–67, Cl. 200—157.

Johnson, Harvey H. Roof box frame. 3,346,999, 10–17–67, Cl. 52—90.

Johnson, John H., to Art Metal, Inc. Multiple suspension device. 3,347,611, 10–17–67, Cl. 312—311.

Johnson & Johnson: *See*—
Nichols, Joseph. 3,347,545.

Johnson Mfg. Co.: *See*—
Johnson, Charles M. 3,346,972.

Johnson, Paul H., to Phillips Petroleum Co. Carbon black manufacture. 3,347,633, 10–17–67, Cl. 23—209.4.

Johnson, Paul R., to E. I. du Pont de Nemours and Co. Process for preventing sulfur loss from chlorosulfonated polyethylene. 3,347,810, 10–17–67, Cl. 260—29.6.

Johnson, Philip C.: *See*—
Engelke, John L., Johnson, and Stein. 3,347,959.

Johnson, Rowland E.: *See*—
Brau, Maurice J., Johnson, and Patterson. 3,348,045.

Johnson, Waldo O., to Weather-Seal, Inc. Magnetically supported sliding doors and panels. 3,346,993, 10–17–67, Cl. 49—409.

Johnston, Arthur A. Concentrator for minerals. 3,347,376, 10–17–67, Cl. 209—444.

Johnstone, Theodore H., to General Motors Corp. Vehicle closure latch. 3,347,584, 10–17–67, Cl. 292—198.

Jones, Ian R.: *See*—
Banks, Hampden O., Jr., Teatum, and Jones. 3,347,711.

Jones, John L. Compressed catamenial tampon of regenerated cellulose. 3,347,237. 10–17–67, Cl. 128—285.

Jones & Laughlin Steel Corp.: *See*—
Hofmeister, Konrad J., and Swann. 3,346,995.
Schraeder, Albin E. 3,347 099.

Jones, Odell J., B. H. Page, and D. F. Dubbs, to Anderson, Clayton & Co., Inc. Cottonseed oil direct extraction method. 3,347,885, 10–17–67, Cl. 260—412.4.

Jones, Richard S., to Westland Aircraft Ltd. Ground effect vehicles. 3 347,329. 10–17–67. Cl. 180—7.

Jordan, Howard E., to The Reliance Electric and Engineering Co. Graded concentric winding dynamoelectric machine. 3,348,084. 10–17–67, Cl. 310—202.

Jordan, Kenneth R., to Westinghouse Electric Corp. Modified carbide fuels. 3,347,749. 10–17–67, Cl. 176—69.

Jorgensen, Pierre, to Compagnie de Saint-Gobain. Electrical comparator circuitry. 3,348,199, 10–17–67, Cl. 340—146.2.

Joyce-Cridland Co., The: *See*—
Hott, Ion V. K. 3,347,342.

Judsen, Nils A., and R. T. Kirchner, to Armstrong Machine Works. Steam trap. 3,347 258, 10–17–67, Cl. 137—183.

Jung, Erland V., to Knapsack Aktiengesellschaft. Production of juice from sugar-containing plant material. 3,347,705, 10–17–67, Cl. 127—44.

Jura, Stanislav, to Uyzkumny ustav matematickych stroju. Brake or drive unit for recording tape. 3,347,435, 10–17–67, Cl. 226—176.

Justi Eduard, and A. Winsel, to Siemens-Schuckertwerke Aktiengesellschaft, and Varta Aktiengesellschaft. Electrochemical method and apparatus for producing a protective gas mixture consisting of nitrogen and hydrogen. 3,347,759, 10–17–67, Cl. 204—129.

K & M Electronics Co.: *See*—
Krause, Stephen R. 3,348,030.

Kabushiki-Kaisha Tokai Rika Denki Seisakusho: *See*—
Inariba, Tokuzo. 3,348,083.

Kaess, Franz, H. Michaud and J. Seeholzer, to Suddeutsche Kalkstickstoff-Werke, Aktiengesellschaft. Method of preparing a blend of a melamine formaldehydre resin and a deaminotriazine formaldehyde resin. 3,347,953, 10–17–67, Cl. 260—849.

Kagan, Sholly, and F. A. Rodgers, to Polaroid Corp. Method for transmitting digital data in connection with document reproduction system. 3,347,981, 10–17–67, Cl. 178—5.

Kai, Shigeto: *See*—
Kashima, Hiroshi, Kurokaws, Kai, and Oka. 3,346,931.

Kalata, Daniel R., and H. H. Huston. Nestable containers. 3,347,411. 10–17–67. Cl. 220—97.

Kali-Chemie Aktiengesellschaft: *See*—
Schmid, Paul. 3,347,623.

Kalman, Peter G., to A. B. Dick Co. Photoconductive copy system. 3,347,669, 10–17–67, Cl. 96—1.

Kamibayashi, Tetsusaburo: *See*—
Oshima, Shintaro, Kamibayashi, and Komuro. 3,348,061.

Kamiya, Takashi: *See*—
Ohara, Masao, Yamamoto, Kamiya, Tanaka, Sugihara, and Ito. 3,347,883.

Kamm, Lawrence J., to Numerical Control Corp. Mechanical interpolator, 3 347,457, 10–17–67, Cl. 235—61.

Kanegafuchi Spinning Co., Ltd.: *See*—
Matsumoto, Toyokazu, Ohara, Kawase, and Sakaurai. 3,347,764.

Kanner, Bernard to Union Carbide Corp. Amino-organofluorosilanes. 3,347,896, 10–17–67, Cl. 260—448.2.

Kappe, Stanley E., to FMC Corp. Sewage treatment process and apparatus. 3,347,784, 10–17–67, Cl. 210—6.

Karen Corp.: *See*—
Blackburn, Leonard. 3,346 909.

Kashima, Hiroshi, W. Kurokawa, S. Kai, and K. Oka, to Asahi Kasei Kogyo Kabushiki Kaisha. Process and apparatus for producing stretchable high bulky yarns. 3,346,931, 10–17–67, Cl. 28—1.

Kashiwamura, Keiji. Combination basin and work board. 3,346 886, 10–17–67, Cl. 4—187.

Kass, Robert E.: *See*—
Lavin, Edward, Markhart, and Kass. 3,347,808.

Kato, Tetsuya: *See*—
Yoshikawa, Masaharu, Kusashio, Kato, and Takenishi. 3,347 846.

Katzeameyer, Edwin B., to B. F. Goodrich Co. Fuel tank. 3,347,406, 10–17–67, Cl. 220—22.

Kaufman, Maxime G., to United States of America, Navy. Phase rate compensator. 3,348.126, 10–17–67, Cl. 332—18.

Kaupp, Josef, and K. Blaettner, to Farbwerke Hoechst Aktiengesellschaft vormals. Terpene phenolic resins. 3,347,935, 10–17–67, Cl. 260—619.

Kawahara, Fred K., to Standard Oil Co. Lubricant grease. 3,347 794, 10–17–67, Cl. 252—49.6.

Kawase, Shigeru: *See*—
Matsumoto, Toyokazu, Ohara, Kawase, and Sakaurai. 3,347,764.

Kawase, Susumu, J. Kubota, and H. Soma, to Nippon Electric Co. Ltd. Recording pen assembly. 3,348 235, 10–17–67, Cl. 346—140.

Kawashima, Masao, and T. Higeta, to Fujitsu Ltd. Equalization circuits. 3,348,171, 10–17–67, Cl. 333—28.

Keller, Jesse C.: *See*—
Lankford, William L., Jr., Mathis, Keller, Bowman, and Van Winkle. 3,348,231.

Keller, Siegfried, and K. Brandt, to Messerschmitt AG. Production of seam-like connections between flat fabric members by means of thermoplastic materials. 3,347,730, 10–17–67, Cl. 156—423.

Kelly, Harlan J.: *See*—
Nissen, George P., and Kelly. 3,347,508.

Kemp, Arthur W., to Farrell Corp. Roll structures and method. 3,347,157, 10–17–67, Cl. 100—41.

Kendall, Paul A., to United States of America, Navy. High speed electromechanical shutter for spectrographs. 3,347,144, 10–17–67. Cl. 95—53.

Kennedy, Vance C., to United States of America, Interior. Freezing-type sediment sampler. 3,347,101, 10–17–67, Cl. 73—421.

Kent, George, Ltd.: *See*—
Allen, Eric H. 3,347,004.

Kepkay, Leslie L., and E. G. Metcalfe, to Massey-Ferguson Services N. V. Rotary beater for combine harvesters. 3,347,244, 10–17–67. Cl. 130—27.

Kerr, Raymond W. Article for holding a cravat adjacent to a shirt collar. 3,346,880, 10–17–67. Cl. 2—150.

Kerr, Robert B., to Mobil Oil Corp. System for the electronic splicing of signals. 3,348,193, 10–17–67, Cl. 340—15.5.

Keska, Kenneth R., E. L. Mackey, and B. C. Dolphin, to The Yoder Co. Tube reshaping machine. 3,347,078, 10–17–67, Cl. 72—225.

Kesker, John M., to National Homes Corp. Insulated threshold. 3,346,994. 10–17–67, Cl. 49—470.

Kessler, Cletus A., to United States of America, Navy. Flux guide for a magnetic fuze. 3,347,165, 10–17–67, Cl. 102—70.2.

Keuffel & Esser Co.: *See*—
Sellen, Carl R. and Collura. 3,347,487.

Khattar, Nasri. Nestable supports. 3,347,186, 10–17–67, Cl. 108—91.

Khoury, Edward F., to Khoury Bros., Inc. Demountable shelf. 3,347,187, 10–17–67, Cl. 108—152.

Khuri, Albert: *See*—
Hogsett, John N., Khuri, and Schuls. 3,347,893.

Killian, Lawrence N.: *See*—
De Gray, Richard J., and Killian. 3,347,646.

Kimberlin, Charles N., Jr., W. F. Arey, Jr., and F. J. Buchmann, to Esso Research and Engineering Co. Dehydration of magnesium chloride. 3,347,625, 10–17–67, Cl. 23—91.

Kimberly-Clark Corp.: *See*—
Nutting, Robert G., and Wagner. 3,347,015.

King, John H.: *See*—
Hartman, William C., and King. 3,348,190.

King, Lawrence. Wall mounted spray can activator. 3,347,468, 10–17–67, Cl. 239—274.

King, Paul F., to Xerox Corp. Asynchronous page-at-a-time printer. 3,348,232. 10–17–67, Cl. 346—74.

Kingsberry Homes Corp.: *See*—
Groat, Marshall O. 3.347,209.

Kinkaid, Robert J., to AMP Inc. Electrical connector elements. 3,348,191, 10–17–67, Cl. 339—176.

Kiraly, Joseph L. Table-lectern. 3,347,184, 10–17–67, Cl. 108—17.

Kirby, Gary N.: *See*—
Badia, Frank A., and Kirby. 3,347,666.

Kirchner, Robert T.: *See*—
Judsen, Nils A., and Kirchner. 3,347,258.

Kistler, James F., to Hewlett-Packard Co. Amplifier having polarity insensitive output voltage. 3,348,159, 10–17–67, Cl. 330—13.

Kiwala, Edward J. Shoe attached weapon. 3,346,971, 10–17–67, Cl. 36—2.5.

Klang, William. Jewelry slide. 3,347,037, 10–17–67, Cl. 58—152.

Klausner, Alvin S. Washing machine or the like with adjustable programming controls. 3,347,066, 10–17–67, Cl. 68—12.

Klein, Robert E., and J. Gammon, to International Telephone and Telegraph Corp. Cordwood module with heat sink fence. 3,348,101, 10–17–67, Cl. 317—100.

Kline, John. Spare propeller holder. 3,347,353, 10–17–67, Cl. 206—1.

Knapp, Lyman E.: *See*—
Rixmann, Amos E., and Knapp. 3,347,602.

Knapp, William H.: *See*—
Pool, Stuart D., and Knapp. 3,347,032.

Knapsack Aktiengesellschaft: *See*—
Jung, Erland V. 3,347,705.

Knapton, Arthur G. and M. P. Reece, to Associated Electrical Industries Ltd. Contact structure for an electric vacuum switch. 3,348,012, 10–17–67, Cl. 200—166.

Knize, Leon J., to W. B. Udell. Cabinet construction. 3,347,607, 10–17–67, Cl. 312—8.

Knudsen, Raymond G., R. E. Badger, and R. R. Zusinec, to Snap-On Tools Corp. Tubular wall ridge removing and expanding devices of the portable type. 3,347,075, 10–17–67, Cl. 72—111.

Knusli, Enrico, and H. Gysin, to J. R. Geigy A.-G. Herbicidal compositions containing 2-methylthio-4-(γ-methoxy-propylamino)-6-isopropylamino-S-triazine. 3,347,657, 10–17–67, Cl. 71—93.

Kobbernagel, Ejler. Gasket arrangement for a centrifuge bowl with peripheral exhaust opening. 3,347,456, 10–17–67, Cl. 233—20.

Koch, Karl F.: *See*—
Schrage, Albert, and Koch. 3,348,039.

Koch, Roland G., to Universal Engineering Co. Axially adjustable tool holder construction. 3,347,115, 10–17–67, Cl. 77—58.

Koegemann, Victor E., W. L. Denman, and C. B. Friedman, to W. R. Grace & Co. Composition and method for treating fresh cooling water. 3,347.797, 10–17–67, Cl. 252—181.

Koehl, William J., Jr., to Mobil Oil Corp. Electrochemical preparation of aromatic esters. 3,347,758, 10–17–67, Cl. 204—59.

Koehnken, George O.: *See*—
Topper, Robert L., Cofield, Foster, Woebcke, and Koehnken. 3,347,599.

Koerner, Harry E.: *See*—
Wright, Robert L., Jr., and Koerner. 3,348,114.

Kohashi, Tadao, to Matsushita Electric Industrial Co., Ltd. Wavelength converting type radiant energy responsive display device. 3,348 056. 10–17–67, Cl. 250—213.

Kohrer, Charles W. Respiration monitor. 3,347,222, 10–17–67, Cl. 128—2.

Kokkinis, Nikolaus, to Lindauer Dornier Gesellschaft m.b.H. Weft thread-cutting mechanism for shuttleless looms. 3,347,282. 10–17–67, Cl. 139—116.

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Kokusai Denshin Denwa Kabushiki Kaisha: *See*—
Oshima, Shintaro, Kamibayashi, and Komuro. 3,348,061.

Kolesh, Victor A., and W. E. Lamlein, to Wallace-Murray Corp. Band saw box. 3,347,359, 10–17–67, Cl. 206—52.

Kollonitsch, Janos: *See*—
Pfister, Karl, and Kollonitsch. 3,347,908.

Komorn, Mark B.: *See*—
Brayman, Jacob, Komorn, and Zeitlin. 3,346,922.

Komuro: Keigo: *See*—
Oshima, Shintaro, Kamibayashi, and Komuro. 3,348,061.

Konkel, Gilbert J. Method and apparatus for binding a manuscript. 3,347,565, 10–17–67. Cl. 281—21.

Kopera, John H., to Rudd-Melikian, Inc. Article dispenser with automatic replacement of depleted stack with a similar stack. 3,347,413, 10–17–67, Cl. 221—11.

Koppelmann, Floris, to Lincentia Patent Verwaltungs-G.m.b.H. Electronic control of motors. 3,348,110, 10–17–67, Cl. 318—227.

Koppers Co., Inc.: *See*—
Mitchell, Hartman, and Dortenso. 3,347,589.
Stewart, Warren A. 3,347,732.
Voris, William H. 3,347,884.

Korger, Gerhard: *See*—
Ruschig, Heinrich, Korger, Aumüller, and Schmidt. 3,347 914.

Kornfeldt, Per: *See*—
Flodin, Per G. M., Kornfeldt, and Gardshol. 3,347,869.

Kortan, Joseph F. Support for christmas trees. 3,347,503, 10–17–67. Cl. 248—46.

Kossnar, Dennis, to Container Corp. of America. Two-cell display carton. 3,347,356 10–17–67, Cl. 206—45.29.

Kotesovec, Vladimir, J. Ziska, and V. Janata, to Vyskumny a vyvojovy ustav drevarsky. Apparatus for rip sawing of logs and timbers. 3,347,289. 10–17–67, Cl. 143—36.

Kracht, Albert J., and H. C. Marks, to Wallace & Tiernan Inc. Treatment of fruits and the like to inhibit decay. 3,347,683, 10–17–67, Cl. 99—156.

Kraissl, Frederick Jr. Multiple element filter assembly. 3,347,386. 10–17–67, Cl. 210—138.

Krakauer, Sidney, S. Musikant, and D. J. Rosenberg, to Certain-Teed Fiber Glass Corp. Spinning glass filaments. 3,347,648, 10–17–67, Cl. 65—3.

Krause, Paul K.: *See*—
Hopkins, John D., Whittingham, Bultman, and Krause. 3,347,967.

Krause, Stephen R., to K & M Electronics Co. Apparatus for photo-electrically scanning and counting physical inventory. 3,348,030, 10–17–67, Cl. 235—92.

Krauss, Walter, and R. Hebermehl, to Farbenfabriken Bayer Aktiengesellschaft. Pigmented polysiloxane surface coating compositions for glossy coatings of increased thermal stability. 3,347,816, 10–17–67, Cl. 260—37.

Kresge, James S., to General Electric Co. Sparkover control circuit for lightning arrester shunt gap unit. 3,348,100, 10–17–67, Cl. 317—70.

Krivanek, Frank J., and N. C. Cahoon, to Union Carbide Corp. Galvanic battery comprising a positive active mass consisting essentially of nickelic oxide. 3,347,706, 10–17–67, Cl. 136—28.

Krokar, Zeljko, to Siemens & Halske Aktiengesellschaft Berlin and Munich. Selectable value counter. 3,348,029, 10–17–67, Cl. 235—92.

Kronenberg, Francis E.: *See*—
Rogers, Charles H., Kronenberg, Olson, and Hebner. 3,347,345.

Krupp, Helmar: *See*—
Engelhardt, Heins, Krupp, Rabenhorst, Spengler, and Wismath. 3,347,087.

Krynski, John E., to Ametek, Inc. Drum filter. 3,347,389, 10–17–67, Cl. 210—401.

Krzewina, Thomas, to General Electric Co. Rack slide stop. 3,347,613, 10–17–67, Cl. 312—333.

Kubota, Junjiro: *See*—
Kawase, Susumu, Kubota, and Soma. 3,348,235.

Kuderna, Jerome: *See*—
Grandinetti, Attilio, and Kuderna. 3,347,168.

Kuhl, Ulrich: *See*—
Willrett, Helmut, and Kuhl. 3,348,196.

Kuhnl, Leopold K.: *See*—
Mead, Bruce R., and Kuhnl. 3,347,422.

Kure, Gregers. Process and arrangement for production and placing of filling material in hollow building elements. 3,347,136, 10–17–67, Cl. 93—1.

Kurokawa, Wataru: *See*—
Kashima, Hiroshi, Kurokawa, Kai, and Oka. 3,346,931.

Kurtze, Guenther: *See*—
Watters, Bill G., and Kurtze. 3,347,335.

Kusashio, Koji: *See*—
Yoshikawa, Masaharu, Kusashio, Kato, and Takenishi. 3,347,846.

Kutzschbach, Dieter: *See*—
Brack, Alfred, and Kutzschbach. 3,347,865.

Kyorin Seiyaku Kabushiki Kaisha: *See*—
Irikura, Tsutomu, Masuzawa, and Nishino. 3,347,860.

LKB-Produkter Aktiebolag: *See*—
Person, Tage H. 3,347,096.

L & L Mfg. Co.: *See*—
Lyon, Gilbert T. 3,346,935.

Laboratory for Electronics, Inc.: *See*—
Fuller, Harrison W., and Spain. 3,347,614.

Lacroix, Roger and C. Beclier, to Comptoir Lyon-Alemand, Louyot & Cie. Electrolytes for the electrodeposition of platinum. 3,347,757, 10–17–67, Cl. 204—47.

Laegreid, Nils, and R. M. Moseson, to G. T. Schjeldahl Co. RF sputtering apparatus including a capacitive load-in for an RF potential. 3,347,772, 10–17–67, Cl. 204—298.

Laidig, Mark L. Horse tail braid. 3,347,018, 10–17–67, Cl. 54—78.

Laing, Nikolaus. Heat pump. 3,347,059, 10–17–67, Cl. 62—325.

Lair, Clair K., to General Dynamics Corp. Impulse generator. 3,348,080, 10–17–67, Cl. 310—29.

Lajoye, Pierre. Motor-scraper. 3,346,975, 10–17–67, Cl. 37—118.

Lake, Charles G., and R. C. Seanor, to Adamson United Co. Calender with adjustable stripping rolls and removable embossing rolls. 3,346,913, 10–17–67, Cl. 18—2.

Lambers, Kenneth D. Fabric clasp, hose supporter, garter and the like having hook and aperture clasping means. 3,346,928, 10–17–67, Cl. 24—246.

Lamlein, Walter E.: *See*—
Kolesh, Victor A., and Lamlein. 3,347,359.

Lamont & Riley, Inc.: *See*—
Patry, Harvey L., F. J. and E., and Lamont. 3,346,941.

Lancet Laboratories, Inc.: *See*—
Rosenstein, Hyman, and Prebluda. 3,347,682.

Lang, Karl F.: *See*—
Froitzheim, Max, Lang, Rappen, and Turowski. 3,347,936.

Lange, Lawrence K.: *See*—
Gruodis, Algirdas J., Lange, and McAnney. 3,348,033.

Lankford, William L. Jr., H. E. Mathis, J. C. Keller, L. G. Bowman, and R. L. Van Winkle, to The Geolograph Co. Pneumatic well depth recorder. 3,348,231, 10–17–67, Cl. 346—33.

Lanier Electronics Laboratory, Inc.: *See*—
Bolick, Fred C., Jr. 3,347,432.

Lanmon, C. P., II, to Schlumberger Technology Corp. Methods for well completion. 3,347,315, 10–17–67, Cl. 166—123.

Lanmon, C. P., II, to Schlumberger Technology Corp. Apparatus for well completion. 3,347,322, 10–17–67, Cl. 175—4.52.

Lansky, Zdenek J., and K. W. Leibfritz, to Parker-Hannifin Corp. Valve assembly. 3,347,259, 10–17–67, Cl. 137—269.

Lapp Insulator Co., Inc.: *See*—
Lapp, Rudolph S. 3,347,003.

Lapp, Rudolph S., to Lapp Insulator Co., Inc. Protective mounting structure for retractable antenna. 3,347,003, 10–17–67, Cl. 52—169.

Lappin, Gerald R.: *See*—
Bell, Alan, and Lappin. 3,347,938.

Lappin, Kenneth R.: *See*—
Maurer, John A., and Lappin. 3,346,957.

Larkfeldt, Birger: *See*—
Samuelsson, Evert, and Larkfeldt. 3,347,146.

Larkin, Wallace K. Landing gear apparatus for light amphibious aircraft. 3,347,499, 10–17–67, Cl. 244—101.

Lasis, Evalds, to Polymer Corp. Ltd. Polymerisation of conjugated diolefins. 3,347,839, 10–17–67, Cl. 260—94.8.

Latshaw, Wilmer E., and W. Wiserkaniuk, to Smith Kline & French Laboratories. Magnesium hydroxide suspensions. 3,347,744, 10–17–67, Cl. 167—55.

Lau, Ralph R.: *See*—
Coldren, Daniel R., and Lau. 3,348,189.

Laughlin, Charles R., Jr., and V. J. Di Losa, to United States of America, National Aeronautics and Space Administration. Diversity receiving system with diversty phase-lock. 3,348,152, 10–17–67, Cl. 325—305.

Lavelle, Joseph E., W. J. Courtney, and A. S. Denholm. High vacuum rotary seal and bearing combination. 3,347,604, 10–17–67, Cl. 308—36.3.

Lavin, Edward, A. H. Markhart, and R. E. Kass, to Monsanto Co. Coating compositions. 3,347,808, 10–17–67, Cl. 260—29.1.

Lawley, Herbert G.: *See*—
Coffey, Robert S., and Lawley. 3,347,763.

Leary, Ralph J., to Esso Research and Engineering Co. Separation of organic compounds. 3,347,473, 10–17–67, Cl. 260—347.7.

Leary, Ralph J., J. R. Michael, and J. Rockett, to Esso Research and Engineering Co. Fluorination of nitrogen compounds. 3,347,913, 10–17–67, Cl. 260—553.

Leathers, Ward, to Education Methods Council, Inc. Card-retaining matrix drum for statistical machines. 3,348,028, 10–17–67, Cl. 235—61.11.

Leathley, Peter T., to Rolls-Royce Ltd. Aircraft. 3,347,493, 10–17–67, Cl. 244—12.

Le Blond, R. K., Machine Tool Co., The: *See*—
Burroughs, Robert K. 3,348,057.

Le Comte, Corstiaan, to North American Philips Co., Inc. Automatic course prediction navigational display. 3,348,223, 10–17–67, Cl. 343—5.

Lee, Francis F., to Sperry Rand Corp. Universal code translator. 3,348,205, 10–17–67, Cl. 340—172.5.

Lee, Franklin G., and H. A. Male, to Westinghouse Electric Corp. Isolator network for providing a plurality of output signals from a single signal source. 3,348,160, 10–17–67, Cl. 330—15.

Lee, Henry L., Jr., to Callery Chemical Co. Epoxide resin composition containing an amine borane accelerator. 3,347,827, 10–17–67, Cl. 260—47.

Leech, Edward J.: *See*—
Schneble, Frederick W., Jr., Polichette, and Leech. 3,347,724.

Leesona Corp.: *See*—
O'Brien, William H. 3,347,476.

Leftwich, James R., to P. R. Mallory & Co., Inc. Transistorized ignition system. 3,347,218. 10–17–67, Cl. 123—148.

Lehrman, David, to The Ironees Co. Container. 3,347,403, 10–17–67, Cl. 220—17.

Leibfritz, Kur W.: *See*—
Lansky, Zdenek J., and Leibfritz. 3,347,259.

Leibner, Gerhard: *See*—
Baer, Karl, Sperber, Goehre, and Leibner. 3,347,798.

Leistritz, Hanskarl. Apparatus for a noncatalytic afterburning of exhaust gases of internal combustion engines. 3,347,040, 10–17–67, Cl. 60—30.

Lemelson, Jerome H. Apparatus for controlling rotary and longitudinal movements of a combined tool carrying spindle. 3,346,894, 10–17–67, Cl. 10—128.

Lemens, Donald J., to McGraw-Edison Co. Capacitor bank having unbalance detecting protective means. 3,348,097, 10–17–67, Cl. 317—12.

Lemmerz, Paul, to Lemmerz-Werke G.m.b.H. Tire rim. 3,347,302. 10–17–67, Cl. 152—409.

Lemmerz-Werke G.m.b.H.: *See*—
Lemmerz, Paul. 3,347,302.

Le Nabour, Marcel P.: *See*—
Dreyfus, Gaspard, and Le Nabour. 3,347,605.

Lenhard, Robert H., M. Heller, and S. Bernstein, to American Cyanamid Co. Preparation of 11β-hydroxy-19-nor steroidal-Δ1,3,5(10),6,8-pentaenes. 3,347,854, 10–17–67, Cl. 260—239.55.

Lenk, James W., and A. H. Burnett, to Walbert Equipment Co. Method and apparatus for registering and making-ready printing plates off a press. 3,347,161, 10–17–67, Cl. 101—216.

Lennox, Forrest R., to The Dow Chemical Co. Apparatus and method for shaping low density materials. 3,346,917, 10–17–67, Cl. 18—12.

Leon, Henry A.: *See*—
Strong, Ira J., and Leon. 3,347,331.

Leonard, Merrill G., and L. L. Wright, to Westinghouse Electric Corp. Electrical inductive apparatus having a multiconductor bushing. 3,348,180, 10–17–67, Cl. 336—90.

Leskinen, Usko M. Greenhouse. 3,346,991, 10–17–67, Cl. 47—29.

Leslie, Catherine M.: *See*—
Leslie, Ivan A. 3,347,196.

Leslie Co.: *See*—
Muller, John T., and Soderberg. 3,347,268.

Leslie, Ivan A., deceased, by C. M. Leslie, executrix, to The Singer Co. Mounting means for bearings for sewing machines. 3,347,106, 10–17–67, Cl. 112—258.

Lester, James M., to Beech Aircraft Corp. Thermal insulation and support system for vacuum jacketed containers. 3,347,056, 10–17–67, Cl. 62—45.

Le Suer, William M., to The Lubrizol Corp. Nitrogen-sulfur and oxygen-containing compounds and their lubricant compositions. 3,347,792, 10–17–67, Cl. 252—47.5.

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Leventhal, Sheldon. Broom and method of assembly. 3,346,902, 10–17–67, Cl. 15—171.

Levine, Myron: *See*—
Simon, Eli, and Levine. 3,347,978.

Lewis, Frank D., Sr., and E. W. Rumrill, Jr., to Lockheed Aircraft Corp. Cartridge valve assembly. 3,347,260, 10–17–67, Cl. 137—315.

Lewis, Irwin C.: *See*—
Mitchell, Charles V., and Lewis. 3,347,776.

Lewis, Sheldon N., to Rohm & Haas Co. Process for the preparation of alkoxymethoxyalkanols. 3,347,934, 10–17–67, Cl. 260—615.

Lewis, Walter E., and R. D. Chisholm, to General Electric Co. Air inlet means for self-cleaning oven. 3,348,023, 10–17–67, Cl. 219—391.

Lewis Welding and Engineering Corp.: *See*—
Hamilton, Wallace. 3,347,416.

Libbey-Owens-Ford Glass Co.: *See*—
Babcock, Eugene W., and Vascik. 3,347,655.

Licentia Patent-Verwaltungs G.m.b.H.: *See*—
Schellhase, Rolf, and Ruppersberg. 3,348,059.
Koppelmann, Floris. 3,348,110.

Liedel, Douglas D., to C. M. Hall Lamp Co. Pivotable mirror. 3,347,513, 10–17–67, Cl. 248—483.

Lill, Melvin H., to FMC Corp. Gauge. 3,346,963, 10–17–67, Cl. 33—147.

Lind, William E., and B. J. Mitchell, to Frigikar Corp. Heat exchangers. 3,347,310, 10–17–67, Cl. 165—124.

Lindauer Dornier Gesellschaft m.b.H.: *See*—
Kokkinis, Nikolaus. 3,347,282.
Kokkinis, Nikolaus. 3,347,284.

Linde, Rienard W., to Waldorf Paper Products Co. Tapered plug valve. 3,347,516, 10–17–67, Cl. 251—160.

Lindeke, Charles B. Label storage and dispensing package. 3,347,361, 10–17–67, Cl. 206—56.

Lindemann Maschinenfabrik G.m.b.H.: *See*—
Dahlem, Peter. 3,347,122.

Linden, Henry R.: *See*—
Feldkirchner, Harlan L., Linden, and Pyrcioch. 3,347,647.

Linder, Jerome: *See*—
Weil, Edward D., and Linder. 3,347,929.

Lindgren, Wallace I. Conduit connecting structure and method. 3,347,569, 10–17–67, Cl. 285—64.

Lindo, Neil A.: *See*—
Chang, Leo S., Turi, and Lindo. 3,347,820.

Lindquist, Robert H., and C. J. Egan, to Chevron Research Co. Naphtha hydroconversion to produce lower boiling hydrocarbon products. 3,347,780, 10–17–67, Cl. 208—111.

Lindsay, Wesley N., to Jennings Radio Mfg. Corp. Method of assembly of electronic components. 3,346,933, 10–17–67, Cl. 29—25.41.

Lindstrom, Harold R., and R. L. Beldin, to Deere & Co. Combination conveyor support and drive. 3,347,350, 10–17–67, Cl. 198—119.

Ling, Ting H.: *See*—
Bunish, Steve, Beasley, and Ling. 3,346,921.

Lison, Achim: *See*—
Luzina, Max, Louis, and Lison. 3,347,117.

List, Heinz, and F. Ronner. Kneading and mixing apparatus. 3,347,528, 10–17–67, Cl. 259—2.

Little, Arthur D., Inc.: *See*—
Bauer, Andrew B. 3,347,321.
Clancy, John J. 3,347,702.
Engelke, John L., Johnson, and Stein. 3,347,959.
Estes, Phillip W., and Johnson. 3,347,963.
Gordon, William E. 3,347,722.
Holly, Sandor. 3,348,093.

Littlejohn, Robert L., to Feniz & Scisson, Inc. Large diameter casing. 3,347,319, 10–17–67, Cl. 166—242.

Littmann, Martin F.: *See*—
Carpenter, Victor W., Ward, and Littmann. 3,347,718.

Livingston, Richard D., to Barber-Colman Co. Multiple winder with automatic broken thread retrieval. 3,347,479, 10–17–67, Cl. 242—35.5.

Lloyd, Wallace G., to Philip Morris Inc. Tobacco smoke filter. 3,347,247, 10–17–67, Cl. 131—266.

Lloyd, Walter B., to The Ohmart Corp. Self-controlled sequence for automatic standardization and calibration of nuclear gauges. 3,348,046, 10–17–67, Cl. 250—83.3.

Lockhart, Alfred L. Device for preventing engagement of vehicle bumper with garage wall. 3,347,343, 10–17–67, Cl. 188—32.

Lockheed Aircraft Corp.: *See*—
Lewis, Frank D., Sr., and Rumrill. 3,347,260.
Nelson, Roy. 3,346,897.
Simon, Eli, and Levine. 3,347,978.

Lockwood, Robert R.: *See*—
Schweitzer, Edmund O., Jr., and Lockwood. 3,348,099.

Lockspike Ltd.: *See*—
Pande-Rolfsen, Per. 3,347,462.

Lodeesen, Herman J., and W. S. Russell, to Hooker Chemical Corp. Process for forming chromate coatings on aluminum. 3,347,713, 10–17–67, Cl. 148—6.2.

Lodge, Albin, to American Sterilizer Co. Mechanism for swinging and lifting doors and the like. 3,346,992, 10–17–67, Cl. 49—255.

Löffler, Theodor, and G. Freudig, to Rheinmetall G.m.b.H. Bolt assembly for semi-automatic firearms. 3,346,982. 10–17–67, Cl. 42—16.

Logman, Willem H.: *See*—
Groenendaal, Willem, and Logman. 3,347,779.

Lohninger, Wilhelm J., to United States of America, Army. Photoelectric range finder. 3,347,129, 10–17–67, Cl. 88—1.

Lohr, Riley, to J. H. Hartman, Jr. Combustible gas toy gun. 3,346,984. 10–17–67, Cl. 42—55.

Lombard, Ralph S. Injection mold locking device. 3,346,924, 10–17–67, Cl. 18—30.

Long, Donald A., W. C. Shaw, and M. T. Carlson, to General Motors Corp. Self-adjusting electric switch. 3,348,011, 10–17–67, Cl. 200—166.

Lorain Products Corp.: *See*—
Jamieson, Robert S. 3,348,060.

Lord Corp.: *See*—
Gwinn, James T., Jr. 3,347,277.
Gwinn, James T., Jr. 3,347,352.
Gwinn, James T., Jr. 3,347,502.

Lorenz, John C., to E. I. du Pont de Nemours and Co. Process for the chlorosulfonation of polyethylene. 3,347,835, 10–17–67, Cl. 260—79.3.

Lornitzo, Frank C., to Ametek, Inc. Washing machine. 3,347,388, 10–17–67, Cl. 210—380.

Lothrop, Frank: *See*—
Anderson, Philip C., and Lothrop. 3,347,212.

Lotts, Ollie E.: *See*—
Turpin, William V., and Lotts. 3,347,083.

Louis, Leo: *See*—
Luzina, Max, Louis, and Lison. 3,347,117.

Lovas, Stephen, and G. S. Di Monico, to Royal Package Equipment, Inc. Packaging machine and method of forming packages. 3,347,011, 10–17–67, Cl. 53—22.

Lovett, John R.: *See*—
Passannante, Anthony J., Lovett, and Argabright. 3,347,872.
Tyler, William E., III, and Lovett. 3,347,925.

Lowe, David, G. L. F. Norris, and W. B. Turner, to Imperial Chemical Industries, Ltd. Metabolic product isolated from cultures of aspergillus wentii. 3,347,909, 10–17–67, Cl. 260—514.

Lubrizol Corp., The: *See*—
LeSuer, William M. 3,347,792.
Meinhardt, Norman A. 3,347,790.

Luckey Laboratories, Inc.: *See*—
Luckey, Manley J. 3,347,636.

Luckenbaugh, Raymond W., to E. I. du Pont de Nemours and Co. Herbicidal composition and method employing dicycloalkylureas. 3,347,658, 10–17–67, Cl. 71—119.

Luckey, Manley J., to Luckey Laboratories, Inc. Breath testers and method of use therefor. 3,347,636, 10–17–67, Cl. 23—232.

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Lueck, Arthur M., to Texas Instruments, Inc. Method for forming a lens on a metal ring. 3,347,651, 10–17–67, Cl. 65—39.

Lukins, Richard H., to Union Special Machine Co. Sewing machine needle. 3,347,192, 10–17–67, Cl. 112—222.

Luna, Norman C.: *See*—
Luna, Tony J., Fallick, Luna, Fallick. 3,348,220.

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Lunde, Earl N. Tar distributor for pavement. 3,347,138, 10–17–67, Cl. 94—39.

Lundström, Hans T., S. J. Wallden, and K. A. Melkersson, to Bolidens Gruvaktiebolog. Process for preparing granular ferroselenium. 3,347,958. 10–17–67, Cl. 264—13.

Lunsford, Carl D., to A. H. Robins Co., Inc. 1-lower-alkyl-3-pyrrolidye N-lower-alkyl- and lower cycloalkyl-N-arylcarbamate antispasmodics and antidepressive. 3,347,856, 10–17–67, Cl. 260—243.

Lüthy, Erich, to Tapijtfabriek Noordster N.V. Device for manufacturing pile products. 3,347,731, 10–17–67, Cl. 156—435.

Lutzke, William C.: *See*—
Holz, Frederick H., Lutzke, and Blink. 3,347,509.

Luzina, Max, L. Louis, and A. Lison, to Wilhelm Hegenscheidt Kommanditgesellschaft. Wheel lathe. 3,347,117. 10–17–67, Cl. 82—8.

Lyles, James M., to Xerox Corp. Xerographic development. 3,347,691. 10–17–67, Cl. 117—17.5.

Lynch, Conrad L.: *See*—
Gloyer, Stewart W., Vogel, and Lynch. 3,347,700.

Lynn, Robert R.: *See*—
Cresap, Wesley L., and Lynn. 3,347,320.

Lyon, Gilbert T., to L & L Mfg. Co. Method of making a fluid pressure coupling. 3,346,935, 10–17–67, Cl. 29—157.

M & T Chemicals, Inc.: *See*—
Davies, Alwyn G. 3,347,890.
Ventura, John J. 3,347,892.
Sawyer, Albert K. 3,347,889.

Maak, Robert O.: *See*—
Behrmann, William C., and Maak. 3,347,781.

MacDonald, Robert N., to E. I. du Pont de Nemours, and Co. Copolymers of formaldehyde with N-fluoroimino-α-cyano compounds. 3,347,829. 10–17–67, Cl. 260—64.

MacGregor-Comarain: *See*—
Mege, Paul A. 3,347,200.

Mackey, Eugene L.: *See*—
Keska, Kenneth R., Mackey, and Dolphin. 3,347,078.

Macy, Robert H.: *See*—
Steitle, James L., Macy, and Thomas. 3,347,052.

Magell, Orville L.: *See*—
Sheppard, Chester S., Schack, and Magell. 3,347,845.

Magerlein, Helmut: *See*—
Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,347,819.

Magna Driver Corp.: *See*—
Clark, Frederick G. 3,347,293.

Mahler, Samuel A.: *See*—
Bjerke, John O., Halliday, Stevens, Mahler, and Holden. 3,347,051.

Mahon, R. C., Co., The: *See*—
Riehter, Donald L. 3,347,010.

Maier, Anton. Locking devices for mould closing mechanism. 3,346,925, 10–17–67. Cl. 18—30.

Maier, Eckhard, to Elba-Werk Ettlinger Baumaschinen- und Hebezeugfabrik G.m.b.H. Movable apparatus for the manufacture of concrete. 3,347,532, 10–17–67, Cl. 259—154.

Mailhotte, Leo A.: *See*—
Coggeshall, Almy D., Mailhotte, and Winchester. 3,348,-085.

Mairs, Thomas G.: *See*—
Guyer, Reynolds. 3,347,446.

Mäkinen, Alpo E. Shelf construction for a multistage dryer for bodies in plate or sheet form. 3,346,967, 10–17–67, Cl. 34—239.

Malchair, Armand, to Societe Anonyme Iwan Simonis, S. A. Means for driving and braking shuttles for circular looms. 3,347,279, 10–17–67, Cl. 139—13.

Malcolm, Donald H., and F. M. Green, to Control Data Corp. Data exchanger. 3,348,207, 10–17–67, Cl. 340—172.5.

Male, Harold A.: *See*—
Lee, Franklin G., and Male. 3,348,160.

Mallory, P. R. & Co. Inc.: *See*—
Brown, William R. 3.348,014.
Leftwich, James R. 3.347.218.
Wood, Arthur F. 3,348,018.

Malz, Hugo, and W. Gobel, to Farbenfabriken Bayer Aktiengesellschaft. Chlorine-containing polymers stabilized with antiminyl compounds. 3,347,821, 10–17–67, Cl. 260—45.75.

Manfield Engineering Corp.: *See*—
Myers, Richard J. 3.347,511.

Mankowich, Ivan, A. D. Varenelli, and A. J. Heinricha, to Uniroyal, Inc. Rotational molding. 3,347,971, 10–17–67, Cl. 264—310.

Mann, Edward J., to Wolverine Toy Co. Cabinet structure. 3,347,609. 10–17–67. Cl. 312—263.

Manning, William F., to Mobil Oil Corp. Partially salvageable jacket-pile connection. 3,347,053, 10–17–67, Cl. 61—46.5.

Manuel, James E.: *See*—
Strong, Edward W., Reade, Manuel, and Bastedo. 3,347,-095.

Manyik, Robert M., W. E. Walker, and T. P. Wilson, to Union Carbide Corp. Polymerization process. 3.347,840, 10–17–67. Cl. 260—94.9.

Marco, Gino J.: *See*—
Jaworski, Ernest G., and Marco. 3,347,677.

Marcus, Ira R., and J. W. Miller, to United States of America, Army. Low voltage wide range comparator and rectifier using a plurality of emitter-follower circuits with the collector current of the conducting emitter-follower maintained constant. 3,348,072. 10–17–67, Cl. 307—88.5.

Marill, Thomas M., and D. J. Edwards, to Bolt Beranek and Newman Inc. Method of and system for remote-location computer communication via telephone. 3,347,988, 10–17–67. Cl. 179—2.

Markhart, Albert H.: *See*—
Lavin, Edward, Markhart, and Kass. 3,347,808.

Markley, Robert A.: *See*—
Webb, James E. 3,347,309.

Marks, Eugene A.: *See*—
Parkinson, Robert C., Marks, Gaa, and De Back. 3,348,-185.

Marks, George B. Terminal sheath. 3,347,976, 10–17–67, Cl. 174—71.

Marks, Henry C.: *See*—
Kraght, Albert J., and Marks. 3,347,683.

Marrs, Roger A.: *See*—
Morris, Josephine H. 3,346,878.

Marschak, Howard J. Means for banding and binning shelves. 3,347,395, 10–17–67, Cl. 211—184.

Marshall, John H.: *See*—
Warman, Bloomfield J., and Marshall. 3,347,993.

Martin, Alan P.: *See*—
Bielstein, George P. R., and Martin. 3,347,098.

Martin, Elmore L., to E. I. du Pont de Nemours and Co. Polycyclic diamines. 3,347,919. 10–17–67. Cl. 260—563.

Martin, James C., to Eastman Kodak Co. Method of preparing 3-thietanone 1,1-dioxides. 3,347,868, 10–17–67, Cl. 260—327.

Martin, Rand H., to HPE Inc. Electric motor housing and support. 3,348,082, 10–17–67, Cl. 310—85.

Martin, William F. Film reel. 3,347,486, 10–17–67, Cl. 242—74.2.

Martiniak, Leonard J., to General Electric Co. Dishwasher with improved liquid inlet system. 3,347,250, 10–17–67, Cl. 134—182.

Marvin Glass & Associates: *See*—
Glass, Marvin I., Janiszewski, and Furuta. 3,347.548.

Marvin, Ronald A., to Communications Patents Ltd. Helicopter ground resonance simulator. 3,346,969, 10–17–67, Cl. 35—12.

Maschinenfabrik Hasenclever A.G.: *See*—
Bachmann, Horst. 3,347,081.
Engelen, Heinz, Dischler, and Albert. 3,347,327.

Massey-Ferguson, Inc.: *See*—
Carlstrom, John D. 3,347,598.
Morrison, John E., Jr., Arzolan, and Hunt. 3,347,426.
Richey, Clarence B. 3,347,188.

Massey-Ferguson Services N.V.: *See*—
Hodges, Leonard S., and Annat. 3,347,560.
Kepkay, Leslie L., and Metcalfe. 3,347,244.

Massey, Phillip S., T. A. Matthews II, and D. L. Dutcher, to Phillips Petroleum Co. Pressure surge suppression in pipe lines. 3,347,256, 10–17–67, Cl. 137—115.

Mastromatteo, Michael: *See*—
Groves, Martin V., and Mastromatteo. 3,346,907.

Masuzawa, Kuniyasu: *See*—
Irikura, Tsutomu, Masuzawa, and Nishino. 3,347,860.

Mathis, Howard E.: *See*—
Lankford, William L., Jr., Mathis, Keller, Bowman, and Van Winkle. 3,348,231.

Mathison, Robert V. Pre-tied tie articles. 3,346,881, 10–17–67, Cl. 2—150.

Matias, James J.: *See*—
Hale, Arthur N., and Matias. 3,347,194.

Matsumoto, Toyokazu, S. Ohara, S. Kawase, and H. Sakaurai, to Kanegafuchi Spinning Co., Ltd. Method of producing polyoxymethylene using trioxane, a solvent and ionizing radiation. 3,347,764, 10–17–67, Cl. 204—159.21.

Matsushita Electric Industrial Co., Ltd.: *See*—
Kohsaki, Tadao. 3,348,056.
Nagata, Takashi, Hirohata, Ishibashi, and Arimura. 3,348,078.

Mattel, Inc.: *See*—
Ryan, John W., Adickes, and De Geider. 3,346,989.

Matthaei, George L., and L. A. Robinson, to United States of America, Army. Interdigital filters with capacitively loaded resonators. 3,348,173, 10–17–67. Cl. 333—73.

Matthews, Charles S., and R. D. Sebs, to Shell Oil Co. Steam drive with viscous volatile buffer. 3,347,313, 10–17–67, Cl. 166—11.

Matthews, Robert W.: *See*—
Motsenbocker, James O., Matthews, Morgan, and Carle. 3,347,405.

Matthews, Thomas A., II: *See*—
Massey, Phillip S., Matthews, and Dutcher. 3,347,256.

Mauldin, John H. Drier and mixer for aggregate and binder. 3,347,533, 10–17–67, Cl. 259—156.

Maurer, John A., and K. R. Lappin, to Weber Dental Mfg. Co. Dental instrument unit construction. 3,346,957, 10–17–67, Cl. 32—22.

Mayling, Albert A., to Bio Metals Corp. Ltd. Cyclic leaching process imploying iron oxidizing bacteria. 3,347,661, 10–17–67, Cl. 75—104.

Maynard, George H., to Scheu Steel Supply Co. Apparatus for producing carbon dioxide. 3,347,221, 10–17–67, Cl. 126—93.

May-Pressenbau G.m.b.H.: *See*—
Peters, Leonhard. 3,347,158.

Mazurk, Louis R., to The Tapecoat Co. Adhesive composition. 3,347,950. 10–17–67, Cl. 260—737.

McAnney, William H.: *See*—
Gruodis, Algirdas J., Lange, and McAnney. 3,348,033.

McCarty, William R., Jr.: *See*—
Erickson, Howard L., and McCarty. 3,348,178.

McCollough, John K.: *See*—
Sanders, Grady H., and McCollough. 3,347,033.

McCoy, Carleton J.: *See*—
Frankenfeld, John W., and McCoy. 3,347,688.

McCurry, James E. Apparatus for releasably connecting a boat hull fitting with a source of flushing water. 3,347,202, 10–17–67, Cl. 115—5.

McFadden, Bruce R.: *See*—
Bosland, Cornelius W., McFadden, and Brookman. 3,348,-102.

McGraw-Edison Co.: *See*—
Lemens, Donald J. 3,348,097.
Sieckman, Walter. 3,347,538.
Urani, Angelo. 3,348,007.
Zankey, Harry E. 3,347,026.

McGraw, George P., Jr.: *See*—
Fitzgerald, Thomas C., and McGraw. 3,348,016.

McGurty, James A.: *See*—
Wukusick, Carl S., and McGurty. 3,347,667.

McIntyre, Thomas M. Holder for multiple cooking containers. 3,347,404. 10–17–67. Cl. 220—19.

McKee, John M., to United Nuclear Corp. Gas analysis method. 3 347,635, 10–17–67, Cl. 23—232.

McKelvie, Henry R. Method of electropolishing metallic sections for balloon control rings and the like. 3,347,760, 10–17–67. Cl. 204—140.5.

McKeown, Robert G. V., to Hankscraft (Canada) Ltd. Sterilizer. 3,347,618, 10–17–67, Cl. 21—94.

McKinney Mfg. Co.: *See*—
Dickinson, Lloyd R., and Higginson. 3,346,910.

McKinney, Ralph E., to Hoover Ball and Bearing Co. Stackable container. 3,347,412, 10–17–67, Cl. 220—97.

McKinnon, Charles N., to United States of America, Navy. Pulse magnetohydrodynamic generator. 3,348,079, 10–17–67, Cl. 310—11.

McLauchlan, John M., and M. M. Merlen, to United States of America. National Aeronautics and Space Administration. Horizon sensor with a plurality of fixedly-positioned radiation-compensated radiation sensitive detectors. 3,348,048, 10–17–67, Cl. 250—83.3.

McMillan Corp. of North Carolina, The: *See*—
McMillan, Edward B. 3,348,224.

McMillan, Edward B., to The McMillan Corp. of North Carolina. Electromagnetic-energy absorber and room lined therewith. 3,348,224, 10–17–67, Cl. 343—18.

McVay, Thomas L.: *See*—
Rampacek, Carl, Browning, and McVay. 3,347,370.

Mead, Bruce R., and L. K. Kuhnl, to Eversharp, Inc. Heat exchange device. 3,347,422, 10–17–67, Cl. 222—146.

Mead Corp., The: *See*—
Minch, Virgil A., and Egan. 3,347,381.
Wood, Prentice J. 3,347,445.

Meddick, John W., to Olin Mathieson Chemical Corp. Selectively removable panel assembly. 3,347,009, 10–17–67, Cl. 52—345.

Medley, Jackson C., to Caterpillar Tractor Co. Dual engine controls. 3,347,044, 10–17–67, Cl. 60—97.

Mefina S.A.: *See*—
Simmen, Robert. 3,347,166.

Mege, Paul A., to MacGregor-Comarain. Controlled self-locking sealing device for the tightly locked junction between two parts or structures and the various applications thereof. 3,347,200, 10–17–67, Cl. 114—202.

Mehus, Orion M. Fluorescent display sign composed of rotatable triangular prisms. 3,348,043, 10–17–67, Cl. 250—77.

Meinhardt, Norman A., to The Lubrizol Corp. Lubricating compositions containing metal salts of acids of phosphorus. 3,347,790, 10–17–67, Cl. 252—32.5.

Melancon, Leo, to Raytheon Co. Circular dipole antenna array. 3,348,228, 10–17–67, Cl. 343—799.

Melchior, Gerard, and P. Cassagne, to Compagnie Francaise de Television. FM/AM converters. 3,348,168, 10–17–67, Cl. 332—1.

Melkersson, Karl A.: *See*—
Lundström, Hans T., Wallden, and Melkersson. 3,347,-953.

Melnychyn, Paul, to Georgia-Pacific Corp. Styrene oxide-lignosulfonate products and process of making same. 3,347,842, 10–17–67, Cl. 260—124.

Melton, James O., to The Geolograph Co. Control device for drilling apparatus. 3,347,524, 10–17–67, Cl. 254—173.

Mencacci, Samuel A., to International Machinery Corp. S.A. Heat treating device. 3,347,155, 10–17–67, Cl. 99—365.

Mencacci, Samuel A., and J. G. Hagerborg, to International Machinery Corp. Hydrostatic cooker bars. 3,347,351, 10–17–67, Cl. 198—131.

Menser, Henry E., ¼ each to T. H. and M. C. Vance. Pipe hanger bracket. 3,347,505, 10–17–67, Cl. 248—68.

Merck & Co., Inc.: *See*—
Bolhofer, William S., and Baldwin. 3,347,910.
Pfister, Karl, and Kollonitsch. 3,347,908.
Rogers, Edward F. 3,347,742.
Sletzinger, Meyer, Firestone, and Reinhold. 3,347,905.
Sletzinger, Meyer, and Reinhold. 3,347,881.
Taub, David, and Wendler. 3,347,928.
Rauenbusch, Erich, and Frommer. 3,347,752.

Mercox, Inc.: *See*—
Tabor, Patrick M. 3,346,981.

Mericle, Boyd, Jr., to Selzer Power Clamp, Inc. Toggle clamp. 3,347,542, 10–17–67, Cl. 269—32.

Merlen, Monty M.: *See*—
McLauchlan, John M., and Merlen. 3,348,048.

Merriman, Henry H. Air lift for bathtubs. 3,346,885, 10–17–67, Cl. 4—185.

Messerschmitt AG: *See*—
Keller, Siegfried, and Brandt. 3,347,730.

Mestanas, Nicholas M.: *See*—
Brandt, Roger, and Mestanas. 3,347,419.

Mester, Joseph H. Ash tray and extinguisher. 3,347,246, 10–17–67, Cl. 131—237.

Met-L-Wood Corp.: *See*—
Urbanick, Burton A. 3,347,305.

Metal Bellows Corp.: *See*—
Chaplin, Edward S., and Hanson. 3,346,945.

Metal Box Co. Ltd., The: *See*—
Mosse, Richard W. E. 3,347,014.

Metal Hydrides Inc.: *See*—
Thorstensen, Thomas C. 3,347,751.

Metcalfe, Edward G.: *See*—
Kepkay, Leslie L., and Metcalfe. 3,347,244.

Metco, Inc.: *See*—
Ingham, Herbert S., Jr. 3,347,698.

Meyer, Andreas, to Siemens & Halske Aktiengesellschaft Berlin and Munich. Method of metal-coating ceramic bodies. 3,347,704, 10–17–67, Cl. 117—227.

Meyer, Daniel A.: *See*—
Harts, Walter A., and Meyer. 3,347,047.

Meyer, Gerhard, E. Siggel, A. Schöpf, and H. Magerlein, to Vereinigte Glanzstoff-Fabriken A.G. Polyolefines stabilised by diboranes. 3,347,819. 10–17–67, Cl. 260—45.7.

Meyer, Paul F., J. L. Wolfe, deceased (by V. V. Wolfe, executrix). Snow roller. 3,346,973, 10–17–67, Cl. 37—10.

Meyers, Rodney M. Drug distribution system. 3,347,358, 10–17–67. Cl. 206—47.

Michael, James R.: *See*—
Leary, Ralph J., Michael, and Rockett. 3,347,913.

Michael, Richard W.: *See*—
Clardy, Edwin K., and Michael. 3,348,032.

Michaud, Horst: *See*—
Kaess, Frans, Michaud, and Seeholzer. 3,347,953.

Michigan Dynamics, Inc.: *See*—
Alsobrooks, Darriel L. 3,347,380.

Micromatic Hone Corp.: *See*—
Ellis, Myron P., Murphy, and Horgan. 3,347,090.

Migliarese, Joseph F., to Colgate-Palmolive Co. Occlusive medicated sheath. 3,347,233, 10–17–67, Cl. 128—260.

Miles, Leon H., to Sinclair Research, Inc. Chart scanning apparatus. 3,346,960. 10–17–67, Cl. 33—1.

Miller, Berton G.: *See*—
Miller, Richard P. and B. G. 3,348,019.

Miller, Clifford E. Timer clock with improved reset mechanism. 3,348,008, 10–17–67, Cl. 200—136.3.

Miller, David W.: *See*—
Henn, Richard W., and Miller. 3,347,675.

Miller, Edwin A., and R. A. Schultheiss, to Texas Instrument Inc. Manufacture of inflated metal products. 3,346,936, 10–17–67, Cl. 29—157.3.

Miller, Gabriel L., to Bell Telephone Laboratories, Inc. Threshold discriminator and zero-crossing detector. 3,348,068, 10–17–67, Cl. 307—88.5.

Miller, Joseph W.: *See*—
Marcus, Ira R., and Miller. 3,348,072.

Miller, Leon F.: *See*—
Hatch, Edmond K., and Miller. 3,347,307.

Miller, Philip C.: *See*—
Webb, James E. 3,347,665.

Miller, Richard P. and B. G. Push button faucet with beater. 3,348,019, 10–17–67, Cl. 210—309.

Miller, Ronald J., to Ex-Cell-O Corp. Filtration apparatus. 3,347,379, 10–17–67, Cl. 210—127.

Millhiser, Robert G.: *See*—
Arnold, Orlan H., Millhiser, Pashaian, and Umbricht. 3,347,378.

Mills, Alan R., to Shell Oil Co. Cationic hydroxy-containing terpolymers, preparation and use. 3,347,832, 10–17–67, Cl. 260—72.

Mills, Samuel M., and K. Husar, to Stone Straw Corp. Tubular bodies, and methods and apparatus for making the same. 3,347,274, 10–17–67, Cl. 138—108.

Mills, Wesley A.: *See*—
Templin, Gail H., and Mills. 3,347,126.

Milos, Walter A. Combined negative and photograph corner mounting. 3,346,979, 10–17–67, Cl. 40—158.

Minch, Virgil A., and J. T. Egan, to The Mead Corp. Waste treatment. 3,347,381, 10–17–67, Cl. 210—150.

Minigrip, Inc.: *See*—
Ausnit, Steven, and Staller. 3,347,298.

Miner, W. H., Inc.: *See*—
Hallberg, John E. 3,347,583.

Minister of Aviation, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland: *See*—
Barnard, Charles R. N. 3,348,225.

Minnesota Mining and Mfg. Co.: *See*—
Courneya, Calice G., and Todd. 3,347,269.
Holmberg, Berten A. 3,347,984.
Power, Frank E. 3,347,579.
Rabuse, George R., Wallner, and Sterling. 3,347,362.

Mirocha, Chester J.: *See*—
Eloy, Fernand, and Mirocha. 3,347,874.

Mitchell, Bert J.: *See*—
Lind, William E., and Mitchell. 3,347,310.

Mitchell, Charles V., and I. C. Lewis, to Union Carbide Corp. Coking a mixture of a hydrocarbon and quinone. 3,347,776, 10–17–67. Cl. 208—46.

Mitchell, Hartman, and A. T. Dortenzo, to Koppers Co., Inc. Exhaust receiving hood. 3,347,539, 10–17–67, Cl. 266—35.

Mobay Chemical Co.: *See*—
Hoppe, Peter, Weinbrenner, Muhlhausen, and Breer. 3,347,520.

Mitchell, John G.: *See*—
Dill, Thomas, and Mitchell. 3,347,778.

Mitchell Mfg. Co.: *See*—
Hols, Frederick H., Lutzke, and Blink. 3,347,509.

Mitchell, Robert M.: *See*—
Dykes, Ralph E., and Mitchell. 3,347,363.

Mitsubishi Petrochemical Co. Ltd.: *See*—
Tanaka, Sanae, Yokoyama, and Seki. 3,347,952.

Mitsui Kagaku Kogyo Kabushiki Kaisha: *See*—
Okubo, Ichiro, and Tsujimoto. 3,347,694.

Mobil Oil Corp.: *See*—
Capsuto, Leon M., and Davis. 3,347,782.
Davis, Francis E., Jr. 3,347,777.
Dill, Thomas, and Mitchell. 3,347,778.
Kerr, Robert B. 3,348,193.
Koehl, William J., Jr. 3,347,758.
Manning, William F. 3,347,053.
Naro, Paul A., and Offenhauer. 3,347,831.
Stancell, Arnold F., Brecht, and Foglia. 3,347,695.
Stutson, Alverd C. 3.347.092.

Mochida, Yazunori, and K. Ishimura, to Nippon Gakki Seizo Kabushiki Kaisha. Reverberation loudspeaker. 3,347,337, 10–17–67, Cl. 181—31.

Modesto, Narciso: *See*—
Brejcha, Robert J., Modesto, and Ridenour. 3,347,596.

Modrey, Henry J. Device for positioning components. 3,346,-942, 10–17–67, Cl. 29—212.

Moelter, Gregory M., to Celanese Corp. Method of making crimped polyoxymethylene filaments. 3,347,969, 10–17–67, Cl. 264—210.

Mogensen, Fredrik Kristian. Screening device. 3,347,368, 10–17–67, Cl. 209—99.

Moller, Knud J.: *See*—
Villadsen, Karl J., and Moller. 3,347,678.

Monma, Hiroshi, to Fujiya Denki Kabushiki Kaisha. Flat coreless direct current motor. 3,348,086, 10–17–67, Cl. 310—268.

Monroe, Charles Z.: *See*—
Allen, Robert J., Monroe, Earp, and Egleston. 3,347,017.

Monsanto Chemicals (Australia) Ltd.: *See*—
Hinde, Ronald W., and Raper. 3,347,864.

Monsanto Co.: *See*—
Bray, John R. 3,348,063.
Cheape, Dudley W., Jr. 3,346,932.
Dill, Dale R. 3,347,906.
Elbert, Donald L., and Wright. 3,346,916.
Jaworski, Ernest G., and Marco. 3,347,677.
Lavin, Edward, Markhart, and Kass. 3,347,808.
Nielsen, Morris L. 3,347,643.
Rademacher, Leo E. 3,347,841.
Rademacher, Leo E. 3,347,956.
Shen, Chung Y. 3,347,627.
Sims, James G. 3,347,738.
Sternberg, Ernest M. 3,347,475.
Sternberg, Ernest H. 3 347,478.
Young, Charles W. 3,348,143.

Monsanto Research Corp.: *See*—
Webster, James A. 3,347,897.

Montecatini Edison S.p.A.: *See*—
Canonali, Giorgi, Giordano, Feriazzo, and Ottaviani. 3,347899.
Scatena, Massimo, and Grazia. 3,347,805.

Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See*—
Fauser, Giacomo. 3,347,915.

Moosmann, Alois. Jet control for machine tools or the like. 3,347,253, 10–17–67, Cl. 137—83.

Morcio, Joseph A.: *See*—
Death, Frank S., and Morcio. 3,347,766.

Morgan, Bill T.: *See*—
Motsenbocker, James A., Matthews, Morgan, and Carle 3,347,405.

Morgan, James P., Jr., to Pennsylvania Saw Corp. Hand saw and handle. 3,347,292, 10–17–67, Cl. 145—31.

Morgan, Olive E.: *See*—
Morgan, Philip F. 3,347,537.

Morgan, Philip F., deceased (by O. E. Morgan, and N. A. Wicks, nee Morgan), to FMC Corp. Apparatus for aerating liquid mediums. 3,347,537, 10–17–67, Cl. 261—124.

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Lloyd, Wallace G. 3,347,247.

Morris Mfg. Co.: *See*—
Morris, Lowell H. 3,347,575.

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Plagmann, Franz. 3,347,214.

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Doyle, George A. 3,348,105.
Parsons, George M., and Harrer. 3,348,148.

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Somer, Fritz. 3,346,887.

Mueller, Heinrich: *See*—
Honsberg, Werner, and Mueller. 3,347,769.

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Hoppe, Peter, Weinbrenner, Muhlhausen, and Breer. 3,347,529.

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Murdock, Forrest L.: *See*—
Scott, Richard L. 3,347,023.

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Murray, Robert E. Lubricator pad. 3,347,606, 10–17–67, Cl. 308—243.

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Krakauer, Sidney, Musikant, and Rosenberg. 3,347,648.

Myers, Arthur F., to E. I. du Pont de Nemours and Co. Arc furnace for pyrolysis of hydrocarbon to acetylene. 3,347,774, 10–17–67, Cl. 204—311.

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Froede, Walter. 3,347,213.

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Yamagishi, Kazuo, and Nakamura. 3,347,701.

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Webb, James E. 3,346,929.
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Hoyt, John M., and Sprang. 3,347,825.
Quackenbush, John J., and Corbett. 3,347,443.

National Homes Corp.: *See*—
Kesker, John M. 3,346,994.

National Research Council: *See*—
Webb, Earle L. R. 3,348,119.

National Research Development Corp.: *See*—
Goodrich, Geoffrey J., and Williams. 3,347,199.

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Turner, Delber W. 3,347,773.

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Timmermans, Frederik A. G., and Snel. 3,348,142.

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Tietz, La Vern R., and Niebergall. 3,347,390.

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Niklaus, Ulrich: *See*—
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Nilsen, Peter J., and Zamzow. 3,346,943.

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Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,347,795.
Kawase, Susmu, Kubota, and Soma. 3,348,235.

Nippon Gakki Seizo Kabushiki Kaisha: *See*—
Mochida, Yazunori, and Ishimura. 3,347,837.

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Nagata, Nobuyoshi. 3,347,836.

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Irikura, Tsutomu, Masuzawa, and Nishino. 3,347,860.

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Nissen, George P., and Kelly. 3,347,508.

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Noddings, James A.: *See*—
Reznick, Frank J., and Noddings. 3,347,771.

Nordson Corp.: *See*—
Rosen, Samuel R. 3,348,186.

Norris, Geoffrey L. F.: *See*—
Lowe, David, Norris, and Turner. 3,347,909.

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Diemer, Gesinus. 3,348,074.
Le Comte, Corstiaan. 3,348,223.

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Kamm, Lawrence J. 3,347,457.

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Holtermann, Hugo, and Salvesen. 3,347,746.

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Fritz, Henry E., Atkins, and O'Connor. 3,347,944.

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Chalupka, Miloslav J. 3,347,987.

Offenhauer, Robert D.: *See*—
Naro, Paul A., and Offenhauer. 3,347,831.

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Webb, James E. 3,347,665.

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Ohara, Saburo: *See*—
Matsumoto, Toyokazu, Ohara, Kawase, and Sakaurai. 3,347,764.

Ohio Crankshaft Co., The: *See*—
Hausenfleck, Howard D., Brittain, and Tsivitse. 3,348,098.

Ohmart Corp., The: *See*—
Lloyd, Walter B. 3,348,046.

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Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,347,795.

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Brooks, Julius E. 3,346,983.
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Meddick, John W. 3,347,009.
Ottmann, Gerhard F., and Voynick. 3,347,863.

Olsen, Norman G.: *See*—
Carlson, Marvin J., Dobeus, Olsen, and Rolls. 3,347,577.

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Rogers, Charles H., Kronenberg, Olson, and Hebner. 3,347,345.

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Mori, Leo, Osawa, and Fujita. 3,347,616.

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Hatch, Edmond K., and Miller. 3,347,307.

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Woods, Allen. 3,347,030.

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Caporali, Giorgio, Giordano, Ferlazzo, and Ottaviani. 3,347,899.

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Steensen, Robert N. 3,347,391.

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Barkhau, Marvin L. 3,347,650.

Owsley, Herbert B.: *See*—
Bunn, Stuart E., and Owsley. 3,347,264.

Pacela, Allan F., to Universal Match Corp. Pneumograph. 3,347,223, 10–17–67, Cl. 128—2.1.

Packard Instrument Co., Inc.: *See*—
Gullett, Robert C. 3,348,176.

Page, Bentley H.: *See*—
Jones, Odell J., Page, and Dubbs. 3,347,885.

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Neidleman, Saul L., Pan, and Diassi. 3,347,927.

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Pandjiris Weldment Co., The: *See*—
Jennings, G. B. 3,348,144.

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Balogh, Stephen. 3,347,387.
Lansky, Zdenek J., and Leibfritz. 3,347,259.

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Wasson, Burton K., and Parker. 3,347,907.

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Parker Pen Co., The: *See*—
Elver, Lowell E. 3,347,733.

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Beushausen, Frederick W., and Parry. 3,347,425.

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Arnold, Orlan M., Millhiser, Pashaian, and Umbricht. 3,347,378.

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Patent Holding and Development Corp.: *See*—
Ross, Ronald A., A. W., and M. E. 3,347,469.

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Patry, Harvey L., F. J., and E., and Lamont. 3,346,941.

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Brau, Maurice J., Johnson, and Patterson. 3,348,045.

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Preotle, John J., and Payne. 3,347,728.

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Peasley, Charles F.: *See*—
Schieser, Warren J., Hecox, and Peasley. 3,347,328.

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Trebillon, Emile, and Wetroff. 3,347,894.

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Stella, Virginio, and Pellacani. 3,346,898.

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Huber, Ludwig K. 3,347,916.
Silverman, Meyer S. 3,347,631.

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Morgan, James P., Jr. 3,347,292.

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Russell, Linus E. 3,347,273.
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Dickson, Woodrow J., and Jenkins. 3,347,789.

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Frotscher, Herbert, and Petzold. 3,347,803.

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Pfaff, Henry O., Jr., and Schlosser. 3,347,572.

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Somer, Fritz. 3,346,887.

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Clardy, Edwin K., and Michael. 3,348,032.
Dollinger, Robert E., Wilson, and Sherk. 3,347,949.
Fewel, Robert A., Harbour, and Whitson. 3,346,912.
Gerdes, Charles W., Jr. 3,347,638.
Hitzman, Donald O. 3,347,699.
Johnson, Paul H. 3,347,633.
Massey, Phillip S., Matthews, and Dutcher. 3,347,256.
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Naylor, Floyd E. 3,347,834.
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Phrix-Werke Aktiengesellschaft: *See*—
Thomas, Rainer, and Weber. 3,347,968.

Pickart, Auguste J.-B. G., to Fabrique Nationale d'Armes de Guerre, S. A. Projectile for a firearm. 3,347,491, 10–17–67, Cl. 244—3.27.

Pickens, Gerald F.: *See*—
Stimson, Allen G., and Pickens. 3,348,054.

Pickering, Barry E., to Henry Simon (Australian) Ltd. Electrical insect catcher. 3,346,988, 10–17–67, Cl. 43—112.

Picker X-Ray Mfg. Ltd.: *See*—
Umberg, Frank H., and Bridgeman. 3,348,042.

Pierdet, Andre: *See*—
Bucourt, Robert, and Pierdet. 3,347,853.

Pietsch, Gerhard J., and J. D. Turner, to Esso Research and Engineering Co. Multipurpose gasoline additive. 3,347,645, 10–17–67, Cl. 44—63.

Pilliod Cabinet Co., The: *See*—
Pilliod, George L. 3,347,610.

Pilliod, George L., to The Pilliod Cabinet Co. Cabinet construction. 3,347,610, 10–17–67, Cl. 312—263.

Pinney, Wesley W.: *See*—
Mahaffy, Reid A., Harder, and Pinney. 3,343,333.

Piper, Melvin E. Method and apparatus for aligning the front wheels of an automobile. 3,346,965, 10–17–67, Cl. 33—203.14.

Pittsburgh Plate Glass Co.: *See*—
Dahms, James B., and Edmonds. 3,347,595.
Gloyer, Stewart W., Vogel, and Lynch. 3,347,700.

Pizzo, Charles. Method for making pizza pies. 3,347,181, 10–17–67, Cl. 107—54.

Plagmann, Franz, to Motoren Versuchsgesellschaft Witten m.b.H. & Co. KG. Angular joint arrangement. 3,347,214, 10–17–67, Cl. 123—11.

Platt, William C., to Ventura Processors. Process for preparing a lemon flavoring oil composition. 3,347,681, 10–17–67, Cl. 99—140.

Platt, William T., to General Refineries, Inc. Dental amalgam measuring and mixing apparatus. 3,347,530, 10–17–67, Cl. 259—12.

Pneumatic Seale Corp.: *See*—
Dobbyn, Geoffrey F. 3,347,205.

Pohl, Eric M.: *See*—
Schiller, James R., Pohl, and Smeltink. 3,346,964.

Pohndorf, Henry L.: *See*—
Bird, Forrest M., and Pohndorf. 3,347,228.

Polaroid Corp.: *See*—
Downey, John F., and Simon. 3,347,672.
Downey, John F. 3,347,673.
Fefferman, Gerald B. 3,347,418.
Kagan, Sholly, and Rodgers. 3,347,981.

Polichette, Joseph: *See*—
Schneble, Frederick W., Jr., Polichette, and Leech. 3,347,-724.

Polushkin, Andrey, and G. J. Watt, to Sperry Rand Corp. Gyroscopic apparatus. 3,347,105, 10–17–67, Cl. 74—5.6.

Polymer Corp. Ltd.: *See*—
Lasis, Evalds. 3,347,839.

Pommer, Horst: *See*—
Freyschlag, Herwig, Pommer, and Reif. 3,347,930.

Pond, George R.: *See*—
Hausman, Eugene A., and Pond. 3,347,622.

Pool, Stuart D., and W. H. Knapp, to International Harvester Co. Mounted fruit picker. 3,347,032, 10–17–67, Cl. 56—329.

Porsche, Dr. Ing., h.c.F., K.G., Firma: *See*—
Hetmann, Richard. 3,347,347.

Porter, Allan W. H., and C. R. Austin, to Hobourn Aero Components Ltd. Controlled heating of flat warp knitting machines. 3,347,063, 10–17–67, Cl. 66—86.

Poston, William B.: *See*—
Ellison, William M., Jr., Fuller, and Poston. 3,347,035.

Poteat, George A., Jr., to Engineered Plastics, Inc. Textile spool. 3 347,489, 10–17–67, Cl. 242—118.61.

Potter Instrument Co., Inc.: *See*—
Altonji, John A., and Valana. 3,347,159.

Potts, John M., and A. V. Slack, to Tennessee Valley Authority. Production of potassium ammonium polyphosphate solution. 3,347,656, 10–17–67, Cl. 71—36.

Potye, John J. Drapery rail apparatus. 3,347,306, 10–17–67, Cl. 160—344.

Pouchot, Walter D.: *See*—
Webb, James E. 3,347,309.

Powell, Florence S.: *See*—
Sharp, Edward J. 3,347,586.

Power, Frank E., to Minnesota Mining and Mfg. Co. Translatable pivot latch assembly. 3,347,579, 10–17–67, Cl. 292—122.

Powers Regulator Co., The: *See*—
Schumann, Eugene R., and Vanagas. 3,347,062.
Thorburn, David H. 3,347,461.

Powlus, Robert A., to Radio Corp. of America. Flexible logic circuit utilizing field effect transistors and light responsive devices. 3,348,064, 10–17–67, Cl. 307—88.5.

Pratt & Whitney Inc.: *See*—
Anderson, Robert F., Hollister, and Reuteler. 3,347,116.
D'Onofrio, Anthony. 3,348,108.

Prebluda, Harry J.: *See*—
Rosenstein, Hyman, and Prebluda. 3,347,682.

Preotle, John J., and F. I. Payne, to General Motors Corp. Method for forming joints in tubes. 3,347,728, 10–17–67, Cl. 156—283.

Presna mechanika narodny podnik: *See*—
Vichr, Radek. 3,348,113.

Preston, Howard K., Jr., to CF & I Steel Corp. Prestressed concrete members. 3,347 005, 10–17–67, Cl. 52—230.

Price, Gail A., to Farmer Bros. Co. Coffee brewing apparatus. 3,347,149 10–17–67, Cl. 99—282.

Price, Lowell T., and J. S. Scoggin, to Phillips Petroleum Co. Apparatus for solvent extraction of catalyst from polymer solid. 3,347,637. 10–17–67. Cl. 23—270.

Prichard, Roy, to International Telephone and Telegraph Corp. High-speed all-relay pulse counter. 3,348,204, 10–17–67, Cl. 340—168.

Priestley, Eric, and A. E. Hodson, to Elliott Bros. (London) Ltd. Aircraft structural stress alleviators. 3,347,498, 10–17–67. Cl. 244—77.

Printing Service Co.: *See*—
Worner, Jacob E., and Edwards. 3,347.123.

Proell, Wayne A., to Standard Oil Co. Process and composition for CO_2 generation from $AgCO_3$ and C. 3,347,629, 10–17–67, Cl. 23—150.

Pryor, Michael J.: *See*—
Broverman, Irwin, and Pryor. 3,347,714.

Puell, Heinz: *See*—
Arendt, Ilse, and Puell. 3,347,974.

Pul-Vac. Inc.: *See*—
Groves, Martin V., and Mastromatteo. 3,346,907.

Puster, Louis M., to Reynolds Metals Co. Charged liquid dispenser with pocketed gas container. 3,347,417, 10–17–67, Cl. 222—61.

Putscher, Richard E.: *See*—
Doelling, George L., Siefker, Schwoegler, and Putscher. 3,347,796.

Pyrcioch Eugene J.: *See*—
Feldkirchner, Harlan L., Linden, and Pyrcioch. 3,347,-647.

Quackenbush, John J., and H. O. Corbett, to National Distillers and Chemical Corp. Container closure. 3,347,443, 10–17–67, Cl. 229—14.

Quarles, Charles C., to E. I. du Pont de Nemours and Co. Process for removal of solid particles from a hydrogen fluoride reactor. 3,347,022, 10–17–67, Cl. 55—71.

Quast, Gilbert W., to Rex Chainbelt Inc. Bar screen with improved rake wiping mechanism. 3,347,382, 10–17–67, Cl. 210—159.

Quinting, Rudi F., to General Motors Corp. Seat belt retractor. 3,347,488, 10–17–67, Cl. 242—107.4.

R & R Research Ltd.: *See*—
Bass, Patrick, and Cooper. 3,347,982.

Rabenhorst, Helmut: *See*—
Engelhardt, Heins, Krupp, Rabenhorst, Spengler, and Wiemath. 3,347,087.

Rabuse, George E., A. J. Wallner, and C. A. Sterling, to Minnesota Mining and Mfg. Co. Pressure sensitive adhesive tapes with anti-static edge coatings. 3,347,362, 10–17–67, Cl. 206—59.

Radcliffe, Remington S., to Westinghouse Electric Corp. Fan construction. 3,347,452, 10–17–67, Cl. 230—259.

Rademacher, Leo E., to Monsanto Co. Method of preparing polyolefins. 3,347,841, 10–17–67, Cl. 260—94.9.

Rademacher, Leo E., to Monsanto Co. Graft blends and method of preparing same. 3,347,956, 10–17–67, Cl. 260—878.

Radio Corp. of America: *See*—
Brooks, Forrest E. 3,348,209.
Carlson, David J., and Theriault. 3,348,062.
Nitsche, Rudolf. 3,348,077.
Powlus, Robert A. 3,348,064.
Ross, Edward C. 3,348,200.

Raff, Paul: *See*—
Schuster, Ludwig, and Raff. 3,347,918.

Rahn, Erwin P. G., and S. A. Babbin, to Wallace & Tierman, Inc. Container and its components for aerosol product. 3,347,423, 10–17–67, Cl. 222—183.

Raifsnider, Phillip J., and V. P. Guinn, to Shell Oil Co. Monitoring corrosion rates by means of radioactive tracers. 3,348,052, 10–17–67, Cl. 250—106.

Rain Jet Corp.: *See*—
Hruby, John O., Jr. 3,347,464.

Ram Engineering Corp.: *See*—
Agostini, Dominic J. and G. L. 3,346,940.

Ramanathan, Visvanathan: *See*—
Rhyner, Paul, and Ramanathan. 3,347,844.

Rambold, Herbert H. Method of preparing turkey product. 3,347,680, 10–17–67, Cl. 99—107.

Rampacek, Carl, J. S. Browning, and T. L. McVay, to United States of America, Interior. Process for washing and removing organic heavy liquids from mineral particles. 3,347,370, 10–17–67, Cl. 209—172.

Ramsel, Charles A., to Caterpillar Tractor Co. Transmission. 3,347,113, 10–17–67, Cl. 74—688.

Rank Precision Industries Ltd.: *See*—
Barr, John D., and Clifford. 3,347,985.

Ranky, Bela, to The Singer Co. Time delay and frequency spectrum analyser. 3,348,139, 10–17–67, Cl. 324—57.

Ranky, Bela, to Analyser Design, Inc. Variable resolution constant amplitude filter. 3,348,161, 10–17–67, Cl. 330—21.

Raper, William G. C.: *See*—
Hinde, Ronald W., and Raper. 3,347,864.

Raphael, Ralph: *See*—
Cymmer, Thomas, and Raphael. 3,347,526.

Rappen, Ludwig: *See*—
Froitzheim, Max, Lang, Rappen, and Turowski. 3,347,-936.

Raskin, Seymour H. Railroad track weighing cell. 3,347,326, 10–17–67, Cl. 177—163.

Rast Industries Ltd.: *See*—
Rast, Wlodzimierz. 3,347,272.

Rast, Wlodzimierz, to Rast Industries Ltd. Protector for gauges and the like. 3,347,272, 10–17–67, Cl. 138—30.

Rauenbusch, Erich, and W. Frommer, to Merck & Co., Inc. Microbiological cleavage process for resolving acemic α-methyl-β-(3,4-dihydroxyphenyl)-alanine. 3,347,752, 10–17–67, Cl. 195—29.

Rausch, Douglas A., to The Dow Chemical Co. (Difluoroaminodifluoromethyl) fluorocyanamide $NF_2CF_2NFC{\equiv}N$. 3,347,911, 10–17–67. Cl. 260—551.

Rausing, Gad A., and H. G. Swede, to AB Tetra Pak. Package having an oblique opening indication. 3,347,444, 10–17–67, Cl. 229—17.

Ravenal, Earl C., to Elbe File & Binder Co., Inc. Cover and binder construction. 3,347,243, 10–17–67, Cl. 129—38.

Rayeski, Thomas J.: *See*—
Carmi, Arieh, and Rayeski. 3,347,653.

Rayner, Eric T., P. H. Eaves, and H. P. Dupuy, to United States of America, Agriculture. Processes for removing the halphen-test response from refined and bleached cottonseed oil. 3,347,886, 10–17–67, Cl. 260—424.

Raytheon Co.: *See*—
Melancon, Leo. 3,348,228.

Read Corp.: *See*—
Royer, Wayne H. 3,347,182.

Reade, Richard S.: *See*—
Strong, Edward W., Reade, Manuel, and Bastedo. 3,347,-095.

Reading Tube Corp.: *See*—
Somer, Frits. 3,346,887.

Reber, Robert L., to The Bendix Corp. Stepped bonding wedge. 3,347,442, 10–17–67, Cl. 228—3.

Redding, Arnold H.: *See*—
Webb, James E. 3,347,309.

Redman, James C.: *See*—
Huska, Harold W., and Redman. 3,347,340.

Reece, Michael P.: *See*—
Knapton, Arthur G., and Reece. 3,348,012.

Reed, Denvil E., Jr.: *See*—
Foster, Donald J., and Reed. 3,347,875.

Reese, Robert L., to The Fanner Mfg. Co. Tie armor suspension. 3,347,980, 10–17–67, Cl. 174—173.

Regan Forge & Engineering Co.: *See*—
Watkins, Bruce J. 3,347,567.

Regan, Patrick J.: *See*—
Soroos, James P., and Regan. 3,347,591.

Reif, Werner: *See*—
Freyschlag, Herwig, Pommer, and Reif. 3,347,930.

Reinhold, Donald F.: *See*—
Sletzinger, Meyer, and Reinhold. 3,347,881.
Sletzinger, Meyer, Firestone, and Reinhold. 3,347,905.

Reinmann, Alfred, to Werkzeugfabrik Selsach A.G. Step-by-step driving-jack. 3,347,522, 10–17–67, Cl. 254—105.

Reiter, Bernard W.: *See*—
Einstein, Karl, and Reiter. 3,347,183.

Reliance Electric and Engineering Co., The: *See*—
Foster, George B. 3,348,234.
Hamby, Russell S. 3,348,107.
Jordan, Howard E. 3,348,084.

Renaudo, Samuel, to Phillips Petroleum Co. Process for making block polymers of olefins. 3,347,955, 10–17–67, Cl. 260—878.

Rengert, Joseph S.: *See*—
Dieck, William W., Rengert, and Winkler. 3,347,962.

Renkey, Albert L., to Harbison-Walker Refractories Co. Induction furnace construction. 3,347,972, 10–17–67, Cl. 13—35.

Renneker, Dennis N., to General Motors Corp. Retractable roof for automotive vehicle. 3,347,592, 10–17–67, Cl. 296—107.

Reuteler, Johann F.: *See*—
Anderson, Robert F., Hollister, and Reuteler. 3,347,116.

Reuter, Gerald L., and G. N. Hill, to Richardson-Merrell Inc. Method of treating bovine mastitis. 3,347,743, 10–17–67, Cl. 167—53.2.

Revelino, James B., to Aerojet-General Corp. Differential pressure transducer. 3,347,100, 10–17–67, Cl. 73—398.

Revere Copper and Brass Inc.: *See*—
Somer, Fritz. 3,346,887.

Rex Chainbelt Inc.: *See*—
Quast, Gilbert W. 3,347,382.

Rexall Drug and Chemical Co.: *See*—
Schrage, Albert, and Koch. 3,348,039.

Reynolds Metals Co.: *See*—
Farquhar, Melville T. 3,346,939.
Funkhouser, Garland B. 3,347,365.
Puster, Louis M. 3,347,417.

Reznick, Frank J., and J. A. Noddings, to The Bendix Corp. Lead-tin alloy plating fixture for silicon. 3,347,771, 10–17–67, Cl. 204—297.

Rheinmetall G.m.b.H.: *See*—
Löffler, Theodor, and Freudig. 3,346,982.

Rhodes, John C. Process of purifying or recovering mine drainage waters and the like. 3,347,787, 10–17–67, Cl. 210—50.

Rhodes, Richard P., and D. A. Guthrie, to Esso Research and Engineering Co. Tetrakis-(difluoroamino) butane. 3,347,922, 10–17–67, Cl. 260—583.

Rhodes, Richard P.: *See*—
Passannante, Anthony J., Rhodes, and Beach. 3,347,924.

Rhone-Poulenc S.A.: *See*—
Deleuze, Antoine, and Guiling. 3,346,918.

Rhyner, Heinz, and R. Vors, to Ateliers des Charmilles S.A. Apparatus for machining by electro erosion. 3,348,015, 10–17–67, Cl. 219—69.

Rhyner, Paul, and V. Ramanathan, to Ciba, Ltd. Water-insoluble indoline monoazo dyestuffs. 3,347,844, 10–17–67, Cl. 260—165.

Riblet Tramway Co.: *See*—
Sowder, Tony R. 3,347,172.

Rice Barton Corp.: *See*—
Goumenlouk, Gleb I. 3,347,740.

Richardson-Merrell Inc.: *See*—
Reuter, Gerald L., and Hill. 3,347,743.

Richey, Clarence B., to Massey-Ferguson, Inc. Soil incorporator. 3,347,188, 10–17–67, Cl. 111—10.

Richter, Donald L., to The R. C. Mahon Co. Metal roof deck. 3,347,010, 10–17–67, Cl. 52—593.

Riddell, George, to Bell Telephone Laboratories, Inc. Stock quotation switching system utilizing switching means for alternating the connection of a register and its associated trunk. 3,347,989, 10–17–67, Cl. 179—6.

Ridenour, Wayne F.: *See*—
Brejcha, Robert J., Modesto, and Ridenour. 3,347,596.

Rieder, Kurt O.: *See*—
Bauer, Edwin F., Jr., and Rieder. 3,347,664.

Riegelmayer, Peter, to Dynamit Nobel Aktiengesellschaft. Method for connecting metal plates. 3,346,946, 10–17–67, Cl. 29—470.1.

Riera, Juan: *See*—
Ballester, Manuel, and Riera. 3,347,940.
Ballester, Manuel, Castaner, and Riera. 3,347,941.

Ries, Stanley K.: *See*—
De Long, Max M., Stout, and Ries. 3,347,081.

Rigler, Ernest M. Heated muff hand exerciser. 3,347,240, 10–17–67, Cl. 128—363.

Riley, Ray L., Hughes Aircraft Co. Magnetic head transient minimisation circuitry. 3,348,219, 10–17–67, Cl. 340—174.1.

Rinfret, Arthur P., C. W. Cowley, and G. F. Doebbler, to Union Carbide Corp. Process for freezing erythrocytes. 3,347,745. 10–17–67, Cl. 167—74.

Rise, Donald J.: *See*—
Brown Gaylord W., and Rise. 3,346,923.

Ritchie, David S. Photo type setting machines. 3,347,140, 10–17–67, Cl. 95—4.5.

Ritchie, Douglas E., to Hewlett-Packard Co. Instrument housing retaining member. 3,347,608, 10–17–67, Cl. 312—216.

Rivera, Arthur: *See*—
De Soto, Aldo J., and Rivera. 3,347,357.

Rixmann, Amos E., and L. E. Knapp. Endless track construction. 3,347,602, 10–17–67, Cl. 305—54.

Robb, David: *See*—
Taylor, Roy P., and Robb. 3,347,709.

Robertshaw Controls Co.: *See*—
Crafts, Cecil A., and Carlson. 3,348,149.

Robins, A. H., Co., Inc.: *See*—
Lunsford, Carl D. 3,347,856.
Robinson, Cecil H., to Schering Corp. 17a-halogenoethylestranes. 3,347,880, 10–17–67, Cl. 260—397.5.
Robinson, Donald N.: *See*—
Gladding, Edward K., and Robinson. 3,347,817.
Robinson, Lloyd A.: *See*—
Matthael, George L., and Robinson. 3,348,173.
Robinson, Russell S. Two-wheeled utility trailers for cycles. 3,347,559, 10–17–67, Cl. 280—204.
Rockett, Jack: *See*—
Leary, Ralph J., Michael, and Rockett. 3,347,913.
Rockwell-Standard Corp.: *See*—
Darak, Michael S., Jr. 3,346,903.
Rodgers, Franklin A.: *See*—
Kagan, Sholly, and Rodgers. 3,347,981.
Roessler, Henry W. to FMC Corp. Swivel joint and packing therefor. 3,347,570, 10–17–67, Cl. 285—94.
Rogers, Charles H., F. E. Kronenberg, A. B. Olson, and T. J. Hebner, to Caterpillar Tractor Co. Brake lining and cooling means. 3,347,345, 10–17–67, Cl. 188—264.
Rogers, Edward F., to Merck & Co., Inc. 2-(4-cyclohexylcyclohexyl)-3-hydroxy-1,4-naphthoquinone in controlling coccidiosis in poultry. 3,347,742, 10–17–67, Cl. 167—33.1.
Rohm & Haas Co.: *See*—
Lewis, Sheldon N. 3,347,934.
Rolfs, John C., to General Precision, Inc. Cross-polarised microwave antenna. 3,348,227, 10–17–67, Cl. 343—768.
Rollins, Dallas W., to ACF Industries, Inc. Collapsible hitch. 3,347,506, 10–17–67, Cl. 248—119.
Rolls-Royce Ltd.: *See*—
Arridge, Robert G. C. 3,347,208.
Halls, Gordon A. 3,347,471.
Leathley, Peter T. 3,347,493.
Mullins, John A. 3,347,497.
Rolls, Tibbets E.: *See*—
Carlson, Marvin J., Dobeus, Olsen, and Rolls. 3,347,577.
Rome Machine & Foundry Co.: *See*—
Berry, Thomas. 3,347,067.
Ronalds, Hugh C. Infuser and container for infusion products. 3,347,151, 10–17–67, Cl. 99—295.
Ronner, Fritz: *See*—
List, Heinz, and Ronner. 3,347,528.
Roozee, James B., to Vandercook & Sons, Inc. Ink roll interrupter for a multi-color rotary offset printing press. 3,347,160, 10–17–67, Cl. 101—209.
Rose, Marvin S. Electronic solid state lock mechanism. 3,347,072, 10–17–67, Cl. 70—277.
Rosen, Samuel R., to Nordson Corp. High resistance cable. 3,348,186, 10–17–67, Cl. 338—214.
Rosenberg, David J.: *See*—
Krakauer, Sidney, Musikant, and Rosenberg. 3,347,648.
Rosener, Harvey J., to Bunker-Ramo Corp. Numerical positioning control system. 3,348,208, 10–17–67, Cl. 340—172.5.
Rosenstein, Hyman, and H. J. Prebluda, to Lancet Laboratories, Inc. Colorant tablet. 3,347,682, 10–17–67, Cl. 99—148.
Rosenthal, Louis A., to Union Carbide Corp. Apparatus for the corona discharge treatment of plastic surfaces having an adjustable length electrode assembly. 3,348,041, 10–17–67, Cl. 250—49.5.
Rosenthal, Rudolph: *See*—
Bonetti, Giovanni A., and Rosenthal. 3,347,939.
Ross, Adolph W.: *See*—
Ross, Ronald A., A. W., and M. E. 3,347,469.
Ross, Edward C., to Radio Corp. of America. Character reader that quadrantizes characters. 3,348,200, 10–17–67, Cl. 340—146.3.
Ross Laboratories, Inc.: *See*—
Ross, Wayne M. 3,348,230.
Ross, Marie E.: *See*—
Ross, Ronald A., A. W., and M. E. 3,347,469.
Ross, Roger J., to The Singer Co. Sewing machine drive mechanism. 3,347,191, 10–17–67, Cl. 112—220.
Ross, Ronald A., A. W., and M. E., to Patent Holding and Development Corp. Gun for flocking trees. 3,347,469, 10–17–67, Cl. 239—424.
Ross, Wayne M., to Ross Laboratories, Inc. Recording indicators for pulse-echo type detection systems. 3,348,230, 10–17–67, Cl. 346—33.
Roth, Gerald C., to Union Special Machine Co. Looper mechanism for blind stitch sewing machines. 3,347,190, 10–17–67, Cl. 112—176.
Rothman, Alex. Bagel slicer. 3,347,296, 10–17–67, Cl. 146—216.
Rothmel, Bernard J.: *See*—
Whipple, Richard E., and Rothmel. 3,348,067.
Rotrekl, Otto: *See*—
Bartosek, Vladimir, Janousek, and Rotrekl. 3,347,283.
Rouillard, Joseph, and J. Vertut, to Commissariat a l'Energie Atomique. Articulation devices with transmission of movements. 3,347,111, 10–17–67, Cl. 74—501.
Roussel-UCLAF: *See*—
Bucourt, Robert, and Pierdet. 3,347,853.
Rowe, Charles A., Jr., A. Schriesheim, and S. Bank, to Esso Research and Engineering Co. Novel grignard reagents. 3,347,912, 10–17–67, Cl. 260—551.
Rowell, Douglas W., to Anaconda American Brass Co. Two-hole extrusion. 3,347,079, 10–17–67, Cl. 72—264.
Roy, Lal B. Bath tub. 3,346,884, 10–17–67, Cl. 4—173.
Royal Package Equipment, Inc.: *See*—
Lovas, Stephen, and Di Monico. 3,347,011.
Royer, Wayne H., to Read Corp. Double lap oven heating system. 3,347,182, 10–17–67, Cl. 107—37.
Rudd-Melikian, Inc.: *See*—
Kopera, John H. 3,347,413.
Rumrill, Edwin W., Jr.: *See*—
Lewis, Frank D., Sr., and Rumrill. 3,347,260.
Runnels, Joe N., Jr.: *See*—
Eberhardt, Donald S., Gratzer, and Runnels. 3,347,495.
Ruppersberg, Gerhard-Heiterich: *See*—
Schellhase, Rolf, and Ruppersberg. 3,348,059.
Ruschig, Heinrich, G. Korger, W. Aumüller, and W. Schmidt, to Farbwerke Hoechst Aktiengesellschaft, vormals Meister Lucius & Bruning. Hydroxy-benzenesulfonyl-ureas and process for their manufacture. 3,347,914, 10–17–67, Cl. 260—553.
Rush, Charles D. Tape guidance system. 3,347,437, 10–17–67, Cl. 226—198.
Russell, David L., to The Dow Chemical Co. Method and apparatus for the treatment of expandable resinous particles. 3,347,961, 10–17–67, Cl. 264—53.
Russell, Linus E., to Peters and Russell, Inc. Surge chambers employing flexible membranes. 3,347,273, 10–17–67, Cl. 138—30.
Russell, Linus E., to Peters and Russell, Inc. Water strainer. 3,347,385, 10–17–67, Cl. 210—232.
Russell, Roger B., Jr., and M. R. Bates, to United States of America, Navy. Probability analyzer. 3,348,031, 10–17–67, Cl. 235—150.5.
Russell, William S.: *See*—
Lodeesen, Herman J., and Russell. 3,347,713.
Russo, Frank C.: *See*—
Buckley, Robert A., and Russo. 3,347,823.
Rutgerswerke und Teerverwertunk Aktiengesellschaft: *See*—
Fritzlheim, Max, Lang, Rappen, and Turowski. 3,347,936.
Ruth, Harold S., Jr. Contour shoulder pack. 3,347,429, 10–17–67, Cl. 224—11.
Rutherford, Harry T. Paste container and dispenser. 3,347,288, 10–17–67, Cl. 141—362.
Rutschmann, Jurg, and E. Schreier, to Sandoz Ltd. (also known as Sandoz A.G.). Aryl-tetralyl compounds and a process for their production. 3,347,879, 10–17–67, Cl. 260—340.5.
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Opfer, Waldo V., Jr. 3,347,496.
Ryan, John W., C. F. Adickes, Jr., and J. De Gelder, to Mattel, Inc. Pneumatic space capsule. 3,346,989, 10–17–67, Cl. 46—44.
Rydstrom, Hans F. Image reproducing device. 3,346,977, 10–17–67, Cl. 40—28.
SCM Corp.: *See*—
Soule, Winsor, Jr., and Binnall. 3,348,215.
Saeli, John J., to General Motors Corp. Transistorized D.C. motor speed control system. 3,348,112, 10–17–67, Cl. 318—332.
Sakaurai, Hasko: *See*—
Matsumoto, Toyokazu, Ohara, Kawase, and Sakaurai. 3,347,764.
Salminen, Wilho M., to Eastman Kodak Co. Preparation of photographic direct positive color images and photographic elements therefor. 3,347,671, 10–17–67, Cl. 96—3.
Salsbury, Albert L. Hydrotherapy bath with wave producing diaphragm. 3,347,225, 10–17–67, Cl. 128—66.
Saltz, Morris A. Drapery pin hook package and holder. 3,347,360, 10–17–67, Cl. 206—56.
Salvesen, Sigbjorn: *See*—
Holtermann, Hugo, and Salvesen. 3,347,746.
Samuelsson, Evert, and B. Larkfeldt, to Aktiebolaget Svenska Flaktfabriken. Air distributor. 3,347,146, 10–17–67, Cl. 98—40.
Sanders Associates, Inc.: *See*—
Boothroyd, Howard W. 3,347,104.
Stromswold, Chester. 3,348,181.
Woodruff, Thomas E. 3,347,997.
Sanders, Grady H., and J. K. McCollough, to Deering Milliken Research Corp. Automatic object handling apparatus. 3,347,033, 10–17–67, Cl. 57—53.
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Ersek, Robert A. 3,346,883.
Sandoz Ltd.: *See*—
Rutschmann, Jurg, and Schreier. 3,347,870.
Sandstrom, Donald J., and C. L. Terrell, to United States of America, Atomic Energy Commission. Device for consolidating metal powers. 3,346,914, 10–17–67, Cl. 18—5.
Sargent Industries, Oil Well Equipment Division: *See*—
Cronin, John W., Jr., and Boyer. 3,347,169.
Sarka, Albert J., to Harris-Intertype Corp. Cutting method and apparatus. 3,347,119, 10–17–67, Cl. 83—38.
Sarka, August J.: *See*—
Doyle, James J., Sarka, and Tancredi. 3,347,990.
Sauerer, Adoph, Ltd.: *See*—
Birmans, Josef. 3,347,285.
Saunders, Charles W., to The United Steel Co. Ltd. Machines for continuously casting metal. 3,347,308, 10–17–67, Cl. 164—282.
Sawyer, Albert K., to M & T Chemicals Inc. Hexaorganotritin compounds and the preparation thereof. 3,347,889, 10–17–67, Cl. 260—429.7.
Scalia, Joseph: *See*—
Henning, George J., and Scalia. 3,346,948.
Scaramucci, Domer. Valve and seal. 3,347,517, 10–17–67, Cl. 251—315.
Scarpelli, Neil N. Trowel. 3,346,905, 10–17–67, Cl. 15—235.6.
Scatena, Massimo, and M. Grazia, to Montecatini Edison S.p.A. Process for producing synthetic polyvinyl ester latices, particularly suitable for water paints and latices thus obtained. 3,347,805, 10–17–67, Cl. 260—17.
Schack, H. Norman: *See*—
Sheppard, Chester S., Schack, and Magell. 3,347,845.
Schaub, Heinz P.: *See*—
Ulrich, Paul, Hoelzle, Stahel, and Schaub. 3,347,617.

Scheidig, Rudolf, to International Standard Electric Corp. Binde armature contact in sealed housing. 3,348,174, 10–17–67, Cl. 335—153.
Scheilhase, Rolf, and G.-H. Ruppersberg, to Licentia Patent-Verwaltungs G.m.b.H. Visibility tester with compensation for the threshold level of the human eye. 3,348,059, 10–17–67, Cl. 250—229.
Scherer, Paul A.: *See*—
Scherer, Paul A. 3,347,197.
Scherer, Paul A., to P. A. Scherer. Constant thrust propulsion and craft system. 3,347,197, 10–17–67, Cl. 114—66.5.
Schering Corp.: *See*—
Robinson, Cecil H. 3,347,880.
Scheu Steel Supply Co.: *See*—
Maynard, George H. 3,347,221.
Schick, Henry C., to International Business Machines Corp. Method of making through-connections by controlled punctures. 3,346,950, 10–17–67, Cl. 29—625.
Schieser, Warren J., W. Hecox, and C. F. Peasley, to Exact Weight Scale Corp. Leaf spring suspension weighing scale. 3,347,328, 10–17–67, Cl. 177—229.
Schiller, James R., E. M. Pohl, and A. Smeltink, to Speedring Corp. Gaging device. 3,346,964, 10–17–67, Cl. 33—147.
Schimpke, Albert J. Gas liquid contact apparatus. 3,347,535, 10–17–67, Cl. 261—29.
Schirmer, Henry G., to W. R. Grace & Co. Perforating film by electrical discharge. 3,348,022, 10–17–67, Cl. 219—384.
Schjeldahl, G. T., Co.: *See*—
Laegreid, Nils, and Moseson. 3,347,772.
Schlichte, Max, to Siemens Aktiengesellschaft, Berlin and Munich. Linking circuits for telephone systems comprising transformers utilizing only the linear working range thereof. 3,348,202, 10–17–67, Cl. 340—166.
Schlosser, Francis G.: *See*—
Pfaff, Henry C., Jr., and Schlosser. 3,347,572.
Schlumberger Technology Corp.: *See*—
Lanmon, C. P., II. 3,347,315.
Lanmon, C. P., II. 3,347,322.
Schuster, Nick A. 3,347,314.
Schluter, Heinz, to Internation Standard Electric Corp. Switching reed relay matrix having unique releasing means. 3,347,994, 10–17–67, Cl. 179—18.
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Schlutz, Charles A.: *See*—
Bellamy, David, Jr., and Schlutz. 3,347,454.
Schmelzer, Hans-Georg, and E. Degener, to Farbenfabriken Bayer Aktiengesellschaft. 2-mercapto-a-triazines. 3,347,859, 10–17–67, Cl. 260—248.
Schmid, Paul, to Kali-Chemie Aktiengesellschaft. Preparation of potassium bicarbonate. 3,347,623, 10–17–67, Cl. 23—64.
Schmid & Wezel, Firma: *See*—
Wezel, Walter, and Wezel. 3,346,956.
Schmidt, Herbert R., to International Business Machines Corp. Data analyzing circuit employing integrator having first and second discharge paths with respectively first and second discharge rates. 3,348,065, 10–17–67, Cl. 307—88.5.
Schmidt-Salzmann, Walther. Yarn lubricating device. 3,347,206, 10–17–67, Cl. 118—8.
Schmidt, Werner: *See*—
Ruschig, Heinrich, Korger, Aumuller, and Schmidt. 3,347,914.
Schmutz, Jean, and F. Hunziker, to Dr. A. Wander, S.A. 5-(basic substituted)-dibenzodiazepines. 3,347,849, 10–17–67, Cl. 260—239.
Schneble, Frederick W., Jr., J. Polichette, and E. J. Leech, to Photocircuits Corp. Metallizing flexible substrata. 3,347,724, 10–17–67, Cl. 156—151.
Scholle Container Corp.: *See*—
Scholle, William R. 3,347,012.
Scholle, William R., to Scholle Container Corp. Sterile packaging. 3,347,012, 10–17–67, Cl. 53—29.
Schonemeyer, Hilmar: *See*—
Schluter, Heinz, and Schonemeyer. 3,347,995.
Schonholzer, Emil T., to Westinghouse Electric Corp. Apparatus for producing phase-shiftable pulses. 3,348,129, 10–17–67, Cl. 323—22.
Schopf, Albert: *See*—
Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,347,819.
Schraeder, Albin E., to Jones & Laughlin Steel Corp. Molten bath temperature measurement. 3,347,099, 10–17–67, Cl. 73—359.
Schrage, Albert, and K. F. Koch, to Rexall Drug and Chemical Co. Plastic light diffuser and collimator. 3,348,039, 10–17–67, Cl. 240—51.11.
Schreier, Emil: *See*—
Rutschmann, Jurg, and Schreier. 3,347,870.
Schreihans, Francis A.: *See*—
Valles, Anthony G., and Schreihans. 3,347,770.
Schriesheim, Alan: *See*—
Rowe, Charles A., Jr., Schriesheim, and Bank. 3,347,912.
Schroeder Brothers Corp.: *See*—
Schroeder, William F., and Holl. 3,347,094.
Schroeder, Manfred R.: *See*—
Atal, Bishnu S., and Schroeder. 3,348,150.
Schroeder, Robert J., to Allis-Chalmers Mfg. Co. Vehicle frame with built-in battery compartment. 3,347,334, 10–17–67, Cl. 180—68.5.
Schroeder, William F., and H. F. Holl, to Schroeder Brothers Corp. Hydraulic circuit tester. 3,347,094, 10–17–67, Cl. 73—168.
Schultheiss, Robert A.: *See*—
Miller, Edwin A., and Schultheiss. 3,346,936.
Schultz, Thomas C., to The Bendix Corp. Choke control device. 3,347,216, 10–17–67, Cl. 123—119.
Schulz, Helmut W.: *See*—
Hogsett, John N., Khuri, and Schulz. 3,347,893.
Schumann, Edward L., to The Upjohn Co. O-monoalkoxybenzylhydroxyl amines. 3,347,933, 10–17–67, Cl. 260—612.
Schumann, Eugene R., and L. Vanagas, to The Powers Regulator Co. Torque limiting mechanism. 3,347,062, 10–17–67, Cl. 64—28.
Schuster, Ludwig, and P. Raff, to Badishe Anline & Soda-Fabrik Aktiengesellschaft. Production of cyclododecylamine. 3,347,918, 10–17–67, Cl. 260—563.
Schuster, Nick A., to Schlumberger Technology Corp. Methods for well completion. 3,347,814, 10–17–67, Cl. 166—13.
Schwartzman, Gilbert. Mixing assemblies for applicators. 3,347,410, 10–17–67, Cl. 222—80.
Schweiger, Frank A., to General Electric Co. Fluid seal. 3,347,553, 10–17–67, Cl. 277—27.
Schweitzer, Edmund O., Jr., and R. R. Lockwood. Electric circuit control system employing capacitor storage and discharge. 3,348,099, 10–17–67, Cl. 317—22.
Schwoegler, Edward J.: *See*—
Doelling, George L., Siefker, and Schwoegler, and Putscher. 3,347,796.
Scoggin, Jack S.: *See*—
Price, Lowell T., and Scoggin. 3,347,637.
Scope Inc.: *See*—
Williams, Richard E. 3,347,983.
Scoran, Eugene: *See*—
Hus, Johannes, Scoran, and Zurheller. 3,347,977.
Scott Aviation Corp.: *See*—
Cupp, Charles D. 3,347,230.
Nelson, James E. 3,347,566.
Scott, H. H., Inc.: *See*—
Fish, Lawrence W., Jr., and Von Recklinghausen. 3,348,154.
Von Recklinghausen, Daniel R. 3,348,155.
Scott, Richard L., to F. L. Murdock. Vacuum deaerator. 3,347,023, 10–17–67, Cl. 55—193.
Scovill Mfg. Co.: *See*—
Somer, Fritz. 3,346,887.
Seanor, Rex C.: *See*—
Lake, Charles G., and Seanor. 3,346,913.
Seba, Richard D.: *See*—
Matthews, Charles S., and Seba. 3,347,313.
Seefluth, Charles L., to Phillips Petroleum Co. Apparatus for sealing thermoplastic materials including a radiant heater and a reflector. 3,347,729, 10–17–67, Cl. 156—380.
Seefluth, Charles L., to Phillips Petroleum Co. Method for forming biaxially oriented thermoplastic articles. 3,347,966, 10–17–67, Cl. 264—97.
Seeholzer, Josef: *See*—
Kaess, Franz, Michaud, and Seeholzer. 3,347,953.
Seibel, Bobly H., to The Boeing Co. Optical measuring instruments. 3 347,130, 10–17–67, Cl. 88—14.
Seizer Power Clamp, Inc.: *See*—
Mericle, Boyd, Jr. 3,347,542.
Seki, Asao: *See*—
Tanaka, Sanae, Yokoyama, and Seki. 3,347,952.
Sellen, Carl R., and F. Collura, to Keuffel & Esser Co. Measuring tape device. 3,347,487, 10–17–67, Cl. 242—84.8.
Sellers, Paul E.: *See*—
Adomaitis, Domas, and Sellers. 3,347,957.
Sepall, Ola, and R. C. Buser, to Anglo Paper Products, Ltd. Production of chlorine dioxide. 3,347,628, 10–17–67, Cl. 23—121.
Seyferth, Dietmar, to The Dow Chemical Co. Cyclopropyl tin compounds. 3,347,888, 10–17–67, Cl. 260—429.7.
Shah, Vipin D.: *See*—
Trussell, Wayne E., and Shah. 3,347,920.
Shannon, Bill M., to Westinghouse Electric Corp. Bus duct having heat dissipating parts. 3,347,975, 10–17–67, Cl. 174—70.
Shapiro, Eugene B.: *See*—
Gore, William C., and Shapiro. 3,347,118.
Sharp, Carl H. Under reamer. 3,347,323, 10–17–67, Cl. 175—269.
Sharp, Edward J., to F. S. Powell, E. L. Blanch, and M. Clontz. Siphon and related structure. 3,347,586, 10–17–67, Cl. 294—19.
Sharpe, Edward L.: *See*—
Falkenberg, Douglass R., and Sharpe. 3,347,211.
Sharts, Clay M., to United States of America, Navy. Azidopentaphenylphosphonitrile trimer. 3,347,876, 10–17–67, Cl. 260—349.
Sharts, Clay M., to United States of America, Navy. Cis- and trans-diazidohexaphenylcyclophosphonitrile tetramer. 3,347,877, 10–17–67, Cl. 260—349.
Shaw, Willard C.: *See*—
Long, Donald A., Shaw, and Carlson. 3,348,011.
Sheehan, Robert W., and I. A. Szupkay, to The Boeing Co. Flush-type safety latch. 3,347,578, 10–17–67, Cl. 292—113.
Shell Oil Co.: *See*—
Baumgartner, Herman J., Hood, and Weaver. 3,347,630.
Fleischer, Fritz K., and Sisk. 3,346,915.
Groenendaal, Willem, and Logman. 3,347,779.
Havenaar, Isaak. 3,347,316.
Matthews, Charles S., and Seba. 3,347,313.
Mills, Alan R. 3,347,832.
Nash, David M., Jr. 3,347,336.
Papadopoulos, Michael N., and Deal. 3,347,621.
Raifsnider, Philip J., and Guinn. 3,348,052.
Slaugh, Lynn H. 3,347,945.
Smith, George. 3,347,833.
Shen, Chung Y., to Monsanto Co. Process for manufacturing sodium trimetaphosphate. 3,347,627, 10–17–67, Cl. 23—107.
Sheppard, Chester S., H. N. Schack, and O. L. Magell, to Wallace and Tiernan Inc. Shock stable azodiformate esters. 3,347,845, 10–17–67, Cl. 260—192.

Sherk, Fred T.: *See*—
Dollinger, Robert E., Wilson, and Sherk. 3,347,449.
Sherrod, Buddy L. Underwater pipe trenching device. 3,347,054, 10–17–67, Cl. 61—72.4.
Sherwin-Williams Co., The: *See*—
Collidge, Sollace B., Jr., and Czarnecki. 3,347,407.
Shieber, Herbert, to United States of America, National Aeronautics and Space Administration. Prestressed refractory structure. 3,347,465, 10–17–67, Cl. 239—265.11.
Shields, Charles F., to The Wolf Machine Co. Knife blade guide for a cloth cutting machine. 3,347,125, 10–17–67, Cl. 83—685.
Shiells, James F., Jr.: *See*—
Griswold, Lee M., Shiells, and Uter. 3,348,017.
Short, Oliver A., and J. R. White, to E. I. du Pont de Nemours and Co. Magnetic ink. 3,347,815, 10–17–67, Cl. 260—33.4.
Shriver, T., & Co., Inc.: *See*—
Augerot, Bernard J. 3,347,383.
Sidles, James, to The B. F. Goodrich Co. Tire. 3,347,300, 10–17–67, Cl. 152—352.
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Sidles, James, to The B. F. Goodrich Co. Method and apparatus for making pneumatic tire. 3,347,964, 10–17–67, Cl. 264—94.
Sieckman, Walter, to McGraw-Edison Co. Apparatus for the vacuum degassing of molten metal. 3,347,538, 10–17–67, Cl. 266—34.
Siefker, Joseph A.: *See*—
Doelling, George L., Siefker, Schwoegler, and Putscher. 3,347,796.
Siegla, Donald C.: *See*—
Bassett, Arthur T., Jr., and Siegla. 3,348,025.
Siegner Maschinenbau G.m.b.H.: *See*—
Hein, Ewald. 3,347,397.
Siemens Aktiengesellschaft, Berlin and Munich: *See*—
Schlichte, Max. 3,348,202.
Siemens Aktiengesellschaft, Munich and Berlin: *See*—
Spandock, Friedrich. 3,348,195.
Siemens & Halske Aktiengesellschaft: *See*—
Arendt, Ilse, and Puell. 3,347,974.
Siemens & Halske Aktiengesellschaft Berlin and Munich: *See*—
Heywang, Walter. 3,347,719.
Krokar, Zeljko. 3,348 029.
Meyer, Andreas. 3,347,704.
Von Sanden, Dieter, and Suckfull. 3,347,992.
Siemens-Schuckertwerke Aktiengesellschaft Berlin and Erlangen: *See*—
Halla, Ottokar. 3,348,184.
Siemens-Schuckertwerke Aktiengesellschaft, and Varta Aktiengesellschaft: *See*—
Justi, Eduard, and Winsel. 3,347,759.
Sierra Engineering Co.: *See*—
Heitman, David L. 3,347,229.
Siggel, Erhard: *See*—
Meyer, Gerhard, Siggel, Schöpf, and Mägerlein. 3,347,819.
Silverman, Louis M., to Transitoke, Inc. Apparatus for filling transit token packages or the like. 3,347,016, 10–17–67, Cl. 53—246.
Silverman, Meyer S., to Pennsalt Chemical Corp. Bismuth disulfide and a method for its preparation. 3,347,631, 10–17–76, Cl. 23—206.
Simmen, Robert, to S. A. Mefina. Fuse for a missile to be fired by a gun with rifled bore. 3,347,166, 10–17–67, Cl. 102—84.
Simon, Eli, and M. Levine, to Lockheed Aircraft Corp. Electrically conductive joints and gaskets. 3,347,978, 10–17–67, Cl. 174—84.
Simon, Henry, (Australia) Ltd.: *See*—
Pickering, Barry E. 3,348,988.
Simon, Myron S.: *See*—
Downey, John F., and Simon. 3,347,672.
Simonis, Herbert: *See*—
Ismail, Roshdy, Corseplus, and Simonis. 3,347,848.
Sinatra, Charles E., and W. Tanski, Jr., to Star Dental Mfg. Co., Inc. Finger control for dental handpiece. 3,346,958, 10–17–67, Cl. 32—28.
Sinclair Research, Inc.: *See*—
Miles, Leon H. 3,346,960.
Singer Co., The: *See*—
Leslie, Ivan A. 3,347,196.
Ranky, Bela. 3,348,139.
Ross, Roger J. 3,347,191.
Wilson, Jean A. 3,347,110.
Singer, Joseph, Jr., to Chicago Aerial Industries, Inc. Method of fusing single layer fiber optic strip. 3,347,649, 10–17–67, Cl. 65—4.
Sipos, Lassio: *See*—
Flint, Alan G., Sipos, and Gutierrez. 3,347,348.
Sirk, Harold W. Camper. 3,347,589, 10–17–67, Cl. 296—23.
Sisk, Billy W.: *See*—
Fleischer, Fritz K., and Sisk. 3,346,915.
Sissons, Christopher R., to British Nylon Spinners Ltd. Reinforced needled pile fabric of potentially adhesive multicomponent fibers and method of making the same. 3,347,736, 10–17–67, Cl. 161—67.
Siviy, George: *See*—
Upton, Chester W., Jr., and Siviy. 3,348,001.
Skanska Attikfabriken AB.: *See*—
Flodin, Per G. M., Kornfeldt, and Gardshol. 3,347,869.
Skogland, Thorbjorn, and D. M. Checkley, to General Electric Co. An electric heater assembly for sauna room. 3,348,021, 10–17–67, Cl. 219—370.
Slack, Archie V.: *See*—
Potts, John M., and Slack. 3,347,656.
Slaugh, Lynn H., to Shell Oil Co. Hydrodimerization of benzene. 3,347,945, 10–17–67, Cl. 260—668.
Sleitzinger, Meyer, and D. F. Reinhold, to Merck & Co., Inc. 6a,16a-Dialkyl steroids and intermediates. 3,347,881, 10–17–67 Cl. 260—397.47.
Sletzinger, Meyer, R. A. Firestone, and D. F. Reinhold, to Merck & Co., Inc. 2-substituted-2-aminoethyl-3-substituted phenylalanine. 3,347,905, 10–17–67, Cl. 260—471.
Small, Augustus B.: *See*—
Forman, Charles D., and Small. 3,347,402.
Smeltink, Albertus: *See*—
Schiller, James R., Pohl, and Smeltink. 3,346,964.
Smiley, Robert A., to E. I. du Pont de Nemours and Co. Difluoroamino alkyl nitrate preparation. 3,347,903, 10–17–67, Cl. 260—462.
Smiley, Robert A., to E. I. du Pont de Nemours and Co. Difluoroamino aliphatic dinitrates. 3,347,904, 10–17–67, Cl. 260—467.
Smith, Donald L.: *See*—
Blanchard, Edward R., and Smith. 3,347.055.
Smith, Edward H. Backhoe combination. 3,347,398, 10–17–67, Cl. 214—138.
Smith, Elmer E.: *See*—
Jensen, Hartley J., and Smith. 3,348,141.
Smith, George, to Shell Oil Co. Epoxy organo-tin compounds. 3,347,833, 10–17–67, Cl. 260—78.4.
Smith, George H., and R. E. Armstrong, Jr., to Union Carbide Corp. Method for refining metals. 3,347,660, 10–17–67, Cl. 75—43.
Smith, John F., to E. I. du Pont de Nemours and Co. Process for isolating carboxylic acid-bearing chloroprene polymers. 3,347,837, 10–17–67, Cl. 260—87.5.
Smith, Keith J.: *See*—
Weil, Edward D., and Smith. 3,347,686.
Smith Kline & French Laboratories: *See*—
Latshaw, Wilmer E., and Wiserkaniuk. 3,347,744.
Smith, Lawrence W., to Smith Precision Products Co. Loading or transfer systems for fluids. 3,347,286, 10–17–67, Cl. 141—39.
Smith, Philip N., and W. E. Wharton, to Deering Milliken Research Corp. Scanning type monitoring and control apparatus. 3,348,222, 10–17–67, Cl. 340—413.
Smith Precision Products Co.: *See*—
Smith, Lawrence W. 3,347,286.
Smith, Richard E., to Sylvania Electric Products Inc. Projection lamp including a blackening control device. 3,348,094, 10–17–67, Cl. 315—71.
Smith, Robert W., to General Motors Corp. Visual indicating spark plug with an integral gas lamp. 3,348,087, 10–17–67, Cl. 313—1.
Smith, Stephen W., to Sperry Rand Corp. Document sorting. 3,347,367, 10–17–67, Cl. 209—74.
Smith & Stone Ltd.: *See*—
Duffield, Joseph F. 3,348,221.
Smith, Ving. Prefabricated building. 3,347,000, 10–17–67, Cl. 52—90.
Snaper, Alvin A. Electro-optical computer or data processing system using superimposed polarizers. 3,348,217, 10–17–67, Cl. 340—173.
Snap-On Tools Corp.: *See*—
Knudsen, Raymond G., Badger, and Zuzinec. 3,347,075.
Suel, Albert: *See*—
Timmermans, Frederik A. G., and Snel. 3,348,142.
Snell, Ronald C., to The Distillers Co., Ltd. Production of pure acetic acid from methyl vinyl ketone by distillation. 3,347,756, 10–17–67, Cl. 203—32.
Snider, Albert R.: *See*—
West, John M., Bevilacqua, and Snider. 3,347,747.
Snoozy, Edward R. Constant level adjustable tractor hitch. 3,347,564, 10–17–67, Cl. 280—479.
Snyder, James M., to E. I. du Pont de Nemours and Co. Process for extraction of metals. 3,347,662, 10–17–67, Cl. 75—106.
Snyder, Paul V., to General Electric Co. Toast temperature detector. 3,348,024, 10–17–67, Cl. 219—413.
Societe Anonyme dite: UNITEC: *See*—
Verbaere, Andre R. 3,347,371.
Societe Anonyme Iwan Simonis, S.A.: *See*—
Malchair, Armand. 3,347,279.
Societe de Prospection Electrique Schlumberger, S.A.: *See*—
Baks, Claude L., and Chesnel. 3,347,164.
Societe d'Etudes de l'Aerotrain: *See*—
Bertin, Jean H., and Guienne. 3,347,170.
Societe Industrielle Belge des Petroles S.A.: *See*—
Tritsmans, Paul A. 3,347,775.
Societe Industrielle Bull-General Electric: *See*—
Bernard, Michel A. R. 3,347,433.
Societe Technique de Pulverisation: *See*—
Boris, Michel. 3,347,424.
Soderberg, Curt A.: *See*—
Muller, John T., and Soderberg. 3,347,268.
Sogenique (Electronics) Ltd.: *See*—
Wolfendale, Caleb F. 3,348,133.
Sohn, August W., and A. Erasmus, to Zellstoffabrick Waldhof. Process for the preparation of products used for the control of viscosity and water absorption of drilling fluids. 3,347,788, 10–17–67, Cl. 252—8.5.
Solow, Joseph. Automobile hood locking means. 3,347,071, 10–17–67, Cl. 70—240.
Soma, Haruo: *See*—
Kawase, Susumu, Kubota, and Soma. 3,348,235.
Somer, Fritz, 1/11 each to Anaconda American Brass Co., Inc., Mueller Brass Co., Phelps Dodge Copper Products Corp., Reading Tube Corp., Scovill Mfg. Co., Bridgeport Brass Co., Div. of National Distillers and Chemical Corp., Calumet & Hecla, Inc., Carro Copper & Brass Co., Div. of Carro Corp., Chase Brass & Copper Co., and Triangle Conduit and Cable Co., Inc. Sanitary drain system, method, and fittings therefor. 3,346,887, 10–17–67, Cl. 4—211.

Soroos, James P., and P. J. Regan, to The Coleman Co., Inc. Lift and locator assembly for camping trailer kitchen unit. 3,347,591, 10–17–67, Cl. 296—23.
Soule, Winsor, Jr., and E. P. Binnall, to SCM Corp. Magnetic drum memory and computer. 3,348,215, 10–17–67, Cl. 340—172.5.
Southworth, James, Jr., and R. E. Stark, to Union Carbide Corp. Charged secondary cell. 3,347,707, 10–17–67, Cl. 136—28.
Sowder, Tony R., to Riblet Tramway Co. Tramway rope displacement indicator. 3,347,172, 10–17–67, Cl. 104—173.
Spain, Robert J.: *See*—
Fuller, Harrison W., and Spain. 3,347,614.
Spandock, Friedrich, to Siemens Aktiengesellschaft, Munich and Berlin. Device for indicating motional direction of a radiator in space. 3,348,195, 10–17–67, Cl. 340—16.
Speedring Corp.: *See*—
Schiller, James R., Pohl, and Smeltink. 3,346,964.
Speiser, Ralph W.: *See*—
Grimes, Charles E., and Speiser. 3,347,558.
Spengler, Gottfried: *See*—
Engelhardt, Heinz, Krupp, Rabenhorst, Spengler, and Wismath. 3,347,087.
Sperber, Heinrich: *See*—
Baer, Karl, Sperber, Goehre, and Leibner. 3,347,798.
Sperry Rand Corp.: *See*—
Dannatt, Hugh St. L. 3,348,206.
Lee, Francis F. 3,348,205.
Polushkin, Andrey, and Watt. 3,347,105.
Smith, Stephen W. 3,347,367.
Sprang, Cornelius A.: *See*—
Hoyt, John M., and Sprang. 3,347,825.
Squibb, E. R., & Sons, Inc.: *See*—
Bacso, Imre, and Diassi. 3,347,879.
Neidleman, Saul L., Pan, and Diassi. 3,347,927.
Staar, Marcel J. H., to Usines Gustave Staar S.A. Tape recorder control device. 3,347,482, 10–17–67, Cl. 242—55.12.
Staats, William A., to Culligan, Inc. Method and apparatus for ion exchange regeneration. 3,347,785, 10–17–67, Cl. 210—35.
Stacey, David Stearns, to Ball Bros. Research Corp. High speed ultraviolet thin spot detector. 3,348,049, 10–17–67, Cl. 250—83.3.
Stabel, Peter: *See*—
Ulrich, Paul, Hoelsle, Stabel, and Schaub. 3,347,617.
Staller, Karel J.: *See*—
Ausnit, Steven, and Staller. 3,347,298.
Stancell, Arnold F., G. Brecht, and A. J. Foglia, to Mobil Oil Corp. Method of surface activation of non-polar hydrocarbon resin and printing. 3,347,695, 10–17–67, Cl. 117—38.
Standard Oil Co., The (Ohio): *See*—
De Gray, Richard J., and Killian. 3,347,646.
Grasselli, Robert K., Greene, and Gray. 3,347,902.
Standard Oil Co. (Indiana): *See*—
Kawahara, Fred K. 3,347,794.
Proell, Wayne A. 3,347,629.
Stephens, James R., and Van Strien. 3,347,828.
Stang, Albert F.: *See*—
Wuns, Paul R., Jr., and Stang. 3,347,981.
Staples, Paul R., to General Electric Co. Calibration means for temperature responsive device. 3,348,009, 10–17–67, Cl. 200—140.
Star Dental Mfg. Co., Inc.: *See*—
Sinatra, Charles E., and Tanski. 3,346,958.
Stark, Robert E.: *See*—
Southworth, James, Jr., and Stark. 3,347,707.
Starry, Carter K. Boat propulsion means. 3,347,203, 10–17–67, Cl. 115—91.
Stara, William K. Hand loom. 3,347,281, 10–17–67, Cl. 139—29.
Stauffer Chemical Co.: *See*—
Baker, Don R., Brokke, and Arnekley. 3,347,850.
Staunton, John J. J., to Coleman Instruments Corp. Mechanically stabilized light chopper. 3,347,615, 10–17–67, Cl. 350—269.
Steck, Gail R., to General Motors Corp. Fluid manifold. 3,347,473, 10–17–67, Cl. 239—553.3.
Steelman, Melvin W., to Clark Equipment Co. Air distribution structure for refrigerated case. 3,347,145, 10–17–67, Cl. 98—36.
Steensen, Robert N., to Owens-Corning Fiberglas Corp. Filter cartridge and method of making the same. 3,347,391, 10–17–67, Cl. 210—491.
Stein, Barry A.: *See*—
Engelke, John L., Johnson, and Stein. 3,347,959.
Steisslinger, Kurt, to Eastman Kodak Co. Film magazine and camera for use therewith. 3,347,142, 10–17–67, Cl. 95—31.
Steitle, James L., R. H. Macy, and M. B. Thomas, to Movible Offshore, Inc. Method of and apparatus for transporting, erecting, and salvaging off-shore structures. 3,347,052, 10–17–67, Cl. 61—46.5.
Stella, Virginio, and S. Pellacani. Device for simultaneously treating both sides of running length film. 3,346,898, 10–17–67, Cl. 15—100.
Stephens, Frederick N., S. J. Burhans, J. T. Warkoczewski, and J. M. Taylor, to Certain-Teed Products Corp. Method of making tubular thermal insulation. 3,347,725, 10–17–67, Cl. 156—184.
Stephens, James R., and R. E. Van Strien, to Standard Oil Co. Process for producing polytrimellitimides with alkylene oxide as hydrogen halide scavenger. 3,347,828, 10–17–67, Cl. 260—47.
Steppuhn, Alfons. Rapid cable making machine. 3,347,034, 10–17–67, Cl. 57—58.36.
Sterling, Craig A.: *See*—
Rabuse, George R., Wallner, and Sterling. 3,347,362.
Sternberg, Ernest M., to Monsanto Co. Yarn traversing mechanism. 3,347,475, 10–17–67, Cl. 242—36.1.
Sternberg, Ernest H., to Monsanto Co. Traverse winding mechanism. 3,347,478, 10–17–67, Cl. 242—26.2.
Stevens, John L., Jr.: *See*—
Bjerke, John O., Halliday, Stevens, Mahler, and Holden. 3,347,061.
Stewart, Harry D. Process of measuring pills. 3,347,324, 10–17–67, Cl. 177—1.
Stewart, Warren A., to Koppers Co., Inc. Apparatus for the manufacture of corrugated paperboard. 3,347,782, 10–17–67, Cl. 156—497.
Stewart, Willis L., J. P. K. Greene, and G. S. Histon, to H & G Industries, Inc. Shingle brush. 3,346,900, 10–17–67, Cl. 15—160.
Stile-Craft Manufacturers, Inc.: *See*—
Cranage, Bidwell C. 3,347,270.
Stilwell, Frances H.: *See*—
Stilwell, William E., Jr. 3,347,065.
Stilwell, William E., Jr., deceased (by F. H. Stilwell, executrix). Combined self-heating washer-driers and control apparatus therefor. 3,347,065, 10–17–67, Cl. 68—12.
Stimson, Allen G., and G. F. Pickens, to Eastman Kodak Co. Photoelectric exposure control system for cameras. 3,348,054, 10–17–67, Cl. 250—206.
Stinson, Beryl G.: *See*—
Collins, John G., and Stinson. 3,347,097.
Stock, Werner, to Union Carbide Corp. Apparatus for preparing a trussed boned fowl portion. 3,347,156, 10–17–67, Cl. 100—7.
Stogryn, Eugene L., to Esso Research and Engineering Co. 3 - difluoroaminomethyl-3-difluoroamino-oxetane and polymers thereof. 3,347,801, 10–17–67, Cl. 260—2.
Stone Straw Corp.: *See*—
Mills, Samuel M., and Husar. 3,347,274.
Storm, Herbert F., to General Electric Co. Phase controlled alternating current power circuits using bidirectional conducting devices. 3,348,128, 10–17–67, Cl. 323—4.
Stout, Bill A.: *See*—
De Long, Max M., Stout, and Ries. 3,347,031.
Stratoflex, Inc.: *See*—
New, Truman L. 3,347,571.
Strengholt, Roy D., to Donnelly Mirrors, Inc. Sealed window construction. 3,347,008, 10–17–67, Cl. 52—396.
Strobel, Josef M., and B. Haas, to The United States Time Corp. Method of making sealed electric batteries. 3,347,710, 10–17–67, Cl. 136—175.
Strom, Albert P. Metering dispenser devices for fluids. 3,347,415, 10–17–67, Cl. 222—48.
Stromswold, Chester, to Sanders Associates, Inc. Broadband rotary transformer. 3,343,181, 10–17–67, Cl. 336—120.
Strong, Edward W., R. S. Reade, J. E. Manuel, and W. Bastedo, to Gyrodyne Co. of America, Inc. Atmospheric static pressure detection means. 3,347,095, 10–17–67, Cl. 73—178.
Strong, Ira J., and H. A. Leon. Stirring apparatus for plural test tubes. 3,347,531, 10–17–67, Cl. 259—71.
Strubin, Klaus. Connecting arrangement for furniture panels and the like. 3,347,574, 10–17–67, Cl. 287—20.92.
Stuemky, Robert E., to Eaton Yale & Towne Inc. Flexible drive mechanism. 3,347,061, 10–17–67, Cl. 64—15.
Struthers Scientific and International Corp.: *See*—
Svanoe, Hans. 3,347,058.
Stutson, Alverd C., to Mobil Oil Corp. Fuel economy meter. 3,347,092, 10–17–67, Cl. 73—114.
Studiengesellschaft Kohle m.b.H.: *See*—
Neumann, Wilhelm P., and Niermann. 3,347,891.
Suckfull, Hubert: *See*—
Von Sanden, Dieter, and Suckfull. 3,347,992.
Suddeutsche Kalkstickstoff-Werke, Aktiengesellschaft: *See*—
Kaess, Franz, Michaud, and Seeholzer. 3,347,953.
Sugihara, Akira: *See*—
Ohara, Masao, Yamamoto, Kamiya, Tanaka, Sugihara, and Ito. 3,347,883.
Sullivan, Gerald L., and J. W. Clayton, Jr., to General Electric Co. Quadrature and harmonic signal eliminator for systems using modulated carriers. 3,348,157, 10–17–67, Cl. 329—50.
Sullivan, James F., to Deere & Co. Spring assembly. 3,347,540, 10–17–67, Cl. 267—1.
Sumco Mfg. Co., Inc.: *See*—
Hankey, Herbert E., and Hamrick. 3,347,523.
Sun Oil Co.: *See*—
Van Venrooy, John J. 3,347,020.
Sunbeam Lighting Co., Inc.: *See*—
Bodian, Marcus, and Wellhouse. 3,348,036.
Superior Tea & Coffee Co.: *See*—
Hrabe, Jerry. 3 347,150.
Sutton, Earl E., to Dominion Electric Corp. Toaster. 3,347,153, 10–17–67, Cl. 99—337.
Sutton, Robert W., to The Bendix Corp. Carburetor. 3,347,536, 10–17–67. Cl. 261—34.
Svanoe, Hans, to Struthers Scientific and International Corp. Concentration of extracts by freezing. 3,347,058, 10–17–67, Cl. 62—58.
Svenska Flaktfabriken, Aktiebolaget: *See*—
Dock, Nils, and Erlesand. 3,347,024.
Samuelsson, Evert, and Larkfeldt. 3,347,146.
Svoboda, Edward J., to Borg-Warner Corp. Fuel injection nozzle. 3,347 470, 10–17–67, Cl. 239—453.
Swann, George R.: *See*—
Hofmeister, Konrad J., and Swann. 3,346,995.
Swede, Harald G.: *See*—
Rausing, Gad A., and Swede. 3.347,444.
Sylvania Electric Products Inc.: *See*—
Smith, Richard E. 3,348,094.
Szabo, Stephen. Power vessels. 3,347,201, 10–17–67, Cl. 114—235.
Szarvasi, Etienne, and M. Bayssat. Tertiary aminoethyl [beta-(naphthyl)-beta-tetrahydrofuryl isobutane] and alpha lower alkenyl ethers. 3,347,858, 10–17–67, Cl. 260—247.7.
Szupkay, Imre A.: *See*—
Sheehan, Robert W., and Szupkay. 3,347,578.

TRW Inc.: *See*—
Clifford, Richard P. 3,348,047.
Gates, Robert L. 3,346,966.
Templeton, Herbert W. 3,347,576.
Inouye, George T., Andres, and Brown. 3,348,165.

Tabor, Patrick M., to Mercox, Inc. Blank cartridge pistol for propelling projectiles. 3,346,981, 10–17–67, Cl. 42—1.

Takahashi, Masao: *See*—
Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,347,795.

Takara Koki Kabushiki Kaisha: *See*—
Yamashita, Hachiro. 3,347,620.

Takenishi, Tadao: *See*—
Yoshikawa, Masaharu, Kusashio, Kato, and Takenishi. 3,347,846.

Talon, Inc.: *See*—
Gwyn, Childress B., Jr. 3,346,951.

Tamm, Emil S., to Balder Electric Co. Liquid conductor type electric switch. 3,348,000, 10–17–67, Cl. 200—33.

Tanaka, Kunihiko: *See*—
Ohara, Masao, Yamamoto, Kamiya, Tanaka, Sugihara, and Ito. 3,347,883.

Tanaka, Sanae, K. Yokoyama, and A. Seki, to Mitsubishi Petrochemical Co. Ltd. Process for the manufacture of liquid heavy aromatic hydrocarbon-formaldehyde resins and their cured resins. 3,347,952, 10–17–67, Cl. 260—838.

Tancredi, Frederick C.: *See*—
Doyle, James J., Sarka, and Tancredi. 3,347,990.

Tanski, William, Jr.: *See*—
Sinatra, Charles E., and Tanski. 3,346,958.

Tapecoat Co., The: *See*—
Masurk, Louis R. 3,347,950.

Tapijtfabriek Noordster N.V.: *See*—
Lüthy, Erich. 3,347,781.

Taub, David, and N. L. Wendler, to Merck & Co., Inc. Process of oxidising hydroxy phenyl alanines to hydroxy benzyl alkyl ketones. 3,347,928, 10–17–67, Cl. 260—590.

Taylor, Jack M.: *See*—
Stephens, Frederick N., Burhans, Warkoczewski, and Taylor. 3,347,225.

Taylor, Kirman, to Diamond Alkali Co. Method of preparing calcium carbonate. 3,347,624, 10–17–67, Cl. 23—66.

Taylor, Leonard F., Jr. Box. 3,347,448, 10–17–67, Cl. 229—34.

Taylor, Randolph G., to United States of America, Navy. 44–60 angstrom photometer having an aluminum coated Mylar window. 3,348,090, 10–17–67, Cl. 313—93.

Taylor, Roy P., and D. Robb, to Burndept, Ltd. Layer type battery having both terminals at one end. 3,347,709, 10–17–67, Cl. 136—108.

Teatum, Eugene T.: *See*—
Banks, Hampden O., Jr., Teatum, and Jones. 3,347,711.

Technisevice Corp.: *See*—
Daniel, Benjamin S. 3,347,036.

Teijin Ltd.: *See*—
Futami, Atsushi, and Hayashi. 3,347,689.

Templeton, Herbert W., to TWR Inc. Preloaded pivot joint. 3,347,576, 10–17–67, Cl. 287—90.

Templin, Gail H., and W. A. Mills. Connector plate for wood trusses. 3,347,126, 10–17–67, Cl. 85—13.

Tennessee Valley Authority: *See*—
Potts, John M., and Slack. 3,347,656.

Teppert, Anton. Band-shaped jewelry. 3,347,038, 10–17–67, Cl. 59—35.

Terrell, Charles L.: *See*—
Sandstrom, Donald J., and Terrell. 3,346,914.

Test Equipment Corp.: *See*—
Erath, Louis W. 3,348,145.
Erath, Louis W. 3,348,147.

Texas Instruments Inc.: *See*—
Brau, Maurice J., Johnson, and Patterson. 3,348,045.
Lueck, Arthur M. 3,347,651.
Miller, Edwin A., and Schultheiss. 3,346,936.
O'Kane, Daniel F. 3,347,639.

Textron Electronics, Inc.: *See*—
Bulpitt, Thomas H. 3,348,055.

Textron Inc.: *See*—
Bailey, William D., and Bradlee. 3,347,080.

Theriault, Gerald E.: *See*—
Carlson, David J., and Theriault. 3,348,062.

Thiel, Walter E. Trigonometrical computer. 3,347,458, 10–17–67, Cl. 235—88.

Thiel, Walter E. Space and terrestrial computer. 3,347,459, 10–17–67, Cl. 235—88.

Thiokol Chemical Corp.: *See*—
Hawkins, Oscar M., Heaton, and Epps. 3,347,712.
Osborn, Stephen W., Broderick, and Villa. 3,347,867.
Zeman, Samuel. 3,347,039.

Thomas, Donald E., to Westinghouse Electric Corp. High temperature nuclear fuel elements. 3,347,750, 10–17–67, Cl. 176—69.

Thomas, Llewellyn H., to International Business Machines Corp. Cyclotron accelerator having the electrostatic field appearing across a non-linear gap. 3,348,089, 10–17–67, Cl. 313—62.

Thomas, Maurice B.: *See*—
Steitle, James L., Macy, and Thomas. 3,347,052.

Thomas, Rainer, and P. Weber, to Phrix-Werke Aktiengesellschaft. Method of separating cations from solutions containing the same and for incorporating cations into bodies of regenerated cellulose. 3,347,968, 10–17–67, Cl. 264—195.

Thomas, Thomas G., and S. G. Wilson, to United Kingdom Atomic Energy Authority. Processes for the recovery of uranium. 3,347,642, 10–17–67, Cl. 23—342.

Thomas, William L., to British Petroleum Co. Ltd. High vacuum distillation. 3,347,754, 10–17–67, Cl. 202—186.

Thompson, Adrian J. Adjustable draw sheet frame and draw sheet. 3,346,890, 10–17–67, Cl. 5—82.

Thompson, David L., to Thompson Tank and Mfg. Co., Inc. Float valve assembly for a portable vacuum tank. 3,347,263, 10–17–67, Cl. 137—448.

Thompson, Jack L.: *See*—
Bahniuk, Eugene, and Thompson. 3,347,041.

Thompson, John W., and T. G. Davis, to Eastman Kodak Co. Antioxidant composition and ester lubricating oil containing it. 3,347,791, 10–17–67, Cl. 252—33.6.

Thompson, Laurie D. Equalizing drive for tandem axle road vehicles. 3,347,332, 10–17–67, Cl. 180—22.

Thompson Tank and Mfg. Co., Inc.: *See*—
Thompson, David L. 3,347,263.

Thorburn, David H., to The Powers Regulator Co. Pneumatic-hydraulic pulse actuator. 3,347,461, 10–17–67, Cl. 236—79.

Thorstensen, Thomas C., to Metal Hydrides Inc. Borohydride and bating treatment of hides. 3,347,751, 10–17–67, Cl. 195—6.

Thun, Alfred, to Alfred Thun & Co., G.m.b.H., Firma. Low bicycle pedal. 3,347,112, 10–17–67, Cl. 74—594.2.

Thun, Alfred, & Co., G.m.b.H., Firma: *See*—
Thun, Alfred. 3,347,112.

Tietz, La Vern R., and L. F. Niebergall, to Walker Mfg. Co. Filter. 3,347,390, 10–17–67 Cl. 210—448.

Tiikkainen, Veikko V. Weighting means for fishing line. 3,346,986, 10–17–67, Cl. 43—43.12.

Timmermans, Frederik A. G., and A. Snel, to Nederlandse Organisatie Voor Toegepast-Natuur-Wetenschappelijk Onderzoek Ten Vehoeve Van Nijverheid, Handel En Verkeer. Device for measuring two consecutive magnitudes as electrical signals. 3,348,142, 10–17–67, Cl. 324—99.

Todd, Jerry W.: *See*—
Courneya, Calice G., and Todd. 3,347,269.

Todd, Paul G., to Trygon Electronics, Inc. Regulated power supply. 3,348,122, 10–17–67, Cl. 321—18.

Tokyo Shibaura Electric Co., Ltd.: *See*—
Mori, Leo, Osawa, and Fujita. 3,347,616.

Tomaino, Paul B., to W. R. Grace & Co. Water dilutable composition comprising a mixture of a propylene oxide adduct of hexane triol and an alkyl ester of sulfosuccinic acid. 3,347,809, 10–17–67, Cl. 260—29.3.

Tomiyasu, Kiyo, to General Electric Co. Controllable microwave impedance utilizing multipaction. 3,348,169, 10–17–67, Cl. 333—13.

Tomlinson, George H., II. Continuous sodium sulfide pulping of cellulosic material. 3,347,739, 10–17–67, Cl. 162—30.

Tompkins, Sally D. Detachable retainer for articles. 3,346,927, 10–17–67, Cl. 24—245.

Topper, Robert L., W. W. Cofield, R. C. Foster, H. N. Woebcke, and G. O. Koehnken, to Transcontinental Gas Pipeline Corp. Method of transporting granular solids in a gas. 3,347,599, 10–17–67, Cl. 302—66.

Topper Tools, Inc.: *See*—
Wilhoyte, Howard J. 3,346,882.

Toro Mfg. Corp.: *See*—
Grimes, Charles E., and Spencer. 3,347,558.

Torr, David. Disposable article having a layer of artificial absorbent fibers and supporting sheet. 3,347,236, 10–17–67, Cl. 128—284.

Torrance, Gordon A., to Jervis B. Webb Co. Carrier stop and track hangar for power and free conveyors. 3,347,171, 10–17–67, Cl. 104—172.

Toscano, Esteban J., to Hughes Aircraft Co. Digital number register. 3,348,156, 10–17–67, Cl. 328—42.

Touze, Pierre, to Compagnie Francaise Thomson Houston-Hotchkiss Brandt. Continuous wire winding device. 3,347,477, 10–17–67, Cl. 242—25.

Toyo Rayon Kabushiki Kaisha: *See*—
Ishikawa, Mitsuo, Yonehara, and Godo. 3,347,852.

Transcontinental Gas Pipeline Corp.: *See*—
Topper, Robert L., Cofield, Foster, Woebcke, and Koehnken. 3,347,599.

Transitoke, Inc.: *See*—
Silverman, Louis M. 3,347,016.

Traxel, Leonard P.: *See*—
Yingst, Thomas O., and Traxel. 3,347,421.

Trebillon, Emile, and G. Wetroff, to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques. Preparation of aluminum trioctyl from butene via growth, displacement and alkylatim reactions with recycle of olefins. 3,347,894, 10–17–67, Cl. 260—448.

Triangle Conduit and Cable Co., Inc.: *See*—
Somer, Fritz. 3,346,887.

Tritsmans, Paul A., to Societe Industrielle Belge des Petroles S.A. Separation of waxy hydrocarbons from oils by flotation. 3,347,775, 10–17–67, Cl. 208—28.

Trotman, Harold C.: *See*—
Freund, Paul W., and Trotman. 3,348,146.

Troy, Leonard. Brake cooling system. 3,347,344, 10–17–67, Cl. 188—264.

Trussell, Wayne E., and V. D. Shah, to Abbott Laboratories. Purification of cyclohexylamine. 3,347,920, 10–17–67, Cl. 260—563.

Trygon Electronics, Inc.: *See*—
Todd, Paul G. 3,348,122.

Tsivitse, Peter J.: *See*—
Hausenfleck, Howard D., Brittain, and Tsivitse. 3,348,098

Tsubouchi, Norio: *See*—
Akashi, Tsuneo, Takahashi, Yamauchi, Tsubouchi, and Ohno. 3,347,795.

Tsujimoto, Michihiro: *See*—
Okubo, Ichiro, and Tsujimoto. 3,347,694.

Tubinis, Matthew P., to Xerox Corp. Printer control system. 3,348,212, 10–17–67, Cl. 340—172.5.

Tulloch, Charles W., to E. I. du Pont de Nemours and Co. Isocyanatosulfur and isothiocyanatosulfur pentafluorides and their preparation. 3,347,644, 10–17–67, Cl. 23—357.

Tung-Sol Electric, Inc.: *See*—
Doelling, George L., Siefker, Schwoegler, and Putscher. 3,347,796.

Turi, Edith: *See*—
Chang, Leo S., Turi, and Lindo. 3,347,820.

Turner, Delber W., to National Tank Co. Gas-water separator for emulsions. 3,347,773, 10–17–67, Cl. 204—302.

Turner, John D.: *See*—
Pietsch, Gerhard J., and Turner. 3,347,645.

Turner, William B.: *See*—
Lowe, David, Norris, and Turner. 3,347,909.

Turpin, William V., and O. E. Lotts. Apparatus for expanding an elastic loop member and moving the same to a given position. 3,347,083, 10–17–67, Cl. 72—393.

Turowski, Johannes: *See*—
Froitzheim, Max, Lang, Rappen, and Turowski. 3,347,936.

Tyler, William B., III, and J. R. Lovett, to Esso Research and Engineering Co. Difluoroamino-substituted nitramines and method of preparation. 3,347,925, 10–17–67, Cl. 260—583.

Uchikoshi, Goji. Control system for a magnetic recorder. 3,347,996, 10–17–67, Cl. 179—100.28.

Udell, Walter B.: *See*—
Knize, Leon J. 3,347,607.

Uffenorde, Tui M. Headrest for eye surgery. 3,347,544, 10–17–67, Cl. 269—328.

Ulrich, Lester J., to Eastman Machine Co. Cloth spreading means for cutting machines. 3,346,954, 10–17–67, Cl. 30—273.

Ulrich, Paul, G. Hoelzle, P. Stahel, and H. P. Schaub, to Ciba Ltd. Process for optically brightening, dyeing or printing fibrous materials. 3,347,617, 10–17–67, Cl. 8—42.

Umberg, Frank H, and C. K. Bridgeman, to Picker X-Ray Mfg. Ltd. Flexible, light-impervious, fluid-tight X-ray film pack. 3,348,042, 10–17–67, Cl. 250—68.

Umbricht, Emil: *See*—
Arnold, Orlan M., Millhiser, Pashalan, and Umbricht. 3,347,378.

Union Carbide Corp.: *See*—
Bauer, Edwin F., Jr., and Rieder. 3,347,664.
Carroll, John H. 3,348,004.
Clark, Milton B., and Darland. 3,347,668.
Death, Frank S., and Morcio. 3,347,766.
Drengler, George R. 3,347,708.
Eloy, Fernand, and Mirocha. 3,347,874.
Foster, Donald J., and Reed. 3,347,875.
Fritz, Henry E., Atkins, and O'Connor. 3,347,944.
Harding, James. 3,347,871.
Hogsett, John N., Khuri, and Schulz. 3,347,893.
Hubert, Andre J. 3,347,943.
Kanner, Bernard. 3,347,906.
Krivanek, Frank J., and Cahoon. 3,347,706.
Manyik, Robert M., Walker, and Wilson. 3,347,840.
Mitchell, Charles V., and Lewis. 3,347,776.
Omietanski, George M., and Williams. 3,347,995.
Rinfret, Arthur P., Cowley, and Doebbler. 3,347,745.
Rosenthal, Louis A. 3,348,041.
Smith, George H., and Armstrong. 3,347,660.
Southworth, James, Jr., and Stark. 3,347,707.
Stock, Werner. 3,347,156.

Union Special Machine Co.: *See*—
Hale, Arthur N. and Matias. 3,347,194.
Lukins, Richard H. 3,347,192.
Perri, Nathan. 3,347,193.
Roth, Gerald C. 3,347,190.

Uniroyal, Inc.: *See*—
Mankowich, Ivan, Varenelli, and Heinrichs. 3,347,971.

Unitcast Corp.: *See*—
Floehr, Walter L. 3,347,174.

United Aircraft Corp.: *See*—
Baker, Mark E., and Burger. 3,347,027.
Hanson, Donald B. 3,347,252.

United Kingdom Atomic Energy Authority: *See*—
Pfeil, Peter C. L. 3,347,715.
Thomas, Thomas G., and Wilson. 3,347,642.

United Nuclear Corp.: *See*—
McKee, John M. 3,347,635.

United States of America
Agriculture: *See*—
Rayner, Eric T., Eaves, and Dupuy. 3,347,886.
Army: *See*—
Brunins, Guntis. 3,348,164.
Collins, John G., and Stinson. 3,347,097.
De Marco, Carlo G., and Dias. 3,347,812.
Gerber, Eduard A. 3,348,076.
Howgate, David W. 3,348,135.
Lohninger, Wilhelm J. 3,347,129.
Marcus, Ira R., and Miller. 3,348,072.
Matthael, George L., and Robinson. 3,348,173.
Moyer, Lando K., and Van Waldron. 3,348,132.
Wright, James B., and Holder. 3,348,096.
Atomic Energy Commission: *See*—
Ahlbeck, Donald R., and Cress. 3,347,135.
Banks, Hampden O., Jr., Teatum, and Jones. 3,347,711.
Clark, Wesley L., Griggs, Hays, and Jacky. 3,347,768.
Jensen, Hartley J., and Smith. 3,348,141.
Sanders, Merwyn. 3,348,044.
Sandstrom, Donald J., and Terrell. 3,346,914.
Interior: *See*—
Kennedy, Vance C. 3,347,101.
Rampacek, Carl, Browning, and McVay. 3,347,370.
National Aeronautics and Space Administration: *See*—
Cantor, Clarence. 3,348,053.
Laughlin, Charles R., Jr., and Di Losa. 3,348,152.
McLauchlan, John M., and Merlen. 3,348,048.

United States of America—National Aeronautics and Space Administration: *See*—Continued
Nichols, Mark R. 3,347,466.
Shieber, Herbert. 3,347,465.
Van Wandernam, Marvin C., Worthley, and Comolli. 3,347,057.
Navy: *See*—
Allen, Willard B. 3,348,203.
Cymmer, Thomas, and Fried. 3,347,091.
Cymmer, Thomas, and Raphael. 3,347,526.
Fischer, Edgar H. 3,348,226.
Griffin, Fred T. 3,348,166.
Hillier, Alexander J., and Haisfield. 3,347,241.
Hoge, Henri H. 3,348,134.
Kaufman, Maxime G. 3,348,126.
Kendall, Paul A. 3,347,144.
Kessler, Cletus A. 3,347,165.
McKinnon, Charles N. 3,348,079.
Orton, Crilley. 3,348,115.
Russell, Roger B., Jr., and Bates. 3,348,081.
Sharts, Clay M. 3,347,876.
Sharts, Clay M. 3,347,877.
Taylor, Randolph G. 3,348,090.

United States Time Corp., The: *See*—
Strobel, Josef M., and Haas. 3,347,710.

United Steel Companies Ltd., The: *See*—
Saunders, Charles W. 3,347,308.

Universal Engineering Co.: *See*—
Koch, Boland G. 3,347,115.

Universal Match Corp.: *See*—
Pacela, Allan F. 3,347,223.
Yingst, Thomas O., and Traxel. 3,347,421.

Universal Oil Products Co.: *See*—
Bicek, Edward J. 3,347,761.
Hunter, William K. 3,347,942.

Uno, Naoyuki: *See*—
Nobusawa, Tsukumo, and Uno. 3,347,141.

Upjohn Co., The: *See*—
Hester, Jackson B., Jr. 3,347,866.
Paquette, Leo A. 3,347,857.
Schumann, Edward L. 3,347,933.

Upton, Chester W., Jr., and G. Sivly, to Westinghouse Electric Corp. Electric distribution system. 3,348,001, 10–17–67, Cl. 200—48.

Upton, Chester W., Jr., to Westinghouse Electric Corp. Electric switch. 3,348,002, 10–17–67, Cl. 200—48.

Urani, Angelo, to McGraw-Edison Co. Protectors for electric circuits. 3,348,007, 10–17–67, Cl. 200—131.

Urbanick, Burton A., to Met-L-Wood Corp. Door construction. 3,347,305, 10–17–67, Cl. 160—40.

Usines Gustave Staar S.A.: *See*—
Staar, Marcel J. H. 3,347,482.

Uter, Thomas G.: *See*—
Griswold, Lee M., Shiells, and Uter. 3,348,017.

Uyzkumny ustav matematickych stroju: *See*—
Jura, Stanislav. 3,347,435.

Vadas, Leslie, to FMC Corp. Pineapple peeling machine. 3,347,294, 10–17–67, Cl. 146—6.

Valana, Joseph G.: *See*—
Altonji, John A., and Valana. 3,347,159.

Valles, Anthony G., and F. A. Schreihans, to General Dynamics Corp. Area measurement and current density control device 3347,770, 10–17–67, Cl. 204—228.

Valyi, Emery I. Method and apparatus for molding plastic bottles. 3,347,965, 10–17–67, Cl. 264—97.

Vanagas, Liudas: *See*—
Schumann, Eugene R., and Vanagas. 3,347,062.

Vance, Margaret C.: *See*—
Menser, Henry E. 3,347,505.

Vance, Thomas H.: *See*—
Menser, Henry E. 3,347,505.

Vandercook & Sons, Inc.: *See*—
Roozee, James B. 3,347,160.

Van Eimeren, Eugene, to Walker Mfg. Co. Engine suspension. 3,347,501, 10–17–67, Cl. 248—8.

Van Strien, Richard E.: *See*—
Stephens, James R., and Van Strien. 3,347,828.

Van Venrooy, John J., to Sun Oil Co. Process and apparatus for gas chromatography. 3,347,020, 10–17–67, Cl. 55—67.

Van Vleet, John M., to Balax, Inc. Method of making tape. 3,347,114, 10–17–67, Cl. 76—101.

Van Waldron, Garvin B., Jr.: *See*—
Moyer, Lando K., and Van Waldron. 3,348,132.

Van Wanderham, Marvin C., W. W. Worthley, and C. R. Comolli, to United States of America, National Aeronautics and Space Administration. Rapid cooling method and apparatus. 3 347,057, 10–17–67, Cl. 62—56.

Van Winkle, Roy L.: *See*—
Lankford, William L., Jr., Mathis, Keller, Bowman, and Van Winkle. 3,348,231.

Varenelli, Andrew D.: *See*—
Mankowich, Ivan, Varenelli, and Heinrichs. 3,347,971.

Varian Associates: *See*—
Allen, Stanley E., Jr. 3,348,088.
Nelson, Forrest A., and Baker. 3,348,136.
Nelson, Forrest A. 3,348,137.

Vascik, Richard A.: *See*—
Babcock, Eugene W., and Vascik. 3,347,655.

Vasta, Joseph A., to E. I. du Pont de Nemours and Co. Coating compositions. 3,347,951, 10–17–67, Cl. 260—837.

Veitch, Robert A., to Canadian Westinghouse Co. Ltd. Winding having improved surge potential distribution. 3,348,179, 10–17–67, Cl. 336—58.

Ventura, John J., to M & T Chemicals Inc. Process for preparing diorganobismuth halides. 3,347,892, 10–17–67, Cl. 260—447.

Ventura Processors. *See*—
Platt, William C. 3,347,681.

Verbaere, Andre R., to Societe Anonyme dite : UNITEC. Apparatus for the separation of materials of different densities. 3,347,371, 10–17–67, Cl. 209—172.

Vereinigte Glanzstoff-Fabriken A. G.: *See*—
Meyer, Gerhard, Siggel, Schöpf, and Magerlein. 3,347,819.

Vertut, Jean: *See*—
Rouillard, Joseph, and Vertut. 3,347,111.

Vessot, Robert F. C., to Hewlett-Packard Co. Atomic beam tube apparatus with transverse headers and spacers to position the components in the housing. 3,348,040, 10–17–67, Cl. 250—41.3.

Vlchr, Radek, to Presna mechanika narodny podnik. Speed control circuit for a multi-speed electric commutator motor. 3,348,113, 10–17–67, Cl. 318—345.

Villa, Jose L.: *See*—
Osborn, Stephen W., Broderick, and Villa. 3,347,867.

Villadsen, Karl J. S., and K. J. Moller, to Aktieselskabet Grindstedvaerket. Processing citrus fruits. 3,347,678, 10–17–67, Cl. 99—103.

Vinal, Albert W., to International Business Machines Corp. Redundant memory organization. 3,348,218, 10–17–67, Cl. 340—174.

Vind, Holger V., to Danfoss A/S. Motor compressor particularly for small refrigeration machines. 3,347,451, 10–17–67, Cl. 230—58.

Vinson, Billy H. Method and circuits for storing electrical energy. 3,348,216, 10–17–67, Cl. 340—173.

Vinz, Ottmar, to Jenaer Glaswerk Schott & Gen. Tubular condenser of variable capacity. 3,348,106, 10–17–67, Cl. 317—249.

Vischer, Alfred III: *See*—
Vischer, William. 3,347,619.

Vischer, Alfred, Jr.: *See*—
Vischer, William. 3,347,619.

Vischer, Peter: *See*—
Vischer, William. 3,347,619.

Vischer, William, 12/30 to A. Vischer, Jr. 2/30 to A. Vischer, III, 2/30 to P. Vischer, 4/30 to W. W. Zitzewitz, 4/30 to E. K. Zitzewitz, 1/30 to G. J. Zitzewitz, 1/30 to B. O. Zitzewitz, and 2/30 G. V. Bouton. Autoclave. 3,347,619, 10–17–67, Cl. 21—98.

Vogel, Henry A.: *See*—
Gloyer, Stewart W., Vogel, and Lynch. 3,347,700.

Volk, William, and C. A. Johnson, to Hydrocarbon Research, Inc. Process of reducing iron oxide. 3,347,659, 10–17–67, Cl. 75—5.

Von Recklinghausen, Daniel R.: *See*—
Fiah, Lawrence W., Jr., and Von Recklinghausen. 3,348,154.

Von Recklinghausen, Daniel R., to H. H. Scott Inc. Oscillator-converter apparatus employing field effect transistor with neutralisation and square law operation. 3,348,155, 10–17–67, Cl. 325—451.

Von Sanden, Dieter, and H. Suckfull, to Siemens & Halske Aktiengesellschaft Berlin and Munich. Circuit arrangement controlling the release of lines in a communication system. 3,347,992, 10–17–67, Cl. 179—15.

Voris, William H., to Koppers Co., Inc. Esters of 2,3',4-trihydroxydiphenyl. 3,347,884, 10–17–67, Cl. 260—410.5.

Vors, Rene: *See*—
Rhyner, Heinz, and Vors. 3,348,015.

Voss, Joseph A. Hygienic devices. 3,347,234, 10–17–67, Cl. 128—260.

Voynick, Irene M.: *See*—
Ottmann, Gerhard F., and Voynick. 3,347,863.

Vyskumny a vyvojovy ustav drevarsky: *See*—
Kotesovec, Vladimir, Zizka, and Janata. 3,347,289.

WacLine, Inc.: *See*—
Charbonneaux, Wilson A., and Hansley. 3,346,970.

Wagar, Harold N., to Bell Telephone Laboratories, Inc. Circuit identifier. 3,348,075, 10–17–67, Cl. 307—113.

Waggoner, Paul H. Spark-check. 3,348,013, 10–17–67, Cl. 200—168.

Wagner, Charles W., to E. I. du Pont de Nemours and Co. Gold-palladium conductor compositions and conductors made therefrom. 3,347,799, 10–17–67, Cl. 252—514.

Wagner Electric Corp.: *See*—
Fites, Cyril B. 3,347,600.
Frank, Arthur E. 3,347,474.

Wagner, Richard C.: *See*—
Nutting, Robert G., and Wagner. 3,347,015.

Wagner, Ross I.: *See*—
Goodrow, Marvin H., Wagner, and Caserio. 3,347,800.

Walbert Equipment Co.: *See*—
Lenk, James W., and Burnett. 3,347,161.

Walker, Wellington E.: *See*—
Manyik, Robert M., Walker, and Wilson. 3,347,840.

Walkinshaw, Thomas G., to Cramer Industries, Inc. Spectator seating structure. 3,347,593, 10–17–67, Cl. 297—248.

Wallace, John W. Livestock ear tag. 3,346,980. 10–17–67, Cl. 40—302.

Wallace, Richard A., and W. W. Deighton, to Burroughs Corp. Automatic accounting machine. 3,348,027, 10–17–67, Cl. 235—61.9.

Wallden, Sven J.: *See*—
Lundström, Hans T., Wallden, and Melkersson. 3,347,958.

Wallner, Alfred J.: *See*—
Rabuse, George R., Wallner, and Sterling. 3,347,362.

Walter D. Pouchot: *See*—
Webb, James E. 3,347,309.

Wander, A., Dr., S. A.: *See*—
Schmutz, Jean, and Hunziker. 3,347,849.

Waldorf Paper Products Co.: *See*—
Linde, Rienard W. 3,347,516.

Wang, Samuel S. M., to The Dow Chemical Co. Tetracycline hydrochloride-piperasine complex. 3,347,861, 10–17–67, Cl. 260—268.

Wang, Samuel S. M., to The Dow Chemical Co. Piperazine 2,6-diiodo-4-nitrophenyl phosphate. 3,347,862, 10–17–67, Cl. 260—268.

Walker Mfg. Co.: *See*—
Hopkins, John D., Whittingham, Bultman, and Krause. 3,347,967.
Tietz, La Vern R., and Niebergall. 3,347,390.
Van Eimeren, Eugene. 3,347,501.

Wallace-Murray Corp.: *See*—
Kolesh, Victor A., and Lamlein. 3,347,359.

Wallace & Tiernan Inc.: *See*—
Kraght, Albert J., and Marks. 3,347,083.
Rahn, Erwin P. G., and Babbin, Paul A. 3,347,423.
Sheppard, Chester S., Schack, and Magell. 3,347,845.

Ward, Chester E.: *See*—
Carpenter, Victor W., Ward, and Littmann. 3,347,718.

Warkoczewski, Joseph T.: *See*—
Stephens, Frederick N., Burhans, Warkoczewski, and Taylor. 3,347,225.

Warman, Bloomfield J., and J. H. Marshall, to Associated Electrical Industries Ltd. Automatic telephone exchange systems with registering of called lines. 3,347,993, 10–17–67, Cl. 179—18.

Warnell, Joseph L.: *See*—
Fritz, Charles G., and Warnell. 3,347,901.

Warner-Lambert Pharmaceutical Co.: *See*—
Higuchi, Takeru, and Hom. 3,347,640.
Higuchi, Takeru, and Hom. 3,347,641.

Warren, Reginald, to Cape Marine Propulsion Ltd. Marine jet propulsion units. 3,347,045, 10–17–67, Cl. 60—222.

Washburn, Robert M., and F. A. Billig, to American Potash & Chemical Corp. Borate esters and gasoline or lubricating oil compositions. 3,347,793, 10–17–67, Cl. 252—49.6.

Washburn, Robert M., and K. R. Eller, to American Potash and Chemical Corp. Reaction between aromatic diacyl compounds and aromatic silanes and the polymers produced therefrom. 3,347,824, 10–17–67, Cl. 260—46.5.

Wasson, Burton K., and J. M. Parker, to Charles E. Frosst & Co. 5-carbamyloxy-3a,4,5,6,7,7a-hexahydro-4,7-methanoindan. 3,347,907, 10–17–67, Cl. 260—482.

Watkins, Bruce J., to Regan Forge & Engineering Co. Double tapered guidance apparatus. 3,347,067, 10–17–67, Cl. 285—24.

Watrous, Donald L., to General Electric Co. Battery charging circuits. 3,348,118, 10–17–67, Cl. 320—40.

Watt, Gordon J.: *See*—
Polushkin, Andrey, and Watt. 3,347,105.

Watters, Bill G., and G. Kurtze, to Bolt Beranek and Newman Inc. Acoustic-wave apparatus. 3,347,335, 10–17–67, Cl. 181—.5.

Weather-Seal, Inc.: *See*—
Johnson, Waldo O. 3,346,993.

Weatherhead Co., The: *See*—
Bahniuk, Eugene, and Thompson. 3,347,041.

Weaver, Donald D.: *See*—
Baumgartner, Herman J., Hood, and Weaver. 3,347,630.

Webb, Earle L. R., to National Research Council. DC/DC transformer with current feedback. 3,348,119, 10–17–67, Cl. 321—2.

Webb, James E., Administrator of the National Aeronautics and Space Administration with respect to invention of E. V. Holman. Latching mechanism. 3,346,929, 10–17–67, Cl. 24—263.

Webb, James E., Administrator of the National Aeronautics and Space Administration with respect to an invention of A. H. Redding, R. A. Markley, and W. D. Pouchot. Self-adjusting, multi-segment, deployable, natural circulation radiator. 3,347,309, 10–17–67, Cl. 165—86.

Webb, James E., Administrator of The National Aeronautics and Space Administration with respects to an invention of P. C. Miller, H. R. Ogden, D. N. Williams, and R. A. Wood. Low temperature aluminum alloy. 3,347,665, 10–17–67, Cl. 75—142.

Webb, Jervis B., Co.: *See*—
Torrance, Gordon A. 3,347,171.

Weber Dental Mfg. Co.: *See*—
Maurer, John A., and Lappin. 3,346,957.
Espenschied, Wilbur L., and Weil. 3,347,325.

Weber, Paul: *See*—
Thomas, Rainer, and Weber. 3,347,968.

Webster, James A., to Monsanto Research Corp. Haloaryl organodisilaalkane compounds and use therefor. 3,347,897, 10–17–67, Cl. 260—448.2.

Weeden, Frank G., Jr., and G. W. Graves, to John L. Dore Co. Corrosion proof flowmeter. 3,347,568, 10–17–67, Cl. 285—55.

Weil, Glenn E.: *See*—
Espenschied, Wilbur L., and Weil. 3,347,325.

Weighart, Frederick G., and R. F. Poriastro, to Automation Industries, Inc. Power supply for an X-ray tube having a frequency responsive feedback means for a variable frequency converter. 3,348,051, 10–17–67, Cl. 250—108.

Weil, Edward D., and K. J. Smith, to Chemical Corp. Antifouling paint. 3,347,686, 10–17–67, Cl. 106—15.

Weil, Edward D., and J. Linder, to Hooker Chemical Corp. Halogenated phenoxyxyriopentenones and prosesses therefor. 3,347,929, 10–17–67, Cl. 260—590.

Weinbrenner, Erwin: *See*—
Hoppe, Peter, Weinbrenner, Muhlhausen, and Breer. 3,347,629.

Weisberger, David. Nose and lip protector apparatus. 3,346,875, 10–17–67, Cl. 2—9.

Weitzner, Dorothea M. Electrically heated hair curling device. 3,347,248, 10–17–67, Cl. 132—40.

Wellborn, William W., to Abrasive Dressing Tool Co. Diamond dressing tool. 3,347,219, 10–17–67, Cl. 125—11.

Wellhouse, Frederick J.: *See*—
Bodian, Marcus, and Wellhouse. 3,348,036.

Wendland, Paul H., to Hughes Aircraft Co. High brightness luminescent evaporated film. 3,347,693, 10–17–67, Cl. 117—33.5.

Wendler, Norman L.: *See*—
Taub, David, and Wendler. 3,347,928.

Werkzeugfabrik Selzach A.G.: *See*—
Reinmann, Alfred. 3,347,522.

Werner, Herbert E. Hydraulic mechanism. 3,347,594, 10–17–67, Cl. 297—347.

Werner, R. D., Co., Inc.: *See*—
Hussa, Harold W., and Redman. 3,347,340.

West, John M., F. Bevilacqua, and A. R. Snider, to Combustion Engineering, Inc. Control organization and method for a nuclear reactor. 3,347,747, 10–17–67, Cl. 176—35.

West, Richard C. Bar caddy. 3,347,354, 10–17–67, Cl. 206—4.

West, William A. Fluid operative apparatus for replacing bushings. 3,346,944, 10–17–67, Cl. 29—252.

Westberg, Frederick W.: *See*—
Zielinski, Robert J., and Westberg. 3,348,104.

Western Co. of North America, The: *See*—
Garland, Walter D. 3,347,297.

Western Electric Co., Inc.: *See*—
Fitzgerald, Thomas C., and McGraw. 3,348,016.
Freund, Paul W., and Trotman. 3,348,146.

Western Unit Corp.: *See*—
Harbers, Henry C. 3,347,563.

Westinghouse Electric Corp.: *See*—
Arnold, Wayne E. 3,348,070.
Baker, Edward P., and Forsha. 3,348,182.
Chamberlin, Richard S. 3,348,071.
Daines, Geoffrey A. 3,347,414.
Frisch, Erling. 3,347,552.
Hickam, William M. 3,347,767.
Jensen, Paul A. 3,348,034.
Jordan, Kenneth R. 3,347,749.
Lee, Franklin G., and Male. 3,348,160.
Leonard, Merrill G., and Wright. 3,348,180.
Mrenna, Stephen A. 3,348,003.
Nixon, Donald R. 3,347,168.
Petersen, Sigrud R. 3,348,127.
Radcliffe, Remington S. 3,347,452.
Schonholzer, Emil F. 3,348,129.
Shannon, Bill M. 3,347,975.
Thomas, Donald E. 3,347,750.
Upton, Chester W., Jr., and Siviy. 3,348,001.
Upton, Chester W., Jr. 3,348,002.
Wright, Robert L., Jr., and Koerner. 3,348,114.

Westland Aircraft Ltd.: *See*—
Jones, Richard S. 3,347,329.

Wetroff, Georges: *See*—
Trebillon, Emile, and Wetroff. 3,347,894.

Wexell, Harry W., to Brundell & Jonsson Aktiebolag. Apparatus and knife for the production of wood chips from logs. 3,347,291, 10–17–67, Cl. 144—172.

Wezel, Hans: *See*—
Wezel, Walter, and H. Wezel. 3,346,956.

Wezel, Walter, and Hans, to Schmid & Wezel, Firma. Blade disk for skinning devices and the like. 3,346,956, 10–17–67, Cl. 30—347.

Wharton, Weir E.: *See*—
Smith, Philip N., and Wharton. 3,348,222.

Wheeler, Charles J. Multiple sectional pipe cutter with the cutting teeth extending in opposite directions. 3,346,953, 10–17–67, Cl. 30—95.

Whipple, Richard E., and B. J. Rothmel, to General Electric Co. Solid state impulse generator using silicon controlled rectifiers for switching. 3,348,067, 10–17–67, Cl. 307—88.5.

Whirlpool, Corp.: *See*—
Brenner, Robert A., and Cuthbert. 3,347,068.

White, Franklin T. Recess joint for road construction. 3,347,516, Cl. 249—9.

White, Jerome R.: *See*—
Short, Oliver A., and White. 3,347,815.

Whiting T., Mfg., Inc.: *See*—
Whiting, Theo C. 3,347,580.

Whiting, Theo. C., to Whiting T., Mfg., Inc. Latch for securing a truck door. 3,347,580, 10–17–67, Cl. 292—128.

Whitson, Bob L.: *See*—
Fewel, Robert A., Harbour, and Whitson. 3,346,912.

Whittingham, David J.: *See*—
Hopkins, John D., Whittingham, Bultman, and Krause. 3,347,967.

Wiatt, Jame G., to The Cincinnati Milling Machine Co. Machine for cutting material. 3,347,121, 10–17–67, Cl. 83—71.

Wicks, Mrs. John.: *See*—
Morgan, Philip F., O. E., and Wicks. 3,347,537.

Wieman, Francis, to The Boeing Company. High power frequency multiplier. 3,348,125, 10–17–67, Cl. 321—69.

Wiley, Mannie. Air circulation system. 3,347,025, 10–17–67, Cl. 55—279.

Wilhelm Hegenscheidt Kommanditgesellschaft: *See*—
Lusina, Max, Louis, and Lison. 3,347,117.

Wilhoyte, Howard J., to Topper Tools, Inc. Leg extension device. 3,346,882, 10–17–67, Cl. 3—4.

Wilkis, Anthony J., to Automatic Electric Laboratories Inc. Normally closed reed switch. 3,348,175, 10–17–67, Cl. 335—154.

Wilkinson, Samuel C., to Crane Packing Ltd. Method of forming a flexible seal connection between large diameter shafts. 3,347,726, 10–17–67, Cl. 156—190.

Williams, Clarence O. Reel for pile fabrics with wood spreader bar. 3,347,484, 10–17–67, Cl. 242—62.

Williams, Dean N.: *See*—
Webb, James E. 3,347,665.

Williams, Gilmer A.: *See*—
Burgess, Douglas P. and Williams. 3,347,280.

Williams, Raymond L., to General Electric Co. Pressurising and drain valve. 3,347,255, 10–17–67, Cl. 137—102.

Williams, Richard E., to Scope Inc. Color filter apparatus for television. 3,347,963, 10–17–67, Cl. 178—5.4.

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Witt, William W., and Williams. 3,348,194.

Williams, Robin A.: *See*—
Goodrich, Geoffrey J., and Williams. 3,347,199.

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Wilson, Lawrence V.: *See*—
Dollinger, Robert E., Wilson, and Sherk. 3,347,949.

Wilson, Stanley G.: *See*—
Thomas, Thomas G., and Wilson. 3,347,642.

Wilson, Thomas P.: *See*—
Manyuk, Robert M., Walker, and Wilson. 3,347,840.

Winchester, Robert L.: *See*—
Coggeshall, Almy D., Mailhotte, and Winchester. 3,348,085.

Winkler, Dean E.: *See*—
Dieck, William W., Rengert, and Winkler. 3,347,962.

Wins, Jean, to G.B.D. Societe Anonyme Holding Luxembourg. Glass tank furnace wall structure. 3,347,654, 10–17–67, Cl. 65—347.

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Justi, Eduard, and Winsel. 3,347,759.

Winter, Harry, to Bell Telephone Laboratories, Inc. Code-checking comparator circuit. 3,348,198, 10–17–67, Cl. 340—146.1.

Wiremold Co., The: *See*—
Murphy, Robert H. 3,347,275.

Wirts, Rudolf: *See*—
Gössel, Helmut, Wirts, and Fernholz. 3,347,900.

Wismath, Harry: *See*—
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Engelman, Joseph H., and Witsell. 3,347,703.

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Latshaw, Wilmer E., and Wiszerkaniuk. 3,347,744.

Woebcke, Herman N.: *See*—
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Wolf Machine Co., The: *See*—
Shields, Charles F. 3,347,125.

Wolfe, John L.: *See*—
Meyer, Paul F., and Wolfe. 3,346,973.

Wolfe, Victoria V.: *See*—
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Wood, Prentice J., to The Mead Corp. Container with inner-cushioning structure. 3,347,445, 10–17–67, Cl. 229—33.

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Webb, James E. 3,347,665.

Wood, Thomas F., and J. T. Angiolini, to Givaudan Corp. Derivatives of hydrindacene and process for preparing same. 3,347,946, 10–17–67, Cl. 260—668.

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Elbert, Donald L., and Wright. 3,346,916.
Wukusick, Carl S., and J. A. McGurty, to General Electric Co. Chromium base alloy. 3,347,667, 10–17–67, Cl. 75—176.
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Lyles, James M. 3,347,691.
Xylander, Kurt: *See*—
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Noda, Ikaya, Yamamoto, Ueta, Minami, Hirano, Someno, and Sudo. 3,347,076.
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Ohara, Yamamoto, Kamiya, Tanaka, Sugihara, and Ito. 3,347,883.
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Keska, Kenneth R., Mackey, and Dolphin. 3,347,078.
Yokoyama, Katsura: *See*—
Tanaka, Sanae, Yokoyama, and Seki. 3,347,952.
Yonehara, Shunsuke: *See*—
Ishikawa, Mitsuo, Yonehara, and Godo. 3,347,852.
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Rosen, Samuel R. 3,348,186.
Yoshikawa, Masaharu, K. Kussahio, T. Kato, and T. Takenishi. Method of preparing 5'-ribonucleotide. 3,347,846, 10–17–67, Cl. 260—211.5.
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Young Machinery Co., Inc., The: *See*—
Dawson, James E. 3,347,534.
Youngstown Steel Door Co., The: *See*—
Butcher, Le Roy C. 3,347,175.
Zak, Joseph. Shoring device for boats. 3,347,543, 10–17–67, Cl. 269—296.
Zamzow, Merle D.: *See*—
Nilsen, Peter J., and Zamzow. 3,346,943.
Zanzola, Louis C.: *See*—
Phillips, Malcolm E., Jr., and Zanzola. 3,347,180.
Zecher, Wilfried: *See*—
Holtschmidt, Hans, and Zecher. 3,347,762.
Zeitlin, Alexander: *See*—
Brayman, Jacob, Komorn, and Zeitlin. 3,346,922.
Zellstoffabrick Waldhof: *See*—
Sohn, August W., and Erasmus. 3,347,788.
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Zankey, Harry E., to McGraw-Edison Co. Fluid separator. 3,347,026, 10–17–67, Cl. 55—316.
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Wood, Frank A. 3,348,177.
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Apa, Armand S., and Ziegler. 3,346,949.
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Zies, Carl W.: *See*—
Gleason, William J., Jr., and Zies. 3,347,257.
Zimmerman, F., & Co., Firma: *See*—
Becker, Kurt. 3,347,249.
Zimmermann, Rolf, to Chemische Werke Albert. Dicyclopentadiene modified unsaturated polyesters and process for preparing them. 3,347,806, 10–17–67, Cl. 260—22.
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Vischer, William. 3,347,619.
Zitzewitz, Elmer K.: *See*—
Vischer, William. 3,347,619.
Zitzewitz, Gertrude J.: *See*—
Vischer, William. 3,347,619.
Zitzewitz, Walter W.: *See*—
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Zizka, Jan: *See*—
Kotesovec, Vladimir, Zizka, and Janata. 3,347,289.
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Zurhellen, Edward: *See*—
Hus, Johannes, Scoran, and Zurhellen. 3,348,077.
Zuzinec, Raymond R.: *See*—
Knudsen, Raymond G., Badger, and Zuzinec. 3,347,075.
Zwicky, Heinrich: *See*—
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CLASSIFICATION OF PATENTS

ISSUED OCTOBER 17, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2– 9	3,346,875	29–157.3	3,346,936	55– 71	3,347,021	73–398	3,347,100	101–376	3,347,162	128–147	3,347,230
10	3,346,876	159.2	3,346,937		3,347,022	421	3,347,101	401.1	3,347,163	201	3,347,231
24	3,346,877	173	3,346,938	193	3,347,023	423	3,347,102	102– 24	3,347,164	221	3,347,232
55	3,346,878	208	3,346,939	241	3,347,024	502	3,347,103	70.2	3,347,165	260	3,347,233
90	3,346,879		3,346,940	279	3,347,025	74– 5.5	3,347,104	84	3,347,166		3,347,234
150	3,346,880		3,346,941	316	3,347,026	5.6	3,347,105	103– 3	3,347,167	276	3,347,235
	3,346,881	212	3,346,942	320	3,347,027	199	3,347,106	87	3,347,168	284	3,347,236
3– 4	3,346,882	213	3,346,943	510	3,347,028		3,347,107	117	3,347,169	285	3,347,237
4– 1	3,346,883	252	3,346,944	56– 9	3,347,029	342	3,347,108	104–120	3,347,170	295	3,347,238
173	3,346,884	436	3,346,945	27.5	3,347,030	388	3,347,109	172	3,347,171	325	3,347,239
185	3,346,885	470.1	3,346,946	327	3,347,031	397	3,347,110	173	3,347,172	363	3,347,240
187	3,346,886	470.3	3,346,947	329	3,347,032	501	3,347,111		3,347,173	129– 16.1	3,347,241
211	3,346,887	509	3,346,948	57– 53	3,347,033	594.2	3,347,112	105–282	3,347,174	16.7	3,347,242
253	3,346,888	560	3,346,949	58.36	3,347,034	688	3,347,113	409	3,347,175	38	3,347,243
5– 12	3,346,889	583	Re.26,282	58.65	3,347,035	75– .5	3,347,659	106– 15	3,347,684	130– 27	3,347,244
82	3,346,890	625	3,346,950	140	3,347,036	43	3,347,660		3,347,685	131– 10.7	3,347,245
220	3,346,891	630	3,346,951	58–152	3,347,037	104	3,347,661		3,347,686	237	3,347,246
325	3,346,892	30– 90	3,346,952	59– 35	3,347,038	106	3,347,662	57	3,347,687	266	3,347,247
8– 42	3,347,617	95	3,346,953	60– 30	3,347,040	124	3,347,663	124	3,347,688	132– 40	3,347,248
151	3,346,893	273	3,346,954	39.82	3,347,039	133	3,347,664	178	3,347,689	133– 8	3,347,249
10–128	3,346,894	276	3,346,955	52	3,347,041	142	3,347,665	273	3,347,690	134–182	3,347,250
13– 35	3,347,972	347	3,346,956	54	3,347,042	157.5	3,347,666	107– 4	3,347,176	136– 28	3,347,706
15– 21	3,346,895	32– 22	3,346,957	54.5	3,347,043	176	3,347,667	14	3,347,177		3,347,707
50	3,346,896	28	3,346,958	97	3,347,044	201	3,347,668	36	3,347,178	86	3,347,708
97	3,346,897	67	3,346,959	222	3,347,045	76–101	3,347,114	46	3,347,179	108	3,347,709
100	3,346,898	33– 1	3,346,960	243	3,347,046	77– 58	3,347,115	54	3,347,180	175	3,347,710
118	3,346,899	18	3,346,961	253	3,347,047	63	3,347,116		3,347,181	202	3,347,711
160	3,346,900	52	3,346,962	61– 37	3,347,048	81–379	Re.26,280	57	3,347,182	230	3,347,712
	3,346,901	147	3,346,963	41	3,347,049	82– .8	3,347,117	69	3,347,183	137– 81.5	3,347,251
171	3,346,902		3,346,964	45	3,347,050	75	3,347,118	108– 17	3,347,184	82	3,347,252
230.1	3,346,903	203.14	3,346,965	46	3,347,051	83– 38	3,347,119	51	3,347,185	83	3,347,253
230.12	3,346,904	226	3,346,966	46.5	3,347,052	42	3,347,120	91	3,347,186	101	3,347,254
235.6	3,346,905	34–239	3,346,967		3,347,053	71	3,347,121	152	3,347,187	102	3,347,255
262	3,346,906	35– 6	3,346,968	72.4	3,347,054	157	3,347,122	111– 10	3,347,188	115	3,347,256
381	3,346,907	12	3,346,969	62– 9	3,347,055	346	3,347,123	112–153	3,347,189	183	3,347,257
552	3,346,908	48	3,346,970	45	3,347,056	609	3,347,124	176	3,347,190		3,347,258
16– 94	3,346,909	36– 2.5	3,346,971	56	3,347,057	635	3,347,125	220	3,347,191	269	3,347,259
163	3,346,910	37– 8	3,346,972	58	3,347,058	84– 1.24	3,347,973	222	3,347,192	315	3,347,260
17– 21	3,346,911	10	3,346,973	325	3,347,059	85– 13	3,347,126	228	3,347,193		3,347,261
18– 1	3,346,912	117.5	3,346,974	457	3,347,060	37	3,347,127	237	3,347,194	375	3,347,262
2	3,346,913	118	3,346,975	64– 15	3,347,061	86– 39	3,347,128	254	3,347,195	448	3,347,263
2.7	3,346,915	156	3,346,976	28	3,347,062	88– 1	3,347,129	258	3,347,196	512.1	3,347,264
5	3,346,914	40– 28	3,346,977	65– 3	3,347,648	14	3,347,130	114– 66.5	3,347,197	525.7	3,347,265
8	3,346,916	130	3,346,978	4	3,347,649		3,347,131		3,347,198	540	3,347,266
12	3,346,917	158	3,346,979	26	3,347,650		3,347,132	125	3,347,199	589	Re.26,288
	3,346,918	302	3,346,980	39	3,347,651	24	3,347,133	202	3,347,200	604	3,347,267
	3,346,919	42– 1	3,346,981	152	3,347,652	26	3,347,134	235	3,347,201	625.17	3,347,268
14	3,346,920	16	3,346,982	307	3,347,653	91– 47	3,347,135	115– .5	3,347,202	625.48	3,347,269
	3,346,921	47	3,346,983	347	3,347,654	93– 1	3,347,136	31	3,347,203	630.15	3,347,270
16	3,346,922	55	3,346,984	375	3,347,655	20	3,347,137	116–133	3,347,204	637.4	3,347,271
19	3,346,923	74	3,346,985	66– 86	3,347,063	94– 39	3,347,138	117– 17.5	3,347,691	138– 30	3,347,272
30	3,346,924	43– 43.12	3,346,986	125	3,347,064		3,347,139	21	3,347,692		3,347,273
	3,346,925	43.15	3,346,987	68– 12	3,347,065	95– 4.5	3,347,140	33.5	3,347,693	108	3,347,274
19–245	3,346,926	112	3,346,988		3,347,066	10	3,347,141		3,347,694	116	3,347,275
21– 94	3,347,618	44– 63	3,347,645	135	3,347,067	31	3,347,142	38	3,347,695	166	3,347,276
98	3,347,619	76	3,347,646	266	3,347,068	42	3,347,143		3,347,696	139– 1	3,347,277
23– 1	3,347,620	46– 44	3,346,989	70– 63	3,347,069	53	3,347,144	46	3,347,697	11	3,347,278
2	3,347,621	100	3,346,990	92	3,347,070	96– 1	3,347,669	47	3,347,698	13	3,347,279
50	3,347,622	47– 29	3,346,991	240	3,347,071	1.5	3,347,670	97	3,347,699	24	3,347,280
64	3,347,623	48–197	3,347,647	277	3,347,072	3	3,347,671		3,347,700	29	3,347,281
66	3,347,624	49–255	3,346,992	71– 36	3,347,656	29	3,347,672	106	3,347,701	116	3,347,282
91	3,347,625	352	Re.26,281	93	3,347,657		3,347,673	201	3,347,702	122	3,347,283
	3,347,626	409	3,346,993	119	3,347,658		3,347,674	212	3,347,703		3,347,284
107	3,347,627	470	3,346,994	72– 15	3,347,073	61	3,347,675	227	3,347,704	257	3,347,285
121	3,347,628	51–156	3,346,995	56	3,347,074	115	3,347,676	118– 7	3,347,205	141– 39	3,347,286
150	3,347,629	225	3,346,996	111	3,347,075	98– 36	3,347,145	8	3,347,206	105	3,347,287
204	3,347,630	52– 34	3,346,997	201	3,347,076	40	3,347,146	33	3,347,207	362	3,347,288
206	3,347,631	70	3,346,998	202	3,347,077	78	3,347,147	420	3,347,208	143– 36	3,347,289
209.1	3,347,632	90	3,346,999	225	3,347,078	99– 2	3,347,677	500	3,347,209	37	3,347,290
209.4	3,347,633		3,347,000	264	3,347,079	103	3,347,678	119– 4	3,347,210	144–172	3,347,291
230	3,347,634	105	3,347,001	334	3,347,080	107	3,347,679	5	3,347,211	145– 31	3,347,292
232	3,347,635	167	3,347,002	342	3,347,081		3,347,680	51.11	3,347,212	50	3,347,293
	3,347,636	169	3,347,003	362	3,347,082	140	3,347,681	123– 8	3,347,213	146– 6	3,347,294
270	3,347,637	171	3,347,004	393	3,347,083	148	3,347,682	11	3,347,214	8	3,347,295
314	3,347,638	230	3,347,005	457	3,347,084	156	3,347,683	46	3,347,215	216	3,347,296
315	3,347,639	300	3,347,006	73– 1	3,347,085	259	3,347,148	119	3,347,216	148– 6.2	3,347,713
	3,347,640	380	3,347,007	6	3,347,086	282	3,347,149		3,347,217	11.5	3,347,714
	3,347,641	398	3,347,008	24	3,347,087	283	3,347,150	148	3,347,218	12	3,347,715
342	3,347,642	545	3,347,009	37.5	3,347,088	295	3,347,151	125– 11	3,347,219	13.1	3,347,716
357	3,347,643	593	3,347,010	59	3,347,089	334	3,347,152	126– 25	3,347,220	32	3,347,717
	3,347,644	53– 22	3,347,011	78	3,347,090	337	3,347,153	85	3,347,221	111	3,347,718
24–245	3,346,927	29	3,347,012	103	3,347,091	359	3,347,154	127– 44	3,347,705	187	3,347,719
	3,346,928	30	3,347,013	114	3,347,092	365	3,347,155	128– 2	3,347,222		3,347,720
263	3,346,929	141	3,347,014	168	3,347,093	100– 4	Re.26,289	2.05	3,347,224	149– 2	3,347,721
265	3,346,930	182	3,347,015		3,347,094	7	3,347,156	2.1	3,347,223	41	3,347,722
28– 1	3,346,931	246	3,347,016	178	3,347,095	41	3,347,157	66	3,347,225	150– 1	3,347,297
72	3,346,932	379	3,347,017	200	3,347,096	269	3,347,158	132	3,347,226	3	3,347,298
29– 25.41	3,346,933	54– 78	3,347,018	315	3,347,097	101– 93	3,347,159		3,347,227	34	3,347,299
91.1	3,346,934	55– 32	3,347,019	342	3,347,098	209	3,347,160	145.8	3,347,228	152–352	3,347,300
157	3,346,935	67	3,347,020	359	3,347,099	216	3,347,161	146.3	3,347,229		3,347,301

152–409 : 3,347,302
156–103 : 3,347,723
151 : 3,347,724
184 : 3,347,725
190 : 3,347,726
244 : 3,347,727
283 : 3,347,728
380 : 3,347,729
423 : 3,347,730
435 : 3,347,731
497 : 3,347,732
515 : 3,347,733
562 : 3,347,734
158–36 : 3,347,303
160–19 : 3,347,304
40 : 3,347,305
344 : 3,347,306
161–66 : 3,347,735
67 : 3,347,736
150 : 3,347,737
179 : 3,347,738
162–30 : 3,347,739
199 : 3,347,740
241 : 3,347,741
164–173 : 3,347,307
282 : 3,347,308
165–86 : 3,347,309
124 : 3,347,310
166–.6 : 3,347,311
3,347,312
11 : 3,347,313
13 : 3,347,314
23 : 3,347,315
29 : 3,347,316
100 : 3,347,317
226 : 3,347,318
242 : 3,347,319
167–53.2 : 3,347,742
3,347,743
55 : 3,347,744
74 : 3,347,745
95 : 3,347,746
170–160.26: 3,347,320
173–118 : 3,347,321
174–23 : 3,347,974
70 : 3,347,975
71 : 3,347,976
74 : 3,347,977
84 : 3,347,978
87 : 3,347,979
173 : 3,347,980
175–4.52: 3,347,322
.57 : Re.26,284
269 : 3,347,323
176–35 : 3,347,747
36 : 3,347,748
69 : 3,347,749
3,347,750
177–1 : 3,347,324
117 : 3,347,325
163 : 3,347,326
208 : 3,347,327
229 : 3,347,328
178–5 : 3,347,981
5.1 : 3,347,982
5.4 : 3,347,983
6.6 : 3,347,984
7.92: 3,347,985
18 : 3,347,986
179–2 : 3,347,987
3,347,988
6 : 3,347,989
3,347,990
15 : 3,347,992
18 : 3,347,993
3,347,994
3,347,995
100.2 : 3,347,996
3,347,997
114 : 3,347,991
157 : 3,347,998
180–7 : 3,347,329
3,347,330
3,347,331
22 : 3,347,332
65 : 3,347,333
68.5 : 3,347,334
181–.5 : 3,347,335
3,347,336
31 : 3,347,337
56 : 3,347,338
182–14 : 3,347,339
207 : 3,347,340
184–1 : 3,347,341
187–8.41: 3,347,342
188–32 : 3,347,343
264 : 3,347,344
3,347,345
190–42 : 3,347,346
192–53 : 3,347,347
195–6 : 3,347,751

195–29 : 3,347,752
198–30 : 3,347,348
33 : 3,347,349
119 : 3,347,350
131 : 3,347,351
220 : 3,347,352
200–30 : 3,347,999
33 : 3,348,000
48 : 3,348,001
3,348,002
50 : 3,348,003
61.2 : 3,348,004
83 : 3,348,005
85 : 3,348,006
131 : 3,348,007
136.3 : 3,348,008
140 : 3,348,009
157 : 3,348,010
166 : 3,348,011
3,348,012
168 : 3,348,013
172 : 3,348,014
202–185 : 3,347,753
186 : 3,347,754
206 : 3,347,755
203–32 : 3,347,756
204–47 : 3,347,757
59 : 3,347,758
129 : 3,347,759
140.5 : 3,347,760
151 : 3,347,761
158 : 3,347,762
3,347,763
159.21: 3,347,764
162 : 3,347,765
164 : 3,347,766
195 : 3,347,767
196 : 3,347,768
225 : 3,347,769
228 : 3,347,770
297 : 3,347,771
298 : 3,347,772
302 : 3,347,773
311 : 3,347,774
206–1 : 3,347,353
4 : 3,347,354
45.24: 3,347,355
45.29: 3,347,356
45.31: 3,347,357
47 : 3,347,358
52 : 3,347,359
56 : 3,347,360
3,347,361
59 : 3,347,362
65 : 3,347,363
3,347,364
3,347,365
3,347,366
208–28 : 3,347,775
46 : 3,347,776
65 : 3,347,777
74 : 3,347,778
89 : 3,347,779
111 : 3,347,780
127 : 3,347,781
138 : 3,347,782
310 : 3,347,783
209–74 : 3,347,367
99 : 3,347,368
124 : 3,347,369
172 : 3,347,370
3,347,371
211 : 3,347,372
315 : 3,347,373
332 : 3,347,374
395 : 3,347,375
444 : 3,347,376
458 : 3,347,377
210–6 : 3,347,784
35 : 3,347,785
45 : 3,347,786
50 : 3,347,787
106 : 3,347,378
127 : 3,347,379
130 : 3,347,380
150 : 3,347,381
159 : 3,347,382
225 : 3,347,383
3,347,384
232 : 3,347,385
238 : 3,347,386
266 : 3,347,387
380 : 3,347,388
401 : 3,347,389
448 : 3,347,390
491 : 3,347,391
211–26 : 3,347,392
40 : 3,347,393
126 : 3,347,394
184 : 3,347,395
214–6 : 3,347,396

214–6 : 3,347,397
138 : 3,347,398
314 : 3,347,399
3,347,400
215–1 : 3,347,401
219–69 : 3,348,015
83 : Re.26,287
107 : 3,348,016
109 : 3,348,017
119 : 3,348,018
309 : 3,348,019
370 : 3,348,020
3,348,021
384 : 3,348,022
391 : 3,348,023
413 : 3,348,024
467 : 3,348,025
3,348,026
220–15 : 3,347,402
17 : 3,347,403
19 : 3,347,404
21 : 3,347,405
22 : 3,347,406
54 : 3,347,407
60 : 3,347,408
3,347,409
97 : 3,347,411
3,347,412
221–11 : 3,347,413
200 : 3,347,414
222–48 : 3,347,415
56 : 3,347,416
61 : 3,347,417
3,347,418
80 : 3,347,410
107 : 3,347,419
129 : 3,347,420
129.1 : 3,347,421
146 : 3,347,422
183 : 3,347,423
263 : 3,347,424
305 : 3,347,425
352 : 3,347,426
399 : 3,347,427
223–98 : 3,347,428
224–11 : 3,347,429
225–2 : 3,347,430
103 : 3,347,431
226–50 : Re.26,283
3,347,432
52 : 3,347,433
162 : 3,347,434
176 : 3,347,435
177 : 3,347,436
198 : 3,347,437
227–109 : 3,347,439
131 : 3,347,438
3,347,440
3,347,441
228–3 : 3,347,442
229–14 : 3,347,443
17 : 3,347,444
23 : 3,347,445
27 : 3,347,446
31 : 3,347,447
34 : 3,347,448
68 : 3,347,449
87.2 : 3,347,450
230–58 : 3,347,451
259 : 3,347,452
233–11 : 3,347,453
14 : 3,347,454
19 : 3,347,455
20 : 3,347,456
235–61 : 3,347,457
61.11: 3,348,028
61.9 : 3,348,027
88 : 3,347,458
3,347,459
90 : 3,347,460
92 : 3,348,029
3,348,030
150.5 : 3,348,031
151.1 : 3,348,032
175 : 3,348,033
193 : 3,348,034
236–79 : 3,347,461
238–349 : 3,347,462
239–113 : 3,347,463
210 : 3,347,464
212 : Re.26,285
265.11: 3,347,465
265.19: 3,347,466
265.31: 3,347,467
274 : 3,347,468
424 : 3,347,469
453 : 3,347,470
466 : 3,347,471
543 : 3,347,472
553.3 : 3,347,473
240–25 : 3,348,035

240–41.35: 3,348,036
41.38: 3,348,037
47 : 3,348,038
51.11: 3,348,039
242–1.1 : 3,347,474
19 : 3,347,476
25 : 3,347,477
26.1 : 3,347,475
26.3 : 3,347,478
35.5 : 3,347,479
55.12: 3,347,481
3,347,482
3,347,483
55.2 : 3,347,480
62 : 3,347,484
68.3 : 3,347,485
74.2 : 3,347,486
84.8 : 3,347,487
107.4 : 3,347,488
118.61: 3,347,489
158.3 : 3,347,490
244–3.27: 3,347,491
3.28: 3,347,492
12 : 3,347,493
14 : 3,347,494
42 : 3,347,495
53 : 3,347,496
54 : 3,347,497
77 : 3,347,498
101 : 3,347,499
154 : 3,347,500
248–8 : 3,347,501
22 : 3,347,502
46 : 3,347,503
68 : 3,347,505
119 : 3,347,506
147 : 3,347,507
188.4 : 3,347,508
188.7 : 3,347,509
205 : 3,347,510
422 : 3,347,511
429 : 3,347,512
483 : 3,347,513
488 : 3,347,504
249–2 : 3,347,514
9 : 3,347,515
250–41.3 : 3,348,040
49.5 : 3,348,041
68 : 3,348,042
77 : 3,348,043
83 : 3,348,044
3,348,045
83.3 : 3,348,046
3,348,047
3,348,048
3,348,049
3,348,050
103 : 3,348,051
106 : 3,348,052
206 : 3,348,053
3,348,054
212 : 3,348,055
213 : 3,348,056
215 : 3,348,057
216 : 3,348,058
229 : 3,348,059
251–160 : 3,347,516
315 : 3,347,517
333 : 3,347,518
365 : 3,347,519
252–8.5 : 3,347,788
8.55: 3,347,789
32.5 : 3,347,790
33.6 : 3,347,791
47.5 : 3,347,792
49.6 : 3,347,793
3,347,794
62.9 : 3,347,795
75 : 3,347,796
181 : 3,347,797
448 : 3,347,798
514 : 3,347,799
253–77 : 3,347,520
254–29 : 3,347,521
105 : 3,347,522
122 : 3,347,523
173 : 3,347,524
189 : 3,347,525
190 : 3,347,526
256–12.5 : 3,347,527
259–2 : 3,347,528
8 : 3,347,529
12 : 3,347,530
71 : 3,347,531
154 : 3,347,532
156 : 3,347,533
180 : 3,347,534
260–2 : 3,347,800
3,347,801
3,347,802
3,347,803

260–2.5 : 3,347,804
17 : 3,347,805
28.5 : 3,347,807
29.1 : 3,347,808
29.3 : 3,347,809
29.6 : 3,347,810
3,347,811
3,347,812
3,347,813
3,347,814
3,347,815
3,347,816
41 : 3,347,818
41.5 : 3,347,817
45.7 : 3,347,819
45.75: 3,347,821
3,347,822
45.8 : 3,347,820
45.85: 3,347,823
46.5 : 3,347,824
47 : 3,347,825
3,347,826
3,347,827
3,347,828
64 : 3,347,829
67 : 3,347,830
3,347,831
72 : 3,347,832
78.4 : 3,347,833
79.3 : 3,347,834
3,347,835
80.73: 3,347,836
87.5 : 3,347,837
93.7 : 3,347,838
94.3 : 3,347,839
94.9 : 3,347,840
3,347,841
124 : 3,347,842
154 : 3,347,843
165 : 3,347,844
192 : 3,347,845
211.5 : 3,347,846
231 : 3,347,855
232 : 3,347,847
234 : 3,347,848
239 : 3,347,849
3,347,850
239.1 : 3,347,851
239.3 : 3,347,852
239.5 : 3,347,853
239.55: 3,347,854
243 : 3,347,856
3,347,857
247.7 : 3,347,858
248 : 3,347,859
268 : 3,347,860
3,347,861
3,347,862
270 : 3,347,863
288 : 3,347,864
313.1 : 3,347,865
326.15: 3,347,866
327 : 3,347,867
3,347,868
340 : 3,347,869
340.5 : 3,347,870
340.7 : 3,347,871
347.3 : 3,347,872
347.7 : 3,347,873
3,347,874
348 : 3,347,875
349 : 3,347,876
3,347,877
397.3 : 3,347,878
3,347,879
397.47: 3,347,881
397.5 : 3,347,880
404.5 : 3,347,882
408 : 3,347,883
410.5 : 3,347,884
412.4 : 3,347,885
424 : 3,347,886
429.5 : 3,347,887
429.7 : 3,347,888
3,347,889
3,347,890
3,347,891
447 : 3,347,892
448 : 3,347,893
3,347,894
448.2 : 3,347,895
3,347,896
3,347,897
465.3 : 3,347,899
3,347,900
465.5 : 3,347,898
465.6 : 3,347,901
465.9 : 3,347,902
467 : 3,347,903
3,347,904

260–471 : 3,347,905
475 : 3,347,906
482 : 3,347,907
488 : 3,347,908
514 : 3,347,909
520 : 3,347,910
551 : 3,347,911
3,347,912
553 : 3,347,913
3,347,914
555 : 3,347,915
561 : 3,347,916
563 : 3,347,917
3,347,918
3,347,919
3,347,920
581 : 3,347,921
583 : 3,347,922
3,347,923
3,347,924
585 : 3,347,926
586 : 3,347,927
590 : 3,347,928
3,347,929
602 : 3,347,930
606.5 : 3,347,931
3,347,932
612 : 3,347,933
615 : 3,347,934
619 : 3,347,935
621 : 3,347,936
623 : 3,347,937
624 : 3,347,938
641 : 3,347,939
649 : 3,347,940
3,347,941
650 : 3,347,942
666 : 3,347,943
3,347,944
668 : 3,347,945
3,347,946
671 : 3,347,947
674 : 3,347,948
679 : 3,347,949
737 : 3,347,950
837 : 3,347,951
838 : 3,347,952
849 : 3,347,953
864 : 3,347,954
878 : 3,347,955
3,347,956
897 : 3,347,957
261–29 : 3,347,535
34 : 3,347,536
124 : 3,347,537
264–13 : 3,347,958
37 : 3,347,959
40 : 3,347,960
53 : 3,347,961
90 : 3,347,962
3,347,963
94 : 3,347,964
97 : 3,347,965
3,347,966
115 : 3,347,967
195 : 3,347,968
210 : 3,347,969
230 : 3,347,970
310 : 3,347,971
266–34 : 3,347,538
35 : 3,347,539
267–1 : 3,347,540
34 : 3,347,541
269–32 : 3,347,542
296 : 3,347,543
328 : 3,347,544
272–8 : 3,347,545
65 : 3,347,546
67 : 3,347,547
273–1 : 3,347,548
130 : 3,347,549
3,347,550
183 : 3,347,551
277–27 : 3,347,552
3,347,553
134 : 3,347,554
171 : 3,347,555
206 : 3,347,556
280–1.11: 3,347,557
87 : 3,347,558
204 : 3,347,559
405 : 3,347,560
406 : 3,347,561
3,347,562
425 : 3,347,563
479 : 3,347,564
281–21 : 3,347,565
285–1 : 3,347,566
24 : 3,347,567
55 : 3,347,568

285–64 : 3,347,569
94 : 3,347,570
149 : 3,347,571
287–14 : 3,347,572
3,347,573
20.92: 3,347,574
58 : 3,347,575
90 : 3,347,576
100 : 3,347,577
292–113 : 3,347,578
122 : 3,347,579
128 : 3,347,580
147 : 3,347,581
178 : 3,347,582
194 : 3,347,583
198 : 3,347,584
294 : 3,347,585
294–19 : 3,347,586
87 : 3,347,587
88 : 3,347,588
296–23 : 3,347,589
3,347,590
3,347,591
107 : 3,347,592
297–248 : 3,347,593
347 : 3,347,594
299–4 : 3,347,595
10 : 3,347,596
36 : 3,347,597
301–9 : 3,347,598
302–66 : 3,347,599
303–71 : 3,347,600
305–35 : 3,347,601
54 : 3,347,602
307–66 : 3,348,060
88 : 3,348,061
88.5 : 3,348,062
3,348,063

307–88.5 : 3,348,064
3,348,065
3,348,066
3,348,067
3,348,068
3,348,069
3,348,070
3,348,071
3,348,072
3,348,073
3,348,074
113 : 3,348,075
308–6 : 3,347,603
36.3 : 3,347,604
122 : 3,347,605
243 : 3,347,606
310–8.4 : 3,348,076
8.5 : 3,348,077
9.5 : 3,348,078
11 : 3,348,079
29 : 3,348,080
55 : 3,348,081
85 : 3,348,082
164 : 3,348,083
202 : 3,348,084
260 : 3,348,085
268 : 3,348,086
312–8 : 3,347,607
216 : 3,347,608
263 : 3,347,609
3,347,610
311 : 3,347,611
3,347,612
333 : 3,347,613
313–1 : 3,348,087
30 : 3,348,088
62 : 3,348,089
93 : 3,348,090

313–136 : 3,348,091
346 : 3,348,092
315–3 : 3,348,093
71 : 3,348,094
80 : 3,348,095
109 : 3,348,096
317–42 : 3,348,097
13 : 3,348,098
22 : 3,348,099
70 : 3,348,100
100 : 3,348,101
112 : 3,348,102
120 : 3,348,103
130 : 3,348,104
234 : 3,348,105
249 : 3,348,106
318–6 : 3,348,107
16 : 3,348,108
220 : 3,348,109
227 : 3,348,110
252 : 3,348,111
332 : 3,348,112
345 : 3,348,113
369 : 3,348,114
320–1 : 3,348,115
2 : 3,348,116
18 : 3,348,117
40 : 3,348,118
321–2 : 3,348,119
3,348,120
16 : 3,348,121
18 : 3,348,122
44 : 3,348,123
45 : 3,348,124
69 : 3,348,125
322–59 : 3,348,127
323–4 : 3,348,128
22 : 3,348,129

323–22 : 3,348,130
3,348,131
43.5 : 3,348,132
93 : 3,348,133
126 : 3,348,134
324–.5 : 3,348,135
3,348,136
3,348,137
37 : Re.26,286
51 : 3,348,138
57 : 3,348,139
58.5 : 3,348,140
68 : 3,348,141
70 : 3,348,143
3,348,144
99 : 3,348,142
158 : 3,348,145
3,348,146
3,348,147
325–15 : 3,348,148
30 : 3,348,149
56 : 3,348,150
185 : 3,348,151
305 : 3,348,152
320 : 3,348,153
451 : 3,348,154
3,348,155
328–42 : 3,348,156
329–50 : 3,348,157
141 : 3,348,158
330–13 : 3,348,159
15 : 3,348,160
21 : 3,348,161
28 : 3,348,162
84 : 3,348,163
331–2 : 3,348,164
3 : 3,348,165

331–78 : 3,348,166
111 : 3,348,167
332–1 : 3,348,168
18 : 3,348,126
333–13 : 3,348,169
22 : 3,348,170
28 : 3,348,171
30 : 3,348,172
73 : 3,348,173
335–153 : 3,348,174
154 : 3,348,175
181 : 3,348,176
213 : 3,348,177
251 : 3,348,178
336–58 : 3,348,179
90 : 3,348,180
120 : 3,348,181
187 : 3,348,182
223 : 3,348,183
338–32 : 3,348,184
183 : 3,348,185
214 : 3,348,186
339–18 : 3,348,187
32 : 3,348,188
3,348,189
3,348,190
75 : 3,348,191
176 : 3,348,192
258 : 3,348,192
340–15.5 : 3,348,193
3,348,194
16 : 3,348,195
146.1 : 3,348,196
3,348,197
3,348,198
146.2 : 3,348,199
146.3 : 3,348,200
3,348,201

340–166 : 3,348,202
167 : 3,348,203
168 : 3,348,204
172.5 : 3,348,205
3,348,206
3,348,207
3,348,208
3,348,209
3,348,210
3,348,211
3,348,212
3,348,213
3,348,214
3,348,215
173 : 3,348,216
3,348,217
174 : 3,348,218
174.1 : 3,348,219
274 : 3,348,220
381 : 3,348,221
413 : 3,348,222
343–5 : 3,348,223
18 : 3,348,224
112 : 3,348,225
225 : 3,348,226
768 : 3,348,227
799 : 3,348,228
346–23 : 3,348,229
33 : 3,348,230
3,348,231
74 : 3,348,232
76 : 3,348,233
110 : 3,348,234
140 : 3,348,235
350–162 : 3,347,614
269 : 3,347,615
271 : 3,347,616

CLASSIFICATION OF DESIGNS

D 1–13 : 208,899
D 2–2 : 208,900
232 : 208,901
293 : 208,902
D 9–2 : 208,903
D13–1 : 208,904
208,905
208,906
D16–1 : 208,907
2 : 208,908
D19–1 : 208,909
D22–25 : 208,910

D22–28 : 208,911
D25–1 : 208,912
D26–1 : 208,913
208,914
5 : 208,915
208,916
13 : 208,917
208,918
14 : 208,919
D30–41 : 208,920
D33–3 : 208,921

D34–5 : 208,922
208,923
208,924
15 : 208,925
D40–1 : 208,926
D42–7 : 208,927
208,928
208,929
208,930
208,931
208,932

D42–7 : 208,933
208,934
D44–21 : 208,935
29 : 208,936
D48–4 : 208,937
16 : 208,938
20 : 208,939
24 : 208,940
31 : 208,941
D49–1 : 208,942
D50–7 : 208,943

D52–6 : 208,944
7 : 208,945
D54–4 : 208,946
12 : 208,947
D56–1 : 208,948
208,949
D58–5 : 208,950
208,951
208,952
6 : 208,953
8 : 208,954

D58–17 : 208,955
208,956
26 : 208,957
D62–2 : 208,958
D67–3 : 208,959
D74–17 : 208,960
208,961
D81–10 : 208,962
D85–2 : 208,963
D86–10 : 208,964
D91–1 : 208,965

CLASSIFICATION OF PLANTS

P. – 30 : 2,771
P. – 50 : 2,773
P. – 54 : 2,772

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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1 : 3,346,932
3,346,959
3,346,974
3,347,039
3,347,209
3,347,370
3,347,656
3,347,712
3,348,096
3,348,135
4 : 3,347,338
3,347,398
3,347,885
3,348,153
5 : 3,348,000
6 : 3,346,878
3,346,888
3,346,897
3,346,908
3,346,915
3,346,927
3,346,930
3,346,933
3,346,934
3,346,944
3,346,945
3,346,963
3,346,966
3,346,976
3,346,980
3,346,981
3,346,989
3,346,990
3,347,007
3,347,010
3,347,012
3,347,049
3,347,100
3,347,131
3,347,147
3,347,149
3,347,154
3,347,165
3,347,169
3,347,188
3,347,202
3,347,204
3,347,220
3,347,223
3,347,228

6 : 3,347,237
3,347,245
3,347,263
3,347,265
3,347,266
3,347,278
3,347,286
3,347,294
3,347,295
3,347,299
3,347,321
3,347,323
3,347,341
3,347,346
3,347,348
3,347,349
3,347,357
3,347,360
3,347,427
3,347,429
3,347,449
3,347,457
3,347,464
3,347,465
3,347,496
3,347,499
3,347,511
3,347,531
3,347,541
3,347,559
3,347,562
3,347,563
3,347,567
3,347,575
3,347,587
3,347,590
3,347,630
3,347,634
3,347,636
3,347,681
3,347,683
3,347,693
3,347,711
3,347,770
3,347,778
3,347,780
3,347,785
3,347,789
3,347,793
3,347,797

6 : 3,347,800
3,347,824
3,347,827
3,347,832
3,347,833
3,347,842
3,347,850
3,347,876
3,347,877
3,347,945
3,347,947
3,347,978
3,347,986
3,348,005
3,348,008
3,348,017
3,348,036
3,348,047
3,348,048
3,348,055
3,348,060
3,348,080
3,348,082
3,348,088
3,348,115
3,348,136
3,348,137
3,348,141
3,348,149
3,348,156
3,348,165
3,348,173
3,348,185
3,348,201
3,348,203
3,348,215
3,348,216
3,348,217
3,348,219
3,348,220
3,348,229
8 : 3,347,056
3,347,101
3,347,234
3,347,361
3,347,549
3,347,999
3,348,049
3,348,159
9 : 3,346,899

9 : 3,346,924
3,346,942
3,346,947
3,346,961
3,346,983
3,347,009
3,347,027
3,347,053
3,347,079
3,347,080
3,347,092
3,347,116
3,347,152
3,347,157
3,347,222
3,347,252
3,347,275
3,347,420
3,347,422
3,347,443
3,347,494
3,347,603
3,347,714
3,347,717
3,347,863
3,347,887
3,347,971
3,347,977
3,348,010
3,348,033
3,348,051
3,348,058
3,348,108
3,348,121
3,348,206
10 : 3,347,021
3,347,178
3,347,207
3,347,644
3,347,658
3,347,676
3,347,680
3,347,690
3,347,737
3,347,765
3,347,799
3,347,810
3,347,815
3,347,817
3,347,818

10 : 3,347,826
3,347,829
3,347,835
3,347,837
3,347,878
3,347,901
3,347,919
3,347,926
3,347,989
3,347,970
11 : 3,346,929
3,347,309
3,347,354
3,347,665
3,348,090
3,348,166
12 : 3,346,916
3,346,943
3,347,057
3,347,064
3,347,072
3,347,126
3,347,148
3,347,210
3,347,217
3,347,450
3,347,544
3,347,738
3,347,747
3,347,814
3,348,006
3,348,063
3,348,096
3,348,105
3,348,143
13 : 3,347,067
3,347,189
3,347,260
3,347,432
3,347,445
14 : 3,347,898
16 : 3,346,876
17 : 3,346,877
3,346,889
3,346,905
3,346,911
3,346,920
3,346,971
3,347,015
3,347,028

17 : 3,347,032
3,347,042
3,347,044
3,347,062
3,347,118
3,347,124
3,347,139
3,347,150
3,347,156
3,347,160
3,347,163
3,347,176
3,347,179
3,347,181
3,347,192
3,347,193
3,347,194
3,347,259
3,347,287
3,347,305
3,347,306
3,347,334
3,347,343
3,347,345
3,347,350
3,347,355
3,347,356
3,347,373
3,347,389
3,347,395
3,347,404
3,347,409
3,347,434
3,347,454
3,347,461
3,347,469
3,347,470
3,347,479
3,347,540
3,347,548
3,347,577
3,347,585
3,347,596
3,347,615
3,347,619
3,347,647
3,347,649
3,347,761
3,347,920
3,347,942

17 : 3,347,950
3,347,957
3,347,991
3,348,016
3,348,066
3,348,099
3,348,148
3,348,175
3,348,176
3,348,177
3,348,178
3,348,192
3,348,204
18 : 3,346,882
3,346,921
3,346,978
3,346,994
3,347,103
3,347,218
3,347,505
3,347,583
3,347,629
3,347,828
3,347,861
3,347,862
3,348,011
3,348,014
3,348,018
3,348,021
3,348,101
3,348,109
3,348,167
3,348,183
19 : 3,347,203
3,347,508
3,347,512
3,347,515
3,347,537
3,347,546
20 : 3,347,043
3,347,060
3,347,161
3,347,235
3,347,264
3,347,393
3,347,573
3,347,593
3,347,725
21 : 3,346,973
3,347,030
3,347,125
3,347,774
3,348,009
3,348,023
3,348,094
3,348,158
22 : 3,346,968
3,347,052
3,347,276
3,347,550
3,347,621
3,347,625
3,347,632
3,347,781
3,347,886
23 : 3,346,941
24 : Re.26,287
3,347,048
3,347,132
3,347,144
3,347,197
3,347,224
3,347,241
3,347,274
3,347,288
3,347,514
3,347,607
3,347,732
3,347,784
3,348,030
3,348,034
3,348,053
3,348,071
3,348,072
3,348,114
3,348,120
3,348,126
3,348,134
3,348,152
3,348,160
3,348,164
3,348,226
25 : 3,346,936
3,347,198
3,347,205
3,347,251
3,347,262
3,347,359
3,347,418
3,347,463
3,347,579

25 : 3,347,604
3,347,608
3,347,614
3,347,670
3,347,672
3,347,673
3,347,702
3,347,751
3,347,808
3,347,809
3,347,812
3,347,841
3,347,888
3,347,956
3,347,959
3,347,963
3,347,981
3,347,988
3,348,040
3,348,093
3,348,100
3,348,154
3,348,155
3,348,157
3,348,224
3,348,228
26 : Re.26,284
3,346,879
3,346,885
3,346,917
3,346,923
3,346,928
3,346,935
3,346,937
3,346,938
3,346,964
3,347,008
3,347,017
3,347,031
3,347,061
3,347,068
3,347,074
3,347,089
3,347,090
3,347,115
3,347,127
3,347,145
3,347,171
3,347,184
3,347,187
3,347,216
3,347,219
3,347,258
3,347,331
3,347,353
3,347,364
3,347,378
3,347,380
3,347,390
3,347,392
3,347,426
3,347,455
3,347,460
3,347,488
3,347,513
3,347,525
3,347,535
3,347,536
3,347,542
3,347,557
3,347,576
3,347,584
3,347,592
3,347,598
3,347,692
3,347,713
3,347,723
3,347,866
3,347,911
3,347,933
3,347,961
3,348,013
3,348,087
3,348,091
3,348,098
27 : 3,346,896
3,346,986
3,346,998
3,347,018
3,347,138
3,347,269
3,347,446
3,347,516
3,347,530
3,347,558
3,347,569
3,347,772
3,347,984
3,348,065
3,348,069
3,348,207

28 : 3,347,372
29 : 3,347,045
3,347,162
3,347,270
3,347,421
3,347,448
3,347,474
3,347,506
3,347,600
3,347,627
3,347,677
3,347,796
3,347,906
3,348,007
3,348,043
3,348,079
3,348,144
31 : Re.26,280
3,346,880
3,347,212
3,347,412
3,347,527
32 : 3,347,319
33 : 3,347,104
3,347,889
3,347,997
3,348,067
3,348,181
34 : 3,346,894
3,346,979
3,346,996
3,347,001
3,347,055
3,347,091
3,347,110
3,347,129
3,347,143
3,347,151
3,347,191
3,347,233
3,347,268
3,347,303
3,347,383
3,347,386
3,347,402
3,347,413
3,347,414
3,347,419
3,347,442
3,347,487
3,347,526
3,347,545
3,347,547
3,347,572
3,347,622
3,347,626
3,347,645
3,347,659
3,347,660
3,347,666
3,347,688
3,347,695
3,347,720
3,347,728
3,347,742
3,347,771
3,347,777
3,347,782
3,347,783
3,347,801
3,347,820
3,347,830
3,347,831
3,347,854
3,347,871
3,347,872
3,347,873
3,347,879
3,347,880
3,347,881
3,347,892
3,347,903
3,347,904
3,347,905
3,347,908
3,347,912
3,347,913
3,347,922
3,347,923
3,347,924
3,347,925
3,347,927
3,347,928
3,347,946
3,347,960
3,347,969
3,347,973
3,347,989
3,348,039
3,348,041
3,348,062

34 : 3,348,068
3,348,075
3,348,076
3,348,089
3,348,117
3,348,146
3,348,150
3,348,170
3,348,190
3,348,198
3,348,200
3,348,209
3,348,210
3,348,211
35 : 3,346,914
36 : 3,346,875
3,346,900
3,346,901
3,346,904
3,346,906
3,346,907
3,346,909
3,346,922
3,346,950
3,346,954
3,346,955
3,346,958
3,347,000
3,347,003
3,347,011
3,347,016
3,347,037
3,347,071
3,347,084
3,347,088
3,347,095
3,347,105
3,347,133
3,347,134
3,347,159
3,347,190
3,347,230
3,347,236
3,347,238
3,347,248
3,347,293
3,347,296
3,347,298
3,347,363
3,347,387
3,347,394
3,347,396
3,347,410
3,347,411
3,347,423
3,347,428
3,347,437
3,347,438
3,347,439
3,347,440
3,347,441
3,347,458
3,347,459
3,347,468
3,347,483
3,347,485
3,347,500
3,347,518
3,347,519
3,347,551
3,347,566
3,347,580
3,347,611
3,347,635
3,347,639
3,347,652
3,347,653
3,347,663
3,347,664
3,347,671
3,347,675
3,347,682
3,347,684
3,347,685
3,347,686
3,347,691
3,347,696
3,347,697
3,347,698
3,347,724
3,347,734
3,347,735
3,347,745
3,347,753
3,347,766
3,347,807
3,347,811
3,347,845
3,347,895
3,347,896
3,347,921

36 : 3,347,929
3,347,932
3,347,937
3,347,962
3,347,965
3,347,990
3,348,028
3,348,031
3,348,054
3,348,081
3,348,085
3,348,092
3,348,103
3,348,112
3,348,116
3,348,118
3,348,122
3,348,123
3,348,124
3,348,128
3,348,129
3,348,138
3,348,139
3,348,161
3,348,162
3,348,169
3,348,188
3,348,197
3,348,212
3,348,213
3,348,214
3,348,218
3,348,227
3,348,232
37 : 3,346,881
3,346,893
3,346,952
3,346,997
3,347,280
3,347,281
3,347,290
3,347,475
3,347,478
3,347,484
3,347,489
3,347,760
3,348,035
39 : Re.26,286
3,346,895
3,346,902
3,346,903
3,346,913
3,346,948
3,346,953
3,346,957
3,346,962
3,346,970
3,346,993
3,347,013
3,347,036
3,347,041
3,347,046
3,347,047
3,347,065
3,347,066
3,347,077
3,347,078
3,347,119
3,347,120
3,347,123
3,347,135
3,347,153
3,347,174
3,347,175
3,347,211
3,347,254
3,347,255
3,347,257
3,347,271
3,347,273
3,347,300
3,347,301
3,347,307
3,347,328
3,347,332
3,347,342
3,347,374
3,347,379
3,347,381
3,347,385
3,347,391
3,347,399
3,347,406
3,347,407
3,347,416
3,347,425
3,347,431
3,347,452
3,347,467
3,347,473
3,347,503

39 : 3,347,504
3,347,523
3,347,543
3,347,553
3,347,589
3,347,591
3,347,610
3,347,624
3,347,643
3,347,646
3,347,650
3,347,655
3,347,667
3,347,668
3,347,706
3,347,707
3,347,708
3,347,718
3,347,721
3,347,743
3,347,776
3,347,790
3,347,792
3,347,794
3,347,804
3,347,823
3,347,825
3,347,857
3,347,897
3,347,902
3,347,964
3,347,980
3,347,998
3,348,004
3,348,025
3,348,026
3,348,046
3,348,050
3,348,057
3,348,084
3,348,104
3,348,107
3,348,131
3,348,180
3,348,182
3,348,186
3,348,208
3,348,234
40 : 3,346,891
3,346,912
3,346,960
3,347,019
3,347,023
3,347,025
3,347,229
3,347,256
3,347,318
3,347,405
3,347,507
3,347,517
3,347,524
3,347,602
3,347,633
3,347,637
3,347,699
3,347,729
3,347,834
3,347,955
3,347,966
3,348,032
3,348,052
3,348,231
41 : Re.26,285
3,347,097
3,347,376
3,347,586
42 : 3,346,883
3,346,910
3,346,949
3,346,951
3,346,965
3,346,984
3,346,992
3,346,995
3,347,005
3,347,006
3,347,020
3,347,026
3,347,058
3,347,069
3,347,094
3,347,099
3,347,168
3,347,182
3,347,183
3,347,232
3,347,277
3,347,292
3,347,330
3,347,340
3,347,344

42	3,347,352	42	3,347,767	44	3,347,227	48	3,347,311	49	3,347,561	54	3,347,595
	3,347,358		3,347,787		3,347,243		3,347,312	51	3,346,939		3,347,840
	3,347,366		3,347,867		3,347,388		3,347,313		3,346,987		3,347,875
	3,347,403		3,347,884		3,347,476		3,347,314		3,347,051		3,347,893
	3,347,415		3,347,910	45	3,347,033		3,347,315		3,347,083		3,347,917
	3,347,472		3,347,916		3,347,035		3,347,320		3,347,180		3,347,944
	3,347,481		3,347,931		3,347,486		3,347,322		3,347,186	55	3,346,890
	3,347,502		3,347,934		3,347,533		3,347,326		3,347,247		3,347,029
	3,347,520		3,347,951		3,348,022		3,347,336		3,347,333		3,347,075
	3,347,534		3,347,972		3,348,222		3,347,367		3,347,365		3,347,108
	3,347,538		3,347,975	46	3,347,564		3,347,447		3,347,369		3,347,114
	3,347,539		3,347,976	47	3,347,267		3,347,490		3,347,430		3,347,128
	3,347,552		3,347,979		3,347,324		3,347,521		3,347,466		3,347,167
	3,347,555		3,348,001		3,347,417		3,347,568		3,347,606		3,347,250
	3,347,571		3,348,002		3,347,662		3,347,570		3,347,856		3,347,382
	3,347,581		3,348,003		3,347,791		3,347,597		3,347,983		3,347,501
	3,347,588		3,348,019		3,347,855		3,347,599	53	Re.26,288		3,347,509
	3,347,609		3,348,024		3,347,938		3,347,638		3,345,999		3,347,556
	3,347,631		3,348,027		3,348,044		3,347,651		3,347,130		3,347,565
	3,347,648		3,348,064	48	Re.26,289		3,347,773		3,347,172		3,347,612
	3,347,687		3,348,070		3,346,892		3,347,802		3,347,225		3,347,613
	3,347,700		3,348,102		3,346,972		3,347,868		3,347,239		3,347,640
	3,347,703		3,348,127		3,347,022		3,347,949		3,347,495		3,347,641
	3,347,716		3,348,132		3,347,054		3,347,987		3,347,510		3,347,733
	3,347,722		3,348,187		3,347,102		3,348,045		3,347,578		3,347,967
	3,347,741		3,348,189		3,347,113		3,348,145		3,347,768		3,348,038
	3,347,744		3,348,191		3,347,246		3,348,147		3,348,125		3,348,097
	3,347,749		3,348,205		3,347,261		3,348,193		3,348,151		3,348,111
	3,347,750	44	3,346,940		3,347,297		3,348,194		3,348,230	59	3,347,325
	3,347,758		3,347,226		3,347,310	49	3,346,985				

DESIGN PATENTS

4	208,957	9	208,933	17	208,959	34	208,943	39	208,938	42	208,922
6	208,903		208,934		208,965		208,956		208,950		208,925
	208,912		208,940	18	208,919	36	208,904		208,952		208,944
	208,945	12	208,913	21	208,911		208,918		208,953	44	208,917
8	208,901		208,924	25	208,936		208,947		208,954		208,935
9	208,928	17	208,907	26	208,921		208,962	42	208,899		208,939
	208,929		208,920	27	208,909		208,963		208,902	45	208,958
	208,930		208,941	31	208,926		208,964		208,905	55	208,923
	208,931		208,942	32	208,914	37	208,927		208,906		208,951
	208,932		208,955	34	208,900	39	208,937		208,908		

PLANT PATENTS

6	2,771	6	2,772	6	2,773

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

October 17, 1967 Volume 843 Number 3

TRADEMARKS

NOTICES

Service by Publication

A petition to cancel the registration identified below having been filed, and the notice of default of such proceedings sent by registered mail to registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrant listed herein, its assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, judgment will be entered against registrant and said registration will be canceled.

The Bennett Corporation, Passaic, N.J., Reg. No. 780,472, Canc. No. 8956.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 441,727 (WRANGLER), Blue Bell Inc., Western style dungarees and pants; **Reg. No. 517,884** (CORDOLAY), St. George Textile Corporation, Rayon piece goods; **Reg. No. 532,851** (BLUE BELL'S WRANGLER), Blue Bell, Inc., Western style jackets; **Reg. No. 771,506** (LADY WRANGLER), Blue Bell, Inc., Misses' and girls' sportwear—namely, dungarees, skirts, jackets, sweaters, blouses and shorts; **Reg. No. 778,794** (WRANGLER), same, work and casual wear socks; **Reg. No. 800,323**, same, Men's, boys', and little boys' jeans, jackets, shirts, shorts, knee pants; and ladies', girls', and little girls' jeans, jackets, shirts, shorts and knee pants, filed Mar. 22, 1967, D.C., S.D.N.Y., Doc. 67–C–1131, *Blue Bell, Incorporated* v. *Marlene Industries Corporation*. Stipulation and order of dismissal, Aug. 1, 1967.

Reg. No. 517,884. (See Reg. No. 441,727.)

Reg. No. 532,851. (See Reg. No. 441,727.)

Reg. No. 544,775 (PIKLE-RITE), Pikle-Rite Company, Inc., Bottled candied sweet midget pickles, bottled sweet mixed pickles, bottled sweet onions, bottled vegetable relish, fancy sweet gherkins, spiced beets, pure catsup, sweet chow, dill pickles, picalilli, sweet pickles, sweet cut-a-cross pickles, hot banana peppers, spiced crab apples, bottled sweet senf gherkins, bottled rose bud beets, bottled sweet fresh cukes, and ogorki (pickles), filed Aug. 4, 1967, D.C., E.D. Wis. (Milwaukee), Doc. 67–C–251, *Pikle-Rite Company, Inc.* v. *Bonduel Pickling Company, Inc. et al.*

Reg. No. 579,705 (SUN BLOC), Elizabeth Arden Sales Corp., Sun lotion; **Reg. No. 704,722** (DAFFY DILLY DANDY), Prepackage Sales Corp., Caramel nut fudge; **Reg. No. 782,584** (SERVICEMASTER), Wade, Wenger Servicemaster Co., Maintenance services for cleaning interiors of commercial buildings and private homes and furnishing thereof, filed Aug. 3, 1967, D.C. Minn. (St. Paul), Doc. 1–67–C–221, *Servicemaster Industries, Inc.* v. *Alexander P. Smekta and Joseph J. Smekta, doing business as Master Cleaners & Upholsterers et al.*

Reg. No. 681,321 (ALTON), Alton Box Board Company, Cartons and containers made in whole or in part from paper

CONDITION OF TRADEMARK APPLICATIONS AS OF AUGUST 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,726
Date of oldest new application	Oct. 18, 1966
Date of oldest amended application (filing date)	July 5, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-25-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-25-66	1-14-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-18-66	7-5-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-24-66	10-30-64
Renewals (All Classes)	7-3-67	.....
Sec. 12(c) Publications (All Classes)	6-29-67	.....

Applications filed during the month of August 1967—2,513

Registrations Issued ---------- 437—No. 836,917 to No. 837,353
Renewals Issued ---------- 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

or paperboard, filed May 27, 1967, D.C.N.J. (Newark), Doc. 573–67, *Alton Box Board Company* v. *West Side Paper Corp., and Armin Kaufman.* Action dismissed as to defendant, West Side Paper Corp., permanent injunction as to defendants, Armin Kaufman and Alkon Poly Film Corp., Aug. 3, 1967.

Reg. No. 690,514 (RODDY), Roddy Mfg. Co., Division of Lorms, Inc., Fishing rods; **Reg. No. 734,102** (RODDYMASTER), Lorms, Inc., same; **Reg. No. 734,104** (RODDYMATIC), same, Fishing rods, reels, line, landing nets, handles, guides, reel seats, lures, and all fishing tackle; **Reg. No. 807,501** (RODEX), Roddy Recreation Products, Inc., Fishing rods and lures, fishing reels, and fishing lines; **Reg. No. 828,152** (RODAC), same, Fishing rods; **Reg. No. 817,714** (ROD-SUPER), same, filed Aug. 3, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1117–CC, *Greenberg-Katz, Inc.* v. *Olympic Wholesale Sporting Goods Company, Inc. et al.*

Reg. No. 704,722. (See Reg. No. 579,705.)
Reg. No. 734,102. (See Reg. No. 690,514.)
Reg. No. 734,104. (See Reg. No. 690,514.)
Reg. No. 771,506. (See Reg. No. 441,727.)
Reg. No. 778,794. (See Reg. No. 441,727.)
Reg. No. 782,564. (See Reg. No. 579,705.)
Reg. No. 807,501. (See Reg. No. 690,514.)
Reg. No. 809,323. (See Reg. No. 441,727.)
Reg. No. 817,714. (See Reg. No. 690,514.)
Reg. No. 828,152. (See Reg. No. 690,514.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 224,626. Kleer-Vu Industries, Inc., New York, N.Y. Filed July 30, 1965.

THERMOSONIC

Class 2—Receptacles

For Plastic Envelopes for Packaging.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Packaging Machinery for Making Plastic Envelopes.

First use Feb. 17, 1965.

SN 226,926. Lamatt Agency, Inc., New Orleans, La. Filed Sept. 1, 1965.

LAMATT
STREAMLINE
CONTROLS

The word "Controls" is disclaimed.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Gas Control Valves for Warm Air Furnaces, Unit Heaters, Floor Furnaces, Water Heaters, Steam Boilers, and Hot Water Boilers.

Class 21—Electrical Apparatus, Machines, and Supplies

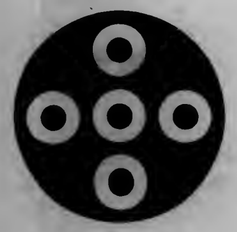
For Solenoid Valves for Gas Fired Appliances.

Class 26—Measuring and Scientific Appliances

For Thermostats and Thermocouples.

First use June 21, 1965.

SN 234,100. Tanabe Seiyaku Co., Ltd., Higashi-ku, Osaka, Japan. Filed Dec. 7, 1965.



The mark consists of a central ring with four smaller rings disposed equidistantly around it, all on circular background. Owner of Japanese Reg. No. 352,553, dated May 22, 1942.

Class 6—Chemicals and Chemical Compositions

For Chemicals—Namely, Amino Acids, Alanine, Arginine, Aspartic Acid, Cysteine, Cystine, Histidine, Isoleucine, Leucine, Methionine, Ornithine, Phenylalanine, Threonine, Tryptophan, Tyrosine, Valine, Potassium Aspartate, Magnesium Aspartate and d, l, and dl Forms Thereof; Thiamine, Thiamine Mononitrate, Thiamine Dicetylsulfate, Pyridoxine, Folic Acid, Pantothenates, Carnitine, Orotic Acid, Methylephedrine, Iodochlorohydroxyquinoline, Rutin, Hesperidine, Isonicotinic Acid Hydrazid, Calcium Amino-Salicylate, Sodium Para-Aminosalicylate, Calcium Cyclamate, Sodium Cyclamate, Berberine, Diastase, Diethylcarbamazine Citrate, Diphen-Hydramine, Diphenhydramine Tannate, Inositol, Pantothenyl Alcohol, Calcium Para-Aminosalicylate, Thioctic Acid, Thioctamide, Para Acetylamino-Benzenesulfonyl Chloride, Benzocaine, Sorbic Acid, Potassium Sorbate Disinfectant and Sodium Succinate Fungus-Inhibiting Antibiotics for Agricultural Use.

Class 18—Medicines and Pharmaceutical Preparations

For Pharmaceuticals for Humans—Namely, Hemostatic and Reinforcing Preparations, Anthelmintics, Antiasthmatics, Bronchodilators, Amino Acids, Antitussives, Expectorants, Digestive Ferment Preparations, Vitamins and Minerals, Antitrichophytic Ointments, Antispastics, Anodynes, Chloagogues, Diuretics, Skin Treating Agents (External), Enteric and External Antiseptics, Vitamins, Antihistamines (Topical and Internal), Adrenal Cortical Hormones, Tonics, Broad Spectrum Antibiotics, Growth Stimulants, Dietary Supplements Especially for Pregnant Women, Sulfonamide, Digestive Secretion Stimulants, Methionine, Hepatotonic Agents, Antifatigue Agents, Detoxicants, Preparations for Treating the Symptoms of a Cold, Antiseptic Lozenges, Vasodilators, Sedatives, Hypnotics, General Anethetics, Amino Acids in d, l, and dl Forms, Filaricides, Hypotensives, Saluretics, Polio Vaccines, Encephalitis Vaccines, Influenza Vaccines, Diphtheria Toxoids; Drugs, Preparations and Compositions for the Treatment of Apoplexy, Hypertension, Tuberculosis, Paragonimiasis, Menopausal Symptoms, Acne, Diarrhea, Food Poisoning, Abdominal Pain, Neuralgia, Rheumatism, Hemorrhoids and Allergies; and Pharmaceuticals for Treatment of Animals—Namely, Vermifuges, Anthelmintics, Enteric and Exterial Disinfectants and Antiseptics, Antidiarrhetics, Broad Spectrum Antibiotics, Multi-Vitamins, Compositions for Treatment of Coccidiosis and Filariasis; Feed Supplements Containing Vitamins and Minerals.

SN 244,818. Robert G. Friedman, Tiffin, Ohio. Filed May 8, 1966.

TEMPONIC

Class 36—Musical Instruments and Supplies

For Phonograph Records and Magnetic Tapes.
First use Jan. 5, 1966.

Class 38—Prints and Publications

For Sheet Music and Printed Musical Arrangement.
First use Jan. 10, 1966.

SN 248,387. W. R. Grace & Co., New York, N.Y. Filed June 20, 1966.

GRACE

Class 4—Abrasives and Polishing Materials

For Combined Glass Cleaning and Polishing Preparation.

Class 16—Protective and Decorative Coatings

For Polymeric Preparation for Coating Pans.

Class 51—Cosmetics and Toilet Preparations

For Protective Hand Cream.

Class 52—Detergents and Soaps

For Chlorinated Powdered Cleansers; and Hand Dishwashing Compound.

First use Apr. 15, 1966.

SN 248,596. Continental Oil Company, Ponca City, Okla. Filed June 21, 1966.

CONOCO

Owner of Reg. Nos. 270,389, 804,481, and others.

Class 1—Raw or Partly Prepared Materials

For Charcoal Starter.
First use on or about May 10, 1963.

Class 6—Chemicals and Chemical Compositions

For Cigarette Lighter Fluid, Windshield Ice Melting Solution, Liquefied Petroleum Gases, Hydraulic Brake Fluid, and Rust Inhibiting Compounds.
First use on or about Dec. 21, 1954.

Class 15—Oils and Greases

For Gasoline; Diesel Oil; Lubricating Oils Including Motor Oils, Upper Cylinder Lubricants and Industrial Lubricants; Hydraulic Oil; Form Oils; Automatic Transmission Fluid; Greases; Pipe Thread Lubricants and Compounds; Petroleum Waxes; Rubber Lubricant; and Heating Oils.
First use on or about Jan. 2, 1919.

SN 251,533. Firma Robert Tavernier, Tielt, Belgium. Filed Aug. 2, 1966.

ERTACETAL

Class 1—Raw or Partly Prepared Materials

For Semi-Finished Materials Made From Polyacetals To Be Used in Industry, These Materials Being in the Form of Sheets, Plates, Blocks, Rods, Tubes, and Bands.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machine, Motor, and Tool Parts, These Parts Being in the Nature of Bearings, Housings, Supports, Rods, Shafts, and Gears.
First use January 1965; in commerce January 1965.

SN 252,352. Continental Oil Company, Ponca City, Okla. Filed Aug. 15, 1966.

CONOCO

The drawing is lined for the color red. Owner of Reg. Nos. 283,697, 804,480, and others.

Class 1—Raw or Partly Prepared Materials

For Charcoal Starter.
First use on or about May 10, 1963.

Class 6—Chemicals and Chemical Compositions

For Cigarette Lighter Fluid, Windshield Ice Melting Solution, Hydraulic Brake Fluid, Rust Inhibiting Compounds and Liquefied Petroleum Gases.
First use on or about Dec. 21, 1954.

Class 15—Oils and Greases

For Gasoline; Diesel Oil; Lubricating Oils, Including Motor Oils, Upper Cylinder Lubricants and Industrial Lubricants; Hydraulic Oil; Form Oils; Rubber Lubricant, Automatic Transmission Fluid; Greases; Pipe Thread Lubricants and Compounds; and Heating Oils.
First use on or about Jan. 2, 1919.

SN 253,636. Deka Plastics, Inc., Elizabeth, N.J. Filed Sept. 1, 1966.

deka

Class 2—Receptacles

For Set Comprising Salt and Pepper Shaker, Butter Dish and Napkin Holder; Serving Pitcher, Sipper, Set of Bowls, Drinking Mug, Bowl, Dust Pan, Salt and Pepper Shaker Set, Corn Butterer, Utensil Tray (for Containing Knives, Forks, Spoons, etc.), Drain Tray (a Drainboard for Holding Dishes and Utensils), Cutlery Box, and Canister Set, All Made of Plastic.
First use January 1961 on napkin holder.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Plastic Ashtray.
First use May 1966.

Class 50—Merchandise Not Otherwise Classified

For Plastic Bottle Caps.
First use October 1963.

SN 254,432. Bercy Industries, Inc., Venice, Calif. Filed Sept. 15, 1966.

MIRROR GO LIGHTLY

Applicant disclaims the term "Mirror" per se, when displayed separate and apart from the mark.

Class 2—Receptacles

For Cosmetic Cases Containing Portable Make-Up Mirrors, Sold Empty.

Class 32—Furniture and Upholstery

For Portable Make-Up Mirrors.

First use June 16, 1966.

SN 256,884. Stanley Home Products, Inc., Westfield, Mass. Filed Oct. 20, 1966.

CAST A SPELL

Class 51—Cosmetics and Toilet Preparations

For Lipstick, Rouge, Perfume, Cologne, Foundation Makeup, Matte Finish Makeup, Face Powder, Dusting Powder, Talcum Powder, Deodorant, Antiperspirant, Face Cream, Facial Astringent, Face and Hand Lotions; Creme Rinse, Hair Spray, Hair Cream; Cuticle Cream, Nail Polish, Nail Polish Remover; Mascara, Eye Shadow, Eye Cream, Eyebrow Pencil; Bath Oil, Bath Salts, Bubble Bath, Milk Bath, After Bath Spray; Breath Purifiers, and Sachets.

Class 52—Detergents and Soaps

For Toiletry Soap and Hair Shampoo.

First use June 3, 1966.

SN 259,728. The Great Atlantic & Pacific Tea Company, Inc., New York, N.Y. Filed Nov. 30, 1966.

A&P

The drawing is lined for the color red. Owner of Reg. No. 62,778 and others.

Class 18—Medicines and Pharmaceutical Preparations

For Multiple Vitamins, Mouthwash and Gargle Preparation for Treating Colds and Sore Throats, and Aspirin.
First use Aug. 24, 1966.

Class 51—Cosmetics and Toilet Preparations

For Fluoride Toothpaste.
First use Oct. 15, 1965.

SN 261,261. Countess Mara, Inc., New York, N.Y. Filed Dec. 22, 1966.

COUNTESS MARA

Owner of Reg. Nos. 534,902, 597,237, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Cravat Cases.
First use Oct. 1, 1955.

Class 28—Jewelry and Precious-Metal Ware

For Cuff Links, Tie Clasps, and Tie Tacks.
First use May 1, 1959.

Class 39—Clothing

For Neckties, Bowties, Men's Dress Shirts, Men's Casual Shirts, Men's Knitted Shirts, Men's Socks, Suspenders, Gloves, Scarves, Handkerchiefs, Robes, Sweaters, Pajamas, Sport Jackets, Slacks, and Ascots.
First use Nov. 25, 1937.

Class 51—Cosmetics and Toilet Preparations

For Cologne, Shaving Lotion, and Personal Deodorant.
First use Oct. 1, 1955.

Class 52—Detergents and Soaps

For Bath and Facial Soap.
First use Oct. 1, 1955.

SN 268,358. Arby's, Inc., Youngstown, Ohio. Filed Apr. 5, 1967.

ARBY'S

Owner of Reg. No. 801,497.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks.
First use at least as early as July 1964.

Class 46—Foods and Ingredients of Foods

For Ready To Eat Roast Beef Sandwiches, Milk Shakes, Milk, Cider, and Prepared Coffee and Tea.
First use at least as early as July 1946.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 205,661. Celanese Corp., New York, N.Y., by change of name from Celanese Corporation of America, New York, N.Y. Filed Nov. 6, 1964.



Applicant's mark is a stylized integration of the letters "C" and "P."

For Plastic Film and Sheet.

First use Apr. 6, 1964.

SN 251,484. L. Teweles Seed Co., Milwaukee, Wis. Filed Aug. 1, 1966.

HiBIENS

For Soybean Seed.

First use July 20, 1966; June 2, 1966, in a different form.

SN 253,680. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed Sept. 1, 1966.

PROMAID

For Melamine Molding Powder.

First use Aug. 10, 1966.

SN 253,682. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed Sept. 1, 1966.

MEL PRO

For Melamine Molding Powder.

First use Aug. 10, 1966.

SN 257,523. Sternco Industries, Inc., Allendale, N.J. Filed Oct. 28, 1966.



For Aquarium Tank Accessories—Namely, Carbon, Floss and Porous Air Stones for Use as Aquarium Filter Material.

First use Sept. 4, 1962.

Class 2—Receptacles

SN 205,662. Celanese Corp., New York, N.Y., by change of name from Celanese Corporation of America, New York, N.Y. Filed Nov. 6, 1964.



Applicant's mark is a stylized integration of the letters "C" and "P."

For Plastic Containers—Namely, Bottles and Jars.

First use Apr. 6, 1964.

SN 232,115. Calpine Containers, San Francisco, Calif., by change of name from California Pine Box Distributors, San Francisco, Calif. Filed Nov. 4, 1965.

CALPINE

For Containers of the Wire Bound, Plywood, Corrugated (Cardboard), and Sawn (Wood) Types as Used for Packing, Shipping, and Storing Various Commodities in Commerce.

First use on about July 15, 1965.

SN 238,965. Plastic Packaging Company, Wheeling, Ill. Filed Feb. 16, 1966.

BILLBOARD

For Packages Consisting of a Plastic Bag and an Imprintable Card.

First use June 30, 1965.

SN 259,686. Tucker Plastic Products Ltd., Toronto, Ontario, Canada. Filed Nov. 29, 1966.



The right to the exclusive use of the words "Tucker, Plastic, Products, and Ltd." is disclaimed apart from the mark. Owner of Canadian Reg. No. 146,165, dated July 15, 1966.

For Injection Molded and Blow-Molded Plastic Houseware Items—Namely, Laundry Baskets, Dishpans, Pails, Trash Cans, Diaper Pails, Baby Baths, and Mixing Bowl Sets.

SN 259,740. Kleartone Transparent Products Co., Inc., Westbury, N.Y. Filed Nov. 30, 1966.

KLEARTONE

For Bags and Envelopes of Synthetic Materials.

First use August 1966.

SN 259,836. Kleartone Transparent Products Co., Inc., Westbury, N.Y. Filed Dec. 1, 1966.

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For Bags and Envelopes of Synthetic Materials.

First use February 1963.

SN 259,837. Kleartone Transparent Products Co., Inc., Westbury, N.Y. Filed Dec. 1, 1966.

KLEARTONE

For Bags and Envelopes of Synthetic Materials.

First use September 1964.

SN 263,747. Continental Can Company, Inc., New York, N.Y. Filed Feb. 1, 1967.

CONOPEEL

Owner of Reg. Nos. 651,879, 769,771, and others.

For Plastic Bags.

First use Dec. 27, 1966.

SN 263,899. The Dow Chemical Company, Midland, Mich. Filed Feb. 3, 1967.

MAPP

Owner of Reg. Nos. 745,630 and 770,339.

For Gas Cylinders.

First use Nov. 28, 1966.

SN 264,096. Plastics, Inc., St. Paul, Minn. Filed Feb. 6, 1967.

PLASSES

For Plastic Cups and Glasses.

First use Oct. 17, 1966.

SN 264,165. Scientific-Atlanta, Inc., Doraville, Ga. Filed Feb. 7, 1967.



For Packaging Materials—Namely, Plastic, Metal Foil, and Paper Box-Like Containers and Lids.

First use Mar. 25, 1966.

SN 276,015. H. T. Hall, Inc., Manasquan, N.J. Filed July 14, 1967.

WHITE-CRETE

For Concrete Burial Vaults.

First use Mar. 1, 1967.

Class 4—Abrasives and Polishing Materials

SN 273,835. S. C. Johnson & Son, Inc., Racine, Wis. Filed June 14, 1967.

SATISFY

For Polishing Preparations; and Polishing Preparations With Cleaning Properties for Use on Furniture and the Like.

First use Mar. 9, 1967.

Class 6—Chemicals and Chemical Compositions

SN 258,793. Eaton Allen Corp., Brooklyn, N.Y. Filed Nov. 16, 1966.



Owner of Reg. Nos. 724,626 and 736,991.

For Fingertip Moistener Composition in Gelatinous Cake Form To Facilitate Picking Up Papers, Cards, and Currency.

First use Sept. 29, 1966.

SN 258,843. Slip-Pruf Service Corporation, Baton Rouge, La. Filed Nov. 16, 1966.

SP-3

For Anti-Slip Compound for Use as a Roadway Spray.

First use Feb. 2, 1966.

SN 264,981. Specialty Products Company, Jersey City, N.J. Filed Feb. 17, 1967.

KLENAL

Owner of Reg. No. 726,057.

For Non-Ionic Surfactant.

First use February 1959.

SN 265,005. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Feb. 17, 1967.

PLURADOT

For Polyoxyalkylene Ether of High Molecular Weight Having Water-Soluble, Surface Active and Wetting Properties.
First use Jan. 25, 1967.

SN 269,270. American Home Products Corporation, New York, N.Y. Filed Apr. 17, 1967.

DAY BRITE

Applicant makes no exclusive claim to the word "Brite" apart from the mark as shown. Owner of Reg. No. 811,183.
For Laundry Bleach.
First use Jan. 26, 1937.

SN 270,462. Apple River Chemical Company, East Dubuque, Ill. Filed May 2, 1967.

apple river

For Anhydrous Ammonia.
First use Apr. 22, 1966.

SN 277,603. W. C. Taylor, Jr., d.b.a. Briteway Products Company, Dallas, Tex. Filed Aug. 7, 1967.

Perma-Hose

For Rinse To Prevent Runs in Hosiery.
First use June 5, 1967.

SN 277,754. General Mills, Inc., Minneapolis, Minn. Filed Aug. 8, 1967.

REPULS

For Anti-Static Spray.
First use May 26, 1967.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 230,924. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

Owner of Italian Reg. No. 77,504, dated Sept. 8, 1943.
For Bomb Throwers, Machine Guns, Rifles, Pistols, Shell Cases for Guns, Shells for Guns, Ballistic Projectiles, Primers for Shell Cases, and Fuses for Projectiles.

Class 10—Fertilizers

SN 255,765. Armour Agricultural Chemical Company, Chicago, Ill. Filed Oct. 5, 1966.

TOURNAMENT

For Fertilizer.
First use on or prior to Oct. 15, 1965.

Class 11—Inks and Inking Materials

SN 252,916. John C. Walter, d.b.a. Organic Products Company, Irving, Tex. Filed Aug. 22, 1966.

For Inks—Namely, General Purpose Ink, Stamp Pad Ink, Marking Ink, Cloth Marking Ink, Vinyl Marking Ink, Polycarbonate Plastic Marking Ink, Temporary Marking Ink, Stencil Ink, Thick or Raised Imprint Ink, Circuit Board Ink, Photographic Film Adhering Ink, Felt Tip Pen Ink, Fungicidal Ink, Lightfast Ink, Solvent Resistant Ink, Insoluble Ink, Ink Solvents and Softeners for Stamp Pads, Ink Solvents and Softeners, Heat Resistant Ink, Pigmented Ink, Dye Ink, Solder Fluxing Ink, and Detergent Removable Ink.
First use on or about Jan. 30, 1958.

SN 252,917. John C. Walter, d.b.a. Organic Products Company, Irving, Tex. Filed Aug. 22, 1966.

OPCO

For Inks—Namely, General Purpose Ink, Stamp Pad Ink, Marking Ink, Cloth Marking Ink, Vinyl Marking Ink, Polycarbonate Plastic Marking Ink, Temporary Marking Ink, Stencil Ink, Thick or Raised Imprint Ink, Circuit Board Ink, Photographic Film Adhering Ink, Felt Tip Pen Ink, Fungicidal Ink, Lightfast Ink, Solvent Resistant Ink, Insoluble Ink, Ink Solvents and Softeners for Stamp Pads, Ink Solvents and Softeners, Heat Resistant Ink, Pigmented Ink, Dye Ink, Solder Fluxing Ink, and Detergent Removable Ink.
First use on or about Oct. 6, 1958.

SN 254,456. Markem Machine Company, Keene, N.H. Filed Sept. 14, 1966.

MARKEM

Owner of Reg. Nos. 161,548, 796,458, and others.
For Roll Leaf Comprising Coloring Agents Releasably Supported on a Carrier.
First use May 1, 1966.

SN 256,922. Central Compounding Company, Chicago, Ill. Filed Oct. 21, 1966.

KODON

For Conditioner for Lithographic Inks.
First use June 13, 1966.

Class 12—Construction Materials

SN 263,111. Quaker State Oil Refining Corporation, Oil City, Pa. Filed Jan. 23, 1967.

MINE-SEAL

For Mastic Composition Comprising Water Emulsion, Asphalt, and Asbestos.
First use Dec. 6, 1966.

SN 263,455. David D. Eastman, d.b.a. Slick Seam, Myers, N.Y. Filed Jan. 27, 1967.

Slick Seam

The word "Seam" is disclaimed apart from the mark as shown.
For Marine Underwater Seam Compound.
First use Jan. 20, 1966.

SN 266,389. Purex Corporation, Ltd., Lakewood, Calif. Filed Mar. 10, 1967.

SCUFF PLATE

For Plastic Sheet for Use as a Protective Surfacing Material for the Interior of Vans and Trailers.
First use Feb. 7, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 248,229. Raymond S. Haydock, d.b.a. Haydock Caster Company, Morton Grove, Ill. Filed June 16, 1966.

ON THE BALL THAT FLOATS

For Hooded Caster Wheel Assembly.
First use Apr. 15, 1966.

SN 253,994. Salem Valve Company, Salem, Ohio. Filed Sept. 7, 1966.

SALEM

For Fluid Control Valves.
First use at least as early as Jan. 19, 1962.

SN 254,072. Textron Industries, Inc., Providence, R.I. Filed Sept. 8, 1966.

TOPSEAL

For Threaded and Non-Threaded Fasteners With Washers Assembled Thereon.
First use July 1, 1951.

SN 257,810. Rio Grande Fence Co., Inc., Knoxville, Tenn. Filed Oct. 26, 1966.

RIO GRANDE FENCE CO.

No claim is made to the wording "Fence Co." apart from the mark as shown.
For Metal and Wire Fencing.
First use on or about Jan. 1, 1960.

SN 257,805. Vesuvius Crucible Company, Swissvale, Pittsburgh, Pa. Filed Nov. 2, 1966.

SUBENTRY

For Pouring Nozzles for Bottom Pour Receptacles.
First use Sept. 1, 1966.

SN 258,834. Dover Corporation, Tulsa, Okla. Filed Nov. 16, 1966.

NOR-GLAS

Owner of Reg. No. 690,761.
For Valve Seats.
First use Oct. 25, 1966.

SN 25[illegible]5. Dover Corporation, Tulsa, Okla. Filed Nov. 16, 1[illegible]

NORRISEAL FULL CIRCLE SEAT VALVES

The words "Full Circle Seat Valves" are disclaimed apart from the mark as shown. Owner of Reg. No. 690,761.
For Valves.
First use Oct. 25, 1966.

SN 258,933. Sloan Valve Company, Chicago, Ill. Filed Nov. 17, 1966.

QUIET-FLUSH II

For Flush Valves.
First use Nov. 23, 1965.

SN 260,468. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

CAFEMAKER

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use Sept. 22, 1966.

SN 260,469. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

CAFEMASTER

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use Sept. 21, 1966.

SN 260,470. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

CAFEMATE

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use June 30, 1966.

SN 260,471. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

DRAPEMASTER

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use July 1, 1966.

SN 260,472. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

DRAPEMATE

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use June 30, 1966.

SN 260,473. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

DRAPETTE

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use June 30, 1966.

SN 260,474. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

DRAPE-IT

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use Sept. 8, 1966.

SN 260,475. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

DRAPEMAKER

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use on or about Oct. 22, 1958.

SN 260,476. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

CURT-N-MATE

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use June 30, 1966.

SN 260,477. The Stanley Works, New Britain, Conn. Filed Dec. 9, 1966.

CURT-N-MASTER

Owner of Reg. No. 711,428.
For Drapery Fixtures and Hardware.
First use June 30, 1966.

SN 261,945. Polyprodukte AG, Zurich, Switzerland. Filed Jan. 4, 1967.

SPRINGFIX

Owner of Swiss Reg. No. 214,897, dated Dec. 11, 1965.
For Connecting Pieces for Fixing or Locking Pins, Nuts and Linkages, in Particular for Locking Forkheads on a Thread Bolt; Safety Clips and Clamping Springs for Locking Pins and Parts Rotatably or Hingedly Mounted on Pins Against Axial Displacement; Articulated Joints for Transmitting Forces; and Clamping Devices for Fixedly Clamping Parts in Position on Shafts or Pins.

SN 262,026. Victor Cornelius, Inc., Eastland, Tex. Filed Jan. 6, 1967.

Rediclips

For Clip-On Holders for Menus.
First use at least as of Mar. 18, 1965.

SN 262,037. W. O. Giles, d.b.a. Giles Enterprises, Montgomery, Ala. Filed Jan. 6, 1967.

GILES

For Fry Kettles.
First use Aug. 1, 1965.

SN 262,052. National Lock Co., Rockford, Ill. Filed Jan. 6, 1967.

SPANISH TREASURE

For Cabinet Hardware—Namely, Knobs, Pulls, Hinges, and Back-Plates.
First use Dec. 7, 1966.

SN 262,234. Marvin Walton, Atherton, Calif. Filed Jan. 9, 1967.

WALTONTITE

For Screws.
First use Oct. 13, 1966.

SN 262,332. Griswold Controls, Santa Ana, Calif. Filed Jan. 11, 1967.

GRISWOLD

For Valves and Controls Therefor.
First use Aug. 29, 1960.

SN 267,920. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Fluid, Semi-Fluid and Gas Handling Valves, Safety and Relief Valves and Air Vent and Water Drain Valves, Sluice Gates, Valve Operating and Actuating Mechanisms, and Parts, Controls and Components of the Foregoing; Pipe, Piping, Tube, Tubing, Pipe Assemblies and Constructions, Pressure Regulators, Exhaust Heads, Back Flow Preventers, Separators, Drip Pockets and Joints, Supports, Hangers, Fittings, and Parts, Controls and Components of the foregoing; Baths, Bathtubs, Lavatories, Sinks, Bidets, Bowls, Water Closets, Tubs, Tanks, Urinals, Water Closet Seats, Covers, Holders for Towels and Toilet Tissue, Holders for Tumblers, Soap and Tooth Brushes, Plumbing Brass, Fixtures, Fittings, Bathroom Cabinets, Bars, Shelves, Racks, Vanities, Drain Boards, Rim Guards and Trays, and Parts, Controls and Components of the Foregoing.
First use Mar. 8, 1967.

Class 14—Metals and Metal Castings and Forgings

SN 230,931. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

FVB TOB

Owner of Italian Reg. No. 139,999, dated Nov. 29, 1958.
For Sheet Steel.

SN 230,932. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 21, 1965.

FVB TOL

Owner of Italian Reg. No. 140,000, dated Nov. 29, 1958.
For Sheet Steel.

SN 242,390. Precision Steel Warehouse, Inc., Franklin Park, Ill. Filed Mar. 31, 1966.

PRECISION PSW BRAND

The word "Brand" is disclaimed. Owner of Reg. Nos. 421,089 and 561,497.
For Cold Rolled Shim Steel, Cold Rolled Strip Steel, Cold Rolled Annealed Spring Steel, Feeler Gauge Stock, Steel Shims, and Brass Shims.
First use in or about December 1944.

SN 251,189. Chromalloy American Corporation, West Nyack, N.Y. Filed July 28, 1966.

IOCHROME

For Chromium Metal.
First use at least as early as 1958.

Class 15—Oils and Greases

SN 256,050. The American Oil Company, Chicago, Ill. Filed Oct. 10, 1966.

AMERICAN PREMIER

Owner of Reg. Nos. 159,168, 580,683, and others.
For Diesel Fuel.
First use Aug. 1, 1960.

SN 264,118. Warner-Patterson Company, Hinsdale, Ill. Filed Feb. 6, 1967.

HpB

For Engine Additive—Namely, Oil Concentrate for Addition to Engine Lubricating Oil.
First use Nov. 14, 1966.

SN 264,718. The American Oil Company, Chicago, Ill. Filed Feb. 15, 1967.

WAYTAC

For Industrial Lubricants.
First use Oct. 31, 1964.

SN 264,813. Fisca Oil Co., Inc., Shawnee Mission, Kans. Filed Feb. 16, 1967.

The drawing is lined for the colors red, blue, and silver.
For Motor Oil and Gasoline.
First use Dec. 11, 1966.

SN 264,814. Fisca Oil Co., Inc., Shawnee Mission, Kans. Filed Feb. 16, 1967.

FISCA

For Motor Oil and Gasoline.
First use Dec. 11, 1966.

SN 265,319. Mistic Metal Mover, Inc., Princeton, Ill. Filed Feb. 23, 1967.

ALUMICUT

For Lubricants for Aluminum Metal Working.
First use September 1966.

Class 16 — Protective and Decorative Coatings

SN 248,870. Western Auto Supply Company, Kansas City, Mo. Filed June 23, 1966.

WIZARD

Owner of Reg. No. 309,617 and others.
For Paints and Paint Products—Namely, Latex Interior Finish, Latex House Paint, Tinting Colors, Wall Primer and Sealer; Varnish Including Floor and Trim Varnish, Spar Varnish, Oil Stain Varnish and Varnish Stain; Interior Enamels Including Undercoat Enamel, House Paints, Screen Enamel, Trim and Shutter Paint, Sash Paint, Porch and Floor Enamel, Latex Interior and Exterior Floor Finish, Floor Sealer Varnish, Redwood Stain Varnish, Shingle Varnish; Spray Paints, Spray Undercoat Lacquer, Spray Bicycle Lacquer; Marine Deck Paint, Marine Bottom Paint, Marine Spar Varnish; Farm Red Barn Paint; Implement Enamel; Iron and Metal Black, Aluminum Paint, Rust Preventative Primer; Automobile Enamel, Automobile Enamel Primer, Automobile Touch-Up Enamel, Automobile Spray Paints; Roof Asphalt Paint, Paint Thinner, Black Tire Paint and White-Wall Tire Paint.
First use June 1, 1953.

SN 261,991. Maas & Waldstein Co., Newark, N.J. Filed Jan. 5, 1967.

CHEMTITE

Owner of Reg. No. 422,769.
For Resin-Based Lacquers.
First use 1946.

SN 263,379. Kyanize Paints, Inc., Everett, Mass. Filed Jan. 26, 1967.

DYNA-BLACK

For Paints and Enamels for Interior and Exterior Use on Wood and Metal Surfaces.
First use September 1956.

SN 264,506. Bee Chemical Company, Lansing, Ill. Filed Feb. 13, 1967.

BEE-PLATE

Without waiving its common law rights and for the purposes of this application only, applicant makes no claim to the word "Plate" apart from the mark as a whole. Owner of Reg. No. 430,129 and others.
For Non-Paint Corrosion Protective Coatings and Corrosion Preventatives — Namely, Liquid Anti-Corrosive Materials Which May Be Applied Either as Furnished or Upon Further Dilution With Kerosene or Like Hydrocarbon Solvents; Upon Evaporation They Leave Upon the Metals To Be Protected, a Soft Wax-Like Coating Which Is Transparent so as To Permit Inspection and Which Can Be Wiped Off With a Rag When so Desired for Further Processing.
First use prior to October 1945.

SN 275,055. Jet Way, Incorporated, Wayne, Mich. Filed June 29, 1967.

JET GALV

For Zinc Primer Applied to Metal Surfaces.
First use in or about October 1966.

SN 277,110. Belknap Hardware and Manufacturing Co., Louisville, Ky. Filed July 31, 1967.

PATHFINDER

For Latex Flat Wall Paint.
First use June 26, 1967.

SN 277,111. Belknap Hardware and Manufacturing Co., Louisville, Ky. Filed July 31, 1967.

Spotless Town

For Interior-Exterior All Purpose Enamel Paint, and Exterior Latex House Paint.
First use Jan. 1, 1937.

SN 277,408. Laco Corp., Baltimore, Md. Filed Aug. 3, 1967.
Owner of Reg. No. 630,620.

DELLAY

For Liquid Preparations Adapted To Be Sprayed on Rugs and Carpets To Form Dirt and Soil Resistant Coatings Thereon.
First use July 31, 1954.

Class 18 — Medicines and Pharmaceutical Preparations

SN 228,855. Pannett Products, Inc., Ossining, N.Y. Filed Sept. 15, 1965.

CKA
CAN AID

For Medicinal Preparation for Common Mouth and Gum Sores, and Minor Dental Plate Irritations.
First use February 1958.

SN 246,654. Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany. Filed May 26, 1966.

SEDA-ILDAMEN

Priority claimed under Sec. 44(d) on German application filed Dec. 10, 1965; Reg. No. 822,779, dated Aug. 8, 1966.
For Medicament for Coronary Therapy.

SN 253,382. Ralph Wells & Company, Monmouth, Ill. Filed Aug. 29, 1966.

SPARKLE

For Vitamin Additive for Dog and Cat Foods.
First use no later than June 15, 1966.

SN 255,126. The Purdue Frederick Company, Yonkers, N.Y. Filed Sept. 26, 1966.

ACORBATE TABLETS

Applicant disclaims the word "Tablets" apart from the mark as shown.
For Vitamin Tonic.
First use July 28, 1966.

SN 255,182. American Pharmaceutical Company, New York, N.Y. Filed Sept. 27, 1966.

Cōdanōl

Owner of Reg. No. 719,554.
For Antibacterial Preparations, and Preparations for the Relief of Skin Irritations, Chafing, Itching, Diaper Rash, Cold Sores, and the Like.
First use in or about August 1946.

SN 256,415. American Pharmaceutical Company, New York, N.Y. Filed Oct. 14, 1966.

ROMEX

Owner of Reg. No. 717,440.
For Decongestants in Spray Form.
First use in or about April 1962.

SN 257,125. Europharma International, Inc., Panama, Panama. Filed Oct. 25, 1966.

BREMAGAN

Owner of Panamanian Reg. No. 8,146, dated Apr. 13, 1964.
For Antiviral Preparation.

SN 257,418. Southwestern Drug Corporation, d.b.a. Truett Laboratories, Dallas, Tex. Filed Oct. 27, 1966.

TRU-STIK

For Medicated Tape Adherent for Enhancing Adherence of Tape to the Skin and Protecting the Skin Against Irritation and Infection.
First use Sept. 25, 1966.

SN 257,567. American Cyanamid Company, Wayne, N.J. Filed Oct. 31, 1966.

RUVACINE

For Vaccine for Measles.
First use Oct. 13, 1966.

SN 258,098. Gray Pharmaceutical Co., Yonkers, N.Y. Filed Nov. 7, 1966.

CC-PREP

Owner of Reg. Nos. 651,983 and 792,107.
For Cathartic To Be Used for Diagnostic Procedure.
First use Oct. 25, 1966.

SN 258,099. Gray Pharmaceutical Co., Yonkers, N.Y. Filed Nov. 7, 1966.

DX-PREP

Owner of Reg. Nos. 651,983 and 792,107.
For Cathartic To Be Used for Diagnostic Procedure.
First use Oct. 25, 1966.

SN 258,100. Gray Pharmaceutical Co., Yonkers, N.Y. Filed Nov. 7, 1966.

LB-PREP

Owner of Reg. Nos. 651,983 and 792,107.
For Cathartic To Be Used for Diagnostic Procedure.
First use Oct. 25, 1966.

SN 258,101. Gray Pharmaceutical Co., Yonkers, N.Y. Filed Nov. 7, 1966.

CY-PREP

Owner of Reg. Nos. 651,983 and 792,107.
For Cathartic To Be Used for Diagnostic Procedure.
First use Oct. 25, 1966.

SN 258,171. Touch-N-Kiss, Inc., Chicago, Ill. Filed Nov. 7, 1966.

TOUCH-N-KISS

For Pharmaceutical Preparation in Liquid and Cream Form, Useful in the Treatment of Acne and Eczema.
First use Aug. 8, 1966.

SN 258,430. Touch-N-Kiss, Inc., Chicago, Ill. Filed Nov. 10, 1966.

T-N-KISS

For Pharmaceutical Preparation in Liquid and Cream Form, Useful in the Treatment of Acne and Eczema.
First Use Oct. 15, 1966.

SN 258,431. Touch-N-Kiss, Inc., Chicago, Ill. Filed Nov. 10, 1966.

T-N-K

For Pharmaceutical Preparation in Liquid and Cream Form, Useful in the Treatment of Acne and Eczema.
First use Oct. 15, 1966.

SN 258,707. McNeil Laboratories, Incorporated, Fort Washington, Pa. Filed Nov. 15, 1966.

CLINIUM

For Cardiovascular Agent.
First use Aug. 18, 1966.

SN 258,708. McNeil Laboratories Incorporated, Fort Washington, Pa. Filed Nov. 15, 1966.

DURAFLEX

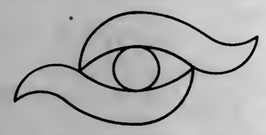
For Skeletal Muscle Relaxant.
First use Aug. 17, 1966.

SN 259,443. Merck & Co., Inc., Rahway, N.J. Filed Nov. 25, 1966.

SINEMET

For Pharmaceutical Preparation for Use in the Treatment of Stomach Upset.
First use Nov. 15, 1966.

SN 262,385. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Jan. 12, 1967.



For Contact Lens Preparations—namely, Contact Lens Wetting Solution, Soaking Solution, and Ophthalmic Drops.
First use Sept. 15, 1964.

SN 264,443. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 10, 1967.

KERRAMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation.
First use Dec. 22, 1966.

SN 265,044. Colgate-Palmolive Company, New York, N.Y. Filed Feb. 20, 1967.

DACTILAKE

Owner of Reg. No. 593,554.
For Gastrointestinal Preparation.
First use on or about Feb. 1, 1967.

SN 265,046. Colgate-Palmolive Company, New York, N.Y. Filed Feb. 20, 1967.

CANTILAKE

Owner of Reg. No. 642,246.
For Gastrointestinal Preparation.
First use on or about Feb. 1, 1967.

SN 265,841. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 2, 1967.

RERRIMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation.
First use Dec. 19, 1966.

SN 266,170. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 7, 1967.

NERRAMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation.
First use Dec. 29, 1966.

SN 266,448. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 10, 1967.

MERAMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation.
First use Jan. 4, 1967.

SN 270,840. Fidelity Pharmaceuticals, Inc., Philadelphia, Pa. Filed May 8, 1967.

FI-CYCLINE

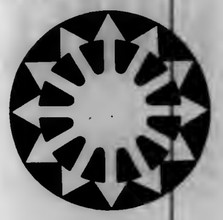
For Antibiotic Chemotherapeutic Preparation.
First use January 1965.

SN 271,012. The Norwich Pharmacal Company, Norwich, N.Y. Filed May 9, 1967.

ACTI-VAC

For Poultry Vaccine for Bronchitis and Newcastle Disease.
First use Mar. 22, 1967.

SN 275,895. E. R. Squibb & Sons, Inc., New York, N.Y. Filed July 13, 1967.



For Semisynthetic Penicillin Containing Preparations.
First use June 7, 1967.

SN 277,405. American Home Products Corporation, New York, N.Y. Filed Aug. 3, 1967.

TRILIEN

Owner of Reg. No. 800,922.
For Analgesic Calmative Product.
First use June 28, 1967.

SN 277,407. American Home Products Corporation, New York, N.Y. Filed Aug. 3, 1967.

TRILIAN

Owner of Reg. No. 800,922.
For Analgesic Calmative Preparation.
First use June 28, 1967.

SN 277,850. American Home Products Corporation, New York, N.Y. Filed Aug. 9, 1967.

TASAMYCIN

For Antibiotic Preparation.
First use July 25, 1967.

Class 19—Vehicles

SN 255,624. Hughes Industries, Inc., Englewood, Colo. Filed Oct. 3, 1966.

SMARTE CARTE

The word "Carte" is disclaimed apart from the mark as shown.
For Baggage Carts in Transportation Terminals.
First use on or about Aug. 1, 1965.

SN 259,251. Keystone Processing & Engineering Corp., North Hollywood, Calif. Filed Nov. 22, 1966.



For Automobile Wheels.
First use Feb. 15, 1965.

SN 271,385. Pierce, Inc., Louisville, Ky. Filed May 12, 1967.

PAK-RAK

For Collapsible Self Storing Truck Rack.
First use Apr. 11, 1967.

Class 20—Linoleum and Oiled Cloth

SN 277,444. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 3, 1967.

DEL MAR

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 19, 1967.

SN 277,445. Congoleum-Nairn Inc., Kearny, N. J. Filed Aug. 3, 1967.

PARTHENON

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 19, 1967.

SN 277,446. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 3, 1967.

CITADEL

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 19, 1967.

SN 277,448. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 3, 1967.

MESA

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 19, 1967.

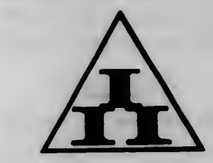
SN 277,449. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 3, 1967.

GRANDEUR

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 19, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 241,469. Industrial Instrumentations, Inc., Marblehead, Mass. Filed Mar. 21, 1966.



For Electronic Security and Monitoring System Utilising a Card Evaluation Unit To Control Access, or Actuate Alarms, According to Pre-Arranged Program Boards, and Components for Such Systems—Namely, Card Readers and Authorization Control and Printout Units.
First use Apr. 17, 1965.

SN 242,874. American District Telegraph Company, New York, N.Y. Filed Apr. 7, 1966.



Applicant disclaims the treble clef design apart from the mark as shown. Owner of Reg. Nos. 700,676, 803,247, and others.
For Sound Reproducing Equipment for Providing Background Music From Recorded Music—Namely, Tape Players, Amplifiers, and Electrical Control and Distribution Equipment for Background Music Signals.
First use on or before Apr. 1, 1966.

SN 246,704. Martin Marietta Corporation, Orlando, Fla. Filed May 26, 1966.

LUMISTOR

For Beta Silicon Carbide Crystals.
First use Mar. 10, 1966.

SN 248,869. Western Auto Supply Company, Kansas City, Mo. Filed June 23, 1966.

WIZARD

Owner of Reg. Nos. 518,329, 638,351, and others.

For Vacuum Cleaners and Parts; Electric Broilers; Electric Buffet Servers; Electric Floor Polishers, Rug Cleaners, Scrubbers, Floor Conditioners, Buffers and Accessories; Spark Plug Cables; Ignition Cables; Generators; Voltage Regulators; Electric Starters for Motor Vehicles; Starter Repair Kits; Starter Switches; Ignition Coils; Coil Resistors; Distributor Caps; Ignition Condensers; Ignition Tune-Up Kits; Ignition Points; Ignition Terminals; Flashlights; Electric Lanterns; Electric Dishwashers; Extractors and Juicers; Electric Grills; Food Grinders and Blenders; Heating Pads; Steam-Electric Irons; Electric Fence Controllers; Battery Fence Controllers; and Electric Motors.

First use June 1, 1947, on vacuum cleaners.

SN 249,432. Kabushiki Kaisha Primo (Primo Co., Ltd.), Mitaka-shi, Tokyo, Japan. Filed July 1, 1966.

Primo

For Microphone, Wireless Microphone, Pick Up for Electric Phonograph, Microphone Stand, Cartridge for Pick Up, Head Phone, and Ear Phone.

First use on or about Oct. 24, 1952; in commerce on or about Sept. 5, 1956.

SN 250,880. Viking Industries, Inc., Chatsworth, Calif. Filed July 22, 1966.



For Wire Cable Connectors, Electrical Wire Couplers, and Submarine Wire Cable Connectors.

First use June 1963.

SN 251,893. Circle F Industries, Inc., Trenton, N.J. Filed Aug. 8, 1966.



Without prejudice to its rights now existing or hereafter arising and for the purpose of this registration only, applicant makes no claim to the notation "Guaranteed Wiring Devices" apart from the mark as shown. Owner of Reg. No. 218,681 and others.

For Electric Switches, Pilot Lights, Outlets and Receptacles, Attachment Plug Caps, Cord Sets, Sockets and Lampholders, and Fittings Therefor.

First use Jan. 1, 1908.

SN 251,951. Tandy Corporation, Fort Worth, Tex., assignee of Radio Shack Corporation, Boston, Mass. Filed Aug. 8, 1966.

ELECTROSTAT-2A

Owner of Reg. Nos. 700,068, 700,069, and 759,127.

For Loud-Speakers, Particularly for Hi-Fi Sets.

First use at least as early as July 15, 1960.

SN 254,550. Modern Industries, Incorporated, d.b.a. Modern Industries, Inc., Seattle, Wash. Filed Sept. 15, 1966.

DYNAMOTE

For Electric Power Converter for Providing Power for Power Tools and Electric Appliances.

First use on or about Aug. 17, 1966.

SN 255,826. International Telephone and Telegraph Corporation, New York, N.Y. Filed Sept. 28, 1966.

SEE-SAW

For Cathode Ray Tubes.

First use Mar. 24, 1966.

SN 255,613. General Indicator Corporation, Palo Alto, Calif. Filed Oct. 3, 1966.



No registration rights are claimed for the word "Scoreboards" apart from the mark as shown. Owner of Reg. No. 750,453.

For Electrical Scoreboards and Displays.

First use June 1, 1966.

SN 260,297. Westinghouse Electric Corporation, Metuchen, N.J. Filed Dec. 7, 1966.

INSTANT ON

Owner of Reg. No. 808,239.

For Television Sets.

First use on or about Oct. 4, 1961.

SN 261,504. Micro-Avionics, Inc., Arcadia, Calif. Filed Dec. 27, 1966.

MICRO-AVIONICS

For Radio Control Apparatus for Model Airplanes.

First use Aug. 6, 1965.

SN 261,559. Elgin Electronics Incorporated, Cleveland, Ohio. Filed Dec. 27, 1966.

INTEGRID

For Printed Electronic Circuit Boards.

First use Nov. 29, 1966.

SN 261,938. Murata Manufacturing Co., Ltd., Otokuni-gun, Kyoto-fu, Japan. Filed Jan. 4, 1967.

muRata

Owner of U.S. Reg. No. 715,196.

For Electronic Apparatus and Their Component Parts—Namely, Radio and Television Receivers, Transmitters, Acoustic Equipment, Ultrasonic Equipment, Capacitors, Filters, Tuning Forks, Insulating Materials, Dielectric Materials, Magnetic Materials, and Semiconductors.

First use July 23, 1953; in commerce July 6, 1958.

SN 262,276. The Micro State Electronics Corporation, Murray Hill, N.J. Filed Jan. 10, 1967.



For Solid State Microwave Components—Namely, Tunnel Diode Amplifiers, Gallium Arsenide Diodes, Microwave Semiconductors, Computer Switching Diodes, Varactors, Integrated Switching Circuits, Microwave Solid State Switches, Transistor Amplifiers, Microwave Tunnel Diodes, Solid State Duplexers and Solid State Subassemblies, Power Oscillators, High Speed Limiters, Therefor.

First use March 1962.

SN 262,431. National Housewares, Inc., Salt Lake City, Utah. Filed Jan. 12, 1967.

EMDEKO

For Heat Detection (Fire Alarm) System, an Electric Blender, an Electric Can Opener and Knife Sharpener, an Electric Floor (Treatment) Machine, and an Electric Griddle Server.

First use Jan. 10, 1965.

SN 262,696. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 17, 1967.

440-T

For Radio Receivers.

First use July 25, 1966.

SN 262,859. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 19, 1967.

XP-10

For Speakers.

First use Sept. 13, 1963.

SN 263,366. Essex Wire Corporation, Fort Wayne, Ind. Filed Jan. 26, 1967.

CABLE SXD DUCT

No claim is made to the words "Cable" and "Duct" apart from the mark as shown. Owner of Reg. Nos. 428,996 and 612,102.

For Electrical Conduit Containing Electrical Wire and Cable.

First use Nov. 14, 1966.

SN 264,542. Haveg Industries, Inc., Wilmington, Del. Filed Feb. 13, 1967.

SPACEWRAP

For Insulated Electrical Wires.

First use May 12, 1966.

SN 267,588. Ballistics Control Corporation, Long Island City, N.Y. Filed Mar. 27, 1967.

ARMED GUARD

For Electronically Operated Burglar Alarms and Fire Alarms.

First use February 1966.

SN 270,190. Columbia Broadcasting System, Inc., New York, N.Y. Filed Apr. 28, 1967.

BASSMAN

For Amplifiers for Electrical Musical Instruments.

First use 1952.

SN 270,200. General Motors Corporation, Detroit, Mich. Filed Apr. 28, 1967.

PACK-X

For Electrical Cable.

First use Mar. 3, 1967.

SN 270,317. Duro-Test Corporation, North Bergen, N.J. Filed May 1, 1967.

VITIMA

For Fluorescent Lamps Useful for General Illumination Purposes.

First use Apr. 18, 1967.

SN 270,318. Duro-Test Corporation, North Bergen, N.J. Filed May 1, 1967.

VITA-LUX

For Fluorescent Lamps Useful for General Illumination Purposes.

First use Apr. 18, 1967.

SN 270,319. Duro-Test Corporation, North Bergen, N.J. Filed May 1, 1967.

VITA-LITE

For Fluorescent Lamps Useful for General Illumination Purposes.

First use Apr. 18, 1967.

SN 270,320. Duro-Test Corporation, North Bergen, N.J. Filed May 1, 1967.

VITA

For Fluorescent Lamps Useful for General Illumination Purposes.

First use Apr. 18, 1967.

SN 270,321. Duro-Test Corporation, North Bergen, N.J. Filed May 1, 1967.

VITA-RAY

For Fluorescent Lamps Useful for General Illumination Purposes.
First use Apr. 18, 1967.

SN 277,242. Union Carbide Corporation, New York, N.Y. Filed Aug. 1, 1967.

KIC

Owner of Reg. No. 427,410.
For Getters for Use in Electronic Devices.
First use on or about June 1939.

Class 22—Games, Toys, and Sporting Goods

SN 243,905. Shakespeare Company, Kalamazoo, Mich. Filed Apr. 20, 1966.



For Sporting Goods—Namely, Golf Bags and Golf Gloves.
First use Jan. 1, 1966.

SN 243,906. Shakespeare Company, Kalamazoo, Mich. Filed Apr. 20, 1966.



The words "Guantes Francisco" are Spanish for "gloves by Francisco." No claim of exclusive right is made to "Guantes" for golf gloves.
For Sporting Goods—Namely, Golf Gloves.
First use Nov. 10, 1965.

SN 245,743. Nippon Gakki Co., Ltd., Hamamatsu, Shizuoka Prefecture, Japan. Filed May 16, 1966.

YAMAHA

The Japanese word "Yamaha" translated means "mountain leaves."
For Snow Skis.
First use October 1959; in commerce November 1963.

SN 254,763. E. E. Fairchild Corporation, Rochester, N.Y. Filed Sept. 20, 1966.

"THE SHAPE"

For Jigsaw Puzzles.
First use Sept. 13, 1966.

SN 256,485. Tiki Lures, Inc., Madison Heights, Mich. Filed Oct. 14, 1966.

Spoonfish

For Fish Lure.
First use Jan. 21, 1963.

SN 257,566. Adirondack Bats, Inc., Dolgeville, N.Y. Filed Oct. 31, 1966.

ADIRONDACK

Owner of Reg. Nos. 521,346 and 792,524.
For Baseball Bats, Softball Bats, Hockey Sticks, Croquet Sets, Water Skis, Snow Skis, Toboggans, and Bobsleds.
First use Sept. 10, 1946.

SN 258,042. Jerry J. Capos, d.b.a. J. C. Game Company, San Francisco, Calif. Filed Nov. 7, 1966.

Singlo

For Equipment Sold as a Unit for Playing an Amusement Board Game.
First use Oct. 25, 1963.

SN 261,048. De Luxe Topper Corporation, Elizabeth, N.J. Filed Dec. 19, 1966.

JOHNNY ASTRO

For Flight Toys.
First use Nov. 15, 1966.

SN 261,888. Standard Packaging Corporation, New York, N.Y. Filed Jan. 3, 1967.

Starcrest

Owner of Reg. No. 800,248.
For Playing Cards.
First use Nov. 7, 1966.

SN 262,333. Gym-Dandy, Inc., Bossier City, La. Filed Jan. 11, 1967.

MR. FROLIC

For Toys—Namely, Fanciful Face Masks To Be Applied To Play Yard Equipment.
First use Dec. 16, 1966.

SN 262,829. Joseph T. Wilson, San Diego, Calif. Filed Jan. 18, 1967.

JUG O' FUN

No claim of exclusive right is made to "Jug" for the goods recited.
For Equipment (or Apparatus) Sold as a Unit for Playing a Parlor Game.
First use Sept. 20, 1966.

SN 264,185. Bard Advertising, Inc., Chicago, Ill. Filed Feb. 8, 1967.

TIC TAC TEXACO

For Printed Contest Cards for Promotional Use by Others To Encourage, Facilitate, and Stimulate the Sale of Their Goods.
First use July 20, 1966.

SN 264,498. Art-Mold Products Co., Cranston, R.I. Filed Feb. 13, 1967.

VISTA

For Golf Balls.
First use on or about Feb. 6, 1967.

SN 264,646. Babolat-Maillot-Witt, La Courneuve, France. Filed Feb. 14, 1967.

V.S.

For Tennis Racket Strings.
First use June 23, 1928; in commerce May 1958.

SN 264,653. De Luxe Topper Corporation, Elizabeth, N.J. Filed Feb. 14, 1967.

FINGERS HARRY

For Equipment for Playing a Board Game.
First use Jan. 30, 1967.

SN 265,347. Southern Athletic Service, Inc., Leesburg, Fla. Filed Feb. 23, 1967.

TRU-SIZE

For Protective Equipment for Athletes.
First use on or about Oct. 5, 1966.

SN 265,515. Glendinning Companies, Inc., Westport, Conn. Filed Feb. 27, 1967.

AMERICANA

For Promotional Game Materials—Namely, Equipment Sold as Units, and Parts of Such Units, for Playing Promotional or Contest Games.
First use Jan. 25, 1965.

SN 265,582. Yankee Homecraft Corp., East Natick, Mass. Filed Feb. 27, 1967.

MINI-PLACQUES

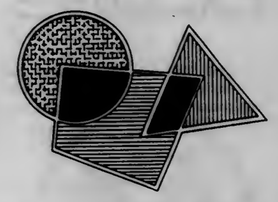
For Toy Kits Comprising Means for Casting and Painting Placques.
First use on or about Nov. 8, 1966.

SN 265,583. Yankee Homecraft Corp., East Natick, Mass. Filed Feb. 27, 1967.

MINI-MOLD

For Toy Kits Comprising Means for Casting and Painting Miniature Figurines.
First use on or about Nov. 8, 1966.

SN 265,794. Child Guidance Toys, Inc., Bronx, N.Y. Filed Mar. 2, 1967.



The drawing is lined for the colors yellow (or gold), red, and blue.
For Children's Educational Toys and Blocks.
First use on or about Mar. 1, 1961.

SN 265,977. Brunswick Corporation, Chicago, Ill. Filed Mar. 6, 1967.

V.I.P.

For Home Billiard Tables and Accessories.
First use Aug. 19, 1966.

SN 271,678. White Stag Manufacturing Co., Portland, Oreg. Filed May 17, 1967.

White Stag

Owner of Reg. No. 369,881 and others.
For Water Skis.
First use December 1959.

SN 274,032. Materic, Inc., Los Angeles, Calif. Filed June 16, 1967.

HANDSURFA

For Surfboard for Use in Body Surfing.
First use June 8, 1967.

SN 274,035. The Creek Chub Bait Company, Garrett, Ind. Filed June 16, 1967.

TIKIE

For Artificial Fishing Lures.
First use May 31, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 235,727. Stone Conveyor Co., Inc., Honeoye, N.Y. Filed Jan. 3, 1966.

WRAPLOCK

For Hubs and Collars for Machinery Components.
First use June 23, 1965.

SN 236,528. Struthers Scientific and International Corporation, New York, N.Y. Filed Jan. 14, 1966.

FRECON

For Equipment and Systems for Crystallization, Such as Crystallizers for Removing Water From Aqueous Solutions and Auxiliary Equipment for Use With Such Crystallizers.
First use Dec. 10, 1965.

SN 237,238. Lundell Manufacturing Company, Inc., Cherokee, Iowa. Filed Jan. 25, 1966.

2020

For Farm and Light Industrial Self-Propelling Tractors.
First use on or about Oct. 8, 1965.

SN 254,195. Scovill Manufacturing Company, Racine, Wis. Filed Sept. 9, 1966.

Converta ← Power

The word "Power" is disclaimed apart from the mark as shown.
For Power Operated Knives.
First use Aug. 16, 1966.

SN 256,375. Sanitary Hydraulics, Inc., Cleveland, Ohio. Filed Oct. 13, 1966.

SEWER JET

Applicant disclaims the word "Sewer" separate and apart from the mark as shown without abandoning any common law rights therein.
For Apparatus for Removing Undesirable Material From the Inside of Pipes or Tubes by the Use of High Velocity Streams of Water.
First use May 1966.

SN 258,078. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Nov. 7, 1966.

FLEXLITE

For Valves for Internal Combustion Engines.
First use on or about Jan. 30, 1965.

SN 258,382. Jacobsen Manufacturing Company, Racine, Wis. Filed Nov. 10, 1966.

LAWN PRINCE

The word "Lawn" is disclaimed apart from the mark as shown.
For Power Lawnmowers and Grass Catchers.
First use as early as 1959.

SN 258,500. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 14, 1966.

PRIME

Owner of Reg. Nos. 705,836 and 793,065.
For Razor Blades.
First use Sept. 14, 1966.

SN 258,501. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 14, 1966.

CHALLENGE

Owner of Reg. Nos. 701,976 and 803,573.
For Razor Blades.
First use Sept. 14, 1966.

SN 259,081. Bio-Lab, Inc., Decatur, Ga. Filed Nov. 21, 1966.

CLOR-TROL

For Chlorinator Mechanism for Swimming Pools and for Other Purposes.
First use October 1966.

SN 259,089. Crompton & Knowles Corporation, Worcester, Mass. Filed Nov. 21, 1966.

FLOWTRUE

For Logrolls—Namely, Rolls Used in Connection With a Dye Jig.
First use on or about Nov. 11, 1966.

SN 259,359. Wallace-Murray Corporation, d.b.a. Heller Tool Co., Newcomerstown, Ohio. Filed Nov. 23, 1966.

ULTRA

For Saw Blades.
First use May 1960.

SN 260,132. Arlo Manufacturing Corp., Hammond, Ind. Filed Dec. 6, 1966.

Mobil-Mite

For Wheel Mounted Apparatus for Baling Scrap Material, Such as Paper Trim, Corrugated Cartons, Metal Foils, Leather, etc.
First use at least as early as Dec. 5, 1962.

SN 260,202. Whitin Machine Works, Inc., Whitinsville, Mass. Filed Dec. 6, 1966.

Masterlith

For Duplicating Machines.
First use Oct. 11, 1966; Mar. 2, 1955, in a different form.

SN 262,432. National Housewares, Inc., Salt Lake City, Utah. Filed Jan. 12, 1967.

EMDEKO

For Power Lawn Mower (Gasoline).
First use June 5, 1964.

SN 276,281. The Gillette Company, Boston, Mass. Filed July 19, 1967.

THE KNACK

For Razors.
First use June 2, 1967.

SN 276,604. The Gillette Company, Boston, Mass. Filed July 24, 1967.

THE MONSTER

For Razor Blades.
First use June 2, 1967.

SN 278,174. Technical Plastics Co., Sun Valley, Calif. Filed Aug. 14, 1967.

CATERWARE

For Disposable Plastic Cutlery, in the Form of Spoons, Knives, and Forks.
First use June 6, 1967.

Class 24—Laundry Appliances and Machines

SN 248,472. Impianti Everest L. Calcaterra S.p.A., Milan, Italy. Filed June 20, 1966.

Mascotte

Priority claimed under Sec. 44(d) on Italian application filed Apr. 2, 1966; Reg. No. 179,551, dated July 15, 1966.
For Dry Cleaning Machines.

SN 256,163. Western Auto Supply Company, Kansas City, Mo. Filed Oct. 10, 1966.

WIZARD

Owner of Reg. No. 425,528, and others.
For Home Laundry Dryers, Home Laundry Washers-Dryers, Gasoline Motor Powered Wringer Washers, Electric Wringer Washers, Electric Laundry Washers, and Laundry Washing Machines (Home).
First use Jan. 1, 1953, on home laundry dryers.

Class 25—Locks and Safes

SN 259,142. New England Lock and Hardware Company, South Norwalk, Conn. Filed Nov. 21, 1966.

STALOK

For Locks, Lock Parts, and Keys.
First use Oct. 7, 1966.

SN 264,111. Stoffel Seals Corporation, Tuckahoe, N.Y. Filed Feb. 6, 1967.

RIMLOCK

Owner of Reg. No. 427,856.
For Base Metal Seals To Be Applied to Shipping Containers—Namely, Barrels, Drums, Bags, Cases, and Directly to Consumer Goods for Identifying the Latter.
First use November 1945.

Class 26—Measuring and Scientific Appliances

SN 244,999. Metrotech Incorporated, Mountain View, Calif. Filed May 5, 1966.



For Electronic and Electromechanical Instruments and Equipment—Namely, Pipe and Cable Finders, Fluid Leak Detectors, Valve Locators, Mineral and Metal Locators, Indicating Millivolt Potentiometers.
First use about June 1962.

SN 245,874. Vickers Limited, Millbank, London, England. Filed Apr. 18, 1966.

VICKERS

For Measuring and Scientific Appliances—Namely, Microscopes, Microscope Parts, Microscope Accessories, viz, Binoculars, Illuminating Devices, Image Splitting Devices, Vernier Measuring Devices, Light Polarizing Devices, Multiple Eyepiece Devices, Lens Systems, Mounting Desks; Metallography Equipments for the Microscopic Study of Metal Structure, Alloys, and Other Materials; Survey Equipment and Accessories, viz, Surveyor's Levels, Plumb Bobs, Tripods, Mounting Circles for Surveyor's Level; Cameras and Camera Accessories, viz, Exposure Control Units, Time Lapse Control Units, Filters, Mounting Stands; Photometers, Electronic Particle and Cell Counters, and Biological Assay Apparatus.
First use at least as early as Dec. 31, 1948.

SN 246,400. Tasco Sales Inc., Miami, Fla. Filed May 23, 1966.



Owner of Reg. No. 705,966.
For Microscopes, Microscope Kits, Including Dissecting Sets, Binoculars, Opera Glasses, Telescopes, Tripods, and Carrying Cases Therefor.
First use July 1, 1952.

SN 246,417. Donald N. Yates, Gibsonia, Pa. Filed May 23, 1966.

LITHOMOTION

For Slide Projectors and Related Parts for Projecting Animated Images.
First use on or about October 1965.

SN 247,244. Mura Corporation, Great Neck, N.Y. Filed June 3, 1966.

MURA

For Testing Instruments—Namely, Voltage, Resistance, and Ampere Range Meters.
First use July 19, 1957.

SN 253,037. Lundy Electronics & Systems, Inc., Glen Head, N.Y. Filed Aug. 24, 1966.

CHEK SORT

For Electronic Data Processing Machines.
First use June 17, 1966.

SN 253,357. Supreme Photo Supply Co., Inc., New York, N.Y. Filed Aug. 29, 1966.

SOVEREIGN

For Photographic Sensitized Film.
First use 1954.

SN 253,928. Thomas Instrument Company, Inc., New York, N.Y. Filed Sept. 6, 1966.

ECLATRON-Q

For Electrical Flash Tubes for Photographic Flash Lighting Equipment.
First use on or about June 15, 1966.

SN 255,847. Wood Conversion Company, St. Paul, Minn. Filed Oct. 5, 1966.

CONWED

Owner of Reg. Nos. 820,946, 832,362, and others.
For Thermostats.
First use about July 21, 1966.

SN 257,586. E. D. Bullard Company, Sausalito, Calif. Filed Oct. 31, 1966.

GREEN/LINE

For Face Protective Shields and Brackets for Mounting the Same and Like Accouterments Onto Safety Helmets.
First use about June 15, 1966.

SN 259,539. The Executive Line, Inc., Chatham, N.Y. Filed Nov. 28, 1966.

EXECUTIVE POCKET PAL

Owner of Reg. Nos. 422,820, 798,109, and others.
For Rulers, Calipers, Slide Rules, Gauges, Protractors, Magnifying and Reducing Glasses.
First use Jan. 1, 1946.

SN 260,333. Hughes Aircraft Company, Culver City, Calif. Filed Dec. 8, 1966.

ZAPPING

Applicant claims no exclusive rights in "Paper" as the name of the goods identified herein.
For Coated Paper for Testing Energy Level in Laser Beams.
First use on or about Jan. 14, 1966.

SN 261,203. Donald C. Crandlemere, Holbrook, Mass. Filed Dec. 21, 1966.

ZIP

Owner of Reg. No. 816,966.
For Adjustable Micrometer Stops for Use on Machinery Having Movable Working Parts, and Stops for Collets; but Not Incldng Rotary Cutting Tools.
First use on or about June 4, 1965.

SN 262,785. Giannini Scientific Corporation, d.b.a. Flight Research Division, Amityville, N.Y. Filed Jan. 18, 1967.

MULTIDATA

For Cameras.
First use at least as early as June 7, 1957.

SN 262,786. Giannini Scientific Corporation, d.b.a. Flight Research Division, Amityville, N.Y. Filed Jan. 18, 1967.

AUTEX

For Camera Accessory—Namely, an Automatic Exposure Control.
First use at least as early as 1957.

SN 263,841. Minolta Corporation, New York, N.Y. Filed Feb. 2, 1967.

MINOLTA

For Photographic Goods—Namely, Cameras and Lenses.
First use Apr. 1, 1954.

Class 27—Horological Instruments

SN 269,981. Ebauches S.A., Neuchatel, Neuchatel, Switzerland. Filed Apr. 25, 1967.

OSCILLATOM

Owner of Swiss Reg. No. 213,852, dated Oct. 21, 1965.
For Time and Frequency Standard Atomic Clock.

Class 28—Jewelry and Precious-Metal Ware

SN 254,792. Marathon Company, Attleboro, Mass. Filed Sept. 20, 1966.

Princess Mara

The name "Princess Mara" is fanciful.
For Jewelry—Namely, Lockets, Pendants, and Bracelets.
First use 1946.
Subj. to Intf. with SN 261,261.

SN 261,614. Mario Buccellati Inc., New York, N.Y. Filed Dec. 29, 1966.

BUCCELLATI

For Jewelry, Flatware, Hollow Ware, and Objets d'Art—Namely, Ornamental Cases, Boxes, and Other Containers, Religious Pieces, Center Pieces, Vases, and Other Artistic Receptacles, Candlesticks, Candelabra, Dresser Sets, Desk Sets, and Statuary, All Made of Precious Metals.
First use Dec. 13, 1952.

SN 267,267. The Richelieu Corp., Holbrook, N.Y. Filed Mar. 21, 1967.

FLICKEARING

For Earrings.
First use Feb. 15, 1967.

SN 277,843. McGrath-Hamin, Inc., Providence, R.I. Filed Aug. 8, 1967.

LOVER'S KNOT

For Finger Rings.
First use on or about Aug. 1, 1967.
Subj. to Intf. with SN 277,868.

SN 277,868. Uncas Manufacturing Company, Providence, R.I. Filed Aug. 9, 1967.

LOVE KNOT

For Jewelry for Personal Wear and Adornment.
First use May 10, 1967.
Subj. to Intf. with SN 277,843.

Class 29—Brooms, Brushes, and Dusters

SN 251,654. Ramer Chemical Company Limited, Camberley, Surrey, England. Filed Aug. 3, 1966.

MODEC

Owner of British Reg. No. 739,423, dated Feb. 17, 1955.
For Sponges for Cleaning Purposes.
First use Oct. 1, 1955; in commerce June 28, 1966.

SN 255,912. Milwaukee Dustless Brush Co., Milwaukee, Wis. Filed Oct. 6, 1966.

SPIRAP

For Brushes.
First use at least as early as Apr. 19, 1966.

Class 32—Furniture and Upholstery

SN 247,837. The Speed Check Co., Inc., Atlanta, Ga. Filed June 10, 1966.

EZ-C

For Visual Counter File for Use in the Laundry and Dry Cleaning Business.
First use October 1960.

SN 252,684. Ronthor Reiss Corporation, New York, N.Y. Filed Aug. 18, 1966.

RONTHOR

Owner of Reg. No. 728,660.
For Plastic Headed Tacks, Drive Screws, Tube Caps, Angle Iron Caps, Drawer Guides, Panel Retaining Buttons and Extrusions, Pole Hangers, Hinges, Rotary Bearings, Shelf Pins, Door Sliding Channels and Gliding Systems, Table Pins and Catches, All for Use in Articles of Furniture.
First use Dec. 27, 1962.

SN 277,490. Bedding Manufacturers Associates, Inc., Philadelphia, Pa. Filed Aug. 4, 1967.

COMFA-PEDIC

For Mattresses and Upholstered Furniture.
First use Sept. 1, 1964.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 252,405. The National Ideal Company, Hicksville, Ohio. Filed Aug. 15, 1966.

ENVIR-O-MATIC

For Ventilation Equipment for Poultry and Livestock Housing—Namely, Fans, Baffles, Louvers, and Controls Therefor.
First use Oct. 11, 1965.

SN 255,849. Wood Conversion Company, St. Paul, Minn. Filed Oct. 5, 1966.

CONWED

Owner of Reg. Nos. 820,946, 832,362, and others.
For Radiant Heating Panels.
First use about May 23, 1966.

SN 259,701. The American Oil Company, Chicago, Ill. Filed Nov. 30, 1966.

AMOCO

Owner of Reg. Nos. 396,202, 396,208, and 736,984.
For Oil Burners, Boilers, Hot Air Furnaces, Portable Heaters, Water Heaters, and Air Conditioning Units.
First use Sept. 11, 1945, on oil burners.

SN 259,739. Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y. Filed Nov. 30, 1966.

KAMO

For Water Heaters, Steam Generators, and Parts Thereof.
First use Nov. 1, 1924.

Class 36—Musical Instruments and Supplies

SN 237,962. Avnet, Inc., New York, N.Y., assignee of Goya Music Corporation, New York, N.Y. Filed Feb. 3, 1966.

GRECO

For Fretted String Instruments—Namely, Guitars.
First use on or about Jan. 1, 1964.

SN 238,704. C. G. Conn Ltd., Elkhart, Ind. Filed Feb. 14, 1966.

HUMITE

For Piano Sounding Board Treated by a Particular Process.
First use June 1965.

SN 241,474. Olga Jastremsky, New York, N.Y. Filed Mar. 21, 1966.

DOLYA RECORDS

Applicant disclaims the word "Records" apart from the mark as shown. The word "Dolya" is the phonetic English version of a Ukranian word which, translated, means "fate."
For Phonograph Records.
First use Dec. 18, 1965.

SN 245,035. David Wexler & Co., Chicago, Ill. Filed May 5, 1966.

Conrad

For Guitars.
First use March 1965.

SN 251,482. Teichiku Kabushiki Kaisha (Teichiku Records Co., Ltd.), Nara, Japan. Filed Aug. 1, 1966.

TEICHIKU

For Gramophone Disks.
First use 1946; in commerce 1948.

SN 254,758. New Orleans Music Supply Company, Inc., New Orleans, La. Filed Sept. 16, 1966.

TOPLINE

For Brass Instruments and Accessories Therefor; Woodwind Instruments and Accessories Therefor; and Stringed Instruments and Accessories Therefor.
First use June 15, 1963.

SN 278,089. Metrotech Incorporated, Mountain View, Calif. Filed June 5, 1967.

For Tape Recorders and Reproducers and Loggers Using Magnetic Tape.
First use about April 1965.

Class 37—Paper and Stationery

SN 256,480. Sperry Rand Corporation, New York, N.Y. Filed Oct. 14, 1966.

COLORSCAN

For Color Coded File Folders.
First use Sept. 13, 1966.

SN 256,604. Sperry Rand Corporation, New York, N.Y. Filed Oct. 17, 1966.

REMLITE

For Guides for Card and Correspondence Indexes.
First use Mar. 1, 1966.

SN 260,296. Western Kraft Corporation, Portland, Oreg. Filed Dec. 7, 1966.

TUF-CORE

For Corrugating Medium.
First use July 12, 1965.

SN 261,502. Lakeside Central Company, Chicago, Ill. Filed Dec. 27, 1966.

Whiz erase

For Typewriter Paper.
First use July 20, 1966.

SN 262,189. New England Business Service, Inc., Townsend, Mass. Filed Jan. 9, 1967.

JETSET

For Business and Office Forms—Namely, Multiple Copy Letter, Note and Reply Forms, Especially for Use With Window Envelopes.
First use Nov. 29, 1966.

SN 265,473. Gary Industries, Inc., d.b.a. Acco Products, Chicago, Ill. Filed Feb. 27, 1967.

Get Smart

For Loose-Leaf Binders.
First use Jan. 9, 1967.

SN 268,129. Wyomissing Corporation, Reading, Pa. Filed Apr. 3, 1967.

CORVON

For Cover Stock for the Publishing Industry.
First use Mar. 28, 1967.

SN 276,063. Eversharp, Inc., Milford, Conn. Filed July 17, 1967.

PERMASHARP

For Writing Instruments—Namely, Pencil-Type Pens.
First use July 12, 1967.

SN 276,205. Pineville Kraft Corporation, Pineville, La. Filed July 18, 1967.

PINELINER

For Kraft Container Board.
First use July 12, 1967.

SN 276,724. Safeway Stores, Incorporated, Oakland, Calif. Filed July 25, 1967.

Owner of Reg. No. 787,573.
For Paper Towels.
First use Oct. 15, 1964.

Class 38—Prints and Publications

SN 223,327. Mission Card Company, Canoga Park, Calif. Filed July 14, 1965.

LAGUNA ART

For Greeting Cards.
First use Apr. 1, 1965.

SN 248,983. Eastman Kodak Company, Rochester, N.Y. Filed June 27, 1966.

TECH BITS

For Technical Bulletins Published From Time to Time.
First use May 10, 1963.

SN 250,613. World of Comic Art Publications, Hawthorne, Calif. Filed July 19, 1966.

THE WORLD OF comic art

For Magazine Published Periodically.
First use May 27, 1966.

SN 260,745. Field Enterprises, Inc., Chicago, Ill., assignee of The Hall Syndicate, Inc., New York, N.Y. Filed Dec. 14, 1966.

TIFFANY JONES

The name "Tiffany Jones" is fanciful.
For Comic Drawings of a Fictitious Character, Published in Daily Newspapers.
First use Nov. 16, 1964.

SN 268,369. Colortron Corporation, d.b.a. Color Classics, Inc., Denver, Colo. Filed Apr. 5, 1967.

COLOR CLASSICS

For Color Photographs.
First use in or about September 1961.

SN 271,206. General Biological Supply House, Inc., Chicago, Ill. Filed May 11, 1967.

TURTOX

For Charts, Key Cards, and Quiz Sheets for Biological Studies.
First use 1929.

SN 275,106. Practical Publications, Inc., Indianapolis, Ind. Filed June 30, 1967.

INDUSTRIAL FINISHING

For Trade Journal Published Monthly.
First use Apr. 12, 1924.

SN 276,445. The Hearst Corporation, New York, N.Y. Filed July 20, 1967.

SECRET AGENT CORRIGAN

Owner of Reg. No. 313,939.
For Newspaper Cartoons.
First use May 1, 1967.

SN 276,555. The Hearst Corporation, New York, N.Y. Filed July 21, 1967.

CAPTAIN KATE

For Newspaper Cartoons.
First use May 28, 1967.

SN 277,327. Childrens Press, Inc., Chicago, Ill. Filed Aug. 2, 1967.

PEOPLE OF DESTINY

For Children's Educational Books.
First use on or about Apr. 1, 1967.

Class 39—Clothing

SN 251,255. Fred Weatherford, d.b.a. Weatherford Enterprises, Washington, D.C. Filed July 28, 1966.

OUTTA-SPACE

For Shirts.
First use June 29, 1966.

SN 256,150. Spartans Industries, Inc., New York, N.Y. Filed Oct. 10, 1966.

KENTSHIRE

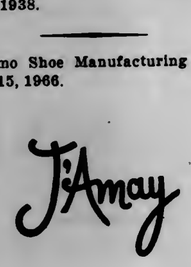
For Infants' Diapers, Sleepwear, and Underwear.
First use Oct. 1, 1961.

SN 259,905. The Dayton Company, Minneapolis, Minn. Filed Dec. 2, 1966.

DAYTONHOSE

Owner of Reg. Nos. 588,314, 645,132, and 731,213.
For Women's Hosiery.
First use Oct. 1, 1938.

SN 260,819. Carmo Shoe Manufacturing Company, Union, Mo. Filed Dec. 15, 1966.



For Women's Shoes.
First use May 1960.

SN 260,935. Helen Harper Inc., New York, N.Y. Filed Dec. 16, 1966.

CHARLIE'S GIRLS

For Dresses, Skirts, Pants, Bermuda Shorts, Jamaica Shorts, Jackets, Sweaters, Jumpers, Blouses, Shirts, Shifts, Stockings, Hats, Shirtwaists, Suits, Coats, Underwear, and Bathing Suits.
First use Nov. 7, 1966.

SN 261,120. Wallach's Inc., Long Island City, N.Y. Filed Dec. 19, 1966.

THE DOUBLE EAGLE

For Men's Wear—Namely, Gloves, Hose, Slacks, Sweaters, Jackets, Walk Shorts, and Sport Shirts.
First use May 14, 1962.

SN 262,248. Maidenform, Inc., New York, N.Y. Filed Jan. 10, 1967.

WONDER SMOOTH

For Foundation Garments.
First use Dec. 14, 1966.

SN 262,466. Cooper's, Incorporated, Kenosha, Wis. Filed Jan. 13, 1967.

C.D.

For Component of Men's Underwear Consisting of a Specially Designed Pouch.
First use at least as early as Dec. 12, 1966.

SN 263,594. Melville Shoe Corporation, New York, N.Y. Filed Jan. 30, 1967.

Hi-Hoppers

For Sneakers.
First use Dec. 15, 1966.

SN 271,099. Thomas Cort, Inc., Philadelphia, Pa. Filed May 10, 1967.



The words "Thos. Cort" are not known to be the name of any living individual.
For Women's Shoes.
First use May 1946; 1943 in a different form.

SN 274,141. Tandy Corporation, d.b.a. Tex Tan Western Leather Co., Fort Worth, Tex. Filed June 19, 1967.

YOAKUM

Owner of Reg. No. 720,706.
For Men's, Women's, and Children's Leather Footwear—Namely, Shoes, Slippers, Boots, and Moccasins.
First use Mar. 1, 1962.

SN 275,198. Chips 'n Twigs, Inc., Philadelphia, Pa. Filed July 3, 1967.

RAINAWAY

For Men's and Boys' Raincoats and Rainwear.
First use June 28, 1967.

SN 275,202. Bernardo Sandals, Inc., New York, N.Y. Filed July 3, 1967.

BERNARDO

Owner of Reg. Nos. 427,711, 640,739, and 715,133.
For Stockings for Thong Sandals.
First use May 15, 1967.

SN 276,294. The Lovable Company, Atlanta, Ga. Filed July 19, 1967.



Owner of Reg. No. 538,306.
For Brassieres, Girdles, Panty Girdles, Corsets, Corselettes, Garter Panties, Garter Belts, Panty Briefs, Panty Hose, Slips, Bra Slips, Half Slips, Half Slips and Panty Combinations, and Sleepwear.
First use 1963.

Class 40—Fancy Goods, Furnishings, and Notions

SN 242,967. Dent & Vallis (Canada) Limited, Toronto, Ontario, Canada. Filed Apr. 8, 1966.

HIGH SOCIETY

For Toilet Sets Consisting Essentially of Combs, Brushes, and Mirrors.
First use January 1966; in commerce January 1966.

SN 278,073. Mercantile Stores Company, Inc., Wilmington, Del. Filed Aug. 11, 1967.

DARCEL

For Wigs.
First use June 9, 1967.

Class 41—Canes, Parasols, and Umbrellas

SN 264,955. Reva Ostrow, New York, N.Y. Filed Feb. 17, 1967.

R

For Umbrellas and Parasols.
First use Feb. 2, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 263,202. Regal Rugs, Inc., North Vernon, Ind. Filed Jan. 24, 1967.

REGAL

For Textile Bathroom Rugs, Mats, and Covers for Lids and Tanks.
First use 1941.

SN 264,511. The Calico Printers' Association, Limited, Manchester, England. Filed Feb. 13, 1967.

GRAFTON

Owner of British Reg. Nos. 146,003 and 586,604, dated June 29, 1938.
For Cotton and Rayon Piece Goods.

SN 264,910. Canton Textile Mills, Inc., Canton, Ga. Filed Feb. 17, 1967.

CANTEX

Owner of Reg. No. 803,154.
For Fabrics of Cotton, Wool, and Synthetic Materials, and Combinations Thereof.
First use Jan. 26, 1949.

SN 265,279. Coronet Industries, Inc., Dalton, Ga. Filed Feb. 23, 1967.

RIVIERA

For Tufted Carpeting.
First use Jan. 6, 1967.

SN 265,579. West Point-Pepperell, Inc., West Point, Ga. Filed Feb. 27, 1967.

LUXOR

Owner of Reg. No. 738,713.
For Sheets and Pillowcases of Cotton and Mixtures of Cotton and Synthetic Fibers.
First use Feb. 6, 1967.

SN 275,210. CKL Distributing Co., Inc., Cleveland, Ohio. Filed July 3, 1967.

ZIP-NET

For Netting Used To Encase Meat Products.
First use May 1966.

Class 43—Thread and Yarn

SN 264,685. Roxy-Eastern Thread Corporation, New York, N.Y. Filed Feb. 14, 1967.



Owner of Reg. No. 624,576.
For Sewing Thread.
First use on or about Dec. 15, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 246,414. Wilhelm Julius Teufel, Kommanditgesellschaft, Stuttgart, Germany. Filed May 23, 1966.

ORTHOLEN

Owner of German Reg. No. 809,961, dated Aug. 17, 1960.
For Plastic Materials in Form of Blocks, Plates, Foils, Films, Rods, and Pipes for Orthopedic, Prosthetic, and Medical Purposes, Orthopedic Articles for Legs, Arms, Heads, and the Human Body; Orthopedic Articles for Therapeutic Purposes; Body Braces; Leg Braces; Prosthetic Articles—Namely, Artificial Legs and Arms, Parts Thereof, Artificial Parts of the Human Body, and Artificial Bosoms.

SN 248,286. American Cyanamid Company, Wayne, N.J. Filed June 17, 1966.

PRE·OP

Owner of Reg. No. 791,554.
For Surgical Sponge.
First use June 7, 1966.

SN 260,083. William S. Rice, Inc., Adams, N.Y. Filed Dec. 5, 1966.

HERCU-GUARD

For Hospital and Sick-Room Mattress Covers, Pillow Covers, Bed Pads, Draw-Sheets, Protective Sheeting, Safety Belts, Armboards for Intravenous Implementation, Hamper Bags, and Disaster Pouches for Accident and Body Removal.
First use June 27, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 262,216. Tasty-Mates Company, Camden, N.J. Filed Jan. 9, 1967.

COLA BERRY

Owner of Reg. No. 735,492.
For Soft Drinks and Syrups for Making the Same.
First use at least as early as Oct. 7, 1960.

Class 46—Foods and Ingredients of Foods

SN 199,642. Victor J. Bergeron, San Francisco, Calif., assignee of Trader Vic's Food Products, d.b.a. Trader Vic's Food Products, Inc., Berkeley, Calif. Filed Aug. 10, 1964.



The words "Delicious Flavor Restaurant" and the word "Catsup" are disclaimed apart from the mark as shown. A translation of the Chinese characters into English reading from right to left, is "restaurant flavor delicious." If rearranged to read in English style, they would be translated to read "delicious flavor resturant." Owner of Reg. Nos. 502,788 and 629,234.
For Catsup.
First use July 17, 1964.

SN 232,038. B. F. Trappey's Sons Inc., New Iberia, La. Filed Nov. 2, 1965.



The Spanish word "Tempero" means "seasonableness." The representation of the woman is fanciful.
For Bottled Peppers.
First use Sept. 24, 1943.

SN 234,590. Armour and Company, Chicago, Ill. Filed Dec. 13, 1965.

BASKETBALL

For Cooked Hams.
First use on or prior to Nov. 1, 1960.

SN 235,402. Flatbrodfabrikken Ideal, Hamar, Norway. Filed Dec. 28, 1965.



The drawing is lined for red and blue.
For Bread, Particularly Flat or Crisp Bread.
First use as early as Jan. 15, 1965; in commerce on or about Jan. 15, 1965; 1930 in a different form.

SN 236,357. William Cottrell & Sons, Waretown, N.J. Filed Jan. 13, 1966.

SEA DOG

For Fresh and Frozen Seafood—Namely, Clams and Scallops.
First use July 6, 1964.

SN 243,045. Vahlsing, Inc., Robbinsville, N.J. Filed Apr. 8, 1966.



The drawing is lined for red and yellow, but no claim is made to color as a feature of the mark.
For Frozen Foods—Namely, Fruits and Vegetables.
First use October 1961.

SN 243,526. Carnation Company, Los Angeles, Calif., assignee of A. Arena & Co., Ltd., Los Angeles, Calif. Filed Apr. 15, 1966.

CARNATION

Owner of Reg. Nos. 75,751, 705,327, and others.
For Fresh Citrus Fruits, Fresh Vegetables, Fresh Melons, and Canned Orange Juice.
First use at least as early as 1905.

SN 243,826. Armour and Company, Chicago, Ill. Filed Apr. 20, 1966.

BLOC-REDI

Owner of Reg. No. 810,840.
For Fresh Cuts of Beef and Pork.
First use on or prior to July 1, 1965.

SN 244,406. A. Giurlani & Bro., Sunnyvale, Calif. Filed Apr. 27, 1966.



For Canned and Bottled Food Products—Namely, Olive Oil, Peperoncini, Sardines, Minestrone Soup, Anchovies, Tomatoes, Tomato Puree, Artichoke Hearts, Olives, Pickles, Chile Peppers, Italian Peppers, Cocktail Onions, Southern Hot Mix (a Mix of Pickles and Spices), Tuna, and Mushrooms.
First use Oct. 28, 1940.

SN 247,522. H. B. Reese Candy Co., Inc., Hershey, Pa. Filed June 7, 1966.



The words "Peanut Butter Cup" are disclaimed apart from the mark as shown.
For Confection Comprising Peanut Butter Encapsulated in a Cup-Like Container of Butterscotch.
First use March 1966.

SN 248,637. Ralston Purina Company, St. Louis, Mo. Filed June 21, 1966.

GOLDEN BULKY

No claim is made to the word "Bulky" apart from the mark as shown, applicant reserving the rights at common law.
For Cattle Feeds.
First use Jan. 7, 1965.

SN 249,555. The Nestle Company, Inc., White Plains, N.Y. Filed July 5, 1966.

SENECA

For Cocoa Sold in Large Quantity Containers to Food Manufacturers for Use in the Production of Toppings, Coatings or Flavoring Ingredients.
First use Jan. 21, 1955.

SN 251,658. J. R. Short Milling Company, Chicago, Ill. Filed Aug. 3, 1966.

DŌ-STRENGTH

Owner of Reg. No. 750,326.
For Wheat Gluten Used as an Ingredient of Bread or Other Bread Products.
First use June 15, 1961.

SN 251,734. Lone Star Foods Company, Inc., Dallas, Tex. Filed Aug. 4, 1966.

STARMARK

For Cereal-Derived Ready-To-Eat Snacks, Flavored With Sesame Seeds, To Be Used in Conjunction With Such Foods as Hor d'Oevres, Dips, Salads, and Soups.
First use July 19, 1966.

SN 253,337. The Quaker Oats Company, Chicago, Ill. Filed Aug. 29, 1966.

PINK PUNCH

Without waiver of its common law rights in the mark as a whole or any feature thereof, applicant disclaims exclusive rights to the word "Pink" separate and apart from the mark as shown.
For Cookies.
First use June 7, 1966.

SN 253,887. Jules Weber, Inc., Brooklyn, N.Y. Filed Sept. 6, 1966.

MASSIMO

The word "Massimo" in the Italian language means "the most."
For Canned Tomatoes.
First use Apr. 20, 1962.

SN 253,913. Salada Foods Ltd., Don Mills, Ontario, Canada. Filed Sept. 6, 1966.

POTATO PLUS

Applicant disclaims the word "Potato" apart from the mark as shown.
For Potato Product in Dehydrated Flake Form.
First use Nov. 26, 1958; in commerce Nov. 26, 1958.

SN 254,270. Frederick Gash, Inc., New York, N.Y. Filed Sept. 12, 1966.



For Imitation Low Calorie Mayonnaise.
First use May 20, 1966.

SN 254,706. National Fruit Flavor Co., Inc., New Orleans, La. Filed Sept. 19, 1966.

OLÉ

For Food Seasoning of a Spice Nature.
First use in or about July 1966.

SN 255,597. Chicago Bird & Cage Co., d.b.a. Meyers Pet Supply, Chicago, Ill. Filed Oct. 3, 1966.

Meyer's

For Pet Foods for Birds, Hamsters, and Turtles.
First use 1920.

SN 255,641. Paulin Chambers Co. Ltd., Winnipeg, Manitoba, Canada. Filed Oct. 3, 1966.

FAT EMMA

Owner of Canadian Reg. No. 104,338, dated Sept. 7, 1956.
For Candy Bars.

SN 255,924. Southern Tea Company, Atlanta, Ga. Filed Oct. 6, 1966.

BREW MAGIC

No claim is made to the word "Brew" apart from the mark as shown. Owner of Reg. No. 750,248.
For Instant Tea.
First use on or about Aug. 10, 1966.

SN 256,505. Philadelphia Chewing Gum Corporation, Havertown, Pa. Filed Oct. 14, 1966.

MOON GUM

The word "Gum" is disclaimed apart from the mark as shown. Owner of Reg. No. 823,476.
For Candy-Coated Chewing Gum Balls.
First use Oct. 10, 1966.

SN 256,713. Arnold Bakers, Inc., Greenwich, Conn. Filed Oct. 19, 1966.

RYE-SEN

For Cocktail Snack—Namely, Rice, Rye, and Caraway Seed Flavored Cracker-Type Product.
First use Sept. 21, 1966.

SN 256,718. John Campbell Ltd., Perth, Scotland. Filed Oct. 19, 1966.

FAIR MAID

For Candy.
First use 1929; in commerce Jan. 18, 1963.

SN 257,048. Leonard Foti, d.b.a. Rosa Food Products Company, Philadelphia, Pa. Filed Oct. 24, 1966.

ROSA

Owner of Reg. Nos. 216,603, 441,847, and 793,707.
For Italian Style Soups—Namely, Minestrone, Pasta e Fagioli, Lentil and Escarole; Macaroni; Canned Vegetables—Namely, Peas, Whole Corn, Crushed Corn, Lima Beans, Pork and Beans, Pink Beans and Zucchini; Malt Syrup for Food Purposes; and Mayonnaise.
First use 1900.

SN 258,122. Keebler Company, Elmhurst, Ill. Filed Nov. 7, 1966.

FIG JAMMERS

Applicant disclaims the word "Fig" apart from the mark as shown.
For Cookies.
First use Sept. 29, 1966.

SN 258,765. Alabama-Georgia Syrup Company, d.b.a. Alaga Syrup Company, Montgomery, Ala. Filed Nov. 16, 1966.

PLOWBOY

For High Grade, Real Cane Table Syrups.
First use 1924.

SN 259,571. Old Dominion Candies, Inc., Salem, Va. Filed Nov. 28, 1966.

NANCY BEE'S

The name "Nancy Bee" is fictitious.
For Candies.
First use Aug. 29, 1966.

SN 259,633. B.N.S. International Sales Corporation, New York, N.Y. Filed Nov. 29, 1966.

ERNEX

For Butter Mix Used for Commercial Baking Purposes.
First use Mar. 25, 1966.

SN 259,634. B.N.S. International Sales Corporation, New York, N.Y. Filed Nov. 29, 1966.

LOREX

For Butter Mix Used for Commercial Baking Purposes.
First use Mar. 25, 1966.

SN 260,004. American Home Products Corporation, New York, N.Y. Filed Dec. 5, 1966.

G.Washington's

Owner of Reg. Nos. 178,722, 431,953, and others.
For Powdered Broths and Broth Mixes and All Purpose Seasonings.
First use Nov. 9, 1964; Mar. 4, 1939, as to the signature portion of the mark.

SN 260,268. N.V. Conservenfabriek "De Westhoek," Oud-Gastel, Netherlands. Filed Dec. 7, 1966.

LAMA

Owner of Dutch Reg. No. 159,380, dated June 10, 1965.
For Meat and Tinned Meat, Fish and Tinned Fish, Game and Poultry, Preserved, Dried and Cooked Fruit and Vegetables, Shellfish and Molluscs, Pickles, Sauces, Soups, Jellies, and Jams.

SN 260,553. International Fortrition Company, Inc., Atlanta, Ga. Filed Dec. 12, 1966.

ENERJETS

Owner of Reg. Nos. 735,020 and 735,021.
For Dried Bakery Product Used as a Livestock and Poultry Feed Ingredient.
First use on or about Oct. 1, 1966.

SN 260,740. Garelick Bros. Farms, Inc., Franklin, Mass. Filed Dec. 14, 1966.

HAV'A SHAKE

For Packaged Frozen Milk Shakes.
First use July 21, 1966.

SN 260,923. Central Seaway Company, Inc., Chicago, Ill. Filed Dec. 16, 1966.

CENSEA

For Frozen Sea Foods.
First use at least as early as December 1958.

SN 260,960. Rocco Supply Company, St. Louis, Mo. Filed Dec. 16, 1966.

DINE-MOR

For Non-Fat Dry Milk Solids With Chocolate Flavoring.
First use Nov. 10, 1966.

SN 261,108. Edward Sharp & Sons Limited, Maidstone, Kent, England. Filed Dec. 19, 1966.

WISP

Owner of British Reg. Nos. 862,608, dated Apr. 7, 1964, and 868,483, dated Aug. 25, 1964.
For Candy.

SN 261,277. Carnation Company, Los Angeles, Calif. Filed Dec. 22, 1966.

TABLE-MATE

Owner of Reg. No. 767,671.
For Sweetener, Both Nutritive and Non-Nutritive.
First use Oct. 7, 1966.

SN 261,650. Farmers Pantry Inc., Valley Stream, N.Y. Filed Dec. 29, 1966.

Farmers Pantry

For Jams and Jellies.
First use Oct. 26, 1966.

SN 261,651. Farmers Pantry Inc., Valley Stream, N.Y. Filed Dec. 29, 1966.

Farmers Pantry

For Bacon, Pretzels, and Potato Chips.
First use Oct. 26, 1966.

SN 262,262. Hawthorn-Mellody, Inc., Chicago, Ill. Filed Jan. 10, 1967.

MELLODY MAID

For Vegetable Fat Cream Substitute for Beverages.
First use on or before Aug. 19, 1966.

SN 262,454. Zausner Foods Corp., Mountainside, N.J. Filed Jan. 12, 1967.

ZAUSNER BIG Z

Owner of Reg. No. 429,165.
For Cheese, Canned Fresh Milk, Skim Milk, Evaporated Milk, Canned Chocolate Milk, Canned Milk Shake, Canned Chocolate Flavored Drink, Cream, Egg Nog, and a Non-Dairy Coffee Cream Substitute.
First use Apr. 15, 1965.

SN 263,312. Zevo, Inc., Los Angeles, Calif. Filed Jan. 25, 1967.

CLAYTON FARMS

For Non-Dairy Sour Cream and Stabilizer for Same.
First use Dec. 29, 1966.

SN 263,787. Sunshine Biscuits, Inc., Long Island City, N.Y. Filed Feb. 1, 1967.

GO GO

Owner of Reg. No. 817,910.
For Snack Crackers.
First use Nov. 2, 1966.

SN 264,355. Whip-Rite Products Corp., Brooklyn, N.Y. Filed Feb. 9, 1967.

WHIP-RITE

Owner of Reg. No. 782,164.
For Imitation Cream Consisting of a Vegetable Product for Use in Coffee, Tea, Cereals, and for Cooking.
First use in 1952.

SN 266,639. Beatrice Foods Co., Chicago, Ill. Filed Mar. 14, 1967.

GREEN FIELD

For Sweet Pickles, Sour Pickles, Dill Pickles, and Fresh Packed Pickles.
First use on or about June 1, 1965.

SN 267,956. Mars, Incorporated, d.b.a. M & M Candies, Wilmington, Del. Filed Mar. 30, 1967.

WEEKEND

For Candy.
First use Feb. 4, 1967.

SN 272,997. Wilbur-Ellis Company, San Francisco, Calif. Filed June 5, 1967.

Pacific Isle

Owner of Reg. Nos. 684,120 and 723,943.
For Canned Fish; Canned Mandarin Oranges; Frozen Chinese Pea Pods; Canned Vegetables; Canned Water Chestnuts; Canned Pineapple; and Canned Mushrooms.
First use Sept. 30, 1951, on canned fish.

SN 272,999. Sunsweet Growers, Inc., San Jose, Calif. Filed June 5, 1967.



Owner of Reg. Nos. 121,593, 650,709, and others.
For Dried Prunes.
First use July 28, 1965.

SN 273,444. Edlo Enterprises, Inc., San Francisco, Calif. Filed June 9, 1967.

VIGOR UP

For Imitation Milk in Fluid Form.
First use Apr. 24, 1967.

SN 275,013. Nuggett Distributors' Cooperative of America, Inc., Stockton, Calif. Filed June 29, 1967.



Owner of Reg. No. 266,684.
For Canned Food Items as Follows: Fruits; Vegetables; Apple Sauce; Vegetable Juices; Fruit Juices; Chicken Broth; Meatless Barbecue Sauce; Tomato Catsup; Chili; Chicken; Chocolate Syrup; Citrus Fruit Sections; Fish; Oysters; Smoked Oysters; Smoked Clams; Corned Beef Hash; Cranberries; Dietetic Fruits and Vegetables; Soups; Flavored Syrups To Be Used as Dessert Toppings; Brandied Fruits; Spiced Fruits; Lemon Juice; Maraschino Cherries; Mandarin Oranges; Mincemeat; Mushrooms; Fruit Nectars; Oyster Stew; Plum Pudding; Prune Juice; Table Syrup; Fountain Syrups Used for Food and Food Beverage Purposes; Evaporated Milk; Cooking Oil; Salad Oil; Baking Powder; Baking Soda; Caviar; Grated Cheeses; Prepared Cake Mixes; Chopped Frozen Chives; Frozen Citrus Fruit; Cocoa; Coconut; Regular Coffee; Instant Coffee; Tea; Frozen Fruit Juice Concentrates; Cookies; Corn Starch for Food Purposes; Dehydrated Food Products—Namely, Onions, Garlic, and Vegetables; Salad Dressings; Mayonnaise; Spices; Food Seasonings—Namely, Salts, Pepper, Chili Powder, Marjoram, Oregano, Onion Powder, Granulated Onion, Paprika, Parsley Flakes, Poultry Seasoning, Rosemary, Sesame Seed, Sage, Thyme, Vegetable Flakes; Cocktail Onions; Olives; Gherkins; Pickles; Cherry Peppers; Chow Mein; Chicken Chow Mean; Chop Suey Vegetables; Chinese Mixed Vegetables; Vegetable Chop Suey; Chicken Chow Mein With Noodles; Gelatin Desserts; Prepared Mixes—Namely, Cake; Muffin, Waffle, Pancake, Pie Crust, Doughnut, Roll and Cookie Mixes; Food Flavoring Extracts; Margarine; Marshmallows; Marshmallow Creme; Peanut Butter; Canned Mincemeat; Non-Dairy Coffee Cream Substitute; Canned and Bulk Nut Meats; Nut Pastes for Use in Baking; Molasses; After Dinner Mints; Pastry and Pot Shells; Canned Meats; Frozen Meats; Meat and Fowl Tenderizers; Brown Gravy; Pudding and Pie Fillings; Fruit Jams; Fruit Jellies; Tartar Sauce; Vinegar; Canned Turkey; Sour Cream Substitute Dressings; Canned Chicken; Soy Sauce; Packaged Gravy Bases; Egg Nog (Non-Alcoholic); Canned Rum Cake; Pickled Fruits and Vegetables; Ravioli; Rice; Instant Potatoes; Potato Salad; Pretzels; Crackers; Alimentary Paste Products; Sugar; Frozen Turkey; Worcestershire Sauce; Antipasto Products; Yeast; Apple Cider; Canned Boston Brown Bread; Hot Sauces; Canned Yams; Yam Flakes; Tamales; Relishes; Frozen Pies; Canned Sauerkraut; Packaged Noodles; Mustard; Egg Solids; Egg Custard; Food Colors; Frozen Fish; Vegetable Shortening; Canned and Dehydrated Peppers; and Canned Tomato Juice.
First use June 15, 1927, on canned fruits and canned vegetables.

SN 276,068. San Diego Products Co., San Diego, Calif. Filed July 17, 1967.

MISSION VALLEY

Owner of Reg. No. 758,771.
For Salad Dressings; Mayonnaise; Pickles; Vinegar; Pickle Relish; Meatless Taco Sauce; Fountain Syrups Used for Food and Food Beverage Purposes.
First use May 1967.

SN 277,105. C. W. Forbes & Son, East Irvine, Calif. Filed July 31, 1967.

RANCHO DEL CAMINO REAL

The mark is translated to mean "the ranch by the king's highway."
For Fresh Vegetables.
First use Apr. 7, 1967.

SN 277,112. Golden Crown Citrus Corporation, Evanston, Ill. Filed July 31, 1967.

GOLDEN CROWN

Owner of Reg. Nos. 700,638 and 807,002.
For Reconstituted Lemon Juice.
First use Apr. 17, 1967.

SN 277,755. General Mills, Inc., Minneapolis, Minn. Filed Aug. 8, 1967.

EXPRESS

For Liquid Breakfast Drink Designed To Provide a Complete Breakfast Meal.
First use July 3, 1967.

SN 277,866. Stark, Wetzel & Co., Inc., Indianapolis, Ind. Filed Aug. 9, 1967.

GRANDSTAND

For Weiners and Other Meat Products.
First use July 18, 1967.

SN 278,175. Young's Market Company, Los Angeles, Calif. Filed Aug. 14, 1967.

TEMPT-URA

For Frozen Breaded Shrimp.
First use July 1967.

Class 47 — Wines

SN 259,754. Monarch Wine Company, Inc., d.b.a. Monarch Wine Company, Brooklyn, N.Y. Filed Nov. 30, 1966.

COLONIAL HERITAGE

For Champagne, Sparkling Rose Wine, and Still Wines.
First use Oct. 29, 1965.

SN 277,752. Franzia Brothers Winery, d.b.a. Old Chateau Wine Co., Ripon, Calif. Filed Aug. 8, 1967.

CAMARO

For Wines.
First use Aug. 1, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 246,181. Lang Brothers Limited, Glasgow, Scotland. Filed May 20, 1966.

LANG'S

Owner of U.S. Reg. Nos. 308,162 and 311,557.
For Whisky.
First use in or about 1933; in commerce in or about 1933.

SN 260,057. Mr. Boston Distiller Inc., Boston, Mass. Filed Dec. 5, 1966.

CANADIAN SPRINGS

The word "Canadian" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 713,944, 728,695, and 744,946.
For Canadian Whisky.
First use Nov. 17, 1966.

SN 261,387. The Nikka Whiskey Distilling Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Dec. 23, 1966.

GOLD NIKKA

For Whisky.
First use Aug. 26, 1964; in commerce Aug. 26, 1964.

SN 263,293. Schenley Distillers, Inc., New York, N.Y. Filed Jan. 25, 1967.

SMART SET

For Prepared Alcoholic Cocktails.
First use Nov. 9, 1966.

SN 267,351. Old Boone Distillery Co., d.b.a. Fairfield Distillery Co., Louisville, Ky. Filed Mar. 22, 1967.

DISTILLER'S PRIDE

For Bourbon Whiskey.
First use Feb. 24, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 243,059. Yardley of London, Inc., Totowa, N.J. Filed Apr. 8, 1966.

NEXT TO NOTHING

For Foundation Cream, Pressed Powder, Eye Shadow, and Lipstick.
First use Mar. 4, 1966.

SN 243,804. Revlon, Inc., New York, N.Y. Filed Apr. 19, 1966.

'clean-clear'

Owner of Reg. No. 642,734.
For Cosmetic Cleansing Lotion.
First use Feb. 14, 1955.

SN 244,507. Maradel Products, Inc., Farmingdale, N.Y. Filed Apr. 28, 1966.

"THE BUGGS"

For Bath Powder.
First use Apr. 1, 1966.

SN 244,861. Sam Michael George, Washington, D.C. Filed May 3, 1966.

DENKLEEN

For Denture Cleaner.
First use at least as early as 1952.

SN 247,918. H.M. Corp., New York, N.Y. Filed June 13, 1966.

SAPPHIRE

For Men's and Boys' Cosmetics—Namely, After Shave Lotion, Cologne, Talc, Shaving Cream, Hair Cream, Hair Tonic, and Deodorant.
First use Apr. 15, 1966.

SN 252,344. John H. Breck, Inc., Springfield, Mass. Filed Aug. 15, 1966.

SWINGING SILVER

The word "Silver" is disclaimed apart from the mark as shown.
For Hair Color Preparation.
First use Aug. 2, 1966.

SN 253,198. H/P Consultants Ltd., Chicago, Ill. Filed Aug. 26, 1966.

STUDIO ONE

For Holding Spray for Grooming Men's Hair.
First use Sept. 27, 1965.

SN 254,183. Rabani Creations Inc., New York, N.Y. Filed Sept. 9, 1966.

"C'EST SI BON"

The term "C'est si Bon" is largely idiomatic, it may be translated as "it's so good."
For Perfume.
First use Dec. 19, 1955.

SN 254,503. Clairol Incorporated, New York, N.Y. Filed Sept. 15, 1966.

INNOCENT

Owner of Reg. No. 789,228.
For Hair Tinting, Dyeing and Coloring Preparation.
First use July 8, 1966.

SN 257,824. John H. Breck, Inc., Springfield, Mass. Filed Nov. 3, 1966.

BEAUTIFUL SKIN BRECK

Applicant disclaims the words "Beautiful Skin" apart from the mark as shown. Owner of Reg. No. 529,328.
For Skin Cream.
First use Oct. 14, 1966.

SN 258,021. Luis Robledo C., Bogota, Colombia. Filed Nov. 7, 1966.

GENCABELLO

For Hair and Scalp Conditioner.
First use Oct. 1, 1966; in commerce Oct. 1, 1966.

SN 258,313. Merle Norman Cosmetics, Inc., Los Angeles, Calif. Filed Nov. 9, 1966.

VIVONS

For Perfume, Spray Cologne, Eau de Toilette, and Dusting Powder.
First use Oct. 17, 1966.

SN 261,471. Richard L. Elkins, d.b.a. Alpern Laboratories, Skokie, Ill. Filed Dec. 27, 1966.

ALPERN

For Creams for Nails and Hands.
First use 1938.

SN 262,354. Sea & Ski Corporation, Reno, Nev. Filed Jan. 11, 1967.

SEA & SKI

Owner of Reg. Nos. 636,263, 807,614, and others.
For Suntan Lotions.
First use Dec. 4, 1953.

SN 263,912. Holland Hall Products, Inc., Stamford, Conn., assignee of Bryce L. Holland, d.b.a. Wipe Out Company, Stamford, Conn. Filed Feb. 3, 1967.

WIPE OUT

For Complexion Pads Impregnated With a Cosmetic Having Skin Conditioning Properties.
First use Dec. 2, 1966.
Subj. to Intf. with SN 269,510.

SN 264,104. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. Filed Feb. 6, 1967.

KINETIC

For After Shave Cologne.
First use Jan. 18, 1967.

SN 264,156. MEM Company, Inc., Northvale, N.J. Filed Feb. 7, 1967.

English Leather



Owner of Reg. No. 672,943.
For Toilet Preparations—Namely, Lotion Used as After Shave Lotion or Eau de Cologne or Toilet Water or Afterbath Rub, Deodorant Lotion, Talcum Powder, and Sets Containing at Least Two of the Foregoing.
First use Apr. 14, 1949.

SN 264,871. Watkins Products, Inc., Winona, Minn. Filed Feb. 16, 1967.

HEIRLOOM

For Spray-On Deodorant Powder.
First use Feb. 6, 1967.

SN 268,644. Yardley of London, Inc., Totowa, N.J. Filed Apr. 7, 1967.

HAZE

For Skin Freshener and Lip Polish.
First use Mar. 8, 1967.

SN 269,510. Clairol Incorporated, New York, N.Y. Filed Apr. 19, 1967.

WIPE OUT

For Anti-Acne Preparation.
First use Nov. 14, 1966.
Subj. to Intf. with SN 263,912.

SN 271,106. Koninklijke Eau de Cologne-fabriek J. C. Boldoot N.V., Amsterdam, Netherlands. Filed May 10, 1967.

SKICE COOLOGNE

For the purpose of this application only, and without waiving any of its common law rights, applicant disclaims the word "Coologne" apart from the mark shown in the drawing.
Owner of Dutch Reg. No. 151,683, dated Jan. 22, 1964.
For Eau de Cologne.

SN 274,687. American Home Products Corporation, New York, N.Y. Filed June 26, 1967.

GREAT STRAIT

No claim of exclusive rights is made to the word "Strait" apart from the mark as shown.
For Hair Straightener.
First use June 9, 1967.

SN 274,843. Ar. Winarick, Inc., New York, N.Y. Filed June 27, 1967.

HIGHLAND LEATHER

Applicant disclaims use of the word "Leather" apart from the mark as shown.
For After Shave.
First use July 25, 1966.

SN 277,965. MEM Company, Inc., Northvale, N.J. Filed Aug. 10, 1967.

QUINAR

For Hair Tonic.
First use 1920.

Class 52—Detergents and Soaps

SN 200,332. Colonial Chemical Corporation, d.b.a. Kent Chemicals, Dalton, Ga. Filed Aug. 21, 1964.

COLOX

For Non-Bleaching Soaps and Detergents for Industrial Textile Use.
First use at least as early as Feb. 8, 1963.

SN 241,038. D-Best Chemical Products, Inc., Shacklefords, Va. Filed Mar. 15, 1966.



For All Purpose Household Cleaner.
First use on or about Sept. 1, 1965.

SN 255,433. Hadleigh-Crowther Limited, Reading, England. Filed Sept. 29, 1966.

INFA-CARE

Owner of British Reg. No. 888,560, dated Dec. 23, 1965.
For Medicated Liquid Detergents for Use in Infants' Bath Water.

SN 258,435. Wolff Appliance Corporation, New York, N.Y. Filed Nov. 10, 1966.

Lacey Ledge

Owner of Reg. Nos. 581,439 and 597,076.
For Toilet Soap.
First use Feb. 4, 1965.

SN 258,779. John H. Breck, Inc., Springfield, Mass. Filed Nov. 16, 1966.

CLEAN AND BRIGHT

Applicant disclaims the word "Clean" apart from the mark as shown.
For Hair Shampoo.
First use Oct. 31, 1966.

SN 258,780. John H. Breck, Inc., Springfield, Mass. Filed Nov. 16, 1966.

BRIGHT AND CLEAN

Applicant disclaims the word "Clean" apart from the mark as shown.
For Hair Shampoo.
First use Oct. 31, 1966.

SN 259,743. John J. Lambert, d.b.a. Lambert Laboratories, Hallandale, Fla. Filed Nov. 30, 1966.

HI-PUP

For Dog Shampoo.
First use Jan. 20, 1959.

SN 260,457. Sea-Air Chemical Corporation, Long Island City, N.Y. Filed Dec. 9, 1966.

MIGHTY MATE

For Solvent Emulsion Degreaser in Liquid Form.
First use 1959.

SN 261,624. Calgon Corporation, Pittsburgh, Pa. Filed Dec. 29, 1966.

CS-98

For Powdered Heavy Duty Steam Cleaning Compound, Particularly Useful in Cleaning Vehicles.
First use Sept. 23, 1966.

SN 261,628. Calgon Corporation, Pittsburgh, Pa. Filed Dec. 29, 1966.

CW-2L

For Heavy Duty Liquid Detergent for Washing Vehicles.
First use Sept. 23, 1966.

SN 262,175. King-Bee Enterprises, Oak Park, Ill. Filed Jan. 9, 1967.

OVENLY BLISS

For Oven Cleaner.
First use January 1966.

SN 263,766. Medaerco, Inc., Silver Spring, Md. Filed Feb. 1, 1967.

OC-20

For Preparation for Cleaning Lenses.
First use Jan. 18, 1967.

SN 263,783. A. O. Smith Corporation, Milwaukee, Wis. Filed Feb. 1, 1967.

HYDRO-PREP

For Cleaning Compound for Cleaning and Flushing Waterways of Hot Water Heating Systems.
First use Oct. 6, 1966.

SN 268,212. Morton International, Inc., Chicago, Ill. Filed Apr. 3, 1967.

PELLEX

Owner of Reg. No. 785,457.
For Cleaning Preparation for Removing Iron and Rust Deposits From Water Softeners, Metals, Porcelain, and Glass.
First use on or about June 14, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 252,597. Sir Pizza International, Inc., Muncie, Ind. Filed Aug. 17, 1966.

Sir PIZZA

Applicant disclaims exclusive right to the word "Pizza" as a service mark for restaurant services apart from the mark as shown.
For Restaurant Services, More Specifically, Drive-In Restaurants.
First use July 12, 1966.

SN 255,563. Guardsmark, Inc., Memphis, Tenn. Filed Sept. 8, 1966.

GI

For Protective Investigations and Property Surveillance Services.
First use July 19, 1965.

SN 262,049. Marc Stevens, Inc., Washington, D.C. Filed Jan. 6, 1967.

The Knife & Fork

For Restaurant Services—Namely, Preparing and Serving Foods and Beverages to the Public, and Providing Food Service for Groups and Parties.
First use Mar. 12, 1961.

SN 262,050. Marc Stevens, Inc., Washington, D.C. Filed Jan. 6, 1967.

THE KNIFE & FORK

For Restaurant Services—Namely, Preparing and Serving Foods and Beverages to the Public, and Providing Food Service for Groups and Parties.
First use Mar. 12, 1961.

SN 268,365. Arby's Inc., Youngstown, Ohio. Filed Apr. 5, 1967.

ARBY'S

Owner of Reg. No. 801,497.
For Restaurant Services.
First use at least as early as July 1964.

Class 101 — Advertising and Business

SN 257,511. Rogersnap Business Forms, Inc., Carrollton, Tex. Filed Oct. 28, 1966.

SPEEDI-SNAPS

For Services of Printing and Supplying Business Forms to Its Customers Bearing the Customer's Own Name.
First use Oct. 18, 1966.

Class 102 — Insurance and Financial

SN 258,528. The First New Haven National Bank, d.b.a. The Second National Bank Charter, New Haven, Conn. Filed Nov. 14, 1966.

CAP

For Credit Card Charge Plan Services.
First use February 1959.

Class 103 — Construction and Repair

SN 255,113. Nationwide Exterminating Inc., Hamilton, Ohio. Filed Sept. 26, 1966.

NATIONWIDE

For Pest Control, Fumigating, and Exterminating Services.
First use Jan. 16, 1963.

Class 105 — Transportation and Storage

SN 248,897. Comomnwealth Travel Service, Inc., Arlington, Va. Filed June 24, 1966.

COMMONWEALTH TRAVEL SERVICE, INC.

For Travel Agency Services.
First use Mar. 4, 1966.

Class 106 — Material Treatment

SN 275,731. Bell & Howell Photo Sales Company, Chicago, Ill. Filed July 11, 1967.

ROYAL GUARD

For Photographic Processing Services.
First use as early as March 1967.

SN 275,732. Bell & Howell Photo Sales Company, Chicago, Ill. Filed July 11, 1967.

ROYAL GUARD



The drawing is lined for blue, but color is not claimed as a feature of the mark.
For Photographic Processing Services.
First use as early as March 1967.

SN 275,733. Bell & Howell Photo Sales Company, Chicago, Ill. Filed July 11, 1967.



The drawing is lined for blue, but color is not claimed as a feature of the mark.
For Photographic Processing Services.
First use as early as March 1967.

Class 107 — Education and Entertainment

SN 235,308. International Tabulating Institute, Los Angeles, Calif. Filed Dec. 27, 1965.

ITI

For Education Services—Namely, Conducting a Data Processing Instruction Course.
First use September 1957.

SN 242,632. Moral Re-Armament, Inc., New York, N.Y. Filed Apr. 4, 1966.

SING-OUT

For Entertainment Services—Namely, Variety Shows, With Dialogue, Skits, Recited Prose Lines and Songs, Rendered Through Media of Stage, Television and Radio and Emphasizing Moral, Social and Civic Responsibility as Basic Ingredients of Patriotism.
First use July 24, 1965.

SN 251,314. Moral Re-Armament, Inc., New York, N.Y. Filed July 29, 1966.

UP WITH PEOPLE

For Entertainment Services, on Radio, Television, and Stage, Which Emphasize Integrity, Faith and a Positive Social Attitude as Essential Ingredients of Patriotism and Sound Nationhood, Necessary for Survival.
First use June 2, 1966.

SN 259,989. Melody Master U.S.A., Inc., Hartford, Conn. Filed Dec. 5, 1966.

MELODY MASTERS

Without waiving any of its comoman law rights thereto, the word "Melody" is disclaimed apart from the mark as shown.

For Service of Providing Background Music in Commercial and Other Establishments.

First use at least as early as 1961.

SN 275,790. Donald L. Sartell, d.b.a. Drum Major Magazine, Janesville, Wis. Filed July 11, 1967.

MISS AMERICAN MAJORETTE

Owner of Reg. No. 684,196.

For Promotion of Physical Education and General Good Health Through the Encouragement of Baton Twirling by the Medium of Sponsoring Monthly and Annual Contents, and for Entertainment Services Conducted Through the Media of Dances, Musical Shows, Pageants, and Festivals.

First use at least as early as May 1, 1967.

SN 275,791. Donald L. Sartell, Janesville, Wis. Filed July 11, 1967.

America's Youth on Parade

For Instruction Courses for Baton Twirlers, Majorettes, Drummers, and Color Bearers, Conducted Through Classes and Pageants; and in Promoting and Conducting Pageants, Festivals, Parades, Musical Shows, Corps Work, and Generally Educational, Athletic, and Entertainment Type Events Which Display the Activities of America's Youth.

First use at least as early as April 1966.

CERTIFICATION MARKS

Class A — Goods

SN 237,516. North American Food Service Corporation, Chicago, Ill. Filed Dec. 6, 1965.



The certification mark is used by persons authorized by the applicant to certify "Quality" according to standards set by applicant.

For Food Products for Use in Restaurants, Institutions, and Hotels.

First use July 1, 1963.

SN 272,892. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 2, 1967.

SAYELLE

The mark certifies that the goods with which the mark is associated comply with quality standards imposed by applicant as to the construction and fiber content. Owner of Reg. No. 814,711.

For Blankets.

First use Mar. 24, 1967.

SN 276,508. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 21, 1967.

SONTIQUE

The mark certifies that the goods with which the mark is associated comply with quality standards imposed by applicant as to construction, filling material and fiber content.

For Sleep Products, Including Pillows, Mattress Pads, Quilts, and Comforters.

First use June 23, 1967, for pillows.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

836,917. SANTA'S FOREST AND DESIGN. Great Lakes Nursery Corp. SN 186,088. Pub. 8–31–65. Filed 12–23–63.

836,918. CANNONBALL. R. W. Cannon & Co., Inc. SN 226,037. Pub. 6–7–66. Filed 8–19–65.

836,919. BASCO WATE. Milwhite Company Inc., d.b.a. Barium Supply Company. SN 231,584. Pub. 8–1–67. Filed 10–24–65.

836,920. SPB. Cosden Oil & Chemical Company. SN 256,826. Pub. 8–1–67. Filed 10–20–66.

836,921. HERB-BOUQUETTES. Charles S. Renwick, Jr. SN 257,084. Pub. 8–1–67. Filed 10–24–66.

836,922. WOLCRON. Chas. Pfizer & Co., Inc. SN 264,377. Pub. 8–1–67. Filed 2–10–67.

836,923. DEXSIL. Olin Mathieson Chemical Corporation. SN 268,852. Pub. 8–1–67. Filed 4–11–67.

Class 2 — Receptacles

836,924. STAKMOR. Mallinckrodt Chemical Works. SN 233,511. Pub. 8–1–67. Filed 11–29–65.

836,925. MERCHANDISING MAGIC. Hoague-Sprague Corporation. SN 252,953. Pub. 8–1–67. Filed 8–23–66.

836,926. TASTY TIGHT AND DESIGN. Scientific-Atlanta, Inc. SN 254,728. Pub. 8–1–67. Filed 9–19–66.

836,927. BARRIERMATIC. Fibreboard Corporation. SN 255,523. Pub. 8–1–67. Filed 9–30–66.

836,928. M AND DESIGN. Jas. H. Matthews & Co. MULTIPLE CLASS (Classes 2 and 50). SN 257,122. Pub. 8–1–67. Filed 10–25–66.

Class 4 — Abrasives and Polishing Materials

836,929. TEAM MATE. Alberto-Culver Company. SN 215,153. Pub. 9–20–66. Filed 3–29–65.

Class 5 — Adhesives

836,930. HIBOND. Lauhoff Grain Company. SN 246,331. Pub. 8–1–67. Filed 5–23–66.

836,931. KRE-X. Joslyn Mfg. and Supply Co., assignee of Hayden-Shaw Mineral Products, Inc. SN 249,533. Pub. 8–1–67. Filed 7–5–66.

836,932. SI-O-BOND. Stauffer Chemical Company. SN 253,353. Pub. 8–1–67. Filed 8–26–66.

836,933. GAF AND DESIGN. General Aniline & Film Corporation. SN 254,148. Pub. 8–1–67. Filed 9–9–66.

836,934. LIL-BOND. Lilly Chemical Products, Inc. SN 255,215. Pub. 8–1–67. Filed 9–27–66.

836,935. SPARK-FAS. Benjamin Foster Company. SN 255,310. Pub. 8–1–67. Filed 9–28–66.

Class 6 — Chemicals and Chemical Compositions

836,936. LOGO OF STYLIZED ROOF OVER WATER (DESIGN). HPE Inc. MULTIPLE CLASS (Classes 6, 13, 23, 26, 31, and 35). SN 212,409. Pub. 8–1–67. Filed 2–19–65.

836,937. TEAM MATE. Alberto-Culver Company. SN 217,517. Pub. 8–1–66. Filed 4–28–65.

836,938. REMAK. Remak Electrograph Pty. Limited. SN 223,831. Pub. 8–1–67. Filed 7–20–65.

836,939. MONO-TEST. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 238,181. Pub. 12–13–66. Filed 2–7–66.

836,940. EBONY. Fletcher Paper Company. SN 240,373. Pub. 4–11–67. Filed 3–14–66.

836,941. ALTER EASE. J. P. Stevens & Co., Inc. SN 243,749. Pub. 8–1–67. Filed 4–19–66.

836,942. BECK-LEE. The Bendix Corporation. MULTIPLE CLASS (Classes 6, 37, and 44). SN 245,039. Pub. 8–1–67. Filed 5–6–66.

836,943. DIPENTEK. Tenneco Chemicals, Inc. SN 247,272. Pub. 8–1–67. Filed 6–3–66.

836,944. LITHCOA. Lithium Corporation of America, Inc. SN 248,493. Pub. 8–1–67. Filed 6–20–66.

836,945. FABRI-COATE. Fabri-Coate Co., Inc. SN 249,747. Pub. 8–1–67. Filed 7–7–66.

836,946. COUNTRY MORNING. Avon Products, Inc. MULTIPLE CLASS (Classes 6, 51, and 52). SN 257,124. Pub. 8–1–67. Filed 10–25–66.

836,947. PURSUE. Amway Corporation. SN 258,028. Pub. 8–1–67. Filed 11–7–66.

836,948. A.S.C. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Company. SN 258,662. Pub. 8–1–67. Filed 11–15–66.

836,949. MICROBIOTONE. Cudahy Company. SN 259,818. Pub. 8–1–67. Filed 12–1–66.

836,950. BASCOIL. The Milwhite Co., Inc., d.b.a. Barium Supply Company. SN 259,952. Pub. 8–1–67. Filed 12–2–66.

836,951. PROTEX PDA. Protex Industries, Inc. SN 259,961. Pub. 8–1–67. Filed 12–2–66.

836,952. TOUCH AND FRESH. Roll-Out Products Corp. SN 259,967. Pub. 8–1–67. Filed 12–2–66.

836,953. PLANAVIN. Shell Oil Company. SN 260,087. Pub. 8–1–67. Filed 12–5–66.

836,954. POROMAT AND DESIGN. Fairchild Camera and Instrument Corporation. SN 260,735. Pub. 8–1–67. Filed 12–13–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

836,955. BRIXIA. Societa Metallurgica Italiana. SN 230,923. Pub. 8–1–67. Filed 10–21–65.

836,956. GARRETT AND DESIGN. The Garrett Corporation. SN 247,791. Pub. 8–1–67. Filed 6–10–66.

Class 10 — Fertilizers

836,957. NU-TURF. Federal Chemical Company. SN 250,262. Pub. 8–1–67. Filed 7–14–66.

836,958. GREENZIT. Geigy Chemical Corporation. SN 264,407. Pub. 8–1–67. Filed 2–10–67.

Class 12 — Construction Materials

836,959. ALPANA. Alpana Aluminum Products, Inc. SN 208,715. Pub. 1–3–67. Filed 12–23–64.

836,960. TRI-MATIC AND DESIGN. Tri-Matic Equipment Co. MULTIPLE CLASS (Classes 12, 13, 23, 26, 31, and 34). SN 238,019. Pub. 4–11–67. Filed 2–3–66.

836,961. VOR-SEAL. The Vorac Company. SN 238,024. Pub. 8–1–67. Filed 2–3–66.

836,962. SAMSON AND DESIGN. Samson Products Incorporated. MULTIPLE CLASS (Classes 12, 19, and 23). SN 242,534. Pub. 5–2–67. Filed 4–4–66.

836,963. T-O-T. Lake Chemical Co. SN 244,228. Pub. 8–1–67. Filed 4–25–66.

836,964. ELAST-O-FOAM. International Foam Corporation. MULTIPLE CLASS (Classes 12, 32, 39, and 42). SN 244,497. Pub. 5–9–67. Filed 4–28–66.

836,965. Z. Goodyear Aerospace Corporation. SN 246,075. Pub. 4–25–67. Filed 5–19–66.

836,966. JUSTCO. Just Plastics, Inc. SN 249,650. Pub. 8–1–67. Filed 7–6–66.

836,967. TIGER AIRO. Chas. Pfizer & Co., Inc. SN 251,563. Pub. 8–1–67. Filed 8–2–66.

836,968. HI-STICK. Eagle-Picher Industries, Inc. SN 255,300. Pub. 8–1–67. Filed 9–28–66.

836,969. CHEVRON (DESIGN). Standard Oil Company of California. SN 255,365. Pub. 8–1–67. Filed 9–28–66.

836,970. SONAC. Sonneborn Building Products, Inc. SN 255,828. Pub. 8–1–67. Filed 10–5–66.

836,971. MAGNALOAD. Powerlock Floors, Inc. SN 256,372. Pub. 8–1–67. Filed 10–13–66.

836,972. EXPAND-O-JOINT. Lamont & Riley, Inc. SN 256,945. Pub. 8–1–67. Filed 10–21–66.

836,973. ECONO-TEE. Wilson Concrete Company. SN 257,323. Pub. 8–1–67. Filed 10–26–66.

836,974. SILHOUETTE. Pittsburgh Plate Glass Company. SN 257,723. Pub. 8–1–67. Filed 11–1–66.

836,975. OXILINE LV. Harbison-Walker Refractories Company. SN 257,854. Pub. 8–1–67. Filed 11–3–66.

836,976. OXILINE CL. Harbison-Walker Refractories Company. SN 257,856. Pub. 8–1–67. Filed 11–3–66.

836,977. WEDCO QUIET SPRAY. Western Chemical and Manufacturing Company. SN 265,948. Pub. 8–1–67. Filed 3–6–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

836,936. (See Class 6 for this trademark.)

836,960. (See Class 12 for this trademark.)

836,978. ALUMA-LOK. Deco Products Company. SN 245,296. Pub. 8–1–67. Filed 5–10–66.

836,979. CL. The Clayton Corporation of Delaware. SN 249,410. Pub. 8–1–67. Filed 7–1–66.

836,980. MISCELLANEOUS DESIGN. Premmco, Inc. SN 249,793. Pub. 8–1–67. Filed 7–7–66.

836,981. AMERICAN LOK-FAST. American Cast Iron Pipe Company. SN 251,174. Pub. 8–1–67. Filed 7–28–66.

Class 14 — Metals and Metal Castings and Forgings

836,982. COL-GRAPH. Columbia Tool Steel Company. SN 244,191. Pub. 8–1–67. Filed 4–25–66.

836,983. TICONOTCHBAR. Frankel Company, Inc. SN 248,323. Pub. 8–1–67. Filed 6–17–66.

836,984. BRUNSMET. Brunswick Corporation. SN 248,573. Pub. 8–1–67. Filed 6–21–66.

836,985. MARPHY. Societe Metallurgique d'Imphy. SN 250,774. Pub. 8–1–67. Filed 7–21–66.

836,986. CEFF. Fairchild Camera and Instrument Corporation. SN 253,643. Pub. 8–1–67. Filed 9–1–66.

836,987. GAF AND DESIGN. General Aniline & Film Corporation. SN 254,149. Pub. 8–1–67. Filed 9–9–66.

836,988. PREFILTRON. Chas. Pfizer & Co., Inc. SN 271,015. Pub. 8–1–67. Filed 5–9–67.

836,989. Q-TEMP. United States Steel Corporation. SN 271,214. Pub. 8–1–67. Filed 5–11–67.

Class 15 — Oils and Greases

836,990. AERODAG. Acheson Industries, Inc. SN 240,140. Pub. 8–1–67. Filed 3–4–66.

Class 16 — Protective and Decorative Coatings

836,991. PRATT & LAMBERT. Pratt & Lambert-Inc. SN 224,115. Pub. 8–1–67. Filed 7–23–65.

836,992. SPRAY CRAFT AND DESIGN. Spraycraft Auto Painting Systems, assignee of Spraycraft Auto Painting Systems, Inc., d.b.a. Spraycraft Auto Painting Co. SN 235,804. Pub. 8–1–67. Filed 1–4–66.

836,993. TRU-GLAZE. Celanese Coatings Company. SN 244,188. Pub. 8–1–67. Filed 4–25–66.

836,994. LITTLE NICK. Borg-Warner Corporation. SN 248,013. Pub. 8–1–67. Filed 6–14–66.

836,995. MULTI-BRITE AND DESIGN. Harris Paint Company. SN 253,873. Pub. 8–1–67. Filed 9–6–66.

836,996. R-9. Rust-Oleum Corporation. SN 255,464. Pub. 8–1–67. Filed 9–29–66.

836,997. MONO THANE. M. A. Bruder & Sons, Incorporated. SN 255,692. Pub. 8–1–67. Filed 10–4–66.

836,998. PPG INDUSTRIES AND DESIGN. Pittsburgh Plate Glass Company. SN 266,085. Pub. 8–1–67. Filed 3–6–67.

Class 17 — Tobacco Products

836,999. HOYO DE MONTERREY. F. Palicio & Co., Inc. SN 249,663. Pub. 8–1–67. Filed 7–6–66.

837,000. RUC AND DESIGN. Rinn & Cloos AG. SN 250,687. Pub. 8–1–67. Filed 7–20–66.

837,001. CABALLERO. Manuel Caballero. SN 263,877. Pub. 5–30–67. Filed 2–3–67.

Class 18 — Medicines and Pharmaceutical Preparations

837,002. BANCON. E. R. Squibb & Sons, Inc., assignee of Olin Mathieson Chemical Corporation. SN 146,208. Pub. 1–15–63. Filed 6–5–62.

837,003. FLUANXOL. H. Lundbeck & Co., A/S. SN 243,687. Pub. 8–1–67. Filed 4–18–66.

837,004. BONDED. Pay 'n Save Corporation. SN 245,340. Pub. 8–1–67. Filed 5–10–66.

837,005. GAF AND DESIGN. General Aniline & Film Corporation. SN 254,150. Pub. 8–1–67. Filed 9–9–66.

837,006. DELICOTE. Warner-Lambert Pharmaceutical Company. SN 254,347. Pub. 8–1–67. Filed 9–12–66.

837,007. PURA-MAST. Ralston Purina Company. SN 255,458. Pub. 8–1–67. Filed 9–29–66.

837,008. KEDLOR. The Dow Chemical Company. SN 258,789. Pub. 8–1–67. Filed 11–16–66.

837,009. BALNAD. The Dow Chemical Company. SN 258,790. Pub. 8–1–67. Filed 11–16–66.

837,010. ROBITUSSIN A-C. A. H. Robins Company, Incorporated. SN 263,952. Pub. 8–1–67. Filed 2–8–67.

837,011. ROBITUSSIN-DM. A. H. Robins Company, Incorporated. SN 263,953. Pub. 8–1–67. Filed 2–8–67.

837,012. NOVOFUR. The Norwich Pharmacal Company. SN 264,573. Pub. 8–1–67. Filed 2–13–67.

837,013. DERMAFUR. The Norwich Pharmacal Company. SN 264,574. Pub. 8–1–67. Filed 2–13–67.

837,014. CHLORASEPTIC. The Norwich Pharmacal Company. SN 264,575. Pub. 8–1–67. Filed 2–13–67.

837,015. RONDOCIN. Chas. Pfizer & Co., Inc. SN 268,269. Pub. 8–1–67. Filed 4–4–67.

837,016. BRONCHOBID. Meyer Laboratories, Inc. SN 269,085. Pub. 8–1–67. Filed 4–13–67.

837,017. COMBADULT. Vitaminerals, Inc. SN 270,316. Pub. 8–1–67. Filed 5–1–67.

837,018. PARGEL. Parke, Davis & Company. SN 270,740. Pub. 8–1–67. Filed 5–5–67.

837,019. FEMENAL. American Home Products Corporation. SN 270,741. Pub. 8–1–67. Filed 5–5–67.

Class 19 — Vehicles

836,962. (See Class 12 for this trademark.)

837,020. SHUTTLE WAGON. J & L Shuttle Corporation. SN 239,275. Pub. 8–1–67. Filed 2–21–66.

837,021. NIMROD. Ward Manufacturing, Inc. MULTIPLE CLASS (Classes 19 and 22). SN 241,720. Pub. 8–1–67. Filed 3–24–66.

837,022. AIRTEK. Fansteel Metallurgical Corporation. SN 245,918. Pub. 8–1–67. Filed 5–18–66.

837,023. ADVANCE. Advance Muffler & Auto Service, Inc. SN 249,930. Pub. 8–1–67. Filed 7–11–66.

837,024. AIR-X. Pullman Incorporated. SN 255,457. Pub. 8–1–67. Filed 9–29–66.

837,025. TRANS-PORTA. Tote-E-Z Products. SN 255,480. Pub. 8–1–67. Filed 9–29–66.

837,026. PITBIKE. Trans-Dapt of California, Inc. SN 265,664. Pub. 8–1–67. Filed 2–28–67.

Class 20 — Linoleum and Oiled Cloth

837,027. ALADDIN. Unokichi Takai. SN 183,483. Pub. 6–29–65. Filed 12–23–63.

Class 21 — Electrical Apparatus, Machines, and Supplies

837,028. PC. Phone Consultants, Inc. SN 233,278. Pub. 8–1–67. Filed 11–24–65.

837,029. CHASEX. Chase & Sons, Inc. SN 235,166. Pub. 8–1–67. Filed 12–23–65.

837,030. CM LABORATORIES AND DESIGN. The C.M. Laboratories, Incorporated. SN 238,925. Pub. 8–1–67. Filed 2–16–66.

837,031. MINTROI. Philippe Darrasse. SN 240,265. Pub. 8–1–67. Filed 3–7–66.

837,032. SOLID STATESMAN. Gates Radio Company. SN 241,656. Pub. 8–1–67. Filed 3–23–66.

837,033. INSTAMATIC. Instamatic Speed Reducing Signals, Ltd. SN 242,986. Pub. 8–1–67. Filed 4–8–66.

837,034. V-I AND DESIGN. Vishay Instruments, Inc. SN 243,275. Pub. 8–1–67. Filed 4–12–66.

837,035. ANCHOR LOK. Precision Paper Tube Company. SN 245,747. Pub. 8–1–67. Filed 5–16–66.

837,036. CSS AND DESIGN. Central Station Signals, Inc. SN 247,990. Pub. 8–1–67. Filed 6–14–66.

837,037. EC AND DESIGN. Electroid Division of Valcor Engineering Corporation, d.b.a. Electroid Company, assignee of Electroid Corporation. SN 248,984. Pub. 8–1–67. Filed 6–27–66.

837,038. ALOHA. Hy Glow Products, Inc. SN 249,648. Pub. 8–1–67. Filed 7–6–66.

837,039. HORNET. Dynamic Models, Incorporated. SN 250,832. Pub. 8–1–67. Filed 7–22–66.

837,040. LINIPAK. Intellux Inc. SN 251,539. Pub. 8–1–67. Filed 8–2–66.

837,041. CONVOLEX. Raychem Corporation, assignee of Rayclad Tubes, Inc. SN 251,656. Pub. 8–1–67. Filed 8–3–66.

837,042. VSI AND DESIGN. Venus Scientific Inc. SN 251,851. Pub. 8–1–67. Filed 8–5–66.

837,043. PROFESSIONAL. Universal Lamp Co., Inc. SN 252,696. Pub. 8–1–67. Filed 8–18–66.

837,044. RO-T-RY AND DESIGN. Consolidated Electronics Industries Corp. SN 253,960. Pub. 8–1–67. Filed 9–7–66.

837,045. VUE-TROL. The Edwin F. Guth Company. SN 254,153. Pub. 8–1–67. Filed 9–9–66.

837,046. UCAR. Union Carbide Corporation. SN 254,748. Pub. 8–1–67. Filed 9–19–66.

837,047. ASI. Automation Services, Inc. SN 259,691. Pub. 8–1–67. Filed 11–30–66.

837,048. FOCUSED GAP. Gauss Electrophysics, Inc. SN 260,999. Pub. 8–1–67. Filed 12–19–66.

Class 22 — Games, Toys, and Sporting Goods

837,021. (See Class 19 for this trademark.)

837,049. RAGGEDY ANN. Knickerbocker Toy Company, Inc. SN 216,310. Pub. 8–1–67. Filed 4–12–65.

837,050. AQUANAUT. Outboard Marine Corporation. SN 238,004. Pub. 8–1–67. Filed 2–3–66.

837,051. SURPRIZE PARTY. Surprize Party, Inc. SN 245,763. Pub. 8–1–67. Filed 5–16–66.

837,052. AS THE WORLD TURNS. Procter & Gamble Productions, Inc. SN 246,358. Pub. 8–1–67. Filed 5–23–66.

837,053. PARAMETRIC. Berkley & Company, Inc. SN 246,531. Pub. 8–1–67. Filed 5–25–66.

837,054. LIVE ACTION. Berkley & Company, Inc. SN 246,532. Pub. 8–1–67. Filed 5–25–66.

837,055. FITNESS KING AND DESIGN. Fitness King, Inc. SN 247,686. Pub. 8–1–67. Filed 6–9–66.

837,056. GRAY GOOSE AND DESIGN. Plymouth Golf Ball Sales Co. SN 254,465. Pub. 8–1–67. Filed 9–14–66.

837,057. TRU-ACTION. Brunswick Corporation. SN 254,664. Pub. 8–1–67. Filed 9–19–66.

837,058. PLUS 25. Brunswick Corporation. SN 254,665. Pub. 8–1–67. Filed 9–19–66.

837,059. MR. AMBY. Loral Corporation. SN 254,694. Pub. 8–1–67. Filed 9–19–66.

837,060. BIG 'N' EASY. Loral Corporation. SN 254,697. Pub. 8–1–67. Filed 9–19–66.

837,061. "VINY-LIVE." Cameo Doll Products Co., Inc. SN 256,343. Pub. 8–1–67. Filed 10–13–66.

837,062. GLORI GLAMOR. De Luxe Topper Corporation. SN 257,166. Pub. 8–1–67. Filed 10–25–66.

837,063. "WATERBUG" AND DESIGN. Materic, Inc. SN 268,844. Pub. 8–1–67. Filed 4–11–67.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

836,936. (See Class 6 for this trademark.)

836,960. (See Class 12 for this trademark.)

836,962. (See Class 12 for this trademark.)

837,064. WIZZARD. Wizzard Metal Products, Inc. SN 224,278. Pub. 8–1–67. Filed 7–26–65.

837,065. PACEMAKER. Kiekhaefer Corporation. SN 234,205. Pub. 8–1–67. Filed 12–8–65.

837,066. W. S. ROCKWELL CO. AND DESIGN. W. S. Rockwell Company. MULTIPLE CLASS (Classes 23 and 34). SN 236,213. Pub. 8–1–67. Filed 1–12–66.

837,067. CYCLO-ROOTER. Roscoe G. Wilcox, d.b.a. Cyclo-Rooter Company. SN 236,686. Pub. 8–1–67. Filed 1–17–66.

837,068. CIM-X. The Cincinnati Milling Machine Co. SN 237,816. Pub. 8–1–67. Filed 2–2–66.

837,069. FLIP-LOK. Atlas Corporation, assignee of Western Sky Industries. SN 239,358. Pub. 8–1–67. Filed 2–21–66.

837,070. BIND-FAST. Ratcliff Hoist Company, Inc. SN 241,800. Pub. 8–1–67. Filed 3–24–66.

837,071. CINCINNATI. The Cincinnati Shaper Company. SN 242,965. Pub. 8–1–67. Filed 4–8–66.

837,072. WIZARD. Western Auto Supply Company. SN 250,069. Pub. 8–1–67. Filed 7–11–66.

837,073. SAWTOOTH AND DESIGN. Dan Polos Industries, Inc. SN 250,204. Pub. 8–1–67. Filed 5–6–66.

837,074. BOS TRONG AND DESIGN. Murray Company of Texas, Inc., d.b.a. Boston Gear Works. SN 251,147. Pub. 8–1–67. Filed 7–27–66.

837,075. AIRSTAR. General Motors Corporation. SN 253,141. Pub. 8–1–67. Filed 8–25–66.

837,076. W AND DESIGN. The Whitaker Manufacturing Company. SN 253,384. Pub. 8–1–67. Filed 8–29–66.

837,077. HAPPY HOME AND DESIGN. F. W. Woolworth Co. SN 253,392. Pub. 8–1–67. Filed 8–29–66.

837,078. RHINALLOY. Shunk Manufacturing Co., Inc. SN 253,689. Pub. 8–1–67. Filed 9–1–66.

837,079. DAVI. Kaman Corporation, by change of name from Kaman Aircraft Corporation. SN 253,765. Pub. 8–1–67. Filed 9–2–66.

837,080. FAHR AND DESIGN. Maschinenfabrik Fahr Aktiengesellschaft. SN 254,548. Pub. 8–1–67. Filed 9–15–66.

837,081. ROBOT. M & W Gear Co. Inc. SN 255,103. Pub. 8–1–67. Filed 9–26–66.

837,082. BONDED. Omark Industries, Inc. SN 255,119. Pub. 8–1–67. Filed 9–26–66.

837,083. PARASCREW. Aktiebolaget C. J. Wennbergs Mekaniska Verkstad. SN 255,179. Pub. 8–1–67. Filed 9–27–66.

837,084. BONDED AND DESIGN. Omark Industries, Inc. SN 259,015. Pub. 8–1–67. Filed 11–18–66.

837,085. GEISHA. The Gillette Company. SN 260,705. Pub. 8–1–67. Filed 12–14–66.

837,086. FLUIDI-STAK. Imperial-Eastman Corporation. SN 266,285. Pub. 8–1–67. Filed 3–9–67.

837,087. GUZZLER. Dart Union Company. SN 270,202. Pub. 8–1–67. Filed 4–28–67.

837,088. MICROSTATIC. Brown & Sharpe Manufacturing Company. SN 271,314. Pub. 8–1–67. Filed 5–12–67.

Class 26—Measuring and Scientific Appliances

836,936. (See Class 6 for this trademark.)

836,960. (See Class 12 for this trademark.)

837,089. REMAK. Remak Electrograph Pty. Limited. SN 223,832. Pub. 8–1–67. Filed 7–20–65.

837,090. SCOTT AND DESIGN. Scott Aviation Corporation. SN 226,001. Pub. 8–1–67. Filed 8–18–65.

837,091. PROJECTORSCOPE. Precision Grinding Limited. SN 232,344. Pub. 8–1–67. Filed 11–8–65.

837,092. INSTANTQUOTE. Ultronic Systems Corp. SN 234,684. Pub. 8–1–67. Filed 12–15–65.

837,093. SNAP-SET. The Cincinnati Milling Machine Co. SN 237,817. Pub. 8–1–67. Filed 2–2–66.

837,094. SPECTO RAY AND DESIGN. H & R Manufacturing Co. SN 237,835. Pub. 8–1–67. Filed 2–2–66.

837,095. MIX-COUNT. The Jaeger Machine Company. SN 240,179. Pub. 8–1–67. Filed 3–4–66.

837,096. COUNTEX. Countex Corporation. SN 242,435. Pub. 8–1–67. Filed 4–1–66.

837,097. HI-LO EYE. Illinois Tool Works Inc. SN 244,218. Pub. 8–1–67. Filed 4–25–66.

837,098. S SAFELINE AND DESIGN. American Optical Company. SN 244,955. Pub. 8–1–67. Filed 5–5–66.

837,099. SAFELINE. American Optical Company. SN 244,957. Pub. 8–1–67. Filed 5–5–66.

837,100. PULSADYNE. John F. Lontz. SN 247,876. Pub. 8–1–67. Filed 6–6–66.

837,101. KIMAC AND DESIGN. The Kimac Company. SN 248,917. Pub. 8–1–67. Filed 6–24–66.

837,102. "MAN OF THE DAY." Mr. Mod Shop, Inc. SN 249,036. Pub. 8–1–67. Filed 6–27–66.

837,103. "MISS OF THE DAY." Mr. Mod Shop, Inc. SN 249,048. Pub. 8–1–67. Filed 6–27–66.

837,104. ATHENA. Eastman Kodak Company. SN 253,862. Pub. 8–1–67. Filed 9–6–66.

Class 27—Horological Instruments

837,105. COLONIAL CRAFTSMAN (DESIGN). The New England Clock Company. SN 253,231. Pub. 8–1–67. Filed 8–26–66.

Class 28—Jewelry and Precious-Metal Ware

837,106. H. Honora Jewelry Company. SN 245,268. Pub. 8–1–67. Filed 5–4–66.

837,107. "MAN OF THE DAY." Mr. Mod Shop, Inc. SN 249,037. Pub. 8–1–67. Filed 6–27–66.

837,108. "MISS OF THE DAY." Mr. Mod Shop, Inc. SN 249,049. Pub. 8–1–67. Filed 6–27–66.

Class 29—Brooms, Brushes, and Dusters

837,109. DANWAY. Danline Manufacturing Company. SN 258,367. Pub. 8–1–67. Filed 11–10–66.

Class 30—Crockery, Earthenware, and Porcelain

837,110. GARLAND. Castleton China, Inc. SN 248,421. Pub. 8–1–67. Filed 6–20–66.

837,111. WORLD BAZAAR. Atlantic Company. SN 257,148. Pub. 8–1–67. Filed 10–25–66.

Class 31—Filters and Refrigerators

836,936. (See Class 6 for this trademark.)

836,960. (See Class 12 for this trademark.)

837,112. JET FROSTER AND DESIGN. Reuben S. Tice. SN 242,685. Pub. 8–1–67. Filed 4–4–66.

837,113. F WITH WORD FRAM AND DESIGN. Fram Corporation. MULTIPLE CLASS (Classes 31 and 34). SN 244,403. Pub. 8–1–67. Filed 4–27–66.

837,114. SURE-COOL. Crown Cork & Seal Company, Inc. SN 248,431. Pub. 8–1–67. Filed 6–20–66.

837,115. ACF. ACF Industries, Incorporated. SN 254,652. Pub. 8–1–67. Filed 9–19–66.

Class 32—Furniture and Upholstery

836,964. (See Class 12 for this trademark.)

837,116. WINDSOR. Futorian Manufacturing Corporation of New York, assignee of Futorian-Stratford Furniture Company, d.b.a. Stratolounger Division. SN 105,433. Pub. 8–1–67. Filed 9–29–60.

837,117. WASH & WEAR. Richard Dougherty, d.b.a. Bahama House. SN 256,203. Pub. 8–1–67. Filed 10–11–66.

837,118. SAFE-NAP. Plakie Toys, Inc., d.b.a. Plakie Toys. SN 270,322. Pub. 8–1–67. Filed 5–1–67.

Class 33—Glassware

837,119. SORENO. Anchor Hocking Glass Corporation. SN 251,266. Pub. 8–1–67. Filed 7–29–66.

837,120. ANYTIME. Riekes Crisa Corporation. SN 253,170. Pub. 8–1–67. Filed 8–25–66.

837,121. SPECTRASHEEN. Owens-Illinois, Inc. SN 254,815. Pub. 8–1–67. Filed 9–12–66.

837,122. ART-VUE. Chemglas Inc. SN 254,775. Pub. 8–1–67. Filed 9–20–66.

Class 34—Heating, Lighting, and Ventilating Apparatus

836,960. (See Class 12 for this trademark.)

837,066. (See Class 23 for this trademark.)

837,113. (See Class 31 for this trademark.)

837,123. GOLDEN DUATROL. Crane Co. SN 233,582. Pub. 8–1–67. Filed 11–30–65.

837,124. DUTYMASTER. Crane Co. SN 233,584. Pub. 8–1–67. Filed 11–30–65.

837,125. HEATEJECTOR. Degree Corporation. SN 240,588. Pub. 8–1–67. Filed 3–10–66

837,126. CENTAUR. Rotron Manufacturing Company, Inc. SN 247,064. Pub. 8–1–67. Filed 6–1–66.

837,127. AMC AND DESIGN. Aimcee Wholesale Corporation. SN 249,394. Pub. 8–1–67. Filed 7–1–66.

837,128. BONDED AND DESIGN. Omark Industries, Inc. SN 259,014. Pub. 8–1–67. Filed 11–18–66.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

836,936. (See Class 6 for this trademark.)

837,129. DELUXE FALCON. The Firestone Tire & Rubber Company. SN 246,768. Pub. 8–1–67. Filed 5–27–66.

837,130. GTR. The General Tire & Rubber Company. SN 252,374. Pub. 8–1–67. Filed 8–15–66.

837,131. GATES AND DESIGN. The Gates Rubber Company. SN 253,028. Pub. 8–1–67. Filed 8–24–66.

837,132. MULTI-STRIP. Bowes "Seal Fast" Corporation. SN 253,719. Pub. 8–1–67. Filed 9–2–66.

837,133. DUPLEX-CURE. The Firestone Tire & Rubber Company. SN 254,600. Pub. 8–1–67. Filed 9–16–66.

837,134. STEEL-TITE. AMG Industries, Inc. SN 254,906. Pub. 8–1–67. Filed 9–22–66.

837,135. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 254,956. Pub. 8–1–67. Filed 9–22–66.

837,136. APRA. Famariss Oil and Refining Company. SN 255,428. Pub. 8–1–67. Filed 9–29–66.

837,137. DUO-CONE. Caterpillar Tractor Co. SN 255,596. Pub. 8–1–67. Filed 10–3–66.

Class 36—Musical Instruments and Supplies

837,138. PLATINUM RECORDS, INC. P AND DESIGN. Platinum Records, Inc. SN 237,619. Pub. 8–1–67. Filed 1–28–66.

837,139. DISCATRON. Discatron Limited. SN 242,769. Pub. 8–1–67. Filed 3–16–66.

837,140. TPI AND DESIGN. Telepro Industries, Incorporated. SN 250,191. Pub. 8–1–67. Filed 7–13–66.

837,141. DYNEXCEL. International Business Machines Corporation. SN 253,145. Pub. 8–1–67. Filed 8–25–66.

Class 37—Paper and Stationery

836,942. (See Class 6 for this trademark.)

837,142. MAGIC SEAL AND DESIGN. Magic Seal Packaging Products. SN 229,832. Pub. 8–1–67. Filed 10–11–65.

837,143. SUPER BAR. Phillips Petroleum Company. SN 249,873. Pub. 8–1–67. Filed 7–8–66.

837,144. QUEENCOTE. Ethyl Corporation. SN 251,529. Pub. 8–1–67. Filed 8–2–66.

837,145. SUPERMATTEX. Ilford, Limited. SN 257,186. Pub. 8–1–67. Filed 10–25–66.

837,146. POM-ETTS. Fort Howard Paper Company. SN 258,529. Pub. 8–1–67. Filed 11–14–66.

837,147. STIK-TITE. Mastercraft Pen Company, Inc. SN 258,706. Pub. 8–1–67. Filed 11–15–66.

837,148. POSTA-MATIC. Curtis 1000 Inc. SN 258,787. Pub. 8–1–67. Filed 11–16–66.

837,149. INSTAFAX. The Carter's Ink Company. SN 258,895. Pub. 8–1–67. Filed 11–17–66.

837,150. SNO-BLUE. International Paper Company. SN 259,432. Pub. 8–1–67. Filed 11–25–66.

837,151. IT'S A SNAP. Les Ferguson Company, Incorporated. SN 259,553. Pub. 8–1–67. Filed 11–28–66.

837,152. R AND DESIGN. Ritepoint Corporation. SN 259,966. Pub. 8–1–67. Filed 12–2–66.

837,153. ANTI-STAT. Arkwright-Interlaken Inc. SN 270,456. Pub. 8–1–67. Filed 5–2–67.

837,154. TAXI. Eversharp, Inc. SN 270,458. Pub. 8–1–67. Filed 5–2–67.

Class 38—Prints and Publications

837,155. YHP COMPANY AND DESIGN. Ed Rossiter, d.b.a. YHP Company. SN 234,305. Pub. 8–1–67. Filed 12–9–65.

837,156. CIRCLE AND BAR (DESIGN). Equipment Guide-Book Company. SN 238,061. Pub. 8–1–67. Filed 2–4–66.

837,157. E-Z-MONEY. Good Investment Promotions, Inc. SN 240,902. Pub. 8–1–67. Filed 3–14–66.

837,158. CATHOLIC APOSTOLATE. The Pallottine Fathers. SN 244,731. Pub. 8–1–67. Filed 5–2–66.

837,159. THE SURGEON ETC. AND DESIGN. American Society of Abdominal Surgeons. SN 246,631. Pub. 8–1–67. Filed 5–26–66.

837,160. SIXTY SECOND REPORT. Kruse, O'Connor and Ling, Inc. SN 253,151. Pub. 8–1–67. Filed 8–25–66.

837,161. QUANTICO SENTRY. Marine Corps Schools. SN 253,976. Pub. 8–1–67. Filed 9–7–66.

837,162. SCHOLASTIC SCOPE. Scholastic Magazines, Inc. SN 254,403. Pub. 8–1–67. Filed 9–13–66.

837,163. THE CCG PICTURE AND DESIGN. California Canners and Growers. SN 254,584. Pub. 8–1–67. Filed 9–16–66.

837,164. WALDO-TUFF. Waldoroth Label Corporation. SN 255,738. Pub. 8–1–67. Filed 10–4–66.

837,165. OCEANUS. Woods Hole Oceanographic Institution. SN 255,741. Pub. 8–1–67. Filed 10–4–66.

837,166. NEWS PILOT. Scholastic Magazines, Inc. SN 256,240. Pub. 8–1–67. Filed 10–11–66.

837,167. SWINGERS. Norcross, Inc. SN 256,677. Pub. 8–1–67. Filed 10–18–66.

837,168. NCR AND DESIGN. The National Cash Register Company. SN 256,958. Pub. 8–1–67. Filed 10–21–66.

837,169. MINE ONE. Mine Publications, Inc. SN 258,130. Pub. 8–1–67. Filed 11–7–66.

837,170. MINE TWO. Mine Publications, Inc. SN 258,131. Pub. 8–1–67. Filed 11–7–66.

837,171. MINE THREE. Mine Publications, Inc. SN 258,132. Pub. 8–1–67. Filed 11–7–66.

837,172. EDN. Rogers Publishing Company. SN 258,154. Pub. 8–1–67. Filed 11–7–66.

837,173. ROYAL-CAL. Chicago Decal Company. SN 258,281. Pub. 8–1–67. Filed 11–9–66.

837,174. SWINGIN' SUSIE. Norcross, Inc. SN 258,318. Pub. 8–1–67. Filed 11–9–66.

837,175. SUNNY COMBS. Norcross, Inc. SN 258,319. Pub. 8–1–67. Filed 11–9–66.

837,176. PET SET. Norcross, Inc. SN 258,320. Pub. 8–1–67. Filed 11–9–66.

837,177. MARY AND DESIGN. Mary L. Townsend. SN 258,854. Pub. 8–1–67. Filed 11–16–66.

Class 39 — Clothing

836,964. (See Class 12 for this trademark.)

837,178. FLUTTERBYE AND DESIGN. Huntington Mfg. Co., Inc. SN 224,309. Pub. 8–1–67. Filed 7–27–65.

837,179. SECURITY QUALITY PLUS. Associated Dry Goods Corporation. SN 238,331. Pub. 8–1–67. Filed 2–8–66.

837,180. TOPS EVERYTHING YOU WEAR. Plymouth Manufacturing Company. SN 240,535. Pub. 8–1–67. Filed 3–9–66.

837,181. THOSE DESIGNING KNITS. Celanese Corporation, by change of name from Celanese Corporation of America. SN 242,328. Pub. 8–1–67. Filed 3–31–66.

837,182. RAINTREE. Oxford Industries, Inc., by change of name from Oxford Manufacturing Company, Inc. SN 243,571. Pub. 8–1–67. Filed 4–14–66.

837,183. ELAST-O-PAD. International Foam Corporation. MULTIPLE CLASS (Classes 39 and 42). SN 244,495. Pub. 5–2–67. Filed 4–28–66.

837,184. PRESS ENGINEERED. Thomson Company. SN 245,867. Pub. 8–1–67. Filed 5–17–66.

837,185. MERRY-O-PRESS (WORD "OVEN" WITHIN O). Merry Mites, Inc. SN 247,136. Pub. 8–1–67. Filed 6–2–66.

837,186. U.S. 1 AND DESIGN. Pretty Please, Inc. SN 248,737. Pub. 8–1–67. Filed 6–22–66.

837,187. LOVEGLOVE. Robert D. Schicker. SN 249,077. Pub. 8–1–67. Filed 6–27–66.

837,188. CHARLES W. Howard B. Wolf, Inc. SN 250,887. Pub. 8–1–67. Filed 7–22–66.

837,189. BEST GIRL. Best Wear Hosiery Mills. SN 251,275. Pub. 8–1–67. Filed 7–29–66.

837,190. MR. JOHN. Mr. John, Inc. SN 253,894. Pub. 8–1–67. Filed 9–6–66.

837,191. LITTLE WORLD AND DESIGN. Little World, Inc. SN 255,216. Pub. 8–1–67. Filed 9–27–66.

837,192. FASCINATION. Kayser-Roth Corporation. SN 255,986. Pub. 8–1–67. Filed 10–7–66.

837,193. "PRO-BLAZER." Palm Beach Company. SN 256,590. Pub. 8–1–67. Filed 10–17–66.

837,194. THEME. J. P. Stevens & Co., Inc. SN 256,886. Pub. 8–1–67. Filed 10–20–66.

837,195. DON RICHARDS. M. Wile & Company, Inc. SN 256,893. Pub. 8–1–67. Filed 10–20–66.

837,196. DANAUD. Chaussures Duchier. SN 257,164. Pub. 8–1–67. Filed 10–25–66.

837,197. LITTLE MERMAID. Converse Rubber Corporation. SN 257,255. Pub. 8–1–67. Filed 10–26–66.

837,198. FREELEE. Sarong, Inc. SN 257,314. Pub. 8–1–67. Filed 10–26–66.

837,199. SCENT-SIR. Frank & Meyer Neckwear Company. SN 257,381. Pub. 8–1–67. Filed 10–27–66.

837,200. CIRCA. Byer-Rolnick Corporation. SN 257,930. Pub. 8–1–67. Filed 11–4–66.

837,201. COLLINS & FAIRBANKS. Federated Department Stores, Inc., d.b.a. Wm. Filene's Sons Company. SN 258,992. Pub. 8–1–67. Filed 11–18–66.

837,202. MR. SLHIM. William D. Stahl, d.b.a. Mr. Slhim. SN 259,696. Pub. 8–1–67. Filed 11–30–66.

837,203. BRAND X. Chadbourn Gotham, Inc. SN 267,316. Pub. 8–1–67. Filed 3–22–67.

837,204. RENE BONNEL. Ohrbach's Inc. SN 267,575. Pub. 8–1–67. Filed 3–27–67.

837,205. TEENY-BOPPER. Blair Fashions, Inc. SN 269,249. Pub. 8–1–67. Filed 4–17–67.

837,206. REBELLION. Chadbourn Gotham, Inc. SN 270,731. Pub. 8–1–67. Filed 5–5–67.

837,207. JUNIORAGE AND DESIGN. Systems Incorporated. SN 270,847. Pub. 8–1–67. Filed 5–8–67.

837,208. ALGENE. Systems Incorporated. SN 270,848. Pub. 8–1–67. Filed 5–8–67.

Class 40 — Fancy Goods, Furnishings, and Notions

837,209. LA MARQUESA. La Marquesa Wig Corporation. SN 250,848. Pub. 8–1–67. Filed 7–22–66.

837,210. FEMME FATALE. Capital Imports, Ltd. SN 260,141. Pub. 8–1–67. Filed 12–6–66.

837,211. HAIR-RAK. Cournoyer Industries, Inc. SN 260,529. Pub. 8–1–67. Filed 12–12–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

836,964. (See Class 12 for this trademark.)

837,183. (See Class 39 for this trademark.)

837,212. ALL YOU NEED IS JUST A LITTLE PRIDE IN YOUR HOME. Thomas Pride Mills, Inc. SN 244,154. Pub. 8–1–67. Filed 4–22–66.

837,213. MONO FLEX AND DESIGN. Michie Textiles, Inc. SN 248,500. Pub. 8–1–67. Filed 6–20–66.

837,214. FERRANYL AND DESIGN. Fabrique de Soieries Andre et Serge Ferrari. SN 253,429. Pub. 8–1–67. Filed 8–30–66.

Class 43 — Thread and Yarn

837,215. MARVESS. Alamo Industries, Inc. SN 256,805. Pub. 8–1–67. Filed 10–20–66.

837,216. QUINTESS. Alamo Industries, Inc. SN 256,806. Pub. 8–1–67. Filed 10–20–66.

837,217. CARAVESS. Alamo Industries, Inc. SN 256,807. Pub. 8–1–67. Filed 10–20–66.

837,218. MERICULA. Alamo Industries, Inc. SN 256,808. Pub. 8–1–67. Filed 10–20–66.

837,219. MOHAIRSPUN. Emile Bernat & Sons Co. SN 262,017. Pub. 8–1–67. Filed 1–6–67.

Class 44 — Dental, Medical, and Surgical Appliances

836,942. (See Class 6 for this trademark.)

837,220. GEM AND DESIGN. Fairhope Fabrics, Inc. SN 243,857. Pub. 8–1–67. Filed 4–20–66.

837,221. CENCO MEDICAL/HEALTH AND DESIGN. Cenco Instruments Corporation. SN 255,061. Pub. 8–1–67. Filed 9–26–66.

837,222. MINIBIRD. Bird Space Technology, Inc. SN 258,480. Pub. 8–1–67. Filed 11–14–66.

837,223. MINI-LUNG. Dow Corning Corporation. SN 258,511. Pub. 8–1–67. Filed 11–14–66.

837,224. I.P.B. Guild Arts & Crafts, Inc. SN 258,538. Pub. 8–1–67. Filed 11–14–66.

837,225. FABULOUS FAKES. Bishop Industries Inc., by change of name from Hazel Bishop Inc. SN 258,539. Pub. 8–1–67. Filed 11–14–66.

837,226. GERI-DIAL. Knoll Pharmaceutical Company. SN 258,700. Pub. 8–1–67. Filed 11–15–66.

837,227. FYNAL. The Dentists' Supply Company of New York. SN 259,224. Pub. 8–1–67. Filed 11–22–66.

837,228. VIM SAUNA AND DESIGN. Vim-Sauna, Inc. SN 259,494. Pub. 8–1–67. Filed 11–25–66.

Class 45 — Soft Drinks and Carbonated Waters

837,229. STEAK N SHAKE. Steak n Shake, Inc. SN 267,995. Pub. 8–1–67. Filed 3–30–67.

Class 46 — Foods and Ingredients of Foods

837,230. CARIBE. Prime Quality Foods, Inc. SN 239,795. Pub. 8–1–67. Filed 2–28–66.

837,231. JAVA JOY. G. P. Gundlach & Company. SN 243,128. Pub. 5–23–67. Filed 4–11–66.

837,232. ONION FUNIONS. Keebler Company, by change of name from United Biscuit Company of America. SN 243,604. Pub. 8–1–67. Filed 4–15–66.

837,233. CHEESE GOLLYS. Keebler Company, by change of name from United Biscuit Company of America. SN 243,605. Pub. 8–1–67. Filed 4–15–66.

837,234. HORIZON. General Foods Corporation. SN 245,188. Pub. 8–1–67. Filed 5–9–66.

837,235. ZIPPE. Topmost Foods, Inc. SN 246,965. Pub. 8–1–67. Filed 5–31–66.

837,236. SILREA. American Cyanamid Company. SN 248,093. Pub. 8–1–67. Filed 6–15–66.

837,237. CALREA. American Cyanamid Company. SN 248,766. Pub. 8–1–67. Filed 6–23–66.

837,238. DELTA AND DESIGN. Sternco Industries, Inc. SN 249,084. Pub. 8–1–67. Filed 6–27–66.

837,239. BLUE RIBBON SEAL (DESIGN). Blue Ribbon Rice Mills, Inc. SN 251,605. Pub. 8–1–67. Filed 8–3–66.

837,240. SAUCY-JOES. Tambellini Food Products Company, Inc. SN 251,757. Pub. 8–1–67. Filed 8–4–66.

837,241. KO-SET. National Starch and Chemical Corporation. SN 252,021. Pub. 8–1–67. Filed 8–9–66.

837,242. CRAZY PEACHES. Hunt-Wesson Foods, Inc., assignee of Hunt Foods and Industries, Inc., d.b.a. Hunt Wesson Foods. SN 252,098. Pub. 8–1–67. Filed 8–10–66.

837,243. POCONO MOUNTAIN AND DESIGN. Pocono Mountain Foods, Inc. SN 252,623. Pub. 8–1–67. Filed 8–18–66.

837,244. WAITER HOLDING A BEER STEIN (DESIGN). Pioneer Restaurants, Inc., d.b.a. Sam's Restaurants. SN 252,679. Pub. 8–1–67. Filed 8–18–66.

837,245. CHECKERBOARD (DESIGN). Ralston Purina Company. SN 253,339. Pub. 8–1–67. Filed 8–29–66.

837,246. LONGDUNKS AND DESIGN. Fred I. Brechtel. SN 254,007. Pub. 8–1–67. Filed 9–6–66.

837,247. SEA GRAPE. Deerfield Groves Company. SN 254,036. Pub. 8–1–67. Filed 9–8–66.

837,248. TURK'S CAP. Deerfield Groves Company. SN 254,037. Pub. 8–1–67. Filed 9–8–66.

837,249. BRADLEY FARMS AND DESIGN. John N. Wright, Jr., Inc. SN 254,349. Pub. 8–1–67. Filed 9–12–66.

837,250. NEWTEX. The Glidden Company. SN 254,533. Pub. 8–1–67. Filed 9–15–66.

837,251. CLASSIC. John W. Eshelman & Sons. SN 254,780. Pub. 8–1–67. Filed 9–20–66.

837,252. LADY JOAN. Sunshine Biscuits, Inc. SN 254,893. Pub. 8–1–67. Filed 9–21–66.

837,253. UNAVAN. Petran Products Corporation. SN 254,940. Pub. 8–1–67. Filed 9–22–66.

837,254. JHS AND DESIGN. United Fruit Company. SN 255,032. Pub. 8–1–67. Filed 9–23–66.

837,255. HEARTHSTONE. Arnold Bakers, Inc. SN 255,589. Pub. 8–1–67. Filed 10–3–66.

837,256. CALCUTTA HOUSE. Eppens, Smith Company. SN 255,789. Pub. 8–1–67. Filed 10–5–66.

837,257. GREYHOUND. Wm. N. Feinstein & Co., Inc. SN 255,791. Pub. 8–1–67. Filed 10–5–66.

837,258. GOLD MEDAL. Beatrice Foods Co. SN 255,863. Pub. 8–1–67. Filed 10–6–66.

837,259. HUMDINGERS. National Biscuit Company. SN 256,117. Pub. 8–1–67. Filed 10–10–66.

837,260. METEORITES. National Biscuit Company. SN 256,118. Pub. 8–1–67. Filed 10–10–66.

837,261. BONNIE BAKER AND DESIGN. Piggly Wiggly Operators' Warehouse, Inc. SN 256,134. Pub. 8–1–67. Filed 10–10–66.

837,262. SERVE 'N SEAL AND DESIGN. Oscar Mayer & Co., Inc. SN 256,458. Pub. 8–1–67. Filed 10–14–66.

837,263. HOG HEAD AND CROWN (DESIGN). Oscar Mayer & Company, Inc. SN 256,459. Pub. 8–1–67. Filed 10–14–66.

837,264. TENDER-TIMED. Norbest Turkey Growers Association. SN 257,324. Pub. 8–1–67. Filed 9–27–66.

837,265. SURPASS. General Mills, Inc. SN 270,647. Pub. 8–1–67. Filed 5–4–67.

Class 47 — Wines

837,266. VON STEUBEN AND DESIGN. Von Steuben'sche Handelscompanie GmbH. SN 263,231. Pub. 8–1–67. Filed 1–25–67.

837,267. LAKI OLA. G. Allen Parlier Corporation, by change of name from Parlier Products Corporation. SN 269,033. Pub. 7–18–67. Filed 4–13–67.

Class 48 — Malt Beverages and Liquors

837,268. IDRIS. Idris Limited. SN 255,531. Pub. 8–1–67. Filed 9–30–66.

Class 49 — Distilled Alcoholic Liquors

837,269. ISLAY MIST. D. Johnston & Company (Laphroaig) Limited. SN 240,624. Pub. 8–1–67. Filed 3–10–66.

Class 50 — Merchandise Not Otherwise Classified

836,928. (See Class 2 for this trademark.)

837,270. WONDER ROCK AND DESIGN. Kordon Corporation. SN 250,282. Pub. 8–1–67. Filed 7–14–66.

837,271. DIP-PIC. Saar Products Co. SN 252,495. Pub. 8–1–67. Filed 8–16–66.

Class 51 — Cosmetics and Toilet Preparations

836,946. (See Class 6 for this trademark.)

837,272. LIN ABART. Teco Iberica, S.A. MULTIPLE CLASS (Classes 51 and 52). SN 232,035. Pub. 8–1–67. Filed 4–27–67.

837,273. TRIED & TRUE. Max Factor & Co., d.b.a. Max Factor. SN 240,232. Pub. 8–1–67. Filed 3–7–66.

837,274. OPTICAL ILLUSIONS. Clairol Incorporated. SN 246,752. Pub. 8–1–67. Filed 5–27–66.

837,275. KANEBO MAY YOUNG. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 247,804. Pub. 8–1–67. Filed 6–10–66.

837,276. KANEBO AND BELL DESIGN. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 247,808. Pub. 8–1–67. Filed 6–10–66.

837,277. "MAN OF THE DAY." Mr. Mod Shop, Inc. SN 249,041. Pub. 8–1–67. Filed 6–27–66.

837,278. POLYSPRAY. Therachemie Chemisch Therapeutische GmbH., d.b.a. Therachemie GmbH. SN 251,848. Pub. 8–1–67. Filed 8–5–66.

837,279. SUNSHOWER. John H. Breck, Inc. SN 253,115. Pub. 8–1–67. Filed 8–25–66.

837,280. SURF WOOD. Eversharp, Inc. SN 267,383. Pub. 8–1–67. Filed 3–23–67.

Class 52 — Detergents and Soaps

836,946. (See Class 6 for this trademark.)

837,272. (See Class 51 for this trademark.)

837,281. MID-SOUTH. Pinehurst Handmade Soap & Candle Company, assignee of The Handmade Soap & Candle Company. SN 197,573. Pub. 7–6–65. Filed 7–10–64.

837,282. TEAM MATE. Alberto-Culver Company. SN 217,518. Pub. 3–1–66. Filed 4–28–65.

837,283. ORA-HEX. Southwestern Drug Corporation, d.b.a. Tru-Lab Products. SN 231,302. Pub. 6–6–67. Filed 10–22–65.

837,284. H.D. CHLOR. Pennsalt Chemicals Corporation. SN 247,053. Pub. 8–1–67. Filed 6–1–66.

837,285. MONCOSOLV. Montgomery Chemical Company. SN 256,225. Pub. 8–1–67. Filed 10–11–66.

Service Marks

Class 100 — Miscellaneous

837,286. ROSETTE. Hitco. SN 222,938. Pub. 8–1–67. Filed 7–8–65.

837,287. GATX AND DESIGN. General American Transportation Corporation. MULTIPLE CLASS (Classes 100, 103, 105, and 106). SN 228,968. Pub. 8–1–67. Filed 9–30–65.

837,288. MENSA. Mensa. SN 235,414. COLLECTIVE MARK. Pub. 8–1–67. Filed 12–28–65.

837,289. ERREAC AND DESIGN. Employee Relocation Real Estate Advisory Committee, Inc. SN 241,446. Pub. 8–1–67. Filed 3–21–66.

837,290. DORM'AID. National Service Industries, Inc. SN 246,346. Pub. 8–1–67. Filed 5–23–66.

Class 101 — Advertising and Business

837,291. AVC NETWORK. Ad Ventures Company, Inc. SN 239,691. Pub. 8–1–67. Filed 2–28–66.

837,292. CW. The Carey Winston Company. MULTIPLE CLASS (Classes 101 and 102). SN 250,085. Pub. 8–1–67. Filed 7–12–66.

837,293. OATS. Institute for Scientific Information, Inc. SN 251,102. Pub. 8–1–67. Filed 7–27–66.

837,294. RAE. RAE Systems, Inc. SN 252,892. Pub. 8–1–67. Filed 8–22–66.

837,295. MELODY-GRAM. The Western Union Telegraph Company. SN 253,070. Pub. 8–1–67. Filed 8–24–66.

Class 102 — Insurance and Financial

837,292. (See Class 101 for this trademark.)

837,296. INA ENTERPRISE. Insurance Company of North America. SN 251,632. Pub. 8–1–67. Filed 8–3–66.

837,297. SEABOARD LOANS AND DESIGN. Seaboard Finance Company. SN 253,687. Pub. 8–1–67. Filed 9–1–66.

837,298. RLI. Reserve Life Insurance Company. SN 254,321. Pub. 8–1–67. Filed 9–12–66.

Class 103 — Construction and Repair

837,287. (See Class 100 for this trademark.)

837,299. PLY-O-GLAS. Carlisle Corporation. SN 209,142. Pub. 8–1–67. Filed 12–31–64.

837,300. YHP COMPANY AND DESIGN. Ed Rossiter, d.b.a. YHP Company. SN 234,304. Pub. 8–1–67. Filed 12–9–65.

837,301. MERIT. Borg-Warner Corporation. SN 251,116. Pub. 8–1–67. Filed 7–27–66.

Class 104 — Communication

837,302. MEMPHIS SOUND. WDIA, Inc., d.b.a. WDIA. SN 262,468. Pub. 5–16–67. Filed 1–13–67.

Class 105 — Transportation and Storage

837,287. (See Class 100 for this trademark.)

837,303. EMPRESS AND DESIGN. Empress Travel Service Inc. SN 252,950. Pub. 8–1–67. Filed 8–23–66.

837,304. FLEXI-FLATOR. The New York Central Railroad Company. SN 253,979. Pub. 8–1–67. Filed 9–7–66.

Class 106 — Material Treatment

837,287. (See Class 100 for this trademark.)

837,305. GAMMA AND DESIGN. Gamma Photolabs, Inc. SN 230,378. Pub. 8–1–67. Filed 10–18–65.

837,306. LP. Lincoln Processing Corp. SN 237,004. Pub. 8–1–67. Filed 1–21–66.

837,307. NITREON. Tom H. Murphy and Don E. Tucker (joint owners). SN 240,320. Pub. 6–27–67. Filed 3–7–66.

837,308. TARGET. Target Stores, Inc. SN 245,996. Pub. 6–13–67. Filed 5–18–66.

Class 107 — Education and Entertainment

837,309. DIRACTION. Diraction, Incorporated. SN 233,471. Pub. 8–1–67. Filed 11–29–65.

837,310. DIRACTION 7. Diraction, Incorporated. SN 233,472. Pub. 8–1–67. Filed 11–29–65.

837,311. GREEN BAY PACKERS. Green Bay Packers, Inc. SN 250,220. Pub. 8–1–67. Filed 7–14–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

837,320. Société Anonyme: Ateliers Robatel et Mulatier, Lyon, France. SN 252,035. Filed P.R. 8–9–66; Am. S.R. 8–15–67.

ROBATEL

Owner of French Reg. No. 33,010, dated Dec. 4, 1961 (Lyon); Natl. Inst. No. 175,925.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial Centrifugal Filtering and Decanting Machines.

Class 24—Laundry Appliances and Machines

For Dry Cleaning Machines for Textiles.

SECTION 2

Class 2 — Receptacles

837,312. Butler Medical Plastics, Inc., successor to Butler Medical Plastics Co., Ulysses, Kans. SN 252,812. Filed P.R. 8–22–66; Am. S.R. 8–18–67.

CYTO-PAK

For Containers for Identifying, Fixing, and Transporting Biological Tissue.
First use Nov. 29, 1965.

Class 5 — Adhesives

837,313. W. J. Ruscoe Company, Akron, Ohio. SN 236,921. Filed P.R. 1–20–66; Am. S.R. 8–14–67.

PAN-L-BOND

For Multi-Purpose Adhesive for Use in Construction.
First use on or about Oct. 11, 1965.

Class 12 — Construction Materials

837,314. Fetter Brothers, Inc., Louisville, Ky. SN 241,886. Filed P.R. 3–25–66; Am. S.R. 8–17–67.
The drawing is lined for the colors red and blue.



For Storm Doors, Storm Windows, and House Siding.
First use Dec. 3, 1965.

Class 16 — Protective and Decorative Coatings

837,315. Furane Plastics Incorporated, Los Angeles, Calif. SN 238,209. Filed P.R. 2–7–66; Am. S.R. 1–20–67.

WOOD-GLAZE

For Synthetic Resin Clear Wood Finish for All Wood Surfaces, With Sealing, Waterproofing and the Like Properties.
First use on or about Dec. 1, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

837,316. Murata Manufacturing Co., Ltd., Otokuni-gun, Kyoto-fu, Japan. SN 227,171. Filed P.R. 9–3–65; Am. S.R. 3–31–67.

MICROFORK

For Electrical Apparatus, Machines, and Supplies—Namely, Pieso-Electric Tuning Forks, and Electromagnetic Tuning Forks.
First use Dec. 1, 1962; in commerce Jan. 24, 1964.

837,317. Behlman-Invar Electronics Corp., Santa Monica, Calif. SN 236,956. Filed P.R. 1–21–66; Am. S.R. 8–21–67.



For Power Supply Indicator Panels.
First use Aug. 2, 1965.

Class 22—Games, Toys, and Sporting Goods

837,318. Athelstan F. Spilhaus, Mound, Minn. SN 234,150. Filed P.R. 12–7–65; Am. S.R. 7–21–67.

EXPERIMENTOY

For Toys.
First use Oct. 23, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

837,320. See Section 1 (Combined Certificate).

837,319. Park Air Corporation, Boston, Mass. SN 241,678. Filed P.R. 3–23–66; Am. S.R. 8–11–67.

PUNCHETTE

For Pneumatically Operated Punch Machines.
First use Nov. 29, 1965.

837,321. Eaton Yale & Towne Inc., Cleveland, Ohio. SN 252,083. Filed P.R. 8–10–66; Am. S.R. 8–15–67.

DUALINE

For Centralized Lubricating Systems.
First use on or about Apr. 4, 1966.

Class 24—Laundry Appliances and Machines

837,320. See Section 1 (Combined Certificate).

Class 26—Measuring and Scientific Appliances

837,322. Tasco Sales Inc., Miami, Fla. SN 246,399. Filed P.R. 5–23–66; Am. S.R. 7–31–67.

OPTI-CENTERED

For Riflescope.
First use Mar. 13, 1964.

837,323. Kleer-Vu Industries, Inc., New York, N.Y. SN 246,792. Filed P.R. 5–27–66; Am. S.R. 8–17–67.

REPEATER X-3R

For Aperture Card Copy Maker, Microfilm Card Copier, and Card-To-Card Reproducer Unit or Machine.
First use Mar. 15, 1966.

837,324. Day Research Corporation, Bloomfield, N.J. SN 252,471. Filed P.R. 8–16–66; Am. S.R. 8–16–67.

DAY

For Ammeters.
First use May 20, 1966.

Class 29—Brooms, Brushes, and Dusters

837,325. Dep Corporation, Los Angeles, Calif. SN 253,819. Filed P.R. 9–6–66; Am. S.R. 8–21–67.

FOAM COMB

For Aerosol Dispenser Applicator for a Foam Hair Setting Preparation.
First use Aug. 12, 1966.

Class 36—Musical Instruments and Supplies

837,326. Avnet, Inc., New York, N.Y., assignee of Goya Music Corporation, New York, N.Y. SN 237,960. Filed P.R. 2–3–66; Am. S.R. 8–21–67.

LEVIN

For Guitars and Mandolins.
First use Dec. 7, 1965.

Class 39—Clothing

837,327. Carrie E. Mann, d.b.a. Birdwell Clothes, Santa Ana, Calif. SN 247,379. Filed 6–6–66.



For Men and Women's Swimwear, Jackets, and T-Shirts.
First use Aug. 6, 1962.

Class 44—Dental, Medical, and Surgical Appliances

837,328. Courtland Laboratories, Los Angeles, Calif. SN 232,531. Filed 11–12–65.

LABTUBE

For Evacuated Stoppered Tubes for Collection of Blood Samples and for Blood-Drawing Assemblies, Said Evacuated Stoppered Tubes Comprising a Tube Having an Open End and a Closed End, Said Tube Having a Reduced Diameter Along That Portion of Its Length Most Proximate to Its Open End so as to Maintain a Seal With the Stopper.
First use May 11, 1961.

837,329. Lumar Industries, Inc., Kansas City, Mo., assignee of Marvin W. Litman, d.b.a. Health House, Prairie Village, Kans. SN 237,364. Filed P.R. 1–26–66; Am. S.R. 8–3–67.



For Exercising Ball for Therapeutic Uses.
First use Jan. 21, 1966.

837,330. Hush-Noise Corporation, Muskegon, Mich. SN 246,568. Filed P.R. 5–25–66; Am. S.R. 6–1–67.

HUSH-NOISE

For Hearing Appliances, Specifically Speech Clarifiers.
First use July 7, 1964.

Class 45—Soft Drinks and Carbonated Waters

837,331. Ma Cherie Sales Corporation of America, d.b.a. Ma Cherie Sales Corporation, St. Louis, Mo. SN 235,997. Filed P.R. 1–7–66; Am. S.R. 8–15–67.

TASTES BETTER
CAUSE ITS "STILLED" BETTER

For Non-Alcoholic Soft Drink Beverages.
First use Aug. 23, 1965.

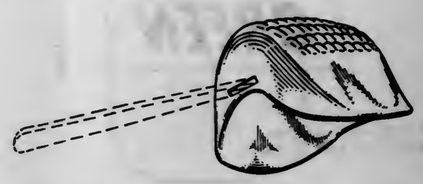
837,332. American Beverage Corporation, Youngstown, Ohio. SN 250,333. Filed P.R. 7–15–66; Am. S.R. 8–8–67.

BON-BON

The words "Bon-Bon" are French words for "good-good."
For Carbonated Beverages Sold as Soft Drinks.
First use July 6, 1966.

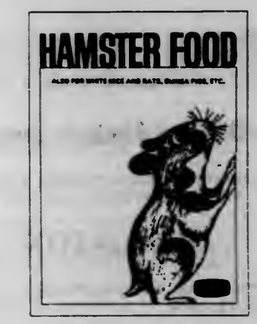
Class 46—Foods and Ingredients of Foods

837,333. Elmo Neal, Sr., d.b.a. Blackburn Candy Company, Hearne, Tex. SN 232,137. Filed P.R. 11–4–65; Am. S.R. 11–21–66.



The mark consists of the configuration of a sucker-type candy with simulated corn kernels appearing on its surface.
For Candy on a Stick, of the Common Sucker Type.
First use at least as early as Dec. 31, 1937.

837,334. Lowe's, Inc., Cassopolis, Mich. SN 234,444. Filed P.R. 12–13–65; Am. S.R. 7–31–67.



For Hamster Food.
First use July 10, 1963.

837,335. Larus & Brother Company, Richmond, Va. SN 250,493. Filed P.R. 7–18–66; Am. S.R. 8–15–67.

LEIGH

For Candies.
First use July 12, 1966.

837,336. Milk Proteins, Inc., Detroit, Mich. SN 251,644. Filed P.R. 8–3–66; Am. S.R. 7–20–67.

WHIP N' WHITEN

For Non-Dairy Imitation Cream Base for Use With Coffee, as Whip Cream and for Cooking.
First use on or about July 15, 1966.

837,337. Del Mar Packing Co., Oxnard, Calif. SN 266,289. Filed P.R. 3–9–67; Am. S.R. 6–29–67.

PLUMB GREEN

For Fresh Vegetables.
First use Apr. 19, 1963.

837,338. Del Mar Packing Co., Oxnard, Calif. SN 266,290. Filed P.R. 3–9–67; Am. S.R. 6–29–67.

ROUND HEAD

For Fresh Vegetables.
First use Nov. 28, 1958.

Class 49 — Distilled Alcoholic Liquors

837,339. Consolidated Distilled Products, Inc., Chicago, Ill. SN 257,592. Filed P.R. 10–31–66; Am. S.R. 8–14–67.

KINGSTON

For Scotch Whisky and Canadian Whisky.
First use Nov. 11, 1964.

Class 50 — Merchandise Not Otherwise Classified

837,340. The Thomson Corporation, Bay City, Mich. SN 250,698. Filed P.R. 7–20–66; Am. S.R. 6–5–67.

COMPOSITE STRIP

For Plain and Decorative Cold Rolled Strip for Use in the Construction Field and as Molding.
First use Oct. 1, 1965.

Class 51 — Cosmetics and Toilet Preparations

837,341. Revlon, Inc., New York, N.Y. SN 245,226. Filed P.R. 5–9–66; Am. S.R. 8–14–67.

ORANGERINE

For Lipstick and Nail Enamel.
First use Mar. 17, 1966.

837,342. Revlon, Inc., New York, N.Y. SN 245,227. Filed P.R. 5–9–66; Am. S.R. 8–14–67.

SNOWPOPPY

For Lipstick and Nail Enamel.
First use Mar. 17, 1966.

837,343. Revlon, Inc., New York, N.Y. SN 245,231. Filed P.R. 5–9–66; Am. S.R. 8–14–67.

GLAZED PEACH

For Lipstick and Nail Enamel.
First use Mar. 17, 1966.

837,344. Revlon, Inc., New York, N.Y. SN 245,232. Filed P.R. 5–9–66; Am. S.R. 8–14–67.

MOCHA MAUVE

For Lipstick and Nail Enamel.
First use Mar. 21, 1966.

837,345. Revlon, Inc., New York, N.Y. SN 245,235. Filed P.R. 5–9–66; Am. S.R. 8–14–67.

CHARCOAL GREEN

For Make-Up for the Lashes of the Eyes.
First use Mar. 18, 1966.

837,346. Revlon, Inc., New York, N.Y. SN 245,236. Filed P.R. 5–9–66; Am. S.R. 8–14–67.

SOFT BLACK

For Cosmetic Make-Up for the Lashes of Eyes.
First use Mar. 18, 1966.

837,347. Revlon, Inc., New York, N.Y. SN 245,238. Filed P.R. 5–9–66; Am. S.R. 8–14–67.

NAVY BLACK

For Make-Up for the Lashes of the Eyes.
First use Mar. 18, 1966.

837,348. Unilever Limited, Cheshire, England. SN 247,847. Filed P.R. 6–10–66; Am. S.R. 7–17–67.

GIBBS

Owner of British Reg. No. 427,154, dated June 17, 1922; and U.S. Reg. Nos. 544,451 and 650,679.
For Dentifrices.

837,349. G. Lee Hames, d.b.a. M.B.D. Co., Los Angeles, Calif. SN 255,434. Filed P.R. 9–29–66; Am. S.R. 8–18–67.

MAKES BREATH DELIGHTFUL

For Breath Deodorant.
First use Dec. 13, 1965.

Service Marks

Class 100 — Miscellaneous

837,350. Eaton Yale & Towne Inc., Cleveland, Ohio, by merger of Yale & Towne, Inc., Cleveland, Ohio. SN 217,432. Filed P.R. 4–26–65; Am. S.R. 8–18–67.

ROOM-OF-THE-MONTH

For Designing Display Rooms To Promote the Sale of Goods and Services of Home Furnishing and Building Material Suppliers.
First use April 1965.

Class 101 — Advertising and Business

837,351. Jack Kirby, d.b.a. Check-Accounting, Freeport, Ill. SN 250,488. Filed P.R. 7–18–66; Am. S.R. 8–16–67.

Check Accounting

For Accounting Service to Farmers, Businesses, and Individuals, in Which Bank Checks and Deposit Slips Are Numbered According to Types of Expenses and Income.
First use Feb. 17, 1965.

Class 106 — Material Treatment

837,352. Electronized Chemicals Corporation, Burlington, Mass. SN 246,164. Filed P.R. 5–20–66; Am. S.R. 8–18–67.

ELECTRON STERILIZED

For Electron Sterilization by Irradiation of Goods of Others.
First use Mar. 30, 1964.

Class 107 — Education and Entertainment

837,353. International Four Wheel Drive Association of Individuals and Clubs, Inc., Fullerton, Calif. SN 230,541. Filed P.R. 10–19–65; Am. S.R. 7–10–67.

NATIONAL FOUR WHEEL DRIVE GRAND PRIX

The English meaning of "Grand Prix" is "great prize."
For Entertainment Services in the Form of Automobile Racing.
First use July 3, 1965.

TRADEMARK REGISTRATIONS RENEWED

31,033. CASCARETS. Cl. 18. 12–21–1897.
61,905. FIT FOR A PRINCE AND DESIGN. Cl. 46. 4–9–07.
63,339. PICHER. Cl. 16. 6–18–07.
63,340. SUBLIMED. Cl. 16. 6–18–07.
64,042. SUBLIMED WHITE LEAD. Cl. 16. 7–23–07.
65,194. SKIDOO. Cl. 52. 9–10–07.
65,344. PREST-O-LITE. Cl. 34. 9–17–07.
66,024. THE LANCER AND DESIGN. Cl. 9. 11–5–07.
66,051. RICHLAND. Cl. 42. 11–5–07.
66,405. COALITE. Cl. 1. 11–26–07.
66,538. THE WASHINGTON POST. Cl. 38. 12–10–07.
66,614. CROCKER'S BEST. Cl. 46. 12–17–07.
67,845. PORCELITE. Cl. 16. 2–18–08.
224,567. CHARM SHOP. Cl. 28. 3–1–27.
227,368. SPORT-TEX. Cl. 39. 5–3–27.
228,329. EAGLE-PICHER. Cl. 14. 5–31–27.
228,404. SUN-SHINE AND DESIGN. Cl. 4. 5–31–27.
228,714. BAKELITE. Cl. 21. 6–7–27.
230,875. PUT. Cl. 52. 8–9–27.
231,880. VESS-DRY. Cl. 45. 8–30–27.
231,932. THUNDERBOLT. Cl. 39. 8–30–27.
232,027. SLEDGE HAMMER. Cl. 39. 8–30–27.
232,086. WASH TUBS AND DESIGN. Cl. 38. 8–30–27.
232,087. "THE PENN FUR CO" AND DESIGN. Cl. 39. 8–30–27.
233,504. MISCELLANEOUS DESIGN. Cl. 15. 10–4–27.
233,505. MISCELLANEOUS DESIGN. Cl. 15. 10–4–27.
233,506. THREE STARS ETC. AND DESIGN. Cl. 9. 10–4–27.
236,629. ASCO VALVES. Cl. 21. 12–20–27.
237,508. E-Z WALK. Cl. 44. 1–10–28.
237,824. "NEVER-DRIP" AND DESIGN. Cl. 35. 1–17–28.
238,706. ELYNOR. Cl. 39. 2–14–28.
430,107. KEMET. Cl. 21. 6–10–47.
430,277. AIRCO AND DESIGN. Cl. 34. 6–10–47.
431,491. UNIVERSAL. Cl. 32. 7–22–47.
432,209. PHILHARMONIC. Cl. 21. 8–26–47.
432,531. MISTRAL. Cl. 39. 9–2–47.
432,979. C-IRON. Cl. 14. 9–23–47.
433,102. PHILHARMONIC. Cl. 21. 9–23–47.
433,321. ENVOY. Cl. 32. 10–7–47.
433,493. ADVENTURE. Cl. 39. 10–14–47.
433,546. FAVORITE. Cl. 23. 10–21–47.
433,722. JANICE. Cl. 46. 10–28–47.
433,848. THE HOUSE OF HEARING. Cl. 44. 11–4–47.
433,853. EDAMIN. Cl. 18. 11–4–47.
433,886. THORS. Cl. 6. 11–4–47.
433,931. ZYLIUM. Cl. 6. 11–4–47.
433,996. SED-A-NAT. Cl. 18. 11–4–47.
434,191. LU-LU BAR. Cl. 46. 11–11–47.
434,319. DITTOS THEY SECOND YOUR MOTION. Cl. 39. 11–18–47.
434,784. LINDE. Cl. 6. 12–9–47.
434,849. BUX. Cl. 6. 12–9–47.
434,942. MIRAFLUFF. Cl. 1. 12–9–47.
435,040. ORTHENE. Cl. 6. 12–9–47.
435,070. GY-COP. Cl. 6. 12–9–47.
435,127. BRAKESOL. Cl. 6. 12–9–47.
435,325. AEROPRILLS. Cl. 10. 12–16–47.
435,726. REPRESENTATION OF AN ELEPHANT. Cl. 6. 1–6–48.
435,949. UCON. Cl. 15. 1–20–48.
436,376. AER-O-CON AND DESIGN. Cl. 21. 2–3–48.
436,507. AQUA HAVEN. Cl. 39. 2–10–48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Aug. 29, 1961

720,503. YOAKUM. Cl. 1.
720,505. RINGLITER. Cl. 1.
720,506. RED BAND. Cl. 1.
720,509. PREPLAST. Cl. 1.
720,517. FOTOWARE. Cl. 2.
720,521. LUXCO. Cl. 5.
720,523. MAGIC-PAK. Cl. 6.
720,527. GNAWS NO MORE. Cl. 6.
720,528. HOZENE. Cl. 6.
720,531. DICRYL. Cl. 6.
720,541. CASCADE. Cl. 6.
720,542. ROSS GAS FOR LESS. Cl. 6.
720,543. ROSS. Cl. 6.
720,546. LUSTRA PEARL. Cl. 12.
720,547. LUSTRA GEM. Cl. 12.
720,548. LUSTRA FLAKE. Cl. 12.
720,553. AMIANCO. Cl. 12.
720,558. ROYLAIR. Cl. 13.
720,559. QUICK-LUBE. Cl. 13.
720,567. RIBBOWIRE. Cl. 14.
720,568. HYDROMON. Cl. 15.
720,569. FE 4. Cl. 15.
720,570. REALE AND DESIGN. Cl. 16.
720,571. PIKE'S GREEN MOUNTAIN SALVE AND DESIGN. Cl. 18.
720,573. TON-HI AND DESIGN. Cl. 18.
720,575. SINEPHYTON. Cl. 18.
720,581. INTRACT. Cl. 18.
720,584. RELADON. Cl. 18.
720,585. RELAPRIN. Cl. 18.
720,592. VELACICLINE. Cl. 18.
720,597. TERRA-CAR. Cl. 19.
720,599. GO-FAR AND DESIGN. Cl. 19.
720,600. BAMBI. Cl. 19.
720,602. MILANO AND DESIGN. Cl. 20.
720,604. OCEANA. Cl. 21.
720,607. INLAYKOTE NAM-LYTE. Cl. 21.
720,608. RANGER. Cl. 21.
720,611. SOLDER-CHIEF. Cl. 21.
720,618. PLAY TV. Cl. 22.
720,619. SOLORON. Cl. 22.
720,623. TAXI. Cl. 22.
720,624. TRAV-L-DERBY. Cl. 22.
720,627. ARCTIC MIST. Cl. 23.
720,631. TRIG-A-TAPE. Cl. 23.
720,632. "IRMAC." Cl. 23.
720,633. "LONATI." Cl. 23.
720,634. FLIKA-DUSTA. Cl. 23.
720,636. SHAVAIR. Cl. 23.
720,638. NON. Cl. 23.
720,639. LAUN-DRI-CLEAN AND DESIGN. Cl. 24.
720,642. A CHIEF PRODUCT AND DESIGN. Cl. 26.
720,643. METER-PAK. Cl. 26.
720,644. WILCA. Cl. 26.
720,647. ROLL-A-TOE. Cl. 26.
720,648. "CLASSIC LOOK." Cl. 26.
720,649. "PLEAT-ON-STRIPE." Cl. 26.
720,650. "CLASSIC NOTCH." Cl. 26.
720,654. VIDAR AND DESIGN. Cl. 26.
720,656. BUCKS COUNTY PROVINCIAL. Cl. 27.
720,659. BUCKS COUNTY PROVINCIAL. Cl. 32.
720,660. PAN TEMPO. Cl. 32.
720,662. MIX 'N MATCH. Cl. 32.
720,670. DEC-A-SHELF. Cl. 32.
720,677. HONEYGLO. Cl. 34.
720,679. COLEMAN AND DESIGN. Cl. 34.
720,688. CANNON AND DESIGN. Cl. 37.
720,689. AUTOMATABELS. Cl. 37.
720,693. FAIBISH AND DESIGN. Cl. 37.
720,695. TEX-N-SET. Cl. 37.
720,697. INTERNATIONAL OILMAN. Cl. 38.
720,698. BUCKS COUNTY PROVINCIAL. Cl. 38.
720,712. BOWLACE. Cl. 40.
720,702. FANCIFUL REPRESENTATION OF NAPOLEON. Cl. 38.
720,715. BLENDELA. Cl. 42.
720,718. FABRI. Cl. 43.
720,719. GENTLEMEN'S CHOICE. Cl. 43.
720,721. CUDDLESHIRE. Cl. 43.
720,727. FLAIRE. Cl. 44.
720,740. VISTA HOUSE. Cl. 46.
720,742. HOP GOLD. Cl. 48.
720,745. ROSEMERE. Cl. 49.
720,747. PROTEK-TIE SEAL. Cl. 50.
720,749. CLUBGARD. Cl. 50.
720,755. TONNERRE. Cl. 51.
720,756. DEBUTANTE INTERNATIONAL. Cl. 51.
720,763. CLENSORENE. Cl. 52.
720,767. KAS. Cl. 52.
720,775. NORTH AMERICAN EQUITABLE LIFE ASSURANCE CO. AND DESIGN. Cl. 102.
720,776. THE BUG DOCTOR AND DESIGN. Cl. 103.
720,777. EXODUS TOURS. Cl. 105.
720,783. VIOLET RAY. Cl. 24.
720,785. HOW TO CATCH FISH AND DESIGN. Cl. 36.
720,789. ALL OF US. Cl. 38.
720,790. UP IN POLLY'S ROOM. Cl. 38.
720,792. KUSHION KLOTH. Cl. 39.
720,795. LISLETTE. Cl. 43.
720,796. RICHER, STRONGER POUND LASTS LONGER. Cl. 46.
720,798. BOX TOPPERS. Cl. 50.
720,799. CASTIGLIONE. Cl. 51.

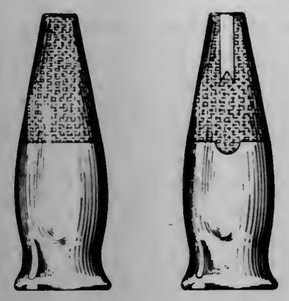
Section 18

225,459. BATTENFELD OILS BAT-O-CO AND DESIGN. Cl. 15. 3–22–27.
379,093. RECORDIO. Cl. 21. 7–2–40.
394,149. RECORDIO. Cl. 36. 3–24–42.
438,179. RECORDIO. Cl. 36. 4–13–48.
442,401. "RECORDIO EDUCATOR." Cl. 21. 4–5–49.
515,254. SHERMAN. Cl. 39. 9–20–49.
557,750. MAJESTIC MIGHTY MONARCH OF THE AIR AND DESIGN. Cl. 21. 4–15–52.
565,449. RECORDIO-GRAM. Cl. 36. 10–21–52.
569,709. MAJESTIC MIGHTY MONARCH OF THE AIR AND DESIGN. Cl. 21. 1–27–53.
624,647. WILCOX-GAY STEREO PHONIC 3D SOUND ETC. AND DESIGN. Cl. 21. 4–3–56.
721,425. ORBIT AND DESIGN. Cl. 51. 9–12–61.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

731,994. COLOR COLOR. Cl. 51. 5–22–62. Clairol Incorporated, New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

805,717. BOTTLE AND LABEL (DESIGN). Cl. 48. 3–15–66. Anheuser-Busch, Incorporated, St. Louis, Mo. Amended to appear:



822,347. BAILEY AND DESIGN. Cl. 26. 1–17–67. Bailey Meter Company, Wickliffe, Ohio. Corrected: In the statement, column 2, line 13, "1812" should be deleted and *1912* should be inserted.

829,692. OVA-NITE. Cl. 18. 6–6–67. Obrig Chemical Corp., Sarasota, Fla. Corrected: In the statement, column 1, line 1, "Onrig" should be deleted and *Obrig* should be inserted.

831,071. FACELLE ROYALE (WITH MAPLE LEAF) AND DESIGN. Cl. 37. 6–27–67. Facelle Company Limited, Toronto, Ontario, Canada. Corrected to appear:

FACELLE *Royale*

831,072. FACELLE ROYALE AND DESIGN. Cl. 37. 6–27–67. Facelle Company Limited, Toronto, Ontario, Canada. Corrected to appear:

FACELLE *Royale*

831,456. DUPLEX. Cl. 37. 7–4–67. Bro-Dart Industries, Inc. Bro-Dart Industries, Newark, N.J. Corrected: In the statement, column 1, before line 1, *Bro-Dart Industries (New Jersey corporation), assignee of* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

409,729. PRO-CAPA. Cl. 51. Michael Trapani, doing business as Pro-Capa Laboratories. 10–17–44. New Cert. Sec. 7(c) to Pro-Capa Products, Inc., Brooklyn, N.Y.

667,125. HOME LIBRARY PRESS AND DESIGN. Cl. 38. Ward Green Company. 9–16–58. New Cert. Sec. 7(c) to Parents' Magazine Enterprises, Inc., New York, N.Y.

724,061. PORT A BAR. Cl. 3. Silver Incorporated. 11–21–61. New Cert. Sec. 7(c) to Esquire-Merz Case Company, Inc., Chicago, Ill.

815,076. CHURCH'S. Cl. 46. Church's Fried Chicken, Inc. 9–13–66. New Cert. Sec. 7(c) to Church's Food Service Industries, Inc., San Antonio, Tex.

815,614. CHURCH'S. Cl. 100. Church's Fried Chicken, Inc., doing business as Church's Drive-In-Restaurant. 9–20–66. New Cert. Sec. 7(c) to Church's Food Service Industries, Inc., San Antonio, Tex.

816,323. DESIGN OF A CHEF. Cl. 100. Church's Fried Chicken, Inc. 10–4–66. New Cert. Sec. 7(c) to Church's Food Service Industries, Inc., San Antonio, Tex.

INDEX OF REGISTRANTS

OCTOBER 17, 1967

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ACF Industries, Inc., St. Louis, Mo. 837,115, pub. 8–1–67. Cl. 31.
AMG Industries, Inc., Akron, Ohio. 837,134, pub. 8–1–67. Cl. 35.
Aberfoyle Mfg. Co., Philadelphia, Pa. 720,795, canc. Cl. 43.
Acheson Industries, Inc., Port Huron, Mich. 836,990, pub. 8–1–67. Cl. 15.
Acme Chemical Co. : *See*—
Acme (Sales), Ltd.
Acme (Sales), Ltd., d.b.a. Acme Chemical Co., Stanwell, England. 720,634, canc. Cl. 23.
Ad Ventures Co., Inc., Wichita, Kans. 837,291, pub. 8–1–67. Cl. 101.
Advance Muffler & Auto Service, Inc., Anaheim, Calif. 837,023, pub. 8–1–67. Cl. 19.
Aeronautical Communications Equipment, Inc.. Miami, Fla. 436,376, ren. 10–17–67. Cl. 21.
Aimcee Wholesale Corp., New York, N.Y. 837,127, pub. 8–1–67. Cl. 34.
Air Reduction Co., Inc. : *See*—
Air Reduction Sales Co.
Air Reduction Sales Co., to Air Reduction Co., Inc., New York, N.Y. 430,277, ren. 10–17–67. Cl. 34.
Airaterra, Glendale, Calif. 720,558, canc. Cl. 13.
Airstream, Inc., Jackson Center, Ohio. 720,600, canc. Cl. 19.
Aktiebolaget C. J. Wennbergs Mekaniska Verstad, Karlstad, Sweden. 837,038, pub. 8–1–67. Cl. 23.
Aktiebolaget Jonkoping-Vulcan : *See*—
Jonkopings Och Vulcans Tandsticksfabriksaktiebolag.
Alamo Industries, Inc., New York, N.Y. 837,215–18, pub. 8–1–67. Cl. 43.
Alberto-Culver Co., Melrose Park, Ill. 836,929, pub. 9–20–66. Cl. 4.
Alberto-Culver Co., Melrose Park, Ill. 836,937, pub. 3–1–66. Cl. 6.
Alberto-Culver Co., Melrose Park, Ill. 837,282, pub. 3–1–66. Cl. 52.
Allen Sales Co., d.b.a. Allen Sales Co., Seattle, Wash. 720,740, canc. Cl. 46.
Allis-Chalmers Mfg. Co., Milwaukee, Wis. 720,638, canc. Cl. 23.
Alpana Aluminum Products, Inc., Minneapolis, Minn. 836,959, pub. 1–3–67. Cl. 12.
American Beverage Corp., Youngstown, Ohio. 837,332. Cl. 45.
American Cast Iron Pipe Co., Birmingham, Ala. 836,981, pub. 8–1–67. Cl. 13.
American Cyanamid Co., Wayne, N.J. 435,325, ren. 10–17–67. Cl. 10.
American Cyanamid Co., Wayne, N.J. 837,236–7, pub. 8–1–67. Cl. 46.
American Home Products Corp., New York, N.Y. 837,019, pub. 8–1–67. Cl. 18.
American Optical Co., Southbridge, Mass. 837,098–9, pub. 8–1–67. Cl. 26.
American Pad & Textile Co., The, Pittsburgh, Pa. 720,619, canc. Cl. 22.
American Seating Co., to American Seating Co., Grand Rapids, Mich. 431,491, ren. 10–17–67. Cl. 32.
American Seating Co., to American Seating Co., Grand Rapids, Mich. 433,321, ren. 10–17–67. Cl. 32.
American Society of Abdominal Surgeons, Melrose, Mass. 837,159, pub. 8–1–67. Cl. 36.
Amlanco Products, Ltd., Christchurch, England. 720,553, canc. Cl. 12.
Ammac Recording Co., Jackson, Miss. 720,785, canc. Cl. 36.
Amway Corp., Ada, Mich. 836,947, pub. 8–1–67. Cl. 6.
Anchor Hocking Glass Corp., Lancaster, Ohio. 837,119, pub. 8–1–67. Cl. 33.
Anheuser Busch, Inc., St. Louis, Mo. 805,717. Am. 7(d). Cl. 48.
Arkwright-Interlaken, Inc., Fiskeville, R.I. 837,153, pub. 8–1–67. Cl. 37.
Armour Pharmaceutical Co., d.b.a. Rebeis Chemical Co., Chicago, Ill. 836,948, pub. 8–1–67. Cl. 6.
Arnold Bakers, Inc., Greenwich, Conn. 837,255, pub. 8–1–67. Cl. 46.
Artistic Card Publishing Corp., Elmira, N.Y. 720,702, canc. Cl. 38.
Associated Dry Goods Corp., New York, N.Y. 837,179, pub. 8–1–67. Cl. 39.
Atlantic Co., Atlanta, Ga. 837,111, pub. 8–1–67. Cl. 30.
Atlas Corp., from Western Sky Industries, Hayward, Calif. 837,069, pub. 8–1–67. Cl. 23.
Atlas Underwear Co., The, Piqua, Ohio. 434,319, ren. 10–17–67. Cl. 39.
Atwood Vacuum Machine Co., Rockford, Ill. 720,597, canc. Cl. 19.
Automatic Switch Co., Florham Park, N.J. 236,629, ren. 10–17–67. Cl. 21.
Automation Services, Inc., Endicott, N.Y. 837,047, pub. 8–1–67. Cl. 21.
Avedisian, Leon : *See*—
Straub & Yorke.
Avnet, Inc., from Goya Music Corp., New York, N.Y. 837,326. Cl. 36.
Avon Products, Inc., New York, N.Y. 836,946, pub. 8–1–67. Multiple Class (Classes 6, 51, and 52).
Award Products, Canoga Park, Calif. 720,618, canc. Cl. 22.
Bahama House : *See*—
Dougherty, Richard.
Bailey Meter Co., Wickliffe, Ohio. 822,347, cor. Cl. 26.
Bakelite Corp., to Union Carbide Corp., New York, N.Y. 228,714, ren. 10–17–67. Cl. 21.
Bamberger, L., & Co., Newark, N.J., to R. H. Macy & Co., Inc., New York, N.Y. 224,567, ren. 10–17–67. Cl. 28.
Barium Supply Co. : *See*—
Millwhite Co., Inc., The.
Battenfeld, C. F., Oil Co., Detroit, Mich. 225,459, canc. Cl. 15.
Beatrice Foods Co., Chicago, Ill. 837,258, pub. 8–1–67. Cl. 46.
Behlman-Invar Electronics Corp., Santa Monica, Calif. 837,317. Cl. 21.
Bendix Corp., The, Detroit, Mich. 836,942, pub. 8–1–67. Multiple Class (Classes 6, 37 and 44).
Berkley & Co., Inc., Spirit Lake, Iowa. 837,053–4, pub. 8–1–67. Cl. 22.
Bernat, Emile, & Sons Co., Jamaica Plain, Mass. 720,718–9, canc. Cl. 43.
Bernat, Emile, & Sons Co., Jamaica Plain, Mass. 720,721, canc. Cl. 43.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 837,219, pub. 8–1–67. Cl. 43.
Best Wear Hosiery Mill, Philadelphia, Pa. 837,189, pub. 8–1–67. Cl. 39.
Bird Space Technology, Inc., Palm Springs, Calif. 837,222, pub. 8–1–67. Cl. 44.
Birdwell Clothes : *See*—
Mann, Carrie E.
Bishop, Hazel, Inc. : *See*—
Bishop Industries Inc.
Bishop Industries Inc., from Hazel Bishop Inc., Union, N.J. 837,225, pub. 8–1–67. Cl. 44.
Blackburn Candy Co. : *See*—
Neal, Elmo.
Blair Fashions, Inc., Chicago, Ill. 837,205, pub. 8–1–67. Cl. 39.
Blakeslee, C. Scott, d.b.a. C. Scott Blakeslee & Associates, Grand Rapids, Mich. 720,624, canc. Cl. 22.
Blakeslee, C. Scott, & Associates : *See*—
Blakeslee, C. Scott.
Blue Ribbon Rice Mills, Inc., Houston, Tex. 837,239, pub. 8–1–67. Cl. 46.
Bonafide Mills, Inc., New York, N.Y. 720,602, canc. Cl. 20.
Borden Co., The : *See*—
Tykor Products, Inc.
Borg-Warner Corp., Chicago, Ill. 836,994, pub. 8–1–67. Cl. 16.
Borg-Warner Corp., Chicago, Ill. 837,301, pub. 8–1–67. Cl. 103.
Boston Gear Works : *See*—
Murray Co. of Texas, Inc.
Bouchery, Charline, Paris, France. 720,799, canc. Cl. 51.
Bowes "Seal Fast" Corp., Indianapolis, Ind. 837,132, pub. 8–1–67. Cl. 35.
Brake, Lester P., to BrakeSol, Oklahoma City, Okla. 435,127, ren. 10–17–67. Cl. 6.
BrakeSol : *See*—
Brake, Lester P.
Brechtel, Fred I., Fort Lauderdale, Fla. 837,246, pub. 8–1–67. Cl. 46.
Breck, John H., Inc., Springfield, Mass. 837,279, pub. 8–1–67. Cl. 51.
Bro-Dart Industries, from Bro-Dart Industries, Newark, N.J. 831,456, cor. Cl. 37.
Brown & Sharpe Mfg. Co., North Kingstown, R.I. 837,088, pub. 8–1–67. Cl. 23.
Brown Soap Co., The, Columbus, to The Climalene Co., Canton, Ohio. 65,194, ren. 10–17–67. Cl. 52.
Bruder, M. A., & Sons, Inc., Philadelphia, Pa. 836,997, pub. 8–1–67. Cl. 16.
Brunswick Corp., Chicago, Ill. 836,984, pub. 8–1–67. Cl. 14.
Brunswick Corp., Chicago, Ill. 837,057–8, pub. 8–1–67. Cl. 22.
Bucks County Provincial, Inc., Palm Beach, Fla. 720,656, canc. Cl. 27.
Bucks County Provincial, Inc., Palm Beach, Fla. 720,659, canc. Cl. 32.
Bucks County Provincial, Inc., Palm Beach, Fla. 720,698, canc Cl. 38.

Butler Medical Plastics, Inc., Ulysses, Kans. 837,312. Cl. 2.
Byer-Rolnick Corp., Garland, Tex. 837,200, pub. 8–1–67. Cl. 39.
C.M. Laboratories, Inc., The, Stamford, Conn. 837,030, pub. 8–1–67. Cl. 21.
Caballero, Manuel, Miami, Fla. 837,001, pub. 5–30–67. Cl. 17.
California Canners and Growers, San Francisco, Calif. 837,163, pub. 8–1–67. Cl. 38.
California Spray-Chemical Corp., Wilmington, Del., and Richmond, to Chevron Chemical Co., San Francisco, Calif. 434,849, ren. 10–17–67. Cl. 6.
California Spray-Chemical Corp., Wilmington, Del., and Richmond, to Chevron Chemical Co., San Francisco, Calif. 435,040, ren. 10–17–67. Cl. 6.
Cameo Doll Products Co., Inc., Port Allegany, Pa. 837,061, pub. 8–1–67. Cl. 22.
Cannon, R. W., & Co., Inc., Salem, Oreg. 836,918, pub. 6–1–66. Cl. 1.
Capital Imports, Ltd., Brentwood, Mo. 837,210, pub. 8–1–67. Cl. 40.
Carbide & Carbon Chemicals Corp., to Union Carbide Corp., New York, N.Y. 435,949, ren. 10–17–67. Cl. 15.
Carlisle Corp., Carlisle, Pa. 837,299, pub. 8–1–67. Cl. 103.
Carter's Ink Co., The, Cambridge, Mass. 837,149, pub. 8–1–67. Cl. 37.
Cascarets, Inc.: *See*—
Sterling Remedy Co., The.
Castleton China, Inc., New Castle, Pa. 837,110, pub. 8–1–67. Cl. 30.
Caterpillar Tractor Co., East Peoria, Ill. 837,137, pub. 8–1–67. Cl. 35.
Celanese Coatings Co., New York, N.Y. 836,993, pub. 8–1–67. Cl. 16.
Celanese Corp., from Celanese Corp of America, New York, N.Y. 837,181, pub. 8–1–67. Cl. 39.
Celanese Corp. of America: *See*—
Celanese Corp.
Cenco Instruments Corp., Chicago, Ill. 837,221, pub. 8–1–67. Cl. 44.
Central Station Signals, Inc., New York, N.Y. 837,036, pub. 8–1–67. Cl. 21.
Chadbourn Gotham, Inc., Charlotte, N.C. 837,203, pub. 8–1–67. Cl. 39.
Chadbourn Gotham, Inc., Charlotte, N.C. 837,206, pub. 8–1–67. Cl. 39.
Chase & Sons, Inc., Randolph, Mass. 837,029, pub. 8–1–67. Cl. 21.
Chaussures Duchier, Annonay, Ardeche, France. 837,196, pub. 8–1–67. Cl. 39.
Check-Accounting: *See*—
Kirby, Jack.
Chemglas Inc., Palo Alto, Calif. 837,122, pub. 8–1–67. Cl. 33.
Chevron Chemical Co.: *See*—
California Spray-Chemical Corp.
Chicago Decal Co., Chicago, Ill. 837,173, pub. 8–1–67. Cl. 38.
Church's Drive-In-Restaurant: *See*—
Church's Fried Chicken, Inc.
Church's Food Service Industries, Inc.: *See*—
Church's Fried Chicken, Inc.
Church's Fried Chicken, Inc., to Church's Food Service Industries, Inc., San Antonio, Tex. 815,076, new cert. Cl. 46.
Church's Fried Chicken, Inc., d.b.a. Church's Drive-In-Restaurant, to Church's Food Service Industries, Inc., San Antonio, Tex. 815,614, new cert. Cl. 100.
Church's Fried Chicken, Inc., to Church's Food Service Industries, Inc., San Antonio, Tex. 816,323, new cert. Cl. 100.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 837,068, pub. 8–1–67. Cl. 23.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 837,093, pub. 8–1–67. Cl. 26.
Cincinnati Shaper Co., The, Cincinnati, Ohio. 837,071, pub. 8–1–67. Cl. 23.
Clairol Inc., New York, N.Y. 731,994, cor. Cl. 51.
Clairol, Inc., New York, N.Y. 837,274, pub. 8–1–67. Cl. 51.
Clayton Corp. of Delaware, The, St. Louis, Mo. 836,979, pub. 8–1–67. Cl. 13.
Climalene Co., The: *See*—
Brown Soap Co., The.
Coalite & Chemical Products, Ltd.: *See*—
Coalite, Ltd.
Coalite, Ltd., London, to Coalite and Chemical Products, Ltd., Chesterfield, England. 66,405, ren. 10–17–67. Cl. 1.
Coleman Co., Inc., The, Wichita, Kans. 720,679, canc. Cl. 34.
Coleport Fabrics, Inc., New York, N.Y. 720,715, canc. Cl. 42.
Columbia Tool Steel Co., Chicago Heights, Ill. 836,982, pub. 8–1–67. Cl. 14.
Comptometer Corp., Chicago, Ill. 720,695, canc. Cl. 37.
Consolidated Distilled Products, Inc., Chicago, Ill. 837,339. Cl. 49.
Consolidated Electronics Industries Corp., New York, N.Y. 837,044, pub. 8–1–67. Cl. 21.
Consolidated Foods Corp.: *See*—
Lowe, Joe, Corp.
Converse Rubber Corp., Malden, Mass. 837,197, pub. 8–1–67. Cl. 39.
Cosden Oil & Chemical Co., Big Spring, Tex. 836,920, pub. 8–1–67. Cl. 1.
Countex Corp., San Francisco, Calif. 837,096, pub. 8–1–67. Cl. 26.
Cournoyer Industries, Inc., Miami, Fla. 837,211, pub. 8–1–67. Cl. 40.
Courtland Laboratories, Los Angeles, Calif. 837,328. Cl. 44.
Crane Co., New York, N.Y. 837,123–4, pub. 8–1–67. Cl. 34.
Crown Cork & Seal Co., Inc., Philadelphia, Pa. 837,114, pub. 8–1–67. Cl. 31.
Cudahy Co., Phoenix, Ariz. 836,949, pub. 8–1–67. Cl. 6.
Curtis 1000, Inc., St. Paul, Minn. 837,148, pub. 8–1–67. Cl. 37.
Cyclo-Rooter Co.: *See*—
Wilcox, Roscoe G.
Daggett & Ramsdell, Inc., New York, N.Y. 720,756, canc. Cl. 51.
Danline Mfg. Co., Kenilworth, N.J. 837,109, pub. 8–1–67. Cl. 29.
Darrasse, Philippe, L'Etang-La-Ville, France. 837,031, pub. 8–1–67. Cl. 21.
Dart Union Co., Providence, R.I. 837,087, pub. 8–1–67. Cl. 23.
Daubert Chemical Co., Chicago, Ill. 720,747, canc. Cl. 50.
Day Research Corp., Bloomfield, N.J. 837,324. Cl. 26.
Deco Products Co., Decorah, Iowa. 836,978, pub. 8–1–67. Cl. 13.
Deerfield Groves Co., Wabasso, Fla. 837,247–8, pub. 8–1–67. Cl. 46.
Degree Corp., Kansas City, Kans. 837,125, pub. 8–1–67. Cl. 34.
Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. 720,568, canc. Cl. 15.
Del Mar Packing Co., Oxnard, Calif. 837,337–8. Cl. 46.
De Luxe Topper Corp., Elizabeth, N.J. 837,062, pub. 8–1–67. Cl. 22.
Dentists' Supply Co. of New York, The, York, Pa. 837,227, pub. 8–1–67. Cl. 44.
Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 836,939, pub. 12–13–66. Cl. 6.
Dep Corp., Los Angeles, Calif. 837,325. Cl. 29.
Desmul Chemical Co., Bellingham, Wash. 720,569, canc. Cl. 15.
Diamond Braiding Mills, Inc., Tarpon Springs, Fla. 720,712, canc. Cl. 40.
Diraction, Inc., Minneapolis, Minn. 837,309–10, pub. 8–1–67. Cl. 107.
Discatron Ltd., Birmingham, England. 837,139, pub. 8–1–67. Cl. 36.
Dougherty, Richard, d.b.a. Bahama House, Sarasota, Fla. 837,117, pub. 8–1–67. Cl. 32.
Dow Chemical Co., The, Midland, Mich. 837,008–9, pub. 8–1–67. Cl. 18.
Dow Corning Corp., Midland, Mich. 837,223, pub. 8–1–67. Cl. 44.
Drexel Furniture Co., Drexel, N.C. 720,660, canc. Cl. 32.
Drive-In Theatre Mfg. Co., Inc., Kansas City, Mo. 720,608, canc. Cl. 21.
Dynamic Models, Inc., Van Nuys, Calif. 837,039, pub. 8–1–67. Cl. 21.
Eagle-Picher Industries, Inc.: *See*—
Picher Lead Co.
Eagle-Picher Industries, Inc., Cincinnati, Ohio. 836,968, pub. 8–1–67. Cl. 12.
Eagle-Picher Lead Co., The, Chicago, Ill., to Eagle-Picher Industries, Inc., Cincinnati, Ohio. 228,329, ren. 10–17–67. Cl. 14.
Eastman Kodak Co., Rochester, N.Y. 837,104, pub. 8–1–67. Cl. 26.
Eaton Yale & Towne, Inc., Cleveland, Ohio. 837,321. Cl. 23.
Eaton Yale & Towne, Inc., from Yale & Towne, Inc., Cleveland, Ohio. 837,350. Cl. 100.
El Al Israel Airlines, Ltd., New York, N.Y. 720,777, canc. Cl. 105.
Electroid Co.: *See*—
Electroid Division of Valcor Engineering Corp.
Electroid Corp.: *See*—
Electroid Division of Valcor Engineering Corp.
Electroid Division of Valcor Engineering Corp., d.b.a. Electroid Co., from Electroid Corp., Union, N.J. 837,037, pub. 8–1–67. Cl. 21.
Electronized Chemicals Corp., Burlington, Mass. 837,352. Cl. 106.
Ely & Walker Dry Goods Co., St. Louis, Mo., to Ely & Walker, Inc., Memphis, Tenn. 231,932, ren. 10–17–67. Cl. 39.
Ely & Walker Dry Goods Co., St. Louis, Mo., to Ely & Walker, Inc., Memphis, Tenn. 232,027, ren. 10–17–67. Cl. 39.
Ely & Walker, Inc.: *See*—
Ely & Walker Dry Goods Co.
Employee Relocation Real Estate Advisory Committee, Inc., Chicago, Ill. 837,289, pub. 8–1–67. Cl. 100.
Empress Travel Service, Inc., New York, N.Y. 837,303, pub. 8–1–67. Cl. 105.
Eppens, Smith Co., Secaucus, N.J. 837,256, pub. 8–1–67. Cl. 46.
Equipment Guide-Book Co., Palo Alto, Calif. 837,156, pub. 8–1–67. Cl. 38.
Eshelman, John W., & Sons, Lancaster, Pa. 837,251, pub. 8–1–67. Cl. 46.
Ethyl Corp., New York, N.Y. 837,144, pub. 8–1–67. Cl. 37.
Ever Ready Label Corp., Belleville, N.J. 720,689, canc. Cl. 37.
Eversharp, Inc., Milford, Conn. 837,154, pub. 8–1–67. Cl. 37.
Eversharp, Inc., Milford, Conn. 837,280, pub. 8–1–67. Cl. 51.
E.Z. Walk Arch Corp., The, to E-Z Walk Corp., New York, N.Y. 237,508, ren. 10–17–67. Cl. 44.
E-Z Walk Corp.: *See*—
E.Z. Walk Arch Corp., The.
Fabri-Coate Co., Inc., Grand Rapids, Mich. 836,945, pub. 8–1–67. Cl. 6.
Fabrique de Soieries Andre et Serge Ferrari, La Rochetaillee-Sur-Saone (Rhone), France. 837,214, pub. 8–1–67. Cl. 42.

Facelle Co., Ltd., Toronto, Ontario, Canada. 831,071–2, cor. Cl. 37.
Factor, Max: *See*—
Factor, Max, & Co.
Factor, Max, & Co., d.b.a. Max Factor, Hollywood, Calif. 837,273, pub. 8–1–67. Cl. 51.
Faibish Corp., Cathedral Station, N.Y. 720,693, canc. Cl. 37.
Fairchild Camera & Instrument Corp., Syosset, N.Y. 836,954, pub. 8–1–67. Cl. 6.
Fairchild Camera & Instrument Corp., Syosset, N.Y. 836,986, pub. 8–1–67. Cl. 14.
Fairhope Fabrics, Inc., Fall River, Mass. 837,220, pub. 8–1–67. Cl. 44.
Famariss Oil and Refining Co., Hobbs, N. Mex. 837,186, pub. 8–1–67. Cl. 35.
Fansteel Metallurgical Corp., North Chicago, Ill. 837,022, pub. 8–1–67. Cl. 19.
Farm Journal, Inc., Philadelphia, Pa. 720,789–90, canc. Cl. 38.
Federal Chemical Co., Louisville, Ky. 836,957, pub. 8–1–67. Cl. 10.
Federated Department Stores, Inc., d.b.a. Wm. Filene's Sons Co., Boston, Mass. 837,201, pub. 8–1–67. Cl. 39.
Feinstein, Wm. N., & Co., Inc., New York, N.Y. 837,257, pub. 8–1–67. Cl. 46.
Fennelly, J. C., Co., San Francisco, Calif. 720,749, canc. Cl. 50.
Ferguson, Les, Co., Inc., San Antonio, Tex. 837,151, pub. 8–1–67. Cl. 37.
Fetter Brothers, Inc., Louisville, Ky. 837,314. Cl. 12.
Fibreboard Corp., San Francisco, Calif. 836,927, pub. 8–1–67. Cl. 2.
Fine Art Designers, Inc., New York, N.Y. 720,648–50, canc. Cl. 26.
Fink, Joseph H., d.b.a. National Bird Control Laboratories, Skokie, Ill. 720,527, canc. Cl. 6.
Firestone Tire & Rubber Co., The, Akron, Ohio. 837,129, pub. 8–1–67. Cl. 35.
Firestone Tire & Rubber Co., The, Akron, Ohio. 837,133, pub. 8–1–67. Cl. 35.
Fisher Brewing Co., Salt Lake City, Utah. 720,742, canc. Cl. 48.
Fitness King, Inc., Hollywood, Calif. 837,055, pub. 8–1–67. Cl. 22.
Fletcher Paper Co., Alpena, Mich. 836 940, pub. 4–11–67. Cl. 6.
Food Machinery & Chemical Corp., New York, N.Y. 720,531, canc. Cl. 6.
Fort Howard Paper Co., Green Bay, Wis. 837,146, pub. 8–1–67. Cl. 37.
Foster, Benjamin, Co., Philadelphia, Pa. 836,935, pub. 8–1–67. Cl. 5.
Fram Corp., East Providence. R.I. 837,113, pub. 8–1–67. Multiple Class (Classes 31 and 34).
Frank & Meyer Neckwear Co., St. Louis, Mo. 837,199, pub. 8–1–67. Cl. 39.
Frankel Co., Inc., Detroit, Mich. 836,983, pub. 8–1–67. Cl. 14.
Friedman-Gins Corp., New York, N.Y. 720,792, canc. Cl. 39.
Furane Plastics, Inc., Los Angeles, Calif. 837,315. Cl. 16.
Futorian Mfg. Corp. of New York, Amsterdam, N.Y. 837,116, pub. 8–1–67. Cl. 32.
GDK Laboratories, Inc., from Gerald D. Kelder, d.b.a. GDK Sales, Morton Grove, Ill. 720,575, canc. Cl. 18.
GDK Sales: *See*—
GDK Laboratories, Inc.
Gamma Photolabs, Inc., Chicago, Ill. 837,305, pub. 8–1–67. Cl. 106.
Garod Radio Corp., New York, N.Y. 557,750, canc. Cl. 21.
Garod Radio Corp., New York, N.Y. 569,709, canc. Cl. 21.
Garrett Corp., The, Los Angeles, Calif. 836,956, pub. 8–1–67. Cl. 9.
Garrison House, Inc., New York, N.Y. 720,688, canc. Cl. 37.
Gary Commodities Corp., New York, N.Y. 720,632–3, canc. Cl. 23.
Gates Radio Co., Quincy, Ill. 837,032, pub. 8–1–67. Cl. 21.
Gates Rubber Co., The, Denver, Colo. 837,131, pub. 8–1–67. Cl. 35.
Gauss Electrophysics, Inc., Los Angeles, Calif. 837,048, pub. 8–1–67. Cl. 21.
Geigy Chemical Corp.: *See*—
Geigy Co., Inc.
Geigy Chemical Corp., Ardsley, N.Y. 836,958, pub. 8–1–67. Cl. 10.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 435,070, ren. 10–17–67. Cl. 6.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 435,726, ren. 10–17–67. Cl. 6.
General American Industries, Inc.: *See*—
Tandy Corp.
General American Transportation Corp., Chicago, Ill. 837,287, pub. 8–1–67. Multiple Class (Classes 100, 103, 105, and 106).
General Aniline & Film Corp., New York, N.Y. 836,933, pub. 8–1–67. Cl. 5.
General Aniline & Film Corp., New York, N.Y. 836,987, pub. 8–1–67. Cl. 14.
General Aniline & Film Corp., New York, N.Y. 837,005, pub. 8–1–67. Cl. 18.
General Foods Corp., White Plains, N.Y. 837,234, pub. 8–1–67. Cl. 46.
General Mills, Inc.: *See*—
Washburn Crosby Co.
General Mills, Inc., Minneapolis, Minn. 837,265, pub. 8–1–67. Cl. 46.
General Motors Corp., Detroit, Mich. 837,075, pub. 8–1–67. Cl. 23.
General Tire & Rubber Co., The, Akron, Ohio. 837,130, pub. 8–1–67. Cl. 35.
George, James M., Danbury, Conn. 720,607, canc. Cl. 21.
Gillette Co., The, Boston, Mass. 837,085, pub. 8–1–67. Cl. 23.
Gilman, Inc., Ft. Worth, Tex. 720,697, canc. Cl. 38.
Glidden Co., The, Cleveland, Ohio. 837,250, pub. 8–1–67. Cl. 46.
Golay-Buchel & Co. S.A., Lausanne, Switzerland. 433,546, ren. 10–17–67. Cl. 23.
Good Investment Promotions, Inc., Cleveland, Ohio. 837,157, pub. 8–1–67. Cl. 38.
Goodyear Aerospace Corp., Akron, Ohio. 836,965, pub. 4–25–67. Cl. 12.
Goya Music Corp.: *See*—
Avnet, Inc.
Great Lakes Nursery Corp., Waukesha, Wis. 836,917, pub. 8–31–65. Cl. 1.
Green Bay Packers, Inc., Green Bay, Wis. 837,311, pub. 8–1–67. Cl. 107.
Guild Arts & Crafts, Inc., Farmingdale, N.Y. 837,224, pub. 8–1–67. Cl. 44.
Gundlach, G. P., & Co., Cincinnati, Ohio. 837,231, pub. 8–1–67. Cl. 46.
Guth, Edwin F., Co., The, St. Louis, Mo. 837,045, pub. 8–1–67. Cl. 21.
H & R Mfg. Co., Stockton, Calif. 837,094, pub. 8–1–67. Cl. 26.
HPE, Inc., El Monte, Calif. 836,936, pub. 8–1–67. Multiple Class (Classes 6, 13, 23, 26, 31, and 35).
Hall, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc. (also known as Robert Hall Clothes), New York, N.Y. 436,507, ren. 10–17–67. Cl. 39.
Hames, G. Lee, d.b.a. M.B.D Co., Los Angeles, Calif. 837,349. Cl. 51.
Handmade Soap & Candle Co., The: *See*—
Pinehurst Handmade Soap & Candle Co.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 836,975–6, pub. 8–1–67. Cl. 12.
Harris Paint Co., Tampa, Fla. 836,995, pub. 8–1–67. Cl. 16.
Hayden-Shaw Mineral Products, Inc.: *See*—
Joslyn Mfg. & Supply Co.
Health House: *See*—
Lumar Industries, Inc.
Hexcel Products, Inc., Berkeley, Calif. 720,677, canc. Cl. 34.
Hills Bros. Coffee, Inc., San Francisco, Calif. 720,796, canc. Cl. 46.
Hitco, Gardena, Calif. 837,286, pub. 8–1–67. Cl. 100.
Hoague-Sprague Corp., Lynn, Mass. 836,925, pub. 8–1–67. Cl. 2.
Honora Jewelry Co., New York, N.Y. 837,106, pub. 8–1–67. Cl. 28.
Humble Oil & Refining Co.: *See*—
Standard Oil Co. (New Jersey).
Stanco, Inc.
Hunt Foods & Industries, Inc.: *See*—
Hunt-Wesson Foods, Inc.
Hunt Wesson Foods: *See*—
Hunt-Wesson Foods, Inc.
Hunt-Wesson Foods, Inc., from Hunt Foods & Industries, Inc., d.b.a. Hunt Wesson Foods, Fullerton, Calif. 837,242, pub. 8–1–67. Cl. 46.
Hunter Engineering Co.: *See*—
Hunter, Lee.
Hunter, Lee, d.b.a. Hunter Engineering Co., St. Louis, Mo. 720,647, canc. Cl. 26.
Huntington Mfg. Co., Inc., Chicago, Ill. 837,178, pub. 8–1–67. Cl. 39.
Hush-Noise Corp., Muskegon, Mich. 837,330. Cl. 44.
Hy Glow Products, Inc., Los Angeles, Calif. 837,038, pub. 8–1–67. Cl. 21.
Idris, Ltd., London, England. 837,268, pub. 8–1–67. Cl. 48.
Ilford, Ltd., Ilford, Essex, England. 837,145, pub. 8–1–67. Cl. 37.
Illinois Tool Works Inc., Chicago, Ill. 837,097, pub. 8–1–67. Cl. 26.
Imperial-Eastman Corp., Chicago, Ill. 837,086, pub. 8–1–67. Cl. 23.
Instamatic Speed Reducing Signals, Ltd., Vancouver, British Columbia, Canada. 837,033, pub. 8–1–67. Cl. 21.
Institute for Scientific Information, Inc., Philadelphia, Pa. 837,293, pub. 8–1–67. Cl. 101.
Insurance Co. of North America, Philadelphia, Pa. 837,296, pub. 8–1–67. Cl. 102.
Intellux, Inc., Goleta, Calif. 837,040, pub. 8–1–67. Cl. 21.
International Basic Economy Corp., New York, N.Y. 720,559, canc. Cl. 13.
International Business Machines Corp., Armonk, N.Y. 837,141, pub. 8–1–67. Cl. 36.
International Cellucotton Products Co., Chicago, Ill., to Kimberly-Clark Corp., Neenah, Wis. 434,942, ren. 10–17–67. Cl. 1.
International Foam Corp., Chicago, Ill. 836,964, pub. 5–9–67. Multiple Class (Classes 12, 32, 39, and 42).
International Foam Corp., Chicago, Ill. 837,183, pub. 5–2–67. Multiple Class (Classes 39 and 42).
International Four Wheel Drive Assn. of Individuals & Clubs, Inc., Fullerton, Calif. 837,353. Cl. 107.
International Milling Co., Inc.: *See*—
New Prague Flouring Mill Co.
International Paper Co., New York, N.Y. 837,150, pub. 8–1–67. Cl. 37.
J & L Shuttle Corp., Bellevue, Ohio. 837,020, pub. 8–1–67. Cl. 19.
Jaeger Machine Co., The, Columbus, Ohio. 837,095, pub. 8–1–67. Cl. 26.

Jo-Do Specialty Co., Inc., New York, N.Y. 720,798, canc. Cl. 50.
Johnston, D., & Co., (Laphroaig), Ltd., Isle of Islay, Scotland. 837,269, pub. 8–1–67. Cl. 49.
Jones, Vess, d.b.a. The Whistle Co. of America, Inc., New York, N.Y., to Vess Beverage Co., St. Louis, Mo. 331,880, ren. 10–17–67. Cl. 45.
Jonkopings Och Vulcans Tandsticksfabriksaktiebolag, to Aktiebolaget Jonkoping-Vulcan, Jonkoping, Sweden. 66,024, ren. 10–17–67. Cl. 9.
Jonkopings Och Vulcans Tandsticksfabriksaktiebolag, to Aktiebolaget Jonkoping-Vulcan, Jonkoping, Sweden. 233,506, ren. 10–17–67. Cl. 9.
Joslyn Mfg. & Supply Co., Chicago, Ill., from Hayden-Shaw Mineral Products, Inc., Detroit, Mich. 836,931, pub. 8–1–67. Cl. 5.
Just Plastics, Inc., New York, N.Y. 836,966, pub. 8–1–67. Cl. 12.
Kaman Aircraft Corp.: *See*— Kaman Corp.
Kaman Corp., from Kaman Aircraft Corp., Bloomfield, Conn. 837,079, pub. 8–1–67. Cl. 23.
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 837,275–6, pub. 8–1–67. Cl. 51.
Kanegafuchi Spinning Co., Ltd.: *See*— Kanegafuchi Boseki Kabushiki Kaisha.
Kayser-Roth Corp., New York, N.Y. 387,192, pub. 8–1–67. Cl. 39.
Keebler Co., from United Biscuit Co. of America, Melrose Park, Ill. 837,232–3, pub. 8–1–67. Cl. 46.
Kelder, Gerald D.: *See*— GDK Laboratories, Inc.
Kemet Laboratories Co., Inc., to Union Carbide Corp., New York, N.Y. 430,107, ren. 10–17–67. Cl. 21.
Kiekhaefer Corp., Fond Du Lac, Wis. 837,065, pub. 8–1–67. Cl. 23.
Kimac Co., The, Old Greenwich, Conn. 837,101, pub. 8–1–67. Cl. 26.
Kimberly-Clark Corp.: *See*— International Cellucotton Products Co.
Kirby, Jack, d.b.a. Check-Accounting, Freeport, Ill. 837,351. Cl. 101.
Kleer-Vu Industries, Inc., New York, N.Y. 837,323. Cl. 26.
Knickerbocker Toy Co., Inc., New York, N.Y. 837,049, pub. 8–1–67. Cl. 22.
Knoll Pharmaceutical Co., Orange, N.J. 837,226, pub. 8–1–67. Cl. 44.
Kordon Corp., Hayward, Calif. 837,270, pub. 8–1–67. Cl. 50.
Koss Appliance Service Co.: *See*— Koss, John.
Koss, John, d.b.a. Koss Appliance Service Co., Philadelphia, Pa. 720,767, canc. Cl. 52.
Kruse, O'Connor and Ling, Inc., Fort Lauderdale, Fla. 837,160, pub. 8–1–67. Cl. 38.
L.I. Electro Labs, Inc., Hewlett, N.Y. 720,611, canc. Cl. 21.
L.I. Electro Labs, Inc., Hewlett, N.Y. 720,642, canc. Cl. 26.
Lake Chemical Co., Chicago, Ill. 836,963, pub. 8–1–67. Cl. 12.
La Marquesa Wig Corp., Miami, Fla. 837,209, pub. 8–1–67. Cl. 40.
Lamont & Riley, Inc., Worcester, Mass. 836,972, pub. 8–1–67. Cl. 12.
Larson, W. O., Foundry Co., The, Grafton, Ohio. 432,979, ren. 10–17–67. Cl. 14.
Larus & Brother Co., Richmond, Va. 837,335. Cl. 46.
Lauhoff Grain Co., Danville, Ill. 836,930, pub. 8–1–67. Cl. 5.
Lee, Frank H., Co., The, Danbury, Conn., to John H. Stetson Co., Philadelphia, Pa. 433,493. ren. 10–17–67. Cl. 39.
Les Laboratoires Dausse, Paris, France. 720,581, canc. Cl. 18.
Lilly Chemical Products, Inc., Gardner, Mass. 836,934, pub. 8–1–67. Cl. 5.
Lincoln Processing Corp., Westbury, N.Y. 837,306, pub. 8–1–67. Cl. 106.
Linde Air Products Co., The, to Union Carbide Corp., New York, N.Y. 434,784, ren. 10–17–67. Cl. 6.
Lithium Corp. of America, Inc., New York, N.Y. 836,944, pub. 8–1–67. Cl. 6.
Litman, Marvin W.: *See*— Lumar Industries, Inc.
Little World, Inc., New York, N.Y. 837,191, pub. 8–1–67. Cl. 39.
Lonitz, John F., Wilmington, Del. 837,100, pub. 8–1–67. Cl. 26.
Loral Corp., Bronx, N.Y. 837,059–60, pub. 8–1–67. Cl. 22.
Lowe, Joe, Co.: *See*— Lowe, Joe, Corp.
Lowe, Joe, Corp., New York, N.Y., to Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewood, N.J. 434,191, ren. 10–17–67. Cl. 46.
Lowe's, Inc., Cassopolis, Mich. 837,334. Cl. 46.
Lucente Enterprises, Inc., Youngstown, Ohio. 721,425, canc. Cl. 51.
Lumar Industries, Inc., Kansas City, Mo., from Marvin W. Litman, d.b.a. Health House, Prairie Village, Kans. 837,329. Cl. 44.
Lundbeck, H., & Co., A/S, Copenhagen, Denmark. 837,003, pub. 8–1–67. Cl. 18.
Lustra Mfg. Corp., Pomona, N.Y. 720,546–8, canc. Cl. 12.
Lux Co., Inc., The, Elkhart, Ind. 720,521, canc. Cl. 5.
M & M Gear Co., Inc., Gibson City, Ill. 837,081, pub. 8–1–67. Cl. 23.
M.B.D. Co.: *See*— Hames, G. Lee.
Ma Cherie Sales Corp.: *See*— Ma Cherie Sales Corp. of America.
Ma Cherie Sales Corp. of America, d.b.a. Ma Cherie Sales Corp., St. Louis, Mo. 837,331. Cl. 45.
MacMillan, Bloedel and Powell River, Ltd., Vancouver, British Columbia, Canada. 720,506, canc. Cl. 1.
Macy, R. H., & Co., Inc.: *See*— Bamberger, L., & Co.
Magic Seal Packaging Products, Columbus, Ohio. 837,142, pub. 8–1–67. Cl. 37.
Mallinckrodt Chemical Works, St. Louis, Mo. 836,924, pub. 8–1–67. Cl. 2.
Mann, Carrie, E., d.b.a. Birdwell Clothes, Santa Ana, Calif. 837,327. Cl. 39.
Marine Corps Schools, Quantico, Va. 837,161, pub. 8–1–67. Cl. 38.
Markowitz, Idel, d.b.a. The Penn Fur Co., to Penn Fifth Avenue Corp., also known as Penn-Fifth Ave. Corp., New York, N.Y. 232,087, ren. 10–17–67. Cl. 39.
Martinat, Jean J., New York, N.Y. 720,755, canc. Cl. 51.
Maschinenfabrik Fahr Aktiengesellschaft, Constance, Germany. 837,080, pub. 8–1–67. Cl. 23.
Mastercraft Pen Co., Inc., Monterey, Calif. 837,147, pub. 8–1–67. Cl. 37.
Materic, Inc., Los Angeles, Calif. 837,063, pub. 8–1–67. Cl. 22.
Olin Mathieson Chemical Corp., New York, N.Y. 720,592, canc. Cl. 18.
Olin Mathieson Chemical Corp., New York, N.Y. 836,923, pub. 8–1–67. Cl. 1.
Olin Mathieson Chemical Corp.: *See*— Squibb, E. R., & Sons, Inc.
Matthews, Jas. H., & Co., Pittsburgh, Pa. 836,928, pub. 8–1–67. Multiple Class (Classes 2 and 50).
Mayborn Products, Ltd., Sydenham, London. 720,763, canc. Cl. 52.
Mayer, Oscar, & Co., Inc., Chicago, Ill. 837,262–3, pub. 8–1–67. Cl. 46.
McGreevey, Werring & Howell, Inc., New York, N.Y. 238,706, ren. 10–17–67. Cl. 39.
Mensa, Blackheath, London, England. 837,288, pub. 8–1–67. Cl. 100.
Merry Mites, Inc., New York, N.Y. 837,185, pub. 8–1–67. Cl. 39.
Metaverpa N.V., Maartensdijk, Netherlands. 720,567, canc. Cl. 14.
Meyer Laboratories, Inc., Detroit, Mich. 837,016, pub. 8–1–67. Cl. 18.
Michie Textiles, Inc., Philadelphia, Pa. 837,213, pub. 8–1–67. Cl. 42.
Milk Proteins, Inc., Detroit, Mich. 837,336. Cl. 46.
Milwhite Co., Inc., The, d.b.a. Barium Supply Co., Houston, Tex. 836,919, pub. 8–1–67. Cl. 1.
Milwhite Co., Inc., The, d.b.a. Barium Supply Co., Houston, Tex. 836,950, pub. 8–1–67. Cl. 6.
Mine Publications, Inc., Minneapolis, Minn. 837,169–71, pub. 8–1–67. Cl. 38.
Mirsky, Rubin, Philadelphia, Pa. 433,722, ren. 10–17–67. Cl. 46.
Mr. John, Inc., New York, N.Y. 837,190, pub. 8–1–67. Cl. 39.
Mr. Mod Shop, Inc., New Orleans, La. 837,102–3, pub. 8–1–67. Cl. 26.
Mr. Mod Shop, Inc., New Orleans, La. 837,107–8, pub. 8–1–67. Cl. 28.
Mr. Mod Shop, Inc., New Orleans, La. 837,277, pub. 8–1–67. Cl. 51.
Mr. Slhim: *See*— Stahl, William.
Monroe Chemical Co., to Putnam Dyes, Inc., Quincy, Ill. 230,875, ren. 10–17–67. Cl. 52.
Monsanto Chemical Co., St. Louis, Mo. 720,509, canc. Cl. 1.
Montgomery Chemical Co., Jenkintown, Pa. 837,285, pub. 8–1–67. Cl. 52.
Mount Vernon Mills, Inc.: *See*— Mount Vernon-Woodberry Cotton Duck Co.
Mount Vernon-Woodberry Cotton Duck Co., to Mount Vernon Mills, Inc., Baltimore, Md. 66,051, ren. 10–17–67. Cl. 42.
Murata Mfg. Co., Ltd., Kyoto-Fu, Japan. 837,316. Cl. 21.
Murphy, Tom H., & Don E. Tucker, Spokane, Wash. 837,307, pub. 8–27–67. Cl. 106.
Murray Co. of Texas, Inc., d.b.a. Boston Gear Works, North Quincy, Mass. 837,074, pub. 8–1–67. Cl. 28.
NEA Service, Inc., to Newspaper Enterprise Assn., Inc., Cleveland, Ohio. 232,086, ren. 10–17–67. Cl. 38.
National Bird Control Laboratories: *See*— Fink, Joseph H.
National Biscuit Co., New York, N.Y. 837,259–60, pub. 8–1–67. Cl. 46.
National Cash Register Co., The, Dayton, Ohio. 837,168, pub. 8–1–67. Cl. 38.
National Dairy Products Corp.: *See*— Sheffield Farms Co., Inc.
National Drug Co., The, Philadelphia, Pa., to Richardson-Merrell, Inc., New York, N.Y. 433,996, ren. 10–17–67. Cl. 18.
National Service Industries, Inc., Atlanta, Ga. 837,290, pub. 8–1–67. Cl. 100.
National Starch & Chemical Corp., New York, N.Y. 837,241, pub. 8–1–67. Cl. 46.
Neal, Elmo, d.b.a. Blackburn Candy Co., Hearne, Tex. 837,333. Cl. 46.
New England Clock Co., The, Bristol, Conn. 837,105, pub. 8–1–67. Cl. 27.
New Prague Flouring Mill Co., New Prague, to International Milling Co., Inc., Minneapolis, Minn. 61,905, ren. 10–17–67. Cl. 46.
New York Central Railroad Co., The, New York, N.Y. 837,304, pub. 8–1–67. Cl. 105.

Newspaper Enterprise Assn., Inc.: *See*— NEA Service, Inc.
Norbest Turkey Growers Assn., Salt Lake City, Utah. 837,264, pub. 8–1–67. Cl. 46.
Norcross, Inc., New York, N.Y. 837,167, pub. 8–1–67. Cl. 38.
Norcross, Inc., New York, N.Y. 837,174–6, pub. 8–1–67. Cl. 38.
North American Equitable Life Assurance Co., Columbus, Ohio. 720,775, canc. Cl. 102.
Norwich Pharmacal Co., The, Norwich, N.Y. 837,012–4, pub. 8–1–67. Cl. 18.
Obits-Farley Co., Inc., Stroudsburg, Pa. 720,599, canc. Cl. 19.
Oceana Import Co., Inc., South Boston, Mass. 720,604, canc. Cl. 21.
Ohrbach's Inc., New York, N.Y. 837,204, pub. 8–1–67. Cl. 39.
Omark Industries, Inc., Portland, Oreg. 837,082, pub. 8–1–67. Cl. 23.
Omark Industries, Inc., Portland, Oreg. 837,084, pub. 8–1–67. Cl. 28.
Omark Industries, Inc., Portland, Oreg. 837,128, pub. 8–1–67. Cl. 34.
Onrig Chemical Corp., Sarasota, Fla. 829,692, cor. Cl. 18.
Outboard Marine Corp., Waukegan, Ill. 837,050, pub. 8–1–67. Cl. 22.
Overstreet, Bill D., d.b.a. Southwestern Exterminators, Amarillo, Tex. 720,776, canc. Cl. 103.
Owens-Illinois, Inc., Toledo, Ohio. 837,121, pub. 8–1–67. Cl. 33.
Oxford Industries, Inc., from Oxford Mfg. Co., Inc., Atlanta, Ga. 837,182, pub. 8–1–67. Cl. 39.
Oxford Mfg. Co., Inc.: *See*— Oxford Industries, Inc.
Pallcio, F., & Co., Inc., Tampa, Fla. 836,999, pub. 8–1–67. Cl. 17.
Pallottine Fathers, The, Milwaukee, Wis. 837,158, pub. 8–1–67. Cl. 38.
Palm Beach Co., Portland, Maine. 837,193, pub. 8–1–67. Cl. 39.
Park Air Corp., Boston, Mass. 837,319. Cl. 23.
Parke, Davis & Co., Detroit, Mich. 837,018, pub. 8–1–67. Cl. 18.
Parlier, G. Allen, Corp., from Parlier Products Corp., Arecibo, Puerto Rico. 837,267, pub. 7–18–67. Cl. 47.
Parlier Products Corp.: *See*— Parlier, G. Allen, Corp.
Pay 'N Save Corp., Seattle, Wash. 837,004, pub. 8–1–67. Cl. 18.
Penn-Fifth Ave. Corp.: *See*— Markowitz, Idel.
Penn Fifth Avenue Corp.: *See*— Markowitz, Idel.
Penn Fur Co., The: *See*— Markowitz, Idel.
Pennsalt Chemicals Corp., Philadelphia, Pa. 837,284, pub. 8–1–67. Cl. 52.
Perkins, William R., Jr., Lynchburg, Va. 720,517, canc. Cl. 2.
Petran Products Corp., Milwaukee, Wis. 837,253, pub. 8–1–67. Cl. 46.
Pfizer, Chas., & Co., Inc., New York, N.Y. 836,922, pub. 8–1–67. Cl. 1.
Pfizer, Chas., & Co., Inc., New York, N.Y. 836,967, pub. 8–1–67. Cl. 12.
Pfizer, Chas., & Co., Inc., New York, N.Y. 836,988, pub. 8–1–67. Cl. 14.
Pfizer, Chas., & Co., Inc., New York, N.Y. 837,015, pub. 8–1–67. Cl. 18.
Philharmonic Radio Corp., now by change of name Teledyne Corp., assor. to Philharmonic Radio Corp., to Symphonic Electronic Corp., New York, N.Y. 432,209, ren. 10–17–67. Cl. 21.
Philharmonic Radio Corp., to Symphonic Electronic Corp., New York, N.Y. 433,102. ren. 10–17–67. Cl. 21.
Phillips Petroleum Co., Bartlesville, Okla. 837,143, pub. 8–1–67. Cl. 37.
Phone Consultants, Inc., San Francisco, Calif. 837,028, pub. 8–1–67. Cl. 21.
Picher Lead Co., Joplin, Mo., to Eagle-Picher Industries, Inc., Cincinnati, Ohio. 63,339–40, ren. 10–17–67. Cl. 16.
Picher Lead Co., Joplin, Mo., to Eagle-Picher Industries, Inc., Cincinnati, Ohio. 64,042, ren. 10–17–67. Cl. 16.
Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. 837,261, pub. 8–1–67. Cl. 46.
Pike Mfg. Co.: *See*— Riker, Arthur B.
Pinehurst Handmade Soap & Candle Co., Pinehurst, from The Handmade Soap & Candle Co., Southern Pines, N.C. 837,281, pub. 7–6–65. Cl. 52.
Pioneer Restaurants, Inc., d.b.a Sam's Restaurants, Sacramento, Calif. 837,244, pub. 8–1–67. Cl. 46.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 836,974, pub. 8–1–67. Cl. 12.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 836,998, pub. 8–1–67. Cl. 16.
Plakie Toys: *See*— Plakie Toys, Inc.
Plakie Toys, Inc., d.b.a. Plakie Toys, Youngstown, Ohio. 837,118, pub. 8–1–67. Cl. 32.
Platinum Records, Inc., Miami, Fla. 837,138, pub. 8–1–67. Cl. 36.
Plymouth Golf Ball Sales Co., Plymouth Meeting, Pa. 837,056, pub. 8–1–67. Cl. 22.
Plymouth Mfg. Co., Boston, Mass. 837,180, pub. 8–1–67. Cl. 39.
Pocono Mountain Foods, Inc., Stroudsburg, Pa. 837,243, pub. 8–1–67. Cl. 46.
Polos, Dan, Industries, Inc., Addison, Ill. 837,073, pub. 8–1–67. Cl. 23.
Powerlock Floors, Inc., Philadelphia, Pa. 836,971, pub. 8–1–67. Cl. 12.
Pratt & Lambert, Inc., Buffalo, N.Y. 836,991, pub. 8–1–67. Cl. 16.
Precision Grinding Ltd., Mitcham Junction, Surrey, England. 837,091, pub. 8–1–67. Cl. 26.
Precision Paper Tube Co., Wheeling, Ill. 837,035, pub. 8–1–67. Cl. 21.
Premmco, Inc., Los Angeles, Calif. 836,980, pub. 8–1–67. Cl. 13.
Preset-O-Lite Co., The, Indianapolis, Ind., to Union Carbide Corp., New York, N.Y. 65,344, ren. 10–17–67. Cl. 34.
Pretty Please, Inc., New York, N.Y. 837,186, pub. 8–1–67. Cl. 39.
Prime Quality Foods, Inc., Harlingen, Tex. 837,230, pub. 8–1–67. Cl. 46.
Procter & Gamble Productions, Inc., Cincinnati, Ohio. 837,052, pub. 8–1–67. Cl. 22.
Product Maintenance, Inc., Milwaukee, Wis. 720,648, canc. Cl. 26.
Protex Industries, Inc., Denver, Colo. 836,951, pub. 8–1–67. Cl. 6.
Pullman, Inc., Chicago, Ill. 837,024, pub. 8–1–67. Cl. 19.
Putnam Dyes, Inc.: *See*— Monroe Chemical Co.
Rae Systems, Inc., Chicago, Ill. 837,294, pub. 8–1–67. Cl. 101.
Ralston Purina Co., St. Louis, Mo. 837,007, pub. 8–1–67. Cl. 18.
Ralston Purina Co., St. Louis, Mo. 837,245, pub. 8–1–67. Cl. 46.
Ratcliff Hoist Co., Inc., Belmont, Calif. 837,070, pub. 8–1–67. Cl. 23.
Raychem Corp., Menlo Park, from Rayclad Tubes, Inc., Redwood City, Calif. 837,041, pub. 8–1–67. Cl. 21.
Rayclad Tubes, Inc.: *See*— Raychem Corp.
Reale Paint Corp., Brooklyn, N.Y. 720,570, canc. Cl. 16.
Rebels Chemical Co.: *See*— Armour Pharmaceutical Co.
Relaxacisor, Inc., Los Angeles, Calif. 720,727, canc. Cl. 44.
Remak Electrograph Pty. Ltd., South Australia, Australia. 836,938, pub. 8–1–67. Cl. 6.
Remak Electrograph Pty. Ltd., North Adelaide, South Australia, Australia. 837,089, pub. 8–1–67. Cl. 26.
Renwick, Charles S., Jr., Carmel, Calif. 836,921, pub. 8–1–67. Cl. 1.
Reserve Life Insurance Co., Dallas, Tex. 837,298, pub. 8–1–67. Cl. 102.
Revlon, Inc., New York, N.Y. 837,341–7. Cl. 51.
Richardson-Merrell, Inc.: *See*— National Drug Co., The.
Riekes Crisa Corp., Laredo, Tex. 837,120, pub. 8–1–67. Cl. 33.
Riker, Arthur B., d.b.a. Pike Mfg. Co., Fort Lauderdale, Fla. 720,571, canc. Cl. 18.
Rinn & Cloos AG, Postfach, Germany. 837,000, pub. 8–1–67. Cl. 17.
Ritepoint Corp., St. Louis, Mo. 837,152, pub. 8–1–67. Cl. 37.
Robins, A. H., Co., Inc., Richmond, Va. 837,010–11, pub. 8–1–67. Cl. 18.
Rockwell, W. S., Co., Fairfield, Conn. 837,066, pub. 8–1–67. Multiple class (Classes 23 and 34).
Rogers Publishing Co., Englewood, Colo. 837,172, pub. 8–1–67. Cl. 38.
Roll-Out Products Corp., Los Angeles, Calif. 836,952, pub. 8–1–67. Cl. 6.
Ross, Inc.: *See*— Ross Utilities, Inc.
Ross Utilities, Inc., d.b.a. Ross, Inc., Belleville, Ill. 720,542–3, canc. Cl. 6.
Rossiter, Ed, d.b.a. YHP Co., Los Angeles, Calif. 837,155, pub. 8–1–67. Cl. 38.
Rossiter, Ed, d.b.a. YHP Co., Los Angeles, Calif. 837,300, pub. 8–1–67. Cl. 103.
Rotron Mfg. Co., Inc., Woodstock, N.Y. 837,126, pub. 8–1–67. Cl. 34.
Ruscoe, W. J., Co., Akron, Ohio. 837,313. Cl. 5.
Rust-Oleum Corp, Evanston, Ill. 836,996, pub. 8–1–67. Cl. 16.
Ruthman Machinery Co., The, Cincinnati, Ohio. 720,627, canc. Cl. 23.
Saar Products Co., Alexandria, Va. 837,271, pub. 8–1–67. Cl. 50.
Sam's Restaurants: *See*— Pioneer Restaurants, Inc.
Samson Products, Inc., Ashland, Nebr. 836,962, pub. 5–2–67. Multiple Class (Classes 12, 19, and 23).
Sarong, Inc., Dover, Del. 837,198, pub. 8–1–67. Cl. 39.
Sayve Corp. of America, Cincinnati, Ohio. 720,783, canc. Cl. 24.
Schering Corp., Bloomfield, N.J. 720,584–5, canc. Cl. 18.
Schicker, Robert D., Omaha, Nebr. 837,187, pub. 8–1–67. Cl. 39.
Scholastic Magazines, Inc., New York, N.Y. 837,162, pub. 8–1–67. Cl. 38.
Scholastic Magazines, Inc., New York, N.Y. 837,166, pub. 8–1–67. Cl. 38.
Scientific-Atlanta, Inc., Atlanta, Ga. 836,926, pub. 8–1–67. Cl. 2.
Scott Aviation Corp., Lancaster, N.Y. 837,090, pub. 8–1–67. Cl. 26.
Seaboard Finance Co., Los Angeles, Calif. 837,297, pub. 8–1–67. Cl. 102.
Sears, Roebuck & Co., Chicago, Ill. 720,670, canc. Cl. 32.
Selchow & Righter Co., Bay Shore, N.Y. 720,623, canc. Cl. 22.

Shavair of America: *See*—
Silver, Irving.
Sheffield Farms Co., Inc., to National Dairy Products Corp., New York, N.Y. 433,853, ren. 10–17–67. Cl. 16.
Shell Oil Co., New York, N.Y. 836,953, pub. 8–1–67. Cl. 6.
Sherman, Sol, d.b.a. Sherman Products, New York, N.Y. 515,254, canc. Cl. 39.
Shunk Mfg. Co., Inc., Bucyrus, Ohio. 837,078, pub. 8–1–67. Cl. 23.
Silver Inc., to Esquire-Merz Case Co., Inc., Chicago, Ill. 724,061, new cert. Cl. 3.
Silver, Irving, d.b.a. Shavair of America, Atlanta, Ga. 720,636, canc. Cl. 23.
Societa Metallurgica Italiana, Florence, Italy. 836,955, pub. 8–1–67. Cl. 9.
Societe Anonyme: Ateliers Robatel et Mulatier, Lyon, France. 837,320. Multiple Class (Classes 23 and 24).
Societe Metallurgique d'Imphy, Paris, France. 836,985, pub. 8–1–67. Cl. 14.
Sonneborn Building Products, Inc., Des Plaines, Ill. 836,970, pub. 8–1–67. Cl. 12.
Sonoco Products Co., Hartsville, S.C. 720,505, canc. Cl. 1.
Sonotone Corp., Elmsford, N.Y. 433,848, ren. 10–17–67. Cl. 44.
Southwestern Drug Corp., d.b.a. Tru-Lab Products, Dallas, Tex. 837,283, pub. 6–6–67. Cl. 52.
Southwestern Exterminators: *See*—
Overstreet, Bill D.
Spilhaus, Athelstan F., Mound, Minn. 837,318. Cl. 22.
Spraycraft Auto Painting Co.: *See*—
Spraycraft Auto Painting Systems.
Spraycraft Auto Painting Systems, from Spraycraft Auto Painting Systems, Inc., d.b.a. Spraycraft Auto Painting Co., San Francisco, Calif. 836,992, pub. 8–1–67. Cl. 16.
Spraycraft Auto Painting Systems, Inc.: *See*—
Spraycraft Auto Painting Systems.
Spring City Knitting Co., Spring City, Pa. 227,368, ren. 10–17–67. Cl. 39.
Squibb, E. R., & Sons, Inc., from Olin Mathieson Chemical Corp., New York, N.Y. 837,002, pub. 1–15–63. Cl. 18.
Stahl, William D., d.b.a. Mr. Sibim, Chicago, Ill. 837,202, pub. 8–1–67. Cl. 39.
Stanco, Inc., Wilmington, Del., and New York, N.Y., to Humble Oil & Refining Co., Houston, Tex. 433,886, ren. 10–17–67. Cl. 6.
Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 233,504–5, ren. 10–17–67. Cl. 15.
Standard Oil Co. of Calif., San Francisco, Calif. 836,969, pub. 8–1–67. Cl. 12.
Stanley Furniture Co., Inc., Stanleytown, Va. 720,662, canc. Cl. 32.
Stauffer Chemical Co., New York, N.Y. 836,932, pub. 8–1–67. Cl. 5.
Steak n Shake, Inc., Bloomington, Ill. 837,229, pub. 8–1–67. Cl. 45.
Sterling Remedy Co., The, Chicago, Ill., to Cascarets, Inc., Hewlett, N.Y. 31,033, ren. 10–17–67. Cl. 18.
Sternco Industries, Inc., Allendale, N.J. 837,238, pub. 8–1–67. Cl. 46.
Stetson, John B., Co.: *See*—
Lee, Frank H., Co., The.
Stetson, John B., Co., to John B. Stetson Co., Philadelphia, Pa. 432,531, ren. 10–17–67. Cl. 39.
Stevens, J. P., & Co., Inc., New York, N.Y. 836,941, pub. 8–1–67. Cl. 6.
Stevens, J. P., & Co., Inc., New York, N.Y. 837,194, pub. 8–1–67. Cl. 39.
Stitzel-Weller Distillery, Inc., Louisville, Ky. 720,745, canc. Cl. 49.
Straub & Yorke, Chicago, Ill., to Leon Avedisian, d.b.a. Sun-Shine Polish Co., Detroit, Mich. 228,404, ren. 10–17–67. Cl. 4.
Sunshine Biscuits, Inc., Long Island City, N.Y. 720,523, canc. Cl. 6.
Sunshine Biscuits, Inc., Long Island City, N.Y. 837,252, pub. 8–1–67. Cl. 46.
Sun-Shine Polish Co.: *See*—
Straub & Yorke.
Surprize Party, Inc., New York, N.Y. 837,051, pub. 8–1–67. Cl. 22.
Symphonic Electronic Corp.: *See*—
Philharmonic Radio Corp.
Systems Inc., New York, N.Y. 837,207–8, pub. 8–1–67. Cl. 39.
Tambellini Food Products Co., Inc., Pittsburgh, Pa. 837,240, pub. 8–1–67. Cl. 46.
Tandy Corp., from General American Industries, Inc., New York, N.Y. 720,503, canc. Cl. 1.
Target Stores, Inc., Minneapolis, Minn. 837,308, pub. 6–13–67. Cl. 106.
Tasco Sales, Inc., Miami, Fla. 837,322. Cl. 26.
Teco Iberica, S.A., Barcelona, Spain. 837,272, pub. 8–1–67. Multiple Class (Classes 51 and 52).
Telepro Industries, Inc., Cherry Hill, N.J. 837,140, pub. 8–1–67. Cl. 36.
Tenneco Chemicals, Inc., New York, N.Y. 836,943, pub. 8–1–67. Cl. 6.
Therachemie Chemisch Therapeutische G.m.b.H., d.b.a. Therachemie G.m.b.H., Dusseldorf, Germany. 837,278, pub. 8–1–67. Cl. 51.
Therachemie G.m.b.H.: *See*—
Therachemie Chemisch Therapeutische G.m.b.H.
Thomas Pride Mills, Inc., Atlanta, Ga. 837,212, pub. 8–1–67. Cl. 42.
Thomson Co., Thomson, Ga. 837,184, pub. 8–1–67. Cl. 39.
Thomson Corp., The, Bay City, Mich. 837,340. Cl. 50.
Thomson-Porcelite Paint Co.: *See*—
Thomson Wood Finishing Co., The.
Thomson Wood Finishing Co., The, to Thomson-Porcelite Paint Co., Philadelphia, Pa. 67,845, ren. 10–17–67. Cl. 16.
Tice, Reuben S., Monterey, Calif. 837,112, pub. 8–1–67. Cl. 31.
Ton-Hi, Inc., Omaha, Nebr. 720,573, canc. Cl. 18.
Topmost Foods, Inc., Costa Mesa, Calif. 837,235, pub. 8–1–67. Cl. 46.
Tote-E-Z Products, New York, N.Y. 837,025, pub. 8–1–67. Cl. 19.
Townsend, Mary L., Tucson, Ariz. 837,177, pub. 8–1–67. Cl. 38.
Trans-Dapt of Calif., Inc., Long Beach, Calif. 837,026, pub. 8–1–67. Cl. 19.
Trapani, Michael, d.b.a. Pro-Capa Laboratories, to Pro-Capa Products, Inc., Brooklyn, N.Y. 407,729, new cert. Cl. 51.
Trig-A-Tape Corp., Berkeley, Calif. 720,631, canc. Cl. 23.
Tri-Matic Equipment Co., Omaha, Nebr. 836,960, pub. 4–11–67. Multiple Class (Classes 12, 13, 23, 26, 31, and 34).
Tru-Lab Products: *See*—
Southwestern Drug Corp.
Tykor Products, Inc., to The Borden Co., New York, N.Y. 433,931, ren. 10–17–67. Cl. 6.
Ultronic Systems Corp., Pennsauken, N.J. 837,092, pub. 8–1–67. Cl. 26.
Unilever, Ltd., Cheshire, England. 837,348. Cl. 51.
Union Carbide Corp.: *See*—
Bakelite Corp.
Carbide & Carbon Chemicals Corp.
Kemet Laboratories Co., Inc.
Linde Air Products Co., The.
Prest-O-Lite Co., The.
Union Carbide Corp., New York, N.Y. 720,541, canc. Cl. 6.
Union Carbide Corp., New York, N.Y. 837,046, pub. 8–1–67. Cl. 21.
Union Carbide Corp., New York, N.Y. 837,135, pub. 8–1–67. Cl. 35.
United Biscuit Co. of America: *See*—
Keebler Co.
United Fruit Co., Boston, Mass. 837,254, pub. 8–1–67. Cl. 46.
United States Steel Corp., Pittsburgh, Pa. 836,989, pub. 8–1–67. Cl. 14.
Universal Lamp Co., Inc., Chicago, Ill. 837,043, pub. 8–1–67. Cl. 21.
Unokichi Takai, Yamanashi-ken, Japan. 837,027, pub. 6–29–65. Cl. 20.
Venus Scientific, Inc., Hicksville, N.Y. 837,042, pub. 8–1–67. Cl. 21.
Vess Beverage Co.: *See*—
Jones, Vess.
Vidar Corp., Mountain View, Calif. 720,654, canc. Cl. 26.
Vim-Sauna, Inc., Hudson, Mass. 837,228, pub. 8–1–67. Cl. 44.
Vishay Instruments, Inc., Malvern, Pa. 837,034, pub. 8–1–67. Cl. 21.
Vitaminerals, Inc., Glendale, Calif. 837,017, pub. 8–1–67. Cl. 18.
Von Steuben'sche Handelscompanie G.m.b.H., Hannover, Germany. 837,266, pub. 8–1–67. Cl. 47.
Vorac Co., The, Rutherford, N.J. 836,961, pub. 8–1–67. Cl. 12.
WDIA: *See*—
WDIA, Inc.
WDIA, Inc., d.b.a. WDIA, Memphis, Tenn. 837,302, pub. 5–16–67. Cl. 104.
Waldoroth Label Corp., Boston, Mass. 837,164, pub. 8–1–67. Cl. 38.
Wampole Laboratories: *See*—
Denver Chemical Mfg. Co., The.
Ward Green Co., to Parents' Magazine Enterprises, Inc., New York, N.Y. 667,125, new cert. Cl. 38.
Ward Mfg., Inc., Hamilton, Ohio. 837,021, pub. 8–1–67. Multiple Class (Classes 19 and 22).
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 837,006, pub. 8–1–67. Cl. 18.
Washburn Crosby Co., to General Mills, Inc., Minneapolis, Minn. 66,614, ren. 10–17–67. Cl. 46.
Washington Post Co., The, to The Washington Post Co., Washington, D.C. 66,538, ren. 10–17–67. Cl. 38.
Western Auto Supply Co., Kansas City, Mo. 837,072, pub. 8–1–67. Cl. 23.
Western Chemical & Mfg. Co., Los Angeles, Calif. 836,977, pub. 8–1–67. Cl. 12.
Western Sky Industries: *See*—
Atlas Corp.
Western Union Telegraph Co., The, New York, N.Y. 837,295, pub. 8–1–67. Cl. 101.
Whistle Co. of America, Inc., The: *See*—
Jones, Vess.
Whitaker Mfg. Co., The, Chicago, Ill. 837,076, pub. 8–1–67. Cl. 23.
Wilcox-Gay Corp., The, from Recordio Corp., Charlotte, Mich. 379,093, canc. Cl. 21.
Wilcox-Gay Corp., The, Charlotte, Mich. 394,149, canc. Cl. 36.
Wilcox-Gay Corp., The, Charlotte, Mich. 438,179, canc. Cl. 36.
Wilcox-Gay Corp., The, Charlotte, Mich. 442,401, canc. Cl. 21.
Wilcox-Gay Corp., The, Charlotte, Mich. 565,449, canc. Cl. 36.
Wilcox-Gay Corp., The, Charlotte, Mich. 624,647, canc. Cl. 21.

Wilcox, Roscoe G., d.b.a. Cyclo-Rooter Co., Lansing, Mich. 837,067, pub. 8–1–67. Cl. 23.
Wile, M., & Co., Inc., New York, N.Y. 837,195, pub. 8–1–67. Cl. 39.
Wilkenson, Erik A., to Halsingborg, Sweden. 720,644, canc. Cl. 26.
Wilson Concrete Co., Red Oak, Iowa. 836,973, pub. 8–1–67. Cl. 12.
Winston, Carey, Co., The, Washington, D.C. 837,292, pub. 8–1–67. Multiple Class (Classes 101 and 102).
Wizzard Metal Products, Inc., Tacoma, Wash. 837,064, pub. 8–1–67. Cl. 23.
Wolf, Howard B., Inc., Dallas, Tex. 837,188, pub. 8–1–67. Cl. 39.
Woods Hole Oceanographic Institution, Woods Hole, Mass. 837,165, pub. 8–1–67. Cl. 38.
Woodward-Wanger Co., Philadelphia, Pa. 237,824, ren. 10–17–67. Cl. 35.
Woolworth, F. W., Co., New York, N.Y. 837,077, pub. 8–1–67. Cl. 23.
Wright, John N., Jr., Inc., Federalsburg, Md. 837,249, pub. 8–1–67. Cl. 46.
YHP Co.: *See*—
Rossiter, Ed.
Yale & Town, Inc.: *See*—
Eaton Yale & Towne, Inc.
Young, W. F., Inc., Springfield, Mass. 720,528, canc. Cl. 6.
Zeolux Corp., New York, N.Y. 720,639, canc. Cl. 24.

U.S. GOVERNMENT PRINTING OFFICE: 0—1967

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
October 24, 1967 Volume 843 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1967

Examiner affirmed	186
Examiner affirmed in part	18
Examiner reversed	47
Total	251

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART I—RULES OF PRACTICE IN PATENT CASES

Amendment of Claims

Sections 1.119, 1.121 and 1.126 (Patent Rules 119, 121 and 126) are revised as set forth below, said revisions to take effect November 1, 1967. The prosecution of all applications for which no amendment has been filed prior to November 1, 1967, must be in compliance with the sections as revised.

The purpose of these revisions is to effect more efficient operation in the prosecution of patent applications as well as in the clerical operations in support thereof.

The general substance of the proposed revisions was published in the Federal Register of June 24, 1967 (32 F.R. 9026). A hearing was held on July 31, 1967, and all persons, who desired to, were invited to attend and to submit their views, objections, recommendations or suggestions. Both the oral and written comments were carefully considered. The sections are being revised substantially as published with a few additional changes.

The full text of the revised sections 1.119, 1.121 and 1.126 reads as follows:

§ 1.119 *Amendment of claims.*

The claims may be amended by canceling particular claims, by presenting new claims, or by rewriting particular claims as indicated in section 1.121. The requirements of section 1.111 must be complied with by pointing out the specific distinctions believed to render the claims patentable over the references in presenting arguments in support of new claims and amendments.

§ 1.121 *Manner of making amendments.*

(a) Erasures, additions, insertions, or alterations of the Office file of papers and records must not be physically entered by the applicant. Amendments to the application (excluding the claims) are made by filing a paper (which should conform to section 1.52), directing or requesting that specified amendments be made. The exact word or words to be stricken out or inserted by said amendment must be specified and the precise point indicated where the deletion or insertion is to be made.

(b) Except as otherwise provided herein, a particular claim may be amended only by directions to cancel or by rewriting such claim with underlining below the word or words added and brackets around the word or words deleted. The rewriting of a claim in this form will be construed as directing the cancellation of the original claim; however, the original claim number followed by the parenthetical word "amended" must be used for the rewritten claim. If a previously rewritten claim is rewritten, underlining and bracketing will be applied in reference to the previously rewritten claim with the parenthetical expression "twice amended," "three times amended," etc., following the original claim number.

(c) A particular claim may be amended in the manner indicated for the application in section 1.121(a) to the extent of corrections in spelling, punctuation, and typographical errors. Additional amendments in this manner will be admitted provided the changes are limited to (1) deletions and/or (2) the addition of no more than five words in any one claim. Any amendment submitted with instructions to amend particular claims but failing to conform to the provisions of paragraphs (b) and (c) may be considered non-responsive and treated accordingly.

(d) Where underlining or brackets are intended to appear in the printed patent or are properly part of the claimed material and not intended as symbolic of changes in the particular claim, amendment by rewriting in accordance with paragraph (b) above shall be prohibited.

(e) In reissue applications, both the descriptive portion and the claims are to be amended as specified in paragraph (a) above.

§ 1.126 *Numbering of claims.*

The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When claims are added, except when presented in accordance with section 1.121(b), they must be numbered by the applicant consecutively beginning with the number next following the highest numbered claim previously presented (whether entered or not). When the application is ready for allowance, the examiner, if necessary, will renumber the claims consecutively in the order in which they appear or in such order as may have been requested by applicant.

(Sec. 1, 66 Stat. 792; 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:

JOHN F. KINCAID,
Acting Assistant Secretary for Science and Technology.

Dated: Sept. 25, 1967.

Published in 32 F.R. 13582–3, Sept. 28, 1967

Veterans Day Holiday

Since Veterans Day falls this year on a Saturday, the preceding day, Friday, November 10, is considered to be a holiday

New Applications Received During August 1967

Patents	7377
Designs	377
Plant Patents	5
Reissues	36
Total	7795

Issue—October 24, 1967

Patents	1173	No. 3,348,236 to No. 3,349,408, incl.
Designs	70	No. 208,966 to No. 209,035, incl.
Plant Patents	1	No. 2,774
Total	1244	

within the District of Columbia and the Patent Office will be closed for business on that day. Accordingly, any action due on November 10, or November 11, 1967, is to be considered timely if taken on November 13, 1967.

By direction of the Acting Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Oct. 11, 1967.

Notice of Tentative Recordation of a Trade Name

[T.D. 67-234]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 2, 1967

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

"BEAUNIT CORPORATION," is a trade name used by Beaunit Corporation (also doing business as Beaunit Fibers and Beaunit Textiles), a corporation organized under the laws of the State of New York, located at 261 Madison Avenue, New York, New York, 10016. The trade name is used in connection with man-made fibers, knitted and woven fabrics and garments, manufactured in the United States.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after October 31, 1967, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1967, of any opposition proceedings.

Until 45 days after October 31, 1967, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

LESTER D. JOHNSON,
Commissioner of Customs.

Disclaimers

3,189,352.—*Frank T. Scalera*, Maplewood, N.J. ANTI-SKATE DEVICE. Patent dated June 15, 1965. Disclaimer filed Oct. 2, 1967, by the inventor, the assignee, *General Electric Company, Inc.*, assenting.

Hereby enter this disclaimer to claims 1, 3 and 8 of said patent.

3,229,558.—*Norman Frederick Harwood*, Claygate, and *Alan John Osborne*, Cheam, England. BLOWN ARTICLE HOLDING AND DE-FLASHING DEVICE. Patent dated Jan. 18, 1966. Disclaimer filed July 12, 1967, by the assignee, *Baker Perkins, Inc.*

Hereby enters this disclaimer to claims 1, 2, 4 and 10 of said patent.

U.S.-German Search Exchange

In accordance with the conclusions stated in the "Joint Report on the U.S.-German Search Exchange" published in the OFFICIAL GAZETTE of May 23, 1967 (838 O.G. 1225-6), arrangements have been concluded for exchanging on a continuing basis, search results in cases where applications for patents for the same invention have been filed in the U.S. Patent Office and in the Patent Office of the Federal Republic of Germany.

Two classes of cases are involved. The first are German origin applications, cases in which an application for patent is first filed in Germany, and later an application is filed in the United States which refers to the prior German application as being for the same invention. In these cases the U.S. office will send notices identifying the corresponding applications, by means of prepared forms, to the German office. After the application has been acted on by the Examiner in Germany, the German office will send to the U.S. office a list of the references, patents and publications, which were cited. The Examiner in the United States will utilize the references to the extent they may be applicable to his case, deriving whatever advantage he may in making his own further search and examination.

The U.S. office will commence sending to the German office the notices of the corresponding applications, with respect to applications newly filed, on or about Oct. 2, 1967. Applications already on file and which have not yet been examined, will also be included to a certain extent.

The cases of the second class are those of U.S. origin. When an application is filed first in the United States and later a corresponding application referring to the U.S. application is filed in Germany, the German Patent Office sends notices identifying the corresponding applications to the U.S. office. A list of the references cited by the U.S. Examiner in the case will then be forwarded to the German office. It may be necessary for some U.S. applications to be taken up by the Examiner out of order; if the U.S. application is older than a certain time, initially set at 24 months, it will be taken up promptly. The German office has already commenced sending some notices of corresponding applications.

In either case, only lists of the references cited will be sent to the other office, and at present the exchange is limited to the references cited in the first action or equivalent communication of the Examiner in the patent office of origin.

Details of the internal routines for handling the cases involved will appear in sections added to the Manual of Patent Examining Procedure.

The arrangement is continuing in the sense that no date of termination has been set and may be modified with experience or terminated when desired.

EDWARD J. BRENNER,
Sept. 18, 1967. *Commissioner of Patents.*

Published in 32 F.R. 13781, Oct. 3, 1967

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,021,472, K. G. Hernqvist, LOW TEMPERATURE THERMIONIC ENERGY CONVERTER, decided May 24, 1967, Interference No. 93,716, claims 1, 5, 6, 7, 10 and 11.

Patent No. 3,058,099, M. Williams, BISTABLE MAGNETIC DEVICES, decided Sept. 13, 1967, Interference No. 93,548, claim 7.

Patent No. 3,058,099, M. Williams, BISTABLE MAGNETIC DEVICES, decided Nov. 9, 1966, Interference No. 93,889, claim 1.

Patent No. 3,129,312, G. A. R. Ojelid, APPARATUS FOR DIELECTRIC HEATING, decided Sept. 18, 1967, Interference No. 95,047, claim 1.

Patent No. 3,133,029, J. Hoekstra, METHOD OF PREPARING A COPPER, COBALT OR NICKEL CATALYST, decided June 30, 1967, Interference No. 95,097, claims 2 and 4.

Patent No. 3,140,414, H. Skjødt and K. J. P. Boisen, COMMUTATORS, decided May 24, 1967, Interference No. 94,732, claims 6 and 9.

Patent No. 3,146,381, L. Moreau, MAGNETIC FORCE CONTROL OR SWITCHING SYSTEM, decided May 24, 1967, Interference No. 94,809, claims 1, 2, 3, 4 and 5.

Patent No. 3,157,585, R. P. Durham, CHROMIUM PLATING, decided Aug. 3, 1967, Interference No. 95,445, claim 1.

Patent No. 3,171,698, R. W. Campbell, SEAT SLIDE MECHANISM, decided Sept. 11, 1967, Interference No. 95,392, claim 5.

Patent No. 3,178,562, W. F. Acker and L. Spiegel, CONTROL APPARATUS, decided Aug. 15, 1967, Interference No. 95,595, claims 1, 2, 3 and 12.

Patent No. 3,183,789, W. Stelzer, FLUID PRESSURE MOTOR MECHANISM, decided Aug. 23, 1967, Interference No. 95,351, claims 1, 2 and 4.

Patent No. 3,197,736, R. A. Leightner and E. N. Schroeder, PATTERN RECOGNITION SYSTEM, decided Aug. 30, 1967, Interference No. 95,579, claims 2 and 3.

Patent No. 3,203,920, E. Nikles, O. Ernst, H. Batzer and K. Brugger, CURABLE MIXTURES CONTAINING EPOXY RESINS, CURING AGENTS AND FLEXIBILIZERS, decided Aug. 28, 1967, Interference No. 95,833, claim 4.

Patent No. 3,223,717, A. Bowers and J. Edwards, 16-FLUOROMETHYL PREGNENE DERIVATIVES, decided Aug. 25, 1967, Interference No. 95,839, claim 8.

Patent No. 3,234,214, P. A. Diassi and J. Fried, 6-HALO-$\Delta^{1,4,6}$-PREGNATRIENE - 16α,17α - DIOL - 3,20 DIONE 16,17 ACETONIDE, decided Aug. 21, 1967, Interference No. 95,584, claims 1, 2, 3, 4, 5 and 6.

Patent No. 3,283,225, A. G. Kalstein, ELECTRIC CAPACITOR, decided Aug. 28, 1967, Interference No. 95,850, claim 1.

Patents Available for Licensing or Sale

3,167,312. TRAMPOLINE TYPE BOUNCER TOY. Roger Blanchard, 4819 E. Waverly St., Tucson, Ariz., 85716.

3,298,253. SAW FILING AND SETTING DEVICE. Warren H. Kellogg, 703 Atlantic Ave., Rochester, N.Y., 14609.

3,320,264. AMINO ALKYL ESTERS OF α-(4-CHLOROBUTOXY)-BENZILIC ACID. Rhein-Pharma Arzneimittelgeselischaft m.b.H., Heidelberg, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,341,242. PAPER CUP HOLDER AND CARRIER. Raymond M. Carson, P.O. Box 101, Faxon, Okla., 73540.

3,346,481. CONTINUOUS RECOVERY OF SHALE OIL AND GAS FROM PULVERIZED OIL SHALE. C. Ingeman Johnsen, Sandvigen, Arendal, Norway.

3,347,546. TRAYLIKE REBOUND UNIT. Nicholas R. Abberly, 501 4th Ave., SE., Cedar Rapids, Iowa, 52401.

3,348,845. PUTTING AID FOR A GOLF PUTTER. Charles W. Stuart, Jr., 926 Nottingham Road, Charlotte, N.C., 28211.

3,349,352. SEALED MAGNETIC SNAP SWITCH. Harold J. Zandt. Correspondence to: Berman, Davidson and Berman, Securities Building, 729 15th St. NW., Washington, D.C., 20005.

The following 2 patents are offered by: Cushman, Darby & Cushman, American Security Bldg., 730 15th St. NW., Washington, D.C., 20005.

2,977,665. PROCESS FOR NON-SHRINKING FIBROUS MATERIALS.

3,055,078. MACHINE FOR PROCESSING NON-SHRINKING FIBROUS MATERIALS.

United Fruit Company is prepared to grant non-exclusive licenses under the following patent.

Applications for license should be addressed to: United Fruit Company, Law Department Prudential Center, Boston, Mass., 02199.

3,333,967. METHOD FOR STORING FRUIT.

The following 20 patents are offered by: McNenny, Farrington, Pearne & Gordon.

Applications for license should be addressed to: John F. Pearne, 920 Midland Bldg., Cleveland, Ohio, 41115.

2,572,248. ELECTROLYTIC METHOD OF MAKING BORON.

2,572,249. ELECTROLYTIC PRODUCTION OF ELEMENTAL BORON.

2,678,870. MANUFACTURE OF REFRACTORY METAL BORIDES.

2,734,820. PROCESS AND COMPOSITION FOR TREATING MOLTEN ALUMINUM.

2,752,299. ELECTROLYTIC PRODUCTION OF MANGANESE AND FERROMANGANESE.

2,752,300. BENEFICIATING TITANIUM OXIDE ORES.

2,752,301. RECOVERY OF CHROMIUM AND IRON VALUES FROM CHROMIUM-IRON ORES.

2,752,303. FUSED BATH ELECTROLYSIS OF METAL CHLORIDES.

2,802,721. PRODUCTION OF TITANIUM TETRACHLORIDE.

2,802,729. RECOVERY OF MANGANESE VALUES FROM METALLURGICAL SLAGS AND TAILINGS.

2,831,761. METHOD FOR PRODUCING LOW-CARBON FERROCHROMIUM.

2,848,303. PRODUCTION OF LOWER OXIDES OF TITANIUM.

2,850,378. PRODUCTION OF CHROMIUM BY LOW-PRESSURE REDUCTION OF OXIDES.

2,877,110. RECOVERY OF MANGANESE FROM METALLURGICAL SLAGS, DUSTS AND ORES.

2,918,417. PRODUCTION OF BORON BY FUSED SALT BATH ELECTROLYSIS.

2,964,397. COPPER-BORON ALLOYS.

2,984,605. DEPOSITION OF BORON FROM FUSED SALT BATHS.

3,028,233. RECOVERY OF MANGANESE FROM METALLURGIC SLAGS, DUSTS, AND ORES.

3,137,647. PURIFICATION OF BORON.

3,144,327. COPPER-BORON ALLOYS AND METHOD OF MAKING SAME.

General Electric Company is prepared to grant non-exclusive licenses under the following 33 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: General Electric Company, Housewares Division, 1285 Boston Ave., Bridgeport, Conn., 06602.

3,315,356. POWER DRIVEN CARVING KNIFE.

Applications for license under the following 8 patents may be addressed to: General Electric Company, Component Products Division, 1635 Broadway, Fort Wayne, Ind., Attention: Patent Counsel.

3,307,093. INDUCTION MOTORS AND STARTING ARRANGEMENTS THEREFOR.

3,320,660. METHODS FOR ASSEMBLING END SHIELD MEMBERS IN DYNAMOELECTRIC MACHINES.

3,330,031. METHOD OF MANUFACTURING A ROTOR HAVING A LAMINATED CORE.

3,333,327. METHOD OF INTRODUCING ELECTRICAL CONDUCTORS INTO CONDUCTOR ACCOMMODATING STRUCTURE.

3,333,328. METHODS FOR CHANGING RELATIVE POSITIONS OF MOVABLE CONDUCTORS FOR USE IN ELECTRICAL INDUCTIVE DEVICES.

3,333,329. METHOD FOR PLACING ONE OR MORE ELECTRICAL COILS IN DESIRED SPACIAL RELATIONSHIP WITH RESPECT TO A COIL-ACCOMMODATING MEMBER.

3,333,330. METHODS FOR EFFECTING COIL-PLACING OPERATIONS OF ELECTRICAL COIL-ACCOMMODATING MEMBERS.

3,333,335. METHOD FOR ALTERING THE OVERALL CONFIGURATION OF ELECTRICAL COILS WOUND FROM A NUMBER OF CONDUCTOR TURNS.

Applications for license under the following 24 patents may be addressed to: Patent Counsel, Electronic Components Division, General Electric Company, 316 E. 9th St., Owensboro, Ky.

2,669,124. VACUUM GAUGE.

2,938,423. INCIPIENT FOG DETECTOR.

2,967,239. METHOD AND APPARATUS FOR ANALYZING CONSTITUENTS OF A SUBSTANCE.

3,080,104. IONIC PUMP.

3,085,198. COMBINATION LEAK DETECTOR AND VACUUM GAGE.

3,093,298. IONIC PUMP.

3,109,115. MAGNETRON TYPE IONIZATION GAUGES.

3,152,752. APPARATUS AND METHOD OF REMOVING ORGANIC VAPORS FROM LOW PRESSURE VACUUM SYSTEMS.

3,168,819. VACUUM SYSTEM.

3,174,083. SUPERCONDUCTIVE DEVICE.

3,196,532. METHOD OF FORMING A SUPERCONDUCTIVE BODY.

3,197,634. DELAYED WARM-UP FILAMENT POWER SUPPLY FOR MASS SPECTROMETER WITH EMISSION CURRENT REGULATION.

3,214,249. SUPERCONDUCTING COMPOSITE ARTICLES.

3,224,248. APPARATUS FOR PRESSURE MEASUREMENT IN VACUUM SYSTEMS.

3,228,589. ION PUMP HAVING ENCAPSULATED INTERNAL MAGNET ASSEMBLIES.

3,228,590. TRIODE IONIC PUMP.

3,230,362. BAKEABLE MASS SPECTROMETER WITH MEANS TO PRECISELY ALIGN THE ION SOURCE, ANALYZER AND DETECTOR SUB-ASSEMBLIES.

3,239,715. ELECTRON EMISSION MONITOR FOR MAGNETRON-TYPE IONIZATION GAGE.

3,262,026. SUPERCONDUCTIVE SOLENOIDS HAVING A FIELD PROBE MOUNTED THEREIN.

3,264,803. SORPTION VACUUM PUMP.

3,280,365. PENNING-TYPE DISCHARGE IONIZATION GAUGE WITH DISCHARGE INITIATION ELECTRON SOURCE.

3,281,668. APPARATUS FOR DETERMINING ELECTRICAL PROPERTIES OF METAL SUCH AS ITS RESISTIVITY AND UTILIZING MEASUREMENTS MADE AT HIGH AND AT LOW TEMPERATURES.

3,289,019. ROTATING MACHINE.

3,304,466. PROTECTIVE CIRCUITS FOR SUPERCONDUCTIVE LOADS.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 28, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-16-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	3-6-64	3-1-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-17-64	4-9-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	6-1-64	5-18-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-3-64	4-16-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-12-64	7-5-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	11-29-63	11-29-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1-8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-16-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1-14-66	9-3-65

Total number of pending applications (excluding Designs)	183, 535
Total number of Design applications pending	4, 353
Total number of applications awaiting action (excluding Designs)	134, 011
Total number of Design applications awaiting action	2, 473
Date of oldest new application awaiting action	Nov. 29, 1963
Date of oldest amended application awaiting action	Nov. 29, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during October 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,524,026 to 2,528,482, inclusive

Plant Patents ..... Numbers 982 to 985, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-3-66	9-22-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	6-17-65	2-7-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	3-4-65	3-4-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-13-66	12-2-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports: Cabinet Structures.	10-5-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	8-23-65	10-18-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

KRISTINUS GESELLSCHAFT MIT BESCHRANKTER HAFTUNG
v.
MURRAY, SONS & CO. LIMITED

No. 7728. Decided January 12, 1967

[54 CCPA —; 370 F.2d 581; 152 USPQ 243]

1. TRADEMARK—CONFUSING SIMILARITY—"PEERAGE" AND "PEER" IN A COMPOSITE MARK WITH AN HERALDIC DESIGN FOR TOBACCO PRODUCTS.

Upon reviewing a decision of the Trademark Trial and Appeal Board, which found confusing similarity between appellee-opposer's registered mark "PEERAGE" and the appellant's mark sought to be registered, "PEER" in a composite mark with an heraldic design strikingly similar to British royal insignia, both marks being for tobacco products, *Held* that, "After a review of the record, we find no error in the Board's decision."

APPEAL from the Patent Office. Opposition No. 42,035.

AFFIRMED.

Gustav Drews for appellant.

Edmund Dill Scotti, Russell L. Law for appellee.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Trademark Trial and Appeal Board sustaining an opposition by Murray, Sons & Co. to Kristinus Gesellschaft's application [2] to register the following trademark, based on its German registration, for use on cigarettes:



Appellee's opposition is based on prior use and registration of the mark "PEERAGE" [3] for smoking tobacco and cigarettes.

In sustaining the opposition, the Board noted that the design portion of the appellant's mark and certain royal insignia of the British Government are strikingly similar. The Board stated:

> Opposer's registered mark is the word "PEERAGE" which is a dictionary word meaning a body of peers and also the rank or dignity of a peer. But "PEERAGE," as a registered trademark, constitutes use of the dictionary term by opposer in an arbitrary sense to identify and distinguish its tobacco products. True, the term "PEERAGE" may have a laudatory connotation, but the evidence adduced by applicant is manifestly insufficient to indicate that "PEERAGE" is

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 110,344, filed Dec. 16, 1960.
[3] Reg. No. 529,445, issued Aug. 22, 1950, affidavit under section 8 accepted and affidavit under section 15 received.

in any way lacking in distinctiveness in the tobacco field. The five third-party registrations, of which only two, namely, the registrations of the marks "PEERLESS" and "COMPEER" may have some relevance herein, and the telephone directory listings, which do not on their face relate to the tobacco field, are entitled to little, if any, probative value in determining the question of likelihood of confusion in this proceeding. See: *In re Helene Curtis Industries, Inc.*, 134 USPQ 501 (CCPA, 1962); *Price-Pfister Brass Mfg. Co.* v. *Milwaukee Faucets, Inc.*, 136 USPQ 215 (CCPA, 1963); *The Fleischmann Distilling Corporation et al.* v. *Maier Brewing Company et al.*, 136 USPQ 508 (CA 9, 1963); and *Sundure Paint Corporation* v. *Maas & Waldstein Co.*, 122 USPQ 377 (CCPA, 1959).

While the word "PEER," per se, may have a number of meanings, it is apparent in view of the heraldic design forming a part of applicant's mark here in question that it serves to suggest nobility. It is apparent, moreover, from a consideration of applicant's mark, as shown above, that the word "PEER" forms a most prominent and significant feature thereof and might well be that portion by which purchasers would call for applicant's cigarettes. In view of its obvious laudatory or descriptive connotation, the fact that the term "de Luxe" appears in close proximity to "PEER" is of little significance. See: *Lever Brothers Company* v. *The Diversy Corporation*, 91 USPQ 251 (Comr., 1951). Under such circumstances and considering the obvious similarities between "PEER" and "PEERAGE," it is concluded that applicant's mark so resembles opposer's registered mark that, as applied to goods identical in kind and otherwise closely related goods, confusion, mistake or deception is reasonably likely to occur. [Footnote omitted.]

The appellant argues that there is no likelihood of confusion, relying upon dictionary definitions of the words "peer" and "peerage" and the importance of the word "de Luxe" in its mark. It also argues that there is lack of proof of the appellee's prior use and ownership of the mark "PEERAGE." These matters were all dealt with in the opinion of the Board. [1] After a review of the record, we find no error in the Board's decision.

The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

KRISTINUS GESELLSCHAFT MIT BESCHRANKTER HAFTUNG
v.
MURRAY, SONS & CO. LIMITED

No. 7729. Decided January 12, 1967

[54 CCPA —; 370 F.2d 583; 152 USPQ 244]

1. TRADEMARK—CONFUSING SIMILARITY—"PEERAGE" AND "PEER EXPORT" FOR TOBACCO PRODUCTS.

In connection with a decision of the Trademark Trial and Appeal Board, which found appellee-opposer's registered mark "PEERAGE" confusingly similar to the appellant's mark sought to be registered, "PEER EXPORT," both marks being for tobacco products, and with reference to findings of the Board that "PEER" is "the significant feature of applicant's mark and that "PEER" and "PEERAGE" are similar in significance, appearance and sound, *Held* that "The decision is affirmed."

APPEAL from the Patent Office. Opposition No. 42,036.

AFFIRMED.

Gustav Drews for appellant.

Edmund Dill Scotti, Russell L. Law for appellee.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is a companion case to PA 7728, between the same parties and decided concurrently by us today. In this case, Kristinus Gesellschaft

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

appeals from the decision of the Trademark Trial and Appeal Board which sustained appellee's opposition to appellant's application [2] to register "PEER EXPORT" [3] for use on "cigars, cigarillos, cigars without wrappers, cigarettes, all goods filter-tipped; cigarette paper incorporated into the cigarette." Appellee's opposition is based on its prior use and registration of the mark "PEERAGE" [4] for smoking tobacco and cigarettes.

The Board found confusion or mistake is reasonably likely to occur and stated:

Applicant's mark consists of the unitary term "PEER EXPORT," but considering the obvious character of the term "EXPORT" as applied to cigarettes or to anything that is exported, it is reasonable to assume that the term "PEER" is the significant feature of applicant's mark and is that portion by which applicant's goods would be recognized and identified in trade. "PEER" and "PEERAGE" are defined in Webster's New Third International Dictionary (unabridged, 1961), inter alia, as "a member of the five ranks of the British peerage" and "the rank or dignity of a peer," respectively. It is apparent from the foregoing that these terms possess a similar significance, and considering that they are also similar in appearance and sound, it is concluded that the resemblances between them is such that as applied to the competitive goods here involved, confusion, mistake or deception is reasonably likely to occur.

Before us, the appellant argues that there is no likelihood of confusion, basing its contention largely upon the fact that it has not disclaimed the word "EXPORT" as a part of the mark and that, in any event, "EXPORT" is so important a part of the mark that it cannot be disregarded and, hence, that "PEER EXPORT" as an entire trademark cannot be considered similar to "PEERAGE." It further contends that there was a lack of proof of the prior use and ownership of the mark "PEERAGE" by the appellee. All of these contentions were raised before the Board and satisfactorily disposed of by it. Detailed discussion of the appellant's arguments is unnecessary.

[1] The decision is affirmed.

AFFIRMED.

[2] Serial No. 119,704, filed May 10, 1961.
[3] The word "Export" is disclaimed by the appellant apart from the mark as shown.
[4] Reg. No. 529,445, issued Aug. 22, 1950, affidavit under section 8 accepted and affidavit under section 15 received.

U.S. Court of Customs and Patent Appeals

IN RE ANDERSON ELECTRIC CORPORATION

No. 7759. Decided January 12, 1967

[54 CCPA —; 370 F.2d 593; 152 USPQ 245]

1. TRADEMARK—CONFUSING SIMILARITY—WORD AND DESIGN MARKS—DIFFERENT DESIGN MARKS BASED ON CAPITAL LETTER "A" FOR ELECTRICAL GOODS.

On the issue of confusing similarity between different design marks based on the capital letter "A" for electrical goods, *Held* that "In *Burndy* [*Application of Burndy Corporation*, 133 USPQ 196, 300 F.2d 938 (CCPA, 1962)] we distinguished between word marks and design marks * * *"; that "Here, as in *Burndy*, the case must be decided primarily on the basis of visual similarity in the marks"; and that "Considering the marks in issue here, we conclude that there is no likelihood of confusion."

APPEAL from the Patent Office. Serial No. 133,440.

REVERSED.

Donald G. Leavitt, J. Harold Kilcoyne for appellant.

Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK *

SMITH, J., delivered the opinion of the court.

This is an appeal from the decision of the Trademark Trial and Appeal Board affirming the Examiner's refusal to register appellant's mark on the Principal Register on the ground that it so resembles a mark previously registered by another as to be likely, when applied to appellant's goods, to cause confusion, mistake or to deceive. Trademark Act of 1946, section 2(d) (15 U.S.C. 1052(d)). Appellant's mark and the previously registered mark are as follows:

Appellant's Mark



Application Serial No. 133,440, filed Dec. 6, 1961.

Registered Mark



Reg. No. 511,571, registered June 28, 1949.

Appellant in its brief concedes that the goods enumerated in the registration are "at least in part identical to the goods recited in appellant's application," e.g., electrical cable clamps. The issue, according to the parties and the Board, turns solely upon a comparison of the marks.

The Board compared the respective marks and concluded:

It is of course true that there are arguable differences between applicant's mark and the mark of the reference registration. On the other hand, the capital letter "A" constitutes visually the most prominent feature of both marks, and we are clearly of the opinion that this feature of identity between them is such that their contemporaneous use for goods identical in kind would be quite likely to cause confusion or mistake or to deceive. * * *

Appellant argues:

* * * it is believed in the present instance that the court's decision in *Application of Burndy Corporation*, 133 USPQ 196, 300 F.2d 938 (CCPA, 1962), provides strong authority for appellant's position because this decision involved facts so strikingly similar to those here under consideration. Thus, the cited decision presented the issue as to whether the following two marks are confusingly similar:



Appellant's Mark.



Mark of cited Reg. No. 534,100.

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[1] In *Burndy* we distinguished between word marks and design marks, stating, 49 CCPA at 968, 969, 300 F.2d at 939, 940, 133 USPQ at 197:

In our view, this case must be decided primarily on the basis of visual similarity of the marks. The marks are not word marks and are not capable of being spoken. They are design marks and, although each is based on a capital letter "B," there are great dissimilarities between them which can be fully appreciated only from seeing them. * * *

* * * * * * * *

Each is a composite of which the letter is but a part, particularly appellant's mark. In normal use of the marks we do not believe that either of them would be spoken, as, for example, in calling for the goods. They stand, therefore, in the posture of classical trade *marks*, as devices or symbols associated with the goods to designate their origin. * * *

Here, as in *Burndy*, the case must be decided primarily on the basis of visual similarity of the marks. In comparing the marks in *Burndy*, the opinion states, 49 CCPA at 968, 300 F.2d at 940, 133 USPQ at 197:

Viewed as a whole, as they must be in deciding this issue, it is the collective judgment of this court that the marks are so distinctly different in appearance that they would not be likely, if in concurrent use, to cause confusion or mistake or to deceive purchasers. Since this is, of necessity, a subjective opinion, no amount of discussion of the matter can add to the statement of our conclusion which is predicated on the apparent visual differences in the marks.

Considering the marks in issue here, we conclude that there is no likelihood of confusion. The reasoning advanced in *Burndy* is fully applicable here and is hereby incorporated in support of our conclusion.

The decision of the Board is therefore reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE HEINZ JAGER

No. 7783. Decided April 20, 1967

[54 CCPA —; 375 F.2d 853; 153 USPQ 359]

1. PATENTABILITY—APPARATUS—OBVIOUSNESS.

"There is, of course, no need to show correspondence, element for element, between the Helming apparatus and that of appellant. We think it clear that the minor differences between the Helming apparatus and that claimed by appellant do not render the latter unobvious, especially since the secondary references show similar techniques in the same field."

2. SAME—PARTICULAR SUBJECT MATTER—"APPARATUS FOR DRYING AND PREHEATING FINE GRANULAR MATERIAL."

The refusal of certain claims in an application entitled "Apparatus for Drying and Preheating Fine Granular Material," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 127,049.

AFFIRMED.

Samuel Lebowitz for appellant.

Joseph Schimmel (*Joseph Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK *

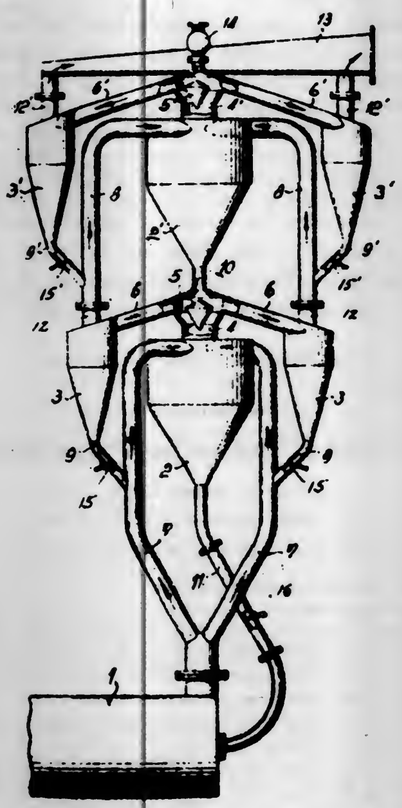
RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals, affirming the Examiner's rejection of claims 1–4 in application

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

Serial No. 127,049, filed July 26, 1961, entitled "Apparatus for Drying and Preheating Fine Granular Material, Particularly Cement Raw Material." No claim has been allowed.

The invention is an apparatus in which heat is exchanged between exhaust gases from a rotary kiln and fine granular feed material, e.g., raw material for cement manufacture. It includes a central cyclone surrounded on the same level by smaller cyclones, arranged to provide a compact heat exchange system, the central cyclone and smaller cyclones constituting the first and second stages, respectively. The drawing, reproduced below, shows an embodiment of the invention in which two central cyclones, 2, 2′, and their associated smaller cyclones, 3, 3′, are arranged one above the other. The rotary kiln is shown at 1.



Claim 4, which is directed to the above-illustrated embodiment, reads:

4. Apparatus for drying and heating fine-granular material, such as cement raw material, comprising two groups of dust-separator cyclones disposed one above the other, each of said two groups having a central cyclone and a plurality of outer cyclones of smaller diameter and volume than said central cyclone at substantially the same level as the latter, said central cyclone having a number of tangential gas inlet conduits equal to the number of said outer cyclones and distributed about the periphery of said central cyclone, said central cyclone having a gas outlet at the top and a dust outlet at the bottom, said outer cyclones being distributed about the periphery of said central cyclone and having each a tangential gas inlet duct and a gas outlet at the top and a dust outlet at the bottom, said dust outlets of said outer cyclones being connected to said respective gas inlet conduits of said central cyclone, a distributor adjoining said gas outlet of said central cyclone, said gas inlet ducts of said outer cyclones each having one end thereof adjacent to said distributor and the opposite end thereof connected to the respective outer cyclone to receive gas from the outlet of said central cyclone; material supply means connected with said distributor of the upper one of said two groups, said dust outlet of said central cyclone in said upper group being connected with said distributor in the lower group, said gas outlets of said outer cyclones in said lower group being connected with said gas inlet conduits of said central cyclone in said upper group, and hot-gas supply means connected to said gas inlet conduits of said central cyclone in said lower group.

Claims 2 and 3 are dependent on claim 1 and define apparatus in which the details of the duct arrangement are more precisely recited.

The apparatus is said to be advantageous in that it may be housed in buildings of less height than those required for prior art apparatus.

The references relied on are:

Helming, 3,083,472, April 2, 1963.
Muller et al., 2,648,532, August 11, 1953.
Bryk et al., 2,853,361, September 23, 1958.

Helming discloses apparatus in which cement raw materials being fed to a rotary kiln are preheated. It includes a central shaft around which, at one or more levels, small cyclones are disposed. Waste gases from the kiln flow into the shaft, mix with the raw material, and then flow with entrained raw material into the small cyclones. The exhaust ducts from the shaft are preferably tangential to it, imparting a cyclonic effect to the flow within the shaft.

Muller et al. describe apparatus for similarly heating cement raw material with waste gases from the kiln. The arrangement of cyclone separators, ducts, etc., different from those of appellant and Helming, is cited to show that it is old to direct dust from outer cyclones to the intake ducts of the central cyclone, to utilize distributors to scatter the raw materials into the gas stream, and to use separate channels to feed the rotary kiln and to carry off waste gases.

Bryk et al. disclose apparatus in which exhaust gases containing finely-divided material flow through a descending duct from the top center of one cyclone to the inlet side of another.

The starting point for the Examiner's analysis was thus stated:

This [Helming] reference shows a structure almost identical to that of appellant and intended for identical use. A central column * * * is divided into two superposed cyclones corresponding to the cyclones * * * of appellant. Helming's cyclones are such and produce rotary motion of the gases therein by induction in the same manner as appellant's cyclones.

In affirming, the Board said:

We agree with the Examiner * * * that claims 1, 2 and 4 do not patentably distinguish from the Helming disclosure modified as suggested by Muller et al. by connecting the dust outlet pipes of the outer cyclones with the gas inlet means of the central cyclone. Also, that it would be obvious, relative to claim 3, as suggested by Bryk et al. to incline the gas conduits from the distributor to the outer cyclones.

We also agree that the disclosure of the swirling gases in the central shaft of Helming would make obvious to one of ordinary skill an apparatus in which cyclones are substituted for Helming's central shaft. We think that the expedient of locating the smaller cyclones on the same level, while not required by Helming, is likewise made obvious thereby since that part of the central shaft analogous to the central cyclone is shown in Helming on the same level as the smaller cyclones.

Appellant, of course, disagrees with each of these conclusions. He seems, however, to urge most strongly the inability of the references

"to meet the important limitation of the distributor [shown at 5 in the drawing]." On this point the Board held:

> The recitation in the claims that the distributor "adjoins" the gas outlet of the central cyclone is so broad as to apply to any structure at the juncture of Helming's central shaft and the exhaust gas pipes whereby the gas and solids are guided to the outer cyclones.

Appellant claims that this was error, arguing that the Examiner relied on an element in Helming which does not adjoin the gas outlet. The Examiner, speaking to this point, said:

> Finally, appellant places great emphasis on his distributors 5. Helming is considered to show equivalent structure. However, the distribution of falling dusts laterally into rising gas streams by means of distributors placed at the outlets of dust discharging conduits is old. Muller et al. show this * * *. So does Helming * * *. It is therefore considered old and obvious to do this at any and every point where dust is discharged centrally and axially into a rising gas stream.

It is apparent to us that separate elements in Helming correspond to appellant's distributor as it affects, respectively, the waste gases and the raw material. The unobviousness of doing what is claimed is not apparent.

[1] There is, of course, no need to show correspondence, element for element, between the Helming apparatus and that of appellant. We think it clear that the minor differences between the Helming apparatus and that claimed by appellant do not render the latter unobvious, especially since the secondary references show similar techniques in the same field.

[2] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE HERBERT C. WHITE AND DON V. WYSONG

No. 7725. Decided April 6, 1967

[54 CCPA —; 374 F.2d 1010; 153 USPQ 174]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—CLAIMS STAND OR FALL TOGETHER.
   "Both parties agree that all of the appealed claims stand or fall together. Therefore, it is only necessary to consider the merits of the appeal with respect to [broadest] claim 1."
2. PATENTABILITY—PROCESS—PROPORTIONS.
   "The fact that Berg does not disclose appellants' ranges of proportions of various materials is of little significance since Berg's proportions fall within the ranges claimed by appellants."
3. SAME—SAME—OBVIOUSNESS—INCREASED PURITY OF PRODUCT.
   "* * * the increased purity of the initial product is only one of the factors to be considered in determining the issue of obviousness of the claimed process."
4. SAME—PARTICULAR SUBJECT MATTER—"METHOD OF PREPARING DI-L-LYSINE.D-CAMPHORATE."
   The refusal of certain claims in an application entitled "Method of Preparing di-L-lysine.D-Camphorate," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 133,804.

AFFIRMED.

Neal A. Waldrop, Theodore Post for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection of claims 1, 3 and 4 of appellants' application Serial No. 133,804, filed August 25, 1961, for "Method of Preparing di-L-lysine.D-Camphorate." No claim has been allowed.

Claim 1 is the broadest of the appealed claims and it reads:

> 1. In a method of recovering di-L-lysine.D-camphorate from an aqueous medium in which it is formed by reaction between proportions of 0.35 to 0.65 mole of D-camphoric acid and 1 mole of DL-lysine, the improvement which consists in adjusting therein the proportion of water and of methanol to 80 to 160 ml. of water and 50 to 250 ml. of methanol per mole of DL-lysine reactant and adjusting the temperature of said aqueous medium to within the range 45° to 90° C. to precipitate therefrom high purity crystalline di-L-lysine.D-camphorate and recovering said crystalline d-L-lysine.D-camphorate directly therefrom.

Claims 3 and 4 depend from claim 1 and they more particularly define the preferred operating conditions for appellants' method. [1] Both parties agree that all of the appealed claims stand or fall together. Therefore, it is only necessary to consider the merits of the appeal with respect to claim 1.

Lysine is one of the essential amino acids. When lysine is synthesized DL-lysine, which is a mixture of L-lysine and D-lysine, is obtained. The isomer L-lysine is present in various proteins and it can be metabolized by humans whereas D-lysine cannot be utilized as an amino acid and it has no known nutritional value. Appellants' invention relates to the separation of L-lysine from a DL-lysine mixture by reacting the DL-lysine with D-camphoric acid in an aqueous methanol medium and then selectively crystallizing out the di-Lysine D-camphorate from said medium at a temperature of 45° to 90° C.

The references relied upon are:

Berg, J. Biol. Chem., vol. 115 (1936), pp. 9–14.
Emmick, 2,556,907, June 12, 1951.
Rogers, 2,657,230, October 27, 1953.

The Berg article discloses the resolution of DL-lysine by fractionally crystallizing its camphorates from 50% methyl alcohol at room temperature. Berg states that the L-lysine compound with D-camphoric acid is "the less soluble and hence the more readily purified." The lysine isomers are then isolated from the camphorates as the dihydrochlorides. Berg employs about 0.5 mole of D-camphoric acid per mole of DL-lysine.

The Emmick patent, cited by the Examiner as background art, also relates to the optical resolution of lysine and it contains the following disclosure:

> The most commonly used method of resolving dl-mixtures involves combination with an optically active compound known as the resolving agent, followed by fractional crystallization of the resulting mixture of compounds (diastereoisomers). For a practical resolution, it is necessary to find a combination of resolving agent and solvent which will give good crystallization behavior, together with a pronounced difference in solubility between the disastereoisomers. Berg (J. Biol. Chem. 115, 9–15 (1936)) obtained 1(+)-lysine by combining dl-lysine with d-camphoric acid and crystallizing the product from 50% aqueous methanol.

For various reasons, Emmick found it advantageous "to provide a new resolving agent for lysine" and this is accomplished by the use of an optically active glutamic acid or its ammonium salt. Emmick's process is stated to be carried out at room temperature.

The Rogers reference, which discloses an improvement over the method of Emmick, indicates that Emmick's crystallization procedure

should be carried out at a temperature in the range of 45 to 75° C., preferably about 60° C.:

> The above patent [Emmick] discloses temperatures in the range 15–30° C. as the preferred and most advantageous temperatures for carrying out the fractional crystallization. It has now been discovered that highly advantageous and surprising results are realized when employing crystallization temperatures which are substantially higher than 30° C. Thus, the use of such higher temperatures permits a marked reduction in crystallization time, which is of considerable value in the economy of the process. Another outstanding advantage is that the resulting product has a markedly improved crystal structure which greatly facilitates its separation from the crystallization mixture.

The Examiner rejected the appealed claims as unpatentable over Berg in view of Rogers. It was the Examiner's contention that it would be obvious to a skilled chemist to apply the improved crystallization procedure of Rogers to the Berg method. The Board agreed with the Examiner and stated:

> In our opinion, the art exemplified by Rogers would suggest that it would be beneficial to increase the crystallization temperature; and to apply this expedient to the Berg resolution procedure would be obvious to the skilled artisan. We agree with the Examiner that the differences between appellants D-camphorate salt and Rogers' glutamate salt, urged by appellants, would be inherent characteristics depending on the resolving agent used, and irrelevant to the crystallization procedure. And since, in our view, the art does suggest the use of higher crystallization temperatures, the selective or differential solubility of the L-lysine D-camphorate as against the D-lysine D-camphorate, would be inherent.
>
> It is noted that Berg discloses molar ratios (1:0.5) of the reactants (DL-lysine and D-camphoric acid) as well as the methanol-water ratios (1:1), both ratios falling within the respective ranges specified in claim 1.

The complicating factor in the present case is that appellants, in their application, referred to a White patent[2] (one of the appellants herein). During prosecution before the Examiner and before the Board, appellants urged that the White patent should be considered as a part of the prior art and, when so considered, it shows the unobvious nature of appellants' present invention. Before us, appellants point to the fact that when White filed his application, the Berg and Rogers disclosures were available to him but White, obviously a man skilled in this art, did not apply the teachings of Rogers to the method of Berg. White modified the Berg process by decreasing the amount of D-camphoric acid used per mole of DL-lysine. It is the appellants' contention that the above facts show that "one skilled in the art would not look to the reaction conditions for resolving DL-lysine with glutamic acid to ascertain how to best resolve DL-lysine when using D-camphoric acid." The Board apparently refused to give any consideration to the White patent and stated:

> It is noted that appellants both in their main brief and in their reply brief as well as in the specification discuss, at length, the White patent, and in the reply brief request that the Board consider this patent. We must point out, however, that since the Examiner has not relied on this reference it is not before us for consideration. We are bound to consider the appeal as being based only on the record before us and limited to those references which were forwarded to us and relied on by the Examiner.

However, the Solicitor contends that the Board construed appellants' request as "one to involve the White patent as the more appropriate basis for rejection" because it is the closest prior art, and it was this request which the Board denied. The Solicitor's brief then states:

> However, in contending for the patentability of the appealed claims below, the appellants had argued the "state of the art" with references to the White patent. Although there are no express comments on those arguments in the decisions of the lower tribunals, it must be presumed that they were considered and found unpersuasive.

In view of the above, we agree with the appellants that the disclosure of White is before us as part of the prior art to be considered in determining the issue of obviousness.

Appellants contend that there is no legal basis for combining the Berg and Rogers teachings since the problem faced by Rogers and that faced by the appellants were entirely different:

> Since Emmick's L-lysine L-glutamate product was above 95% optically pure and produced in satisfactory yields, the *only* problem facing Rogers in modifying Emmick's process was that of reducing the time required for the reaction. Emmick used 40–48 hours. Rogers raised the temperature and reduced the reaction time to a minimum of 8 hours.
>
> * * * Restated in its entirety, the problem faced by appellants was that of elimination of the White patent recrystallization step, while preserving a high yield of high optical purity product in a reasonably short total reaction time.

Appellants also contend that a consideration of all of the prior art, including the White patent, would lead one away from the appellants' claimed process.

After a thorough review of the case, we are of the opinion that the decision below must be affirmed.

The resolution of DL-lysine by the use of D-camphoric acid is old in the art, as shown by Berg. The only substantial difference between appellants' claimed process and that of Berg resides in the crystallization temperatures employed. Emmick discloses that the Berg method for resolving DL-lysine requires improvement since the D-camphoric acid resolving agent is expensive, of uncertain availability in this country, and results in rather wide variations in yield and purity of product. Emmick provides a new resolving agent, an optically active glutamic acid, but otherwise substantially follows the procedure of Berg. The Rogers patent discloses an improvement over Emmick by the use of a crystallization temperature of 40 to 75° C. When such relatively high temperatures are used, Rogers reports that "highly advantageous and surprising results are realized." The advantageous results referred to by Rogers are the shortened crystallization time and very marked improvement in crystal structure of the product which are then easily filtered and recovered substantially free of agglomerates.

The stated rejection is that the claimed process is obvious in view of the Berg and Rogers references. Berg states that his crystallization step was continued over night in the cold. In view of Rogers' teaching that shorter crystallization time can be realized by the use of higher temperatures, it seems to us that it would be obvious to one skilled in the art to employ the higher temperatures of Rogers in the method of Berg. [2] The fact that Berg does not disclose appellants' ranges of proportions of various materials is of little significance since Berg's proportions fall within the ranges claimed by appellants.

Appellants' argument to the effect that the claimed process is unobvious in view of the prior art, including the White patent, is not persuasive. Though appellants stated that they were concerned with

[2] U.S. Patent 2,859,244 issued November 4, 1958, for "Resolution of DL-lysine with D-Camphoric Acid." White appears to be an improvement over the Berg method and it calls for the use of 0.2 to 0.35 mole of D-camphoric acid per mole of DL-lysine. White also discloses that the precipitation of di-L-lysine D-camphorate is preferably carried out in a medium of between 60 to 95 parts of alcohol and 40 to 5 parts of water.

the elimination of the recrystallization step of the White process, it is clear that White does not *require* any such recrystallization step. Thus White states:

> It has previously been believed that 0.5 mole of D-camphoric acid per mole of DL-lysine was necessary to effect a separation of the L- from the D-isomer as the di-L-lysine.D-camphorate, and that a plurality of fractional crystallizations was necessary to get a good isomer separation. *By the process of this invention*, utilising a proportion of 0.2 to 0.35 mole of D-camphoric acid per mole of DL-lysine, *crystallization of di-L-lysine.D-camphorate is carried out with ease and rapidity to give a very granular salt. One fractional crystallization suffices*, yet the yields of L-lysine approximate 80 percent, DL-lysine basis. [Emphasis added.]

However, White does employ a recrystallization step to increase the purity of his product from 78% to 98% L-lysine. What appellants are apparently saying may be that they are able to produce a purer product initially by their claimed method. This line of argument misses the mark since the rejection is not based on White but on Berg. [3] Moreover, the increased purity of the initial product is only one of the factors to be considered in determining the issue of obviousness of the claimed process. *In re Graf*, 52 CCPA 1206, 343 F.2d 774, 145 USPQ 197. When appellants' process is considered in view of all of the art of record, we are not persuaded that the Board committed reversible error.

[4] The decision below is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

My disagreement with the majority is twofold: (1) The majority opinion does not give effect to the test for determining obviousness under 35 U.S.C. 103 as recently stated by the United States Supreme Court in *Graham* v. *John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467:

> • • • Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. • • •

If this test is applied to the present record, the numerous differences between the prior art and the claims at issue would lead to the conclusion that the claims are directed to an unobvious invention.

(2) It is only by a hindsight reconstruction of the prior art in the light of appellants' disclosure that the majority can so combine the several references as to support a rejection under section 103. The mandate of section 103 is that the determination of obviousness must be made as of the time appellants made their invention. The prior art *as reconstructed* by the majority *did not exist* at such time. It was only by reason of appellants' invention that such reconstruction is now made. The art prior to appellants' filing date does not suggest this reconstruction.

I would, therefore, reverse the decision of the Board.

U.S. Court of Customs and Patent Appeals

IN RE BORJE ANDERSSON

No. 7721. Decided January 12, 1967

[54 CCPA —; 370 F.2d 589; 152 USPQ 239]

1. PATENTABILITY—OBVIOUSNESS.

"• • • we agree with the Board that, while Stribling does not describe a specific angle, he does disclose that the downward angle utilizes the motive power to the best advantage; and, in the absence of some persuasive showing to the contrary, it seems clear that the usual practices in the art would require determining the angle that is optimum for any given hull. Certainly one of ordinary skill could readily, and would be prompted to, ascertain, as a simple expedient, whether the angle for optimum performance would be 45° or less."

2. SAME—PARTICULAR SUBJECT MATTER—"ARRANGEMENT IN AND RELATING TO PROPELLER DRIVEN SHIPS."

The refusal of a certain claim in an application entitled "Arrangement in and Relating to Propeller Driven Ships," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 137,873.

AFFIRMED.

Michael S. Striker for appellant.

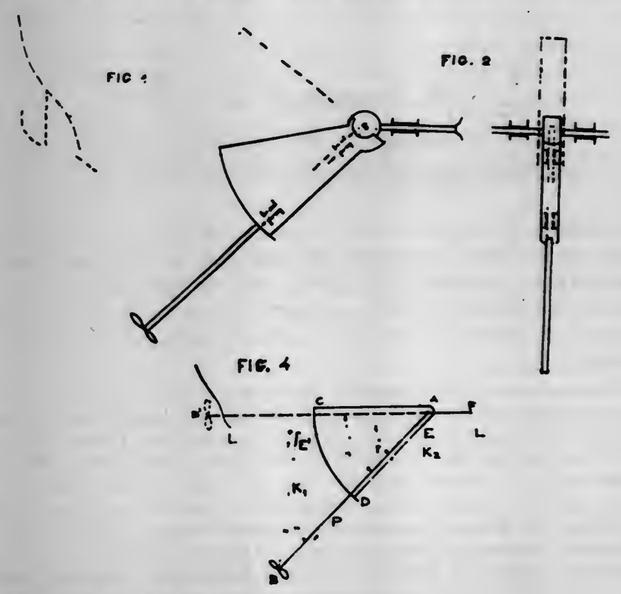
Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, JR., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

Anderson appeals from the decision of the Patent Office Board of Appeals affirming the rejection of claim 2 of appellant's application [2] entitled "Arrangement in and Relating to Propeller Driven Ships."

Reproduced below are FIGURES 1, 2 and 4 of appellant's drawings depicting his arrangement for a propeller driven marine vessel:



The references relied on are:

Stribling, 931,159, August 17, 1909.

Kilvington, 2,956,536, October 18, 1960.

As is apparent from the drawings (FIGS. 1 and 2) of Stribling, reproduced below, this reference discloses a marine propulsion system disposed in a water craft. The craft has a downwardly opening recess at its after portion within which is disposed a pivotably movable power transmission means, rotatively and universally connected at

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 137,873, filed September 13, 1961.

one end to an inboard engine (in the fore portion of the craft) with a propeller at the other end. The transmission means comprises a propeller shaft 16 rotatably supported in a planar lowering board 17. The propeller and shaft are operable rotatably in at least two positions, viz (1) a position wherein the shaft is horizontally disposed (FIG. 2) within the recess with the propeller 22 aft of the after portion and (2) a position wherein the propeller, shaft and planar board 17 are lowered about the universal connection 15 and form an angle with the horizontal (FIG. 1).

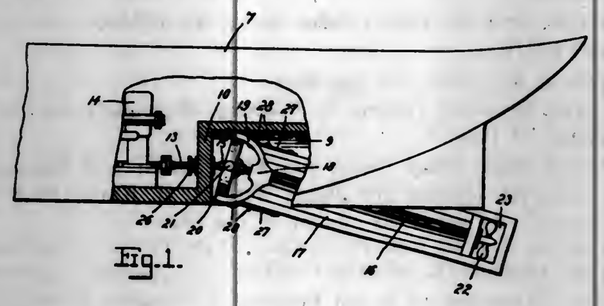
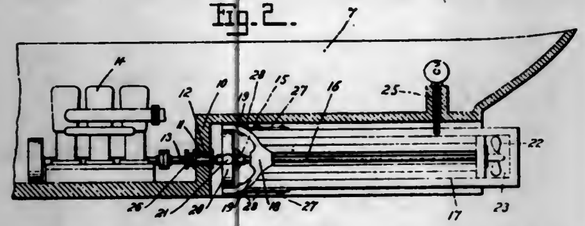


Fig. 1.

Fig. 2.



Kilvington shows a pivotal shaft and propeller, with a planar circle sector which pivotally supports the shaft and propeller and is adjustable to vary the angle of the shaft with the horizontal.

In aid of clarification, we have inserted numerals from the Stribling reference at relevant intervals in appealed claim 2, which reads as follows:

2. An arrangement for a propeller driven marine vessel having a hull [7], said hull having a fore portion and an aft portion and a substantially horizontal fore-aft line running between said fore and aft portions and a recess [8] formed in said hull between said fore and aft portions, said arrangement comprising, in combination, a propeller shaft [16] having a propeller [22] mounted at one end thereof and having its other end located in said recess spaced from the aft portion [10] of said hull, said propeller shaft having a length greater than the distance between said recess and said aft portion of said hull so that said propeller shaft may be displaced between a substantially horizontal position [FIG. 2] in which said propeller is located behind said aft portion of said hull and a turned position [FIG. 1] in which said propeller shaft is directed in rearward downward direction with said propeller at said one end thereof located spaced downwardly from said aft portion thereof; driving means [14] carried by said vessel for driving said propeller shaft; a universal joint [15] coupling said driving means to said propeller shaft; *and a circle sector of substantially planar configuration movably mounted in the recess formed in the hull of said vessel and supporting said propeller shaft at said other end thereof in a manner whereby said propeller shaft is displaceable with said circle sector from said substantially horizontal position into said turned position thereof in which latter position said shaft forms with said fore-aft line an angle of at least 45°, said propeller shaft extending with the end portion thereof carrying said propeller to a considerable extent rearwardly beyond said circle sector so that in said turned position of said shaft, said propeller carried thereby will be rearwardly and downwardly spaced from said circle sector.* [Emphasis supplied.]

The Board affirmed the Examiner's rejection of the pending claim under 35 U.S.C. 103 as unpatentable over Stribling alone or in view of Kilvington.

The Board noted that appellant's propeller and the Stribling propeller are disclosed to be useful for the same purpose, viz, to secure better performance in deep water.

A comparison of the appealed claim with the means and elements disclosed in Stribling, as indicated by the Stribling reference numerals imposed thereupon, conclusively supports the view of the Board that up to the portion of the claim which we have italicized, viz, beginning with "and a circle sector," the claim under consideration reads directly on Stribling.

As to the remainder of the claim embraced by the italicized portion thereof, the Board noted these three differences between the claim and the Stribling disclosure: (1) the recitation of "a circle sector of substantially planar configuration movably mounted in the recess" of the hull; (2) a shaft inclination of at least 45° to give the best result, while Stribling does not describe any angle but illustrates an angle which appellant asserts to be about 25°; and (3) the recitation that the propeller shaft extends beyond the circle sector "to a considerable extent rearwardly."

With reference to the limitation (1) relating to a "circle sector," the Examiner noted in his answer that if the term be defined to include the boards 17 of Stribling, plus the members surrounding the propeller defining the opening 23, it would be obvious to one skilled in the art either to extend the propeller 22 beyond the circle sector or to eliminate the surrounding members defining the opening in view of the teaching of Kilvington, which shows a propeller totally rearward of a circle sector in all turned positions of the propeller shaft so that, in the language of the appealed claim, "said propeller shaft extending with the end portion thereof carrying said propeller to a considerable extent rearwardly beyond said circle sector so that in said turned position of said shaft, said propeller carried thereby will be rearwardly and downwardly spaced from said circle sector." The Examiner reasoned that:

* * * it is obvious, within the bounds of 35 U.S.C. 103, in view of Kilvington, to modify Stribling as to eliminate the surrounding members defining the opening or to extend the propeller rearwardly of such surrounding members.

Supplementing the Examiner's reasoning, with which we agree, the Board stated:

As to the circle sector shape, nothing persuasive has been advanced as to why such shape stabilizes in any unexpected manner or produces any other unexpected advantage. As appellant has conceded, for an adjustable angle propeller, this shape is old in Kilvington for the purpose of applying power for the angular displacement necessary in such patent.

In the absence of some persuasive showing to the contrary, we agree with the Examiner that the mere adopting of such shape for the Stribling propeller mounting board and stabilizer 17 is but the use of a known feature in the art for known purposes and thus obvious.

Relative to the 45° angle limitation (2), it should be noted that Stribling states that an object of his invention is:

* * * the provision of a drop propeller * * * mounted in a pivotal board whereby when said board is lowered the same will act as a balance or keel board * * * to steady the boat in its movement.

[1] In this connection we agree with the Board that, while Stribling does not describe a specific angle, he does disclose that the downward angle utilizes the motive power to the best advantage; and, in the absence of some persuasive showing to the contrary, it seems clear that the usual practices in the art would require determining the angle that is optimum for any given hull. Certainly one of ordinary skill could readily, and would be prompted to, ascertain, as a simple expedient, whether the angle for optimum performance would be 45° or less.

We have heretofore noted, in our discussion of the Examiner's views relative to the term "circle sector," the suggestion to modify Stribling in view of Kilvington either to eliminate the members surrounding the propeller which define the opening 23 or to extend the propeller rearwardly of the surrounding members to meet the claim limitation (3) that the propeller shaft extend beyond the circle sector to "a considerable extent rearwardly."

We agree with the Examiner and the Board that Kilvington makes it clearly obvious either to omit the portion of the Stribling structure extending beyond the propeller or to put the rearmost propeller bearing in the rearmost transverse part and place the propeller thereabeyond.

After full consideration of appellant's brief and oral argument, we are not persuaded of reversible error on the part of the Board in holding the appealed claim unpatentable under 35 U.S.C. 103 over the cited art.

[2] For the foregoing reasons, the decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE SUNBEAM CORPORATION

No. 7724. Decided January 5, 1967

[54 CCPA —; 370 F.2d 358; 152 USPQ 116]

1. TRADEMARK—DESCRIPTIVENESS—"SPRAY MIST" FOR ELECTRIC PRESSING IRONS.
"Granted, as appellant concedes, that 'Spray Mist' is somewhat suggestive of one feature, or function, of the goods, we are unable to agree with the Board that the mark is *merely descriptive* of an electric pressing iron within our understanding of the statue."

APPEAL from the Patent Office. Serial No. 124,304.

REVERSED.

George R. Clark (*Robert M. Newbury*, of counsel) for appellant.

Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

In refusing Sunbeam's application [2] to register "Spray Mist" for use on "Electric Pressing Irons" the Trademark Trial and Appeal Board stated:

As shown by a catalog page made of record by applicant, the mark "Spray Mist" is used on a combination steam, spray and dry iron. The iron is described therein as "The New Sunbeam Spray Mist spray, steam or dry iron—steam-propelled spray gives you the delicate spray you want for the most stubborn wrinkles" and "Now! Faster ironing with fewer strokes because steam propelled spray thoroughly and gently envelopes the wrinkled area . . . penetrates, without soaking! Result: neater-looking ironing. Sprays warm water even for Dry ironing!"

According to Webster's Third New International Dictionary (Unabridged, 1961) "spray," as a verb is defined inter alia, as "to discharge a liquid as spray" and as a noun, inter alia, as "a jet of liquid (as water) dispersed by a sprayer." "Mist" is defined therein as "a fine spray." In view thereof and considering applicant's iron as described in its catalog sheet, it is our opinion that although the mark "Spray Mist" may be somewhat incongruous in that the terms "Spray" and "Mist" can be used interchangeably, it immediately conveys or describes a function or feature of applicant's iron, namely, that it sprays a mist of water during the ironing process. Accordingly, in the absence of evidence which would tend to indicate that it does, in fact, identify and distinguish applicant's irons, it is our opinion that "Spray Mist" is merely descriptive within the meaning of section 2(e)(1) * * *.[3]

[1] Granted, as appellant concedes, that "Spray Mist" is somewhat suggestive of one feature, or function, of the goods, we are unable to agree with the Board that the mark is *merely descriptive* of an electric pressing iron within our understanding of the statute.

The decision is reversed.

REVERSED.

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 124,304, filed July 19, 1961.

[3] Section 2 of the Lanham Act provides in pertinent part:
No trademark by which the goods of the applicant may be distinguished from the goods of others shall be refused registration on the principal register on account of its nature unless it—
* * * * * * *
(e) consists of a mark which (1) when applied to the goods of the applicant is merely descriptive * * * of them * * *.

U.S. Court of Customs and Patent Appeals

IN RE GEORGE M. RAPATA

No. 7714. Decided January 12, 1967

[54 CCPA —; 370 F.2d 584; 152 USPQ 229]

1. CLAIM—CONSTRUCTION OF CLAIMS—RIBS EXTENDING "SUBSTANTIALLY" TO HEAD.
"The appellant's arguments as to the absence of ribs extending to the head in Herr are not convincing in view of the fact that all of the appealed claims state that the ribs must extend 'substantially' to the head."

2. PATENTABILITY—DEVICE—OBVIOUSNESS.
In deciding that claims to a fastener were unpatentable over the prior art, *Held* that "We think the Board correctly noted that appellant has offered no clear indication of any particular advantages of the claimed invention over the closely related fasteners disclosed in the prior art."

3. SAME—PARTICULAR SUBJECT MATTER—"PLASTIC FASTENER."
The refusal of certain claims in an application entitled "Plastic Fastener," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 54,649.

AFFIRMED.

Olson, Trexler, Wolters & Bushnell (*Richard Bushnell* and *Richard Sturtevant*, of counsel) for appellant.

Joseph Schimmel (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the Examiner's rejection of appealed claims [2] 6 through 16. The posi-

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] In application No. 54,649, filed September 8, 1960, entitled "Plastic Fastener." Two claims stand allowed.

tion of the Patent Office is that the claimed invention is obvious in view of the prior art, 35 U.S.C. 103.

The claimed invention is a plastic fastener. The prior art relied on is as follows:

Whitted, 2,976,345, March 21, 1961.
Rapata, 2,836,214, May 27, 1958.
Herr et al. (German), 1,006,733, April 18, 1957.
Kearns, 2,402,287, June 18, 1946.

The Examiner held the claimed invention unpatentable over Herr in view of Whitted and, further, over Kearns in view of Rapata. In affirming the rejection the Board states it "applied the art in a manner somewhat different from that used by the Examiner." The appellant makes no objection. Rather he argues that this demonstrates that there is disagreement as to what the references do teach. We find that the appealed claims were properly rejected in view of the art of record and the decision of the Board must therefore be affirmed.

An embodiment of the appellant's invention and the fasteners disclosed in the principal references of Kearns and Herr are depicted as follows:

Appellant

Fig 1



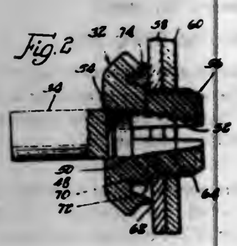
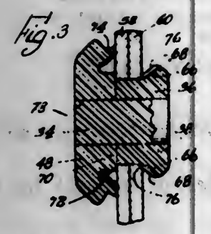


Fig. 2

Fig. 3



Herr

Abb. 1

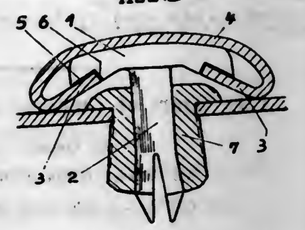
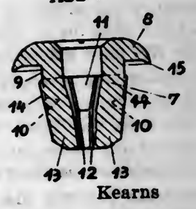


Abb. 7



Kearns

Fig. 1

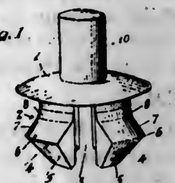
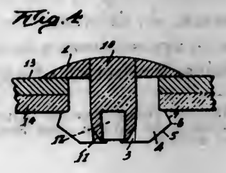


Fig. 4



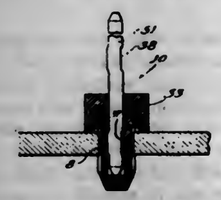
The single independent claim on appeal states:

6. A device of the type described comprising a one-piece member of tough deformable and resilient plastic material, said member including a head portion for overlying one side of the work structure, and a plurality of axially extending shank sections separated by slot extending axially from separate free entering ends thereof for insertion through an apertured work structure, said shank sections having radially solid walls between said slots and having outer surfaces presenting a cross-sectional configuration of predetermined dimensions, said member having a passageway extending axially therein and partially defined by inner surfaces of said shank sections and adapted to accommodate an element insertable therein for expanding said shank sections, said shank sections each including a plurality of axially extending circumferentially narrow and spaced compressible ribs projecting laterally outwardly from said outer surfaces thereof and having outer edges defining a cross-sectional configuration having transverse dimensions greater than said predetermined transverse dimensions for engagement with a margin of a work structure aperture when the device is applied to the work structure, each of said ribs extending substantially to said head for insuring engagement with an inner edge of the aperture regardless of the thickness of the work structure, portions of said ribs within a work structure aperture being deformed and collapsed when said shank sections are expanded for creating generally radially extending shoulders between said portions of said ribs and additional portions of the ribs located outwardly of said aperture for engaging behind the work structure and cooperating with said head for positively securing the device with respect to the work structure and said expanding element and at least a portion of said inner surfaces being relatively tapered for causing outer end portions of said outer surfaces as well as said ribs to be located radially outwardly of said first mentioned cross-sectional configuration and for engaging behind the work structure when the shank sections are expanded.

Whitted discloses a fastener having a head and a fluted shank portion. The flutes, which extend along the shank to the head, become deformed when the fastener is installed to create radially extending shoulders as locking means. Rapata also discloses the feature of an expanding shoulder to provide locking means.

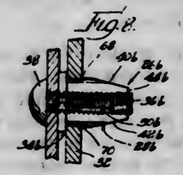
Whitted

Fig. 1



Rapata

Fig 8.



The Board reasoned as follows:

* * * The basic concept of ribs on an expansible shank of a fastener being deformed upon expanding said shank and forming lock shoulders is found in FIGS. 8 and 9 of Rapata. While the ribs 14 of Herr's element * * * are not deformed when applied to the single plate shown in FIG. 1 of that patent, it is apparent that these ribs will be deformed and provide locking shoulders when associated with two plates, as in Kearns, for precisely the same reason as in this case and in FIGS. 8 and 9 of the Rapata patent. Thus, the Herr * * * structure so used would provide a deformation of the ribs in the second plate and form locking shoulders thereagainst. Moreover, even with a single plate, the patent to Rapata would render obvious the extension in Herr * * * of the ribs and the slots in the shank to the head of the rivet so that the ribs can be crushed and also form locking shoulders, as is taught by Rapata. Appellant has generally argued the lack of showing in Herr * * * and in FIGS. 8 and 9 of Rapata of a plurality of ribs on each shank section, as is required by claim 6, which is the base claim for the remaining claims on appeal, but there is no

clear indication of the particular advantages afforded by the same over the single rib on each shank portion shown by Herr * * * for example. However, it is our opinion that it is obvious to one skilled in the art to provide two or more ribs in place of the single rib shown on each shank section of Herr to attain thereby the obvious result of increased locking shoulders. While the patent to Whitted does not disclose a split, expansible shank, it does disclose plural ribs with each rib having a locking shoulder in the assembly, as is apparent from FIG. 1 of that patent, and from FIG. 3 of Whitted there are more than one rib for each quarter section of the shank.

The tapered structure of the ribs set forth in some of the claims depending from claim 6 are shown by Herr * * * and the polygonal cross section of the shank recited in claims 12 and 15 is not particularly relied on by the appellant for a patentable distinction and, further, is common, the Examiner referring generally to the art of record for this aspect.

Both the appellant and the Solicitor discuss extensively the Herr reference. The appellant argues:

Thus Herr fails completely to teach or suggest (1) the concept of providing ribs adapted to be compressed within a workpiece aperture and formed around an edge thereof for providing retaining shoulders, (2) the concept of obtaining the combination of both shoulders formed on the ribs and shoulders provided by expanding the solid surface of the shank sections for retaining the fastener while facilitating expansion of the fastener, particularly in relatively thick work structures, (3) the provision of a plurality of the aforementioned ribs on a shank section, (4) the provision of the aforementioned ribs on *each* of the shank sections, and (5) the extension of the ribs on the expandable shank sections substantially to the enlarged head of the device.

The Solicitor argues:

The Herr * * * disclosure fails in being completely anticipatory of appellant's fastener in only two respects. First, it does not specifically teach the placing of a plurality of compressible ribs on each of the shank sections 10 (one rib 14 only being shown on each of the two sections in Herr * * *) and secondly, the ribs shown do not extend to the head.

The Solicitor argues that the Board correctly relied on the teachings in Whitted (a plurality of compressible ribs) and in Rapata (ribs extending to the head providing locking shoulders) in holding the claimed combination obvious.

As to appellant's five contentions regarding Herr the Solicitor argues as follows:

The disclosure of Herr * * * would seem to refute each of appellant's five contentions. As to items (1) and (2), the patent clearly shows (1) ribs 14 *adapted* to be compressed within a properly sized workpiece aperture to (2) cooperate with the shank sections upon expansion thereof and form shoulders for retaining the fastener in the aperture. This relationship is a matter that is determined by the nature, shape, and size of the aperture in the parts to be fastened with relation to the size of the shank and the ribs. Much more than a mere provision of ribs is involved. If the ribs in appellant's device have in themselves the potential for expansion to form a shoulder upon expansion of the shank sections of appellant's fastener, they likewise must have the same potential in the Herr * * * fastener, since there is no difference in structure over the reference insofar as the first two items are concerned.

With reference to appellant's third and fourth contentions, it is to be noted that even though only two ribs are shown on the shank sections in the drawing, the Herr * * * disclosure in no way expressly limits the number of ribs to two and might be said to suggest use of as many as might be needed in the statement * * * that "projecting ribs 14 may be arranged on the outer surface 10" of the shank. It is submitted that this statement would provide ample motive for providing a plurality of ribs on all of the shank sections of the Herr * * * fastener if it were deemed either necessary or desirable. Such is especially the case since reference numeral 10 in FIGURE 5 identifies adjacent sections 10 one with and one without ribs.

Turning now to appellant's fifth contention, it is to be noted that the ribs 14 of the Herr * * * fastener * * * contrary to appellant's argument, *do* extend *substantially* to the head of the fastener. The language used by appellant in the appealed claims which requires the ribs to extend *substantially* to the head is clearly broad enough to permit terminating the ribs of appellant's device a small distance before they reach the head, as in the Herr * * * device * * *.

We are unable to find any error in the result reached by the Board. [1] The appellant's arguments as to the absence of ribs extending to the head in Herr are not convincing in view of the fact that all of the appealed claims state that the ribs must extend "substantially" to the head. Also, the features of a plurality of ribs or locking shoulders formed from ribs are taught by the prior art. While Herr may disclose that his ribs are an added feature, that embodiment of the Herr invention is not taught to be inferior and is entitled to the same consideration as the other teachings of record. [2] We think the Board correctly noted that appellant has offered no clear indication of any particular advantages of the claimed invention over the closely related fasteners disclosed in the prior art.

[3] The decision of the Board is therefore affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

RALSTON PURINA COMPANY *v.* MIDWEST CORDAGE CO., INC., ASSIGNEE BY MESNE ASSIGNMENTS FROM FAYETTE LIVESTOCK AUCTION, INC.

No. 7720. Decided March 16, 1967

[54 CCPA —; 373 F.2d 1015; 153 USPQ 73]

1. TRADEMARK—CANCELLATION—ESTOPPEL—LACHES OR ACQUIESCENCE—BURDEN OF PROOF ON INFRINGER.

"The doctrine here invoked has been available in trademark infringement suits at least since *McLean* v. *Fleming*, 96 U.S. 245 (1877), in which, although an injunction was granted, an accounting was denied because of 'acquiescence of long standing' and 'inexcusable laches.' The circumstances under which an injunction would also be denied became clearer in the subsequent cases. * * * The circumstances, the court indicated, may well arise 'where the use, by others, for a long period, under assumed permission of the owner, had largely enhanced the reputation of a particular brand.' The equity of a defendant in his promotional expenditures was soon established. *Valvoline Oil Co.* v. *Havoline Oil Co.*, 211 Fed. 189 (1913). It is in this form that the doctrine comes to us. However, the obligation has always been on the infringer to show not only inexcusable delay or apparent acquiescence but also 'some reason why it will not be just to stop him.' *Dwinell-Wright Co.* v. *White House Milk Co.*, 132 F.2d 822, 56 USPQ 120 (2d Cir. 1943, L. Hand, J.). The registrant, of course, has the right to invoke the doctrine in a cancellation proceeding. 15 U.S.C. 1069 (1964); *Loma Linda Food Co.* v. *Thomson & Taylor Spice Co.*, 47 CCPA 1071, 279 F.2d 522, 126 USPQ 261 (1960); Halliday, Laches, Acquiescence and Estoppel in Registration Cases, 40 Trademark Rep 85 (1950). He, however, bears the burden of showing the injustice."

2. SAME—SAME—SAME—SAME—SAME.

"We cannot agree that registrant [in the cancellation proceeding] has met that burden [of showing why it will not be just to stop him]. It, to be sure, has shown activity on the part of petitoner which, for the sake of argument, may be deemed acquiescence in registrant's use of the mark. But it has not made even a serious effort to show prejudice to itself as a result of petitioner's retreat from that stance. We see no decisions made by registrant in reliance upon petitioner's purported acquiescence. We have no evidence of promotional expenditure. Sales data are too imprecise even to indicate any substantial growth of registrant's trade in the six-month period between petitioner's alleged acquiescence and first assertion of right in the mark for baler twine."

3. SAME—SAME—SAME—ACQUIESCENCE.

"It is probably true that long acquiescence in the use of a trademark by a successful business, even without expansion of trade, may provide a basis for a valid inference of prejudice. See *Anheuser Busch, Inc.* v. *Du Bois Brewing Co.*, 175 F.2d 370, 81 USPQ 423 (3d Cir. 1949). Logically, we suppose, it must

be admitted that each day sees some incremental aggrandizement of good will—each advertising dollar expended adds in some sense to registrant's equity. But a minimal equity thus acquired over such a short period of time as six months has never been enough to overturn another's rights in a trademark. Some substantial prejudice has always been required."

4. SAME—SAME—SAME—SAME.

"Registrant's defense [of acquiescence in a cancellation proceeding] is, after all, an equitable one. We do not scan petitioner's history for one fatal misstep. We sustain petitioner's rights in the absence of a showing that to do so would work *injustice*."

APPEAL from the Patent Office. Cancellation No. 8,018.

REVERSED.

John D. Pope III for appellant.

A. Yates Dowell, A. Yates Dowell, Jr., for appellee.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Trademark Trial and Appeal Board, 145 USPQ 348, dismissing a petition to cancel from the Principal Register a registration [2] of the trademark CHECKERBOARD for baler and binder twine.

The registrant and its predecessors have sold baler twine since May 1958 under the trademark CHECKERBOARD. Annual sales were initially about $20,000 to $25,000. They grew to approximately $140,000 to $150,000 in the years 1960–1962. Sales for 1963 were about $50,000. Sales of $75,000 to $80,000 were predicated for 1964.[3] No evidence of registrant's advertising expenditures has been introduced.

The petitioner has for many years sold a variety of products including animal feeds, cereals, and farm equipment under numerous trademarks utilizing a checkerboard design or variants of the word CHECKER. Its registrations of these trademarks include registrations for livestock and poultry feeds, bread, baked rye flour products, various other food products, feed containers, watering fountains for animals, insecticides, fungicides, and vermifuges, antibiotics and even magazines. It is petitioner's practice to show the checkerboard mark on all advertising material and printed forms. Its advertising expenditures during the years 1958–1962 were in excess of seventy-two million dollars. Its total sales over that same period exceeded three billion dollars.

Petitioner also owns and operates a chain of rural stores which sell its products and others at retail. The latter are called Checkerboard

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Registration No. 707,960, issued December 6, 1960, claiming first use May 30, 1958.

[3] Testimony on registrant's sales was somewhat imprecise. Mr. Elwood Long, the former president and owner of appellee's predecessor, testified as follows:

Mr. Long, can you tell us some estimate of your volume of sales during the years that you were handling this Checkerboard twine? I believe you said from '58 to late December of '62? A. Well, our smallest years would run twenty to twenty-five thousand starting in '58 and '59. And then the volume grew up to a hundred and forty to fifty thousand in '60 and '61 and in '62.

Mr. Victor Barredo, general manager of registrant also testified on sales:

Q11. And during the time that you have been with that company, have you merchandised twine? A. If I have merchandised twine? Yes, I have.

Q12. Under the trademark "Checker"? A. No, "Checkerboard."

Q13. Checkerboard. During what period of time have you been merchandising twine? When I say "You" I mean the company in which you are its general manager under this trademark "Checkerboard." A. Since January, 1963.

Q14. And how did you come to commence it at that time? A. The company bought the Checkerboard twine business from Missouri Twine and Equipment Company and Mr. Long.

Q15. You received customer lists from him? A. Yes, I did.

Q16. What were your approximate sales of this particular item in 1963? A. Oh, around—I don't have the exact figure—but I would say close to fifty thousand dollars.

Q17. Do you have a forecast of your sales for 1964? A. Well, we anticipate an increase and we are figuring that—rather we are getting prepared for an increase to around probably seventy-five or eighty thousand dollars.

We adopt registrant's view for purposes of this opinion i.e., that the testimony refers to sales of *twine* under the CHECKERBOARD trademark.

stores and are identified by a checkerboard design on the store fronts. Customer's receipts bear the checkerboard design. These stores sold binder twine before registrant's first use of CHECKERBOARD. Petitioner has introduced into evidence sales tickets for binder twine from 1956 and 1957.

The Board dismissed the petition for cancellation because, in its view,

* * * regardless of any asserted prior rights petitioner is now claiming in its checkerboard design and its registered marks pleaded herein, it has either acquiesced, by acts of omission and commission, to respondent's asserted superior rights in its registered mark as applied to bailer twine or had taken the past position that there was no confusion in trade because it regarded respondent's product as substantially different from the goods on which it used its mark, or marks.

That conclusion is built upon evidence of the following chronology. Application for the registration in question was filed March 4, 1960, and registration issued December 6, 1960. On March 7, 1961, attorneys for appellee's predecessor, wrote to a supplier of petitioner, objecting to the supplier's shipment of twine under the trademark CHECKER into the United States as an infringement of his company's rights in its registered trademark CHECKERBOARD. On March 29, 1961, petitioner's attorney answered that letter and requested certain information on registrant's mark and its use. In the next two weeks several other letters were exchanged by counsel. Petitioner's counsel then learned that Mr. Long, at that time president and owner of appellee's predecessor, was a valued customer of petitioner and, in response to a suggestion from the sales department, arranged a conference with him, during which petitioner's counsel suggested that Mr. Long contact one of petitioner's buyers to negotiate sales of twine and other products. Mr. Long did so and by May 18, 1961, sold 900 bales of twine to petitioner under the CHECKERBOARD label. Negotiations continued at least into the latter part of June but no further purchases could be agreed upon. In November and December 1961, Mr. Long wrote to petitioner's buyer about prices for the coming season. On December 21, 1961, petitioner's attorney wrote to Mr. Long and expressed concern over the use of CHECKERBOARD in the farm supply field. Petitioner no longer sells twine under the CHECKER mark.

The Board's analysis of the foregoing led it to dismiss the petition for cancellation. It said:

In summary, the record shows that petitioner has had actual knowledge of respondent's use and registration of its mark since early in 1961; following such notice, and with the apparent consent of its legal counsel on such matters, it negotiated and subsequently bought "CHECKERBOARD" bailer twine from respondent and discontinued its purchases of "CHECKER" bailer twine from another party. While Mr. Fraser [petitioner's counsel], in his testimony on his recollections as to his dealings with respondent, now takes the inconsistent positions that it was his feeling that the respondent would only use its mark on goods which were sold exclusively to petitioner or that respondent would forego the use of its mark "CHECKERBOARD" if petitioner were to purchase its products, the record fails to support either of these positions. In fact, to the contrary, it indicates that petitioner acquiesced to [in] respondent's asserted superior rights in its mark for bailer twine, and that respondent apparently expanded its business in "CHECKERBOARD" for such goods on the basis thereof. It is concluded that petitioner is precluded by its past actions from now asserting that it will be damaged by the continued existence of respondent's registration of [on] the register.

The registrant, properly, we think, interprets the Board's opinion

thus expressed to be "that laches or acquiescence amounting to estoppel is present in the case at bar."

[1] The doctrine here invoked has been available in trademark infringement suits at least since *McLean* v. *Fleming*, 96 U.S. 245 (1877), in which, although an injunction was granted, an accounting was denied because of "acquiescence of long standing" and "inexcusable laches." The circumstances under which an injunction would also be denied became clearer in the subsequent cases. In *Menendez* v. *Holt*, 128 U.S. 514 (1888), the court commented on *McLean* v. *Fleming*:

> Mere delay or acquiescence cannot defeat the remedy by injunction in support of the legal right, unless it has been continued so long and under such circumstances as to defeat the right itself.

These circumstances, the court indicated, may well arise "where the use, by others, for a long period, under assumed permission of the owner, had largely enhanced the reputation of a particular brand." The equity of a defendant in his promotional expenditures was soon established. *Valvoline Oil Co.* v. *Havoline Oil Co.*, 211 Fed. 189 (1913). It is in this form that the doctrine comes to us. However, the obligation has always been on the infringer to show not only inexcusable delay or apparent acquiescence but also "some reason why it will not be just to stop him." *Dwinell-Wright Co.* v. *White House Milk Co.*, 132 F.2d 822, 56 USPQ 120 (2d Cir. 1943, L. Hand, J.). The registrant, of course, has the right to invoke the doctrine in a cancellation proceeding. 15 U.S.C. 1069 (1964); *Loma Linda Food Co.* v. *Thomson & Taylor Spice Co.*, 47 CCPA 1071, 279 F.2d 522, 126 USPQ 261 (1960); Halliday, Laches, Acquiescence and Estoppel in Registration cases, 40 Trademark Rep. 85 (1950). He, however, bears the burden of showing the injustice.[4] *Loma Linda*, supra.

[2] We cannot agree that registrant has here met that burden. It, to be sure, has shown activity on the part of petitioner which, for the sake of argument, may be deemed acquiescence in registrant's use of the mark.[5] But it has not made even a serious effort to show prejudice to itself as a result of petitioner's retreat from that stance. We see no decisions made by registrant in reliance upon petitioner's purported acquiescence. We have no evidence of promotional expenditure. Sales data are too imprecise even to indicate any substantial growth of registrant's trade in the six-month period between petitioner's alleged acquiescence and first assertion of right in the mark for baler twine.[6]

[3] It is probably true that long acquiescence in the use of a trademark by a successful business, even without expansion of trade, may provide a basis for a valid inference of prejudice. See *Anheuser Busch, Inc.* v. *Du Bois Brewing Co.*, 175 F.2d 370, 81 USPQ 423 (3d Cir. 1949). Logically, we suppose, it must be admitted that each day sees some incremental aggrandizement of good will—each advertising dollar expended adds in some sense to registrant's equity. But a minimal equity thus acquired over such a short period of time as six months has never been enough to overturn another's rights in a trademark. Some substantial prejudice has always been required.

Registrant has cited three cases. In each of these, it seems to us, the injustice in stopping the latecomer's use of the mark was manifest. In *Valvoline Oil Co.* v. *Havoline Oil Co.*, supra, the combination of an unexcused delay of eight years with advertising expenditures of at least $100,000 persuaded the court that equity forbade an injunction. In *Procter & Gamble Co.* v. *J. L. Prescott Co.*, 102 F.2d 773, 40 USPQ 434 (3d Cir. 1939), advertising expenditures of almost $14,000,000 were again decisive in light of an unexcused delay of at least five years. *Anheuser Busch, Inc.* v. *Du Bois Brewing Co.*, supra, was an extraordinary case in which the infringing business had not expanded at all in 40 years. But the good will acquired and advertising of defendants during that long period, coupled with plaintiff's apparent acquiescence, convinced the court's majority that an injunction would be unfair. We find it impossible to equate these cases with the one at bar. We cannot so lightly find that the registrant was prejudiced. See *Meat Industry Suppliers, Inc.* v. *Kroger Co.*, 130 USPQ 434 (N.D. Ill. 1961).

The parties were asked to file supplementary briefs in which they discussed *Alfred Dunhill* v. *Dunhill Tailored Clothes, Inc.*, 119 USPQ 325 (S.D.N.Y. 1958), a typical case in which prejudice was inferred from long acquiescence. Registrant's comments on that case are of interest:

> While the period of time of the knowledge, cordiality and sales, and apparent acquiescence is much less in the instant case than in *Dunhill*, the present case involves additional facts of significance, namely (*a*) the demand * * * by registrant that petitioner cease use of the trademark; (*b*) the compliance by petitioner with such demand * * * (*c*) discussions between petitioner's counsel and registrant's principal subsequent to the registrant's demand, in which no counter demand was made by the petitioner; (*d*) registrant's apparent right to assume that it was acting properly in view of the absence of any use of petitioner's trademark in any field even remotely analogous to baler twine; and (*e*) the absence of any confusion.

The additional facts recited do not reflect any injustice consequent upon the petition for cancellation. They show neither reliance nor other prejudice. They seem to spring from a vague feeling that it was somehow unfair for the hitherto docile petitioner, of a sudden, to take the offensive.

[4] Registrant's defense is, after all, an equitable one. We do not scan petitioner's history for one fatal misstep. We sustain petitioner's rights in the absence of a showing that to do so would work *injustice*.

The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, would affirm.

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[4] Former Assistant Commissioner Leeds addressed herself to the problem in opposition proceedings. Her comments are instructive:

> Acquiescence relates to one's inaction during another's performance of an act . . . laches relates to delay after an act is done. . . . Both require actual or imputed knowledge.
>
> [P]roof of acquiescence short of an estoppel in an opposition proceeding can avail an applicant nothing.

Salem Commodities, Inc. v. *Miami Margarine Co.*, 106 USPQ 411, 414 (Comm'r. 1955) *rev'd on other grounds*, 44 CCPA 932, 244 F.2d 729, 114 USPQ 124 (1957).

[5] The petitioner's purchase and precedent negotiations do not, as a matter of fact, seem as unequivocal to us as they apparently did to the Board. We note the initiation of the negotiations by counsel for the purpose of resolving a legal problem and the uncontradicted testimony that counsel, as early as June 1961, indicated orally petitioner's interest in protecting the checkerboard mark. We think petitioner's actions were subject to several interpretations. But we do not agree that respondent could justifiably adopt the one most favorable to it without some other assurance (e.g., explicit consent, other purchases, passage of a substantial period of time).

[6] We do not find any substantial support in the record as a whole for the Board's finding that the respondent "apparently expanded its business" in reliance upon the alleged acquiescence.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,298,934. (See 3,000,576.)

2,604,359, F. L. Zybach, SELF-PROPELLED SPRINKLING IRRIGATING APPARATUS, filed July 12, 1967, D.C. Colo. (Denver), Doc. 67–C–331, *Frank L. Zybach et al.* v. *Enresco, Inc.*

2,627,014, J. E. Kolb, RADIANT HEATER; 2,824,944, J. E. Ammerman, ELECTRIC HEATING APPARATUS; 2,930,881, same, HEATER MOUNTING MEANS; 2,973,423, Ammerman and Walling, MAGNETICALLY SUPPORTED HEATER ASSEMBLY; 2,977,454, J. F. Volker, ELECTRIC IMMERSION HEATER; 3,072,775, Ammerman and Benko, ELECTRIC HEATER ASSEMBLY AND METHOD; 3,111,572, L. D. Drugmand, ELECTRIC IMMERSION HEATER ASSEMBLY, filed Nov. 27, 1964, D.C. Md. (Baltimore), Doc. 15997, *Edwin L. Wiegand Co. Inc.* v. *Electro-Therm Inc. and American Instrument Company, Inc.* Complaint and counterclaim, dismissed without prejudice, June 29, 1967.

2,667,243, H. D. Fenske, CONVEYANCE CONSTRUCTION, filed May 24, 1967, D.C. Md. (Baltimore), Doc. 18371–C, *National Steel Corporation* v. *Baltimore and Ohio Railroad.*

2,699,192, H. Abraham, INTERLOCKING SHINGLE, filed July 20, 1967, D.C., S.D.N.Y., Doc. 67–C–2787, *Apex Products Corporation* v. *Bantanlite Inc.* Same, filed July 20, 1967, D.C., S.D.N.Y., Doc. 67–C–2788, *Apex Products Corporation* v. *Heath Sealing Novelties Company, Inc.* Same, filed July 20, 1967, D.C., S.D.N.Y., Doc. 67–C–2789, *Apex Products Corporation* v. *Dan-Dee Imports, Inc.*

2,707,030, E. R. Ortman, PUMP INSTALLATION, filed July 12, 1961, D.C., E.D. Wis. (Milwaukee), Doc. 61–C–166, *Earl R. Ortman* v. *Herbert W. Maass.* Defendant restrained from the manufacture, use and sale of devices in infringement of claims 1 and 3 of patent during the unexpired term of said Letters Patent, July 17, 1967.

2,727,786. (See 3,000,576.)

2,736,403, J. M. Gwynne, METAL FRAME CONSTRUCTIONS, filed Sept. 20, 1963, D.C., S.D.N.Y., Doc. 63–C–2769, *Jacob M. Gwynne* v. *Michael Flynn Manufacturing Co.* Filed stipulation and order dismissing action, Aug. 2, 1967.

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, filed July 18, 1967, D.C., N.D. Ga. (Atlanta), Doc. 11066, *Norwich Pharmacal Co.* v. *International Brokers, Inc.*

2,792,572, Rosenbaum and Harvey, KNIT GARMENT, filed Jan. 8, 1963, D.C., S.D.N.Y., Doc. 64–C–78, *Mock Fashioning Associates* v. *Manhattan Shirt Company, Inc.* Judgment and order dismissing plaintiff's complaint, July 21, 1967.

2,796,226, H. Kanter, NECKTIE FORM, filed July 7, 1967, D.C., S.D.N.Y., Doc. 67–C–2620, *E-Z Clasp Inc.* v. *France Neckwear Company, Inc.*

2,821,096, J. M. R. Lyeth, Jr., VEHICLE DIFFERENTIAL WITH CUMULATIVE TORQUE RESISTANCE, filed Aug. 2, 1967, D.C., E.D. Mich. (Detroit), Doc. 30213, *John M. R. Lyeth, Jr. and Borg-Warner Corporation* v. *Eaton Yale and Towne, Inc.*

2,824,315, G. D. McKeny, RELEASABLE COUPLING DEVICE, filed July 28, 1967, D.C., W.D. Wash. (Seattle), Doc. 7295, *C. J. Hendry Company* v. *Nordby Supply Co.*

2,824,944. (See 2,627,014.)

2,912,974, G. I. Wahnish, SMOKE GENERATING APPARATUS, filed July 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1271, *George A. Wahnish* v. *The Kartridg Pak Co. and Oscar Mayer and Co., Inc.*

2,918,251, D. A. Epp, OUTLET STRUCTURE FOR IRRIGATION PIPES, filed Aug. 8, 1967, D.C., Kans. (Wichita), Doc. W–3874, *Henderson Manufacturing Co.* v. *Ulysses Irrigation Pipe Co., Inc. and Pat H. Appling.*

2,930,881. (See 2,627,014.)

2,936,959. (See 3,000,567.)

2,942,429, Van Dolah and Patterson, POULTRY CHILLING, filed Sept. 29, 1964, D.C., W.D.N.C. (Charlotte), Doc. 1945, *Morris and Associates, Inc.* v. *Swift and Company.* Consent judgment, claims 1–12 incl. valid, plaintiff has infringed and enjoined permanently from further infringement, Aug. 7, 1967.

2,967,315, Helbig and Warner, HAND-PROPELLED POLISHING MACHINE, filed July 19, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–698, *Polymatic Industries, Inc.* v. *Halls Oldsmobile.*

2,973,423. (See 2,627,014.)

2,977,454. (See 2,627,014.)

2,985,995, Bunting and Nelson, COMPACT INTERLACED YARN, filed July 14, 1967, D.C., E.D. Tenn. (Knoxville), Doc. 6038, *Eastman Kodak Company* v. *E. I. du Pont de Nemours and Company, Inc.*

3,000,576, Levey and Harvey, SPRAY GUN; 3,018,968, G. S. Levey, CLOSED SYSTEM RECIRCULATING ASSEMBLY; 2,298,934, M. T. Foster, SPRAY NOZZLES; 2,727,786, J. A. Bede, PAINT HEATING AND CIRCULATING SYSTEM AND SPRAY DEVICE THEREFOR; 2,936,959, Nord and Rosen, SPRAY GUN, filed May 5, 1967, D.C., N.D. Tex. (Dallas), Doc. CA3–2050, *The Spee-Flo Manufacturing Corporation* v. *Braniff Airways, Incorporated, and Southwest Air Equipment.*

3,018,968. (See 3,000,567.)

3,072,775. (See 2,627,014.)

3,111,572. (See 2,627,014.)

3,214,753, R. J. Dodge, SOUND SIGNAL SYSTEM, filed Aug. 7, 1967, D.C., S.D. Tex. (Houston), Doc. CA67–H–616, *Automatic Power, Incorporated* v. *The Gabriel Corp. of Texas Inc.*

3,225,789, R. G. Thompson, WATER SOFTENER VALVE, filed Aug. 4, 1967, D.C., W.D. Wis. (Madison), Doc. 67–C–106, *Jack F. Shabel* v. *Royal McEwen, doing business as Royal Sales & Service Co.*

3,228,413, F. F. Stevens, KEG TAPPING DEVICE; Reg. No. 358,526 (ECONOMY BRAND), Economy Food Co., Onion Powder and garlic powder, filed Aug. 2, 1967, D.C. Conn. (New Haven), Doc. 12100, *Mack Johnston, Inc. and Long Beach Plastic Co., Inc.* v. *Franklyn R. Hoff et al.*

3,261,545, M. E. Frazier, TRASH BAG HOLDER, filed Aug. 2, 1967, D.C. Mass. (Boston), Doc. 67–600–J C.A., *International Paper Company* v. *Tac, Inc.*

3,313,545, J. R. Bartsch, UNITARY MOLDED GOLF BALL, filed July 7, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–656, *PCR Patent Dev. Corp.* v. *Chemold Corp.*

D. 174,240, W. R. Tappan, RANGE; D. 180,069, T. B. Clark, COOKING RANGE, filed C.A., Sixth Circuit, Ohio, N.D. (Cleveland), Doc. 17088, *The Tappan Company* v. *General Motors Corporation et al.* Lower court affirmed, July 21, 1967.

D. 180,069. (See D. 174,240.)

Reg. No. 358,526. (See 3,228,413.)

PLANT PATENTS

GRANTED OCTOBER 24, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,774
ROSE PLANT

Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Sept. 1, 1966, Ser. No. 577,106
1 Claim. (Cl. Plt.—11)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous and upright habit of growth, abundant foliage, large flower size, and a distinctive and attractive general color tonality of the flowers corresponding to Rose Red, lightly overcast with Begonia Rose.

PATENTS

GRANTED OCTOBER 24, 1967

GENERAL AND MECHANICAL

3,348,236
FLUID VENTILATED SUIT
Lynn L. Copeland, 1546 Tulpehocken St., Philadelphia, Pa. 19138
Filed June 7, 1965, Ser. No. 461,634
5 Claims. (Cl. 2—2)



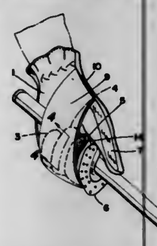
1. A body protective garment formed of a unitary structure having arms, legs and torso portions and shaped to snugly enclose the arms, legs and torso comprising,
(a) an inner resilient fluid impervious layer of material having an outer layer of pliant reinforcing material laminated thereto,
(b) a plurality of fluid distribution grooves formed in said inner layer,
(c) said grooves extending longitudinally of the arms, legs and torso portions and spaced thereabout,
(d) fluid supply duct means spaced from the grooves,
(e) said fluid supply duct means extending longitudinally of the tarso portion and also extending longitudinally along at least portions of the arms and the legs,
(f) each arm portion and each leg portion of the garment having a ring-like continuous passageway communicating between the fluid supply duct means and the distribution grooves and
(g) means for supplying fluid to the fluid supply duct means for passage through the distribution grooves for controlling the temperature of the body.

3,348,237
REVERSIBLE WRAP AROUND GARMENT
Natalie Simonoff, Atlantic Beach, N.Y., assignor to Esther Lustig, New York, N.Y.
Filed Oct. 24, 1965, Ser. No. 504,437
6 Claims. (Cl. 2—74)



1. An article of women's apparel comprising a lower portion and an upper portion connected together at the waist of the wearer, said lower portion having a first upper edge section connected to said upper garment portion and an upper edge section free from said upper garment portion, said upper garment portion comprising a central body covering section connected at its lower edge to said first upper edge section of the lower garment portion, and forming a neckline, arm holes and shoulders on one side of the wearer, and a pair of free body covering sections connected along their inner side edges to the side edges of said central body covering section and forming with the latter the arm holes and shoulders of the garment, said pair of free body covering sections being adjustably wrapped in overlapping relation on the other side of the wearer to form a different neckline on such other side of the wearer, means connected to said pair of free body covering portions for holding the same in adjusted relation, an elastic strip connected along the line of attachment of said lower and upper portions, and a second elastic strip connected along the free upper edge section of said lower portion, one of said elastic strips being substantially stronger than the other of said elastic strips whereby when tension is applied to said elastic strips, said other elastic strip will stretch before said stronger elastic strip.

3,348,238
GOLF GLOVE WITH GRIP LOCKING MEANS
John K. Hydock, R.D. 1, Byesville, Ohio 43723
Filed Oct. 28, 1966, Ser. No. 590,383
8 Claims. (Cl. 2—161)



1. In combination with a golfer's glove or the like, means adapted to compel the wearer to retain a firm grip upon the shaft of a golf club when the hands are gripping the club shaft, said means comprising at least one piece of fastening material attached to the back of the glove, and a strip of flexible material having one end thereof permanently attached to said glove along a line substantially coinciding with the outermost edge of the thumb of the glove and extending diagonally across the palm of the glove, said strip having means adapted to coact with said piece of fastening material when said strip has been wrapped about the glove and its opposite end portion caused to overlie said piece of fastening material.

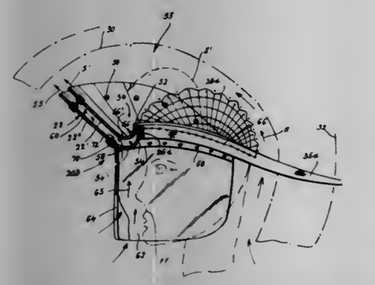
3,348,239
CHEF'S HAT
Georges Lamour, 950 NE. 147th St., North Miami, Fla. 33161
Filed May 29, 1964, Ser. No. 371,222
3 Claims. (Cl. 2—171.3)

1. A paper hat of generally cylindrical form comprising: a folded paper headband of generally cylindrical form, said headband having a smooth folded upper edge and a folded lower marginal portion forming an annular seat inside the headband, an elongated generally cylindrical sidewall portion, a series of closely adjacent vertically disposed pleats in a corrugated pattern extending annularly therearound and having a lower marginal edge secured within said seat, said sidewall portion extending at least twice the distance above said upper edge of the headband as the distance between the upper and lower edges of the headband, a disc-like crown piece having ventilator openings formed therein and including an inturned skirt portion, said cylindrical sidewall portion



having an inner downturned flap, said skirt portion being secured to said downturned flap of said sidewall portion in closing relation to the cylindrical form of said hat along the skirt and in position to hold said sidewall portion at the upper portion of the hat so that said sidewall portion of the hat is at all times upstanding in use, and liner means extending completely around the inside surface of the headband.

3,348,240
HEAT PROTECTING HEAD SHIELD FOR HAIR DRIER
Karin Kohn, 301 E. 69th St., New York, N.Y. 10021
Filed Feb. 7, 1966, Ser. No. 525,417
2 Claims. (Cl. 2—174)



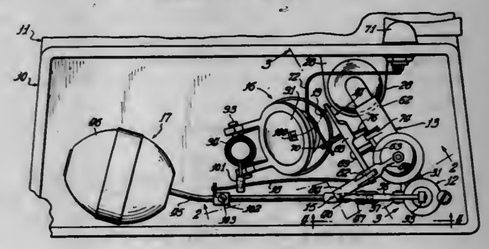
1. A device for protecting a person's face from heated air streams impinging on the person's head while inserted in a hood of a hair drier, said device comprising a double-walled crescent-shaped flexible visor having inner and outer spaced walls, means holding said walls spaced apart defining a narrow channel, said walls having lower marginal portions turned inwardly and upwardly and secured together at their edges defining a generally U-shaped channel about the lower portion of the visor, the upturned portion of the outer wall having holes formed therein opening into said narrow channel for admitting cool air thereto, an elongated headband secured along a portion of its length to said visor at the securement of said lower marginal portions and having free ends, a head-enclosing hair net having a lower edge portion secured to said elongated headband, said free ends of the elongated headband forming adjustable means for securing said device about a person's head, said visor extending radially outwardly and upwardly when in use about a person's head to deflect heated air streams upwardly and outwardly leaving a person's hair inside the hood of a hair drier, and a transparent plastic face-protecting shield attached at its upper edge to the outer wall adjacent said holes for guiding cool air past the person's face through said holes to cool the same, while air in said narrow channel heated by the heated inner wall of the visor passes upwardly and outwardly of the narrow channel.

3,348,241
WOMEN'S PROSTHETIC LOUNGEWEAR
Beatrice O. Dodds, 11735 Tennessee Ave., Los Angeles, Calif. 90064
Filed Mar. 26, 1965, Ser. No. 442,998
2 Claims. (Cl. 3—36)



1. A lounging garment, especially for mastectomy amputees and the like, and including, a bodice made of sheer semi-transparent material substantially enclosing the upper portion of the amputee's torso, said bodice having a pair of opposite interiorly opening pockets overlying the opposite breast areas of the bossom and made of colored material underlying the corresponding areas of said bodice respectively, and a prescribed shaped prosthesis breast of light weight and made with surface material having substantially the same body and color as the material of the said pockets and removably positioned in either pocket respectively, whereby opacity as observed through the bodice material is the same at each opposite breast area.

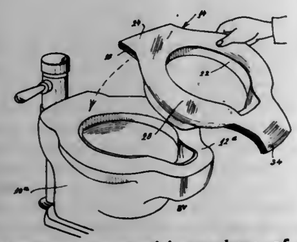
3,348,242
WATER CLOSET DEVICE
Frank Ralph Wilhelm, Mansfield, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 17, 1965, Ser. No. 440,396
5 Claims. (Cl. 4—41)



1. An improved flush tank device for the tank and bowl of a water closet comprising a tank, a bowl, a diversion conduit connecting said tank with said bowl, a

discharge conduit connecting said tank with said bowl, a water supply, a diverter valve adapted to normally discharge water into said tank and actuatable to discharge water through said diversion conduit into said bowl, a normally open water inlet valve interconnecting said supply with said diverter and actuatable to close to prevent water from passing therethrough into said diverter, means for actuating said diverter valve, means for automatically and releasably retaining said diverter actuator means in the actuating condition, a normally closed discharge valve positioned in said discharge conduit for closing said conduit and actuatable to the open condition and adapted to open into said tank, means for interconnecting said diverter actuating means with said discharge valve to open said valve when said diverter actuating means is actuated to allow water contained in said tank to flow through the exhaust conduit into the bowl, a float element connected to said inlet valve and adapted to actuate said inlet valve when the level of the water in said tank reaches a predetermined high level, and means for interconnecting said float element and said diverter actuator retaining means for releasing said retaining means when said float element reaches a predetermined low level.

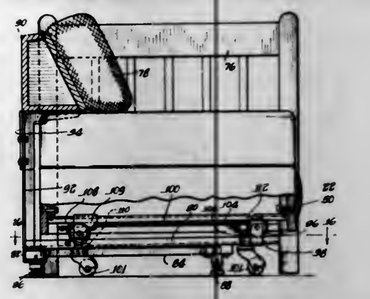
3,348,243
SANITARY SINGLE-USE TOILET SEAT COVERS
William S. Kelly, 64—27 79th St.,
Middle Village, N.Y. 11379
Filed Oct. 8, 1964, Ser. No. 402,549
1 Claim. (Cl. 4—245)



A toilet seat cover comprising a base of semi-rigid plastic material having an oval shaped body with a central oval shaped opening, a plurality of superimposed peelable plastic sheets conformable to and supported on the base and electrostatically adhering thereto and to each other, said sheets having oval shaped openings aligned with the opening in the base, a flat extension on the rear end of the body of the base, flat extensions on the sheets conformable to the flat extension on the body of the base, inwardly extending flanges on the outer side of the peripheral edges of the body of the base, inwardly extending flanges on the outer peripheral edges of the sheets conforming to the flanges of the body of the base, said flanges adapted to be snapped into position between the toilet seat and toilet bowl, and integral aprons on the flexible sheets extending radially thereof at the front thereof for the convenient peeling off of the topmost sheet of the stack.

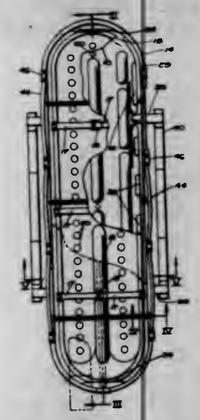
3,348,244
MODULAR FURNITURE CONSTRUCTION
George S. Fasanella, Chicago, Ill., assignor to The Englander Company, Inc., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,318
3 Claims. (Cl. 5—17)

1. A furniture module comprising: a box frame including a pair of end boards, a pair of side rails and connecting means joining said boards and said rails in rectangular relationship; rigid frame elements mounted on top edges of said box frame; spring members connected to opposite rigid frame elements spanning said box frame; braces attached to said frame elements to oppose said spring members; an end plate associated with each of said end boards; a lock strap member mounted on each of said end plates and defining a cam-receiving aperture; upright



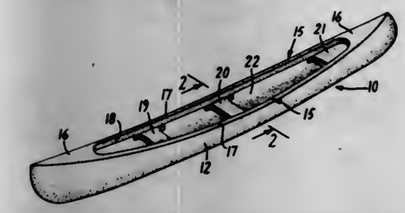
headboard and footboard members disposed respectively at said end plates and having locking plate means secured thereto including a cam slidably engaging said cam-receiving aperture; and progressively engageable means interconnecting said end boards, said end plates and said headboard and footboard members.

3,348,245
CARRIERS, PARTICULARLY FOR VICTIMS OF HIGH ENERGY RADIATION
Harry A. Shindler, 109 Allyn St.,
West Hartford, Conn. 06103
Filed Oct. 1, 1965, Ser. No. 492,052
10 Claims. (Cl. 5—82)



2. A carrier for accident victims, particularly those who have been exposed to high energy radiation,
said carrier comprising
a litter in the form of an elongated, relatively shallow shell on which the victim may be placed and then lashed thereto,
a containment area device in the form of a transparent, flexible, plastic sheet material envelope having a sealable opening therein through which the litter may be introduced and the victim then enclosed within an isolated atmosphere, and
a basket in the form of an elongated shell having a depth somewhat greater than that of the litter and in which the litter is nested with the containment area device enveloped thereabout.

3,348,246
BOAT STRUCTURE
Eugene L. Vidal, Montevideo Road,
Avon, Conn. 06001
Filed Oct. 18, 1965, Ser. No. 497,283
13 Claims. (Cl. 9—2)



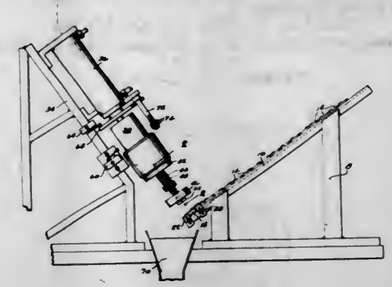
1. A one-piece plastic boat structure molded of a continuum of relatively rigid synthetic plastic material comprising a hull formed at least in part by a floatable monocoque shell open at the top, channel-like reinforcing gunwales formed integrally with the shell and extending in fore-and-aft directions along both sides of the shell adjacent the inner sides of the shell, and at least one recessed seat integrally formed with and connecting opposite channel-like reinforcing gunwales.

3,348,247
MULTIPURPOSE SPORTS EQUIPMENT
Harry B. Flannigan, Rte. 1, Box 244,
Iron, Minn. 55751
Filed Aug. 18, 1965, Ser. No. 480,618
6 Claims. (Cl. 9—310)

1. Multipurpose sports equipment comprising:
(a) four elongated support members each having one end arcuately bent;
(b) a body formed of a sheet of stiff material arcuately bent at one end and attached to two of said support members in spaced apart substantially parallel relationship forming a sled; and
(c) means for attaching the arcuately bent ends of said support members in a fixed relationship to form two inverted generally U-shaped leg members cooperating with said body to form a four-legged, vertically upright frame.

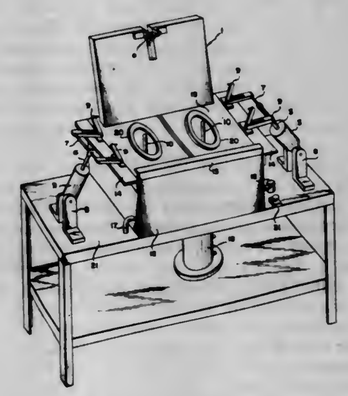
3,348,248
AUTOMATIC TAPPING MACHINE AND METHOD
Edwin Milkert, East St. Louis, Ill., assignor to MSL Industries, Inc., Racine, Wis., a corporation of Minnesota
Filed Nov. 1, 1965, Ser. No. 505,903
6 Claims. (Cl. 10—129)

1. A method of moving workpieces to and from a tapping station, such method including the bias and advance of successive workpieces toward such station, the stopping of an advanced workpiece at said station, the engagement of a tap with a workpiece stopped at said station to form threads, the bodily withdrawal of the tap from said station while still engaged with the workpiece whereby to lift the workpiece from the station and permit the advance of a successive workpiece to the station, and the



unscrewing of the tap from the workpiece following its bodily removal from said station and the discharge of the workpiece free of said station.

3,348,249
MULTIPLE SHOE LASTING
Igor Ivan Markevitch, Wayne, N.J., assignor to Arnav Industries, Inc., Kenilworth, N.J., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,544
7 Claims. (Cl. 12—1)

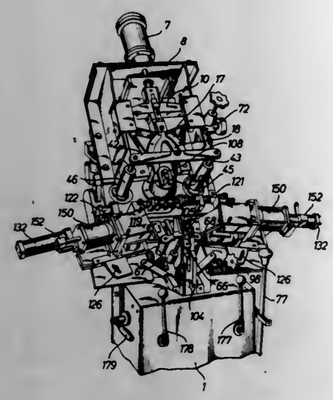


1. An apparatus for lasting a plurality of shoes comprising a plurality of elastomeric lasting bags, each of said lasting bags having a bottom opening to accommodate a movable lasting pin, a top opening for receiving shoes to be lasted, a lasting pin, means to move said lasting pin into lasting position in side of said bag and then out of said bag to eject a lasted shoe and receive another shoe to be lasted, a rigid hollow housing arranged about said lasting bags and having a fluid-tight attachment with said bottom and said top openings of said lasting bags so as to provide a fluid-tight chamber between said housing and said lasting bags, means to apply and release hydraulic pressure in said fluid-tight chamber between said housing and said lasting bags, and a lid having opening and closing means to cover the top of the said housing and said top openings of said lasting bags during the hydraulic pressure lasting step and uncover said lasting bag top openings during the pin ejection and pin reloading steps.

3,348,250
MACHINE FOR PULLING OVER, HEEL FORMING AND LASTING OF SHOES

August Allgayer, Alfeld, Leine, Germany, assignor to Schuhmaschinen-Gesellschaft Hanke & Co. m.b.H., Alfeld, Leine, Germany

Filed May 21, 1965, Ser. No. 457,580
Claims priority, application Germany, May 21, 1964, Sch 35,194
7 Claims. (Cl. 12—10.1)



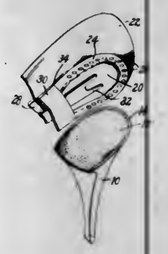
1. A machine for pulling-over, heel forming, and lasting of shoes by means of an adhesive within the area between the heel and the sides adjacent to the toe of the shoe and in a position in which the bottom surface of the last for the shoe upper faces downwardly, characterized by the fact that the heel part of the last together with the upper is adapted to be mounted in a fixed position on a first sliding carriage in such a manner that the toe part thereof faces the operator of the machine, that for lowering the toe part of the last, the last together with the first carriage is pivotable to an inclined plane in which the holding and supporting means and the tools for working on the shoe bottom are located, that the tools for working on the shoe bottom are mounted on a second sliding carriage which, after the last has been pivoted downwardly, is movable within this inclined plane, that after the machine has been started and the last has been mounted in a fixed position relative to the first or heel carriage, this carriage is movable to a position in which the front part of the last is in engagement with a stop member which is provided on the second carriage, and that this stop member is adapted to control the locking of the first carriage.

3.348,251
SHOE MANUFACTURING

Daniel Appleton, Beverly, and Gerald W. Cleversey, Topsfield, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Jan. 22, 1965, Ser. No. 427,400
4 Claims. (Cl. 12—147)

1. A method for adhesively attaching a heel formed of synthetic polymeric material to a shoe upper which comprises:
(a) applying to a heel seat engaging surface of a heel a mixture of a polyurethane mastic adhesive in fluid, foamable, reactive form and an organic solvent capable of solvating the said synthetic polymeric material, and
(b) while maintaining the heel seat engaging surface of the heel positioned relative to a heel seat of a shoe upper allowing the polyurethane to further react and provide the polyurethane in stiffened foamed

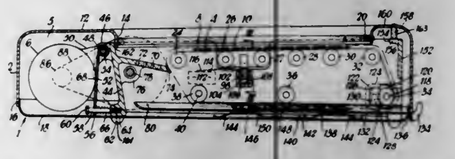


form serving to adhesively attach the heel to the shoe upper.

3,348,252
CLEANING APPARATUS

Henry C. Lightowler, 18 Crispin Way, Farnham Common, England

Filed Oct. 20, 1965, Ser. No. 498,330
11 Claims. (Cl. 15—36)

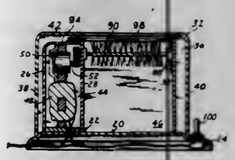


8. A device for cleaning the undersides of footwear, the device comprising a housing having a top wall, a looped belt having the outer surface thereof arranged for cleaning objects engaged thereby, means mounting the belt for movement within the housing in a path having an upper run, an aperture in the top wall of the housing allowing a footwear underside to engage the outer surface of the belt on said upper run, driving means for the belt, and stationary means accessible through the aperture to provide support for the footwear heel at a level below the said upper run.

3,348,253
HAIR BRUSH AND/OR COMB CLEANER

John W. McCoy, 9005 Rohr Place, San Diego, Calif. 92123

Filed June 14, 1965, Ser. No. 463,812
4 Claims. (Cl. 15—38)

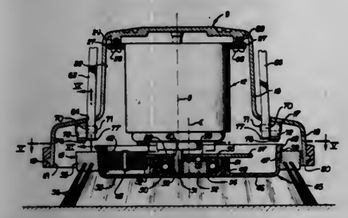


1. A device for removing hair from a hair brush or a comb, which hair brush includes a body and bristles extending therefrom, said device comprising in combination:
(A) means forming a frame;
(B) a pair of horizontally elongated brushes supported by the frame and arranged parallelly and juxtaposed to one another, said brushes including substantially radially extending bristles;
(C) a rod supported by the frame and disposed above and parallelly of the elongated brushes for supporting the hair brush body in a position in which the bristles of the hair brush extend downwardly into contact with the bristles of both of the elongated brushes;
(D) and means supported by the frame for rotating the elongated brushes in opposite directions to pull hair from the bristles of the hair brush downwardly.

3,348,254
FLOOR TREATING MACHINE

Frederick K. Storm, Jr., Glendale, and Eldridge H. Smiley, Rosemead, Calif., assignors, by mesne assignments, to Emdeko Distributing, Inc., Salt Lake City, Utah, a corporation of Utah

Filed Dec. 14, 1965, Ser. No. 513,698
2 Claims. (Cl. 15—49)

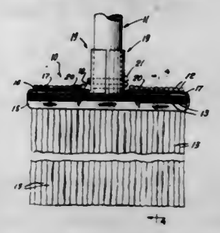


1. In a vertically compact orbiter-type floor treating machine having a housing means with a chamber provided with a downwardly facing opening lying in a plane, a stabilizing rotatable driving mass and an orbitally related freely rotatable mass at said opening; the combination of:
a motor means in said chamber having a driving motor shaft end projecting beyond the plane of the opening and having an axis;
means for mounting a stabilizing driving mass on said shaft end and including:
a bearing means including a bearing plug and an inner race therearound, said bearing plug having an axis spaced from the shaft axis and having eccentric connection to said shaft end,
a circular flat plate-like disc flywheel carried on and secured to the bearing plug and having an axial opening for passage therethrough of said shaft end,
counterbalance elements secured to the peripheral margin of the flywheel and having a center of gravity lying in a plane defined by the axis of the shaft end and the bearing plug;
a brush carrier and brush ring having bristles comprising the freely rotatable, orbitally related driven mass;
means for mounting said brush carrier comprising a bottom wall on the brush carrier provided with an upstanding annular boss,
a bearing cap secured to said annular boss, and
an outer bearing race carried in fixed relation by said bottom wall within said annular boss and bearing retainer cap;
said bottom wall of said brush carrier having a smooth, planar, virtually uninterrupted bottom face for sliding contact with a surface being treated to support said machine from said surface when bristles of said brush ring are short and extend only a short distance below said bottom wall;
said bottom wall including a light weight plastic material having a low coefficient of friction for minimizing abrasion of the surface being treated;
said brush carrier protectively covering said shaft end, bearing means, and enclosing said flywheel and counterbalance elements; and
the bottom face of said bottom wall being spaced below the plane of said opening.

3,348,255
MOP HAVING A DETACHABLE HEAD

Everett Bernell Lohman, P.O. Box 1713, Marysville, Calif. 95901

Filed Aug. 19, 1966, Ser. No. 573,648
1 Claim. (Cl. 15—229)

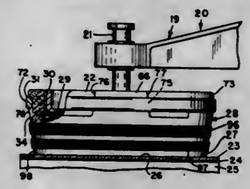


In a mop structure, the combination of a separable mop head and an elongated handle therefor, said mop head consisting substantially in its entirety of a plurality of layers of strands of absorbent fibrous material arranged in parallel, side by side relation to each other, the strands of said layers being arranged one upon another and connected intermediate their ends by individual strips of fabric for the respective layers arranged transversely thereof, spaced parallel lines of stitching extending transversely of and connecting said strands and said strips of fabric and forming therewith a pair of flat pockets positioned between two adjacent layers of said strands, one side of said mop head having a central opening therein communicating with said pockets, said handle having a pair of arcuate fittings forming a socket removably connected to one of its ends, and said fittings each having an integral outwardly directed planar tab, perpendicular to the longitudinal axis of said handle, said tabs being removably receivable in said pockets to substantially fill the same in the assembled position of said mop head relative to said handle, whereby said mop head is removably connected to said handle.

3,348,256
CRENELATED POLISHING PAD

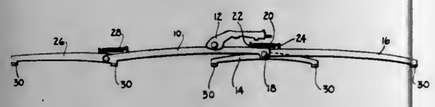
William E. Becker, Raynham, Mass., assignor to Bacon Felt Company, Taunton, Mass., a corporation of Massachusetts

Filed May 25, 1965, Ser. No. 458,655
9 Claims. (Cl. 15—230.12)



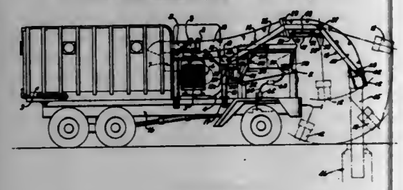
9. In combination:
a circular glass polishing block;
a composite polishing pad, of felt substantially greater than one inch in thickness, covering the polishing face of said block;
a felt ring encircling said pad, said ring having a preformed, upstanding interrupted, self supporting, integral rim-like flange of said felt, said interrupted felt flange extending around the peripheral wall of said block to form spaced attachment tabs of felt;
reinforcing means for unitizing the felt of said ring, tabs and pad, and
a locking ring encircling said felt attachment tabs on said block for firmly securing said pad thereon.

3,348,257
WINDSCREEN WIPERS
Ruben Hadekel, London, England, assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Aug. 18, 1965, Ser. No. 480,619
Claims priority, application Great Britain, Aug. 18, 1964, 33,706/64
3 Claims. (Cl. 15—250.42)



1. A windscreen wiper harness comprising a primary yoke having between its ends means for attachment to the end of a wiper arm, a secondary yoke to which one end of the primary yoke is pivoted at a point lying between the ends of the secondary yoke, and a lever which is pivoted to the primary yoke at the end to which the secondary yoke is pivoted, the lever being urged about its pivot axis by means of a spring so that a free end of the lever can apply wiping pressure to the end of a wiping rubber.

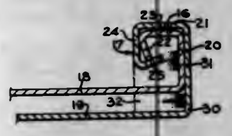
3,348,258
VACUUM-TYPE DEBRIS COLLECTOR
Ben Daneman, Milwaukee, Wis., assignor to Central Engineering Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed June 18, 1965, Ser. No. 464,976
20 Claims. (Cl. 15—314)



1. In a vacuum debris collector, for a vehicle movable to the site of the debris to be collected and having an enclosed vacuum tank with a forward intake opening,
a flexible pick-up nozzle having a suction end and a second end with said second end in substantially airtight communication with said opening,
a power boom assembly rotatably mounted on said vehicle adjacent said tank and connected to said nozzle,
power means for rotating and retracting said power boom assembly, and
control means remote from said power boom assembly and said power means and connected to said power means, whereby said power boom assembly can be controllably rotated to direct said suction end selectively forward and to the side of said vehicle to said debris and said power boom assembly and said nozzle can be controllably retracted to a position in which said power boom assembly and said nozzle do not substantially add to the overall height of said vehicle.

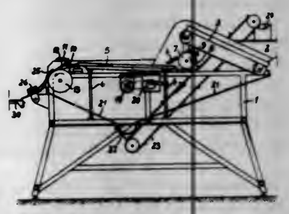
3,348,259
HINGE
Robert I. Wilhelmsen, Downey, and Irven R. Wilhelmsen, Fullerton, Calif., assignors to Wilhelmsen Sheet Metal, Inc., Paramount, Calif., a corporation of California
Filed July 9, 1965, Ser. No. 470,735
5 Claims. (Cl. 16—128)

1. In combination: a first flat sheet metal structural element; a second flat sheet metal structural element; a first channel member formed integral with an edge of said first structural element, said member having three consecutively angularly united walls, the first of which is united with said edge of said first element at a right angle therewith, the second wall being united with said first wall at a right angle therewith, and the third wall being united with said second wall at less than a right angle therewith the free end of the third wall being spaced from the first structural element a distance less than the width



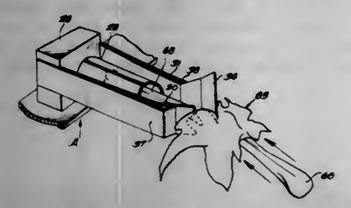
of the second wall; and a second channel member formed integral with an edge of said second structural element and substantially like said first channel member, one of said channel members being lengthwise slid into the other channel member so as to be articulate relative thereto while being locked against broadside separation from said other channel member by the constant opposition to each other of the third walls respectively of said channel members.

3,348,260
METHOD AND APPARATUS FOR THE FULLY AUTOMATIC FEED OF FISH TO FISH WORKING MACHINES
Alfred Friedrich Adolf Bartels, Lubeck-Israelsdorf, and Herbert Kröger, Lubeck, Germany, assignors to Nordischer Maschinenbau Rud. Baader, Lubeck, Germany, a firm
Filed Nov. 18, 1964, Ser. No. 412,193
Claims priority, application Germany, Nov. 19, 1963, N 24,039; Mar. 5, 1964, N 24,561; Sept. 10, 1964, N 25,495
8 Claims. (Cl. 17—2)



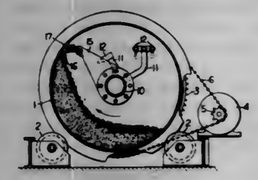
2. An apparatus for automatically transporting fish, particularly small fish, such as herrings, to a fish treating machine, said apparatus comprising, in combination, oscillating channels having intake ends and outlet ends, separate means feeding the fish to said intake ends and turning the wrongly directed fish, said means comprising turning cylinders located adjacent said intake ends, and guide plates extending over a portion of the circumference of said cylinders; a rhythmic timing and orienting device having channels constituting a continuation of the first-mentioned channels and an uprighting device having channels constituting a continuation of the second-mentioned channels; and rotary toothed cylinders partially extending into the third-mentioned channels perpendicularly to the bottoms thereof, one of the walls of each of the third-mentioned channels constituting a yieldable guiding surface for the fish.

3,348,261
METHOD FOR REMOVING MEAT FROM POULTRY LEGS
Asa B. Segur, 1185 S. Ridgeland Ave., Oak Park, Ill. 60304
Original application Nov. 20, 1963, Ser. No. 325,104, now Patent No. 3,216,056, dated Nov. 9, 1965. Divided and this application Oct. 1, 1965, Ser. No. 492,030
9 Claims. (Cl. 17—45)



1. In a method for removing meat from a poultry leg, the steps of slicing the meat longitudinally along at least one side of a leg section, and thereafter plowing the meat in opposite directions along the upper and lower leg sections and towards the knee joint therebetween.

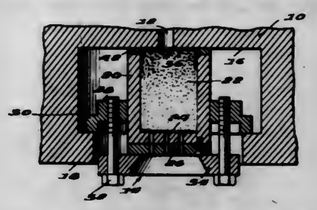
3,348,262
APPARATUS FOR CONTROLLING COATING DEPTH IN A BALLING DRUM
Glenn A. Helan, Franklin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 1, 1963, Ser. No. 320,624
2 Claims. (Cl. 18—1)



1. In an apparatus for rolling pulverant material into balls on an internal surface of a cylindrical shell and having said surface coated by a layer of the pulverant material, means for controlling coating depth on said surface, comprising, a pair of scraper blades connected together and diverging from each other in a direction toward said coating on said surface to define therebetween an acute angular space having its apex pointed away from said surface, support means connected to said scraper blades and holding said blades against said layer but spaced from said surface, and driving means connected to said shell for rotating said shell about a central cylindrical axis of said shell to provide relative movement between the coated surface and scraper blades to scrape some of the coating off of the surface.

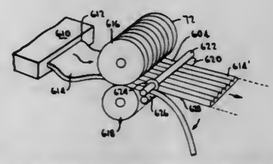
3,348,263
MELT SPINNING FILTRATION BED RETAINING SCREEN
Thomas Lee Carter, Hixson, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 537,938
3 Claims. (Cl. 18—8)

1. In a spinneret assembly including an open top holder, a filter bed in said holder and parts for clamping the open top of said holder to an orificed surface of a spinning machine, a bed-containing cap for the holder,
said cap having a central portion of screen material shaped complementally to said surface and a depending rim portion fitted inside and extending upwardly beyond the open top of said holder, said cap being



adapted to be forced into said holder when the open top holder is clamped to said surface thereby eliminating any space between said cap and said surface.

3,348,264
APPARATUS FOR MAKING PICTORIAL PARALLAX PANORAMAGRAM UNITS
Harold D. Rice, Leawood, Kans., and Sam L. Leach, St. Louis, Mo., assignors, by mesne assignments, to PID Corporation, Beverly Hills, Calif., a corporation of California
Continuation of application Ser. No. 436,974, Jan. 6, 1965, which is a division of application Ser. No. 202,930, May 14, 1962, now Patent No. 3,241,429, dated Mar. 22, 1966. This application Jan. 11, 1967, Ser. No. 608,704
5 Claims. (Cl. 18—10)

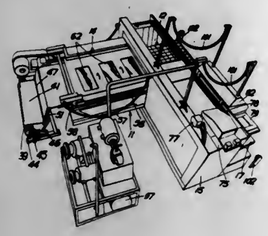


1. Apparatus for forming lenticulated sheet stock suitable for use in optical parallax units comprising, in combination, simultaneously operative and juxtaposed means for extruding a formable plastic sheet, means for embossing one face of said sheet with equally shaped adjacent arcuate lens ribs extending longitudinally of said sheet and having a maximum width on the order of about 0.015 inch, said embossing means including a roller having its longitudinal axis extending across the path of said sheet being fed from said extruding means, the surface of said roller defining a plurality of juxtaposed, circumferentially extending concave portions for shaping said ribs, adjacent concave portions on said surface of said roller meeting at axially spaced junctions, and means for severing said sheet along the junction between two of said ribs to provide a guide edge on said sheet exactly parallel to said junction, said severing means including a cutting edge extending longitudinally of the path of travel of said sheet and positioned aligned exactly with one of said junctions on said sheet.

3,348,265
VACUUM MOLDING MACHINES
Edward Carter King and Peter John Michael Pardoe-Matthews, Royal Tunbridge Wells, England, assignors to King Packaging Limited, Royal Tunbridge Wells, England, a British company
Filed June 20, 1963, Ser. No. 289,359
Claims priority, application Great Britain, June 20, 1962, 23,845/62
8 Claims. (Cl. 18—19)

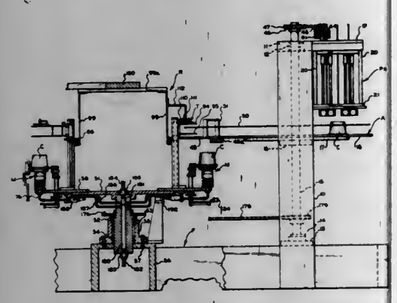
1. A vacuum molding machine comprising a vacuum mold shaped to form a plurality of articles from a sheet of thermoplastic material positioned over the mold, which

articles are arranged in a row, a heater assembly including a heater for heating the sheet, knife means, means for traversing the knife means across the molded sheet for separating the articles from each other, the knife means



comprising a set of knives mounted on the heater assembly, and said means for traversing the knife means comprising means for moving the heater assembly and the vacuum mold laterally relative to each other.

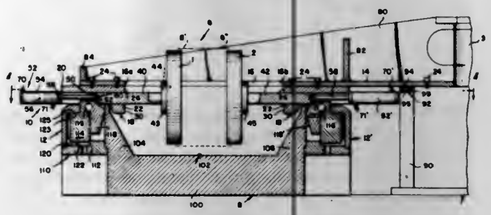
3,348,266
PLASTIC ARTICLE RIM FORMING APPARATUS
Gaylord W. Brown and Donald J. Rise, Beaverton, Mich., assignors to Brown Machine Company of Michigan, Inc., a corporation of Michigan
Filed Aug. 30, 1963, Ser. No. 305,651
18 Claims. (Cl. 18—19)



13. A machine for performing an operation on organic plastic containers having: a carrier; a plurality of spaced apart, container-shaped male mandrels permanently supported on the carrier; tool means adjacent the path of the mandrels; means for moving the carrier past a container supplying member; transfer element means on the carrier adjacent each mandrel operable for transferring a container in inverse position into telescoped position on each mandrel from the supplying member; and means for relatively rotating the mandrels and tool means.

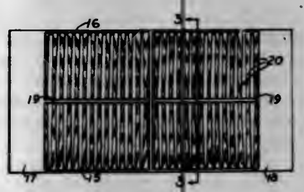
3,348,267
SECURING DEVICE FOR ROTARY MOLD APPARATUS
Robert Nouel, Villejuif, Seine, France, assignor, by mesne assignments, to Inventions Finance Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 21, 1963, Ser. No. 252,942
5 Claims. (Cl. 18—20)

1. In a machine for automatically forming molded articles, a rotatable support means, a plurality of split mold means on said rotatable support means for movement between a plurality of rotational positions, means supporting said mold means on said rotatable support means for opening and closing movement of said mold means, means for relatively moving each of said plurality of mold means into and out of closing position, all of said plurality of mold means being located substantially equidistantly of the axis of rotation of said rotatable support means, and a pair of force multiplying securing devices fixed in position relative to said rotatable support means for clamping said mold means tightly closed when each said mold means are disposed in one predetermined rotational position, each of said devices including a fulcrum carried by a support structure, a lever member mounted on said fulcrum, said lever member



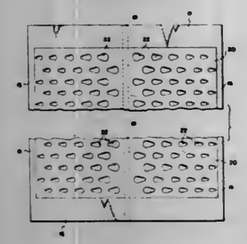
disposed beyond said rotatable support means, said lever member being pivoted about said fulcrum, said lever member having its structural mass located in such a manner as to be responsive to gravitational force to normally tilt it about said fulcrum in one direction, further means including a piston reciprocable in a chamber disposed in said support structure, and a fluid pressure inlet to said chamber for entry of fluid under pressure to move said piston in a direction causing pivotal movement of said lever member in a direction opposite said one direction, whereby as each said split mold means is intermittently and sequentially rotated to said closing position, said securing devices sequentially clamp each said split mold means at said closing position.

3,348,268
SCREEN FOR CARDING MACHINES
Robert B. Jenkins, Sr., Gastonia, N.C., assignor to R. B. Jenkins & Co., Inc., Gastonia, N.C., a corporation of North Carolina
Filed Sept. 6, 1966, Ser. No. 582,191
8 Claims. (Cl. 19—95)



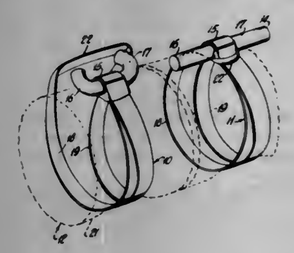
1. A carding machine screen comprising:
(a) a frame including opposed side and end members and a center rib extending between the end members in parallel relation to the side members,
(b) a plurality of bars each having a face and extending along spaced axes parallel to each other and to the end members between the center rib and each side member, and
(c) the face on each bar being narrower at the center rib than at its respective side member to define outwardly converging air spaces between adjacent bars.

3,348,269
PERFORATED SCREEN FOR CARDING MACHINES
Robert Bain Jenkins, Sr., Gastonia, N.C., assignor to R. B. Jenkins & Co., Inc., Gastonia, N.C., a corporation of North Carolina
Original application Sept. 6, 1966, Ser. No. 582,191. Divided and this application May 5, 1967, Ser. No. 636,416
4 Claims. (Cl. 19—95)



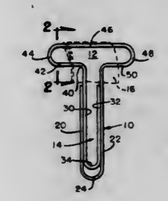
1. A screen for carding machines having a main rotating cylinder which creates air currents that strike said screen, said screen comprising:
(a) a frame having a longitudinal axis transverse to the axis of the main cylinder and including a pair of longitudinally extending parallel side members spaced from each other and on opposite sides of said longitudinal axis;
(b) channeling means extending between said side members for channeling more of said lint laden air currents through said screen intermediate said side members than at said side members; and
(c) said channeling means comprising:
(i) a plate member extending between the side members of said frame,
(ii) said plate member having a plurality of perforations therein, and
(iii) said perforations being of a given size adjacent the longitudinal axis of the screen and decreasing in size toward the side members.

3,348,270
LAUNDRY TIE-UP DEVICE
Herman Mazor, 1701 W. 3rd St., Brooklyn, N.Y. 11213
Filed Mar. 28, 1966, Ser. No. 537,763
6 Claims. (Cl. 24—16)



1. A laundry tie-up member for releasably engaging a bundle of material to be laundered, comprising a loop of flexible elastic material and a holding rod of semi-stiff elastic material, said loop being anchored to a portion of said rod intermediate the ends thereof, said rod having two arms flanking the anchored portion of said loop and being bendable outwardly in a direction away from said loop and into an inoperative position at which said arms are in mutually adjacent spaced relation, said loop being adapted to be flattened to produce a double elastic band comprising two adjacent sections, said loop being proportioned so that said band is adapted to yieldably embrace said bundle and the end portion of the loop pass over the arms when held in said inoperative position, whereby said loop will be interlocked with said rod when said arms are yieldably returned from said inoperative position.

3,348,271
PAPER-CLIP FASTENER
Ruth S. Miller, 3945 Connecticut Ave., Washington, D.C. 20008
Filed Mar. 3, 1966, Ser. No. 531,608
5 Claims. (Cl. 24—66)



1. A paper-clip formed from a single length of wire bent to form a T shaped fastener having a first elongated flattened open loop and a second elongated flattened open loop extending at right angles to said first loop; said first loop consisting of a pair of U shaped portions, the first of said U shaped portions comprising two vertically extending straight legs, namely, a first straight leg having a free, unconnected upper end and a second straight leg parallel to said first straight leg, and a curved portion connecting the lowermost extremities of said first and second straight legs; the second of said U shaped portions comprising a third straight leg having one free end and disposed along the inner side of said second straight leg, a curved extension of said third straight leg disposed along the said curved portion and a fourth straight leg disposed along the inner side of said second straight leg, so that the smaller second U shaped portion is nested within the confines of the larger first U shaped portion; said second loop consisting of an uppermost horizontal bar extending across and constituting the upper flattened side of said loop, a curved portion of said wire extending in the form of a semicircle joining each of the two ends of said uppermost horizontal bar to a shorter lowermost horizontal straight piece of said wire, the first of said shorter horizontal pieces of wire being connected to said fourth straight leg and the other of said shorter horizontal bars being connected to said second straight leg.

3,348,272
RESILIENT PIN, PARTICULARLY FOR CLOTHES
Luciano Germani, Milan, Italy, assignor to S.A.R.T. Stampaggio Articoli Resine Termoplastiche S.r.L., Milan, Italy, a corporation of Italy
Filed Feb. 18, 1966, Ser. No. 528,481
Claims priority, application Italy, May 20, 1965, 1,474/65
4 Claims. (Cl. 24—137)

1. A clasp to retain objects on a line, said clasp comprising a frame member having two longitudinal parallel sides, a flexible tongue disposed within said frame mem-

ber and having a pair of substantially straight, parallel longitudinal sides spaced from the longitudinal sides of said frame member, a flexible bar connecting one end of said tongue to one end of said frame member, the other end of said tongue and the other end of said frame member being bent in opposite directions to form an insert opening for said object, said bar being of a smaller width than that of said tongue to define with the longitudinal



sides of said frame member a pair of openings symmetrically arranged lengthwise to said bar, said bar and said frame member being provided with half-transversal notches aligned one with respect to the other and having alternatively opposed openings to define at least one line-retaining opening extending transversely to said frame member.

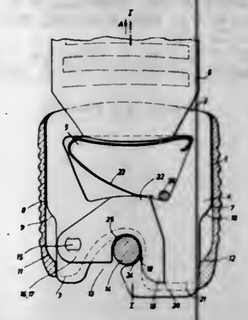
3,348,273
3-WAY AUTOMOBILE TIE-DOWN HOOK
Clarence Norman Hall, 8 Rothsay Ave., Toronto, Ontario, Canada
Filed Mar. 29, 1966, Ser. No. 538,254
5 Claims. (Cl. 24—230.5)



1. A combination hook comprising a central body portion and two projecting arm members formed integral therewith, one of said projecting arm members being tapered and curving at its outermost end, and the outer end of the second of said projecting arm members being integrally formed as a cross-bar axially oriented normal to the axis of said second arm member, and flattened surfaces provided on the central body portion adjacent each of the projecting arm members, and an aperture formed in the central body portion to receive a chain link or clevis.

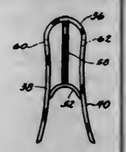
3,348,274
FASTENING BUCKLE FOR SAFETY BELTS OR THE LIKE
Per Olaf Weman, Hamburg, Germany, assignor to Sigmatex A.G., Basel, Switzerland
Filed June 6, 1966, Ser. No. 555,571
Claims priority, application Germany, Oct. 30, 1965, S 100,293
7 Claims. (Cl. 24—233)

1. A fastening buckle for connecting safety belts and the like to brackets, comprising a buckle plate having a hook-shaped recess at one end to receive a bracket and a belt attaching means at the opposite end; a locking-hook means pivotably mounted on said plate to lock a bracket in said recess; a housing mounted around said locking hook means on said plate and movable relative to the two fixed ends of said plate; said housing having a sup-



porting rim in contact with a free end of said locking-hook means; and a spring means to hold the free end continually in contact with said rim.

3,348,275
UTILITY FASTENER
Paul A. Lawrence, 1660 Beaver, Des Moines, Iowa
Filed Dec. 13, 1965, Ser. No. 513,170
6 Claims. (Cl. 24—255)

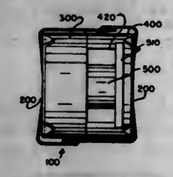


1. A utility fastener, comprising, a length of plastic material bent upon itself to form a bight portion and a pair of leg portions, said plastic material being flat on the inner surfaces of said leg portions along lines extending transversely of the longitudinal axis of said clip, said bight portion being arcuate in shape with said leg portions having opposing convex inner surfaces along their length, and a semicylindrical in shape slide element being disposed in said bight and means for moving said slide element longitudinally of said leg portions for spreading said leg portions apart, said slide element is formed of sheet material of substantially uniform thickness and matingly engages the inside surface of said bight portion when in a retracted position, and has a concave forward surface, said slide element having longitudinal forward side edges being tapered towards the adjacent leg portions for engagement with said legs when being moved between extended and retracted positions.

3,348,276
CORE CUP RETAINING DEVICE
Sigitas Miknaitis, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 492,241
8 Claims. (Cl. 24—263)

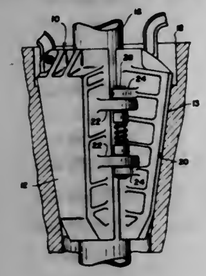
1. Apparatus for fixedly retaining a plurality of cup-core sections in abutting relationship, said apparatus including a pair of identical resilient retaining elements, each said element comprising a deformable base, first and second legs extending from said base, said bases and said legs forming a cavity for said cup-core sections, each of said first legs including a female portion having an aperture therein and a pair of generally parallel portions joined by said female portion, and each of said second

legs including a male portion for insertion into the aperture of a co-operating female portion of the other retaining element of said pair, and a lip on said male portion directed against the direction of insertion into the co-



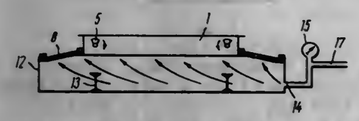
operating female portion to engage the edge of the aperture therein and secure said elements in locking engagement with said bases deformed to urge said cup-core sections together.

3,348,277
PIPE SLIP ASSEMBLY AND METHOD FOR TESTING
Charles D. Crickmer, Houston, Tex., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 5, 1966, Ser. No. 547,953
11 Claims. (Cl. 24—263)



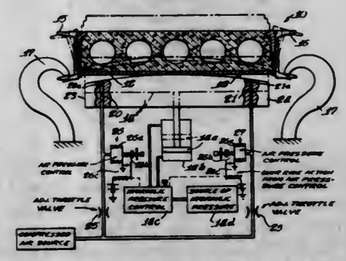
1. In a pipe slip assembly having a plurality of slip members with at least one hinge lug on each of said slip members, said hinge lugs having bores therein respectively, pairs of said bores being axially aligned when pairs of said hinge lugs are mated by positioning said slip members to form such a slip assembly, the improvement comprising: a normally rigid hinge pin extending through said aligned bores of a mated pair of said lugs, said hinge pin being readily and measurably deformable under load occurring when aligned bores are forced into misalignment exceeding a predetermined amount.

3,348,278
AIR SUSPENDED VIBRATIONAL MOLD
Ivan Pavlovich Jankovsky, ulitsa Karla Marxa 25, apt. 5; Grigory Ignatjevich Kholodinsky, 2nd Kokhovsky pereulok, 8, apt. 16; and Viktor Mitrofanovich Skljadnov, ulitsa Jamnaja 3, apt. 18, all of Minsk, U.S.S.R.
Filed Jan. 6, 1965, Ser. No. 423,795
13 Claims. (Cl. 25—41)



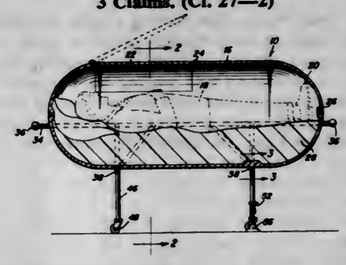
1. An apparatus for compacting materials by vibration comprising: a vibratory platform; a base constituted by a closed chest with a perforated upper wall underlying said platform; means for supplying compressed air via said chest between said perforated upper wall of said chest and said platform to lift the platform during vibration; and an elastic screen attached to the lower part of said platform to retain a cushion of air between said platform and the perforated upper wall of said chest.

3,348,279
STRIPPING SYSTEM FOR CONCRETE SLAB CASTING FORM
Theodore W. Shoe, Troy, Ohio, assignor to The Flexicore Co., Inc., Dayton, Ohio, a corporation of New York
Filed Oct. 21, 1965, Ser. No. 500,114
7 Claims. (Cl. 25—120)



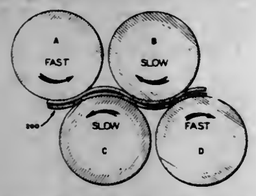
1. In a system for stripping casting forms having normally flat bottoms, said system having contour plate means to define a curved surface over which a casting form bottom is arched to conform to said curved surface and power means are provided for arching the casting form bottom, the improvement comprising air duct means having a free air discharge end lying generally in the curved surface defined by the contour plate means, means including a connection between said air duct means and a source of compressed air and normally providing substantial air flow resistance to said air duct means, said free duct end being adapted to be substantially closed as the bottom of said casting form approaches the desired arch stripping shape and means responsive to the rise in air pressure incident to the substantial blockage of air discharge from the normally free duct end for controlling the power means for arching the casting form bottom.

3,348,280
UPRIGHT BURIAL CASKET, VAULT AND CARRIER
Morgon J. Myers, 750 Reynolds St., Taft, Tex. 78390
Filed Oct. 1, 1964, Ser. No. 400,730
3 Claims. (Cl. 27—2)



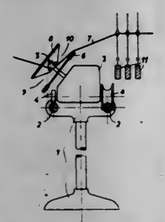
1. A carrier for caskets comprising a pair of side rails, a pair of transversely extending arcuate saddles interconnecting the side rails, a plurality of depending legs rigidly attached to the saddles, wheels on the lower ends of the legs for enabling the carrier to rollingly engage a supporting surface, means on one of said saddles for locking engagement with a casket for securing the casket in place, said side rails having inturned end portions to form handles for controlling movement thereof when rollingly engaging a surface.

3,348,281
FUR FELTING MACHINE
Morton H. Baker, deceased, late of Sandy Hook, Conn., by Dorothea S. Baker, administratrix, Sandy Hook, Conn., and Frederick Ritchie Marindin, Woodbury, Conn., assignors to Doran Brothers, Inc., Danbury, Conn., a corporation of Connecticut
Filed May 7, 1964, Ser. No. 365,839
26 Claims. (Cl. 28—5)



1. In a machine for shrinking hat bats, in combination, an upper row of rolls, a lower row of rolls forming a surface complementary to the surface formed by said upper row of rolls, means for driving at least one of said rows of rolls, whereby a bat fed between said rows of rolls will be fed through to the other end, said last mentioned means driving alternate rolls in said driven row of rolls at different rates of speed.

3,348,282
DEVICE FOR DRAWING WARP THREADS INTO REEDS
August Baumgartner and Walter Gegenschatz, Uster, Switzerland, assignors to Zellweger, Ltd., Uster, Switzerland
Filed Jan. 14, 1966, Ser. No. 520,619
Claims priority, application Switzerland, Jan. 14, 1965, 625/65
8 Claims. (Cl. 28—44)



1. In a weaving machine having a reed and heddles, a device for drawing warp threads into said reed comprising a drawing-in attachment including a reeding hook and means for reciprocating said reeding hook in response to indexing movement of said attachment, support means for supporting said drawing-in attachment adjacent said reed between said reed and said heddles for movement parallel to said reed with reeding hook extending during a portion of its stroke through a dent in said reed, the improvement essentially consisting of guide means supported on said drawing-in attachment forming at least one inlet opening for the warp threads facing one of the upper and lower baulks of the reed for guiding said warp threads individually onto said reeding hook.

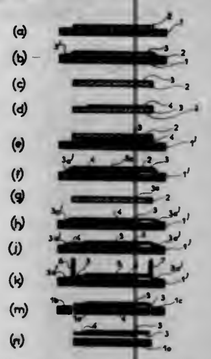
3,348,283
METHOD FOR CRIMPING TEXTILE STRANDS
Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 4, 1964, Ser. No. 349,338
2 Claims. (Cl. 28—72)

1. In treatment of an at least partially thermoplastic textile strand to crimp it, the improvement comprising preheating the strand to a temperature at which it is adapted to be stuffer-crimped, stuffing it into a confining



zone through which its passage is impeded temporarily to crimp it, and maintaining it under essentially adiabatic conditions throughout substantially that entire zone.

3,348,284
METHOD FOR MANUFACTURING METAL COATED BANDS
Georges Gallet, La Celle-Saint-Cloud, and Claude Guenel, Pantin, France, assignors to Compagnie General d'Electricite, Paris, France
Filed Mar. 23, 1965, Ser. No. 442,101
18 Claims. (Cl. 29—25.42)

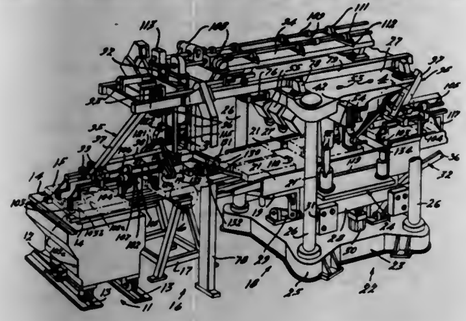


1. Method of manufacturing an ultra-thin insulating band coated by at least one metallic layer, comprising:
coating a first insulating band on one side thereof with a first lacquer layer and depositing a first metallic layer on the free face of said first lacquer layer,
applying the obtained band metal face down upon a second insulating band made of a material having high adherence characteristics with said lacquer,
securing the lateral edges of said first lacquer layer to the lateral edges of said second band, the metallic layer being in contact with the second band, by attaching means having an attachment strength higher than the adherence of said first lacquer layer to said first insulating band and disposed along said lateral edges,
removing said first insulating band, said first lacquer layer remaining attached to said second band owing to the relatively weak adherence of the lacquer to the first band, and
removing the second band by eliminating said attachment.

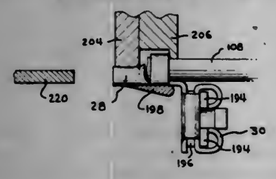
3,348,285
PRODUCTION LINE
Harry E. Day, Birmingham, Mich., assignor to Delta Associated Industries Corp., a corporation of Michigan
Filed Nov. 6, 1964, Ser. No. 409,441
17 Claims. (Cl. 29—33)

1. In a production line having at least one work station with vertically spaced and relatively movable tool and workpiece supports, an overhead transfer mechanism mounted above the line, means for repeatedly advancing and retracting said transfer mechanism along the path of the movement of the workpieces, downwardly extending

portions on said transfer mechanism disposed forwardly and rearwardly of said station and having elements engageable with said workpieces to move them along the production line, means for moving said elements between upper retracted positions and lower operative positions in which the elements engage the workpieces, means for advancing said transfer mechanism while said elements are in their operative positions, means for retracting said transfer mechanism while said elements are in their retracted positions, at least one fixture for said station, and a track at the upper portion of said station and extending transversely thereto, said fixture being mounted on said track for movement into and out of said station.

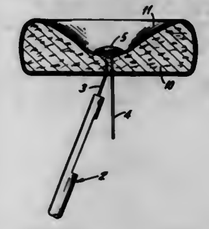


3,348,286
CRIMPING AND FORMING MACHINE
Willard Le Roy Busler, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 12, 1966, Ser. No. 549,585
8 Claims. (Cl. 29—33)



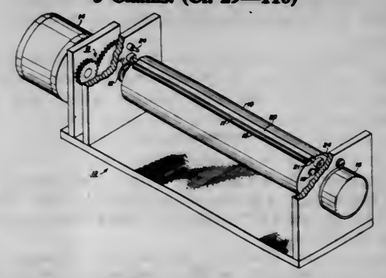
1. Apparatus for securing an electrical connector to a wire conductor and for subsequently forming said connector comprising means for intermittently feeding said connectors in strip form to a crimping station whereby the lead end connector is positioned above a crimping mandrel, means for positioning a wire conductor above said lead end connector in a position to be secured thereto, a press ram mounted for reciprocating moyement, means responsive to movement of said ram for severing said lead end connector from said strip, means responsive to movement of said severing means for clamping the said lead end connector to said crimping mandrel, a crimping head secured to said press ram and cooperating with said crimping mandrel to secure said wire conductor to said lead end connector, said crimping head being operatively to contact said lead end connector subsequent to the clamping thereof, transfer means operative to engage said lead end connector subsequent to the clamping thereof, transfer means operative to engage said lead end connector subsequent to the crimping thereof and to move said connector from said crimping mandrel to a forming mandrel, hold-down means operative to engage said connector and clamp the said connector to said forming mandrel, means for effecting rotation of said transfer means to cause said connector to be formed around said forming mandrel, means to effect further movement of said transfer means to move said transfer means out of contact with said connector, means to move said hold-down means out of contact with said connector subsequent to withdrawal of said transfer means, and means to eject said connector from said forming mandrel.

3,348,287
UPHOLSTERING METHOD
John B. Orlando, Bronx, N.Y., assignor to Defiance Button Machine Company, New York, N.Y.
Filed Oct. 15, 1965, Ser. No. 496,453
4 Claims. (Cl. 29—91.1)



1. A method of inserting a fastener through materials to be fastened and clinching the fastener, the fastener comprising a head portion and at least two prongs dependent from the head portion, which method comprises the steps of temporarily assembling the fastener in a pointed cylindrical needle by placing a first prong in a prong holding means at the tail of the needle, the said means constituting an axial hollow portion of the needle tail defined in part by a wall lying in a chord of the cylinder, placing a second prong outside of said prong holding means and within the projected cross-sectional area of the inserter, forcing the assembled inserter and fastener through the material to be fastened, and moving the inserter so as to bend the prongs apart to clinch the fastener.

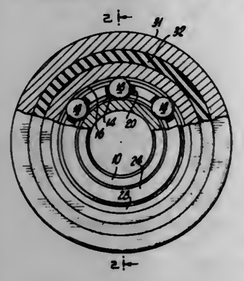
3,348,288
DRUM CLAMP
Armand R. Tanguay, Pasadena, and George T. Shimabukuro, Monterey Park, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,223
3 Claims. (Cl. 29—118)



1. Sheet to drum clamping means comprising:
(a) a drum journaled for rotation about an axis in a frame;
(b) a first longitudinal slot in the drum;
(c) a clamp bar supported within said drum normally biased to lie within said first slot and having a plurality of ramp portions thereon;
(d) an axially extending cam supported for movement within said drum and having ramp portions operatively connected to said clamp bar ramp portions to move said bar outward from said slot to receive a first edge of a sheet of flexible material and to

move said bar inward into said slot to secure said first edge to said drum;
(e) a second longitudinal slot in the surface of said drum adjacent to said first slot; and
(f) a wiper bar normally biased to lie within said second slot and removable therefrom supported externally of said drum to provide a windup tension to the sheet and to secure a second edge of said sheet in said second slot.

3,348,289
METHOD OF MAKING A BEARING MOUNT ASSEMBLY
Donald R. Marsh, Westfield, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Aug. 9, 1965, Ser. No. 478,091
2 Claims. (Cl. 29—148.4)

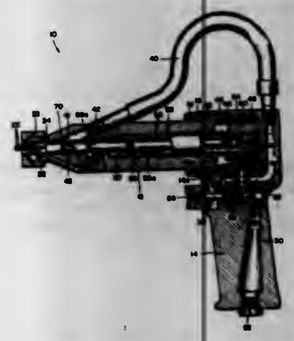


1. The method of making a bearing mount assembly comprising
providing an outer cylindrical member for supporting a bearing outer ring,
machining an outer cylindrical surface of said outer member to provide an accurate mounting surface for a subsequent grinding operation,
positioning a bearing ring generally concentrically within said member,
providing a resilient material in the annular space between said member and said ring, said resilient material having a hardness rating selected to cause damping of noises due to operation of the bearing,
mounting the resulting assembly for grinding by utilizing said accurate mounting surface to position the same,
and grinding a bearing race on the inner surface of said bearing ring to provide for precise concentric mounting of a rotatable member within said bearing ring.

3,348,290
METHOD OF FABRICATING A HEAT EXCHANGER FROM A SINGLE CAST INGOT BY ROLLING HEAT TREATING AND BONDING
Irwin Broverman, Cheshire, and George Jagaciak, Milford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Original application Oct. 23, 1963, Ser. No. 318,158. Divided and this application July 15, 1966, Ser. No. 574,853
1 Claim. (Cl. 29—157.3)

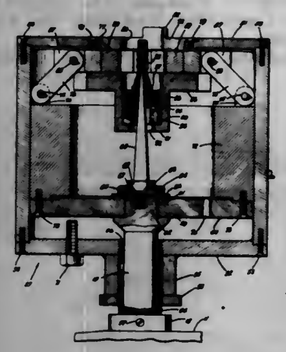
A process for fabricating sheet metal panel comprising the steps of:
(A) casting a molten mass of aluminum having from 0.15% to 0.45% chromium therein into an ingot at a temperature in excess of 1300° F.,
(B) precipitating said chromium into a uniform dispersion of microscopically sized particles of chromium aluminide in said ingot,
(C) and rolling said ingot to at least two sheets,
(D) forming a blank by positioning two of said sheets adjacent one another, one of said sheets having applied to a confronting surface thereof a pattern of weld inhibiting material,
(E) heating said blank to a temperature within the range of 800° to 1,000° F.,
(F) pressure welding said sheets together in the area not covered by said weld inhibiting material,
(G) cooling and cold working said blank to develop a high strength level in said sheets,
(H) partially annealing said blank in the temperature range of 550° to 600° F. for a period of about 10 to 60 minutes,
(I) and inflating the blank in the unwelded areas by the application of fluid pressure therein.

3,348,291
FLUID OPERATED STUD DRIVER TOOL
Joseph F. Niedzwiecki, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed July 26, 1965, Ser. No. 474,832
7 Claims. (Cl. 29—212)



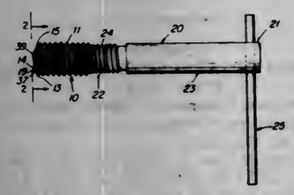
1. A fluid operated tool for inserting studs into an opening in a rubber tire or the like, comprising:
housing means including a piston chamber spaced from one end thereof and having a bore extending longitudinally from said piston chamber to said one end of said housing means;
fluid actuated piston means disposed within said piston chamber for reciprocatory movement therein;
means for reciprocating said piston means within said piston chamber;
rod means carried by said piston means for reciprocatory movement therewith and extending into said bore in said housing means towards said one end thereof;
means communicating with said bore in said housing means for supplying studs individually thereto adjacent said one end of said housing means; and
a plurality of fingers projecting from said one end of said housing means normally cooperating to close said bore in said housing means and movable to expand said opening in said rubber tire;
said means for supplying studs comprising passage means communicating with said bore in said housing means for conveying studs thereto;
locking means extending through said bore in said housing means and projecting into said passage means to prevent passage of studs to said bore; and
actuating means carried by said rod means for moving said locking means from said passage means sufficiently to permit passage of studs therethrough.

3,348,292
APPARATUS FOR MOUNTING HOSE COUPLINGS
George L. Turner, Hickory Corners, and Carl H. Harris, Battle Creek, Mich., assignors to H. B. Sherman Manufacturing Company, Battle Creek, Mich., a corporation of Michigan
Filed Feb. 7, 1964, Ser. No. 343,317
4 Claims. (Cl. 29—237)



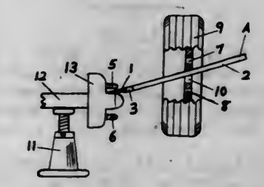
4. A machine for mounting a hose coupling half having inner and outer gripping portions on the end of an appropriate diameter piece of hose, which includes in combination a socket including means for fixed position receiving and holding the end of a piece of hose carrying an unanchored coupling half ready for anchoring, a crimping means fitting over the outer hose gripping portion of said coupling half, an expanding means fitting into the inner hose gripping portion of said coupling half, toggle action means for actuating both said crimping means and said means actuating said expanding means, power supply means, and means operably connecting said power supply means to both said crimping means and said expanding means for actuating same to anchor said coupling half on said hose end while both said hose and coupling half remain stationary, wherein said means actuating said crimping means includes a linkage converting lengthwise movement to crosswise movement while progressively increasing the crimping leverage as maximum crimping position is approached.

3,348,293
WIRE COIL INSTALLING TOOL
David W. Newton, Bethel, and William D. Downing, Newtown, Conn., assignors to Heli-Coil Corporation, Danbury, Conn., a corporation of Delaware
Filed May 12, 1966, Ser. No. 549,556
5 Claims. (Cl. 29—240.5)



1. A tool for inserting a wire coil insert having outer and inner screw thread forming portions of certain pitch and internal pitch diameter, and a diametrical tang extending at its root from the terminal end of the last convolution of said coil insert at the leading end of the latter, comprising:
(a) an elongated tool body having a driving portion, a generally cylindrical insert supporting head end portion, and an intervening shank portion connecting said insert supporting portion to said driving portion for transfer of torque from the latter to the insert supporting portion about the longitudinal axis of the latter,
(b) means mounted to said driving portion to apply torque thereto,
(c) an exterior male screw thread carried by said insert supporting portion of a pitch substantially equal to that of the insert and of a pitch diameter appreciably less than the internal pitch diameter of the insert to permit contraction of the turns of the latter during torque installation thereof by said tool in an internally threaded hole of a workpiece,
(d) at least the leading end of said threaded insert supporting portion being provided with a longitudinal hole to define an externally threaded tubular flange terminating in a circular edge,
(e) said circular edge being spirally arranged along an appreciable extent of the crest of the last convolution of the thread of said flange to ride beneath the tang root when said insert is screwed onto said threaded insert supporting portion, and
(f) a longitudinally-extending abutment shoulder for engagement by the tang root to apply installation torque to the insert when supported on said head end portion, and defined by an axially longitudinal step in said flange circular edge.

3,348,294
WHEEL MOUNTER
Daniel A. Gerardi, 157 Grove St., Stamford, Conn. 06902
Filed June 20, 1966, Ser. No. 559,638
2 Claims. (Cl. 29—273)

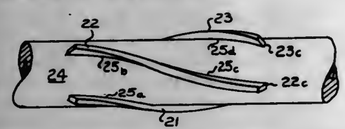


1. A wheel mounting tool comprising an elongated lever having first and second ends, said first end defining a handle for insertion through the hub opening of a wheel for elevating and slidably mounting said wheel, said second end defining a flat surface engageable with a wheel hub and serving as a pivot for said lever, and a sleeve rotatably mounted on and substantially the same size and configuration as the lever, said sleeve being positioned adjacent said flat surface and defining means for rotating said wheel to align the wheel stud openings with the hub studs.

3,348,295
PROCESS FOR FIELD RECONSTRUCTION OF WELL DRILLING STABILIZERS
Sam L. Bass, Jr., 183 Eckhart Drive, New Iberia, La. 70560
Filed Oct. 21, 1965, Ser. No. 499,554
2 Claims. (Cl. 29—401)

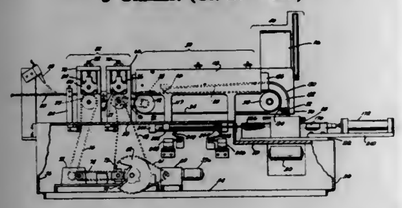
1. A process for field reconstruction of well drilling stabilizers, comprising

removing worn blades from a stabilizer, welding replacements on the stabilizer,



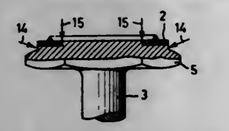
heating said welded assembly to a temperature at the locus of the blades of from about 700° F. to 1000° F. and slowly cooling to ambient temperature.

3,348,296
METHOD FOR MAKING STEEL WOOL SOAP PAD
Carl J. Demrick, 6375 Golfview, Birmingham, Mich. 48010
Filed June 14, 1965, Ser. No. 463,736
3 Claims. (Cl. 29—419)



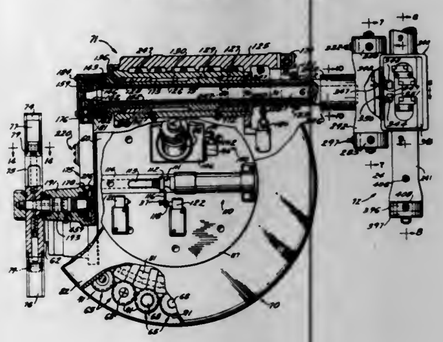
1. In the method of making a pad of fibrous material such as steel wool or the like the steps of separating a ribbon of said material into strips, forming each strip into a roll coiled about a longitudinal axis and having a generally rectangular, longitudinal cross section, forming each roll in a direction along said axis into an intermediate pad having a generally circular, longitudinal cross section, and then pressing said intermediate pad in a direction transverse to said circular cross section to form a finished pad.

3,348,297
METHOD OF MANUFACTURING A MOUNT FOR A SEMI-CONDUCTOR DEVICE
Henricus Emanuel Dijkmeijer, Mollenhutseweg, Nijmegen, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 3, 1965, Ser. No. 460,982
Claims priority, application Netherlands, June 20, 1964, 64—7,071
2 Claims. (Cl. 29—480)



1. A method of producing a mount for an envelope of a semi-conductor device, comprising the steps of soldering a metal welding ring to one of two sides of a metal blank having at least one rim of a diameter equal to that of one of the edges of the welding ring, disposing the blank with the welding ring in a molding press having a chamber bearing laterally on at least two corresponding rims over a height equal to the local thickness of the welding ring plus at least 0.1 mm., annealing the material of the blank while in the press so that its hardness increases and a stem is formed on the other side of the blank, and applying a pressure in a given direction to form the blank into the mount, the soldering joint remaining in a state of rest underneath the said supported edge of the welding ring over a height of at least 0.1 mm. and at least part of the material underneath the welding ring being displaced in a direction transverse to the direction of pressing.

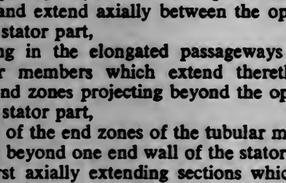
3,348,298
MECHANICAL TOOL CHANGER FOR A MACHINE TOOL
Robert K. Sedgwick, Waukesha, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Aug. 10, 1961, Ser. No. 130,631
2 Claims. (Cl. 29—568)



2. In a machine tool having an operating station that receives tools for performing work operations;
a frame;
tool storage means mounted on said frame and removably carrying a plurality of tools for use in the operating station;
a carrier mounted on said frame for pivotal movement;
a tool change arm rotatably supported by said carrier for rotation about an axis that is parallel to the pivotal axis of said carrier, said tool change arm being shifted by the pivotal movement of said carrier between a parked position and an operating position with the rotary movement of said tool change arm while in the operating position serving to transfer tools between the operating station and said storage means to effect a tool change at the operating station;
a source of power;
a first shaft connected to be rotated by said source of power;
a second shaft connected for rotation with said tool change arm; and,
a drive chain drivingly interconnecting said first and second shafts to transmit the power from said first shaft to said second shaft for rotating said tool change arm in a tool change operation.

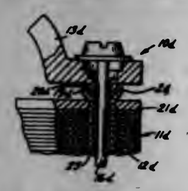
3,348,299
METHOD OF APPLYING ELECTRICAL CONTACTS
Robert C. Knutson, Rosemount, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Original application Sept. 3, 1963, Ser. No. 306,378, now Patent No. 3,237,138, dated Feb. 22, 1966. Divided and this application Sept. 14, 1965, Ser. No. 487,185
5 Claims. (Cl. 29—578)

1. The method of making electrical contacts on the surface of a member made of a semi-conductor material, comprising the steps of:
providing a roughened portion and a smooth portion on the surface of said semi-conductor material member,
depositing a suitable material on said roughened portion and on a strip shaped part of said smooth portion contiguous to and adjacent said roughened portion, the said deposited material comprising an integral layer having a strong bond with the roughened portion and a weak bond with the smooth portion, and



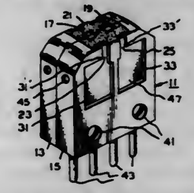
lifting the strip-shaped material from said smooth surface portion in the areas adjacent said roughened portion.

3,348,300
METHOD OF MANUFACTURING ELECTRIC MOTORS
Nils Kauri Lindgren, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Original application Jan. 19, 1961, Ser. No. 83,814, now Patent No. 3,200,275, dated Aug. 10, 1965. Divided and this application Sept. 16, 1964, Ser. No. 396,916
Claims priority, application Sweden, Jan. 20, 1960, 541/60
4 Claims. (Cl. 29—596)



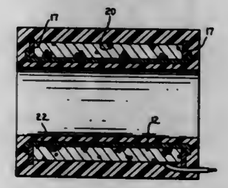
1. The method of making a stationary unit of an electric motor including a stack of metal plates forming a stator part having elongated passageways extending therethrough and elongated tubular members which extend through the passageways and include end portions which project beyond the opposing ends of the stator part and are formed to function as rivets to hold the stack of metal plates together and a metallic bearing support part at each end of the stator part for rotatably mounting a rotor shaft, said method comprising the steps of:
stacking the metal plates to form the stator part,
drilling the metal plates to form the plurality of elongated passageways which are spaced from one another and extend axially between the opposing ends of the stator part,
positioning in the elongated passageways the hollow tubular members which extend therethrough and have end zones projecting beyond the opposing ends of the stator part,
the walls of the end zones of the tubular members projecting beyond one end wall of the stator part having (a) first axially extending sections which flare outward from the immediate vicinity of the one end wall of the stator part to a first region axially removed from the one end wall of the stator part and also having (b) second sections which extend axially of the stator part from the first region to the extreme ends of the tubular members and define recesses,
positioning one of the metallic bearing support parts at the one end of the stator part with one surface thereof overlying the recesses formed in the second axially extending sections of the end zones of the tubular members and in abutting relation therewith, and
while the one bearing support part and the recesses in the second axially extending sections are in said abutting relation at the one end of the stator part, deforming the one bearing support part at the vicinities of the recesses to flow metal of the bearing support part axially of the stationary unit of the electric motor to form projections which are integral with the one bearing support part and extend into the recesses into interlocking relation with the hollow tubular members.

3,348,301
PROCESS FOR MANUFACTURE OF MAGNETIC RECORD-PLAYBACK HEADS
Paul H. Schulte, D–9 Gardenia, San Francisco Urb., Rio Piedras, Puerto Rico 00927
Filed Nov. 1, 1963, Ser. No. 320,705
4 Claims. (Cl. 29—603)



1. A method of manufacture of housings for magnetic record-playback heads comprising the steps of: forming a blank of high permeable magnetic material into similar peripherally flanged semi-enclosures; embossing opposite corresponding peripheral portions of the semi-enclosures outwardly; lancing material from the enclosures at corresponding positions without severing the same from the embossed portions; forming the lanced material to depend from said surfaces at angles approximating 45° and with off-set right angle portions on the ends thereof lanced from the semi-housings; and severing the blank into similar semi-enclosures for association.

3,348,302
METHOD OF MAKING AN ENCAPSULATED COIL BOBBIN
James A. Foerster, Fort Wayne, Ind., assignor to Wabash Magnetics, Inc., Wabash, Ind., a corporation of Indiana
Filed Mar. 21, 1966, Ser. No. 535,982
1 Claim. (Cl. 29—605)



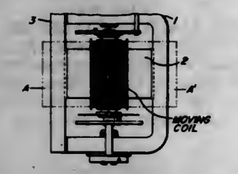
A process of making encapsulating coils which comprises winding a flat length of a non-porous aromatic polyamide into a multiple layered tubular shape, bonding together layers of said tubular shape by placing epoxy resins between the layers and heating to a temperature of about 200 to 500° F., cutting the shape transversely of the axis at a plurality of points to form a plurality of tubular shapes, positioning a disc made up of a plurality of non-porous aromatic polyamide sheets laminated together in a

manner such that the grain of the laminated sheets are positioned at 90° to each other at the ends of each tube, flaring out the ends of said tubular shape into engagement with the discs at the respective ends, bonding the disc to the tube with epoxy resin between the tube and the disc, thereby forming a bobbin, winding a coil wire about said bobbin and encapsulating the wound bobbin.

3,348,303
METHOD OF MOUNTING A CENTER MAGNET WITHIN A CYLINDRICAL METALLIC YOKE

Satsuro Umeda, 1215 Yoyogi Uehara-machi, Shibuya-ku, Tokyo, Japan

Filed Feb. 25, 1963, Ser. No. 260,419
6 Claims. (Cl. 29—606)

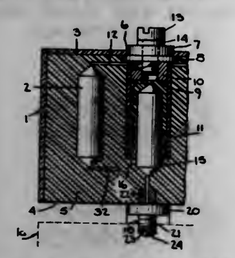


1. In a method of mounting a centrally disposed center magnet mounted in a frame in which a moving coil is rotatably mounted within a substantially cylindrical metallic yoke by inserting said frame into said yoke, the improvement comprising the steps of exerting a predetermined amount of pressure on said yoke in a direction perpendicular to the axis of said yoke to cause said yoke to be deformed into an oval, maintaining said deformed condition for a predetermined interval, inserting a frame having a length greater than the normal inside diameter of said yoke into said yoke with the frame extending in the direction of the longer diameter of the oval yoke, and releasing said pressure to tighten said frame within said yoke by means of the force inherent in the metallic material of said yoke within the limit of its elasticity.

3,348,304
METHOD OF MAKING ENCAPSULATED RESISTORS OF HIGH PRECISION

Luigi Tassara, Milan, Italy, assignor to Consolidated Electronics Industries Corp., New York, N.Y., a corporation of Delaware

Original application Mar. 28, 1961, Ser. No. 98,861, now Patent No. 3,213,402. Divided and this application Dec. 9, 1964, Ser. No. 429,693
4 Claims. (Cl. 29—610)

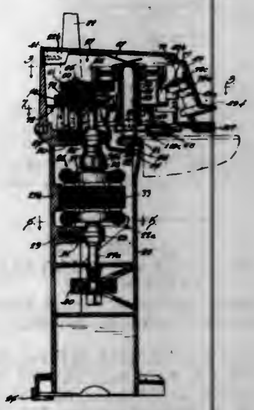


1. The method of making a precision composite resistor comprising the steps of: connecting a plurality of individual resistors into a two-terminal network; placing said network inside a container having an interior wall separating one portion thereof from the remainder, said network being located in said remainder of said container; partially filling said remainder with encapsulating material; measuring the resistance of said network; connecting a compensating resistor thereto to adjust the overall resistance to a desired value; placing said compensating resistor within said one portion; and subsequently filling said container and said one portion with encapsulating material.

3,348,305
CAN OPENER

Sigmund H. Bielak, Downers Grove, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed Jan. 10, 1966, Ser. No. 519,616
20 Claims. (Cl. 30—4)

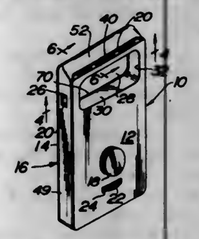


6. In a can opener of the type including can cutting and can rotating means which are relatively movable between a can loading position wherein said cutting and rotating means are spaced apart to receive the end seam of a can therebetween and a can cutting position wherein said end seam is gripped between said cutting and rotating means, the combination comprising a frame supporting a can rotating wheel for rotation about a first axis, drive means for rotating said wheel, a can cutter movably mounted on said frame, an operating handle connected to said cutter to move said cutter horizontally toward said can rotating wheel, and means connecting said operating handle to said wheel to move said wheel axially toward said cutter at the same time said cutter is moved toward said can rotating wheel.

3,348,306
RIBBON-BLADE RAZOR HAVING ADJUSTMENT MEANS FOR THE BLADE

Robert B. Hammons, Clearwater, Fla., assignor, by mesne assignments, to Minnesota-Ohio Oil Corp., a corporation of Minnesota

Filed Mar. 30, 1966, Ser. No. 538,646
4 Claims. (Cl. 30—40.1)



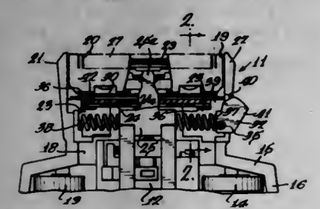
1. A cutting device comprising a combination blade holder and handle in the form of a flat hollow housing having face and back portions and an opening therethrough adjacent one end thereof defining the underside of a marginally slotted comb member and the sidewalls

of said housing on which said comb member is supported, a flat blade-guide surface on the outside of said comb member adjacent the slotted area thereof, means to hold a coil of blade within said housing, means to guide said blade lengthwise over said flat surface of said comb member with the cutting edge of the blade overhanging said slotted area, means within said housing to receive used blade from said guide means, a bridge member extending lengthwise across said flat blade-guide surface, a movable yoke member having arms encompassing the side walls of said housing and extending from end to end of the housing, said bridge member being attached at its ends to said arms and said yoke member having a base member connecting said arms and extending across the end of said housing opposite said comb member, said yoke member being slidable on the side walls of said housing to move said bridge member toward and away from said flat blade-guide surface, and means acting between said yoke base member and said housing for urging said bridge member in the direction toward said flat blade-guide surface.

3,348,307
SHAVER HEAD RELEASE

William P. Beck, Westchester, and Daniel C. Stahly, Villa Park, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed Jan. 26, 1967, Ser. No. 611,952
5 Claims. (Cl. 30—43.92)



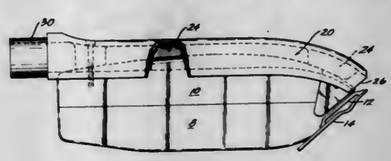
1. In a dry shaver of the type having a motor enclosed in a housing, resilient means associated with said motor to deliver power to an oscillating system, a shaver head detachably secured to said housing within a recess in the walls of said housing, a head ejection mechanism comprising a head ejection lever pivotally mounted on said housing, a spring seat formed on said lever, a coil spring forming part of said resilient means and having one end thereof seated on said spring seat, manually actuable means on said lever accessible from the exterior of said housing to pivot said lever against the force exerted by said spring, latch means for retaining said shaving head in said recess, head ejection portion on said lever engageable with said shaving head on rotation of said lever to urge said head upwardly out of engagement with said latch means.

3,348,308
VACUUM CLEANER ATTACHMENT FOR A HAIR CLIPPER

Matthew G. Andis, Racine, Wis., assignor to Andis Clipper Co., Racine, Wis., a corporation of Wisconsin

Filed Sept. 27, 1965, Ser. No. 490,338
2 Claims. (Cl. 30—133)

1. The combination with a hair clipper having coacting blades and a supporting casing which constitutes a handle upon which the blades are mounted and by which they are guided and which comprises separable parts held together by screw threaded connectors, of a vacuum nozzle extending across the top of the handle and having an open mouth proximate the blades and having its rear end provided with a vacuum connection, said vacuum nozzle being attached to the casing by the same screws which connect the component parts of the casing to each other the vacuum nozzle having the form of an inverted channel having a lower margin with a peripheral shoulder and depending flange complementary to the top of the



casing and closely fitted thereto, said shoulder and flange providing a sealed connection between the casing and nozzle, the nozzle coacting with the casing as a part of the handle by which the clipper is manipulated in use.

3,348,309
PRUNING IMPLEMENT

Jesse J. Jones, R.R. 1, Box 110, La Grange, N.C. 28551

Filed Jan. 25, 1966, Ser. No. 522,944
9 Claims. (Cl. 30—166)



1. A pruning implement comprising an elongated cylindrical support having a pair of opposed ends, an elongated blade having a pair of opposed ends and a pair of longitudinally-extending spaced-apart edges, said blade being arcuate in cross-section and having an end thereof fixedly-secured to one end of said support and with one of said edges comprising a cutting edge, an elongated substantially hollow cylindrical sleeve having a pair of opposed open ends, said sleeve having one end thereof telescoped over said one end of said support and normally positioned adjacent said other end of said support, said sleeve having its other end normally sheathing said blade, said support having a longitudinal axis greater than the longitudinal axis of said sleeve and being reciprocable and rotatable within and relative to said sleeve, and the other end of said sleeve having opposed transversely-extending slots formed therein to receive the limb to be pruned therethrough.

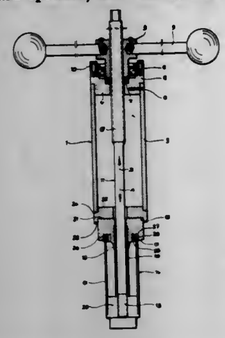
3,348,310
CUTTING TOOL FOR REPAIRING ARTICLES

Georg Gottauf, Munich, Germany, assignor to Stahlgruber Otto Gruber & Co., Munich, Germany, a company of Germany

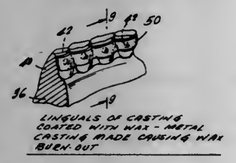
Filed Feb. 9, 1966, Ser. No. 526,240
Claims priority, application Germany, Feb. 26, 1965, St 23,420
9 Claims. (Cl. 30—360)

1. A cutting tool for removing cylindrical pieces from a damaged object comprising a guide tube, a spindle disposed in said guide tube for axial movement therein, an abutment mounted at one end of said guide tube, a cutting tool, means connecting said cutting tool to said spindle for moving said cutting tool in accordance with the movement of said spindle and for thereby moving said cutting tool toward said abutment whereby said abutment may be placed on one side of the damaged object with said spindle inserted through the damaged object and said cutting tool being on the other side of the damaged

object so that said cutting tool cuts through said damaged object when it is moved toward said abutment by the movement of said spindle, and said guide tube being provided with centering means for accurately positioning said guide tube so that said spindle may accurately penetrate the damaged area of the object.



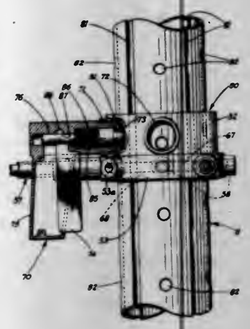
3,348,311
METHOD OF SPLINTING TEETH
Bernard Weissman, 3406 Poplar St., Oceanside, N.Y. 11572
Filed Aug. 6, 1963, Ser. No. 300,199
4 Claims. (Cl. 32—6)



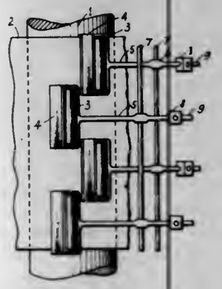
3. The method of forming a dental retaining splint adaptable to be mounted in a mouth having teeth, each of said teeth having a facial surface and a lingual surface, said method comprising forming facial-lingual apertures in a plurality of said teeth which are to be retained, forming a wax-up of a splint having a surface configuration which corresponds to a plurality of said lingual surfaces and having a plurality of internally threaded recesses formed in the surface thereof each located in a position with respect to the other which corresponds to the position in which the facial-lingual apertures are each located with respect to the other, and casting out a splint body from the wax-up.

3,348,312
CORNER GUIDE SYSTEM
John Jones, 60 Tyndall Ave., Apt. 406, Toronto 3, Ontario, Canada
Filed Oct. 24, 1966, Ser. No. 588,929
4 Claims. (Cl. 33—85)

1. In a guide device for construction of a corner of a masonry structure on a base foundation, the combination of: a column having a plurality of spaced-apart openings formed along its length, means for supporting said column in a vertical position adjacent said foundation, a bearing member slidably mounted on said column and having at least one radial aperture formed therein, a sleeve circumscribing said bearing member and having radial apertures therein adapted to be aligned with said bearing aperture, an arm holder ring circumscribing said sleeve, a pair of arms and a vertex pin projecting from said ring within a plane perpendicular to the axis of said column, a guide line associated with said arms and said pin adapted to form a right angle guide for alignment of bricks at said corner, a selector means fixed in said sleeve aperture having a releasable securing element adapted to pass through said bearing aperture and engage said column openings thereby permitting selective vertical adjustment of said bearing and associated sleeve and ring on said column.

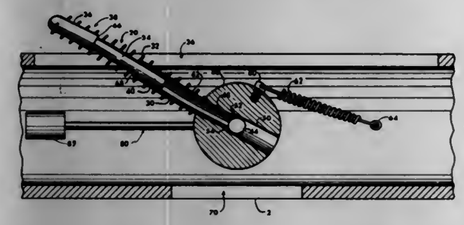


3,348,313
DEVICE FOR DETECTING SURFACE ELEVATIONS IN SHEET MATERIAL
Laszlo Urmenyi, 18 Ernle Road, Wimbledon, London SW. 20, England
Filed Sept. 16, 1964, Ser. No. 397,040
1 Claim. (Cl. 33—148)



Device for detecting wrinkles, lumps and other surface elevations in paper and other sheet material containing at least two feeler members adapted to contact the sheet material across the whole of the inspected width and adapted to ride on a datum surface of a datum member in such a way that the sheet material to be tested can pass between the said feeler members and the said datum surface whereby the distance between the said datum surface and the said feeler members is determined by the thickness of the said sheet material and any surface elevation on the sheet material will temporarily increase such distance, the said feeler members being mounted staggered so that the portions of the sheet material inspected by each individual feeler member are overlapping, each of the said feeler members also comprising part of an electrically reactive circuit element the other part of the said circuit element being the said datum member, the reactance of the said circuit element being a function of the distance between the said feeler member and the said datum member, also comprising a device adapted to give a signal output when the said reactance differs from a predetermined value.

3,348,314
WELL BORE CALIPER
Alexis A. Venghiattis, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed May 27, 1965, Ser. No. 459,153
8 Claims. (Cl. 33—178)



1. In a well logging system including a subsurface logging instrument, improved caliper apparatus comprising

centralizing means for centering said instrument in a borehole,

caliper means for simultaneously and separately deriving the perpendicular distances between the axis of said instrument and a plurality of points on the wall of said borehole, said caliper means including a plurality of caliper arms rotatably mounted in said instrument and extending outwardly into engagement with the wall of said borehole, said arms being rotatable through an angle exceeding 90° with respect to said logging instrument axis whereby said instrument is operable when run either upwardly or downwardly in said borehole, and

electrical means for deriving the average of said distances between said points and said axis of said instrument.

6. A method of determining the cross-sectional area of an uncased borehole in the earth, said method comprising the steps of

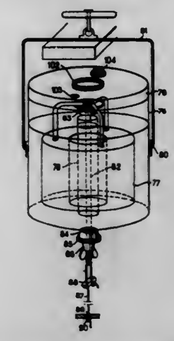
establishing substantially the longitudinal axis of said borehole,

separately and simultaneously deriving a signal proportional to the square of the perpendicular distance between said borehole axis and each of a plurality of location points on said borehole wall, and

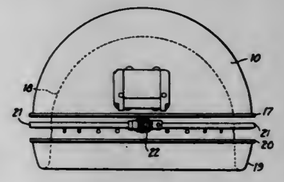
determining the average of said derived signals.

3,348,315
DEVICE FOR THE STABLE DETERMINATION OF THE VERTICAL ABOVE A GIVEN POINT
Marie Pierre Poltevin de Fontguyon, 159 Rue de l'Universite, Paris 7, France
Filed Mar. 3, 1965, Ser. No. 436,833
Claims priority, application France, Mar. 7, 1964, 966,578
5 Claims. (Cl. 33—206)

3. A portable device for the stable determination of the vertical above a given point located outside said device, comprising a line, means for atacching said line to said given point, a vessel having a vertical axis and adapted to contain a liquid, the bottom of said vessel having an axial orifice and being provided with a vertical axial cylindrical conduit open at its two extremities and extending upwardly from said orifice, an annular float adapted to be immersed in the liquid in the vessel and surrounding said conduit, a grapnel fixed to said float and having arms and an axial rod for carrying the line attachment means, said rod passing through the axial cylindrical conduit, a fluid-tight cover on the top of said vessel, a plug carried by the rod and adapted to close the top of the axial cylindrical conduit, and a nut adapted to press against the under side of the device and to draw the axial rod downwardly to pull the plug against the top of the conduit to prevent liquid from entering the conduit during transport of the device.



3,348,316
DRYER HOOD
Carroll R. Reiss, Green Township, Hamilton County, and Arthur W. Forbriger, Silverton, Ohio, assignors to The Realistic Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 20, 1963, Ser. No. 289,302
1 Claim. (Cl. 34—99)

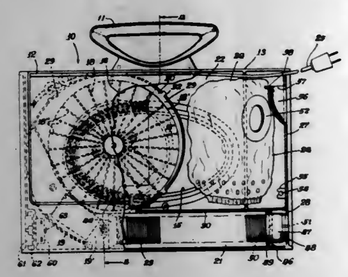


A dryer hood which comprises an outer member of dome shape, a conduit communicating with the interior of the outer member through an opening therein, an inner member including a main portion of dome shape, an intermediate portion of cylindrical shape, and a return bent flange, outwardly extending peripheral flanges on the outer and inner members, and means for linking the peripheral flanges to join the members together and to form a cavity therebetween, the return bent flange of the inner member being aligned with the wall of the outer member, there being discharge openings in the inner member.

3,348,317
HAIR DRYER
William M. Copeland, Villa Park, and Stanley V. Horecky, Oak Park, Ill., and Thomas H. Hayes, Roanoke, Va., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 11. 1966, Ser. No. 564,325
15 Claims. (Cl. 34—99)

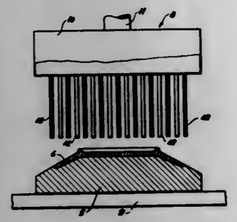
1. In a hair dryer comprising a motor-blower-heater unit housed within a portable casing, a flexible electric extension cord for said unit, said casing having an air inlet and air outlet formed thereon, an axially collapsible and expansible hose connected to said outlet, and a hose storage compartment in said casing for axially collapsed storage of said hose in said casing, the outer end of said hose being adapted for removable connection to a collapsible hair dryer cap; the improvements of another

storage compartment in said casing, said another compartment having a size sufficient to receive said cap and and cord when in collapsed condition for storage therein



whereby said casing comprises a compact portable hair drying assembly complete with motor-blower-heater unit, hose, cord and hair dryer cap.

3,348,318
DRYING EQUIPMENT
Kristian Himmelstrup Norlyng, Copenhagen, Denmark, assignor to Aktieselskabet Bing & Grondahls Porcellaensfabrik (Porcelainfabrikerne Bing & Grondahl og Norden A/S), Copenhagen, Denmark
Filed Sept. 21, 1965, Ser. No. 488,898
Claims priority, application Denmark, Sept. 23, 1964, 4,671/64
3 Claims. (Cl. 34—105)

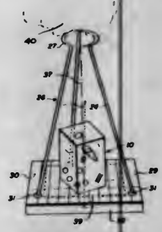


1. An apparatus for drying ceramic bodies as they are transported along a horizontal path, said apparatus comprising a casing extending above said path and containing at least one air pressure chamber and air outlet means; a nozzle aggregate for each ceramic body to be dried, each aggregate comprising a plurality of elongated parallel nozzles extending downwardly from said chamber to the vicinity of said path, and means to supply air to said chamber at a predetermined pressure so that it passes through said nozzles, contacts the surfaces of said bodies, and is then reflected upwardly therefrom, said nozzles being spaced apart sufficiently to allow the reflected gases to flow therethrough towards said air outlet means, the spacing between the discharge end of said nozzles and said ceramic body being such that the reflected gas will not impinge on the discharge from the nozzles.

3,348,319
X-RAY DEMONSTRATION PRISM
Mary C. Harrison, Suite 1509, 1450 Chestnut St., Vancouver 9, British Columbia, Canada
Filed May 24, 1965, Ser. No. 457,995
8 Claims. (Cl. 35—8)

1. Apparatus for use in the training of X-ray technicians, adapted for the taking of radiographs using an X-ray tube having a port, and an X-ray film holder, and adapted for the viewing of said radiographs by an observer by means of a viewing box having an upper surface, the said apparatus including in combination:

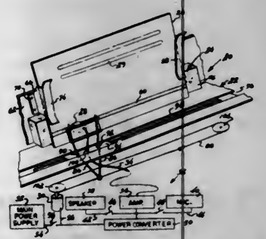
(a) a transparent base plate having an upper surface and a lower surface, grid markings on a said surface, the plate adapted so that its lower surface is in contact with the X-ray film holder in making X-ray exposures, and adapted for placing over a radiograph resting upon the upper surface of a viewing box,



(b) resting on the upper surface of the base plate a prism or block of material transparent both to light and to X-rays, imbedded at random positions within the prism a number of objects, spaced from one another generally in three dimensions, some of the objects being of well known simple geometric shape and of material opaque both to light rays and to X-rays,

(c) means to position the X-ray tube with respect to the prism when making radiographs thereof, which positioning means is also adapted to position the eye of the observer when the radiographs are being viewed.

3,348,320
PHONETIC TEACHING DEVICE
George K. Brokaw, 110 Forest Lane, Berkeley, Calif. 94708
Filed Dec. 14, 1964, Ser. No. 418,103
11 Claims. (Cl. 35—35)



1. A phonetic teaching device for use in combination with a card having a strip of magnetic recording tape extending across its lower end and writing or printing thereon above the tape related to the spoken words that have been prerecorded on the tape, said device comprising:

(1) a chassis;

(2) a sound producing and reproduction system mounted within said chassis including a power supply, an amplifier, speaker means, and a pickup head;

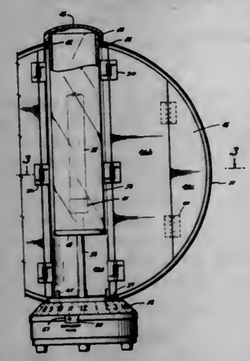
(3) means for holding said card stationary on said chassis in a predetermined upright position;

(4) a pair of pulleys mounted in said chassis near opposite ends of the card being held and endless flexible belt means on said pulleys;

(5) means for driving one said pulley and thus said belt means at a constant predetermined linear rate;

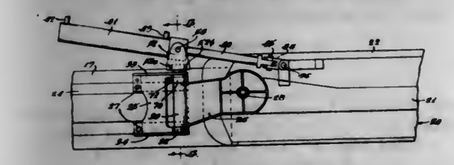
(6) means connected to said belt means for driving said pickup head and for urging said pickup head against a tape segment on a card during one direction of travel between said pulleys and for retracting said pickup head from the tape segment during travel in the opposite direction.

3,348,321
WORLD-WIDE TIME INDICATOR
Cabot L. Cunningham, Box 22, Red Mountain, Calif. 93558
Filed Jan. 6, 1966, Ser. No. 519,124
3 Claims. (Cl. 35—46)



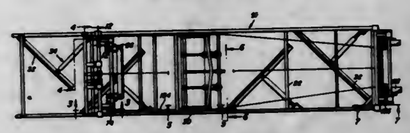
1. A world-wide time indicator, comprising a base, a hollow rod fixedly secured to the base and extending upwardly therefrom, an electrical socket on the upper end of the rod to receive a lamp, electrical lead lines extending through the rod between the socket and the base, a light-transmitting tube having an open upper end and supported on the rod in surrounding relation to the socket, a translucent hollow body having a map of the world disposed thereabout, the upper end of the map body also being open for fitting about the upper end of the tube, and means on said upper end of the tube supporting the map body in surrounding relation thereto when it is so fitted, a cap to cover the upper end of the tube, whereby the lamp may be replaced after removing the cap without removing said map body, a ring rotatably mounted on the base and having a twenty-four hour time scale thereabout adjacent the map, and means for rotating the ring relative to the base at one revolution per twenty-four hour period.

3,348,322
MOLDBOARD WING
Richard P. Stewart, Omaha, Nebr., assignor to Omstell Industries, Inc., Omaha, Nebr.
Filed Oct. 6, 1964, Ser. No. 401,789
6 Claims. (Cl. 37—155)



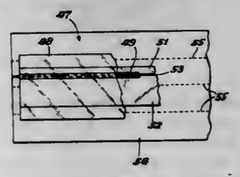
5. A wing attachment for a moldboard comprising, means for mounting the wing relative to the moldboard including a mounting base attachable to the rear of the moldboard and having spaced collars, a member connected to the wing and pivotally associated with said collars by a sleeve aligned with said collars and a pivot pin extending through said sleeve and collars, and a spacing collar positionable between one or the other of said collars and said sleeve whereby the location of the spacing collar determines the height of the member and wing relative to the moldboard.

3,348,323
COMBINATION LAND LEVELER
George W. Purdy, 901 S. Jefferson, De Witt, Ark. 72042
Filed June 17, 1964, Ser. No. 375,738
9 Claims. (Cl. 37—180)



1. A land leveler comprising an elongated rigid frame, a plurality of elongated blades mounted on said frame, the longitudinal axes of the blades being in rearwardly inclined relation to the longitudinal axis of the frame, a transversely extending bucket pivotally mounted on said frame for pivotal movement about a transverse axis, said bucket being disposed intermediate the blades with at least one inclined blade disposed forwardly and rearwardly of the bucket, said bucket adapted for selective engagement with the ground surface for moving earth into low spots, said bucket including a trip blade mounted on the lower edge thereof, and spring means engaging the trip blade for retaining it in substantially vertical position but enabling it to pivot rearwardly at the bottom edge thereof so that the bucket may pass over an obstruction without the bucket being elevated, said spring means including an elongated link pivotally attached to the rear of the bucket and having a lower end pivotally attached to the trip blade, the upper end of said link being pivotally attached to a spring plunger assembly having one end thereof pivotally attached to the frame thus biasing the trip blade to its operative vertical position.

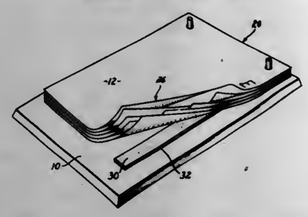
3,348,324
INDEX TABS
Walter F. Cunningham, Chicago, Ill., assignor to Superior-Tabbies, Inc., Chicago, Ill., a corporation of Illinois
Original application Feb. 5, 1959, Ser. No. 791,462, now Patent No. 3,070,482, dated Dec. 25, 1962. Divided and this application May 3, 1962, Ser. No. 192,126
8 Claims. (Cl. 40—23)



1. A flexible composite strip providing separable tabs for attachment in use to the edge portion of a sheet of paper, comprising a transparent backing strip with a coating of pressure-sensitive adhesive on its lower surface, a pair of parallel filler strips adhered to said lower surface of said backing strip and spaced from each other a distance at least as great as the sum of their thicknesses to define a hinge portion extending longitudinally of said backing strip, said backing and filler strips together forming the body portion of said tabs and having transparent skirts wtih pressure-sensitive adhesive coating for attachment in use to opposed sides of the sheet of paper when said backing member is folded along said hinge portion to present said filler strips in opposed face-to-face relation-

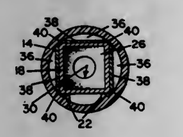
ship, and a planar mounting strip of release paper for carrying said backing and filler strips said skirts releasably attached thereto.

3,348,325
OVERLAPPING TAB INDEX
Lawrence S. Snelgrove, 7 Woodhaven Heights, Toronto, Ontario, Canada
Filed Feb. 18, 1966, Ser. No. 528,468
5 Claims. (Cl. 40—104)



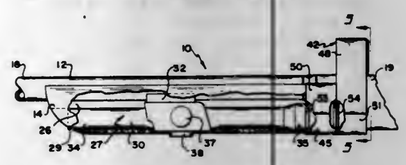
1. An index device for storing information comprising a base supporting above it a pad of resilient leaves having aligned edges, the leaves being hingedly connected to each other and to the base along one edge of the pad, at least some of the leaves having overlapping tabs protruding outwardly from another edge of the pad, said tabs overlying one another and some tabs projecting beyond the next overlying tab to expose a portion of their upper faces, said exposed portions being adapted to receive indicia thereon, a strip of compressible material fixed between the base and the pad so as to support the tabs in spaced relationship to the base, the strip of compressible material being deformable by the application of downward digital pressure on the exposed upper surface of a tab, so that the tab may be separated from its next overlying tab.

3,348,326
HANDLE CONSTRUCTION
Armand A. Lachance, % American Metal Products Co., Auburn, Mass. 01501
Filed Oct. 5, 1965, Ser. No. 493,128
1 Claim. (Cl. 40—308)



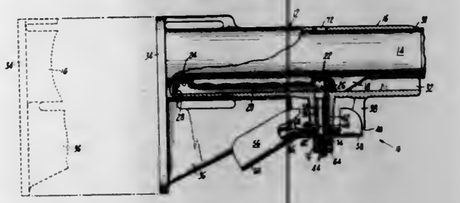
A pusher handle construction for a cart comprising a pair of tubes, one within the other, said tubes being of different cross sectional conformation and the inner tube being provided with at least one flat surface thereon for the slide-in reception of an elongated imprinted strip which is visible through the outer tube, means for preventing rotation of the inner tube with respect to the outer tube, and means at the ends of said combined tubes for supporting the same on a cart, wherein the inner tube is substantially rectangular and the outer tube is substantially cylindrical and transparent, the corners of the inner tube substantially impinging upon the interior surface of the outer tube, and an inwardly directed projection on the interior surface of the outer tube substantially impinging upon one of the flat surfaces of the inner tube and maintaining the same against rotation within the outer tube, the other sides of the inner tube being unimpeded and providing for a clear view of the strip through the outer tube.

3,348,327
TELESCOPICALLY SIGHTED FIRE ARMS
Martin Lamens, 5811 16A Ave., R.R. 4, Ladner, British Columbia, Canada
Filed Apr. 11, 1966, Ser. No. 541,783
8 Claims. (Cl. 42—1)



1. A fire arm comprising a barrel having muzzle and breech ends and mounted on and projecting from a stock, loading and firing means for the barrel at the breech end thereof, a telescope tube mounted beneath the barrel extending longitudinally thereof and having a forward end facing in the same direction as the muzzle end of the barrel, an eyepiece for the telescope tube and operatively connected to a rearward end of said tube extending laterally and upwardly therefrom and terminating for sighting purposes close to but to one side of the barrel.

3,348,328
ADJUSTABLE BUTTSTOCK ASSEMBLY
Robert Earl Roy, East Haven, Conn., assignor to Colt's Inc., Hartford, Conn., a corporation of Arizona
Filed May 10, 1966, Ser. No. 549,005
9 Claims. (Cl. 42—73)



1. An adjustable buttstock assembly for a firearm comprising a fixed member mountable on a firearm for extension rearwardly thereof, a stock fitted onto and receiving said fixed member for relative sliding movement, a latch carried by said stock and selectively engageable with said fixed member for locking said fixed member and said stock against relative sliding movement, and operating means for moving said latch into a partially retracted position precluding removal of said stock from said fixed member, while permitting sliding movement therebetween for varying the length of the firearm, and a fully retracted position permitting unrestricted sliding movement of said stock relative to said fixed member for disassembly and assembly of the buttstock.

3,348,329
FISHING TACKLE BOX
Winston Seemann, Summit, Ill., assignor to Medallion Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 17, 1965, Ser. No. 440,375
1 Claim. (Cl. 43—26)

An elongate fishing tackle box for storing both fishing rod sections and fishing gear in the interior thereof, said box comprising:

(a) two sections of substantially similar configurations,

(b) said sections being joined together along a common hinge for pivotal movement therebetween, thereby defining an upper cover section and a lower tray section,

(c) one of said sections being unbroken along its length, said length being of sufficient size to accommodate fishing rod sections,

(d) latching means associated with said rod accommodating section for securing fishing rod sections thereto,

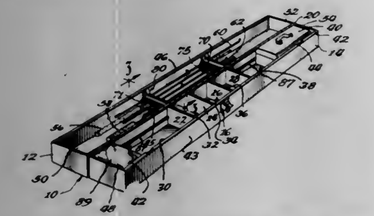
(e) said latching means comprising:

(1) a transversely extending lip formed on a side of the pole accommodating section opposite said hinge,

(2) at least one U-shaped, integrally formed metallic latching member,

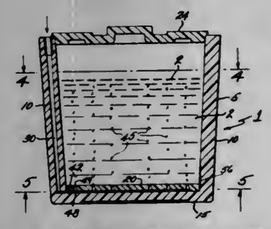
(3) one arm of said U-shaped member being joined to said tackle box at said hinge to permit pivotal movement thereof,

(4) the opposite arm of said U-shaped member being provided with a return bend flange on the end thereof, said end being adapted to be resiliently engaged under said lip to define a latching position for the base portion of the U-shaped latch member,



(5) at least one resilient mounting and supporting block secured to the rod accommodating section of said tackle box in alignment with the U-shaped latching member to provide a resilient support for the fishing rod sections and to cooperate with said latching means to resiliently clamp said rod sections therebetween when the said opposite arm of said U-shaped member is engaged under said lip, wherein said base portion of the U-shaped latching member is a substantially planar section, corresponding to the width of said elongate rod accommodating section of said tackle box, the base portion contacting said block when the latching member is in latched position to substantially fully embed the fishing rod sections in said block.

3,348,330
MINNOW BUCKET
James A. Gilliam, Cleveland, Ohio, assignor to Gil-Boy Enterprises, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 10, 1965, Ser. No. 462,965
1 Claim. (Cl. 43—57)



A bucket adapted for keeping minnows alive, the bucket comprising a bottom wall and a side wall integrally formed therewith and generally frusto-conical in elevation to define a chamber for the disposition of water, a false bottom disposed in said chamber and engaging said bottom wall, a plurality of reinforcing ribs spaced circumferentially around and formed integrally with said side wall, means forming a passageway in one of said ribs for transporting fresh air to the bucket chamber, said passageway opening at one end to the top of said side wall and at the opposite end to the bucket chamber below a top portion of said false bottom, air distributing means provided in said false bottom comprising means forming a central cavity and a plurality of channels formed in the underside of said false bottom extending radially and communicating at the inner end thereof to said central cavity, means defining an air passage in said false bottom connecting said passageway formed in the rib and said central cavity, means defining a plurality of ports formed in said false bottom which communicate with said channels and said bucket chamber to provide for the passage of air from said air distributing means to said chamber, said ports being evenly distributed along said channels so as to provide a uniform distribution of air to the water in said chamber, said passage in said false bottom being generally larger in capacity than any one of said channels, each of said ports provided in the false bottom having a larger cross-sectional area at its lower end communicating with its associated channel.

3,348,331
LIVE ANIMAL TRAP
Drew A. Williams, P.O. Box 66, Kennett, Mo. 63857
Filed July 16, 1965, Ser. No. 472,431
8 Claims. (Cl. 43—61)

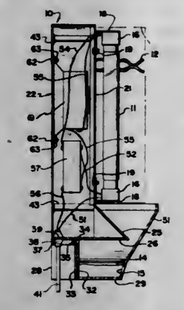


2. A live animal trap comprising an enclosure having an access opening at at least one longitudinal extremity, a normally open barrier for said access opening horizontally hinged at its lower edge within said enclosure, a vertically floating false bottom within said enclosure, an actuating lever fulcrumed intermediate its ends adjacent one extremity of said false bottom, means hingedly connecting one arm of said lever to the adjacent extremity of said false bottom, and the opposite arm of said lever underlying said open barrier, whereby, when said false bottom is subjected to the weight of an animal entering said enclosure through said access opening, said lever is rocked on its fulcrum, causing the arm of said lever underlying said barrier, to swing the latter upwardly and close said access opening.

3,348,332
ULTRA-VIOLET LIGHT INSECT TRAP
Robert A. O'Connell and Grant M. Hegranes, Albuquerque, N. Mex., assignors to I.M.S. Corporation, Albuquerque, N. Mex., a corporation of New Mexico
Filed Dec. 23, 1965, Ser. No. 515,940
8 Claims. (Cl. 43—113)

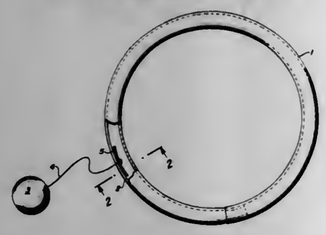
1. In an insect trap, a vertical support, an ultra-violet insect-attracting lamp on said support, a container beneath said lamp having an insect-receiving liquid reservoir in a lower portion thereof, said container having upwardly extending wall means, deflector means underneath said lamp, said deflector means having upwardly and inwardly extending wall means, said deflector wall means having a lower portion spaced from said container wall

means to define a narrow insect-receiving throat above said reservoir, and grill means adjacent said support and in generally encircling relation to said lamp, whereby



insects landing on said grill means are exposed to radiation from said lamp to fall downwardly through said throat into said reservoir.

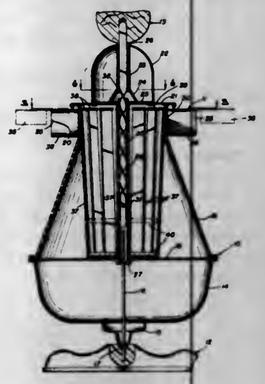
3,348,333
COMBINED HOOP AND TETHERED BALL
Anthony Cascioli, Easton, Pa., assignor of fifty percent to Jack Schuman, Allentown, Pa.
Filed Dec. 28, 1965, Ser. No. 517,037
5 Claims. (Cl. 46—51)



1. An amusement device comprising:
(a) a hoop portion in the form of a closed curvilinear figure, said hoop portion being hollow and having a peripheral slot extending completely and continuously around its outer periphery,
(b) retainer means within said hollow hoop portion and adapted to slidably engage the inner surface thereof, said retainer means being of dimension large enough to avoid passing through said slot when said device is in operation,
(c) a satellite body,
(d) cord means secured at one end to said satellite body and at the other end to said retainer means, said cord means passing through said slot,
(e) whereby revolution of said hoop portion will cause said satellite body to fly away from and continuously around the periphery of said hoop portion.

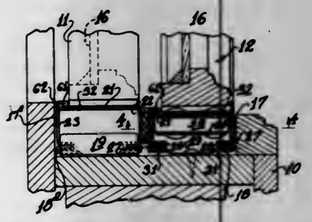
3,348,334
SPINNING TOY HAVING AN EXTENSIBLE SKIRT
Schuyler Reynolds, 3068 E. 13th Ave., Columbus, Ohio 43219
Filed Feb. 23, 1965, Ser. No. 434,207
2 Claims. (Cl. 46—119)

1. In a spinning toy; a substantially hollow body rotatable about a substantially vertical axis and including an axially disposed, substantially vertically arranged guide member; a weight mounted for free vertical sliding movement on said guide member; and a skirt of flexible, sheet material having a continuous outer band portion encircling said body and a plurality of inwardly projecting webs extending inwardly of said body and secured to said weight, said weight being arranged normally on said guide member to draw the webs of said skirt inwardly and downwardly into said body and to a position at which the outer band portion of said skirt occupies a relatively retracted position of encirclement about said body, but



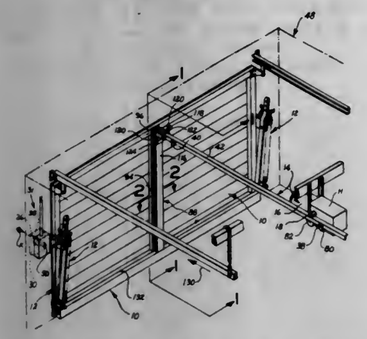
said weight being movable upwardly on said guide member in response to centrifugal forces acting on said skirt during relatively high speed rotation of said body to permit the outer band portion of said skirt to move outwardly by centrifugal force to a relatively extended position of encirclement about said body.

3,348,335
PIVOTABLE SASH WINDOW
Anthony Mauro, 2318 21st Ave. S., Birmingham, Ala. 35223
Filed Dec. 13, 1965, Ser. No. 513,418
3 Claims. (Cl. 49—181)



1. In a window including a frame and at least one sash mounted for vertical sliding movement relative to said frame and adapted to be tilted toward a horizontal position the improvement which comprises:
(a) a track secured to said frame,
(b) a channel-like runner carried by said track and having a pair of flanges,
(c) an interlocking joint between the track and the runner,
(d) a pivot pin securing the sash to the runner,
(e) a cam carried by the sash and provided with two substantially circular bearing surfaces disposed eccentrically relative to said pivot pin in position to move the flanges of the channel-like runner outwardly when the sash is tilted thus to jam the interlocking joint between the track and the runner and restrain vertical movement of the runner and the sash carried thereby, and
(f) a stop member carried by said cam to prevent rotation of the sash beyond a predetermined angular position.

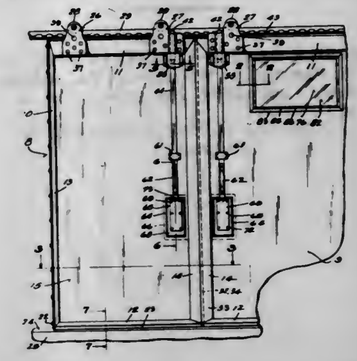
3,348,336
OVERHEAD DOOR OPERATOR
Claude A. Hashagen, 638 N. Crescent Heights Blvd., Los Angeles, Calif. 90048
Filed Dec. 17, 1965, Ser. No. 514,604
8 Claims. (Cl. 49—200)



1. Coupling apparatus for effectively converting an upper motor-driven garage-door-top-inward-pulling device into a lower garage-door-bottom-outward-pushing-and-lifting device, comprising longitudinal lever means and lever-mounting means adapted to be vertically mounted along and fixedly attached to an inside surface of a garage door of a type effectively horizontally pivotally mounted for movement between a lower vertical closed position and an upper substantially horizontal open position and provided with an upper controllably reversible motor-driven garage-door-top-moving device for forcibly moving said garage door from said closed position into said open position, and vice versa, said lever-mounting means and said lever means being provided with horizontally directed pivot pin means effectively pivotally interconnecting same for relative rotation of said lever means with respect to said lever-mounting means around a horizontal axis, said lever means being provided with a pivotal attachment and connection means for connection to the forward end of a longitudinal driven connection member of an upper controllably reversible motor-driven garage-door-top-moving device for forcible movement rearwardly of said attachment and connection means whereby to forcibly move an upper portion of said lever means above the level of said horizontal pivot pin means rearwardly in a manner such as to cause a lower portion of said lever means to effectively apply increasing outward and upward force to a garage door bottom for effectively facilitating movement of the garage door from a closed position to an open position, and vice versa, upon reversed driving operation of the upper motor-driven garage-door-top-moving device.

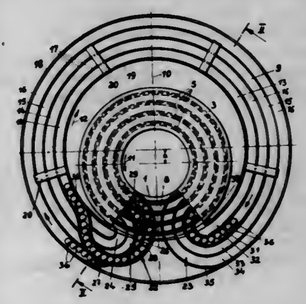
3,348,337
SLIDING DOOR
Rocco Grasso, South Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,362
9 Claims. (Cl. 49—449)

1. A door construction including a core having top, bottom, and side edges and comprising a single, unitary bonded sandwich of plastic material, said core including a pair of spaced parallel facing panels and an inner, lightweight filler located between said facing panels, said core including an aperture therethrough, a shell having a dished portion received in said aperture and extending beyond one of said facing panels, said dished portion having an opening disposed outwardly of said one facing panel, a locking bar extending through said opening and along and outwardly of said one facing panel, means on said door guiding movement of said locking bar, a handle located in said dished portion and attached to said locking bar, a frame having top, bottom, and side members



of channel shaped formation respectively receiving the top, bottom, and side edges of said core, and means uniting said frame members to said core to provide a substantially rigid assembly of said frame and said core.

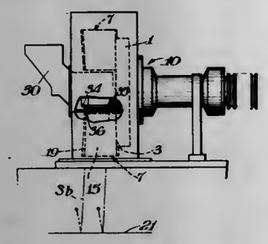
3,348,338
APPARATUS FOR LAPPING AND GRINDING BALLS
Sebastian Messerschmidt, Altstadtstrasse 5, Schweinfurt, Germany
Filed Mar. 11, 1964, Ser. No. 351,017
Claims priority, application Germany, Mar. 15, 1963, M 56,126
3 Claims. (Cl. 51—3)



1. Apparatus for lapping and grinding a plurality of balls comprising in combination:
a pair of lapping and grinding discs concentrically located in opposed relation to each other, one of said discs having a plurality of concentrically arranged grooves therein;
means for rotating one of said discs;
magazine means including an annular rotatable base eccentrically arranged with respect to said discs, said magazine also including means defining a plurality of guiding channels for the balls to be ground and lapped, the number of channels being equal to the number of grooves in said disc;
means for rotating said base in a direction opposite to that of said one disc;
said magazine including means for leading balls out of one groove on said disc, around one of said guiding channels, reinserting said balls in a different one of said grooves in sequential progression so that each ball travels the same path length around each groove

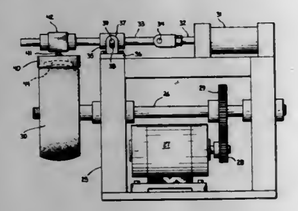
between said discs and through the channels in said magazine and each ball traverses each of said grooves and channels in succession.

3,348,339
ABRASIVE BLASTING WHEELS AND VANES
Joseph E. Bowling, Jr., Waynesboro, Pa., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,150
3 Claims. (Cl. 51—9)



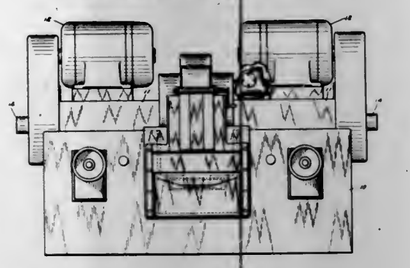
1. A rotatable abrasive blasting wheel assembly comprising a rotatable wheel, said wheel having a surface perpendicular to the axis of rotation of said wheel, abrasive propelling vanes secured to said wheel, each of said vanes having a lower edge disposed against said wheel, said lower edge being parallel to said surface from its inner edge near the center of said wheel to the periphery of said wheel, each of said vanes having a planar abrasive propelling face with a feed end near the center of said wheel and a discharge end near the periphery of said wheel, said discharge end of each face being flared outwardly relative to said surface and with respect to said feed end, the abrasive propelling face of every other vane being forwardly inclined at an acute angle with respect to said surface, and the abrasive propelling face of the intervening vanes being backwardly inclined at an obtuse angle with respect to said surface.

3,348,340
METHOD AND APPARATUS FOR MANUFACTURING OPTICAL LENSES
Tracy H. Calkins and Frank E. Duckwall, Indianapolis, Ind., assignors to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed July 24, 1964, Ser. No. 384,873
5 Claims. (Cl. 51—91)



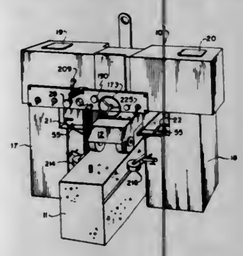
1. A method of making a lens having a concave toric surface comprising the steps of placing a lens on a support having the counterpart configuration of a desired concave toric lens surface, subjecting said lens to heat sufficient to cause said lens to sag into fitting contact with said support thereby to form the desired concave toric lens surface on one side of said lens, placing said one side of said lens against a grinding wheel having the same counterpart toric configuration as said support and orienting said lens so that the one side of said lens fits said grinding wheel, and rotating said grinding wheel so as to grind the one side of said lens.

3,348,341
ABRASIVE DISC SPINDLE MOUNTING
Elman R. Dunn, Roscoe, Ill., assignor to Landis Tool Company, Waynesboro, Pa.
Filed July 16, 1964, Ser. No. 383,152
9 Claims. (Cl. 51—111)



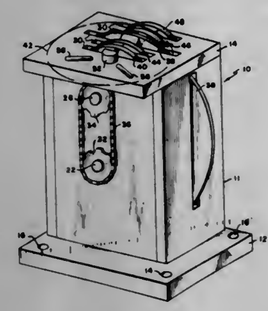
3. In a disc grinder,
(a) a base,
(b) a member slidably mounted on said base,
(c) a spindle housing in said member,
(d) a spindle rotatably mounted in said housing,
(e) an abrasive disc on one end of said spindle,
(f) means to change the plane of rotation of said abrasive disc comprising
(g) defromable means for pivotally supporting one end of said spindle at a point on its axis adjacent the center of said disc,
(h) and means to shift the other end of said spindle housing radially in different directions relative to said slidable member.

3,348,342
FINISHING MACHINE
Joseph P. Zachek, Hilbert, Wis. 54129
Filed July 22, 1964, Ser. No. 384,439
28 Claims. (Cl. 51—180)



1. Apparatus for finishing the side wall surfaces of walls comprising, in combination: a frame; a pair of housing assemblies secured beneath said frame in spaced relation so as to straddle a wall, each of said housing assemblies having finishing means attached thereto for finishing at least one of said surfaces; a driving assembly adjustably mounted beneath said frame between said housing assemblies, said driving assembly being arranged to ride on a top surface of said wall and being adjustable to positionally raise and lower said housing assemblies with respect to said top surface; and drive means coupled to both said finishing means and said driving assembly for operating them to finish said surface and to convey said apparatus.

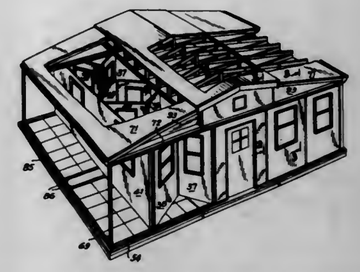
3,348,343
WORKPIECE REGULATING DRIVE UNITS FOR GRINDING MACHINES
Harold W. White, Wilson, N.Y., assignor to Cocker Saw Company, Inc., Burt, N.Y., a corporation of New York
Filed May 10, 1965, Ser. No. 454,599
3 Claims. (Cl. 51—237)



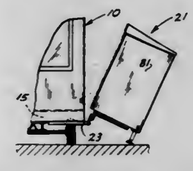
1. A regulating drive unit for rotating a substantially flat surfaced workpiece during an abrading operation, comprising:
a housing having center-of-rotation line, and including a top surface having means defining a plurality of substantially parallel slots therein;
a drive shaft rotatably mounted in said housing; said drive shaft being disposed substantially parallel to, and spaced below said top surface;
a first regulating drive wheel mounted on said drive shaft for rotation therewith, and having a portion of its peripheral edge extending through one of said slots in said top surface;
a driven shaft rotatably mounted in said housing; said driven shaft being disposed substantially parallel to and between said drive shaft and said top surface; and
a second regulating drive wheel mounted on said driven shaft for rotation therewith, and having a portion of its peripheral edge extending through one of said slots in said top surface;
said first and second regulating drive wheels being spaced from each other and from the center-of-rotation line of said housing; and
positive drive connection means for driving said first and second regulating drive wheels so that their peripheral rates of speed are directly proportional to the distance they lie from the center-of-rotation line of the housing.

3,348,344
TRANSPORTABLE BUILDING CONTRUCTION WITH AN EXTENDABLE BODY STRUCTURE
Leon Tatevossian, 69—44 Olcott St., Forest Hills, N.Y. 11375
Filed Feb. 19, 1964, Ser. No. 346,052
13 Claims. (Cl. 52—22)

1. A transportable building comprising, in combination,
pre-erected substantially rigid core body structure, and extendable body structure,
said extendable body structure being pre-assembled with said core body structure and adapted to be easily erected adjacent thereto to define therewith a sturdy, aesthetically appealing and weather-tight building;
said extendable body structure comprising, in turn,
ceiling structure and roof structure pivotally connected with each other and with said core body structure adapted to be folded into adjacent relationship with said core body structure for transport and erected to extend generally horizontally outwardly of said core body structure and angularly of one another, whereby said ceiling and roof structures are spaced at one end, at least one post structure pivotally connected with said ceiling and roof structures at a location spaced apart from said core body structure and adapted to be folded into adjacent relationship with said ceiling structure for transport, and
guide means for said post structure.



3,348,345
ROTATABLE PORCH FOR A MOBILE HOME AND METHOD OF MOUNTING
Lynn E. Byers and Charles A. Long, both of Slater, Iowa 50244
Filed Apr. 7, 1965, Ser. No. 446,187
13 Claims. (Cl. 52—79)

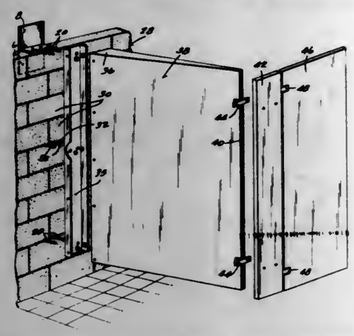


1. In a porch for mobile homes,
first and second spaced apart arm members having open channels at one of their ends, said first and second arm members secured to the underside of a mobile home,
a pipe detachably rotatably mounted in and extending between said channels,
first and second brackets operatively secured to said pipe,
a floor member secured to said first and second brackets, and an enclosure means secured to said floor member.

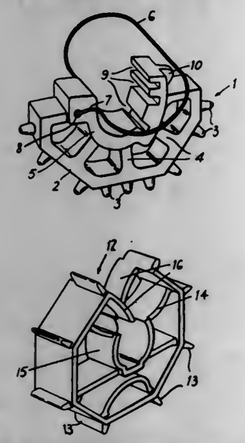
3,348,346
BRACKET FOR MOUNTING PARTS ON MASONRY
William J. Heim, Milwaukee, Wis., and Larry E. Schlentker, Jr., Berwyn, and John A. Kuhn, Rolling Meadows, Ill., assignors to Milwaukee-Ferrometal Stamping Corp., Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1965, Ser. No. 497,780
4 Claims. (Cl. 52—239)

3. A masonry wall comprising lower and upper superimposed blocks and an intervening mortar joint, a bracket disposed in the mortar joint between blocks and comprising angles having leg portions extending upwardly and downwardly in engagement with the rear faces of the lower and upper blocks, said angles having leg portions in substantial face contact and in welded connection with

each other and extending forwardly through the mortar joint and provided with threaded attachment rod extensions welded to said forwardly projecting portions exposed at the face of the wall beyond said mortar joint.

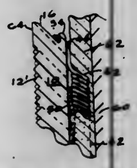


3,348,347
SYNTHETIC PLASTIC SPACER FOR CONCRETE REINFORCEMENTS
Ferdinand William Berry, "Latchetts," 108 Woodland Drive, Hove 4, Sussex, England
Filed Nov. 18, 1964, Ser. No. 411,985
Claims priority, application Great Britain, Nov. 21, 1963, 46,001/63, 46,002/63
5 Claims. (Cl. 52—309)



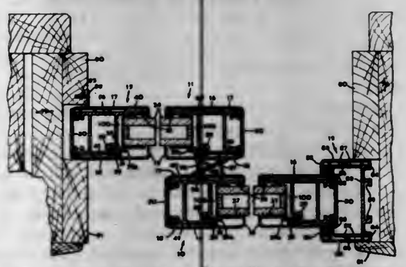
5. A spacer for spacing reinforcements in a reinforced concrete structure, comprising a framework moulded from a synthetic plastic material, including a peripheral frame, at least one outwardly directed projection integral with said peripheral frame, inwardly directed frame portions integral with said peripheral frame, a generally U-shaped inner frame integral with the inner ends of at least some of said frame portions, and defining with the latter and said peripheral frame, a plurality of apertures for the passage of liquid concrete, said inner frame defining at least part of a reinforcement-receiving opening extending inwardly from the peripheral frame, and a pair of closure elements for retaining a reinforcement within said opening, said closure elements comprising flaps moulded one to each side of the mouth of the reinforcement-receiving opening, each flap being, in width, approximately one half of the length of the opening, and the two flaps being mutually staggered in the direction of the longitudinal axis of the opening, and extending diagonally into and part way across the opening, with their free inner ends at least aligned with one another, whereby said flaps are deformable to an open position by engagement with a reinforcement upon insertion into the opening, but are not deformable towards an open position by engagement with a reinforcement once it has been inserted into, and is located within said opening, said inwardly directed frame portions being of different thickness both to said peripheral frame and said inner frame, and said at least one outwardly directed projection being different thickness to said peripheral frame, thereby to form a plurality of steps across opposite side surfaces of the spacer between said at least one outwardly directed projection and the reinforcement-receiving opening.

3,348,348
VITREOUS TILE AND MOUNTING STRUCTURE THEREFOR
Agustin Perez, 616 S. Electric Ave., Alhambra, Calif. 91803
Filed July 1, 1963, Ser. No. 291,638
9 Claims. (Cl. 52—391)



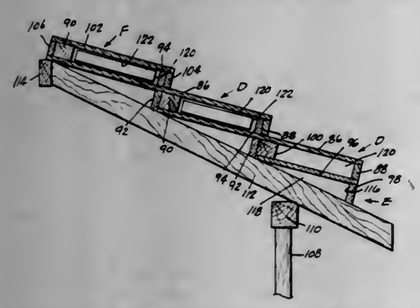
1. A vitreous tile and mounting structure combination comprising:
a tile body formed to include a frontal and a rear surface and a pair of substantially opposite edges;
a spring end retaining means formed integrally with said tile body along the rear portion of each of said opposite edges;
at least one elongated mounting wire spring with tile body engaging means disposed at each end thereof for releasably supportingly engaging the spring end retaining means of said tile body and having a length when so engaged whereby said mounting spring is in tension across said rear surface of said tile body and a thin foramenated mortar engaging back plate disposed over a major portion of said rear surface of said tile body and interposed between said tension spring and said tile body rear surface.

3,348,349
REINFORCED PLASTIC GLASS HOLDING FRAME
Walter Petersen, Erindale, Ontario, Canada, (3177 Winston Churchill Blvd., R.R. 2, Clarkson, Ontario, Canada)
Filed July 19, 1965, Ser. No. 473,091
12 Claims. (Cl. 52—498)



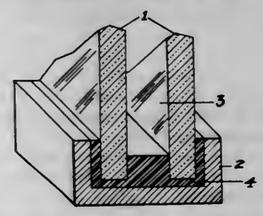
1. A glass pane receiving and holding structure comprising a rigid metal reinforcing frame and covering members of rigidly resilient material attached to and covering said metal frame, said metal frame being comprised of rigid metal reinforcing members each having a web portion, two arms, one at each end of and extending normally from each side of the web portion, a first channel portion formed by the two arms and extending outwardly in the frame from the web portion, one of said arms at one end of the web portion having an elongated portion extending inwardly from one side of the web, and each reinforcing member also having a second, smaller, upset channel portion located on the oposite end and on the same side of the web as the elongated portion of said one arm with open side of said upset channel facing inwardly on the frame, and said covering members of rigidly resilient material being comprised of a first sheath member engagingly fitted over and covering said one arm at one end of the web portion, including the elongated portion, of the metal reinforcing member, a second sheath member engagingly fitted over and covering the other of said arms, said first and second sheaths having inside projecting portions forming a space between sheath and reinforcing member, a glazing spline inserted in the upset second channel portion of the reinforcing member to form a glass pane receiving opening between the elongated portion of said one arm of the reinforcing member and said spline, and a cover strip engagingly fitted across the first channel portion of the metal reinforcing member between the first and second sheaths, the frame incorporating rigid corner members which are of a material similar to said covering members and which bond said sheath members together at the frame corners, and slip-fit metal corner members which align, but are unsecured to, the metal reinforcing members at the frame corners, and the metal reinforcing members at the frame corners being spaced a distance apart.

3,348,350
CONSTRUCTION UNIT
Thomas W. Mills, 31 Sweet Bay Road, Portuguese Bend, Calif. 90272
Filed Jan. 8, 1965, Ser. No. 424,381
13 Claims. (Cl. 52—542)



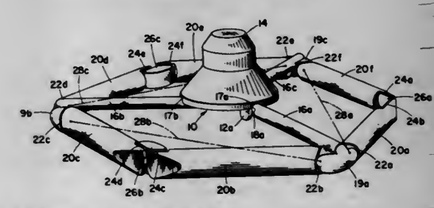
1. A multi-panel wall construction comprising: a plurality of spaced beams lying in a common plane to provide a planar basic support; a plurality of thin, narrow, elongate wall panels arranged in lateral overlapping relation with their longitudinal axes crossing the axes of said beams, and secured to said beams to constitute a complete wall; said panels comprising a starter panel, a finisher panel, and at least one intermediate panel; said starter panel having a first flange secured to one longitudinal edge and extending inwardly substantially normal to the plane of the panel to contact the beams and support the panel at an acute angle to the plane of the beams, and having a second flange secured to its other longitudinal edge and extending outwardly from the opposite face of the panel; said intermediate panel having a longitudinal rib located in the vicinity of its longitudinal axis and extending inwardly to engage and be secured to the second flange of said starter panel, an inwardly extending flange along one longitudinal edge to engage another part of said starter panel, and an outwardly extending flange along its other longitudinal edge; said finisher panel having a longitudinal edge portion adapted to engage and be secured to the outwardly extending flange of the intermediate panel and having an inwardly extending flange at its other longitudinal edge to engage and be secured to another portion of said intermediate panel; each of said panels lying in substantially parallel planes at substantially the same acute angle to the plane of the beams.

3,348,351
SEALED STRUCTURES AND PROCESS THEREFOR
Louis Citarel, Trenton, and Joseph J. Giordano, Woodbridge, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,987
17 Claims. (Cl. 52—393)



1. In a sealed structure having a plurality of spaced and aligned structural elements sealed therebetween by means of an intervening sealant strip.
the improvement comprising a sealant strip formed from a sealant based on a curable, liquid, high sulfur rank polysulfide polymer having —SSH terminals and an average sulfur rank of about 1.6 to 5,
said sealant providing said structure with improved and substantial resistance to water vapor permeation.

3,348,352
FOLDABLE STRUCTURE
Alan F. Cummings, Downey, Calif., assignor to North American Aviation, Inc.
Filed Apr. 16, 1964, Ser. No. 360,272
14 Claims. (Cl. 52—646)



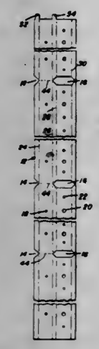
1. A structure comprising:
a hub,
a plurality of rigid inextensible spokes,
first joint means pivotally connecting one end of each of said spokes to said hub for movement between a first folded position wherein said spokes are disposed substantially parallel to one another and a second deployed position wherein said spokes extend radially of said hub,
a plurality of rigid rim elements each having an end adjoining an end of an adjacent rim element to provide a series of element junctions,
a plurality of second joint means pivotally connecting the other end of respective spokes to adjoining ends of adjacent rim elements at respectively different

ones of alternate junctions, each of said second joint means comprising a connecting portion rigidly connected to each of said spokes and a separate joint means between said connecting portion and each of the adjacent rim elements, pairs of said second joint means at mutually remote ends of a pair of adjacent rim elements having axes substantially coincident when said spokes are in said deployed position, thereby permiting movement of a pair of said rim elements between adjacent spokes between a first folded position wherein said rim elements are disposed substantially parallel to and juxtaposed with the spoke connected thereto when said spokes are in said deployed position, and a second deployed position wherein said rim elements extend laterally from said spokes, independent of folding of others of said rim elements,

third joint means pivotally interconnecting adjoining rim element ends which are remote from said spokes in the deployed position of said rim elements, pairs of said third joint means at mutually remote ends of a pair of adjacent rim elements having axes substantially coincident with an axis of one of said first joint means when said rim elements are in their folded position, thereby permitting folding of one spoke in unison with the juxtaposed rim elements pivotally connected thereto independent of folding of others of said spokes, and

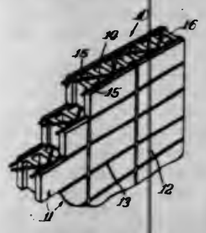
means for limiting pivotal motion of said spokes and said rim elements about said joint means to the coincident axes.

3,348,353
METAL WINDOW FRAME
Victor Rosario Cartagena, 629 Yunque St., Summit Hills, San Juan, Puerto Rico 00920
Filed June 16, 1965, Ser. No. 464,379
6 Claims. (Cl. 52—658)



1. A sheet metal blank for use in forming structural members such as windows comprising a body extending longitudinally a substantially greater distance than transversely, said body having a plurality of adjacent parallel sections extending the entire longitudinal length thereof, said body having V-shaped cutouts spaced along a first parallel section, hexagonally shaped cutouts spaced along the length of the body laterally aligned with each V-shaped cutout and extending through second, third and fourth parallel sections, tab means extending longitudinally of the body from first and second sections, screw receiving holes spaced along said blank in a fifth section thereof, and screwdriver receiving holes spaced along said third section of said blank alongside each screw receiving hole.

3,348,354
MASONRY REINFORCEMENT
William H. Bartlett, Cedar Rapids, Iowa, assignor to Dur-O-Wal National, Inc., a corporation of Iowa
Filed Aug. 4, 1965, Ser. No. 477,284
2 Claims. (Cl. 52—693)



1. In a reinforcement for masonry wall construction having a pair of cylindrical, metal, parallel, spaced side rods and a plurality of cross rods extending between said side rods, means for providing effectively positive retention of said side rods against longitudinal movement through a body of surrounding mortar, said retention means comprising means in said side rods defining a pair of diametrically opposite series of axially aligned spaced grooves, said grooves being spaced apart a fraction of an inch, each groove opening radially outwardly and being defined by a radially inner substantially planar rectangular bottom surface extending right angularly chordally to the axis of the side rod and having an axial width of approximately .024 inch, a chordal length of at least approximately one-half the diameter of said side rods, and a pair of opposed, substantially planar side wall surfaces extending angularly outwardly from the axially opposite ends of said bottom surface, said side wall surfaces being oppositely inclined at an angle of approximately 135 degrees to said bottom surface, the maximum depth of said grooves being at least approximately .014 inch, said side rods further including an upset portion at the radially outer edge of at least one of said side wall surfaces and defining a surface substantially coplanar with the side wall surface.

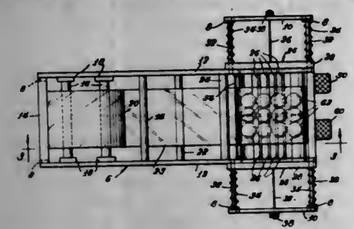
3,348,355
CERAMIC COATINGS
Robert E. Jennings, Birmingham, Ala., assignor, by mesne assignments, to C.M.C. Corporation, Birmingham, Ala., a corporation of Alabama
No Drawing. Filed Aug. 25, 1965, Ser. No. 482,629
7 Claims. (Cl. 53—28)

4. In a method of packaging products on a packaging machine provided with a container forming element comprising forming a container from said packaging film material, charging said container with said product and sealing said container, the improvement comprising frictionally engaging said packaging film material with a chrome oxide surface of said forming element to form said container.

3,348,356
METHOD OF COVERING A TRAYLESS PACKAGE WITH HEAT SHRINKABLE PLASTIC FILM
Edward G. Curtis, St. Petersburg Beach, Fla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 324,174
14 Claims. (Cl. 53—30)

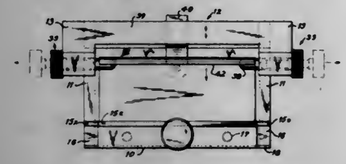
11. A method of forming a trayless package having a heat shrinkable plastic film covering including the steps of, placing the object to be packaged upon a platform having an angle bar edge, drawing a sheet of plastic film from a roll and guiding the film beneath the platform then over the object and the platform and finally tucking

the lead end of the film between the platform angle bar edge and the sheet of film, moving a heat sealing platen into abutment with the angle bar edge to heat seal the



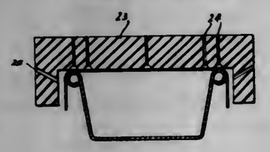
film together along the width thereof, moving a hot wire to sever the film along the region of the heat seal, and moving the platform so as to remove the package therefrom.

3,348,357
COILED TUBE UNCOILING DEVICE AND METHOD
Harold Zweben, 69 Beaumont Drive, Plainview, N.Y. 11803
Filed May 21, 1965, Ser. No. 457,719
9 Claims. (Cl. 53—32)



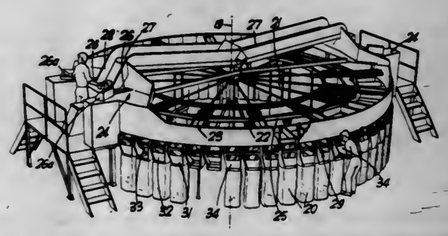
9. The method of loading a resilient cylindrical single coil sheet cartridge with paste for use in a plunger operated syringe comprising clamping rigidly the outer edge of said resilient sheet to a stable platform, unrolling the free end of said sheet away from the clamped end by forcing the free end away therefrom, retaining the free end of the unrolled sheet in a seized semi-cylindrical open position, loading paste upon the open unrolled sheet under and adjacent to said semi-cylindrical free end, releasing said loaded sheet under manual control to effectuate a controlled recoiling of said sheet and releasing said secured outer edge to provide a loaded coiled cartridge suitably filled with said paste.

3,348,358
METHOD OF SEALING A CONTAINER
Martin M. Sternau, Flushing, N.Y., assignor, by mesne assignments, to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed June 15, 1956, Ser. No. 591,628
9 Claims. (Cl. 53—42)



8. A method of sealing a container comprising the steps of placing a sheet of heat shrinkable plastic film over the mouth of a container, said sheet being substantially larger than the opening of the mouth of said container, gathering the edge portion of said film into depending pleats, shielding said sheet across the mouth of said container and simultaneously applying heat to the rim area of said sheet to shrink said sheet selectively primarily at its rim area to seal the container.

3,348,359
TRANSFER DEVICES
Ian Kennan Bertram Lasbrey, Belfast, Northern Ireland, assignor to Short Brothers & Harland Limited, Belfast, Ireland, a company of Ireland
Filed May 16, 1966, Ser. No. 550,387
Claims priority, application Great Britain, May 17, 1965, 20,792/65
9 Claims. (Cl. 53—52)

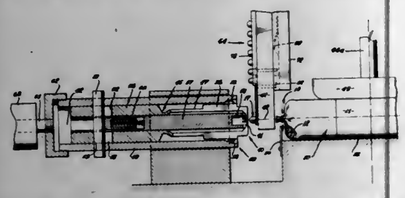


1. Apparatus for sorting a collection of articles into any one of a plurality of receiver bags, which apparatus comprises a plurality of stationary receiver bags arranged vertically in a circle about a vertical axis, a plurality of stationary loading trays arranged at spaced-apart points above the circle of receiver bags, a plurality of moving trays mounted for continuous movement in a circular path beneath each loading tray and above each receiver bag, said moving trays having a latch thereon and being openable on release of said latch, driving means coupled to said trays and driving the moving trays, as a single unit, around the circular path whereby each moving tray passes under each of the loading trays and above each of the receiver bags, means associated with each loading tray for selecting a particular receiver bag into which it is required to deposit an article being sorted, means associated with each loading tray for initiating and controlling the transfer, by dropping, of an article from each loading tray when loaded to one of the moving trays, a mechanical memory mechanism attached to each moving tray for remembering a pre-selection of a receiver bag for an article transferred to the moving tray, and means for initiating and controlling the transfer, also by dropping, of an article from a loaded moving tray to the pre-selected receiver bag, the means for initiating this second transfer comprising means above said circular path and engageable with said mechanical memory mechanism to release the releasable latch on the moving tray to open the moving tray when the position of the moving tray relative to the pre-selected receiver bag is such that the article thereon will fall into the bag.

3,348,360
END CLOSURE OF FILM PACKAGES
Max Roland, Burlingame, Wendell J. Stratton, Glendale, and Axel W. Stratton, Jr., Daly City, Calif., assignors, by mesne assignments, to Wendell J. Stratton, Palestine, Tex.
Filed Apr. 6, 1964, Ser. No. 357,355
2 Claims. (Cl. 53—138)

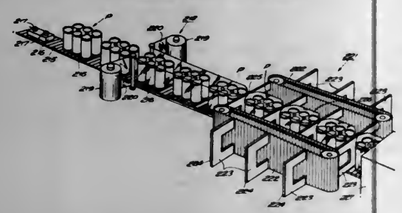
1. Apparatus of the character described for use in processing a series of packages each comprising a flexible wrap containing a filler, each package including a band holding the wrap terminal portion in gathered condition at an end of the package to block exposure of the filler to the exterior, said apparatus including first means movable to supply a series of caps each recessed to receive a wrap terminal portion and band, and other means including

jaw structure and jaw actuator structure movable relative to the packages, said means being operable in predetermined timed relation to movement of said first means and in repeated cycles each characterized by initial reception of a cap at the jaw structure followed by insertion of a wrap terminal portion and band within the cap recess and deformation of the cap to confine the band against expansion during package handling, said first means having an advanced position in which a cap is releasably retained between said jaw structure and said band end of the package for pick-up by the jaw structure during advancement thereof, said first means also having a retracted position in which the jaw structure is advanced relative



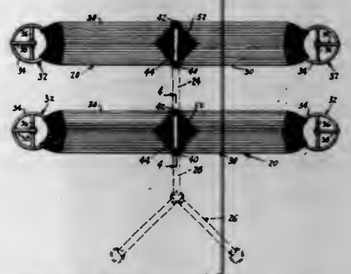
to said package for effecting said cap deformation, a cap magazine, and mechanism to feed caps in series sequence from the magazine for supply between said jaw structure and said band end of the package in response to movement of said first means between advanced and retracted positions, said magazine and first means moving as a unit for feeding caps by gravitation from a stack in the magazine, and said mechanism including upper and lower cap holders, the upper holder displaced during retraction of said first means to retain the stack of caps in the magazine while the lower holder releases a lower cap for supply to said jaw structure, the upper holder displaced during advancement of said first means to release a cap from the stack to the lower holder.

3,348,361
APPARATUS FOR ASSEMBLING PACKAGES
James C. De Shazor, Jr., Sherman Oaks, Calif., and Lawrence R. Burk, St. Louis, and Richard S. Jackson, Crestwood, Mo., assignors, by mesne assignments, to James C. De Shazor, Sherman Oaks, Calif.
Original application Apr. 9, 1964, Ser. No. 358,441, now Patent No. 3,245,196, dated Apr. 12, 1966. Divided and this application Dec. 23, 1964, Ser. No. 429,696
3 Claims. (Cl. 53—184)



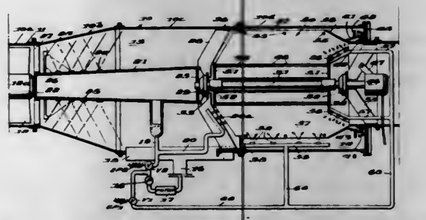
1. In a machine for producing multiple-can packages, including:
(a) means to continuously feed a succession of can units along a predetermined path, each unit including a plurality of cans, the units being spaced from each other along said path;
(b) means to feed a separate sheet of plastic film continuously along each side of said path, said film being fed in the direction of and at about the same as said units;
(c) gripping means to engage the outside face of the sheet at each of the transverse sides of said path;
(d) power means to move said gripping means toward said path until the plastic sheets engage each other in the space between the units;
(e) heating means associated with said gripping means to fuse the plastic sheets together at their engagement area thereby enclosing said units on all vertical sides with plastic sheet; and
(f) means to thereafter heat said enclosed unit to shrink the plastic sheet tightly around the unit.

3,348,362
SADDLE CINCH AND D-HOLDER
Arsenio Herrera, 635 Pennsylvania St., Denver, Colo. 80203
Filed Feb. 16, 1966, Ser. No. 527,830
9 Claims. (Cl. 54—23)



1. A cinch for saddles comprising
a plurality of substantially parallel strands forming a band-like member for underlying the mid-section of a horse;
means, secured to each end of the band-like member, for connecting the band to a saddle;
at least one ring intermediate the band and adjacent each longitudinal edge thereof;
means affixing the rings in transversely aligned relation to the band on one face thereof, the affixing means including means interconnecting the rings and at least one of said strands.

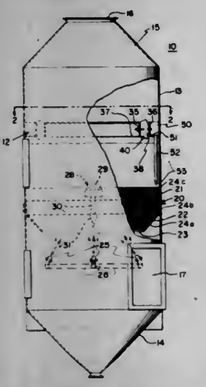
3,348,363
ROTATING ELIMINATOR
James F. King, Jr., Winston-Salem, N.C., and Agnew H. Bahnson, Jr., deceased, late of Winston-Salem, N.C., by Wachovia Bank and Trust Company, executor, Winston-Salem, N.C., assignors to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina
Filed Aug. 23, 1966, Ser. No. 579,182
7 Claims. (Cl. 55—227)



1. In a combined air washer and eliminator, the combination comprising a casing having an air inlet at one end and an air outlet at the other end, a fan for moving the air to be treated through said casing between said inlet and outlet, a first electric motor operatively associated with said fan for driving said fan, a washer chamber located within said casing and including water spray means for effecting contact of water with the air, an eliminator chamber located within said casing on the downstream side of said washer chamber, a rotatably

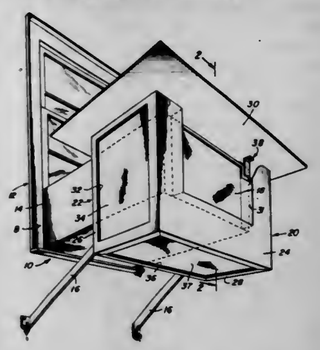
mounted bladed eliminator assembly located within said eliminator chamber and which comprises a plurality of radially extending blades for producing a centrifugally induced helical outward flow path of the liquid droplets separated out of the air stream, a second electric motor operatively associated with said eliminator assembly for rotatably driving said eliminator assembly, back flooding nozzles arranged adjacent the edges of the blades of said eliminator assembly, pump means having an inlet and an outlet, conduit means connecting the inlet of said pump means with the lower part of said eliminator chamber for recirculating water collected in said eliminator chamber, selectively operable valve means located at the outlet of said pump means and operatively associated with said pump means outlet for directing the water selectively to said water spray means in said washer chamber and to said back flooding nozzles located in said eliminator chamber, and timer means programming operation of said air washer and eliminator assembly over a sequential cycle which includes firstly cutting off the electric power to said first and second electric motors, secondly operating said valve means to cut off the water to said water spray means substantially concurrently with the cutting off of said second electric motor and to thereafter cut on the water to said back flooding nozzles thereby to clean off the surfaces of the blades of said eliminator assembly, thirdly operating said valve means to cut off the water from said back flooding nozzles, fourthly, restoring the electric power to said first motor and thereafter to said second motor and lastly operating said valve means to restore the flow of water to said water spray means.

3,348,364
GAS SCRUBBER WITH IMPROVED LIQUID SEPARATOR
Elijah B. Henby, Northfield, Ill., assignor to National Dust Collector Corporation, Skokie, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 503,463
1 Claim. (Cl. 55—257)



A wet type, updraft gas scrubber comprising a housing having a vertically extending, cylindrical wall, inlet means to the housing adjacent the lower end of said housing, outlet means from the housing adjacent the upper end of said housing, a filter bed extending transversely across said housing intermediate said inlet and outlet means, said filter bed comprising a plurality of spherical filter elements forming a plurality of diverse and tortuous paths for said gas flowing upwardly therethrough, liquid spray means between said inlet means and said bed for upwardly introducing a fine spray of liquid droplets into the gas flowing upwardly into said filter bed thereby to wet and collect the contaminants in the gas on the surfaces of said filter elements, and separator means for removing and collecting liquid remaining in the gas flowing upwardly from said filter bed, said separator means including a pair of co-axial, spaced apart, inner and outer cylindrical rings defining therebetween an anuular flow path for said gas substantially smaller in cross section than said housing and thereby substantially increasing the flow velocity of said gas, said inner and outer rings being arranged co-axially with the vertical axis of said cylindrical wall and spaced intermediate said filter bed and the upper end of said wall, said outer ring having a diameter less than the internal diameter of said cylindrical wall and spaced inwardly therefrom for forming an inner wall of a annular, liquid collecting trough around the interior surface of said cylindrical wall, an annular bottom wall for said trough extending between said outer ring and said cylindrical wall, means in said bottom wall for removing the collected liquid from said trough and directing said liquid into said filter bed, imperforate circular wall means across said inner ring for blocking gas flow upwardly to said inner ring, and a plurality of adjustable spaced inclined overlapping planar swirl vanes mounted between said rings throughout said annular gas flow path for directing the upwardly flowing gas between said rings outwardly at high velocity against the cylindrical wall of said housing, each of said vanes including an arcuate outer edge adjacent said outer ring, and a straight inner edge and a pair of mounting pins connected at the inner and outer edges of the vanes projecting through said inner and outer rings, respectively, pivotally supporting said vanes for angular adjustment relative to the horizontal and overflow means effective to drain off excessive liquid which may accumulate above the filter bed.

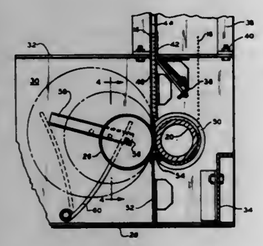
3,348,365
CONDENSER UNIT AIR CLEANER AND HOUSING
Dennis D. Dupre, Houma, La., assignor of forty percent to Lee P. Lottinger, Jr., Houma, La.
Filed Oct. 16, 1964, Ser. No. 404,264
2 Claims. (Cl. 55—350)



1. In combination with a tubular casing through which air is adapted to be pumped and having a pair of opposing side walls each of which having an air inlet opening and at least one additional transverse wall in which an air outlet opening is formed, said openings of the casing being defined in an end portion thereof, a protective cover cabinet housing supported, in part, on said casing, the end portion of said casing in which said inlet and outlet openings are formed being enclosed within said cabinet housing, said cabinet housing including a pair of opposing side wall panels generally paralleling and spaced outwardly of said pair of side casing walls, and an additional wall panel generally paralleling and sealed against said additional casing wall, said side wall panels each having

an air inlet opening formed therein of total cross-sectional area greater than the total cross-sectional area of each of the first-mentioned air inlet openings of the side walls of the casing and in registry with the first-mentioned air inlet openings, porous air filter means disposed in the side wall panel air inlet openings, said additional wall panel including an air outlet opening which defines with said additional casing wall opening a common air outlet opening from the casing and said cabinet housing, said cabinet housing including an impervious roof panel extending over and outwardly spaced from the side wall panels and the additional wall of the cabinet housing.

3,348,366
AIR SEALING REWIND CONSTRUCTION FOR ROLL-TYPE FILTER
Robert L. Bennett, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,596
3 Claims. (Cl. 55—354)



1. In a roll-type air filter including a filter media supply section, a filter media rewind section, an air passage intermediate the supply section and said rewind section through which a stream of air to be filtered is passed, filter media extending through said air passage from said supply section to said rewind section so said stream of air is passed through said media in said air passage in filtering relation, media conveyor means including an endless belt conveyor supporting said media in said air passage and moving said filter media from said supply section through said air passage to said filter media rewind section, said conveyor passing around and in contact with roller means disposed in said rewind section, and means sealing the sides of said media passed through said air passage and preventing air leakage around the sides of said media,

(a) a filter media rewind roll receiving and rewinding filter media which has passed through said air passage section from said supply section, said rewind roll having opposite end spindles and being disposed generally parallel to said roller and upstream of said roller, relative to the direction of flow of gas to be filtered through said air passage, and means urging a peripheral section of said rewind roll, including filter media wound thereon, against said conveyor and urging said conveyor against said roller means at the nip formed at the line of contact between said conveyor and said rewind roll periphery, said line of contact defining a rewind roll driving engagement line which is tangential to said rewind roll at the point of contact of said rewind roll and said conveyor;

(b) a stationary panel extending continuously across the width of said rewind section and rigidly fixed to said rewind section in sealing relation, to prevent air to be filtered from passing around said stationary panel, said panel terminating adjacent said nip in an upper sealing edge parallel to the axis of said rewind roll and said sealing edge continuously contacting media wound on said rewind roll preventing the passage of air between said sealing edge and said rewind roll; and,

(c) spindle receiving channel means forming substantially straight channels, one of said channel means being disposed on each of the opposite sides of said rewind section receiving and supporting said spindles of said rewind roll and said channel means being disposed within said rewind section, said spindles of said rewind roll removing through said channel means in response to accumulation of filter media on said rewind roll while maintaining contact between said rewind roll, including said media wound thereon, and both said sealing edge of said stationary panel and said conveyor means along said driving engagement line.

3,348,367
FILTER BAG AND METHOD OF MAKING SAME
Elton E. Rush, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,221
1 Claim. (Cl. 55—361)



An improved filter bag, suitable for filtering solids from gases, and formed from a length of porous filter cloth provided with a first selvage along one longitudinal side edge thereof and a second selvage along the opposite longitudinal side edge thereof, each said selvage having a width within the range of 0.75 to 3 inches which is wider than the selvage normally provided on filter cloth and each said selvage being formed of a closer, less flexible weave than the more porous weave which forms the remainder of said cloth, said bag comprising: a tubular body; a longitudinal joint in said body; said joint being formed by folding said one side edge over upon itself to form a first fold completely within the width of said first selvage, folding said opposite side edge over upon itself to form a second fold completely within the width of said second selvage, and overlapping and interlocking said first fold and said second fold; and a plurality of spaced apart rows of stitching, each extending longitudinally along and through said joint, and each outer row of said stitching being positioned at least 0.125 inch from the inner edge of the one of said selvages which is adjacent thereto, said inner edge being defined as the edge of the selvage which is woven to the remainder of said cloth.

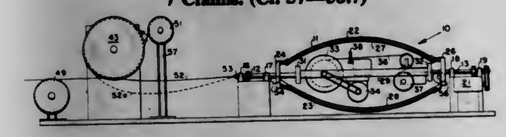
3,348,368
METHOD AND APPARATUS FOR PROCESSING GLASS YARN
Chester J. Dudzik and Guy E. Perkins, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed July 23, 1964, Ser. No. 384,595
11 Claims. (Cl. 57—35)

6. Apparatus for processing glass yarn comprising, a support for a supply of yarn, a heating device defining a thermally isolated heat zone for passage of yarn therethrough to heat the yarn, a false twist device including a twist trapping member to impart twist in the yarn before passage thereof through said heat zone and to untwist the yarn thereafter, means for applying a lubricant to said yarn after passage of the yarn through said heat zone and prior to engagement of the yarn with said twist trapping member, take up means for collecting the proc-



essed yarn, and tension means operable to maintain the yarn at a uniform tension during passage thereof through said heating device and to said take-up means.

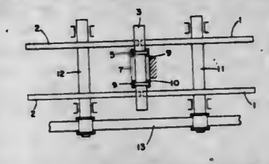
3,348,369
STRANDING APPARATUS
Harvey Burr, De Kalb, Ill., assignor to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,668
7 Claims. (Cl. 57—58.7)



1. Stranding apparatus comprising:
(A) a cradle,
(B) strorage means supported by said cradle,
(C) metering means supported by said cradle, metering twisted strand comprising a plurality of individual wires into said storage means at a preselected rate of advance,
(D) a flyer rotating around said cradle and supporting said strand,
(E) said strand being twisted by the rotation of said flyer,
(F) a smooth-surfaced capstan upstream of said flyer,
(a) said wires being wrapped around said capstan and advanced thereby,
(b) said wires being slippable on said captan so as not to advance therewith at speeds substantially exceeding said rate of advance, and
(G) means driving said capstan at a surface speed greater than the speed of said metering means.

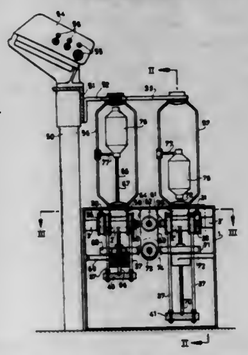
3,348,370
DRIVE ARRANGEMENT FOR FALSE TWISTING DEVICES
Hans Gassner, 33 Friedhofstrasse, Schweinfurt, Germany
Continuation of application Ser. No. 10,326, Feb. 23, 1960. This application July 5, 1966, Ser. No. 562,698
Claims priority, application Germany, Feb. 25, 1959, K 37,090
8 Claims. (Cl. 57—77.45)

1. A device for imparting a false twist to synthetic filaments in a continuous operation, said device comprising a twisting tube member hollow throughout for the passage therethrough of the synthetic filament to be false twisted and adapted for rotation, two pairs of rotatable drive discs mounted for rotation on parallel axes, the opposed discs of each pair being disposed in a common plane, drive means for unidirectionally driving said drive discs, and a bipolar magnet fixedly disposed between said pairs of drive discs with both poles of said magnet being disposed in close proximity to said twisting tube member,



said twisting tube member consisting at least partially of magnetic material and being held in position and urged into frictional contact with the peripheries of said pair of drive discs in the nip thereof by the magnetic force lines of said magnet, with the twisting tube member being driven by the said drive discs.

3,348,371
SPINDLE-RAIL-LIFTING DEVICE FOR FLY-FRAMES
Fabio Lancerotto, Genoa, Italy, assignor to Nuova San Giorgio S.p.A., Genoa-Sestri, Italy, an Italian company
Filed Nov. 28, 1966, Ser. No. 597,292
Claim priority, application Italy, Sept. 21, 1963, 19,395/63, Patent 705,441
3 Claims. (Cl. 57—99)

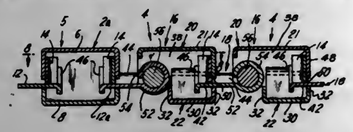


1. In a fly-frame having a framework and first and second spindle rails, the vertical movement of which is brought about by first and second flexible members, respectively, pulled by first and second driving pulleys respectively, a device comprising rotatable component parts rigidly affixed to the driving pulleys aforementioned, along with first and second driving means, either one of which is capable of being actuated at any instant, said rotatable members comprising two differential gears and plurality of gear wheels, said rotatable members being drivingly so connected that, when said first-named driving means is actuated during the fly-frame operation, the spindle rails are imparted vertical movement in opposite directions, whereas said spindle rails are vertically and undirectionally moved when said second driving means are actuated.

3,348,372
BRACELET LINKAGE WITH DETACHABLE LINK ASSEMBLIES
Emil Rodriguez, New York, N.Y., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Apr. 17, 1964, Ser. No. 363,048
11 Claims. (Cl. 59—79)

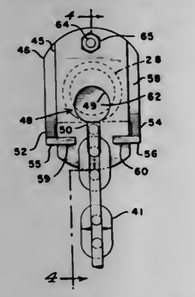
1. A link assembly adapted to be detachably included in a linkage comprising a plurality of serially connected substantially similar assemblies, said assembly comprising

an upper member, a second and lower member located beneath said upper member, and means securing said members to one another in that position, said upper member having a top wall of a given length and width and having depending side walls, said lower member having a bottom wall of susbtantially the same width and of approximately half the length of said top wall of said upper member, said bottom wall of said lower member underlying said top wall of said upper member at one end of said upper member, said link assembly having a recess



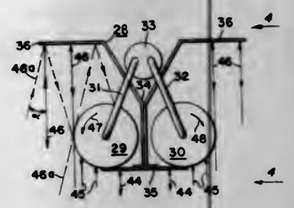
therein at the other end thereof which is open at said other end and is flanked by said side walls of said upper member, said upper member side walls at said recess having apertures therein, said lower member having a first part extending out beyond said one end of said upper member which is receivable in said recess at said other end of an adjacent link assembly via the open end of said recess and carrying a connecting means releasably engageable in said apertures in said side walls of said upper member of said adjacent assembly.

3,348,373
CHAIN CONNECTOR
Joseph C. Hurlburt, Leola, and John K. Hale, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,582
2 Claims. (Cl. 59—93)



1. In combination with a pair of structural members subject to loads attempting to separate said members, break away mechanism for adjustably interconnecting said members to normally prevent separation thereof but to yield in response to separating loads in excess of a predetermined amount, said mechanism comprising a chain having a plurality of interconnected links wherein each link is disposed in a plane generally perpendicular to the plane of the preceding and following links with which it interconnects, means fixing one end of said chain to one of said pair of members, a first plate having a keyhole slot therein, said slot having a main body opening of a size to readily permit passage of said chain links therethrough and a leg portion extending from said main body opening, said leg portion being of a size to receive any selected one link of said chain therein and prevent passage therethrough of the perpendicularly disposed preceding and following chain links, said first plate having a bolt hole extending therethrough and spaced from said keyhole slot, a base plate fixedly carried by the other member of said pair of members, said base plate having a bolt hole therethrough, said first plate normally being positioned on said base plate in an operative position wherein said first plate bolt hole is aligned with said base plate bolt hole, said base plate having a portion covering said main body opening of said keyhole slot when said first plate is in operative position to prevent movement of a chain link from said leg portion of said keyhole slot into said main body portion thereby fixedly anchoring said chain relative to said first plate, a bolt having a predetermined shear strength normally extending through said aligned bolt holes when said first plate is in operative position, and means on said base plate engaging said first plate to prevent movement of said first plate relative to said base plate in all directions other than perpendicular to the axis of said bolt whereby forces attempting to separate said members are transferred between the members through said chain and said first plate and are applied to said bolt as direct shear loads.

3,348,374
SUN REFERENCED ORIENTING DEVICES
Samuel Schalkowsky, Radnor, Pa., (4003 Woodlawn Road, Chevy Chase, Md. 20015)
Filed Nov. 13, 1963, Ser. No. 323,411
20 Claims. (Cl. 60—26)



1. A momentum transfer device, comprising in combination, a pair of substantially identical radiometers each of which includes a radiation transparent housing and a rotatable momentum wheel disposed for rotation therewithin about a fixed axis, radiation blocking means having a predetermined indexed position relative to said radiometer housnigs disposed in front of said radiometers to intercept a portion of radiation directed toward said radiometers from a particularly positionable source of radiation, and means mounting said radiometer in such fixed relation to one another that incident radiation from said particularly positionable source causes the momentum wheels to rotate counter to one another about their respective axes in such relative sense that any torque exerted on each radiometer housing by a change of angular veloicty of the momentum wheel therewithin is in such direction as to tend to shift the entire device to equalize the radiation incident upon the said pair of radiometer housings.

3,348,375
GAS TURBINE ENGINE FUEL CONTROL
William B. Gardner, West Simsbury, Joel F. Kuhlberg, East Hampton, and Peter W. McLaughlin, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 2, 1966, Ser. No. 531,150
10 Claims. (Cl. 60—39.28)

1. A fuel control for a gas turbine engine having a rotor with a compressor connected to a turbine and a burner section between the compressor and the turbine, the control comprising:

metering means for metering fuel flow to said engine;

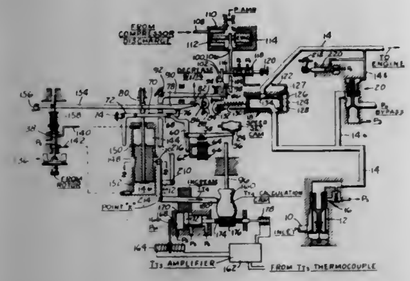
speed selecting means for selecting a desired operating speed of said rotor, said speed selecting means being functionally connected to said metering means;

speed sensing means for sensing the actual speed of said rotor;

means responsive to said speed sensing means and functionally connected to said metering means for modifying fuel flow in response to deviations of engine speed from the selected desired speed;

temperature selecting means for selecting a desired temperature at the inlet to the turbine, said temperature selecting means being functionally connected to said metering means;

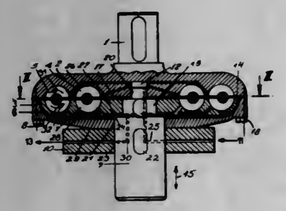
means for sensing a plurality of engine parameters;



calculating means functionally connected to said means for sensing a plurality of engine parameters for calculating the actual temperature at the inlet to said turbine; and

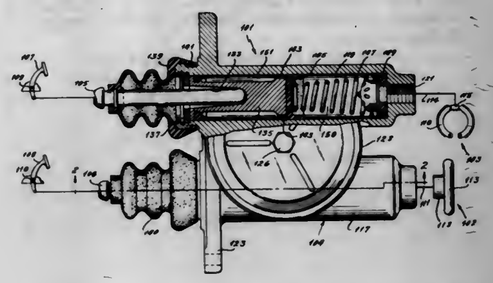
means responsive to said calculating means and functionally connected to said metering means for modifying fuel flow in response to deviations in turbine inlet temperature from the selected desired turbine inlet temperature.

3,348,376
GENERATOR OF HIGH FREQUENCY OSCILLATIONS
Werner Elsfeldt, 15 Buchnerstrasse, Darmstadt 61, Germany
Filed Oct. 20, 1965, Ser. No. 498,784
Claims priority, application Germany, June 10, 1965, N 26,854
10 Claims. (Cl. 60—54)



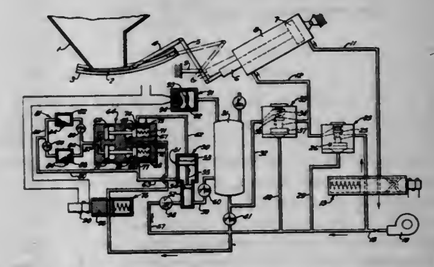
1. A high-frequency oscillation generator, comprising a pair of axially aligned rotors having confronting faces transverse to their axes and formed with confronting angularly spaced fluid compartments adapted to induce a centrifugal flow of fluid between the compartments of said rotors upon relative rotation thereof, at least one of said rotors being axially oscillatable for transferring vibrations to a body, input means for driving a pumping one of said rotors for inducing a hydraulic-fluid flow between said compartments, and means for restricting the rotation of the other, driven rotor relative to the pump rotor.

3,348,377
PRESSURE GENERATING MEANS
Walter R. Freeman, Portage Des Sioux, and Werner F. Boldt, Kirkwood, Mo., assignors to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Dec. 4, 1958, Ser. No. 778,145
7 Claims. (Cl. 60—54.6)



1. A pressure generating system comprising a first pressure fluid branch having a first cylinder and piston assembly for actuating a preferred pressure fluid responsive device, a second fluid pressure branch having a second cylinder and piston assembly adapted to be operated independently of said first cylinder and piston assembly for actuating a sacrificial fluid pressure device, said first and second cylinder having first and second compensation ports, respectively, a pressure fluid reservoir in communication with both said first and second cylinders through the compensation ports therefor, said second compensation port having an upper fluid inlet end positioned in said reservoir at a predetermined level spaced above the upper fluid inlet end of said first fluid compensation port, and a bleeder port having a fluid inlet end connecting said second cylinder with said reservoir at a level intermediate to the upper fluid inlet end of said first and second compensation ports.

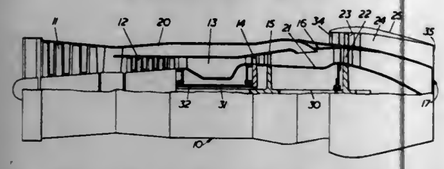
3,348,378
HIGH PRESSURE FAIL-SAFE GATE-OPERATING APPARATUS
Kenneth F. Lemley, 144 Woodhaven Lane, Pittsburgh, Pa. 15237
Filed Apr. 25, 1966, Ser. No. 544,987
9 Claims. (Cl. 60—57)



1. In fail-safe gate-operating apparatus having a reservoir containing compressed air that is used only for closing a gate in emergencies, and a source of compressed air for charging the reservoir, of a pressure intensifier connected with said reservoir for increasing the air pressure in the reservoir above the pressure supplied by said source, said intensifier including a cylinder containing a piston for operating the intensifier, a pair of conduits connected with the cylinder at opposite sides

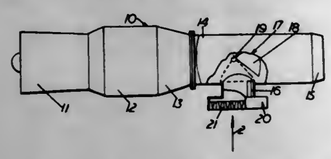
of the piston, a reversing valve connected with said source for connecting it with said conduits alternately to reciprocate the piston, and means for operating the valve.

3,348,379
TURBOJET ENGINE WITH COMPRESSOR BYPASS AND AFT FAN
Geoffrey Light Wilde, Turnditch, Cowers Lane, Derby, and John Frederick Coplin, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Sept. 18, 1964, Ser. No. 397,518
Claims priority, application Great Britain, Sept. 25, 1963, 37,826/63
7 Claims. (Cl. 60—226)



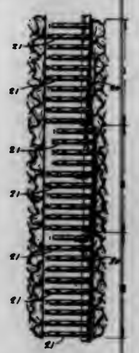
1. A gas turbine jet propulsion by-pass engine comprising compressor means, combustion equipment, turbine means and an exhaust duct mounted in flow series, a by-pass duct through which air may flow from the compressor means to the exhaust duct thus by-passing the combustion equipment and said turbine means, a mixing zone within said exhaust duct, the by-pass air mixing with the turbine exhaust gases in said mixing zone, an auxiliary turbine mounted within the exhaust duct downstream of the mixing zone and a fan drivingly connected to said auxiliary turbine.

3,348,380
POWER PLANT FOR VTOL OR STOL AIRCRAFT HAVING MEANS TO AUGMENT JET THRUST WHEN THE SAME IS DIRECTED VERTICALLY
John A. J. Rees, Weybridge, England, assignor to Rolls-Royce Limited, Derbyshire, England, a British company
Filed Jan. 5, 1966, Ser. No. 518,946
Claims priority, application Great Britain, Jan. 11, 1965, 1,258/65
4 Claims. (Cl. 60—229)



1. A jet propulsion power plant for use in VTOL or STOL aircraft comprising: a gas turbine engine mounted on an axis generally parallel to the longitudinal axis of the aircraft, said gas turbine engine including compressor means, combustion means, turbine means and a jet pipe arranged in flow series; a forward propulsion nozzle mounted on the downstream end of said jet pipe; a downwardly directed nozzle assembly communicating with said jet pipe upstream of the downstream end of the same for providing direct lift from the exhaust gases, said downwardly directed nozzle assembly including a downwardly facing discharge nozzle at its discharge end, said downwardly facing discharge nozzle have a plurality of compartments, and constant-volume combustion means in each of said plurality of compartments; and valve means in said jet pipe, said valve means having a forward propulsion position in which jet exhaust gases are permitted to flow exclusively through said forward propulsion nozzle and a direct lift position in which jet exhaust gases are permitted to flow exclusively through said nozzle assembly.

3,348,381
COAL FACE SUPPORT SYSTEMS
Oskar Jacobi, Semperstrasse 24, Essen, Germany
Filed Feb. 15, 1965, Ser. No. 432,556
Claims priority, application Germany, June 4, 1964, B 77,067/64
6 Claims. (Cl. 61—45)



1. A method of automatically and successively advancing through a predetermined distance individual support units of a mine roof support system which are associated together in groups, the groups being controlled by a group control means, and wherein the individual support units within each group are controlled by unit control means, comprising transmitting a signal from the group control means to the unit control means of each group which is spaced the predetermined distance from the working face, whereby the unit control systems are actuated upon the localized sensing of the predetermined distance rather than sequentially, each of said actuated unit control means transmitting a signal to a first one of its individual roof support units, relieving the first support unit of its roof-supporting pressure, advancing the first support through the predetermined distance, triggering the unit control means, resetting the first unit under its roof-supporting pressure, relieving the second one of the individual roof support units of its roof-supporting pressure, the unit control means relaying control signals from unit to unit until the last unit is reached whereupon the first unit again becomes the controlling unit and is reactuated upon a subsequent signal from the group control means.

3,348,382
OFFSHORE PLATFORM FOR ICE CONDITIONS
Kenneth A. Blenkarn and George C. Howard, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,692
1 Claim. (Cl. 61—46)

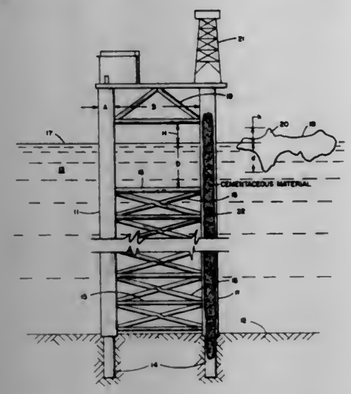
A marine structure capable of withstanding impact from ice floes or similar floating objects comprising

a rigid braced structure containing at least three substantially vertical legs at approximately equal distances apart, the ratio of spacing between adjacent legs at the water level to the average outer diameter of said legs at said level being between about three and about eight,

said structure being provided with continuous cross bracing between adjacent legs extending from at least the bottom of the water to a level at least 10 feet below, but not substantially exceeding 20 feet below low water level,

said legs extending a substantial distance above the water level,

a second cross-braced structure including a top platform mounted upon and rigidly attached to said legs at a distance of at least 10 feet above but not substantially more than 20 feet above high water level,



said platform including flooring suitable for carrying out marine operations from said platform,

said legs containing no cross bracing between said rigid-braced structure and said rigid-braced top platform, and

a filling of cementaceous material occupying at least the major part of the volume inside each of said legs from the inner diameter towards the center thereof and at least throughout the length of said legs in which there is no cross bracing.

3,348,383
CABLE LAYING PLOW WITH BRACE ATTACHMENT
Leon O. Kelley, P.O. Box 488, Stamford, Tex. 79553
Filed June 28, 1965, Ser. No. 467,323
7 Claims. (Cl. 61—72.6)

7. A cable laying plow for movement through the ground, which plow is attached to a prime mover, and which plow comprises;

(a) a mounting bracket,

(1) said mounting bracket having upper and lower horizontal holes formed therein, which holes lie in a vertical plane which is perpendicular to the line of travel,

(b) pairs of rearwardly extending frame means, one arranged above the other,

(1) horizontal holes formed in each frame means near each end thereof,

(2) said horizontal holes in the forward end of said respective frame means adapted to register with the respective horizontal holes in said mounting bracket,

(3) horizontal pivot means pivotally connecting said respective frame means and said mounting bracket,

(c) hydraulic power means interconnecting said mounting bracket and one of said frame means pivotally mounted on said bracket to move said frame means relative to said mounting bracket,

(d) a plow shank,

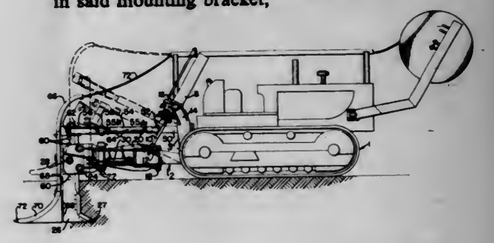
(1) said plow shank having transverse, horizontal holes formed therethrough, parallel to the horizontal holes in said mounting bracket,

(2) pivot pins passing through said horizontal holes in the rear of the respective frame means and through horizontal holes in said plow shank so that the axis of the respective pivot pins in the rear of said frame means and in said plow shank are the same distance apart as the axes of said spaced apart, horizontal holes in said mounting bracket,

(3) said frame means adapted to pivot about said horizontal axes on said mounting bracket and on said plow shank to raise said plow shank in the same upright position by said frame means, which form a parallelogram,

(e) a pair of upright pivot pins interconnecting portions of each frame means intermediate the length of the respective frame means,

(1) the axes of one pair of said upright pivot pins in said upper frame means and in said lower frame means being spaced intermediate the length of said frame means and being equidistant from the respective horizontal axes of holes in said mounting bracket,



(2) the axes of the other pair of upright pivot pins in said upper frame means and in said lower frame means being spaced intermediate the length of said frame means and being equidistant from the respective horizontal axes of holes in said plow shank,

(3) each said upright pin in each lower frame means being axially aligned with said respective upright pins in said upper frame means when said frame means are in one position, and which upright pins in one frame means are parallel with said upright pins in said other frame means, when in all other positions, so as to enable unitary, lateral swinging movement of certain portions of said frame means about said upright pivot pins when said frame means are in at least one position with respect to said horizontal pivot pins, and

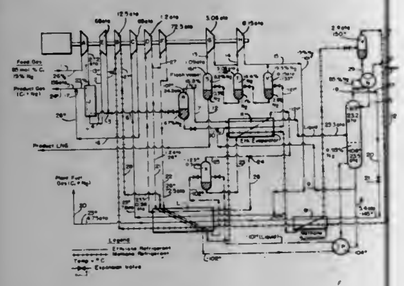
(f) hydraulic power means interconnecting two adjacent portions of one of said frame means in abridging relation with respect to one of said upright pivot pins to move said adjacent portions of said frame means relative to each other about said upright axes.

3,348,384
PROCESS FOR THE PARTIAL LIQUEFACTION OF A GAS MIXTURE
Alexander Harmens, Purley, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company
Filed Dec. 16, 1965, Ser. No. 514,335
Claims priority, application Great Britain, Feb. 19, 1965, 7,300/65
10 Claims. (Cl. 62—28)

1. Process for obtaining a liquefied product and a gaseous products from

a gaseous feed mixture from which have been removed the impurities of water and acid to provide an impurity free feed stream essentially of

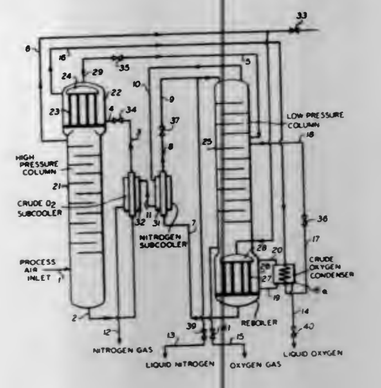
a combustible higher boiling point component and a lower boiling point component,
said liquefied product comprising substantially only higher boiling component,
said gaseous product having a specified proportion of the lower boiling component;
said process comprising the steps of
(a) cooling the impurity free feed stream at high pressure to sub-ambient temperature,
(b) expanding the cooled feed stream in an expansion machine,
(c) flashing expanded gas from step (b) into a feed stream flash vessel,
(d) condensing the flash vapors from the feed stream flash vessel by indirect heat exchange with a boiling refrigerant,
(e) feeding said condensed vapors to a distillation column to produce a top gas and a bottom product,



(f) maintaining the distillation conditions in said column such as to produce said top gas of the proper controlled composition and of such quantity of the lower boiling component as to be suitable for fuel gas for the process, a part of the top gas being condensed by a refrigerant,
(g) mixing bottom product of said column with the flash liquid from the feed stream flash vessel (step (c)),
(h) flashing said admixed liquids in a second flash step to produce top vapors and bottom liquid,
(i) controlling the composition of the bottom product of the column (step (e)) so that said top vapors (step (h)) have the above specified proportion of lower boiling component,
(j) removing said bottom liquid (step (h)) as the liquefied product and said top vapors as the gaseous product.

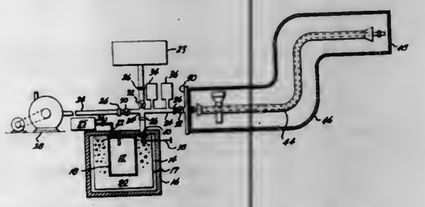
3,348,385
SEPARATION OF GAS MIXTURES
Jeram S. Kamlani, Fairfield, and Gunnar Lund, North Haven, Conn., assignors to Gas Equipment Engineering Corporation, Milford, Conn.
Filed Dec. 23, 1964, Ser. No. 420,673
10 Claims. (Cl. 62—29)

1. In a process for separation of a gas mixture including a low boiling component and a high boiling component by liquefaction and fractionation in a high pressure column and a low pressure column separate from the high pressure column, comprising
(a) fractionating the mixture in the high pressure column to provide an overhead vapor rich in the low boiling component and as bottoms a crude cut of the high boiling component in liquid state;
(b) condensing a portion of the high pressure column overhead vapor and using the resulting condensate as reflux for the high pressure column;
(c) reducing the pressure of crude cut and condensing the reflux for the high pressure column by indirect heat exchange of crude cut at the reduced pressure and the overhead vapor of the high pressure column;



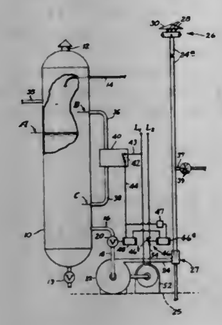
(d) transferring crude cut utilized in said indirect heat exchange to the low pressure column and fractionating the crude cut therein to provide a low pressure column overhead vapor rich in the low boiling component and a low pressure column bottoms rich in the high boiling component;
the improvement which comprises:
(e) vaporizing at least a portion of the crude cut during said indirect heat exchange and cooling said at least partially vaporized crude cut during said transfer to the low pressure column to condense crude cut.

3,348,386
APPARATUS AND METHOD FOR PUMPING AND STORING GASES
Amiel G. Forshee, Burien, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 11, 1965, Ser. No. 431,878
6 Claims. (Cl. 62—48)



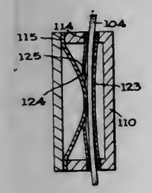
1. Apparatus for storing, dispensing and recovering a gas comprising:
(a) a container;
(b) means for defining a space within said container containing a material for gas adsorption;
(c) means for cooling said space; and
(d) a conduit interconnecting said space within said container with a vacuum pump, a source of gas, and a point of use for said gas, said conduit having means to operatively connect and isolate said space from said vacuum pump, said source of gas, and said point of use as desired, said conduit being isolated from said means for cooling said space.

3,348,387
METHOD AND APPARATUS FOR EVAPORATING LIQUEFIED GASES
Kurt Kuhlmann, Portland, Oreg., assignor to Industrial Air Products Co., Portland, Oreg., a corporation of Oregon
Filed Feb. 9, 1966, Ser. No. 534,602
10 Claims. (Cl. 62—52)



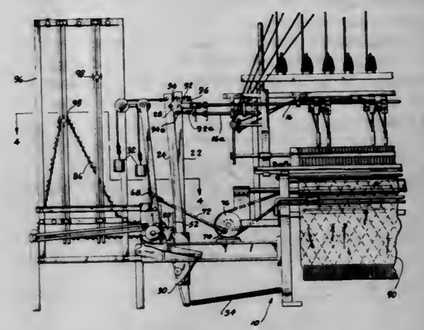
1. Apparatus for evaporating a liquefied gas comprising
liquid dispersing means located above the ground for dispersing the liquefied gas while such is in the liquid state into the atmosphere, including a discharge opening communicating with the atmosphere,
support means supporting said dispersing means above the ground,
a supply of liquefied gas under pressure spaced from said dispersing means, and
fluid passage means connecting said supply with said dispersing means for conveying gas in a liquid state from the former to the latter, said supply including means forcing gas while in a liquid state through said fluid passage means to said dispersing means.

3,348,388
BRACELET FOR INTERCHANGEABLE BROOCHES
Burton Elliott, % Marcus Purchasing Co., Inc., Gimbel Bldg., 10th floor, 1275 Broadway, New York, N.Y. 10001
Filed Oct. 22, 1965, Ser. No. 501,071
3 Claims. (Cl. 63—1)



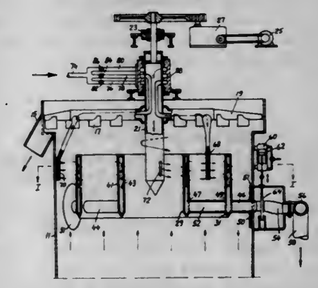
1. An article of jewelry comprising a bracket including
a channel portion,
opposite walls of said channel portion having mutually aligned holes therethrough extending transversely of the channel,
a longitudinally curved sleeve extending through and between said holes,
said sleeve being fixed to said channel portion and having an aperture in its wall,
and a spring member secured to said bracelet and protruding into said sleeve through said aperture.

3,348,389
LAYING THREADS BETWEEN AND ACROSS KNITTED FABRIC
Abraham J. Platnick, Valley Stream, N.Y., assignor to Cavalier Mills, Inc., Brooklyn, N.Y.
Continuation of application Ser. No. 256,698, Feb. 6, 1963. This application Mar. 25, 1966, Ser. No. 537,385
10 Claims. (Cl. 66—128)



1. A machine for inlaying pattern yarns between and across a knitted fabric for use in conjunction with a V-bed knitting machine, comprising:
(a) a moving cam carriage;
(b) control rods, said control rods being movably positioned parallel to the beds of the knitting machine;
(c) feeder tubes for the pattern yarns, said feeder tubes being individually mounted on said control rods and being located adjacent the beds of the knitting machine; and
(d) operating means, said operating means selectively moving said control rods and said feeder tubes mounted thereon relative to the movement of said moving cam carriage,
whereby said pattern yarns are selectively inlaid between and across the knitted fabric.

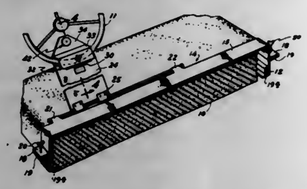
3,348,390
CELLULOSIC MATERIAL PROCESS VESSEL LIQUID DISTRIBUTION DEVICE
Johan C. F. C. Richter, St.-Jean-Cap-Ferrat, Alpes-Maritimes, France, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden
Filed Mar. 22, 1966, Ser. No. 536,325
Claims priority, application Sweden, Mar. 25, 1965, 3,847/65
12 Claims. (Cl. 68—181)



1. In a process vessel for the treatment of cellulosic material comprising an upright cylindrical container adapted for axial flow of cellulosic material, feed means at one end of the container, discharge means at the other end of the container, a liquid distribution device for distributing liquid over the cross-section of the container

consisting of at least one tubular arm rotating about the axis of the container and provided with at least two outlet orifices, at least two liquid supply conduits connected to the outlet orifices, and strainer means for straining liquid from the cellulosic material, the improvement comprising liquid distribution means comprising at least two liquid outlet orifices mounted on at least one rotating tubular arm to move at mutually different radial distances from the axis of the container and connected to separate liquid supply conduits, and at least part of the liquid supply conduits are provided with independently adjustable flow control means, whereby the supplied liquid can be controlled as to its distribution in the container between areas located at different radial distances from the container axis.

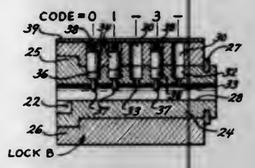
3,348,391
STEERING WHEEL LOCK FOR AUTOMOBILES
Irving F. Barnwell, 150—42 115th Drive, Jamaica, N.Y. 11434
Filed Mar. 1, 1966, Ser. No. 530,990
6 Claims. (Cl. 70—211)



1. In an automotive vehicle, a device for locking the steering wheel consisting of an elongated support extending transversely of the vehicle and having a first means for securing the same to the front seat of the vehicle, a locking device consisting of a plate, a second means hingedly and slidably connecting one end of said plate to said support for slidable movement of the plate longitudinally with respect to the support, said plate having a length sufficient to extend from said support to a position beyond an adjacent portion of said wheel to position the other end of the plate against the underside of said wheel portion, said plate having near but spaced from said other end thereof a first arcuate jaw of the same radius of curvature as the convex side of said wheel registrable against the convex side of said wheel portion, said plate having hinged thereto on an axis below said first jaw a second arcuate jaw complementary to said first jaw having the same radius of curvature as the concave side of said wheel whereby when said plate is positioned as aforesaid said second jaw is swung upward into engagement with the concave side of said wheel portion said wheel portion is confined between said jaws, and a third means for releasably locking said jaws against separation from said wheel portion.

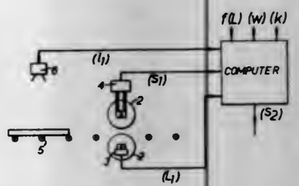
3,348,392
MASTER-KEYING SYSTEM
Joseph Schreiber, 18507 Forrer, Detroit, Mich. 48235
Filed May 12, 1965, Ser. No. 455,056
2 Claims. (Cl. 70—358)

1. A master-keying system comprising: a first master key and a second master key both provided with similar cylindrical shanks; said first master key being cut according to a predetermined code combination in the form of shallow depressions on the surface of said cylindrical shank; said second master key being cut according to the same code combination as said first master key with at least one code digit added thereto; a first series of locks adapted to be operated by said first master key, each one of said locks being provided with pin-tumbler elements each adapted to be displaced by each of said shallow depressions on the surface of said shank to a predetermined position dependent from each code digit of the code combination corresponding to each pin-tumbler element for unlocking each one of said locks and each one of said locks having at least one of said pin-tumbler elements omitted whereby all the locks in said first series dependent from said first master key are different from one another only as to the permutation order of said omitted pin-tumbler element; a key for fitting each said lock in said first series, each key being cut to the same code combination as said first master key, except that each said key is coded differently from said first master key relatively to the omitted pin-tumbler element of the lock operable by said key; a second series of locks similar in construction and in code combinations to the locks in



said first series, each lock in said second series having a pin-tumbler element corresponding to the added code digit of said second master key; and a key for each said lock in said second series, each such key being cut according to the same code combination as said second master key, except that each such key is coded differently from said second master key relatively to the omitted pin-tumbler element of the lock operable by said key; whereby said first master key is adapted to operate the locks of said first series only, said second master key is adapted to operate the locks of both said first and second series, each key in said first series is adapted to operate only one lock in said first series and each key in said second series is adapted to operate one lock in said first series and one lock in said second series.

3,348,393
ROLLING
Peter J. Shipp, London, England, assignor to The British Iron and Steel Research Association
Filed Aug. 19, 1963, Ser. No. 302,967
Claims priority, application Great Britain, Aug. 21, 1962, 32,049/62
8 Claims. (Cl. 72—8)



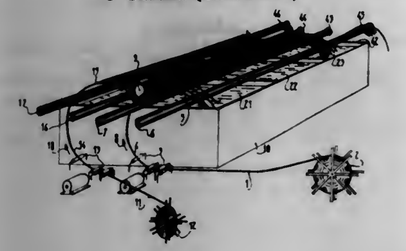
1. Apparatus for controlling the setting of the roll of the last broadside pass in the rolling sequence of a roughing stand of a plate mill to produce a predetermined length (w) for the rolled material, comprising means for generating an electrical signal representing the actual roll gap setting (s_1) corresponding to the last-but-one pass, means for generating an electrical signal representing rolling load (L_1) corresponding to the last-but-one pass, means for generating an electrical signal representing the material length (l_1) before said last pass, and calculating

apparatus for providing an electrical signal for controlling the roll gap setting (s_2) for said last pass calculated in accordance with the relationship

$$\frac{l_1 s_1}{w} + \frac{l_1 f(L_1)}{w} - f(L_2) - r_2 k$$

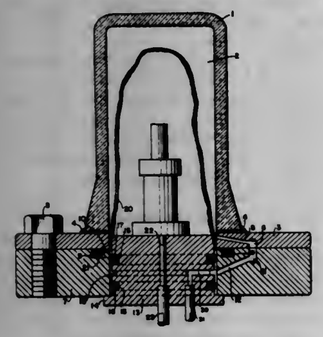
where k is a predetermined constant characteristic of the mill, $f(L)$ is the total mill stretch calculated in predetermined manner from the respective rolling load (L_1 or L_2), and r_2 is the predicted reduction ratio for the pass to be controlled.

3,348,394
APPARATUS FOR CONTINUOUSLY DISPLACING A FILAMENTARY MATERIAL IN A TREATMENT INSTALLATION
Marcel A. Giros, Ancerville, France, assignor to Societe Meusienne de Constructions Mecaniques, Ancerville, France, a company of France
Filed Apr. 29, 1965, Ser. No. 451,728
Claims priority, application France, May 5, 1964, 787
5 Claims. (Cl. 72—39)



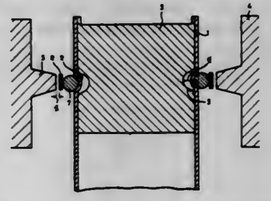
1. A method for treating a filamentary material in a treating section of elongated form consisting in imparting to at least two strands of said material the form of the turns of a helix, forming thus at least two helices, bringing about a mutual insertion of said at least two helices within said treating section, each helix interpenetrating turn for turn with at least one further helix, and advancing the material constituting said helices, the latter remaining substantially inchanged in location.

3,348,395
SPECIMEN MOUNTING DEVICE FOR POROSITY DETERMINATION APPARATUS
Clyde Orr, Jr., Atlanta, and Warren P. Hendrix, Lawrenceville, Ga., assignors to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia
Filed Dec. 6, 1963, Ser. No. 511,689
6 Claims. (Cl. 73—38)



1. In a specimen mounting device for use in determining the volume of a specimen, a substantially air tight specimen chamber, a base attached to said specimen chamber and having an opening therethrough communicating with said specimen chamber, a flexible bag fixedly attached to said base within said opening and extending into said specimen chamber, a specimen mounting plug slideably inserted into said opening, a first passage means extending through said base and said plug for communicating with said specimen chamber external to said flexible bag, a second passage means extending through said plug for communicating with said flexible bag, and means for connecting both said first passage means and said second passage means to a measuring means for measuring gas pressure.

3,348,396
MAGNETIC FORMING APPARATUS, DEVICE AND METHOD FOR MAKING DEEP GROOVES ON PARTS MADE OF CONDUCTING MATERIALS, PARTICULARLY TUBES MADE OF METAL OR CERAMIC-METAL MATERIALS
Michel Veaux, Cardana, and François Marchal, Cadrezzate, Italy, assignors to European Atomic Energy Community-Euratom, Brussels, Belgium
Filed Mar. 9, 1965, Ser. No. 438,291
Claims priority, application, Belgium, Mar. 26, 1964, 518,374
9 Claims. (Cl. 72—56)

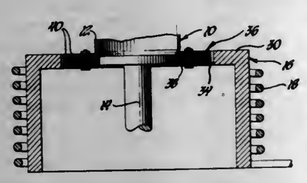


2. Method of forming deep grooves on deformable and, usually, electrically conducting tubular bodies by means of a magnetic pulse forming apparatus essentially comprising a coil to create a pulsed magnetic field, a metallic body having a very low specific resistance formed with at least a shoulder for the concentration of the magnetic pressure on the zone of the body to be deformed, the zone overlying a groove on a die or a body to which said body is to be joined, a conductive intermediate driver member on which repulsive forces are induced and an elastic, pressure transmitting element between said intermediate member and the body to be deformed, the method comprising, performing in succession several forming operations with said intermediate driver member annular in shape and having a width at least as great as the width of said shoulder and a thickness which is small in relation to its width, said intermediate driver member disposed at a small distance from said shoulder and supported by an annular, elastic, pressure transmitting element of a succession of said elements, having a same shape, of which at least that of the final element of the succession corresponds to the shape of the groove to be obtained and being of progressively increasing sizes as the depth of the groove increases during its formation at each deforming operation, whereby the position of said intermediate member is maintained substantially constant and the elastics elements enter at each forming operation into the groove during its formation.

3,348,397
MAGNETIC FORMING APPARATUS
Richard Weadock, Jr., Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,810
7 Claims. (Cl. 72—56)

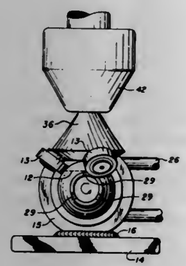
1. Apparatus for magnetically forming a metallic workpiece comprising a conductor of predetermined shape,

means energizing the conductor so as to develop a certain magnetomotive force for establishing a magnetic field, and laminated flux concentration and distributing means increasing the magnetic intensity of the field and



also distributing discontinuities in the field within a working space adjacent the workpiece so as to develop a uniform magnetic pressure for forming the workpiece, the laminations each having a current interrupting slot therein, the slots being angularly displaced from each other.

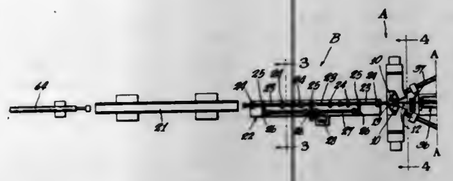
3,348,398
MANUFACTURING VALVE BALLS
Andrew L. Freeborn, Hayesville, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Feb. 20, 1964, Ser. No. 346,256
6 Claims. (Cl. 72—80)



3. That method of finishing a previously formed solid spherical blank, to smooth and harden the surface thereof, which comprises supporting the previously formed blank on a first diametric axis thereof, contacting the blank with a plurality of rolls having the faces thereof directed tangentially to the surface of the blank and perpendicular to diametric axes at the points of contact thereof, moving the rolls along a circular path having a diameter less than the diameter of the blank and defined by a central axis of rotation directed centrally through the blank, and turning the blank on the first diametric axis to contact the rolls along successive circular arcs for progressive plastic modification of the surface thereof.

3,348,399
METHODS OF AND APPARATUS FOR FORMING TUBULAR MEMBERS
Hubertus Prieur, Youngstown, Ohio, assignor to The McKay Machine Company, Youngstown, Ohio
Filed Aug. 4, 1964, Ser. No. 387,445
15 Claims. (Cl. 72—97)

1. The method of forming an elongated tubular member from an elongated cylindrical body, which comprises forcing one end of the body between the rolls of a pass, simultaneously rotating and longitudinally advancing said body through said pass with said rolls and over a mandrel to displace material at the center of said body radially outwardly, loosely confining substantially all of said body ahead of said pass within a sleeve, and rotating said sleeve



and consequently the body confined therein in the same direction as and at at a speed generally coincidental with the rotational direction and speed imparted to said body by said pass.

3,348,400
PROCESS AND APPARATUS FOR STRAIGHTENING METALLIC ROD STOCK
Willy Korf, Baden-Baden, Germany, assignor to Ferrotest G.m.b.H., Basel (Schweiz), Germany
Filed June 10, 1965, Ser. No. 462,954
Claims priority, application Germany, June 11, 1964, F 43,148
46 Claims. (Cl. 72—161)



1. A process for straightening coiled metallic rod stock, particularly coiled steel wire, comprising the steps of uncoiling a section of such stock and flexing the section back and forth in at least one plane to effect partial straightening thereof; and thereupon subjecting such partially straightened section to the action of tensional stresses to increase its overall length by at least two percent with resultant final straightening of the thus stretched section.

3,348,401
METHODS AND EQUIPMENT FOR THE WIDENING OF STOCK
Claus L. Sporck, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 14, 1964, Ser. No. 389,698
6 Claims. (Cl. 72—178)

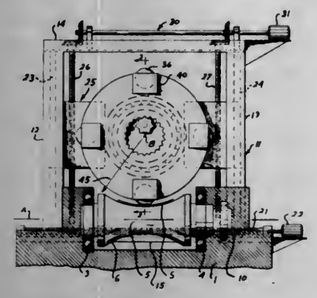
1. Apparatus for providing a taper in metal strip or sheet stock, comprising:

a roll mounted for rotation about an axis and having an exterior, concave, curved surface of revolution for supporting stock being worked;

a plurality of rollers;

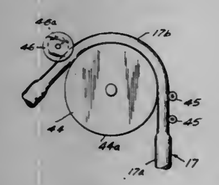
a rotatable carrier having means rotatably mounting the rollers on the carrier, the rotation of the carrier causing the rollers to successively move over said concave surface along concave paths which extend in the same direction as the rotational axis of said roll, the roller movement working stock supported on the roll so that the thickness along each path constitutes a taper; and

means supporting said carrier for rotation about an axis which is transverse to the rotational axis of said roll and including mechanism for shifting the carrier to cause the carrier rotational axis to be tangent or



non-tangent with the locus of the center of the radius of said concave surface.

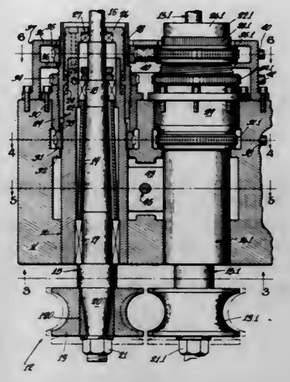
3,348,402
METHOD OF MAKING COIL FOR ABSORPTION REFRIGERATION APPARATUS
Bengt Reistad Reistad, Bromma, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 27, 1964, Ser. No. 355,337
Claims priority, application Sweden, Mar. 29, 1963, 3,507/63
4 Claims. (Cl. 72—217)



1. A method of making a coil for a gas circuit of absorption refrigeration apparatus which comprises first deforming a region of a straight piece of pipe which is cylindrical in cross-section and formed of ferrous metal to provide a pipe section at said region having a minor axis and a longer major axis and a longitudinal reentrant portion in the wall thereof, and thereafter bending the pipe back upon itself to form a bend at said region and straight pipe sections connected thereto with the major axis of said region extending substantially in the same direction as the axis of the radius of curvature of the bend and the reentrant portion at the inside wall of the bend and the inner diameter of each straight pipe section being substantially equal to the distance between the inner surfaces of the opposing walls of said pipe section at the bend at the immediate vicinity of the major axis thereof, the longitudinal reentrant portion functioning to support the opposite outer side wall of the pipe at the bend while it is being formed.

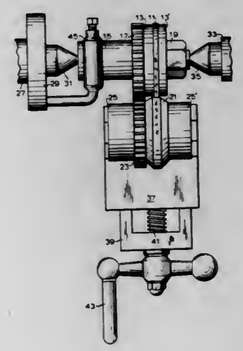
3,348,403
ROLL PASS FOR TUBING OR THE LIKE
William W. Bartley, New Castle, Pa., assignor to The McKay Machine Company, Youngstown, Ohio
Filed Nov. 2, 1964, Ser. No. 408,237
15 Claims. (Cl. 72—237)

1. An improved mill for working longitudinally moving elongated stock, comprising a pair of rolls which together form a pass through which the stock is fed, moving means for simultaneously and equally adjusting the rotational axes of said rolls toward and away from each other to maintain a fixed position of the pass line for the stock



while providing adjustment of the pass size, and locking means separate from said moving means for locking each of the rolls independently against movement once they are adjusted.

3,348,404
METHOD FOR PRODUCING ACCURATE TYPE
Paul J. Thut, Penfield, N.Y., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 24, 1964, Ser. No. 421,044
5 Claims. (Cl. 72—340)



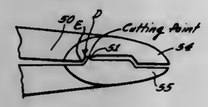
1. The method of forming accurate raised type on a periphery of a type wheel comprising the steps of

making a relatively hard master wheel having oversized intagliated characters therein,

synchronously rotating said master wheel in pressure contact with a relatively soft type wheel blank whereby metal of the type wheel flows into and fills the intagliated characters of the master wheel thereby forming raised characters on the periphery of the type wheel, and

vertically shaving the outlines of the raised characters to predetermined line widths respectively uniform as to each line width throughout the shaved depth of the character.

3,348,405
TRANSISTOR LEAD-FORMING TOOL
Phillip Allan Johnson, Sylmar, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Feb. 26, 1965, Ser. No. 435,445
1 Claim. (Cl. 72—325)



A tool for crimping and simultaneously cutting the terminals of transistors comprising:

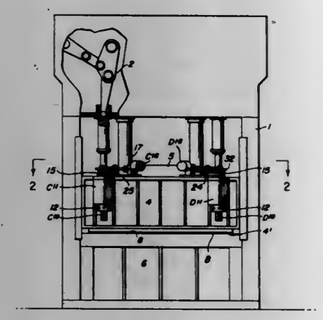
a pair of mating jaws, said jaws having mating surfaces being shaped so that when the jaws are mated the surfaces thereof provide a pair of adjacent substantially right angle bends in a bendable wire inserted between the jaws;

a stop on one of said mating surfaces for correctly positioning a transistor terminal inserted between the jaws;

a cutter fixed to one of said jaws for determining the length of the terminal so inserted, said cutter including a holding notch on the other of said pair of jaws opposite the cutting edge of said cutter; and

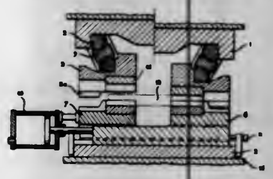
means for moving said jaws to mate with and to regress from one another..

3,348,406
MOTORIZED PRESS RAM ADJUSTING MEANS
Henry A. Holberson, Youngstown, Ohio, assignor to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio
Filed Nov. 12, 1963, Ser. No. 322,892
3 Claims. (Cl. 72—446)



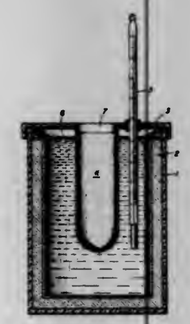
1. In a draw press comprising a vertically disposed frame, a die proximate the lower end thereof having a cavity and a flat surface about the perimeter thereof, a ram vertically reciprocal in the frame having an under face cooperative with said surface to clamp a blank thereon, an externally threaded plunger proximate each corner of the ram and a collar threaded thereon adapted to bear on the adjacent corner of the ram, that improvement which comprises a gear on each collar, an element cooperative therewith to rotate the collar and electrically actuated means for driving said element, a control station apart from the press, and electrical instrumentalities between said station and each said driving means selectively operable to actuate each of the latter independently to thereby move the collars in either direction axially of their respective plungers.

3,348,407
DEVICE AND PARTICULARLY FORGING APPARATUS FOR SIMULTANEOUS UPSETTING AND BENDING OF MATERIAL LIKE BARS, RODS OR INGOTS
Tadeusz Rut, Poznan, Poland, assignor to Centralne Laboratorium Obrobki Plastycznej, Poznan, Poland
Filed Sept. 2, 1964, Ser. No. 394,073
Claims priority, application Poland, Sept. 30, 1963, 102,676, 102,679
25 Claims. (Cl. 72—450)



1. Forging apparatus comprising a press base and a press head movable towards and away from said base, first means carried by said press head and base for engaging a workpiece between them upon movement of said head towards said base, second means carried by said press head and base for engaging the said workpiece between them upon movement of said head towards said base, said second means being spaced from said first means transversely of the path of movement of said head, and means connecting said first means to said head and said base for causing said first means to move towards said second means during movement of said head towards said base.

3,348,408
REFERENCE SOURCE FOR CALIBRATION OF THERMOGRAPHIC INSTRUMENTS
Nelson E. Engborg, Old Greenwich, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,731
6 Claims. (Cl. 73—1)



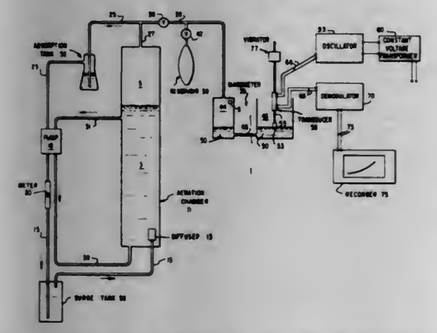
1. A reference black body source for infrared instruments comprising in combination,

(a) a liquid-tight open-top container with insulated walls filled with a liquid at calibrating temperature,

(b) a cover for closing the top of said container, said cover having an opening with a downwardly projecting closed end tube of cross section small in comparison with the cross section of the container, the inner surface of the tube being of high emissivity for at least the major portion of its length from the closed end, which projects into the center of the container, and

(c) thermometric means for accurately measuring the temperature of any liquid introduced into the container.

3,348,409
METHOD AND APPARATUS FOR ANALYZING GAS ABSORPTION AND EXPIRATION CHARACTERISTICS
Robert M. Arthur, 5500 Wabash Ave., Terre Haute, Ind. 47803
Filed Sept. 19, 1963, Ser. No. 310,025
9 Claims. (Cl. 73—19)



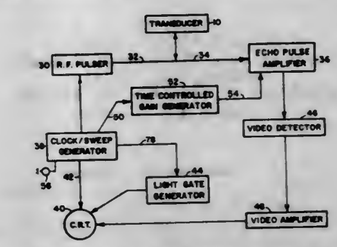
1. Apparatus for analysis of the gas absorption and gas expiration characteristics of a substance comprising a fluid-tight chamber containing a lower space for holding the substance and an upper gas space for providing the gas in contact with the substance, said chamber being operatively associated with a gas circulation system including a gas line interconnecting the upper gas space and the lower space and means for conducting said gas from the gas space into the lower space; a manometer containing a first, fluid-tight, closed-leg uncommunicative with the atmosphere, a second leg, and a manometric liquid in liquid communication with each leg, partially filling each leg, and defining a gas space in the first leg; gas-tight communication means in gas to gas communication between the gas space of the chamber and the gas space in the first leg of the manometer and adapted to reflect changes in the partial pressure of the gas in the chamber by a change in height of the manometric liquid in the second leg; means for converting the change in height of the manometric liquid into an electrical signal representative of the change and means for recording the electrical signal to thereby provide an indication of the gas absorption and expiration characteristics of the substance.

ERRATUM

For Class 73—38 see:
Patent No. 3,348,395

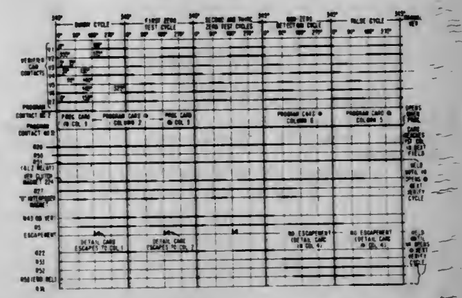
3,348,410
DYNAMIC GAIN CONTROL FOR ULTRASONIC TESTERS
Elliott A. Henry, Newtown, Conn., assignor, by mesne assignments, to Branson Instruments Incorporated, Stamford, Conn., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,927
4 Claims. (Cl. 73—67.8)

1. In apparatus for displaying pulse reflections along the time sweep axis of a cathode ray oscilloscope, in combination, a cathode ray tube including at least one ray-deflecting means and an intensity-control electrode, an adjustable sweep generator connected to said ray-deflecting means, a transducer for converting reflection pulses to electrical signals, a signal amplifying channel connected from said transducer to said intensity-control electrode,



and means controlled by the ramp output of said sweep generator for cyclically controlling the gain of said amplifying channel to vary its gain as a function of the amplitude of said sweep generator output throughout at least a major portion of each sweeping cycle.

3,348,411
RECORD CARD VERIFYING MACHINE
Jonathan U. Roe, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 3, 1965, Ser. No. 452,792
11 Claims. (Cl. 73—156)



1. In a record verifying machine adapted to read a detail record and a program record concurrently in column-by-column fashion, the combination of:

settable elements adapted to be set selectively in various states to represent selected data;

program-controlled setting means responsive to the reading of a predetermined control indicium in the program record to establish a predetermined automatic setting of said settable elements during the reading of at least one detail record column;

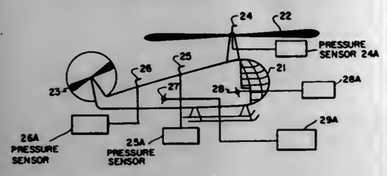
and reading control means for comparing the setting of said settable elements with data read from the detail record to interrupt the reading of the detail record at a column thereof which does not contain data corresponding to the setting of said settable means;

said program-controlled setting means being adapted, upon the sensing of said predetermined control indicium, to establish a zero setting of said settable elements, thereby enabling said reading control means to check automatically for the presence of a zero representation in at least one detail record column following the establishment of such zero setting;

said program-controlled setting means including means responsive to the sensing of successive additional control indicia in the program record for causing the zero setting of said settable elements to be effectively maintained during the reading of consecu-

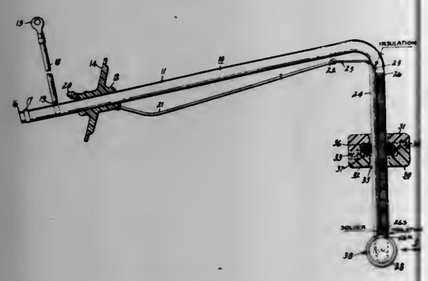
tive record columns in a given detail record field until the first column in that field lacking a zero representation is sensed.

3,348,412
ALTITUDE MEASUREMENT
Tenny D. Lode, 4925 Sherwood Road, Madison, Wis. 53711
Filed Nov. 27, 1964, Ser. No. 414,286
7 Claims. (Cl. 73—178)



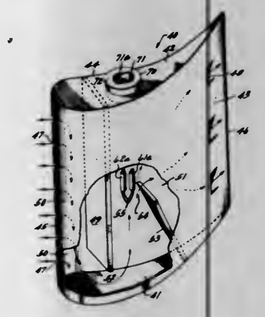
7. Means for measuring the relative altitude of an aircraft in flight above a surface, said aircraft deriving substantial support from a downwardly directed blown air stream, including means for measuring an air data parameter associated with said blown air stream which changes when the aircraft is proximate the ground in a first area beneath the wing level of said aircraft, means for measuring the same air data parameter in a second area less beneath the wing than the first area, and means for comparing the measurements of the parameters at said first and second area.

3,348,413
LINEAR FUEL LEVEL GAUGE MEANS
Wilbur J. Zimmerle, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,266
2 Claims. (Cl. 73—313)



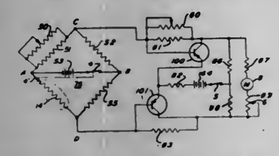
1. A float assembly for a linear fuel level gauge comprising, an elbow shaped tubular fuel intake probe of conductive material having an intake filter adjacent one end thereof, a mounting flange adjacent the opposite end thereof and an electrical insulation covering along an intermediate portion thereof, a resistance wire spirally carried over said insulation covering, an elongated insulating member extending longitudinally over said resistance wire, a strip of conductive material fitted over said elongated insulation member, an electrical connection between said resistance wire and said tubular probe, an electrical connection for said strip of conducting material terminating in a terminal carried by said mounting flange, an electrical ground connection for said tubular probe and a float member movable along that portion of said tubular probe which carries said resistance wire carrying an annular spiral spring contact member of electrically conductive material in electrical engagement with each said resistance wire and said strip of conductive material for providing an electrical contact bridge therebetween.

3,348,414
GAS TURBINE TEMPERATURE MEASURING APPARATUS
Everett Wilber Waters, Lynnfield, Robert Hughes Hufnagel, Marblehead, and Lowell Jackson Pierce, Melrose, Mass., assignors to General Electric Company, a corporation of New York
Filed Oct. 9, 1964, Ser. No. 402,877
5 Claims. (Cl. 73—341)



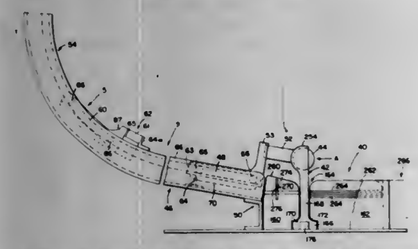
1. Gas temperature measuring apparatus for measuring the temperature of gases in the annular fluid flow passageway of a gas turbine engine, said gas temperature measuring apparatus comprising in combination:
(a) a cylindrical casing enclosing the annular fluid flow passageway,
(b) a plurality of circumferentially spaced, radially extending vanes traversing the annular passageway,
(c) a plurality of openings in said casing each radially outward of a respective one of said vanes,
(d) each of said vanes having a hollow interior formed by radially spaced inner and outer end walls and side walls connecting axially spaced upstream leading and downstream trailing edge portions,
(e) each vane having a plurality of radially spaced openings in the leading edge and at least one opening adjacent the trailing edge,
(f) a radially extending transverse wall dividing the interior of each vane into a radially extending mixing chamber adjacent the leading edge and a second chamber adjacent the trailing edge,
(g) a passage adjacent one end of the vane providing fluid flow communication between the mixing and second chambers,
(h) the outer end wall of each vane having an opening therein downstream of the transverse wall each of said openings being radially aligned with a respective one of the openings in the casing,
(i) a plurality of probes each extending radially inward through an associated set of openings in said casing and in an outer end wall of one of said vanes into the second chamber of the respective vane,
(j) a plurality of thermocouples each supported by a respective one of said probes within the second chamber of the respective vane,
(k) sealing means between each of said probes and the opening in the outer end wall of the respective vane,
(l) and means electrically connecting the plurality of thermocouples in parallel such that the average electromotive force produced can be determined.

3,348,415
TEMPERATURE MEASURING DEVICE
Thomas C. Ash, Jr., Mount Holly, N.J., assignor to Turon, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 1, 1964, Ser. No. 415,013
3 Claims. (Cl. 73—362)



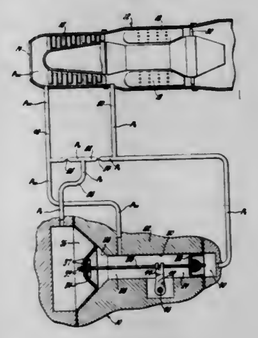
1. In combination, a resistance bridge network, one arm of said bridge network comprising a temperature sensitive element, said temperature sensitive element characterized by a large resistance change per degree of temperature change, said temperature sensitive element adapted to be placed adjacent the human body to detect the temperature thereof as a function of resistance, potential source means connected across said bridge network in one direction and between one pair of nodes to provide current flow in said bridge when unbalanced, first and second transistors having the respective base electrodes thereof connected to another pair of nodes across said bridge network in another direction, self-biasing resistors connected between the base and collector electrodes of each of said first and second transistors, potential supplying means connected between the emitter and collector electrodes of each of said first and second transistors to selectively produce current flow therethrough, and meter means connected between the collector electrodes of said first and second transistors to indicate the sense and magnitude of current produced thereby.

3,348,416
GOLF PRACTICE DEVICE
Joseph S. Warsen, 78 Birch Road, Malverne, N.Y. 11565
Filed Oct. 21, 1966, Ser. No. 588,540
7 Claims. (Cl. 73—379)



1. A golf practice device including tee means comprising resilient support means holding golf ball means adjacent track means, said track means comprising a first end comprising said tee means, an intermediate portion and a second end, a vehicle having a main body portion including cushioning means adapted to ride along said track means normally positioned at said first end of said track means, said cushioning means adapted to abut said golf ball means when said vehicle is at said first end of said track means, a pair of electrical contacts disposed off center along opposite sides of the vehicle track relatively near the first end, a plurality of pairs of electrical contacts extending from the first mentioned pairs toward the second end of the vehicle track, indicator panel means comprising left and right indicating means and a plurality of means to indicate distances of vehicle travel, electrical circuit connections between said electrical contacts on said vehicle track and said right, left and distance indicator means on said panel, and a source of electrical power; said vehicle including contact engaging means adapted to be displaced laterally during travel of the vehicle, said contact engaging means adapted to contact one of said first mentioned pairs of contacts when displaced laterally to the left and another of said first mentioned pairs of contacts when displaced laterally to the right, and also to contact said plurality of contacts as said vehicle rides from said first end of said track means toward said second end of said track means; so that when the held golf ball means is struck squarely toward the center line of the track by club means, it will cause the vehicle to travel along the track means between and clear of the first mentioned contacts, then against each of the plurality of contacts along the total distance it travels on the track means, and when the held golf ball means is struck at an angle, the vehicle contact engaging means will be displaced laterally and contact one of the said first mentioned pairs of contacts and then each of the plurality of contacts along the total distance it travels on the track means.

3,348,417
PRESSURE RATIO SENSOR
Alan Hitzelberger, Grand Blanc, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,696
6 Claims. (Cl. 73—407)

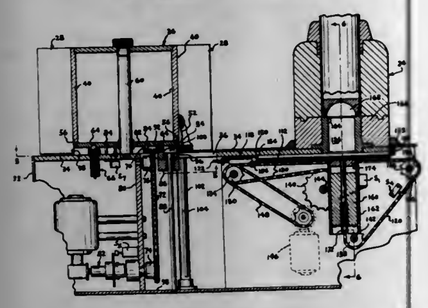


3. A pressure ratio sensor comprising, in combination,
a movable structure comprising a first movable wall, a second movable wall, and means connecting said walls together for joint displacement of said walls and connecting means;
means cooperating with said walls causing the ratio of the areas of said walls to vary with such displacement;
a higher pressure fluid source;
a relatively lower pressure fluid source;
two orifices connected in series for flow between said sources to develop an intermediate pressure between said orifices;
means to apply the said higher and lower pressures to opposite sides of the first movable wall; and
means to apply the said intermediate and lower pressures to opposite sides of the second movable wall so as to oppose the force exerted on the first movable wall by the higher and lower pressures;
the movable structure being substantially free from bias other than by the said pressures as recited so that the movable structure assumes a position determined by the ratio of the said higher and lower pressures.

3,348,418
AUTOMATIC SAMPLE CHANGER

George R. Utting, Guilford, and Peter G. Mueller, Hamden, Conn., assignors to Intertech, Inc., North Haven, Conn., a corporation of Connecticut

Filed Aug. 13, 1963, Ser. No. 301,801
10 Claims. (Cl. 73—421)



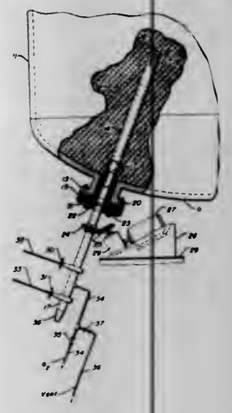
1. In an automatic sample changer, conveyor means comprising a moving conveyor element, a first set of spaced supports on which said conveyor element is carried to define a first run portion for said element, and a second set of spaced supports over which said element is also trained and defining a second run portion for said element, said second set of supports being positioned intermediate the first run portion of said conveyor and disposed to direct said second run portion transversely of the first, means including said conveyor element for advancing a sample from a starting position along said first run portion and means adjacent said first run portion which is engaged on arrival of a sample at a first predetermined position to interrupt further advance of said sample notwithstanding continued advance of said conveyor element, means disposed at said predetermined position for moving a sample transversely of said first run portion and generally in the direction of said second run portion of said conveyor, said last means comprising a reciprocable member normally positioned out of the path of said first run portion of said conveyor but movable to intersect said path whereby to engage and carry a sample at said first predetermined position to a second predetermined position displaced from said first run portion, said reciprocable member being engaged by said conveyor element to move it to said second predetermined position in timed sequence with the arrival of the sample at said first predetermined position, and means for reversing the direction of travel of said conveyor element upon arrival of said reciprocable member and sample at said second predetermined position whereby to return said plunger to said normal position relative to said conveyor element, redeposit the sample on said conveyor and return said sample to the starting position.

3,348,419
SOLIDS SAMPLING APPARATUS

George E. Addison, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,524
8 Claims. (Cl. 73—424)

1. Apparatus for periodically withdrawing samples of solid particle-form material from a closed vessel containing a fixed bed of such material which comprises an elongated casing extending through an opening in a wall of said vessel and upwardly into said bed; means sealably securing the lower end portion of the casing to said vessel wall; an elongated hollow tubular rotor rotatably mounted within the casing and extending downwardly therethrough beyond said securing means to the exterior of the casing and said vessel; a pair of block valves, spaced apart along the longitudinal axis of said hollow rotor, and connected in serial flow communication into and carried by the lower external portion of said hollow rotor; a first opening formed in the casing wall within said vessel; a second opening formed in the rotor wall and adapted to register with said first opening only during a limited angular displacement of the rotor, corresponding to its sample withdrawal position, to form a fixed port of restricted cross-section connecting the interior of the rotor with the exterior of the casing, said first opening being otherwise closed by the rotor wall; and reversible rotary drive means coupled to said rotor for reciprocably turning the rotor, and said block values carried thereby, about its longitudinal axis to and from its sample withdrawal position.



3,348,420
MECHANICAL OVERSPEED TRIP FOR ROTATING MACHINERY

John W. Schlirf, Jeannette, Pa., assignor to Carrier Corporation, Syracuse, N.N.Y., a corporation of Delaware

Filed Sept. 7, 1965, Ser. No. 485,310
2 Claims. (Cl. 73—538)

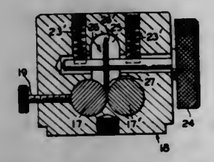


1. In combination with a rotary shaft having a cavity therein, a shaft overspeed trip assembly comprising a Belleville spring, a trip button extending through the center hole of the Belleville spring, and means for releasably securing said spring to said trip button; said trip assembly being disposed within said cavity, a retainer for maintaining said trip assembly within said cavity, said assembly being operable to project the trip button beyond the limits of the cavity in response to centrifugal forces generated by rotation of said shaft, said forces being sufficient to stress the Belleville spring beyond its overcenter position.

3,348,421
SLIDE PROPULSION MEANS

Ralph A. Boice, Livingston, N.Y., assignor to Boice Gages, Inc., Hyde Park, N.Y., a corporation of New York

Filed Oct. 4, 1965, Ser. No. 492,815
7 Claims. (Cl. 74—202)

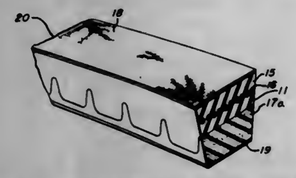


1. In combination, a straight track structure having a channel therealong; said channel having opposite walls, a slide mounted on said track structure for movement therealong, an axle positioned perpendicular to the direction of said track structure, in space within a hollow in said slide, a wheel fixed on said axle; said wheel extending into said channel and in contact with said opposite walls thereof, stressed spring means on said slide, forcibly pushing said axle laterally in a direction towards said channel whereby said wheel exerts an appreciable pressure against said walls; said wheel, when the slide is in movement along the track, contacting each of said walls only along a straight line along the track; said wheel acting in the manner of a wedge tc force said channel walls apart and means whereby said axle can be rotated whereupon the slide will move along said track structure.

3,348,422
TRANSMISSION BELT AND METHOD OF MANUFACTURE

Kenneth D. Richmond, Nixa, Mo., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio

Filed July 22, 1965, Ser. No. 474,059
5 Claims. (Cl. 74—233)



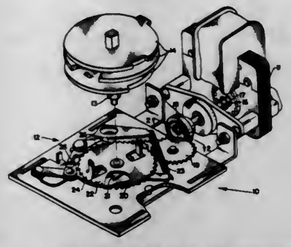
1. An endless V-type transmission belt having a tension section and a compression section, said compression section comprising transverse teeth and a blown rubber section located inwardly of and between said teeth.

3,348,423
TRANSMISSION DEVICE FOR A TIMER

Joseph E. Wiser, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,278
9 Claims. (Cl. 74—424.5)

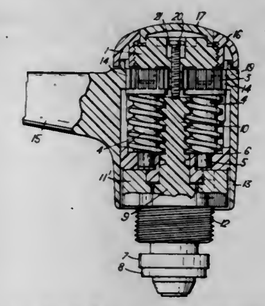
1. In a time sequence switch for accomplishing a plurality of timing sequences, a drive motor providing a substantially constant rotary motion output including rotor means displaced from the stator means by bias means so that energization of said motor causes said rotor means to be displaced to a determined position with respect to said stator means, spiral gear means carried by said rotor means including at least one Archimedes' spiral tooth formed thereon having an arcuate extent in excess of 360 degrees, said spiral tooth having a common axis with said rotor means, said spiral tooth engaging with a plurality of teeth of and rotatably driving gear means after displacement of said rotor means with respect to said stator means, an escapement means connected to said gear means for translating said substantially constant rotary motion of said gear means to an intermittent rotary motion output, and a cam-carrying shaft connected to said intermittent rotary motion output of said escapement means intermittently displaced in determined increments by said escapement.



3,348,424
ACTUATING MECHANISM FOR WATER TAPS

Edward Moey Schaverien, 6 Canons Drive, Edgware, England

Filed June 28, 1965, Ser. No. 467,644
Claims priority, application Great Britain, July 10, 1964, 28,635/64
9 Claims. (Cl. 74—424.6)



1. A tap for fluid flow control comprising a casing, movable sealing means and rack means associated therewith, worm means cooperating with said rack means, gear means connected to said worm means for rotating the latter and thus effecting movement of said rack means and sealing means between tap-closing and tap-opening positions, cooperating locking means, respectively on said worm means and said casing, adapted to be brought into locking engagement upon, and as a result of, termination of movement of said rack and sealing means to a tap-closing position for the purpose of opposing inadvertent tap-opening rotation of said worm means until positively initiated by actuation of the associated gearing.

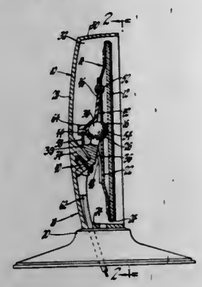
3,348,425
REMOTE CONTROL REAR VIEW MIRROR

Andrew J. Van Noord, Grand Rapids, Mich., assignor to Kent Engineering, Grand Rapids, Mich., a partnership of Michigan

Filed May 4, 1964, Ser. No. 364,641
7 Claims. (Cl. 74—501)

4. A remote control rear view mirror, comprising:
a mirror member having means of support including a universal joint connection engaged to the back side thereof,

a rearwardly disposed projection on the back of the mirror member on a line of reference through the pivotal center of the universal joint connection and extending therebeyond,



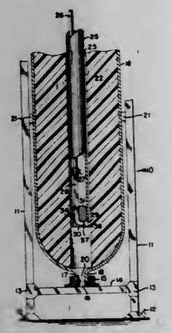
and a single pair of laterally flexible, axial force transmitting cable members disposed in a plane of reference relatively parallel to the back side of the mirror member and operatively engaged to the extended end of the projection from relatively opposite sides thereof for actuating said mirror member in the course of simultaneous axial movement of the cable members in relatively like and opposite directions.

3,348,426

FLEXIBLE CUTTER SHAFT FOR CUTTING SLOTS IN A SOLID PROPELLANT IN A ROCKET MOTOR CASE

Robert H. Brown and Alfred H. Hecht, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Aug. 19, 1964, Ser. No. 390,710
3 Claims. (Cl. 74—501)



1. A flexible shaft assembly for use in cutting a slot in a solid propellant grain comprising a shaft having a compressed honeycomb structure, and means for guiding a portion of said shaft from a first plane to a second plane at right angles to said first plane.

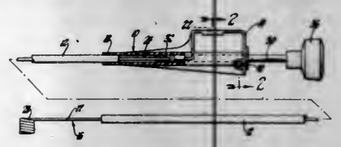
3,348,427

REMOTE CONTROL ASSEMBLY

Thomas E. Wilkey, Barto, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Filed Apr. 9, 1965, Ser. No. 446,966
8 Claims. (Cl. 74—502)

1. A remote control assembly comprising: a guide having a first bore therethrough, a core element movably disposed in said first bore in said guide, said guide having a second bore therethrough transverse to said first bore and at least partially intersecting said first bore, and friction means for providing a predetermined amount of resistance to the movement of said core element including a resilient member fixed in said second bore to bear against one side of said core element so that said core element is held against movement between said first bore



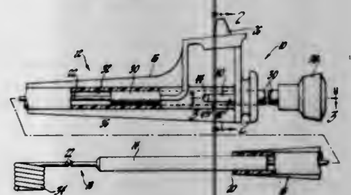
and said resilient member until a predetermined force is applied to said core element to move said core element, that portion of said core element bearing against said resilient member being of constant cross section therealong.

3,348,428

REMOTE CONTROL ASSEMBLY

Robert J. Shaeffer, Skippack, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Filed Apr. 9, 1965, Ser. No. 447,029
17 Claims. (Cl. 74—502)



1. A remote control assembly comprising; a guide adapted to support a movable core element therein, and a resilient membrane formed integrally with a portion of said guide for providing a predetermined frictional resistance to the movement of the core element to be supported by the guide, said membrane having a first thickness along a first portion thereof and a second thickness along the remaining second portion thereof, said first thickness being greater than said second thickness.

3,348,429

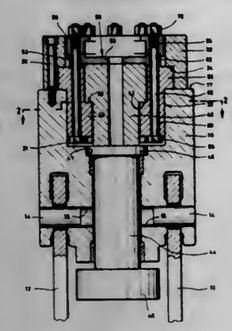
OVERLOAD SAFETY DEVICE IN MACHINES

Rudolf Nägele, Weissenstein, and Antal Poóczа, Strassdorf, Germany, assignors to May-Pressenbau GmbH, Schwabisch Gmund, Germany

Filed July 14, 1965, Ser. No. 471,883
Claims priority, application Germany, Sept. 22, 1964, M 62,521
10 Claims. (Cl. 74—584)

1. In a press, drive means for providing a force which extends in a given direction, driven means driven by said drive means in said direction, said drive means and driven means respectively having flat surfaces which directly engage each other in a plane which is perpendicular to said force, and transmission means coacting with said drive means and driven means for transmitting a drive from said drive means to said driven means while pressing said drive means and driven means against each other at said surfaces thereof with a given prestress force, said transmission means including a train of transmission elements which transmit the drive from one element to the next element from said drive means to said driven means, and one of said elements of said transmission means being frangible and capable of breaking at a given force which exceeds said prestress force by a given increment so as to interrupt the transmission of the drive from said drive means to said driven means, and said prestress force with

which said transmission means presses aid drive mean and driven means against each other at said surfaces thereof being opposed by said driven means when the



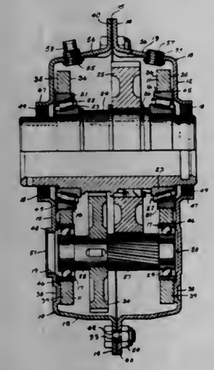
latter encounters a load so that when said driven means encounters a load said surfaces tend to be displaced apart from each other in opposition to the prestress force provided by said transmission means.

3,348,430

SPEED REDUCER

Clayton H. W. Polzin, Milwaukee, Wis., assignor to The Falk Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Feb. 12, 1965, Ser. No. 432,317
13 Claims. (Cl. 74—606)



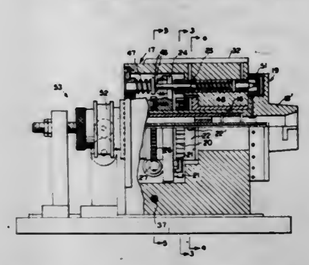
1. A speed reducer comprising: a housing formed of housing halves each comprised of a cover including an end wall provided with output and input shaft openings and a plurality of axial locating surfaces that lie in a common plane, said cover also including an integral mounting flange, a bearing plate secured to said cover and having a planar surface located axially against said axial locating surfaces, said bearing plate also having shaft bearing openings, first registering locating means on said bearing plate and said cover to angularly locate said bearing plate in said cover to axially align said shaft bearing openings of said bearing plate with said shaft openings of said cover, and second registering locating means on the flanges of said housing halves to angularly locate the covers relative to each other to axially align said shaft bearing openings of each housing half; bearings received within said shaft bearing openings of said bearing plates; meshing reduction gearing mounted in said housing and including an output shaft and an input shaft journaled in said bearings; and means closing the unused shaft openings of the covers.

3,348,431

INDEXING APPARATUS

John Postolowski, 45—12 163rd St., Flushing, N.Y. 11358

Filed Oct. 28, 1965, Ser. No. 506,021
16 Claims. (Cl. 74—822)



1. In an indexing apparatus of the character described, the combination of a frame, a shaft journalled thereon, a first cam mounted for rotation on the shaft, an index wheel and a ratchet wheel, both fixed on said shaft, a pawl carried on the first cam, biased into engagement with said ratchet wheel so that upon turning the first cam in a first direction, said ratchet wheel will turn in said first direction and upon turning the first cam in the opposite direction, said pawl will ride on the teeth of the ratchet wheel and said ratchet wheel will remain motionless, an elongated bolt positioned in a direction along the shaft, slidably mounted on the frame; said index wheel having a series of identical sockets equi-spaced around an entire circle which is concentric with said shaft; said bolt being entered into one of the socket and the end of the bolt within said socket being fitted therein whereby said shaft is held against turning on the frame, a cam follower carried by said bolt, contacting said first cam; said first cam being adapted when turned in said opposite direction, to shift the bolt out of said socket and free the shaft for rotation on the frame, first means associated with the bolt to move it into a socket when said first cam is turned in said first direction, a pneumatic cylinder having a piston rod, second means associating the piston rod and the first cam whereby on movement of the piston rod in one direction, the first cam will rotate a fraction of a turn in one direction, and on movement of the piston rod in the reverse direction, the first cam will rotate the same fraction of a turn in such reverse direction, an electrically controlled valve for operating said cylinder, a circuit for operating said valve, means to control said circuit, said piston having a predetermined stroke whereby the fractional turn of the ratchet wheel caused upon the fractional turn of the first cam in said first direction, equals the angular distance between sockets multiplied by a predetermined whole number.

3,348,432

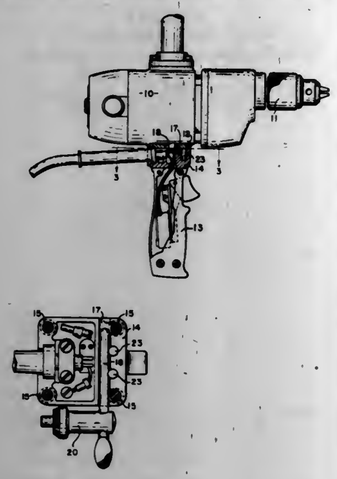
PORTABLE ELECTRIC DRILL WITH CHUCK KEY RETAINING STRUCTURE

Joseph D. Kieffer III, Camillus, N.Y., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 20, 1965, Ser. No. 498,216
7 Claims. (Cl. 77—7)

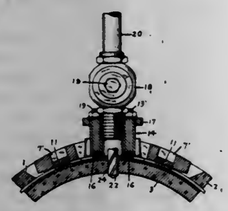
1. A portable electric drill having a key-operated chuck on the output spindle thereof, said drill including a casing formed with a handle receiving surface, a handle extending radially from said casing, said handle being formed

with an end portion having a surface abutting said handle receiving surface on said casing and being detachably secured thereto, a slot extending transversely of said abutting surfaces, said slot being open at one end and being



dimensioned to slidably receive the handle stem of a chuck key, a plug of resilient material extending through the side wall of said slot and yieldingly engaging a chuck key handle stem inserted in said slot.

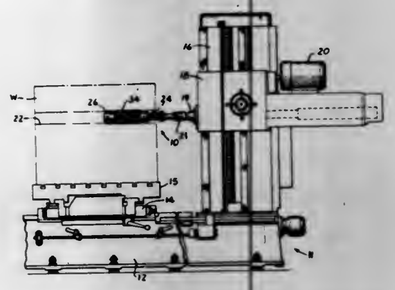
3,348,433
TAPPING ASSEMBLY
Robert M. Mayes, Hazlet, N.J., assignor to International Pipe & Ceramics Corporation, East Orange, N.J., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,273
4 Claims. (Cl. 77—42)



1. A support means for a tapping machine for use in tapping a concrete pressure pipe prestressed with high tensile strength wire, said support means containing walled recesses for receiving notched wire anchor blocks, means for supporting a tapping machine, and means for gripping a section of the high tensile strength wire exposed in said recesses and securing said support means to the pipe, said gripping means comprising at least one wire anchor bar having a notched cavity for gripping said wire, and said walled recesses having a wedging means for firmly securing the notched wire anchor blocks.

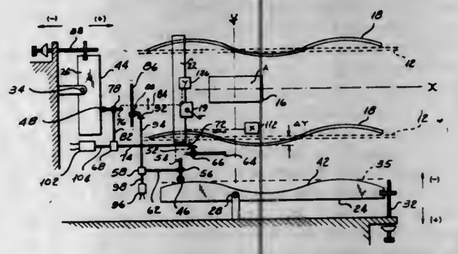
3. A tapping assembly for tapping a concrete pipe circumferentially wrapped with high tensile strength wire which comprises in combination a tapping machine and a support means for said tapping machine, said support means containing walled recesses for receiving notched wire anchor blocks, means for supporting the tapping machine, and means for gripping a section of the high tensile strength wire exposed in said recesses and securing said support means to the pipe, said gripping means comprising at least one wire anchor bar having a notched cavity for gripping said wire, and said walled recesses having a wedging means for firmly securing the notched wire anchor blocks.

3,348,434
BORING BAR ASSEMBLY FOR DEEP HOLE BORING
Harvey R. Plummer, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed June 29, 1965, Ser. No. 468,061
4 Claims. (Cl. 77—58)



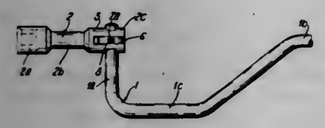
1. A deep hole boring bar assembly comprising, in combination, a boring bar having a cutter adjacent one end thereof and coupling means adjacent the opposite end thereof, a relatively thin shelled follower bearing support journaled on said bar intermediate the ends thereof, said follower bearing support having a plurality of longitudinal grooves the bottom surface of which is tapered relative to the axis of said bar, a plurality of removable elongated wear shoes mounted in said grooves of the follower bearing support, each said wear shoe having a tapered side complementary to said bottom surface of the follower bearing support and a straight side substantially parallel to the axis of said bar, said wear shoes having a strip of plastic bearing material attached to said straight side, said wear shoes being axially movable with respect to said follower bearing support in response to axially displacement of said bar, an adjustable stop on said boring bar adjacent said coupling means, and means adjacent said follower bearing support for transmitting an axial thrust between said adjustable stop and said wear shoes.

3,348,435
MULTI-AXIS MACHINE MISALIGNMENT COMPENSATOR
Warner R. Lauper, San Pedro, Calif., assignor to Coleman Electronic Systems, Santa Ana, Calif., a corporation of California
Filed Feb. 11, 1965, Ser. No. 431,849
22 Claims. (Cl. 77—63)



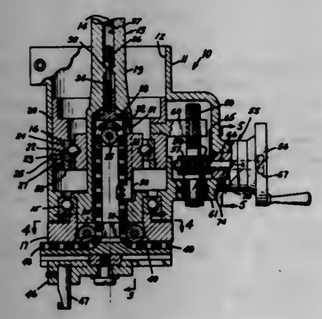
1. An error compensator for a multiple axis machine comprising in combination a positioned member, a plurality of machine ways corresponding to respective multiple axes, means positioning said member along said ways, means producing an output which is a function of the position of said member along a first way, an angularly adjustable template, said template patterned after a second way and extending in its direction, a follower, means for moving said follower along said template as said member moves along said second way, means responsive to said output and to the component of movement of said follower which is perpendicular to the axis along which said template extends for controlling the position of said member along said first way.

3,348,436
HAND BRACE FOR WHEEL NUTS HAVING AN ANGULARLY ADJUSTABLE U-CRANK ARM
Charles Cecil Robinson, Wimborne, England, assignor to Ives (Engineers) Limited, Bournemouth, England
Filed June 3, 1965, Ser. No. 461,073
Claims priority, application Great Britain, Oct. 19, 1964, 42,576/64, Patent 1,015,570
8 Claims. (Cl. 81—177.9)



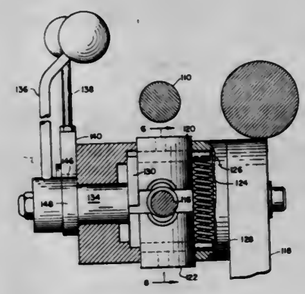
1. A hand brace for tightening or untightening nuts comprising a box spanner and a brace handle forming therewith a tommy-bar lever, said handle being mounted in the box spanner for rotation about the tommy-bar axis, a replaceable indexing cam fixed on said tommy-bar cooperating with a spring loaded plunger housed within the spanner and forming the cam follower, there being provided notches in the cam into which the plunger is urged thereby to locate the spanner in various positions relatively to the handle.

3,348,437
OFFSET-ADJUSTABLE TOOL HOLDER
Edmond A. Pichette, 14304 San Feliciano Drive, La Mirada, Calif. 90638
Filed Jan. 5, 1966, Ser. No. 518,847
10 Claims. (Cl. 82—2)



1. A tool holder having an axis of rotation and adapted to shift a tool laterally relative to said axis of rotation, comprising: a body adapted to be attached to non-rotating structure; a shaft rotatably mounted in said body and adapted to be turned by motive means, said shaft having an axis of rotation; a tool slideway extending laterally on the shaft; a tool slide shiftably mounted in said tool slideway; a pair of channel-forming idler wheels mounted to said shaft; a bight-forming idler wheel mounted to said shaft; a flexible, non-extensible, slide-shifting means having a dimension of length, said slide-shifting means being fixed to the tool slide at two points on the tool slide on opposite sides laterally of the pair of channel-forming idler wheels, and extending axially between and in contact with them to form a channel, and over the bight-forming idler wheel to form a bight; an axially movable adjustment link rotatably and slidably mounted in the body and engaging said slide-shifting means; an adjustment block axially shiftably mounted to the body and engaged to adjustment means so constructed and arranged as to shift the adjustment block and thereby the adjustment link, thus to move the tool slide laterally as a result of moving the slide-shifting means along its dimension of length.

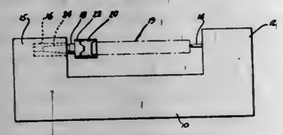
3,348,438
MODULAR LATHES
Peter D. George, 156 Crabtree Road, Quincy, Mass. 02169
Original application May 15, 1964, Ser. No. 367,720. Divided and this application Jan. 23, 1967, Ser. No. 611,086
1 Claim. (Cl. 82—23)



A driving mechanism for lathe modules and the like, comprising

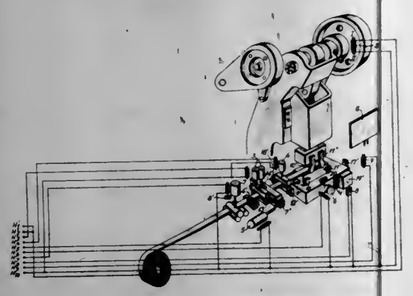
(a) a lead screw,
(b) means for rotating said lead screw,
(c) a support fixed to said module and extending into proximity with said lead screw,
(d) a pair of half-nuts mounted to said support and disposed on opposite sides of said lead screw,
(e) spring means normally urging said half-nuts apart and out of engagement with said lead screw,
(f) a shaft rotatably mounted to said support and perpendicular to said lead screw,
(g) a lever arm mounted to said shaft,
(h) a pair of links each connected at one end eccentrically to said shaft and at the other end to said half-nuts and adapted to pull said half-nuts into driving engagement with said lead screw upon rotation of said arm,
(i) locking means mounted on said support for locking said half-nuts in an engaged position,
(j) said locking means including a shoulder formed on said shaft and a latch pivoted to said support about an axis parallel to said shaft and adapted to engage said shoulder when said half-nuts are in an engaged position, and,
(k) another lever arm mounted to said latch for moving said latch into and out of shoulder-engaging position.

3,348,439
ARBOR DRIVE
Meredith M. Windsor, Detroit, and Charles A. Weber, Livonia, Mich., assignors to Star Cutter Company, Farmington, Mich., a corporation of Michigan
Filed July 19, 1965, Ser. No. 473,026
1 Claim. (Cl. 82—40)



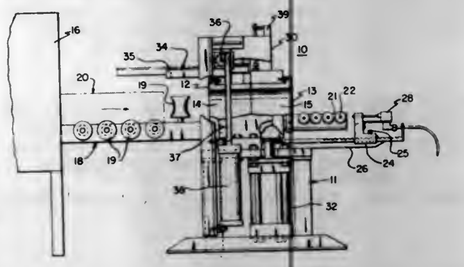
An arbor drive assembly for transmitting rotational drive forces from a live center to an arbor, said assembly comprising a tubular collar press fit on one end of said arbor in a coaxial relation therewith, said collar having one end thereof formed with axially extending notches having inwardly converging side faces and flat bottom faces which are concentric with the axis of said collar, a driving head on said spindle having axially projecting teeth provided with outwardly converging side faces and flat crowns, said teeth being concentric with said collar axis and being positioned in said notches so that said teeth side faces are in firm engagement with said notch side faces and said teeth crowns are spaced from said notch bottom walls, whereby rotational movement of said head is transmitted directly through said teeth and notches to said collar.

3,348,440
AUXILIARY OPERATION CONTROL FOR AUTOMATIC SYSTEMS
Hermann Børge Funck Jensen, Aarhus, Denmark (16 Moller Meyersvej, Aarhus-Risskov, Denmark)
Filed Nov. 25, 1964, Ser. No. 413,918
46 Claims. (Cl. 83—58)



1. A sequence control having a plurality of stages and including data signal means to indicate by means of feeling devices the completion of each stage of a normal program as it proceeds, electrically controlled function means which can be started and stopped by means of command signals, and switch means operatively connecting said data signal means and said function means and operable in response to coincidence between a completed program step and conditioning of the subsequent step to condition the sequence control for a command signal to be derived therefrom, wherein the improvement comprises auxiliary switch means in said sequence control for rendering ineffectual the conditioning of the sequence control to provide a command signal for the next normal program stage including further means for deriving at least one alternative command signal deviating from the normal program.

3,348,441
APPARATUS FOR CUTTING BILLETS BY MEANS OF APERTURED DIES
Henry W. Toney and Charles B. Haizenga, Niles, Mich., assignors to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed Mar. 27, 1964, Ser. No. 355,157
1 Claim. (Cl. 83—123)

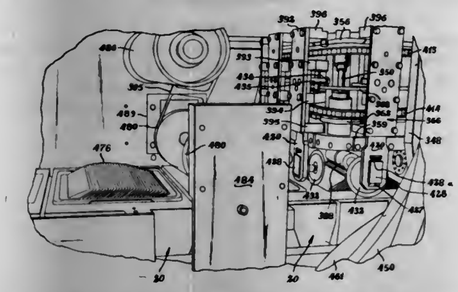


A billet severing apparatus for severing aluminum billets and the like and comprising adjacent tubular shaped stationary and vertically slidable movable shear dies, said dies being provided with alignable apertures of approximately the same size as and conforming to the cross-sectional shape of a billet; guillotine means for guiding the vertical movement of said movable die; conveyor means for advancing a billet into the aperture of said fixed die; adjustable stop means for limiting the advance of a billet through the last mentioned aperture, cradle means vertically movable with said movable die positioned for receiving a severed billet discharged from said movable die; hydraulic cylinder means connected for moving said movable die and said cradle means in unison vertically relative to said stationary die with a shear action to sever said billet; limit switch means adjustably positioned with said adjustable stop means for actuating said hydraulic cylinder means; ejection means including a pusher bar for ejecting a severed billet portion from said movable die and said cradle when said movable die and cradle are in their upper position, said pusher bar being provided with a gear rack; pinion means in operative engagement with said gear rack; an ejecting cylinder having a piston rod provided with a gear rack in operative engagement with said pinion means, actuation of said cylinder being effective to operate said pusher bar; and limit switch means controlled by the vertical movement of said movable die for initiating actuation of said cylinder means.

3,348,442
APPARATUS FOR CUTTING MOVING SHEET MATERIAL
Augustus H. Eberman and Hans A. Jensen, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Original application July 31, 1963, Ser. No. 299,000, now Patent No. 3,290,858, dated Dec. 13, 1966. Divided and this application Apr. 27, 1966, Ser. No. 560,391
11 Claims. (Cl. 83—318)

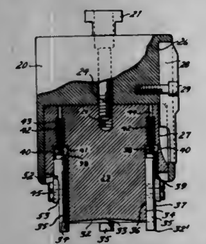
1. Mechanism for cutting a sheet of packaging film having a plurality of packages formed at least in part thereby longitudinally spaced-apart along the film, wherein the film is continuously advanced in a continuous package forming machine, said mechanism comprising, means mounting cutting means above said film in vertical spaced relation above the latter, said means including further means for simultaneously driving said cutting means to describe a horizontal continuous path and to move with said film, during a portion of its travel, at a velocity equal to the velocity of the film, which path generally corresponds to the peripheral shape of said packages, other

means for temporarily bringing said cutting means downwardly into contact with said film at a point at the margin of one of said packages with said path in registry with



the periphery of said one package, whereby said cutting means severs said film at the periphery of said one package as the latter is being continuously advanced.

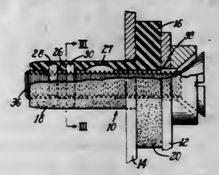
3,348,443
SHEARPROOF METAL PUNCH
William M. Smith and Herbert F. Beers, Jr., Chalfont, Pa., assignors to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 24, 1966, Ser. No. 522,479
10 Claims. (Cl. 83—686)



1. A male punch member having cutting edges with a plurality of channels vertically disposed around the sides of the punch, comprising a plurality of retractable elements having a cutting edge on each element slidably mounted within the channels of the punch, resilient means acting from the punch yieldably maintaining the cutting edges of the elements in advance of the cutting edges of the punch, said elements entering a female die, adapted to cooperate with the male punch member, in advance of the member when not arrested by a workpiece in order to prevent deflection of the punch member, the elements retracting to align their cutting edges with those of the punch when arrested by a workpiece, wherein the slidable elements have straight sides along their entire length where slidably engaged with the punch and seating means for the elements limiting their length of advancement.

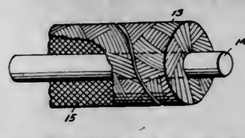
3,348,444
EXPANSION FASTENER WITH DUAL THREADED ENGAGEMENT MEANS
Dominic J. Brignola, Phoenixville, Pa., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Oct. 28, 1965, Ser. No. 505,486
5 Claims. (Cl. 85—70)

1. A fastening device adapted for assembly into an aperture in a support panel, said device comprising a body formed of resilient and deformable material comprising a hollow barrel having a flange at one end and a plurality of nut means disposed in the barrel in spaced relation to the flange, said device being adapted to be assembled with the support by the rotation of a screw through the barrel into the nut means whereby the barrel



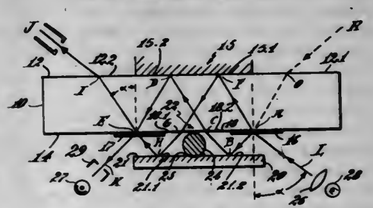
shortens and is bulged outwardly, said nut means being responsive to the tightening of the screw therein to cause gripping of an internal portion of the barrel between at least two of the nut means.

3,348,445
METHOD OF MAKING SOLID PROPELLANTS IN TEXTILE FORM
Isidore G. Nadel, 628 Highland Ave., Little Falls, N.J. 07424
Original application Feb. 10, 1965, Ser. No. 431,745, now Patent No. 3,304,867, dated Feb. 21, 1967. Divided and this application Dec. 7, 1965, Ser. No. 523,479
7 Claims. (Cl. 86—1)



1. A method of forming a solid, spun propellant comprising:
twisting a plurality of continuous nitrocellulose filaments to form a strand thereof,
winding said strand on a central core in a predetermined winding pattern and spacing between adjacent windings of said strand to form a propellant having controllable ballistic properties therein.

3,348,446
INTERFEROMETER WITH PIVOT MEANS LOCATED BETWEEN A MIRROR AND A TRANSPARENT PLATE HAVING TOTALLY REFLECTIVE AND SEMI-REFLECTIVE LIGHT DIVIDING MEANS LOCATED THEREON
Niels O. Young, South Lincoln, Mass., assignor to Block Engineering, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 22, 1963, Ser. No. 325,710
14 Claims. (Cl. 88—14)



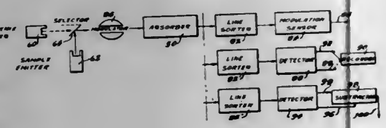
1. Interference apparatus comprising:
a first surface having two reflective regions;
a second surface parallelly fixed to the first surface and having two separate transmissive-reflective regions and two separate transmissive regions therebetween;
a third surface adjacent the second surface having two separate regions being predominantly reflective toward the second surface;

the said regions being arranged for dividing radiation incident on one of the transmissive-reflective regions into two components directed towards adjacent reflective regions, on each of the first and third surfaces respectively, for reflection thereon of the components towards the other reflective regions of the third and first surfaces, respectively, through transmissive regions on said second surface, for further reflection thereon of the components towards the other transmissive-reflective region for recombination thereon;

elongate tilting means extending between the separate transmissive regions of the second surface and the separate reflective regions of the third surface, for forming a gap of variable angle between the second and third surfaces;

whereby variation of the gap angle causes the lengths of the two components to vary relatively to each other causing them to interfere with essentially parallel wave fronts at the recombining transmissive-reflective region.

3,348,447
DETERMINATION OF ISOTOPIC CONCENTRATIONS
Joseph A. Goleb, Naperville, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 16, 1964, Ser. No. 404,542
6 Claims. (Cl. 88—14)



1. An apparatus for the determination of isotopic concentration in a mixture of two isotopes of an element comprising:

(a) an absorption tube containing an externally cooled tubular cathode, said cathode having at least an inner surface consisting essentially of a reference isotope of said element;

(b) means for establishing a hollow-cathode discharge within said absorption tube using ions of a heavy rare gas, said ions being capable of sputtering a cloud of ground state atoms of the reference isotope from the inner surface of said tubular cathode;

(c) a pair of spectrum emission sources one of which is a reference emitter and the other a sample emitter, the sample having an undefined mixture of said two isotopes, and said reference emitter having a known composition, said composition being essentially of the same reference isotope as that used in the inner surface of the tubular cathode, said sources each emitting an intensity of photons from each isotope linearly dependent on the proportion of isotope present;

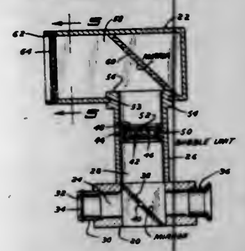
(d) means for successively directing photons from said reference emitter and said sample emitter through the axis of said tubular cathode wherein the ground state atoms of the reference isotope absorb resonant photons emitted by the reference isotope in said sources when said tubular cathode is operating;

(e) sorter means for isolating a single spectral line characteristic of said element, said means positioned to receive photons transmitted from said emission sources through said tubular cathode;

(f) means positioned between said sources and said absorption tube for modulating the flow of photons being transmitted; and

(g) sensor means for relating the intensities of said spectral line to isotope concentration, said means being sensitive only to the modulated flow of photons.

3,348,448
OPTICAL DEVICE FOR DETERMINING ANGLES BY MEASURING THE ORIENTATION OF ONE IMAGE WITH RESPECT TO ANOTHER
Theodore F. Callahan, Iron River, Wis. 54847
Filed Oct. 11, 1963, Ser. No. 315,552
5 Claims. (Cl. 88—2.4)



1. An optical device for determining angles comprising:

(a) a casing adapted to be held in the hand of an observer for permitting light rays from a remote object to travel along a first longitudinal sighting axis directly to the observer;

(b) first reflector means fixedly disposed with respect to said first sighting axis and being provided with means to combine light rays along said first sighting axis and a second sighting axis which is perpendicular to and which intersects said first axis;

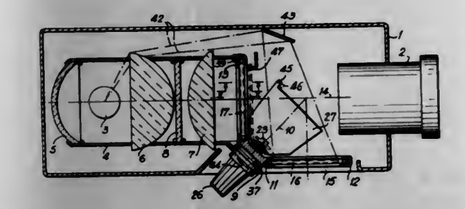
(c) second reflector means spaced from said first sighting axis and rotatable about said second sighting axis to provide a third sighting axis in a plane parallel to said first sighting axis for reflecting along said second axis additional light rays arriving from said object when said first and third sighting axes are parallel and for reflecting along said second axis light rays arriving from a second remote object when said second reflector means is rotated;

(d) a transparent member fixedly disposed with respect to said second reflector means and located on said third sighting axis and perpendicular thereto so that those light rays striking said second reflector means must pass therethrough,

(e) said transparent member having angularly spaced graduations thereon located circumferentially about said third sighting axis providing an indication of the angular degree of inversion of the image along said third sighting axis and therefore the rotative position of said second reflector means.

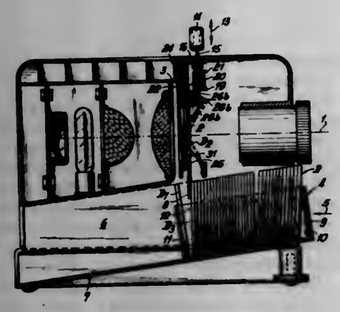
3,348,449
PHOTOGRAPHIC SLIDE PROJECTOR
Erich Zillmer, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Dec. 17, 1965, Ser. No. 514,496
Claims priority, application Germany, Dec. 31, 1964, V 27,483
18 Claims. (Cl. 88—27)

1. In a photographic slide projector having a predetermined optical axis, a housing having a side where the operator is normally located during operation of the projector, manually turnable means having a substantially horizontal axis during use of the projector, said substantially horizontal axis being inclined at an angle with respect to the optical axis sufficiently great to provide for the substantially horizontal axis a direction extending toward an operator normally located at said side of said housing, so that said manually turnable means can be conveniently turned by the operator, and slide-carrier means, connected with said manually turnable means to be turned thereby, for removably carrying a plurality of slides respectively in planes which make predetermined angles with each other and which are respectively situated at locations angularly distributed about said substantially horizontal axis for situating one slide in a projection position extending perpendicularly across the optical axis



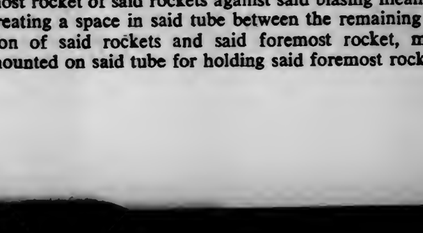
and at least one additional slide in a plane parallel to the optical axis at a position accessible at said side of said housing to be conveniently removed from said slide-carrier means and replaced by another slide, so that said slides can be displaced between said projection position and said side of said housing for successively projecting a series of slides in response to turning of said manually turnable means, and means coacting with said manually turnable means for limiting the latter to only one direction of rotation.

3,348,450
SLIDE-HANDLING STRUCTURE FOR PHOTOGRAPHIC PROJECTORS, VIEWERS, AND THE LIKE
Erich Zillmer, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Dec. 27, 1965, Ser. No. 516,310
Claims priority, application Germany, Jan. 5, 1965, Z 11,254
16 Claims. (Cl. 88—28)



1. In a photographic slide projector for projecting images from slides which are situated one directly next to and in engagement with the other in a container which is open at one side, a projection plane in which the slides are to be successively situated for projection of images therefrom, transporting means situated in advance of said projection plane for engaging and transporting a slide along a path situated in advance of said projection plane to a location where the slide is properly positioned with respect to the optical axis but is situated along said optical axis in advance of said projection plane, shifting means engaging a slide at said location for shifting the slide from said transporting means along the optical axis into said projection plane so that an image can then be projected from said slide, and return means engaging a slide in said plane and returning it to the container while maintaining the slide in said projection plane during return movement of the slide into the container.

3,348,451
GUN TURRETS
Roy Gilbert Vickers, Grantham, England, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland, a society of Switzerland
Filed Jan. 25, 1966, Ser. No. 522,909
Claims priority, application Great Britain, Apr. 26, 1965, 17,544/65
10 Claims. (Cl. 89—36)



1. A gun turret comprising a rotatable cupola, a gun port formed in the cupola wall below the uppermost profile of the cupola, a gun cradle for mountably supporting a gun and mounted on trunnions affixed to the cupola about an elevation axis extending across the gun port so as to have the cradle extend from the inside of the cupola through the gun port with the major part of the gun cradle projecting outwardly from the gun port, a gun port mantelet movable with said cradle about said elevation axis to close said gun port at different firing angles of elevation, a door at the rear end of said cradle accessible from inside said cupola at all angles of elevation of said cradle to give access at all times to a gun in said cradle, and counterbalance means for balancing said cradle about said elevation axis.

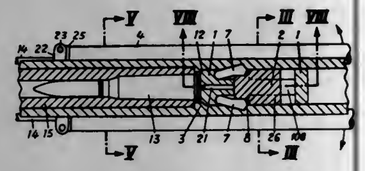
3,348,452
MINIATURE ROCKET DEFENSE SYSTEM
David R. Sawle, Berkeley, Calif., assignor to MB Associates, a corporation of California
Filed Mar. 3, 1965, Ser. No. 437,350
3 Claims. (Cl. 89—1.807)



1. In a rocket launching tube, the combination comprising: a plurality of rockets axially aligned in said tube, a biasing means in said tube, means mounted on said tube for holding and shifting rearwardly all but the foremost rocket of said rockets against said biasing means for creating a space in said tube between the remaining portion of said rockets and said foremost rocket, means mounted on said tube for holding said foremost rocket in

firing position, and firing means mounted on said tube and positioned to operate within said space for firing said foremost rocket from said tube.

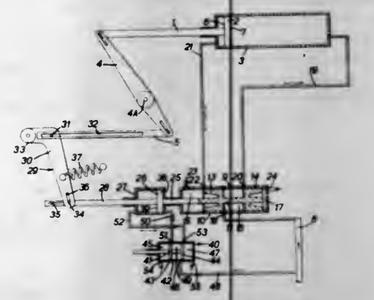
3,348,453
FIREARM WITH FIRING PIN RETARDING MEANS
Ernst Muhlemann, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding A.G., Zurich, Switzerland
Filed Mar. 7, 1966, Ser. No. 532,384
Claims priority, application Switzerland, Mar. 10, 1965, 3,337/65
7 Claims. (Cl. 89—180)



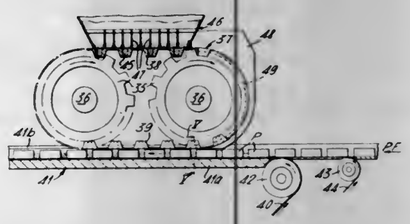
1. An automatic firearm comprising:
a breech housing having a chamber;
a breech head arranged in said housing and adapted to be locked to said housing in the igniting position;
control means for controlling the locking of the breech head in the housing, said control means being relatively movable with respect to said breech head from a position of abutment in which ignition takes place; and
friction brake means coacting with said control means for frictionally braking the movement of the control means away from said position of abutment, said friction brake means comprising means defining a catch recess provided with a friction surface and a spring-loaded, slideable friction element stationary with respect to said housing at least as long as the breech head is locked in said igniting position, said friction element being slideably movable in a direction transverse to the direction of movement of the control means and adapted to be received into said catch recess when the control means is in the position of abutment.

3,348,454
ACTUATING ARRANGEMENTS
Peter B. Kahn, Catisfield, Fareham, and Thomas Alfred Oldfield, Warsash, England, assignors to Plessey-UK Limited, Essex, England, a British company
Filed Apr. 5, 1965, Ser. No. 445,619
2 Claims. (Cl. 91—44)

1. A control system for a thrust reverser having a double-acting ram cylinder, a ram piston, movable along this cylinder, and mechanical locking means movable when the ram piston is at one end of its stroke between a locking position in which said locking member prevents movement of the ram piston from said one end position and an inoperative position in which said locking member permits such movement of the ram piston, the system comprising means for resiliently urging the locking member to said locking position, a control valve having a shuttle-type valve element controlling the admission of fluid pressure to and the release of pressure from the ram cylinder at the two sides of said piston respectively, and lost-motion coupling means connecting said valve element with the locking member for forcing the locking member to its inoperative position against said resilient means when said valve element is moved to one end position while permitting movement of the valve element to its other end position irrespective of the position of said locking member, said shuttle-type valve element having lands of such length as to permit sufficient movement of the valve element from said other end position towards said one end position to render the locking element inoperative before admitting fluid pressure to the ram cylinder for movement of the ram piston from said one end position to the opposite end of its stroke.

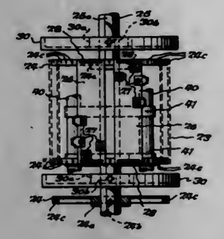


3,348,455
APPARATUS FOR PRODUCING COMPOSITE FILTER PLUGS
David Theodore Nelson Williamson and Peter David Loomes, London, England, assignors to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Oct. 1, 1964, Ser. No. 400,699
Claims priority, application Great Britain, Oct. 4, 1963, 39,207/63
6 Claims. (Cl. 93—1)



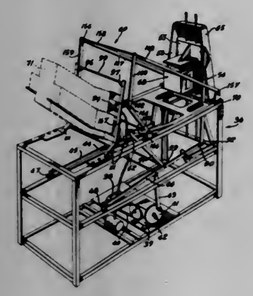
6. Apparatus for producing composite filter rod containing portions of powdered filter material comprising means for feeding a stream of filter plugs with gaps between successive plugs at regular intervals onto a continuous wrapper, means for advancing said wrapper through an elongated loading zone, filling means comprising an endless flexible conveyor band mounted so that a lower run thereof extends parallel to and immediately above said stream of plugs on said wrapper in said loading zone, said band having a plurality of regularly-spaced powder-receiving pockets therein, a powder hopper arranged to allow powder to descend onto said conveyor band, and common driving means connected to drive the wrapper-advancing means and the conveyor band in synchronism so that each of the pockets of said conveyor band travels facing upwardly beneath said hopper and is filled with said powder after which each of said filled pockets of said band travels to said loading zone where it is facing downwardly and is in register with one of said gaps between successive plugs whereby the powdered material is transferred to the gap as said pocket of said band and said gap continue to pass through said loading zone.

3,348,456
SCRAP STRIPPING APPARATUS
Ronald P. Marconet, West Chester, and Virgil L. Lutz, Cincinnati, Ohio, and Robert C. Wolf, Timonium, Md., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed July 1, 1965, Ser. No. 468,708
3 Claims. (Cl. 93—36)



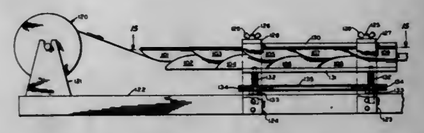
1. In a device adapted to strip scrap from sheets having blanks cut and creased thereon, a rotatable drum comprising at least two spaced-apart disks adjustably mounted on a shaft, at least one arcuate plate adjustably fastened to and between the two disks, and at least one scrap ejector lug adjustably fastened to the arcuate plate.

3,348,457
CONTAINER FORMING MACHINE
Daniel Wainberg, 4755 Blvd. des Grandes Prairies, St. Leonard, Montreal 38, Quebec, Canada
Filed June 15, 1964, Ser. No. 375,395
8 Claims. (Cl. 93—51)



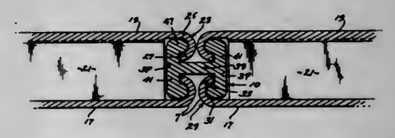
1. In a container forming machine, a machine frame, a plunger mechanism including a plunger, a forming die detachably secured to said machine frame and having a throat which is positioned in alignment with said plunger, longitudinal arms having their outer ends integral with said forming die and projecting therefrom, a magazine adapted to support a plurality of pre-cut blanks in an endwise position and integral with the inner ends of said longitudinal arms, a gate extending upwardly from said longitudinal arms and integral therewith and situated adjacent to the inner ends thereof and forming a blank removal outlet for said magazine, a blank pick-up mechanism secured to said machine frame, a blank pick-up member secured to and adapted to be operated by said blank pick-up mechanism for removing a foremost blank from the magazine and through the aforementioned gate and placing said blank on said forming die and over the throat thereof and in alignment with said plunger, and means for operating said plunger mechanism and said blank pick-up mechanism.

3,348,458
PLEATER FOR SHEET MATERIAL AND MEANS FOR TYING AND CUTTING CASINGS
Maynard J. G. Tipper, Oakland, Calif., assignor, by mesne assignments, to Rheem Manufacturing Company, New York, N.Y., a corporation of California
Original application Mar. 27, 1964, Ser. No. 355,502, now Patent No. 3,261,268, dated July 19, 1960. Divided and this application June 2, 1965, Ser. No. 470,259
2 Claims. (Cl. 93—84)



1. A pleater for forming longitudinally extending pleats in a horizontally elongated sheet of material adapted to be moved longitudinally through said pleater comprising,
a plurality of transversely spaced apart horizontally elongated vertically disposed lower pleater elements extending upwardly into engagement along their upper edges with said sheet for forming upper folds,
a plurality of transversely spaced apart horizontally elongated vertically disposed upper pleater elements extending downwardly into engagement along their lower edges with said sheet for forming lower folds intermediate said upper folds,
said upper and lower elements converging toward a central longitudinally extending central plane in a forward direction relative to the direction of travel of said sheet for converging said folds to form closely adjacent substantially vertically disposed pleats,
the inner of said upper and lower pleater elements being substantially longer than the outer elements and the length of said elements changing progressively from the central element to the outer elements on both sides of said central element.

3,348,459
INTERLOCKING MATTING AND COUPLING BAR THEREFOR
Leo M. Harvey, Los Angeles, Calif., assignor to Harvey Aluminum (Incorporated)
Filed Jan. 3, 1967, Ser. No. 606,767
6 Claims. (Cl. 94—13)

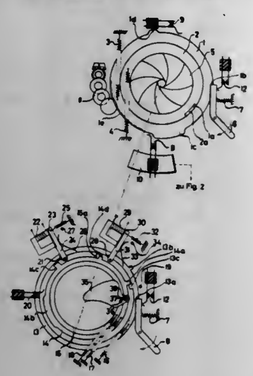


1. An extruded supporting mat section comprising: deck and base plates spaced by means of parallel ribs; male connector means on one side edge of the mat and complementary female connector means on the other side edge; said ribs and the side edge connector means between the plates being cut-away at their ends with ends of the plates extending therebeyond; the end of each plate being turned inwardly toward the other plate to form socket-like end connector means into which a coupling bar can be inserted in keying engagement; the cut-away distance of said ribs and side edge connector means being sufficient to permit sliding of a coupling bar through the end connector means; said deck and base plates, side edge connector means and end connector means all being integral parts of the extrusion.

3,348,460
ELECTRONICALLY CONTROLLED APERTURE AND SHUTTER ARRANGEMENTS FOR USE WITH CAMERAS

Helmut Schmitt, Hausen, Bavaria, Germany, assignor to P. Gossen & Co. G.m.b.H., Erlangen, Bavaria, Germany, a firm

Filed Oct. 15, 1965, Ser. No. 496,509
Claims priority, application Germany, May 28, 1965, G 43,717
11 Claims. (Cl. 95—10)



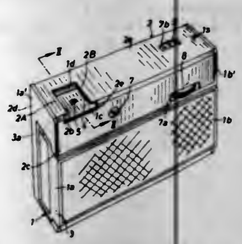
1. In a camera operable with a light sensitive film, the combination, comprising: an aperture device adapted to move from an initial position to predetermined aperture positions thereof, a shutter device adapted to move from a closed position to an open position and return to said closed position, means for actuating said aperture and shutter devices to commence movement to said predetermined aperture positions and to said open position, respectively, and means for controlling the time increment elapsing between the movement of said shutter device from said closed position and returning thereof to said closed position, said means comprising light sensitive means for sensing the light intensity to which said film is exposed through said aperture device, a source of potential, capacitor means for charging to a predetermined threshold level from said source of potential, variable resistance means connected in circuit relationship with said source of potential and said light sensitive means for controlling attainment of said threshold level by said capacitor means, the arrangement being such that said time increment is less than the time required for said aperture device to move to said predetermined aperture positions thereof.

3,348,461
ACCESSORY CLIP FOR PHOTOGRAPHIC CAMERAS

Alfred Winkler, Munich, and Dieter Engelsmann, Franz Landbrecht, and Otfried Renner, Unterhaching, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed Apr. 9, 1965, Ser. No. 446,892
Claims priority, application Germany, Apr. 10, 1964, A 21,561
13 Claims. (Cl. 95—11.5)

1. In a photographic camera, a combination comprising a housing member including a top portion provided with an integral platform; a cover member including a top panel having a flat portion located at a level above and spaced from said platform, said cover member having a substantially rectangular cutout extending into said flat portion of the top panel above said platform and said flat portion comprising a pair of edge portions adjacent to the sides of said cutout and forming with said platform an accessory clip for the shoe of an attachment, said edge portions and said cutout and the remainder of said flat portion being located in a common plane; and electric

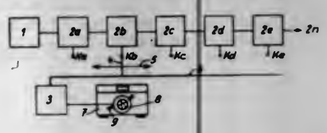


contact means mounted on said platform, said contact means having conductor means located below said platform.

3,348,462
PHOTOGRAPHIC CAMERA

Paul Fahlenberg, Baierbrunn, near Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a German firm

Filed Apr. 7, 1965, Ser. No. 446,214
Claims priority application Germany, Apr. 10, 1964, C 32,619; Apr. 16, 1964, C 32,657
21 Claims. (Cl. 95—53)



1. A photographic camera having a shutter, and electrical means including at least one armature for controlling at least a part of the operation of said shutter, said electrical means comprising means for generating a series of electric pulses, a series of pulse frequency dividers, means operatively connecting said generating means and said frequency dividers to each other to apply the output of said generating means to the input of the first one of said series of frequency dividers and the output of each of said frequency dividers to the input of the next succeeding frequency divider in the series, an output contact operatively connected to the output of each of said frequency dividers, an end stage and at least one magnetic winding energized upon activation of said end stage for operating upon a shutter-controlling armature, and a setting member for connecting said end stage electrically to any selected one of said output contacts, so that the pulse frequency, divided by the selected number of frequency dividers, will be applied to said end stage to energize said magnetic winding, thereby to operate said armature.

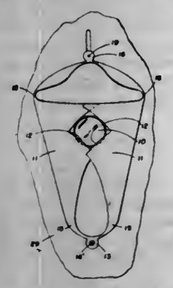
3,348,463
ONE-PIECE LIGHT-CONTROLLING STRUCTURE

Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 24, 1965, Ser. No. 463,454
21 Claims. (Cl. 95—64)

1. A light controlling arrangement comprising a one piece structure having at least two portions where said structure is relatively flexible, said portions being very small with respect to the size of the remainder of said structure, and at least one point where said structure is held rigidly to a support, said structure having sections

which are adapted to overlap when said flexible portions are flexed, the degree of overlap being determined by the

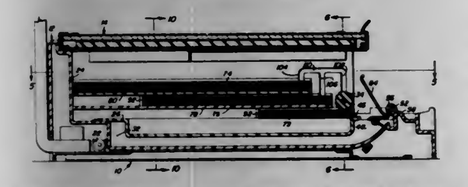


position of at least one of said flexible portions with respect to said point where said structure is held rigidly, said flexible portions being remote from said point.

3,348,464
ADAPTER UNIT FOR COPYING MACHINES

Ernest W. Sturdevant, 4105 Tulare Drive, Silver Spring, Md. 20906

Filed Mar. 22, 1965, Ser. No. 441,719
2 Claims. (Cl. 95—73)

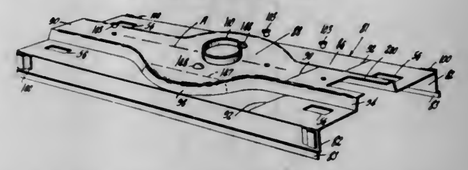


1. In a copying machine of the type for making copies from a sensitized matrix and which includes a base unit and a case unit mounted upon said base unit, said case unit having a chamber for receiving a supply of different sizes of copy paper, a tank for an activating solution disposed in said machine beneath said chamber, said machine having a dispensing opening through which a matrix and a sheet of copy paper engaged therewith may be simultaneously withdrawn and a deflector means for engaging the forward end of a sheet of copy paper when it is withdrawn from said supply in said chamber and directing it against a matrix whereby the matrix and the withdrawn sheet retained in face-to-face engagement may be withdrawn as a unit package through said dispensing opening, the improvement comprising; means in said case unit supporting and storing in said chamber different sizes of copy paper with their forward ends in vertically spaced relation and each adjacent said dispensing opening, a dispensing means mounted on said machine and selectively engageable with the forward ends of said different sizes of copy paper for feeding a sheet of a selected size of copy paper from said supply and towards said dispensing opening, said supporting and storing means comprising a plurality of trays each including a bottom, side walls, an open front and a rear, upwardly extending abutment members engageable by the rear ends of a stack of copy paper whereby to position the front end thereof at the open front end, said trays being removably supported in superposed relation, said supporting and storing means positioning the front ends of different size copy paper in vertically and longitudinally spaced relation, said dispensing means comprising a feed member, means mounting said feed member upon said machine for movement between a plurality of positions in each of which positions it is engageable with the front end of a selected size sheet, said feed member being movable and operable when so engaged to withdraw the engaged sheet from the associated stack and move it toward said dispensing opening, said feed member comprising a feed roller having an axle extending transversely of said chamber, means for effecting rotation of said feed roller, said mounting means including a series of vertical slots each disposed adjacent the front end of a stack of copy paper together with a connecting slot communicating with each vertical slot, said roller being slidably retained and movable in said slots.

3,348,465
LIGHTING AND VENTILATING TROFFER ASSEMBLY

Michael Henry Kruger, Chestnut Hill, Mass., assignor to Smithcraft Corporation, Chelsea, Mass., a corporation of Massachusetts

Filed Nov. 20, 1964, Ser. No. 412,756
10 Claims. (Cl. 98—40)



1. A lighting and ventilating troffer assembly including a troffer member having a top wall and side walls, a vent housing having a generally corresponding top wall and side walls in nesting relation to said troffer member, an electrical connection access opening in the top wall of said troffer member, a corresponding access opening in the top wall of said vent housing and a rotatably removable access plate formed of resilient material and cooperating with one of said top walls to close said opening, said plate having a main body adapted to cover substantially completely said opening, two tab means located oppositely from the center of rotation of said plate, said tab means adapted to be inserted and engage simultaneously the underside of the wall, and two projection means on said plate located oppositely from the center of rotation of said plate and spaced from said tab means, said projection means constructed and arranged to ride upon the surface of said wall and resiliently deform said plate as said tab means move to locking position, said projection means adapted to slide from said wall over edges of said opening into said opening upon terminal movement of said plate, allowing said plate to straighten, said projections cooperating with said edges of said opening over which they slide to lock said access plate against inadvertent removal.

3,348,466
VERTICAL BLADE LOUVER

Robert W. Lane and Earl F. Mathers, Marietta, Ohio, assignors to The Airolite Company, Marietta, Ohio, a corporation of Ohio

Filed Oct. 16, 1964, Ser. No. 404,347
2 Claims. (Cl. 98—121)

1. In an air ventilating louver having upper and lower blade supporting members and a front sill plate,

(A) a plurality of vertically extending blades mounted between said supporting members in spaced parallel relation, said blades being in substantially Z-shaped cross-section and oriented so as to define:

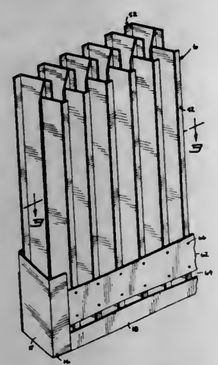
(1) a series of air inlet passages each of which are disposed at an acute angle with reference to the plane of said sill plate,

(2) a corresponding series of air outlet passages each of which is disposed at an acute angle with reference to the plane of said sill plate and

which are in substantially parallel spaced relation with respect to said inlet passages,

(3) a series of air transfer passages in interconnecting communication with corresponding pairs of said inlet and outlet passages, said transfer passages disposed in a direction substantially perpendicular to the direction of said inlet and outlet passages and being adapted to induce turbulence in the air passing through said louver;

(B) a plurality of vertically extending inlet stops mounted on each of said blades being adapted to restrict the air entering said inlet passages and to facilitate the removal of water therefrom, said inlet

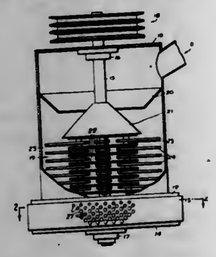


stops comprising flat metal strips, the width of which are dimensioned so as to be in the range of 30% to 38% of the distance between the blades;

(C) a plurality of vertically extending outlet stops mounted on each of said blades being adapted to expand the air leaving said outlet passages and to facilitate removal of air therefrom, the width of said outlet stops being dimensioned so as to be in the range of 30% to 38% of the distance between the blades; and

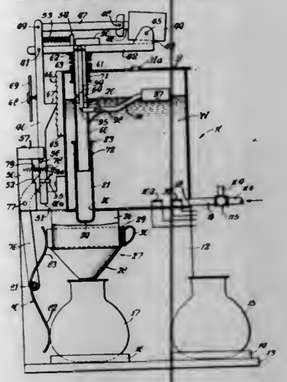
(D) an exterior weather shield consisting of a rigid flat plate extending in closely spaced horizontal alignment approximately one-half inch above said front sill plate.

3,348,467
STOCK FEED PELLETING MACHINE
Frederick Ellrott, Albert C. Ellrott, and Charles Ellrott, all of Sleipner Junction, Rockhampton, Queensland, Australia; Roy D. Ashton, 94 Bremer St., North Rockhampton, Queensland, Australia; and Douglas H. Ashton, Elphinstone St., and Ernest S. Gomersall, 6 Cavell St., both of Rockhampton, Queensland, Australia
Filed Aug. 17, 1966, Ser. No. 573,111
9 Claims. (Cl. 99—235)



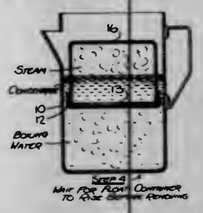
1. A pelleting machine including a pelleting chamber peripherally bounded by a substantially cylindrical apertured plate, a radial arm within said chamber rotatable about the axis of said plate, a blade on the outer extremity of said arm, the axial widths of said arm and said blade being substantially equal to the axial length of said plate, the leading edge of the outer end of said blade moving closely adjacent the inner face of said plate and the leading face of said blade being substantially radial, and means for feeding material to be pelleted to said chamber.

3,348,468
COFFEE BREWER
David C. Eisendrath, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,681
17 Claims. (Cl. 99—282)



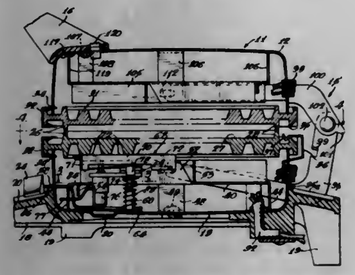
1. Brewing apparatus comprising:
a tank for holding liquid;
outlet means movable mounted in said tank;
manually operable means for moving said outlet means in said tank from a set position wherein the outlet means is out of communication with liquid in the tank to any one of a plurality of selectable positions below the upper level of liquid for discharging any one of a plurality of different quantities of liquid from said tank;
means biasing said outlet means toward said set position;
latch means for locking said outlet means in the selected position;
and means for releasing said latch means as a result of the selected quantity of liquid being discharged from said tank.

3,348,469
COFFEE MAKER
Sam Kasakoff, 329 E. 58th St., New York, N.Y. 10022
Filed Sept. 4, 1964, Ser. No. 394,420
3 Claims. (Cl. 99—320)



1. A coffee-maker comprising a generally cylindrical pot for boiling water, and a generally cylindrical float container telescopically receivable within said pot, said container being constituted by a cup into which a charge of coffee grounds may be placed to be brewed with boiling water taken from said pot to produce a concentrate, a removable perforated cap for said cup and a porous filter element receivable within said cap over the perforations therein to render said cup permeable to liquid and gas only through the pores of the filter element in the cap, the cup being otherwise sealed, whereby when the container is inverted in said pot, steam from said boiling water therein enters said cup and expels the concentrate therefrom to cause said container to float.

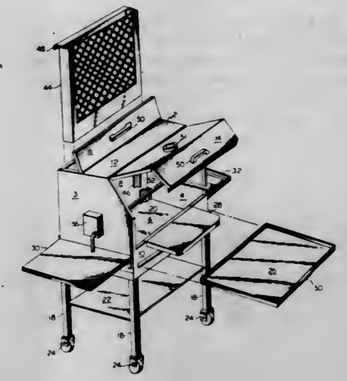
3,348,470
WAFFLE BAKER OR THE LIKE
Charles E. Swanson, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 4, 1966, Ser. No. 539,701
21 Claims. (Cl. 99—331)



1. In a waffle baker comprising an inverted cup-shaped housing, a tray disposed within said housing for supporting a radiant heating element on its upper surface, a cooking plate positioned on top of said housing enclosing said tray and heating element, said housing being provided with a horizontally extending slot and a vertically extending mounting post spaced from said slot, thermal responsive means including a metallic bracket which readily conducts heat from said cooking plate, a thermostat secured to said bracket and defining a cavity which is adapted to receive said post in vertical sliding relationship, said thermostat having a horizontally extending lever for adjusting the thermal setting thereof, said lever pivotally mounted on a vertical axis spaced between said thermostat cavity and housing slot, a control member pivotally connected to said post and extending from said post through said housing slot for manipulation by the user, said thermostat lever interlocking with said member at a point intermediate the length of said member whereby the pivotal movement of the member causes the lever to swing through a greater arc than the member moves through.

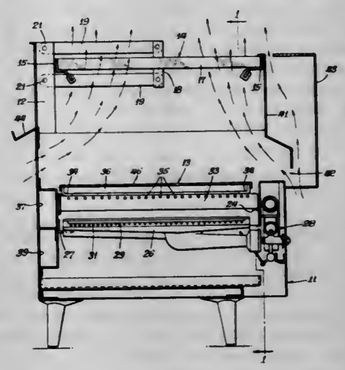
3,348,471
CHARCOAL BROILER
William E. Lackenbauer, 148 Pineview Road, Dudley, Mass. 01570, and Thomas G. Brown, Rte. 44, East Putnam, Conn. 06260
Filed June 16, 1966, Ser. No. 558,086
1 Claim. (Cl. 99—421)

An oven-type charcoal broiler comprising a base supported on a removable frame, a foldable front wall, a rear wall, a heating component removably attached to said rear wall, and provided with an ash separation element, a first side wall having a plurality of stations therein adapted to receive a skewer, a second side wall having a corresponding number of stations therein adapted to receive a skewer and additionally having an adjustable bracket for a motor on the outside thereof, a folding lid for said heating component which forms a part of a top wall of said oven, said charcoal broiler further including a temperature indicator provided on said foldable front wall, removable serving trays attached to said front and side walls, a removable drip pan disposed between said skewer and said base, a tray removably secured to said frame, said heating component being adapted to receive fuel fed through the top of said component and being adapted to retain said fuel in vertical alignment across the rear wall of the oven, said heating component comprising a rear wall having a flange on



the outside thereof for attaching said component to the oven, a first side wall and a second side wall each having slots for slideably receiving an inner rear wall and an L-shaped grate, which grate serves as an inner front wall over at least three-fourths of the area of the rear wall and as an inner bottom wall, a bottom wall, and a front wall adjacent said bottom wall which front wall covers an area less than one-fourth the area of the rear wall.

3,348,472
OPEN HEARTH BROILER
Richard J. Anetsberger and John A. Anetsberger, Northbrook, Ill., assignors to Anetsberger Brothers, Inc., Northbrook, Ill., a corporation of Illinois
Filed Feb. 2, 1965, Ser. No. 429,748
4 Claims. (Cl. 99—447)



2. An open hearth broiler, comprising a grid, a heat source disposed below and supplying infra-red rays to said grid to cook food supported thereon, and a cabinet

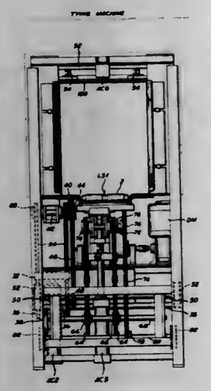
having a lower portion enclosing said heat source and an upper portion supporting said grid in cooking position spaced upwardly from said lower portion, said upper portion of said cabinet being substantially fully open on top and on all sides to the surrounding atmosphere and formed to assure an upwardly directed supply of cool air at the front, upward and inward drafting at the rear, and outward venting laterally below said grid.

3,348,473

INLINE FEEDER DEVICE FOR TYING MACHINE

William R. Luy, Milwaukee, Wis., and John H. Trumble, San Francisco, Calif., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed July 7, 1965, Ser. No. 470,127
9 Claims. (Cl. 100—4)



1. A feeder device for use in cooperation with a bundle tying machine, said feeder device comprising, in combination:

a receiving portion for receiving a stack of articles from a delivery source;

pusher means reciprocably movable along a linear path between stack receiving and stack tying positions to move a stack of articles between said stack receiving and said stack tying positions;

means responsive to the arrival of a stack at said receiving position to cause said pusher means to receive and move said stack to said tying position;

stop means movable between stack interferring and non-interferring positions;

means responsive to movement of said pusher means from said receiving position to said tying position to initiate a tying operation of said tying machine prior to the arrival of said stack at said tying position and also to cause said stop means to move to said stack interferring position to stop said stack at said tying position;

ejector means reciprocably movable to move a tied bundle of articles between said stack tying and a bundle ejecting position;

means responsive to the arrival of said stack at said tying position to cause said pusher means to return to said stack receiving position and to cause said ejector means to move to said tying position to receive the stack thereat; and

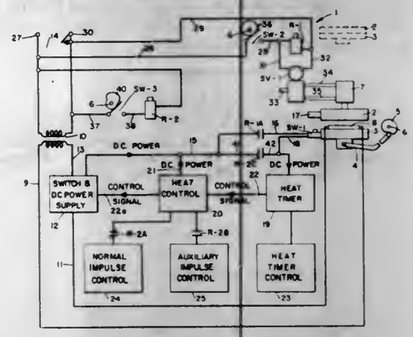
means operable subsequent to completion of a tying operation to first cause said stop means to move to said non-interferring position and then to cause the first mentioned movement of said ejector means.

3,348,474

HEATSEALING MACHINES

Norman A. Virta, Mount Prospect, and Richard E. Zanotti, Harwood Heights, Ill., assignors to Triangle Package Machinery Company, Chicago, Ill., a corporation of Illinois

Filed Feb. 2, 1965, Ser. No. 430,035
14 Claims. (Cl. 100—93)



1. A machine for heatsealing thermoplastic sheets and having sealing cycles and skip cycles of operation, said machine comprising

(a) means for applying pressure to such sheets,

(b) said means including

(1) a pair of pressure jaws movable during sealing cycles of said machine between

(a') one position effective to clamp such sheets therebetween, and

(b') another position wherein said jaws are spaced from each other and ineffective to clamp said sheets therebetween,

(c) said jaws remaining in said skip position during other cycles of operation of said machine,

(d) a heater element mounted on one of said jaws in position to engage the portion of said sheets disposed between said jaws when said jaws are disposed in said one position,

(e) means for heating said heater element to a predetermined temperature during each of said sealing cycles of operation, and

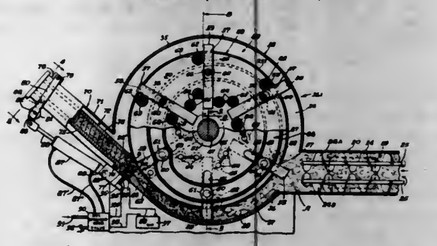
(f) means for heating said heater element to a lower temperature than said first-mentioned temperature during each of said skip cycles of operation.

3,348,475

HAY WAFERIZER

Abraham S. Fenster, West Orange, N.J., and Rodger W. Asmus, Downers Grove, Ill., assignors to International Harvester Company, a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 532,825
7 Claims. (Cl. 100—177)



1. A three-stage machine for waferizing hay comprising a first-stage unit including auger means for compacting hay to bale density, said first-stage unit having a hay inlet and hay outlet; a second stage unit including a housing having an interior chamber, a vane drum rotatably mounted in said chamber, said vane drum and said chamber defining an elongate second-stage compaction zone, said zone having at its opposite ends an inlet communicating with said outlet of said first-stage unit and an outlet; a plurality of vanes in said vane drum, each of said vanes being movable through said zone on rotation of said vane drum and each of said vanes being movable radially with respect to said drum between an extended position and a retracted position; a third-stage unit including die means having an inlet aligned with said zone outlet for receiving wafers formed in said zone, said die means being dimensioned so that wafers passing therethrough frictionally engage said die means thereby generating sufficient heat to impart a "set" to said wafers.

3,348,476

FLAT-FORMED INFLATABLE PRESSURE BAGS

Winston E. Brownlee, Suttons Bay, and Jack L. Ritchey, Traverse City, Mich., assignors to Parsons Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 4, 1963, Ser. No. 255,998
8 Claims. (Cl. 100—211)



5. A pressure bag for applying bonding pressure and the like, comprising

a flat-sided distensible hollow body having a plurality of reinforced ply laminates having joints alternately at opposite side surfaces of the bag and vulcanized to form successive bag layers, and

a flexible flat sheet pattern within the innermost layer and of a size corresponding to the inner size of the bag when flattened,

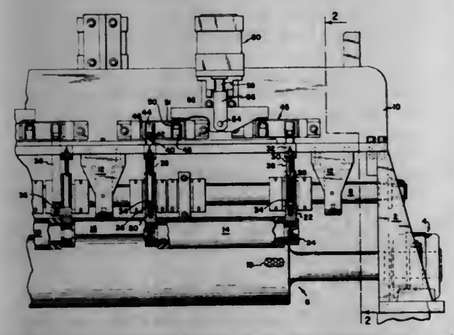
said pattern having a non-adherent surface.

3,348,477

PAPER CONVERTING, AND PARTICULARLY PRODUCING IMPROVED PAPER TOWELS

Ruel E. Taylor, Jr., and Fernald J. Fitzpatrick, South Windham, Maine, assignors to Hudson Pulp & Paper Corp., New York, N.Y., a corporation of New York

Original application Jan. 12, 1961, Ser. No. 82,319. Divided and this application Oct. 23, 1965, Ser. No. 510,439
9 Claims. (Cl. 101—23)



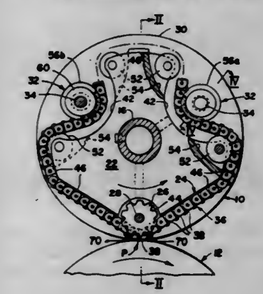
1. In paper converting apparatus, the combination of, an anvil roll comprising a rigid mandrel and a peripheral structure thereon presenting an arrangement of radial walls defining pockets with each pocket being surrounded by a continuous wall structure and with the wall structures providing support for a web of paper passing thereabout along a path which is a segment of a cylinder, a plurality of pressure rolls longitudinally spaced along said anvil roll and each extending only a portion of the length thereof, each pressure roll having a relatively soft flexible cover and having its axis parallel to the axis of said anvil roll and adapted to be positioned in contact with a web of paper passing around said anvil roll, and means to press said pressure roll toward said anvil roll with sufficient pressure to cause the pressure roll to bulge into said pockets, said means comprising a plurality of separately operable pressure mechanisms corresponding in number with the number of said pressure rolls and respectively associated therewith whereby the pressure exerted on each of said pressure rolls may be individually controlled.

3,348,478

ROTARY ENDLESS CHAIN PRINTING MACHINE

Walter F. Gancarz and William A. Marion, Youngstown, Ohio, assignors to The American Paper Products Company, Youngstown, Ohio, a corporation of Ohio

Filed Feb. 4, 1965, Ser. No. 430,277
10 Claims. (Cl. 101—91)



1. In a date printing cylinder having a rotational axis, the combination comprising: a support member rotatable about said rotational axis; a discontinuous guide track at the periphery of said support member; a drive pinion carried by said printing cylinder in alignment with said discontinuous guide track; chain guide members carried by said printing cylinder in alignment with said discontinuous guide track; and an endless chain of type-links engaged with and extending externally of said discontinuous guide track and said drive pinion and internally of said chain guide members; successive ones of said type-links being movable into printing position with a point on the periphery of said data printing cylinder rotating about said rotational axis through a circle of given diameter; the length of said chain being greater than the circumference of said circle.

3,348,479

ERROR DETECTING PRINTER IN HIGH SPEED PRINTING APPARATUS

Richard A. Pandolfi, Haupauge, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

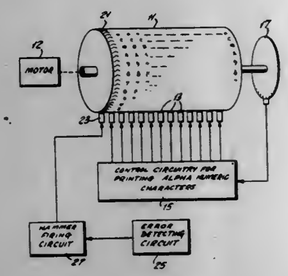
Continuation of application Ser. No. 387,935, Aug. 6, 1964. This application Sept. 27, 1966, Ser. No. 582,461
5 Claims. (Cl. 101—93)

1. A high speed printer comprising:

a type carrier for moving a plurality of information characters to be printed past a printing line, said type carrier also supporting a validating character,

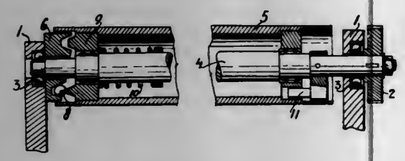
means to continuously move said type carrier past said printing line,

a plurality of hammers positioned along said print line,
means for producing an output signal determinative of the position of said information characters relative to said plurality of print hammers,
first means responsive to said output signal and to encoded information signals to operate said hammers to print,



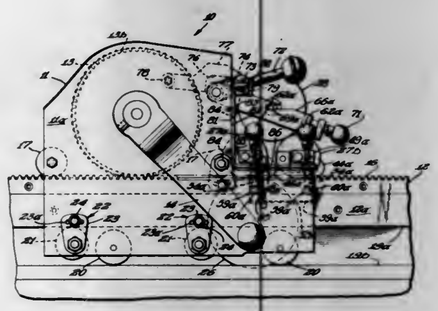
means operable to detect errors in the information and to produce a signal indicating whether an error is detected,
a validating hammer, and
second means independent of said first means for operating said validating hammer to print said validating character in response to an output from said error detecting means.

3,348,480
MECHANISM FOR AXIALLY RECIPROCATING A DISTRIBUTING CYLINDER IN A PRINTING MACHINE
František Boháč, Krtiny, and Ladislav Burda, Brno, Czechoslovakia, assignors to Adamovské Strojírny, národní podnik, Adamov, Czechoslovakia
Filed May 12, 1965, Ser. No. 455,100
Claims priority, application Czechoslovakia, May 14, 1964, PU 2,786/64
3 Claims. (Cl. 101—349)



1. In a printing machine having a stationary support, a distributing cylinder mounted on said support for rotation about the axis thereof, and means for axially reciprocating the cylinder during said rotation, the improvement in the reciprocating means comprising:
(a) cooperating ring means on said support and on said cylinder, said ring means including
(1) a cam member formed with an annular groove about said axis, said groove having two side walls angularly converging inward of said groove,
(2) a ring member having an axially projecting annular face about said axis and thus being in axial alignment with said groove, and terminating at a plane front face axially facing said groove, said annular face converging toward said front face,
(3) a ball member having a portion received within said groove in simultaneous three-point contact with said side walls and said front face,
(4) said cam member and said ring member being fixedly fastened to said support and said cylinder, respectively, and
(b) yieldably resilient means urging said cam and ring members axially toward each other for rolling engagement of said ball member between said side walls and said front face in said three-point contact.

3,348,481
TRAVELING INKING ROLL SUPPORTING SYSTEM
Raymond F. Nowak, Mundelein, Ill., assignor to Vandercook & Sons, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 10, 1965, Ser. No. 438,592
8 Claims. (Cl. 101—354)

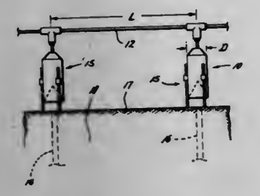


1. In a printing press comprising,
a horizontal longitudinal form-supporting bed,
track means on the bed situated adjacent the longitudinal sides thereof,
a carriage carried on said bed and having a pair of spaced carriage plates situated respectively adjacent the two longitudinal sides of the bed,
wheels on said carriage and engageable with said track means for guiding said carriage horizontally along said bed,
a pair of form rollers,
a pair of shafts supporting said form rollers and projecting respectively from both ends of said rollers, and
a pair of form roller carriers for vertically adjustably supporting and journalling said form roller shafts and situated respectively at the two longitudinal sides of said bed,
wheels mounted on said carriers and engageable with said track means for guiding said carriers horizontally along said bed,
means connecting said carriers with said carriage for movement in a horizontal direction together with said carriage and in a vertical direction independently of said carriage, and
means for selectively adjusting the vertical disposition of said form rollers relative to said carriers.

3,348,482
EXCAVATING APPARATUS AND METHOD FOR EXCAVATING MATERIALS
Russell W. Keener, Peter L. De Marsh, and Carlos E. Ballard, Stafford, Tex., assignors to Jet Set Corporation, a corporation of Texas
Filed Jan. 3, 1966, Ser. No. 518,368
11 Claims. (Cl. 102—23)

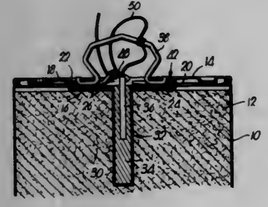
1. A method of excavating comprising the steps of:
(a) positioning a plurality of circular shaped charges to direct energy generated on initiation into a material to be excavated;

(b) nonabuttingly arranging said shaped charges in a pattern relative to one another in which the center line spacing between adjacent shaped charges to diameter of shaped charges does not exceed seven to one;



(c) initiating said shaped charges to direct energy into the material to be excavated; and
(d) said energy excavating material adjacent to said shaped charges and also between adjacent shaped charges having center line spacing to diameter which does not exceed seven to one.

3,348,483
CAN FOR EXPLOSIVE CHARGE
Harry H. Sorg, Jr., Joplin, Mo., assignor to Re Lo Manufacturing Co., Joplin, Mo., a corporation of Missouri
Filed Mar. 16, 1966, Ser. No. 534,887
4 Claims. (Cl. 102—24)



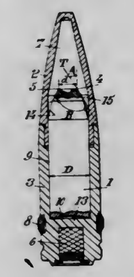
1. A marine explosive device comprising:
a receptacle having an explosive charge therein and including an end wall, said end wall being provided with an opening communicating with the interior of the receptacle;
a closure for said receptacle, said closure including a plate adapted to be disposed across said opening and having an area sufficiently great to completely close the latter, said plate having a hole therethrough and disposed in registry with the opening in said end wall;
an elongated tube having one end thereof secured to the plate in surrounding relationship to said hole to close the latter, said tube extending into the receptacle through said opening when the plate is in closing relationship over said opening, said tube being adapted to receive therein detonator means for said charge; and
releasable structure securing said closure to said receptacle with the detonator extending into the receptacle in position for detonating said charge when the detonator is actuated, said structure including a rim and a plate supporting seat surface on the end wall and surrounding said opening, and spring means engaging the plate and said rim for exerting a biasing force to hold the plate in sealed relationship with said surface.

3,348,484
FLAME CARTRIDGE
Andrew J. Grandy, North Hills, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 23, 1965, Ser. No. 516,171
8 Claims. (Cl. 102—32)



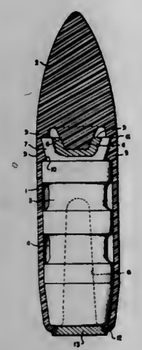
1. A flame cartridge comprising a combustible bullet body having:
a base portion including therewithin
a first pocket,
a primer composition located in said first pocket,
a second pocket adjacent said first pocket,
a propellant located in said second pocket,
an obturator located adjacent said second pocket, and
a body portion connected to said base portion including therewithin,
a third pocket located at a rearward portion of said body portion adjacent said obturator,
a fourth pocket located at a forward portion of said body portion,
an incendiary composition located in said fourth pocket, and
a fuze cord extending from said second pocket, through said third pocket to said fourth pocket.

3,348,485
ARMOR PIERCING SHELL
Georges Dufour, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland
Filed Oct. 5, 1965, Ser. No. 493,050
Claims priority, application Luxembourg, Oct. 8, 1964, 47,107
2 Claims. (Cl. 102—52)



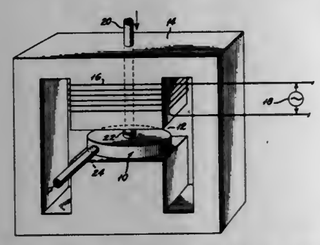
1. An armor piercing shell which comprises, in combination, a core of a hard material and, about said core, an envelope of a light material of a diameter greater than that of said core, wherein the front part of said core is in the form of a cup the edge of which constitutes the most forwardly projecting portion of said core and wherein the angle made, in a radial plane of the shell, between the tangent at said edge to an axial section of the outer surface of said core and a parallel to the shell axis ranges from 25° to 35° and the angle made, also in said radial plane, between said tangent and the tangent to said cup at said edge is substantially equal to 90°.

3,348,486
PLASTIC-LEAD MUSHROOMING BULLET
Reinhold Rapp, Stadeln, Bavaria, Germany, assignor to Dynamit Nobel A.G., Troisdorf, Germany
Filed Dec. 10, 1965, Ser. No. 512,985
Claims priority, application Germany, Dec. 12, 1964, D 46,045
22 Claims. (Cl. 102—92.3)



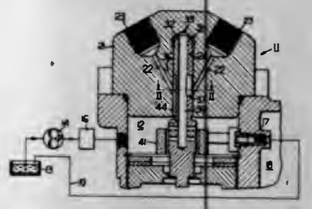
1. A bullet for cartridges, having an axis, an axial forward end and an axial rear end; a bullet jacket of synthetic plastic material; a core of lead material within said jacket; said jacket having a forward end substantially rigid jacket tip and an axially extending generally tubular portion, substantially enclosing said core at the forward end and the sides, respectively; said jacket tip having a rearwardly extending and inwardly tapered wedge means for engaging the central portion of said core to mushroom the forward end of said core outwardly and forwardly upon relative axial movement toward each other.

3,348,487
FLUID PUMP AND HEATER SYSTEM
George Miller, Little Falls, N.J. (% Howard L. Volgenau, 2401 H St., NW., Apt. 304, Washington, D.C. 20007)
Filed Aug. 12, 1964, Ser. No. 389,229
9 Claims. (Cl. 103—1)



1. A fluid pump for pumping a fluid of high inherent resistance or nonconductivity comprising a housing of electrical insulating material, a spiral conduit in said housing, a conduit of electrical insulating material connected to the center of said spiral, a conduit of electrical insulating material connected to the end of the spiral whereby a fluid can flow from one conduit of insulating material to the other conduit of insulating material through the spiral conduit, means for producing a magnetic field through the spiral conduit, at least one of the walls of the spiral conduit being an electrical conductor wound in a direction at right angles to the magnetic field whereby the spiral operates as the secondary of a transformer when the fluid to be pumped is in the spiral conduit.

3,348,488
DISTRIBUTOR FUEL INJECTION PUMP WITH PRECHARGING AND PILOT INJECTION
George D. Wolff, Hazel Crest, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 7, 1965, Ser. No. 512,092
7 Claims. (Cl. 103—2)



1. In a distributor type fuel injection pump the combination comprising:
a pump housing including
a bore,
a plurality of delivery passages communicating at angularly spaced intervals with said bore adapted for connection to fuel delivery lines, respectively,
an injection pressure chamber at one end of said bore, and
a supply chamber for supplying fuel to said injection pressure chamber,
means supplying fuel to said supply chamber and maintaining the latter at a pressure substantially above atmospheric pressure,
a reciprocable pump plunger in said bore for pressurizing fuel in said injection pressure chamber, and
rotating valve means in said housing between said injection pressure chamber and said delivery passages defining a pilot port and a main port cyclically connecting said delivery passages two at a time to said injection pressure chamber during the pumping stroke of said plunger to deliver a main quantity of fuel through said main port to one of said two passages and a relatively smaller quantity of fuel through said pilot port to the other of said two passages and defining precharging passage means cyclically connecting said delivery passages in free flow fluid communication with said supply chamber during a major portion of the time they are disconnected from said injection pressure chamber.

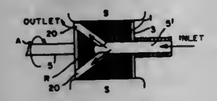
3,348,489
INDUCTION PUMP
Ernst Meyer, Rodernstrasse 12, Offenbach am Main, Germany
Filed Dec. 13, 1965, Ser. No. 513,510
Claims priority, application Germany, Jan. 21, 1965, M 63,868
8 Claims. (Cl. 103—53)



1. An induction pump for pumping a flowable medium, said pump comprising an open ended cylinder, one end portion of the cylinder constituting a suction condut and the other a pressure conduit, exciting coil means encompassing the mid-portion of the cylinder, a magnetizable

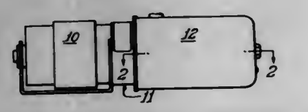
tubular plunger slidable in the mid-portion of said cylinder and including an open passageway extending between the two end faces of the plunger, said plunger having a tubular extension of lesser diameter than the outer diameter of the plunger on each end face in alignment with the hollow interior of the plunger, said extensions protruding into said end portions of the cylinder and being slidably guided therein.

3,348,490
COMBINED ELECTRIC MOTOR AND FLUID PUMP APPARATUS
Leonhard Katz, Woburn, and John H. Sununu, Concord, Mass., assignors to Astro Dynamics, Inc., Burlington, Mass., a corporation of Massachusetts
Filed Sept. 7, 1965, Ser. No. 485,401
3 Claims. (Cl. 103—87)



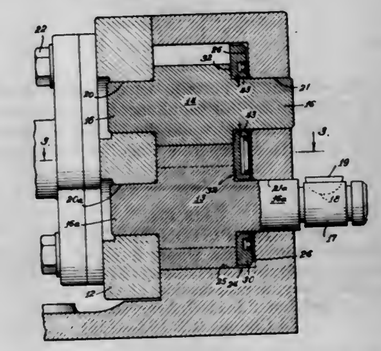
1. A combined fluid pump and electric motor having, in combination, a cylindrical motor rotor of magnetic material positioned coaxially within a cylindrical magnetic-field-permeable chamber in close proximity to the walls thereof, the chamber having a fluid inlet and a fluid outlet disposed at opposite inlet and outlet ends of the rotor, said rotor having shafts extending axially from said opposite ends thereof for mounting said rotor for rotation about its axis, the shaft at the inlet end of said rotor being hollow and providing a rotor inlet communicating with said chamber inlet, a source of non-magnetic fluid connected with the chamber inlet, means for generating a motor stator-coil field at the said walls surrounding the rotor, said rotor having a passage therethrough with a first section extending from said rotor inlet coaxially with the rotor to a second section diverging entirely to one side of the rotor axis and extending to a rotor outlet through the outlet end of the rotor adjacent to the periphery, the rotor pumping the fluid through said passage during its rotation in response to the said stator-coil field.

3,348,491
HYDRAULIC PUMP AND SUMP
William T. Stephens, Mentor, Ohio, and David N. Prevallet, Auburn, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 532,159
9 Claims. (Cl. 103—87)



1. In a combined motor and pump assembly, a casing enclosing said motor said pump being mounted on an end of said casing, a cylindrical sump for said pump mounted on said casing encircling said pump and having a central axis, said cylindrical sump having a fluid sealing engagement with said casing and being rotatable with respect thereto, a housing for said pump, inlet means connected to said pump housing having a fluid sealing relationship with respect thereto and being coaxial with said central axis, said inlet means having a fluid inlet portion remote from said pump and extending radially outwardly from said inlet means, a fluid inlet for said sump formed in said cylindrical sump on the opposite side of said central axis from said fluid inlet portion of said tube whereby said pump and motor unit may be mounted in various angular positions about said axis and said sump and pump inlets maintained in proper vertical relationship to horizontal by relative rotation of said sump with respect to said pump and motor.

3,348,492
REVERSIBLE WEAR PLATE PUMP
Gerald D. Olson and Austin E. Pettyjohn, Auburn, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 5, 1966, Ser. No. 599,237
12 Claims. (Cl. 103—126)

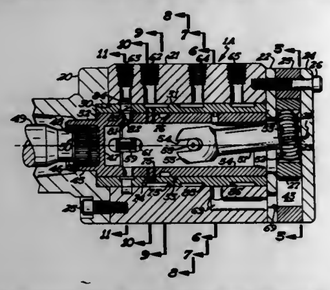


1. A reversible fluid pump or motor device having a cavity therein being defined by an inner peripheral surface, rotatable means in said cavity, an end wall enclosing said cavity, a seal plate disposed between said rotatable means and said end wall, said plate having opposed faces, one of said faces of said plate having seal means therein engageable with said end wall to define high and low pressure zones on said plate to provide pressure loading of said rotatable means, means for communicating high pressure fluid to said high pressure zone, said plate being adapted to move radially in said cavity, said plate having a portion of the periphery thereof recessed to define the limits of a plurality of arcuate sealing surfaces on opposite sides of the periphery of said plate, said plate further being adapted for axial movement toward said rotatable means to provide a wear sealing engagement of the other face with said rotatable means whereby in one direction of rotation of said rotatable means the high pressure fluid will move said plate radially to engage said sealing surfaces along one side of the periphery thereof with said inner peripheral surface to provide a seal between the low and high pressure zones of said plate and when said rotatable means is rotated in the other direction the high pressure will move the plate radially to engage the sealing surfaces on the opposite sides of said plate with said inner peripheral surface to provide a fluid seal therebetween whereby pressure loading of said rotatable means is provided in either direction of rotation of said rotatable means.

3,348,493
FLUID PRESSURE REMOTE CONTROL DEVICES AND SYSTEMS
Wayne B. Easton, South Bend, Ind., assignor to Char-Lynn Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 21, 1965, Ser. No. 515,508
20 Claims. (Cl. 103—130)

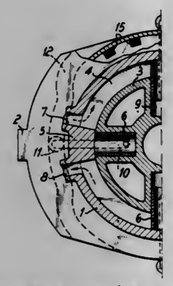
1. Fluid pressure apparatus comprising, a casing, a pair of fluid inlet and outlet ports in said casing, a second pair of ports in said casing having fluid communication with

the exterior of said casing, chamber forming means for forming expanding and contracting chambers, valve means operatively associated with said chamber forming means for sequentially connecting said fluid inlet port and one



of said second pair of ports to separate ones of said expanding chambers and for simultaneously and sequentially connecting said outlet port and the other one of said second pair of ports to separate ones of said contracting chambers.

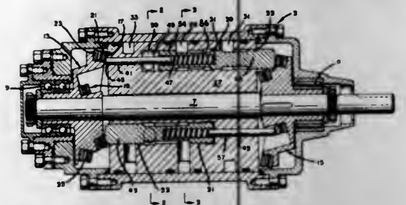
3,348,494
ROTARY PISTON MACHINE
Arno Fischer, Rottenbuch, Upper Bavaria, Ammermuhle, Germany, assignor to Halbergerhutte G.m.b.H., Brebach, Germany, a corporation of Germany
Filed Jan. 23, 1967, Ser. No. 611,133
13 Claims. (Cl. 103—136)



1. A fluid displacement device, comprising a stator;
a rotor coaxially mounted within the stator and forming at least two working chambers between stator and rotor;
vane members associated with said working chambers and mounted in said rotor for movement into and out of said working chambers;
the stator having radially or axially staggered peripheral running surfaces engageable by said vane members;
each vane member having the form of an open-ended tube one end of which engages said running surfaces;
the working chambers having side walls which are formed by integral flanges on the rotor between which flanges said tubular vane members are guided.

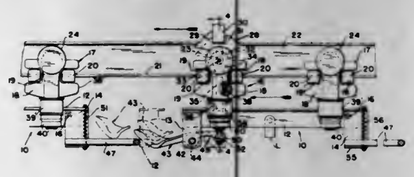
3,348,495
FIXED DISPLACEMENT MOTOR OR PUMP
Elias Orshansky, Jr., 1079 Lombard St., San Francisco, Calif. 94109
Filed Sept. 24, 1965, Ser. No. 489,823
3 Claims. (Cl. 103—173)

1. A fixed displacement hydraulic motor or pump comprising in combination:
(a) a fixed cylinder block,
(b) a shaft passing through said block and mounted for rotation relative thereto,
(c) first and second double wobble plates affixed to said shaft, one of said plates being located at each end of said block,
(d) each of said double wobble plates having two concentric cam surfaces, namely an inner cam surface and an outer cam surface,
(e) the said inner cam surface making a greater angle to normal from the shaft than the outer cam surface thereby equalizing piston travel against the two cam surfaces,
(f) an outer tier of pistons mounted for reciprocation in said block, each of said pistons having a head bearing against the outer cam surface of the first



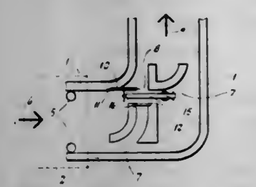
wobble plate, and a retractor of reduced diameter bearing against the outer cam surface of the second wobble plate,
(g) an inner tier of pistons mounted for reciprocation in said block, each of said pistons having a head bearing against the inner cam surface of the second wobble plate and a retractor of reduced diameter bearing against the inner cam surface of the first wobble plate, and
(h) each of the pistons having a spool valve formed as a part thereof, wherein each of the inner tier pistons serves as a valve for a mating piston on the outer tier and vice versa.

3,348,496
ACCUMULATING CARRIER FOR POWER AND FREE CONVEYOR SYSTEM
Paul Klamp, St. Clair Shores, and Leonard J. Bishop, Birmingham, Mich., assignors to Mechanical Handling Systems, Incorporated, Warren, Mich., a corporation of Michigan
Filed Oct. 11, 1965, Ser. No. 494,319
12 Claims. (Cl. 104—96)



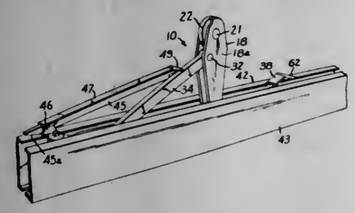
1. In an accumulating carrier of the type having a support member provided with horizontally journaled wheel means mounting the same for travel, a dog on said support member engageable by propulsion means for said travel of the support member, said dog being movable to position the same for releasable propelling engagement by said propulsion means, and a load member sustained by said support member to travel therewith and to swivel relative thereto about an upright axis; the improvement to control the positioning movement of said dog, comprising a movable control element to govern the dog movement, an operating element mounted on said load member to move relative to the latter upon engagement of the operating element with another object, and means providing a positive, bi-directional operating connection between said operating and control elements to move the control element upon said movement of the operating element.

3,348,497
SWITCHING MEANS FOR TRACK SYSTEM
Sture Bertil Mattsson, Norrkoping, Sweden, assignor to Borgs Fabriks AB, Norrkoping, Sweden
Filed June 1, 1965, Ser. No. 460,237
Claims priority, application Sweden, June 18, 1964, 7,507/64
6 Claims. (Cl. 104—130)



1. A device for use with a switch for a track system for trucks equipped with running wheels which rotate around axles that are arranged at right angles to the plane of the track, said switch being used to transfer a truck from one track to a crossing or branch without swivelling the truck or requiring the stopping of it, characterized in that at least one of the crossing or branched points there are provided guides which permit both a linear movement in the original direction of the track and a movement along a curved line during and for switching in a direction of movement different from that originally pursued by the truck, the guides including rear portions, the guides during the switching being so actuated that the rear portions, viewed in the direction of truck travel, are brought to the switching position only after the front wheels have passed them.

3,348,498
RAILWAY CAR POSITIONING MECHANISM
Victor H. Ames, Midlothian, and Edward T. Dolin, Oaklawn, Ill., assignors to Whiting Corporation, a corporation of Illinois
Filed July 6, 1965, Ser. No. 469,696
6 Claims. (Cl. 104—176)



1. In a railway car positioning apparatus including; guide track means mounted between the rails of railway track in parallel relation with the latter and a robot mounted by said guide track means for movement in either direction therealong, which robot includes; a base having rollers in rolling engagement with said guide track means, arm means including a first arm pivotally secured at one of its ends to said base for swinging movement, in a vertical plane parallel with said guide tracks, between a generally vertical erected position and a generally horizontal collapsed position, said arm means including a second arm having one end thereof pivoted to said first arm at a location spaced from said one end of the latter, an abutment on said base and arranged to be engaged by the other end of said second arm thereby to prevent swinging movement of said first arm beyond its erected position so as to adapt said first arm for pushing engagement with a railway car axle when the robot is moved in one direction and to permit said first arm to deflect under a railway car axle when the robot is moved in the other direction, resilient means connected to said arm means for urging said first arm to its erected position thereby to engage a rail car axle, and releasable means engageable with said arm means for holding both of said arms collapsed for movement of the robot in either direction beneath a rail car axle; the improvement comprising, a bar having one end thereof pivotally mounted adjacent one side of said guide track means for swinging movement, in a vertical plane parallel with the latter, between a generally horizontal position and an inclined position, means for preventing upward swinging movement of said bar beyond said inclined position and thereby limiting swinging movement of the bar through an angle less than 90°, said bar including means defining a guideway extending longitudinally of the bar, a catch pivotally mounted on said bar adjacent the other end thereof, which catch is adapted to be engaged by said second arm of the robot, when both of said arms are erected and when the robot is moved in said other direction, thereby to raise said bar to its inclined position, and means on said first arm adjacent the other end thereof, which means is received within said guideway, when said bar is in its inclined position, for collapsing said arms during continued movement of the robot in said other direction, said catch being yieldable to permit passage of said arms when said robot is moved in said one direction.

3,348,499
TRAM CARRIER SWAY INDICATOR AND CONTROL
Tony R. Sowder, 814 Grace Ave., Spokane, Wash. 99207
Filed Nov. 25, 1966, Ser. No. 596,981
5 Claims. (Cl. 104—178)

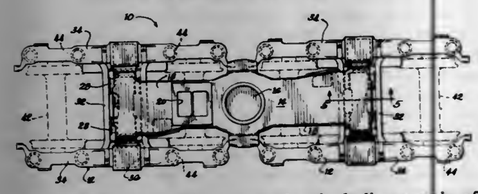


1. In a tram of the nature having a circulating traction rope supported by plural towers with depending carriers supported for motion by said traction rope, a carrier sway indicator of the nature aforesaid, comprising, in combination:
paired opposed mounting brackets structurally carried by adjacent tram towers so that a line passing therethrough is substantially tangent to the lateral limit of travel of a tram carrier at at least some point thereon but no part of said line is within the normal course of travel of said tram carrier;
a light source, carried by one of said mounting structures, directing a discernible cone of light to said other mounting structure;
a photoelectric cell carried by said other mounting structure adapted to operatively receive aforesaid cone of light transmitted thereto by aforesaid light source; and
electrical circuitry communicating with said photoelectric device to annunciate upon interruption of the light beam between said light and said photoelectric cell.

3,348,500
EIGHT WHEEL RAILWAY TRUCK WITH SPAN BOLSTER

Norman B. Akitt, Schenectady, N.Y., assignor to Adirondack Steel Casting Co., Inc., Watervliet, N.Y.

Filed Jan. 8, 1965, Ser. No. 424,242
6 Claims. (Cl. 105—183)

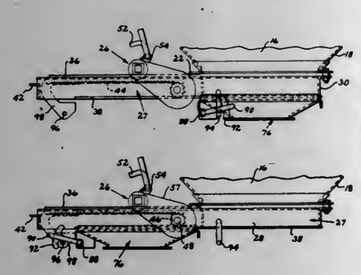


1. In a railway truck construction including a pair of truck frames, axles associated with each frame and wheels associated with each axle, and including a span bolster interconnecting said truck frames, said bolster including a center support portion adapted to be pivotally connected to the superstructure supported by said construction, the improvement comprising means for securing said bolster to said truck frames, said bolster including longitudinally extending sections formed on either side of said center support portion, vertical walls extending transversely across said longitudinally extending sections adjacent the ends thereof, and oppositely facing vertical walls formed in said truck frames, resilient means interposed between said vertical walls adapted to react to longitudinally applied forces, horizontally disposed surfaces defined by said longitudinally extending sections, and oppositely facing horizontally disposed surfaces defined by said truck frames, and additional resilient means interposed between said horizontally disposed surfaces adapted to react to shear forces and to vertically applied forces.

3,348,501
SLIDING GATE HOPPER CAR DISCHARGE STRUCTURE

Eric S. Stevens, St. Charles, and Willard E. Kemp, Bridgeton, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Oct. 19, 1965, Ser. No. 497,642
8 Claims. (Cl. 105—248)

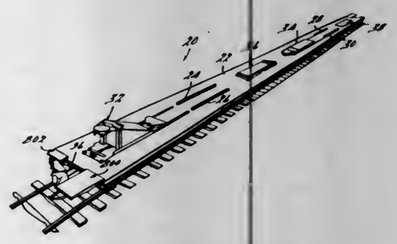


1. A bottom outlet structure adapted to be secured beneath a hopper structure for the discharge of lading and comprising, a first discharge structure including a gate and support means on which the gate is mounted for sliding movement from one side of the hopper structure in a generally horizontal plane between open and closed positions to control the flow of lading through the first discharge structure, means to slide said gate in said generally horizontal plane between its open and closed positions, a second discharge structure mounted beneath said first discharge structure and adapted to receive lading therefrom, and means supporting said second discharge structure for movement in a generally horizontal direction only from said one side of the hopper structure in an area generally vertically coextensive with the area utilized by the movement of the gate and between an operable position beneath the first discharge structure and an inoperable position removed from beneath the first discharge structure, said second discharge structure being movable selectively between operable and inoperable positions to permit a discharge through both said first and second discharge structures when the gate is open and the second discharge structure is in operable position, and to permit a discharge of lading only through the first discharge structure when the gate is open and the second discharge structure is in inoperable position.

3,348,502
MULTI-POSITION HITCH ON RAILROAD CAR

Samuel P. Burns, Fraser, and Robert H. Bauer, Dearborn, Mich., assignors to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan

Original application Sept. 30, 1963, Ser. No. 312,406, now Patent No. 3,204,579, dated Sept. 7, 1965. Divided and this application Mar. 30, 1965, Ser. No. 454,232
4 Claims. (Cl. 105—368)



1. A multi-purpose railcar comprising,
a generally flat deck having
a ramp at one end thereof to facilitate loading of a heavy duty over-the-road semi-trailer having wheels at one end and a kingpin at the opposite end thereof,
support means on the railcar elevatable to a relatively high position for engagement with the kingpin of said semi-trailer, and
a turntable on said deck for the acceptance of one end of a wheelless container having a kingpin at the opposite end thereof,
said elevatable support means being positionable at a relatively low position and rotatable about a vertically extending axis so as to extend angularly laterally outboard of the decks of said railcar to effect engagement with the kingpin on said wheelless container when said one end thereof is seated on said turntable, rotation of said support means about said vertical axis toward the deck of said railcar effecting movement of said wheelless container into alignment with said railcar.

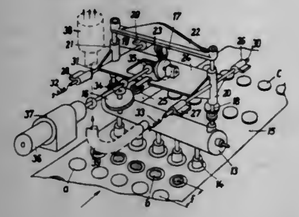
3,348,503
BAKERY APPARATUS

Hermann Beik, Hannover, and Georg Florian, Kaltenweide, Germany, assignors to Werner Bahlsen, Hannover, Germany

Filed June 15, 1965, Ser. No. 464,052
Claims priority, application Germany, June 23, 1964, B 77,378
11 Claims. (Cl. 107—1)

1. Apparatus for bringing pairs of cake elements into superposed relationship, which cake elements are carried in spaced apart parallel rows on a moving conveyor, comprising a plurality of suction nozzles, which nozzles

are interconnected in a row parallel to the rows of cake elements and are spaced apart at distances equal to the spacing of said rows of cake elements, means for jointly reciprocating said nozzles transversely of the direction of their row with respect to the conveyor and arranged to be lowered to a position close to the conveyor at the end

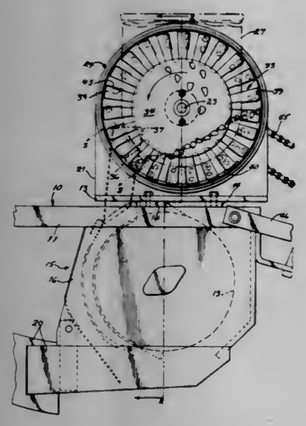


points of said reciprocation, control means to control said nozzles in synchronism with the conveyor movement so that on each said lowering movement they meet adjacent cake element rows, and means for applying suction to the nozzles in one of the two directions of movement so that they each pick up a row of cake elements and deposit them on an adjacent row.

3,348,504
CELL-LESS PLANTER

Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed May 28, 1965, Ser. No. 459,832
9 Claims. (Cl. 111—34)

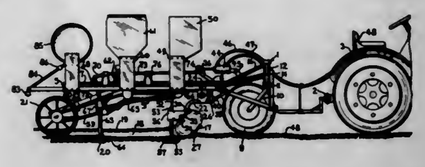


1. In a planter having a frame and a seed hopper mounted on the frame, a relatively stationary plate mounted on the frame in communication with the hopper and in contact with the seed, a seed wheel mounted on the frame for rotation parallel to said plate in the path of said seed, including a hub section and radially projecting axially yieldable fingers having a bias toward said plate, axially projecting actuating means carried by the plate engageable with said fingers during a portion of the path of rotation of the wheel to deflect said fingers sufficiently to accommodate a seed between the deflected fingers and the plate, each of said fingers being biased toward the plate after rotation of the wheel beyond said actuating means to hold said seed between the finger and the plate.

3,348,505
EARTH WORKING AND PLANTING APPARATUS

Donald D. Smith, 1155 W. 2nd, Colby, Kans. 67701

Filed Mar. 22, 1965, Ser. No. 441,684
5 Claims. (Cl. 111—73)



1. An earth working and planting apparatus comprising in combination with the tractor,
(a) a frame connected to said tractor and having laterally spaced ground engaging wheels mounted at a forward portion of the frame for supporting same, said frame being elongate transversely of the direction of travel by said tractor,
(b) a shaft extending transversely of the frame behind said wheels and rotatable on said frame,
(c) a plurality of standards secured to said shaft in laterally spaced apart relation and depending therefrom,
(d) outwardly concaved cutting discs arranged in pairs on said standards, said discs being journalled on said standards and converging forwardly whereby during forward movement the respective pairs of discs will each form a furrow with ridges on each side thereof,
(e) an extensible means mounted on said frame,
(f) means operatively connecting the extensible means to said standard shaft whereby extension and contraction of said extensible means positions the discs and raises and lowers the discs relative to the ground,
(g) seed furrow opening devices movably connected to the frame rearwardly of the discs, there being one of said furrow opening devices for each disc and arranged to open a seed furrow adjacent the respective side ridge,
(h) means for adjusting the seed furrow opening devices relative to the frame, including an operative connection to the extensible means whereby the furrow opening devices are raised and lowered simultaneously with the raising and lowering of the discs,
(i) seed dispensing mechanisms mounted on said frame, said seed dispensing mechanisms depositing seeds in the respective seed furrow behind the seed furrow opening device,
(j) press wheels connected to the frame adjacent to the rear thereof in supporting relation thereto, there being one press wheel for each seed furrow opening device and a trailing relation thereto for covering and pressing soil around the deposited seeds,
(k) and means for driving the seed dispensing mechanisms.

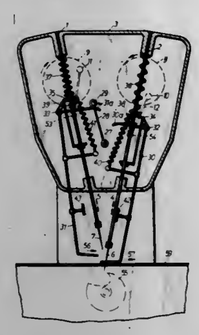
3,348,506
EMBROIDERING MACHINE

Karl Haberhauer, Krefeld, and Franz Hoever, Aldekerk, Germany, assignors to Maschinenfabrik Carl Zangs Aktiengesellschaft, Krefeld, Germany

Filed July 19, 1965, Ser. No. 473,050
Claims priority, application Germany, Aug. 1, 1964, M 61,959
6 Claims. (Cl. 112—98)

1. In an embroidering machine or the like; a machine frame, a needle plate on the frame on which fabric rests while being stitched, first and second needle support means reciprocably mounted in the frame and adapted for receiving needles for stitching fabric resting on said needle

plate, guide means in the frame guiding said first and second support means for reciprocation at an angle to each other, the axes of reciprocation of said first and second support means and the needles carried thereby including an angle therebetween the apex of which is



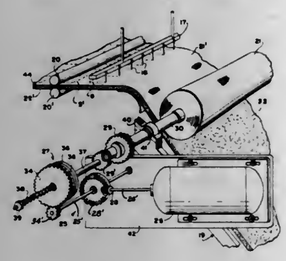
substantially in the plane of the upper side of said needle plate so the lines of stitching in the fabric of the two needles are in substantially exact alignment, and drive means adapted for selective connection to said first and second needle support means for driving said first and second support means one at a time.

3,348,507

DIFFERENTIAL TENSION CONTROL DEVICE FOR AUTOMATIC MULTI-NEEDLE QUILTING MACHINES

Paul Kuhn, Waldwick, N.J., assignor to Pathe Equipment Co., Inc., East Paterson, N.J., a corporation of New York

Filed Aug. 17, 1964, Ser. No. 390,018
8 Claims. (Cl. 112—118)



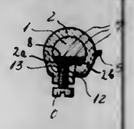
1. In an automatic multi-needle sewing machine for quilting a plurality of superposed plies, of the class having a carriage slidably mounted on a frame for movement in a direction transverse to the direction of the feed of the plies, pinch rollers mounted on the carriage for moving the plies past the needles by pulling said plies to unwind the top ply and the bottom ply supply rolls, top and bottom supply roll shafts on the carriage for holding said supply rolls, and a cam shaft on the frame having first cam means thereon for controlling the operation of said pinch rollers and the movement of the carriage, the combination with said carriage of a device for tensioning the top ply comprising an electric motor mounted on the carriage, rotatable means connecting the shaft of said motor and the top ply supply roll shaft for turning said top ply supply roll shaft in a direction to wind up a top ply supply roll when the latter is thereon upon the operation of said motor, a slip coupling interposed in said rotatable means; said top ply supply roll shaft being turnable for a supply roll thereon to unwind while the pinch rollers are operated, a circuit for operating said motor, a normally open switch interposed in the circuit and a second cam means secured on said cam shaft adapted to shift and hold said switch in closed condition so said motor will operate during all stoppages in the operation of said pinch rollers while the carriage is in motion to tension the top ply while sewing lines of stitching transverse to the direction of the work feed.

3,348,508

NEEDLE-ATTACHING DEVICE FOR SEWING MACHINES

Yasukata Eguchi and Susumu Hanyu, Tokyo, Japan, assignors to Janome Sewing Machine Co., Ltd., Tokyo, Japan

Filed Jan. 6, 1965, Ser. No. 424,888
Claims priority, application Japan, Jan. 13, 1964, 39/49,438
11 Claims. (Cl. 112—226)



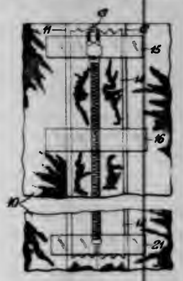
1. A needle-attaching device for sewing machines, comprising, in combination, an elongated needle bar member having a first axially extending abutment face formed on a lower end portion thereof; a ring member surrounding said lower end portion and having an inner surface portion constituting a second abutment face and defining with said first abutment face a space adapted to receive a plurality of needle end portions; and clamping means including a portion projecting into said space, said clamping means cooperating with said second abutment face so as to force a single needle end portion or a plurality of needle end portions received in said space in direction toward and into abutment with said first abutment face in clamping engagement with both of said abutment faces.

3,348,509

METHOD OF APPLYING SLIDE FASTENERS

Eileen H. Degraw, 12 Orchard Circle, Suffern, N.Y. 10901

Filed Jan. 4, 1966, Ser. No. 518,699
1 Claim. (Cl. 112—265)



A method for applying a slide fastener to a previously-prepared opening in a garment, said method comprising the steps of:

(a) applying temporary stitching to close said opening along the line corresponding to that which one wishes the interlocking portion of the slide fastener to follow:

(b) positioning a slide fastener on the inside of the garment with the interlocking portion thereof in juxtaposition with the line of temporary stitching;

(c) temporarily securing slide fastener onto said garment by a plurality of strips of adhesive tape;

(d) placing an elongated strip of adhesive tape having a length substantially equal to the length of the slide fastener and a width smaller than the width of the slide fastener on the outside of the garment in a position corresponding to the position of the slide fastener;

(e) permanently sewing the slide fastener onto the garment by means of a sewing machine, using the edges of the elongated strip of adhesive tape as directional guidelines; and

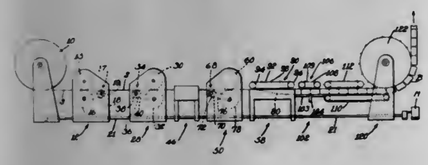
(f) removing the adhesive tapes and the temporary stitching.

3,348,510

METHOD OF AND APPARATUS FOR MANUFACTURING TUBULAR BODIES

Frederick S. Sillars, 6 Grover St., Beverly, Mass. 01915

Filed May 19, 1965, Ser. No. 456,982
19 Claims. (Cl. 113—7)



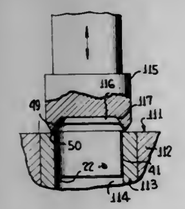
9. Apparatus for manufacturing tubular bodies from a continuous web of stock comprising means for forming a plurality of holes in said continuous web at uniform distances corresponding to the axial height of tubular bodies to be manufactured from said web whereby successive holes define body blanks, means for partially severing the defined blanks from said continuous web by cutting into opposite sides of said web along lines which extend through said holes, the innermost end of the cuts being spaced from the holes whereby the continuity of said web is maintained only in the area proximate to said holes, means for deforming said cut blanks while still integral with said web into a plurality of tubular bodies defined axially by successive holes and cuts and means engageable within said holes for moving said web continually past said punching, said partial severing and said deforming means.

3,348,511

METHOD OF FORMING SHEET METAL BEARING CUP WITH EXTERNAL RESTRAINING FLANGE

John H. Cowles, Forestville, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed June 23, 1964, Ser. No. 377,257
18 Claims. (Cl. 113—117)



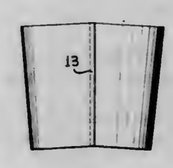
1. In a method of forming a bearing cup of the type which includes a cylindrical body having an inwardly directed retaining flange at one end thereof and an outwardly directed restraining flange adjacent the retaining flange, the steps of forming a sleeve having an end portion of an increased diameter, forming an annular intermediate portion perpendicular to the axis of the sleeve, and then folding said end portion inwardly in parallel, adjacent, reversely folded relation to said annular intermediate portion with the folded end portion becoming the inwardly directed retaining flange and the intermediate portion becoming the outwardly directed restraining flange.

3,348,512

METHOD OF PRODUCING CONICAL VESSELS

Sven Ericsson, Bjarred, and Allan Ove Egard Lenander, Malmo, Sweden, assignors to AB Platmanufaktur, Malmo, Sweden

Filed Dec. 7, 1964, Ser. No. 416,434
7 Claims. (Cl. 113—120)



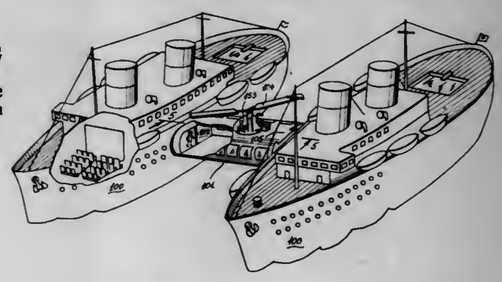
1. A method of producing conical vessels using two body plates and a bottom plate, characterized in that only two body plates are used, each having the form of a trapezoid, of which the two non-parallel sides are of equal length, in that the two plates are bent in such a way and placed in such a way that a conical body is formed, in that adjacent plates are made to overlap each other in such a way that the overlapping is of the same size at both ends of the body, in that the two overlapping end sections are firmly secured to each other, and in that the bottom plate is thereafter secured on the body.

3,348,513

LIFE-SAVING SAFETY DEVICES FOR TWIN PASSENGER AIRCRAFT OR SHIPS

Harry S. Dishart, 5701 Ft. Hamilton Parkway, Brooklyn, N.Y. 11219

Filed Apr. 20, 1966, Ser. No. 543,941
7 Claims. (Cl. 114—.5)



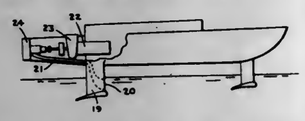
1. In a hull design, the combination of a plurality of hull components in parallel spaced apart relation, a connecting bridge between said hull components, means for selectively separating said bridge from either of said hull components, said bridge including a passageway therethrough to permit movement of persons from one said hull component to the other and a slidable door at each end of said passageway for sealing the end of said passageway when an adjacent hull component has been separated

from said bridge, said means for selectively separating said bridge from each of said hull components comprises a dovetail having a pair of spaced apart grooves, said grooves extending convergingly toward one end to permit separation in one direction only.

3,348,514
CENTRIFUGAL PUMP TO PROVIDE JET PROPULSION

Hunt Davis, Williamsville, N.Y., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Feb. 9, 1966, Ser. No. 526,106
1 Claim. (Cl. 114—66.5)



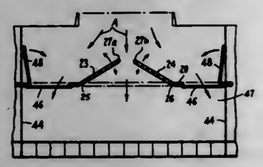
In a water-borne craft having a hydrofoil connected to the craft by a strut, an annular jet propulsion pumping means comprising:

(a) a pump housing having a suction inlet therein;
(b) a suction opening in the leading edge of the hydrofoil strut;
(c) a suction passage communicating between the suction opening in the hydrofoil strut and the suction inlet of the pump;
(d) a turbo-pump impeller in the pump housing disposed with its axis generally horizontal;
(e) a flow discharge passage in the impeller directed in a generally tangential, vertical course;
(f) integral, arcuate, diffuser vanes in the housing defining jet discharge passages disposed to receive at one end thereof the tangential flow from said flow discharge passage of the impeller and at the other end thereof to discharge said flow in a generally axial direction; and
(g) said diffuser vanes extending in smooth gradual transition from a generally vertical direction at the point of receiving the flow from said flow discharge passage of the impeller to a generally horizontal direction at the point of axial discharge of the flow from said diffuser vanes.

3,348,515
DESIGN OF GENERAL CARGO AND BULK CARGO VESSEL

George T. R. Campbell, Montreal, Quebec, and Norman V. Laskey, St. Lambert, Quebec, Canada, assignors to Algonquin Shipping and Trading Limited, Montreal, Quebec, Canada

Filed Sept. 20, 1966, Ser. No. 580,736
Claims priority, application Canada, Sept. 2, 1966, 969,482
7 Claims. (Cl. 114—72)

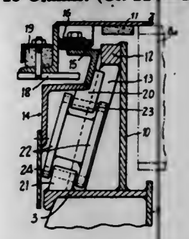


1. A vessel for carrying general and bulk cargo, the said vessel having a main deck, a self-supporting tween deck and a series of transverse bulkheads defining cargo holds longitudinally of the vessel, each of the said cargo holds extending the full width of the vessel, upper side ballast tanks under said main deck, the lowermost portion of which, at the sides of the vessel, is located at approximately eight feet six inches above the top surface of the tween deck, a centrally located hatch opening in said main and tween deck at each hold of the vessel, the said hatch openings having a width equal to approximately 50% of the breadth of the vessel, a series of cargo feeder openings in the said tween deck located in spaced relation to the peripheral edges of the hatch opening, and hinged covers for said tween deck hatch opening and cargo feeder openings, the said hinged covers being positioned flush with the top surface of the said tween deck.

3,348,516
DEVICE FOR CLAMPING AND LIFTING CARGO HATCH COVERS

René Charles Caillet, 26 Rue de La Republique, Saint-Germain-en-Laye, Yvelines, France

Filed May 2, 1966, Ser. No. 546,843
Claims priority, application France, May 4, 1965, 15,719
13 Claims. (Cl. 114—202)

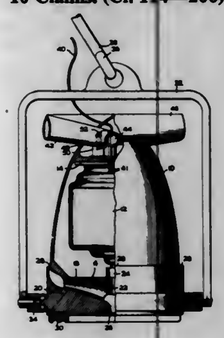


1. A device for controlling the clamping and lifting of a hatch cover adapted to close a hatch opening provided with a coaming, said device comprising at least one section extending along the side coamings and between a ledge on the hatch cover and the deck, section control means, and mechanical means connecting said hatch cover to said deck and housed in a sheltered space formed between said section and said coaming, whereby the application of a force from said section control means to longitudinally move said section will impart a movement having a vertical component thereto in order to effect the clamping and lifting of said hatch cover.

3,348,517
UNDERWATER SUCTION ANCHORS

Virgil E. Johnson, Jr., Gaithersburg, and William C. Webster, Brookville, Md., assignors to Hydronautics, Inc., Laurel, Md., a corporation of Maryland

Filed Feb. 18, 1966, Ser. No. 528,635
10 Claims. (Cl. 114—206)

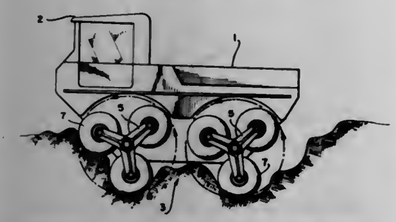


1. A self-propelled maneuverable anchor for suction attachment to submerged surfaces comprising: a pump means including a housing; a pump inlet and at least one outlet through said housing, said outlet configured to direct the effluent from said pump along said housing to propel the anchor through water; an annular seal disposed around said pump inlet, a support means connected to said housing for lowering the anchor into a body of water; and adjustable means to controllably guide the anchor through water.

3,348,518
AMPHIBIOUS STAR-WHEELED VEHICLE

Robert W. Forsyth and John P. Forsyth, Upland, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Oct. 13, 1965, Ser. No. 495,443
6 Claims. (Cl. 115—1)

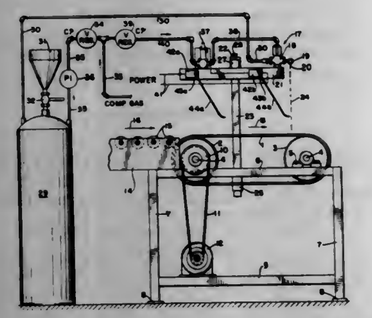


1. A multi-purpose vehicle comprising at least one body section, a plurality of major wheel assembly axles rotatably attached to said body section, a plurality of minor wheel assembly axles rotatably attached to said major wheel assembly axles, said minor wheel axles being parallel to and spaced from said major wheel axles and positioned substantially equidistant therearound, a wheel with low-pressure, low-profile, wide tread tire assembly mounted on said minor wheel axles and means for selectively driving said major and minor wheel assembly axles.

3,348,519
AUTOMATIC GLUE DISPENSING APPARATUS

James B. Dyess, Jr., Daniel B. Tullis, and George T. Waters, Conroe, Tex., assignors to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,712
2 Claims. (Cl. 118—2)



1. A glue dispensing apparatus for applying a controlled amount of glue on to the surface of a container that comprises:

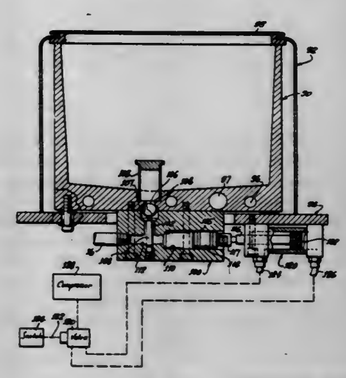
(a) a glue discharge head having a discharge passage terminating in a plurality of discharge orifices, said discharge orifices being disposed in vertical spaced relationship to the container being glued, and being spaced apart from each other, so that glue may be dispensed in a series of parallel streams onto the surface of the container when the container is in a selected glue-receiving position;
(b) conveying means for moving containers to be glued under said discharge orifices;
(c) glue supplying means communicating with said glue discharge head for supplying glue thereto;
(d) a normally-closed, pressure responsive glue control valve communicating with said glue supplying means for controlling the flow of glue to said glue discharge head;
(e) a source of fluid pressure communicating with said normally closed glue control valve;
(f) a normally closed solenoid control valve, said solenoid valve being actuated to open position upon supply of a driving force when a container to be glued is determined as being present in a selected glue-receiving position;
(g) actuating means for the glue control valve responsive to the presence of a container in a selected position comprising:
  (1) an electrical circuit adapted to transmit an electrical signal for opening said normally-closed solenoid control valve;
  (2) respectively a first and a second normally open electrical switch, each connected in series in said electrical circuit;
  (3) respectively a first and a second mechanical actuating means for respectively closing the first and second normally-open electrical switches, said means being responsive to the presence of a container in the selected position;

whereby the presence of a container in the selected position causes the transmission of an electrical signal so as to open the normally-closed solenoid valve, thereby causing fluid pressure to be applied to the normally-closed pressure responsive glue control valve, thereby causing said valve to open so that glue may be discharged through the glue discharge orifices onto the container to be glued.

3,348,520
APPLICATOR SYSTEM FOR HOT MELT ADHESIVE AND THE LIKE

Glynn H. Lockwood, Carmel Valley, Calif., assignor to Lockwood Technical, Inc., Sand City, Calif., a corporation of California

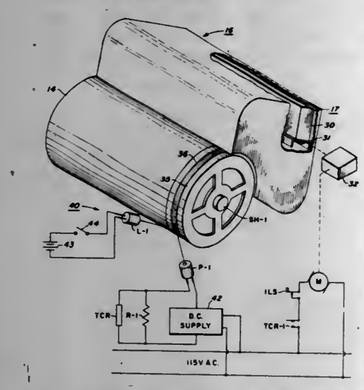
Filed Sept. 16, 1965, Ser. No. 487,699
8 Claims. (Cl. 118—2)



7. A system for applying to a work surface that is movable along a path a viscous hot melt adhesive in a controlled pattern of parallel line segments, said system comprising in combination

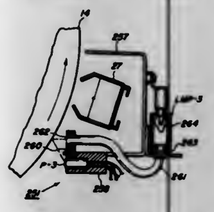
structure forming a hot melt tank open to atmospheric pressure and adapted to receive solid adhesive,
means for controllably heating the tank structure to melt adhesive in the tank,
structure forming a pump cylinder containing an axially reciprocable pump piston and communicating with the tank interior via a check valve for admitting liquid adhesive to the cylinder during suction movement of the piston,
a piston actuator for driving the piston in intermittent cycles of movement in timed relation to the work surface movement, each piston cycle comprising a delivery stroke followed by a suction stroke,
structure forming a plurality of dispensing nozzles mountable adjacent the work surface path and communicating in parallel with the pump cylinder,
an individual normally closed valve for each nozzle normally closing the communication between that nozzle and the cylinder and actuable in response to adhesive pressure to permit outward flow of adhesive from the nozzle,
and means for adjustably limiting the rate of flow from the tank interior to the pump cylinder to produce an adjustably variable subatmospheric pressure in the cylinder during the suction stroke of the pump piston and thereby insure closure of said valves.

3,348,521
AUTOMATIC TONER CONTROL SYSTEM
Samuel A. Hawk, Columbus, Ohio, assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,349
1 Claim. (Cl. 118—7)



In a xerographic apparatus of the type wherein a latent electrostatic image is placed on a xerographic drum and is made visible by passing the drum through a developer mechanism, a toner dispensing and control apparatus including a toner dispenser for introducing toner material into said developer mechanism, and actuator device associated with said dispensing means for controlling the introduction of toner into the developer mechanism, the improvement comprising
a xeroprinting drum having a permanent electrostatic image formed thereon,
said xeroprinting drum being mounted for rotation with the xerographic drum and positioned so that the xeroprinting drum passes through a charging station and the developer mechanism whereby the permanent control image is developed,
a light source arranged for illuminating the control image developed on said xeroprinting drum,
a light sensitive device arranged to receive light rays reflected from said developed control image and to vary an electrical output in accordance therewith,
means responsive to said output and associated with said actuating device for actuating the same to dispense toner into the developer mechanism when said output reaches a predetermined level.

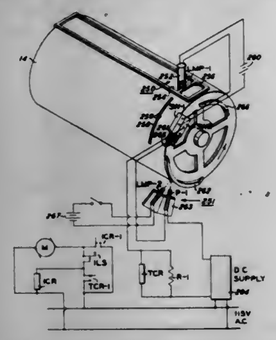
3,348,522
AUTOMATIC TONER CONTROL SYSTEM
James M. Donohue, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,350
3 Claims. (Cl. 118—7)



1. A toner dispensing device and control circuit therefor for use in an electrostatic reproduction apparatus having an electrostatic reproducing plate and a developer mechanism adapted to apply developer material to exposed images on the plate thereby producing powdered images thereon including:
a container for the toner,
means for dispensing toner from the container into the developer mechanism for replenishing the developing material with toner,
an actuator device associated with the said dispensing means for controlling the introduction of the toner into the developer mechanism,
means for producing on a portion of the electrostatic reproducing plate remote from the exposed image to be reproduced an electrostatic image for development by the developer mechanism,
a light source arranged for illuminating the developed image,
a light sensitive device arranged to receive the light rays from said image and to produce an output in accordance therewith,
means for comparing said output with a preset output and producing a differential signal,
and means responsive to said differential signal and associated with said dispensing means for actuating the same to dispense toner into the developer mechanism.

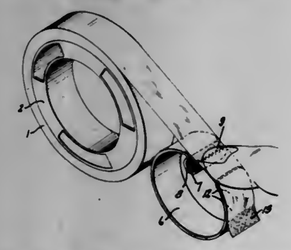
3,348,523
AUTOMATIC TONER CONTROL SYSTEM
James R. Davidson, Rochester, and Roy M. Pierce, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,356
2 Claims. (Cl. 118—7)

1. In a xerographic apparatus of the type having a xerographic drum adapted to pass through a xerographic charging station and exposing station and including a developer mechanism arranged to produce a powdered image on the drum, a toner dispensing and control device including
a shielded light source positioned intermediate the charging and developer stations adjacent the edge of the drum at a position remote from the copy imaging area,
a mask positioned intermediate said shielded light and the drum and being adapted to produce a control latent electrostatic image on the remote area of the drum when said light is energized,
means to energize said shielded light periodically whereby a series of latent images are placed on the drum,
a container for the toner,
means for dispensing toner from said container into the developer mechanism for replenishing developer material therein,
an actuator device associated with said dispensing means for controlling the introduction into the developer mechanism,



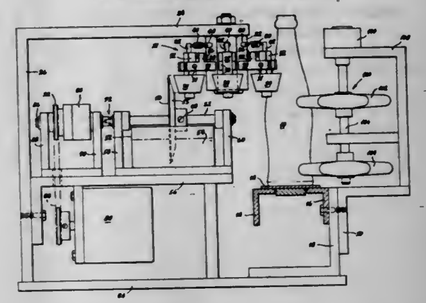
a lamp arranged to illuminate a developed control image produced in said remote area,
a photoelectric device arranged to receive reflected light from the control image and connected in a circuit for establishing a current level therein when the density of the developed control falls below a predetermined value,
and means responsive to the current level in the circuit and associated with said actuator device for actuating the same to dispense toner into the developer mechanism when the current level attains a predetermined value.

3,348,524
TAPE DISPENSER
Henry E. Butler, 107 Glen Ave., Scotia, N.Y. 12301
Filed Feb. 12, 1964, Ser. No. 344,347
5 Claims. (Cl. 118—43)



1. A dispenser for use with a roll of pressure-sensitive tape defining a circular opening in the center of the roll, comprising:
an open expansible ring of resilient strip material having a transverse dimension no greater than that of said roll and having opposite terminating ends circumferentially spaced from one another, said ring being adapted for insertion into said opening, one of said terminating ends defining a concave recess terminating in cutting serrations, and
a mat of loosely bound fibers disposed on the outside of said ring in said recess and adjacent said serrations.

3,348,525
CONTAINER GUMMING APPARATUS
Michael Zwarycz, Wilbraham, and Charles A. Dumas, Westfield, Mass., assignors to United States Envelope Company, Springfield, Mass., a corporation of Maine
Filed May 18, 1965, Ser. No. 456,721
6 Claims. (Cl. 118—220)

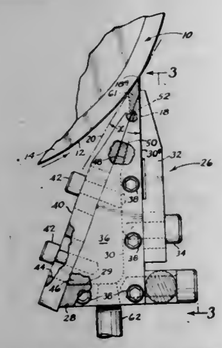


1. An apparatus for applying gum to generally cylindrical articles moved in a single line with their central axes generally parallel along a given path by an associated conveyor, said apparatus comprising a gum reservoir for receiving a quantity of gum, a gum pick-up member having a central axis of revolution and having a gum pick-up surface surrounding and coaxial with said axis, means supporting said gum pick-up member so that a portion of said gum pick-up surface is located within the body of gum contained in said reservoir and so that another portion thereof is located outside of said body of gum, means for rotating said pick-up member about said axis of revolution, a turret located between said gum pick-up member and said given path, means supporting said turret for rotation about a turret axis arranged generally parallel to said central axes of said articles, a plurality of gum applicators and means supporting said gum applicators on said turret in angularly spaced relation about said turret axis and for rotation about axes generally parallel to said turret axis, said turret being so arranged relative to said conveyor that as said articles are moved along said given path by said conveyor the advancing side of each article engages one of said gum applicators and moves it and said turret about said turret axis to bring the following one of said applicators into position for engagement with and movement by the next of said articles, said turret being further so arranged relative to said gum pick-up member that as said turret is rotated said gum applicators are brought in succession into contact with said portion of said gum pick-up surface located outside of said body of gum and by such contact are spun about their axes to transfer gum from said gum pick-up surface to said applicator, and said means for driving said gum pick-up member being operable to drive said member at a speed sufficient to rotate each of said gum applicators one full revolution about its axis each time it contacts said gum pick-up surface.

3,348,526
COATING APPARATUS FOR COATING WEBS
Arthur W. Neubauer, Camas, Wash., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Mar. 27, 1964, Ser. No. 355,187
4 Claims. (Cl. 118—410)

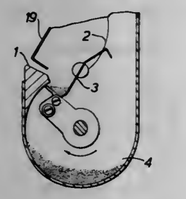
1. Apparatus for applying a coating to a moving web comprising means for advancing the web including backup means having a backing surface for supporting the upper face of the web as the same is advanced under the backing surface;

applicator means comprising blade mounting means and an inverted blade with the latter forming with the lower face of the web, where such web is supported on the back-up means, an elongated pocket extending transversely of the web for receiving coating material to be applied to the web, which pocket is open along a longitudinally extending side of the pocket facing the web as it advances into the pocket;
said blade including a blade body bounded along one margin by working edge, said blade being mounted on said blade mounting means with the blade body extending downwardly from said working edge and with the working edge disposed adjacent the backing surface and extending transversely of the web thereby to define a nip through which the web travels while being coated;



said applicator means further comprising extrusion means defining an elongated extrusion opening spaced a short distance below and substantially parallel to said working edge and in a position where material extruded through such opening is directed as an extruded ribbon upwardly against said blade body and said web, with such ribbon supported on one face only and such support being supplied by said blade body, said extrusion means further including means defining a chamber for coating material communicating with said extrusion opening, said applicator means being devoid of support for the opposite face of such extruded ribbon in a region extending from the extrusion opening to said backing surface; and
means for supplying coating material to said chamber.

3,348,527
POWDER APPLICATION
Christopher Simmons, 174 Marsh Lane, Stanmore, England
Filed Feb. 17, 1966, Ser. No. 528,034
Claims priority, application Great Britain, Nov. 19, 1965, 49,191/65
5 Claims. (Cl. 118—429)



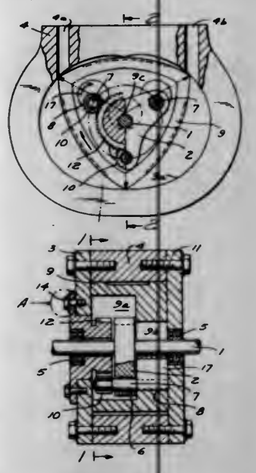
1. A device for applying powder to a sheet, comprising guide means which define a predetermined path for the sheet, a tiltable platform having an upper surface which in a normal position is located in said path, a reservoir for the powder located below said guide surface, and means for transferring a quantity of the powder up to the platform, the platform being arranged to be tilted down to a position to receive powder from the transfer means and then to be tilted back to its normal position so as to lift powder into the sheet path.

3,348,528
COOLING APPARATUS
Herbert A. White, Jr., Churchill, Pa. (2516 Collins Road, Pittsburgh, Pa. 15221)
Filed June 16, 1966, Ser. No. 558,126
10 Claims. (Cl. 122—360)



1. Cooling apparatus comprising a copper member having a cooling fluid chamber therein and a threaded opening into said fluid chamber, a dielectric bushing having internal and external threads threaded into said opening, a ferrous pipe threaded into said bushing, an external flange on said pipe adjacent said bushing, and a protective coating on the inside and outside of said pipe, said protective coating having a melting point of at least about 400° F.

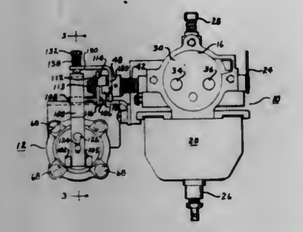
3,348,529
ROTARY PISTON MACHINE
Johann Assum, Augsburg, Germany, assignor to Messerschmitt Aktiengesellschaft, Augsburg, Germany
Filed Aug. 10, 1965, Ser. No. 478,654
14 Claims. (Cl. 123—8)



1. A rotary piston machine comprising, in combination, casing means having an inner non-circular annular guide face; a rotor including a rotary piston means in said casing means having portions guided on said guide face so that said rotor makes a composite rotary motion; rotary means mounted in said casing means for rotation about an axis and including a shaft and a flange on said shaft;

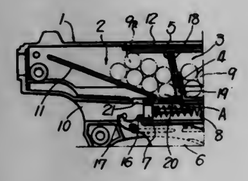
and a plurality of eccentric means angularly spaced about said axis, each of said eccentric means being mounted in said flange and in said rotor, respectively, for turning movement about parallel axes so as to transmit a torque between said rotor and said rotary means.

3,348,530
CHOKE CONTROL DEVICE
Herman J. Umpfenbach, Detroit, Mich., assignor to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,270
8 Claims. (Cl. 123—119)



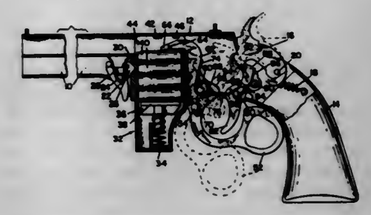
8. A choke control device for a carburetor having a body, an induction passage, a shaft, an offset choke valve mounted on the shaft, and a spring urging said valve toward the closed position, comprising a unit responsive to engine temperature for controlling the choke valve including a movable member, collar means on said shaft for rotation therewith, lever means movable by said member to engage said collar means to urge said choke valve toward the closed position, and extension means formed on said collar means for engaging said lever means for positively holding said choke valve in the closed position regardless of engine manifold vacuum until said lever means is moved out of engagement with said extension means by said movable member.

3,348,531
TOY GUN HAVING A DIVIDED MAGAZINE
Hiroshi Yano, % Sekiden Kagaku Kogyo Co., Ltd., 2 1-chome, Jinai-cho, Moriguchi-shi, Osaka, Japan
Filed Mar. 6, 1964, Ser. No. 349,841
3 Claims. (Cl. 124—27)



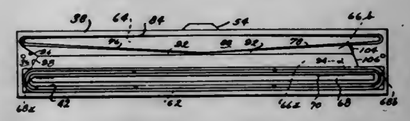
1. An improved toy gun comprising, a gun body having a discharge aperture in the front end thereof, front and rear magazines in said gun body for storing balls to be discharged by said gun, a vertical partition wall having an opening disposed in said gun body to define said front and rear magazines, said partition wall at its lower end defining a feed aperture for said balls to drop singly therethrough from said front magazine, said partition wall projecting upwardly from the rear end of said feed aperture, planar shutter means extending from the internal upper wall of said gun body in substantial alignment with said partition wall to form said opening, and striking means for discharging each of said balls when said balls are in alignment with said discharge aperture after passing through said feed aperture.

3,348,532
TOY GUN WITH SPRING ACTUATED PROJECTILE PROPELLING MEANS
Rene R. Carbonneau, West Boylston, Mass., assignor to Consolidated Development Corporation, Leominster, Mass., a corporation of Massachusetts
Filed Feb. 10, 1965, Ser. No. 431,686
4 Claims. (Cl. 124—27)



1. A top firearm comprising a barrel and a frame connected thereto, mechanism in the frame for propelling a simulated cartridge through the barrel, said mechanism including a cartridge propelling hammer, a pivot for the hammer, said hammer having two general positions, one in which it is retracted from cartridge-propelling position and cocked, and the other in which it is located in cartridge striking and propelling position, a spring for moving the propelling hammer from cocked to cartridge striking and propelling position, a pivoted sear, a nose on the sear temporarily engaging the propelling hammer holding it in cocked position, a spring tending to hold the sear in hammer cocked position, a trigger, a trigger pin, interengaging means between the trigger and the sear whereby the trigger upon being pressed moves the sear to hammer releasing position, and a lever, means pivotally mounting said lever, means pivotally mounting said cartridge propelling hammer on said lever, means biasing said hammer into engagement with said lever, hammer and lever surfaces abutting each other, said surfaces being in continuous abutting relationship as the lever is moved in one direction to carry the hammer with it to the cocked position thereof adjacent the sear, abutting surfaces being separated in response to the return motion to normal position so that the hammer stays in cocked position regardless of the position of the lever until the sear releases the hammer.

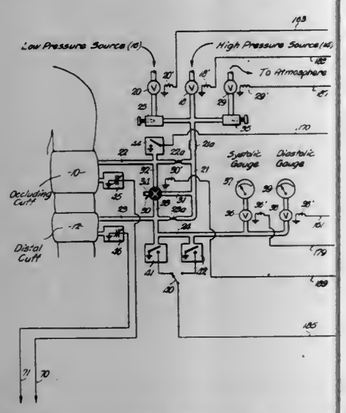
3,348,533
BASEBOARD HEATER
Murray O. Wilhoite, Nashville, Tenn., assignor to Temco, Inc., Nashville, Tenn., a corporation of Tennessee
Filed June 23, 1965, Ser. No. 466,370
2 Claims. (Cl. 126—90)



1. A gas-fired horizontally elongated combustion unit for a space heater, the length of said unit being substantially greater than the vertical and transverse dimensions,

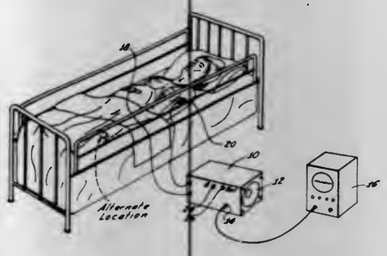
said unit having walls defining three elongated chambers extending longitudinally of said unit and disposed one above the other, the lowermost chamber having a generally uniform transverse cross sectional area along its length and communicating along its length with the bottom of the intermediate chamber, said lowermost chamber having at least one air inlet opening therein and carrying an elongated gas burner tube which extends substantially the length of said lowermost chamber, the uppermost chamber having a vertical dimension which increases from each end toward the middle thereby effecting a transverse cross sectional area which is greatest at the middle, the wall at the location of greatest vertical dimension having a horizontally facing combustion gas outlet opening, said intermediate chamber being of lesser length and lesser transverse dimension than said lowermost chamber and said uppermost chamber, said intermediate chamber tapering upwardly and inwardly toward the longitudinal center line of said unit thereby forming a slot of relatively small width extending the length of said intermediate chamber, said slot communicating along its length with the bottom of said uppermost chamber, said gas burner tube being sealed at one end and open at the other end to receive gas, the wall of said unit which defines the end of said intermediate chamber remote from the open end of the burner tube being inclined upwardly and inwardly toward the transverse center line of said unit from the bottom of said intermediate chamber to the lowermost edge of said slot and then inclined upwardly and outwardly away from said transverse center line, said unit further comprising a small generally L-shaped baffle disposed in said intermediate chamber near the open end of said gas burner tube, said baffle having a horizontal leg portion blocking communication between said intermediate chamber and said lowermost chamber, said baffle having an upstanding portion remote from the open end of said burner tube.

3,348,534
AUTOMATIC SPHYGMOMANOMETER
Thomas I. Marx, Hingham, Mass., and Claude W. Lowe, Kansas City, Mo., assignors to W. W. Holland, Macomb, Ill., and W. L. Davis, Keokuk, Iowa
Filed Nov. 6, 1963, Ser. No. 321,893
33 Claims. (Cl. 128—2.05)



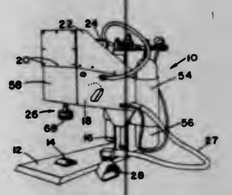
1. A sphygmomanometer including an occluding cuff and a distal cuff, means for inflating and deflating said cuffs, means for registering the pressure in at least one of said cuffs, means responsive to arterially-induced pressure pulsations in said occluding cuff for generating an electrical wave analogous to said occluding cuff pulsations, means responsive to arterially-induced pressure pulsations in said distal cuff for generating an electrical wave analogous to said distal cuff pulsations, and means for continuously comparing the instantaneous values of the two waves and actuating the said pressure-registering means when the instantaneous values of the respective waves differ by more than by a predetermined amount.

3,348,535
PARTURITIVE PHONE
David Paul Gregg, 1936 Kelton Ave., Los Angeles, Calif. 90025
Filed Dec. 4, 1964, Ser. No. 415,888
4 Claims. (Cl. 128—2.05)



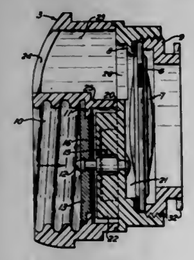
1. Apparatus for detecting fetal heart beats during parturition, including: first electro-acoustical transducer means for sensing a mother's heart beat and the fetal heart beat and for producing respective first and second electrical signals in response thereto each with particular amplitude; second electro/acoustical transducer means for sensing the mother's heart beat to the substantial exclusion of the fetal heart beat and for producing a third signal in response to the mother's heart beat with a particular amplitude; circuit means coupled to said first and second transducer means and responsive to said electrical signals from said first and second transducer means for substantially nulling out said first and third electrical signals and for passing said second electrical signal; and reproducing means coupled to said circuit means for reproducing said second electrical signal.

3,348,536
HEART-LUNG RESUSCITATOR
John J. Tambascia, Kendall Park, N.J., assignor to Medi-Tech Laboratories, Summit, N.J., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,680
6 Claims. (Cl. 128—53)



1. An external heart massage and pulmonary ventilation device comprising a base, a horizontally extending member, means mounting said member above said base for adjustment vertically towards and away from said base, a sternum compressor carried by said member, means to reciprocate said sternum compressor vertically, adjustable means limiting the downward stroke of said sternum compressor and means operatively connected to said stroke adjusting means to deliver air or oxygen intermittently to a patient synchronously with said stroke adjustment, said compressor includes a plunger having a piston head at one end and a pad at its other adapted to engage the sternum and said means to reciprocate said compressor includes a cylinder in which said piston head and plunger are slidable, a source of gas under pressure and valved conduits operatively connected to the top and bottom of said cylinder so that gas is supplied to the bottom of the cylinder beneath said piston head while it is simultaneously exhausted from the top of the cylinder above said piston head to raise said compressor and at the top of the stroke the operation is reversed to lower said compressor and the cycle is repeated.

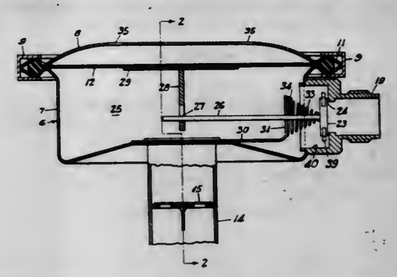
3,348,537
COMBINATION BREATHING VALVE AND SPEAKING DIAPHRAGM UNIT
John C. Miller, Pittsburgh, Harry N. Cotabish, Glenshaw, and Elmer E. Buban, Monroeville, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1965, Ser. No. 436,070
5 Claims. (Cl. 128—141)



1. A combination breathing valve and speaking diaphragm unit for a breathing mask, said unit comprising a housing having a side wall adapted to be sealed in an opening in such a mask, the housing having a wall at one end but being open at the opposite end, a speaking diaphragm mounted in the housing adjacent its open end and closing that end, said end wall of the housing having an opening therethrough spaced lengthwise of the housing from the diaphragm, the diaphragm overlapping at least the major portion of the end wall opening, a valve mounted in said wall opening, the side wall of the housing being provided with an outlet port between said valve and diaphragm, and a partition wall in the housing substantially parallel to said diaphragm, the partition wall being located between said port and diaphragm but spaced from the diaphragm to form a chamber between the diaphragm and partition wall, said end wall being provided with a voice transmission opening at one side of said end wall opening, and the housing being provided with an internal passage connecting said voice opening with said chamber.

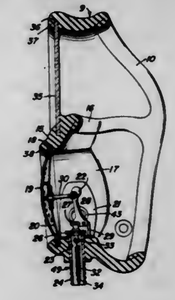
3,348,538
BREATHING APPARATUS EXHALATION VALVE WITH SUCTION CONTROL
Howard A. Benzel, Lancaster, N.Y., assignor, by mesne assignments, to Scott Aviation Corporation, Lancaster, N.Y., a corporation of New York
Filed Nov. 5, 1964, Ser. No. 409,065
15 Claims. (Cl. 128—142)

1. In combination with a life support system having a fluid outlet, a source of suction, and a control including a chamber having a movable wall, a fluid inlet to said chamber communicating with said system outlet for movement of said wall upon fluid flow into said chamber from said system, a fluid outlet from said chamber communicating with said source of suction, valve means controlling fluid flow through said chamber outlet, and means



connecting said valve means to said movable wall for placing said chamber in communication with said source of suction upon such movement of said wall.

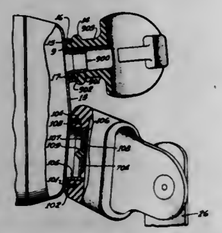
3,348,539
UNDERWATER MASK WITH COMBINATION SPEAKING DIAPHRAGM AND DEMAND VALVE
James H. McDonald, Toms Brook, Va., assignor of one-half to Garland Hudgins, Maurertown, Va.
Filed Jan. 14, 1965, Ser. No. 425,472
4 Claims. (Cl. 128—142.2)



1. An underwater breathing and communicating mask comprising a resilient face frame, said frame including a rear peripheral edge contoured for sealing contact with the face of a user, a transverse partition spanning said frame at the forward portion thereof and dividing said mask into distinct upper and lower chambers, said lower chamber constituting an air chamber and being of a size so as to closely conform to the nose and mouth area of a user's face, at least the central portion of the partition arching upwardly to overlie and confine the nose of a user within the lower chamber, said upper chamber being substantially larger than the lower chamber and constituting a viewing chamber, a transparent plate forming the forward wall of the viewing chamber, said transparent plate being peripherally sealed to the upper portion of the forward edge of the frame and the upper portion of the partition constituting the lower level of the viewing chamber, a valve-controlled air intake communicated with the lower air chamber and a valve-controlled air exhaust communicated with the lower air chamber whereby a movement of breathing air into and out of the air chamber can be effected independent of the viewing chamber, a flexible sound responsive vibrating diaphragm forming the forward wall of the air chamber for orientation immediately forward of the mouth of a user for a sound transmitting vibration in response to sounds emitting from the

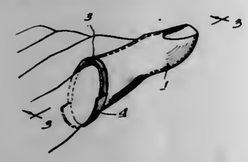
mouth of a user, link means connecting the diaphragm and the valve control for the intake for effecting an opening of the air intake in response to an inward movement of the diaphragm resulting from the act of inhaling by a user and means for securing the mask to a user.

3,348,540
PRESSURE REGULATOR, MOUTHPIECE, EXHAUST DUCT AND STRAP FOR UNDERWATER BREATHING APPARATUS
Richard E. Cullity, La Mirada, Calif., assignor to W. J. Volt Rubber Corp., a corporation of California
Filed Aug. 5, 1964, Ser. No. 387,737
3 Claims. (Cl. 128—147)



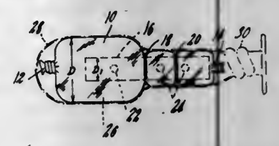
1. A pressure regulator for underwater breathing apparatus, said regulator including a regulator casing having a rear wall, first and second aligned openings in said rear wall, first and second rear wall flanges outwardly projecting and surrounding said first and second openings, respectively, a mouthpiece having a neck terminating in a mouthpiece flange fitting into and being surrounded by said first flange, a first retainer fitting into said mouthpiece neck and flange for fastening said mouthpiece to said rear wall, an exhaust duct having an exhaust duct flange fitting into the second rear wall flange, and a second retainer fitting into said exhaust duct flange for fastening said exhaust duct to said rear wall, said second retainer including a spider and a one-way flap valve, mounted on top of and adjacent to the outer surface of said spider, said flap valve closing off said spider against ambient water surrounding the outer side of said valve when said regulator is in use.

3,348,541
FINGER BANDAGE
Gordon J. Loebeck, Clarendon Hills, Ill., assignor of one-third each to Dale Vercellotti and Albina J. Mouish, both of Westmont, Ill.
Filed Oct. 29, 1965, Ser. No. 505,699
6 Claims. (Cl. 128—157)



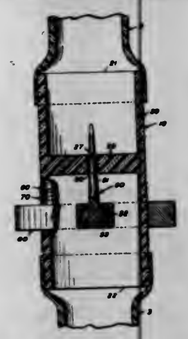
1. A sterile bandage for a fingertip comprising
(a) a flexible cylindrical body portion substantially complementing in shape to a finger, said body portion having a longitudinal axis and further having a tip and a rear margin remote relative to said tip,
(b) a sterile lining in said body portion, and
(c) an adhesive flap which is fixed to said body portion and extending therefrom longitudinally beyond said rear margin for retaining said body portion on the finger of the wearer.

3,348,542
ANESTHETIC ARTICLES
Richard R. Jackson, 54 Dwight St., Brookline, Mass. 02146
Filed Dec. 2, 1964, Ser. No. 415,326
9 Claims. (Cl. 128—184)



1. An applicator device sized and shaped to removably enter a body opening and lie in a body passage, said device including a highly flexible, distensible, thin wall exposed to contact surface tissue that defines the body passage, the wall comprising a generally fluid-tight membrane having a diffusion characteristic for diffusion of surface-effective fluid anesthetic through its thickness, said wall being sealed to form at least a part of an inflatable container adapted to receive surface-effective fluid anesthetic, whereby the yieldable pressure of the fluid anesthetic introduced to said container itself can distend the wall into an intimately conforming tissue-contacting relationship to apply anesthetic to that tissue by diffusion.

3,348,543
PARENTERAL LIQUID ADMINISTRATION APPARATUS
Thomas P. Stafford, Glendale, Calif., assignor to Don Baxter, Inc., Glendale, Calif., a corporation of Nevada
Filed Oct. 20, 1965, Ser. No. 498,535
4 Claims. (Cl. 128—214)



1. A variable flow liquid administration system comprising in combination a container, conduit means, and venous needle means all connected in series, said container including a liquid to be administered, and flow-regulating means interposed in said conduit means and connected in series therewith, said regulating means comprising:
an elongated tubular body having an upper inlet and a lower outlet respectively connected in series to said conduit means, said body having a single intermediate flange disposed transversely between said inlet and outlet and defining separate chambers, said chamber above said flange containing and being filled with said liquid to be administered, said flange including a longitudinally extending orifice having a substantially uniform cross section, said flange including a lower seat surrounding said orifice; a magnetically attractive, manually-controllable element circumposed on said tubular body and adjustably secured thereto, said manually-controllable element having a longitudinal range of adjustment greater

than the longitudinal length of said orifice; and a valve member including an enlarged, lower magnetically attractive enlarged portion magnetically coupled to said manually-controllable element and freely suspended in said body beneath said flange so that there is substantially no frictional resistance to movement thereof, said valve member including an elongated, integral and upwardly tapered stem tapered from said enlarged portion and extending through said orifice and therebeyond whereby fine incremental adjustments of said liquid are provided over a wide range and at a substantially constant rate; the liquid in said upper chamber flowing around said tapered stem and preventing drag on said stem and tending to prevent impaction of said stem in said orifice and providing a liquid flowing cushion thereabout whereby the adjustments of said valve member are substantially instantaneous.

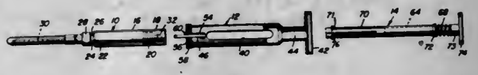
3,348,544
POLYPROPYLENE CANULA FOR CONTINUOUS INTRAVENOUS INFUSION
Bernhard Braun, 1 An der Trankelucke, Melsungen, Germany
Filed July 26, 1962, Ser. No. 212,696
Claims priority, application Germany, July 29, 1961, B 63,451
2 Claims. (Cl. 128—214.4)



1. A therapeutic device comprising an inner metal canula having a cutting edge at the forward end portion thereof, a flexible, substantially non-distensible canula formed of a physiologically acceptable polypropylene plastic material positioned about said metal canula coaxial with the same, the forward end of the plastic canula adjacent the insertion end of the metal canula tapering inwardly to substantially the same diameter as the metal canula in order to make a smooth, even, and edge-tight contact therewith and terminating just short of the forward end of said metal canula, said plastic canula defining, as integral parts thereof, a first portion of substantially uniform outer cross-section and wall thickness extending rearwardly from said forward end, an outwardly tapering second portion of rearwardly increasing wall thickness, extending rearwardly from said first portion, an enlarged recess adjacent said second portion in communication with the interior of said canula and sidewardly extending finger holding means, rearward of said first portion, said recess defining a seat for connection with other tubings, syringes, and the like.

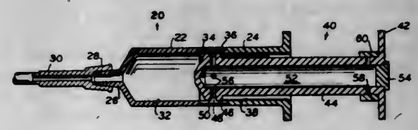
3,348,545
LATCHED CARTRIDGE
Stanley J. Sarnoff, 7801 Woodmont Ave., Bethesda, Md. 20014, and John W. Balenger, Dayton, Ohio; said Balenger assignor to said Sarnoff
Filed Oct. 22, 1964, Ser. No. 405,660
10 Claims. (Cl. 128—218)

4. A syringe holder comprising a barrel having a bearing at the rear end thereof, a plunger slidable in said bearing and including a rod having a thumb piece on the rear end thereof and resilient divergently biased legs at the front end thereof with inturned lips on the free ends of the legs, a sleeve forming part of the plunger snugly surrounding the rod and slidable therealong, a spring to urge the sleeve toward the forward ends of the legs, an



enlargement on the rear end of the sleeve to engage the barrel on the forward movement of the plunger, to limit the forward movement of the sleeve relative to the barrel, and a latch on the barrel to engage a cartridge positioned therein.

3,348,546
INTERMIXING SYRINGE
Ralph R. Roberts, Glen Rock, N.J. (48 Winging Way, Upper Saddle River, N.J. 07458), and Boris Schwartz, 400 Park Ave., Paterson, N.J. 07504
Filed Dec. 1, 1964, Ser. No. 415,021
7 Claims. (Cl. 128—218)

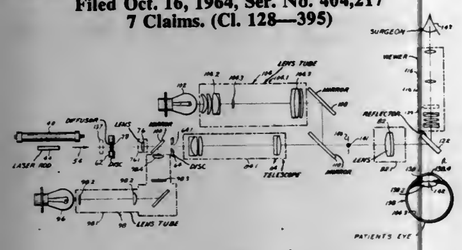


1. An intermixing syringe for the isolated storage of medicants and the like, the syringe including an outer housing having a partially closed front end and an open rear end, and means on said partially closed front end for the mounting thereon of a hypodermic needle, and a hollow plunger slidable in the bore of the housing and providing for the isolated storage of at least one of the medicants and the like, the syringe including means whereby at least one of the ingredients may be selectively transferred from one of the storage portions to another storage portion for the mixing of the ingredients, the syringe comprising: (a) an outer housing of generally tubular construction and having an inner bore formed with at least two diameters and arranged with a front bore portion of relatively constant diameter, an intermediate bore portion adjacent the front bore portion and larger than said front bore portion, and a rear bore portion of relatively constant diameter and of a size similar to the front bore portion, (b) a plunger of generally tubular configuration and having on its inner end a piston portion closing the end of the plunger, the piston formed with at least two outwardly extending and resilient ring-type sealing surfaces sized so as to be slidable in the like-sized front and rear lesser bore portions while engaging these bore portions in a fluid-flow sealing manner and being manipulatable in the front bore for aspiration of the syringe, the plunger having at least one fluid passageway from the inner storage chamber of the plunger and terminating at the piston surface and between adjacent ring-type sealing surfaces, the ring-type sealing surfaces as they are brought in the way of the intermediate bore portion being smaller than the intermediate bore portion and rendered ineffective for fluid sealing of the bore, and (c) removable means providing for the sealing of the outer open end of each of the storage chambers of the plunger to seal the chambers for storage and transport.

3,348,547
PHOTOCOAGULATING APPARATUS

Arthur J. Kavanagh, Southbridge, Mass., Charles J. Koester, South Woodstock, Conn., Milton R. Thorburn, Southbridge, Mass., and Robert B. Tackaberry, Tonawanda, N.Y., assignors, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware

Filed Oct. 16, 1964, Ser. No. 404,217
7 Claims. (Cl. 128—395)

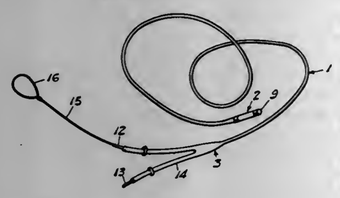


1. Photocoagulating apparatus comprising a first optical system, field stop means of selected size, a laser actuable to emit a beam of intense light, light-diffusing means interposed in said light beam, said diffusing means being arranged at the first principal focus of said first optical system so that said first optical system directs light from said diffusing means through said stop, and a second optical system adapted to be arranged between said stop and an eye in telecentric relation to the pupil of said eye, said first and second optical systems being cooperable to form an image of said diffusing means at said eye pupil, said second optical system being cooperable with the refractive media of said eye to form an image of said stop at the retina of said eye for photocoagulating said retina at the location of said retinal image.

3,348,548
IMPLANTABLE ELECTRODE WITH STIFFENING STYLET

William M. Chardack; 144 Ivyhurst Road, Buffalo, N.Y. 14226

Filed Apr. 26, 1965, Ser. No. 450,910
9 Claims. (Cl. 128—418)



3. In an electrode adapted for permanent implantation in an animal body, a body of electrically insulating material, electrically conductive means consisting entirely of spirally wound electrical conductor extending lengthwise within said body, and a removable stylet also extending lengthwise within said body, said stylet imparting rigidity to said electrode for insertion thereof through a vein into the heart.

3,348,549
BRASSIERE PAD AND PROCESS

George L. Brodmann and Albert Stewart, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,528
5 Claims. (Cl. 128—481)

1. A process for preparing molded, three-dimensional textile articles which comprises (1) shaping, while unrestrained, a resin-bonded fibrous batt of randomly intermingled, crimped, linear polyester staple fibers around a hemispherically-shaped mold at a temperature below

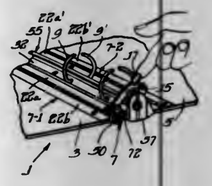


about 100° C., (2) then heating the fiber batt on the mold to a temperature in the range 120°–180° C., and (3) thereafter cooling the molded batt to a temperature below 100° C. before removing the batt from the mold.

3,348,550
RING BINDER

Harold H. Wolf, Highland Park, and Robert E. Dahl, Mount Prospect, Ill., assignors to Feldco-Major, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 6, 1966, Ser. No. 519,084
2 Claims. (Cl. 129—24)



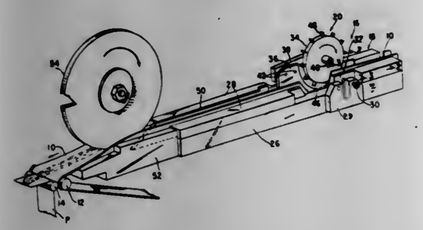
1. A notebook ring binder comprising front and rear covers and a spine assembly hinged to the inner longitudinal margins of the covers to enable the covers to pivot into a generally horizontal position, said spine assembly including a pair of ring carrying members mounted for lateral horizontal movement with respect to one another between relative contiguous and spaced apart positions, and longitudinally spaced notebook paper receiving ring halves rigidly anchored to each of said ring carrying members, each ring half on each ring carrying member being positioned opposite a corresponding ring half on the other ring carrying member, said corresponding ring halves having facing end portions which are forced horizontally into tight engagement when the ring carrying members are moved into said relative contiguous positions, manually operable means for moving said ring carrying members between said relatively contiguous and spaced apart positions, said manually operable means including an upwardly arched control lever pivotally supported on one end of one of said ring carrying members, a finger engaging portion on said control lever spaced from said one end thereof for pivoting the control lever about said axis between said raised and lowered positions, a connecting link having one end pivotally connected to the other end of said control lever and another end pivotally supported from the other ring carrying member, the distance between the pivot axes at the ends of said connecting link being somewhat greater than one-half the distance between the pivot axes at the opposite ends of the control lever, wherein in said raised position of said control lever the connecting link extends outwardly away from the control lever to space the ring carrying member carrying the connecting link substantially away from the ring carrying member carrying the control lever, and in the lowered position of the control lever the ends of the connecting link connected to said other ring carrying member is

pivoted and pulled into nestled relation beneath the upwardly arched control lever which pulls the last mentioned ring carrying member adjacent the ring carrying member carrying the control lever, in said nestled position of said connecting link the pivot axis at the end thereof connected to the former ring carrying member being above a line connecting said pivot axes at the ends of said control lever, whereby a toggle locking action is obtained in conjunction with the resiliency of the ring halves, which toggle action locks the ring carrying members in their contiguous positions where the ring halves are tightly closed, the end of the connecting link opposite the end connected to said control lever being fixed to a control rod extending longitudinally from one end of the ring carrying member carrying said connecting link to the other end thereof, means pivotally supporting said other end of the control rod to the latter ring carrying member, and a connecting link and a control lever pivoted to one another and interconnecting said other end of the control rod to the other ring carrying member carrying the first mentioned control lever, wherein there is provided cooperating pairs of connecting links and control levers pivoted respectively about coaxial pivot axes for transmitting equal reciprocating forces to said ring carrying members to move the same between their spaced apart and contiguous positions by movement of the finger engaging portion of said first mentioned control lever at one end of the ring carrying members.

3,348,551
CIGARETTE MAKING MACHINE

Jesse R. Pinkham, Winston-Salem, N.C., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed May 4, 1965, Ser. No. 453,025
10 Claims. (Cl. 131—84)

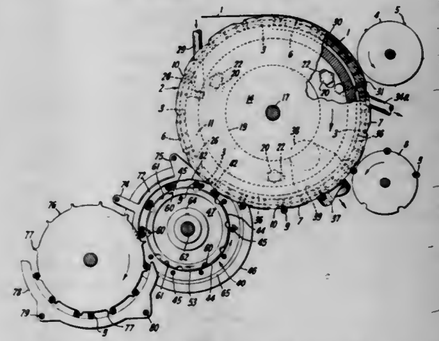


1. In a cigarette making machine having a conveyor belt adapted to receive tobacco from a feeding means adapted to feed tobacco thereon in excess of that required to form a filler stream and means to move the belt and filler stream toward a trimming device through guide means adapted to cause the belt and the stream thereon to have a channel shaped section including an arcuate lower portion which merges with vertically extending parallel spaced planar side walls, thereby forming a channel with an open upper extremity, the improvement wherein the trimming device includes means for mounting a wheel and a ledger plate adjacent thereto in the channel between said side walls, said wheel having an axis arranged transversely of the path of travel of the stream and including plural blades extending radially of the axis and having a width such that the blades may be rotated between said channel side walls, said ledger plate extending across said channel between said side walls and downstream of the wheel with respect to the direction of travel of said stream, said ledger plate including guide means providing a straight edge extending across the channel, said ledger means permitting a desired quantity of tobacco in said stream to pass thereunder while excess tobacco propelled by the blades is guided so as to be separated from the stream, and said means for mounting said ledger plate and said wheel in said channel being such that said plate and wheel may be moved simultaneously about a pivot thereby controlling the size of the portion of the stream permitted to pass under the ledger plate, and means for so adjusting the position of the wheel and ledger plate.

3,348,552
FILTER TIPPING DEVICE

Thomas Joseph McCarthy, Richmond County, and Ocee Keaton Groppe, Richmond, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Nov. 9, 1964, Ser. No. 409,889
7 Claims. (Cl. 131—94)

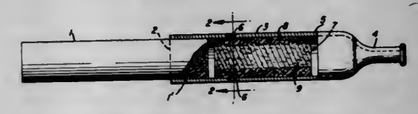


7. Apparatus for rolling a uniting band about a cigarette and filter assembly comprising first and second drums peripherally spaced by substantially the diameter of said assembly, the adjacent surfaces being driven in opposite direction, said first drum being adapted to carry on its surface a succession of uniting bands and said assemblies into the bight between said first and second drums where each of said assemblies is caused to roll over each of said uniting bands, a series of rotating rolls orbiting said second drum, each of said assemblies and associated uniting bands being under the control of one of said rotating rolls as they pass through the bight between said first and second drums so as to be removed therefrom.

3,348,553
SMOKER'S MOUTHPIECE

Karl Huber, Newark, N.J., assignor to Emkay Inc., Newark, N.J., a corporation of Delaware

Filed Mar. 9, 1965, Ser. No. 438,198
3 Claims. (Cl. 131—194)

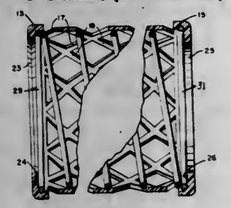


1. A smoker's mouthpiece comprising a cylindrical tube having an inlet and outlet and composed of thermally conductive metal, a porous cylindrical plug composed of randomly arranged compacted thermally conductive metal filaments contained in the tube in intimate thermal contact with the tube, the plug comprising a sleeve-like portion adjacent its periphery and surrounding a core, the sleeve-like portion being more highly compacted than the core, and means providing a plurality of circumferentially spaced apertures through the tube wall located intermediate the ends of the plug, the apertures being directed at an angle toward the tube inlet.

3,348,554
TUBULAR HAIR CURLER WITH MEANS FOR ENCLOSING A COIL SPRING

Nathan L. Solomon, P.O. Box 550, Englewood, N.J. 07631

Filed Oct. 27, 1964, Ser. No. 406,741
5 Claims. (Cl. 132—39)

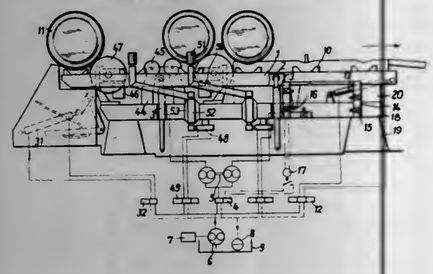


1. A hair curling device comprising a generally one-piece tubular body member having end rings at opposite ends and having an interstitial pliable wall structure intermediate of said end rings and integrally connecting said end rings, each of said end rings having an interiorly directed shoulder, one of said shoulders having a smaller interior diameter than the other of said shoulders and each of said shoulders having a smaller inner diameter than the inner diameter of said tubular wall structure, and a coil spring formed of a series of helices having an outer diameter substantially equal to the inner diameter of said tubular wall structure, said spring being telescopically received within said tubular body member having its opposite end helices abutting corresponding shoulders.

3,348,555
BARREL WASHING MACHINE

Fritz Thomas, Teufelsseestrasse 30, Berlin, Germany

Filed Oct. 23, 1965, Ser. No. 503,202
Claims priority, application Germany, June 25, 1965, T 19,318
16 Claims. (Cl. 134—43)

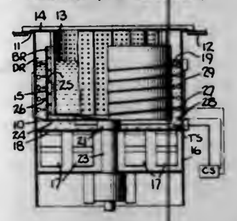


1. A barrel washing machine having individual stationary treatment stations including a feed station for barrels to be treated, an external cleaning station and a bung-hole detecting station, said machine comprising first means for lifting the barrels at the feed station and depositing the barrels at the next treatment station, second means for aligning the barrels at the external cleaning station and at the bung-hole detecting station, third means for conveying the barrels to successive stations for treatment, hydraulic means coupled to the first three said means to drive the same, said hydraulic means comprising a single pressure fluid source for supplying pressure fluid from the source to said three means and a respective piston-cylinder arrangement for each of the said three means, valve means controlling operation of the hydraulic means, said valve means comprising a separate electromagnetic valve controlling actuation of a respective piston-cylinder arrangement, and control means for selective activation of the individual electromagnetic valves.

3,348,556
TEMPERATURE REGULATION OF FLUID BATHS

Howard M. Layton, Ossining, N.Y., assignor to Interlab, Inc., New York, N.Y., a corporation of New York

Filed May 27, 1965, Ser. No. 459,321
7 Claims. (Cl. 134—57)



1. A temperature-regulated fluid bath arrangement comprising,

(a) a tank for containing fluid,

(b) a basket suspended within said tank and permeable to said fluid whereby the internal region of said tank is filled with fluid, the periphery of said basket being spaced from the wall of said tank to define an external fluid region,

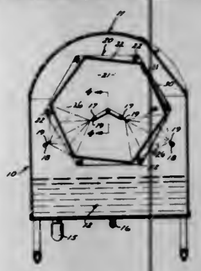
(c) thermostatically controlled means to regulate the temperature of fluid in said external region, and

(d) means including a rotary drum concentrically disposed between said basket and said tank and including a helical blade on the side adjacent the basket and a helical blade on the side adjacent the tank to agitate the fluid within said external region to produce mixing currents which penetrate said basket and which render the temperature of the fluid within the internal region uniform.

3,348,557
APPARATUS FOR ETCHING METAL

Kenneth W. Adamson, 23346 Hartland St., Canoga Park, Calif. 91304

Filed July 1, 1965, Ser. No. 469,000
2 Claims. (Cl. 134—113)

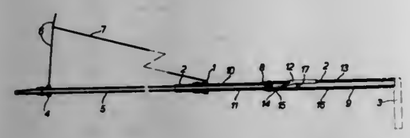


1. An etching apparatus consisting of a spray chamber covered with a transparent cover, a fixture for mounting a workpiece within said chamber, which fixture is capable of rotating about a horizontal axis, spray manifolds having spray heads thereon mounted both internally and externally to the surface of revolution generated by the rotating work-piece which internal and external spray heads are mounted diametrically opposite each other so that the spray impingement pattern covers an arc of less than one hundred and eighty degrees on the bottom of the rotation with no spray in the upper portion of the rotation to permit visual inspection during operation, and which spray pattern is symmetrical about a vertical plane through the horizontal axis, means for circulating the etching fluid through the manifolds and spray heads, and means for rotating the mounting fixture about an axis in the horizontal plane.

3,348,558
UMBRELLAS, SUNSHADES AND THE LIKE

Yung Kwong Yuen, 320 Lily House, So Uk Estate, Kowloon, Hong Kong

Filed May 3, 1965, Ser. No. 452,722
Claims priority, application Great Britain, June 3, 1964, 22,999/64
3 Claims. (Cl. 135—46)

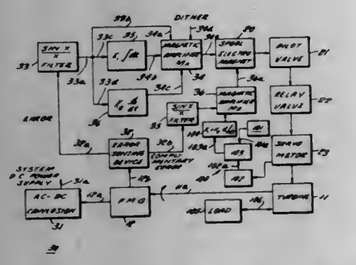


1. An umbrella comprising plural sections which can telescope relatively to each other; a notch; a handle; a runner; ribs pivoted to said notch, stretchers pivoted to said runner and to said ribs; one of said sections comprising an inner tube carrying said notch at one end, and a hand-grip tube connected to said inner tube and projecting toward said handle; the other of said sections comprising a handle tube carrying said runner and slidable by gravity under its own weight within said hand-grip tube and surrounding said inner tube; said handle tube being formed with longitudinal slots; a spring-biased catch lever pivoted to said handle tube; said hand-grip tube having longitudinally spaced holes therein; said catch lever being formed with a locking end portion and being mounted to extend through said slots in said handle tube with its locking end portion selectively engaging in one of said holes in said hand-grip tube to retain the umbrella selectively in the opened or closed position; said catch lever being manually operable to release said sections for relative telescopic movement.

3,348,559
ELECTRONIC GOVERNOR

Abraham Brothman, Dumont, and Lee M. Horowitz, Cedar Grove, N.J., assignors, by mesne assignments, to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 7, 1964, Ser. No. 357,988
12 Claims. (Cl. 137—30)



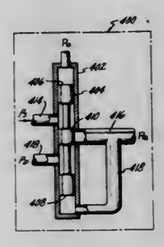
1. Electronic control means for regulating the speed of turbines and the like, comprising first means for sensing the speed of the turbine; said first means generating first and second complementary error signals; second means receiving said complementary error signals for generating an output suitable to adjust the speed of the turbine to the desired level; said first error signal being diverted through first, second and third paths between said first means and said second means; said first path connecting said first means to said second means; said second path comprising integrating means; said third path comprising differentiator means.

4. Electronic control means for regulating the speed of turbines and the like, comprising first means for sensing the speed of the turbine; said first means generating first and second complementary error signals; second means receiving said complementary error signals for generating an output suitable to adjust the speed of the turbine to the desired level; said first error signal being diverted through first, second and third paths between said first means to said second means; said second path comprising integrating means; said second means comprising first amplifier means having a plurality of inputs for receiving signals from said plural paths; second amplifier means for receiving said second error signal; solenoid means having first and second inputs for receiving signals from said first and second amplifier means; said solenoid means comprising armature means reciprocally movable under control of said solenoid means input signals; relay valve means controlled by said armature means for adjusting the speed of the turbine.

3,348,560
ACCELERATION FORCE COMPENSATOR FOR AIRCRAFT PRIME MOVER

Charles F. Stearns, East Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Continuation of application Ser. No. 363,577, Apr. 29, 1964. This application Feb. 21, 1967, Ser. No. 617,713
7 Claims. (Cl. 137—38)



7. For a hydraulic system having at least one control valve for regulating an output device, which system is subjected to G loads adversely affecting the control valve imposing an error on the output device, means for compensating for the G loads including valve means remotely mounted from said control valve, said valve means having at least one pressure reaction chamber on one end thereof and an interconnection to said control valve for leading fluid to or away from said control valve in accordance with the G load imposed on said hydraulic system.

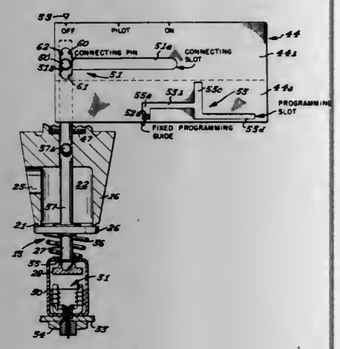
3,348,561
CONTROL APPARATUS FOR GAS BURNERS

John R. MacLennan, Miraleste, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

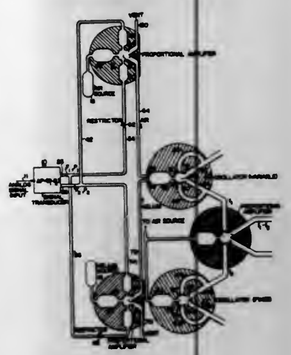
Filed June 30, 1965, Ser. No. 468,239
12 Claims. (Cl. 137—66)

1. A fuel valve comprising: a body having a passage therethrough; safety valve means including a valve closure member in said passage and flame responsive means to hold said closure member open when it is otherwise opened; a rotary valve member in said passage in series with said safety valve closure member and rotatable between "off," "pilot" and "on" positions; a manual control knob for rotating said rotary valve and for manually opening said safety valve closure member; programming

means between said valve body and said knob and including a programming guide on one and a cooperating slot on the other, said programming means rendering said knob rotatable from said "off" position toward said "pilot" position only upon said knob being depressed a predetermined distance with respect to said body, permitting further depression of said knob to accomplish manual opening of said safety valve closure member only when said knob is in said "pilot" position, and permitting rotation of said knob from said "pilot" position to said "on" position only when said knob is retracted from said body a predetermined distance; a valve stem nonrotatably connected to said rotary valve member but axially movable with respect thereto and operably connected to said safety valve closure member; connecting means between said knob and said valve stem and including a T-shaped connecting slot on one of said knob or stem, the slot including a vertical portion having an upper portion and a lower portion and intersected substantially at its vertical center by a horizontal slot which extends in one direction from said vertical slot; and a connecting pin rigidly connected to the other of said knob or stem and disposed in said slot, said connecting pin and slot and said programming slot and guide being so arranged that when said safety valve is closed, depression of said knob to rotate said knob from the "off" to the "pilot" position causes said pin to be disposed in the upper vertical portion of said connecting slot and rotation of said knob causes rotation of said stem and said rotary valve, and so that if said safety valve closure member is open when said knob is depressed to move from said "off" position, or a position intermediate said "off" and "pilot" positions, toward said "pilot" position, said connecting pin is disposed in the horizontal portion of said connecting slot and said knob is rotated with respect to said stem and said rotary valve, and so that when said knob is retracted and rotated from said "pilot" position toward said "on" position, said connecting pin is disposed in the lower part of said vertical portion of the connecting slot if said safety valve closure member is open but is disposed in the horizontal portion of said connecting slot if said safety valve closure member is closed so that said knob can then be rotated with respect to said stem and said rotary valve member, the walls surrounding the vertical portion of said slot on the side opposite from said horizontal portion continuously forming an abutment surface for engagement with said connecting so that said knob is continuously operably connected to said stem and to said rotary valve for rotation in a direction from said "on" position towards said "off" position.

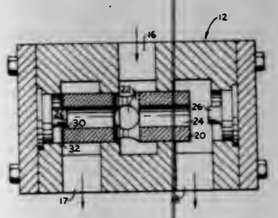


3,348,562
CONTROL APPARATUS
Harvey D. Ogren, Roseville, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Jan. 30, 1964, Ser. No. 341,235
11 Claims. (Cl. 137—81.5)



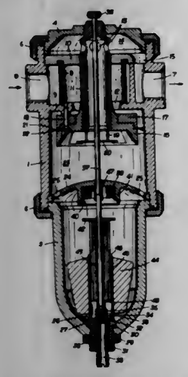
9. In combination, a fluid oscillator, a plurality of sources of different fluids in which sound travels at different speeds, means supplying fluids from said sources to power said oscillator, and means in the last named means for varying the proportions of said fluids supplied to said oscillator to vary the frequency of oscillation of said oscillator.

3,348,563
FLOW DIVIDER VALVE
Peter Sidles, Jr., North Aurora, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 3, 1965, Ser. No. 430,065
2 Claims. (Cl. 137—101)



1. In a flow divider for use between a source of fluid under pressure and two separate circuits which comprises, a body having an inlet receiving fluid under pressure and two outlets communicating with said circuits, said body having a bore communicating with the inlet and both outlets, a piston reciprocal in said bore and having passages communicating between the inlet and the outlets at each end of the piston, the improvement which comprises an element at at least one end of the bore positioned to be embraced by the passage at one end of the bore as the piston moves toward it in response to pressure from its opposite end to restrict flow through the bore and create a pressure drop causing continued movement of the piston until flow past its ends and to the outlets is of unequal volume and in which the passages at the ends of the piston are cylindrical and said element is of cylindrical configuration with a diameter smaller than the passage which embraces it, the passages in the piston including a coaxial cylindrical passage throughout its full length.

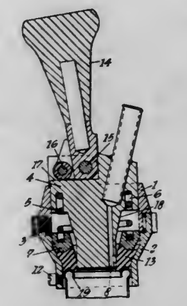
3,348,564
DEVICE FOR THE AUTOMATIC DRAINING OF LIQUIDS FROM COMPRESSED-GAS SYSTEMS
Herbert Söchting and Erwin Vock, Vienna, Austria, assignors to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed Dec. 13, 1965, Ser. No. 513,485
Claims priority, application Austria, Dec. 22, 1964, A 10,842/64
3 Claims. (Cl. 137—193)



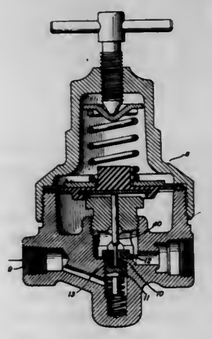
1. A device for automatically draining of liquids from compressed gas systems comprising a storage reservoir for accumulating liquid separated from compressed gas, a drain opening in the bottom of the reservoir, drain valve seat means surrounding the drain opening, a drain valve element cooperating with the seat for opening and closing the drain opening, a valve stem reciprocably mounted in the reservoir connected to the drain valve element for operating said element, piston means slidably mounted on the valve stem, including an armature, a bushing slidably mounted on the piston means, the lower end of the bushing comprising valve means arranged to cooperate with valve seat means upstream of the drain valve element and seat, the arrangement being such that when the bushing is in its lowest position flow between the reservoir and the drain valve seat and element is prevented via the lower portion of the bushing and when raised from its lowest position flow is permitted, the upper portion of the bushing is constructed to form with the piston a restricted passageway between the reservoir and the drain valve head and seat, float means operatively connected to the bushing, interengaging means on the bushing and piston means for effecting upward movement of the piston means after a predetermined upward movement of the bushing, interengaging means on the piston means and the stem for effecting upward movement of the stem and consequently the drain valve element after a predetermined movement of the piston means, and a magnet mounted in the reservoir for cooperation with the armature, the magnet being arranged to attract and hold the piston means in its uppermost position upon a predetermined movement of the piston means and to maintain said piston in its uppermost position until the bushing falls to its lowermost position.

3,348,565
DISPENSING OF CARBONATED BEVERAGES
Eric Clifford Turner, Weybridge, Surrey, England, assignor to Watney Combe Reid & Co., Limited, London, England, a British company
Filed July 6, 1964, Ser. No. 380,372
1 Claim. (Cl. 137—212)

An extractor for withdrawing liquids from a pressurized container, said container having a neck portion, and valved passageways for gas and liquid located within said neck portion and operable by axial displacement thereof, said extractor comprising an outer casing, complemental means on said casing and the inside of said neck portion cooperable to instantly engage said casing within said neck portion, an axially slidable valve engaging member within said casing, said valve engaging member being provided with gas and liquid passageways for sealing with the gas and liquid passageways located within the neck portion, means within the casing cooperable with said valve engaging member for biasing said valve engaging member to a position where the gas and liquid passageways therein are in non-sealing relationship respecting the said gas and liquid passageways located in the neck portion, a lever pivoted to said outer casing for swinging movement about an axis at right angles to the axis of said outer casing, a smooth engagement surface carried by said lever for pressing said valve engaging member downwardly in the casing for placing the gas and liquid passageways therein in sealing relation with the gas and liquid passageways located in the neck portion and a seal ring biased to seal between the casing and the valve engaging member through which the valve engaging member is arranged to slide, said seal ring being arranged to seal the neck portion of the container.



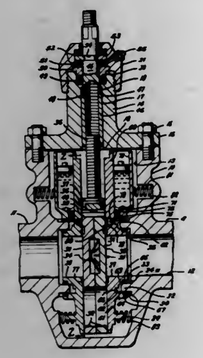
3,348,566
SELF-CLEANING VALVE STRUCTURE
Lee Varis, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 18, 1964, Ser. No. 390,430
1 Claim. (Cl. 137—242)



Valve structure for controlling the flow of a fluid through a passageway between a higher pressure area and a lower pressure area comprising a valve seat holder,

a resilient toroidal-shaped projection protruding from said holder, said projection being rounded on its protruding end, a hard valve seat surrounding a circular entrance to said passageway from said higher pressure area, said projection having a mean diameter only slightly larger than said circular entrance, said projection and said circular entrance having substantially the same axis, said projection being partially extruded into said passageway when the valve is closed, whereby the extrusion of said projection upon the closing of the valve dislodges impurities which are present on the resilient projection and the valve seat prior to the closing of the valve.

3,348,567
COMPOUND PRESSURE SEALANT-SEALED VALVE
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla. 33154
Filed Jan. 4, 1965, Ser. No. 423,271
19 Claims. (Cl. 137—246.12)



15. In a sealant sealed valve, a housing having a flow port, a two-sided closure therefor movable in at least two planes relative to the flow port, a closure seat slidably mounted about said flow port and normally resiliently urged against said closure, sealant sealing faces disposed between each side of said closure and seat, a pair of sealant reservoirs in communication with said faces, means responsive to line pressure when the closure is in flow port-closing position imparting movement to said seat whereby sealant is forced from one of said reservoirs to said sealing faces, and additional sealant reservoir means interiorly of said housing responsive to line pressure to automatically transfer a supply of sealant therefrom to said one reservoir.

3,348,568
COATED CERAMIC CAPACITOR
Richard A. Stark, Des Plaines, and Daher Barakat, Chicago, Ill., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 544,459
16 Claims. (Cl. 317—258)

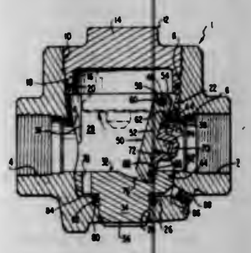
1. A coating for electrical components consisting essentially of from 1–15% by weight of butyl glycidol ether, from 5–20% by weight of 170–180 weight epoxide epoxy resin, from 15–30% by weight of 400–450 weight epoxide epoxy resin, from 1–5% by weight of dicyandiamide, from 0.1–5% by weight of bentonite, from 0.2–2% by weight of benzidine yellow, from 30–60% by weight of calcium carbonate, and from 3–10% by weight of xylol.

3. A ceramic capacitor comprising: a ceramic member having predetermined dielectric characteristics; a pair of electrically conducting areas formed on said member and deposited so as to produce a capacitance determined by the area between said electrically conducting areas and the thickness and dielectric characteristics of said ceramic member; terminal members connected to each of said electrically conducting areas; and a coating having a high Q value and means for suppressing corona generated at portions of said capacitor consisting essentially of from



1–15% by weight butyl glycidol ether, from 5–20% by weight of 170–180 weight epoxide epoxy resin, from 15–30% by weight of 400–450 weight epoxide epoxy resin, from 1–5% by weight of dicyandiamide, from 0.1–5% by weight of bentonite, from 0.2–2% by weight of benzidine yellow, from 30–60% by weight of calcium carbonate, and from 3–10% by weight of xylol, said coating being deposited over said ceramic member said electrically conducting areas and portions of said terminal members adjacent to said ceramic member.

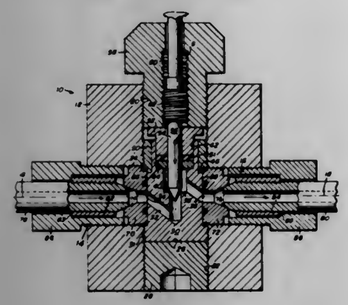
3,348,569
VALVES
James A. Frye, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Nov. 30, 1964, Ser. No. 414,594
5 Claims. (Cl. 137—269.5)



1. A swing-type valve comprising a valve body having first and second fluid passageways in fluid communication with a valve body bore the longiutdinal axis of which is transversed to said passageways, said valve body bore being open on at least one longitudinal end thereof, and having a frustoconical portion adjacent said open end, closure means for closing said open end of said valve body bore a frustoconical insert rotatably mounted in said bore, said insert having opposed first and second ports in fluid communication with an insert bore, said ports registrable with either of said first and second passageways, a clapper pivotally mounted on said insert and within said insert bore, said clapper registrable with one of said opposed ports, the other of said opposed ports

being formed by a generally U-shaped recess extending from an upper end of said frustoconical insert adjacent the major diameter thereof towards a lower end of said frustoconical insert coextensively with the lower periphery of said one of said opposed ports.

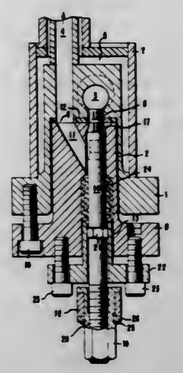
3,348,570
VALVE ASSEMBLY FOR ISOLATING CONTROLLED FLUID FROM VALVE HOUSING
Robert H. Nealy, 3 Clovis Road, East Brunswick, N.J. 08816
Filed Dec. 10, 1962, Ser. No. 243,265
3 Claims. (Cl. 137—315)



1. A valve for controlling fluid in a process stream flowing from a first conduit to a second conduit comprising a valve housing having a pair of opposed aligned openings leading to the interior thereof, and a third opening extending through said housing and substantially perpendicular to and intersecting the common axis of said pair of openings, a removable core within said housing at the point of intersection and having a bore therethrough, said bore having an inlet and outlet respectively in communication with said pair of openings, a valve seat intermediate the length of said bore, a valve closure in said third opening, a valve operator in said third opening to bring said valve closure toward and away from said seat, removable conduit seats in sealing engagement with said core about said inlet and said outlet, said seats respectively receiving in sealing engagement each of said first and second conduits, whereby said process stream is isolated from said housing as it flows between said first and second conduits.

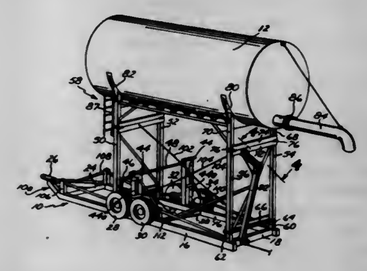
3,348,571
REMOVABLE HEAD AND SEAT NEEDLE VALVE
Roy T. Holton, New Bern, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,808
1 Claim. (Cl. 137—340)

A valve assembly comprising (1) a valve cup containing an intake bore and a discharge bore through its outer wall to provide external connections to intake and discharge lines, the internal termini of the said bores being in the cup bottom, the said valve cup having disposed therein (2) a valve body of external shape to match the internal shape of the said cup, the said valve body providing a continuous passage, each end of the said passage opening upon the surface of the said body that matches the said cup bottom, the said passage ends being disposed opposite the said internal termini of the said intake and discharge bores, an annular seating surface in the said passage near one end of the said passage and angularly disposed relative to said passage, an access bore providing access to the said seating surface from the valve body surface opposite that which matches the cup bottom, said valve body surface having flange portions thereon, releasable means cooperating with said valve cup structure to hold said valve body within said cup, (3) a stem bearing a frustoconical valve surface to provide an abutting face to the said seating surface slideably mounted in said



access bore, stem sealing means removably mounted within said access bore, (4) valve control means connected to said stem for operatively positioning said frustoconical valve surface relative to said annular seating surface, (5) jacket means operatively surrounding said valve cup through which heat transfer fluid can be pumped for heating said valve cup and associated apparatus.

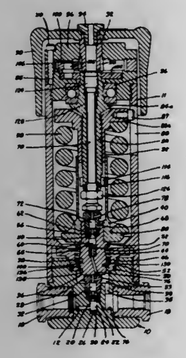
3,348,572
PORTABLE SOURCE OF FLUID
Vriel A. Hall, 503 Ave. Presidio, San Clemente, Calif. 92672
Filed Oct. 21, 1965, Ser. No. 500,041
6 Claims. (Cl. 137—344)



1. A portable source of fluid to fill mobile fluid carriers comprising in combination, a main frame, a support frame carried by said main frame in raised and lowered positions, a fluid tank on said support frame to be moved therewith, at least three elongated support members operatively interposed between said main and support frames, a hinge at one end of each member connected thereto and to the support frame at a position spaced from such hinges of other support members, each of said hinges being so connected to said support members and support frame as to permit the latter to be horizontal while being raised and lowered to cause all of said support members to be parallel, a hinge at the other end of each support member connected thereto and to said main frame at

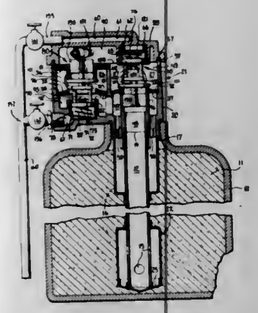
spaced positions thereon to cause said main and support frame to be parallel in both raised and lowered positions and said support members to be parallel to each other, said hinges being so positioned on said frames and support members to confine relative movement therebetween to approximately ninety degrees, a support arm connected to said main frame and extending upwardly therefrom, a source of power operatively interposed between said support arm and said support members and comprising a first plurality of pulleys on said support arm and a second plurality of pulleys on said support members having an elongated line extending therebetween for causing the support members to be raised to their vertical positions with said support frame and tank thereon, and retractable wheels on said main frame for transporting the same on a given surface and including manual operating means for raising and lowering the wheels as desired, retraction of said wheels causing said main frame to rest on the ground so that pulling on said line causes said support frame and tank thereon to be moved to raised position.

3,348,573
FLUID PRESSURE REGULATOR HAVING A GUIDED PRESSURE RESPONSIVE MEMBER
Francis H. Bradford, Berkeley, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Apr. 19, 1965, Ser. No. 449,074
3 Claims. (Cl. 137—505)



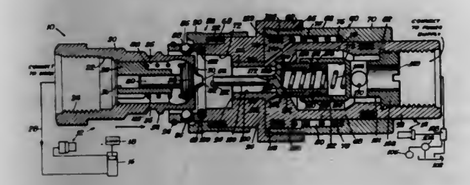
1. In a fluid pressure regulating device, a body having fluid chamber means formed therein, inlet and outlet flow passages formed in said body communicating with said fluid chamber,
valve means located in said inlet passage for controlling the flow of fluid therefrom through the fluid chamber and outlet passage,
said fluid chamber means having a wall formed therein,
a long pressure responsive piston member operatively associated with said valve means and axially slidable in said chamber for actuating said valve means in response to changes in pressure in said chamber and outlet,
first complementary cylindrical sliding surfaces on said piston member adjacent one end thereof and the wall of said chamber,
means biasing the piston in a valve opening direction,
seal ring sealing means between said first complementary sliding surfaces,
second complementary cylindrical sliding surfaces formed on said piston at the end thereof opposite from and said body remote from said first complementary sliding surfaces, and
said first and second complementary sliding surfaces being smoothly finished, close-fitting and non-yielding, with their combined axial lengths of engagement being but a fraction of the length of said piston to prevent lateral movement thereof while minimizing friction between said sliding surfaces.

3,348,574
COMPACT WATER SOFTENING VALVE STRUCTURE
Earl P. Brane, Largo, Fla., assignor, by mesne assignments, to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin
Filed Oct. 5, 1964, Ser. No. 401,376
5 Claims. (Cl. 137—599.1)



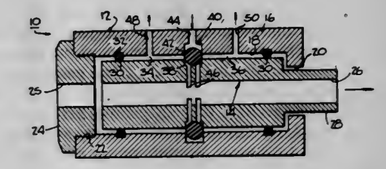
1. A water softener valve comprising a housing having first, second, third, fourth and fifth chambers therein; said housing having a first drain passage leading from said third chamber externally of said valve; a first valve assembly slidably mounted within said first, second and third chambers and said drain passage; said first valve assembly including a valve closure element received within said second chamber and movable with said valve assembly to a first position closing off communication between said first and second chambers and to a second position closing off communication between said second and third chambers; spring means acting between said housing and said valve assembly and tending to urge said valve assembly into said first position; said valve assembly further including a piston received within said drain passage; said housing having a second drain passage leading from said fourth chamber externally of said housing and adapted for coupling to an external drain; a second valve assembly slidably mounted within said fourth and fifth chambers; said second valve assembly including a valve closure element received within said fourth chamber and movable with said valve assembly to and from a given position closing off communication between said fourth and fifth chambers; said second valve assembly further including a piston received within said second drain passage; spring means acting between said housing and said second valve assembly and tending to urge said second valve assembly into said given position; said housing having a water inlet passage opening into said second chamber and adapted to be connected to a water source; said housing having a water outlet passage leading out of said fourth chamber; said housing having a second passage communicating between said first chamber and said fourth chamber; said housing having a third passage leading from said third chamber externally of said valve, said third passage extending around said fifth chamber and adapted for connection to one end of a water softening tank, said fifth chamber opening externally of said valve and adapted for connection to the other end of the water softening tank, said housing having a venturi passage leading from said first chamber to said fifth chamber, and a brine supply passage opening into said venturi passage, a pair of poppet valves each mounted in a respective one of said pistons and controlling flow from said third and fourth chambers into said drain passages.

3,348,575
HYDRAULICALLY ACTUATABLE FLUID COUPLING
Frank J. Simak, Hickory Hills, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 480,056
8 Claims. (Cl. 137—614.05)



8. A fluid coupling for connecting together the ends of first and second pressure conduits, comprising: a male coupling member having a valve body, a bore within said body, having first and second ends,
means in said body providing a valve seat at said second end of said bore defining a fluid opening,
a male check poppet slidably movable within said bore in first and second directions toward and away from said first end of said bore to block said fluid opening upon movement in said second direction and to unlock said fluid opening upon movement in said first direction away from said valve seat,
resilient means within said bore to bias said check poppet in said second direction against said valve seat; said check poppet having a snout at one end thereof proximate said valve seat,
and a female coupling member having a female body, a bore within said female body having first and second ends, said second end of said male bore adapted to mate within said first end of said female bore; a cylinder slidably mounted on said female body for sliding movement of said female body therein,
means on said female body cooperable with said cylinder to provide first and second limits of movement of said cylinder relative to said female body,
resilient means biasing said cyilnder toward its first limit of movement,
locking means cooperable between said cylinder and said male body to effect locking engagement of said male coupling member with said cylinder of said female coupling member,
means providing said female bore with a valve seat therein, a pressure balanced check poppet within said bore having a snout extending in a first direction toward said first end of said bore, said check poppet being slidably positioned within said bore and adapted for movement in first and second directions toward and away from said valve seat to close and open communication through said bore,
resilient means within said bore biasing said check poppet in said first direction against said valve seat,
said male and female coupling members being releasably coupled by inserting said male member into said female coupling member, the snout of said male poppet being adapted to engage said snout of said female check poppet, said female check poppet being movable in said second direction with a minimum of manual force to open communication between said first and second fluid chambers,
and means in said bore of said female coupling to limit movement of said female check poppet in said second direction,
whereby after movement of said female check poppet to the limit of its movement in said second direction, additional force to engage said male and female couplings effects a relative sliding movement of said cylinder toward its second limit of movement on said body a distance sufficient to permit locking engagement of said male valve body and said female cylinder, and hydraulic means to move said female body portion and said female check poppet in said first direction relative to said cylinder to said cylinder's first limit of movement to unseat said male check poppet.

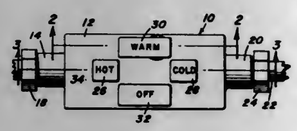
3,348,576
FLUID FLOW CONTROL DEVICE AND MECHANISMS EMBODYING THE SAME
Nathan Ackerman, Lake Success, N.Y. (% Sandex, Inc., 678 Berriman St., Brooklyn, N.Y. 11208)
Filed Apr. 7, 1964, Ser. No. 358,032
3 Claims. (Cl. 137—625.43)



1. A flow control device comprising:
(A) a cylinder body,
(B) a piston body axially slidable in said cylinder body,
(1) said piston body being hollow to provide a path for flow of fluid controlled by the device,
(2) said hollow interior being fully exposed to said fluid,
(C) an annular space between facing portions of the piston body and the cylinder body,
(D) an annular groove on the interior surface of the cylinder body between the ends thereof,
(E) an annular groove on the exterior surface of the piston body between the ends thereof,
(F) said grooves running transversely to the direction of movement to the piston body,
(G) said grooves being parallel and opposed and having their mouths facing one another,
(H) a control O-ring received in both grooves and spanning the space between the mouths of the grooves,
(I) a body flow first passageway in the cylinder body leading to the groove in the cylinder body,
(J) a pair of body flow second passageways in the piston body leading to different ends of the groove in the piston body,
(K) a surface flow third passageway leading to the mouths of both said grooves at only one side thereof,
(L) a surface flow fourth passageway leading to the mouths of both said grooves at only the other side thereof,
(M) there being no structural elements within the piston body to effect any control over the flow of fluid through the passageways,
(N) the body flow second passageway in the piston body leading from the groove in the piston body to the hollow interior of the piston body,
(O) said piston body and said cylinder body being relatively movable between two extreme positions,
(P) the grooves and the control member being so proportioned that

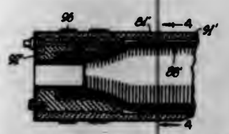
(1) when the bodies are relatively moved in one direction to one extreme position the control member is squeezed between one diagonally opposite set of corners of the mouths of said grooves
  (a) to seal the body flow first passageway from the surface flow third passageway,
  (b) to seal the body flow second passageway from the surface flow fourth passageway,
  (c) to open a space past the control member connecting the body flow first passageway to the surface flow fourth passageway, and
  (d) to open a second space past the control member,
    (i) said second space being unconnected to the first space and
    (ii) connecting the body flow second passageway to the surface flow third passageway, and that
(2) when the bodies are relatively moved in the opposite direction to the other extreme position the control number is squeezed between the other diagonally opposite set of corners of the mouths of said grooves
  (a) to seal the body flow first passageway from the surface flow fourth passageway,
  (b) to seal the body flow second passageway from the surface flow third passageway,
  (c) to open a space past the control member connecting the body flow first passageway to the surface flow third passageway, and
  (d) to open a second space past the control member,
    (i) this second space being unconnected to the last mentioned first space and
    (ii) connecting the body flow second passageway to the surface flow fourth passageway.

3,348,577
PUSH BUTTON FAUCET
Richard P. Miller, 7222 Shannon Road, and Berton G. Miller, 2010 Eastern Ave., both of Verona, Pa. 15147
Filed Dec. 2, 1965, Ser. No. 511,170
5 Claims. (Cl. 137—637.1)



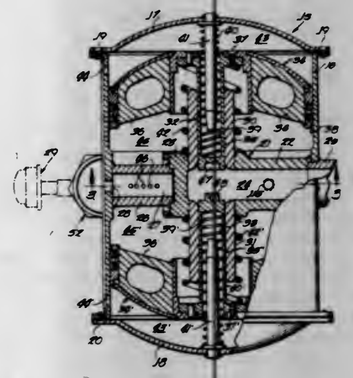
1. A faucet construction for use in discharging hot and cold water or a mixture thereof from a spigot comprising a body having an adapter for connection with a hot water supply line and an adapter for connection with a cold water supply line, a hot water inlet valve, associated with the adapter for controlling flow of hot water, a cold water inlet valve, associated with the adapter for controlling flow of cold water, each of said valves having a stem connected thereto, a push button member engaged with the hot water inlet valve stem, a push button member engaged with the cold water valve inlet stem, each push button member including a cam for moving the stems upon inward movement of the push button members, and means returning the push button members to an inoperative position, each cam and push button member being of one-piece construction with the cam being a longitudinal inclined surface on the push button member.

3,348,578
PRESSURE VESSELS
Jean Mercier, 1185 Park Ave., New York, N.Y. 10028
Original application Sept. 2, 1959, Ser. No. 837,693, and Apr. 26, 1963, Ser. No. 275,847. Divided and this application Nov. 22, 1965, Ser. No. 508,901
4 Claims. (Cl. 138—30)



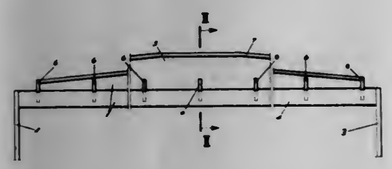
1. A pressure vessel comprising a tubular casing for two fluids under pressure, a hollow elongated core in said casing extending the length thereof, said core comprising an elongated coil spring having tightly wound convolutions, an elongated sleeve of deformable resilient material positioned in said casing encompassing said core, said sleeve defining a chamber on each side thereof to separate the fluids in said casing, said core and said casing having circular ends, means securely retaining said ends in fixed position and clamping the respective ends of said sleeve therebetween, said core being oval shaped between its ends, said resilient sleeve being normally slightly stretched on said core.

3,348,579
SELF-ADJUSTING PULSATING FLUID PRESSURE DAMPING ACCUMULATOR
John F. Swift, Chicago, and Ralph E. Wallace, Elmhurst, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 26, 1965, Ser. No. 443,037
13 Claims. (Cl. 138—31)



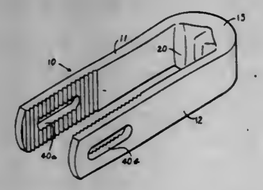
9. A fluid pressure accumulator for damping pressure pulsations in a hydraulic pressure line having a variable mean pressure value comprising in combination a casing, a first elastic fluid piston connected to a first hydraulic piston forming a first compound piston axially slidable in said casing, opposing first spring means disposed in said casing adapted to urge said first compound piston axially toward a predetermined first position, a second elastic fluid piston connected to a second hydraulic piston forming a second compound piston axially slidable in said casing, opposing second spring means disposed in said casing adapted to urge said second compound piston axially toward a predetermined second position, said first compound piston being in axial alignment with respect to said second compound piston, a first elastic fluid compression chamber positioned outboardly to urge resiliently said first compound piston inwardly toward said second compound piston, a second elastic fluid compression chamber positioned outboardly to urge resiliently said second compound piston inwardly toward said first compound piston, and a hydraulic chamber communicatively connected to said hydraulic pressure line and positioned inboardly to urge each of said compound pistons outwardly whereby said compound pistons oscillate in opposed relation substantially in resonance with said pulsations thereby damping said pulsations and minimizing vibrations of said casing.

3,348,580
FRAME STAVE FOR A HEDDLE FRAME
Bernhard R. Koch, Horgenberg, Switzerland, assignor to Grob & Co. AG., Horgen, Switzerland
Filed Oct. 14, 1965, Ser. No. 495,791
Claims priority, application Switzerland, May 12, 1965, 6,629/65
5 Claims. (Cl. 139—91)



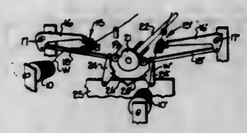
1. A frame stave for a heddle frame, said frame stave comprising:
  a hollow profile section of completely closed and uninterrupted wall structure extending longitudinally of the frame stave, said hollow profile section having an oblate section and elongated form with top and bottm edge wall portions;
  a span-shaped reinforcing web section spanning one of said edge wall portions and extending longitudinally of the frame stave, said reinforcing web being secured along one edge to an edge wall portion of the hollow oblate profile section.

3,348,581
PLASTIC LUG STRAP
Coyt E. Murray, Gastonia, N.C., assignor to Future Plastics, Incorporated, Gastonia, N.C., a corporation of North Carolina
Filed Apr. 26, 1965, Ser. No. 450,918
2 Claims. (Cl. 139—153)



1. A lug strap comprising a pair of spaced legs and an enthickened web interconnecting corresponding ends of the legs and formed from high molecular weight polyethylene having a molecular weight of at least 1,000,000, and the molecular chains in said high molecular weight polyethylene web extending in a direction parallel to said legs, thus increasing the strength of said web.

3,348,582
WEFT YARN BRAKE FOR SULZER LOOM
Grover J. Brookshire, Blue Ridge Road, Black Mountain, N.C. 28711
Filed Sept. 27, 1965, Ser. No. 490,432
1 Claim. (Cl. 139—194)

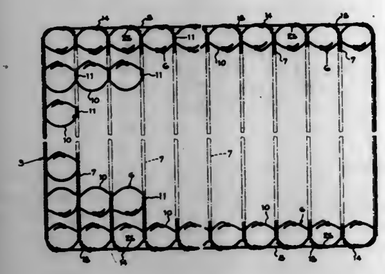


In a Sulzer loom having means for periodically withdrawing weft yarn from a supply spool and carrying the weft yarn across the loom, a brake operating level, and cam controlled means for reciprocating one end of said operating lever in timed relationship to the periodic withdrawal of the weft yarn, the combination therewith of an improved weft brake comprising:
  (a) a first brake element supported adjacent the path of travel of the weft yarn as it is withdrawn from the supply spool, said first brake element including
    (1) a support bracket,
    (2) a resilient pad fixed on said support bracket,
    (3) a wear-resistant brake pad fixed on said resilient pad, and
    (4) yarn guide means positioned closely adjacent opposite sides of said brake pad for guiding the weft yarn across said brake pad, and
  (b) a second brake element including:
    (1) a support bracket carried by said one end of the said reciprocating brake operating lever,
    (2) a resilient pad fixed on said support bracket, and
    (3) a wear-resistant brake pad fixed on said resilient pad and aligned with the brake paid of said first brake element to move into and out of engagement therewith in timed relationship to withdrawal of the weft yarn to thereby clamp and release the weft yarn, and
  (c) the resilient pad of one of said brake elements being formed of a much more yieldably material than the resilient pad of the other brake element.

3,348,583
METHOD OF FABRICATING COIL SPRING UNITS
Clifford Goldmeyer, Cincinnati, and Thomas J. Dull, Fairfield, Ohio, assignors to The J. R. Greeno Company, Cincinnati, Ohio, a corporation of Ohio
Application Oct. 2, 1964, Ser. No. 401,092, which is a division of application Ser. No. 339,638, Jan. 23, 1964, now Patent No. 3,316,944. Divided and this application Sept. 13, 1965, Ser. No. 495,747
4 Claims. (Cl. 140—92.4)

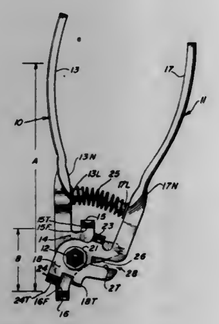
1. The method of assembling a coil spring unit having rows of vertically disposed coil springs, each row of coil springs including terminals adjoining one another, said spring unit having a border wire extending about the periphery of the spring unit in adjoining relationship to the terminals of the marginal coil springs, said method comprising:
  placing said coil springs in adjacent parallel rows extending across the spring unit, with the terminals of said coil springs in adjoining relationship to one another, and with the terminals of the marginal coil springs in adjoining relationship with the said border wire;
  threading respective helicals about the terminals of the rows of coil springs, thereby joining said rows of terminals to one another, with an end portion of each helical projecting beyond the border wire at opposite sides of the spring unit;

wrapping the projecting end portion of each helical about the marginal terminals and border wire of the spring unit;
and tightening the wrapped portion of the helical to



provide a clamping engagement between the adjoining portions of the border wire and terminal, thereby to secure the marginal terminals to the border wire and to lock the helical against longitudinal displacement with respect to the spring unit.

3,348,584
METHOD OF TENSIONING STRAP AND TOOL THEREFOR
John R. Beach, Elmhurst, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,224
17 Claims. (Cl. 140—93.2)



1. A tool for tensioning a strap loop having opposite strap ends movably threaded through a buckle, said tool comprising an elongated rigid body having a hand grip portion at one end for application or manual force and having a pair of spaced gripping jaws mounted at the other end to engage spaced regions of one of said strap ends at locations flanking the buckle for drawing said one strap end through the buckle by fulcruming the remote one of said jaws against the strap to translate the applied force moment with a mechanical advantage determined substantially by the ratio of the distance between the hand grip portion and the remote one of said gripping jaws to the distance between said gripping jaws, a clamp rockable on said other end of said body to swing between an open position and a closed position and having a pair of complementally spaced jaws, each individually associated with a separate one of said gripping jaws, said clamping jaws being concurrently cooperable with the gripping jaws to pinch each of the said spaced strap regions when the clamp is in closed position and to release the strap when the clamp is in open position, resiliently yieldable means reacting between said body and clamp normally to bias said clamp to one of said positions, and means for rocking said clamp to the other of said positions.

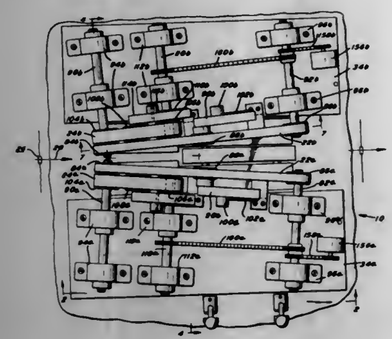
3,348,585
METHOD OF MAKING INDUSTRIAL BELTS WITH STRENGTH WIRE MEMBERS THEREIN AND APPARATUS FOR STRAIGHTENING AND TENSIONING SUCH STRENGTH WIRE MEMBERS
Hermann Post and Friedrich-Wilhelm Weigel, Hannover, Germany, assignors to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed May 20, 1964, Ser. No. 368,861
Claims priority, application Germany, May 28, 1963, C 30,102
3 Claims. (Cl. 140—147)



1. A method of making industrial belts of rubber material having embedded therein longitudinally extending approximately parallel strength wire members of ferro-magnetic material, especially single wires, stranded wires, and cables, which includes the steps of: in a continuous manner mechanically pulling the wire strength members in approximately parallel and laterally spaced arrangement to each other and in the longitudinal direction thereof over a stationary support while simultaneously magnetically pulling each strength wire member against said support so as to maintain said strength wire members parallel to each other at the respective desired lateral spacing and at the same time exerting braking force thereon relative to the pulling force exerted upon the wire strength members in the longitudinal direction thereof, and in a continuous manner applying rubber material upon those respective portions of said strength wire members which have left said support.

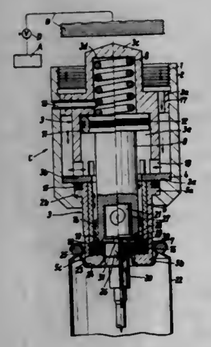
3,348,586
LEAD STRAIGHTENING MACHINE
Ruffner Campbell and William L. Hayes, Jr., Boone, N.C., assignors to International Resistance Company, Philadelphia, Pa.
Filed Oct. 22, 1965, Ser. No. 501,202
8 Claims. (Cl. 140—147)

1. A machine for straightening the terminal leads of an electrical component of the type having a cylindrical body portion and terminal lead wires extending longitudinally from the ends of the body portion comprising:
a pair of lead straightening plates lying in the same horizontal plane and having adjacent straight edges in spaced parallel relation,
each of said lead straightening plates having a lead straightening portion extending from the entrance end of the plate and a lead aligning portion extending from the straightening portion to the exit end of the plate,
the width of said straightening portions tapering outwardly from a narrowest entrance end, the aligning portions being of uniform width and tapering away from each other from the widest end of the straightening portions;
a platform mounted between and extending along the aligning portions of the lead straightening plates,
said platform having a horizontal top surface which is vertically above the top surfaces of the lead straightening plates;



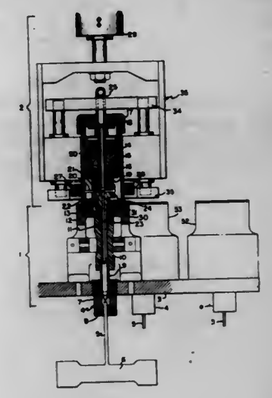
a separate endless belt extending over the top surface of each of the lead straightening plates,
each of said belts having a portion juxtaposed to and extending completely along the top surface of its respective lead straightening plate; and
means for driving said endless belts so that the portions of the belts juxtaposed to the straightening plates move from the entrance ends of the straightening plate to the exit ends thereof.

3,348,587
FILLING APPARATUS FOR AEROSOL PACKAGES
Hans Grothoff, Valbert, Westphalia, Germany, assignor to Spritztechnik G.m.b.H., Valbert, Westphalia, Germany
Filed Apr. 7, 1965, Ser. No. 446,158
Claims priority, application Germany, Apr. 14, 1964, S 90,519
15 Claims. (Cl. 141—20)



9. An apparatus for admitting a compressed fluid, particularly a compressed propellant, through the valve of an aerosol package, comprising a source of compressed fluid; a filling head having a nozzle provided with an open end; an annular valve seat mounted in said open end; a valve member received with clearance in said nozzle and including a front end portion reciprocable in the axial direction of said nozzle; a piston rigid with said front end portion; means for biasing said front end portion into sealing engagement with said valve seat; and means including a passage provided in said filling head and terminating at said seat, said passage being arranged to admit compressed fluid from said source between said valve member and said nozzle intermediate said piston and said valve seat at such pressure that the fluid overcomes the bias upon said front end portion and the front end portion moves away from said valve seat to permit escape of fluid from said passage and through the valve seat.

3,348,588
MERCURY DISPENSER
Ronald D. Ayotte, Salem Depot, N.H., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 24, 1964, Ser. No. 362,351
8 Claims. (Cl. 141—61)

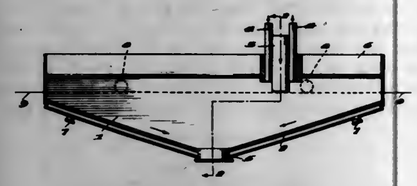


1. A mercury dispenser for filling electric discharge devices comprising: a single dispensing head containing a mercury reservoir demountably disposed over a plurality of machine heads disposed upon radial arms of a rotary exhaust machine, each of said machine heads being adapted to be indexed beneath said dispenser head, said machine head including gasket means disposed therein; means for forming a temporary seal between said dispensing head and one of said gasket means; means for holding an arc tube within each of said machine heads; means for transferring a predetermined quantity of mercury from said reservoir to said arc tube held by the machine head which is temporarily sealed to said dispensing head; means for moving said dispenser head vertically with respect to said one machine head; whereby said temporary seal is formed by forcing said dispenser head upon said gasket means.

3,348,589
PNEUMATIC LOADING APPARATUS
Werner Krauss, Hamburg, Germany, assignor to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed Mar. 10, 1965, Ser. No. 438,648
Claims priority, application Germany, Mar. 10, 1964 P 33,802
7 Claims. (Cl. 141—284)

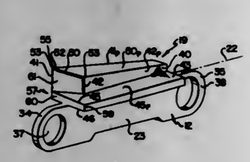
1. Loading apparatus for conveying a pulverulent or granular material to a receiver, said loading apparatus

comprising a movable housing having an outlet adapted to be aligned with said receiver, stationary means for delivering material to said housing, means mounting said housing for substantially horizontal reciprocation relative to said stationary means to position said outlet in alignment with the receiver, conveying means in said housing



for delivering material to said outlet from horizontally remote portions of said housing and means for sealing between said stationary delivering means and said movable housing, to close the housing from the surrounding atmosphere.

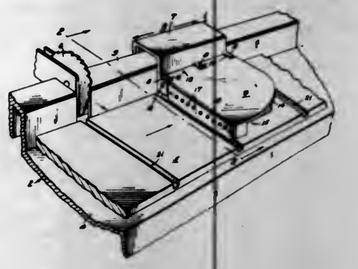
3,348,590
CHAIN SAWS
Henry L. Grunewald, Prince George, British Columbia, Canada, assignor of one-half to Roderick R. H. MacLeod, North Surrey, British Columbia, Canada
Filed Dec. 21, 1964, Ser. No. 419,635
7 Claims. (Cl. 143—135)



1. A saw chain comprising fore and aft elongated right and left L-shaped cutter teeth, each tooth having a vertical leg having upper, outer and inner cutting edges at its forward end, said vertical legs of the teeth being spaced outwardly on opposite sides of the medial plane of the chain so that said vertical legs cut spaced apart grooves in wood as the saw chain is drawn therethrough leaving an elongated tongue of wood between the grooves, each of said teeth having a horizontal leg extending inwardly over said medial plane, said horizontal legs having forward transverse cutting edges to cut the outer edge of the tongue.

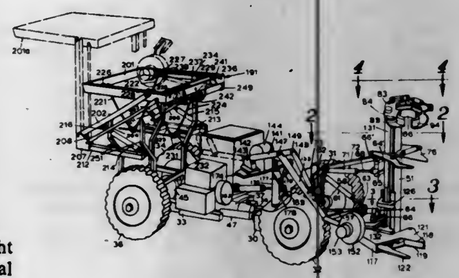
3,348,591
SAW GUIDE ASSEMBLY
Julio B. Carrasco, 381 Sherbundy St., Sierra Vista, Ariz. 85635
Filed Oct. 8, 1965, Ser. No. 494,286
4 Claims. (Cl. 143—168)

1. A saw guide assembly for use with a radial sawing machine including a guide strip, a flat table and a circular saw blade; said assembly comprising a sliding member adapted for slidable engagement on said guide strip; a flat substantially rectangular plate having a work engaging edge, there being an undercut portion along an inner corner of said plate for gripping said plate by the fingers of an operator for raising said plate from said plate; hinge means connecting said plate to said sliding member; a work abutting member secured to said work engaging edge of said plate and adjustable means carried by said sliding



member for holding said assembly against sliding movement along said guide strip.

3,348,592
TIMBER HARVESTING MACHINE
Robert A. Winblad, Cincinnati, and Roland W. Wagner, Sharonville, Ohio, assignors, by direct and mesne assignments, to The Cincinnati Milling Machine Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 4, 1965, Ser. No. 477,254
17 Claims. (Cl. 144—3)

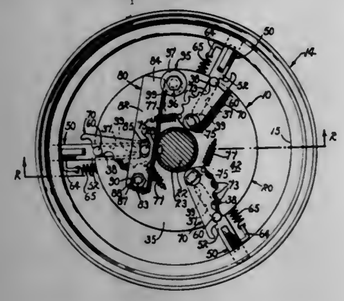


1. A timber harvesting apparatus comprising a self-propelled vehicle for supporting and conveying a vertical timber harvesting device through a timber stand, said device including a single cut-off unit for severing the trunk of a tree at its base and also at successive locations along the trunk to provide bolts of the desired length, means on the cut-off unit to grip the tree and effect its descent in a vertical direction, and a delimbing unit encircling the trunk of the tree in vertical spaced relation above said cut-off unit for removing the limbs from each trunk section before it is severed from the tree.

3,348,593
CLAMPING APPARATUS FOR OPEN CENTER TIRE RIMS
Eugene W. Turpin, 66 N. Academy, Sanger, Calif. 93657
Filed Aug. 16, 1965, Ser. No. 480,044
10 Claims. (Cl. 144—288)

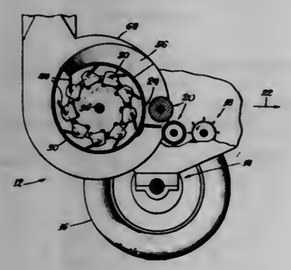
1. A clamping apparatus for supporting open center tire rims during tire mounting and dismounting operations comprising a support member adapted to be loosely received within such a rim, rim engaging means mounted

on the support member for controlled extension and retraction relative thereto, adjusting means borne by the support member engageable with said rim engaging means for preliminarily positioning the rim engaging means out-



wardly from the support member against the rim, and lock means borne by the support member manipulatable farther to extend said adjusting means outwardly from said preliminary position to tighten and to hold said rim engaging means in clamping relation against the rim.

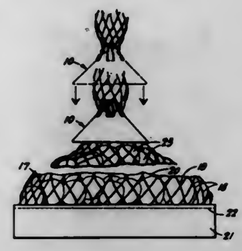
3,348,594
FORAGE HARVESTER
Manfried L. Hoch, Lockport, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 3, 1965, Ser. No. 484,830
12 Claims. (Cl. 146—107)



1. A combination cutter head and blower unit comprising, a housing, a cutter head and a blower operatively mounted in the housing, the housing having an entrance opening to the cutter head and an exit opening from the blower, the cutter head being operative for cutting plants received through said entrance opening, the housing comprising means for deflecting cut plant particles from the cutter head to the blower in a direction containing a large component of the direction of rotation of the blower.

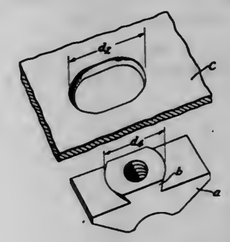
3,348,595
BAG CLOSURE STRUCTURE
Peter P. Stevens, Jr., Point Reyes Station, Calif., assignor to Walter Landor, San Francisco, Calif.
Filed Mar. 15, 1967, Ser. No. 623,437
15 Claims. (Cl. 150—3)

1. A bag closure, comprising a main body part having side wall structure converging inwardly from a relatively large mouth to a smaller neck dimension to pass a gathered section of a bag or the like therethrough, and bag-engaging gripper structure extending from said neck and being effective to permit relative movement between said bag closure and such bag section in one direction and to prevent relative movement therebetween in the opposite direction, said main body part being invertible to enable the direction of permissible relatve movement be-



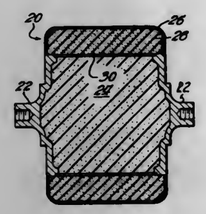
tween said bag closure and such bag section to be selectively reversed while such bag section is extended through said neck, whereby said bag closure is adjustably positionable along such bag section and defines a releasable closure therefor.

3,348,596
NUTS ESPECIALLY ADAPTED FOR THIN-WALL MOUNTING
Kajetan Leitner, 8939 Waal 187, Germany
Filed Feb. 23, 1965, Ser. No. 434,332
3 Claims. (Cl. 151—41.73)



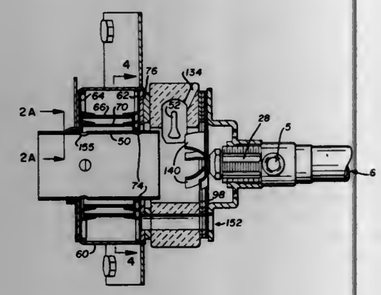
1. A nut in combination with a carrier part having an elongated aperture therein, said nut having an internally threaded bore adapted for receiving a coupling member which is to extend through the aperture of said part, said nut comprising an elongated base having a flat surface of a lengthwise dimension sufficient for spanning the maximum dimension of said aperture and being formed with tapered lengthwise extremities, and a generally oblong collar coaxial with said bore and having its maximum lateral dimension extending in the same direction as the maximum lateral dimension of said base, the collar having a pair of opposed, substantially flat side portions being spaced apart a distance less than the minimum dimension of said aperture and having diagonal dimensions in a plane normal to the axis of said bore greater than the minimum dimension of said aperture to be spanned by the base, said collar being partially frusto-conical with its larger diameter more remote from the base and with its smaller diameter lying in the plane of said flat surface, the collar being axially insertable into said aperture whereby subsequent rotation of the nut to turn the collar in the aperture effects radial deformation by cutting into the part and providing locking engagement of the nut therein.

3,348,597
VEHICLE TIRE
Eugene P. Goldberg, Highland Park, Ill., and Carl V. von Linsowe, Portland, Oreg., assignors to Borg-Warner Corporation, a corporation of Illinois
Filed June 17, 1965, Ser. No. 464,774
1 Claim. (Cl. 152—323)



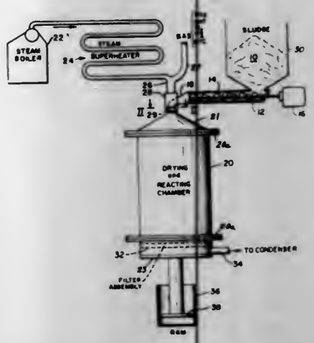
A generally cylindrical, puncture-proof vehicle tire for an amphibious vehicle comprised of a polyurethane rubber casing and a polyurethane foam interior, said foam interior consisting of concentric inner and outer cellular foam layers, said inner foam layer having a density of between one and three pounds per cubic foot and said outer cellular foam layer having a density of from three to five pounds per cubic foot, said inner and outer foam layers being separated from each other by a cylindrical sheet of plastic or metal.

3,348,598
BURNER AND ITS OPERATION
Milan Momchilovich, Akron, and Wallace F. Rhodes, Stow, Ohio, assignors to The Falls Stamping and Welding Company, Cuyahoga Falls, Ohio, a corporation of Ohio
Filed Mar. 8, 1965, Ser. No. 437,702
20 Claims. (Cl. 158—4)



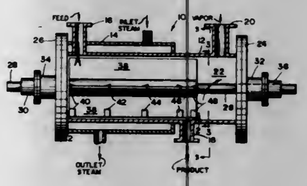
1. An oil burner which includes:
an oil inlet,
a primary air inlet,
means for producing a conical spray of the oil in the air and a passage for the spray leading therefrom,
electrodes in the passage to ignite the oil in the spray,
screen means located so as to be contacted by the spray and heated to incandescence from partial combustion of the oil in the spray, said screen means surrounding the passage and separating it from a chamber exterior of the passage which is closed exteriorly of the screen means except for an inlet for secondary air, and
means for conducting secondary air into said exterior chamber.

3,348,599
APPARATUS FOR DEWATERING AND DEHYDRATING SLIMES AND THE LIKE
John E. Lohstoeter and John L. Young, Pittsburgh, Pa., assignors to Scientism Laboratories, Pittsburgh, Pa.
Filed Apr. 3, 1964, Ser. No. 357,245
2 Claims. (Cl. 159—2)



1. Apparatus for drying sludge, comprising a drying chamber having a top portion including means for extruding the sludge in ribbons while superheated steam is introduced along said ribbons into said chamber so as to surface-dry said ribbons as they fall to form particles on the bottom portion of said chamber, a filter at the bottom portion of said chamber on which the falling particles are collected and supported, and a condenser connected to the bottom portion of said chamber below said filter so that superheated steam is passed through the filter and supported layer of sludge.

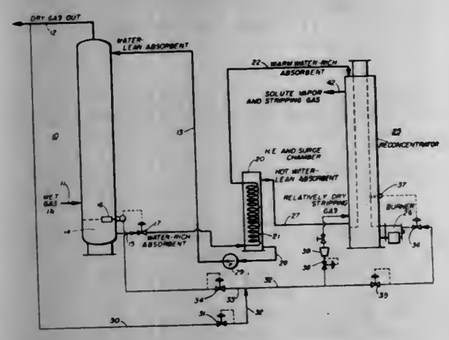
3,348,600
THIN-FILM-TYPE FLUID PROCESSING APPARATUS
Leo J. Monty, Reading, Mass., assignor to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Aug. 5, 1966, Ser. No. 570,462
10 Claims. (Cl. 159—6)



1. A fluid processing apparatus of the rotary, thin film type which apparatus comprises in combination:
(a) a closed chamber characterized by an interior wall defining a surface of revolution;
(b) a rotor within the chamber;
(c) means to rotate the rotor;
(d) rotor blades secured to the rotor for rotation therewith, the blades generally radially and coaxially arranged from the rotor, and extending into a close non-contacting relationship with the interior wall of the chamber to form a small space between the edge of the blades and the interior wall during rotation of the rotor blades;
(e) an inlet means at one end in the chamber for the introduction of material to be processed;

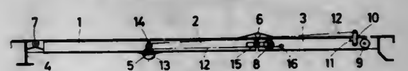
(f) outlet means in the chamber axially spaced apart from the inlet means for the removal of processed material from the chamber; and
(g) means to control the flow of the material in the apparatus, which means includes at least one raised projection, the projection lying entirely on the leading or advancing face of the blades with reference to the direction of rotation of the rotor blades, the projection being substantially flush with the peripheral edge of the blade and extending radially inwardly a predetermined distance, the projection having its surface contoured to impart an axial vector component to the material being processed.

3,348,601
MEANS FOR RECONCENTRATING LIQUID ABSORBENT
Ernest C. Hill, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,767
1 Claim. (Cl. 159—13)



An absorbent reconcentrator comprising,
a vessel shell extended vertically, heat exchange structure mounted in the upper portion of the vessel and connected to a source of absorbent which has absorbed a solute which is to be removed, the exchange structure arranged to bring the solute-rich absorbent into indirect heat exchange with vapors flowing up the vessel shell,
means for discharging the rich absorbent from the heat exchange structure and above a lower portion of the vessel and distributing the rich absorbent over a cross section of the lower portion for flow of the liquid down the length of this lower portion of the vessel shell,
a discharge outlet for the absorbent at the lower portion of the vessel shell,
a fired tube extending up along the axis of the lower portion of the vessel shell in indirect heat exchange relation with the down-flowing solute-rich absorbent discharged from the heat exchange structure so as to transmit heat into the absorbent all along its downward flow path,
a discharge stack for the fired tube extending up the upper portion of the vessel and insulated from the upper portion so as not to heat the heat exchange structure and vapors flowing up the upper portion,
thermal responsive means for the tube firing responsive to the temeprature of the absorbent flowing down the lower portion of the vessel shell,
combustible gas flow, valve control means regulated by the thermal responsive means,
means for introducing stripping gas, under-saturated with respect to water vapor, into the lower portion of the vessel shell which flows upward countercurrent to absorbent and concurrent with solute vapors and into the upper portion where absorbent is condensed and from which solute vapors and stripping gas are discharged to atmosphere,
and packing material in the lower portion of the shell between the fired tube and the inside wall of the shell to further intimate contact between the stripping gas and heated descending less solute-rich absorbent and in the upper portion of the shell to further intimate contact between the ascending vapors and the descending more solute-rich absorbent condensate.

3,348,602
HATCH COVERS
Johan Bertil Olsson, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Jan. 17, 1966, Ser. No. 520,988
Claims priority, application Sweden, Jan. 30. 1965, 1,271/65
3 Claims. (Cl. 160—188)



1. In a multisection hatch cover; a first, second and third sections adapted to cooperate with a coaming surrounding a hatch opening and provided with roller tracks for wheels carrying the sections during opening and closing movements;
first and second folding hinges interconnecting said sections;
swinging hinge means connecting the first section with one transverse side of the coaming;
a flexible member disposed at a longitudinal side of the coaming having a minimal length essentially corresponding to the breadth of the third section plus twice the beadth of the second section;
first attachment means attaching one end of said flexible member to the third section close by that end thereof which is remote from the swinging hinge at the coaming;
second attachment means attaching the other end of the flexible member to the pertaining longitudinal side of the coaming at a position which, when the cover is in closed position, is located outside the folding hinge between the second and third sections counting from the swinging hinge;
first and second pulleys arranged on the second section at each end of its pertaining longitudinal side, said first and second pulleys being adapted to receive and to guide the flexible member which from the attachment at the third section first runs inwards to the joint between the first and second sections and from thence outwards again to the attachment at the coaming.

3,348,603
MOVABLE PANEL SUPPORTS
James A. Ford, Sturgis, Mich., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan
Filed Sept. 23, 1965, Ser. No. 489,604
16 Claims. (Cl. 160—197)

1. A movable panel assembly comprising:
an elongated horizontal track having a plurality of lengthwise extending, substantially parallel, downwardly opening passageways, said track having at lease one lengthwise extending, laterally projecting flange adjacent each passageway;

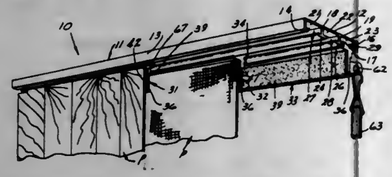
elongated carrier means extending into said passageways and having a length less than the length of said passageways, each carrier means having laterally projecting support means adjacent its upper end disposed above and movably engaging said flange so that said carrier means hangs downwardly from and can move lengthwise along said track;

said carrier means including a body portion disposed below said support means and hanging below said track, said body portion having a front mounting surface thereon;

a flat front panel fixedly mounted on said track adjacent one end thereof and hanging downwardly therefrom;

a plurality of further flat panels disposed behind said front panel and respectively connected to said carrier means for movement therewith lengthwise of said track;

fastening means connected to said body portion at the mounting surface thereof whereby said further flat panels can be releasably fastened to said carrier means;



means secured to said carrier means and located below said track for causing sequential movement of said further panels in response to movement of one of said further panels toward the other end of said track, said means including blocking means mounted on the rear side of said body portion below said support means and adjacent one longitudinal end of said carrier means and abutment means mounted on the front side of said body portion below said support means adjacent the other longitudinal end of said carrier means, said further panels being movable for a limited distance longitudinally with respect to each other and with respect to the adjacent forward panel toward the other end of the track, said relative movement between adjacent panels being limited by abutment of the abutment means of one further panel with the blocking means of an adjacent panel, said abutment means and blocking means coacting to establish a predetermined minimum overlap between adjacent panels; and

stop means coacting between adjacent panels for laterally aligning said further panels directly behind said front panel and preventing movement of said panels beyond said one end of said track, said stop means causing one vertical edge of said further panels to be directly laterally aligned behind the corresponding vertical edge of said front panel.

3,348,604

WINDOW SHADES AND SHADE ROLLERS

John E. Gallagher, Flossmoor, Orin N. Crider, Chicago Heights, and Bryson McCulloch, Flossmoor, Ill., assignors to Slick Industrial Company, Chicago Heights, Ill., a corporation of Delaware

Application Oct. 31, 1963, Ser. No. 320,274, now Patent No. 3,274,676, dated Sept. 27, 1966, which is a continuation of application Ser. No. 197,185, May 21, 1962. Divided and this application May 20, 1966, Ser. No. 576,774

8 Claims. (Cl. 160—313)

1. A shade comprising: a plastic outer tube; a shade wound thereon; rewinding means for one of said tube, including means by which said tube is supported and spring means in said tube opposing rotation of said tube in a direction to unwind said shade; a rigid, cellular, plastic foam core for said tube extending substantially from



said spring means to the other end of said tube and preventing substantial lengthwise deflection of said tube; and means for the opposite end of the tube for rotatably supporting it.

3,348,605

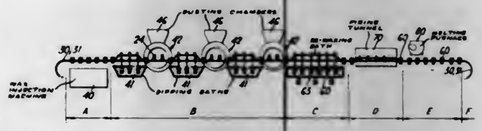
METHOD AND APPARATUS FOR FORMING CAST OBJECTS USING EXPENDABLE PATTERNS

John Aherne Heron, Farnham Royal Lodge, near Slough, England

Continuation of application Ser. No. 331,023, Dec. 16, 1963. This application Aug. 22, 1966, Ser. No. 574,255

Claims priority, application Great Britain, Dec. 19, 1962, 47,967/62; Apr. 19, 1963, 15,632/63

11 Claims. (Cl. 164—26)



6. A method of forming cast objects comprising the steps of (a) making expendable patterns of the objects to be formed, (b) attaching each expendable pattern to a support device, (c) forming an integral shell mould about each said pattern and over the support device, (d) melting out the expendable pattern from each shell mould and fixing the shell moulds while the latter remain attached to the support device, (e) filling the empty, fired shell moulds with molten metal, and (f) removing each shell mould and support device from its cast object after the metal has set.

9. Apparatus for forming cast objects comprising means for making expendable patterns of the objects to be formed, means for attaching each expendable pattern to a support device, means for forming an integral shell mould about each said expendable pattern and over the support device, means for melting out the expendable pattern from each shell mould and for firing the shell moulds while the latter remain attached to the support device, means for filling the empty, fired shell moulds with molten metal, and means for removing each shell mould and support device from its cast object after the metal has set.

3,348,606

MOLDING MACHINE TRANSFER MECHANISM

Edward J. Ptak and Kenneth E. Bellis, Cleveland, and Glenn S. Marks, Euclid, Ohio, assignors to The National Acme Company, a corporation of Ohio

Filed June 15, 1965, Ser. No. 464,067

15 Claims. (Cl. 164—219)

13. A transfer mechanism for use with a mold box comprising, in combination, a frame,

a transfer station on said frame,

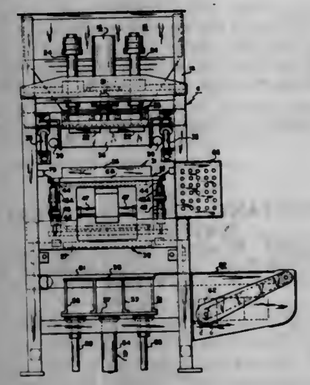
means to introduce molding material into a mold box,

means to present the mold box at said station in a position with the mold therein facing downwardly,

transfer means mounted on said frame beneath said station for movement with a vertical component,

motive means to move said transfer means upwardly from a lower, retracted position to an upper position closely adjacent the mold box at said station,

stripper motive means to eject the mold from a mold box at said station onto said transfer means with a first force,



and means to resist downward movement of said transfer means such that said first force must overcome the resistance to downward movement of said transfer means to thus hold said mold between two opposing forces to positively but carefully eject the mold from a mold box.

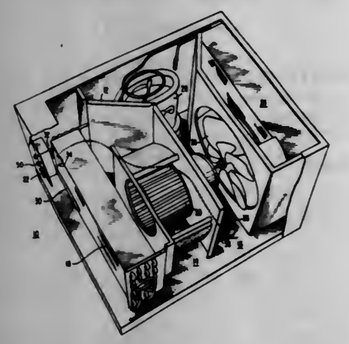
3,348,607

INDOOR-OUTDOOR COMPENSATED THERMOSTAT

Thomas A. Cootey, Rutland, Vt., assignor to Friedrich Refrigerators, Incorporated, San Antonio, Tex., a corporation of Texas

Filed July 13, 1965, Ser. No. 471,607

1 Claim. (Cl. 165—28)



In a heat exchanger having a compartment in communication with an enclosed space and providing a path for returning air to said space and a second compartment positioned externally of said space and providing a path for circulating ambient air therethrough, the improvement comprising: a split bulb thermostat having an indoor-portion positioned in the path of return air and having an outdoor portion positioned in the path of ambient air; a control unit positioned in said first compartment; a single expansible-contractible power element in said unit; a pair of heat exchanger start-stop switches mounted in said unit; a switch actuating linkage pivotally mounted within said unit and connected at one end to said power element and constrained to move between said start-stop switches at the other end, said linkage being connected intermediate the said ends for movement in one direction to a resilient biasing member and for movement in the opposite direction to a resilient member and capillary tubes connecting said indoor portion and said outdoor portion of said split-bulb to the other end of said power element, said indoor portion of said split bulb being proportioned relative to said outdoor portion such that said indoor portion effects approximately 90 percent of the control of said unit.

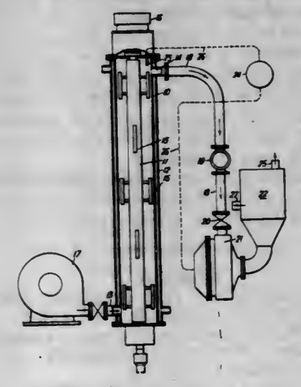
3,348,608

APPARATUS FOR HEAT OR COLD TREATING MATERIAL UNDER PRESSURE

Thomas Sydney Ling, Levenbank, Leven, Fife, and Samuel Wilfred Maxfield, Leven, Fife, Scotland, assignors to George Scott & Son (London) Limited, a British company

Filed Feb. 4, 1966, Ser. No. 525,914

6 Claims. (Cl. 165—40)



1. Apparatus for heat and cold treating material under pressure, the apparatus including a pressure vessel, means for heating and cooling the vessel as desired, an inlet in the pressure vessel for inlet of the material into the vessel, an outlet from the vessel, first pump means for maintaining the pressure in the vessel, the delivery of said pump means being connected to said outlet and the material from the vessel after treatment passing through the pump means in contra-flow to the operation of the pump means, pressure sensitive means within the vessel arranged to control the speed of said pump means and therewith the rate of removal of treated material from the vessel, and second pump means provided for force feeding the material through the inlet into the vessel, the delivery of said second pump means being connected to the pressure vessel inlet.

3,348,609

MULTI-POSITIONAL POWER SUPPLY MODULE AND HEAT EXCHANGE TECHNIQUES

Lester Dubin, Pelham Manor, Maurice G. Paulson, Huntington, and Benjamin Shmurak, Lynbrook, N.Y., assignors to Lambda Electronics Corporation, Melville, N.Y., a corporation of New York

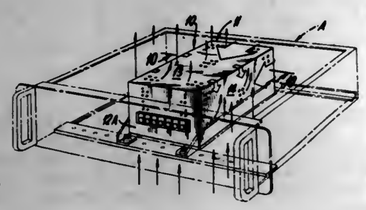
Filed Apr. 29, 1966, Ser. No. 546,222

15 Claims. (Cl. 165—47)

1. A multi-positional power supply module comprising:

(a) heat generating temperature sensitive electronic components, and

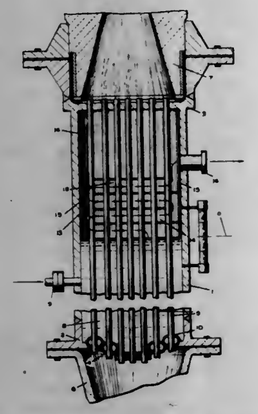
(b) a heat exchanger for said components adapted to serve as at least a partial outer enclosure for said module, said exchanger being formed from heat conductive material and including a central panel, two side panels extending perpendicularly from said central panel along its opposite edges, and a rear panel extending perpendicularly from said central and side panels, said heat generating components being directly thermally coupled in heat conductive relation to said rear panel,



(c) said rear panel being formed from integral flap extensions of said central and side panels bent and arranged in an overlapping heat conductive relationship to thereby provide effective heat conductive paths from said heat generating components directly to said panels, said panels serving as a plurality of orthogonal heat dissipating surfaces permitting operation of said module in a plurality of orientations without the need for derating,

(d) said central and side panels being substantially planar and having a plurality of apertures formed therein for ventilation of said module.

3,348,610
HEAT EXCHANGERS FOR COOLING FRESH CRACKED GASES OR THE LIKE
Fromut Vollhardt, Gottingen, Germany, assignor to Schmidt-sche Heissdampf-Gesellschaft m.b.H., Kassel-Bettenhausen, Germany
Filed Mar. 14, 1966, Ser. No. 534,157
Claims priority, application Germany, June 24, 1965, Sch 37,281
4 Claims. (Cl. 165—158)



1. A heat exchanger for cooling fresh cracked gases or the like comprising a vertical pressure jacket, means for supplying water to the interior of said jacket, tube plates located at the ends of said jacket, a gas inlet head located at the lower end of said jacket and a gas outlet head located at the top of said jacket, the tube plate at the lower end of said jacket comprising step-wise arranged chambers interconnected with each other in gas tight relation, said chambers having openings in the chamber wall communicating with the interior of said pressure jacket, rectilinear heating tubes extending through the interior of said jacket and having their ends fixed to said tube plates, the interior of said pressure jacket being subdivided into a lower water chamber and an upper steam chamber, said jacket having a steam discharge outlet from said steam chamber, guide plates located in said steam chamber above the highest water level forming interconnected sections through which said heating tubes extend so that steam passing through said section to said steam discharge outlet are forced into contact with said heating tubes.

3,348,611
SURFACTANTS FOR OIL RECOVERY BY WATERFLOODS
Joseph Reisberg, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 9, 1965, Ser. No. 470,925
18 Claims. (Cl. 166—9)

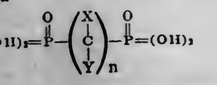
1. An improvement in waterproofing operations for recovering oil from subterranean reservoirs involving the injection of aqueous liquid through at least one injection borehole penetrating said reservoir, forcing said aqueous liquid into said reservoir through said injection borehole, and recovering oil displaced from said reservoir by said aqueous liquid at a location spaced from said injection borehole, said improvement comprising incorporating in at least the initial portion of said aqueous liquid a composition containing both low molecular weight alkyl aryl sulfonates which are water soluble and high molecular weight alkyl aryl sulfonates which are water insoluble, said low molecular weight alkyl aryl sulfonates being present in at least critical micelle concentration with amphiphilic molecules comprising said high molecular weight alkyl aryl sulfonates penetrating into and swelling the micelles, whereby the interfacial tension between said portion of said aqueous liquid containing said mixture and the residual oil in said reservoir is substantially reduced enabling said portion to displace said oil from said reservoir with greater efficiency.

3,348,612
CEMENTING CASING IN OIL-WET WELLS
Joseph U. Messenger, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Sept. 15, 1965, Ser. No. 487,602
13 Claims. (Cl. 166—29)

1. A method of cementing casing in a well penetrating subterranean formations which comprises the steps of:
(a) flowing a slug of liquid having mutual solubility for oil and water through the annular space between said casing and the wall of said well;
(b) flowing through said annular space and emplacing therein a cement slurry between said casing and said wall of said well; and
(c) allowing said cement slurry to set and form an impermeable cement sheath bonding said casing to said wall of said well.

3,348,613
NOVEL ACIDIZING COMPOSITION AND METHOD
Riyad R. Irani, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 19, 1965, Ser. No. 457,181
15 Claims. (Cl. 166—42)

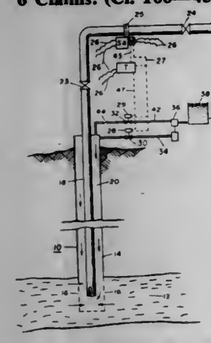
1. For use in the acidizing of wells and in other acidizing operations where iron and like substances are likely to be encountered, an acidizing fluid containing hydrochloric acid and effective inhibiting amounts of an inhibiting agent selected from the group consisting of acids having the formula



wherein n is an integer from 1 to 10, X is selected from the group consisting of hydrogen and lower alkyl groups and Y is selected from the group consisting of hydrogen, hydroxyl and lower alkyl groups, and their water soluble salts.

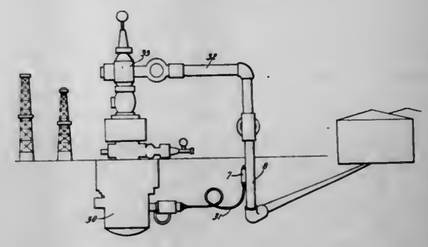
3. In an acidizing operation, the step of applying to the structure to be treated an acidizing fluid containing an inhibiting agent as defined in claim 1.

3,348,614
HYDRATE PREVENTION IN GAS PRODUCTION
James A. Sinclair and Robert A. Fair, Casper, Wyo., assignors to Mobil Oil Corporation, a corporation of New York
Filed June 23, 1965, Ser. No. 466,147
6 Claims. (Cl. 166—45)



6. A method of producing gas from a subterranean formation comprising:
(a) completing a gas well from the surface of the earth into said subterranean formation having a casing with perforations leading into said subterranean formation and having tubing suspended within said casing to provide a continuous annular space communicating with said subterranean formation and said tubing, across which gas from said subterranean formation must flow to be produced through said tubing,
(b) providing conduit communicating with said tubing and containing a multiple-orifice valve actuatable to control production of natural gas,
(c) connecting a stepping actuator to said multiple-orifice valve to actuate said multiple-orifice valve to align the desired flow-controlling section therein to control flow through said conduit and hence through said tubing in response to suitable control functions,
(d) mounting a microswitch adjacent said stepping actuator,
(e) connecting a timer to said microswitch,
(f) connecting a source of freezing point depressant with a pump and connecting said pump through a motor-operated valve to said annular space,
(g) connecting the power end of said pump through a second motor-operated valve and conduit to said annular space whereby gas pressure in said annular space supplies power to operate said pump when said second motor-operated valve is open,
(h) connecting said motor-operated valve and said second motor-operated valve to said microswitch and to said timer,
(i) supplying electrical power to said stepping actuator, said microswitch, and said timer,
(j) imparting a starting control function to start a cycle and to step said stepping actuator thereby opening said multiple-orifice valve to start flow of gas through said tubing, releasing said microswitch, resetting and stopping said timer when running, effecting opening of said motor-operated valve and said second motor-operated valve, and pumping freezing point depressant into said annular space to be admixed with said gas and to be produced through said tubing,
(k) preventing the repositioning of said valves or said stepping actuator when power temporarily fails,
(l) subsequently applying a stopping control function to step said stepping actuator, closing said multiple-orifice valve to stop said flow of gas, depressing said microswitch, and actuating said timer,
(m) continuing to pump freezing point depressant until expiration of said preset predetermined time interval in said timer, thereupon closing said valves, and resetting and shutting off said timer, and
(n) imparting a starting control function to repeat said cycle and start flow of gas containing premixed therewith said freezing point depressant which was continuously injected for said predetermined time interval after cessation of production of said natural gas.

3,348,615
AUTOMATIC SAFETY RELIEF AND BACK PRESSURE VALVE
Phylander S. Adams, 4175 El Paso St., Beaumont, Tex. 77703
Filed Jan. 6, 1965, Ser. No. 423,673
5 Claims. (Cl. 166—97)



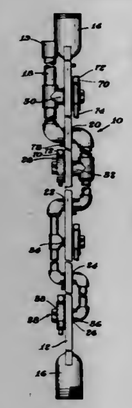
1. In combination with a casing head of an oil well being pumped and a flow line leading from the pump, the improvement comprising an automatic pressure relief safety valve connected between the casing head and the flow line for controlling casing gas pressure, said valve including:
a body member defining a generally elongated chamber, said body member being mounted against the external surface of a portion of said flow line such that the longitudinal axis of said chamber is generally parallel with the central axis of said portion of said flow line, said body member having at least one outlet port communicating with the interior of said portion of a flow line, and said inlet port leading into one end of said chamber;
a valve member mounted in said chamber for controlling gas flow into said chamber through said inlet port;
spring means mounted in said chamber for normally biasing said valve member to the closed position with respect to said inlet port;

adjusting means connected to said body member for adjusting the compression force on said spring means to thereby vary the amount of gas pressure required on said valve member to move said valve member to the open position;

and conduit means communicating between said casing head and said inlet port for passage of gas from said casing head to said inlet port;

whereby pressure inside said casing head is relieved through said conduit means, through said inlet port, through said chamber, and through said outlet port when the casing pressure exceeds the biasing force exerted by said spring means.

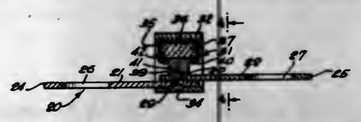
3,348,616
JETTING DEVICE
Warren M. Zingg, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,289
6 Claims. (Cl. 166—223)



6. A jetting tool assembly comprising an elongated body member having coupling means at least at one end thereof, a flow line extending along said body member and mechanically coupled thereto at intervals along its length, said flow line having a coupling element adjacent to an end of said body member, at least one swiveled jetting assembly, said jetting assembly being mechanically coupled to said body member and fluid flow coupled to said flow line, said jetting assembly comprising a swivel head having an offset flow member coupled there to and a jetting nozzle coupled to said offset flow member by a conduit.

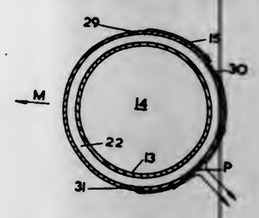
3,348,617
FUSIBLE LINK
Bruce J. Macartney, Chatham, N.J., assignor to The Fyr-Fyter Company, New York, N.Y.
Filed Sept. 13, 1965, Ser. No. 487,008
1 Claim. (Cl. 169—42)

A load supporting fusible link comprising a pair of flat tension members positioned with the adjacent end of one tension member overlapping the adjacent end of the other tension member, means located at the outer ends of said tension members for attachment thereof to a load, a thermally responsive element including a cup shaped container receiving a fusible material, a piston member abutting the surface of the fusible material and closing the opening of the cup shaped member, the cup shaped member having a flat base, the piston member having a recessed end, and a clamping member of generally square cross sectional shape encircling said thermally responsive element and said overlapping ends of said tension mem-



bers, the adjacent surfaces of said clamping member and said overlapping tension members deformed into said recessed end of said thermally responsive element.

3,348,618
HELICOPTER ROTOR
John Avery Flint and James Eric George, Farnborough, England, assignors to Power Jets (Research and Development) Limited, London, England
Filed Oct. 15, 1965, Ser. No. 496,475
Claims priority, application Great Britain, Oct. 20, 1964 42,707/64
12 Claims. (Cl. 170—135.4)

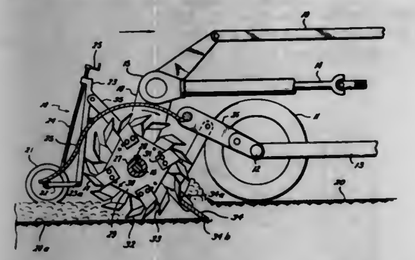


1. A helicopter rotor comprising a non-rotatable member, a head member rotatably mounted on said non-rotatable member, at least one rotor blade attached to said head member to rotate therewith, at least one long shallow aperture in the surface of each blade extending along the blade span, means for feeding a fluid flow to the head member, means dividing each aperture spanwise into at least two separate sections, passages formed in each blade, each passage connected to conduct fluid flow from the head member to one of said spanwise aperture sections for discharge as a thin layer over the blade surface, and means for independently varying the fluid flowing to each of said passages.

3,348,619
ROTARY TILLER
Aaron G. Reynolds and Eugene R. Reynolds, McAllen, Tex., assignors to Reynolds Research & Manufacturing Corporation, McAllen, Tex.
Filed Aug. 31, 1964, Ser. No. 393,118
8 Claims. (Cl. 172—66)

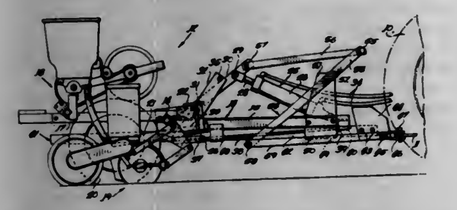
1. In a rotary tiller, including a frame movable forwardly over the ground surface, a shaft extending laterally across the frame and having groundworking elements spaced therealong, and means for rotating the shaft to move said groundworking elements rearwardly as they pass into and through the soil beneath the ground surface; the improvement which comprises a fixed blade extending across the frame parallel to the shaft and tilting downwardly and forwardly with respect to the frame from its upper to its lower edge, said lower edge being at a level below the lowermost path of said groundworking elements so as to sever and deliver a layer of said soil to said groundworking elements as the frame moves forwardly, said upper edge being substantially adjacent to the path of the groundworking elements at a point intermediate their forwardmost and lowermost paths, and

said groundworking elements comprising blades each of which has a cutting edge which extends substantially parallel to the upper edge of the fixed blade for shearing



off segments of the layer of soil delivered thereto as said cutting edge moves downwardly and rearwardly past the upper edge of the fixed blade.

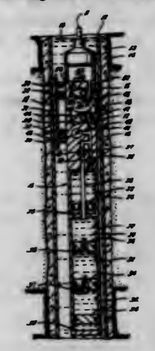
3,348,620
HITCH FOR IMPLEMENTS
John W. Orendorff, Downers Grove, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,539
6 Claims. (Cl. 172—316)



1. In an implement adapted to be connected to and propelled by a tractor having a drawframe thereon, a tool-carrying frame extending therebetween and the tractor comprising a main hitch section mounted on the tool-carrying frame and a draft hitch section connected to the tractor drawframe in telescopic association with said main hitch section, and power transmission means operatively connecting said sections for telescoping one of said sections relative to the other to selectively vary the longitudinal spacing between the tool-carrying frame and the tractor.

3,348,621
APPARATUS FOR WELL COMPLETION
Nick A. Schuster, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Apr. 29, 1965, Ser. No. 451,787. Divided and this application May 8, 1967, Ser. No. 637,012
9 Claims. (Cl. 175—4.52)

1. Apparatus for use in a well bore traversing earth formations comprising: a support; sealing means on said support adapted for isolating first and second sections of a well bore from fluids in a well bore; means on said support for placing said sealing means into sealing engagement with a well bore; first and second perforating means on said support isolated from one another and adapted, upon operation, for passing through said sealing means and producing first and second perforations in an earth formation respectively in communication with such isolated sections; means on said support for discharging fluid under pressure through one of such isolated sections into one of such perforations; and means on said support for receiving fluid through the other of such



isolated sections from the other of such perforations for removing debris therefrom.

3,348,622
BOUNDARY LAYER CONTROL
Hermann Papst, St. Georgen, Black Forest, Germany
Original application Dec. 23, 1963, Ser. No. 332,619. Divided and this application Mar. 16, 1966, Ser. No. 534,890
Claims priority, application Germany, Dec. 24, 1962, P 30,859
5 Claims. (Cl. 180—54)



1. In a self-propelled vehicle, particularly in a road vehicle, a hollow chassis having windows and doors and comprising hollow structural support means including at least one post adjacent to one of said doors; outer covering means supported by said chassis and hollow structural support means and each of said means having an outer side along which a boundary layer develops when the vehicle is in motion, one of said means having slots at least some of which are provided on said post and through which the boundary layer may enter the interior thereof, said slots extending substantially transversely of the direction of movement of the vehicle; and suction-generating means carried by said vehicle and operative for producing at an inner side of the respective means a suction effect so as to compel entry of the boundary layer into said slots at the respective outer sides.

3,348,623
AUTOMATIC ELECTRIC DRIVE SYSTEM
Harold R. Potter, Walnut Heights Addition, Rte. 4, Bedford, Ind. 47421
Filed Oct. 14, 1964, Ser. No. 403,750
13 Claims. (Cl. 180—65)

12. An automatic electric drive system comprising:

a prime mover having an output shaft and having a manually operable output controller, said controller being operable to vary the power output available on said output shaft;

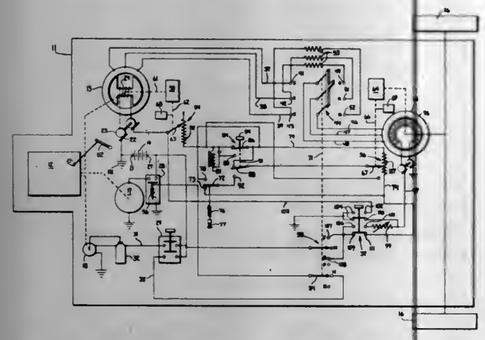
a source of direct current electrical energy;

an electrical generator having a rotor connected to and driven by said output shaft, said generator having exciter means therein and having load current power output means therein;

a vehicle drive motor having power input terminals thereon and having a power output shaft;

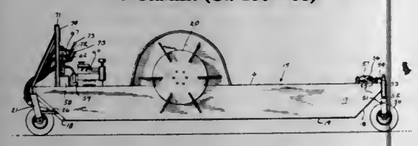
power switching means connecting the power output means of said generator to the power input terminals of said motor;

an exciter circuit for said generator, said exciter circuit including said exciter means, said source of electrical energy, and a variable resistance means;



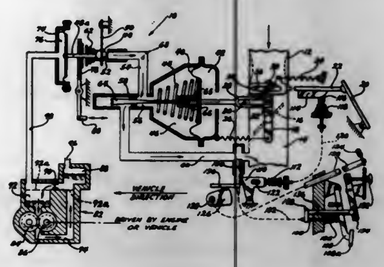
speed responsive actuator means coupled to said generator and to said vehicle drive motor and having output members connected to said variable resistance means and responsive to speed increases of said generator and to speed increases of said motor to decrease the resistance in said exciter circuit.

3,348,624
HYDRAULIC PROPULSION SYSTEM
Jerome O. Just, Hartland, and Howard W. Stern, Milwaukee, Wis., assignors to Aquatic Controls Corporation, Hartland, Wis., a corporation of Wisconsin
Filed Apr. 28, 1965, Ser. No. 451,416
5 Claims. (Cl. 180—66)



1. A multiple speed hydraulic propulsion system for a wheeled vehicle, comprising: a prime mover mounted on the vehicle; a constant displacement pump mounted on the vehicle and driven by said prime mover; a reservoir of hydraulic fluid mounted on the vehicle that supplies said pump; two pairs of reversible hydraulic motors with each pair drivingly connected to a separate wheel axle of the vehicle, each of said motors having a pair of inlet-outlet ports; three control valves each connected to one port of two motors; input distribution means receiving the output of said pump and connected to one port of a first motor; and return distribution means leading to said reservoir and connected to one port of a last motor; each of said control valves being shiftable between a first position in which the ports of said motors connected to said valve are connected to said input and return distribution means and a second position in which the ports connected to said valve are connected together so that one or more of said motors may be connected in series and in parallel with others of said motors and serially connected motors, whereby the speed at which said motors drive said vehicle may be increased by increasing the number of serially connected motors to thereby increase the percentage of the output of said pump that is supplied to each of said motors.

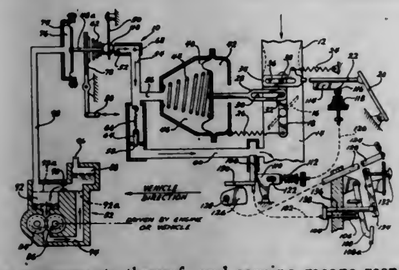
3,348,625
VEHICLE SPEED REGULATOR DEVICE
Robert H. Thorner, 8750–W. Chicago Blvd., Detroit, Mich. 48204
Original application Jan. 16, 1961, Ser. No. 82,769, now Patent No. 3,213,691, dated Oct. 26, 1965. Divided and this application Oct. 20, 1965, Ser. No. 498,430
26 Claims. (Cl. 180—108)



1. In a control device for regulating the speed of an internal combustion engine having an intake passage for the flow of air therethrough, a throttle operatively mounted in said passage whereby closure of said throttle increases the vacuum in said passage on the downstream side of the throttle and conversely, the combination of means to effect speed controlling movements of said throttle comprising, a pressure responsive member operatively connected to said throttle for actuation thereof, a vacuum circuit for the flow of air therethrough and having inlet and outlet restrictions therein, said circuit communicating with said pressure responsive member on one side thereof at a point between said two restrictions and having its outlet communicating with said intake passage on the downstream side of said throttle, said inlet restriction comprising valve means including a movable valve portion to vary the restrictive effect of said inlet restriction for controlling said vacuum acting on said pressure responsive member to effect movements thereof, sensing means responsive to changes in the speed of said engine to produce forces acting on said valve portion for effecting speed-regulating movements of said pressure responsive member and cooperating throttle, and said outlet restriction comprising second valve means including a movable valve element operatively connected to said throttle to vary the restrictive effect of said outlet restriction in response to changes in the position of the throttle.

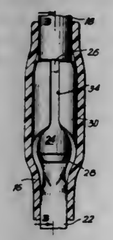
3,348,626
VEHICLE SPEED REGULATING DEVICE
Robert H. Thorner, 8750 W. Chicago Blvd., Detroit, Mich. 48204
Continuation of application Ser. No. 283,272, May 27, 1963, which is a division of application Ser. No. 74,315, Dec. 7, 1960, now Patent No. 3,153,325, dated Oct. 20, 1964. This application June 30, 1966, Ser. No. 562,006
39 Claims. (Cl. 180—108)

1. In a control device for regulating the speed of an automotive vehicle including an internal combustion engine having an intake passage for the flow of air therethrough, a throttle operatively mounted in said passage whereby closure of said throttle increases the vacuum in said passage on the downstream side of the throttle and conversely, the combination of means to effect vehicle speed-controlling movements of said throttle comprising, a pressure-responsive member operatively connected to said throttle for actuation thereof, a vacuum circuit for the flow of air therethrough and having inlet and outlet restrictions therein, said circuit communicating with said pressure-responsive member on one side thereof at a point between said two restrictions to provide vacuum acting on said pressure-responsive member in a throttle-opening direction, said circuit having its outlet communicating with said intake passage on the downstream side of said throttle, said inlet restriction comprising valve means including a first movable valve portion to modulate the restrictive effect of said inlet restriction for controlling said vacuum acting on said pressure-responsive member to



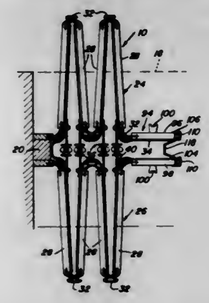
cause movements thereof, and sensing means responsive to changes in the speed of said vehicle to produce forces acting on said first valve portions for causing speed-regulating movements of said pressure-responsive member and cooperating throttle, said valve means including a second valve portion operable substantially independent of said forces and cooperating with said outlet restriction to modulate the restrictive effect thereof.

3,348,627
BINAURAL TUBE SUPPORTING STRUCTURE FOR STETHOSCOPES
Irving A. Speelman, Roslyn Heights, N.Y., assignor to Propper Manufacturing Co., Inc., Long Island City, N.Y., a corporation of New York
Filed Jan. 23, 1967, Ser. No. 610,857
5 Claims. (Cl. 181—24)



1. In a binaural stethoscope, a pair of substantially rigid elongated binaural tubes respectively having upper free ends adapted to be received respectively in the ears of the user the stethoscope and respectively having lower elongated free end portions distant from said upper free ends thereof, respectively, spring means operatively connected to said lower end portions of said tubes for supporting the latter for respective swivelling movement about their axes, said spring means including at the lower elongated end portion of each tube an elongated sleeve portion entending around and frictionally engaging said lower elongated end portion, and friction-increasing means formed by part of said spring means and each tube for increasing the frictional resistance to turning of said tubes with respect thereto beyond the frictional resistance resulting solely from engagement of said sleeve portions with said tubes, respectively, said lower end portion of each tube terminating in a tapered extremity of a given exterior configuration, said sleeve portion at the lower elongated end portion of each tube being spaced from said extremity thereof and said friction-increasing means including the portion of each tube which extends from said sleeve portion up to and including said extremity, said spring means having an elongated portion of channel-shaped configuration also forming part of said friction-increasing means and extending from each sleeve portion thereof up to and beyond the extremity of each tube and conforming to the exterior surface configuration of the tube, said spring means being curved inwardly at each tube extremity toward the axis of the tube along the tapered extremity thereof, so that the increase in frictional resistance beyond that derived from said sleeve portions results from the additional frictional engagement between the parts of said tubes and said spring means which extend from said sleeve portions of said spring means up to and including said extremities of said tubes.

3,348,628
ACOUSTICAL FOLDING DOOR
Guy E. Dixon, Miami, Thomas M. Dixon, Hialeah, and Russell I. Geyer, Miami, Fla., assignors to Panelfold Doors, Inc., a corporation of Florida
Filed May 14, 1965, Ser. No. 455,871
13 Claims. (Cl. 181—33)

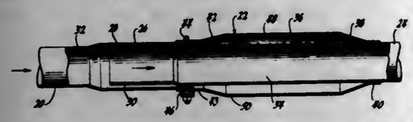


1. An acoustical folding door consisting of a pair of folding panel assemblies orientated alongside of and spaced from each other with each panel assembly including a plurality of rigid panels orientated in edge to edge relation and provided with a hinge strip interconnecting adjacent edges and forming a seal therebetween, means supporting said assemblies from a trackway for movement from an extended accordion folded condition to a retracted collapsed condition, said means including means articulately interconnecting the assemblies whereby the assemblies will move from the extended to the retracted position generally in a simultaneous manner, the endmost panels of each panel assembly being interconnected and adapted for engagement with the periphery of an opening, and means at the upper and lower edges of said panel assemblies for sealing engagement with a top and bottom surface, said means interconnecting the assemblies including a rigid connecting plate having the ends thereof hingedly connected to oppositely disposed rigid panels on the panel assemblies.

3,348,629
RESONATOR SILENCER
Thomas R. Cassel, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,835
5 Claims. (Cl. 181—48)

1. A resonator silencer for attenuating objectionable sound waves comprising, a first conduit within which sound waves are established and having an end portion,

a second conduit having an end portion thereof in smaller size than said first conduit end portion and telescopically received therewithin, the space between said end portions forming the tuning neck of said resonator silencer, said first and second conduits being coaxially arranged to provide a continuous and unrestricted passage therethrough, and a resonator shell encircling por-



tions of said conduits and having one end thereof sealingly secured to said first conduit end portion and the said other end thereof sealingly secured to said second conduit at a point distant from said tuning neck, said shell and the portion of the second conduit which it encircles defining the tuning chamber of said resonator silencer, said tuning chamber and the conduit passage being acoustically connected by said tuning neck.

3,348,630
ESCAPE DEVICE
Masatada Yamamoto, 7–4 2-chome, Igusa, Suginami-ku, Tokyo, Japan
Filed Dec. 17, 1965, Ser. No. 514,531
1 Claim. (Cl. 182—48)



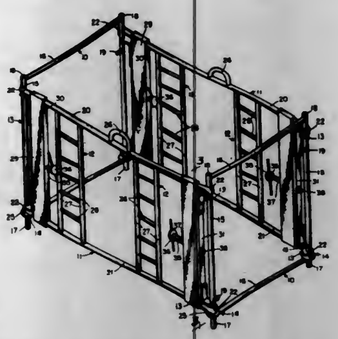
An escape device comprising an elongated tubular body adapted to be supported at its one end in a position to extend vertically downwardly and including an opening at each end of a size to permit passage of a person, said tubular body itself being made of a pliant material and having a plurality of wide body portions and smaller throat portions which are vertically spaced in the operative position, said throat portions being formed as part of said body portions and connecting said wide portions and being of a cross section slightly smaller than said body portions and that of a person and being made of an elastic material which will expand to permit passage of the person therethrough feet first, the resilient material being strong enough to resist the free fall of the individual and slow his downward speed but permit his passage whereby he may move downwardly safely without using any additional descending apparatus.

3,348,631
SCAFFOLD SIDE MEMBER
Adam Jadek, E. 1728 Hartson Ave., Spokane, Wash. 99202
Filed Aug. 1, 1966, Ser. No. 569,270
2 Claims. (Cl. 182—179)

1. A side member for modular scaffolding of the nature aforesaid, for use with rigid, planar end members having a cylindrical, peripheral frame, including, in combination:

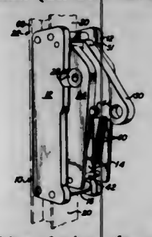
spaced, parallel upper and lower horizontal beams having laterally extending ends with configuration adapted to fit about the laterally outward surface of cylindrical vertical scaffold end members;

at least one ladder structurally communicating, substantially vertically, between said spaced, horizontal beam members; and



paired, opposed fastening means structurally communicating between said upper and lower beam members near the lateral extensions thereof, including a housing, a fastening beam member outwardly biased but laterally moveable within said housing, screw means extending between said housing and said fastening beam to cause lateral movement therebetween and fastening means carried by said fastening beam member adapted to pivotably engage the cylindrical vertical posts of said end member.

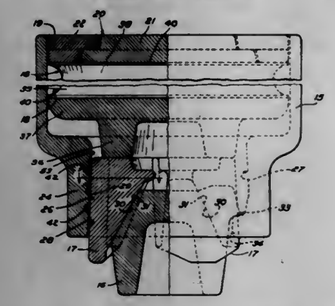
3,348,632
CLIMBING DEVICE
William E. Swager, R.R. 2, Fremont, Ind. 46737
Filed Feb. 16, 1965, Ser. No. 433,145
5 Claims. (Cl. 182—230)



1. In a safety locking device, the combination of a sliding locking carriage having a set of rollers spaced longitudinally at upper and lower ends and counter rollers parallel to and cooperative with said first set of rollers to receive in sliding engagement between said rollers a wide flat flange of a supporting rail, with said first set of rollers slidably engaging the flange on an inner surface and the second set of rollers on an outer opposite surface, the clearance between both sets of rollers corresponding substantially to the thickness of said flange for easy sliding rolling movement of said carriage upon said flange when engaged and supported by said rollers, a pivotally mounted locking arm in said carriage for pivotal movement in a plane normal to the said outer surface of said flange, said arm having a wide serrated flange gripping end having a series of gripping teeth extending from side to side thereof eccentrically disposed with respect to said pivot for eccentric movement of said end, to grippingly engage the outer surface of said flange by bearing eccentrically upon

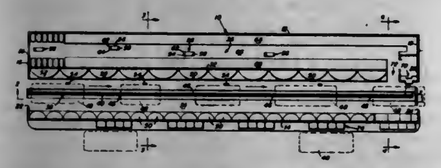
and thereby safely gripping a wide surface area of said flange in the pivotal movement of said locking arm, and resilient spring means mounted in substantial tension between said arm and said carriage, biasing said arm into firm teeth engaging, locking grip to the outer surface of said flange, stop means on said carriage positioned to intercept an inner end of said arm and stop rotary movement of said arm when moving against said spring tension, said arm having an opposite end extending outward from said carriage as a lever and for eccentric tooth gripping disengagement from the outer flange surface upon opposite movement of said lever by a user of said device.

3,348,633
METHOD AND APPARATUS FOR LUBRICATING FRICTION DRAFT GEAR
William H. Allan, Kenmore, N.Y., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed June 22, 1964, Ser. No. 376,633
9 Claims. (Cl. 184—1)



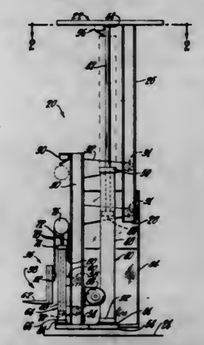
1. A method of lubricating a non-planar friction surface of an inwardly converging friction clutch bore of a friction draft gear of the type having a series of friction clutch members slidable in the friction bore, which method comprises the steps of positioning relatively thin preformed insert means of metallic lubricant which are generally complementary in configuration to the non-planar friction surface of said friction bore in said friction bore flush against said friction surface, and then assembling the rest of the draft gear including said slidable friction members and actuating said friction clutch a number of times with said slidable friction members being wedged inwardly and radially outwardly of said friction bore whereby said metallic lubricant of said insert means is spread uniformly over said friction surface to lubricate same.

3,348,634
STORE SERVICE
John H. Hitchins, 2964 Peachtree Road NW., Atlanta, Ga. 30305
Filed Aug. 20, 1965, Ser. No. 481,275
4 Claims. (Cl. 186—1)



1. A drive-in store comprising a customer area, means for moving a customer's vehicle along a predetermined path within said customer area, means displaying a plurality of articles along a portion of said predetermined path, a storage area within said store and remotely located with respect to said customer's area, cart means disposed within said storage area for receiving articles selected by said customer, a remote communications system providing communication between said customer area and said storage area, said communications system including portable transmitter means carried on said vehicle in said customer area and portable receiver means carried on said cart, and an article exchanging area for delivering selections made by the customer to said vehicle.

3,348,635
CONTROL SYSTEM FOR LOAD LIFTING APPARATUS
Robert A. Nieminski, Philadelphia, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 26, 1966, Ser. No. 575,350
15 Claims. (Cl. 187—9)

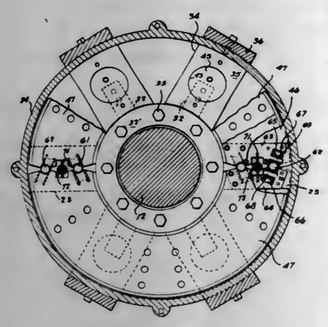


1. In a combination of the class described, a fluid pressure source having a high pressure side and a low pressure side, a primary upright extending from a base, a secondary upright movably mounted on said primary upright, a load carriage movably mounted on said secondary upright, a main hydraulic ram operable between said primary upright and said secondary upright for moving said secondary upright relatively to said primary upright, a second hydraulic ram operable between said secondary upright and said load carriage for moving said load carriage relatively to said secondary upright, operating valve means for said rams, the movement of said operating valve means to particular lift positions directing fluid from the high pressure side of said pressure source to one of said rams while the other ram remains inoperative, control valve means for said rams, and means whereby the operation of either of said rams to a particular extended position actuates said control valve means to effect the movement of fluid to the other ram during positioning of said operating valve in lift position so that the two rams operate automatically in sequence regardless of which ram is first energized.

3,348,636
GUIDE MEANS FOR DISC BRAKE FRICTION PADS
Elmo N. Boyles, P.O. Box 951, Orlando, Fla. 32802
Filed Nov. 9, 1965, Ser. No. 506,989
6 Claims. (Cl. 188—73)

1. A brake assembly for a vehicle wheel comprising a rotatable disc element adapted to be fixed to said wheel for rotation about the axis of the wheel, support means adapted to be fixedly-secured to the vehicle body and including annular ring means surounding said disc element, spaced inwardly-extending exposed radial opposing cylinder block means secured on said annular ring means

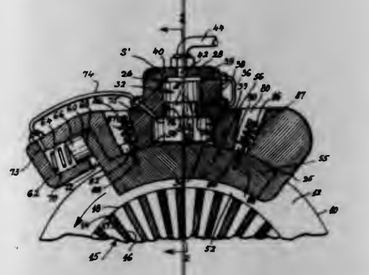
and extending adjacent opposite sides of said disc element, said cylinder block means being formed with opposing brake cylinder bores located on opposite sides of the disc element, brake pistons in said cylinder bores, means to admit fluid under pressure into the brake cylinder bores behind the pistons, brake shoes disposed between the



pistons and the disc element and being engageable with the disc element responsive to extension of the pistons relative to the cylinder bores, guide rod members fixed to the support means and extending parallel to the axis of the disc element, and rollers journalled to the ends of the brake shoes and supportingly-engaged with said guide rod members.

3,348,637
SELF-ENERGIZING DISC BRAKES
Horacio E. Perez, 612 Lake Elizabeth Drive, Winter Haven, Fla. 33880
Filed Oct. 21, 1965, Ser. No. 499,136
2 Claims. (Cl. 188—152)

1. A brake assembly comprising:
(a) a rotatable disc having a peripheral generally V-shaped circumferential groove defined by two annular outwardly flaring opposing side walls;
(b) a brake block mountable in a fixed position to a support, said block having a cylindrical first cavity formed therein open toward said disc and extending axially in a direction radial to said disc, said cavity having adjoining radially outer and inner cylindrical sections with the inner section larger in diameter than the outer section;
(c) means for mounting said disc rotatably to said support;
(d) a multiple-section cylindrical first piston movable axially in said cavity radially of said disc, said piston having a first cylindrical piston section disposed in the inner cavity section, with second and third piston sections disposed in the outer cavity section, the diameters of said first and third piston sections being substantially equal in diameter to those of the inner and outer cavity sections respectively, said second piston section being located between the first and third piston sections and having a diameter smaller than that of the outer cavity section to define a cylindrical space therewith;
(e) said block having an extension extending circumferentially of said disc with a cylindrical second cavity formed therein;
(f) a spring biased second cylindrical piston movable axially in said second cavity;
(g) first fluid conduit means connected to one end of said first cavity and supplied with fluid from a fluid source;
(h) second fluid conduit means connected at opposite ends to spaced axial points in said outer section of the first cavity;
(i) third fluid conduit means connected between said second cavity and one end of said inner section of the first cavity;
(j) an arcuate brake shoe,
(1) said shoe having a core generally triangular in cross section,
(2) two annular brake linings on opposite sides of said core, said core and linings extending radially into said V-shaped groove in the disc and normally spaced slightly from the side walls thereof;
(3) an arm extending radially from said core into said second cavity and contacting said second piston; and
(k) spring biased guide members movably connecting said brake shoe to said block so that the shoe is movable slightly radially and circumferentially of the disk,

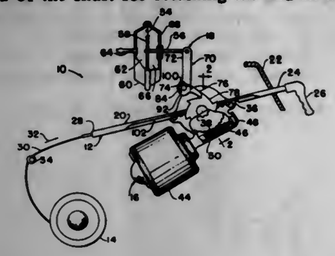


(1) whereby said brake shoe is advanced radially inward of the disc to engage the side walls thereof frictionally when said first piston is advanced axially of said block toward the disc as fluid is forced into said first cavity via said first fluid conduit and
(2) whereby said brake shoe is advanced circumferentially slightly in the direction of rotation of said disc to advance said second piston and fluid pressure from the second cavity through said third fluid conduit means to the inner section of the first cavity, and
(3) whereby one end of the second fluid conduit means is closed by the third section of the first piston when the first piston advances, said one end of the second fluid conduit means being opened when the first piston retracts to equalize pressures in the first and second cavities as the fluid pressure in the first cavity is relieved.

3,348,638
POWER ACTUATED PARKING BRAKE
Joseph C. Littmann, Grosse Pointe Woods, Mich., assignor to Ferro Manufacturing Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 2, 1965, Ser. No. 476,302
8 Claims. (Cl. 188—162)

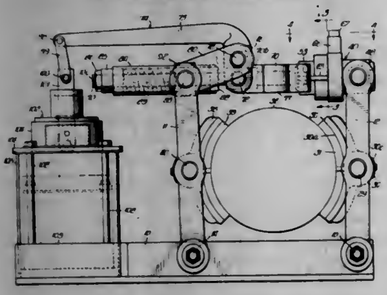
1. A power actuated parking brake including a rod movable axially, a cable connected to said rod and to a brake operable to set said brake when said rod is moved in one direction and to release said brake when said rod is moved in the other direction, a shaft extending transversely of the rod and having a pinion portion thereon, said rod having a rack portion thereon engaged with the pinion portion of said shaft, electro-mechanical brake setting apparatus connected directly to one end of the shaft to turn the shaft in one direction to set the brake

and engine-vacuum actuated mechanism connected to the other end of the shaft for retaining the rod in a position



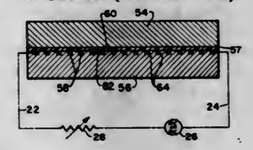
to maintain the brake set and for releasing the brake when vacuum is applied thereto.

3,348,639
INDUSTRIAL BRAKE
Victor H. Ames, Midlothian, and Robert T. Fischer, Harvey, Ill., assignors to Whiting Corporation, a corporation of Illinois
Filed May 11, 1965, Ser. No. 454,811
12 Claims. (Cl. 188—171)



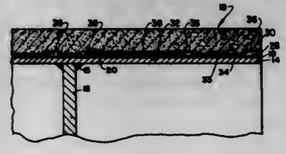
1. A brake apparatus for arresting rotation of a cylindrical member comprising, a base, a pair of brake arms each having one of its ends pivotally mounted to said base, a pair of brake shoes pivotally supported by said arms, respectively, intermediate the ends of the latter and arranged for engaging said cylindrical member at generally diametrically oppositely disposed locations thereon, two coaxial elements connected together by adjustment means for axial movement toward each other upon operation of the adjustment means, one of said elements being pivotally connected to one of said arms adjacent the other end thereof, biasing means pivotally associated with the other arm adjacent the other end thereof, which biasing means is also associated with the other of said elements for forcing said other ends of said arms together thereby to urge said shoes into engagement with said cylindrical member, lever means associated with said other element and said biasing means and being movable in one direction during movement of said shoes into braking engagement with said cylindrical member, said lever means being movable in another direction for acting in opposition to said biasing means and thereby releasing said shoes, the amount of movement of said lever means in either direction being directly proportional to the amount of movement of said shoes between their release and braking positions, means for moving said lever means in said another direction, said lever means including means engageable with said adjustment means for operating the latter when the lever means moves a predetermined amount thereby to limit maximum movement of said lever means to said predetermined amount.

3,348,640
LAMINATED ARTICLES AND METHODS OF BONDING AND DEBONDING THEREFOR
Robert R. Thompson, Livonia, and James C. Cumming, Pleasant Ridge, Mich., assignors to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,303
5 Claims. (Cl. 188—250)



1. A method of bonding a friction lining member to a metal mounting member therefor, said members being preformed to have generally coextensive mounting surfaces of the same contour comprising recessing an electrical resistance heating element that is distinct from either of said members within and along said friction lining member closely adjacent the mounting surface thereof so that said element does not project out of said mounting surface, said heating element being disposed in an electrically insulating environment with respect to said members, providing a coextensive layer of thermosetting non-metallic adhesive material between said members while holding said members together under pressure, and electrically energizing said element sufficiently to heat and cure said layer in situ and thereby form a uniform shear resistant bond of said material between said members at said surfaces.

3,348,641
BRAKE SHOE LINING WITH INCORPORATED HEATING ELEMENT
Arthur F. Gage, Detroit, Mich., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,714
18 Claims. (Cl. 188—250)

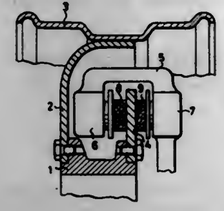


1. A composite brake lining of the type that is bonded by a heat setting adhesive to a metal brake shoe platform consisting essentially of an outer friction material member and a separate preformed internal solid back-up member molded together in assembly, an electrical heating element extending longitudinally between said members, and externally accessible terminals for said element at opposite ends of said lining.

3,348,642
DISK BRAKE
Rudolf Kosche, Schorndorf, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed May 21, 1965, Ser. No. 457,631
Claims priority, application Germany, May 23, 1964, D 44,523
3 Claims. (Cl. 188—251)

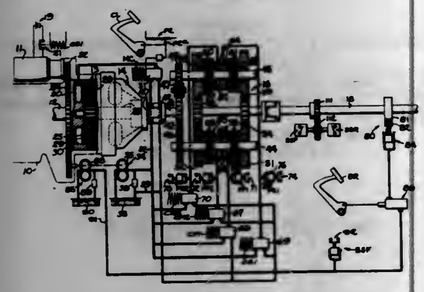
1. A disk brake arrangement, especially for a wheel of a motor vehicle having a frame, comprising at least two elements which are rotatable with respect to each other, one of said elements being stationary relative to said frame, another of said elements including a brake disk,

one brake lining disposed on each side of said brake disk, the material of the lining disposed on one side of said brake disk having a coefficient of friction which differs



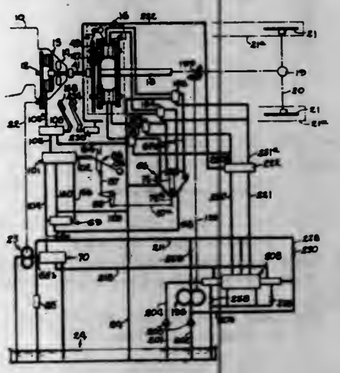
substantially from that of the material of said lining disposed on the other side of said brake disk, whereby squealing of the brakes is effectively prevented.

3,348,643
ELECTRO-HYDRAULIC CONTROLS FOR POWER DRIVE SYSTEM
Miles A. Townsend, Cupertino, Calif., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 473,150, July 19, 1965. This application Dec. 5, 1966, Ser. No. 599,670
25 Claims. (Cl. 192—3.5)



11. In a system for driving a load from a prime mover, the combination comprising a transmission having input and output shafts adapted for coupling respectively to the prime mover and the load, said transmission having means including first and second clutches respectively engageable to produce forward or reverse drive of said output shaft relative to the direction of rotation of said input shaft, first and second electrical actuators and means responsive to excitation thereof for respectively engaging said first and second clutches, means including first and second controllable switching devices in first and second electrical circuits for selectively exciting said first and second actuators, first and second direction selector control means for applying control signals to said first and second switching devices to render the latter selectively and complementally conductive, means for sensing and signaling when said outpul shaft is turning in a given direction with a speed greater than a predetermined value, and means responsive to signaling by said sensing means for rendering one of said switching devices immune to the control signals from said selector control means, said one device being that which in its conductive state results in drive of said output shaft in a direction opposite to said given direction.

3,348,644
CONTROL FOR A POWER DRIVE SYSTEM AND INCLUDING SHIFT-RESTRICTING INHIBITORS FOR A REVERSIBLE TRANSMISSION
Conrad R. Hilpert Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed July 19, 1965, Ser. No. 473,148
22 Claims. (Cl. 192—4)

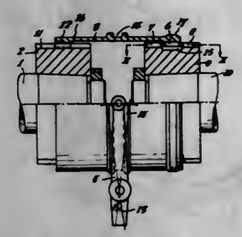


1. In a system for driving a load from a prime mover, the combination comprising a transmission having input and output shafts coupled respectively to the prime mover and the load, said transmission having drive means engageable to produce drive of said output shaft in a given direction, an actuator and means responsive to activation thereof to engage said drive means, an activating fluid system connected to selectively activate said actuator and thereby set said transmission to drive the load in a given direction, means for sensing and signaling when the load is being driven in the direction opposite to said given direction, inhibit means responsive to signaling from said sensing means to prevent activation of said actuator, means to disable said inhibit means when said drive means is engaged prior to signaling by said sensing means, a brake system including means operable in response to receiving pressure fluid to retard rotation of said output shaft, a source of pressure fluid including means to selectively conduct pressure fluid to said retarding means to slow said output shaft, means for sensing the pressure of the fluid of said source and generating a second signal in response to said pressure being below a predetermined value, and means acting in response to said second signal for disabling said inhibit means and thereby allow said transmission to be set to drive the output shaft in said given direction to retard rotation of said output shaft and stop the load.

3,348,645
DOG CLUTCH
Hans Sigg, Widen, Aargau, Switzerland, assignor to Maag Gear Wheel & Machine Company Limited, Zurich, Switzerland, a company of Switzerland
Filed Feb. 15, 1966, Ser. No. 527,536
Claims priority, application Switzerland, Feb. 17, 1965, 2,191/65
5 Claims. (Cl. 192—67)

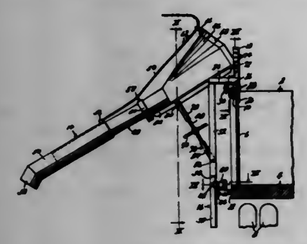
1. A clutch comprising two concentric members each having teeth therebetween internally and externally, respectively, disposed on rings on the members for interengagement to enable a drive to be transmitted between the said two members, all of the teeth on both of the said members being located on similar pitch circles about the common axis of the members and having the same pitch and tooth thickness, one of the said members being provided with one more ring of teeth than

the other said member and including at least two rings of teeth, the teeth of one of the said two rings of teeth being displaced circumferentially relative to the teeth of the other said ring of teeth by a distance equal to one-half of the pitch of said teeth, the rings of teeth being so positioned on the two members that the said rings



of teeth on the two members alternate in an axial direction along the members when the two members are in the declutched position, the two members being movable axially relative to each other to engage one of said rings of teeth on said one member with a ring of teeth on said other member.

3,348,646
TRUCK UNLOADING CHUTE
Leonard McCall, Rte. 1, Golden City, Mo. 64748
Filed May 3, 1966, Ser. No. 547,371
1 Claim (Cl. 193—5)



An unloading device for trucks having beds with upstanding side walls, said device comprising:

(a) a frame adapted to be engaged over the top edge of one of said side walls, said frame extending above said side wall and including rigid members depending adjacent the inner surface of said side wall and adapted to have frictional sliding engagement therewith,

(b) a pair of rollers carried by said frame for rotation on axes normal to the plane of said side wall whereby to have rolling contact with the upper edge of said side wall,

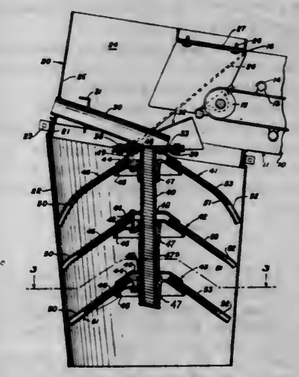
(c) a third roller carried for rotation on a vertical axis by a portion of said frame depending externally of said side wall whereby to have rolling contact with the outer surface of said side wall, said third roller being vertically adjustable with respect to said frame,

(d) an elongated chute consisting of upper and lower sections slidable longitudinally with respect to each other, said upper section being pivoted at its upper end to the portion of said frame extending above said side wall for vertical pivotal movement, said chute being inclined outwardly and downwardly whereby said lower chute section tends to be moved outwardly on said upper section by gravity whereby to lengthen said chute,

(e) means for adjusting the length of said chute consisting of a flexible strand attached to said lower chute section and a bracket member fixed to the upper end portion of said upper chute section, and in which selected points of the length of said strand may be releasably engaged, and

(f) a turnbuckle of adjustable length extending between said frame and said upper chute section and pivotally connected thereto at points distal from the pivotal axis of said chute, whereby the angle of inclination of said chute may be adjusted, said bracket and said turnbuckle being accessible to an operator positioned in said truck bed.

3,348,647
FRUIT DEPOSITING DEVICE FOR HARVESTER
Lauren W. Gates, Stockton, and Robert E. Jones, Rio Vista, Calif., assignors to The Regents of the University of California, Berkeley, California
Filed July 18, 1966, Ser. No. 565,830
16 Claims. (Cl. 193—7)



1. A fruit depositing device, including in combination hopper means,
a skirt suspended from said hopper means,
fruit-delaying means supported by said hopper means centrally with respect to said skirt and having a series of radially outwardly extending flexible flaps extending toward said skirt and in relation thereto such that descending fruit must flex at least one said flap in order to descend further.

3,348,648
KEYBOARD PROVIDING SERIAL GENERATION OF TWO DIFFERENT CODES RESPONSIVE TO ONE KEY DEPRESSION
Kenneth R. Frechette, Bristol, Conn., assignor to Royal Typewriter Company, Inc., Hartford, Conn., a corporation of Delaware
Filed Aug. 8, 1966, Ser. No. 570,827
2 Claims. (Cl. 197—16)

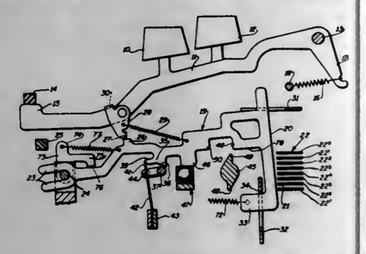
1. A code generating keyboard comprising,
a frame,
a keylever and an interposer fulcrum rod supported by said frame,
a plurality of keylevers pivotally supported by said keylever fulcrum rod,
an interposer beneath each of said keylevers rockably supported by said interposer fulcrum rod and power translatable relative thereto, said interposers being rockable from a restored to an active position in response to depression of its associated keylever through a normal distance,

a spring for restoring each of said interposers after translatory movement thereof,

a cyclically operable shaft for power translating a rocked interposer to generate a respresentative code,

means for preventing the rocking of a second interposer until a first rocked interposer has been translated by said shaft,

means for latching a rocked interposer and for releasing a said rocked interposer as it is translated thereby permitting another interposer to be rocked,



means responsive to the rocking movement of an interposer for cycling said shaft,

a lever pivoted on said interposer fulcrum rod having an offset overlying one of said interposers located adjacent a predetermined interposer,

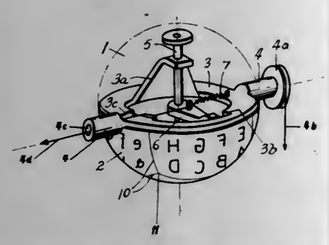
and a spring connected between said predetermined interposer and said lever operative toward the end of powered translatory movement of said predetermined interposer to rock said lever to thereby rock the said one interposer adjacent the predetermined interposer.

3,348,649

SPHERICAL TYPE CARRIER APPARATUS AND BEARING YOKE THEREFOR

Bernhard Cramer, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 13, 1966, Ser. No. 579,009
Claims priority, application Germany, Oct. 19, 1965, St 24,529
5 Claims. (Cl. 197—52)



1. Spherical type carrier apparatus comprising:

a pair of hemispherical shells having firmly arranged types equally distributed throughout the entire surface of said shells, and said shells being rigidly connected to one another;

an equatorial disc having firmly arranged bearing pins, and said disc being arranged between said shells, such that said shells are rotatable with respect to said disc;

a rotatable bearing yoke being adapted for swivel mounting said bearing pins, such that said spherical type carrier is capable of being turned about said bearing pins; and

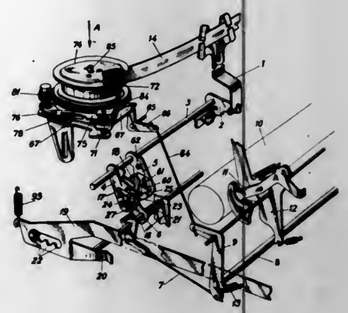
means for setting said spherical type carrier in dependence upon the respective type intended to be printed.

3,348,650

RIBBON FEED MECHANISM FOR TYPEWRITERS, COMPUTERS, AND SIMILAR MACHINES

Joachim Meinherz, Paderborn, and Hermann Waldenburger, Pforzen, Germany, assignors, by mesne assignments, to Societe de Mecanographie Japy, Paris, France

Filed July 3, 1962, Ser. No. 210,871
Claims priority, application Germany, Aug. 12, 1961, A 38,120
13 Claims. (Cl. 197—151)



1. In a ribbon feed mechanism for a typewriter and similar machines comprising means for stepwise longitudinal displacement of the ribbon, a ribbon guide transversely shiftable with respect to the typewriter carriage, a universal bar and lever linkage means actuated by said bar for shifting said ribbon guide, a first lever and a bolt parallel to the pivot axis of said first lever and carried thereby; a second lever pivotally carried in parallel relationship with respect to said first lever and having at least two cam slots facing said first lever, said slots converging towards the pivot axis of said second lever and cooperating with said bolt; a pear-shaped tumbler pawl pivotally carried by said second lever between said slots, said pawl having an arm directed towards the pivot axis of said second lever and the swelling portion of said pawl protruding alternately over the said slots for cooperation with said bolt; said swelling portion of said pawl having an oblong pivot hole pivotally mounting said pawl on a fixed pivot pin which is mounted on said second lever, a limit stop for said arm on either side of both said slots; a tilting spring for urging alternately said pawl against one of said stops and for tilting the same from one stop to the other; and a linked connection of said second lever with said ribbon guide.

3,348,651

MICROPOROUS TYPEWRITER RIBBONS

Charles E. Mater and George C. West, Buena Vista, Va., and Howard M. Brigham, Montclair, N.J., assignors to Reeves Brothers, Inc., a corporation of New York

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,878
7 Claims. (Cl. 197—172)

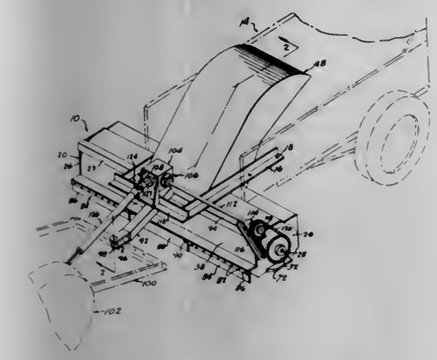
1. A pressure-sensitive, ink-transfer product suitable for use in typewriter and high-speed printer ribbons, tapes and sheets comprising (a) a shock-absorbent base layer of an elastomeric polymer film having a high degree of resiliency in a direction normal to the plane of such film; (b) an intermediate layer of a thin, non-elastic polymer film bonded to the shock-absorbent base layer; and (c) an inking layer bonded to the intermediate layer of non-elastic polymer film over substantially its entire working surface and comprising a substantially continuous film of a microporous inking composition consisting essentially of a uniformly blended mixture of (i) an elastomeric polymeric binder, (ii) an inking compound comprising a non-aqueous, non-voltatile ink carrier which is substantially insoluble in the elastomeric polymeric binder and which contains a high concentration of an ink pigment, and (iii) a finely ground microporous inorganic filler.

3,348,652

REFUSE GATHERING MACHINE

Herbert O. Vinyard, Rte. 2, Box 75A, Hammond, La. 70401

Filed Apr. 22, 1966, Ser. No. 544,600
8 Claims. (Cl. 198—7)



1. A refuse gathering machine comprising an elongated, open bottom, horizontal housing having a top wall, a rear wall, a front wall, and end plates, an upwardly directed inclined chute leading from the interior of the central portion of said housing, said chute having a discharge opening spaced considerably above and offset from the vertical plane containing the housing axis, the upper and lower walls of said chute penetrating within said housing in curved lower portions, the sidewalls of the chute terminating at the housing without substantial entrance to permit the free movement of refuse from the ends of the housing to its center, a conveyor shaft extending longitudinally within the housing, oppositely turned conveyor screw portions on said shaft extending from the end plates to the shaft center portion lying within said chute, a thrower rotor fixed on said shaft center portion and including a pair of blades lying in planes parallel to the shaft axis, said blades having outer free edges which pass said curved lower portions of the upper and lower chute walls with wiping tolerance when the rotor is turned, and means for rotating the shaft in a direction to cause the conveyor screw portions to move refuse entering the housing through its open bottom to the thrower rotor, the thrower rotor then serving to throw refuse upwardly through the chute for emptying through said discharge opening onto a receiver.

3,348,653

ARTICLE HANDLING APPARATUS

Emmett R. Mills, 908 5th St., Washougal, Wash. 98671

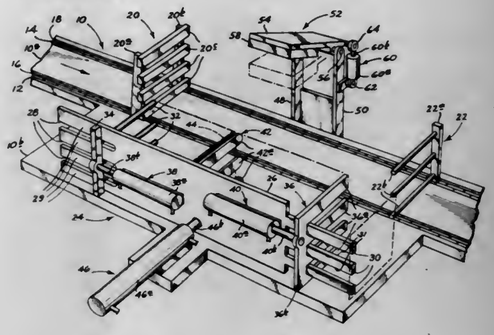
Filed Oct. 11, 1966, Ser. No. 585,942
6 Claims. (Cl. 198—24)

1. Apparatus for handling a stack of compressible sheet-like articles comprising, in operative position,

a conveyer;

stack-receiving means mounted on said conveyer for movement with the conveyer including a pair of spaced-apart stack-end supports adapted to receive and hold a stack of such articles;

stack-dimensioning means mounted in a position located to one side of said conveyer including a pair of spaced-apart, relatively movable, stack-compressing agencies, said agencies having one state where they are relatively widely spaced apart and in said one state being adapted to receive between them an uncompressed stack of articles having a length greater than the spacing between said supports, said dimensioning means further including means for shifting the agencies together and into another state, which other state is operable to produce compression of a stack placed between the agencies whereby the stack's length becomes less than the spacing between said supports; and



means for moving said dimensioning means while in its said other state from its position located to one side of said conveyer to another position where the agencies of said dimensioning means are between the stack-end supports in said receiving means with any compressed stack held between the agencies then becoming located between said supports;

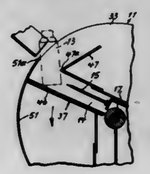
said stack-end supports comprising multiple spaced-apart support elements and said stack-compressing agencies comprising multiple spaced-apart fingers which, with the agencies between the stack-end supports and upon movement of the agencies apart from one another, interfit with the support elements of the stack-end supports thus to accommodate relative movement of said agencies away from one another, whereby the ends of a stack between the agencies becomes supported by said stack-end supports.

3,348,654

APPARATUS FOR UNSCRAMBLING CONTAINERS

Burton R. Garrett, 131—12 232nd St., Laurelton, N.Y. 11413

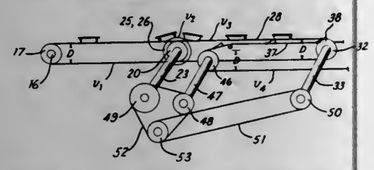
Filed July 2, 1965, Ser. No. 469,203
9 Claims. (Cl. 198—33)



1. An apparatus for uprighting bottles or articles having their opposite ends of different shapes or contours comprising, a slide on which bottles are delivered, a rotative carrier having pockets into which the bottles are delivered from the slide, each pocket containing an axially

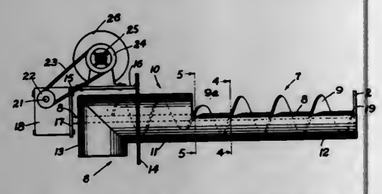
positioned pin for entry into a bottle or for contact with the bottom of a bottle according to the way in which a bottle enters a pocket, each pocket also including an angular deflecting plate fixedly carried by the pocket, a bottle conveyor, a delivery channel through which each bottle is carried on its way to the conveyor, said channel including a deflector plate defining an arcuate wall of said delivery channel, said plate having a part for contact with a bottle confined between it and the deflecting plate on the pocket to orient the bottle to a position with its mouth disposed upwardly so that it reaches the conveyor and assumes an upright position thereon when it leaves the carrier.

3,348,655
DEVICE FOR DISENTANGLING AND CONVEYING FLANGED RECEPTACLES
Chester J. Pierce, Jr., Palo Alto, and Lawrence J. Pagendarm, Redwood City, Calif., assignors to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,432
5 Claims. (Cl. 198—34)



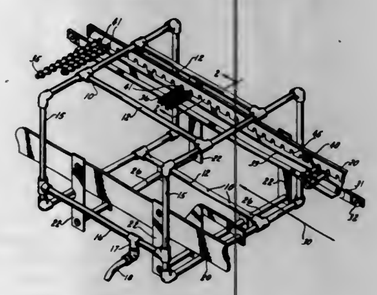
1. A device for continuously disentangling and conveying flanged receptacles, such as trays, susceptible to entanglement by overlapping of their flanges, the device comprising, in combination, a first conveyor providing an upper first conveying surface on which the receptacles are conveyed; a second conveyor providing an upper second conveying surface substantially in the same plane as the said first surface for receiving receptacles conveyed by said first conveyor and conveying them further, the second conveyor being driven to move at a higher linear rate than the first conveyor; and an intermediate third conveyor driven at a linear rate higher than the first conveyor and less than the second conveyor, said third conveyor projecting above said plane, intermediate said first and second conveyors, so as to uptilt receptacles received by it from the first conveyor, and subsequently down-tilt receptacles delivered by it to said second conveyor, all three conveyors being driven continuously.

3,348,656
CONVEYOR APPARATUS
William H. Hall, 808 Congress St., and Jon D. Hall, 7245 Ronald Drive, both of Saginaw, Mich. 48602
Filed Nov. 25, 1966, Ser. No. 597,015
5 Claims. (Cl. 198—64)



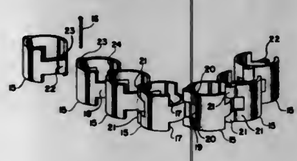
1. Cube dispensing and conveying apparatus comprising a cube storage bin having a hopper bottom; an open top, substantially horizontal trough at the bottom of said hopper for receiving cubes from said bin; an annular housing forming a continuation of said trough and extending beyond said bin; screw conveyor means spanning the length of said trough and extending through said housing for delivering cubes from said trough into and through said housing; and driving means connected to said conveyor means for rotating the latter in a direction to deliver cubes to and through said housing, said conveyor means comprising a shaft extending the full length of said trough and said housing and having a helical vane extending continuously from one end of said shaft to the other, said vane having a uniform diameter corresponding substantially to the diameter of said housing except at the juncture of said trough and said housing at which juncture said vane has a portion of reduced diameter such that the radial dimension from said reduced vane portion to the inner surface of said housing corresponds substantially to the thickness of one of said cubes.

3,348,657
SPRAY ETCHING DEVICE
Glenn S. Fredrikson, Mesa, Ariz., assignor to Dea Products, Incorporated, a corporation of Arizona
Filed Mar. 23, 1966, Ser. No. 536,758
2 Claims. (Cl. 198—127)



1. In etching equipment, an improved conveyor having a plurality of rollers for advancing work through an etch-chamber or the like, each roller including means supporting said roller at either end thereof, a wire interconnecting either end of said roller, said wire helically wound about an axis passing through said supporting means to provide a contact surface to support work thereon, said surface being contained in a single cylindrical surface, a drive sprocket attached for rotation with said wire about an axis passing through said supporting means, said drive sprockets engaging a drive chain supported beneath said sprocket, said sprocket urged into driving engagement with said chain only by gravity, and means restraining horizontal movement of said sprockets.

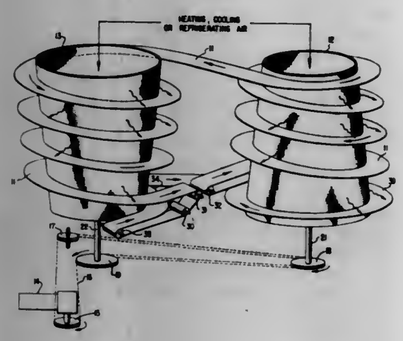
3,348,658
SAMPLE CONVEYING CHAIN FOR LIQUID SCINTILLATION SPECTROMETER
Raymond E. Cannon, San Diego, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 11, 1966, Ser. No. 541,843
5 Claims. (Cl. 198—131)



1. A conveyor chain for a liquid scintillation spectrometer comprising:

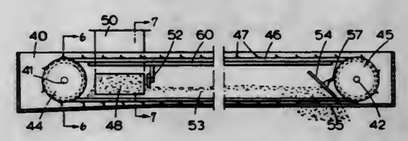
tubular links forming workpiece holding receptacles, adjacent links positioned such that their circumferences substantially intersect along a vertical line;
a vertical hole through adjacent links along said line;
a pin inserted through said hole to interconnect said links, providing for positive rotational orientation of said links when said chain is in tension; and
a keyway in said tubular links for cooperating with a key in a object to rotationally orient said object in said links.

3,348,659
CONVEYOR SYSTEM
Gerald C. Roinestad, Winchester, Va., assignor to Ashworth Bros., Inc., Fall River, Mass., a corporation of Massachusetts
Filed Apr. 19, 1967, Ser. No. 634,032
42 Claims. (Cl. 198—136)



1. A conveyor system which comprises
an endless flat belt made up of a plurality of links collapsibly connected together to permit the belt to bend in an edgewise direction, and
a belt driving and supporting assembly comprising
rotatable friction driving means comprising an upright drum having a circular cross section and a peripheral driving surface,
supporting means engaging the underside of said belt to support said belt for helical movement curving edgewise around said drum successively through a plurality of vertically spaced loops contiguous to said drum throughout their length, the radially inner edge of said belt being in sliding frictional engagement with said driving surface, and
supplemental driving means engaging said belt,
said driving and supporting assembly comprising tension control means with said drum driving surface having a coefficient of friction relative to said belt correlated with the coefficient of friction of said supporting means relative to said belt to maintain said belt throughout said loops at a magnitude of tension less than the tension which would cause one edge of the belt to be raised above the other edge and with said supplemental driving means maintaining said magnitude of tension sufficient to permit the belt to be smoothly driven by said drum by frictional engagement between said driving surface and the radially inner edge of the belt at a speed slightly less than the speed of the contiguous drum surface and feeding the belt to an initial point in its path through said loops at a tension not greater than said magnitude.

3,348,660
CONVEYORS
James Mundy Baker, Bristol, England, assignor to James Baker Conveyors Limited, Bristol, England
Original application Aug. 13, 1963, Ser. No. 302,768, now Patent No. 3,219,173, dated Nov. 23, 1965. Divided and this application July 28, 1965, Ser. No. 477,993
Claims priority, application Great Britain, Aug. 13, 1962, 30,938/62
9 Claims. (Cl. 198—168)

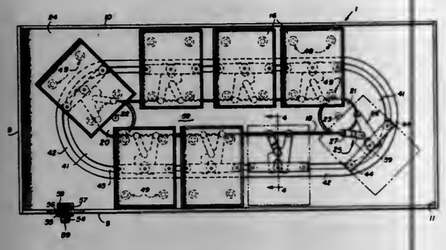


1. A conveyor comprising:
(a) a housing,
(b) an endless belt having an approximately V-section, arranged within said housing,
(c) at least one V-grooved driving wheel supporting the belt at one end thereof,
(d) means for supporting the belt at the other end thereof,
(e) a plurality of flexible strips connected at intervals along the outside surface of the belt in such a manner as to leave the driven faces of the V-belt free from projections,
(f) transverse bars connected respectively to said flexible strips at the free ends thereof and arranged to move in close proximity to at least a part of the inside surface of the housing,
(g) said flexible strips being of such a length that the bars have some freedom of movement towards and away from the belt, and
(h) said bars being inclined to said inside surface of the housing so that the pressure thereon from the conveyed material urges them towards said inside surface of the housing.

3,348,661
STORAGE AND RETRIEVAL APPARATUS
John J. Brautovich, Monta Vista, Calif., assignor to Powerfile, Mountain View, Calif., a corporation of California
Original application Feb. 15, 1965, Ser. No. 432,731, now Patent No. 3,290,104, dated Dec. 6, 1966. Divided and this application Nov. 21, 1966, Ser. No. 595,894
8 Claims. (Cl. 198—181)

1. In a continuous path conveyor of the type including a closed path single chain trained about at least two spaced sprocket wheels to define at least two linear reaches, a plurality of containers carried by said chain, the improvement comprising:
cantilever means for securing each said container to and for maintaining each said container spaced from said chain, said cantilever means including:
a main arm, one end of said main arm being pivotally attached to said chain and the other end of said main arm being pivotally and slidably attached to said container;
an auxiliary arm, one end of said auxiliary arm being pivotally attached to said chain spaced from said one end of said main arm and the other end of said auxiliary arm being pivotally secured to said main arm intermediate the two said ends thereof;

guide means for positioning and supporting each said container, said guide means including:



a continuous track means spaced apart from said chain path; and

follower means secured to each said container for slidably engaging said track means.

3,348,662

ARRANGEMENTS FOR THE STOCKING OF BULK PRODUCTS WITH A COLLAPSIBLE TRIPPER

Jacques Pradon, 19 Ave. de la Tourelle, St.-Maur-des-Fosses, France

Filed July 1, 1966, Ser. No. 562,364
Claims priority, application France, July 1, 1965, 23,113
2 Claims. (Cl. 198—186)



1. Apparatus for conveying bulk materials comprising:

a belt conveyor moving in a forward direction,

a connection conveyor frame mounted over said belt conveyor for movement longitudinally thereof and including means for conveying bulk material,

a tripper device mounted under the upper run of the belt conveyor and including a frame hinged at one end thereof to said device for swinging movement about a horizontal axis from a horizontal position to an upwardly angled position inclined upwardly in the direction of movement of said conveyor,

said tripper frame at the other end thereof carrying camming means positioned to one side of said conveyor,

said conveyor frame including cam bar means positioned in alignment with said tripper frame means for engaging same to swing said tripper frame to its upwardly angled position on relative movement of said conveyor frame toward said tripper device,

a bend pulley carried by said conveyor frame adjacent the normal operating level of said belt conveyor,

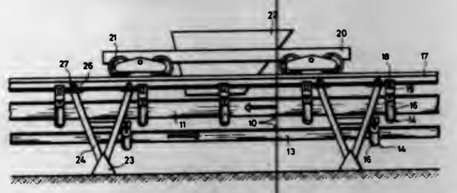
and means for releasably securing said conveyor frame to said tripper device when movement of said conveyor frame relative to said tripper device raises said tripper device frame sufficiently to bring said bend pulley into engagement with said conveyor and dispose said tripper frame other end over said conveying means.

3,348,663

SUPPORTING STRUCTURE FOR MOVABLE BELT CONVEYORS

Theodor Schmieder, Bad Oeynhausen, Germany, assignor to Eisenwerk Weserhutte A.G., Oeynhausen, Germany, a corporation of Germany

Filed Oct. 7, 1965, Ser. No. 493,772
3 Claims. (Cl. 198—192)



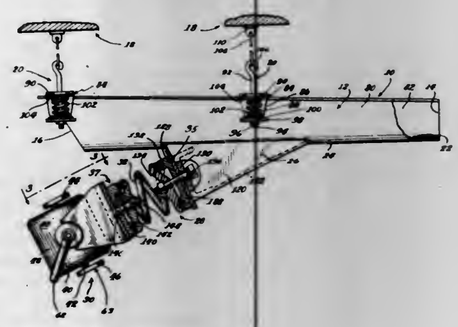
1. A suporting structure for a laterally movable belt conveyor comprising a plurality of sleepers, a plurality of conveyor supports connected to the sleepers, means suspending a conveyor between the conveyor supports including sets of rollers mounted on axles pivotally suspended from the rails and connected to clamps engaging the rail bases, and a railroad rail mounted on top of the conveyor supports on each side of the conveyor by connecting means permitting a small pivotal movement between the rails and the supports.

3,348,664

NATURAL FREQUENCY VIBRATING FEEDER

Elmer J. Renner, Aurora, Ill., assignor to Stephens-Adamson Mfg. Co., a corporation of Illinois

Filed Jan. 21, 1966, Ser. No. 522,191
18 Claims. (Cl. 198—220)



1. A vibrating feeder comprising:

a trough,

means for resiliently supporting said trough,

a spring assembly connected at one end thereof to said trough at an acute angle with respect to the trough, thereby defining an angle of attack direction,

and an exciter device carried by the other end of said spring assembly,

said trough, said spring assembly and said exciter device forming a vibratory system,

said exciter device including a rotatable eccentric mounted to rotate about an axis lying in a plane that extends generally longitudinally of the trough, and motor means for rotating said eccentric at a speed approximating the resonant frequency of said system in said angle of attack direction,

said spring assembly including a helical spring having its two ends connected respectively to the trough and to the exciter device and having its central axis in said angle of attack direction;

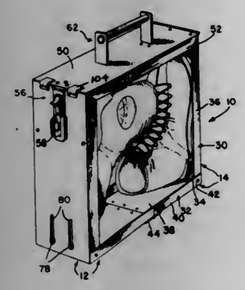
said spring assembly having a spring rate laterally thereof that is substantially equal to or less than half its spring rate axially thereof, and said spring assembly constituting the sole support for said exciter device.

3,348,665

COMBINED SKI BOOT RETAINER AND CARRIER

Robert G. Andretich, 12628 Fairview, Blue Island, Ill. 60406

Filed July 15, 1966, Ser. No. 565,589
8 Claims. (Cl. 206—1)



1. A portable ski boot retainer and carrier in the form of an articulated frame structure comprising three rigid frame sections including first and second frame sections each of which is of L-shape configuration and has a long leg and a short leg, and a third linearly straight frame section of an effective length substantially equal to the combined lengths of said short legs, means hingedly connecting the distal ends of the short legs of the first and second frame sections together for relative swinging movement of said first and second frame sections, means hingedly connecting one end of the third section to the distal end of the long leg of the second section for relative swinging movement of said third and second frame sections, said frame sections being relatively movable between a folded rectangular condition of the frame structure wherein said short legs are horizontal and coplanar, the long legs are vertical and parallel, and the third frame section is horizontal and has its other end abutting the distal end of the long leg of the first section, and an unfolded condition of the frame structure wherein the short legs of the first and second frame sections are vertical and folded flat upon each other in face-to-face relationship, the long legs of said first and second frame sections are horizontal and coplanar, and the third frame section is disposed with respect to the long leg to which it is hingedly connected at an angle greater than 90°, a carrying handle secured to said third frame section, and means releasably securing the sole portion of a ski boot in face-to-face relationship with respect to each of said long legs whereby the ski boots are movable with such legs and assume a nested relationship when the frame structure is in its folded condition.

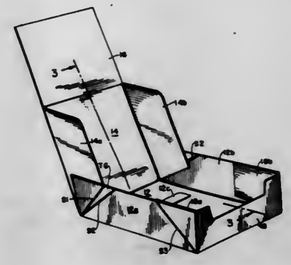
3,348,666

SOUP CARTON

Frank McCormick, Piermont, N.Y., assignor to Federal Carton Corporation, North Bergen, N.J., a corporation of New York

Filed May 19, 1965, Ser. No. 457,125
9 Claims. (Cl. 206—44)

1. A unitary storage and display container comprising a rectangular receptacle having five walls, from a first one of which the other four walls extend at right angles, and means comprising gussets connecting one of said four walls to an adjacent pair of said walls, said gussets when



in folded or unfolded position lying parallel to said adjacent walls to permit limited inclination of said one wall with respect to said first wall.

3,348,667

COMBINATION SHIPPING AND DISPLAY CONTAINER

John E. Beeby, Alameda, Calif., assignor to The Clorox Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 23, 1966, Ser. No. 529,441
9 Claims. (Cl. 206—45.33)

1. A combination shipping and display container comprising a bottom tray having upstanding side and end walls, a top cover having downwardly extending side and end walls, a plurality of angular partitions vertically interposed between said bottom tray and said top cover such that the compression loads on said container are primarily absorbed by the angular partitions, each of said angular partitions having an end wall and two side walls, said side walls of each angular partition being substantially at right angles to its adjoining end wall, a plurality of articles resting on said bottom tray, said angular partitions being capable of assemblage to expose any portion of said articles in said container, and means for maintaining said container elements in assembled relationship.

3,348,668

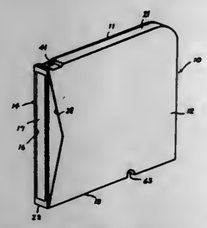
REEL CONTAINER

Hideo Amatsu, Tokyo, and Hanjiro Esashi, Miyagi-ken, Japan, assignors to Sony Corporation, Shinagawa-ku, Tokyo, a corporation of Japan

Filed Sept. 13, 1965, Ser. No. 486,948
3 Claims. (Cl. 206—52)

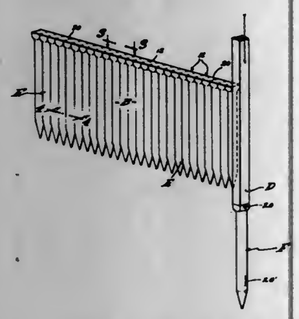
1. A reel container comprising an integral molding having opposed side walls and edge walls therebetween, releasable latch means between said side walls, a front wall hingedly secured at its bottom edge between said side walls and engageable with said latch means to form

a closure for said container, and opposed arcuate ribs within said container providing a track for receiving a



reel in an off center position whereby said reel is free to roll forward when said front wall is unlatched.

3,348,669
BODY UNIT COMPRISING A STICK OF SEVERABLE FASTENERS
Richard E. Powers, San Marino, Calif., assignor to Powers Wire Products Co., Inc., El Monte, Calif., a corporation of California
Filed Jan. 18, 1965, Ser. No. 426,214
7 Claims. (Cl. 206—56)



1. A unit comprising a stick of separately drivable fasteners and including one body of material formed into a multiplicity of identical and parallel enlargements, and interconnections therebetween, each of the said enlargements being in the form of a double ended elongated fastener with one end to enter a part to be fastened and the other end to receive driving force to effect said entry, and each interconnection being in the form of solid body material extending between adjacent said other ends of the said elongated fasteners, each of said fastener formed enlargements being severable from the body of material by displacing the same with force applied to said other end of the body and thereby shearing the interconnection.

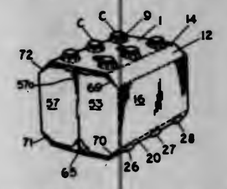
3,348,670
COSMETIC STICK CONTAINER
Robert Gordon Bau, 3271 Laurel Canyon Blvd., North Hollywood, Calif. 91604
Filed Oct. 21, 1966, Ser. No. 596,370
14 Claims. (Cl. 206—56)

1. Cosmetic container apparatus comprising:
an operator container for receiving a cosmetic stick and having an operating mechanism for extending and retracting the stick through one end of said container;
slide means in said container movable between an extended position near said one end and a retracted position near the opposite end of said container, said slide means being in the retracted position when a cosmetic stick is inserted in said one end of the container;
and means carried by said slide means including latch means for selectively latching the cosmetic stick to the slide means and adapted in the retracted position thereof to selectively capture the cosmetic stick to



effect its reciprocal movement through said one end of the container, and to release the cosmetic stick when it is desired to remove the stick from the container.

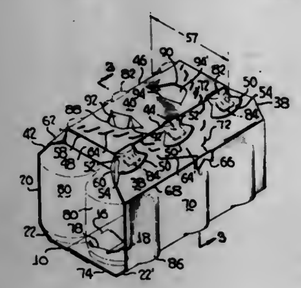
3,348,671
BOTTLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Oct. 30, 1964, Ser. No. 407,779
4 Claims. (Cl. 206—65)



1. A carrier for packaging two rows of bottles whose axes are disposed in substantially parallel relation to one another, said carrier comprising a top panel, a pair of top sloping panels foldably joined to opposite sides of said top panel, a pair of side wall panels foldably joined respectively along the edges of said top sloping panels remote from said top panel, a pair of bottom panels foldably joined respectively along the edges of said side wall panels, fastening means for securing said bottom panels together, a medial keel panel foldably joined to one of said bottom panels and disposed between the two rows of bottles, an end panel foldably joined to each end edge of each side wall panel, interlocking means for securing the end panels at each end of the carrier together to form a substantially complete closure for the ends of the carrier, and a locking notch formed in said keel panel near the ends thereof for receiving and holding the adjacent end panels closed.

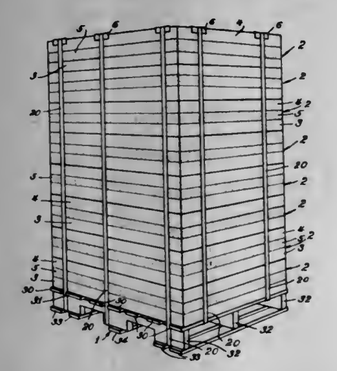
3,348,672
CARTON FOR EASY OPEN BOTTLES
William M. Brown, Darien, Conn., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 5, 1965, Ser. No. 437,447
10 Claims. (Cl. 206—65)

8. A package comprising a group of containers bearing crown caps with a flap and arranged in two parallel rows with the flaps of each row extending outwardly in opposite directions, a wrap-around carrier for restraining said group of containers, said carrier comprising a top panel having first, second and third sections joined along fold lines, a pair of side panels joined to said first and third sections and a bottom panel joining said side panels, said second section being substantially perpendicular to said side panels, said first and third sections joining their



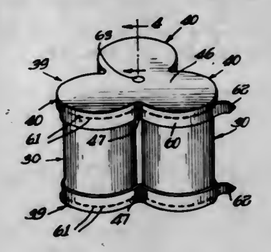
respective side panels at an angle, and a plurality of apertures formed in said first and third sections and arranged in substantially opposing parallel rows, each of said apertures being in the shape of a doorknob having a broad base, a flap of each of said containers extending through and beyond a respective aperture, the crown cap being positioned within the broad base of the aperture.

3,348,673
UNITIZED SEALED LAYER CARTON LOAD
Gene C. Bahls and Frank C. McNutt, Kalamazoo, Robert E. Price, Scotts, and Victor R. Zidell, Kalamazoo, Mich., and Lloyd C. Dick, Cincinnati, Ohio, assignors, by mesne assignments, to Brown Company, a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,951
10 Claims. (Cl. 206—65)



1. In a palletized load comprising a pallet base and a plurality of layers secured thereto, the improvement wherein each of said layers comprises a unitary base container having a bottom panel and ascending side walls, a unitary cover having a top panel and depending side walls, and an adhesive strip adhesively affixed to both the side walls of said container and the side walls of said cover, said adhesive strip extending around and sealing the entire perimeter of said layer at the junction between said container and said cover thereby sealing the space defined by said container and said cover, said container having therein a plurality of paperboard trays each comprising a bottom panel, side wall panels and end wall panels connected thereto and having a plurality of articles arranged within said trays, and vertical reinforcing members arranged at least one at each end of each of said trays comprising a body member and end members disposed at right angles thereto, said layers thus being individually sealed against the intrusion of foreign matter thereby preventing the contents of said trays from becoming contaminated.

3,348,674
CONTAINER CARRIER AND PACKAGE
Ouglesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Original application July 17, 1959, Ser. No. 827,747. Divided and this application Jan. 23, 1967, Ser. No. 611,046
8 Claims. (Cl. 206—65)



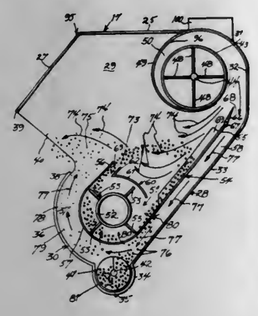
1. A packaging device adapted to retain a plurality of containers each including an axially and radially extending circumferential bead having top, bottom and side portions located at one end thereof, said bead defining a closed figure having a major dimension, comprising a one-piece elastic plastic shaped carrier member including a plurality of interconnected bead engaging means respectively adapted to engage at least a portion of each individual circumferential bead of the containers, each of the bead engaging means including portions for overlying said top and bottom portions of the beads to prevent unauthorized separation of the individual containers from the package, and a detachable severable extension extending from each of the bead engaging means for engaging sidewalls of the containers for normally restraining removal of the containers from the package and for permitting relative easy removal of the containers upon detachment of the severable extension.

3,348,675
SINK-FLOAT SEPARATION PROCESS
Elmer C. Tveter, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,563
2 Claims. (Cl. 209—5)

1. In a sink-float separation process, wherein finely divided solid materials of a size which tends to form flocs in non-aqueous media and which contains at least two components of different densities are separated by employing a parting liquid of intermediate density substantially non-reactive with said solid material, said parting liquid having a maximum viscosity of about 5 centipoises at process temperature and consisting essentially of at least one halogenated hydrocarbon containing inclusively from one to two carbon atoms and from 2 to 6

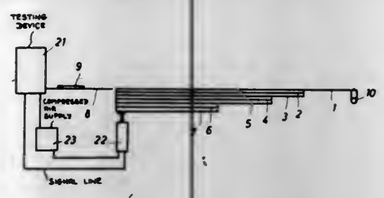
halogen atoms, water being present in the process in a maximum amount of 2 percent by weight of the solid material; the improvement which comprises providing an ionic dispersant which is substantially unreactive with said solid material and said parting liquid and which is soluble in said parting liquid, selected from the group consisting of (A) petroleum sulfonates, (B) cationic amine surface active agents containing up to 20 carbon atoms and having at least one uninterrupted alkyl group containing at least 8 carbon atoms, (C) anionic sulfonate and sulfate-containing surface active agents having at least one uninterrupted alkyl chain containing from 8 to 18 carbon atoms, (D) mono- and dialkyl esters of phosphoric acid, the monoalkyl esters containing from 4 to 20 carbon atoms and the dialkyl esters containing from 8 to 12 carbon atoms, and (E) stearate esters and divalent stearate salts, and adding from about 0.005 to about 1.0 percent by weight of said dispersant to said parting liquid.

3,348,676
ROTARY CLEANING UNIT
Elof K. Karlsson, East Moline, and Edward C. Collins, Moline, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 5, 1964, Ser. No. 387,593
2 Claims. (Cl. 209—22)



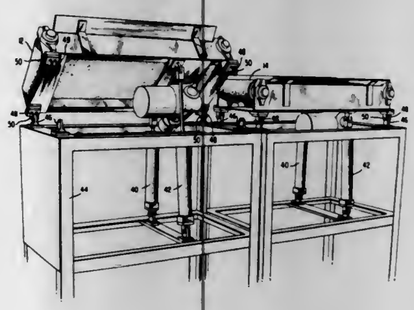
1. A device for removing nongrain material from a mixture thereof with grain comprising:
- an elongated housing having a front wall, a rear wall and inner and outer side walls;
- an elongated horizontally extending grain impeller disposed within said housing adapted to toss material upwardly therefrom;
- an elongated inclined surface disposed in said housing spaced from one side wall thereof and in the path of the tossed material, said inclined surface and said one side wall providing an aisle therebetween;
- a plurality of guides disposed on said inclined surface extending downwardly from said front to said rear wall;
- a grid removably disposed in a lower portion of said inclined surface and providing means through which grain from the falling material can pass and over which the remainder of the material is returned to said impeller;
- a clean grain trough disposed below said grid; and
- means for directing a first air current on one side of said inclined surface into the tossed material and a second air current on the other side of said inclined surface through said aisle, such that said tossed material encounters said first current before falling onto the inclined surface and said grain that passes through said grid encounters said second air current while falling through said aisle whereby light nongrain material is carried away by said currents.

3,348,677
DISTRIBUTION DEVICE FOR BULK GOODS
Franz Josef Meyer, Opladen, Germany, assignor to Goetzewerke Friedrich Goetze AG, Burscheid, Germany
Filed Dec. 17, 1965, Ser. No. 514,492
7 Claims. (Cl. 209—74)



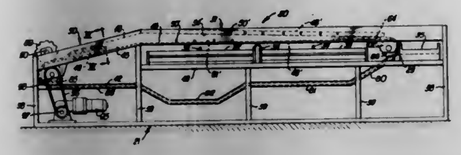
1. A device for sorting bulk goods into a plurality of quality grades after such goods have been processed by a testing device, comprising, in combination:
- a plurality of discharge channels, one of which constitutes a normal channel, for receiving the processed bulk goods, each of said channels corresponding to one quality grade of the bulk goods, and the other said discharge channels each being stacked with respect to said normal channel at a different fixed vertical distance therefrom; and
- a lifting mechanism coupled to said discharge channels for moving all of said channels in unison to selectively position a selected one of said channels at a predetermined height;
- wherein said normal channel is initially positioned at the predetermined height and said lifting mechanism includes a plurality of lifting devices each arranged for lifting said channel by a different predetermined amount so as to position a respective one of the other stacked discharge channels at such height.

3,348,678
AUTOMATIC WEIGHT GRADING APPARATUS
Stanley L. Flowers, 103 Bruce Drive, West Milton, Ohio 45383
Filed Jan. 10, 1966, Ser. No. 519,744
7 Claims. (Cl. 209—74)



1. An automatic weight grading apparatus comprising:
- a base;
- at least two belt conveyors on said base arranged in alignment and adjacent one another;
- weighing means connected to the first of said conveyors for sensing the weight of an article as it passes along said conveyor;
- trunnion means positioned on opposite sides of said base and supporting the other of said conveyors thereon for pivotal movement on axes parallel to the longitudinal axis of the other of said conveyors;
- article discharge means for selectively tilting the other of said conveyors on said trunnions in opposite directions each transverse to the movement of said conveyor;
- and means interconnecting said weighing means and said tilting means whereby the other of said conveyors remains in untilted condition for articles below a first predetermined weight, is tilted in one direction for articles greater than said first but less than a second predetermined weight and is tilted in the opposite direction for articles greater than said second predetermined weight.

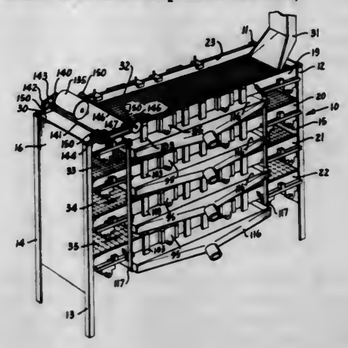
3,348,679
GROMMET MEANS FOR SIZING APPARATUSES
Kenneth F. Russell, Pomona, Calif., assignor to Brogdex Company, Pomona, Calif., a corporation of California
Original application May 29, 1961, Ser. No. 113,304, now Patent No. 3,179,429, dated Apr. 20, 1965. Divided and this application Apr. 13, 1965, Ser. No. 447,646
4 Claims. (Cl. 209—84)



1. In combination with a sizing apparatus for articles of irregular shape, each including a major and minor dimension and having a plurality of parallel sizing roll members, each member being rotatable about an axis, means to orient each article on the sizing rolls with respect to its major dimension, and means to progressively spread said sizing roll members apart at selected article classification zones for classifying said articles in accordance with selected volume, the provision of: a plurality of spaced grommets on said roll members in alignment, adjacent grommets on adjacent roll members having point locations for supporting an article, each of said grommets having external surfaces generated by rotating a composite curve about said axis and having a minimum diameter at edges of said grommets and a maximum diameter at the central portion of said grommets, the composite curve forming said external surfaces being derived from a plurality of independent curves, each based on shapes of constant volume while maximum and minimum dimensions of said shapes are varied to provide spacing of point locations on said surfaces to form pocket openings irregularly variable in the shape of the openings substantially in accordance with the volume of the said shapes.

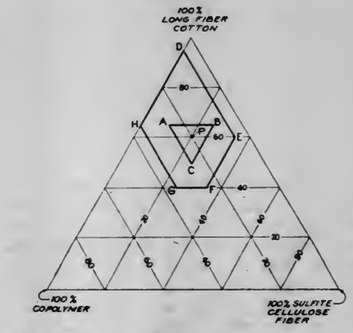
3,348,680
SEGREGATION APPARATUS AND METHOD
Bentley B. Mathews, P.O. Box 335, Arbuckle, Calif. 95912, and Paul T. Frentzen, Arbuckle, Calif.; said Frentzen assignor to said Mathews
Filed Aug. 23, 1965, Ser. No. 481,847
24 Claims. (Cl. 209—84)

23. A method of segregating articles according to size, comprising
- (a) depositing said articles on the upper reach of a substantially horizontally disposed continuous belt having openings therein through which articles of a predetermined size or less are adapted to pass;
- (b) translating the upper reach of said belt to move said articles thereacross;
- (c) imparting oscillations to the upper reach of said belt simultaneously with the translating thereof to orientate the articles deposited thereon;



- (d) damping said upper reach to effect control of the energy level of oscillations imparted thereto by physically contacting at least one edge portion thereof with a shield extending in juxtaposition thereto; and,
- (e) collecting the articles which pass through openings in said belt.

3,348,681
FILTRATION OF PERCHLORETHYLENE AND FILTER FABRIC
Donald E. Wiegand, Minneapolis, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,648
11 Claims. (Cl. 210—65)

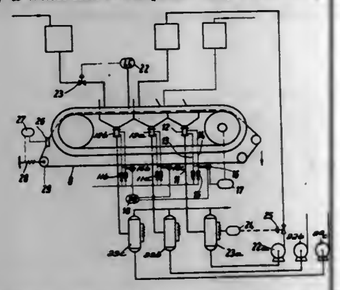


1. The method which comprises filtering perchlorethylene through a sheet of felted fiber containing cellulosic fibers and thermoplastic fibers of copolymer of vinyl chloride-vinyl acetate.

3,348,682
METHOD AND APPARATUS FOR OPERATING A FILTER BELT
Willi Aulich, Buchschlag, and Edwin Ley, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Apr. 16, 1965, Ser. No. 448,894
Claims priority, application Germany, Apr. 16, 1964
M 60,677
8 Claims. (Cl. 210—66)

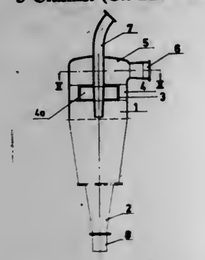
1. A process for automatically controlling a belt filter wherein the speed of the belt filter is dependent on rate of filtration, the steps comprising feeding a suspension

onto the belt filter which is driven by a drive means, filtering the suspension with the belt filter whereby a filter cake is produced, washing the cake on the belt filter whereby a wash filtrate is produced, measuring the density



of the wash filtrate with sensing and measuring means producing an impulse, measuring the impulse and applying it to the drive means of the belt filter whereby the speed of the belt filter is regulated based on the density of the wash filtrate.

3,348,683
METHOD OF SEPARATING PARTICLES IN LIQUID SUSPENSION IN A HYDROCYCLONE FOR SEPARATING ARTICLES IN LIQUID SUSPENSION
Nils Anders Lennart Wikdahl, 16 Burevagen, Djursholm, Sweden
Filed Sept. 8, 1961, Ser. No. 136,833
Claims priority, application Sweden, Sept. 13, 1960, 8,723/60
3 Claims. (Cl. 210—84)

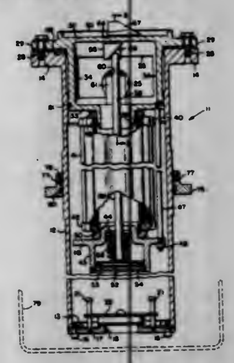


1. In a method of separating in a hydrocyclone including a separation chamber, discrete particles contained in a liquid suspension into a heavy fraction and a light fraction, the steps of providing several inlet ducts connected with said separation chamber and distributed in symmetric relationship about a lengthwise axis of the separation chamber substantially tangentially oriented in reference to said axis, feeding the suspension to one end of said ducts at an inlet pressure between 0.5 and 2.5 atmospheres, and discharging the suspension from the ducts at the other end thereof into the separation chamber in the form of substantially tangentially directed partial flows having an entry speed of 1 to 8 meters per second into the chamber, whereby a minor portion of the inlet pressure energy of the suspension is converted into kinetic energy while the suspension is flowing through said ducts.

3,348,684
SUMP FILTER WITH INDICATOR
Paul F. Wilber, Richland, N.Y., assignor to Dollinger Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 26, 1966, Ser. No. 523,215
6 Claims. (Cl. 210—90)

1. A filter comprising

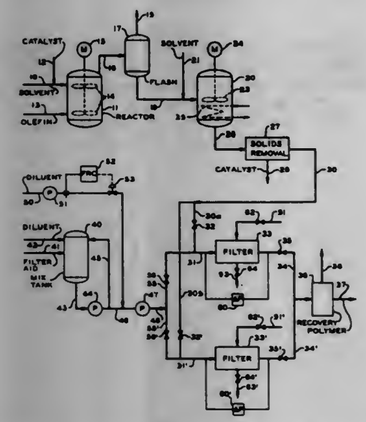
(a) a housing,
(b) a porous filter element mounted in said housing,
(c) means for connecting said housing to a pump for pumping fluid through said element, and
(d) indicating means responsive to predetermined changes in the rate of flow of the fluid through said element to indicate the cleanliness of said element,
(e) said filter element having a central bore,
(f) said connecting means comprising
  (1) means for connecting one end of said bore to said pump, and
  (2) means for closing the opposite end of said bore so that fluid pumped through said element must flow radially through the pores in said element to be filtered thereby,
(g) said housing surrounding said element in spaced relation thereto, and having therein a pair of spaced, fluid ingress and egress ports, respectively, one of which communicates with said one end of said bore for connecting said pump thereto, and the other of which communicates with the space between said element and said housing,



(h) said closing means comprising a first member closing said opposite end of said bore and movable in one direction, when the pressure differential created by said pump between said bore and the outside of said element exceeds a predetermined value, and
(i) said indicating means comprising
  (1) a second member having thereon indicia representative of different degrees of cleanliness of said element,
  (2) a third member mounted in operative relation to said second member, and movable relative thereto to register with different portions of said indicia, one of said second and third members being secured to the outside of said housing, and the other of said second and third members being movably mounted on the exterior of said housing, and
  (3) means operatively connecting said other of said second and third members to said first member for movement thereby, when said first member moves in said one direction.

3,348,685
FILTER APPARATUS AND FILTER AID FEEDING AND CONTROLLING SYSTEM
Neil C. Miller, Villa Park, Ill., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 2, 1964, Ser. No. 393,873
1 Claim. (Cl. 210—101)

Filtering apparatus comprising a filter; first conduit means communicating with the inlet of said filter to supply a material to be filtered; a mixing tank; means to introduce a filter aid into said mixing tank; means to introduce a diluent into said mixing tank; second conduit means communicating between said mixing tank and the inlet of said filter to supply diluent and filter aid from said mixing tank to said filter; a source of diluent; third conduit means communicating between said source of diluent and said second conduit means to add additional diluent to said second conduit means; a constant delivery pump in said second conduit means between the junction with said third conduit means and said filter to pass material to said filter at a first constant rate; a second pump in said third conduit means; a flow controller in said third conduit means downstream from said second pump to maintain a constant flow of diluent through said third

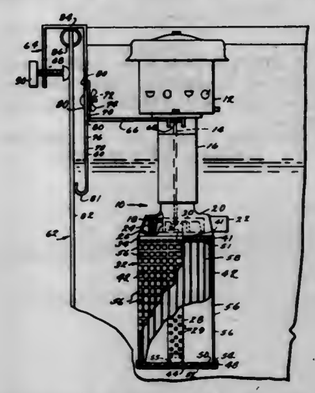


conduit means at a second rate which is less than said first constant rate; a third pump in said second conduit means between said mixing tank and the junction with said third conduit means; and fourth conduit means communicating between the outlet of said third pump and said mixing tank, said third pump being operated at a rate which is greater than the difference between said first constant rate and said second rate so as to return to said mixing tank through said fourth conduit means a portion of the filter aid and diluent passed by said third pump and whereby there is maintained at the outlet of said third pump a sufficient pressure to prevent diluent flowing through said third conduit means from entering said fourth conduit means.

3,348,686
FILTER UNIT AND VACUUM ATTACHMENT THEREFOR
Carroll F. Spitzer, Rte. 3, Hagerstown, Md. 21740
Filed Dec. 21, 1964, Ser. No. 419,699
7 Claims. (Cl. 210—169)

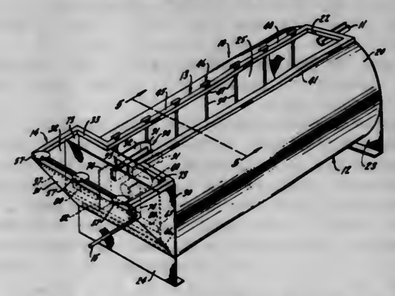
1. A pool filter assembly comprising: a pump having a suction inlet and a pressure discharge, said pump including a motor, a power takeoff shaft protruding from said motor, an impeller secured of said shaft at the outer end thereof and means defining an impeller chamber surrounding said impeller; a perforated intake tube communicated to said suction inlet, a filter element peripherally surrounding said perforated intake tube and a filter case surrounding said filter element, said filter element comprising paper having a plurality of longitudinal convolutions, said filter case having a generally cylindrical side wall and having disk-like top and bottom ends, a disk-like resilient gasket positioned within said filter case adjacent each of said ends said filter element being of a length to engage each of said resilient gaskets; and means

defining a plurality of openings through said filter case for admitting water to be filtered by passage through said filter element bracket means removably mountable on a pool side wall by a first portion thereof, said bracket means including a generally laterally extending arm secured to said pump; said assembly additionally comprising a pool cleaning subassembly including a hose-attached surface cleaner device and means defining a chamber of



a size to receive and at least partially surround said filter case, means on said filter case and means on said chamber means for securing said chamber means to said filter case in an at least partially surrounding condition with respect to said filter case; means defining a surface cleaner device hose receiving coupling on said chamber means and communicated therethrough to the filter case for communicating the surface cleaner device to the filter case.

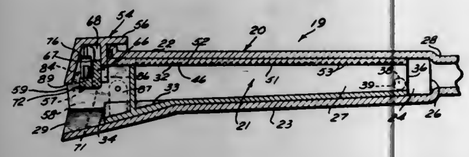
3,348,687
SEWAGE TREATMENT SYSTEM
Joseph W. Foster, Kansas City, Mo., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 31, 1965, Ser. No. 444,194
9 Claims. (Cl. 210—195)



1. A tank assembly for the aeration treatment of solid bearing liquid sewage, comprising: a generally cylindrical aeration chamber having its major axis disposed in a substantially horizontal plane, means for emitting air in said aeration chamber to cause rotation of the sewage in a generally circular flow path about said axis as the sewage is aerated, a settling chamber at one end of said aeration chamber for receiving solid bearing liquid from said aeration chamber and settling solids therefrom, transfer means for transferring sewage from said aeration chamber to said settling chamber, said transfer means including passage means having an inlet mouth in said aeration chamber, said inlet mouth being located between said axis and the outermost periphery of said aeration chamber, said inlet

mouth opening in a direction generally counter to said flow path and thus facing into the rotating sewage so as to cause sewage to flow directly into said mouth without substantially changing its flow direction, whereby said settling chamber receives sewage having considerable kinetic energy but is prevented from receiving solids held at the periphery of said aeration chamber by centrifugal force, and means for returning solids from said settling chamber to said aeration chamber.

3,348,688
MANUAL FILTER FOR A WASHING MACHINE
Carl R. Patterson, St. Joseph, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,726
3 Claims. (Cl. 210—238)



2. A laundry liquid filter for use in a washing machine to remove foreign particles from the laundry liquid comprising,

an elongated housing having a liquid inlet and a liquid outlet situated respectively at opposite ends of said housing and a chamber communicating said inlet and said outlet,

a filter cartridge including a cartridge body and a cover member,

a plurality of spaced parallel imperforate rigid wall members formed on said cartridge body and extending outwardly therefrom to form a plurality of flow paths therebetween communicating said inlet and said outlet and extending substantially parallel to the longitudinal axis of said housing,

a plurality of axially transverse imperforate rigid walls extending between adjacent wall members at the ends thereof and arranged to block a first group of said flow paths from said inlet and to block a second group of said flow paths from said outlet,

said flow paths of said first group being arranged, respectively, between pairs of flow paths of said second group,

hinged members formed on said cover member and on said cartridge body to pivotally guide said cover member to a closed position wherein said cover member overlies said cartridge body and to an open position wherein said cover member is pivoted away from said cartridge body, said hinge means being constructed and arranged on the body and cover member so as not to restrict substantially, completely open longitudinal flow from the inlet through the cartridge to the outlet,

said cover member having an inflexible filter surface formed thereon and engageable with the outer extremities of said wall members in the closed position of said cover member and having a plurality of grooves formed therein and extending transversely to said wall members to communicate adjacent flow paths in the closed position of said cover member,

said filter cartridge being insertable into said housing through said outlet in the closed position thereof for communicating liquid from said inlet to said outlet and for removing particles entrained in the liquid in said grooves,

said filter cartridge being removable from said housing whereby said cover member can be pivoted to said open position for flushing said wall members, said flow paths and said filter surfaces under a water faucet,

a handle mounted on said filter cartridge to be disposed outside of said housing in the inserted position of said cartridge,

a movable latch and release bar mounted on said handle having a nib formed thereon shaped complementarily to and engageable with a nib formed on said housing, and spring biasing means mounted on said handle engageable with said latch and release bar to bias said nibs together in locking engagement to releasably lock said cartridge in said housing.

3,348,689
CONCENTRIC FILTER ELEMENTS HAVING ASSEMBLING AND LOCKING MEANS
Frederick Kraissl, Jr., 244 Kinderkamack Road, North Hackensack, N.J. 07661
Filed June 29, 1965, Ser. No. 467,872
16 Claims. (Cl. 210—238)



1. In a multi-element filter-separator comprising an outer substantially cylindrical filter and an inner concentric filter, an arcuate handle of inverted U-shape having its lower end secured to the inner filter, and cooperating means on said handle and said outer filter for latching said filters together, the improvement which comprises a tongue latch at the lower end of said handle extending laterally outward from said inner filter, a horizontal flange extending outwardly from the upper end of said outer filter, an upstanding projection on said outer filter, a horizontal slot in one of said tongue and projection, said projection extending above said flange and being secured to said outer filter, said tongue fitting into said projection on relative rotation of said filters, a spring having an attachment to an intermediate part of said handle and extending downwardly, an opening in one of said projection and spring, the lower end of said spring being adjacent to and in line with said projection, and cooperating means on the other of said projection and spring for entry into said opening, said opening and said cooperating means being in horizontal alignment when said tongue is in latched position in said slot.

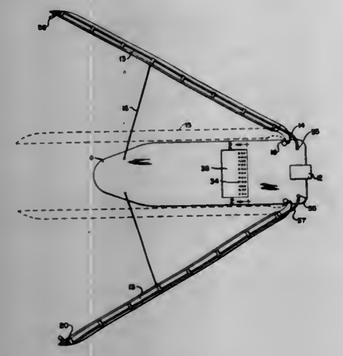
3,348,690
CATCHER FOR CLEANING WATER SURFACES
Jan Cornelissen, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,824
Claims priority, application Netherlands, Nov. 14, 1963, 300,508
8 Claims. (Cl. 210—242)

1. Apparatus for collecting matter floating on the surface of a liquid comprising:

(a) a floating vessel;

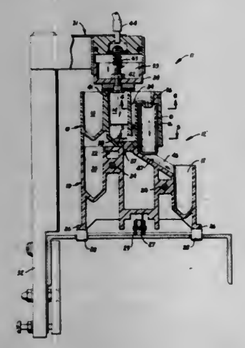
(b) elongated boom means partly submerged in the liquid and attached at one end thereof to the vessel and extending forwardly and outwardly from the direction of movement of the vessel for forming a collecting area between a portion of the vessel and said boom means;

(c) a separating tank within said vessel; and,



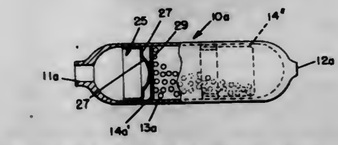
(d) inlet means for said separating tank disposed on the hull of said vessel near the juncture of said boom means therewith, said inlet means comprising a vortex chamber having an inlet opening to admit liquid and floating matter from said collecting area with a vortical motion, said inlet opening comprising a vertically extending tubular bushing member adjustably mounted in said vortex chamber for controlling the area of said opening.

3,348,691
SAMPLE CONDITIONING UNIT
Daisy Travaglio, Kensington, Calif., assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed Feb. 27, 1964, Ser. No. 347,787
9 Claims. (Cl. 210—255)



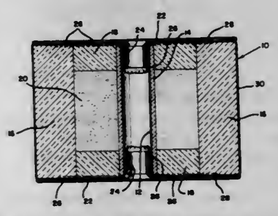
1. A sample conditioning unit for automated analytical apparatus, comprising a housing having a plurality of laterally spaced compartments, a first passage in said housing extending from the bottom of a first of said compartments to a location near the top of a second of said compartments, each of said first and second compartments being laterally disposed to each other and defined by walls internal of said housing, the walls of said first and second compartments defining said first passage, means for moving liquid through said first passage, a second passage in communication between said second compartment and a third compartment for carrying liquids from the second to the third compartment, and conditioning means carried in said second compartment.

3,348,692
DRYER WITH IMPROVED DESICCANT COMPRESSING SPRING
Stephen Balogh, Lyons, N.Y., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 21, 1964, 419,971
The portion of the term of the patent subsequent to Mar. 30, 1982, has been disclaimed
5 Claims. (Cl. 210—266)



1. In combination with a tubular dryer containing a bead-type desiccant and means for retaining said desiccant in position at one end thereof, a perforated baffle at the other end of the desiccant, an annular ring fixed in secured engagement against the interior sidewall of the tubular dryer adjacent said baffle, and a spring finger carried by said ring engaging said baffle to retain the same in position at the other end of the desiccant.

3,348,693
ENGINE COOLANT FILTER ELEMENT
William C. Cornell, 1040 Adrienne Drive, Alamo, Calif. 94507
Filed Sept. 1, 1965, Ser. No. 484,376
4 Claims. (Cl. 210—282)

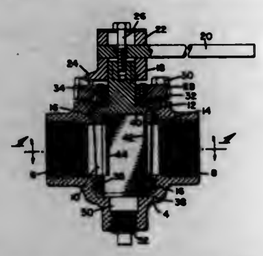


1. A filter element for use in filtering coolant liquids used in internal combustion engines, comprising fiberglass filtering sections so arranged as to define an internal chamber, dry chemicals positioned in said chamber for conditioning said liquid coolant during use of the filter element, and means for retaining said fiberglass sections in position, said means comprising retainer plates formed from a sacrificial metal.

3,348,694
STRAINER VALVE PLUG AND VALVE
Russell G. Smith, Cincinnati, Ohio, assignor to Continental Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 21, 1966, Ser. No. 528,951
4 Claims. (Cl. 210—390)

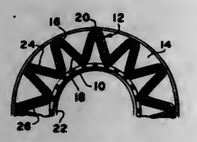
1. A plug-type valve comprising in combination: a valve body having an inlet port, an outlet port, and a substantially cylindrical chamber intermediate said ports for accommodating a valve plug; a substantially cylindrical valve plug rotatable in the body chamber, said plug being hollow and having opposed ports at opposite ends of a diameter to register with the inlet and outlet ports of the

valve body when the plug is rotated to open-valve position; and imperforate portions in the plug wall to close said body ports when the plug is rotated to a closed-valve position; and a screen covering one only of the plug ports, for straining foreign matter from a fluid passed through the inlet and outlet ports of the valve body in the open position of the valve; means for back-flushing



the screen with the valve in closed position, said back-flushing means comprising a cleaning port in a side of the valve body for directing a cleaning fluid against the outside of the screen while the valve is in closed position, for dislodging foreign matter from the screen; and a bottom cleaning port in the body of the valve for draining out the cleaning fluid introduced through the cleaning port first mentioned.

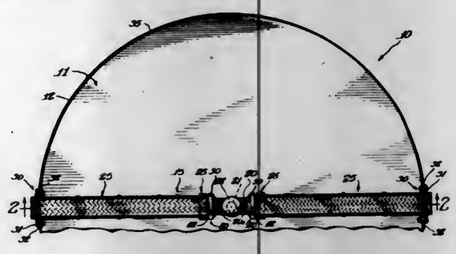
3,348,695
FILTER MATERIAL
Borje O. Rosaen, Ann Arbor, Mich., assignor to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed July 12, 1965, Ser. No. 471,295
4 Claims. (Cl. 210—489)



3. A filter element comprising:
(a) a first supporting member and a second supporting member,
(b) a flexible cloth material carried intermediate said supporting members,
(c) said cloth material being constructed of strands of monofilament material woven together and having a surface exposed to fluid on the inlet side of said filter element and an opposite surface exposed to fluid on the outlet side of said filter element, and
(d) said cloth material having at least the surface on the inlet side roughened to form a plurality of jagged projections and depressions on said inlet side surface of said material adapted to increase the ability of said cloth material to catch and retain foreign particles and to decrease the porosity of said cloth material.

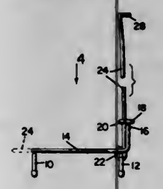
3,348,696
SEWAGE TREATMENT SYSTEM
John W. Parks, Shawnee Mission, Kans., and Ralph A. Olson, Kansas City, Mo., and Thomas J. Langley, Prairie Village, Kans., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 3, 1966, Ser. No. 518,427
3 Claims. (Cl. 210—530)

1. In a sewage treatment tank having a plurality of scrapers affixed to and depending from a rotating bridge arrangement of the type including a center column supported rotatable turntable and a radially disposed wing section adapted for travel at its outermost end on the peripheral wall of the tank, an improvement in hinge assembly for connecting the wing section to the turntable, comprising: first pivot pin means on said turntable, second pivot pin means on said wing section, toggle link means interconnecting said first and second pivot pin means, and stop means on one of said turntable and said wing section for limiting the downward pivotal move-



ment of said toggle link means about said first pivot pin means to support the inner end of said wing section with said wing section in substantially horizontal relationship, said toggle link means permitting said wing section to rise along its entire length without excessively stressing the turntable or the wing section, the pivot axis of said second pivot pin means normally lying in a horizontal plane below the pivot axis of said first pivot pin means.

3,348,697
UNICYCLE STAND CONSTRUCTION
Henry A. Saunders, Worcester, Mass., assignor to Persons-Majestic Mfg. Company, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 1, 1966, Ser. No. 539,440
6 Claims. (Cl. 211—22)

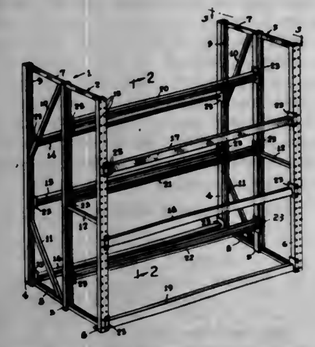


1. A folding stand for a unicycle comprising a base including a pair of spaced rods, a pair of legs swingably mounted at their ends on one rod, said legs being movably mounted to slide on said one rod, resilient measn normally tending to hold the legs in spaced relation, and means on said stand arranged to hold said legs in their normal spaced relationship, in upright condition thereof at a right angle to the plane of the rods, the legs when free of the last-named means being swingable into the general plane of the rods.

3,348,698
PALLET RACK
Kennedy McConnell, Riverdale, Ill., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York
Filed Feb. 7, 1966, Ser. No. 525,421
3 Claims. (Cl. 211—24)

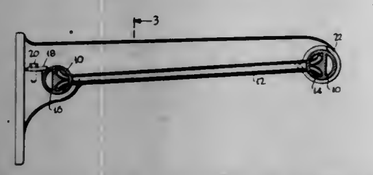
1. A support structure comprising spaced end frames connected together by horizontal beams, the horizontal beams being connected to the end frames along two outside vertical rows and a middle vertical row between them so that the structure is divided into two back to back common inside vertical border of both bays, one of the

horizontal beams of said middle vertical row of horizontal beams being elevated above the level of an adjacent horizontal beam on one of the outside vertical rows of



horizontal beams, whereby an object being supported by the two mentioned horizontal beams will be cradled on them with the larger weight portion of an object being carried by the horizontal beam of the ouside vertical row.

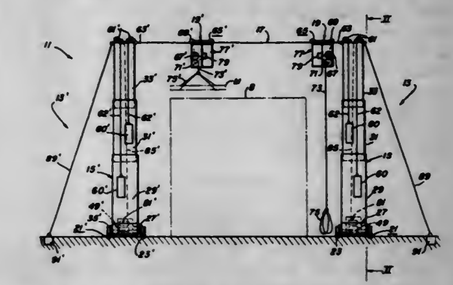
3,348,699
LADDER-TYPE RACK, AS FOR PASSENGER VEHICLES
Kenneth W. Mealing, Bucks County, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 28, 1965, Ser. No. 516,993
4 Claims. (Cl. 211—90)



1. A ladder-type rack, comprising in combination, spaced supporting means including brackets and a ladder-type unit supported on said brackets, said ladder-type unit comprising a pair of spaced apart hollow-section side rails and longitudinally spaced rungs, each rung being secured at each of its opposite ends at a joint in a hole in a side rail of said pair of side rails, the joint for the opposite end of each rung comprising a wedge element having sides defining an edge provided in the rail with said edge facing said hole, and bifurcation elements on said opposite end of each rung being spread apart on said sides of said wedge element, the wedge elements for all of the joints of a side rail being formed on a through-running bar element within said rail.

3,348,700
MATERIAL POSITIONING APPARATUS FOR BUILDING CONSTRUCTION
Elmer L. Williford, Rte. 1, Box 353, Bastrop, La. 71220
Filed Oct. 5, 1966, Ser. No. 584,498
6 Claims. (Cl. 212—13)

1. An apparatus for erecting a building comprising:
(A) trackway means
(B) right and left tower assemblies, each assembly including:
(1) a wheeled tower including:
(a) a base structure of substantially great weight and mass,
(b) a plurality of telescopically arranged tower sections extending uprightly from said base structure including an outer section surmountably fixed on said base structure and at least one inner section adapted to be moved upwardly and downwardly relative to said outer section,
(c) manually controllable power operative elevating means for moving said inner section upwardly and downwardly and for vertically positioning said inner section at a desired elevation,
(d) rail wheel means runably supporting said wheeled tower on said trackway means, and
(e) manually controllable power operative tow means for horizontally positioning said wheeled tower at a desired location along said trackway means,
(i) said wheeled towers respectively of right and left tracked tower assemblies being arranged on said trackway means directly opposite each other,

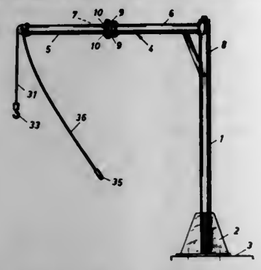


said right and left wheeled towers being adapted to be correspondingly moved horizontally equi-distantly simultaneously by the tow means of the tracked tower assemblies,
(C) a main cable secured at opposite end portions thereof respectively to corresponding inner tower sections of the wheeled towers of said right and left tracked tower assemblies and with said main cable being tautly tensioned between said inner tower sections, and
(D) a hoisting trolley including
(1) roller means rolling engaging said main cable and pendantly suspending said trolley from said cable,
(2) traveling mechanism mounted on said hoisting trolley and operatively engaging said main cable for moving said trolley to and fro along said main cable,
(3) hoisting mechanism mounted on said trolley including a hoisting cable pendantly arranged underneath said trolley,
(4) an operator compartment included in said trolley, and
(5) manually operative control means in said trolley for operatively controlling respectively said traveling mechanism and said hoisting mechanism.

3,348,701
HOISTING CRANE
Carl Erling Mennerdahl, Ladspikaregatan 6, Goteborg, Sweden
Filed Jan. 24, 1966, Ser. No. 522,693
6 Claims. (Cl. 212—31)

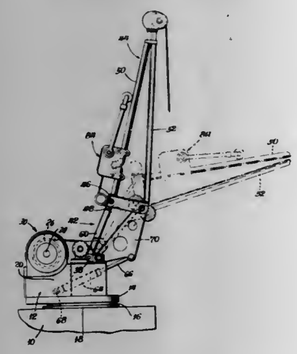
1. In an improved hoisting crane, a crane post and a crane beam, said crane beam comprising an outer beam

section and an inner beam section, said outer crane beam section journalled with its inner end about a vertical axis at the outer end of the inner crane beam section, the inner crane beam section journalled with its inner end about a vertical axis on the crane post, a cylinder disposed in the outer crane beam section in the longitudinal direction of said section, a piston axially slidable in said cylinder, a piston rod of said piston presenting at its outer end a plurality of pulleys for a rope or the



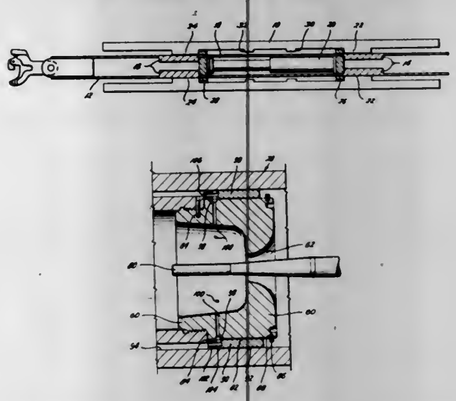
like, said rope provided with hoisting means and running over a corresponding number of pulleys mounted at the outer end of the outer crane beam section, an end portion at the outer end of said outer crane beam section on which end portion said outer pulleys are mounted, distance rods connecting said end portion to the end of said cylinder, at least one of said distance bars having a passage channel for feeding compressed fluid to the interior of said cylinder.

3,348,702
MULTIPURPOSE CRANE
Carl G. Wennerstrom, Evanston, and Paul M. Sievert, Oak Park, Ill., assignors to Sievert Electric Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 8, 1966, Ser. No. 541,312
6 Claims. (Cl. 212—54)



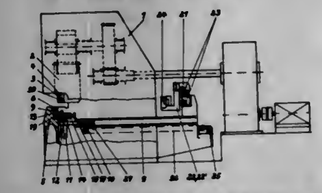
1. A crane to be mounted to a platform for handling an elongated work object without hazard of the work object striking other objects, which crane comprises the combination of: a rotatable base mounted to the platform; a cable drum mounted by means of a shaft above the base; an articulate boom having one hinge, a free end, and an end pivotally mounted to the base; a hydraulic means, expansible in elongation, having a first end pivotally mounted to the base and a second end pivotally mounted to the hinged boom section, such that movement of the free end of the boom relative to the pivotally mounted end is responsive to expansion of the hydraulic means; a sheave mounted to the free end of the boom; a cable operatively positioned with respect to the cable drum and the sheave, and to which the work object is fastened; and a cradle means movably mounted to the hinged boom section and adapted to be operatively positioned with respect to the free end of the boom to engage the work object and to hold it in a relatively fixed position with respect to the hinged boom section, such position being responsive to translational movement of the cradle means along the hinged boom section; whereby the elongated work object may be positioned with respect to the hinged boom section in such position as may be appropriate for handling the elongated work object by relative movement of the crane elements without hazard of the work object striking another object.

3,348,703
SHOCK ABSORBER
Richard G. Powell, Houston, and George D. Moran, Rosharon, Tex., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed July 19, 1965, Ser. No. 473,105
6 Claims. (Cl. 213—8)



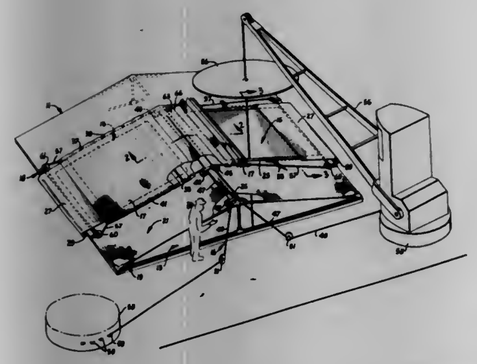
1. A hydraulic-pneumatic cushion unit comprising inner and outer telescoped cylinders defining an outer variable hydraulic chamber, said cylinders defining a snubbing chamber therebetween, the inner cylinder being closed at each end thereof, a floating piston disposed within the inner cylinder and dividing the same into a pneumatic chamber and an inner hydraulic chamber, a compressible fluid filling the pneumatic chamber and an incompressible fluid filling the inner hydraulic chamber, the outer hydraulic chamber and the snubbing chamber, one end of the inner cylinder having a metering orifice, the outer cylinder being closed at one end thereof, a metering pin carried by the closed end of the outer cylinder and adapted to extend through the metering orifice to control the size of the same, said inner cylinder having means defining a bearing surface having a bearing stop at either end thereof, a snubber bearing slidably received on the bearing surface and being in bearing engagement with the outer cylinder, bleed passage means in said inner cylinder establishing fluid communication between the hydraulic chamber and the snubbing chamber, the snubber bearing having a plurality of different sized orifices therein, each which communicates with said bleed passage at different positions of said snubber bearing relative to said bearing surface to allow a predetermined rate of hydraulic fluid flow in one direction through the fluid communication, and a lesser rate of fluid flow in the opposite direction, said snubber bearing being hydrostatically balanced to prevent radial stressing of the same by the hydraulic fluid.

3,348,704
MEANS FOR EXCHANGING UNITS, EACH CONSISTING OF A SHEAR BLADE AND ITS MOUNTING, IN MACHINES FOR SHEARING METAL SHEETS OR PLATES
Hermann Boos, Buderich, near Dusseldorf, and Georg Bollig, Dusseldorf-Oberkassel, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Feb. 15, 1965, Ser. No. 432,754
4 Claims. (Cl. 214—1)



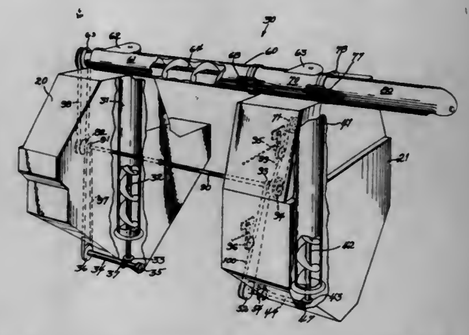
1. Blade-changing apparatus, for changing the upper and lower blade units, each consisting of a blade and a blade-holder, of a sheet-metal shearing machine, comprising: a carriage adapted to carry the blade units, a guideway on which the carriage can travel, means for driving the carriage along the guideway, a cylinder secured vertically in the carriage, a piston and piston rod slidable in the cylinder, a mounting carried on the upper end of the said piston rod, means for supplying pressure fluid to the cylinder so as to bring the mounting into engagement with the upper blade unit, a horizontal cylinder secured to the said mounting, a piston and piston rod slidable in the horizontal cylinder, a cross-bar secured to the piston rod of the horizontal cylinder, horizontal rods secured to the said cross-bar and guided through the mounting towards the lower blade unit, and means for supplying pressure fluid to the horizontal cylinder in order to bring the horizontal rods into engagement with the lower blade unit.

3,348,705
WEATHER TENT FOR CARGO HATCHES
Harold H. Yanow, 528 15th Ave., San Francisco, Calif. 94118
Filed July 2, 1965, Ser. No. 469,234
18 Claims. (Cl. 214—15)



1. In combination with cargo moving apparatus, a hatch cover comprising cover means adapted to be removably mounted over a ship's hatch for keeping rain out of said hatch and having an aperture therein for loading and unloading cargo, a foldable water impervious shield having means associated therewith for urging the shield toward an unfolded position closing said aperture, and a shield opening means operatively connected to said shield for urging the shield toward a folded position to open the aperture, said shield opening means being operatively connected to said cargo moving apparatus for automatic opening in response to the approach of cargo to allow part of the cargo moving apparatus and cargo carried thereby to pass through the aperture.

3,348,706
GRAIN TANK UNLOADING SYSTEM
Charles M. Hyman, Davenport, Iowa, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,454
9 Claims. (Cl. 214—17)

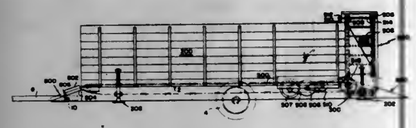


1. In a combine having a frame extending along a longitudinal axis, said frame including spaced apart side panels parallel to said longitudinal axis;
a first grain tank affixed to one of said side panels and extending outwardly therefrom;
a second grain tank hingedly mounted on the other of said side panels and extending outwardly therefrom;
means for unloading said first and second grain tanks including a first vertical conduit within said first grain tank, a first vertical auger mounted for rotation within said first vertical conduit, a second vertical conduit within said second grain tank, a second vertical auger mounted for rotation within said second vertical conduit, a horizontal conduit overlying said first and second grain tanks and communicating with said first and second vertical conduits, a horizontal auger mounted for rotation within said horizontal conduit, said horizontal conduit and auger including releasable couplings that will permit a portion of said horizontal conduit and auger to be secured to said second grain tank and to pivot away from the combine frame with the second grain tank;
and drive means for said first and second vertical augers and said horizontal auger.

3,348,707
FORAGE RECEIVING AND SELF-UNLOADING UNIT
Leon L. Anstee, Leola, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,979
6 Claims. (Cl. 214—44)

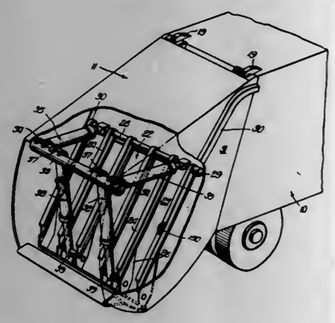
1. A self-unloading device for receiving and unloading forage and the like comprising, in combination:
(a) an elongated frame capable of receiving a dump vehicle for dumping thereon,
(b) a feed conveyor on said frame operable to move forage longitudinally from one end of said frame to the other end of said frame,
(c) said feed conveyor having input and output ends,

(d) an output conveyor on said other end of said frame and adjacent said feeder conveyor output end and extending transversely with respect thereto and lying in a plane spaced from and below the plane of said feed conveyor output end and having an output end,
(e) a metering device adjacent to and mounted above said output conveyor output end and adjustable with respect thereto and extending substantially across the width of said output conveyor,



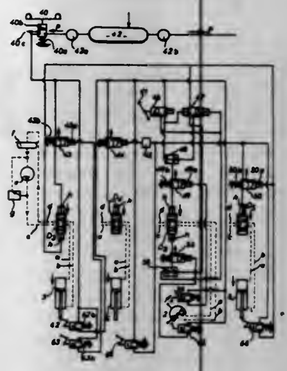
(f) said frame being opened at both ends and having front and rear ramp means,
(g) said rear ramp means including means for covering said output conveyor when a dump vehicle is driven therethrough, and
(h) said rear ramp means including movable barrier means having operating and non-operating positions for directing forage from the end of said feed conveyor into said output conveyor when said barrier means is in the operating position.

3,348,708
REFUSE VEHICLE
Cyril R. Gollnick, Oshkosh, Wis., assignor to Leach Company, Oshkosh, Wis., a corporation of Wisconsin
Filed July 13, 1965, Ser. No. 471,594
16 Claims. (Cl. 214—83.3)



1. In a refuse vehicle having a storage body and a loading hopper adjacent and in communication with the body, a packer plate in said hopper extending between opposite side walls of the latter, said plate having opposite side edges adjacent said side walls, respectively, and said plate having opposite leading and trailing edges, a pair of sliding pivots mounted on said plate adjacent respective side edges thereof, a pair of inclined guide tracks supported by respective side walls of the hopper and receiving said pivots, respectively, thereby to mount said plate for both sliding movement along said tracks and for pivoting movement about said pivots, the improvement comprising, powered means pivoted at one end thereof to the hopper and pivoted at the other end thereof to said plate adjacent said pivots, which powered means cooperate with said guide tracks for sliding said plate in both directions therealong, other powered means pivoted at one end thereof to the hopper and pivoted at the other end thereof to said plate adjacent the trailing edge thereof for pivoting said plate about said pivots.

3,348,709
CONTROL OF MULTIPLE SERVO-MOTOR ACTUATED MACHINES
Jean Fauchere, Bourg-la-Reine, France, assignor to Societe Auxitra, Paris, France, a corporation of France
Filed Oct. 22, 1965, Ser. No. 500,526
Claims priority, application France, Feb. 5, 1965, 4,598
8 Claims. (Cl. 214—138)

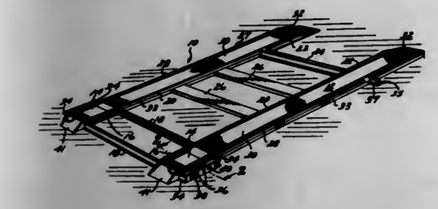


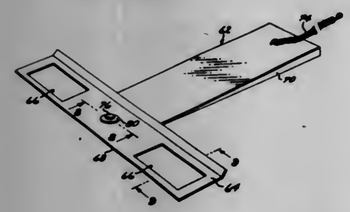
1. A device for the control of machines having a plurality of active members actuated by hydraulic means and the movements of which is to be controlled independently at will or, alternatively, to follow each other automatically in a pre-determined sequence, comprising in combination, a plurality of hydraulic means and distributor means, a main hydraulic circuit feeding said hydraulic means with hydraulic fluid through said distributor means associated therewith, at least one distributor means being associated with each hydraulic means, control members associated with said distributor means for the control thereof, said control members being controlled selectively either independently by first manually operable means associated to each control member or automatically and in a pre-determined sequence through an auxiliary circuit comprising second manually operable means having two positions corresponding respectively to the putting in or out of action of said auxiliary circuit, said second means causing further the feeding with hydraulic fluid of the first hydraulic means of the sequence, and switching members for controlling said control members and, therefore, the distributor means, at least one switching member cooperating with each of said hydraulic means and being actuated upon operation thereof so as to stop and to provide respectively the feeding with hydraulic fluid of the hydraulic means associated therewith and of the subsequent hydraulic means in the sequence.

3,348,710
METHOD FOR TRANSPORTING VEHICLES
Henry B. James, 11881 Stephanie Lane, Garden Grove, Calif. 92640
Filed Oct. 4, 1965, Ser. No. 492,457
5 Claims. (Cl. 214—152)

1. A method of unloading a vehicle from a transporting vessel at dockside comprising the steps of:
locating a hoisting platform adjacent said vehicle;
rolling said vehicle onto said platform;

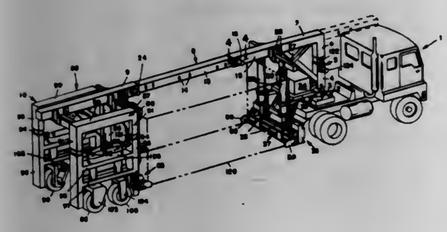
hoisting said platform and lowering it onto the dock;
wedging a hoisting member under the front wheels of said vehicle and raising said front wheels out of engagement with their supporting surface;





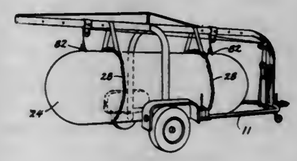
transporting said vehicle off said hoisting platform to a parking area by supporting said front wheels on said hoisting member and rolling said vehicle on its rear wheels;
lowering said front wheels onto said parking area;
disengaging said hoisting member from said front wheels.

3,348,711
STRADDLE TYPE CARRIER
Emery T. Gove, 750 47th Ave., No. 42, Capitola, Calif. 95010
Filed June 28, 1965, Ser. No. 467,452
17 Claims. (Cl. 214—392)



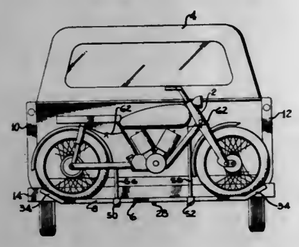
1. In a straddle carrier that includes a frame supported for movement over the ground, which frame has a longitudinal axis and load engaging means movable thereon into and out of engagement with a load to be lifted, power actuatable means on said frame connected with said load engaging means for elevating and for lowering the latter together with a load engaged therewith, said frame having front and rear end portions spaced along said axis and said rear end portion including an arch assembly having a pair of vertically extending side frame members respectively at opposite sides of said axis and an overhead frame member connecting the upper ends of said side frame members, a wheel carried by each side frame member adjacent to the lower end thereof supporting the rear end of said frame including said arch assembly for movement over the ground longitudinally of said axis with said arch assembly in straddling relation to the load to be lifted, the improvement comprising:
(a) an overhead beam connecting said front and rear end portions including means connecting said beam with said arch assembly for movement of the latter toward and away from said front portion and the space between said front and said rear end portions being free from obstruction to free lateral access thereto relative to the longitudinal axis of said carrier;
(b) said load engaging means being respectively secured to said front and said rear portions at points adjacent to their lower ends for engagement with a load in said space and on the ground;
(c) load holding and supporting means respectively, on said front and rear end portions adjacent to but spaced above said load engaging means and in positions for engagement by a load elevated by said load engaging means and actuatable by upward movement of said load for movement into holding and supporting relation to said load for holding and supporting said load thereon independently of said load engaging means whereby such load when so held and supported will connect the lower ends of said side frame members and said front portion to cooperate with said beam for holding said arch assembly and said front portion rigidly together;
(d) power actuated means connected with said load holding and supporting means for simultaneously moving the latter out of holding and supporting relation to such load upon said load being lifted off said load holding and supporting means by actuation of said load engaging means.

3,348,712
TRAILER
Jerry D. Hanson, 201 Court Ave., Eagle Grove, Iowa 50533
Filed Sept. 13, 1965, Ser. No. 486,867
9 Claims. (Cl. 214—396)



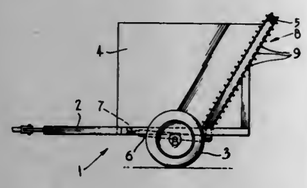
1. In a vehicle, the combination of a frame including an overhead lengthwise extending frame member and a vertically disposed forward end frame member, a hydraulic cylinder mounted on said forward end frame member and having a piston rod carrying pulley means, a pair of collar means lengthwise adjustably mounted and spaced apart on said overhead frame member and each carrying a pulley, a length of cable connected between its ends to said pulley means on said piston rod and one end of said cable extending over one of said collar pulleys and the other end extending over the other of said collar pulleys, and means for supplying said cylinder with pressure fluid, an anchorage pulley is fixed to said frame adjacent said cylinder, and said pulley means on said piston rod including a pair of pulleys, said anchorage pulley fixed to said frame being disposed below said pair of pulleys on said piston rod and said cable extending over said anchorage pulley with its ends extending over one said pair of pulleys on said piston rod, and a second pair of pulleys are provided below said first pair of pulleys and each engage one of said cable ends between said collar pulleys and said first pair of pulleys on said piston rod.

3,348,713
MOTORCYCLE CARRIER
Frederick R. Will, 12691 Ranchero Way, Garden Grove, Calif. 92640
Filed May 24, 1966, Ser. No. 552,481
3 Claims. (Cl. 214—450)



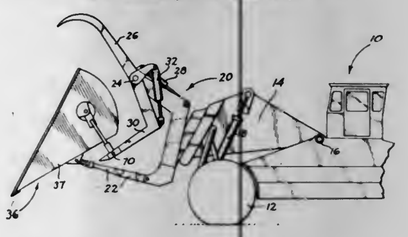
1. A carrier for transporting a motorcycle or the like on a larger vehicle such as an automobile or truck comprising:
structural means adapted to be rigidly fixed to the frame of the larger vehicle near the rear thereof;
an elongate cylindrical member connected to the structural means and cantilevered rearwardly therefrom substantially parallel to the length of the larger vehicle;
an elongate upright channel member of U-shaped cross-sectional configuration connected to the rear end of the cylindrical member and disposed behind the large vehicle substantially perpendicular to the cylindrical member, said elongate channel having upturned portions at each of its ends, and being mounted for pivotal movement about the cylindrical member relative to said structural means between a first inclined loading position in which one end of the channel is juxtaposed the ground, and a second inclined loading position in which the other end of the channel is juxtaposed the ground; and,
a pair of elongate stop members connected to the structural means, and extending rearwardly therefrom on opposite sides of the cylindrical member, said stop members each being independently slideable rearwardly and forwardly relative to the support means between a release position out of the path of the channel, and a stop position in the path of the channel for limiting movement of the channel in one direction to a substantially horizontal transporting position.

3,348,714
TIPPING-BIN TRUCKS OR TRAILERS
Roy Cecil Ash, Geelong, Victoria, Australia, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,511
3 Claims. (Cl. 214—508)



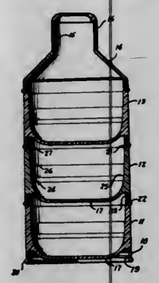
1. A tipping bin comprising a wheeled frame, an open-topped bin having a floor and four closed sides pivotally mounted on said frame for angular movement about an axis proximate the upper extremity of one side of said bin, said one side comprising a conveyor means arranged such that said conveyor means forms an end wall of said bin when said bin is in a lowered loading position and a movable discharging floor when said bin is in a raised tilted position, means for effecting angular movement of said bin about said axis to a raised tilting position whereby said conveyor means is the lowermost side of said bin, means for actuating said conveyor means, and wherein the means for actuating the conveyor means and the means for effecting angular movement of the bin are interconnected so that the conveyor operates in timed relation with the raising and lowering of the bin.

3,348,715
VEHICLE WITH BUCKET
Vincent C. Kretz, Seattle, Wash., assignor to Nelson Equipment Company, Portland, Oreg., a corporation of Oregon
Filed Mar. 28, 1966, Ser. No. 537,990
8 Claims. (Cl. 214—767)



1. The combination of a vehicle,
material-handling mechanism mounted on said vehicle beyond one end thereof including a forwardly mounted raisable platform, and a power-actuated movable arm operable when actuated to push material forwardly from said platform,
a scoop bucket,
detachable pivot means detachably connecting said scoop bucket to said platform, with the bucket being tiltable about an axis extending transversely of the vehicle, and
detachable means operatively connecting said bucket to said power-actuated arm, with said arm in a position to tilt said bucket on actuation of the arm.

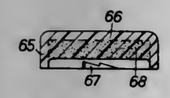
3,348,716
CONTAINER
Yuichi Nakata, 9238 Higaski-Kaigan, Shigasaki-shi, Kanagawa-ken, Japan
Filed Aug. 10, 1964, Ser. No. 388,434
1 Claim. (Cl. 215—6)



A multi-unit container for feeding infants comprising a plurality of stacked similar containers, each container comprising a one piece member formed with an integral

wall and bottom, the upper and lower edges of the wall being threaded, the bottom edge of one container being threaded to the upper edge of another container, with the lower end of the bottom edge being formed with a head portion which is threaded into close contact with a shoulder portion of the upper edge of the next lower container to provide a fluid tight joint therewith, and a funnel threaded to the upper edge of the uppermost container in the stack, each of said units being threaded to the lower end of the stack as it is used and the funnel being threaded to the upper unit for dispensing the contents thereof whereby the stackable units can be reused.

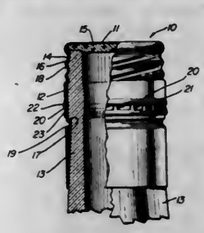
3,348,717
CLOSURES FOR CONTAINERS
Eugene Joseph Treanor, White Lodge, Rectory Road, Burnham-on-Sea, Somerset, England
Filed Dec. 8, 1965, Ser. No. 523,813
Claims priority, application Great Britain, Dec. 9, 1964, 50,031/64; Apr. 15, 1965, 16,141/65
5 Claims. (Cl. 215—9)



1. A closure for a container and a container neck formation of the kind having two sets of locking formations, one set on the closure and one set on the neck formation, the sets of locking formations being capable of mutual engagement to retain the closure in a closed position on the neck formation and capable of mutual disengagement to permit the removal of the closure from the neck formation, one set of locking formations comprising a spigot and the other set of locking formations presenting a row of sockets comprising a locking socket which is engaged by the spigot when the closure is in its closed position and outer socket means comprising at least one outer socket which the spigot must pass on rotation of the closure from its closed position to a release position in which it can be removed from the neck formation, and spring means operative to urge the spigot into any socket with which it is in register, wherein the improvement comprises the provision of abutment faces on the spigot and the locking socket shaped to abut each other to prevent the movement of the closure from its closed position by the application to the closure of torque alone and in the absence of the application of an axial force to move the closure against the action of the spring means and thus to remove the spigot from the locking socket.

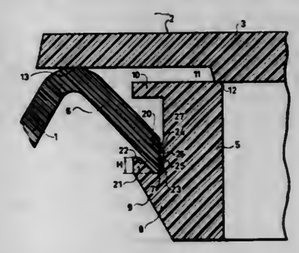
3,348,718
BOTTLE CLOSURE
Charles Musy, Taisey par Saint-Remy-les-Chalon, Saone-et-Loire, France, assignor to La Bouchage Mecanique, Neuilly-sur-Seine, France
Filed Jan. 4, 1966, Ser. No. 518,708
Claims priority, application France, Jan. 20, 1965, 2,614; June 4, 1965, 19,556
16 Claims. (Cl. 215—42)

1. A partially preformed tubular closure cap of deformable material adapted to be secured over the open-ended exteriorly screw-threaded neck of a container by being fitted down over said neck and crimped into engagement therewith, said cap having an elongated lower skirt adapted to extend below the threaded portion of said neck when the cap is in position thereon, said lower skirt having a plurality of elongated horizontal cuts therethrough spaced apart in a line circumferentially around the skirt with narrow bridge portions left between the cuts to provide breakable connections between the portions of



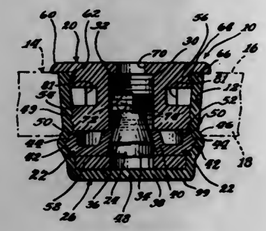
the skirt above and below said line, and edge portions of the opposite lips of each cut being in abutting contact.

3,348,719
CLOSURE MEANS
Anders Ruben Rausing, Sjobo, and Rolf Lennart Ignell, Lund, Sweden, assignors to Tetra Pak Rausing & Co. K.G., Hochheim am Main, Germany, a company of Germany
Filed Dec. 10, 1965, Ser. No. 512,983
Claims priority, application Switzerland, Dec. 28, 1964, 16,729/64; application Sweden, Mar. 20, 1965, 3,630/65
5 Claims. (Cl. 215—47)



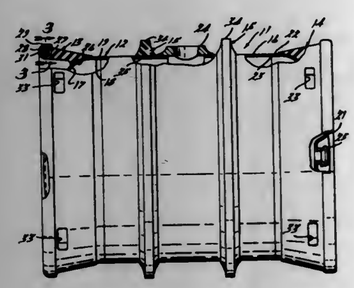
1. In combination with a container having a circular opening in the upper end thereof surrounded by a shoulder and an inwardly and downwardly extending lip, said lip having a substantially cylindrical inner edge surface, a cap for said opening comprising a lid portion normally engaging said shoulder and an integral, tubular plug portion extending into and through said opening, said plug portion having a first flange adjacent to the lower end thereof which is of greater outer diameter than the inner diameter of said lip and is normally positioned below said lip with its upper surface engaging said lip, said plug portion having a neck portion above said first flange and having at least one outwardly extending sealing tongue normally engaging said substantially cylindrical surface of said lip, said plug portion having a second flange above said neck portion of greater outer diameter than the inner diameter of said lip and normally positioned above the inner edge of said lip, said plug portion having an annular recess between said second flange and said lid portion which extends inwardly farther than said neck portion and defines a frangible portion between said lid portion and said plug portion, at least one of said container and said cap being elastic and the vertical distance between the upper surface of said first flange and the lower surface of said lid portion in unstressed condition being less than the vertical distance between said shoulder and the lower edge of said lip whereby said lid portion normally is held tightly engaged with said shoulder and said lower edge of said lip is held tightly engaged with the upper surface of said first flange.

3,348,720
BUNG ARRANGEMENT FOR BEER BARRELS
William D. Richardson, Palos Heights, Ill., assignor to Tuthill Pump Company, a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,624
4 Claims. (Cl. 217—108)



1. A beer barrel bung comprising:
a frusto-conical body member having an annular laterally directed flange formed about its larger end,
a plurality of laterally directed latch arms mounted within the smaller end of said body member for movement outwardly and inwardly of said body member,
means for extending said latch arms with respect to said body member to latch the bung within a barrel bung hole,
said body member being formed with an annular ridge thereabout intermediate said latch arms and said larger end thereof,
a resilient cup member received over said body member smaller end and overlying said body member including said latch arms up to said flange,
said cup member being secured to said body member adjacent the larger end of said body member, and
means for distending said cup member in a direction away from said body member smaller end and inwardly of the bung hole to retract said latch arms into said body for removing the bung from the bung hole.

3,348,721
BARREL
David J. Trevarrow, Jr., Maple Glen, Pa., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,316
4 Claims. (Cl. 220—5)



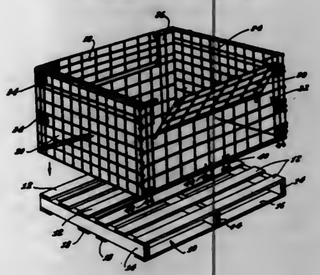
1. A barrel comprising a generally cylindrical center band, first and second elliptical heads having flange portions affixed to said center band at each end thereof, said heads and said center band being formed of a generally thin wall sheet metal construction, first and second elastomer shock supports affixed to said head flanges around their periphery, said shock supports having a depending skirt portion extending from said flanges and terminating in a supporting portion having a supporting surface spaced from the respective head of said barrel, the outer periphery of said supporting surfaces extending radially beyond said center band for providing a resilient rolling surface at each end of said barrel and a substantially rigid reinforcing ring embedded in said supporting portion, said elastomer shock supports having substantially more resilience than said heads and said center band.

3,348,722
BARREL
David J. Trevarrow, Jr., Orchard Lake, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Original application May 20, 1965, Ser. No. 457,316. Divided and this application Jan. 3, 1967, Ser. No. 606,702
4 Claims. (Cl. 220—5)



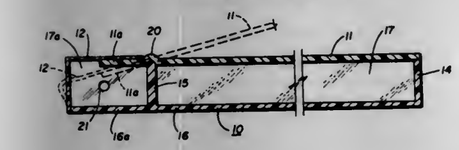
1. A barrel comprising a generally cylindrical center band, first and second heads affixed to each end of said center band around its periphery, said center band and said heads being formed of a generally thin construction, at least one elastomer shock support affixed around the periphery of said barrel at one end thereof, said elastomer shock support having a skirt portion extending past the respective head and defining a supporting surface at its outer extremity for the barrel spaced from the respective head, and a tap spout affixed to the respective head and extending outwardly therefrom into said skirt portion and terminating inwardly of the upper periphery of said skirt portion, the portion of said skirt portion surrounding said tap spout being relieved for access to said tap spout.

3,348,723
RECEPTACLE
James D. Wilson, Long Beach, Calif., assignor to Banner Metals, Inc., Compton, Calif., a corporation of Ohio
Filed Aug. 2, 1965, Ser. No. 476, 435
3 Claims. (Cl. 220—6)



1. A knock-down bin including: a double-faced rectangular-shaped bottom pallet member having an upper face and a lower face and including a plurality of transversely extending boards forming each face and supported and separated from one another by a plurality of interposed elongated stringer members spaced from one another; a first lattice-like wire-formed side member and a first lattice-like wire-formed end member hinged to one another along respective edges thereof and adapted to be supported in an upright position on a first side edge and on a first end edge respectively of the upper face of said pallet member; a plurality of bolts slidably mounted on one of said first members at the free end thereof and a plurality of latches mounted on the other of said first members at the free end thereof; a second lattice-like wire-formed side member and a second lattice-like wire-formed end member hinged to one another at respective edges thereof and adapted to be respectively supported in an upright position on a second side edge and on a second end edge of the upper face of said pallet member; a plurality of bolts mounted on one of said second members at the free end thereof and a plurality of latches mounted on the other of said second members at the free end thereof, said bolts on said first member being positioned slidably to engage said latches on said second member, and said bolts on said second member being positioned slidably to engage said latches on said first member when said first and second members are in place on said pallet member; and a plurality of brackets mounted on each of said end members adjacent the lower edge thereof, each of said brackets being configured to extend around the edge and under the top face of the pallet adjacent a corresponding one of said stringer members to engage the underside of said upper face and a side of said corresponding stringer member, said brackets serving to prevent movement of said first and second members transversely with respect to said upper face of said pallet member and to prevent movement of said first and second members perpendicularly to the plane of said upper face.

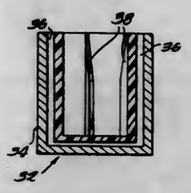
3,348,724
HINGED LID BOX
Charles Rosso, Cimarron, N. Mex. 87714
Filed Feb. 26, 1965, Ser. No. 435,422
10 Claims. (Cl. 220—31)



1. A box of the hinged cover type comprising a body member and a cover member cooperating to form a closed compartment, means on one of said members providing a fulcrum along an axis parallel to said cover and in alinement with one wall of said compartment and spaced inwardly from one edge of the cover a distance sufficient to afford leverage for lifting the cover on the other side of the fulcrum, means adjacent said one edge of said cover and extending between said cover and said body for retaining said cover on said body in engagement with said fulcrum and for holding said cover in its closed position, said retaining means being resilient and compressible whereby said edge of said cover may be depressed to compress said retaining means and to rotate said cover about said fulcrum to an open position affording access to the interior of said compartment and whereby said cover is returned to its closed position by the resilience of said retaining means upon release.

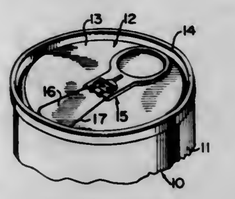
3,348,725
SOIL PIPE COVER
Donald Bedelle Fuller, Champaign, and James Robinson, Homer, Ill., assignors to Kollar Kap Corp., Champaign, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 501,325
8 Claims. (Cl. 220—42)

1. A soil pipe cover adapted to be placed over a soil pipe preparatory to pouring a masonry floor and to provide an innerspace between the soil pipe and the masonry floor upon its removal, said soil pipe cover being removable by the application of heat thereto to melt or burn it and comprising a cylindrical container which is formed of a fusible material having a side wall with an exterior diameter of a size sufficient to provide the desired innerspace and an interior diameter which is larger than the outer diameter of available extra heavy weight soil pipe, an end wall



at one of its ends and a plurality of spacers spaced longitudinally about the interior periphery of said side wall and having a length corresponding to the interior length of said side wall, each of said spacers being tapered along their entire length and of a depth sufficient to firmly grip the edge of available standard service weight soil pipe when said soil pipe cover is installed over it.

3,348,726
PULL TAB
George D. La Cross, Oaklawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 24, 1965, Ser. No. 504,474
9 Claims. (Cl. 220—54)

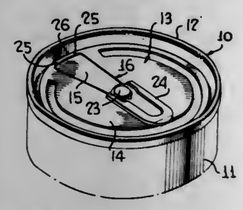


1. A pull tab and tear strip assembly comprising a removable tear strip forming an integral part of a container, and a separate pull tab rigidly secured to said tear strip, said pull tab being formed of sheet metal and having a panel portion generally in face-to-face overlying relation to a portion of said tear strip, and a pair of nibs struck from said panel and passing through said tear strip, said nibs being bent over behind said tear strip to securely attach said pull tab to said tear strip.

3,348,727
CONTAINER
John C. Jasper, Hinsdale, and Blase C. Rau, Skokie, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 24, 1965, Ser. No. 504,952
10 Claims. (Cl. 220—54)

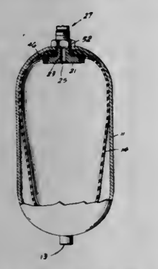
1. In a panel of the type including a panel portion removable by tearing and wherein said removable panel portion is defined by a peripheral weakening line having a terminal portion; the improvement residing in the further weakening of said panel adjacent said weakening

line terminal portion to define a hinge strap forming a continuation of said removable panel portion and pre-



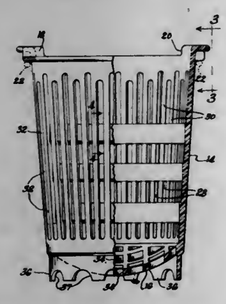
venting the complete removal of said panel portion under abnormal opening conditions.

3,348,728
PRESSURE VESSELS
Harold Norris Love, Chicago, Ill., assignor, by mesne assignments, to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Jan. 4, 1965, Ser. No. 422,954
9 Claims. (Cl. 220—63)



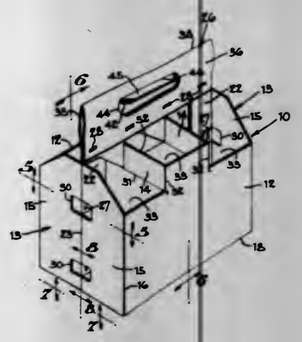
1. A bladder for a pressure vessel, said bladder being of resilient deformable material and being circular in cross section and having a port at one end axially aligned with the longitudinal axis of the bladder, said port having a thickened annular bead of diameter smaller than the maximum cross section diameter of said bladder, said bead having a rigid member removably positioned therein.

3,348,729
SILVERWARE HOLDING MEANS FOR DISHWASHERS
Ralph Ettlinger, Jr., 1370 Lincoln Ave. S., Highland Park, Ill. 60035
Filed Oct. 14, 1965, Ser. No. 495,939
1 Claim. (Cl. 220—83)



In a dishwashing apparatus wherein rack means are transported through the apparatus for cleaning of items carried by the rack, the improvement comprising silverware containers adapted to be carried by the rack means, said containers comprising cylindrically shaped cups having an upstanding side wall and a bottom wall, said side wall defining elongated substantially vertical slots extending from points near the top edge of the side wall to points adjacent the bottom wall, said slots being closely spaced whereby relatively narrow strips of material form the cup body between said top edge and said bottom wall, reinforcing bands integrally formed around the periphery of said cup body for interconnecting said strips, said bands being formed at the inner edges of said strips whereby said slots are substantially continuous along said side walls, said side wall tapering inwardly from top to bottom, and wherein said side wall extends downwardly beyond said bottom wall, said side wall being scalloped whereby improved drainage is provided and supporting feet are formed for said cup, said bottom wall defining a concave interior surface and including a plurality of openings formed in the bottom walls, and wherein the top edge of each cup comprises an outwardly extending flange, said flange being adapted to engage means supporting the cup, said flange defining upwardly formed portions to thereby provide a handle for grasping a cup, said upwardly formed portions being disposed in spaced-apart relationship with respect to said means supporting the cup, and wherein said upwardly formed portions are disposed at two diametrically opposed locations on said flange.

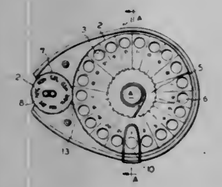
3,348,730
CARRIERS FOR BOTTLES AND OTHER ARTICLES
William H. Wright, Cincinnati, Ohio, assignor to The C. W. Zumbiel Company, Norwood, Ohio, a corporation of Ohio
Filed June 28, 1965, Ser. No. 467,583
2 Claims. (Cl. 220—111)



1. In a collapsible one-piece bottle carrier having a carrier body comprising a composite bottom, a pair of side wall panels, a pair of composite end walls each having a pair of end wall panels connected to the opposite ends of said side wall panels, and a beam-like handle connected to said carrier body, the handle having a first section and a second section doubled over upon the first section, the improvement comprising:
- an end wall flap projecting from the free edge of each of said end wall panels;
- said end wall flaps delineated by fold lines extending vertically along said end wall panels in the erected condition of the carrier;

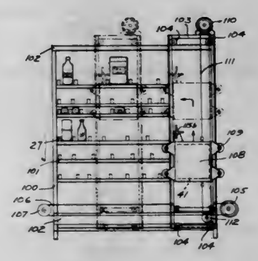
- the end wall flaps of each pair of end wall panels being disposed in facial engagement with one another and being folded into the interior of said carrier body;
- each of said end wall panels including an attachment tab delineated by lines of severance;
- each of said attachment tabs hingedly connected to its associated end wall panel along the vertical fold line which delineates the end wall flap relative to the end wall panel;
- each of said attachment tabs delineating an opening in its associated end wall panel and being folded inwardly at right angles to its end wall panel and disposed in facial engagement with its associated end wall flap, whereby said inwardly folded end wall flaps and related end wall tabs are disposed in facial relationship with one another in the erected condition of the carrier;
- a staple extending through said folded end wall flaps and related end wall attachment tabs and clinched thereover and securing said end wall flaps and end wall tabs in facial engagement with one another, thereby to lock the carrier in erected condition;
- said end wall flaps each having a flap extension projecting upwardly beyond the upper edge of the carrier body;
- said flap extensions being disposed between the said first and second handle sections which are doubled over upon one another;
- and respective staples passing through each of said flap extensions and through said first and second handle sections and clinched thereover, thereby securing said flap extensions to said beam-like handle, whereby the weight load of the carrier body, at least in part, is transmitted from said carrier body through the said flap extensions to said beam-like handle.

3,348,731
MEDICAL TABLET CONTAINER AND DISPENSER
Clara V. Eicholtz, Midland, Edgar F. Trombly, Grosse Point Farms, and Bertrand N. Trombley, Bloomfield Hills, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 537,737
5 Claims. (Cl. 221—5)



1. A pill-dispensing device comprising a housing provided with a closable outlet in one part of the housing, a container rotatably mounted within said housing and having a multiplicity of compartments in said container adapted to be moved individually into registry with the outlet of said housing, a rotatable cooperating driving means mounted within said housing and adapted to be moved out of and into operative relationship with and adapted to rotate said container, and a window in said housing on the same side as the outlet of said housing and so positioned that when a unit of time can be read on said cooperating means and said cooperative driving means is thereafter moved into operative relationship with the container, said unit of time disappears and another unit of time on said cooperative means can then be read through said window, and means within said housing adapted to prevent rotation of said container in any but one direction.

3,348,732
ARTICLE DISPENSING DEVICE
Heinz Walter Schwarz, Vogelsbergweg 12, Offenbach am Main, Germany
Filed Sept. 2, 1966, Ser. No. 576,968
18 Claims. (Cl. 221—123)



1. An article dispensing device comprising in combination:
- (a) several horizontally mounted trays disposed in a superimposed spaced-apart relationship for placing on each tray a row of articles to be dispensed one by one;
- (b) a transport means on each tray for displacing the respective row of articles through a distance such that the respective foremost article in said row is pushed over an edge of the respective tray;
- (c) first drive means common to said transport means;
- (d) coupling means for coupling said first drive means with the transport means of a selected one of said trays;
- (e) a movably mounted common receiving means for receiving the article pushed over said edge of any of the trays;
- (f) conveying means coupled with said receiving means for moving the same into a receiving relationship with said edge of the selected tray;
- (g) second drive means for driving said conveying means to move said receiving means up and down relative to said edge of the trays; and
- (h) control means for controlling said coupling means to couple the transport means on a selected tray to the first drive means for the purpose aforesaid and for controlling the second drive means to activate said conveying means for moving the receiving means into a receiving relationship with the selected tray.

3,348,733
ARTICLE DISPENSING APPARATUS HAVING AN ELECTRICALLY CONTROLLED ARTICLE RELEASING ASSEMBLY
Elmer C. Johnson, Raytown, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Nov. 8, 1965, Ser. No. 506,637
1 Claim. (Cl. 221—298)

Apparatus for dispensing articles from a stack thereof comprising:
- an inclined platform for supporting said articles for gravitational movement of successive articles to a consumer access station;
- an article release gate;

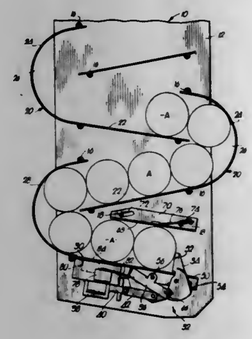
means mounting said gate adjacent said platform for movement, under the weight of the lowermost article on said platform, from a closed position retaining said lowermost article, and hence said stack, against gravitational movement, to an open position permitting gravitation of said lowermost article from said platform;

a stop;

means mounting said stop adjacent said platform for movement between an actuated disposition engaging the next to the lowermost article on said platform, and a normal disposition clearing said articles,

said stop having means engageable with said gate for latching the latter in said closed position when said stop is in said normal disposition;

control means coupled with said stop for shifting the latter from said normal to said actuated disposition



thereof to release said gate and hold said next to the lowermost article, and hence said stack, against gravitation, whereby the lowermost article is dispensed while the remaining articles of said stack are retained by said stop; and

first yieldable means coupled with said gate and biasing the latter toward said closed position,

said control means including an electrically operable actuator for effecting said shifting of the stop to said actuated disposition, second yieldable means coupled with said stop and biasing the latter toward said normal disposition, and circuitry coupled with said actuator for operating the latter and for maintaining the actuator in operation until the lowermost article clears said gate, whereby to permit said first yieldable means to close the gate prior to return movement of the stop to said normal disposition under the action of said second yieldable means.

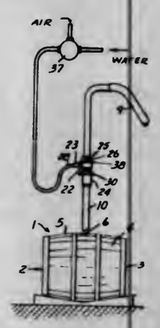
3,348,734
METHOD AND APPARATUS FOR EMPTYING LIQUID CONTAINERS
Harold B. Rice, Walnut Creek, and Harold Richard Swenson, Concord, Calif., assignors to John Burton Machine Corporation, Concord, Calif., a corporation of California
Filed June 14, 1966, Ser. No. 557,467
4 Claims. (Cl. 222—1)

1. The method of emptying a container of liquid having only one relatively small discharge opening in one side thereof comprising the steps of:

disposing said container with said one side uppermost,

introducing a suction conduit having an inlet end through said opening until said end is adjacent the lower side of said container,

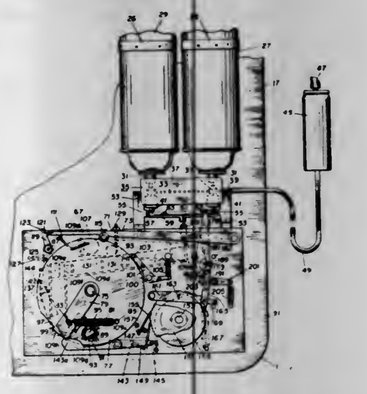
applying suction to said conduit to remove said liquid therethrough and simultaneously permitting air to enter said container through said discharge opening around said conduit,



deflecting said air in a direction generally laterally of said conduit toward the sides of said container that are between said upper and lower sides.

whereby liquid on said lower side is urged by the flow of said air toward said inlet end for removal by said suction.

3,348,735
LIQUID SPRAY DISPENSING APPARATUS
Harry H. Haltzman, 324 Greenleigh Court, Cherry Hill, N.J. 08034, Theodore M. Wright, Camden, N.J., and George S. Dimmick, Philadelphia, Pa.; said Wright and said Dimmick assignors to said Haltzman
Filed Mar. 16, 1966, Ser. No. 534,705
20 Claims. (Cl. 222—2)



1. Liquid spray dispensing apparatus comprising, in combination,

(1) an aerosol container in which said liquid is retained under pressure, said container having a valve controlled outlet including a passage which is normally maintained closed by said valve,

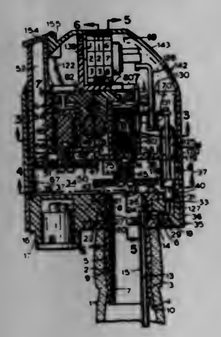
(2) a spraying head remote from said container, said spraying head having a manually operable, valve controlled outlet which also includes a passage, said last named valve also normally maintaining said last named passage closed,

(3) storage means coupling said container outlet to said head,

(4) control mechanism independent of said first named valve actuable to control release of said liquid from said container, and

(5) means responsive to actuation of said control mechanism for opening said first named valve for releasing a charge of said liquid from said container into said storage means while said second named valve remains closed whereby to store said charge temporarily in said storage means under pressure until said second named valve is opened to release said stored charge to the ambient.

3,348,736
LIQUID DISPENSER WITH DISPENSING CYCLE REGISTER
Bailey P. Dawes, Los Altos, Calif., assignor, by mesne assignments, to P. B. Florence Co., Inc., doing business as Pan Pacific Company, San Francisco, Calif., a corporation of California
Filed Sept. 24, 1965, Ser. No. 489,876
3 Claims. (Cl. 222—38)



1. In a dispenser for dispensing a predetermined measured amount of liquid from a container having said liquid therein and having a neck for pouring liquid from said container;

(a) a housing having an upper end and a lower end and an open-ended conduit having one open end thereof at said lower end of said housing providing an inlet to open into said container and the other open end at said upper end of said housing opening outwardly thereof providing a discharge outlet, when the lower end of said housing is secured on the neck of said container;

(b) said conduit having an enlarged portion intermediate its ends defining a measuring chamber;

(c) a first valve means within said conduit normally closing the latter to flow of liquid from said measuring chamber to said discharge outlet;

(d) a second valve means within said conduit in a normally open position for flow of liquid from said inlet into said measuring chamber when said housing is on said neck and said housing and container are inverted to pouring position;

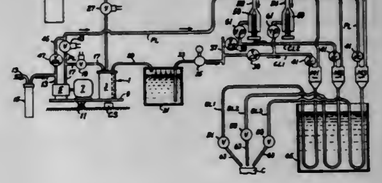
(e) valve actuating means connected with said first and said second valve means and manually actuatable for movement to move said second valve means to closed position closing said conduit to flow of liquid into said measuring chamber from said inlet and for moving said first valve means to open position opening said conduit to flow of liquid in said measuring chamber to said discharge outlet, in succession, when said housing and container are in said pouring position;

(f) an air duct separate from said conduit communicating between said measuring chamber and the atmosphere for admitting air into said measuring chamber;

(g) a passageway separate from said conduit for air communicating between said measuring chamber and the interior of said container when said housing is on said neck;

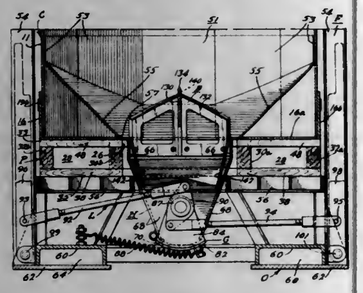
(h) a member connected with said valve actuating means actuatable for movement from a position closing said air duct to flow of atmospheric air into said measuring chamber when said first valve means is in closed position, and opening said passageway to flow of air between said measuring chamber and said container, to a position closing said passageway to flow of air between said measuring chamber and opening said air duct to flow of atmospheric air into said measuring chamber upon actuation of said valve actuating means to move said first valve means to open position and said second valve means to closed position, and vice versa.

3,348,737
DISPENSERS
Thomas O. Yingst, Pevely, and Burl E. Tucker, Jr., Festus, Mo., assignors to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Continuation of application Ser. No. 402,229, Oct. 7, 1964. This application May 18, 1966, Ser. No. 550,889
14 Claims. (Cl. 222—58)



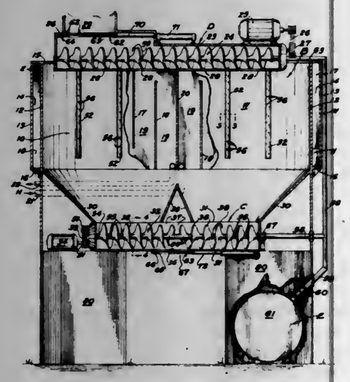
7. A beverage mixing and dispensing system comprising a plurality of mixers in each of which water and syrup may mix to constitute a beverage and each adapted to hold a beverage under pressure, a plurality of beverage delivery lines, one for each mixer, each extending from a respective mixer, a plurality of dispensing valves, one for each of said lines, a plurality of water lines, one for each mixer, each for supplying water under pressure to a respective mixer, a plurality of sources of syrup under pressure, one for each mixer, and a plurality of syrup lines interconnecting the syrup sources to the respective mixers, beverage being dispensed from any mixer on opening of the respective dispensing valve by pressure thereon from the respective water and syrup lines, and water and syrup being supplied via said lines to said mixer for replenishing said mixer with water and syrup in amount corresponding to the amount of beverage dispensed, the water and syrup supplied to said mixer mixing therein to constitute beverage in amount corresponding to that dispensed, at least one of said water lines being a carbonated water line and at least one of said water lines being a plain water line, and means for bleeding plain water from the plain water line into the carbonated water line.

3,348,738
DISPENSING HOPPER HAVING A CONTAINER OPENER
Ronald G. Hertlein, Crown Point, Ind., assignor to General Refractories Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1965, Ser. No. 515,298
4 Claims. (Cl. 222—88)



1. An opener assembly for use with a container to facilitate discharge of the contents of the container comprising a frame structure including a deck on which the container seats, a hopper having a lower discharge opening depending from the deck, a gate cooperatively associated with said discharge opening and adapted for movement between a first position closing said discharge opening and a second position remote therefrom to permit discharge of material through said discharge opening, a cutting blade mounted on the upper open end of the hopper comprising an elongated central section of W-shaped profile having a central peak higher than the end peaks and a pair of inverted V-shaped sections normal to the central section and disposed one at each end of the central section, the crest of the V being in the same plane as the end peaks of the central section.

3,348,739
HOT MIX STORAGE BIN
James D. Brock, Chattanooga, Tenn., assignor to Industrial Boiler Company, Inc., Chattanooga, Tenn., a corporation of Tennessee
Filed Nov. 3, 1966, Ser. No. 591,911
8 Claims. (Cl. 222—146)

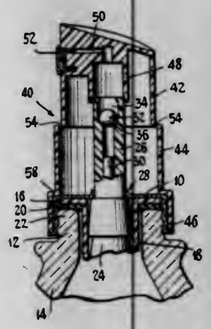


1. In a bin for storing a hot asphalt mix, wall means for defining a storage chamber, distributing means for distributing a hot asphalt mix to said storage chamber, heating means for heating a hot asphalt mix within said storage chamber, conveying means for conveying a hot asphalt mix from said storage chamber, environment supply means for supplying a non-oxidizing gas under greater than atmospheric pressure to said storage chamber, and sealing means for substantially sealing said storage chamber to selectively restrict the escape of said non-oxidizing gas from said storage chamber.

2. The bin of claim 1 including a receiving chute through which a hot asphalt mix enters said bin and in which said sealing means includes a gate means selectively positionable to open and close said receiving chute.

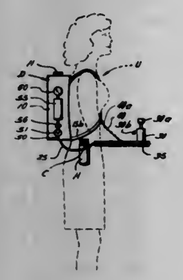
3. The bin of claim 2 having an opening for discharge of a hot asphalt mix from said bin and in which said sealing means includes a gate means selectively positionable to open and close said opening.

3,348,740
TAMPER-PROOF ACTUATOR FOR HAND-HELD DISPENSERS
William R. O'Donnell, Trumbull, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,543
7 Claims. (Cl. 222—153)



1. A tamper-proof actuator cap for small hand-held dispensers of the type having a depressible discharge-controlling member, comprising a tubular body including means for mounting the body on the container of the dispenser, a tubular depress button having a size in width which is smaller than that of the body to enable a telescopic fit therewith, said body and button being disposed in end-to-end relation and having a thin frangible integral connecting web joining their juxtaposed ends, said depress button having a fitting which is engageable with the discharge-controlling member of the dispenser to effect actuation of the member when the button is depressed, said button and body constituting essentially continuations of each other and the button being rigidly carried by the body before breakage of the connecting web, thereby to indicate non-use of the dispenser, said web rupturing upon the occasion of the first depressing movement of the button and the first use of the container whereby the button is telescopically slidably received in the body and guided thereby, said broken web and lower telescopic disposition of the button being an indication that the container has been used.

3,348,741
DISPENSER APPARATUS ADAPTED TO BE CARRIED BY A USER
Chris E. Wooten, 116 Crestway, Baytown, Tex. 77520
Filed Oct. 18, 1965, Ser. No. 497,251
1 Claim. (Cl. 222—175)



A dispenser apparatus adapted to be carried by a user for dispensing liquid, comprising:

(a) a storage tank having an upper and lower end and a front and back side, said tank sealably containing liquid and gas under pressure to enable liquid to be moved from said storage tank;

(b) said front and back sides having parallel outwardly extending arcuate portions wherein said front side fits snugly against the user's back and wherein said front arcuate portion is defined by parallel leading edges of said tank;

(c) support means connected to said tank for supporting said tank on the user's back, said support means including a pair of straps each having an upper and lower end, wherein each of said straps is secured at its upper end with the upper end of said storage tank immediately adjacent one of said leading edges and the lower end of each of said straps is diagonally secured adjacent the lower end of said tank immediately adjacent one of said leading edges to thereby criss-cross said straps to enable the user to be positioned between said tank and said criss-cross portion of said pair of straps for supporting and carrying said tank;

(d) a liquid dispenser resilient tube secured with the bottom of said storage tank;

(e) a dispenser valve including a valve handle, said tube being connected at its other end with said valve wherein depression of said handle enables the liquid to escape from said tank filled with gas under pressure and liquid;

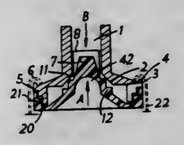
(f) means for mounting said dispenser valve in front of the user for easy access thereto by the user, said means for mounting including a tray having front and back parallel outwardly extending arcuate portions wherein said back arcuate portion extends partially around the user's body and wherein said front outwardly extending arcuate portion of said tray receives said valve and said resilient tube secured with the bottom of said tank and said valve extends partially around said front outwardly extending arcuate portion of said tray;

(g) a pair of suspension members one of which is secured at one end with each of said straps below said criss-crossed portion, each of said suspension members being secured at the other end thereof adjacent the back outwardly extending arcuate portion of said tray for suspending said tray and said dispenser valve relative to the user;

(h) a pressure container having a pressurized gas therein; and

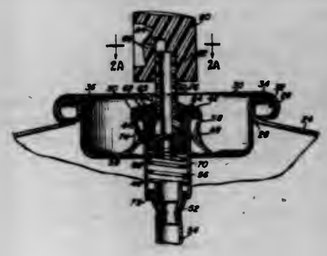
(i) connection means for connecting said pressure container to said tank for introducing pressurized gas therefrom into said tank to thereby provide continuous gas pressure on the liquid in said tank.

3,348,742
AEROSOL VALVE
Louis Assalit, 20 Rue des Colonies, Marseille, France
Filed Sept. 30, 1965, Ser. No. 491,736
Claims priority, application France, Oct. 5, 1964, 20,713, Patent 1,410,846
4 Claims. (Cl. 222—394)



1. An aerosol valve of adjustable flow comprising a rigid mounting including a tubular cylindrical duct having a flared and internally beveled base with vertical side wall defining a chamber, a movable element formed of resiliently compressible material and including a cylindrical portion disposed in the tubular duct of the mounting and having a diametral notch in its outer end and opposed lateral V-shaped notches extending axially inwards from said diametral notch, said movable element including a shoulder to abut against the beveled portion of the base and a flexible diaphragm portion extending radially outwards from the inner end of the cylindrical portion to the periphery of the base of the mounting, said movable element being apertured for passage of material to the duct of the mounting.

3,348,743
AEROSOL VALVE CONSTRUCTION
Edward H. Green, 11 Army Trail Road, Addison, Ill. 60101
Filed Dec. 23, 1965, Ser. No. 515,944
10 Claims. (Cl. 222—402.24)



9. A valve for use with a pressurized package, comprising

(A) A cover member adapted to be installed in said package;

(B) a housing formed in said cover member and enclosed but for a first passageway adapted to communicate with the interior of the package and a second passageway communicating to the exterior of the cover member,

(C) gasket means installed adjacent the second passageway,

(D) an integral assembly comprised of a valve plunger part and a stem part reciprocable in the housing and biased to press the valve plunger against the gasket means to prevent discharge of the pressurized product, and a portion of the stem protruding through the second passageway having the outer end thereof arranged to removably receive a sprayhead,

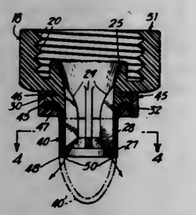
(1) the valve plunger including a cup member having a valve seat on its upper rim and a hollow blind-bottom socket coaxial with the valve seat,

(2) the stem part having an extension on the axial end thereof opposite the end protruding through said second passageway, and a bore extending through said stem part including said extension,

(3) an axially extending slot in said extension communicating laterally with the bore and opening axially to the end of said stem opposite said protruding end,

(4) the axial end of said stem carrying said extension being fixedly engaged within the socketed portion of the cup member whereby the bottom of said socket closes off one end of said bore, the other end opening to the exterior of said cover.

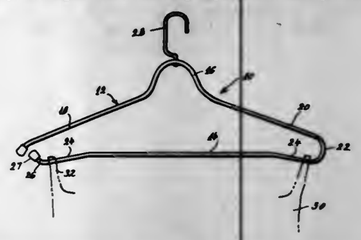
3,348,744
COMPOSITE SELF-SEALING CAP
Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware
Filed May 20, 1966, Ser. No. 551,711
3 Claims. (Cl. 222—494)



1. A molded product of the character defined, comprising a molded plastic nut part including an annular key rim portion adjacent one surface thereof, a projecting end extending outwardly from said nut part through and beyond said key rim portion, a closure head on said projecting end, a flexible nipple part enclosing said projecting end and adapted to sealingly engage said closure head with a free end of said nipple part extending outwardly beyond said closure head, a plastic coupling member having dual flanges molded onto said key rim portion of the first part in coupling said parts together, and said dual flanges housing said key rim portion in retaining said parts against separation.

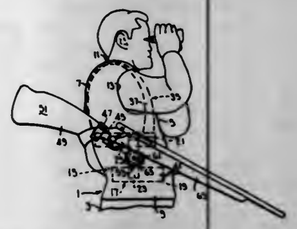
3,348,745
GARMENT HANGER WITH END LOADING SLOT
Gino Basile and Concetta A. Basile, both of 2550 Independence Ave., Bronx, N.Y. 10463
Filed Mar. 30, 1965, Ser. No. 443,788
2 Claims. (Cl. 223—88)

1. A garment hanger comprising a single elongated metal rod round in cross section having outwardly and downwardly extending shoulder portions including lower ends thereon and an upstanding central arched portion connected therebetween, a horizontal bar extending inwardly at one end from the lower end of one of said shoulder portions and having an upstanding portion at the other end closely spaced from the lower end of the other of said shoulder portions, said horizontal bar being substantially straight and having opposite end portions in-



clined downward and outwardly relative to said upstanding portion and said lower end of one of said shoulder portions, respectively, and a hook projecting upwardly from said central arched portion.

3,348,746
SHOOTING JACKET
Burton H. Stumpf, Waterloo, Ill., assignor to Afico S.A., Lausanne, Switzerland, a Swiss corporation
Filed July 29, 1965, Ser. No. 475,779
18 Claims. (Cl. 224—1)

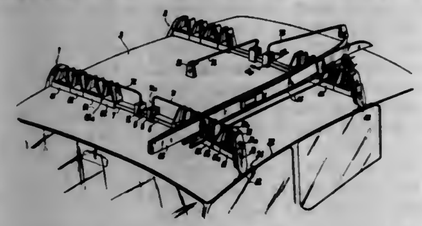


15. A gun carrier comprising a frame having a lower arm spaced from an upper arm, the lower arm being adapted to rest against the hip at one side of the wearer beneath the arm, the frame further comprising a bar having one end portion projecting above an end portion of the upper arm, a U-shape gun stock clip attached to said one end portion of the bar so that it opens downwardly when the carrier is being worn, a gun stock support member attached to the frame and projecting outwardly therefrom in spaced relation to the clip, the support member having a center portion on which the stock of a gun may rest and a flange at the outer end portion for engaging the stock of a gun to hold it between the flange and the frame, and means for holding the carrier on the wearer, an intermediate portion of said bar being pivoted on said upper arm of said frame, and the other end portion of the bar being adjustably anchored to said frame whereby the location of said clip may be varied by adjusting the place at which said other end portion of the bar is anchored on the frame.

3,348,747
SKI CARRIER
Alexandre Vuarchex, Annemasse, France, assignor to DAV, Annemasse, France, a body corporate of France
Filed Feb. 25, 1966, Ser. No. 529,997
10 Claims. (Cl. 224—42.1)

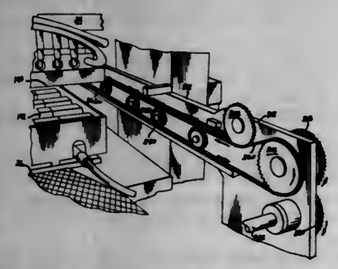
1. A ski carrier for use with an elongated vehicle having a roof and a gutter extending along each side of said roof, each gutter being of generally U-shaped transverse cross-sectional configuration, said carrier comprising: two elongated transverse members which, when said carrier is in use, extend above said roof transversely of the longitudinal axis of said vehicle and in longitudinally

spaced relationship; a foot member at each end of each transverse member, each of said foot members comprising two structural elements, one of said elements being engageable in one of said gutters and the other element being connected to one end of the corresponding transverse member; means defining a slot in one of said elements; pin means extending through said slot means interconnecting said two elements while permitting relative limited vertical movement as well as relative pivotal movement of the element in the gutter relative to the other element about an axis perpendicular to said longitudinal axis of the vehicle, said interconnecting means



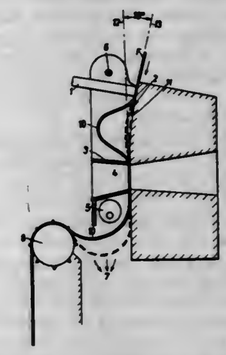
also permitting one of said two elements to be fixedly secured to the other element in any vertically or pivotally adjusted position thereof; means for adjusting the length of each transverse member to bring said one element of said foot members into register with said gutters whereby each foot member may be positioned in one of said gutters; locking means securing each foot member against upward movement out of its respective gutter; and a series of transversely spaced ski carrier members positioned on each of said transverse members, each ski carrier member on one of said transverse members being in axial alignment with a corresponding ski carrier member positioned on the other transverse member.

3,348,748
PLASTIC SHEET ADVANCING APPARATUS
Robert E. O'Brien and Edward C. Markowski, Grand Rapids, Mich., assignors to Kirkhof Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan
Filed July 22, 1965, Ser. No. 474,034
12 Claims. (Cl. 226—53)



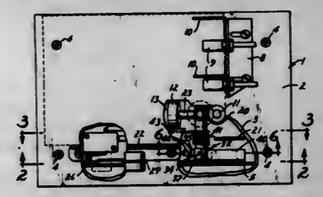
9. Advancing apparatus for elongated plastic web stock comprising: a pair of parallel elongated coplanar glide elements having glide surface means for engaging one face of the opposite edges of the web; endless recirculatory drive elements adjacent the respective ones of said glide surface means, each having along its length a plurality of web indent grippers and a plurality of intermediate elongated web puncture elements; said glide element surface means being aligned with said indent grippers to allow web gripping therebetween; said elongated puncture elements normally projecting past said surface means to puncture a web thereon and projecting into receiving space adjacent said surface means.

3,348,749
APPARATUS FOR THE RAPID INTERMITTENT TRANSPORT OF PERFORATED FILM
Heinrich Zahn, Rossdorf, near Darmstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Sept. 20, 1965, Ser. No. 488,683
Claims priority, application Germany, Sept. 21, 1964, F 44,024
8 Claims. (Cl. 226—59)



1. Apparatus for the rapid intermittent transport of perforated film by pneumatic acceleration forces pulling down the film rapidly through a film gate, comprising, in combination, a mechanical clamping device for the film in the region of said film gate, said clamping device releasing the film at least during the pulldown time and clamping the film during the remainder of the frame change period, means for the non-uniform transport of the film, said transport means remaining stationary at least during the pulldown time and transporting the film by the height of a film frame during the remainder of the frame change period, so that the film forms periodically a loop ahead of said film gate, a curved film guide between said transport means and said film gate, to which the film is adapted during rapid pulldown, whereby the movement of the film is stopped and the registration of the film in said film gate is determined, the radius of curvature of said film guide being so great that the tangent lines drawn to said film guide at a distance of two frame heights form an angle of less than 15°.

3,348,750
TAPE DRIVE ACTUATING MECHANISM FOR TAPE HANDLING MACHINES
Paul J. Nieland, St. Paul, Minn., assignor, by mesne assignments, to The Telex Corporation, Tulsa, Okla., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,259
5 Claims. (Cl. 226—90)

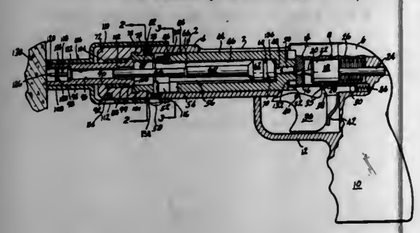


1. A tape driving mechanism for use with a tape handling machine and comprising:

(a) a rotary power driven capstan having a surface for frictional driving engagement with one side of a tape,

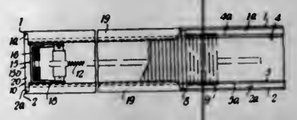
(b) a rockshaft mounted for rocking movements about an axis that is generally normal to the capstan axis,
(c) an idle pressure roller adapted to engage the side of the tape opposite that engaged by the capstan so as to maintain the tape in frictional driving engagement with the capstan,
(d) means mounting said pressure roller on the rockshaft for arcuate swinging movements about the axis of the rockshaft toward and away from said capstan between an inoperative position relatively widely spaced therefrom and an operative tape driving position wherein said pressure roller presses the tape into driving engagement with the capstan and wherein the axis of the pressure roller is generally parallel with the axis of the capstan,
(e) means for actuating said swinging movement of the pressure roller, said means comprising:
(1) a slide mounted and guided for generally straight line sliding movements in a path that is generally normal to the axis of the rockshaft,
(2) a cam arm secured on said rockshaft and projecting generally radially outwardly therefrom and being movable in a generally arcuate path between inoperative and operative positions corresponding to those of the pressure roller,
(3) said slide including a drive element projecting laterally of the direction of sliding movement of said slide and into the path of movement of said cam arm,
(4) said drive element being disposed and arranged relative to said cam arm to engage the same when in its inoperative position and impart arcuate movements to said cam arm and the pressure roller so as to move the latter from its inoperative to its operative position upon movement of the slide in one direction, and
(5) means yieldingly biasing said cam arm toward its said inoperative position whereby to return said pressure roller to its inoperative position upon movements of said slide in the opposite direction,
(6) said cam arm defining a curved cam surface having a maximum degree of curvature located generally adjacent said rockshaft and extending generally outwardly therefrom in a curve having an expanding radius.

3,348,751
POWER OPERATED PISTON TOOL
Robert W. Henning, North Haven, Conn., assignor to Olin Mathieson Chemical Corporation
Filed Aug. 2, 1965, Ser. No. 476,367
7 Claims. (Cl. 227—8)



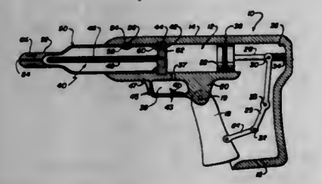
1. A power-actuated tool including a housing having a front and rear portion, barrel means having a breech end and a muzzle end slidably mounted in said front portion for movement between a forward breech open position and a rearward breech closed position, firing pin means slidably mounted in said rear portion, cocking means for moving said firing pin means from a fired position to a cocked position as said barrel means is moved into its breech closed position, means biasing said firing pin means from said cocked position to said fire position, said biasing means operable through said cocking means to bias said barrel means forwardly from said breech closed position, sleeve means disposed about said barrel means adjacent the muzzle end thereof, said sleeve means having limited relative axial movement with respect to said barrel means, means on said sleeve means for abutting said barrel means upon rearward movement of said sleeve means to move said barrel means toward its breech closed position against the bias of said firing pin biasing means, means on said barrel means for abutment by said sleeve means upon forward movement thereof to move said barrel forwardly in the housing, stop means on said housing for limiting the rearward movement of said sleeve means to a position wherein said barrel means is spaced forwardly of its breech closed position, said cocking means and said firing means being positioned in said firing position upon movement of said barrel means rearwardly relative to said sleeve means into a position that said sleeve means is in abutment with said stop means and the muzzle end of said barrel means is flush with the muzzle end of said sleeve means.

3,348,752
STAPLE MAGAZINES
Alfred G. Wheble, Lane, England, assignor to Dunham White and Company Limited, Ashford, Kent, England
Filed July 26, 1965, Ser. No. 474,909
Claims priority, application Great Britain, July 31, 1964, 30,284/64
9 Claims. (Cl. 227—109)



1. A staple magazine for a stapling machine of the herein described type having an end plate and a staple driving blade, and carrying and feeding alternately clips of wide crown or narrow crown staples, which comprises a generally flat base;
an outer pair of parallel walls and an inner pair of parallel walls perpendicularly upstanding from said base;
said outer pair of walls and inner pair of walls defining a straight feed path for staples carried slidably as clips in said feed path,
said feed path having a staple discharge end adjacent said base;
said pair of inner walls being a support for a clip of staples mounted to straddle said inner walls;
wide staples being guided by and laterally confined between the inner surfaces of said outer pair of walls, and
narrow staples being guided by and laterally restrained astride the outer surfaces of said inner pair of walls;
said inner pair of walls and said base at said staple discharge end of said feed path terminating short of said outer pair of walls by a distance equal to the thickness of a staple to partly define a staple driving plane;
deflectable guide means mounted within said pair of inner walls at the discharge end of said feed path, said guide means having an angled part which enters said staple driving plane at an acute angle thereto when said guide means is undeflected, said angled part having a width substantially equal to the width between the outer surfaces of said pair of inner walls;
said guide means being mounted to deflect from said staple driving plane to a position at which side edges of said angled part are substantially flush with the outer surfaces of said pair of inner walls;
said guide means restraining lateral movement of a narrow staple when a narrow staple is located in said staple driving plane and deflecting to permit said narrow staple to be driven downwardly through said plane whilst maintaining said lateral restraint, and said guide means deflecting to permit downward movement of a wide staple located in said staple driving plane,
said wide staple being restrained from lateral movement by the inner surfaces of said outer pair of walls.

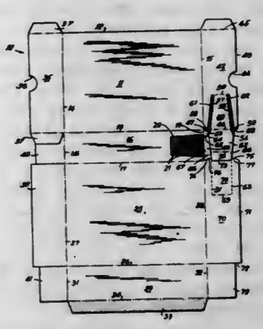
3,348,753
MOLTEN SOLDER DISPENSING DEVICE
Clarence B. Isbrandt, 3911 N. Christiana Ave., Chicago, Ill. 60618
Filed Apr. 5, 1965, Ser. No. 445,546
10 Claims. (Cl. 228—53)



1. A soldering device comprising (a) an air chamber; (b) a piston within said air chamber adapted to expel air from said air chamber; (c) actuating means coupled to said piston for operating said piston to expel air from said air chamber; (d) heating means having an enlarged base portion and an elongated tip portion, said tip portion having an orifice formed therein and said base portion being secured within said air chamber, said orifice in said tip portion communicating with said air chamber so that air expelled from said air chamber is forced through said orifice; and (e) reservoir means formed about said heating means for holding a supply of solder, said reservoir means having a dispensing orifice formed therein, said solder being expelled from said reservoir through said dispensing orifice when said actuating means is operated.

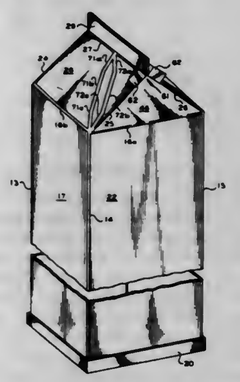
3,348,754
RECLOSABLE DISPENSING CONTAINER WITH SNAP LOCK
Stanley R. Koolnis, New York, N.Y., assignor to Lee Drechsler, Palisades, and Fred Zandell, New York, N.Y.
Filed Dec. 23, 1965, Ser. No. 516,058
5 Claims. (Cl. 229—17)

1. A reclosable container comprising: a bottom wall; a plurality of side walls upstanding from said bottom wall extending about the periphery thereof; a top wall extending across the upper ends of said side walls, said top wall comprising a pair of inner and outer layers adhesively secured in overlying relation; a pair of spaced retainers projecting from at least one of said layers of said top wall, generally coplanar therewith, beyond the adjacent side wall; a tab extending from said inner layer of said top wall between said retainers and hingedly connected to said layer for swinging movement through the space between said retainers; said inner and outer layers of said top wall being formed with severance lines extending inwardly from opposite sides of said tab, the top-wall portion between said severance lines defining a closure openable upon severance of said severance lines for swinging out of the plane of said top wall; said tab being movable with said closure; wings on said tab for movement therewith into and out of retaining engagement beneath said



retainers; and said wings being in edge-to-edge conforming engagement with said retainers when coplanar therewith.

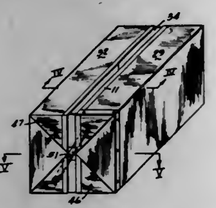
3,348,755
GABLE TOP CONTAINER
George E. MacEwen, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,747
6 Claims. (Cl. 229—17)



1. A gable top container of sheet material comprising a tubular body having four side walls, a bottom closure fixed to said body, a pair of opposed roof panels inclining toward each other and overlying the top of said body, a pair of opposed triangular end closure panels infolded between said roof panels from the opposite gable ends formed by the latter, first and second pairs of triangular fold-back panels, each pair of triangular fold-back panels being joined to the opposite sides of a respective one of said triangular end closure panels along fold lines which are in proximity with said roof panels, said fold-back panels being folded against the underside of said roof panels, a ridge panel surmounting each of said roof panels, a ridge panel surmounting each of said fold-back panels, each pair of ridge panels surmounting a pair of fold-back panels being hinged together at the apex of the contiguous end closure panel and being folded about such hinge joinder in face-to-face relation, between the ridge panels surmounting said roof panels, wherein the improvement comprises first and second score lines located in each of said pair of roof panels, each of said first and

second score lines comprising first, second and third score sections, the second score section of each of said first and second score lines being substantially parallel to each other and to the plane of one of said triangular end closure panels, the second score section of each of said first score lines being positioned in the respective roof panel above said plane and the second score section of each of said second score lines being positioned in the respective roof panel below said plane, the third score section of each of said first and second score lines extending downwardly from the lower end of the corresponding second score section of said first and second score lines to the lower corner of the respective roof panel contiguous to said one of said triangular closure panels, the first score section of each of said first and second score lines extending upwardly from the upper end of the corresponding second score section of said first and second score lines to a point on the upper edge of the respective roof panel substantially at the intersection of said plane with said upper edge.

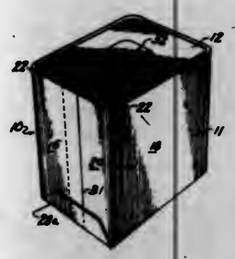
3,348,756
SHIPPING CONTAINER
Willard P. Boysen, Winnetka, Ill., assignor to Menasha Corporation, Chicago, Ill., a corporation of Wisconsin
Filed Feb. 7, 1966, Ser. No. 525,548
10 Claims. (Cl. 229—37)



6. A self-draining container formed from a completely imperforate corrugated paperboard blank free of slots in which the marginal edges of said blank are sealed against moisture penetration, said blank being folded along fold lines to provide panels defining side walls and end walls, together with end flap defining panels which fold to form pairs of opposed truncated triangular flaps against said end walls, said blank having additional panels thereon forming pairs of top and bottom covers for said container, said last named panels terminating short of the median center of said container, thereby providing drainage slots for said container.

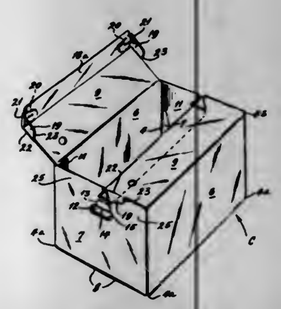
3,348,757
CARTON CONSTRUCTION
Robert J. Hickin, Seville, Ohio, and Jerome J. Galbierz, St. Louis, Mo., assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,217
4 Claims. (Cl. 229—37)

1. A receptacle suitable for packaging granulated material or the like comprising an integral body section formed from a sheet of foldable fibrous material forming upright side panels with closure flaps at the bottom of said panels; said body material having a plurality of spaced parallel first fold lines extending from the top to the bottom of said side panels and defining the same, second fold lines extending generally downwardly from the top of said panels in closely spaced relation to the upper portions of said first fold lines to permit rounded corners to be produced at the upper end of said body, and a third fold line disposed at the bottom of said side panels normal to said first fold lines, said third fold line cooperating with a plurality of slits arranged to form extensions of said first fold lines when the closure flaps are disposed in the planes of the side wall panels respectively contiguous therewith, to define the closure flaps at the bottom of said body; and a rigid end closure having rounded corners and sealingly connected to the top of



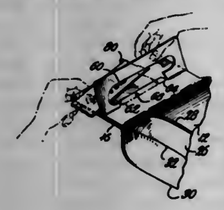
said body when the flaps have been folded into closure position in the bottom of the receptacle; said second fold lines permitting the corner portions of the top of said body sheet to conform to the radius of curvature at the corners of said rigid closure.

3,348,758
CARTON
Nicholas D. Ellis, St. Louis, Mo., assignor to Anheuser-Busch, Incorporated, St. Louis, Mo., a corporation of Missouri
Filed Apr. 1, 1966, Ser. No. 539,476
3 Claims. (Cl. 229—44)



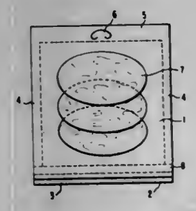
1. A carton having side walls and end walls, said end walls having a notch therein and an end reinforcing flap with a registering notch therein hinged to said end wall, said side walls each having a side cover flap hingedly secured thereto, said side cover flaps each having an outer and inner side cover flange positioned at an angle thereto, said side cover flaps each having small end cover brackets for maintaining said side cover flange in angular relation with said side cover flap, said end cover brackets having a small bottom and a wider top thereby covering only a small portion of said end walls adjacent to said notch when said cover flaps are in closed position and leaving the major portion of the end walls uncovered, said side cover flaps closing the entire top of the carton when in their closed position, said outer and inner side cover flanges having lower portions which extend downwardly below the bottom of said notch and contact the inner faces of said end reinforcing flaps to maintain said side cover flaps in their closed position and to rigidify the carton in a longitudinal direction.

3,348,759
PAPER BAG
Carl E. Johnson, 1540 Easton Ave., Bethlehem, Pa. 18017
Filed Aug. 26, 1966, Ser. No. 575,413
4 Claims. (Cl. 229—53)



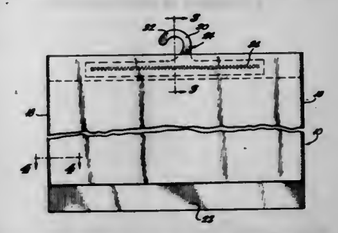
1. A bag formed of flexible material defining a front panel, a rear panel, and a pair of side panels connecting the side edges of said front and rear panels, said front and rear panels including upper edges, said side panels each including an upper edge, the upper edges of said side panels being spaced a substantial distance below the upper edges of said front and rear panels, pressure sensitive adhesive means disposed on the upper portions of the inner surfaces of said front and rear panels and extending from a point closely adjacent the upper edges of said side panels to a point closely adjacent the upper edges of said front and rear panels for securing such upper portions of the front and rear panels to one another, said front panel having a cutout formed therein for displaying a cash register tape, and flap means formed adjacent the lower part of said cutout, said flap being defined by a pair of slits formed in said front panel for receiving such cash register tape to limit the movement thereof and to hold it in position until the front and rear panels are adhesively secured to one another so as to seal the upper end of the bag and the cash register tape.

3,348,760
SUSPENDIBLE FLAT BAG
Hermann Hinsken, Wiesbaden-Biebrich, Georg Trzeciak, Wiesbaden-Schierstein, and Ewald Rasel, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany
Filed July 7, 1966, Ser. No. 563,577
Claims priority, application Germany, July 10, 1965, K 56,590
6 Claims. (Cl. 229—53)



1. A bag made from sealable film having a bag body and at least one welded seam with a slot-shaped perforation in the bag margin for suspending the bag, the ends of the perforation being curved in the direction of the bag body to at least such an extent that the ends of the perforation run toward each other but do not meet, whereby a flap delimited by the perforation remains connected to the bag.

3,348,761
HANGABLE PACKAGING RECEPTACLE
Erich Vetter, Huntington, N.Y., assignor to Uniflex, Inc.
Filed Sept. 27, 1966, Ser. No. 582,366
1 Claim. (Cl. 229—54)



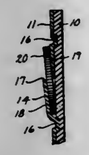
A packaging receptacle comprising: a bag-like portion having closed upper and side edges, said bag-like portion being formed of heat-fusable, flexible sheet material and including front and rear walls extending in overlying relation from a reverse fold establishing the upper edge of said bag-like portion, said reverse fold also defining mutually facing gusset wall portions extending along the upper edge from one of said side edges to the other, said front and rear walls and the ends of said gusset wall portions being fused to each other along a single weld line lying along each of said side edges, and means to suspend said bag-like portion in hanging fashion, said last mentioned means including an elongated strip portion positioned between said mutually facing gusset wall portions and heat-welded to said front and rear walls through said gusset wall portions, thereby to establish a heat-weld through two layers of said sheet material on opposite side of said strip, and an integral hanger portion projecting upwardly from said strip portion at a point near the longitudinal center thereof, whereby the loading stress on said hanger portion is transmitted by said strip symmetrically and uniformly to said front and rear walls.

3,348,762
HOUSEHOLD BAG CONSTRUCTION
Edward Michael Kasinkas, Lansdowne, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 22, 1966, Ser. No. 567,135
5 Claims. (Cl. 229—80)



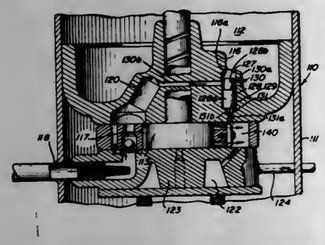
1. A sealable household bag comprising: an upper sheet having a top edge, a bottom edge and two sides, a lower sheet having a top edge, a bottom edge and two sides, means sealingly securing said bottom edges and sides of said upper and lower sheets to form an open-topped bag capable of receiving small household articles, said top edge of said lower sheet extending at least one inch beyond the top edge of said upper sheet to define a closure flap, the upper face of said closure flap having an oxidized strip transverse thereto and spaced from the top edge of said upper sheet, and a thin, uniform pressure-sensitive adhesive film located over a majority of said oxidized area, whereby said adhesive will selectively prefer to remain adhered to said oxidized area when said closure flap is removed from a surface to which it has been adhesively secured, said sheets each having a thickness in the range from about 0.4 mil to about 6 mils, and said film having a thickness in the range from about 0.1 mil to about 0.35 mil.

3,348,763
COIN SAVING BOOKS
Thomas C. Weston, 11004 W. Copeland Ave., Hales Corners, Wis. 53130
Filed Sept. 21, 1966, Ser. No. 581,084
9 Claims. (Cl. 229—92.9)



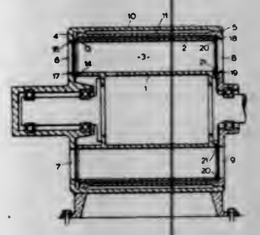
1. A coin saving device, comprising: a cover having an outer face and an inner face; an inner sheet of resilient and flexible material overlying the inner face of said cover; means joining portions of said cover and inner sheet together; and a plurality of coin-receiving compartments formed by and between said cover and inner sheet, said inner sheet having openings extending across each of said coin-receiving compartments and defining a coin-holding pocket therebelow adapted to receive more than half of a coin inserted therein, the distance between the opposite ends of said openings in said resilient sheet being slightly less than the width of the coins to be projected therethrough but said openings being temporarily expandable to permit the insertion or removal of coins from said pockets, said openings resuming their original size after coins have been inserted in said pockets to yieldably retain the same therein.

3,348,764
PRESSURE EQUALIZING MEANS FOR COMPRESSORS AND THE LIKE
Bert W. Romerhaus, Haubstadt, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,246
7 Claims. (Cl. 230—22)



7. In a compressor having means defining a pressure chamber, means defining a suction chamber, and means for pumping fluid from said suction chamber to said pressure chamber, means for causing the pressure in said pressure chamber and suction chamber to be substantially equal during initiation of operation of said pumping means and permitting the chambers to have a pressure differential therebetween during subsequent operation of the pumping means, comprising:
means defining an equalization passage between said pressure chamber and suction chamber;
means for closing said equalization passage as a result of initiation of operation of said pumping means including valve means having a movable valve member for selectively closing said equalization passage, and means biasing said valve member to open said equalization passage when the pumping means is inoperative; and
means for applying pressure developed by operation of said pumping means to said valve means for delayedly moving said valve member in opposition to said biasing means to close said equalization passage after a preselected period of time, said valve means comprising means defining a bore, said equalization passage having an inlet opening into said bore and an outlet opening outwardly from said bore, said valve member comprising a slug movable in said bore for selectively blocking fluid flow between said inlet and outlet, and said slug including a lower portion and a transversely reduced upper portion, selectively aligned with said inlet and outlet and permitting fluid flow therearound through said bore, and spaced from alignment with said inlet and outlet with said lower portion disposed to block said fluid flow.

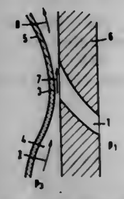
3,348,765
PRESSURE EXCHANGERS
Dudley Brian Spalding, 2 Vineyard Hill Road, Wimbledon, London, SW. 19, England
Filed Oct. 19, 1965, Ser. No. 497,972
Claims priority, application Great Britain, Jan. 13, 1965, 1,561/65
6 Claims. (Cl. 230—69)



1. A pressure exchanger comprising
(a) a first structure having cells in which one gas quantity expands, so compressing another gas quantity with which it is in direct contact,
(b) a second structure having ports communicating with the cells,
(c) ducting communicating with the ports to lead gas at different pressures steadily to and from the cells,
(d) means to effect relative motion between the structures, and
(e) a surface on each structure, which surfaces define a clearance permitting said motion and providing a path for the flow of leakage gas from a high-pressure zone to a low-pressure zone, characterized in that one of said surfaces continues beyond the termination of the other surface and has a portion which is curved away from the other surface whereby the leakage gas is induced to follow the curved surface and to enter the low-pressure zone in the same general direction as the flow of gas in that zone.

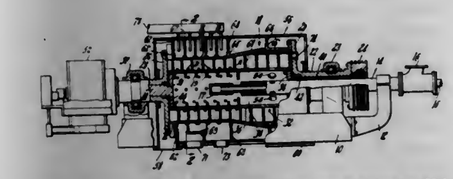
3,348,766
DEVICE FOR CLOSING OPENINGS SUCH AS PRESSURE OPENINGS IN GAS PUMPS
Kurt Mugele, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 23, 1965, Ser. No. 442,078
Claims priority, application Germany, Mar. 25, 1964, S 90,199
15 Claims. (Cl. 230—79)

14. In a pump having, during operation, a working fluid medium at a location of substantially maximum pressure and having a control plate formed with an opening, a device for closing the opening comprising guide means extending transversely to the axis of the opening, a fluid medium jet drawn from the working fluid medium at the location of substantially maximum pressure and



guided past the opening by said guide means at a specific velocity and in a direction defining a specific angle with the axis of the opening so as to sealingly close the opening.

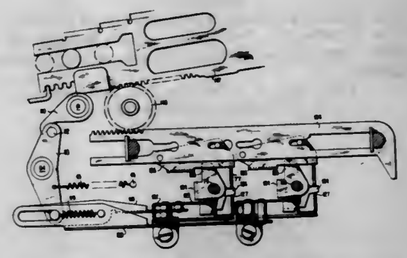
3,348,767
CENTRIFUGAL SEPARATOR
Francis X. Ferney, Walpole, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Filed Apr. 19, 1965, Ser. No. 449,159
7 Claims. (Cl. 233—7)



1. In a centrifugal separator for separating solid particles from the liquid portion of a slurry comprising a rotatable bowl including an imperforate truncated conical inner surface connected at its smaller end with the inlet end of a portion extending coaxially therefrom having at least one screen in its wall and having a solids discharge end opposite said inlet end, said portion having a diameter at its outlet end no less than its diameter at its inlet end, a helical conveyor coaxially mounted for rotation within said bowl, means for introducing said slurry into said bowl in advance of the inlet end of said screen portion by a distance, measured along the axis, equal to at least 15% of the diameter of the larger end of said conical surface, and means for rotating the bowl and the conveyor in the same sense at slightly different speeds to cause the solids in said slurry to deposit on the inner surface of the bowl and to advance the solids deposit in one direction along said conical surface toward the discharge end of said screen portion, the improvement which comprises means for removing the liquid portion of said slurry to maintain the depth of liquid within said bowl at such a level that the surface of the liquid intersects the conical surface at a distance from the inlet end of said screen portion, measured along the axis, equal to at least 15% of the diameter of the larger end of said conical surface.

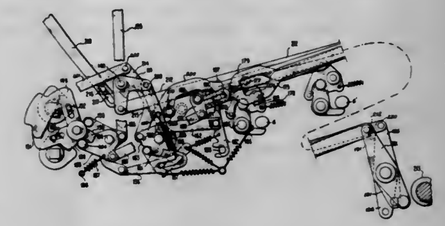
3,348,768
ACCUMULATION SELECTING MECHANISM FOR CALCULATING MACHINE
Richard E. Busch, La Puente, Calif., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 11, 1964, Ser. No. 388,900
6 Claims. (Cl. 235—60)

1. In a calculating machine of the cash registering type having a plurality of differential actuators, a plurality of accumulator elements driven by said differential actuators, an extent representative of a numerical value, and means for driving said differential actuators through incremental amounts relating to said numerical values, the improvement essentially consisting of at least two accumulator elements associated with each differential actuator capable of being selectively positioned in operative association therewith, an accumulator selection rack reciprocable between a reference position and a plurality of positions representative of accumulator selection, means



for selectively driving said rack to a representative position, positioning means for shifting said accumulator elements in relation to their associated differential actuators, step means associated with said accumulator selection rack for arresting said positioning means in a position determined by the representative position of said selection rack so as to place one of said accumulator elements in operative association with its respective differential actuator.

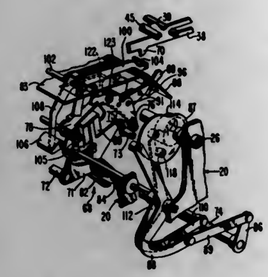
3,348,769
CONTROL MECHANISM FOR CALCULATING MACHINE
Richard E. Busch, La Puente, Calif., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 11, 1964, Ser. No. 388,901
3 Claims. (Cl. 235—60)



1. In a calculating machine of the cash registering type having a plurality of primary differential actuators, a plurality of accumulator elements respectively driven by said primary differential actuators an extent representative of a numerical value, and means for driving said differential actuators through incremental amounts relating to said numerical values, the improvement consisting of a plurality of secondary differential actuators operably associated with said primary differential actuators for coordinate movement therewith, a plurality of secondary accumulator elements, means for positioning said secondary accumulator elements in operative relationship to a respective secondary differential actuator comprising cam means for shifting said secondary accumulator elements to their operative position in contact with a respective secondary differential actuator, first selector linkage means associated with said cam means for effecting actuation thereof in response to machine operation, second selector linkage means normally inoperative to effect actuation of

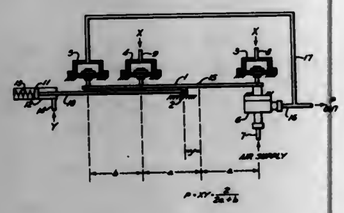
said cam means, actuating means for simultaneously shifting said first selector linkage means out of operative association with said cam means and for shifting said second selector linkage means into association with said cam means, said second selector linkage means being operative to engage said cam means for a longer time than said first selector linkage means.

3,348,770
ACCOUNTING MACHINE READ-IN DEVICE
Nicholas Kondur, Jr., Northville, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 4, 1966, Ser. No. 540,035
4 Claims. (Cl. 235—61)



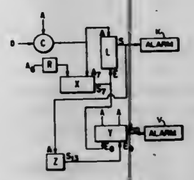
2. A device for stopping a movable data rack in any one of a number of data representing positions comprising supporting means, a rack pivotally mounted on said supporting means and having a plurality of abutments representative of different data information, said rack having a home position and pivotal therefrom along a path of travel, a first stop member operable in timed relation to the movement of said rack to engage a predetermined one of said abutments to stop the rack, and a second stop member carried by said rack and movable therewith from a retracted position to an effective stop position corresponding to the abutment engaged by said first stop member.

3,348,771
FORCE BALANCE COMPUTING APPARATUS
William L. Krayer, Pittsburgh, Pa., assignor to Calgon Corporation, Pittsburgh, Pa.
Filed July 13, 1965, Ser. No. 471,698
15 Claims. (Cl. 235—200)



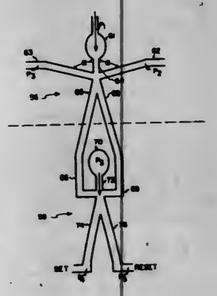
1. Force balance computing apparatus comprising
(a) a beam
(b) means for continuously applying a force to said beam in proportion to a variable pneumatic pressure
(c) means for varying the length of a lever arm on said beam for said force applying means as a function of a variable pneumatic pressure, and
(d) means for applying two equal forces as a couple in opposition to said lever arm.

3,348,772
ALARM SYSTEM
Henri-Pierre Chabrier, 39 Rue Boileau, Lyon 6e, France, and Andre Saint-Joanis, 47 Ave. Vallioud, Sainte-Foyles-Lyon, France
Filed Jan. 2, 1964, Ser. No. 335,265
Claims priority, application France, Jan. 5, 1963, 920,557
20 Claims. (Cl. 235—201)



1. A fluid-operated alarm sequence, comprising:
fault signal detector means,
first warning means,
second warning means,
one of said warning means being capable of functioning in rhythmic operation,
actuating control means operatively connected with both of said warning means for controlling and actuating said warning means including oscillator means for producing a rhythmic signal upon actuation thereof connected with one of said warning means, said rhythmic signal being applied to said one warning means for actuating said one warning means in the rhythmic operation thereof, memory means, connecting means operatively connecting said memory means with said detector means, said memory means being actuated by the output signal of said detector means supplied by said connecting means, and further means connecting said memory means with said oscillator means connected to said one warning means for actuation thereof, said memory means including manually operated means for switching said memory means to thereby produce an output signal applied to said oscillator means for transforming the rhythmic signal of said oscillator means applied to said one warning means into a continuous signal.

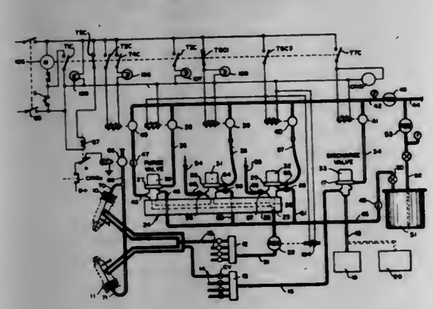
3,348,773
FLUIDIC FLIP FLOP DEVICES
Charles J. Ahern, Detroit, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,498
7 Claims. (Cl. 235—201)



1. Fluid device comprising
means for receiving a fluid signal,

first means having a common passage with a bifurcation forming two channels in which the fluid signal may flow,
means for receiving a fluid supply,
second means for providing two channels in which the fluid supply may flow,
the channels of the first means being connected to said second means to change the flow path of the fluid supply from one of the channels of said second means to the other of the channels of said second means,
first control means connected to said common passage and before said bifurcation for causing a control fluid flow across said common passage and into one channel of said first means to direct the path of the fluid flow supply to one of the channels in said second means regardless whether the fluid signal to the first means is present,
second control means connected to said common passage and before said bifurcation for causing a control fluid flow in another of said first means to direct the path of the fluid flow supply into the other of the channels of said second means regardless of the presence of the fluid flow signal to the first means.

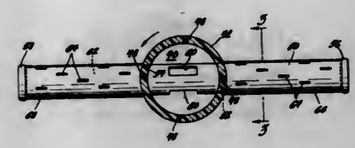
3,348,774
SEMI-AUTOMATIC COLOR CHANGE SYSTEM FOR PAINT SPRAY INSTALLATION
Richard F. Wiggins, Fairfield, Conn., assignor to The Gyromat Corporation, Stratford, Conn., a corporation of Connecticut
Filed Mar. 18, 1965, Ser. No. 440,736
4 Claims. (Cl. 239—70)



2. A semi-automatic color change system for a paint spray installation, which comprises
(a) a paint spray nozzle,
(b) independent fluid supply and discharge lines associated with said nozzle,
(c) a controllable discharge valve in said discharge line,
(d) selectively controllable paint and purge fluid control valves associated with said supply line,
(e) said purge fluid valve being upstream of said paint valves, and
(f) a color change cycle timer associated with said valves and operative in sequence to open said discharge valve and direct into said supply and discharge lines purge fluids and paint of a new color.

3. A color change sysem for a paint spray installation, which comprises
(a) a valved paint spray nozzle;
(b) a supply line connected to said nozzle for supplying paint and solvent to said nozzle;
(c) a discharge line connected to said spray nozzle and communicating with said supply line only substantially at said spray nozzle;
(d) a plurality of controllable paint supply valves selectively connectable to said supply line;
(e) a controllable solvent supply valve selectively connectable to said supply line and located upstream of said paint supply valves; and
(f) a controllable discharge valve in said discharge line.

3,348,775
REACTION JET SPRAY ARM FOR DISHWASHERS HAVING SIMULTANEOUS ROTATION ABOUT PERPENDICULAR AXIS
Frank E. La Flame, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,990
5 Claims. (Cl. 239—227)

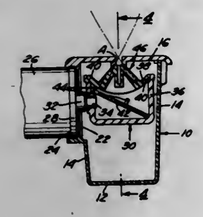


1. In a dishwasher, a washing compartment, means including a bottom surface defining a sump region in said washing compartment, fluid distributing pump means in said sump region including means for drawing fluid from said sump region and for discharging it therefrom, a first rotatable member supported on said pump means including a pressurizable cavity, ports in said first rotatable member for discharging the fluid from said pressurizable cavity to produce a resultant reactive force on said rotatable member to move it with respect to said pump means about a first axis, a second tubular member rotatably supported by said first member on an axis perpendicular to said first axis, means for communicating the interior of said tubular rotatable member with said pressurizable cavity of said first rotatable member, said tubular member having ports therein for directing pressurized fluid from said tubular member, said tubular member being subjected to a resultant reactive force upon discharge of fluid through said tubular member ports for causing rotation of said tubular member on said first rotatable member.

3,348,776
WAVE SPRINKLER PROVIDING A PLURALITY OF DIFFERENT VELOCITIES THROUGH A PLURALITY OF DIFFERENT NOZZLES
Edwin J. Hunter, Riverside, Calif., assignor to Moist-O'Matic, Inc., Riverside, Calif., a corporation of Minnesota
Filed June 1, 1965, Ser. No. 460,300
5 Claims. (Cl. 239—242)

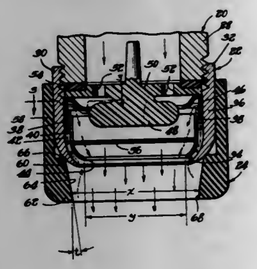
1. In a wave sprinkler of the class described, a nozzle comprising:
a housing mounted for oscillation about a horizontal axis and connected to a source of water under pressure;
a nozzle plate on said housing having a nozzle boss projecting upwardly therefrom;
said nozzle boss having a plurality of jet nozzles provided therein which are arranged in two rows directly opposite from one another and facing toward opposite sides of a plane normal to the axis of oscillation;
said two rows of nozzles being disposed at varying angles to said normal plane, whereby the streams of water issuing therefrom are arranged in a fan-like pattern; and

the nozzles in one of said rows being offset with respect to the nozzles in the other row, whereby the



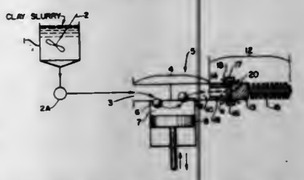
streams of water from one row of nozzles pass between the streams of the other row.

3,348,777
AERATOR CONVERTER
Julius A. Hjulian, 12646 S. Harlem Ave., Palos Heights, Ill. 60463
Filed May 28, 1965, Ser. No. 459,825
5 Claims. (Cl. 239—424.5)



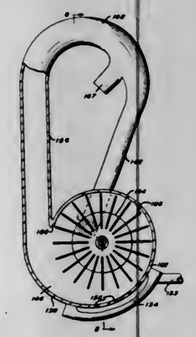
1. An aerator assembly for providing an aerated flow of fluid from a liquid discharge member, said aerator assembly comprising: a skirt member supported by the liquid discharge member with an annular fluid discharge edge at a lower end of the skirt member; a wall member supported by the liquid discharge member and positioned radially outwardly of said skirt member and terminating with a lip positioned adjacent to said discharge edge to at least partially define air inlet passage means between said skirt member and said wall member through which air passes to be aspirated into liquid flowing from the liquid discharge member; a tubular member supported by the liquid discharge member and located radially outwardly of said wall member; and a flow controlling member joined to a lower end portion of said tubular member and extending downstream from said wall member, said flow controlling member including a downstream narrowing conical throat to enable a persisting flood of liquid to be formed in said air inlet passage means when a momentary backup is developed in the aerated flow through said conical throat whereby to cut off a normal flow of air through said air inlet passage means to develop a non-aerated discharge of liquid, wherein said downstream narrowing conical throat has a major inside dimension that is smaller than an inside dimension of said tubular member and wherein said flow controlling member includes a shoulder at a juncture of said flow controlling member with said tubular member, said shoulder bridging between said major inside dimension of said conical throat and said inside dimension of said tubular member to locate said conical throat with respect to said fluid discharge edge by engagement with said wall member.

3,348,778
REDUCING PARTICLE SIZE OF CLAY AND RHEOLOGY CONTROL OF CLAY-WATER SYSTEMS
Morris I. Cohn, Needham, and Roy D. Perdue, Andover, Mass., assignors to Mineral Industries Corporation of America, Needham, Mass., a corporation of Massachusetts
Filed Mar. 4, 1966, Ser. No. 540,126
20 Claims. (Cl. 241—5)



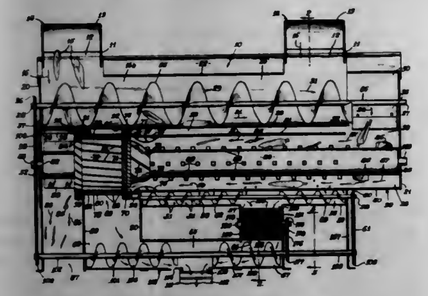
10. A method of increasing the dilatancy point of clay comprising forcing a flowable liquid slurry of said clay, having a clay concentration not substantially less than 30% by weight, in the form of a thin film edgewise through a thin hard-surfaced gap under a high pressure of at least 100 lbs. per square inch and at an extremely high velocity by virtue of reduction of said high pressure to a substantially lower pressure.

3,348,779
METHOD AND APPARATUS FOR COMMINUTING MATERIALS
Norwood H. Andrews, Box 68, Moorestown, N.J. 08057
Filed Oct. 2, 1964, Ser. No. 401,191
22 Claims. (Cl. 241—39)



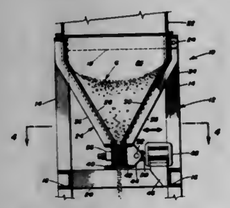
2. Apparatus for the reduction of material to finely divided particles comprising an endless curved chamber, means to introduce a stream of gaseous fluid adjacent the periphery of said curved chamber, said stream being directed to have both rotational and radial components of movement, means for introducing into said chamber and into said gaseous stream feed material to be divided, said gaseous stream having sufficient energy to impose centrifugal force on the gas and material flowing therein, a grinding zone abutting the outer periphery of said chamber, first rotatable vanes within said casing positioned to forcibly mix feed material with material circulating in said stream, second rotatable vanes positioned closely adjacent the periphery of said chamber to cause circulating material and a portion of said gas stream to flow along and adjacent at least a portion of the periphery of said curved chamber, the periphery of at least a portion of said second vanes being in the outer portion of the grinding zone, and means disposed radially inwardly of said periphery for the discharge of said gas and divided material.

3,348,780
COMBINATION CORN SHELLING AND COB GRINDING APPARATUS
Reynold Barkstrom, Moline, Ralph L. Sutton, Rock Island, and Dwight B. Carlson, Rapids City, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,651
18 Claims. (Cl. 241—101)



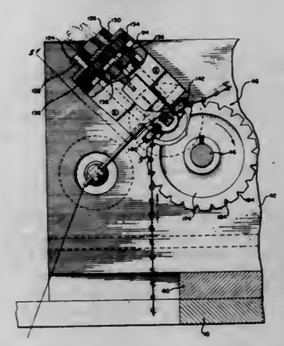
1. A corn shelling and cob grinding device comprising a sheller housing having a corn intake port, a cob discharge end and foramina for passing separated grain from said housing; a rotor journalled in said housing; abrading means disposed peripherally of said rotor; means for feeding material axially of said rotor through said cob discharge end; a perforate casing disposed in cob receiving association with said cob discharge end and having a debris discharge opening and perforations for passage of ground cobs from said casing; a cob grinder driven in said casing; feeder members disposed peripherally of said cob grinder for feeding debris axially of said grinder through said debris discharge opening; means defining a collection chamber having opposite portions disposed in receiving alignment with said foramina and said perforations, and proportioning means for continuously mixing ground cob and grain in selected ratios.

3,348,781
APPARATUS FOR REDUCING SIZE OF MATERIALS
Walter J. Sackett, Sr., 3700 Echodale Ave., Baltimore, Md. 21207
Filed Sept. 3, 1964, Ser. No. 394,154
1 Claim. (Cl. 241—264)



Apparatus for reducing oversize materials, comprising, structure defining a hopper having a spaced pair of fixed vertical endwalls and therebetween a steeply angled stationary sidewall, a pivotally mounted steeply angled movable sidewall converging toward each other at their lower ends, with said sidewalls terminating in spaced parallel sections, a vibrator secured to the lower end of said movable sidewall for oscillating said movable sidewall toward and away from said fixed sidewall at a predetermined rate, whereby when granules of said materials to be reduced in size are fed into said hopper, the vibration of said movable sidewall causes said material granules to pass downwardly therethrough and between said parallel sections of said sidewalls to be reduced in size, said vibrator limiting the oscillation of said movable sidewall away from said stationary sidewall and stop means adjustably mounted to the lower end of said stationary sidewall and extending toward the lower end of said movable sidewall for limiting the oscillation of said movable sidewall towards said stationary sidewall.

3,348,782
AUTOMATIC WINDING MACHINE
David W. Birch, Williamsville, and Kenneth F. Hebdon, Arcade, N.Y., assignors to Delevan Electronics Corporation, East Aurora, N.Y.
Filed June 22, 1965, Ser. No. 465,888
2 Claims. (242—9)

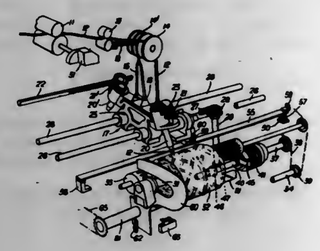


1. In combination with a coil form having a cylindrical body provided with notched ends and connector leads extending from such ends,
means for rotatably supporting said coil form by said connector leads thereof at a fixed station,
means for selectively rotating said coil form while at said fixed station,
a length of coil wire,
means for anchoring one end of said coil wire at a point on one side of said fixed station and at a position adjacent one end of said cylindrical body,
coil wire guide means mounted for movement traversing the length of said body on the opposite side of said fixed station to first engage the coil wire against said one end of the cylindrical body while the same is rotated and thereby cause said coil wire to simultaneously wrap about said body and the connector lead associated with said one end thereof,
means for anchoring the coil wire at a point on said one side of fixed station and at a position adjacent the opposite end of said cylindrical body,
means for indexing said coil form from said fixed station to a position beyond said means for anchoring, and means for cutting the coil wire when said coil form has been indexed as aforesaid.

3,348,783
WINDING APPARATUS
John K. P. Mackie, Belfast, Northern Ireland, assignor to James Mackie & Sons Limited, Belfast, Northern Ireland, a British company
Filed July 6, 1965, Ser. No. 469,725
Claims priority, application Great Britain, July 10, 1964, 28,669/64
7 Claims. (242—54.4)

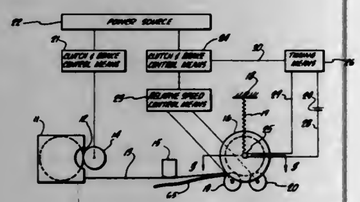
1. Apparatus for winding balls of textile sliver comprising a rotary winding spindle for supporting a sliver ball, a nozzle for feeding sliver to said spindle, a travers-

ing mechanism for traversing said nozzle in a direction parallel with the axis of said spindle, rotating means responsive at least in part to traversing movement of said nozzle for rotating said nozzle whereby to apply false twist



to said sliver, a driving roller for turning a ball of sliver supported by said spindle, means for driving said driving roller and stopping means for stopping the traversing mechanism shortly before said driving roller completes a ball.

3,348,784
TAPE TRANSPORT ASSEMBLY
John T. Gardiner, Monrovia, and Magne Jarle Kjos, Duarte, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 11, 1965, Ser. No. 431,873
13 Claims. (Cl. 242—55.12)



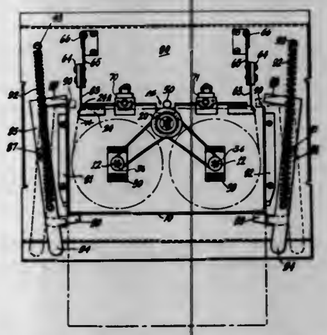
4. A tape transport assembly comprising:
a supply reel, the supply reel having information storing tape wound therearound,
a pickup reel,
means for detecting information stored in the tape,
means for transporting the tape from the supply reel to the pickup reel comprising a feed-out and rewind roller in contact with the supply reel,
the detecting means being positioned between the supply reel and the pickup reel in close proximity to the path followed by the tape, and
means for winding the tape about the pickup reel and for transporting the tape past the detecting means at a constant speed comprising
tape drive roller means supporting the pickup reel and in driving contact with the pickup reel and with the tape at the point of reel contact,
means for maintaining driving contact between the roller means and both the pickup reel and tape as the tape is wound onto the pickup reel,
a power source,
control means for operatively connecting the tape drive roller means to the power source, and
means for imparting constant speed to the tape drive roller means.

3,348,785
AUTOMATIC TEXTILE BEAM TRANSFER APPARATUS
John Cocker III, Gastonia, N.C., assignor to Cocker Machine & Foundry Company, Gastonia, N.C., a corporation of North Carolina
Original application June 18, 1962, Ser. No. 205,171, now Patent No. 3,219,206, dated Nov. 23, 1965. Divided and this application Nov. 8, 1965, Ser. No. 506,773
7 Claims. (Cl. 242—47)



1. A textile beam transfer apparatus for transferring full beams from a textile machine, each of said beams being generally cylindrical and rotatable about an axis for winding a textile thereon, said apparatus comprising
beam-winding apparatus for rotating said beam to wind said textile thereon,
doffing means operative in response to the completion of said winding to doff said beam from said winding apparatus,
full-beam storage means located at a position remote from said beam-winding apparatus and at a predetermined level,
empty-beam storage means located at a level above said full-beam storage means,
conveying means extending between said beam-winding apparatus and said full-beam storage means, and
actuating means responsive to the action of said doffing means and connected to said conveying means upon completion of said doffing to convey said full beam to a level below the level of said empty-beam storage means for deposit at said full-beam storage means.

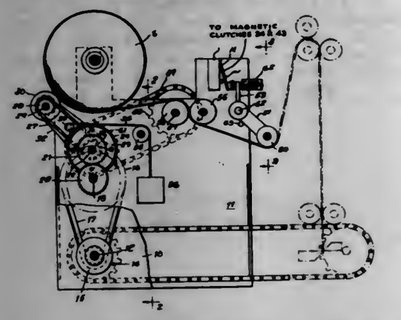
3,348,786
SOUND TAPE CARTRIDGE
Eugene M. Miller, Crystal Lake, Ill., and Jerry O. Kelley, Lake Ozark, Mo., assignors, by direct and mesne assignments, to Cart-Trac, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 24, 1964, Ser. No. 354,477
25 Claims. (Cl. 242—55.13)



25. In sound tape apparatus for use with a driving capstan spindle, a pinch roller assembly including a pinch roller over which tape is travelled between the roller and capstan spindle, tape reels journalled adjacent to pinch roller to serve as payout and take-up reels for the travelled tape, driven reel pulley means for each reel to

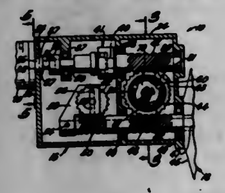
drive the same individually; said pinch roller assembly including two drive pulleys assembled coaxially with the pinch roller each to be rotated in a different direction codirectionally with the roller when driven by the capstan spindle, and each provided with belt means driving one of said reel pulley means; and means which is part of said pinch roller assembly acting automatically in accordance with the direction of travel of the tape for coupling the pinch roller with that one of said drive pulleys which will drive the reel acting as the take-up reel for the direction of tape travel.

3,348,787
DRIVE AND DRIVE CONTROL FOR SUPPLY ROLLS
William H. Giles, Brooklyn, N.Y., assignor to Nu Roll Corp., Mineola, N.Y., a corporation of New York
Filed May 20, 1966, Ser. No. 551,750
3 Claims. (Cl. 242—75.5)



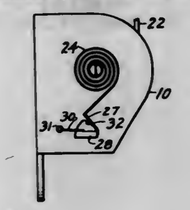
1. A drive for controlling the speed of rotation of a supply roll comprising a drive shaft connected to a master machine, a pair of shafts operatively connected to said drive shaft, one of said last named shafts being driven at a speed greater than the drive shaft, and the other of said last named shafts being driven at a speed under the speed of the driven shaft, an arm pivotally connected at one end to one shaft of said pair of shafts, another shaft journaled on the free end of said arm and having driving connections with the shaft to which the arm is pivoted, rollers journaled on the other end of said arm and in driving contact with said supply roll and selective driving connections between said pair of shafts and said drive shaft for driving the supply roll.

3,348,788
POWER-DRIVEN SPINNING REEL ASSEMBLY
David Vinokur, 16217 Dalark St., La Puente, Calif. 91744
Filed Sept. 27, 1965, Ser. No. 490,502
22 Claims. (Cl. 242—84.21)



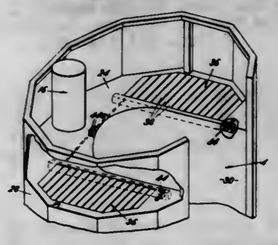
1. A fishing reel assembly selectively operable manually and from motor means forming part of said reel assembly, said assembly comprising a main frame, motor means mounted on said main frame and including speed reduction means, a normally nonrotatable spool mounted on said main frame, a flyer rotatable on said frame to wind line onto said spool, manual drive means including first one-way clutch means having its driven side connected to said flyer, and transmission means driven by said motor means and including a second one-way clutch having the driven side thereof operatively connected to drive said flyer when said motor means is energized, and control means for activating said motor.

3,348,789
SECURITY BELTS
Richard F. Hirsch, 3142 Prospect, La Crescenta, Calif. 91014
Filed Sept. 1, 1966, Ser. No. 576,688
7 Claims. (Cl. 242—107.4)



1. A safety unit for seats, chairs and the like, the unit comprising in combinat on a shiftable belt and a device to accommodate the belt; the device having a support means accommodating a roller to which one end of the belt is attached and upon which the belt is wound, a toothed wheel fixed to the roller to rotate therewith, latch means to prevent the wheel and the roller from unwinding, a main spring means having an end portion thereof attached to the roller and another end portion attached to the latch means, the main spring means constantly urging the roller to wind the belt thereon, a spring arm means engaging a portion of the roller and having a leg engaging the latch means to prevent its operation when the roller is first rotated to extend the belt, when the main spring means is wound to a predetermined strength and the belt retracted a short distance to release the leg from the latch means, said another end portion of the main spring then acting to shift the latch means and thus free it for its engagement with the toothed wheel so that the roller is prevented from unwinding but left free to wind the belt thereon.

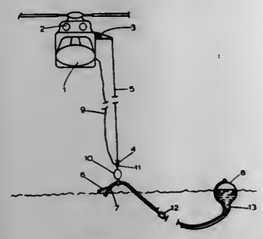
3,348,790
MAINTENANCE OF TEMPERATURE CONDITIONS IN SATELLITES
Jeffrey L. Crowder, Wheathamstead, and William H. Durrant, Welwyn, England, assignors to British Aircraft Corporation (Operating) Limited, London, England, a company of Great Britain
Filed June 4, 1965, Ser. No. 461,443
Claims priority, application Great Britain, June 5, 1964, 23,433/64
5 Claims. (Cl. 244—1)



1. In a satellite having a substantially cylindrical body, and means for maintaining the axis of the body perpendicular to the ecliptic while the satellite is in orbit, the

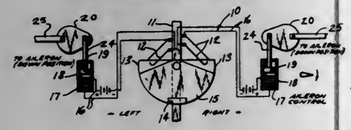
improvements comprising a cylindrical surface of the body well insulated thermally so that substantially no radiant heat from the sun reaches the interior of the satellite, and ends of the body also thermally insulated, but less well, this insulation of the ends being adjustable by means responsive to temperature within the body.

3,348,791
REFUELING OF ROTARY WING OR VERTICAL TAKEOFF AIRCRAFT
Robert M. McKinlay, Yeovil, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Oct. 11, 1965, Ser. No. 494,619
Claims priority, application Great Britain, Oct. 15, 1964, 42,063/64
10 Claims. (Cl. 244—2)



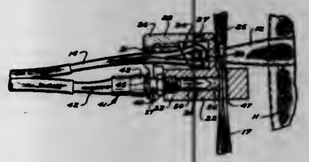
1. An apparatus for transferring fuel from a floating or ground-based fuel container to a hovering aircraft comprising:
a fuel container,
a first pipeline in communication with the container near the upper portion thereof,
a second pipeline in communication with the container near the lower portion thereof,
holding means for connecting together the free ends of the said first and second pipelines,
and further apparatus carried by the aircraft including,
a source of gas under pressure and means for connecting said source to the free end of the first pipeline,
a fuel receiving tank and means for connecting said tank to the free end of the second pipeline, and a winch means including a cable wound thereon, said cable including a grapple means at the free end thereof for retrieving and hauling the first and second pipelines aboard the aircraft for connection to the said source and the said tank respectively, whereby when gas under pressure is fed from the source along the first line to the container, fuel is forced under pressure through the second pipeline to the tank.

3,348,792
AIRCRAFT GUIDANCE SYSTEM
Roy L. Porter, Groton, Conn.
(520 Big Pine Drive, Virginia Beach, Va. 23452)
Filed Nov. 29, 1965, Ser. No. 510,327
1 Claim. (Cl. 244—80)



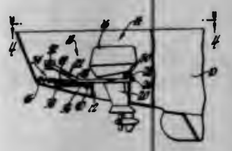
An aircraft guidance system, comprising: a support member, rotary switch means rotatably mounted on said support member, contact means mounted on said support member and being adapted to communicate with said switch means, said rotary switch means including a pair of rotary switch members and a half-circular conductor plate adapted for positioning between said contact means secured to said rotary switch members, said rotary switch means further including a weight member firmly affixed to said plate for maintaining said plate on a predetermined plane, at least one electro-magnet capable of communicating with said contact means, at least one permanent magnet adapted to be repulsed by the electric charge of said electro-magnet, a non-metallic cylindrical housing for fixedly positioning said electro-magnet and movably positioning said permanent magnet, driving means secured to said permanent magnet and being adapted to regulate control surface members of an airplane in accordance with the movements of said permanent magnet within said cylindrical housing.

3,348,793
MEANS FOR ATTACHING REEFING LINE CUTTER TO LOAD CARRYING PARACHUTES
Marshall S. Kriesel, St. Paul, Ottomar H. Vetter, Minneapolis, and Earl L. Muelling, Green Isle, Minn., assignors to Aerospace Research Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 18, 1965, Ser. No. 496,887
10 Claims. (Cl. 244—152)



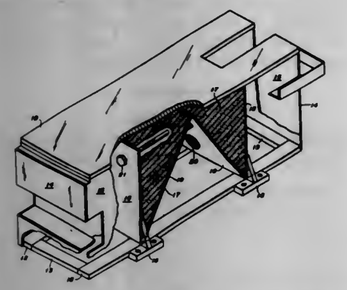
1. A cutter assembly for a line used to reef a parachute, said parachute having a canopy and plurality of loops attached to the canopy and through which the reefing line extends, said cutter assembly having mean to receive said reefing line and hold it in position for cutting, remotely controllable means for cutting the reefing line, and a latch on the cutter assembly having a section which is openable to permit to receive one of said loops and closable to retain the cutter assembly on said one loop.

3,348,794
MOTOR MOUNT FOR BOATS
Allan M. Hayes, 2675 Douglas Drive, Bloomfield Hills, Mich. 48013
Filed Oct. 7, 1965, Ser. No. 493,637
13 Claims. (Cl. 248—4)



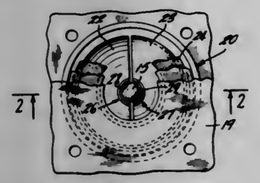
1. A boat having a well and a storage space above said well, a motor normally disposed in a stowed position in said storage space and insertable into a propelling position in said well for propelling said boat, and motor lift means operatively connected to said boat for movement relative to said boat to and from a support position, means for supporting said motor lift means in said support position, said motor lift means being operatively connected to said motor for supporting said motor in said propelling and stowed positions while in said support position and for allowing said motor to move between said propelling and stowed positions as said motor lift means moves relative to said boat.

3,348,795
MACHINE BASE
Charles G. Schilling, Franklin Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 513,987
3 Claims. (Cl. 248—19)



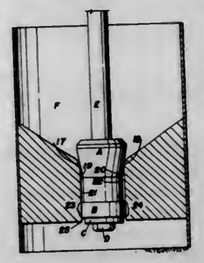
1. A machine base comprising a welded steel structure having walls which define compartments, and masses of sand tightly packed in said compartments and fully enclosed by said walls, said walls being relatively movable in bending or torsion to distort the compartments and produce frictional forces between the sand particles themselves and between the walls and sand particles, said frictional forces dissipating energy and eliminating chatter of a machine mounted on said base.

3,348,796
SPHERICAL TYPE OF ALL-DIRECTIONAL FRICTIONAL DAMPER
Paul Baratoff, Jackson Heights, Nicholas F. Kfoury, Manorhaven, and Billy Y. K. Mui, Astoria, N.Y., assignors to Korfund Dynamics Corporation, Long Island City, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,713
11 Claims. (Cl. 248—20)



1. A vibration damper for damping vibrations in a vibratile mass relative to a fixed reference base, comprising an elongated rigid rod having one end pivotally mounted about and the remainder thereof freely depending from a fixed point on the vibratile mass and having a longitudinal axis adapted to assume a predetermined position in space relative to the vibratile mass when the vibratile mass is at rest and susceptible of angular displacement from said predetermined spatial position in any plane passing through and including said predetermined spatial position upon lateral displacement of the vibratile mass relative to the fixed reference base, a generally spherical damping means enclosing and diametrically receiving a longitudinal extent of said rod spaced from said one end for frictionally damping axial displacement of said rod relative to the fixed reference base, said spherical damping means being susceptible of rotation about a radially inward center of rotation and adapted to engage at least two spaced-apart points on said longitudinal extent of said rod respectively positioned on opposite sides of said center of rotation, and means for frictionally restraining rotation of said spherical damping means about said center of rotation to dampen angular displacement of said rod from said predetermined spatial position.

3,348,797
GOLF FLAG PIN BASE
Charles William Turbyfill, Box 490, Marshall, Tex. 75670
Filed Dec. 17, 1962, Ser. No. 245,037
1 Claim. (Cl. 248—44)

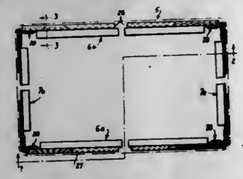


A device for positioning a golf flag pin securely in a golf hole socket comprising:
(a) a circular pin base having an upper and lower end and an upper and lower portion, said upper portion adjacent said upper end having a larger diameter than said lower portion and said lower portion having a straight cylindrical outer surface;
(b) said upper portion having a tapered outer surface from adjacent said upper end to said lower portion;
(c) said upper portion having an opening in said upper end for receiving the golf flag pin;
(d) said lower portion having an opening in said lower end concentric with said opening in said upper end of said upper portion;
(e) a resilient circular disc having an opening therein concentric with said opening in said lower end of said base, said disc being mounted concentric with said pin base adjacent said lower end;
(f) a circular washer having an opening therein concentric with said opening in said disc means, said washer being mounted concentric with said disc adjacent its lower end; and
(g) bolt means extending through each of said concentric openings of said washer and disc and extending upwardly into said opening in said lower end in said lower portion whereby placement of said base in the golf hole socket enables said tapered surface of said upper portion and said resilient disc to continuously contact the golf hole socket thereby enabling said pin base and the flag pin to be centered in the golf hole socket.

3,348,798
LAUNDRY TUB STAND
Laurent Gervais, Roxboro, Quebec, Canada, assignor to Crane Canada Limited, Montreal, Quebec, Canada
Filed May 9, 1966, Ser. No. 548,438
Claims priority, application Canada, Nov. 18, 1965, 945,711
5 Claims. (Cl. 248—150)

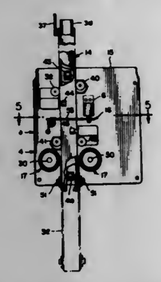
1. A self-locking open rectangular stand adopted to receive and support laundry tubs and the like, the said stand comprising two pairs of opposed frame members formed of sheet material disposed in a vertical plane, a first pair of said frame members being located at right angles to a second pair of said frame members to form the open rectangular stand, the said first pair of frame

members having end portions offset in a plane parallel with the main body of the frames, two pairs of right angled vertically disposed supporting legs, the said pairs of legs each having one right angled member secured to said first pairs of frame members inwardly of said offset portion, the other right angle member of the said legs being projected across the plane of and spaced from the free ends of the said offset portions of the said first



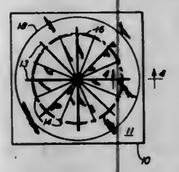
pair of frame members, the second of said pair of frame members having their end portions bent inwardly at right angles to the main body of the frame member, the said right angled end portions adopted for sliding engagement within the space between the adjacent surface of said supporting legs and the said offset portions of the first pairs of frame members, and stop means adopted to maintain the top horizontal edges of the said first and second pairs of frame members in a common plane.

3,348,799
TRAY ASSEMBLY
Wolfgang Junkel, Des Plaines, and Milton R. Nielsen, Wheaton, Ill., assignors to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Nov. 1, 1965, Ser. No. 505,785
5 Claims. (Cl. 248—283)



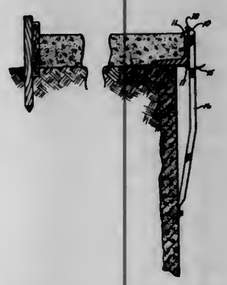
1. A tray arm assembly comprising a mounting panel adapted to be secured to a dental console; a vertical post having flat sides and being of uniform horizontal cross section throughout substantially its entire vertical extent; a plurality of rollers secured to said panel and engaging said post for guiding movement of said post between raised and lowered positions; said rollers being arranged in vertically-spaced pairs; each of said pairs engaging one of the flat sides of said post; a locking plate having an opening through which said post extends; said opening being slightly larger than the outside cross-sectional dimensions of said post to permit unrestrained vertical movement of the post therethrough when said locking plate is generally horizontally disposed; said locking plate being mounted upon said panel for limited pivotal movement between a generally horizontal position and a normal downwardly inclined position in which edge portions of said locking plate engage the outer surface of said post to prevent downward movement of the post relative to said locking plate; a horizontally-elongated tray arm having one end thereof affixed to the upper portion of said post and having a tray mounted adjacent the opposite free end of said arm; gripping means provided adjacent said free end of said arm for the manual shifting of said tray, tray arm, and post upwardly and downwardly as a unit; power-operated releasing means mounted upon said panel for moving said locking plate into its generally horizontal position; and control means adjacent said gripping means for actuating said power releasing means to pivot said locking plate into its generally horizontal position when downward movement of said tray, tray arm, and post is desired.

3,348,800
COASTER AND METHOD OF MAKING SAME
Jerome C. Wiechers, 5357 Hunt Club Road, Racine, Wis. 53402
Filed Sept. 16, 1965, Ser. No. 487,842
5 Claims. (Cl. 248—346.1)



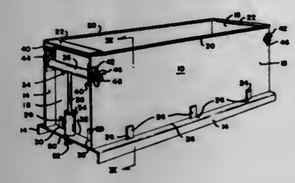
1. A coaster for absorbing the droplets of condensate draining from a tumbler, comprising a base of an absorbent material having an affinity for water and being capable of rapidly absorbing water into the body of said material when the water comes into contact with the surface of said material, said base having a flat top surface, and a plurality of spaced-apart lines of a non-absorbent material printed into said base and permanently attached thereto and superimposed on said flat top surface of said base and extending a slight distance thereabove for supporting the tumbler in a position spaced above said base and being disposed on said base in an arrangement to have the condensate droplets come into contact with said top surface while those droplets are still clinging to the tumbler so that those droplets are sucked from the tumbler and into said base by the affinity of said absorbent material.

3,348,801
CANTILEVER DECK FORM
Max W. Deason, 3242 N. Erma, Tucson, Ariz. 85705
Filed Aug. 30, 1965, Ser. No. 483,563
6 Claims. (Cl. 249—19)



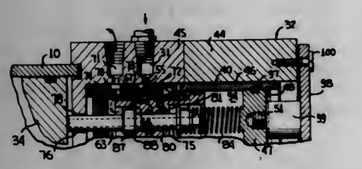
1. A cantilever deck form comprising: a band of semi-rigid material; a flexible member having a cross-section of generally L-shape, and having one leg of said L secured to said band; an anchor member secured in a substantially horizontal position in supporting contact with the other leg of said L; and a support bracket secured in a substantially vertical plane in supporting contact with said anchor.

3,348,802
MOLD BOX
Robert B. Corbett, Mars, Pa., assignor of one-half each to Sam Heppenstall & Associates, Inc., and Corbett Associates, Inc., both corporations of Pennsylvania
Filed Sept. 22, 1965, Ser. No. 489,326
10 Claims. (Cl. 249—163)



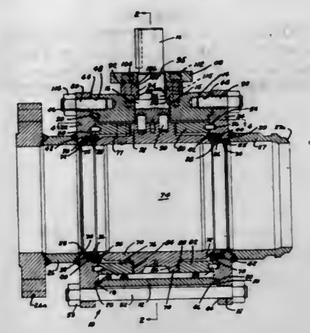
1. A mold structure comprising a bottom wall member, a plurality of vertical wall members detachably joined to said bottom wall member, a generally T shaped clamping member rotatably mounted on at least one of said vertical wall members, said one vertical wall member extending between a spaced opposed pair of said vertical wall members, and means for securing said clamping member to said opposed wall members and to said bottom wall member.

3,348,803
PISTON REVERSING ACTUATOR VALVE
Ralph Churchill, Jr., Hoffman Estates, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 30, 1964, Ser. No. 407,665
12 Claims. (Cl. 251—12)



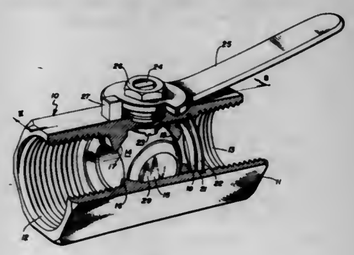
1. An actuator valve comprising a housing, first and second chambers in said housing, a first passage for introducing fluid into said first chamber, a second passage for venting fluid from said second chamber, and valve means for controlling the passage of fluid from said first chamber to said second chamber, said valve means including a valve member movable between a first position cutting off fluid communication between said chambers and a second position placing said chambers in fluid communication, means maintaining said valve member in said first position, means for moving said valve member from said first position to said second position whereby fluid passes from said first passage through said first chamber into said second chamber, restriction means between said second chamber and said second passage for restricting the flow of fluid from said second chamber to said second passage, a third chamber, and a third passage in fluid communication with said third chamber for introducing fluid therein to augment the movement of said valve member from said second position to said first position to close-off fluid communication between said first and second chambers.

3,348,804
VALVE CONSTRUCTION
Jack E. Piccardo, Oakland, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed June 10, 1964, Ser. No. 373,922
9 Claims. (Cl. 251—214)



7. A rotatable valve structure comprising:
a rotatable valve member,
a pair of bearing blocks rotatably receiving said valve member,
a pair of end walls of plate material,
means engaged around the edges of said end walls drawing said edges toward each other to clamp said bearing blocks between said end walls, and
a body ring completely containing said valve member, embracing said bearing blocks and enclosing the space between said end walls,
said body ring being slightly narrower than said bearing blocks, and
a resilient seal around the edges of said body ring,
said drawing means pulling the edges of said end walls toward each other into engagement with said resilient seal.

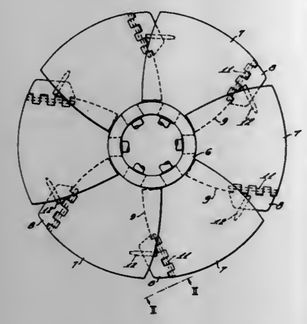
3,348,805
BALL VALVE
Robert E. Sanctuary, Shrewsbury, Mass., assignor to Worcester Valve Co., Inc., Worcester, Mass., a corporation of Massachusetts
Filed Sept. 8, 1964, Ser. No. 394,975
12 Claims. (Cl. 251—315)



7. A ball valve, comprising
(a) a body having an inlet passage and an outlet passage,
(b) a generally spherical ball formed of a hard resilient plastic material mounted in the body between the passages and having a bore extending therethrough for connecting the passages on occasion,
(c) seats formed in the body on opposite sides of the ball adjacent the passages, and

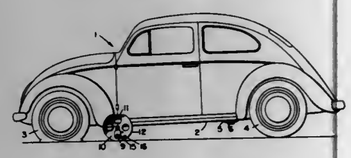
(d) an annular flange having a thin resilient lip located on each side of the ball and engageable with the said seats when the ball is positioned so that the bore does not connect the passages, each of said flanges being formed of said hard resilient plastic material and being attached to said ball.

3,348,806
SPOILERS FOR TURBINE BLADES
Ignacy Swiecicki, York, Pa., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 17, 1967, Ser. No. 623,977
2 Claims. (Cl. 253—59)



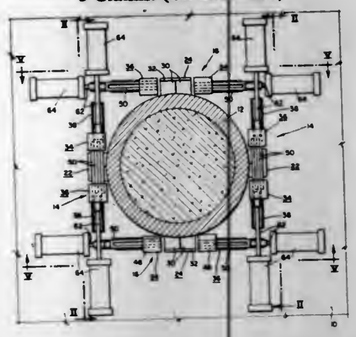
1. A hydraulic machine motor comprising: a hub, a plurality of blades, having leading and trailing edges, pivotally mounted on said hub and extending outwardly therefrom, said blades being movable from an open position to a closed position; a spoiler pivotally connected to a blade and movable between a first position in the plane of said blade to a second position defining a plane at an angle with the plane of said blade; and means attached to a blade adjacent to said spoiler and engaging said spoiler when said blades are in a closed position to move said spoiler to said second position.

3,348,807
APPARATUS FOR JACKING MOTOR VEHICLES
Michael Rossnan, 11724 Lovejoy St., Silver Spring, Md. 20902
Filed May 6, 1966, Ser. No. 622,374
9 Claims. (Cl. 254—94)



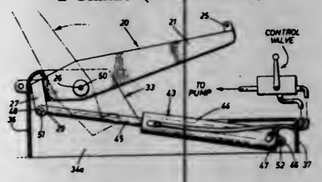
1. A jacking device for motor vehicles including in combination a hardware member for attachment to the chassis of such vehicle and having a non-circular opened socket, a stub axle having an end for slideable reception in said socket, a disk-like member provided with means to radially and slideably, adjustably receive the other end of said axle, and means adjacent said first mentioned means for releasably adjustably positioning said other end in said first mentioned means.

3,348,808
JACKS FOR ELEVATING THE PLATFORM OF AN OFFSHORE DRILLING RIG
Edgar W. Brown III, P.O. Box D, Port Arthur, Tex. 77640
Filed June 7, 1966, Ser. No. 555,911
8 Claims. (Cl. 254—106)



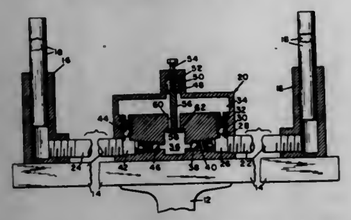
1. The combination comprising a platform, a column extending freely through said platform, said platform being movable vertically relative to said column, a plurality of wedge devices mounted upon said platform for movement vertically therewith and disposed in circumferentially spaced relation about said column, vertically spaced locking means on said column for coaction with said wedge devices, alternate ones of said wedge devices being engaged with certain of said locking means for supporting said platform on said column, and intervening ones of said wedge devices being free of said locking means, and means for actuating said wedge devices in repeating cycles in each of which first said intervening devices are partially extending for engaging certain of said locking means to support said platform on said column, next said alternate devices are retracted to free them from said locking means, then said intervening devices are fully extended to raise said platform on said column one step, next said alternate devices are partially extended for engaging certain of said locking means to support said platform on said column, then said intervening devices are retracted to free them from said locking means, and next said alternating devices are fully extended to raise said platform on said column a second step.

3,348,809
HYDRAULIC HOIST FOR TOW TRUCKS
Robert E. Lardner, Edmonton, Alberta, Canada, assignor to Western Pneumatics Ltd., Edmonton, Alberta, Canada
Filed Feb. 7, 1966, Ser. No. 525,575
2 Claims. (Cl. 254—124)



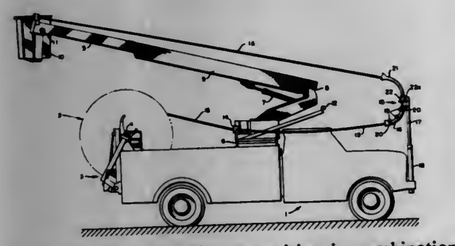
1. A hydraulically operated hoist for use on a truck comprising: lift arm means, said arm means having a load attachment means secured thereto adjacent one end thereof and actuator attachment means secured thereto adjacent the other end thereof; an elongated support frame including a pair of spaced apart side members; pivot means extending transversely between said side members at the rearward end thereof in supporting relation with said arm at a point intermediate the ends thereof; a double acting hydraulically operable piston and cylinder actuator extending between said support frame side members and having one end pivotally attached at the forward end of said support frame; means to selectively provide fluid pressure to said actuator, said actuator and actuator attaching means enabling said arm means to be rotated to a position substantially perpendicular to said support frame when said actuator is in a retracted position and to a position in close coextensive relation with said support frame when said actuator is in an extended position, whereby the space requirement of the hoist when not in use is reduced to a minimum.

3,348,810
HYDRAULIC BALANCING DEVICE
Martin J. Curran, Jr., 3035 Dunbar St., Attica, N.Y. 14011
Filed Mar. 29, 1966, Ser. No. 538,295
8 Claims. (Cl. 254—133)



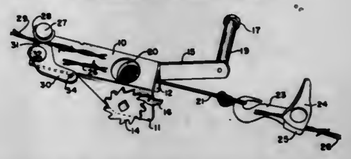
1. An apparatus comprising a support, a plurality of elements movably mounted thereon, and a balancing hydraulic system connecting and in part controlling the motion of said elements under external pressure,
a cylinder for each element, each element applying increased pressure to its cylinder as it retracts with respect thereto under external pressure,
and a central valve system connected to the cylinders and being effective to transfer pressure from any cylinder under such increased pressure to any cylinder under lesser pressure,
said valve system including a balance valve effective to cease such transfer when the exterior pressures on the several elements is substantially equal.

3,348,811
WIRE PLACING DEVICE
Wayne M. Pierce, Jr., Milford Conn., assignor to Hunt-Pierce Corporation, Milford, Conn., a corporation of Connecticut
Filed Mar. 25, 1966, Ser. No. 537,416
3 Claims. (Cl. 254—134.3)



1. A wire placing device comprising in combination: a vehicle for transporting said device; a reel of wire and means for supporting said reel; a boom situated on said vehicle; a mast; means for guiding the wire from said reel to said boom; a chute on said mast through which said wire passes from said reel to said boom, said chute comprising upper and lower curved portions and rollers extending into said chute to minimize frictional effects on the wire as it moves through said chute, said portions being aligned end to end; swivel means for mounting said upper portion to pivot about an axis through the aligned ends; and a member in which said mast is adapted to slide, said member being located at the front of said vehicle.

3,348,812
WIRE STRETCHER
Malcolm C. Story, 521 S. Willson Ave., Bozeman, Mont. 59715
Filed July 19, 1966, Ser. No. 566,299
1 Claim. (Cl. 254—161)

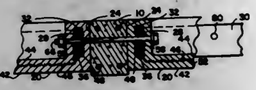


A hand operated light weight wire stretcher of a size for reception in a pocket of an article of clothing and for support by one hand of an operator for pulling at least one wire intermediate its length toward a relatively fixed element comprising a channel shape frame having side flanges adjacent one end thereof and open at said one end for the free passage of a cable, the web of said channel being substantially continuous and substantially free of projections from said one end to closely adjacent the other end, a windup reel shaft rotatably mounted in said flanges closely adjacent said one end, crank means of a length approximately the distance between the axis of said shaft and the other end of said frame to rotate said shaft, means to selectively prevent rotation of said shaft, a flexible cable secured by one of its ends to said shaft adapted to have its free end attached to a wire intermediate the length of the wire, means closely adjacent the other end of said frame for attaching said frame to a fixed element whereby rotation of said shaft will cause said cable to move said wire toward said fixed element under the desired tension whereby said wire may be fixed to said relatively fixed element, a comealong secured to the free end of the cable for attachment to one of the wires being stretched, the fixed element being the other wire being stretched, and the means for securing said other end of the frame to the other wire is a wire engaging clamp including a wire engaging stud projecting upwardly from the web of the channel with said stud having a flange spaced from the web and a serrated cam having a handle is pivotally mounted on said web adjacent the other edge of said web so the serrated cam will react against the other wire being stretched to confine the other wire between said web and the flange of said stud when the cam handle lies within the projected outline of the frame to fix the wire stretcher with respect to said other wire, the cam handle being movable from a position overlying the frame to a position extending beyond the said other end of the frame, said cam handle having a recess for attachment to the relatively fixed element when the cam handle extends outwardly from the said other end of said frame.

3,348,813
PANEL FENCE CONSTRUCTION
Earl T. Hazelett, Jr., 2837 N. 4th St., Phoenix, Ariz. 85021
Filed Apr. 11, 1966, Ser. No. 541,712
4 Claims. (Cl. 256—19)

1. In a panel fence construction the combination of: horizontally spaced vertically disposed posts; a plurality

of vertically superimposed horizontally elongated panels having opposite vertical sides disposed adjacent said posts; each panel having a generally rectangular band-shaped frame provided with four substantially flat strip portions generally fixed together to form said band-shaped frame; a first pair of said strips of each panel disposed vertically adjacent said posts; a second pair of said strip portions of each panel disposed horizontally; flat sides of said strip portions disposed normally to said opposite sides of said panel; first and second opposite edges of said strip portions directed toward said opposite sides of said panels; a reinforcing mesh structure abridging the area between all of said first and second strip portions,



said mesh structure engaging said first edges of said strip portions and disposed in a plane generally aligned with said first edges; peripheral portions of said mesh structure secured to and substantially surrounding said strip portions; said second edges of said strip portions projecting towards one side of each of said panel beyond a plane of said mesh structure to form a substantially rectangular surrounding panel flange at one side of each of said panels; a coat of cementitious material covering said mesh structure and said strip portions; and bolts extending through said cementitious material, said strip portions and said mesh and through said rectangular panel flange; said bolts also extending horizontally through said posts to hold said panels secured to said posts.

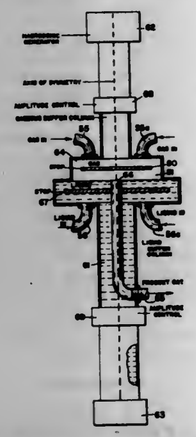
3,348,814

METHODS AND MEANS FOR PRODUCING PHYSICAL, CHEMICAL AND PHYSICO-CHEMICAL EFFECTS BY LARGE-AMPLITUDE SOUND WAVES

Robert P. Shaw, New York, N.Y., assignor to Macrosonic Process Corporation, New York, N.Y., a corporation of Delaware

Original application June 16, 1958, Ser. No. 742,301, now Patent No. 3,087,840, dated Apr. 30, 1963. Divided and this application Apr. 29, 1963, Ser. No. 276,628

11 Claims. (Cl. 259—1)



1. Improved method for producing effects of the character described in a substance by sound waves which comprises applying to said substance large-amplitude sound waves in a substantially close system in which a nonlinear wave performs a periodic excursion, periodically reinforcing such wave at at least one point of the system, and synchronizing such periodic reinforcements with the motion of the wave.

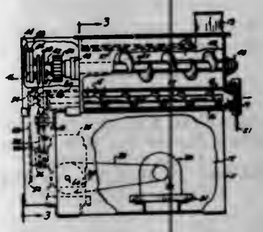
3,348,815

CLAY MIXER AND EXTRUDER

Percy Edick, 425 S. Campbell, Detroit, Mich. 48209

Filed Dec. 27, 1966, Ser. No. 604,673

6 Claims. (Cl. 259—6)



1. A machine for heating, mixing and extruding clay comprising a housing, having a power train chamber and a clay mixing chamber; a clay charging inlet upon said housing adjacent one end of the mixing chamber; a pair of spaced power driven shafts journaled through said mixing chamber; a series of longitudinally spaced angularly disposed paddles on each shaft for breaking up and mixing the clay and for advancing the clay to the other end of said mixing chamber; an extruding tube in said housing underlying and parallel to said mixing chamber and extending outwardly of said housing and including an extruding outlet; a manually movable clay cutoff gate normally closing said tube outlet; an inlet passage between said other end of said mixing chamber and said one end of said tube; and a power driven clay feed screw rotatively mounted within said tube.

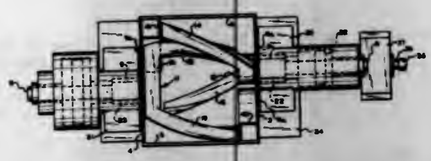
3,348,816

MIXING MACHINE

Bradley G. Cox, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York

Filed Feb. 11, 1966, Ser. No. 534,271

23 Claims. (Cl. 259—41)



1. A mixing machine comprising a container having opposed, spaced apart end walls; a pair of mixing blades, each of said blades including a pair of spaced apart arms joined to one another at corresponding ends, the other ends of each of said arms being free; means mounting said blades at opposite ends of said container for rotation about substantially parallel but noncoincident axes spaced from one another a distance sufficient to enable an arm of either of said blades to pass between the arms of the other of said blades, the joined ends of one pair of arms being adjacent one of said end walls and the joined ends of the other pair of arms being adjacent the opposed end wall, said free ends of the arms of each of said blades extending toward and beyond the free ends of the arms of the other of said blades; and means for rotating said blades simultaneously.

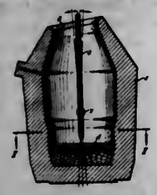
3,348,817

PROCESS AND APPARATUS FOR INTERMIXING LIQUIDS, MORE ESPECIALLY METAL SMELTS

Erich H. K. Mueller and Bernhard Osann, Wolfenbuettel, and Christian Mueller, Salzgitter-Lebenstedt, Germany, assignors to Huettenwerk Salzgitter Aktiengesellschaft, Salzgitter-Watenstedt, Germany, a corporation of Germany

Filed Sept. 24, 1963, Ser. No. 311,066

11 Claims. (Cl. 259—72)



1. A process for subjecting a liquid contained in a vessel to an agitation of such nature as to effect stirring of the liquid, comprising the steps of acting upon the liquid in the vessel with a first instrumentality to impart to the liquid a rotary movement about the vessel axis; terminating the action of said first instrumentality and imparting to said liquid with a second instrumentality a periodic oscillating movement only in a vertical plane in substantially horizontal direction to thereby sustain said rotary movement.

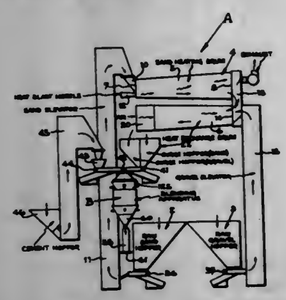
3,348,818

APPARATUS AND METHOD FOR BLENDING DRY MATERIALS

Arthur C. Avril, Cincinnati, Ohio, assignor to A & T Development Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 12, 1965, Ser. No. 432,168

34 Claims. (Cl. 259—148)



19. A method of blending a combination of dry materials, either of uniform or of varying particle sizes and of different specific gravities comprising the steps of:

providing a generally cone-shaped diaphragm formed of flexible material and normally depressed to an inverted receiving position to form a vessel, with the apex of the cone-shaped diaphragm disposed at the lower end thereof;

feeding said combination of dry materials in metered quantities into said cone-shaped diaphragm, with the diaphragm in said inverted receiving position forming said vessel;

shifting said diaphragm from said inverted receiving position to an erected upright position with the apex of the cone at the upper end thereof, thereby to propel the material from the diaphragm;

and thereafter collecting said combination of blended dry materials.

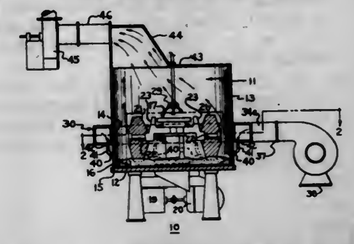
3,348,819

APPARATUS FOR CONDITIONING PARTICULATE MATERIAL

Robert L. McIlvaine, Winnetka, Ill., assignor, by mesne assignments, to National Engineering Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 7, 1964, Ser. No. 416,566

5 Claims. (Cl. 259—1.51)



1. Apparatus for conditioning particulate material, such as foundry sand and the like, comprising an enclosed mixing chamber for containing a batch of said material, said chamber including a bottom wall, an upstanding peripheral sidewall, and a top wall, a mixing head in said chamber mounted for rotation about an axis upstanding from said bottom wall for moving said material in a circular orbit around said chamber to mix and agitate the same, an elongated gaseous fluid supply manifold secured to the exterior of said sidewall, said manifold extending generally parallel of said bottom wall and having an interior peripheral edge conforming to and adapted to seal against the exterior surface of said sidewall, fan means connected to one end of said manifold for delivering gaseous fluid under pressure to the interior thereof, a plurality of inlet opening defining means in said sidewall at circumferentially spaced locations therein in communication between the interior of said chamber and the interior of said manifold, a plurality of fluid delivery conduits connected to the interior of said manifold, each having an exit end in communication with one of said inlet opening defining means in said sidewall and an open inlet end in communication with the interior of said manifold for delivering a high velocity flow of gaseous fluid directly into the material in said mixing chamber, and exhaust fan means in communication with said mixing chamber above said inlet opening defining means in said sidewall for exhausting gaseous fluid from said chamber at velocities substantially less than the velocity of said fluid flowing into said material through said inlet opening defining means in said sidewall.

3,348,820

TUBE MIXER FOR MORTAR

Horace A. Wilkinson, Lilli Pilli, near Sydney, New South Wales, and Eric P. Dimmock, Baulkham Hills, near Sydney, New South Wales, Australia, assignors to Monier Research & Development Pty. Ltd. (formerly Monier Mechanical Research Pty. Ltd.), Sydney, New South Wales, Australia

Filed Sept. 8, 1966, Ser. No. 578,040

Claims priority, application Australia, Oct. 20, 1965, 65,496/65

7 Claims. (Cl. 259—161)

1. A tube type mixer comprising:

(a) an elongated tubular casing;

(b) an elongated shaft extending axially through said casing for rotation and against axial movement relative thereto;

(c) a screw flight fixed to said shaft and extending helically therearound and radially therefrom into proximate contact with said casing, said flight having interruptions therein at longitudinally spaced intervals along said shaft;

(d) substantially cylindrical spacers coaxially disposed on said shaft at each of said interruptions, said spacers having a length and cross-section permitting, during the conveyance of material by said screw flight, the accumulation of a plug of said material at each of said interruptions, whereby:

(1) the portions of the screw flight immediately upstream of each of said interruptions function to trowel material onto the trailing end of the plug in the interruption immediately downstream therefrom; and

(2) the portions of the screw flight immediately downstream of each of said interruptions function to shear material from the leading end of the plug in the interruption immediately upstream therefrom;



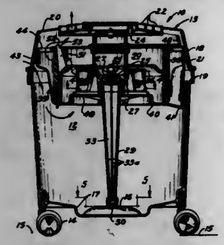
(e) feeding means in communication with the interior of said casing at an upstream portion of said flight, said means being adapted to continuously supply material to be mixed to said flight;

(f) outlet means in communication with the interior of said casing at a portion of said flight downstream of said feeding means, said outlet means being adapted to permit the discharge of mixed material from said casing;

(g) a plurality of pins fixed to and extending radially into said casing, respectively, at the interruptions in said flight, said pins having the distal ends thereof disposed immediately adjacent said spacers to prevent the build-up of material being conveyed by said screw flight on said spacers; and,

(h) means for introducing fluid additives into a material being mixed within said casing.

3,348,821
HUMIDIFIER
John L. Martin and Russell M. Amundsen, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Nov. 23, 1965, Ser. No. 509,310
4 Claims. (Cl. 261—29)



1. Air humidifying apparatus, comprising:

container means for containing a liquid having impurities therein and defining an enclosed chamber having air inlet and air outlet means;

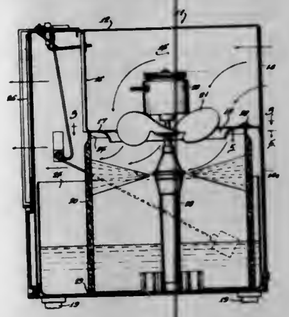
wall means intermediate said air inlet and outlet means for defining an air passage therebetween;

liquid translation means having drive means, said liquid translation means being positioned in said air passage and in communication with liquid in said container means for distribution of said liquid across said air passage;

air translation means operatively connected to said liquid translation means, said air translation means being positioned in said air passage for flowing air from a space to be humidified through said inlet means and said air passage for humidification thereof by partial evaporation of said liquid in said air passage, and for transfer of humidified air from said air passage through said air outlet means to said space, upon operation of said drive means;

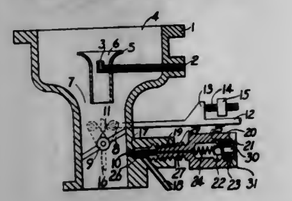
impervious deflector means extending at an acute angle to a horizontal plane positioned in spaced adjacent relationship to said liquid translation means to receive and deflect liquid therefrom, said air translation means directing air flow above and below said deflector means; and a flexible foam cylinder positioned in said air passage in contact with said wall means, and surrounding said liquid translation means and said impervious deflector means, said deflector means dividing said foam cylinder into an upper portion and a lower portion, said air translation means directing a first quantity of air from said inlet means above said deflector means and through said upper portion of the foam cylinder while directing the remaining quantity of air from said inlet means below said deflector means and through said lower portion of said foam cylinder.

3,348,822
HUMIDIFYING DEVICE
Joseph L. Vieceli, La Grange, and Charles G. Judy, Westchester, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed May 28, 1965, Ser. No. 459,794
13 Claims. (Cl. 261—34)



9. In a humidifier having a cup shaped water reservoir, horizontal wall disposed over the reservoir and defining locking openings therein, pump means for lifting water from the reservoir and propelling it outwardly below the wall, the improvement comprising a humidifying element extending from the wall into the reservoir including a pliant porous rectangular skirt, a strengthening element molded along the upper edge of said skirt and adapted for cooperating with the bottom surface of the horizontal wall to form a relatively air-tight seal, fastening means projecting from said strengthening element and positioned to pass through the openings in the horizontal wall to lock said skirt thereto, said fastening means positioned so that said skirt forms a cylindrical shape with the ends thereof in overlapping relationship, a closing rib molded to said skirt and projecting away therefrom, said rib positioned on the overlapped section of said skirt and shaped to abut against the reservoir whereby the humidifying element assumes a cylindrical shape with the upper edge against the horizontal wall and the side of the cylindrical element held closed.

3,348,823
MOTOR IDLING SPEED CONTROL PROPORTIONING VALVE
Don D. Roquerre, 260 Aster St., P.O. Box 186, Laguna Beach, Calif. 92651
Filed Sept. 27, 1965, Ser. No. 490,472
2 Claims. (Cl. 261—41)



1. A carburetor for an internal combustion engine, said carburetor having a carburetor barrel and a main throttle valve, a first valve chamber leading to a first valve seat forming a first valve opening into said carburetor barrel downstream of said main throttle valve, and a fuel supply outlet into said chamber adjacent said valve seat, comprising:

a body with a second valve chamber and a nozzle member attached to said body adapted to fit within and coaxially with said first valve chamber, the unattached end of said nozzle member forming a first valve with said first valve seat and adapted to be adjustably spaced from said first valve seat;

a coaxial air passage through the entire length of said nozzle member communicating said second valve chamber with said carburetor barrel;

an end member coaxial with said second valve chamber providing a second valve seat and an air inlet passage into said second valve chamber;

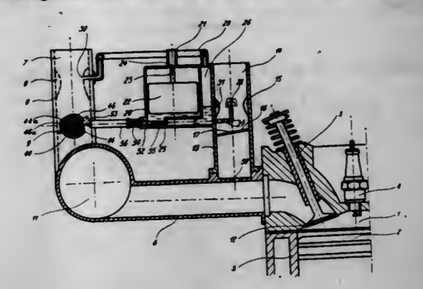
a closure member biased within said second valve chamber against said second valve seat forming a second valve responsive to the vacuum in said carburetor barrel of said combustion engine to open said second valve;

first adjustment means adapted to adjust said first valve thereby adjusting the flow of fuel from said fuel supply outlet through said first valve opening into said carburetor barrel; and

second adjustment means independent of said first adjustment means adapted to adjust the biasing force on said closure member thereby adjusting the flow of air from said air inlet passage through said coaxial air passage through said nozzle member and into said carburetor barrel.

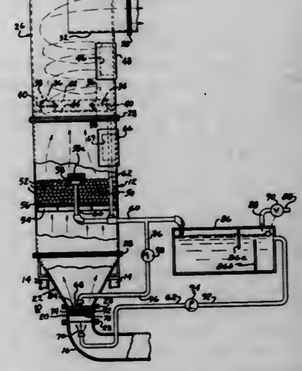
3,348,824
AUTOMATIC ARRANGEMENT FOR A CARBURETOR
Jean-Pierre Soubis, La Celle-Saint-Cloud, France, assignor to L'Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France
Filed June 3, 1966, Ser. No. 555,028
Claims priority, application France, June 10, 1965, 20,346
3 Claims. (Cl. 261—41)

1. In an automatic arrangement for the carburetor of an internal combustion motor, comprising a main inlet pipe provided with a main venturi, a rotating control element for controlling the volume of gas admitted into said pipe, said carburetor being provided with a jet, a needle cooperating with said jet, elastic means associated with said needle, a rod support, means for rotating said rod support about its axis as a function of the rotation of said control element, a cam track of nonuniform cross section in the axial direction having an internal bore through which said rod support passes, and adapted to allow said cam track to slide freely along said rod support, means for driving in rotation said cam track by said rod support, means controlling the sliding of said cam track as a function of the depression prevailing in said main inlet pipe, downstream from said rotating control element and a feeler cooperating with said needle applied against said cam track by said elastic means, the



provision of an auxiliary feed pipe, means for admitting air into said pipe, a channel extending into said auxiliary feed pipe for feeding motor fuel to the air admitted in said auxiliary pipe and control means for the flow of motor fuel feeding said auxiliary pipe, operating in response to the depression prevailing in said main inlet pipe at the level of the neck of said main venturi.

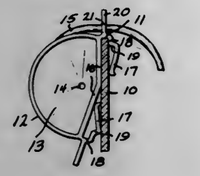
3,348,825
APPARATUS FOR COLLECTING CONTAMINANTS FROM GASES
Robert L. McIlvaine, Winnetka, Ill., assignor to National Dust Collector Corporation, Skokie, Ill., a corporation of Illinois
Filed Feb. 3, 1966, Ser. No. 524,945
8 Claims. (Cl. 261—98)



1. In a dust collector for removing contaminants from gas, the combination including a flow nozzle for said gas forming a part of said collector and having a smaller cross section than an adjacent downstream portion of said collector, a plurality of spherical filter elements arranged to lie in a single layer extending across said nozzle and generally transversely of the direction of gas flow therein, said filter elements arranged in said layer to lie in side-by-side, freely rotatable, tangential relation with one another thereby forming a multiplicity of small gas flow orifices between adjacent filter elements, first grid means underlying said layer and extending across said flow nozzle for

supporting said filter elements, second grid means overlying said layer and spaced above said filter elements therein by a distance sufficient to permit limited movement of said elements but prevent permanent displacement of said elements out of said layer, and spray means for wetting the undersurfaces of said spherical elements in order to collect contaminants from said gas flow impinging thereon.

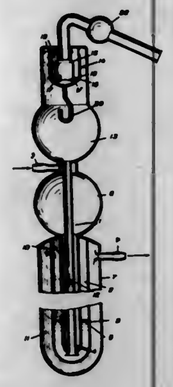
3,348,826
VEHICLE MOUNTED AERATING DEVICE FOR MINNOW BUCKETS
William J. Karley, Elmwood Trailer Park, Sioux Falls, S. Dak.
Filed Mar. 26, 1964, Ser. No. 354,995
2 Claims. (Cl. 261—121)



1. An aerating device for minnow buckets comprising a funnel member, said funnel member being of substantially semi-conical shape and having a flat side wall, said funnel member being adapted to be attached to the upper edge of a vehicle window pane, said flat wall being adapted to rest against said pane, an integral clip member extending from said funnel member and receiving said pane upper edge, said flat side wall including a further integral portion extending angularly therefrom, said further integral portion including a further integral clip extending therefrom, said clips including flanges having openings, a lengthened tube received in either of said openings, a minnow bucket to which said tube communicates, said tube communicating to said funnel member.

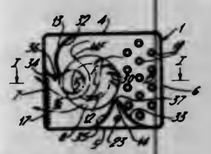
3,348,827
GAS WASHING BOTTLE
Robert Trefzer, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
Filed Sept. 13, 1965, Ser. No. 486,854
Claims priority, application Switzerland, Sept. 18, 1964, 12,181/64; July 27, 1965, 10,502/65
10 Claims. (Cl. 261—121)

1. A gas washing bottle comprising, in combination, a first vessel having an upper end and a lower end; gas inlet means at said upper end of said first vessel; a second vessel disposed around said first vessel and having an upper end and a lower end; a first space between said first vessel and said second vessel defining a first chamber for holding washing liquid; first aperture means at said lower end of said first vessel communicating said first vessel with said first chamber; a third vessel disposed around said second vessel and having a lower end and an upper end; a second space between said second vessel and said third vessel defining a second chamber; second aperture means at said upper end of said second vessel communicating said first chamber with said second chamber; gas outlet means for treated gas at said upper end of said third vessel; said gas outlet means being offset from said second aperature means; said second chamber being adapted to retain in the washing bottle washing liquid forced from said first chamber into said second chamber and said first vessel being adapted to retain in the washing bottle washing liquid sucked from said first chamber into said first vessel; a pressure equalising tube extending through said first vessel from said lower end of said second vessel; and a collecting chamber communicating with said pressure equalising tube; said collecting chamber being



adapted to retain in the washing bottle washing liquid forced from said first chamber into said pressure equalising tube.

3,348,828
AIR HUMIDIFIER DEVICES
Nikolaus Laing, 35 Hofener Weg, 7141 Aldingen, near Stuttgart, Germany
Filed Jan. 3, 1966, Ser. No. 518,340
Claims priority, application Austria, Aug. 6, 1965, A 7,305/65
16 Claims. (Cl. 261—142)

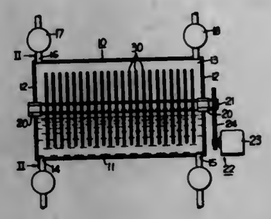


1. An air humidifier comprising a housing having an inlet and an outlet, a bladed cylindrical rotor mounted for rotation in said housing, a motor for rotating said rotor in a predetermined direction, guide means co-operating with the rotor whereby on rotation of the rotor to set up a flow of air in a direction perpendicular to the axis of the rotor from the inlet through the path of the rotating blades to the interior of the rotor and thence again through the path of the rotating blades to the outlet, and humidifying means extending over the length of the rotor and parallel to the axis thereof, said humidifying means including elements to carrying water into the path of said flow and means to supply water to said elements.

3,348,829
AERATOR
Patrick G. Grimes, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 18, 1963, Ser. No. 331,520
7 Claims. (Cl. 261—152)

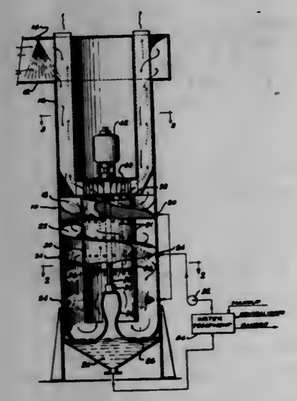
1. A pressurized device for dissolving an oxygen containing gas in a liquid comprising, in combination, a pressure resistant shell having a gas inlet port for admitting

said oxygen containing gas into the upper portion of said shell, means for conducting said liquid through the lower portion of said shell, a shaft mounted in said shell for rotation about a horizontal axis, a plurality of axially spaced disks supported on said shaft for rotation therewith and being partially immersed in said liquid and partially exposed to said gas in said upper portion of said shell above said liquid, means for increasing the solubility



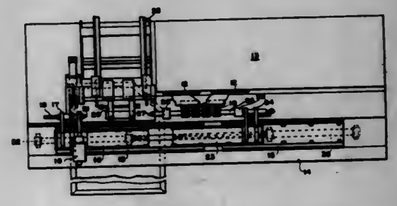
of said oxygen containing gas in said liquid including means for supplying said gas through said inlet port at a pressure greater than several atmospheres and valve means associated with said inlet port for maintaining said gas at said pressure within said upper portion of said shell, and means for rotating said shaft so that said disks pick up a coating of said liquid and expose it to said oxygen containing gas and return said exposed coating to said liquid.

3,348,830
COMBINED WET SCRUBBER AND HEAT EXCHANGE APPARATUS
David R. Pearl, West Hartford, and Peter W. Kalika, Simsbury, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,407
2 Claims. (Cl. 261—161)



1. In a combined wet scrubber and heat exchange apparatus for removing impurities from hot, dirty gases, an upright, cylindrical housing, a first cylindrical member positioned concentrically within the upper portion of the housing, inlet means for introducing hot, dirty gases into the annular space between the housing and first member, first flow passage means in the annular space through which the dirty gases flow, a second cylindrical member positioned concentrically within the lower portion of the housing, said second cylindrical member having a bottom edge which is spaced from the bottom of the housing, spray means positioned so as to scrub the gases flowing downwardly in the annular space between the housing and the second cylindrical member, a centrifugal fan positioned directly above the second cylindrical member, the fan having a central bottom inlet and a radial outlet, second flow passage means within the annular space between the housing and the first cylindrical member, said second flow passage means being positioned so that it is in heat exchange relationship with said first flow passage means, said second flow passage means having lower inlet means connected to the fan outlet, and upper outlet means through which clean gases can be discharged, after being heated by the incoming hot, dirty gases.

3,348,831
INDUCTION HARDENING MACHINE
Melvin M. Seeloff and Richard K. Fowler, Warren, Ohio, assignors to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed June 12, 1964, Ser. No. 374,744
5 Claims. (Cl. 266—4)



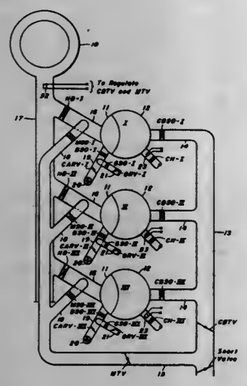
1. An induction hardening machine for elongated workpieces and of the kind having an annular inductor rigidly mounted on a base and having a fixed longitudinal axis along which the elongated workpiece moves into and out of said inductor comprising the combination an elongated track fixed with respect to said base and axis and being parallel with said axis, a pair of separate and independently slidable slides mounted on said track in longitudinally spaced relation, a loading mechanism to position workpieces in succession in alignment with said axis, one of said slides mounting a spindle with a driving center at one end thereof for rotation about said axis, means on said one of said slides to rotate said spindle, an elongated rod rigidly cantilevered on the other of said slides and having a live center on its free end and positioned for longitudinal movement along said axis concentrically within said inductor, and a double-acting hydraulic cylinder for each of said slides to slide them independently along the same axis, and control means for said cylinders to first retract the slides from each other to space said centers and permit the loading and unloading thereon of the workpieces, to then close said centers onto the ends of said workpieces, and finally to move said workpieces into and out of said inductor.

3,348,832
AUTOMATIC STOVE SELECTION SYSTEM FOR BLAST FURNACES
Selwyne P. Kinney, Pittsburgh, and Hugh B. Carr, McMurray, Pa., assignors to S. P. Kinney Engineers, Inc., Carnegie, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1966, Ser. No. 518,874
6 Claims. (Cl. 266—14)

1. In a multi-stove blast furnace installation of the type described, apparatus for automatically selecting the hottest of the stoves as the stove next to go ON BLAST, comprising,

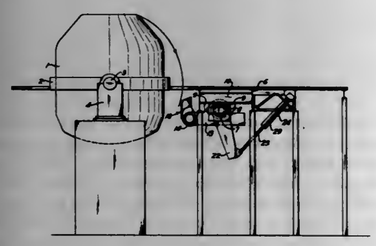
(a) means sensing the temperatures of the stoves and generating a signal indicative of the temperature of each stove,

(b) means for comparing the temperature indicative signals and producing an output signal indicative of the hottest of the stoves, and



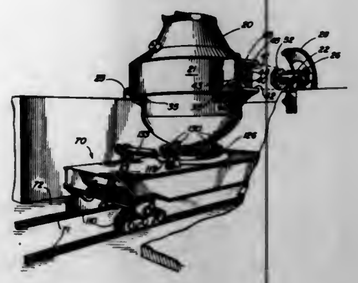
(c) means responsive to the output signal for establishing as the stove next to go ON BLAST, the stove whose temperature indication produced the output signal.

3,348,833
DESKULLING APPARATUS
Herbert A. Long, Belle Vernon, William E. Brown, Centerville, Pa., and Laddie J. Crincic, Belle Vernon, Pa., assignors, by mesne assignments, to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 9, 1964, Ser. No. 417,135
11 Claims. (Cl. 266—36)



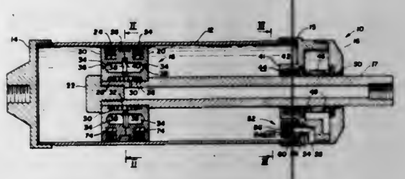
1. Apparatus for deskulling a tiltable steel-making vessel used in a basic oxygen furnace system, said apparatus comprising a frame, means pivotally supporting the frame on a horizontal axis, a plurality of upwardly directed deskulling teeth supported by the frame in front of said axis in a row extending lengthwise of it, each of said teeth including a tooth body rigidly mounted on the front of the frame and a tooth cap provided with a downwardly opening socket receiving the upper end portion of said body to support the cap, and means connected with the frame and normally holding it in a position where said teeth will be engaged by the skull projecting from the lip of a vessel in front of the frame when the vessel is tilted toward the teeth, said means being adapted to yield whenever the pressure of the skull against the teeth exceeds a predetermined value to allow the teeth to be forced downwardly.

3,348,834
ROTATABLE VESSEL FOR HEAT-GENERATING REACTIONS
Donald C. Stafford, Homewood, and Robert S. Chamberlin, Western Springs, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Mar. 4, 1965, Ser. No. 437,128
18 Claims. (Cl. 266—36)



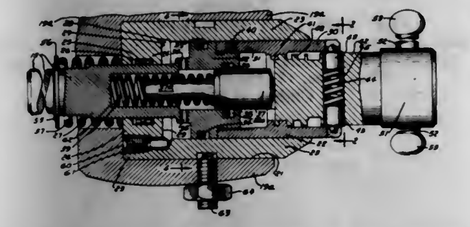
1. In combination:
a normally vertically disposed vessel;
a pair of horizontally disposed trunnion pins having a common axis;
and means mounting said vessel on said pins, between the pins, for rotation of the vessel about the axis of said pins;
said mounting means including means mounting the vessel for sliding removal, from its mounting on said pins, in a horizontal direction transverse to the axis of said pins, with the vessel in its normal vertical disposition, to separate the vessel from the pins.

3,348,835
PNEUMATIC SHOCK ABSORBER
Charles J. Casey, 613 Mt. Pleasant Road, Pittsburgh, Pa. 15214
Filed June 1, 1965, Ser. No. 460,143
10 Claims. (Cl. 267—65)



1. A vehicle shock absorber comprising a cylinder for attachment to a vehicle axle and a piston therein for attachment to a vehicle chassis, said piston containing a small orifice for permitting air to flow from one side of the piston to the other in said cylinder, and a one-way check valve for admitting air in one side of the cylinder only during compression of the vehicle spring and which is closed as the result of rebound movement and travel of the piston in an opposite direction, there being no other openings to the atmosphere in said cylinder, whereby the air pressure therein will progressively increase as the result of reciprocation of the piston until the compressive forces diminish to a point where they no longer activate said check valve.

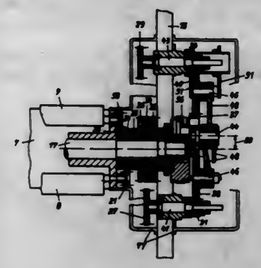
3,348,836
CLAMPING MEANS HAVING HYDRAULIC POWER ASSISTING DEVICES
Walter Smierciak, Elgin, Ill., assignor to Wilton Corporation, Schiller Park, Ill., a corporation of Illinois
Filed Dec. 21, 1964, Ser. No. 419,766
9 Claims. (Cl. 269—25)



1. In combination with a manually operable clamping device having a body and a movable jaw and a rotatably mounted spindle;
means for increasing the transmitted pressure to a movable jaw comprising an inner cylindrical passaged thrust casing;
an inner cylindrical piston slidably mounted within said thrust casing and having ports therein;
an inner sleeve on said piston;
a plunger slidably mounted in said inner piston;
means for introducing hydraulic liquid in said cylindrical casing and between it and a portion of said plunger;
spring means for retracting said plunger to starting position;
a driving member threadingly and rotatably mounted in said inner sleeve;
and a handle on the outer portion of said driving member;
the manual rotation of said driving member beyond a pre-determined pressure point being adapted to press said plunger inwardly to press hydraulic fluid into an enlarged chamber within said casing to thereby substantially increase the pressure against an enlarged inner face of said thrust casing, said thrust casing being adapted to press said movable jaw of said clamping device to closing position;
and a spring mounted about an outer portion of said spindle and adapted to maintain under pressure the hydraulic fluid between said piston and the inner face of said casing.

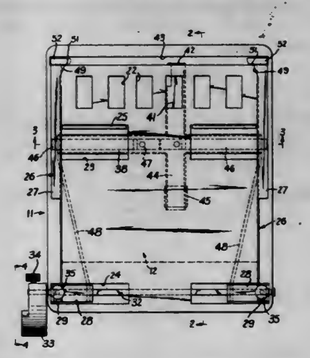
3,348,837
FOLDING BLADE CARRIER WITH TUBULAR, DOUBLE SUN GEARING
Hans-Bernhard Bolza-Schunemann, Wurzburg, Germany, assignor to Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft, Wurzburg, Germany, a corporation of Germany
Filed Apr. 13, 1965, Ser. No. 447,706
6 Claims. (Cl. 270—77)

1. In a printing machine folding mechanism of the 3–2 folder type having a combined folding and collecting cylinder rotatable about an axial shaft, three folding blades mounted on pivot means on said cylinder for rotary movement on said cylinder symmetrical about the cylinder axis, a folding blade drive mechanism for immersing said folding blades into two folding off rollers having a planetary gear fixed to and rotating each blade, a drive gear for each of said planetary gears, three double sun gears each having gears of a first and second pitch diameter rotatably mounted on the cylinder shaft, each gear of a first pitch diameter of said double sun gears meshing with a respective planetary drive gear meshing with the respective planetary gear to position each respective blade, a common drive gear mounted eccentric to the axis of said cylinder and having drive means for rotating it with half the rate of revolution of said cylinder and in the opposite direction, a crank arm mechanism arranged symmetrically about said cylinder axis and having three first crank arms having means attaching them to rotate with said common drive gear about the drive gear axis, three swinging intermediate gears rotatably mounted on a pivot means on the outer portion of said first crank arms and meshing with said common drive gear and orbiting thereabout, three second



crank arms mounted on said pivot means on the outer portion of each of said first crank arms, a pivot means on the outer portion of each of said second crank arms, three driven pinions fixed on and rotating said last pivot means and meshing with said swinging intermediate gears and three gears fixedly mounted on said respective three pivot means and meshing with and each driving one of the other gears of a second pitch diameter of said double sun gears, each double sun gear having a connecting tubular shaft, said tubular shafts being arranged coaxially, whereby one of said three folding blades is positioned in its immersing into the folding off rollers.

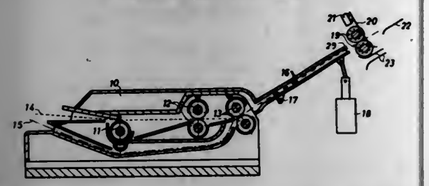
3,348,838
SHEET FEEDING MECHANISM
Edward M. Springer, Chicago, Ill., assignor to Heyer Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1965, Ser. No. 516,489
11 Claims. (Cl. 271—24)



1. In sheet feeding mechanism having a table for supporting a stack of sheets and sheet advancing means for urging the uppermost sheet of a stack forwardly, sheet guiding, restraining and releasing means, comprising abutment stop means for engaging a forward edge of the sheets, a single sheet releasing lip overlying and engageable with a forward corner of the uppermost sheet in a stack, and a side rail integrally related to said lip and

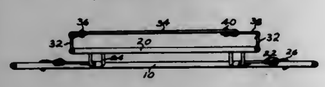
extending downwardly to said table for guidingly engaging an edge of the sheets in a stack and pivotally supported by the table rearwardly of said lip to enable vertical movement of the latter without binding and the maintenance by said lip of a predetermined downward pressure on the uppermost sheet regardless of the height of the stack or number of sheets in it.

3,348,839
PHOTOGRAPHIC COPYING APPARATUS STRIPPING MECHANISM
Emile Frans Stievenart, Antwerp, Belgium, and Konrad Phleps, Grunwald, near Munich, Germany, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a company of Belgium
Filed Sept. 21, 1965, Ser. No. 488,988
Claims priority, application Belgium, Mar. 22, 1965, 44,426
3 Claims. (Cl. 271—64)



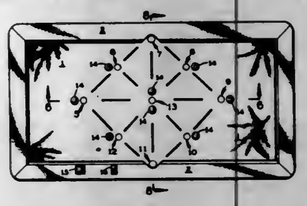
1. Mechanism for separating in moistened state an exposed sheet of light-sensitive material and a sheet of image-receiving material wherein the leading edge of one sheet slightly precedes the leading edge of the other sheet, with means for gripping the leading edge of the preceding sheet, said mechanism comprising means suitable for pressing in operative position broadwise on the back side of the preceding sheet at a locus situated close to the gripping area of the said means for gripping the sheet to make both sheets execute in said area a sudden change of movement towards the non-gripped sheet so that, owing to the tendency of the non-gripped sheet to abstain from following the imposed curvature and due to the stretching of the gripped sheet, and its subsequent displacement thereof with respect to the non-gripped sheet, the leading edge of the non-gripped sheet will separate from the gripped sheet, and means for receiving the non-gripped sheet after its separation from the other sheet and for guiding the non-gripped sheet during its further advancing along a path which is different from the path followed by the gripped sheet.

3,348,840
RESILIENTLY MOUNTED BASKETBALL PRACTICE AND REBOUND RING
Wayne Lee Dix, 1820 S. 4th St., Terre Haute, Ind. 47802
Filed Apr. 13, 1965, Ser. No. 447,733
3 Claims. (Cl. 273—1.5)



1. In a practice device for mounting on a basketball goal ring; a practice ring smaller in diameter than the goal ring, a plurality of strips of elastic material distributed circumferentially about the practice ring and each having one end secured to the practice ring, and a hook member secured to said other end of each said strip, said hook members being adapted for engaging the basketball goal ring to support the practice ring coaxial therewith in a plane at least as high as that of said goal ring, an additional strip of elastic material adapted for extending substantially diametrically across said practice ring and having means at one end permanently connecting the said additional strip to the practice ring and means at the other end for detachably engaging the practice ring while said additional strip extends diametrically across said practice ring.

3,348,841
ELECTRICALLY TIMED POOL TABLE
Harvey Heiss, North Miami, Fla., assignor to All Tech Industries, Inc., Hialeah, Fla., a corporation of Florida
Filed Dec. 17, 1964, Ser. No. 419,096
7 Claims. (Cl. 273—11)



1. A pool table comprising means forming a substantially horizontal planar playing top including a cushion means upstanding around the margin thereof,
said top having a plurality of pockets therethrough in predetermined spaced relation for receiving pool balls played therein,
a manually accessible compartment in said table for retaining a plurality of pool balls gravitated therein,
runway means connecting said pockets with said compartment for conducting each of said balls by gravity from each of said pockets into said compartment,
a holding means movably retained in said table below said pockets for movement from an idle holding position intersecting said runway means to a release position withdrawn therefrom for temporarily holding and releasing said balls descended in said pockets when operated,
electro-motive means in said table operatively connected to said holding means for moving same from said holding to said release position and return to said holding position for releasing each of said balls held in said runway means by said holding means for descent into said compartment when energized,
an electric timer means adapted and constructed to operate an electric switch means following a predetermined time period for play when energized,
a coin receiving device including a coin switch for operation by the deposit of each of said coins of predetermined value,
a source of electric energy,
electric circuit and control means connecting said electro-motive means and said electric timer means and said electric switch means and said coin switch and said source of energy whereby the deposit of one of said coins in said receiving device will operate said coin switch and simultaneously energize said timer means for one of said time periods and said electromotive means for releasing each of said balls held in said runways for descent into said compartment for manual play on said table during said time period.

3,348,842
FOOTBALL KICKING APPARATUS AND METHOD
Philip L. Stern, 105 W. 13th St., New York, N.Y. 10006
Filed July 16, 1964, Ser. No. 383,156
3 Claims. (Cl. 273—55)

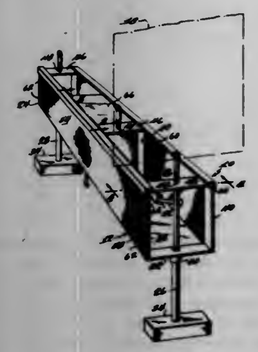
1. Apparatus for use in instruction in the spiral kicking of an American style football, comprising a football having the form of a prolate spheroid, a first indicium

on the football indicating the center of kicking impact of the football, a second indicium on the football in the form of a visible line lying in the longitudinal axial plane of the football, a kicking shoe adapted to be worn on the kicking foot of the user, an indicium on the kicking shoe in the form of a visible line lying at a predetermined desired substantial but relatively small acute angle with respect to the plane of the correct kicking stroke of the



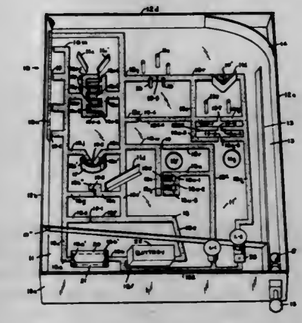
kicking foot and with respect to the longitudinal axis of the foot-receiving portion of said shoe, whereby when the football is disposed and dropped with the visible line thereon constituting the second indicium on the football in the plane of travel of the indicium in the form of a visible line on the kicking shoe, and the kicking foot is swung in a kicking stroke in the generally vertical plane containing the longitudinal axis of the kicking foot a correctly executed spiral kick of the football results.

3,348,843
AUTOMATIC TARGET STAND
George L. Stanley, 2840 Orville, Kansas City, Kans. 66102
Filed Feb. 18, 1964, Ser. No. 345,726
1 Claim. (Cl. 273—105.6)



Apparatus for moving a plurality of targets from a non-firing to a firing position including a frame, target receiving means for each of said targets, each of said target receiving means being shock absorbingly attached to a pivotable target post, an operating mechanism adjustable to present each of said targets at a predetermined interval for a predetermined time interval and resilient means connected to said frame and each of said target posts to move said targets from a firing to a non-firing position, said operating mechanism including gear reducing means, means commonly driven by said gear reduction means carrying adjustable camming means for controlling the pivoting sequence of each target post, and the duration of time in which the target post is pivoted to a firing position, lever means, said camming means operatively engaging said lever means, and means operatively connecting said lever means and said target posts to pivot said posts to a firing position.

3,348,844
GAME PLAYING BOARD CONTAINING SCORING AREAS FORMED BY ELECTRICALLY CONDUCTIVE STRIPS
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Filed Sept. 23, 1963, Ser. No. 310,945
7 Claims. (Cl. 273—121)



1. A game board comprising in combination, a playing board having an electrically insulating upper surface, a plurality of electrically conducting circuit elements secured to said board and arranged in a series circuit with a power supply and a scoring means, said circuit having a plurality of breaks therein defined by gaps in said circuit elements which appear on the upper surface of said playing board, at least one of said gaps occuring in a scoring area defined by a stop for an electrically conducting scoring member having a conducting surface adapted to bridge said gap when said scoring member is abutting said stop and prepositioned in said scoring area, a second scoring member adapted to be directed to bridge a second gap in said circuit and to effect energizing of said scoring means when another scoring member is retained by said stop and bridging the gap adjacent said stop.

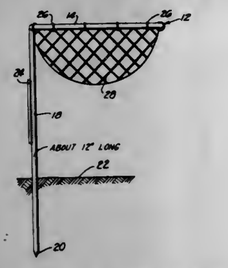
3,348,845
PUTTING AID FOR A GOLF PUTTER
Charles Wayland Stuart, Jr., 926 Nottingham Road, Charlotte, N.C. 28211
Filed Apr. 22, 1965, Ser. No. 449,957
9 Claims. (Cl. 273—165)



1. The combination with a golf putter of a putting aid comprising an elongate hand gripping member mounted on the putter and having opposed faces of a length and width to enable one hand of the golfer to grip said member with the thumb on one face thereof and the fingers in

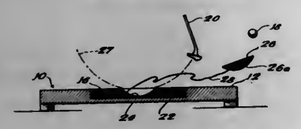
an extended substantially flat condition on the other face thereof, said gripping member having means on one end thereof for receiving therein the portion of the golfer's hand between the thumb and fingers to enable better gripping of said member.

3,348,846
GOLF GAME RECEPTACLES
Elmer E. Atchison, 340 Milford Road, Orange, Calif. 92667
Filed Aug. 21, 1964, Ser. No. 391,228
1 Claim. (Cl. 273—176)



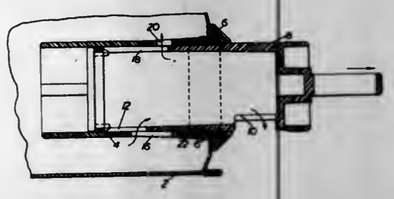
Apparatus for playing a game of golf comprising a plurality of receptacles each of which comprises a ring defining a plane, said ring having a top opening therein, a net secured to said ring, said net depending from said ring and being adapted to retain a golf ball therein after the golf ball has passed through said top opening in said ring, a single leg secured to said ring, said leg extending at substantially right angles with respect to said plane of said ring, said leg being adapted to be driven into the ground, an indicia plate secured to said leg, the length of said leg being about twelve inches, said indicia plate carrying indicia indicating the size of said top opening in said ring, there being at least two sizes of top openings in said plurality of receptacles.

3,348,847
GOLF PRACTICE DEVICE INCLUDING SIMULATED DIVOT MEANS
Frederick Fischl, % Bi-Lateral Fire Hose Co., 20 N. Wacker Drive, Chicago, Ill. 60606
Filed Sept. 28, 1964, Ser. No. 399,698
2 Claims. (Cl. 273—186)



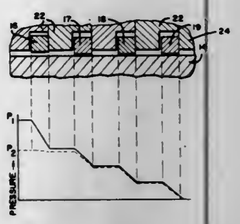
1. A golf practice device for use with a golf ball and golf club, comprising: a platform; a simulated fairway portion in said platform for supporting a golf ball to be struck by a golf club; means simulating a divot portion removably embedded in said simulated fairway portion, said simulated fairway portion and divot means being of substantially the same elevation as the platform, and said divot portion means being provided with a convex bottom configuration; an outwardly concave recess formed in said fairway portion generally mating with said divot means bottom configuration, said recess configuration and convex bottom approximating the path of travel of a properly swung golf club head, and said divot portion means being so configured as to be launched by the head of said golf club when said club has been properly swung to propel said golf ball after said ball has been positioned on said fairway portion adjacent the periphery of said divot portion means.

3,348,848
TUBULAR BODY MOUNTING AND SEALING ELEMENT OF A SEPTUM INSERT FOR CONTAINERS
Anthony James Lucking, London, and Charles Anthony Lane, Surrey, England, assignors to Waddington & Duval (Holdings) Limited, London, England
Filed Mar. 28, 1966, Ser. No. 537,732
Claims priority, application Great Britain, Apr. 1, 1965, 13,915/65
2 Claims. (Cl. 277—26)



1. In a dispenser, tap, pourer or the like made of plastic material a tubular body adapted to be fitted through an aperture in the wall of a container whose contents are to be dispensed; seals on the body adapted to engage the walls of the aperture, and a ring of a material whose coefficient of expansion approximates that of the material of the container tightly disposed entirely within an annular recess in the tubular body adjacent to and at the opposite side of the wall from the seal.

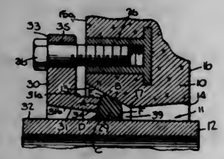
3,348,849
METALLIC PACKING
Wallace K. Newcomb, Charles E. Blank, Sr., and Donald F. Van Loon, Painted Post, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 15, 1966, Ser. No. 579,615
2 Claims. (Cl. 277—27)



1. In an apparatus having a reciprocating member having an outside cylindrical circumference moving in a cylinder and subject to a predetermined fluid pressure of 10,000 p.s.i. or higher, a sealing device comprising:
a packing body including a bore slidably receiving said reciprocating member and having a plurality of axially spaced annular grooves formed on the interior of said bore;
a plurality of annular rings mounted around said reciprocating member with each ring being movably mounted in a separate one of said grooves in said packing body;
each annular ring having a circular bore of predetermined diameter to receive said reciprocating member with a predetermined initial clearance therebetween, when said fluid pressure is absent, and further having an outer circular circumference of predetermined diameter thereby providing said ring with a predetermined radial thickness, and a constant radial cross-sectional area around its entire circumference;

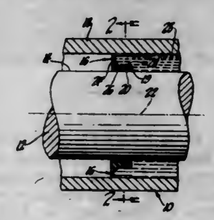
said plurality of rings being mounted around said reciprocating member to withstand a differential pressure drop across them with a first ring being located closest to said predetermined fluid pressure and being arranged with its outside circumference and one end face subject to said predetermined fluid pressure;
each ring being formed of a metallic impervious material having a predetermined modulus of elasticity of at least 65×10^6 and having substantial strength to resist stresses;
said predetermined radial thickness and predetermined modulus of elasticity being selected in accordance with said predetermined fluid pressure to allow said fluid pressure to place each ring in compression and, as a result, to elastically reduce the size of said circular bore to a smaller circular bore surrounding said reciprocating member with almost zero clearance therebetween without permanently deforming said ring and without creating frictional drag between said ring and said reciprocating member; and
said predetermined initial clearance between said first ring and said rod being substantially greater than the predetermined initial clearance between the remainder of said rings and said rod.

3,348,850
PIPE JOINT AND SEAL
Michael J. Scales, 248 Piermont Ave., Nyack, N.Y. 10960
Filed Jan. 27, 1967, Ser. No. 612,258
7 Claims. (Cl. 277—101)



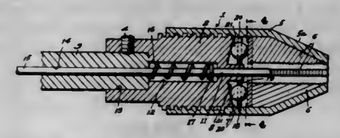
1. A pipe joint and seal between a concrete side wall and a pipe having an unfinished generally cylindrical pipe surface with a diameter variation in the order of one-half an inch or more comprising a cross-sectionally circular resilient ring of 30 to 60 durometer hardness positioned around said pipe surface and having an undeformed cross-sectional diameter at least one and one-half the diameter variation, said side wall having an outer surface, a rough concrete circular-shaped axially sloped surface on said side wall having a minimum diameter forming an annular opening, said sloped surface extending from said minimum diameter outwardly substantially to said outer surface of said side wall, and a second surface on the other side of said opening from said sloped surface and spaced from said pipe a greater distance than said minimum dimension to permit angular positions of said pipe over a ten degree arc, a rigid annular ring member positioned around said pipe with an inner axially extending surface facing said pipe and flared outwardly therefrom to permit angular movement in cooperation with said second surface over a ten degree arc and having a generally radially extending surface facing said sloped surface with a radial width less than the undeformed cross-sectional diameter of said resilient ring, and said ring member forming with said sloped surface a radially exterior annular space for receiving a circumferential portion of said resilient ring, fastening means mounted in said concrete side wall and connected to said ring member for securing said ring member to said wall and deforming said ring into a radial surface-engaging portion and a sloped surface-engaging portion between said radially extending and sloped surfaces and into a radially interiorly pipe-engaging portion between said ring member and said pipe surface and a radially exteriorly protruding portion in said exterior annular space between said ring member and said sloped surface, said sloped surface-engaging portion engaging said sloped wall over a first sealing area, said pipe-engaging portion contacting said pipe surface over a second sealing area and having an unengaged area between said first and second sealing areas, said protruding portion and said pipe-engaging portion changing size inversely on changes in pipe diameter over a range of approximately one-half the cross-sectional diameter of said resilient ring while said deformed ring maintains the sealing relation with said sloped surface and said pipe surface and solely supports said pipe over a ten degree arc of angular positions.

3,348,851
SEAL
James D. Symons, Southfield, and Louis H. Weinand, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 2, 1965, Ser. No. 460,723
4 Claims. (Cl. 277—134)



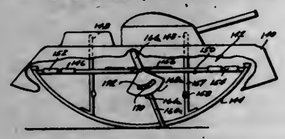
1. A seal for sealing the space between relatively rotating members having a common axis of rotation comprising a resilient seal connected to one of the members and having a seal lip including an axially extending sealing surface circumferentially and sealingly engaging a surface of the other of said members, at least one slit cut into and extending axially across the sealing surface, said slit held closed by elastomeric forces within the resilient seal upon non-relative rotation of said members and held open by a torque differential developed on opposite sides of the slit during relative rotation of said members.

3,348,852
AUTOMATIC CHUCK
Curtis L. Wilson, Box 1094, Sierra Vista, Ariz. 85635
Filed Jan. 27, 1965, Ser. No. 428,587
5 Claims. (Cl. 279—58)



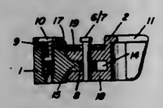
1. An automatic chuck comprising in combination, a body, a shaft secured to said body, a sheath secured around said body, a series of gripping jaws slidably mounted in said sheath, there being a chamber between said body and said jaws, means responsive to centrifugal force generated by rotation of said chuck in said chamber, said means adapted to apply tension on said jaws upon rotation of said chuck, means for rotating said chuck and means for automatically activating said rotation carried by said chuck.

3,348,853
OCCUPANT-PROPELLED ROCKER FOR CHILDREN
Ivan Halaj, 476 W. 5th St., San Pedro, Calif. 90731
Filed July 21, 1965, Ser. No. 473,593
3 Claims. (Cl. 280—1.175)



1. A rider-propelled amusement apparatus for surface use, comprising:
a frame including a pair of spaced-apart rockers to engage said surface to thereby support said frame upright;
seat means affixed to said frame;
at least one stepping arm means pivotally affixed to said frame whereby to extend to said surface; and
means to variously control the swinging arc of said stepping arm means relative to said frame means, including means defining at least one arcuate slot keyed to said stepping arm means to limit the movement thereof; and means for variously positioning said means defining said arcuate slot, whereby to control the propulsion of said apparatus in either direction.

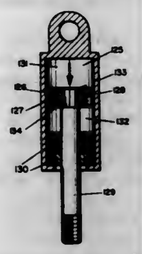
3,348,854
TOE IRON FOR SAFETY SKI BINDINGS
Hannes Marker, Hauptstrasse 51–53, Garmisch-Partenkirchen, Germany, and Gunter Adam, Garmisch-Partenkirchen, Germany; said Adam assignor to said Marker
Filed June 1, 1966, Ser. No. 554,579
Claims priority, application Germany, June 4, 1965, M 65,491
5 Claims. (Cl. 280—11.35)



1. A toe iron for safety ski binding comprising a base means attached to a ski, said base means being formed with a guide surface extending transversely to the longitudinal direction of the ski, the length of which corresponds approximately to the range of foot-twist occurring during harmless lateral jolts, and terminating in guide faces which are inclined sharply forwardly to said transverse guide surface, a sole-retaining member carried by said base means, said sole-retaining member being positioned for movement along said guide surface and being biased by a return spring means carried by said base means and acting upon said sole-retaining member in every position to bias the sole-retaining member towards its normal sole-retaining position.

3,348,855
SAFETY TOE IRON FOR SKI BINDINGS
Hannes Marker, Hauptstrasse 51–53, Garmisch-Partenkirchen, Germany
Filed June 17, 1966, Ser. No. 558,463
Claims priority, application Germany, June 21, 1965, M 65,665
6 Claims. (Cl. 280—11.35)

1. A toe iron for safety ski bindings comprising a base means attached to a ski, said base means being formed with a guide surface extending transversely to the longitudinal direction of the ski, the length of which corresponds approximately to the range of foot-twist occurring during harmless lateral jolts, and terminating in guide faces which are inclined sharply forwardly to said transverse guide surface, a sole-retaining member carried by said base means, said sole-retaining member being positioned for movement along said guide surface and being biased by a return spring means carried by said base means and acting upon said sole-retaining member in every position to bias the sole-retaining member towards its normal sole-retaining position, said return spring means comprised of a container for a compressed gas, a plunger carried by said container, the volume of said container being variable by said plunger which is positioned for engagement by said sole-retaining means and is operated in response to a displacement of the sole-retaining member, the change in volume between the two limiting positions of the plunger being small compared to the total volume of the container for compressed gas.

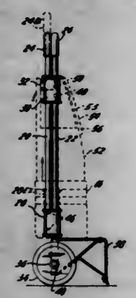


3,348,856
TOE IRON FOR SAFETY SKI BINDINGS
Hannes Marker, Hauptstrasse 51–53, Garmisch-Partenkirchen, Germany
Filed June 17, 1966, Ser. No. 558,464
Claims priority, application Germany, June 21, 1965, M 65,666
5 Claims. (Cl. 280—11.35)



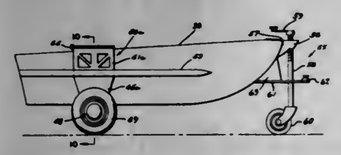
1. A toe iron for safety ski bindings comprising a base means attached to a ski, said base means being formed with a guide surface extending transversely to the longitudinal direction of the ski, the length of which corresponds approximately to the range of foot-twist occurring during harmless lateral jolts, and terminating in guide faces which are inclined sharply forwardly to said transverse guide surface, a sole-retaining member carried by said base means, said sole-retaining member being positioned for movement along said guide surface and being biased by a return spring means carried by said base means and acting upon said sole-retaining member in every position to bias the sole-retaining member towards its normal sole retaining position, said return spring means comprised of two elements and a prestressed rubber tension spring having a very low spring rate secured therebetween, said two elements being slidable carried by said base plate and positioned for engagement with opposite sides of said sole-retaining member and stop means positioned so that one of said elements is carried along at a time by a movement of the sole-retaining member, whereas the other is retained in its initial position by stop means.

3,348,857
CONVERTIBLE TWO-WHEELED CARRIER
Libby Rollin, 101 Ellwood Ave., Mount Vernon, N.Y. 10552
Filed Dec. 3, 1965, Ser. No. 511,388
5 Claims. (Cl. 280—36)



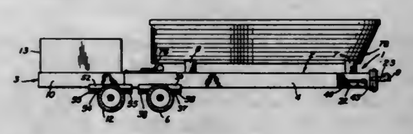
1. A convertible carrier for carrying a plurality of objects comprising a stationary frame including at least two parallel side rods and a tubular handle, an extendible frame including at least two parallel side rods and a tubular handle, a fixed upper pair of cylindrical slides fastened to said side rods of said stationary frame and through which said side rods of said extendible frame can pass, a movable lower pair of cylindrical slides fastened to said side rods of said extendible frame and through which said side rods of said stationary frame can pass, a lower cross-brace bridging said side rods of said stationary frame at the bottom thereof, an upper cross-brace bridging said side rods of said stationary frame between said fixed upper pair of cylindrical slides, a pair of support feet adapted to be swivelled about a vertical axis at either end of said lower cross-brace, a pair of wheels axially fastened through said side rods of said stationary frame and through said lower cross-brace, and support means fastenably associated with said upper and said lower cross-braces for providing carrying support for said plurality of objects.

3,348,858
OUTDOOR SPORTING EQUIPMENT INCLUDING A WHEEL MOUNTED BOAT ASSEMBLY
Floyd R. Rose, 220 Virginia, Battle Creek, Mich. 49017
Filed May 10, 1965, Ser. No. 454,486
8 Claims. (Cl. 280—43.2)



1. An outdoor sporting equipment assembly, which comprises a boat having a hull, a rib on each side of said hull and extending lengthwise of same, a spray rail for each side of said hull, each of said spray rails having an endwise sliding fit with the corresponding rib on the side of said hull and being longitudinally movable thereon, a rear wheel assembly on each side of said hull, means hingedly mounting said rear wheel assemblies on the upper portion of said hull, said rear wheel assemblies having a support means with said means hingedly mounting said rear wheel assemblies on said hull being at the upper end of said support means, a rib on said support means, each of said rear wheel assemblies having at least one wheel on the lower end of said support means, said spray rail on each side of said hull engaging said rib on said support means for releasably holding said support means of said wheel assembly in fixed hull supporting position.

3,348,859
TOWING DEVICE EMBODYING TWO TRAILERS
David H. Melbye, 4513 W. 101st St., Oak Lawn, Ill. 60453
Filed May 24, 1965, Ser. No. 458,173
3 Claims. (Cl. 280—415)

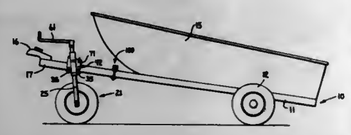


1. A tow device comprising
(a) two trailers,
(b) each of said trailers including
(1) an elongated frame having
(a') front and rear ends, and
(b') two elongated members extending longitudinally of said frame,
(2) a pair of wheels spaced from each other transversely of the length of said frame, and
(3) means mounted on said elongated members and operatively connected to said pair of wheels for supporting said frame on said wheels,
(c) one of said frames having a rear end portion disposed between said elongated members thereof,
(d) the other of said frames having a front end portion
(1) disposed between said elongated members thereof, and
(2) receivable in said rear end portion,
(e) means operatively releasably connecting said front and rear end portions together in immovable relation to each other,
(f) said first-mentioned means on said one frame being movable longitudinally of said elongated members on which they are mounted for adjusting the position of said wheels operatively connected thereto forwardly and rearwardly relative to said one frame,
(g) said front and rear end portions comprising forwardly bowed elongated channel-shaped members having upper and lower flanges,
(h) said flanges on said front end portion being disposed between said flanges on said rear end portion, and
(i) said means releasably connecting said front and rear end portions together comprising elongated members mounted in said flanges of said channel-shaped members.

3,348,860
TRAILER WITH STEERABLE WHEELED PROP
Eldon R. Buckles, R.R. 7, Box 508, Terre Haute, Ind. 47805
Filed Sept. 3, 1965, Ser. No. 484,927
3 Claims. (Cl. 280—475)

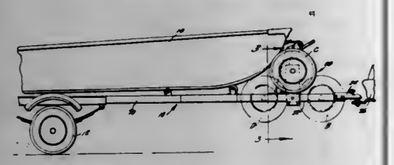
1. A trailer arrangement comprising a frame, a pair of wheels of the same size mounted on opposite sides of the rear of said frame, a further wheel of the same size as said wheels, an axle rotatably mounting said further wheel, a tubular element swingably secured to said frame toward the forward end thereof, a rod fixed at one end to said axle in perpendicular relation thereto and extending through said tubular element, a lever swingably connected to the other end of said rod for turning said further wheel in said tubular element, means locking said

tubular element in a generally upright position but with said wheel positioned downwardly and to the rear of the swingable connection of said tubular element and frame, a collar adjustably fixed on said rod at one of various positions spaced from said axle, said collar bearing



against said tubular element for supporting said tubular element and frame while permitting said further wheel to be steered relative to said frame, and means operable when said locking means is unlocked for locking said axle to said frame with said further wheel to the rear of said connection of said frame and tubular element.

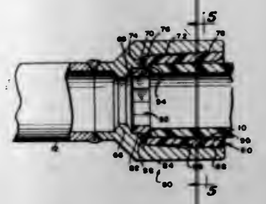
3,348,861
TRAILER SPARE AND THIRD WHEEL
Wilfred A. Curtis, Depot St., North Woodstock, N.H. 03262, and James F. Keating, D.W.H. 3, Woodstock, N.H. 03262
Filed Feb. 25, 1966, Ser. No. 530,197
4 Claims. (Cl. 280—475)



1. A third wheel assembly adapted to be mounted upon the forwardly extending draw bar of a trailer frame, said assembly comprising a third wheel, means for pivotably mounting said third wheel on said draw bar for movement through an arc of 360° in a plane parallel thereto, and lock means on said mounting means for preventing further movement of said third wheel at 90° intervals of its arcuate movement, said mounting means including an elongated arm mounting said third wheel at one end thereof, hinge means for pivotably connecting the other end of said arm to the draw bar of said trailer frame, said hinge means including a pivot pin secured to said elongated arm and adapted to extend through said draw bar, and spring means on said pivot pin for urging said elongated arm into abutment with said draw bar.

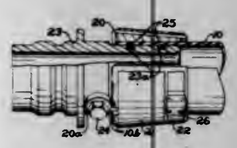
3,348,862
TRANSITION FITTING
Wilbur R. Leopold, Jr., and Carl E. Floren, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Original application Jan. 22, 1963, Ser. No. 253,199, now Patent No. 3,245,701, dated Apr. 12, 1966. Divided and this application Sept. 16, 1965, Ser. No. 505,446
1 Claim. (Cl. 285—39)

In a transition joint for connecting metal pipe to plastic pipe, a metal coupler having a bore therethrough including a reduced portion constructed and arranged to be joined to the metal pipe and an enlarged portion, said enlarged portion including first, second and third cylindrical counterbored portions and first and second radial walls between the first and second counterbored portions and the second and third counterbore portions respectively, the last-mentioned radial wall constituting a stop shoulder, and interior threads along said third counterbored portion; a plastic adapter of generally cylindrical construction and including a minor diameter portion having an axial extent greater than the axial extent of said second counterbored portion but less than the combined axial extent of said first and second counterbored portions adapted to be received and nest within said first counterbored portion, an outwardly extending radial wall merging with a major diameter portion, said radial wall adapted to engage said stop shoulder, said major diameter portion being exteriorly threaded for engagement with the interior threads of said metal coupler, the interior surface of said minor diameter portion being of generally hexagonal shape, an outwardly facing radial



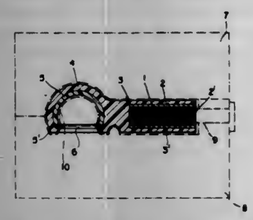
wall merging with said enlarged diameter portion and constructed and arranged to limit the inward movement of said plastic pipe within said plastic adapter, the inner surface of said major diameter being outwardly flared; said first radial wall and second counterbored portion of said metal coupler defining with the opposite radial wall of said adapter and the minor diameter portion an annular space, and a resilient sealing ring adapted to be carried within said annular space and compressed axially between said first radial wall and said opposite radial wall of said adapter to form a seal between said adapter and said coupler.

3,348,863
HOSE COUPLING
William R. Rinker, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Apr. 14, 1967, Ser. No. 630,938
9 Claims. (Cl. 285—252)



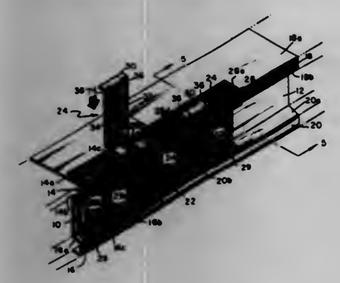
1. The combination comprising: a thin wall flexible hose, a rigid cylindrical support sleeve having a uniform inside diameter and a uniformly axially tapering outer surface fitted over one end of said hose, the said hose having the end thereof passing through said sleeve and turned axially back over the outer surface of the latter, a rigid outer sleeve having an inner surface of frustoconical configuration generally complementary to the outer surface of the said support sleeve fitted over the turned-back portion of said hose wedging the latter between said outer sleeve and said support sleeve, a rigid coupling sleeve having one end of cylindrical configuration adapted to slip-fit into the inner diameter of said hose, seal means providing a fluid-tight seal between said hose and said coupling sleeve, and means releasably attaching the free end of said support sleeve to said coupling sleeve.

3,348,864
COUPLING MEMBER AND PROCESS FOR MAKING SAME
Jürgen Ulderup, Lemforde, Hannover 207, Germany
Filed Mar. 27, 1963, Ser. No. 268,252
Claims priority, application Germany, Mar. 29, 1962, L 41,603
4 Claims. (Cl. 287—90)



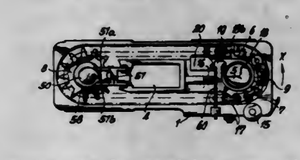
1. A coupling member for a universal joint, comprising a spherically concave bearing shell encompassing slightly more than a hemisphere, said shell being bounded by a circular rim with a diameter slightly less than the diameter of the interior of said shell; a tubular insert spacedly aligned with the shell and extending substantially radially thereof and parallel to the plane of the rim; a body of synthetic resinous material enveloping said shell and said tube while conforming thereto and leaving said rim and an end of said tube remote from said shell exposed; and a flexible metallic guard ring embedded in said body adjacent said rim, said ring having an inner diameter slightly less than that of said rim and being spreadable against the surrounding resinous material, said body having a generally spheroidal portion surrounding said shell and forming a mouth converging inwardly toward said ring.

3,348,865
PLASTER FRAME
John Dalton, Jr., Wheeling, W. Va., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,559
2 Claims. (Cl. 287—189.36)



1. In a plaster frame, the combination of: a pair of rails, the upper and the lower longitudinal edges of each rail being shaped to define a reverse bend, said upper reverse bend of each rail being provided with at least one pair of vertically aligned slots, and said lower reverse bend of each rail having a vertically disposed tab struck from the upper lateral surface thereof and thereby providing a slot in said upper surface of said lower reverse bend, said slot being in vertical register with said pair of vertically aligned slots in said upper reverse bend; a joining plate overlying and nesting with the adjacent ends of said rails, the upper longitudinal edge of said joining plate being provided with a reverse bend which nests with the reverse bend which characterizes the upper longitudinal edge of each of said rails, said reverse bend of said joining plate having a pair of vertically aligned slots formed therein near each end thereof and in register with the corresponding vertically aligned slots formed in the upper longitudinal edge of said rails, and the lower longitudinal edge of said joining plate being a laterally extending flange overlying the upper lateral surface of the lower reverse bend of said rails and terminating flush with the vertical surface thereof, said laterally extending flange of said joining plate being provided with cutouts in register and co-extensive with the slots in the upper lateral surface of the lower reverse bend of said rails whereby an interlocking of the laterally extending flange of the joining plate with the vertically disposed tabs struck from the upper lateral surface of the lower reverse bends of the rails is effected; and a pin extending through each series of vertically aligned slots and cutouts whereby said rails and said joining plate are securely fastened to one another.

3,348,866
APPARATUS FOR APPLYING TAMPON REMOVAL CORDS
Herbert Etz, Wuppertal-Langerfeld, Germany, assignor to Dr. Carl Hahn KG., Dusseldorf, Germany, a corporation of Germany
Filed Sept. 10, 1965, Ser. No. 486,794
Claims priority, application Sweden, Sept. 14, 1964, 11,020/64
20 Claims. (Cl. 289—18)



1. An apparatus for applying removal cord loops around tampon pads which comprises a cord conveyor disposed for movement in an orbital path around a tampon pad, said cord conveyor having a first cord gripping means for gripping the forward end portion of a continuous length cord to carry said forward end along said orbital path to form a cord loop surrounding said tampon pad, said cord conveyor having a second cord gripping means disposed for gripping a portion of said continuous length cord defining the rear end portion of said cord loop, and knotting means disposed for operative engagement with said forward end cord portion and with a portion of said continuous cord length following said rear end portion to join said forward and rear end portions with a knot to form a closed cord loop around said tampon pad.

3,348,867
TOUCH LATCH
Thomas A. Stubblefield and Viola B. Yaw, both of P.O. Box 748, Lake Tahoe, Kings Beach, Calif. 95716
Filed Aug. 23, 1965, Ser. No. 481,680
9 Claims. (Cl. 292—122)

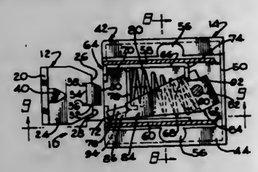
1. A touch latch, said touch latch comprising a catch and a latch;

said catch being arranged to be mounted on a first member which is relatively movable to a second member, said catch having a nose and an abutment thereon;

said latch being arranged to be mounted on the second relatively movable member, said latch having a movable plunger therein, a lock arm pivoted in said latch, a spring in said latch, the improvement comprising:

said spring having one end in engagement with said lock arm to urge said lock arm to rotate in a first direction and being in engagement on its other end with said plunger to urge said plunger in a first direction, mechanical interengagement means between

said plunger and said lock arm so that when said spring urges said plunger in said first direction of said plunger, said mechanical interengagement means between said plunger and said lock arm rotate said lock arm in a direction opposite its first direction, said catch being engageable with said plunger to move



said plunger in a direction opposite its first direction to disengage said mechanical interengagement between said plunger and said lock arm and cause said spring to urge said lock arm in said first direction so that said lock arm engages said nose and locks said lock arm to said catch.

3,348,868
SAFETY LOCK FOR DOUBLE DOORS
Edward C. Pollak, 21 Thimble Lane, Hicksville, N.Y. 11801, Bennett B. Harmon, 220—55 46th Ave., Bayside, N.Y. 11361, and William Solomon, 46 Croley St., Huntington, N.Y. 11743
Filed May 5, 1966, Ser. No. 558,184
2 Claims. (Cl. 292—280)



1. In a device for securing a first door of a pair of hingedly mounted double doors during the period in which the other of said pairs of doors is in locked condition, said device automatically releasing said first door upon release of said other door, the improvement comprising: a relatively fixed latch element adapted to be secured to a portion of a framed door opening in which said pair of doors is installed, a frame element mountable upon a planar surface of said first door, a rotary latch element mounted for rotation upon said frame element and selectively engageble with said fixed latch element when said first door is in closed position relative to said door opening, and latch element locking means having a component thereof selectively engageable with said rotary latch element to prevent rotation of the same, and a second component projecting into the path of movement of said other door to be contacted thereby when said pair of doors are in closed position.

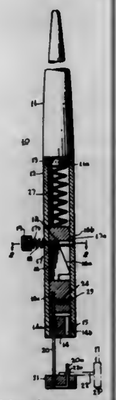
3,348,869
SLIDE FASTENER ACTUATING DEVICES
Warren B. Zern, 1016 N. Evans and Mineral Sts., Pottstown, Pa. 19464
Filed July 8, 1965, Ser. No. 470,412
26 Claims. (Cl. 294—19)

1. A device for actuating a slide fastener including a tab of the type having an opening therein comprising

a handle of rod-like construction,

pin structure movably carried at one end of said handle and extending longitudinally thereof, said pin structure having a diameter sufficiently small to extend through the opening in the slide fastener,

structure carried by the device and cooperating with said one end of said handle to form at least one slot extending transversely of said pin structure and beyond said one end of said handle, said slot having opposite walls extending substantially transversely of said pin structure, said walls having substantially planar support means for engaging the tab of said slide fastener, one of said walls being formed by a member from which said pin structure extends and facing the other wall formed by said one end of said handle, said slot being constructed and arranged



to receive the slide fastener after it is positioned on said pin structure and said opposite walls of said slot being shaped so as to cooperate with said pin structure in maintaining said slide fastener tab substantially perpendicular to the longitudinal axis of said handle during both push and pull longitudinal movements of said handle, and

means in addition to said pin structure to releasably lock the slide fastener tab in said slot regardless of the direction of movement of the slide fastener relative to said pin structure.

3,348,870
SLIDE FASTENER ACTUATING DEVICES
Warren B. Zern, 1016 N. Evans and Mineral Sts., Pottstown, Pa. 19464
Filed Aug. 24, 1965, Ser. No. 482,087
9 Claims. (Cl. 294—19)



1. A device for actuating a slide fastener of the type including a tab having an opening therein comprising

a handle of rod-like construction having a hollow extension at one end thereof,

structure at the outer end of said hollow extension forming an open end slot extending transversely of the longitudinal axis of said handle, permanent magnet means positioned at the end of said slot opposite said open end thereof for drawing the slide fastener tab into said open-end slot,

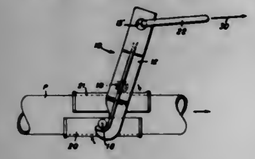
slide means positioned within said hollow extension,

compression spring means positioned within said hollow extension and adapted to exert a force in a longitudinal direction on said slide means,

said slide means having a slot therethrough and an inclined cam surface extending therealong, a cross pin extending transversely through said slot in said slide means, said cross pin having structure adapted to engage said inclined cam surface on said slide means, at least one end of said cross pin extending through the side wall of said hollow extension for manual movement of said cross pin relative to said inclined cam surface on said slide means, and

pin means carried by said slide means and adapted to extend transversely through said open end slot, said pin means being adapted to extend through the opening in the slide fastener tab and lock the slide fastener tab within said open end slot in a position perpendicular to the longitudinal axis of said handle.

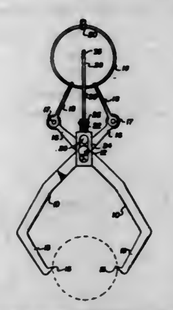
3,348,871
PIPE AND ROD TOOL
John H. Gaddis, Tyler, Tex., assignor of one-half to Lawrence J. Daniel, Charlotte, N.C.
Filed Dec. 29, 1965, Ser. No. 517,398
8 Claims. (Cl. 294—92)



1. A pipe and rod puller and pusher comprising, in combination, a lever member having an elongated main portion and bifurcated lower limb portions depending therefrom having hooked lower end bearing portions; a transverse bearing member extending between said bifurcated portions at a position proximal to their juncture with the elongated main portion of the lever; an upper clamp member pivotally engaged with said transverse bearing member and having a depending open and elongated shoe portion for engaging an elongated top portion of a pipe or rod to be clamped and pulled; and a lower clamp member having an open and elongated shoe portion for engaging a lower portion of the pipe or rod and journals extending oppositely and transversely from the last mentioned open shoe portion supported in said hooked lower end bearing portions on the bifurcated limb portions of the lever member whereby a pulling force applied to the outer end of the main portion of the lever causes the lever to pivot about the transverse bearing member and the clamp members to tightly grip the pipe or rod being pulled, said upper clamp portion comprising a tubular portion pivotally mounted on said transverse bearing member and said depending open and elongated shoe portion is fixed to said tubular portion.

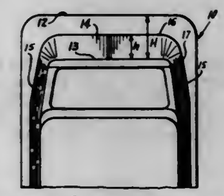
3,348,872
AUTOMATIC TONGS
William B. Kolinski, P.O. Box 167, Nanaimo, British Columbia, Canada
Filed June 9, 1966, Ser. No. 556,416
5 Claims. (Cl. 294—110)

1. Tong mechanism for use with a single lifting cable comprising a pivot pin, a pair of tongs pivotally mounted in crossed relationship on the pin, said tongs having upper ends extending above the pin and load gripping arms extending below the pin, linking means connecting the cable and the upper ends of the tongs normally operative under a taut cable condition to urge the arms towards each other to a load gripping position, a tong engaging member slidably connected to the pin for vertical movement relative to the tongs into and out of supporting and spreading engagement with the arms, latch mechanism extending between the cable and tong engaging member operable by gravity when the cable is slackened off so as to render the linking means inoperative to connect the



cable and tong engagement member, thereby moving the latter when the cable is again drawn to a taut condition into supporting and spreading engagement with the arms.

3,348,873
MEANS FOR REDUCING LATERAL WIND RESISTANCE AND CONSEQUENT BODY SWAY AND YAW IN VEHICLES
Walter Selden Saunders, 24 S. Chester Road, West Chester, Pa. 19380
Filed Feb. 11, 1966, Ser. No. 526,809
11 Claims. (Cl. 296—1)



1. In combination with a motor vehicle including a cab and a body, with the body of a height and width greater than the width of the cab, an upright substantially solid shield positioned to extend above the top of said cab and having its lower edge in substantially air impervious relation therewith for diverting substantially the entire air flow over the top of the cab relatively widely to avoid direct contact with the front of the body, creating a relatively stable air eddy in advance of the forward end of the body, the diverted air reattaching to the body at points spaced rearwardly of the forward end in a smooth even flow, and vertical side shields on the cab extending the full height thereof, connected in substantially air impervious relation thereto, and merging smoothly with the shield extending above the cab roof to reduce side sway caused by a cross wind, said side shields being inclined rearwardly relative to the longitudinal axis of the vehicle at an angle between 30° and 45°.

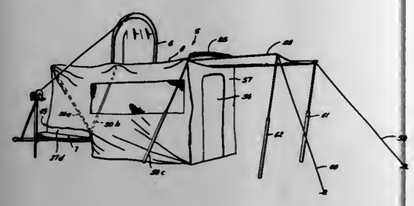
3,348,874
COMBINATION BOAT-TENT-TRAILER APPARATUS
De Witt Y. Gorman, Houston, Tex., assignor to Caco Manufacturing Corp., a corporation of Texas
Filed Dec. 9, 1965, Ser. No. 512,742
2 Claims. (Cl. 296—23)

1. A combination boat-tent-trailer apparatus comprising:

(a) A boat adapted to be placed on a trailer in an overturned position and rotated to a vertical position and thereafter removed;

(b) A trailer having an upper surface for use as a tent bed, said trailer being of substantially the same length as said boat for receiving said boat in an overturned position;

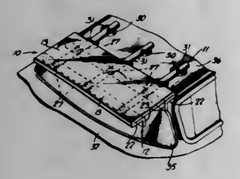
(c) A camper-type tent bed mounted on said trailer in a folded position and protected by the cover of said boat, when said boat is in an overturned position on said trailer wherein rotation of said boat to a vertical position enables said tent to be unfolded to form an enclosure over said trailer;



(d) Releasable engaging means mounted with the back end of said boat and said trailer for enabling said boat to be releasably secured with said trailer and to enable said boat to be removed from said trailer; and

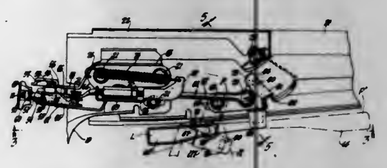
(e) A guide means releasably secured on the front end of said boat and mounted on said trailer for guiding the front end of said boat as said boat is rotated.

3,348,875
AUTOMOBILE WINDSHIELD WEATHER VISOR
John P. Francis, 20 Boston St., Haverhill, Mass. 01830
Filed Aug. 11, 1966, Ser. No. 571,816
9 Claims. (Cl. 296—95)



1. A weather visor structure for the windshield of a motor vehicle secured to the roof top thereof comprising a removably attached rain visor panel, a longitudinally disposed visor support, said removably attached rain visor panel being attachable and longitudinally adjustable upon the sliding engagement of said rain visor panel on said visor support, said rain visor panel providing increased weather protection to the roof top rearwardly of the extreme end of the said visor support upon the extended rearward movement of said rain visor panel on said visor support in extending rearwardly thereof, said rain visor panel having at least one vertically elongated laterally disposed vertical supporting member in the form of a panel and extending downwardly from the underside of said rain visor panel with the bottom portion of the said vertical member adapted to frictionally engage a laterally extending portion of the roof top in rain sealing engagement, said vertical supporting member extending laterally and in a longitudinally spaced apart position between the forward and the rear lateral edges of said rain visor panel, said vertical supporting member being provided with an aperture therethrough, roof engaging means mounted on the roof top and engaging the rear portion of said visor support in supporting said support therefrom and over the roof top and the windshield area, said visor support freely engaging the said aperture of said vertical supporting member of said rain visor panel in adjustably supporting said rain visor panel for removable attachment thereto and for the said frictionally engaged rain sealing engagement of the said bottom portion of the said vertical supporting member of said rain visor panel with the roof top upon the said extended rearward movement of said rain visor panel.

3,348,876
CONVERTIBLE TOP LATCH MECHANISM
Walter Pollak, Detroit, and William E. McLean, Farmington, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 504,033
5 Claims. (Cl. 296—121)



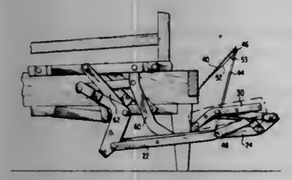
1. In combination with a vehicle body having a convertible top movable between raised and lowered positions relative to a top support, the top including a header member, a side rail member pivoted to the header member, latch means mounted on one of the members and movable between latched and unlatched positions to selectively latch the header member to the top support, and latch operating means movable between first and second positions to selectively move the latch means between unlatched and latched positions, the improvement comprising cooperating means on the latch means and on the other member movable between locked and unlocked positions to selectively lock the side rail member and the header member together against relative pivotal movement, actuating means on the latch operating means operable in the second position thereof to selectively move the cooperating means between locked and unlocked positions and means preventing movement of the latch operating means to first position when the cooperating means are in locked position.

3,348,877
REMOVABLE CLOSURE FOR VEHICLE BODIES
George Caramanna, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,579
3 Claims. (Cl. 296—137)



2. In a vehicle body including a spaced pair of transverse header structures defining therebetween an opening to be covered, a removable top comprising, in combination, a flexible cover member of a size to cover said opening, said cover member including opposite transverse edge portions respective to said spaced header structures, resiliently deformable rigidifying frame means having said cover member mounted thereto as a unit therewith, said frame means having a normal state folding said cover member and frame means unit to a folded storage condition, cooperative releasable securing means on said spaced header structures and on said cover member and frame means unit located generally transversely centrally of the body on each thereof and operative to secure said cover member and frame means unit to said spaced header structures, said cooperative securing means defining at each side thereof a distinct side portion of said cover member and frame means unit, each such side portion being independently foldable and unfoldable to open and close a respective portion of said opening, and latch means respective to each of said side portions for releasably holding said side portions in unfolded position against the action of said frame means.

3,348,878
SKIRT LIFTER FOR CHAIR WITH FOOTREST
Walter C. Rogers, Jr., High Point, N.C., assignor to Royal Development Company, Inc., High Point, N.C., a corporation of North Carolina
Filed June 3, 1966, Ser. No. 555,122
15 Claims. (Cl. 297—68)



1. In a chair or the like having a footrest, extendible and retractable means movable below the chair for projecting and retracting the footrest past the front of the chair, a skirt depending from the front of the chair, and second means having one end connected to said first recited means to be movable therewith between extended and retracted positions while also being movable relative to said first recited means, said second recited means being operatively connected to said skirt to raise the skirt upon movement relative to said first recited means during movement of said first recited means into extended position.

3,348,879
TABLE AND CHAIRS
Anthony Merola, 957 Wellesley Road, Pittsburgh, Pa. 15206
Filed June 17, 1966, Ser. No. 558,402
7 Claims. (Cl. 297—157)

1. A combination table and chairs, comprising

(a) a table portion,

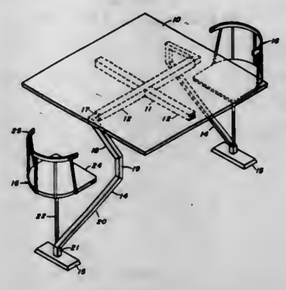
(b) a plurality of chair members positioned adjacent the table in normal seating position, each chair member comprising

(i) a seat portion,

(ii) a base member engaging a floor surface beyond the plane of the table, and

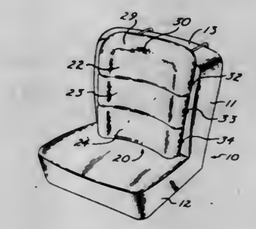
(iii) an upright support leg connecting the base to the seat to support the seat in a normal seating position with respect to the table,

(c) a plurality of table support members each connected to and extending from the underside of the table downwardly and outwardly beyond the plane of the table to connect with one of the base members, whereby the table and chairs derive mutual support from the base members only, the points of connection of each table support member to the table and base respectively lying substantially in a common vertical plane with like points of at least one other table support member whereby the weight of



the table acts through these points in the same vertical plane and being so arranged that two such connected table support members are capable of supporting the table in a relatively stable horizontal plane without additional support means.

3,348,880
ADJUSTABLE BACK SUPPORT CUSHIONS
David T. Swann, 16309 Harvard Ave., Cleveland, Ohio 44128
Filed Apr. 14, 1966, Ser. No. 542,554
1 Claim. (Cl. 297—230)



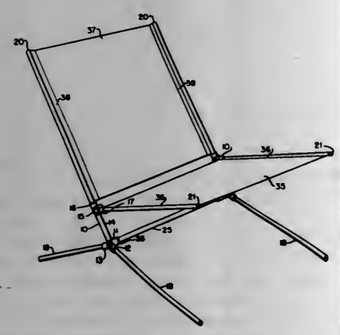
A backrest cushion for providing selective, localized support to a person's back from the hips to the base of the neck comprising flexible wall means defining three inflatable and substantially expandable chambers divided by horizontal flexible walls and adapted to be disposed in front of the backrest of a seating means, the lower chamber being located in the sacroiliac region of the back, the middle chamber being located at the small of the back, and the upper chamber being located in the region of the upper spine, shoulders, and lower neck, means for separately inflating each chamber whereby to provide selected, localized support to the back at different levels, said flexible wall means defining vertically extending protuberances at the lateral edges of said chambers, the upper chamber being provided with a horizontally extending protuberance disposed across the top edge of said upper chamber which joins said vertically extending protuberances so that a continuous resilient ridge is provided along the sides and across the top of the cushion to provide lateral support against sidewise movement and rearward support at the base of the neck of a person seated against said cushion, said protuberance disposed across the top edge of said upper chamber being provided with a rounded recess shaped to receive the lower neck portion of a person seated against said backrest cushion.

3,348,881
FASTENING MEANS FOR A THREE-POINT SAFETY BELT, PARTICULARLY FOR MOTOR VEHICLES
Per-Olaf Weman, Hamburg-Garstedt, Germany, assignor to Sigmatex A.G., Basel, Switzerland, a firm
Filed Nov. 16, 1966, Ser. No. 594,798
Claims priority, application Germany, Nov. 26, 1965, S 100,672
10 Claims. (Cl. 297—388)



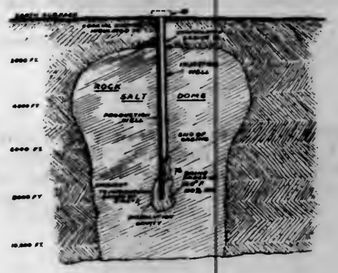
1. Fastening means for a three-point safety belt, particularly for use in motor vehicles, comprising a self-retracting belt winder for a shoulder belt extending substantially diagonally to the upper part of a user's body, and means permitting a hip belt extending substantially transversely of the upper part of the user's body to be fastened on both sides of the user near the floor of the vehicle, said latter means including a belt winder provided at one end of the hip belt independently of said self-retracting belt winder for the shoulder belt and the lengths of the shoulder belt and the hip belt being independent of each other.

3,348,882
KNOCKDOWN CHAIR
Stanton P. Chassaignac, Box 1341, Grand Central Station, New York, N.Y. 10017
Filed July 26, 1966, Ser. No. 567,987
6 Claims. (Cl. 297—440)



1. A chair comprising, in combination, two side fittings each containing a transverse aperture, a back member cantilevered upwards from each side fitting, a seat member cantilevered forward from each side fitting, a flexible back extending between said back members, a flexible seat extending between said seat members, a cross member having first and second cylindrical ends extending into the transverse apertures in said side fittings mounting said side fittings on said cross member, said cross member having means holding said fittings apart stretching said back and said seat between said back and said seat members, a front leg extending downward from each side fitting, and a back leg extending downward from each side fitting, said side fittings having tubular studs fixed thereto, said back members, said seat members, said front legs, and said back legs telescoping into said tubular studs to be cantilevered from said side fittings.

3,348,883
METHOD FOR CONCOMITANT MINING AND BENEFICIATION OF SOLUBLE MINERAL
Charles H. Jacoby, Grosse Ile, Mich., and John L. Ryon, Jr., Clarks Green, Pa., assignors to International Salt Company, Clarks Summit, Pa.
Filed Dec. 27, 1965, Ser. No. 516,621
8 Claims. (Cl. 299—4)



1. The method of concomitantly mining and beneficiating a deposit of soluble mineral disposed at such depth beneath the earth's surface as to be surrounded by a geological environment characterized by being at a substantially elevated temperature relative to the neighborhood earth surface rock temperature, said method comprising,

drilling first and second bore holes downwardly from the earth's surface into said deposit,

completing said boreholes by installation of means preventing wall failure closures of said boreholes and by installation of wall heat insulation means substantially throughout the length of said second borehole from the upper end thereof to at least adjacent the nether end thereof,

establishing fluid-flow communication between the nether ends of said bore holes through said deposit,

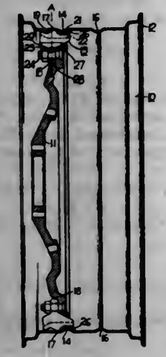
pumping a solvent for said mineral downwardly through said first bore hole in direct heat exchange relation with the borehole wall and in indirect heat-exchange relation with the ambient geology thereby heating said solvent to a substantially elevated temperature and then circulating said heated solvent through said deposit and up through said heat-insulated second borehole while maintaining substantially constant temperature and pressure conditions on the upflowing dissolution product,

and then discharging said product into recovery apparatus providing a reduced temperature and pressure atmosphere for separation of purified mineral from the remainder of said product.

3,348,884
WHEEL CLAMP
Kenneth C. Adams, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 9, 1966, Ser. No. 548,597
5 Claims. (Cl. 301—9)

1. A wheel and rim assembly comprising a wheel having a portion adapted to be attached to an axle, a rim arranged peripherally of said wheel, adjustable clamps retaining said rim on said wheel, said rim being provided with a pair of axially spaced beads projecting inwardly

toward the axis of rotation of said wheel, said clamps including a wheel attaching portion extending radially inward to engage said wheel and means defining a pair of axially spaced recesses with each recess of different



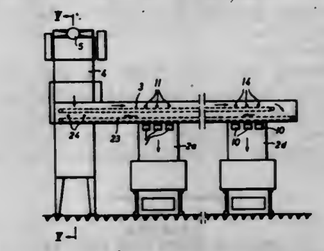
axial spacing on opposite sides of the axial center of said attaching portion receiving one or the other of said beads in one or the other of said recesses, said clamps being reversible on one side of said wheel to provide a different spacing of said recesses relative to said wheel.

3,348,885
WHEEL COVER
Floyd I. Dully, Detroit, and Arnold J. Maletzke, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 28, 1966, Ser. No. 523,712
2 Claims. (Cl. 301—37)



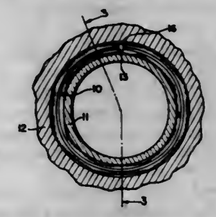
1. In combination with a vehicle wheel having a wheel body provided with a radially outwardly facing shoulder and a wheel rim having an intermediate axially outwardly facing flange merging into a radially inwardly opening bead joined across a juncture shoulder to an axially extending flange, a cover mounting member including a generally axially resilient body and a generally radially resilient cantilever arm joined to the body adjacent one end thereof by a radially facing fulcrum rib, the other free end of the body having a rib shaped to conform to the wheel body shoulder and seating thereagainst, the fulcrum rib seating against the wheel rim juncture shoulder within the rim bead to axially compress the body and hold the free end rib against the wheel body shoulder, the intermediate portion of the body being of generally ogee shape and including oppositely opening integral ribs, one of said ribs seating against the intermediate flange of the wheel rim upon axial compression of the body and seating of the free end rib and fulcrum rib on their respective shoulders, the cantilever arm being resiliently biased radially outwardly with respect to the fulcrum rib and seating against the wheel rim inwardly facing flange, a cover member including a peripheral reversely bent flange seating on a like shaped flange at the free end of the cantilever arm to mount the cover member on the wheel, and cooperating means on the peripheral flange of the cover member and on the cantilever arm adjacent the free end thereof holding the cover member against rotation relative to the cantilever arm.

3,348,886
FEEDING DEVICES FOR FIBER TREATING MACHINES
Adolf Hergeth, Dulmen, Westphalia, Germany, assignor to Hergeth K.G. Maschinenfabrik u. Apparatebau, Dulmen, Westphalia, Germany
Filed Mar. 4, 1966, Ser. No. 531,852
6 Claims. (Cl. 302—12)



1. A feeding device for fibrous material comprising a plurality of feeding shafts, first conveyor means extending along the feeding shafts, means for transferring material from said first conveyor means to said feeding shafts, second conveyor means functioning as a storage device for fibrous material, means placing said first and second conveyor means in fluid communication for the transfer of fibrous material therebetween, said first and second conveyor means being movable in opposite directions of travel, said conveyor means being operable at different speeds, and means provided for regulating the speed of said second conveyor in response to the demands of said feeding shafts as indicated by sensing means associated with said feeding shafts.

3,348,887
COMBINATION TOLERANCE RING AND BEARING JOURNAL MEMBER
Martin I. Sheps, Baltimore County, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Mar. 4, 1965, Ser. No. 437,030
1 Claim. (Cl. 308—26)



In an electric tool, the combination of:

(a) a housing provided with a cylindrical bore having a pair of internal annular grooves formed therein; said grooves being spaced axially from one another;

(b) a pair of rings seated within the respective grooves;

(c) said rings each comprising a single molded-plastic polygonally-shaped loop having an outer surface and an inner surface, each of which surfaces is characterized by a plurality of corners separated by flat sides;

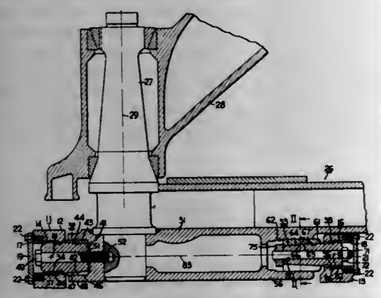
(d) the corners on the outer surface of each ring being in engagement with a respective internal annular groove in the housing; the respective inner surfaces of said rings extending radially inwardly into the cylindrical bore in the housing;

(e) an indexing cylindrical member pivotably mounted within the bore in the housing and adapted for occasional, limited relaive rotation therein; said cylindrical member having a smooth uninterrupted outer surface which is at least in engagement with the respective flat sides on the respective inner surfaces of the rings;

(f) each of said rings being inherently capable of deforming in order to compensate for misalinements in the concentricity of the pivotably-mounted cylindrical member in relation to the bore in the housing, as well as diametral tolerance accumulations therebetween;

(g) whereby said rings fulfill the dual function of combined tolerance rings and bearing journals for the pivotably-mounted cylindrical member within the housing, and whereby the pair of axially-spaced rings provide a lateral stability for the cylindrical member.

3,348,888
MOTOR SCRAPER HITCH
Dale W. Hawk, Marion, Iowa, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 12, 1965, Ser. No. 439,239
5 Claims. (Cl. 308—72)



1. In combination with a pair of structures, a draft connection therebetween permitting pivoting of said structures about a common axis and comprising:

a pair of spaced spherical sockets on one of said structures aligned on said axis,

a pair of spaced pivot parts having spherically formed bearing surfaces complementary to and in pivotal bearing engagement with said sockets, respectively,

means rigidly securing said pivot parts to the other of said structures including,

walls in said other structure defining an opening bounded by a radially inward facing cylindrical surface aligned on said axis,

a shank portion on one of said pivot parts extending into said opening and having a radially outward facing conical surface substantially aligned on said axis,

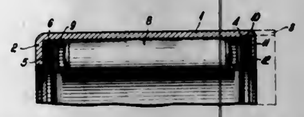
a longitudinally split sleeve in said opening having

a radially outward facing cylindrical face in confronting relation to said cylindrical surface, and

a radially inward facing conical face complementary to and in confronting relation to said conical surface on said shank portion, and

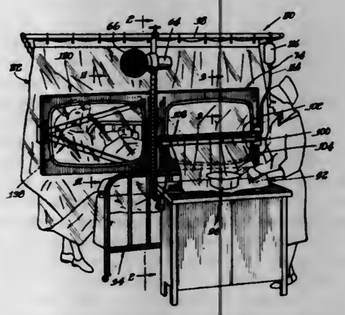
axially adjustable thrust transmitting means operable to adjust said sleeve relative to said one part thereby causing said conical surface and face to cammingly engage and radially expand said sleeve into firm engagement with said cylindrical surface thereby rigidly securing said one pivot part and sleeve to said other structure.

3,348,889
SEALED NEEDLE BEARING
Georg Schaeffler and Rudolf Jahn, Nurnberg, Germany, assignors to Industriewerk Schaeffler, Herzogenaurach, Germany, a corporation of Germany
Filed Aug. 3, 1964, Ser. No. 387,036
Claims priority, application Germany, Aug. 13, 1963, J 24,242
6 Claims. (Cl. 308—187.2)



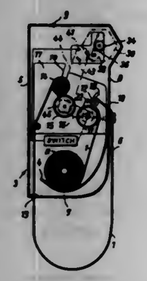
3. A sealed needle bearing comprising a thin walled outer race drawn from sheet metal and a series of needle rollers therein, the outer race having on one end a radially-inwardly directed rim bent over the outer edge of the race with the inner surface of the race and the rim being continuous and smooth-walled, and a shoulder formed in the bore of the other end by reduction of the wall thickness, an elastic sealing disc clamped against the radially-inwardly directed rim by a metal disc on the inner side of the elastic sealing disc with the said metal disc bearing at its periphery against the bore of the race under preload, a second metal disc bearing against the shoulder in the bore and an elastic sealing disc clamped against the second metal disc by the flanged-over end of the race having a reduced wall thickness.

3,348,890
ISOLATOR METHOD AND APPARATUS
Philip C. Trexler, Stoneham, Mass., assignor to Snyder Manufacturing Company, Inc., New Philadelphia, Ohio, a corporation of Ohio
Filed Aug. 27, 1964, Ser. No. 392,390
10 Claims. (Cl. 312—3)



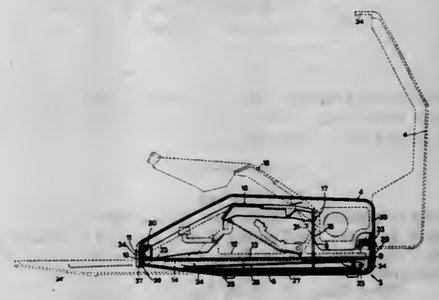
10. In a method of making sanitary transfer of a series of articles between a position interior of a closed chamber having a transfer port therein and a position exterior of said chamber, the steps comprising closing and sealing said port with first heat sealable plastic material means sized to define a space for receiving an article to be transferred, introducing a first article into said space from one of said positions, simultaneously forming an endless heat seal and an adjacent endless severed edge in said first heat sealable plastic material means in continuation of closing and sealing said port, effecting transfer of said first article to the other of said positions, closing and sealing said port with second heat sealable plastic material means in continuation of said first material means closing and sealing said port, removing said first material means from said port, introducing a second article, into the space defined by said second plastic material means from said one position, simultaneously forming an endless heat seal and an adjacent endless severed edge in said second plastic material means in continuation of closing and sealing said port, and effecting transfer of said second article to said other position.

3,348,891
TOWEL DISPENSER
Erich Schumm, Siegelsbergerstrasse 17, Murrhardt, Wurttemberg, Germany
Filed Oct. 22, 1965, Ser. No. 501,535
3 Claims. (Cl. 312—38)



1. A towel dispenser comprising a housing having a window and a horizontal withdrawal slot in its front wall and a return slot in its bottom wall, a feed roller rotatably mounted within said housing substantially parallel to said withdrawal slot and having a peripheral friction surface, means for rotatably mounting a supply roll and a wind-up roll in different horizontal positions spaced from each other within said housing, said supply roll having a clean towel wound thereon, said towel being adapted to pass from said supply roll to said feed roller and to engage firmly with a part of said peripheral friction surface thereof and then to pass from said feed roller through said withdrawal slot to the outside of said housing and to form a loose loop underneath said housing and then to pass through said return slot back into said housing, the free end of said towel being adapted to be secured to said wind-up roll so as to be would thereon, so that when a pull is exerted on said towel outside of said housing, said towel is withdrawn from said supply roll and thereby drives said feed roller, locking means for locking said feed roller at uniform intervals of its revolution and for thereby permitting only a predetermined length of said towel to be withdrawn through said withdrawal slot when a pull is exerted upon the outer part of said towel, means accessible from the outside of said housing for releasing said locking means, means for operatively connecting said feed roller to said wind-up roll so that, when a certain length of said towel is being withdrawn through said withdrawal slot and said feed roller is thereby rotated, a corresponding length of said towel is simultaneously wound upon said wind-up roll, an advertising device within said housing behind said window, and driving means for operatively connecting said advertising device to said feed roller, in which said advertising device comprises a rotary member rotatably mounted within said housing and having a peripheral surface with advertisements thereon, said driving means comprising an electric motor and a reduction gear connecting said motor to said rotary member, and switch means operatively connected to said feed roller for switching on said motor so as to rotate said rotary member for one revolution thereof, and for then switching off said motor.

3,348,892
CARRYING CASE FOR A PORTABLE TYPEWRITER
Carlo Grassi, Milan, Italy, assignor to Antares, S.p.A., Milan, Italy, a corporation of Italy
Filed Apr. 13, 1966, Ser. No. 542,285
5 Claims. (Cl. 312—208)



1. In combination with a portable typewriter having a platen carriage,

(a) carrying case base having a typewriter mounted thereon, said carrying case base comprising,

(a1) a bottom wall

(a2) two opposite side walls upreaching from the bottom wall to mask permanently at least partially the sides of the typewriter,

(a3) and a shallow upreaching rear wall,

(b) a top shroud at the front of the carriage cooperative with the side walls of said carrying case base to shroud the typewriter at the top in front of the carriage,

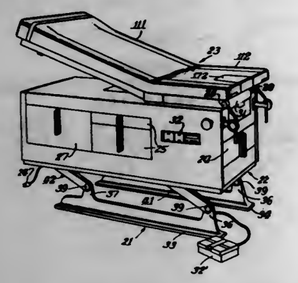
(c) a carrying case cover removably associable with said base upon its side walls and said rear wall,

(d) and a carrying handle for said carrying case projecting from one of said side walls of said carrying case base and whereby said typewriter is adapted to be carried by its carrying case base.

3,348,893
PHYSICIAN'S EXAMINING TABLE
James M. Katzfey and Warren J. Peterson, Two Rivers, Wis., assignors to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin
Filed Oct. 11, 1965, Ser. No. 494,853
16 Claims. (Cl. 312—209)

1. A physician's examining table comprising a base structure adapted to rest on the floor, a cabinet located over said base structure, means in said cabinet forming storage space, a plurality of lever means connected to said base structure and to the lower portion of said cabinet, and power operated means connected to said lever means for raising and lowering said cabinet relative to said base structure, said power operated means being located within the lower portion of said cabinet, whereby the major portion of said cabinet is available for storage space, said lever means being spaced apart and extending from said base structure upwardly to said cabinet and below said storage space, the lower portions of said lever means being connected to said base structure and the upper por-

tions of said lever means being connected to said cabinet, said power operated means also extending below and at



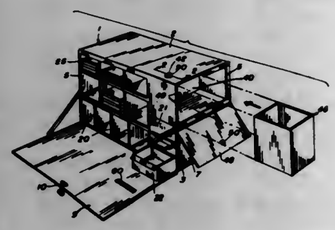
one side of said means forming said storage space, whereby said lever means and said power operated means do not interfere with said storage space.

3,348,894

HYPODERMIC SYRINGE STORAGE UNIT

James S. de Berry, La Canada, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California

Filed Mar. 29, 1966, Ser. No. 538,300
6 Claims. (Cl. 312—209)



1. A hypodermic syringe storage unit comprising: an enclosed cabinet with a plurality of compartments for sterile packaged syringes with an openable front panel for closing off said compartments, said cabinet having within its confines a chamber for portions of contaminated syringes, which chamber has an entrance port through an external wall of said cabinet and has an openable section in a cabinet wall which opens independently of and faces in a different direction from said front panel for entrance to said chamber; means connected to the cabinet wall at the entrance port for rendering a hypodermic syringe incapable of giving further injections, said means being a member distinct from the apertured wall itself; and a removable container within the chamber adapted to catch portions of contaminated syringes as they pass through said entrance port.

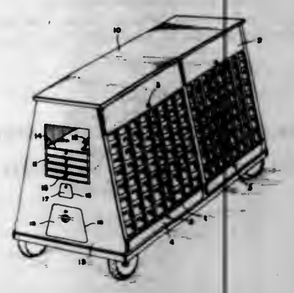
3,348,895

ROLLING SALES DISPENSING UNIT AND MULTIPLE CASH DRAWER FOR GASOLINE STATIONS

Eugene F. Settlemire, 1443 Broadway, Tucson, Ariz. 85719

Filed Oct. 13, 1965, Ser. No. 495,553
8 Claims. (Cl. 312—212)

1. A movable sales dispensing unit having a hollow body with substantially parallel side walls which are spaced apart by generally upright racks connected together and adapted to carry cans, said racks comprising several slides each of which has space for holding cans set one above the other in said slides, said racks including means preventing entry and removal of cans to and from the slides except at the tops and the lower ends of the slides, plural doors mounted at the bottoms of each of said racks, each door extending over the lower ends of several of said slides, single top doors mounted at the



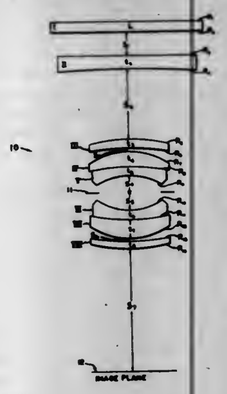
tops of said racks, each opening to the tops of all slides on their sides of the body, upper locks and lower locks coacting with said doors, so as to prevent opening said doors when said doors are locked in closed position, said locks for said top doors being operable by a common key and said locks at the bottoms of said slides each being operable by a different key that is different than said common key.

3,348,896

MODIFIED GAUSS TYPE OF OPTICAL OBJECTIVE FOR USE IN ULTRAVIOLET LIGHT

Ellis I. Betensky, Webster, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed July 9, 1964, Ser. No. 381,325
2 Claims. (Cl. 350—2)



1. An optical projection objective of the modified Gauss type for use in ultraviolet light, said objective having a relative aperture as great as $f/4.5$ and forming a distortion-free image at finite conjugates, said objective being well corrected for spherical and chormatic aberrations, coma, astigmatism and field curvature for light wavelengths in the range 3500 A. to 4200 A., said objective comprising the following optically aligned optical parts,

a pair of doublet negative meniscus lens members which are concave toward an intervening diaphragm from which the members are spaced by axial distances which are designated respectively S_4 and S_5, said doublet members being designated V and VI,

a pair of positive meniscus singlet lens members designated III and VIII which enclose said doublet members and are concave toward said diaphragm, said members III and VIII being spaced from said doublet members by axial distances designated S_3 and S_6,

on the entrant side of member III an aspheric distortion corrector plate designated II is spaced at a distance S_2 therefrom, and

spaced at an axial distance designated S_1 forwardly of plate II is a plano parallel plate designated I,

the constructional data of said objective having values as set forth in the table of mathematical statements herebelow wherein R_1 to R_{14} designate the radii of the successive optical surfaces on said optical parts, the minus (—) sign used therewith denoting surfaces which are concave toward entrant light, t_1 to t_8 designate the axial thicknesses of the successive optical parts I to VIII, and S_1 to S_7 represent the successive axial air spaces from plate I to said image,

R_1=Plano
R_2=Plano
R_3=Plano
R_4=Aspheric surface defined by $X=-.00000047Y^4$ where X represents the sagittal coordinate and Y represents the tangential coordinate
$R_5=.542F$
$R_6=4.880F$
$R_7=.198F$
$R_8=.423F$
$R_9=.1632F$
$-R_{10}=.171F$
$-R_{11}=.557F$
$-R_{12}=.2027F$
$-R_{13}=5.270F$
$-R_{14}=.542F$
$S_1=.0655F$
$S_2=2.8200F$
$S_3=.000507F$
$S_4=.13440F$
$S_5=.13440F$
$S_6=.000423F$
$S_7=1.1280F$
$t_1=.02684F$
$t_2=.04230F$
$t_3=.02744F$
$t_4=.05370F$
$t_5=.02443F$
$t_6=.02443F$
$t_7=.05870F$
$t_8=.02233F$

the symbol F denoting the equivalent focal length of said objective,

the refractive index of the glass in plate I being substantially 1.519 and being substantially 1.517 in plate II, the refractive index of the glass in lens elements III, IV, VII and VIII being substantially 1.51718 and the Abbe number thereof being substantially 64.01, and furthermore the refractive index of the glass in the lens elements V and VI being substantially 1.58252 and the Abbe number thereof being substantially 46.3,

all air-glass optical surfaces being coated to transmit a maximum of light in the wavelength range 3500 A. to 4200 A.

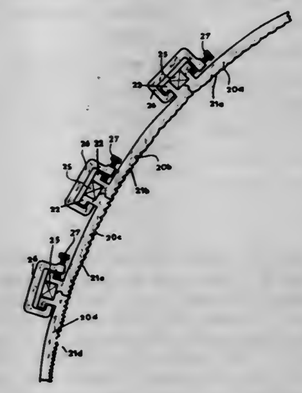
3,348,897

CURVED SCREENS FOR PROJECTING MOTION PICTURE FILMS OR THE LIKE

Jules Hourdiaux, 96 Ave. de Versailles, Paris 16°, Seine, France

Original application Apr. 3, 1964, Ser. No. 360,163, now Patent No. 3,295,910, dated Jan. 3, 1967. Divided and this application Sept. 7, 1966, Ser. No. 577,731
Claims priority, application France, Apr. 6, 1963, 930,681, Patent 1,434,929
5 Claims. (Cl. 350—125)

1. A projection screen comprising a series of individual panels, each panel comprising a sectional member having longitudinal edges provided with complementary positioning means said sectional member being formed with a plurality of integral longitudinal ribs, each rib having a light-diffusing front face, said front faces together constituting a single curved projection surface and being substantially parallel to a direction perpendicular to the projection axis throughout the screen surface, said sectional member further comprising two rearward side lugs par-



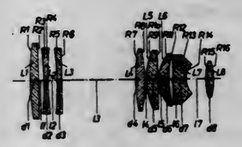
allel to said longitudinal ribs, said panels being assembled together in side-by-side relation along said longitudinal edges, and securing means for keeping said panels assembled together, said securing means comprising clamp members embracing the respective side lugs of two adjacent panels.

3,348,898

VARIABLE FOCAL LENGTH OBJECTIVE HAVING EIGHT AXIALLY SPACED LENSES

Carl Baur, Baldham, Munich, and Christian Otzen, Grunwald, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed Nov. 25, 1963, Ser. No. 325,815
Claims priority, application Germany, Dec. 1, 1962
A 41,769
3 Claims. (Cl. 350—184)



1. An adjustable projection objective of variable focal length having an aperture of 1:1.1, comprising eight axially spaced lenses of which the second and third lenses

are forwardly and rearwardly movable in the direction of the optical axis while maintaining a constant axial airspace, the objective as a whole having a total length of 2.78209f and being constructed substantially according to the specifications in the following table:

Lenses	Radii	Thicknesses Airspaces	n_D	ν
1	$R_1=+3.10878f$	$d_1=0.12800f$	$n_1=1.56873$	$\nu_1=63.12$
	$R_2=\infty$	$l_1=$variable		
2	$R_3=-3.54321f$	$d_2=0.10947f$	$n_2=1.51680$	$\nu_2=64.20$
	$R_4=+3.54321f$	$l_2=0.07900f$		
3	$R_5=-2.37372f$	$d_3=0.10947f$	$n_3=1.51680$	$\nu_3=64.20$
	$R_6=\infty$	$l_1=$variable		
4	$R_7=+2.25261f$	$d=0.13673f$	$n_4=1.56873$	$\nu_4=63.12$
	$R_8=-2.25261f$	$l=0.00800f$		
5	$R_9=+1.41669f$	$d_4=0.19000f$	$n_5=1.62041$	$\nu_5=60.29$
	$R_{10}=\infty$	$l_3=0.00500f$		
6	$R_{11}=+0.56300f$	$d_5=0.16880f$	$n_6=1.62041$	$\nu_6=60.29$
	$R_{12}=+2.02380f$	$l_4=0.04621f$		
7	$R_{13}=\infty$	$d_7=0.25475f$	$n_7=1.78470$	$\nu_7=26.10$
	$R_{14}=+0.33093f$	$l_7=0.25194f$		
8	$R_{15}=+0.82575f$	$d_8=0.13000f$	$n_8=1.75496$	$\nu_8=53.28$
	$R_{16}=-0.82575f$			

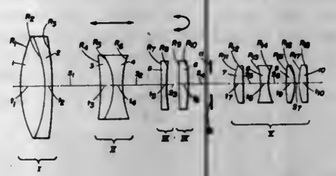
wherein the first column lists the eight lenses in numerals in the order from the front to the rear, wherein f is the focal length of the objective, n_D is the index of refraction for the wave length 587.6 mμ of the spectrum, and ν is the dispersive index; and wherein R, d and l refer, respectively, to the radii of curvature of the refractive surfaces, the axial thicknesses of the lenses, and the axial airspaces between the lenses, the subscripts on the characters R, d and l being numbered consecutively from the front to the rear, and the plus and minus signs in the second column indicating refractive surfaces respectively convex and concave to the front, the rear intercept length and focal length of the objective depending on the position of said second and third lenses as follows:

Variable Airspace	Variable Airspace	Rear Intercept Length	Focal Length
$l_1=0.08749f$	$l_3=1.08023f$	$0.29375f$	$0.75172f$
$l_1=0.68766f$	$l_3=0.48004f$	$0.31374f$	$1.00f$
$l_1=1.12772f$	$l_3=0.04000f$	$0.32521f$	$1.25248f$

the actual powers of refraction, $\Delta n/R$ of the surfaces of the lenses having substantially the values stated in the following table in which the lens surfaces of all lenses are designated by successive numbers in the order from the front to the rear

Lens Surfaces	Powers of Refraction	Lens Surfaces	Powers of Refraction
1	$+0.18294/f$	9	$+0.43792/f$
2	0	10	0
3	$-0.14586/f$	11	$+1.10197/f$
4	$-0.14586/f$	12	$-0.30656/f$
5	$-0.21772/f$	13	0
6	0	14	$-2.37120/f$
7	$+0.25248/f$	15	$+0.91427/f$
8	$+0.25248/f$	16	$+0.91427/f$

3,348,899
ZOOM OBJECTIVE
William H. Price, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 13, 1964, Ser. No. 367,157
2 Claims. (Cl. 350—184)



1. A zoom objective with a front zoom member and a rear converging member, the front zoom member comprising four components made up of six elements, from front to rear, a positive biconvex doublet, a negative biconcave doublet, a single negative element and single positive element, the negative biconcave doublet being movable to vary the magnification of the objective and the single positive element being movable and mechanically coupled with said biconcave doublet so that the back focal length of the objective is substantially constant for all settings of the two movable members, said front zoom member being characterized in that its elements conform to the following table:

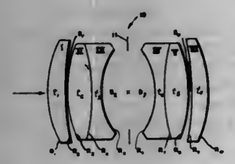
Lens Element	N	V	Radii, mm.	Thickness or Separation, mm.
1	1.61	58.8	$R_1=+50.9$ $R_2=-37.0$	$t_1=7.40$ $t_2=2.02$
2	1.65	33.8	$R_3=-390$	S_1 varies 2.50 to 31.9
3	1.72	29.3	$R_4=-80.5$ $R_5=-16.0$	$t_3=3.57$
4	1.70	56.2	$R_6=+21.7$ $R_7=\infty$	$t_4=1.80$ S_1 varies 34.56 to 5.20
5	1.65	33.8	$R_8=+61.3$ $R_9=+159$	$t_5=1.07$ S_3 varies 2.12 to 4.99
6	1.61	58.8	$R_{10}=-33.0$	$t_6=2.16$

where from front to rear R_1 to R_{10} are the radii of curvature of the surfaces, t_1 to t_6 the thicknesses of the lens elements, S_1 to S_3 the separations of the components, N the refractive indexes for the D line of the spectrum and V the dispersive indexes.

3,348,900
FOUR COMPONENT SYMMETRICAL COPYING OBJECTIVE
Lena M. Hudson, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 25, 1964, Ser. No. 378,005
2 Claims. (Cl. 350—209)

1. A symmetrical type optical objective having a field angle of 40° and relative aperture of $f/3.8$ and used for copy and process operations, said objective having an excellent correction for spherical and chromatic aberrations, coma, astigmatism, distortion and field curvature, each

half of said objective consisting of an outer singlet positive meniscus lens member and a doublet negative meniscus member spaced inwardly therefrom, each half being equally spaced from an intervening diaphragm, the lens elements of the doublet member being an outer double convex element in contact with a double concave element and having a common interface which is convex toward said diaphragm, said objective having a long back focus of at least 75 percent of the equivalent focal length thereof which is represented by the symbol F, the values of the constructional data for said objective being set forth substantially in the table of mathematical statements herebelow wherein R_1 to R_{10} represent the radii of the successive lens surfaces, the minus (—) sign used with certain R values applying to those surfaces which are concave toward the front of the objective, t_1 to t_6 represent the successive lens thicknesses, S_1 and S_4 represent the outer interlens spaces and S_2 and S_3 represent the spaces between the front and rear double concave elements and said diaphragm, the refractive index of the positive singlet lens members, the double convex lens element, and the



double concave lens elements being designated respectively n_D(I), n_D(II) and n_D(III) in the front half of said objective and being designated respectively n_D(VI), n_D(V) and n_D(IV) in the rear half thereof, and the corresponding Abbe numbers thereof being designated respectively ν(I), ν(II), ν(III), ν(VI), ν(V) and ν(IV),

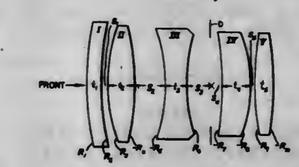
$$R_1=-R_{10}=.283F$$
$$R_2=-R_9=1.272F$$
$$R_3=-R_8=.322F$$
$$-R_4=R_7=.466F$$
$$R_5=-R_6=.1750F$$
$$t_1=t_6=.0430F$$
$$t_2=t_5=.0598F$$
$$t_3=t_4=.0230F$$
$$S_1=S_4=.0023F$$
$$S_2=S_3=.0670F$$
$$\left.\begin{aligned} n_D(I)=n_D(VI)&=1.5725\\ n_D(II)=n_D(V)&=1.5725\\ n_D(III)=n_D(IV)&=1.5838\\ \nu(I)=\nu(VI)&=57.4\\ \nu(II)=\nu(V)&=57.4\\ \nu(III)=\nu(IV)&=46.0 \end{aligned}\right\}\text{Absolute values}$$

3,348,901
FIVE COMPONENT OBJECTIVE LENS
Lena M. Hudson, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 18, 1964, Ser. No. 376,007
2 Claims. (Cl. 350—210)

1. An objective lens comprising a positive meniscus lens having the two radii facing the rear of the system, a double convex positive lens having its shorter curve on the long conjugate side of the system, and a double concave negative lens; a fourth element comprising a positive meniscus lens and a diaphragm separating the fourth element from the third lens, the radii of the fourth element defining curves which are concave toward the diaphragm, and a fifth element defining a double convex positive lens having its strong curve facing the back of the lens, said lenses conforming substantially to the following conditions:

$$R_1=1.4614F$$
$$R_2=3.5039F$$
$$R_3=.7898F$$
$$-R_4=7.9212F$$
$$-R_5=0.8169F$$
$$R_6=0.8169F$$
$$-R_7=9.0000F$$
$$-R_8=0.6850F$$
$$R_9=2.1898F$$
$$-R_{10}=1.6614F$$
$$t_1=0.0787F$$
$$t_2=0.1338F$$
$$t_3=0.0898F$$
$$t_4=0.1260F$$
$$t_5=0.0945F$$
$$S_1=0.0079F$$
$$S_2=0.1394F$$
$$S_3=0.0945F$$
$$S_4=0.0441F$$
$$S_5=0.0016F$$
$$n_1=1.6570$$
$$n_2=1.6570$$
$$n_3=1.7200$$
$$n_4=1.6570$$
$$n_5=1.6200$$
$$\nu_1=50.9$$
$$\nu_2=50.9$$
$$\nu_3=29.3$$
$$\nu_4=57.2$$
$$\nu_5=60.3$$

wherein F is the equivalent focal length of the system, R_1 through R_{10} are the radii of the surfaces of the elements I through V respectively, the minus (—) sign meaning that the designated surface is concave toward the front



of the objective, t_1 through t_5 are the axial thicknesses of the elements I–V respectively and S_1 through S_5 are the axial interlens spacings, S_3 and S_4 being the front and rear airspaces lying between the concave surfaces R_6 and $-R_7$ respectively and the axial position of the diaphragm and wherein n_1 through n_5 and ν_1 through ν_5 are the index of refraction and the Abbe numbers of the respective elements I–V.

3,348,902
OPTICAL SYSTEM FOR PROJECTION MAGNIFIER
Ralph K. Dakin, Pittsford, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Mar. 24, 1964, Ser. No. 354,378
2 Claims. (Cl. 350—232)

1. A projection lens system for magnifying the size of a projected image comprising four lens elements com-

bined into two compound components which have the following constructional data:

$$\sum_{R_1}^{R_8}\left(\frac{1}{R_1}+\frac{1}{R_2}+\cdots\frac{1}{R_8}\right)=-.125$$

Lens	Radii	Spacing	Thickness	N_d	ν
I	R_1=16.68 $-R_2$= 6.69	S_1=33.3	t_1=2.5	1.5725	57.40
II	$-R_3$= 6.69 $-R_4$=40.51	S_2=22.0	t_2=1.1	1.6170	36.6
III	$-R_5$=16.58	S_3=28.0	t_3=1.0	1.6110	58.8
IV	R_6=10.03 R_7=10.03 R_8=∞	S_4=1154.5	t_4=4.0	1.6170	36.6

wherein N_d and ν are the index of refraction and the reciprocal dispersion ratio respectively, S_1 is the spacing



from the first component to the object, S_2 plus S_3 is the spacing between the two components, and S_4 is the spacing from the second component to the image plane.

CHEMICAL

3,348,903
HYDRAZINE AS AN ANTI-STAINING AGENT FOR A PEROXIDE BLEACHING SOLUTION

Hermann Baier, Frankfurt am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,141
Claims priority, application Germany, Feb. 7, 1963, D 40,837
4 Claims. (Cl. 8—111)

1. In a process for bleaching textile fabrics with aqueous peroxidic bleaching liquors which fabrics have ferrous metal particles therein likely to cause catalytic injury to such fabrics during the bleaching with the aqueous peroxidic bleaching liquor, the step of treating said fabrics with at least one hydrazine compound selected from the group consisting of hydrazine hydrate and hydrazine salts in an aqueous medium at a point not later than said bleaching process with the aqueous peroxidic bleaching liquor, the amount of said hydrazine compound employed in said treatment being sufficient to prevent any catalytic injury to the fabrics caused by said presence of ferrous metal particles.

3,348,904
PAPER PARCHMENTIZED WITH ORTHO-PHOSPHORIC ACID

Edward L. Taylor, Allegan, Mich., assignor to Brown Company, a corporation of Delaware

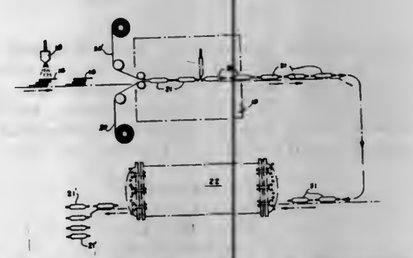
No Drawing. Filed Feb. 12, 1964, Ser. No. 344,180
1 Claim. (Cl. 8—119)

Parchment sheet-form paper containing integrally interbonded parchmentized cellulose fibers non-indigenous to the main body of the paper, produced by the parchmentization of a water-absorbent paper sheet by contact with substantially pure liquid ortho-phosphoric acid of parchmentizing strength of at least approximately 80% concentration for a period of about 20 to 40 seconds, in the presence of 0.1 to 2% added cellulose by weight based on the weight of ortho-phosphoric acid, at least some of which cellulose is in solution in said acid, characterized by a high degree of opacity, dry burst, tear and heat resistance, and diminished tendency to curl when compared with paper parchmentized in the same parchmentization medium in the absence of added cellulose and characterized by a high degree of opacity, dry burst and tear resistance and diminished tendency to curl when compared with paper parchmentized by the use of sulfuric acid as parchmentizing agent.

3,348,905
METHOD FOR STERILIZATION OF AN OINTMENT IMPREGNATED GAUZE

William G. Reveley, Old Saybrook, Conn., assignor to Chesebrough-Pond's, Inc., New York, N.Y., a corporation of New York

Filed May 18, 1964, Ser. No. 368,061
14 Claims. (Cl. 21—56)



1. A process for the sterilization of an ointment impregnated gauze which comprises the steps of: preconditioning a gauze under such conditions that there is uniformly distributed therethrough, water in an amount of at least 5% by weight of the dry gauze; impregnating the preconditioned gauze with an ointment; enclosing said ointment impregnated gauze in an envelope of a flexible protective material to form a package; hermetically sealing said package; and, heating said package in a pressure chamber under suitable conditions of temperature, pressure and time to effect sterilization of the ointment impregnated gauze without causing distortion of the envelope.

3,348,906
SOLVENT EXTRACTION PROCESS FOR THE RECOVERY OF VANADIUM VALUES

Angus V. Henrickson, Golden, and Wayne C. Hazen, Wheatridge, Colo., assignors to Kerr-McGee Corporation, a corporation of Delaware

No Drawing. Filed Dec. 7, 1962, Ser. No. 242,940
8 Claims. (Cl. 23—22)

1. In a process for the recovery of vanadium values including the steps of intimately contacting an aqueous solution containing vanadium values to be recovered and contaminating iron values with a substantially water immiscible organic solvent extractant to produce a loaded solvent extractant phase containing absorbed vanadium values and iron, at least a portion of the absorbed iron being in the ferric oxidation state, separating the resulting loaded solvent extractant phase from the aqueous solution, intimately contacting the separated loaded solvent extractant phase with a 10 to 20% sulfuric acid stripping solution for the absorbed vanadium values and at least a portion of the absorbed ferric iron to produce an aqueous stripping solution containing desorbed vanadium values and ferric iron, thereafter separating the stripping solution from the extractant phase and recovering the vanadium values therefrom, the improvement comprising intimately contacting the stripping solution containing the desorbed ferric iron with a reducing agent therefor whereby ferric iron is reduced to the ferrous state, thereafter intimately contacting the solvent extractant phase with the stripping solution to strip additional absorbed iron therefrom, separating the stripping solution from the solvent extractant phase, and then intimately contacting additional aqueous solution containing vanadium values to be recovered with the separated solvent extractant phase.

3,348,907
PROCESS FOR PREPARING A HIGHLY POROUS SODIUM PERBORATE

Ludwig Pellens and Helmut Honig, Bad Honningen, and Rudolf Siegel, Niederbieber, Germany, assignors to Kali-Chemie Aktiengesellschaft, Hannover, Germany

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,095
Claims priority, application Germany, Apr. 13, 1963, K 49,477
8 Claims. (Cl. 23—60)

1. A process for preparing highly porous sodium perborate capable of trickling, having a particle size range of 0.25 to 1 mm. and having a bulk weight between 0.25 and 0.45 kg./l., by reaction of a sodium metaborate solution with hydrogen peroxide in the absence of a stabilizer, comprising forming a reaction mixture by adding under stirring, at a temperature between 10 and 15° C., an aqueous solution of sodium metaborate to an aqueous solution of hydrogen peroxide, until crystallization of sodium perborate from the reaction mixture starts; then further adding sodium metaborate solution and adding hydrogen peroxide solution to the reaction mixture and thereby maintaining in the reaction mixture an excess of hydrogen peroxide, corresponding to a mol-ratio of hydrogen peroxide to sodium metaborate in the range of 1.1 to 1.8, and after the desired completion of precipitation by crystallization, reacting the excess of hydrogen peroxide present with an additional amount of sodium metaborate, cooling the reaction mixture up to about 1° C. and separating the precipitated sodium perborate from the mother liquor.

3,348,908
SIMPLIFIED PREPARATIONS OF COPPER HALIDE ADSORBENTS

Robert B. Long, Wanamassa, and Fred A. Caruso, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,758
8 Claims. (Cl. 23—97)

1. A solution process for preparing an active, high large pore porosity, solid cuprous halide adsorbent selected from the group consisting of cuprous chloride and cuprous bromide which comprises:

(A) slowly adding a liquid acid solution of a cuprous halide salt selected from the group consisting of CuCl and CuBr in a concentrated aqueous hydrohalogen acid, corresponding to the halogen of said dissolved cuprous halide salt, to a larger volume of a liquid solution of a complexing material, which forms a stable insoluble complex with said cuprous halide salt having a ratio of copper to complexing material greater than 1:1, dissolved in a material selected from the group consisting of water, C_1 to C_{10+} alcohols, C_2 to C_8 water-soluble ethers, water-soluble esters and caustic solutions, which complex precipitates out of solution upon formation thereof as insoluble complex particles;

(B) separating said precipitate of said insoluble cuprous halide complex particles; and

(C) dissociating said complex particles to obtain the active, high large pore porosity adsorbent.

3,348,909
PROCESS FOR PRODUCTION OF ALKALI METAL NITRATES AND CHLORINE

Lyle F. Albright, Lafayette, Ind., and Hans F. Haug, Landenberg, Pa., assignors to Purdue Research Foundation, Lafayette, Ind., a corporation of Indiana

Filed June 8, 1965, Ser. No. 462,261
23 Claims. (Cl. 23—102)

3. A process of producing alkali metal nitrate from the corresponding alkali metal chloride comprising the steps of separately dissolving nitric acid and alkali metal chloride into a larger mass of molten alkali metal nitrate which has been heated to a temperature at which the alkali metal chloride reacts with nitric acid and below the temperature at which the nitric acid readily thermally decomposes so as to convert the alkali metal chloride and nitric acid to alkali metal nitrate and elemental chlorine.

3,348,910
PROCESS FOR THE MANUFACTURE OF MAGNESIUM AMMONIUM PHOSPHATE MONOHYDRATE

Robert D. Goodenough, Midland, and Richard C. Belski, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,076
14 Claims. (Cl. 23—105)

1. A process for preparing magnesium ammonium phosphate monohydrate which comprises:

(a) adding an aqueous slurry of a magnesium compound selected from the group consisting of magnesium hydroxide, magnesium oxide and magnesium carbonate, to an aqueous solution of monoammonium dihydrogen phosphate at a reaction temperature within the range of from about 80° to about 100° C. containing at least 10 percent by weight monoammonium dihydrogen phosphate in excess of that stoichiometrically needed to react with the selected magnesium compound slurry, the resulting mixture providing a mole ratio of ammonia to magnesium equivalents within the range of from about 1.0 to about 1.3, and having a pH value within the range of from about 4.6 to about 7.2, thereby precipitating magnesium ammonium phosphate monohydrate; and

(b) separating the so-formed precipitate from said mixture.

3,348,911
METHOD FOR PREPARING HIGH RATE ZEOLITIC MOLECULAR SIEVE PARTICLES

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 6, 1965, Ser. No. 453,869
10 Claims. (Cl. 23—112)

1. A method of preparing synthetic zeolite particles having a predetermined size and shape and an apparent bulk density of from about 0.70 to about 0.95 gm./cc. which comprises:

preparing a sol of an inorganic oxide selected from the group consisting of silica and alumina;

mixing a gelling agent with said sol;

forming hydrogel particles from the resulting mixture;

contacting the undried hydrogel particles with an organic liquid that is miscible with water and has a lower surface tension than water, sufficient water in said hydrogel particles being displaced by said liquid to decrease shrinkage of the particles when dried and calcined;

drying and calcining the hydrogel particles to form solid inorganic oxide particles of said size and shape;

bringing said solid inorganic oxide particles into contact with an aqueous treating solution containing alkali metal cations and anions selected from the group consisting of hydroxyl, silicate and aluminate, the composition of said treating solution being established in relation to the original composition of said solid inorganic oxide particles to form the desired zeolite;

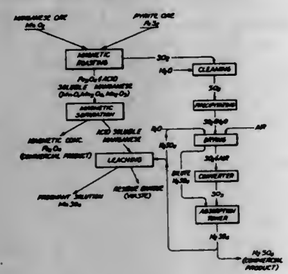
maintaining the particles in contact with said treating solution until they are substantially converted to zeolite particles of said size and shape; and

separating the particles from the treating solution and drying the particles to yield zeolite particles having an apparent bulk density of from about 0.70 to about 0.95 gm./cc.

3,348,912
METHOD OF PREPARING MANGANESE SULFATE FROM PYRITE REDUCED MANGANESE DIOXIDE ORES

Phillip R. Porath, Los Altos, and Michael H. Pettibone, Palo Alto, Calif., assignors to Utah Construction & Mining Co., San Francisco, Calif., a corporation of Delaware

Filed Sept. 23, 1963, Ser. No. 310,639
4 Claims. (Cl. 23—117)



1. In a method for separating the manganese values from a manganese dioxide bearing ore, the steps of combining pyrite with such ore, partially roasting the combined pyrite and ore in a reducing, oxygen limited atmosphere so that the ore and pyrite react to produce a calcine containing MnO, Mn_2O_3 and Mn_3O_4, magnetite, and gases containing sulphur dioxide, the roasting step utilizing the pyrite as fuel to liberate heat for the reaction, converting said sulphur dioxide gas to sulphuric acid, and leaching the calcine with sulphuric acid to dissolve the manganese oxides to form manganese sulphate.

3,348,913
PROCESS FOR RECOVERING POTASSIUM SULFATE FROM FINAL MOTHER LIQUORS OF KAINITE

Giacinto Veronica, Novara, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Jan. 7, 1964, Ser. No. 336,141
Claims priority, application Italy, Jan. 15, 1963, 909/63
4 Claims. (Cl. 23—121)

1. The method of producing potassium sulfate from final mother liquors (FML) of kainite $KCl \cdot MgSO_4 \cdot 3H_2O$ processing, obtained by leaching kainite, containing K^+, Na^+, MG^{++}, Cl^-, SO^{--} ions and having a Cl^- concentration higher than 160 g./liter, which comprises the steps of diluting said final mother liquors in aqueous mixtures of schoenite $K_2SO_4 \cdot MgSO_4 \cdot 6H_2O$, the resulting liquid phase having a chloride concentration less than 160 g./liter and an initial K_2O concentration at least 35 g./liter, adding gypsum $CaSO_4 \cdot 2H_2O$ in order to precipitate the potassium present in the form of syngenite $K_2SO_4 \cdot CaSO_4 \cdot H_2O$, separating and leaching said syngenite in order to recover solid gypsum and a solution of potassium sulfate.

3,348,914
PROCESS FOR RECOVERING OXIDES OF NITROGEN

Bernard Quanquin and Honoré Trumbach, Grand-Couronne, France, assignors to Potasse et Engrais Chimiques, Paris, France, a societe anonyme of France

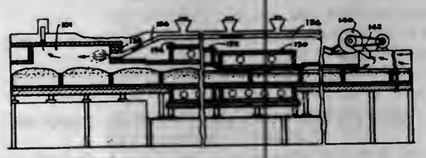
No Drawing. Filed Apr. 28, 1964, Ser. No. 363,266
Claims priority, application France, Jan. 21, 1964, 961,015, Patent 1,391,087
6 Claims. (Cl. 23—161)

1. A process for recovering oxides of nitrogen present in industrial gaseous effluents, and said nitrogen oxides having an average degree of oxidation at least equal to N_2O_3, comprising the steps of scrubbing said gaseous effluents with an aqueous suspension of calcium hydroxide in an amount effective to absorb said nitrogen oxides and form a solution containing less than about 65 grams per liter of nitrogen present as calcium nitrite and calcium nitrate, and adding at least 2 moles of sulfuric acid for every 3 moles of calcium nitrite in said solution whereby said nitrite is oxidized and nitric oxide is evolved.

3,348,915
METHOD FOR PRODUCING A CRYSTALLINE CARBIDE, BORIDE OR SILICIDE

George Robert Watson, Chippawa, Ontario, and Ben Matchen, Niagara Falls, Ontario, Canada, assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed Nov. 7, 1961, Ser. No. 152,125
3 Claims. (Cl. 23—204)



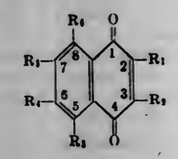
1. In a method for producing a crystalline metal boride from a mass of intimately mixed reactants comprising a metal oxide, a boron-containing compound and a solid carbon-containing material, said mass comprising a top portion and a portion subjacent thereto, the improvement comprising heating said mass in a first zone to a temperature sufficient to react said reactants in said top portion of the mass to produce said crystalline metal boride and to revolve gaseous carbon monoxide, continuing heating said mass in a second zone to a temperature sufficient to substantially complete the reaction of said reactants in said mass and to produce in said subjacent portion said crystalline metal boride and simultaneously evolving gaseous carbon monoxide which rises through said top portion of said mass to increase the crystal growth therein.

3,348,916
HYDROGEN PEROXIDE

William Reid Logan, Dunstable, and John Edwin Braid, Luton, England, assignors to Laporte Chemicals Limited, Luton, England, a British company

No Drawing. Filed Sept. 15, 1964, Ser. No. 396,747
Claims priority, application Great Britain, Sept. 18, 1963, 36,764/63
11 Claims. (Cl. 23—207)

1. A process for the production of hydrogen peroxide by subjecting a working solution comprising an organic solute in an organic solvent system to cycles of steps which include hydrogenation, oxidation, and extraction of the hydrogen peroxide formed by the oxidation; wherein the organic solute of the working solution is a member selected from the group consisting of naphthoquinones having the formula



in which R_1 and R_2, which may be different, are each alkyl of up to 9 carbon atoms, and R_3 to R_6 which may be different, are each selected from the group consisting of hydrogen and alkyl of up to 9 carbon atoms.

3,348,917
GLASS CONTAINING DISSOLVED CARBON, METHODS OF MAKING AND USING, AND OBTAINING GRAPHITE

Leonard R. Nestor, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 22, 1960, Ser. No. 44,818
11 Claims. (Cl. 23—209.1)

1. A liquid solution of elemental carbon in fused tricalcium aluminate.

6. Method of making clear transparent carbon-containing glass comprising heating together components consisting essentially of aluminum oxide and calcium oxide in approximately 1:3 molecular ratio to a temperature within the range of about 1620–1820° C. in contact with a source of elemental carbon and under a non-oxidizing atmosphere for a time sufficient to provide a liquid melt containing dissolved carbon, and then rapidly quenching said melt.

8. Method of making pure flake graphite comprising heating together components consisting essentially of aluminum oxide and calcium oxide in approximately 1:3 molecular ratio to a temperature of at least about 1620° C. in contact with a source of elemental carbon and under a non-oxidizing atmosphere for a time sufficient to provide a liquid melt containing at least about 3–4 percent of dissolved carbon, slowly cooling and solidifying said melt in the furnace atmosphere to permit in situ precipitation of flake graphite, and then separating said flake graphite from the surrounding acid-soluble magma.

9. Method of making a porous product comprising heating a body of tricalcium aluminate, containing in situ precipitated carbon intimately dispersed therein, in an oxidizing atmosphere for a time and at a temperature sufficient to oxidize and remove said carbon without melting said tricalcium aluminate.

11. Method of investigating thermal processing comprising subjecting to determinable thermal conditions a tell-tale comprising clear transparent tricalcium aluminate glass containing about 1–4 percent of dissolved carbon.

3,348,918
DIAMOND PURIFICATION

Jurgen M. Kruse, Pitman, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,654
6 Claims. (Cl. 23—209.9)

1. A process for selectively oxidizing the carbon in a carbon-diamond powder mixture which comprises contacting said mixture with a lead oxide and molecular oxygen at a temperature within the range of about from 250 to 500° C.

3,348,919
PROCESS FOR PRODUCING HYDROGEN FROM FINELY DIVIDED METALS AND WATER AT AMBIENT TEMPERATURES

Durland Karl Shumway, New Market, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,301
6 Claims. (Cl. 23—211)

1. In a method for producing and recovering hydrogen by the interaction of a finely divided metal selected from the group consisting of aluminum, zinc, iron and copper with liquid water, the improvement which comprises carrying out the said reaction with a catalytic amount of water-soluble alkali metal salt of a polyaminocarboxylic acid metal chelating agent dissolved in said water.

3,348,920
REAGENT AND METHOD FOR THE QUANTITATIVE DETERMINATION OF BILIRUBIN

Patrick V. Ferro, Miami, and Anna Bell Ham, Coral Gables, Fla., assignors to Dade Reagents, Inc., Miami, Fla., a corporation of Florida

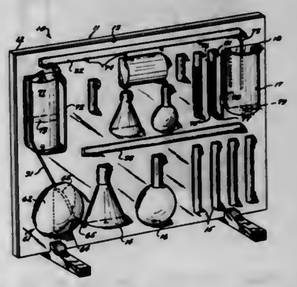
No Drawing. Filed Feb. 25, 1964, Ser. No. 347,121
17 Claims. (Cl. 23—230)

14. A method for quantitatively determining the bilirubin content of a sample comprising the steps of reacting said sample with a diagnostic reagent containing an acid capable of oxidizing bilirubin in the presence of ferric ions, a ferric ion catalyst, an alcohol, and a lipid solvent comprising an ethylene glycol derivative having one of the hydroxyl groups thereof etherified by a short chain alkyl group, to solubilize and oxidize all of said bilirubin; and thereafter colorimetrically analyzing the oxidized bilirubin solution to determine optically the bilirubin content thereof.

3,348,921
INTEGRATED CHEMICAL LABORATORY TOY

Miriam Katz and Jacob Katz, both of 2905 S. Sepulveda, Los Angeles, Calif. 90064

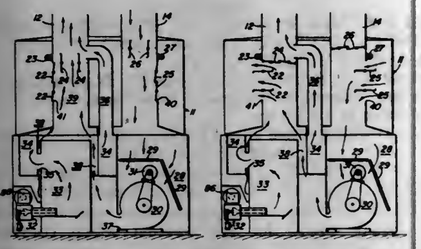
Filed Feb. 3, 1964, Ser. No. 342,215
11 Claims. (Cl. 23—259)



1. A chemical laboratory comprising: a support member; a plurality of protrusions extending outwardly from said support member and defining a plurality of discrete

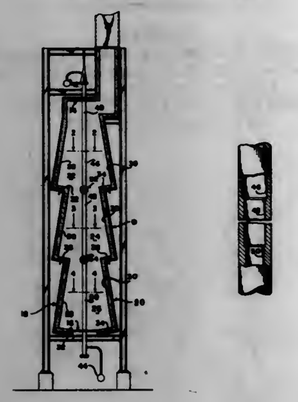
cavities each adapted to contain a fluid; and conduit means for interconnecting predetermined cavities to provide fluid communication therebetween.

3,348,922
CARBON DIOXIDE GENERATOR
Robert N. Bose and William I. Tibbitts, St. Joseph, and Rolf I. Ranum, Benton Harbor, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,148
9 Claims. (Cl. 23—281)



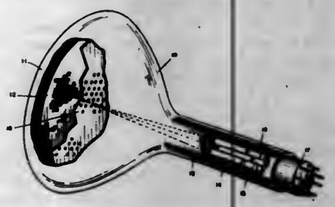
1. Apparatus for providing carbon dioxide rich gas to the atmosphere in a chamber, comprising: an enclosure; a burner in said enclosure for burning hydrocarbon fuel in the presence of air to provide said gas in a heated condition; first conduit means in said enclosure for flowing said gas from said burner into said chamber; second conduit means in said enclosure for flowing a gaseous component of said chamber atmosphere in heat exchange relationship with said heated gas prior to said gas entering said chamber; and movable valve means in said second conduit means for directing said component subsequent to said heat exchange flow selectively to said chamber or to a place of disposal to regulate the temperature in said chamber.

3,348,923
TUBE DESIGN FOR TERRACE WALL FURNACE
Kenneth D. Demarest, Mendham, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 491,971
6 Claims. (Cl. 23—288)



1. A primary reformer for use in the production of hydrogen and carbon monoxide mixtures comprising
a housing including opposite vertically oriented side walls each side wall defining at least two refractory faced planar surfaces one above the other;
inwardly oriented step means between the planar surfaces;
opposite planar surfaces being substantially coextensive with each other in a vertical direction so that the side walls and step means define at least two distinct heating chambers one above the other;
individually controlled heating means for each of said heating chambers;
a plurality of closely spaced parallel upright catalyst filled reaction tubes within said housing approximately midway between said side walls;
each of said tubes having a uniform outside diameter lengthwise thereof and opposed inlet and outlet ends;
said tubes also having a change in wall thickness along their lengths occurring substantially at the plane of said step means so that each tube defines at least two reaction zones one above the other, each reaction zone being substantially coextensive with a heating chamber;
the tube wall thickness being substantially uniform in each reaction zone, and greater in a reaction zone adjacent a tube outlet end than in a reaction zone adjacent a tube inlet end.

3,348,924
RECOVERING EXCESS VANADATE PHOSPHOR REMOVED FROM A CATHODOLUMINESCENT SCREEN
Albert K. Levine, Beechhurst, and Frank C. Palilla, Maspeth, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Original application May 28, 1964, Ser. No. 370,804, now Patent No. 3,243,625, dated Mar. 29, 1966. Divided and this application Mar. 25, 1966, Ser. No. 537,419
6 Claims. (Cl. 23—312)



1. In the manufacture of a cathode ray tube having a phosphor screen employing a red-emitting phosphor comprising a host crystal of a vanadate of a trivalent metal selected from the group consisting of yttrium, gadolinium and lutetium activated by a trivalent rare earth element selected from the group consisting of europium and samarium, a blue-emitting phosphor comprising silver activated zinc sulfide, and a green-emitting phosphor comprising silver activated zinc-cadmium sulfide, said red, blue and green-emitting phosphors being mixed with polyvinyl alcohol, the method of recovering said red-emitting phosphor from said blue and green-emitting sulfide phosphors comprising the steps of
(a) removing excess red, blue, and green phosphors and polyvinyl alcohol from the screen to form a mixture,
(b) separating the solid portion of said mixture of phosphor and polyvinyl alcohol from the rest of said mixture,
(c) heating said solid portion to approximately 450° C. for about one hour until substantially all of said polyvinyl alcohol is removed,
(d) treating the remaining mixture with a hot dilute mineral acid thereby selectively dissolving said blue-emitting and green-emitting phosphors while being substantially non-reactive with said red-emitting phosphor, and

(e) drying the recovered red-emitting phosphor, said recovered red-emitting phosphor having essentially the same luminescent properties as the original composition.

3,348,925
REFRACTORY COMPOUND AND METHOD OF PRODUCTION
Howard J. Bartlett, Niagara Falls, Ontario, Canada, assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
No Drawing. Filed July 27, 1964, Ser. No. 385,493
1 Claim. (Cl. 23—315)

Aluminum borocarbide, a compound of aluminum, boron, and carbon in equimolar proportions having the following *d* spacings and intensities as determined by powder X-ray diffraction:

d	I	*d*	I
7.93	*s*	1.665	*vw*
3.97	*m*	1.599	*vw*
3.14	*vw*	1.567	*w*
2.95	*m*	1.516	*mw*
2.89	*vs*	1.469	*mw*
2.642	*m*	1.432	*mw*
2.370	*s*	1.383	*mw*
2.160	*w*	1.336	*w*
2.080	*vw*	1.292	*s*
1.980	*ms*	1.207	*m*
1.799	*ms*	1.132	*vw*
1.702	*s*	1.113	*w*

3,348,926
STABLE PHOSPHONITRILIC POLYMERS
Erik R. Nielsen, Des Plaines, and William L. Stepp, Chicago, Ill., assignors to IIT Research Institute, a corporation of Illinois
No Drawing. Filed Aug. 3, 1961, Ser. No. 130,227
4 Claims. (Cl. 23—357)

1. A water stable polymeric compound having a molecular weight of greater than 500 comprising the reaction product of $(PNCl_2)_{3-11}$ with an alkali metal cyanide, said reaction product being produced in a water-free environment.

3,348,927
COMPOSITION AND PROCESS
Margot Becke, Heidelberg, Germany, assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Nov. 29, 1962, Ser. No. 241,026
3 Claims. (Cl. 23—357)

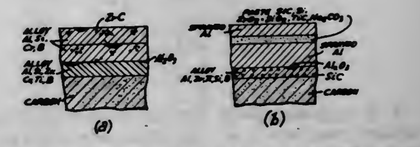
1. A composition of matter having the formula $P_3N_2SCl_7$, said $P_3N_2SCl_7$ prepared by the process of claim 2.

2. Method of preparing the compound of claim 1 which comprises reacting $P_4N_2Cl_{14}$ with at least 2 moles of hydrogen sulfide per mole of said $P_4N_2Cl_{14}$ and evaporating the reaction mixture under subatmospheric pressure to remove by-products and to recover the product.

3,348,928
PROCESS FOR PREPARING A BERYLLIUM BOROHYDRIDE
David B. Kellom and Carlos M. Bowman, Midland, Lz F. Lamoria, Bay City, and Buddy L. York, Akron, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 1, 1963, Ser. No. 292,167
3 Claims. (Cl. 23—361)

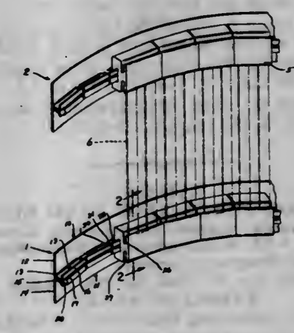
1. In a process for preparing beryllium borohydride by reacting a beryllium halide and sodium borohydride the improvement which comprises:
(a) utilizing beryllium chloride as the beryllium halide reactant and providing said beryllium chloride and sodium borohydride at $BeCl_2/NaBH_4$ gram mole proportions of from about 1 to 2/2,
(b) reacting the beryllium chloride-sodium borohydride mixture at a temperature of from about 50 to about 150° C. and a maximum pressure of about 10 millimeters mercury absolute for a period of from about 0.5 to about 2 hours, and
(c) recovering said beryllium borohydride.

3,348,929
PROTECTING CARBON MATERIALS FROM OXIDATION
Alexander Jordanov Valtschev and Temenushka Nikolova Valtscheva, Sofia, Bulgaria, assignors to Metalurgitschen Zavod "Lenin," Pernik, Bulgaria
Filed Jan. 30, 1963, Ser. No. 255,126
Claims priority, application Germany, Apr. 16, 1962, M 52,521; Japan, Sept. 28, 1962, 37/41,965
17 Claims. (Cl. 29—180)



1. An article of carbon, such as a graphite electrode, having an oxidation preventing coating of a material selected from the group consisting of
(a) aluminum alloys, wherein the alloying component is selected from the group consisting of boron, silicon, titanium, zirconium, chromium and molybdenum;
(b) high-melting carbides and nitrides selected from the group consisting of boric carbide, silicon carbide, titanium carbide, zirconium carbide, chromium carbide, molybdenum carbide, tiitanium nitride and zirconium nitride; and
(c) bialuminum trioxide,
said coating consisting of at least one layer formed on the carbon article by first applying the coating forming material to the carbon article and thereafter electric arc treating the material to a temperature above 2,000° C. for less than half a second without substantially heating the carbon article proper.

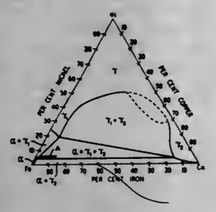
3,348,930
SUPPORT FOR REFRACTORY BLOCKS
George E. Fisher, Cherry Lane, Ambler, Pa. 19002
Filed May 6, 1965, Ser. No. 453,779
8 Claims. (Cl. 29—183)



1. A support for refractory blocks comprising: a pair of meal strips each having integral leg and foot sections, the strips being butted together with the respective leg

sections lying in a common plane and with the respective foot sections engaging one another and means fixedly connecting the strips together.

3,348,931
MEMORY ELEMENT WITH A MAGNETICALLY ISOTROPIC IRON-NICKEL-COPPER ALLOY
John P. Reekstin, Jr., Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 14, 1964, Ser. No. 418,094
6 Claims. (Cl. 29—183.5)



5. A magnetic overlay for a cubic waffle-iron memory element comprising a 40 mil copper substrate, a gold film approximately one micron in thickness covering said copper substrate, and a magnetic film approximately 0.7 micron covering said gold film, said magnetic film having the approximate composition:

	Percent
Fe	84
Ni	5
Cu	11

3,348,932
ADDITIVE COMPOSITIONS TO IMPROVE BURNING PROPERTIES OF LIQUID AND SOLID
Ira Kukin, West Orange, N.J., assignor to Apollo Chemical Corp., Clifton, N.J., a corporation of New York
No Drawing. Filed Aug. 21, 1964, Ser. No. 391,303
9 Claims (Cl 44—4)

1. A fuel additive composition to improve the combustion of the fuel by reducing soot, consisting essentially of the addition to an amount of 1,000 gallons or its equivalent of the fuel of the admixture combination of:

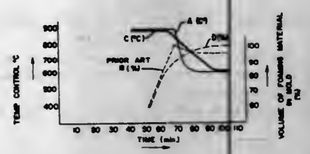
(A) Metal selected from the group consisting of iron, manganese and copper, and

(B) Metal selected from th group consisting of lead, cobalt, nickel, zinc, chromium, antimony, tin and vanadium,

the metal concentration in the composition of the metal of group A being less than the metal concentration of the metal of group B, and in the following amounts, proportions and relative proportions in said stated amount of the fuel: the metal concentration of the metal of group A being in the range of from 2×10^{-5} to 1.35 moles of the metal, and the metal concentration of the metal of group B being in the range of from 0.001 to 2.5 moles of the metal.

3,348,933
METHOD FOR MAKING FOAM GLASS
Ernst Otto Schulz, Neuhaus am Rennweg, Germany, assignor to VEB Schaumglaswerk Taubenbach, Kreis Neuhaus am Rennweg, Germany
Filed Apr. 29, 1964, Ser. No. 364,066
4 Claims. (Cl. 65—22)

1. A method of making foam glass in a mold, comprising the steps of: mixing finely-divided glass and a gas-producing foaming agent; heating the mixture in a mold to foaming reaction temperature; discontinuing the heating at a point where the mold is not completely filled; initiating slow cooling of the foaming mass; continuing gas production within the foaming mass, to cause the foaming mass to increase in volume during said cooling;



and completing the slow cooling process to reach the temperature at which flow of the foaming mass is substantially stabilized approximately coincident with the complete filling of the mold by the foamed mass.

3,348,934
METHOD OF TREATING THE SURFACES OF GLASS CONTAINERS
Arthur L. Hinson, Mauricetown, and Dudley C. Smith, Millville, N.J., assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 23, 1964, Ser. No. 420,619
6 Claims. (Cl. 65—30)

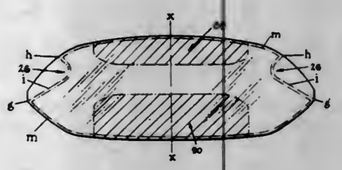
1. A method of treating a surface portion of a glass article, having surface alkalinity, to provide said surface portion with reduced alkalinity and free of water marks of insoluble deposits which comprises the steps of:

(1) converting nongaseous SO_3 to the gaseous state;

(2) contacting said surface portion at an elevated temperature with said gaseous SO_3 to obtain a white bloom on said surface portion; and

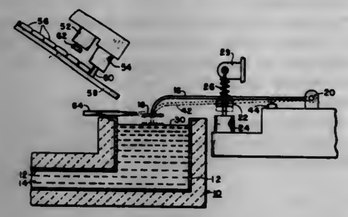
(3) water washing said surface portion to remove the white bloom.

3,348,935
METHOD FOR BENDING GLASS SHEET TO A COMPLEX CURVATURE
Frank J. Carson and Herbert A. Lefler, Jr., Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Aug. 11, 1955, Ser. No. 527,726
8 Claims. (Cl. 65—103)



2. A method of bending a glass sheet to a complex curvature including bends about both the transverse and longitudinal axes of said sheet, comprising heating the sheet to sagging temperature and bending the marginal edge portion of said sheet into conformity with the shaping surface of a concavely curved mold, and after the sheet contacts the mold shaping surface retarding the heating of a sheet portion spaced inwardly of one of the longitudinal edges of the sheet, and concentrating radiant heat on a longitudinally extending area of the sheet between the sheet area having the heating thereof retarded and the one longitudinal sheet edge while continuing to heat said sheet to cause the sheet to sag downwardly inwardly of the marginal edge portions thereof.

3,348,936
AUTOMATIC MOLTEN GLASS LEVEL CONTROL APPARATUS
Forest P. Clark and Robert T. Gladwell, Jr., Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 29, 1963, Ser. No. 305,310
10 Claims. (Cl. 65—160)



10. An apparatus for controlling the level of molten material in a container comprising

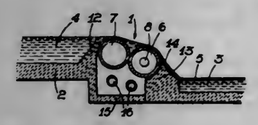
(a) a float type level sensing member,

(b) means for causing the level sensing portion of said member to lower toward the surface of said molten material at periodic intervals in accordance with a predetermined schedule,

(c) raw material feeding means,

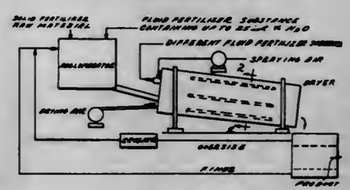
(d) means operatively associated with said member and responsive solely thereto for providing a source of electrical energy to said raw material feeding means when said sensing portion lowers to a predetermined level whereby a predetermined amount of raw material is fed by said feeding means to said container to raise the level of said molten material.

3,348,937
SPOUT FOR THE DISCHARGE OF MOLTEN GLASS
Emile Plumat, Gilly, Belgium, assignor to Glaverbel, Brussels, Belgium, a Belgian company
Filed Sept. 5, 1963, Ser. No. 306,867
Claims priority, application Luxembourg, Sept. 29, 1962, 42,438
8 Claims. (Cl. 65—333)



1. Apparatus for forming sheet glass, comprising a container for a bath of molten glass having a sheet forming spout through which the molten glass is discharged from the bath to a lower level below the surface level of the bath, said sheet forming spout including transversely extending elongated means forming a barrier to the flow of the molten glass through the spout and having a first glass sheet forming surface constituting a crest over which the molten glass flows from the bath to said lower level, a second inclined fixed glass sheet forming surface located between said first sheet forming surface and said lower level and forming a continuation of said first sheet forming surface, means for adjustably moving said elongated means to enable said first surface thereof to be displaced relative to said second fixed surface to modify the level of the crest formed by said first surface, and a pair of spaced fixed transverse portions disposed upstream and downstream of said elongated means, said elongated means spanning the space between said fixed transverse portions and the latter having opposed surfaces formed to remain in coactable fluid-tight sealing relation with exterior surface portions of said elongated means during the adjusting movements of said elongated means therebetween, said second inclined fixed sheet forming surface being provided on said downstream fixed transverse portion.

3,348,938
PROCESS FOR PRODUCING GRANULAR MIXED FERTILIZER
Peter John Sherrington, Peter Waterhouse, and Daniel John Howard Jones, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Apr. 15, 1964, Ser. No. 364,330
3 Claims. (Cl. 71—28)

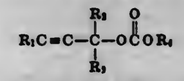


1. A continuous two-step process for producing granular mixed fertilizer comprising: continuously introducing into an agglomerating zone finely divided recycled product obtained as hereinafter described and a fertilizer substance containing up to 25% water by weight; agitating the recycled product and fertilizer substance in the agglomerating zone to agglomerate the same into granules having low water content; continuously removing the granules from the agglomerating zone and continuously transferring them to a coating zone; coating and drying the granules in the coating zone without effecting further agglomeration by cascading them through a stream of hot gas and by simultaneously spraying them with a liquid fertilizer substance of different composition from the granules to thereby form enlarged granules substantially free of moisture; continuously removing the enlarged granules; sieving the removed granules to obtain a product of desired grading; and recycling to the agglomerating zone the undersize and crushed oversize particles.

2. Process as in claim 1 wherein said first fertilizer substance contains from 0.5 % to 10% by weight of water and comprises a fertilizer substance selected from the group consisting of ammonium nitrate and urea.

3,348,939
PROCESS FOR KILLING GROWING PLANTS
Delta W. Gier, Parkville, Mo., assignor to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed May 18, 1964, Ser. No. 368,348
6 Claims. (Cl. 71—79)

1. A process of killing growing plants comprising applying to the growing plants a herbicidally effective amount of an acetylenic carbonate having the formula



where R_1 is selected from the group consisting of hydrogen, lower alkyl, phenyl and tolyl; R_2 is selected from the group consisting of lower alkyl, lower alkenyl, phenyl, methylphenyl and chlorophenyl; R_3 is selected from the group consisting of lower alkyl, phenyl and R_4 is selected from the group consisting of lower alkyl, lower alkenyl,

aryl of the phenyl series, chlorophenyl, cyclohexyl, furfuryl and tetrahydrofurfuryl.

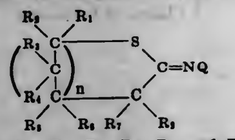
3,348,940
HERBICIDAL AND INSECTICIDAL COMPOSITION

Roger Williams Addor, Pennington N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Dec. 5, 1963, Ser. No. 328,204, now Patent No. 3,318,910, dated May 9, 1967. Divided and this application Jan. 31, 1967, Ser. No. 612,818

6 Claims. (Cl. 71—90)

1. An insecticidal and herbicidal composition consisting essentially of an inert carrier and an effective amount of a compound of the formula:



wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7 and R_8 are each a substituent selected from the class consisting of hydrogen and lower alkyl; n is an integer from 0 to 1; and Q is a substituent selected from the group consisting of H_2X and $—PZ(OR_{10})_2$, in which X is a halogen atom, Z is a substituent selected from the group consisting of oxygen and sulfur, and R_{10} stands for lower alkyl.

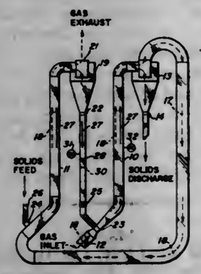
3,348,941
PRESSURE BALANCING METHOD

Richard E. King, Duluth, Minn., assignor of one-half to Northern Natural Gas Company, Omaha, Nebr., a corporation of Delaware, and one-half to W. S. Moore Company, Duluth, Minn., a corporation of Minnesota

Filed Sept. 15, 1964, Ser. No. 396,603

The portion of the term of the patent subsequent to Mar. 22, 1983, has been disclaimed

3 Claims. (Cl. 75—26)



1. A pressure balancing method for use in conjunction with an apparatus including a first riser, a second riser, a first gas-solids separator at the top of the first riser, a second gas-solids separator at the top of the second riser, means communicating the top of the first separator with the bottom of the second riser, a conduit extending downwardly from the second separator toward the bottom of the first riser and means defining a junction for the bottom of the downwardly extending conduit and the bottom of the first riser; said method comprising the steps of:

introducing gas into said junction for movement along an enclosed gas path defined by said first riser, said first separator, said communicating means and said second riser, into said second separator, whereby said gas undergoes a pressure drop as it moves along said path;

exhausting said gas from said second separator;

and providing a pressure drop, at said junction, equal to the pressure drop resulting from movement of said gas along said enclosed gas path, whereby movement of gas through said downwardly extending conduit is prevented;

said last-recited step including utilizing the movement of said gas through said junction to provide said pressure drop;

and measuring the temperature in said first riser and in said downwardly extending conduit to provide an indication of gas movement upwardly through the downwardly extending conduit;

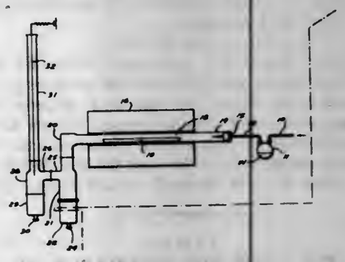
and when said temperature measurement indicates an upward movement of gas in said downwardly extending conduit, adjusting the pressure drop at said junction to prevent said upward movement of gas.

3,348,942
RECOVERY OF RHENIUM VALUES

William H. Davenport, Woodbury, Conn., assignor to Chase Brass and Copper Co. Inc., Cleveland, Ohio, a corporation of Ohio

Filed Mar. 8, 1965, Ser. No. 437,774

15 Claims. (Cl. 75—82)



11. A process for recovering rhenium values from a rhenium-containing material that also contains other metal values, and from which the rhenium can be substantially completely converted to a volatile rhenium oxide by direct oxidation, comprising:

contacting said material in a reaction zone with a gaseous stream furnishing oxygen and water vapor, at an elevated temperature at which rhenium and other metal values in the material are oxidized and evolve as oxides into the gas stream;

continuously sweeping said gas stream from the reaction zone into a recovery zone, to carry the evolved rhenium and other metal oxide into the recovery zone;

condensing the water vapor in the recovery zone to wet and to carry down the oxides;

recovering a solution containing rhenium values from the recovery zone;

converting said solution to ammonium perrhenate, and then

separating and recovering the rhenium values from said solution.

3,348,943
REFRACTORY METAL DISPERSION

Bernard D. Pollock, Los Angeles, Calif., assignor, by mesne assignments, to the United States of America as respresented by the United States Atomic Energy Commission

Filed Aug. 27, 1965, Ser. No. 483,367

6 Claims. (Cl. 75—204)

1. The method for preparing a fine dispersion of particles of a refractory metal selected from the class consisting of tungsten, molybdenum, chromium and rhenium

substantially insoluble in a solid substrate body of a material selected from the class consisting of carbides, nitrides, and oxides of the metals of the actinide series suitable for zone-melting treatment comprising providing said refractory metal in contact with said solid body, traversing said body with a source of heat to establish a moving molten zone therein, whereby said refractory metal in contact with said molten zone becomes merged therewith, and cooling said body to provide a fine dispersion of particles of submicron size of said refractory metal in said body.

3,348,944
PHOTOENGRAVING RESIST

Michael Michalchik, Bethpage, N.Y., assignor to Fairchild Camera & Instrument Corporation, Syosset, N.Y., a corporation of New York

No Drawing. Filed July 17, 1963, Ser. No. 295,798

7 Claims. (Cl. 96—1.8)

1. In a recording element comprising a photoconductive layer deposited on a metal base, said layer comprising photoconductive zinc oxide suspended in an insulating film formed from a hydroxylated silicone resin, the improvement which comprises the presence in said silicone resin film of a substance selected from the group consisting of alkoxy phenyl silanes and alkoxy phenyl siloxanes, the alkoxy group of said silane and siloxane containing up to four carbon atoms in such amount that the alkoxy content of the film is from about 0.3% to about 2% by weight.

3,348,945
HEAT DEVELOPABLE LIGHT-SENSITIVE PHOTOGRAPHIC MATERIAL

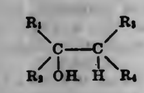
Helmut Mäder and Hans Ulrich, Leverkusen, Walter Püschel, Koeln-Stammheim, and Anita von König, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 4, 1964, Ser. No. 342,528

Claims priority, application Germany, Feb. 18, 1963, A 42,356, Patent 1,174,159

7 Claims. (Cl. 96—29)

1. In a heat developable photographic material comprising a support bearing a light sensitive silver halide emulsion layer and containing a silver halide developing substance, the improvement according to which the material also carries a compound of the following general formula



wherein

R_1 and R_3 represent a member of the group consisting of hydrogen atoms, an alkyl and an aryl radical,

R_2 represents a member of the group consisting of an aryl and a heterocyclic radical,

R_1 and R_2 together may represent the ring members forming a cyclohexyl ring, and

R_4 represents a nitrile or nitro group.

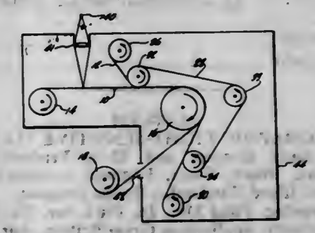
7. A process of producing photographic transfer images which comprises exposing to a subject to be reproduced a photographic material as claimed in claim 1, subjecting the exposed material to heat while it is in contact with a non-light sensitive transfer material to develop a silver image in said exposed material, to transfer developer substance from the unexposed areas of said exposed materials to the transfer layer and to produce a visible image in said transfer material by the action of said transferred developer substance.

3,348,946
NON-AQUEOUS SILVER HALIDE PHOTOGRAPHIC EMULSION PROCESSING

Viron V. Jones, San Dimas, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed July 20, 1964, Ser. No. 383,580

18 Claims. (Cl. 96—29)



1. A non-aqueous process for developing and stabilizing a photographic image comprising the steps of:

exposing a low speed photosensitive silver halide emulsion disposed on a sheet to light for the formation of a latent image,

applying a developing agent to the exposed emulsion to render the latent image visible and thereafter,

processing the emulsion by applying a mixture of a polyhydric alcohol and a stabilizing agent selected from the group consisting of potassium thiosulfate, potassium thiocyanate, benzene thiosulfonate salts, thioglycerol, thiourea and salts of mercaptoacetic acid to the developed emulsion to stabilize the image recorded therein.

3,348,947
DIAZO PRINT PROCESS

Charles A. Girard, Lexington, and Francis R. Clarke, Nicholasville, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,356

23 Claims. (Cl. 96—49)

1. A process for the development of a visual image by the chemical reaction of a light-sensitive diazonium compound and an azo dye coupler, in an alkaline medium, comprising exposing a material sensitized with a two-component diazonium coating to light under a positive, contacting said light-exposed two-component diazotype material with an amine oxide, and thereafter heating said material to produce alkaline vapors whereby an image develops on the unexposed areas of said light-exposed two-component diazotype material.

3,348,948
PRESENSITIZED DEEP ETCH LITHOGRAHIC PLATES

Robert F. Leonard, East Rockaway, and Madeline Beckett, Hempstead, N.Y., assignors to Litho Chemical & Supply Co., Inc., Lynbrook, N.Y., a corporation of New York

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,219

12 Claims. (Cl. 96—75)

1. A presensitized deep etch lithographic plate which retains its photographic sensitivity when stored for a prolonged period of time, comprising a metal plate having on at least one surface thereof a coating of a diazido-

polyvinylpyrrolidone sensitizer composed of the following constituents in the following amounts with in a ±10% tolerance:

	Percent
Water (distilled)	93.19
Polyvinylpyrrolidone K–90	4.47
Polyacrylic acid (M.W. 95,000)	0.51
Tannic acid	0.25
Sodium salt of 4,4'-diazidostilbene-2,2'-disulfonic acid	0.99
Sodium azide	0.33
Wetting agent	0.25

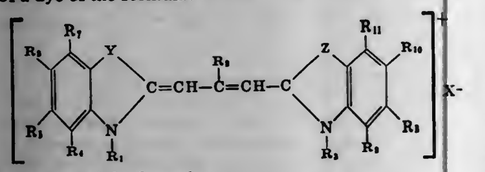
3,348,949

PHOTOGRAPHIC LIGHT-SENSITIVE MATERIALS

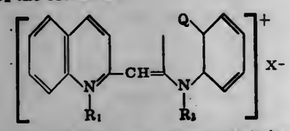
Konrad Jerzy Bannert and Elvin Frederick William Thurston, Ilford, Essex, England, assignors to Ilford Limited, Ilford, England, a British company

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,328
Claims priority, application Great Britain, Apr. 19, 1963, 15,581/63; June 24, 1963, 25,066/63
4 Claims. (Cl. 96—104)

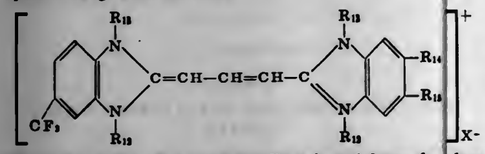
1. A photographic silver halide emulsion which contains a sensitising dye selected from the class consisting of a dye of the formula:



and a dye of the formula:



where Y is selected from the class consisting of oxygen, sulphur and selenium atom, Z is selected from the class consisting of sulphur and selenium, Q is selected from the class consisting of sulphur and a —CH=CH— group, R_1 and R_3 are each selected from the class consisting of alkyl and carbamoylethyl, R_2 is an alkyl group, R_5 and R_6 and R_9 and R_{10}, taken singly are each selected from the class consisting of hydrogen, halogen, alkyl, aryl and alkoxy, and taken in pairs of vicinal groups are methylenedioxy, R_4 and R_8 taken singly each represent a hydrogen atom and taken together with R_5 and R_9 form part of a benzene ring, R_7 and R_{11} taken singly represent a hydrogen atom and taken together with R_6 and R_{10} form part of a benzene ring, and X is an anion, together with a benzimidazole dye selected from the class consisting of dyes of the general formula:



where the groups R_{12} are severally selected from the class consisting of alkyl, aralkyl, hydroxyalkyl and sulphoalkyl of the formula $HO_3S—(CH_2)_n—$ where n is an integer from 1 to 6, the groups R_{13} are severally selected from the class consisting of alkyl, aralkyl and aryl, R_{14} is selected from the class consisting of hydrogen and halogen and R_{15} is selected from the class consisting of hydrogen, halogen and, where R_{14} is hydrogen, trifluoromethyl, and X is an anion, and corresponding anhydro dyes where R_{12} is sulphoalkyl and in which X is a hydroxy group.

3,348,950

SNACK PRODUCT AND PROCESS

Verne E. Weiss, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

Filed June 25, 1964, Ser. No. 377,858
18 Claims. (Cl. 99—80)

1. A process for making a food product, said process comprising:

(a) cooking a mixture of corn, sucrose, water and a flavor developing ingredient selected from the group consisting of $NaHCO_3$, $KHCO_3$, K_2CO_3, Na_2CO_3, Na_3PO_4 and mixtures thereof, to form a workable gelatinized dough, the moisture content of said dough being at least 30%,

(b) shaping said dough into a desired configuration,

(c) drying said dough to a temperature suitable for frying and to a moisture content ranging from about 9–16%, and

(d) frying said dough, the ratio of sucrose to corn being from about one-half pound to two pounds of sucrose per 25 pounds of corn.

3,348,951

PROCESS FOR PREPARING BAKED, STARCH-REDUCED PRODUCTS

Cyril Harry Evans, Cambridge, England, assignor to Spillers Limited, London, England

No Drawing. Filed Mar. 1, 1966, Ser. No. 530,805
Claims priority, application Great Britain, July 21, 1962, 28,159/62
20 Claims. (Cl. 99—86)

1. A process for preparing baked starch-reduced dietetic products comprising the steps of forming a dough from wheat protein, at least one starch replacement ingredient selected from the group consisting of cooked wheat germ, wheat bran, protein of soya beans, protein of ground nuts, protein of milk, and enzyme inactivated full fat soya flour, at least one texturizing agent selected from the group consisting of lecithin, sodium caseinate, and calcium caseinate, yeast, and water, the dry ingredients of said dough comprising about 18% dry gluten by weight, promoting fermentation with said yeast so as to produce a risen dough, and thereafter baking said dough for a period of time sufficient to produce a moist baked product.

3,348,952

ENHANCING FLAVOUR OF FOODS USING FLAVOURING ENZYME PRODUCED BY A MICROORGANISM OF THE GENUS TRAMETES

Shiro Hori and Hirao Shimazono, Tokyo, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed May 6, 1964, Ser. No. 365,482
Claims priority, application Japan, May 8, 1963, 38/24,635
17 Claims. (Cl. 99—116)

1. In a process for the manufacture of a dairy product wherein an initial dairy material selected from the group consisting of milk and milk products is converted to the said dairy product, the improvement according to which the conversion is effected in the presence, in the material being converted, of flavouring enzyme produced by a microorganism of the genus Trametes.

3,348,953

DESSERT PRODUCT

Edward M. Brooks, Arleta, Calif., assignor to Carnation Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Aug. 4, 1965, Ser. No. 477,310
5 Claims. (Cl. 99—139)

1. A frozen, baked custard comprising in combination a mixture of water, egg solids, milk solids, and more than 17% of saccharide and at least about 0.2% of gelatin.

3,348,954

PROCESS FOR PREPARING MEAT FLAVOR AND AROMA COMPOSITIONS

Julius Green, New City, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,780
10 Claims. (Cl. 99—140)

1. A process for preparing a water-dispersible roast meat flavor and aroma composition of high concentration and strength which comprises liquefying meat by heating said meat in the presence of moisture at temperatures above about 330° F. and autogenous pressures to hydrolyze the meat protein to an extent whereat visible discrete meat fibers substantially disappear and said roast meat flavor and aroma is developed throughout the liquefied meat and thereafter immediately cooling said liquefied meat to a temperature less than the atmospheric boiling point of the liquefied meat.

3,348,955

PROCESS FOR STABILIZING STERILIZED MILK

Aubrey P. Stewart, Jr., Corning, Iowa, assignor to Nodaway Valley Foods, Inc., a corporation of Iowa

No Drawing. Filed Sept. 14, 1966, Ser. No. 579,212
2 Claims. (Cl. 99—151)

1. The method for stabilizing short-time high-temperature sterilized evaporated milk against age-thickening which comprises, cooling the sterilized evaporated milk, sterilizing in the absence of heat a polyphosphate of the class consisting of sodium, potassium and ammonium polyphosphates, adding to the cooled sterile milk said polyphosphate in the proportion of from .02 percent to .10 percent by weight of the milk solids.

3,348,956

REFRACTORY FIBER COMPOSITION

Wendell Graydon Ekdahl, Martinsville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,820
4 Claims. (Cl. 106—65)

1. An inorganic refractory fiber composition of high temperature stability and improved fiberizing characteristics formed by melting and fiberizing a batch of ingredients providing a formulation consisting essentially, in approximate percentage by weight, of:

	Percent
Silica	44–60
Alumina	35–55
Manganese dioxide	0.1–2.0

3,348,957

PROCESS FOR MANUFACTURING CLAY PRODUCTS

Asoke Chandra Das Chaklader, Vancouver, British Columbia, Canada, and Lawrence G. McKenzie, Spokane, Wash., assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed Oct. 8, 1964, Ser. No. 402,654
9 Claims. (Cl. 106—67)

1. A process for manufacturing clay products comprising heating a formed composition containing at least a substantial proportion of natural, non-calcined clay to a temperature sufficient to cause at least some dehydroxylation of said clay to occur, said temperature being less than 1000° C., and applying pressure to said composition while dehydroxylation of said clay is occurring.

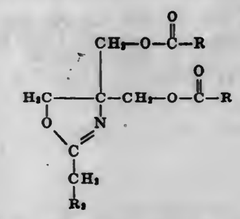
3,348,958

ETHYL CELLULOSE COMPOSITIONS

Lloyd E. Cockerham and Robert F. Purcell, Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Nov. 17, 1965, Ser. No. 508,367
4 Claims. (Cl. 106—176)

1. A plasticized ethyl cellulose composition from which films may be prepared comprising ethyl cellulose and an amount of an oxazoline of the formula



wherein R is an alkyl or an alkenyl radical containing from 8 to 24 carbon atoms and wherein R^2 is an alkyl or an alkenyl radical containing from 7 to 23 carbon atoms wherein when the ethyl cellulose is of viscosity grade 10 the oxazoline is present in the range of 1–50% by weight based on weight of the ethyl cellulose and wherein when the ethyl cellulose is of viscosity grade 100 or grade 200 the oxazoline is in an amount in the range of 1 to 50% by weight based on weight of ethyl cellulose.

3,348,959

PROCESS FOR PREPARING SURFACE-TREATED PIGMENTS

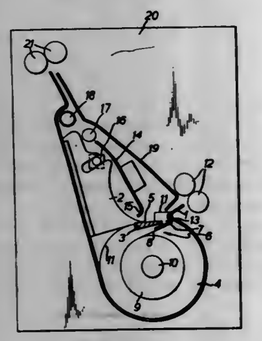
Lajos Csonka, 14 Pazsit utca; János Szerecz, 35a Csalan utca; and Jenö Gönczy, 34 Csalan utca, all of Budapest, Hungary

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,561
Claims priority, application Hungary, Jan. 2, 1963, CO–152
2 Claims. (Cl. 106—308)

1. A process for treating pigments to impart to them improved dispersibility in organic solvents, lacquers and synthetic materials, said pigments having positive surface charges when dispersed in water, which comprises forming in an aqueous medium a dispersion of the pigment to be treated, then incorporating into said dispersion a 1 to 5% aqueous solution of 0.1 to 30% by weight, based on the pigment weight, of a first member selected from the group consisting of alkali and ammonium salts of saturated, unsaturated and polymerized aliphatic, arylated aliphatic, aromatic and hydroaromatic carboxylic acids containing at least 6 carbon atoms, alkyl- aryl- and mixed alkyl-aryl sulfonates, sulfates, phosphates and polyphosphates, the condensation products of alkyloxy-, aryloxy- and amino-sulfonic acids with fatty acids containing from 8 to 18 carbon atoms, the sulfonated derivatives of condensation products of fatty acids containing from 8 to 18 carbon atoms with aromatic diamines, the semiesters and N-alkylsemiamide derivatives of aliphatic, arylated aliphatic, aromatic and hydroaromatic polycarboxylic acids, alkoxo acids of alkyl borates, and mixtures thereof, incorporating into said dispersion a 0.1 to 2 N aqueous solution containing 0.05 to 5% by weight, based on the pigment weight of a second member selected from the group consisting of boric acid, alkali borates, alkali stannates, alkali antimonites, alkali antimonates, alkali arsenites, alkali arsenates, alkali aluminates, alkali zincates, alkali plumbites, alkali chromites, and mixtures thereof, incorporating into said dispersion a 0.1 to 2 N aqueous solution of 1 to 2 equivalents, based on the amount of said second member, of salts soluble in water of cations selected from the group consisting of lead, mercury, copper, cadmium, divalent tin, cobalt, nickel, divalent iron,

zinc, manganese, magnesium, calcium, strontium, barium, trivalent iron, chromium, aluminum, tetravalent tin, titanium and mixtures thereof, and thereafter separating the pigment from said aqueous medium.

3,348,960
POWDER APPLICATION
Paul Gilbert, 41 Woodbrooke Way, Corringham, England, and Ronald Watson, 122 Brownspring Drive, London SE. 9, England
Filed Feb. 17, 1966, Ser. No. 528,141
Claims priority, application Great Britain, Feb. 17, 1965, 6,920/65
12 Claims. (Cl. 117—17.5)

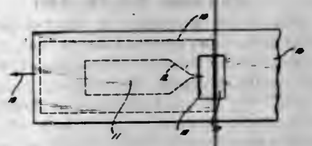


1. In apparatus adapted to supply powder to separate sheets and comprised of guide means definitive of a predetermined feed path for said sheets and disposed on the underside of said path to support sheets fed therethrough, said apparatus having an upward-facing surface on the underside of said path and adapted to hold powder in the way of movement of a sheet in said path, and said sheets being relatively moved in time succession in said path and over said surface to pick up powder on the upper side of each sheet, the improvement comprising, a platform providing such surface, a powder reservoir below said platform and having a substantially greater storage capacity for powder than said surface, means to transfer powder from said reservoir to said surface, said transfer means being a repetitive supplier of new accumulations of powder on said surface so as to form a succession of fresh piles of powder of which each is presented to a respective one of said sheets moving successively in said path and means rendering said guide means apertured so as to allow surplus powder to fall back into said reservoir.

3,348,961
PROCESS FOR THE FABRICATION OF IMPROVED FLUORESCENT LAMPS
Richard C. Ropp, Towanda, Pa., and Robert F. Quirk, Danvers, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
No Drawing. Filed Jan. 2, 1963, Ser. No. 248,852
1 Claim. (Cl. 117—33.5)

In the process for fabricating a fluorescent lamp the steps which comprise: heating a zinc silicate fluorescent phosphor activated by manganese to a temperature between about 1850 to 2400° F. and then cooling to form a thermally treated phosphor; forming coating suspension by mixing said thermally treated phosphor, a lacquer vehicle and 0.2 to 0.7 percent by weight of the thermally treated phosphor of antimony oxides; and coating said suspension on a fluorescent lamp envelope.

3,348,962
METHOD AND APPARATUS FOR PREPARING SINGLE CRYSTAL THIN FILMS
Jack J. Grossman, Santa Monica, and Morris Braunstein, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,449
2 Claims. (Cl. 117—48)



1. A method for preparing single crystal thin films which comprises the steps of placing a fixed mask having an elongate opening therethrough including a tapered portion with an acute angle upon a suitable substrate, placing a movable mask having an opening therethrough over the fixed mask so that only the acute angle of the opening of the fixed mask is exposed, vapor depositing crystalline material upon the acute angle-exposed portion of the substrate, and continuously moving the movable mask relative to the fixed mask to gradually expose more of the substrate while continuously vapor depositing crystalline material upon the exposed substrate and resulting deposited crystalline material.

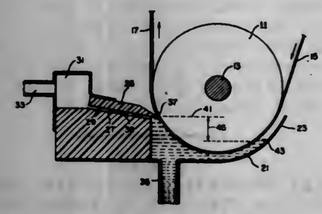
3,348,963
METHOD OF PRODUCING GAS-PERMEABLE ELASTIC POLYURETHANE FILMS
Osamu Fukushima, Kazuo Noda, and Tamon Kishida, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki, Japan
No Drawing. Filed Oct. 13, 1965, Ser. No. 495,682
Claims priority, application Japan, Nov. 14, 1964, 39/64,455
7 Claims. (Cl. 117—63)

1. The method of producing gas-permeable films and coatings which comprises forming a polyurethane elastomer by reacting a polyglycol of a mean molecular weight of about 500–5000 selected from the group consisting of polyester glycol, polyether glycol, polyether ester glycol and mixtures thereof, an organic diisocyanate, and a polyfunctional chain extender selected from the group consisting of diamines and diols; said polyglycol, diisocyanate and extender being combined in a proportion such that the combined number of OH groups of said polyglycol and said extender are approximately the same as the number of NCO groups of said diisocyanate; dissolving said polyurethane elastomer in a solvent to form a solution; adding an alkyl alcohol having from 8 to 30 carbon atoms to said solution in an amount from 0.1 to 20% based upon the weight of said polyurethane elastomer; coating said solution onto a flat substrate; wet coagulating said resultant coating with a liquid which is a non-solvent for said polyurethane elastomer and is miscible with said solvent; washing with water to remove the solvent; and drying.

3,348,964
IMMERSION COATING OF STRIP MATERIAL
Paul J. Good, Springwater, N.Y., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 1, 1964, Ser. No. 364,140
8 Claims. (Cl. 117—69)

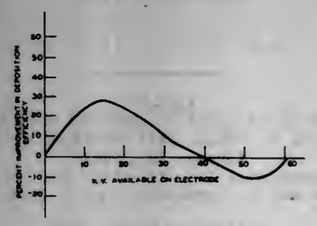
1. The method of applying a liquid coating of uniform and controllable thickness to a moving web of sheet material, which comprises the steps of providing a bath of the coating liquid, moving a web through a path in which

one face of the web enters the bath and then exits from the bath in an upward direction, forming a meniscus of the coating liquid against said face of the web at the point where said face of the moving web exits from the bath, and subjecting the meniscus to downward force of variable amount varying in accordance with the liquid level of one portion of the bath, so arranged that when said



liquid level drops, greater downward force is applied to the meniscus to reduce the quantity of coating liquid carried upwardly from the bath past the meniscus by the upwardly moving web, and when said level rises, lesser downward force is applied to the meniscus to allow a greater quantity of coating liquid to be carried upwardly from the bath past the meniscus by the upwardly moving web.

3,348,965
ELECTROSTATIC SPRAYING
Edward W. Drum, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana
Filed Feb. 4, 1964, Ser. No. 342,488
7 Claims. (Cl. 117—93.4)



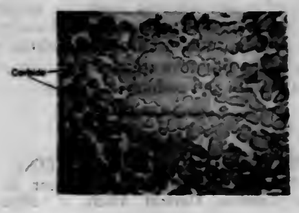
1. In a coating process in which a liquid organic solvent-based paint is mechanically atomized to form spray particles and in which the material being sprayed is in a state of high spatial concentration when passed through a zone in which the atmospheric ions are in a state of high spatial concentration to cause the spray particles to become electrostatically charged to thereby improve the efficiency of deposition of the paint being sprayed upon a target, said paint containing electrically conductive metallic particles dispersed in an organic solvent-based liquid continuum and said particles tending to become oriented to cause the electrostatic potential generating said atmospheric ions to "short out" through the paint and the electrostatic potential used being sufficient to "short out" through said paint, the improvement which comprises incorporating in said liquid continuum of said paint an agent which increases the conductivity thereof to cause said continuum to become sufficiently conductive so that a portion of said electrostatic potential drains off through the paint to thereby lower the electrostatic potential to a level incapable of causing said orientation of conductive particles and the shorting out incidental thereto.

3,348,966
PREPARATION OF BLISTER-FREE ELASTOMERIC FILMS AND COATINGS
Charles W. Simons, Bedford, and Irving J. Arons, West Peabody, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed Apr. 15, 1964, Ser. No. 360,083
15 Claims. (Cl. 117—95)

11. A method of preparing blister-free films of an elastomeric polymer which comprises
(1) depositing on a substrate a layer of solution comprising
(a) natural rubber,
(b) a volatile organic solvent consisting of a mixture of an aromatic petroleum solvent having a boiling range between about 321° and 345° F., and an aliphatic petroleum solvent having a boiling range between about 321° and 388° F.,
(c) finely divided calcium carbonate,
(d) elemental sulfur, and
(e) an activated dithiocarbamate,
(2) heating the deposited layer at a temperature of about 240° F. to cure said rubber, and thereafter
(3) heating the deposited layer at a temperature of about 300° F. to remove substantially all of said solvent from said layer.

12. A method according to claim 11 wherein said substrate is a closure cap having a top panel and a dependent skirt and said layer is deposited on the inner-annular surface of said cap.

3,348,967
PROCESS OF MAKING AN ARTICLE HAVING A HARD CARBIDE, BORIDE OR SILICIDE OUTER REGION
Edward E. Hucke, Ann Arbor, Mich., assignor, by mesne assignments, to Valley Company, Inc., Atchison, Kans., a corporation of Kansas
Filed Dec. 27, 1962, Ser. No. 247,676
4 Claims. (Cl. 117—118)



1. In the process for making an article having at least an outer layer of substantial thickness containing at least one hard, high melting point carbide, comprising the steps of:
(a) infiltering a permeable framework which is essentially elemental carbon with a liquid metallic material comprising at least one metallic element capable of chemically combining with the framework material to form at least one hard, high melting point carbide, said infiltration being carried out at a temperature sufficiently low that said metallic material remains in the liquid phase throughout the infiltration of said framework, said infiltration being continued until substantially all of the voids in said framework are substantially completely filled to at least a depth sufficient to permit removal of an outer portion of said article of substantial thickness without destroying more than a minor outer portion of the infiltered region; and

(b) subjecting the infiltered framework to carbide forming pressure and temperature conditions for a sufficiently long time to chemically combine at least a portion of said framework with at least one element in said metallic material to form at least one hard, high melting point carbide; the improvement of adding to said metallic material before the infiltration of said framework cerium in an amount sufficient to reduce the size of the particles produced in the reaction of the metallic material with the framework and in the range of from about 0.1 to about 10 percent of the metallic material.

3,348,968

SYNTHETIC TEXTILE TREATED WITH POLYALKENOXY AGENTS AND CORROSION INHIBITING SALTS TO PREVENT STATIC ELECTRIC CHARGES

Duncan Robert Hulbert, Dennis Richard Sheard, and Harold Frederick Brown, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,102
Claims priority, application Great Britain, Feb. 21, 1963, 7,069/63
1 Claim. (Cl. 117—138.8)

Textile materials comprising fibers and filaments of a member of the group consisting of polyethylene terephthalate and polypropylene having an antistatic surface coating comprising

(a) 0.05–0.3% on the weight of said fibers and filaments of a member of the class consisting of a condensate of lauric acid with ethylene oxide in a molar ratio of about 1:9, a condensate of cetyl and oleyl alcohols with ethylene oxide in a molar ratio of about 1:3.5, a condensate of cetyl amine with ethylene oxide in a molar ratio of about 1:12, a condensate of dodecyl mercaptan with ethylene oxide in a molar ratio of 1:6, and a condensate of stearic acid with approximately 9 moles of ethylene oxide and

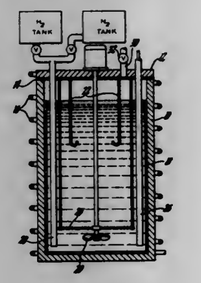
(b) 0.001 to 0.05% on the weight of said fibers and filaments of a salt selected from the group consisting of potassium carbonate, sodium bicarbonate, sodium phosphate, sodium chromate, sodium benzoate, sodium silicate, lithium carbonate, sodium nitrite, sodium tetraborate and sodium carbonate.

3,348,969

ELECTROLESS NICKEL PLATING

Seymour Katz, Oak Park, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,822
16 Claims. (Cl. 117—160)



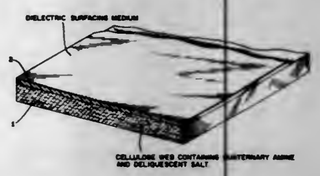
1. The method of electroless plating workpieces with a uniform, adherent, bright and smooth decorative nickel coating, said method comprising the steps of placing at least one workpiece in an aqueous bath having a pH in excess of 2, said bath containing dissolved nickel and sufficient acetate ion buffer to maintain the bath above about pH 2 during chemical reduction of at least a major proportion of the nickel in the bath, providing a pressurized gaseous reducing environment for said bath containing said workpiece, heating said bath containing said workpiece to induce deposition of said nickel on said workpiece, and regulating the temperature of said bath such that said temperature varies inversely with respect to the concentration of nickel therein but within the area of *abcd* of FIGURE 2 to produce a smooth, bright, decorative nickel coating on said workpiece.

3,348,970

ELECTROSTATIC CONDUCTIVE PAPER

Jerome M. Gess, Drexel Hill, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 16, 1962, Ser. No. 166,497
5 Claims. (Cl. 117—201)



1. An electrostatic image-recording medium consisting of a cellulose web having dispersed therein an N-alkyl oxyhydroxy propyl trimethyl ammonium chloride wherein the alkyl group contains from 10 to 18 carbon atoms, said cellulose web containing a dispersed deliquescent salt, and carrying on one surface a layer of a dielectric material.

3,348,971

METHOD OF MAKING A THIN FILM CAPACITOR

Otis F. Boykin, 8215 Maryland Ave., Chicago, Ill. 60619

Original application May 28, 1963, Ser. No. 283,729. Divided and this application Apr. 6, 1966, Ser. No. 540,642
6 Claims. (Cl. 117—215)



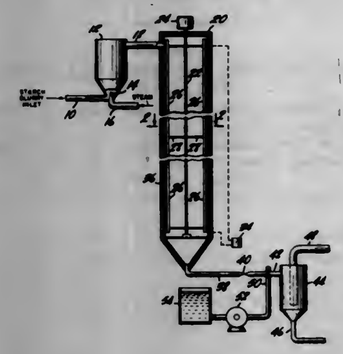
1. The method of making a capacitor comprising the steps of: applying a first layer of electrically conductive material onto one surface of a base of insulating material, bonding the first layer to the surface, applying at least one thin layer of glass particles admixed with an organic metal compound in solution, the metal thereof being oxidized when fired in an oxidizing atmosphere to form a dielectric film onto the first layer, firing said layer of glass particles and organic metal compound in solution in an oxidizing atmosphere to fuse the glass to the layer of electrically conductive material and simultaneously converting the metal fraction thereof into an oxide of the metal to produce a dielectric film, applying a second layer of electrically conductive material onto the exposed surface of the fused on dielectric film, and bonding the second layer to the dielectric film.

3,348,972

APPARATUS FOR CONTINUOUS CONVERSION OF STARCH

Gerwin G. Taylor, Flossmoor, Ill., assignor to American Maize-Products Company, a corporation of Maine

Original application Mar. 9, 1961, Ser. No. 94,515, now Patent No. 3,169,083, dated Feb. 9, 1965. Divided and this application Feb. 19, 1964, Ser. No. 345,929
5 Claims. (Cl. 127—28)



1. An apparatus for a continuous process of converting acid catalyzed starch slurries into dextrose and related intermediate products by subjecting said slurries to heat and pressure comprising a closed cylindrical vessel having an inlet port, an outlet port and a central rotatable shaft, at least one paddle blade attached to said shaft, said paddle blade extending substantially throughout the vessel and being positioned closely adjacent the inside wall of the vessel to provide a slight clearance space therebetween, means for rotating said paddle blade at angular peripheral speeds equivalent to 10 to 100 feet per minute for a vessel one foot in diameter, and means for maintaining the level of fluid slurry in said vessel at a predetermined height.

3,348,973

SECONDARY BATTERY

Thedford P. Dirkse, Grand Rapids, Mich., assignor to Calvin College and Seminary, Grand Rapids, Mich., a corporation of Michigan

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,405
14 Claims. (Cl. 136—30)

7. An electro-chemical battery cell comprising an alkaline electrolyte and electrodes immersed therein, one of said electrodes comprising a zinc element, and said cell including therein an additive having the general formula of tridecyloxypoly (ethylenoxy) ethanol.

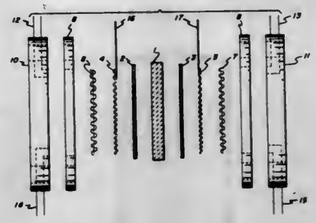
3,348,974

FUEL CELL CONTAINING A METALLIZED PAPER ELECTRODE

William Austin Barber, Springdale, and Norman Thorndike Woodberry, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed July 1, 1963, Ser. No. 295,271
10 Claims. (Cl. 136—86)

1. A fuel cell comprising in combination: a porous, hydrophilic, noncatalytic, electrolyte-containing matrix and directly contacted therewith a metallized paper sheet electrode, said sheet electrode comprising in admixture: (a) an unfused, fibrillated, substantially hydrophobic paper pulp in an amount ranging from about 30% to about 60%, (b) an electro-conductive filler selected from the group consisting of carbon, titanium, tantalum and zirconium, said filler being present in an amount ranging from about 25% to 50%, (c) a water-repellent compound



present in an amount equal to from about 1% to about 25%, and (d) an active metal catalyst being present in an amount ranging from about 1% to less than about 25%, all of said percentages being based on the weight of the overall resultant electrode.

3,348,975

PROCESS FOR PREPARING FUEL CELL ELECTRODE CONTAINING 45% OF A WATER-PROOFING AGENT

Lance Kenneth Ziering, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Aug. 26, 1964, Ser. No. 392,116
6 Claims. (Cl. 136—120)

1. In the preparation of an electrode adapted for use in a fuel cell, the improvement which comprises the sequential steps of:

(a) spray coating on a screen substrate an aqueous catalyst mixture comprising a catalyst, water-proofing agent and a water soluble extender whereby a structurally weak composite is formed;

(b) drying the later composite to remove water therefrom at a temperature between about 50° C. and 100° C.;

(c) spray coating mineral oil lubricant on said dried composite;

(d) calendering said lubricated composite to provide good structural strength to said composite; and

(e) activating the so-calendered composite by the removal therefrom of the water soluble extender and the said mineral oil.

3,348,976

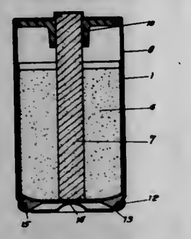
SELF-SUPPORTING SINTERED ZINC ANODE STRUCTURE

Francis John Kelly, Port Credit, Ontario, and Franciszek Przybyla, Toronto, Ontario, Canada, assignors to Mallory Battery Company of Canada Limited, Clarkson, Ontario, Canada

Filed Mar. 30, 1965, Ser. No. 443,986
7 Claims. (Cl. 136—125)

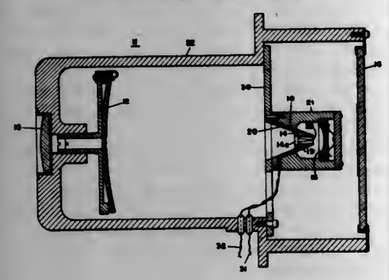
1. In combination with a battery: a porous anode of specific anode shape and entire structural integrity in the form of a self-supporting open three dimensioned metal network consisting essentially of sintered zinc metal particles having communicating voids therebetween; and at least one weld consisting essentially of zinc metal connecting each zinc particle of substantially all said particles to at least one adjacent zinc particle of said structure and providing the sole structural connection between said particles, said particles exhibiting within said structure a particle shape modified by temperature alone.

3,348,977
DRY CELL
Robert Paillet, Paris, France, assignor to Societe Les Piles Wonder, Saint-Ouen, France
Filed May 26, 1965, Ser. No. 459,037
Claims priority, application France, June 1, 1964, 976,643, Patent 1,405,923; Nov. 20, 1964, 995,716, Patent 1,423,094
10 Claims. (Cl. 136—133)



1. Dry cell comprising at least one primary electrochemical element of which the external member is a container, said dry cell being enclosed within a case of plastic material and sealed at the top, said dry cell being essentially characterized in that said case is clamped at the bottom portion thereof between the raised edge of a cup and an O-ring seal which bears on the outer periphery of an overthickness formed on the base of said container.

3,348,978
TRANSDUCERS FOR RADIATION PYROMETERS
Albert B. Teague, Glenside, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1964, Ser. No. 347,762
13 Claims. (Cl. 136—214)



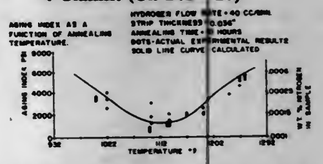
1. A radiant-energy transducer including
a target having an area for receiving radiation from an external source,
temperature-sensitive electrical means in thermal-conductive relation to said target area,
the combination of said target and said electrical means producing at temperature equilibrium of the target an electrical output which is representative of the radiation input from said source and which changes with change of radiation input at a rate dependent upon the thermal time-constant of the combination, and
means for substantially enhancing the electrical output of said combination without materially increasing the time-constant thereof comprising
a coating of tiny transparent dielectric hollow beads on at least one face of the target to provide structural means of relatively low thermal mass in the path of radiation to said target area and having a surface in close-spaced relation to said area and in thermal-conductive relation therewith.

7. A multijunction thermopile suited for a radiation pyrometer comprising
a target having a radiant-energy receiving area, and
an array of pairs of thermocouple elements having junctions bonded to said target at points spaced substantially uniformly throughout the perimeter thereof and with said elements extending radially and augularly therefrom in the form of a cage having a truncated cone-like configuration with said target as a frustrum surface intermediate and spaced substantially from both the base and apex of the cone.

3,348,979
PROCESS FOR TREATING ALUMINUM WELD WIRE
James F. Murphy, Hamden, and Allan A. Dolomont, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Jan. 24, 1964, Ser. No. 339,874
8 Claims. (Cl. 148—5.2)

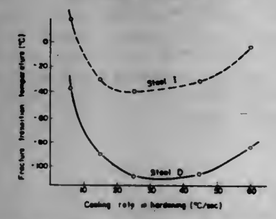
1. A process for treating aluminum weld wire comprising:
(A) passing said wire through a first tank containing an aqueous alkaline solution in which the wire is the cathode in an electrolytic cell and then passing said wire through a second tank containing an aqueous alkaline solution in which said wire is the anode in an electrolytic cell,
(B) rinsing said wire,
(C) passing said wire through an acid neutralizing bath,
(D) rinsing said wire,
(E) continuously passing said wire through an aqueous coating solution having a pH from approximately 1 to 7 consisting essentially of a pH regulator and a substance selected from the group consisting of soluble hexavalent chromium compounds, soluble fluoride compounds, soluble acidic substances, and acid stable complex anions for a time sufficient for formation on the wire surface of a coating of at least 5 milligrams per square foot of surface,
(F) rinsing said wire, and
(G) heating said wire to a temperature of about 150 to 500° F. for a period of time from about 2 minutes to 5 hours.

3,348,980
PROCESS FOR PRODUCING NON-AGING STEELS
Joseph F. Enrietto, Pittsburgh, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 9, 1965, Ser. No. 438,241
4 Claims. (Cl. 148—16)



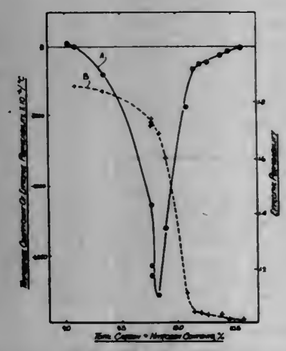
1. A process for producing non-aging rimmed plain-carbon steel containing above about 0.04% by weight of carbon, said steel having, when cast, a nitrogen content of about 0.004%, said process consisting essentially of the steps of rapidly cooling said steel through the transformation range to cause a fine carbide distribution and then slow-cooling said steel to about 300° F. to allow precipitation so as to prevent the occurrence of carbon strain aging, and then loosely coiling said steel in strip form and annealing said strip in an enclosure in the presence of dry hydrogen in an open-coil box anneal at a temperature in the range of about 975° F. to 1150° F. for a time sufficient to reduce the nitrogen content of the steel in solution to at most 0.0005% by weight, the flow of hydrogen through the enclosure being sufficient to mix the ammonia gas formed at the surfaces of the strip with hydrogen and prevent any accumulation of ammonia at the surfaces from impeding the reaction of nitrogen in the steel with the hydrogen.

3,348,981
HIGH TENSION LOW TEMPERATURE TOUGH STEEL
Susumu Goda, Hisashi Gondo, and Yasumitsu Onoue, Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed Feb. 17, 1965, Ser. No. 433,303
Claims priority, application Japan, Feb. 21, 1964, 39/9,642
2 Claims. (Cl. 148—36)



1. A high tensile strength, low temperature tough steel consisting essentially of 0.05 to 0.25% by weight of C, 0.04 to 0.17% by weight of Al, 0.05 to 1.60% by weight of Mn, 0.20 to 1.60% by weight of Cr, and 0.05 to 1.00% by weight of Mo, the combined weights of Mn, Cr and Mo being no greater than 2.5% by weight, the remainder being Fe and inevitable impurities and the steel having the aluminum in solid solution therein, the steel having been heated to a temperature above the A_3 point to austenitize it, thereafter hardened at a cooling rate of 10–60° C. per sec., and then tempered by heating to a temperature between 500° C. and the A_1 point.

3,348,982
IRON POWDER AND CORE WITH CONTROLLED PERMEABILITY COEFFICIENT
Thornley Athelstan Dunton, Birmingham, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,622
Claims priority, application Great Britain, Mar. 6, 1963, 8,977/63
2 Claims. (Cl. 148—105)

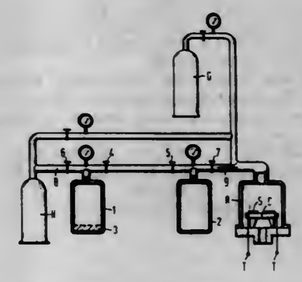


1. A process of using as an inductor core an agglomerate body containing iron powder comprising inductively coupling an agglomerate powder body containing carbonyl-iron powder consisting essentially of 7% to about 10% nitrogen, about 0.5% to about 2% carbon, with a total nitrogen plus carbon content of 9.0% to about 10.5%, and the balance essentially iron and having a microstructure consisting essentially of epsilon phase with an electrically conductive element disposed in close proximity to said body by passing an electric current through said electrically conductive element to characterize said core by a temperature coefficient of permeability not greater than 5 times 10^{-6} per ° C.

3,348,983
PROCESS FOR PRODUCING SQUARE HYSTERESIS MAGNETIC ALLOYS
Yuzo Odani and Manabu Sunazawa, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan
Filed Nov. 5, 1964, Ser. No. 409,177
Claims priority, application Japan, Nov. 7, 1963, 38/59,448
4 Claims. (Cl. 148—120)

1. A process for producing square hysteresis loop magnetic alloys comprising steps of finally rolling by cold working at a severe draft a material prepared by replacing a part of the content of Fe in an Ni-Fe series alloy material of 80–84 at. percent Ni with any one of 2–10 at. percent Mo, 2–10 at. percent W, 3–10 at. percent Cr, 3–6 at. percent V and 4–10 at. percent Si, oxidizing it in an oxidative atmosphere at 250–1100° C., annealing it in hydrogen or a vacuum at a temperature of 1000° C. to the melting point of said alloy material and then quenching it from a temperature above 450° C.

3,348,984
METHOD OF GROWING DOPED CRYSTALLINE LAYERS OF SEMICONDUCTOR MATERIAL UPON CRYSTALLINE SEMICONDUCTOR BODIES
Erich Pammer, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, and Munich, Germany, a corporation of Germany.
Filed Dec. 23, 1964, Ser. No. 420,638
Claims priority, application Germany, Jan. 3, 1964, S 88,949
11 Claims. (Cl. 148—174)



1. The method of growing doped crystalline semiconductor layers on crystalline semiconductor bodies in a reaction space by thermal dissociation from a gaseous mixture composed of semiconductor compound and dopant substance and carrier gas, which comprises the antecedent steps of placing the dopant substance in volatilizable constitution into a first pressure-resistant vessel, filling the vessel with the carrier gas up to a given pressure and keeping the carrier gas in said first vessel at a given temperature until the dopant vapor has attained saturation pressure, transferring at least part of the gaseous mixture from the first vessel into a second pressure resistant vessel free of non-gaseous dopant, and

supplying the gas mixture through pressure-reducing means from said second vessel to the reaction space together with the gaseous compound of the semiconductor material to be precipitated in said space.

3,348,985

GAS-GENERATING PYROTECHNIC COMPOSITION CONSISTING ESSENTIALLY OF AMMONIUM NITRATE AND AMINOTETRAZOLE

Hans Stadler and Kurt Ballreich, Nurnberg, and Heinz Gawlick, Furth, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

No Drawing. Filed Aug. 4, 1966, Ser. No. 570,163
Claims priority, application Germany, Aug. 14, 1965, D 47,981
10 Claims. (Cl. 149—2)

1. A pyrotechnic gas-generating composition comprising about 53 to 83% of ammonium nitrate and about 2 to 25% of aminotetrazole.

3,348,986

PROCESS OF PREPARING PLASTIC COATED HIGH EXPLOSIVE PARTICLES AND ARTICLES

Charles W. Sauer, Cambridge, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

No Drawing. Original application Feb. 4, 1955, Ser. No. 486,306. Divided and this application May 24, 1966, Ser. No. 633,358
11 Claims. (Cl. 149—11)

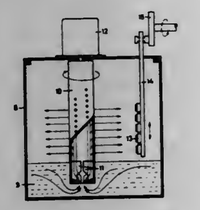
1. A process for making an elastomer-bonded explosive which comprises forming a solution of an elastomer in a solvent, adding the resulting elastomer solution to a non-solvent emulsifying liquid agent, mixing in high explosive particles and the necessary elastomer modifiers, agitating the resulting liquid mixture until the high explosive particles are coated, said elastomer, removing the resulting elastomer-coated explosive particles, and drying said elastomer-coated explosive particles, said high explosive being present in a concentration from about 50 to 95 percent by weight, said solvent being a non-solvent for said high explosive, said emulsifying liquid medium being a non-solvent for the elastomer and the high explosive.

3,348,987

METHOD OF PRODUCING THIN LAYERS OF GALVANOMAGNETIC SEMICONDUCTOR MATERIAL, PARTICULARLY HALL GENERATORS OF $A^{III}B^{V}$ COMPOUNDS

Gustav Stark and Klaus Otto, Nuremberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany and at Erlangen, Germany, a German corporation

Filed July 17, 1964, Ser. No. 383,528
Claims priority, application Germany, July 20, 1963, S 86,298
2 Claims. (Cl. 156—17)



1. The method of producing thin layers of indium antimonide and indium arsenide, which comprises pregrinding the layers on substrates to a given thickness, and subjecting the layers on the substrates to simultaneous etching and chemical polishing in an aqueous ferric chloride solution containing an addition of glycerin in a volumetric ratio of at least one part glycerin to five parts solution, and thereby reducing the layer to ultimate thickness.

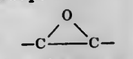
3,348,988

METHOD OF INSTALLING TILE WITH AN EPOXY RESIN COMPOSITION

Herman B. Wagner, Blooming Glen, Pa., and Ernest E. Weller, Sayreville, N.J., assignors to Tile Council of America, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed June 29, 1962, Ser. No. 206,162
2 Claims. (Cl. 156—71)

1. In a method of installing tile on a substrate, the improvement which comprises preparing a mortar by adding a member selected from the group consisting of water, ethyl alcohol, methyl alcohol, methyl ethyl ketone, methyl isobutyl ketone, butyl acetate, and mixtures of the foregoing to a unitary composition consisting essentially of, in intimate admixture, an epoxy resin having at least two reactive epoxy groups



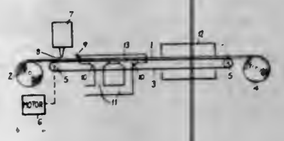
and a polyfunctional amine epoxy resin hardener absorbed on a molecular sieve powder, to form a trowellable admixture, utilizing the resulting admixture to install the tile, and allowing the admixtures to cure.

3,348,989

PROCESS FOR MANUFACTURING IMPREGNATED CELLULAR MATERIALS

Douglas Roberts, Stoulton, Worcester, England, assignor to Witco Chemical Company Limited, London, England, a British company

Filed July 22, 1963, Ser. No. 296,648
Claims priority, application Great Britain, Aug. 16, 1962, 31,487/62
13 Claims. (Cl. 156—285)



1. A process for impregnating a cellular material having an intercommunicating cell structure, wherein a substance to be introduced into the cellular material is applied in the form of a fluid foam on to one surface of the cellular material and suction is applied to the opposite surface of the cellular material in order to draw the substance into the cellular material.

3,348,990

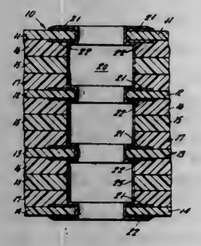
PROCESS FOR ELECTRICALLY INTERCONNECTING ELEMENTS ON DIFFERENT LAYERS OF A MULTILAYER PRINTED CIRCUIT ASSEMBLY

Julius Zimmerman, Brooklyn, and George Pisan, Hicksville, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware

Filed Dec. 23, 1963, Ser. No. 332,506
3 Claims. (Cl. 156—293)

1. A process for electrically interconnecting elements on different layers of a multilayer printed circuit assembly; said process comprising the steps of producing a stack having a plating passage; said stack including an insulating

sheet between a first and a second printed circuit board each having a conductive element through which said passage extends; forming groove means in the wall of said passage to expose more extensive surface areas of said



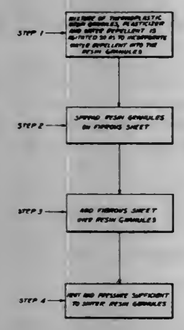
elements in said passage; and coating the surface of said passage with electrically conductive material bonded to surface portions of said elements exposed in said passage thereby conductively connecting said elements.

3,348,991

METHOD OF MAKING A WATERPROOF GAS-PERMEABLE PLATIC SHEET

Jerrold J. Abell, Manchester, and Richard C. Berry, Danielson, Conn., assignors to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts

Original application Dec. 20, 1962, Ser. No. 245,998, now Patent No. 3,262,834, dated July 26, 1966. Divided and this application Jan. 12, 1966, Ser. No. 520,099
12 Claims. (Cl. 156—300)



1. A method of manufacturing a waterproof microporous permeable plastic sheet which comprises the steps of:
(a) vigorously agitating a mixture comprised of thermoplastic resin granules, a plasticizer and at least one compatible water repellent so as to cause said plasticizer to blend with said resin granules and carry with it said water repellent to thereby incorporate said water repellent within said resin granules,
(b) spreading said resin granules in a uniform layer on a compressible fibrous sheet,
(c) laying down on the exposed surface of said layer a second compressible fibrous sheet, and
(d) applying heat and pressure to the resulting assembly to sinter the resin granules into a microporous permeable layer.

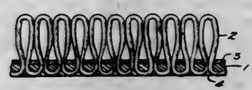
6. A process as claimed in claim 1 wherein a fibrous sheet is bonded to the granular layer.

3,348,992

TUFTED PRODUCTS

William H. Cochran II, Stonington, Conn., assignor to Madison Research & Development Corporation, Stonington, Conn., a corporation of New Jersey

Filed Aug. 13, 1963, Ser. No. 301,782
5 Claims. (Cl. 161—66)



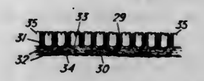
1. An improved tufted fabric comprising a non-woven backing fabric with tufting yarn passing back and forth through the backing fabric and extending above the backing fabric to form the tufted surface of the fabric, said backing fabric being backsized with a thermosetting resin.

3,348,993

FABRICS

Christopher Robert Sissons, Raglan, England, assignor to British Nylon Spinners Limited, Monmouthshire, England

Filed Nov. 27, 1964, Ser. No. 414,242
Claims priority, application Great Britain, Nov. 29, 1963, 47,217/63
17 Claims. (Cl. 161—67)



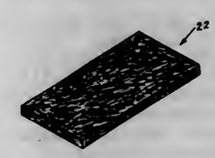
1. A non-woven fabric having an integral structure and simulating a conventional pile fabric, which fabric comprises a stratum of fibre tufts and a base stratum in a form of a fibrous web, said fibrous web base stratum containing fibres located in planes at least substantially normal to the planar surfaces of the stratum, which fibres project beyond a planar surface of the base stratum as fibre tufts thereby providing the fabric with a pile surface and said fibrous web comprising at least a proportion of composite fibres comprising at least two fibre-forming synthetic polymeric components arranged in distinct zones across the cross-section of each fibre and at least one and less than all of the components being potentially adhesive and located so as to form at least a portion of the peripheral surface of each fibre, said composite fibres being adhesively bonded to contiguous fibres in the structure through the agency of said potentially adhesive component thereby securing tufts in the structure.

3,348,994

HIGH TEMPERATURE FIBROUS BOARD

Willis M. Rees, Newark, and Richard F. Shannon, Lancaster, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Sept. 26, 1963, Ser. No. 311,805
16 Claims. (Cl. 161—170)



1. A fibrous board product comprising:
(a) a mass of intermeshed glass fibers disposed in an open, non-woven arrangement, and,

(b) a binder composition present as a coating on the surfaces of said fibers, said binder composition comprising:

(1) a hardened synthetic resinous binder material bonding said glass fibers to one another at points of contact,

(2) a devitrifying agent for said glass fibers selected from the group consisting of fibrous calcium and magnesium silicates dispersed in said binder composition and in surface contact with said glass fibers, and

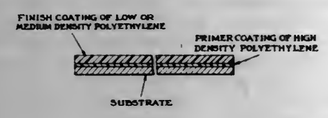
(3) a devitrification accelerator selected from the group consisting of the oxides, hydroxides, carbonates, and silicates of titanium, zirconium, chomium, aluminum and magnesium, and mixtures thereof, dispersed in said binder composition and in surface contact with said glass fibers, said devitrifying agent and devitrification accelerator being present in the binder composition in a ratio by weight ranging from about 1:1 to about 19:1, substantially all of said devitrifying agent and devitrification accelerator being finer than 200 mesh.

3,348,995

METHOD OF COATING METAL SURFACES WITH POLYETHYLENE UTILIZING A POLYETHYLENE PRIMER AND ARTICLES PRODUCED THEREBY

James R. Baker and Edwin H. Phelps, Birmingham, Ala., assignors to American Cast Iron Pipe Company, Birmingham, Ala., a corporation of Georgia

Filed Mar. 9, 1964, Ser. No. 350,321
24 Claims. (Cl. 161—216)



1. A method of coating metal surfaces with polyethylene comprising the steps of applying to a metal substrate a high density polyethylene material having a specific gravity in the range of 0.941 to 0.965 to form a first layer of predetermined thickness while maintaining said substrate at a temperature of at least 500° F. so as to melt the polyethylene material, and then applying to said first layer a lower density polyethylene material having a specific gravity in the range of 0.910 to 0.940 to form a second layer greater in thickness than said first layer while maintaining said substrate at a temperature of at least 350° F. and sufficient to effect complete melting of both of said layers at the junction therebetween.

3,348,996

ACOUSTICAL PANEL HAVING OPENINGS AND CERAMIC SURFACING MATERIAL BONDED TO THE PANEL

John E. Cadotte, 2427 Western Ave. N., St. Paul, Minn. 55110

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,809
2 Claims. (Cl. 162—114)

1. An acoustical panel having a porous sound-absorbing body portion consisting entirely of inorganic material and essentially of a ceramically bonded porous body of a mineral fiber felt and of particulate ceramic material, said mineral fiber predominating in synthetic mineral fiber, the particulate ceramic material being present in quantity not exceedng the quantity of fiber, said body portion having a density up to 50 pounds per cubic foot and having a multiplicity of acoustical openings exposed to the receipt of sound and extending from a face of the body portion into but not through the body portion, said face having a coat of glaze ceramically bonded thereto at areas other than said openings, and said openings at their juncture with the surface of said face having smooth fired edges.

3,348,997

POLYVINYL ALCOHOL, ALKYLENEIMINE, EPICHLOROHYDRIN CONDENSATION PRODUCT AND METHOD OF FORMING CELLULOSIC WEBS THEREWITH

Paul Lagally, Annapolis, Md., and John W. Brook, Plainfield, N.J., assignors to Chemirad Corporation, East Brunswick, N.J., a corporation of Delaware

No Drawing. Filed June 29, 1966, Ser. No. 561,334
13 Claims. (Cl. 162—164)

1. A water-soluble condensation product of polyvinyl alcohol, alkylenimine, and epichlorohydrin wherein the molar ratio of said polyvinyl alcohol to said alkylenimine to said epichlorohydrin is in the range of from 1:1:0.8 to 1:4:8.

5. In a process of improving the properties of cellulosic sheet material, the steps which comprise adding to an aqueous cellulosic fiber pulp a condensation product of polyvinyl alcohol, alkylenimine, and epichlorohydrin, wherein the molar ratio of said polyvinyl alcohol to said alkylenimine to said epichlorohydrin is in the range of from 1:1:0.8 to 1:4:8, forming the cellulosic sheet material from the thus treated cellulosic fiber pulp, and curing the resulting sheet material.

3,348,998

2,4,6 - TRICHLORO - PHENOXYACETYL N - METHYL AMPHETAMINE AND PRODUCTS CONTAINING SAME

Kenneth Eric Vincent Spencer, Emsworth, England, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 3, 1965, Ser. No. 461,183
Claims priority, application Great Britain, Sept. 18, 1964, 38,118/64
5 Claims. (Cl. 167—65)

1. A pharmaceutical composition comprising 2,4,6-trichlorophenoxyacetyl N-methyl amphetamine and a pharmaceutically acceptable carrier therefor.

3,348,999

COMPOSITIONS TO ENHANCE THE LEARNING RATE AND RETENTION LEVEL IN ANIMALS COMPRISING 2-IMINO-5-PHENYL-4-OXAZOLIDINONE AND A RELATIVELY INSOLUBLE BASE

Eugene Leo Woroch, Itasca, and William Donald Smart, Waukegan, Ill., assignors to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,345
3 Claims. (Cl. 167—65)

1. A pharmaceutical composition in dosage unit form and effective to enhance the learning rate and retention level in animals comprising about 5 to 50 milligrams of a combination of 2-imino-5-phenyl-4-oxazolidinone and a relatively insoluble base selected from the group consisting of magnesium hydroxide, magnesium carbonate, calcium carbonate, and aluminum hydroxide, said base being combined in the ratio of at least 0.05 mole of the base to one mole of the 2-imino-5-phenyl-4-oxazolidinone; and a pharmaceutically-acceptable carrier.

3,349,000

PROCESS FOR TREATING HUMAN NAILS AND HAIR WITH DIMETHYLOL THIOUREA COMPOSITIONS

Bernhard Joos, 23 Kurfürstenstrasse, Zurich, Switzerland

Filed Jan. 21, 1964, Ser. No. 339,271
Claims priority, application Switzerland, Jan. 24, 1963, 855/63
3 Claims. (Cl. 167—85)

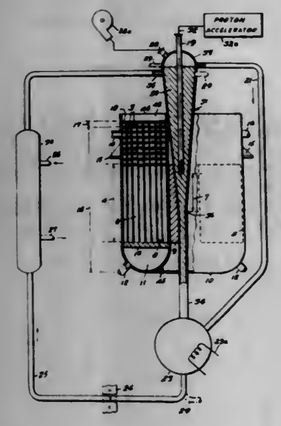
1. A process for improving the strength and elasticity of human nails and hair which comprises wetting the surface thereof with a fluid composition containing from about 1 to about 15% by weight of the total composition of dimethylol thiourea, about 0.2 to about 2% by weight of an acidic compound selected from the group consisting of phosphoric acid, lactic acid, citric acid, acetic acid, glycerophosphoric acid and acid salts thereof, and a liquid diluent.

3,349,001

MOLTEN METAL PROTON TARGET ASSEMBLY

Richard Myles Stanton, Canton, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed July 22, 1966, Ser. No. 567,161
7 Claims. (Cl. 176—11)



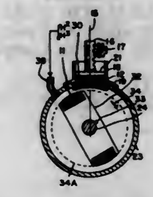
1. A target assembly for accelerated nuclear particles comprising, a housing, conduit means running symmetrically through and carried by said housing, molten lead flowing through said conduit means, recirculating means connected to the ends of said conduit means for recycling said molten lead, tube means evacuated and longitudinally and symmetrically disposed within said conduit means from within said housing to an externally disposed particle accelerator, said tube means receiving and guiding a beam of accelerated nuclear particles emanating from said accelerator, containing means radially disposed around said conduit means within said housing, fertile nuclear material within said containing means, and coolant means passing through and in contact with said fertile material and carried by said housing, whereby said accelerated particle strikes the molten lead thereby emitting through nuclear reaction other nuclear particles which penetrate and react with the surrounding nuclear material causing additional nuclear reactions and generating heat.

3,349,002

NUCLEAR REACTOR

Nikola J. Trbojevich, 8106 E. Jefferson Ave., Detroit, Mich. 48214

Filed Mar. 28, 1958, Ser. No. 724,713
4 Claims. (Cl. 176—21)



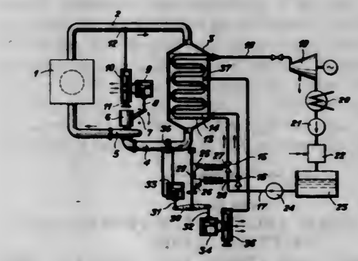
1. A reactor comprising a cylindrical core rotatable about an axis, an outer stationary member tangential of the said core and two fissionable and subcritical masses respectively affixed to the said core and member and so selected that when the first said mass tangentially bypasses the second said mass in its proximity, the combined masses become momentarily hypercritical and momentarily generate a divergent fission chain reaction and in which the mass in the outer member comprises a slide and means for bodily moving the said mass in the said slide in a direction perpendicular to the said axis, for the purpose of adjustment.

3,349,003

METHOD OF HEATING WORKING MEDIUM IN THE HEAT EXCHANGER OF A NUCLEAR REACTOR INSTALLATION

Jakob Kägi, Wiesendangen, Zurich, Switzerland, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland

Filed Aug. 9, 1965, Ser. No. 478,283
Claims priority, application Switzerland, Aug. 13, 1964, 10,616/64
14 Claims. (Cl. 176—60)



1. A method of heating a working medium in the heat exchanger of a nuclear reactor installation comprising the steps of

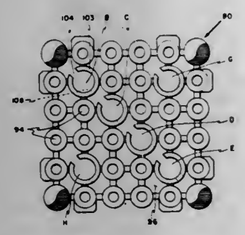
(1) circulating a heat vehicle through the reactor and the heat exchanger at a variable rate of flow,

(2) circulating a working medium at variable flow rates in a plurality of parallel component flows in heat exchange relationship with the heat vehicle in a flow direction opposite to the flow direction of the heat vehicle in the exchanger, and

(3) distributing the working medium between the parallel component flows at variable rates in response to the rate of flow of the heat vehicle to the nuclear reactor to have each parallel component flow in a heat exchange relationship with the heat vehicle of the same temperature drop whereby the temperature drop in the heat vehicle flow shifts toward the

entry thereof into the heat exchanger upon reduction of flow rate of the working medium as compared to the temperature curve for a uniform reduction of all the component flows.

3,349,004
NUCLEAR REACTOR FUEL BUNDLE
James L. Lass and Dominic A. Venier, San Jose, Calif., assignors to General Electric Company, a corporation of New York
Filed Jan. 17, 1966, Ser. No. 521,119
9 Claims. (Cl. 176—78)



1. A fuel bundle for use in a nuclear reactor comprising a plurality of rods, each rod comprising material selected from the group consisting of (1) fuel material, (2) fuel material mixed with a special neutron absorber, (3) inert or diluent material mixed with a special neutron absorber, and (4) a special neutron absorber material without additives, said rods being arranged in a predetermined geometric array, said plurality of rods including at least one removable rod, a first tie plate positioned at one end of said fuel bundle and operatively connected to the ends of said plurality of rods, a second tie plate positioned at the other end of said fuel bundle and operatively connected to the other ends of said plurality of rods, said first and second tie plates operatively connecting said plurality of rods in a predetermined geometric array, said first tie plate including means forming at least one opening to permit removal or insertion of said removable rod, said means including a slot adjacent said opening that extends the entire thickness of said first tie plate, said removable rod including a locking mechanism that cooperates with said opening and said slot in said upper tie plate to retain said removable rod in a fixed position.

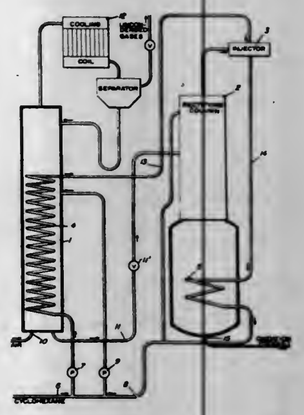
3,349,005
FERMENTATION PROCESS FOR PRODUCTION OF CITRIC ACID
Mario Alexander Batti, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed May 25, 1965, Ser. No. 458,747
4 Claims. (Cl. 195—36)

1. In a process for producing citric acid in a citric acid-producing medium in which citric acid has begun to form resulting in a pH of less than about 3.0 and wherein the rate of citric acid production in said medium is retarded by the presence in said medium of an excess amount of an inhibitor selected from the class consisting of copper and organic materials which are toxic to citric acid-producing fungi, said inhibitor intended to counteract the undesirable presence of contaminants in said medium, the improvement which comprises adding to said fermentation medium an amount of alkaline material sufficient to increase the pH of said medium to a value of at least about 3.0 to counteract the retarding effect of said excess amount of inhibitor and promote the citric acid-producing activity in said medium.

3,349,006
PROCESS AND COMPOSITION FOR THE ENZYMATIC DETERMINATION OF URIC ACID
Harry Gregory Albaum, Rockville Centre, N.Y., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed June 17, 1963, Ser. No. 288,498
10 Claims. (Cl. 195—103.5)

8. A process for detecting uric acid in blood serum which comprises treating blood serum with a hydrogen peroxide generating system comprising
urate oxidase,
an inhibitor for catalase selected from the group consisting of alkali metal azides and alkali metal cyanides,
a buffer effective to maintain the pH of the generating system in a range of about from pH 8.5 to pH 10 in which said urate oxidase is effective to convert uric acid to allantoin with the concomitant production of hydrogen peroxide for a period sufficient to convert the uric acid present in the blood serum to allantoin with the concomitant production of hydrogen peroxide being quantitative
and thereafter contacting the resulting mixture with a hydrogen peroxide detecting system comprising
a chromogen,
a substance having peroxidative activity effective to catalyze the oxidation of said chromogen by hydrogen peroxide with the production of a color change,
and a buffer effective to maintain the pH of the resulting mixture in a range of about from pH 4.5 to pH 5.5 and thereafter observing the color developed and correlating same to the quantity of uric acid present in the blood.

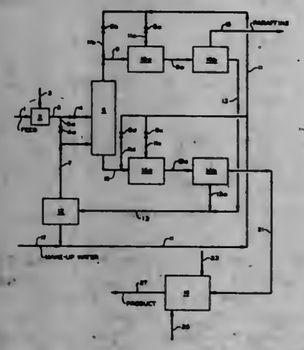
3,349,007
DISTILLATION PROCESS FOR RECOVERY OF OXIDATION PRODUCT OF CYCLOHEXANE
Stanislaw Marian Ciborowski and Kazimierz Zbigniew Balcerzak, Warsaw, Poland, assignors to Instytut Chemii Ogolnej, Warsaw, Poland
Filed Mar. 27, 1964, Ser. No. 355,297
Claims priority, application Poland, Mar. 30, 1963, P 101,183
3 Claims. (Cl. 203—26)



1. A method of distilling off unreacted hydrocarbon from a crude reaction mixture obtained from the liquid-phase air oxidation of the hydrocarbon which comprises:
(a) removing the crude reaction mixture from the oxidation reaction zone in which an exothermic reaction occurs and forwarding said crude reaction mixture to a rectifying column of a still,

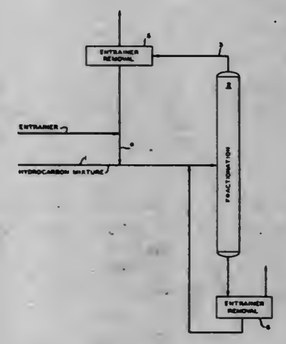
(b) distilling off in the rectifying column the unreacted hydrocarbon from the oxidation reaction products,
(c) compressing at least a portion of the unreacted hydrocarbon vapors taken off from the rectifying column by means of an injector to a pressure higher than that pressure obtaining in the still of the rectifying column,
(d) forwarding the compressed hydrocarbon vapors to a heating coil in the still of the rectifying column,
(e) condensing the hydrocarbon vapors in the heating coil, the heat of condensation being utilized in the vaporization of the unreacted hydrocarbon in the still, the process being further characterized by:
(1) a portion of the liquid unreacted hydrocarbon condensed in the heating coil is forwarded to a shell cooling system for the oxidation reactor wherein it is vaporized at a pressure higher than that of the hydrocarbon vapor leaving the rectifying column and is then compressed,
(2) the hydrocarbon vapors produced in the cooling system of the oxidation reactor are used as the driving agent of the injector employed in compressing the hydrocarbon vapors leaving the rectifying column,
(3) another portion of the liquid unreacted hydrocarbon condensed in the heating coil, together with fresh unreacted hydrocarbon introduced from outside the reaction system, is introduced into the reaction zone of the reactor for oxidizing, and
(4) the remaining portion of the liquid unreacted hydrocarbon condensed in the heating coil is recycled to the rectifying column as a reflux stream.

3,349,008
AZEOTROPIC DISTILLATION OF PARAFFIN-HALOGENATED PARAFFIN MIXTURES
Van C. Vives, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 19, 1964, Ser. No. 412,455
11 Claims. (Cl. 203—60)



1. The process of separating a mixture comprising haloaraffins and paraffins, which comprises:
introducing said mixture into a distillation zone;
distilling said mixture with an entrainer selected from the group consisting of N,N-dimethylformamide, N, N-diethylformamide, N-methyl-N-ethyl - formamide, N,N-dimethylacetamide, N,N-diethylacetamide, N-methyl-N-ethylacetamide, acetonitrile, propionitrile, butyronitrile, α-methylbutyronitrile, α,α - dimethylpropionitrile, and α-ethylbutyronitrile, said entrainer being added to said zone along with said mixture, to form an azeotrope with said paraffinic hydrocarbon;
withdrawing said azeotrope and entrainer as overhead;
recovering a paraffin rich fraction from said overhead;
withdrawing said haloparaffins as bottoms product; and
recovering a haloparaffin rich fraction from said bottoms product.

3,349,009
SEPARATION OF HYDROCARBONS BY DISTILLING WITH A FLUOROCARBON
Forrest N. Ruehlen, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 2, 1965, Ser. No. 506,086
9 Claims. (Cl. 203—67)



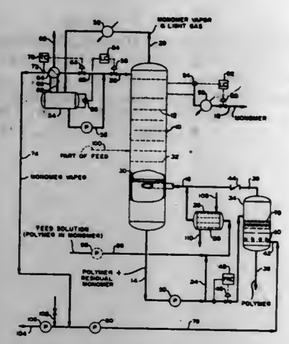
1. The method of separating a mixture of close boiling hydrocarbons into one or more components comprising:
(a) adding a fluorohalocarbon having at least one fluorine atom, at least one halogen atom other than fluorine and 2 to 6 carbon atoms per molecule to the mixture to form an admixture, said fluorohalocarbon functioning as an entrainer,
(b) distilling the admixture thus formed whereby at least one of the components of the mixture is obtained in a relatively pure state.

3,349,010
METHOD AND APPARATUS FOR CONTROLLING POLYMER DEPOSITION IN REBOILER
William E. Plaster, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,426
6 Claims. (Cl. 203—99)

1. In a process for recovering wash liquid substantially free of polymer from washings obtained by washing a solid olefin polymer in admixture with soluble polymer of the same olefin and monomer of said olefin comprising the steps of:
(a) feeding said washings into a fractional distillation column and there distilling same so as to recover an overhead vapor stream of said monomer and lighter material in minor amount, a bottoms liquid stream of said monomer and said soluble polymer of substantially higher polymer concentration than in said washings, and a side stream of said monomer substantially free of said light material as the recovered wash liquid;
(b) passing a substantial portion of the bottoms stream of step (a) in liquid form thru indirect heat exchange tubes of a reboiler to heat said stream and returning the heated liquid stream to the bottom section of said column as reboil liquid wherein there is a tendency for polymer to deposit in said tubes;

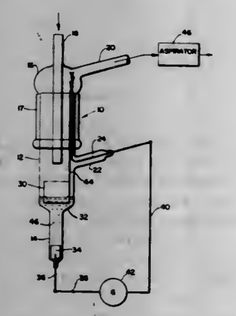
the improvement comprising:

(c) prior to feeding a substantial portion of the washings into the fractional distillation column admixing the washings feed of step (a) with the bottoms



stream of step (b) upstream of said reboiler so as to increase the flow rate of liquid thru said tubes and decrease the concentration of soluble polymer in the mixed stream, thereby decreasing the tendency of polymer to deposit in said tubes.

3,349,011
METHOD AND APPARATUS FOR MONITORING CO_2
Paul A. Hersch, Fullerton, and Carlos J. Sambucetti, La Habra, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Jan. 27, 1964, Ser. No. 340,157
7 Claims. (Cl. 204—1)



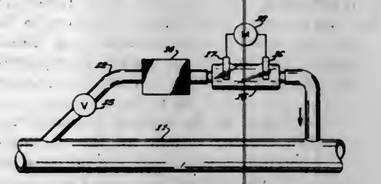
1. In a galvanic process for monitoring CO_2 in a gas sample containing O_2 and CO_2, the steps comprising:

providing a cathode and a mercury anode free of base metals joined by KOH solution with said cathode being only partly submerged in said solution, said cathode being selected from the group consisting of platinum and palladium;

conveying a stream of gas containing O_2 and CO_2 directly to the unsubmerged portion of the cathode; and

measuring the current across said electrodes without driving a current through said electrodes from an external power source whereby the current measured is a function of the CO_2 content of the gas stream.

3,349,012
POTENTIOMETRIC SENSOR WITH PRESATURATOR
Cyril Solomons, Edina, Minn., assignor to Honeywell Inc. a corporation of Delaware
Filed Feb. 13, 1964, Ser. No. 344,575
4 Claims. (Cl. 204—1)



2. The method of measuring the concentration of an anion dissolved in a fluid comprising:

(a) saturating the fluid to be tested with a relatively insoluble salt of a metal and the anion being sought by placing the sample in contact with an excess of said salt in solid form,

(b) inserting said saturated sample into a measuring cell including a reference electrode and a measuring electrode, said measuring electrode being composed of the metal of said insoluble salt,

(c) measuring the potential between said reference electrode and said measuring electrode.

3,349,013
ELECTROLYTIC RECORDING PROCESS AND MATERIALS
Eugene F. Barnes, Arlington Heights, and Carole N. Urbanski, Elmwood Park, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
No Drawing. Filed Jan. 22, 1964, Ser. No. 339,346
19 Claims. (Cl. 204—2)

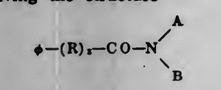
1. In a process of electrolytic facsimile recording wherein an anodic metal is dissolved in an electrolytically conducting recording medium by electrochemical oxidation of the metal to form soluble metal ions and the dissolved metal is deposited on the recording medium as a marking substance, the improvement which comprises employing as the recording medium a support impregnated with an electrolytically conducting solution containing a formaldehyde sulfoxylate reducing agent in an amount sufficient to deposit said dissolved metal on the medium as a marking substance.

3,349,014
METHOD AND COMPOSITION FOR THE TREATMENT OF AN ALUMINUM SURFACE
William H. Hyter, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
No Drawing. Filed Aug. 28, 1964, Ser. No. 392,953
13 Claims. (Cl. 204—15)

1. The method of anodizing a predetermined surface area of an aluminum part, which comprises applying a liquid electrolyte to a porous pad, said porous pad being positioned on a metal electrode, said electrolyte comprising about 2 to about 12% by weight of phosphoric acid, about 9 to about 30% by weight of acetic acid, and about 7% to about 60% by weight of sulfuric acid, connecting said electrode, said pad and said part in an electric circuit with said part forming the anode, contacting said pad with said surface area of said part, moving said pad over said predetermined surface area of said part and maintaining continuous contact between said pad and said surface area while passing direct current through said circuit, and continuing said movement of said pad and said passage of current for a period sufficient to form an anodic coating on said predetermined surface area of said part.

3,349,015
ELECTRODEPOSITION OF BRIGHT NICKEL
Frank Passal, Detroit, Mich., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 17, 1963, Ser. No. 295,818
9 Claims. (Cl. 204—49)

3. An aqueous acid electrolytic bath containing soluble nickel salts for the electrodeposition of nickel and containing as a primary brightener an effective amount of a compound having the structure

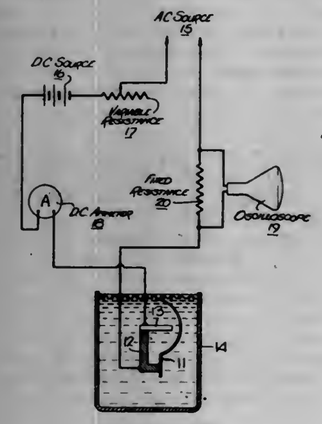


wherein R is selected from the group consisting of

$$—CH_2—CH_2—$$

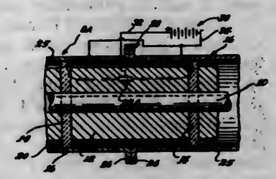
—CH=CH—, and —C≡C—; x is 0 or 1; A is selected from the group consisting of —CN and $—(CH_2)_a—CN$ wherein a is an integer 1–10; and B is selected from the group consisting of hydrogen, $—(CH_2)_a—CN$ wherein a is an integer 1–10, and hydrocarbon radicals having less than 6 carbon atoms.

3,349,016
PROCESS FOR EMPLOYING AN AUXILIARY ANODE MADE OF HIGH PURITY NICKEL
Francis Xavier Carlin, Pompton Lakes, N.J., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 12, 1965, Ser. No. 425,012
2 Claims. (Cl. 204—49)



1. In the electrodeposition of nickel from a chloride-containing nickel plating bath wherein an auxiliary anode made of high purity nickel containing not more than about 0.001% of sulfur is employed, the improvement comprising supplying to said auxiliary anode a direct current and a superimposed alternating current having a frequency of about 5 cycles per second to about 20 cycles per second and with a current ratio of alternating current to direct current of at least 4 to 1.

3,349,017
METHOD AND STRUCTURE OF CATHODICALLY PROTECTING METALLIC CASINGS OF HEAT DISTRIBUTION SYSTEMS
George E. Ziegler, Evanston, Ill., assignor to Concrete Thermal Casings, Inc., a corporation of Washington
Filed May 2, 1966, Ser. No. 546,835
9 Claims. (Cl. 204—147)



1. The method of protecting a metallic casing, of a heat distribution system that includes a pipe adapted to carry a heated fluid therethrough, from the corrosive deteriorating effects of moisture within the casing, which method comprises:

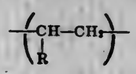
surrounding the pipe with the casing and a layer of thermally insulating material interposed between the pipe and the casing that is characterized by having good dielectric properties when dry but having some electrically conducting properties when wet, and that is further characterized by having at least one electrode in contact with the insulating material in radially spaced relation to the casing, and operatively distributed along the length of the pipe, with means associated therewith for making the casing the cathodic portion and the electrodes the anodic portion of a cathodic protecting system,

and circulating a heated fluid through the pipe to cause moisture within the thermally insulating material to be driven radially outwardly toward the casing to thereby open circuit the cathodic protective system,

whereby when the heat distribution system is first installed and before the circulation of heated fluid therethrough, and when the circulation of the heated fluid may be seasonably terminated thereby causing redistribution of moisture within the thermal insulating material, and when moisture may otherwise reach the proximity of the inner surface of said casing, the cathodic protection system provides continual protection for the casing internal surface against corrosion.

3,349,018
CONTROLLABLE DEGRADATION OF α-OLEFIN POLYMERS USING IRRADIATION
James E. Potts, Millington, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,562
10 Claims. (Cl. 204—159.2)

1. Method for uniformly and controllably degrading α-olefin polymers containing at least about 50 percent by weight α-olefin, the balance being an olefinic hydrocarbon copolymerizable therewith and having the repeating unit



wherein R is an alkyl group containing from about 1 to 16 carbon atoms which comprises subjecting such α-olefin polymer to ionizing radiation having an energy in the range of from about 50 kev. to about 20 mev. to a total dose between about 0.01 to about 3 megareps, whereby the molecular weight of said polymer is decreased.

3,349,019

PHOTOCHEMICAL PROCESS FOR THE PRODUCTION OF LINEAR TRANSITION METAL COORDINATION POLYMERS FROM METAL CARBONYLS

Harold E. Podall, Alexandria, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,170
3 Claims. (Cl. 204—159.11)

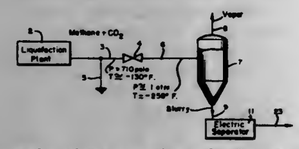
1. The process of making a transition metal containing polymer which comprises reacting a transition metal carbonyl derivative with a difunctional active hydrogen compound in an organic solvent in the presence of ultraviolet irradiation at a temperature in the range of from approximately 25° C. to 150° C.; wherein said derivative is a transition metal carbonyl having an organic or inorganic ligand attached to the metal in place of one or more of the carbon monoxide ligands and having at least one carbon monoxide ligand which remains attached to the metal, the difunctional hydrogen compound being a member selected from the group consisting of: phosphinic acids, sulfinic acids, stannoic acids, boronic acids, silanediols, and bis-β-diketones.

3,349,020

LOW TEMPERATURE ELECTROPHORETIC LIQUIFIED GAS SEPARATION

Carl F. Crownover and Richard L. Every, Ponca City, Okla., assignors to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company

Filed Jan. 8, 1964, Ser. No. 336,590
12 Claims. (Cl. 204—180)



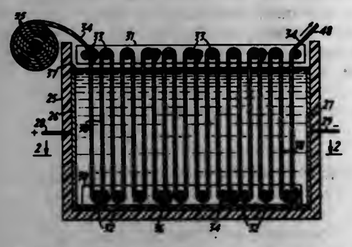
1. A process for the separation of mixtures including two different gases, one of which solidifies at a higher temperature than the other, which comprises the step of cooling the mixture until a slurry is produced wherein one of said two constituents is in a liquid phase and the other is in a solid phase, charging the solid phase particles of said slurry with a charge of a single polarity, and separating said charged particles from the liquid by attracting them to an electrode of opposite polarity to that of the charged particles in a high voltage D.C. field.

3,349,021

ELECTRODIALYSIS WITH MOVING MEMBRANES

Jerry Hugh Brown, Sunnyvale, Calif., and David Guy Conning, Surrey, England, assignors to American Machine & Foundry Company, a corporation of New Jersey

Original application Oct. 17, 1962, Ser. No. 231,614, now Patent No. 3,318,796, dated May 9, 1967. Divided and this application Jan. 10, 1967, Ser. No. 608,426
5 Claims. (Cl. 204—180)



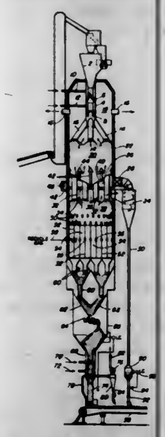
1. A method of electrodialysis comprising moving an ion exchange membrane through an electrodialysis device under tension while passing a current across said membrane and through fluid being treated and thereby agitating said fluid under treatment.

3,349,022

METHOD AND APPARATUS FOR RETORTING OIL SHALE

John G. Mitchell, Larchmont, and James H. Haddad, Dobbs Ferry, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

Filed June 23, 1965, Ser. No. 466,384
9 Claims. (Cl. 208—11)



1. In the retorting of oil shale granules by passage downwardly through a shale preheat zone, a kerogen decomposition zone, a combustion zone and a shale cooling zone countercurrent to rising gasiform material, the improvement which comprises cooling shale granules in said shale cooling zone by direct countercurrent contact with rising gasiform material in a plurality of elongated adjacently positioned confined passageways having a length to cross sectional ratio sufficient to maintain a substantially uniform gasiform material pressure drop through the separate passageways, recovering granular shale particles from said elongated passageways substantially uniform in temperature throughout the retort cross section, passing gasiform material preheated in said elongated passageway combined with combustion supporting gaseous material introduced to said retort upwardly through a combustion section countercurrent to downwardly flowing shale granules under conditions to heat said gaseous material by combustion, removing finely divided solid particle material moving upwardly through said mid retort with said heated gasiform material in a fines removal zone adjacent the upper level of said combustion section, passing heated gasiform material substantially free of solid fines upwardly through the kerogen decomposition zone and recovering kerogen decomposition products and gasiform material from the upper portion of said retort.

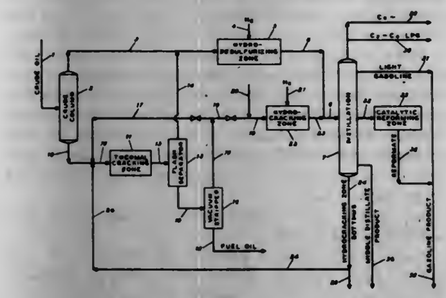
3,349,023

COMBINATION CRACKING PROCESS FOR MAXIMIZING MIDDLE DISTILLATE PRODUCTION

Norman J. Paterson, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware

Filed Mar. 5, 1964, Ser. No. 349,612
4 Claims. (Cl. 208—58)

1. In a process wherein a hydrocarbon residuum feed boiling above about 550° F., other than a hydrocracked fraction as described hereinafter, is thermally cracked in a thermal cracking zone to produce synthetic materials including gasoline and middle distillate, and the effluent thereof is separated into fractions including at least a gasoline fraction, a middle distillate fraction having an end boiling point of at least 550° F., a distillate gas oil fraction boiling above the end boiling point of said middle distillate fraction, and a cracked tar fraction boiling above the end boiling point of said gas oil fraction, and wherein conversion of said feed to said synthetic products increases as operating temperature is raised up to a critical conversion point above which gasoline yield continues to increase as operating temperature is further raised but middle distillate yield begins to decrease;



the improvement for raising said critical conversion point to increase the yield of middle distillate and decrease the yield of cracked tar without substantially changing gasoline yield, said yields being with reference to said hydrocarbon feed, which comprises:

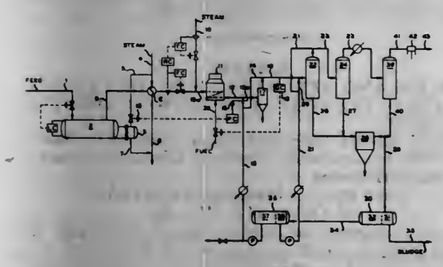
catalytically hydrocracking a hydrocarbon oil boiling above about 550° F., separating the oil effluent of the hydrocracking into fractions including middle distillate and a hydrocracked fraction boiling above the end boiling point of said middle distillate fraction separated from the effluent of said thermal cracking zone, and passing at least a portion of said hydrocracked fraction to said thermal cracking zone in an amount of from one to ten volumes per ten volumes of said hydrocarbon feed.

3,349,024

MAINTAINING PRESSURE IN A HYDROCARBON THERMALCRACKING ZONE

Luther F. Mayhue, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 17, 1964, Ser. No. 411,856
4 Claims. (Cl. 208—95)



4. In a continuous cracking process wherein a paraffin is cracked to an olefin in a tube reactor and wherein the coke build-up in the tubes of said reactor causes a decrease in the pressure of the effluent from said reactor, the improvement which comprises feeding paraffin from a liquid storage zone from which it is vaporized, sensing the pressure of said effluent from said reactor, and adjusting the heat supply to said liquid storage zone to vaporize said paraffin in accordance with said sensed pressure of said reactor effluent to maintain a predetermined pressure of said effluent.

3,349,025

HYDROCRACKING WITH A PRESULFIDED TUNGSTEN OXIDE COMPOSITE CATALYST FROM THE GROUP COMPRISING OF SILVER, ZINC OR THORIUM ON A SILICEOUS CARRIER

Alfred M. Henke, Springdale, Bruce K. Schmid, McCandless Township, Allegheny County, and James R. Strom, O'Hara Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 15, 1965, Ser. No. 472,300
12 Claims. (Cl. 208—111)

10. A hydrocracking method comprising contacting a low-nitrogen distillate hydrocarbon oil feed stock with hydrogen at hydrocracking conditions and with a presulfided hydrocracking catalyst prepared by contacting a composite of oxides of tungsten and at least one metal selected from the group consisting of silver, zinc and thorium, and an active, siliceous cracking catalyst, with a sulfiding gas mixture containing chiefly hydrogen in admixture with a minor proportion of a sulfiding agent, at a temperature in the range of about 300° to 900° F., for a period sufficient to sulfide at least a substantial portion of said oxides, said contact of feed stock and catalyst being carried out to form products of lower boiling range than the feed stock.

3,349,026

REFORMING PROCESS EMPLOYING A DEACTIVATED ISOMERIZATION CATALYST

Burwell Spurlock, Lafayette, and Emanuel M. Blue, Piedmont, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,824
1 Claim. (Cl. 208—140)

A process for reforming a naphtha feed which comprises (1) converting an isomerization catalyst that has been at least partially deactivated, said isomerization catalyst consisting essentially of platinum disposed on an alumina support and containing over 3 weight percent aluminum chloride chemically combined with said support through the surface hydroxyl groups therein, said isomerization catalyst having been at least partially deactivated by contact with deactivating agents during the isomerization reaction thereby effecting a deleterious change in the chemical structure of the chloride-containing compound imparting catalytic isomerization activity, said method of converting the deactivated isomerization catalyst comprising reducing the chloride level of catalyst to below 1 weight percent by contacting said catalyst with a gas having a water vapor content of from about 100 to about 1000 molal p.p.m., at a temperature of from about 400° to about 1100° F. and (2) contacting said naphtha feed with the resulting chloride reduced catalyst in a reforming zone at a temperature in the range of from about 800 to about 1050° F. and a pressure in the range of from about 100 to about 100° p.s.i.g. in the presence of hydrogen to produce a reformed naphtha with a substantially increased aromatic content and a substantial amount, on a net basis, of hydrogen.

3,349,027
MULTI-STAGE HYDRODESULFURIZATION PROCESS

Norman L. Carr, Allison Park, William A. Horne, Oakmont, and William C. Offutt and Allen E. Somers, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 8, 1965, Ser. No. 430,907
5 Claims. (Cl. 208—210)

1. A continuous, multi-stage, catalytic process for the hydrodesulfurization of a hydrocarbon stream boiling below about 650° F. which comprises

treating said hydrocarbon stream with hydrogen in a first reactor in the presence of a hydrodesulfurization catalyst at hydrodesulfurization conditions of pressure and temperature and at a weight hourly space velocity of between about 21 and 200,

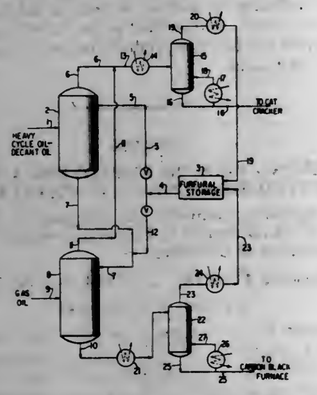
separating gaseous sulfur compounds from the hydrocarbon effluent stream from the first reactor, and

treating the hydrocarbon effluent stream with hydrogen in a second reactor in the presence of a hydrodesulfurization catalyst at hydrodesulfurization conditions of pressure and temperature and at a weight hourly space velocity of between about 21 and 200.

3,349,028
CONTINUOUS SOLVENT EXTRACTION OF DECANT, CYCLE AND GAS OILS

Warren E. Burch, Lake Charles, La., assignor to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

Filed July 9, 1965, Ser. No. 470,863
6 Claims. (Cl. 208—327)



1. A solvent extraction process for treating hydrocarbon feed to obtain a separate portion of aromatic hydrocarbons having nitrogen and metallic constituents suitable for carbon black feedstock and a separate portion of nonasphaltic, nonaromatic hydrocarbons substantially free of nitrogen and metallic components and suitable for catalytic cracking, said process comprising:

(a) intimately contacting a first hydrocarbon feed having an initial boiling point of at least 450° F. and containing 50% to 85% (vol.) heavy cycle oil, 50% to 15% (vol.) decant oil, said hydrocarbon feed comprising a mixture of 50% to 80% (wt.) aromatic hydrocarbons, 20% to 50% (wt.) nonaromatic hydrocarbons and containing significant quantities of nitrogen and metallic constituents with a first solvent for said aromatic hydrocarbons, thereby forming a first extract phase containing a major portion of said first solvent, a major portion of said aromatic hydrocarbons, and a major portion of said nitrogen and metallic constituents and a first raffinate phase containing a minor portion of said first solvent, a minor portion of said aromatic hydrocarbons, a minor proportion of said nitrogen and metallic constituents, and a major portion of said nonaromatic hydrocarbons;

(b) separating said first extract phase from said first raffinate phase;

(c) intimately contacting a second hydrocarbon feed comprising a substantially asphaltene-free gas oil having an initial boiling point of at least about 450° F. and containing from about 10% to about 20% (wt.) aromatic hydrocarbons, from about 80% to about 90% (wt.) nonaromatic hydrocarbons and nitrogen and metallic constituents with at least a portion of said first extract phase and additional quantities of said solvent, thereby forming a second extract phase containing a major portion of said first solvent, a major portion of said additional solvent, a major portion of said aromatic hydrocarbons, and a major portion of said nitrogen and metallic constituents from said first and second hydrocarbon feeds and a second raffinate phase containing a minor portion of said solvents, a minor portion of said nitrogen and metallic constituents, and a major portion of nonaromatic hydrocarbons from said second hydrocarbon feed;

(d) separating said second extract phase from said second raffinate phase;

(e) removing the major portion of solvent from said second extract phase, thereby recovering an aromatic concentrate containing a major portion of said nitrogen and metallic constituents and suitable as carbon black feedstock; and

(f) removing solvent from said first and second raffinate phases, thereby recovering a mixture of predominantly nonaromatic hydrocarbons substantially free of nitrogen and metallic constituents and suitable for catalytic cracking feedstock.

3,349,029
CARBON AND WATER RECOVERY

Jen-Pu Cheng, St. Louis, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 20, 1964, Ser. No. 383,902
25 Claims. (Cl. 210—21)

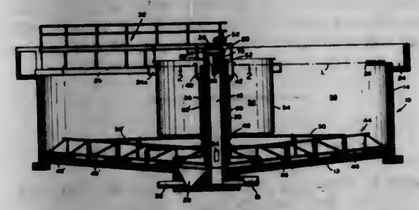
1. An improved process for recovering finely divided carbon particles from an aqueous medium system containing said finely divided carbon particles comprising (1) treating said finely divided carbon particle-containing aqueous medium system with a sufficient amount of a surfactant capable of rendering said carbon particles hydrophobic, (2) contacting said so-rendered hydrophobic carbon particles wtih sufficient water insoluble solvent to transform said so-rendered carbon particles into larger discrete carbon units, and (3) separating said larger discrete carbon units from said aqueous medium system, thereby producing water capable of reuse.

3,349,030
PROCESS AND APPARATUS FOR THE CLARIFICATION TREATMENT OF SOLIDS-CARRYING LIQUIDS

Elton S. Savage, Ridgefield, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,633
23 Claims. (Cl. 210—46)

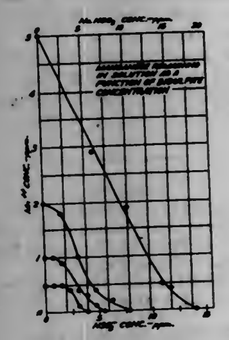
19. In a process for treating liquids containing suspended solids, in a tank provided with a flocculation zone wherein said solids are flocculated in the presence of previously settled solids and a clarification zone wherein the thus flocculated solids are permitted to settle whereby clarified liquid is discharged as overflow from said tank and settled sludge solids are discharged from the bottom of said tank, the improvement comprising continuously feeding raw liquid to be treated into said flocculation zone wherein suspended solids are contacted with each other as well as with recirculated solids while maintaining relatively gentle agitation sufficient to promote floc formation, selectively recirculating a predetermined portion of previously settled sludge solids derived directly from concentric annular sections in said clarification zone into said flocculation zone along with said raw feed to effect flocculation and sedimentation of said solids, and discharging settled solids from the bottom of said tank.



3,349,031
METHOD AND COMPOSITION FOR REMOVAL OF MANGANESE FROM WATER

George B. Hatch, Allison Park, and Elizabeth A. Guthrie, Philadelphia, Pa., assignors to Calgon Corporation, Pittsburgh, Pa.

Filed Aug. 20, 1965, Ser. No. 481,218
10 Claims. (Cl. 210—50)



5. A method of oxidizing substantially all Mn^{++} in water containing dissolved oxygen and having a pH of between about 6 and about 7, comprising adding a compound which yields bisulfite ion in solution in an amount in p.p.m. determined by the equation

$$[HSO_3^-]=2[Mn^{++}]+4$$

and about ½ to 10 p.p.m. of a compound selected from the group consisting of soluble salts of iron, copper, and cobalt, where $[Mn^{++}]$ is the manganous ion concentration of said water in p.p.m. and $[HSO_3^-]$ is the bisulfite ion concentration in p.p.m. of said water after said compound yielding bisulfite ions has been added and exhausted of its bisulfite.

6. A solid composition useful for precipitating manganese from water containing Mn^{++} consisting essentially of (*a*) a compound selected from the group consisting of soluble salts of iron, copper, and cobalt, and (*b*) a compound which yields bisulfite ions in solution where the ratio of the iron, copper, and cobalt to bisulfite ion is about 0.01:1 to about 0.5:1.

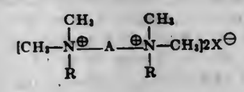
3,349,032
METHOD OF PREVENTING THE SWELLING OF CLAYS IN SUBTERRANEAN FORMATIONS

Charles D. Krieg, Houston, Tex., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,352
6 Claims. (Cl. 252—8.55)

1. A method of preventing the swelling of clay-containing materials in contact with water which is characterized by contacting said materials with a polyquaternary amine selected from the group consisting of

(1) the polyquaternary amine having the formula

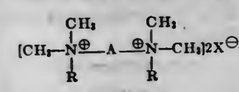


where R is selected from the group consisting of a hydrocarbon radical having at least 6 carbon atoms, chlorophenyl, and nitrophenyl,

A is selected from the group consisting of an alkylene ether radical having 1–10 carbon atoms and a cycloalkylene ether radical having 4–10 carbon atoms, and

X is an anion, and

(2) the polyquaternary amine having the formula



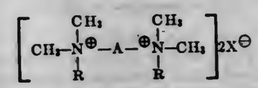
where R is selected from the group consisting of a hydrocarbon radical having at least 6 carbon atoms, chlorophenyl, and nitrophenyl,

A is an unsaturated aliphatic hydrocarbon radical having 2–10 carbon atoms, and

X is an anion.

5. A method of recovering oil from clay-containing subterranean oil-bearing formations by water flooding which is characterized by flooding said formations with water containing a polyquaternary amine selected from the group consisting of

(1) the polyquaternary amine having the formula

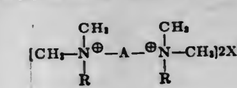


where R is selected from the group consisting of a hydrocarbon radical having at least 6 carbon atoms, chlorophenyl, and nitrophenyl,

A is selected from the group consisting of an alkylene ether radical having 1–10 carbon atoms and a cycloalkylene ether radical having 4–10 carbon atoms, and

X is an anion, and

(2) the polyquaternary amine having the formula



where R is selected from the group consisting of a hydrocarbon radical having at least 6 carbon atoms, chlorophenyl, and nitrophenyl,

A is an unsaturated aliphatic hydrocarbon radical having 2–10 carbon atoms, and

X is an anion

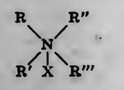
in an amount sufficient to prevent the swelling of the clays in said formations.

3,349,033
STABLE MICROBIOLOGICALLY ACTIVE LAUNDRY SOFTENER

Vincent Zuccarelli, Staten Island, N.Y., assignor, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,307
5 Claims. (Cl. 252—8.75)

1. A stable microbiocidally active laundry softener composition consisting essentially of a softeningly effective amount of (1) a quaternary ammonium fabric softener, (2) a microbiocidally effective amount of a quaternary ammonium salt having only one alkyl group of 8 to 22 carbon atoms attached to the quaternary nitrogen and having a phenol coefficient of at least 200, and (3) about 1 to 3% by weight of an emulsifying agent consisting of a fatty alcohol having 10 to 18 carbon atoms in the chain, said fabric softener having the structure:



wherein R and R' are alkyl radicals having 10 to 20 carbon atoms, R'' is a methyl radical, R''' is a radical selected from the group of methyl, ethyl, and an ethoxylated radical having the structure $(CH_2—CH_2O)_nH$ where n is an integer of at least 1, and X is an anion selected from the group consisting of chlorine, bromine, sulfate and methosulfate.

3,349,034
GREASE COMPOSITIONS

Richard A. Butcosk and William F. Olszewski, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 5, 1965, Ser. No. 453,517
7 Claims. (Cl. 252—28)

1. A grease comprising
a major proportion of an oil of lubricating viscosity,
a grease forming amount of a thickening agent, and
from about 0.2 to about 5 percent by weight, based upon the grease, of a thiobis(dichlorophenol).

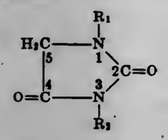
6. A grease defined by claim 1 wherein the thickening agent is an essentially hydrophobic clay.

3,349,035
ACTIVATED BLEACHING COMPOSITION

Karl Dithmar and Peter Koblischek, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed May 10, 1965, Ser. No. 454,655
Claims priority, application Germany, May 12, 1964
D 44,402
7 Claims. (Cl. 252—99)

1. A solid, stable bleaching composition for the production of aqueous baths having a bleaching action consisting essentially of a solid, stable inorganic peroxygen bleaching compound and a 1-substituted-3-acylhydantoin activator of the structure:



wherein R_1 is a member selected from the group consisting of alkyl, cycloalkyl, phenyl, alkyl-phenyl and phenylalkyl, the alkyl groups indicated being lower alkyl and R_2 is an acetyl group, the amount of said activator being about 0.3 to 1.25 mol per mol of peroxygen present.

3,349,036
CLEANING COMPOSITION

Arthur W. Campbell, Terre Haute, Ind., assignor to Vego Chemical Corporation, Terre Haute, Ind.

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,052
2 Claims. (Cl. 252—101)

1. A cleaning composition for aluminum boat bottoms consisting essentially of aqueous nitric acid of concentration ranging from 5.0 to 35.0% by weight, HNO_3 content and 0.25 to 20.0% by weight, of sulfamic acid, based on the HNO_3 content of the composition.

3,349,037
ADDITIVE FOR STAINLESS STEEL PICKLING BATHS

Joseph C. Peterson, 3801 N. Meridian St., Apt. 402, Indianapolis, Ind. 46208

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,568
6 Claims. (Cl. 252—146)

1. An additive for acid pickling baths consisting essentially of 0.5 to 1 part by weight of lignin sulfonate, 20 to 30 parts by weight of sodium 2-ethylhexyl sulfate, and 25–30 parts by weight of propylene glycol, the balance being water.

3,349,038
DETERGENT COMPOSITIONS

Edwin B. Michaels, Stamford, and Clayton A. Wetmore, Norwalk, Conn., assignors to Stamford Chemical Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 24, 1962, Ser. No. 189,699
6 Claims. (Cl. 252—161)

1. A detergent composition suitable for use in charging a drycleaning solvent which consists essentially of: a major amount of an oil-soluble petroleum sulfonate of average molecular weight between about 425 and about 465 and a minor amount of a water-soluble alkyl aryl sulfonate having a molecular weight from about 200 to about 350, said alkyl aryl sulfonate being present from 1% but not exceeding 8% of the oil-soluble sulfonate by weight.

3,349,039
CLEANING COMPOSITION

Daniel Auguste Marie Henri Renault, Boulogne-sur-Seine, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed June 19, 1963, Ser. No. 288,918
Claims priority, application France, June 26, 1962, 901,995
5 Claims. (Cl. 252—172)

1. A liquid cleaning composition consisting essentially of a major portion of trans-dichloroethylene and a minor portion of a compound selected from the group consisting of ethyl bromide, methylene chloride, and trifluorotrichloroethanes, said compound being present in admixture with the trans-dichloroethylene in an amount within the range of 15–30% by weight.

3,349,040
PEROXIDE CURING OF UNSATURATED POLYESTER RESINS AND FORMULATIONS THEREFOR

Donald M. Kreesin, Getzville, Solomon C. Westbrook, Jr., Buffalo, Orville L. Magell, Kenmore, and James R. Kolczynski, Williamsville, N.Y., assignors to Wallace & Tiernan, Inc., East Orange, N.J., a corporation of Delaware

No Drawing. Filed Apr. 17, 1967, Ser. No. 631,174
13 Claims. (Cl. 252—182)

1. A peroxide solution formulation consisting essentially of:
(a) 3,5-dimethyl - 3,5-dihydroxy - 1,2-peroxycyclopentane; and

(b) organic liquid solvent having substantial solubility in water, which solvent is selected from the class consisting of:
(1) lower alkanols;
(2) benzyl alcohol;
(3) lower glycols;
(4) ether glycols;
(5) saturated heterocyclic diethers having only carbon, hydrogen and oxygen atoms and 3–4 carbon atoms in the ring;
(6) alkyl and cycloalkyl ketones having a total of 3–7 carbon atoms;
(7) lower alkyl esters of lower alkanols, lower glycols, and ether glycols;
(8) saturated monohydric ether alcohols having a total of 4–8 carbon atoms;
(9) ketoalkanols and lower alkyl esters of ketoalkanols having 4–8 carbon atoms in the ketoalkanol portion;
(10) lower alkyl esters of phosphoric acid;
(11) N-alkyl-2-pyrrolidone where alkyl has 1–4 carbon atoms;
(12) R'-ethers of lower glycols and ether glycols where R' is lower alkyl or phenyl;
(13) mono-R' ether, mono-lower alkyl ester of lower glycols and ether glycols where R' is lower alkyl or phenyl; and
(14) di-R''-alkali metal sulfosuccinate where R'' is alkyl having 6–16 carbon atoms.

3,349,041
GEL-FORMING INSPECTION PENETRANT AND EMULSIFIER COMPOSITIONS AND PROCESSES

James R. Alburger, 5007 Hillard Ave., La Canada, Calif. 91011

Filed Oct. 18, 1965, Ser. No. 497,058
20 Claims. (Cl. 252—301.2)

17. A gel-forming water-washable and normally liquid testing composition for use in the detection of surface discontinuities in test bodies, said composition consisting essentially of a normally liquid water-soluble ethoxylated alkylphenol having a concentration within the approximate range of 30–80%, a normally liquid water-insoluble ethoxylated alkylphenol having a concentration within the approximate range of 10–25%, a normally liquid water-soluble glycol extender having a concentration within the approximate range of zero to 45%, and at least one indicator dye having a concentration within the approximate range of .1–40%.

18. A liquid testing composition in accordance with claim 17 in which said indicator dye is a fluorescent sensitizer.

3,349,042
MEANS AND METHOD FOR VAPOR AND FOG GENERATION

Edward F. Andrews, 105 15th St., Belleair Beach, Fla. 33565

Filed Feb. 6, 1964, Ser. No. 343,066
25 Claims. (Cl. 252—305)

9. The method of producing a hot pressurized vapor comprising the steps of providing a source of gaseous fuel under pressure and a source of vaporizable fog forming liquid, utilizing the pressure of said gaseous fuel to force vaporizable liquid from said source into a confined space while maintaining complete separation of said gaseous fuel from said vaporizable liquid, burning the same gaseous fuel after it has forced the vaporizable liquid into said confined space to vaporize said vaporizable liquid in said confined space and discharging said vaporizable liquid after it has been vaporized by the heat from the burning of said gaseous fuel through an orifice in said confined space.



3,349,043
METHODS AND COMPOSITIONS FOR CONTROLLING OXIDATION OF METAL SURFACES

John A. Manning, Hinsdale, Mass.; Harry J. Dame, executor of said John A. Manning, deceased, assignor to Manning Development Corporation, Lenox, Mass., a corporation of Massachusetts

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,541
12 Claims. (Cl. 252—407)

1. A method of controlling oxidation of a surface of metal selected from the class consisting of copper, brass, iron, aluminum, magnesium, zinc and uranium, comprising applying to the surface, in the presence of water, a mixture of
(a) at least one compound selected from the class consisting of glycolic, diglycolic, gluconic, tannic, citric, oxalic, glutaric, sebacic, azeleic, pelargonic, butyric, valeric, caproic, caprylic, capric, lauric, myristic, palmitic, stearic, oleic, linoleic, phenylacetic, benzoic, o-, m-, and p-toluic, o-, m-, and p-chlorobenzoic, o-, m-, and p-bromobenzoic, phthalic, isophthalic, terephthalic, salicylic, anthranilic, m- and p-aminobenzoic, lactic, glyceric, tartaric, glyoxalic, and formyl-acetic acids, propanoic and butanoic acid anhydrides, lead, zinc, tin, chromium, cadmium, sodium and potassium salts of sebacic acid, azeleic acid and pelargonic acid, cresylic acid, ascorbic acid, 2-keto-1-gulonic acid, pyruvic acid, acetoacetic acid, levulinic acid, o-benzoylpropionic acid, beta-benzoylpropionic acid, sodium ascorbate, potassium ascorbate, calcium ascorbate and magnesium ascorbate; and
(b) at least one diketone selected from the class consisting of 2,4 pentanedione and 2,5 hexanedione, said one compound being present in said mixture in a proportion of at least about 1% by weight, and said one diketone being present in said mixture in a proportion of at least about 0.1% by weight.

3,349,044

PROCESS FOR POLYMERIZATION OF VIC-EPOXY COMPOUNDS WITH ALUMINUM HYDROCARBYL-SALICYLIC ACID CATALYSTS

Ernst L. Th. M. Spitzer, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,101
Claims priority, application Netherlands, May 31, 1963, 293,496
10 Claims. (Cl. 260—2)

1. A process for the polymerization of epoxide compounds which comprises polymerizing monomeric halogen-substituted vic-epoxy compounds at about —80° C. to about +150° C. in the presence of a catalyst comprising an aluminum hydrocarbyl compound and a hydrocarbyl-substituted salicylic acid, said acid having at least one hydrocarbyl substituent directly attached to the aromatic nucleus of the acid, the molar ratio of hydrocarbyl-substituted salicylic acid to aluminum compound being between about 0.1 and 2.1.

3,349,045

POLY(α,α,α',α'-TETRACHLORO-p-XYLYLENE) FILMS

Heinrich G. Gilch, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 9, 1964, Ser. No. 381,563
4 Claims. (Cl. 260—2)

1. A process for the preparation of poly(α,α,α',α'-tetrachloro-p-xylylene) films which comprises

(1) passing α,α,α,α',α',α'-hexachloro-p-xylene through a reaction chamber containing a metal reducing agent selected from the group consisting of copper, zinc, aluminum and tin and which is maintained at a temperature of between about 400° C.–600° C. and at a pressure between about 0.01 to 1 mm. Hg to form a vaporous mixture containing reactive intermediary α,α,α',α'-tetrachloro-p-xylylene diradicals and a vaporous metal chloride compound;

(2) passing the mixture of said vapors over a surface which is maintained at a temperature of between about 150° C.–350° C. to deposit the vaporous metal chloride compound on said surface;

(3) depositing the vapors containing the reactive intermediary α,α,α',α'-tetrachloro-p-xylylene diradicals on a second surface which is maintained at a temperature of between 100° C.–200° C.;

(4) heating said second surface to a temperature of between about 150° C.–250° C. for a period of between about 40 to 120 minutes; and

(5) recovering from said second surface a film of clear, non-crystalline poly(α,α,α',α' - tetrachloro-p-xylylene).

3,349,046

MICROPOROUS PLASTIC SHEET MATERIAL AND METHOD OF MAKING SAME

Jerrold J. Abell, Manchester, and Kenneth J. Virkus, Willimantic, Conn., assignors to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,638
7 Claims. (Cl. 260—2.5)

1. A permeable microporous thermoplastic resinous sheet comprising a layer of sintered granules of at least one thermoplastic resin selected from the group consisting of polyvinyl chloride and a copolymer of vinyl chloride and vinyl acetate, said copolymer containing from 85% to 97% by weight of vinyl chloride, said granules of resin being plasticized with a compatible liquid monomeric diacid ester of a glycol and an unsaturated carboxylic acid, said ester being capable of being polymerized to produce a thermoset resin, said granules also containing a polymerization inhibitor which prevents polymerization of said ester during sintering and a polymerization catalyst.

3,349,047

CURABLE LIQUID POLYSULFIDE RESIN STABLY ADMIXED WITH CALCIUM PEROXIDE

Eric A. Sheard, Hamilton Square, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,512
3 Claims. (Cl. 260—18)

2. A one-package, time-stable, substantially anhydrous polymer composition capable of being cured to a solid polysulfide rubber upon exposure to water at common room temperatures and also capable of being shipped and stored in a single container and later being deposited in place wtihout agitation or intermixing with other material for complete curing solely by contact of its surface with moisture-containing surroundings, the one-package polymer composition consisting essentially of a liquid polythiopolymercaptan polymer in which there is dispersed from about 1 to about 8 parts by weight of calcium peroxide, all quantities being based upon each 100 parts by weight of liquid polythiopolymercaptan polymer contained in the one-package polymer composition.

3. A one-package polymer composition according to claim 2, in which polymer composition there is also dispersed from about 0.1 to about 5 parts by weight of a cure rate retarding agent selected from the group consisting of cadmium stearate, lead stearate, cobalt stearate, aluminum octoate, aluminum distearate, and oleic acid.

3,349,048

METHOD FOR MAKING LINEAR POLYDIARYLSILOXANES

Howard A. Vaughn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 17, 1965, Ser. No. 508,393
8 Claims. (Cl. 260—18)

1. A method for making linear diarylpolysiloxane composed of at least five chemically combined diarylsiloxy units comprising (1) forming a paste consisting essentially of a substantially inert organic solvent, a diarylsilane diol, and a metal salt of a fatty acid utilized in said paste in an amount sufficient to provide for a proportion of from 0.01 percent to 3 percent by weight of metal, based on the weight of said diarylsilane diol, (2) effecting the removal of said substantially inert organic solvent from said paste, (3) heating the resulting product of (2) to a temperature between 20° C. and 225° C. and (4) recovering linear polydiarylsiloxane from (3).

2. The method of claim 1 where said metal salt of a fatty acid is stannous octoate.

3,349,049

URETHANE COATINGS FROM HYDROXYL TERMINATED POLYESTERS PREPARED FROM DIMER ACIDS

Joseph J. Seiwert and Jack B. Boylan, Cincinnati, Ohio, assignors to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,322
6 Claims. (Cl. 260—22)

1. A package made of separate components, A and B, which on being mixed together cure to form a protective coating when cast in a film-form on a substrate, said component A being an organic solution of a polyfunctional compound containing a plurality of available isocyanate groups, and component B being a hydroxyl-terminated polyester formed from a polyol and a mixture of carboxylic acids made of 10 to 70 mol percent dimer acids, from 20 to 80 mol percent of an acid selected from the group consisting of maleic acid, phthalic acid, isophthalic acid, fumaric acid, succinic acid, maleic anhydride, phthalic anhydride, succinic anhydride, and mixtures of said acids and said anhydrides, and from 10 to 70 mol percent of an aliphatic, monobasic acid containing from 9 to 22 carbon atoms, said polyester having a hydroxyl functionality of at least 2, an acid value below about 5, a hydroxyl value of at least 50, and a molecular weight of from about 300 to 3000.

3,349,050

COATING COMPOSITION

Alexander N. Salem, Brecksville, Ohio, assignor, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 8, 1965, Ser. No. 446,700
8 Claims. (Cl. 260—22)

1. In organic solvent solution, a compatible blend of:

(1) organic solvent-soluble copolymer of an ethylenically unsaturated, oil-modified alkyd resin with monomers selected from the group consisting of styrene, methyl methacrylate, and mixtures of styrene and methyl methacrylate, said copolymer containing at least 30% by weight of said monomers; and

(2) organic solvent-soluble methyl methacrylate copolymer consisting essentially of from 50–75% by weight of methyl methacrylate, from 15–40% by weight of lauryl methacrylate and from 1 to 10% by weight of monoethylenically unsaturated carboxylic acid;

said blend containing said copolymer alkyd and said methyl methacrylate copolymer in a weight ratio of 50:50 to 90:10.

3,349,051

POLYESTER RESIN MODIFIED BITUMINOUS COMPOSITIONS

Stephen H. Alexander, St. Louis, Mo., and Stewart R. Montgomery, Silver Spring, Md., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 9, 1964, Ser. No. 336,635
5 Claims. (Cl. 260—28.5)

1. A cured bituminous composition consisting essentially of a polyester resin-modified bituminous composition prepared by mixing 10 to 60 percent by weight of a bitumen, 15 to 70 percent by weight of an unsaturated polyester resin wherein said unsaturated polyester resin is one prepared by the polycondensation of a dibasic acid selected from the group consisting of maleic acid, fumaric acid, aconitic acid, itaconic acid, citraconic acid, and chloromaleic acid, and a polyhydric alcohol selected from the group consisting of ethylene glycol, propylene glycol, dipropylene glycol, and trimethylene glycol, and 10 to 45 percent by weight of a solvent comprising a substituted aromatic hydrocarbon having ethylenically unsaturated substituents, said solvent being a cross-linking agent for said polyester resins.

3,349,052

THERMOPLASTIC FIBERS AND METHOD OF PREPARING SAME

Ralph Zaayenga, West Chester, and Francis B. Bartholf, Boothwyn, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Mar. 3, 1965, Ser. No. 436,936
13 Claims. (Cl. 260—28.5)

1. Method of forming thermoplastic fibers which comprises (1) heating a homogeneous blend of polyethylene and hydrocarbon wax to above the softening point of the blend, said blend containing 35–75% polyethylene and 25–65% wax, said polyethylene having a density of 0.925 to about 0.950, (2) cooling said blend to below its softening point while simultaneously mixing same, whereby said homogeneous blend solidifies as a plurality of small discrete fibers, and (3) recovering said fibers.

3,349,053

CROSSLINKED WATER SOLUBLE POLYMER OF DIGLYCIDYL ETHER AND AN ALKANOLAMINE

Theodore L. Ashby, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 31, 1964, Ser. No. 386,733
7 Claims. (Cl. 260—29.2)

1. A water soluble crosslinked resin comprising the reaction product of diglycidyl ether, an alkanolamine and an alkylenediamine, wherein the amine chemical equivalents are approximately equal to the equivalents of diglycidyl ether, each of said alkanolamine and alkylenediamine independently containing a divalent hydrocarbon group having from 2 to 4 carbon atoms and the ratio of said alkanolamine to said alkylenediamine being from about 10:1 to about 100:1 said reaction product prepared by reacting diglycidyl ether with an alkanolamine and an alkylenediamine at a temperature between about 25 and 80° C., then digesting the product of said reaction to promote polymer chain growth and crosslinking.

3,349,054

TEXTILE DECORATING METHODS USING CURABLE POLYMERIC COMPOSITIONS CONTAINING MIXTURES OF POLYCYCLOALIPHATIC POLYEPOXIDE AND TRIAZINE

George J. Leitner, Peekskill, and Eduard K. Kleiner, New York, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,583
15 Claims. (Cl. 260—29.6)

13. The method of decorating textiles consisting of

A. applying to a textile a composition comprising

(1) a coloring agent

(2) an extender and

(3) a heat curable resinous composition of:

(a) at least one aqueous emulsion interpolymer composed of

(1) from about 25 to about 55% by weight, of styrene,

(2) from about 45 to about 75%, by weight, of at least one alkyl acrylate having from 7 to 15 carbon atoms, and

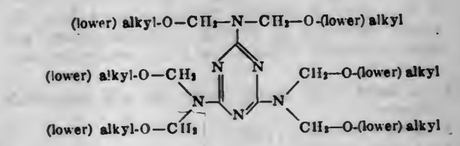
(3) from about 0.5 to about 10%, by weight, of at least one reactive acrylic,

said interpolymer having a glass transition temperature of from about —20 to about +5° C., and

(b) from about 0.5 to about 30%, by weight of interpolymer, of a mixture consisting of

(1) a polycycloaliphatic polyepoxide, each cycloaliphatic ring of which contains from 5 to 6 carbon atoms and at least one epoxide group, and

(2) from about 10 to about 90%, by weight of said mixture, of a triazine of the formula:



and

B. heating said textile at such a temperature and for such a period as to cure the composition thus applied.

3,349,055
MANUFACTURE OF ELECTROCONDUCTIVE INKS CONTAINING POLYVINYL METHYL-MALEIC ACID COPOLYMERS OR SALTS THEREOF AS ADHESIVE

Akira Taguchi, 20 Mita-Koyama-cho, Shiba, Minato-ku, Tokyo, Japan

Filed Apr. 6, 1965, Ser. No. 446,087
3 Claims. (Cl. 260—29.6)

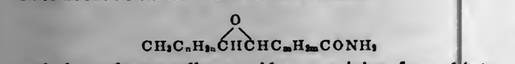
1. A method for the manufacture of an aqueous electroconductive ink, said method comprising adding carbon black to an aqueous solution consisting essentially of a dispersion adhesive which is present in an amount between 5 and 25% by weight of the dry weight of carbon black, said dispersion adhesive being selected from the group consisting of the half amide of polyvinyl methyl maleic acid copolymer, and the ammonium salt thereof, adding a carbon black dispersing agent to the aqueous solution to form a mixture, and thoroughly mixing the resulting mixture with a preservative.

3,349,056
POLYOLEFIN COMPOSITIONS STABILIZED WITH EPOXYALKANOAMIDES

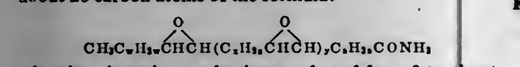
Lloyd H. Wartman, Charleston, and Charles E. Ladish, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Sept. 27, 1965, Ser. No. 490,332
12 Claims. (Cl. 260—30.4)

1. A polyolefin composition comprising a normally solid polyolefin containing therein from 0.01 to 1 weight percent of an epoxyalkanoamide selected from the group consisting of monoepoxyalkanoamides containing from 14 to about 30 carbon atoms of the formula:



and the polyepoxyalkanoamides containing from 14 to about 20 carbon atoms of the formula:



wherein n is an integer having a value of from 3 to about 15, m is an integer having a value of from 3 to about 19, with the sum of n plus m having a value of from 10 to about 26; w is an integer having a value of from 0 to about 7, x is an integer having a value of from 0 to about 6, z is an integer having a value of from 2 to about 8, y is an integer having a value of from 1 to 3, with the sum of w, x and y having a value of from 4 to about 14.

3,349,057
POLYSULFIDE POLYMERS WITH STABILIZED PROPERTIES

Joseph J. Giordano, Woodbridge, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed May 12, 1964, Ser. No. 366,898
22 Claims. (Cl. 260—45.75)

3. A curable polysulfide polymer based composition comprising in uniform admixture

(a) a polysulfide polymer that is ordinarily liquid at 25° C. and of the formula $HS(RSS)_xRSH$, wherein R is a divalent aliphatic radical selected from the group consisting of alkylene, oxahydrocarbon and thiahydrocarbon radicals, and x is a number between 3 and 100;
(b) a metal oxide curing agent for said polysulfide polymer;
(c) orthonitroanisole; and
(d) a cure stabilizing system comprising at least one polar liquid with a dipole moment of at least 0.5 debye units, and at least one copper salt that is soluble in said polar liquid to the extent of at least 5% by weight based upon the weight of said polar liquid.

17. A process for providing polysulfide polymer based vulcanizates of consistent physical properties comprising the steps of

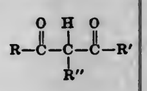
(a) mixing to uniform admixture
(I) a polysulfide polymer that is ordinarily liquid at 25° C. and of the formula $HS(RSS)_xRSH$, wherein R is a divalent aliphatic radical selected from the group consisting of alkylene, oxahydrocarbon, and thiahydrocarbon radicals, and x is a number of about 3 to 100,
(II) a metal oxide curing agent for said polysulfide polymer, said curing agent being present in from about 1 to 20 parts by weight per 100 parts by weight of said polysulfide polymers,
(III) orthonitroanisole, said orthonitroanisole being present in from about 2 to 50 parts by weight per 100 parts by weight of said polysulfide polymer,
(IV) a polar liquid which has a group dipole moment of at least 0.5 debye units, and is present in at least 0.01 part by weight per 100 parts by weight of said polysulfide polymer, and
(V) a copper salt that is soluble to the extent of at least 5% in said polar liquid, and is present in at least about 0.005 part by weight of copper per 100 parts by weight of said polysulfide polymer;
(b) subjecting the admixture prepared in step (a) to curing temperatures of 70° F. to 350° F. for 0.1 to 100 hours to provide a solid elastomeric vulcanizate.

3,349,058
ORGANIC PHOSPHITES FOR PREVENTION OF VOID FORMATION IN POLYMER OLEFIN STRUCTURES

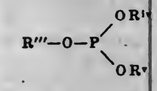
Kenneth R. Mills and Arthur A. Harban, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,012
9 Claims. (Cl. 260—45.85)

1. A process for the preparation of a substantially void free structure from a polymer of a mono-1-olefin which has been treated with a diketone to extract catalyst residue, said diketone having the structural formula



wherein R and R′ are selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, alkaryl, alkylcycloalkyl, cycloalkylalkyl, alkoxy, cycloalkoxy, aroxy, aralkoxy, alkaroxy, alkylcycloalkoxy and cycloalkylalkoxy groups and R″ is hydrogen or a hydrocarbon group as defined for R and R′ and the number of carbon atoms in each of R, R′ and R″ being up to 8, comprising intimately admixing said polymer with a phosphite ester represented by the formula



wherein R‴ is a hydrocarbon group selected from the group consisting of alkyl, aryl, cycloalkyl, alkaryl and aralkyl groups having 1 to 20 carbon atoms and R^{IV} and R^{V} are selected from the group consisting of R‴ and hydrogen, extruding said polymer at a temperature above its softening point to form said structure and solidifying said structure.

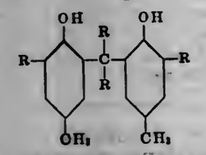
9. A process for the preparation of a substantially void free film of polypropylene prepared by polymerizing propylene in the presence of a catalyst system prepared by admixing diethylaluminum chloride and the reaction product of titanium tetrachloride and aluminum having the approximate formula $3TiCl_3 \cdot AlCl_3$, said polymer subsequently being treated with acetylacetone to extract catalyst residue, comprising applying an acetone solution containing from about 0.025 to 1.0 parts by weight per hundred parts of polymer each of dioctyl phosphite, 2,6-di-t-butyl-4-methyl phenol and dilaurylthiodipropionate onto said polymer in finely divided particulate form, extruding said thus treated polymer at a temperature of about 400 to 600° F. to provide a substantially void free film having a thickness of about 1 to about 10 mils and chilling said film.

3,349,059
COLOR STABILIZED POLY-α-OLEFIN COMPOSITIONS

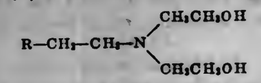
Gerald R. Lappin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 127,105, July 27, 1961. This application Aug. 19, 1966, Ser. No. 573,725
12 Claims. (Cl. 260—45.85)

1. A plastic composition comprising: (1) poly-α-olefin polymeric material prepared from α-monoolefinic aliphatic hydrocarbons having 2–10 carbon atoms, containing a metallic polymerization catalyst residue at trace concentration, (2) a bisphenol antioxidant having the formula:



wherein each R is a radical independently selected from the group consisting of hydrogen and hydrocarbon radicals, said antioxidant being present in a stabilizing amount, and (3) a diethanolamine having the formula:



wherein R is a radical selected from the group consisting of (a) aliphatic hydrocarbon radicals having about 8–18 carbon atoms and (b) radicals of the formula:



wherein R′ is an aliphatic hydrocarbon radical having about 7–17 carbon atoms, said diethanolamine being compatible with said poly-α-olefin and present in a color stabilizing amount.

3,349,060
POLYEPOXIDE CARBOCYCLIC DIAMINE COMPOSITIONS

Reginald Norman Lewis, Olton, and Ian Raoul Horne, Acocks Green, Birmingham, England, assignors to Bakelite Limited, London, England, a British company

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,120
4 Claims. (Cl. 260—47)

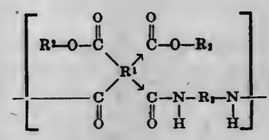
1. A polyepoxide composition formed by reacting a polyepoxide, which polyepoxide possesses at least two terminal oxirane epoxide groups per average molecule, with 30% to 45% of the stoichiometric equivalent of a carbocyclic diamine, which diamine contains two isolated carbocyclic radicals each having 6 carbon atoms linked by a short chain bivalent bridge radical selected from the group consisting of $-(CH_2)_n-$, $-NH-$, $-O-$, $-S-$, or $-SO_2-$, each of said two carbocyclic radicals having one amino group, the diamine containing at least three reactive hydrogen atoms attached to the nitrogen atoms in the amino groups, which proportion of the carbocyclic diamine is such that the product of the reaction is capable of being dissolved in a solvent for the composition and is capable of being cured to form an infusible and insoluble product.

3,349,061
AMIDE-ESTER ISOMERS

Gerfried Pruckmayr, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,818
6 Claims. (Cl. 260—47)

1. A meltable polyimide precursor having a melting point of 50–200° C., predominantly composed of a mixture of amide-ester isomers consisting essentially of one or more units corresponding to the formula:



wherein:

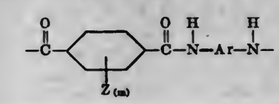
the arrows denote isomerism;
R^1 is a tetravalent radical having at least one aromatic carbocyclic ring, each carbonyl group being directly attached to a different carbon atom of an aromatic carbocyclic ring of R^1 in a position ortho or peri to another carbonyl group;
R^2 is alkyl or aryl; and
R^3 is an aromatic divalent radical, the amine groups being directly attached to different R^3 carbon atoms which are separated by at least one other carbon atom.

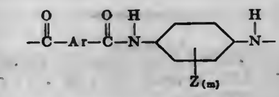
3,349,062
HALOGENATED AROMATIC POLYAMIDES

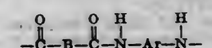
Harold Wayne Hill, Bartlesville, Okla., and Stephanie Louise Kwolek and Wilfred Sweeny, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

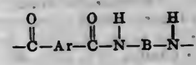
No Drawing. Filed July 21, 1966, Ser. No. 566,765
8 Claims. (Cl. 260—47)

1. A linear fiber-forming, synthetic polycarbonamide wherein recurring carbonamide linkages are an integral part of the polymer chain from the class consisting of a homopolymer and a copolymer, the said homopolymer and copolymer consisting essentially of recurring units of the class consisting of

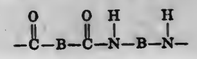
(I) 

(II) 

(III) 

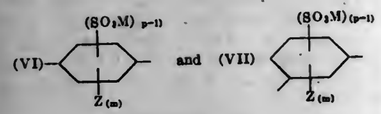
(IV) 

and

(V) 

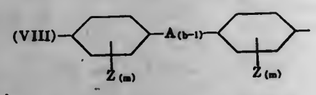
wherein:

Ar is a divalent radical from the class consisting of



and

B is a divalent radical of the formula



and wherein:

the hexagon represents the benezene nucleus,

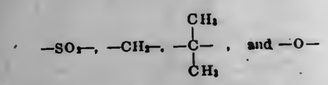
M is hydrogen or a neutralizing cation,

p is a number of from one to two inclusive;

Z is a monovalent radical replacement for hydrogen on nuclear carbon from the class consisting of —F and —Cl;

m is a number from 0 to 3, there being at least one *m* equal to at least 1 in each recurring unit;

A is a divalent radical from the class consisting of



and *b* is a number from one to two inclusive;

other copolymeric units whenever present constituting no more than 10% of the recurring polycarbonamide units, the said polycarbonamide having a melting point of at least about 300° C. and an inherent viscosity of at least about 0.6 in sulfuric acid at 30° C. at a concentration of 0.5 gram of polymer per 100 cc. of solution.

3,349,063

ACRYLONITRILE-THIOSULFURIC ACID COMPOUND COPOLYMERS

Rudi Mayer, Leverkusen, Mathildenhof, and Egon Kuntz and Carlhans Süling, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 31, 1964, Ser. No. 386,772
Claims priority, application Germany, Aug. 21, 1963, F 40,551
10 Claims. (Cl. 260—79.3)

1. A copolymer comprising at least 70% acrylonitrile and 0.1 to 10% of a copolymerizable thiosulfuric acid compound of the formula R—S—SO_3X, wherein R is selected from the group consisting of an ethylenically unsaturated alkyl and aryl radical and wherein X is selected from the group consisting of hydrogen, an alkalimetal, the ammonium and a substituted ammonium radical.

3,349,064

POLYMERIZATION AND COPOLYMERIZATION OF ETHYLENE USING HALOGEN-CONTAINING PROMOTERS

Albert Gumboldt and Ernst Junghanns, Frankfurt am Main, Gerhard Schleitzer, Hofheim, Taunus, and Hans Dieter Stemmer, Hattersheim (Main), Germany, assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,075
10 Claims. (Cl. 260—80.7)

1. In the polymerization or ethylene wherein ethylene is polymerized in an inert organic diluent in the presence of a catalyst prepared by reacting a vanadium compound soluble in the organic diluent with an organoaluminum compound, the improvement which comprises conducting the polymerization in the presence, as a catalyst promoter, of a promoting amount of an unsaturated carbocyclic compound containing at least 4 halogen atoms, at least 2 of which halogenated atoms are attached to doubly bound carbon atoms and at least 1 of which is attached to a singly bound carbon atom alpha to the double bond, the carbocyclic nucleus of said carbocyclic compound being selected from the group consisting of cyclopentadiene, cyclopentene, bicyclo(2,2,1)-heptadiene-2,5, cyclopentene-2-one, cyclopentene-3-one, and cyclopentene-2,4-dione.

3,349,065

BUTYL RUBBER CATALYST SYSTEM UTILIZING AlR_2X WITH AN HX PROMOTER

Joseph P. Kennedy, Clark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed May 1, 1964, Ser. No. 364,110
7 Claims. (Cl. 260—85.3)

1. A process for copolymerizing a major amount of a C_4 to C_7 isoolefin with a minor amount of C_4 to C_{14} multiloefins which comprises, contacting a mixture of the materials to be polymerized with a catalyst system comprising an anhydrous hydrogen halide and a dialkyl aluminum monohalide having the formula,

$$AlR_2X$$

where R is a branched or straight chain C_1 to C_{12} alkyl and X is selected from the group consisting of fluorine, chlorine and bromine, at a temperature of between about 0° C. and about —100° C., the mole ratio of an anhydrous hydrogen halide to dialkyl aluminum monohalide being no greater than 0.05:1.

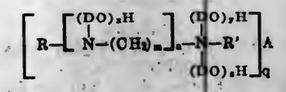
3,349,066

POLYMERISATION PROCESS

Patrick Samuel Bryant, Welwyn Garden City, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 22, 1963, Ser. No. 296,455
Claims priority, application Great Britain, July 31, 1962, 29,437/62
11 Claims. (Cl. 260—85.5)

1. A process for the manufacture of polymers of vinylidene chloride having antistatic properties in which vinylidene chloride is polymerized with from 0 to 50% by weight of the mixture of monomers of other copolymerizable monomers in aqueous emulsion in the presence of a water soluble free-radical polymerization catalyst and, as sole emulsifying agent, from 0.05% to 7% by weight of the polymerizable material of at least one cationic quaternary ammonium compound having the general formula



where R is an aliphatic hydrocarbon radical having from 8 to 24 carbon atoms, R' is selected from the group consisting of hydrogen and alkyl groups, D is a straight chain alkylene group containing at least two carbon atoms, *m* is a positive integer, *n* is selected from the group consisting of 0 and 1, *x*, *y* and *z* are whole numbers equal to or greater than zero the sum of *x*, *y* and *z* is at least *n*+2, A is an anion and *q* is a positive integer equal to the valency of A.

3,349,067

CATALYST, PREPARATION THEREOF, AND POLYMERIZATION PROCESS UTILIZING SAID CATALYST

Thomas Hill, Falkirk, Scotland, assignor, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England

No Drawing. Filed Dec. 19, 1962, Ser. No. 245,687
Claims priority, application Great Britain, Dec. 29, 1961, 46,572/61, 46,573/61; Aug. 16, 1962, 31,512/62
13 Claims. (Cl. 260—88.2)

1. A process of preparing a polymerization catalyst which comprises contacting a carrier material with a solution of chromium-containing compound in anhydrous organic solvent, depositing a chromium compound which is at least partially convertible to chromium oxide on heating in the presence of elemental oxygen, onto said carrier material under substantially anhydrous conditions by evaporating said solvent or precipitating said chromium compound from solution by chemical reaction, and subsequently heating the resulting composite in the presence of elemental oxygen and thus converting the chromium compound to chromium oxide wherein at least part of the chromium is hexavalent.

9. A process which comprises polymerizing an aliphatic 1-olefin having from 2 to 8 carbon atoms per molecule and no branching nearer the double bond than the 4-position, at a temperature within the range 100 to 500° F. in the presence of a catalyst prepared in accordance with claim 1.

3,349,068

HYDROLYZED ISOPROPENYL ACETATE POLYMERS AND PROCESS

Stanley Bywater and Edward Whalley, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a corporate body

No Drawing. Filed Dec. 2, 1960, Ser. No. 73,210
2 Claims. (Cl. 260—91.3)

1. Solid poly-(alpha-methylvinyl alcohol) produced by hydrolyzing isopropenyl acetate homopolymer, said homopolymer having an intrinsic viscosity at 25° C. in acetone solution of about 0.1 or above, a molecular weight of above about 10,000 and a melting point of above 100° C.

3,349,069

POLYHALOGENOUS COPOLYMER COMPOSITIONS

Paula Davis, Gibraltar, and Kurt C. Frisch and Edward J. Fujiwara, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,410
29 Claims. (Cl. 260—92.3)

1. A polyhalogenous copolymer comprising the reaction product of:

(1) an alkylene oxide containing from 3 to 4 carbon atoms, inclusive, and having an alkyl group attached to a carbon atom of the oxirane ring, said alkyl group having a maximum of 2 carbon atoms and containing at least 2 halogen atoms bonded to the same terminal carbon atom, and

(2) an ethylenically-unsaturated compound having a plurality of polymerizable carbon-to-carbon double bonds,

said copolymer being characterized by the presence of pendant alkyl groups having a maximum of 2 carbon atoms and having at least 2 halogen atoms bonded to the same terminal carbon atom, and by the presence of ethylenically-unsaturated groups.

3,349,070

BULK POLYMERIZATION PROCESS

David S. Thayer, Hillsdale, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 22, 1963, Ser. No. 274,576
3 Claims. (Cl. 260—93.5)

1. In the bulk polymerization of a feed consisting essentially of styrene in a reaction system comprising a polymerization zone in which the reaction mixture is cooled by evaporative cooling and from which a vapor stream consisting essentially of styrene is withdrawn at a temperature of at least about 280° F., the steps of combining said vapor stream with a liquid condensate having the some composition as said vapor stream, in sufficient amount to provide a liquid-vapor mixture having a temperature below 200° F., passing said liquid-vapor mixture through a condenser wherein the monomer vapors are condensed, returning part of the resulting condensate as said liquid condensate to admixture with said vapor stream, and returning the remainder of the condensate to the reaction mixture.

3,349,071

REDUCING COLD FLOW OF DIENE POLYMERS

Charles W. Strobel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 17, 1963, Ser. No. 317,031
5 Claims. (Cl. 260—94.7)

1. In a polymerization process in which a conjugated diene of 4 to 8 carbon atoms is polymerized in the presence of a compound of the formula RLi where R is a hydrocarbon radical selected from the group consisting of aliphatic, cycloaliphatic, and aromatic radicals, the improvement comprising terminating the polymerization by adding 0.01 to 50 millimols per 100 parts of polymer of carbon disulfide to the polymerization mixture, agitating the polymerization mixture for 15 minutes to 2 hours at a temperature of 25 to 125° C., and recovering the polymer, said polymer having reduced cold flow.

3,349,072

POLYETHYLENE PROCESS

Richard L. Alexander, Orange, Tex., Harold D. Lyons, Overland Park, Kans., and Francis E. Brown and Russell A. Long, Orange, Tex., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,185
16 Claims. (Cl. 260—94.9)

1. In a continuous process for preparing polymers of ethylene by contacting an ethylene-containing feed stream in a polymerization zone with a free radical generating polymerization initiator at a polymerizing temperature and pressure, the improvement comprising:

(a) carrying out the polymerization in a polymerization zone which is substantially free of accumulated deposits of polyethylene;

(b) employing a free radical generating polymerization initiator having a half-life at 185° F. or from 5 to 50 minutes;

(c) maintaining a pressure in said zone which does not exceed 18,500 p.s.i.g.;

(d) maintaining an initiation temperature in said zone which does not substantially exceed 365° F.;

(e) introducing into said zone at least one polymerization inhibitor selected from the class consisting of nuclearly substituted phenols, biphenols and bisphenols wherein each phenolic nucleus has at least one substituent selected from the class consisting of hydroxy, carboxyl, carbonyl, nitro, amino, aminoloweralkyl, loweralkylamino, lower alkyl, lower alkenyl, lower alkoxy and lower alkacyl groups, said inhibitor being introduced into said zone in at least

an amount sufficient to produce polyethylene resins which are capable of fabrication into films having a tear factor of at least 5.5, a gloss of at least 110, a haze of less than 4.5, a transparency of at least 65, a background of at least 5, a low temperature brittleness of 0, and a stress crack resistance of at least 200.

3,349,073

PROCESSES FOR PREPARING DIAZOAMINO COMPOUNDS AND AZO AMINO COMPOUNDS

Charles J. Umberger, 1356 Madison Ave., New York, N.Y. 10028, and Frank F. Florese, 40–45 Ely Ave., Bronx, N.Y. 10469

No Drawing. Filed Oct. 25, 1963, Ser. No. 318,832
10 Claims. (Cl. 260—140)

1. A process for producing an N,N'-diaryldiazoamino compound which comprises reacting at a temperature in the range of −40° C. to room temperature in a non-aqueous, acidic medium, sodium amide and a diazotizable, primary, aromatic amine.

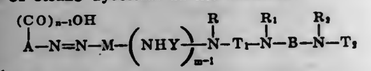
3,349,074

WATER-SOLUBLE AZO DYESTUFFS

Herbert Francis Andrew, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,562
Claims priority, application Great Britain, Dec. 19, 1962, 47,994/62; Jan. 18, 1963, 2,260/63
7 Claims. (Cl. 260—146)

1. The metal complexes selected from the class consisting of 1:1-copper, 1:2-chromium and 1:2-cobalt complexes of bisazo dyestuffs of the formula:

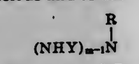


wherein

A is a radical selected from the class consisting of o-phenylene and o-naphthylene radicals,

n has one of the values 1 and 2,

M is a 1-hydroxy-3-sulphonaphthalene radical connected to the azo group in the 2 position of the naphthalene nucleus and to the



group in one of the 6- and 7-positions of the naphthalene nucleus, Y is selected from the class consisting of m-phenylene, p-phenylene, monosulpho-m-phenylene and monosulpho-p-phenylene, *m* has one of the values 1 and 2,

R, R_1 and R_2 are independently selected from the class consisting of hydrogen and alkyl radicals having from 1 to 4 inclusive, carbon atoms,

T_1 is selected from the class consisting of s-triazine and pyrimidine radicals,

T_2 is selected from the class consisting of 2,4-dichloro-6-s-triazinyl, 5-cyano-2,4-dichloro - 6 - pyrimidyl, 5-cyano - 4,6 - dichloro-2-pyrimidyl, 2,4,5 - trichloro-6-pyrimidyl and 4,5,6-trichloro-2-pyrimidyl, and B is the radical of a monoazo compound of the formula: —D—N=N—E— wherein D is selected from the class consisting of phenylene, monosulphophenylene, monosulphophenylene, monochlorophenylene, mononitro phenylene and monocarboxyphenylene and E is an aromatic nucleus consisting of the residue of a coupling component H—E—NHR which coupling component is selected from the class consisting of para coupling primary and secondary amines of the benzene and naphthalene series and 5-pyrazolones carrying in the 1-position of the pyrazole nucleus an at most dicyclic radical of the benzene series to which the amino group is attached.

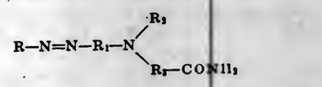
3,349,075

MONOAZO DYES FOR HYDROPHOBIC FIBERS

David J. Wallace and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 1, 1963, Ser. No. 277,118
8 Claims. (Cl. 260—158)

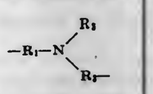
1. An azo compound having the general formula



wherein

R=a monocyclic 2-thiazolyl radical

R_1=a member of the class consisting of a monocyclic arylene group of the benzene series and in



R_1 together with R_2 and the nitrogen atom form a 6-tetrahydroquinolyl radical,

R_2=a member of the class consisting of hydrogen, alkyl, hydroxyalkyl and cyanoalkyl,

R_3=lower alkylene, said compound being free of sulfo and carboxyl groups.

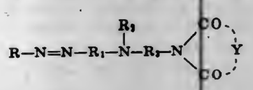
3,349,076

MONOAZO DYES

Max A. Weaver and David J. Wallace, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,346
11 Claims. (Cl. 260—152)

1. An azo compound of the general formula



wherein

R=a benzene radical,

R_1=a phenylene radical,

R_2=a member of the class consisting of hydrogen atom, a lower alkyl radical, and a benzene radical,

R_3=a lower alkylene group, and

Y=—NHNH— or a chain of 2 or 3 atoms consisting of carbon and at least one oxygen, sulfur, or nitrogen atom.

3,349,077

ETHERIFIED XANTHOMONAS HYDROPHILIC COLLOIDS AND PROCESS OF PREPARATION

Richard G. Schweiger, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed May 17, 1965, Ser. No. 456,467
12 Claims. (Cl. 260—209)

1. The process of treating a Xanthomonas hydrophilic colloid to increase its compatibility with an organic solvent which comprises the steps of: contacting said colloid with 10 to 40% of the weight thereof with an alkali hydroxide dissolved in an aqueous medium, placing the colloid so treated with said alkali hydroxide in a closed vessel, heating said treated colloid to a temperature in the range of about 35° C. to 60° C., introducing from 30 to 150% by weight of the initial weight of the Xanthomonas colloid of an alkylene oxide selected from the group consisting of epoxyethane, epoxypropane, 1,2-epoxybutane, 2,3-epoxybutane, epoxyisobutane, 1,2 epoxy 3 butene and epoxy propanol into said vessel while maintaining said temperature and continuing the said treatment step until said colloid is etherified by the said alkylene oxide to a D.S. in the range of from 0.1 to 1.0.

8. An etherified Xanthomonas hydrophilic colloid having a D.S. of .1 to 1, with a hydroxyalkyl radical selected from the group consisting of hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxyisobutyl, hydroxy 3 butenyl and dihydroxypropyl.

3,349,078

PROCESS OF PREPARING SULFATE ESTERS OF ALGIN AND PRODUCTS OBTAINED THEREBY

Richard G. Schweiger, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,361
18 Claims. (Cl. 260—209.6)

1. A process of forming a sulfate ester of algin which comprises bringing together algin in a swollen, dehydrated activated form, sulphur trioxide, and sufficient of an N-dialkyl amide to form a complex with the said sulphur trioxide, so as to form a reaction mixture, and allowing said reaction mixture to stand until esterification has taken place to a degree of substitution within the range 0.1 to 1.9.

3,349,079

GEL FORMING ALGINATE PRODUCTS AND METHOD OF PRODUCING THE SAME

John C. Freedman, La Mesa, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,769
17 Claims. (Cl. 260—209.6)

1. An alginic acid salt capable of forming a heat resistant aqueous gel, said salt having .25 to .45 equivalent of calcium reacted per equivalent of alginic acid, the remaining .55 to .75 equivalent of said acid being substantially all reacted with a material that will produce a water soluble salt when reacted with alginic acid.

3,349,080

SOLUBLE EPOXY DERIVATIVES OF CELLULOSE

Gordon D. Hiatt, Rochester, and Martin E. Rowley, Hilton, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 13, 1967, Ser. No. 615,367
16 Claims. (Cl. 260—225)

1. An epoxidized alkenoic acid ester of cellulose containing

(a) from about 1 to about 2.8 saturated groups per anhydroglucose unit; said saturated groups being selected from the group consisting of lower fatty acid groups containing from 2 to 4 carbon atoms and alkyl groups containing from 1 to 2 carbon atoms;

(b) from about 0.05 to about 2 unsaturated groups per anhydroglucose unit; said unsaturated groups being selected from the group consisting of straight and branched chain alkenoic acids containing from 3 to 20 carbon atoms and cycloalkenoic acids containing from 4 to 6 carbon atoms in their rings; and

(c) from about 0.004 to about 0.4 equivalent of oxirane oxygen per 100 grams.

3,349,081

PROCESS FOR PREPARING SUCROSE ESTERS OF HIGH MOLECULAR WEIGHT FATTY ACIDS

Luciano Nobile, Milan, Italy, assignor to Ledoga S.p.A., Milan, Italy

No Drawing. Filed June 15, 1964, Ser. No. 375,293
Claims priority, application Great Britain, June 26, 1963, 25,434/63
1 Claim. (Cl. 260—234)

In a process for preparing sucrose monoesters of high purity by transesterification of sucrose with natural triglycerides in dimethylformamide, followed by evaporation of the reaction solvent, treatment of the residue with a butanol-aqueous sodium chloride mixture and evaporation to dryness of the separated butanol layer, the step which comprises heating the residue from the evaporation of butanol with about 5 times its weight of a solvent of the class consisting of dichloroethane, methyl ethyl ketone and ethyl acetate at the boiling temperature of said solvent, cooling the solvent, and collecting the precipitate.

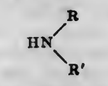
3,349,082

MANNICH BASES OF RIFAMYCIN SV

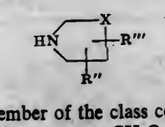
Nicola Maggi and Piero Sensi, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,166
Claims priority, application Great Britain, Apr. 2, 1964, 13,653/64; Oct. 29, 1964, 44,180/64
9 Claims. (Cl. 260—239.3)

1. A process for preparing an aminomethyl derivative of rifamycin SV, which comprises refluxing rifamycin S in an inert organic solvent with at least two equimolecular amounts of formaldehyde and an excess over an equimolecular amount of a secondary nitrogen base selected from an amine of the formula

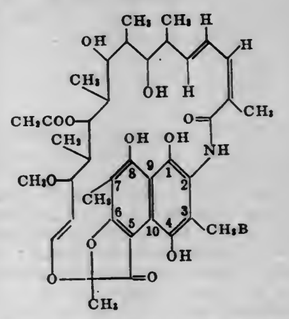


wherein R is lower alkyl, R' is a member of the class consisting of lower alkyl, hydroxy-lower alkyl, carboxy-lower alkyl and cycloalkyl groups and a heterocyclic compound of the formula



wherein X is a member of the class consisting of methylene, ethylene, the group —CH_2O— and the group —CH_2NH—, R'' and R''' are members of the class consisting of hydrogen, lower alkyl, hydroxy and carboxy groups, and contacting the obtained aminomethyl derivative of rifamycin S with an aqueous solution of ascorbic acid.

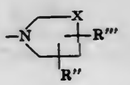
3. A compound selected from aminomethyl derivatives of rifamycin SV of the formula



wherein B is a radical selected from the group consisting of



and



in which R is lower alkyl, R' is a member of the class consisting of lower alkyl, hydroxy-lower alkyl, carboxy-lower alkyl and cycloalkyl groups, X is a member of the class consisting of methylene, ethylene, the group —CH_2O— and the group —CH_2NH—, while R'' and R''' are members of the class consisting of hydrogen, lower alkyl, hydroxy and carboxy groups, and the N-oxide of said aminomethyl derivatives of rifamycin SV.

3,349,083

PROCESS FOR THE PRODUCTION OF 6β:19-OXIDO-STEROIDS

Albert Wettstein, Riehen, Georg Anner, Karl Heusler and Jaroslav Kalvoda, Basel, and Hellmut Ueberwasser, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1962, Ser. No. 222,207
Claims priority, application Switzerland, July 15, 1960, 8,133/60; Oct. 28, 1960, 12,107/60; Dec. 23, 1960, 14,393/60; Apr. 5, 1961, 3,989/61; June 2, 1961, 6,480/61; Jan. 9, 1962, 185/62
7 Claims. (Cl. 260—239.55)

1. Process for the manufacture of 6β:19-oxido-steroids selected from the group consisting of those of the androstane, pregnane, cholane, cholestane, spirostane, stigmastane and cardanolide series, consisting in treating a 19-unsubstituted 5α-halogeno-6β-hydroxy-steriod selected from the group consisting of one of the androstane, pregnane, cholane, chloestane, spirostane, stigmastane and cardanolide series with a heavy metal acylate derived from a carboxylic acid having 1 to 15 carbon atoms having an oxidizing action to produce 5α-halogens-6β:19-oxido steroids.

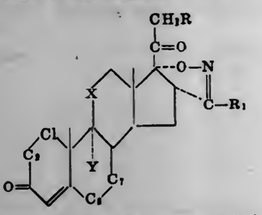
3,349,084

STEROIDAL [16,17-d]-2'-ISOXAZOLINES OF THE PREGNANE SERIES

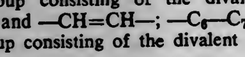
Donald E. Ayer, Portage, and John E. Pike, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 17, 1965, Ser. No. 456,521
18 Claims. (Cl. 260—239.55)

1. A compound of the formula:



wherein R is selected from the group consisting of hydrogen, hydroxy and acyloxy, in which acyl is the acyl radical of a hydrocarbon carboxylic acid of 1 to 12 carbon atoms, inclusive; R_1 is selected from the group consisting of hydrogen, lower-alkyl of 1 to 8 carbons, inclusive, aryl of 6 to 12 carbon atoms, inclusive, halogen, carboxy and carbalkoxy, in which the alkyl radical is lower-alkyl as hereinbefore defined; X is selected from the group consisting of methylene, β-hydroxymethylene and carbonyl; Y is selected from the group consisting of hydrogen, fluorine and chlorine; —C_1—C_2— is selected from the group consisting of the divalent radicals: —CH_2—CH_2 and —CH=CH—; —C_6—C_7— is selected from the group consisting of the divalent radicals:



in which the R_2 at the 6-position is selected from the group consisting of hydrogen, methyl, fluorine and chlorine; and wherein when X is methylene Y is limited to hydrogen.

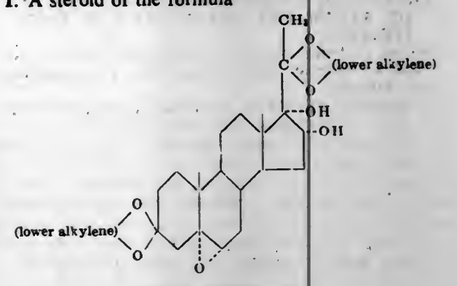
3,349,085

ACETALS AND KETALS OF 6-ALKYL-16,17-DIHYDROXYPROGESTERONE AND INTERMEDIATES THEREFOR

Josef Fried, Princeton, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 30, 1959, Ser. No. 830,467
11 Claims. (Cl. 260—239.55)

1. A steroid of the formula



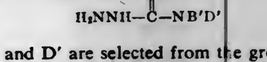
3,349,086

PROCESS FOR THE PREPARATION OF ASYMMETRIC AMINO TRIAZINE DERIVATIVES

Ralph Raphael George Haber, 42 Kaplansky St., Givatayim, Israel

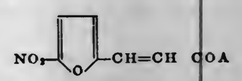
No Drawing. Filed Nov. 8, 1963, Ser. No. 322,517
Claims priority, application Israel, Nov. 16, 1962, 18,236, 18,237; Oct. 24, 1963, 20,126
9 Claims. (Cl. 260—240)

1. A process for the preparation of asymmetric amino triazine derivatives comprising, reacting an amino compound having the formula:



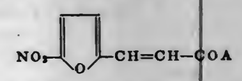
wherein B' and D' are selected from the group consisting of hydrogen and lower alkyl by heating said amino compound in the presence of an inert solvent with a compound selected from the group consisting of

(1) a glyoxal derivative formed by heating 5-nitrofurylidene acetone with selenium dioxide in the presence of a solvent selected from the group consisting of inert organic solvents, water and mixtures thereof, said glyoxal derivatives having the formula:

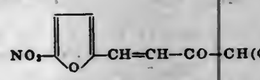


wherein A is selected from the group consisting essentially of —CHO and —$CH(OH)_2$, and

(2) a compound formed by the reaction product of the glyoxal derivative having the formula:



wherein A is selected from the group consisting of —CHO and —$CH(OH)_2$ with a material selected from the group consisting of water, lower alkyl, benzyl, alcohol and carboxy acid anhydride and having the formula:



wherein R is selected from the group consisting of hydrogen, lower alkyl, benzyl and R'CO wherein R' is a lower alkyl.

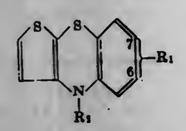
3,349,087

THIENO-BENZOTHIAZINE DERIVATIVES

Jany Renz, Jean-Pierre Bourquin, and Hans Winkler, Basel, Pierre Gagnaux, Allschwil, Simon Guldimann and Leo Ruesch, Basel, and Gustav Schwarb, Allschwil, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,382
Claims priority, application Switzerland, Oct. 1, 1964, 12,765/64; Oct. 21, 1964, 13,634/64; Dec. 23, 1964, 16,634/64; Apr. 1, 1965, 4,496/65, 4,497/65; Aug. 18, 1965, 11,638/65, 11,639/65
23 Claims. (Cl. 260—243)

1. A compound of the formula:



in which

R_1 is hydrogen, chlorine, bromine, alkoxy (C_1–C_4), alkylmercapto (C_1–C_4), alkylsulphonyl (C_1–C_4), alkylsulphinyl (C_1–C_4), aliphatic acyl of 2 to 4 carbon atoms inclusive, trifluoromethyl or cyano, and

R_2 is hydrogen, aliphatic acyl of 1 to 4 carbon atoms inclusive or benzoyl.

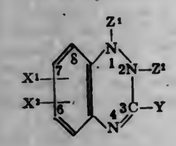
3,349,088

THERAPEUTICALLY VALUABLE 1,2-DIHYRO-1,2,4-BENZOTRIAZINE DERIVATIVES AND PROCESS FOR PREPARATION THEREOF

Istvan Molnar, Theodor Wagner-Jauregg, Ulrich Jahn, and Georg Mixich, Zofingen, Switzerland, assignors to Siegfried Aktiengesellschaft, Zofingen, Switzerland, a corporation of Switzerland

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,592
Claims priority, application Switzerland, Oct. 22, 1963, 12,928/63
8 Claims. (Cl. 260—248)

1. A chemical compound having the formula



wherein X^1 and X^2 are independently selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and lower alkylamino;

Y is a member selected from the group consisting of amino, lower alkylamino, lower alkoxy, phenyl, piperidino, morpholino lower alkyl and phenyl lower alkyl;

Z^1 and Z^2, when independent groups, are independently selected from the class consisting of hydrogen, acyl radicals of lower aliphatic carboxyl acids, and acyl radicals of araliphatic carboxylic acids;

Z^1 and Z^2, when linked together, represent the diacyl di-radical of an acid selected from the group consisting of lower aliphatic dibasic carboxylic acids and lower aliphatic dibasic carboxylic acid whose alkylene group is substituted with cycloalkyl;

and when Y is amino, at least one of X^1, X^2, Z^1, and Z^2 is not hydrogen.

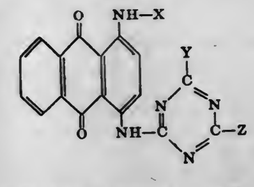
3,349,089

TRIAZINE DYES OF THE ANTHRAQUINONE SERIES

Mikhail Vasiljevich Kazankov, Moscow, and Valentin Nickolaevich Ufimtsev, Krasnogorsk, U.S.S.R., assignors to Gosudarstvenny Nauchno-Issledovatelijsky Institute Organicheskikh Produktov i Krasitelei, Moscow, U.S.S.R.

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,096
12 Claims. (Cl. 260—249)

1. A triazine dye of the formula



wherein X is an alkylsubstituted phenyl radical, and Y and Z are radicals selected from the group consisting of phenyl, phenoxy-, phenylamino-, anthraquinonyl-amino-, 4-arylaminoanthraqinonyl-1-amino, and anthrapyridonylamino residues.

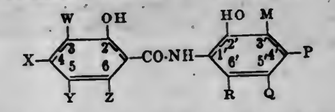
3,349,090

POLYHALOGENATED DI-HYDROXYBENZANILIDE DERIVATIVES

Arthur William James Broome, Neville Stanton Crossley, and William Glynne Moss Jones, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 30, 1964, Ser. No. 386,450
Claims priority, application Great Britain, Aug. 14, 1963, 32,129/63
4 Claims. (Cl. 260—268)

1. A benzanilide derivative of the formula:



wherein W, X, Y, Z, M, P, Q and R are selected from hydrogen, chlorine and bromine, provided that at least two of W, X, Y and Z are selected from chlorine and bromine, and that at least two of M, P, Q and R are selected from chlorine and bromine, and that at least five of W, X, Y, Z, M, P, Q and R are selected from chlorine and bromine, and the pharmaceutically-acceptable salts thereof.

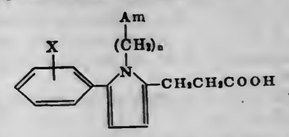
3,349,091

1-AMINOALKYL-5-[(HALO/ALKOXY)PHENYL]-2-PYRROLEPROPIONIC ACIDS

Leland J. Chinn, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 29, 1966, Ser. No. 605,544
11 Claims. (Cl. 260—268)

1. A compound of the formula



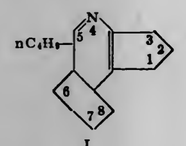
wherein X represents halogen of atomic number less than 53 or lower alkoxy; Am represents pyrrolidinyl, N-(lower alkyl)pyrrolidinyl, piperidyl, N-(lower alkyl)piperidyl, piperazinyl, N-(lower alkyl)piperazinyl, or N,N'-bis-(lower alkyl)piperazinyl; and *n* represents a positive integer less than 4.

3,349,092
HEXAHYDRODICYCLOPENTAPYRIDINE AND OCTAHYDROPHENANTHRIDINE COMPOUNDS AND METHOD OF MANUFACTURE

Harry Chafetz, Poughkeepsie, N.Y., and Richard C. Anderson, Logan, Utah, assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

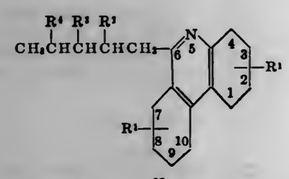
No Drawing. Filed Mar. 31, 1964, Ser. No. 356,064
7 Claims. (Cl. 260—283)

1. A method of preparing a heterotricyclic compound selected from the group consisting of:



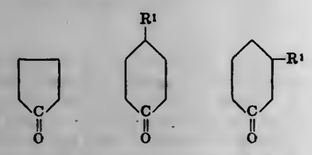
I

and



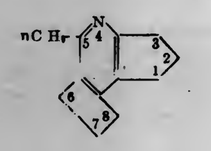
II

wherein R^1 is a substituent selected from the group consisting of hydrogen and alkyl of from 1 to 10 carbons, alkaryl from 7 to 10 carbons, aralkyl of from 7 to 10 carbons and aryl from 6 to 10 carbons, wherein two of said R^2, R^3 and R^4 groups are hydrogen and the remaining group is the same as R^1 and wherein R^1 is never attached to the 4th and 10th ring position carbon, comprising contacting ammonia with cycloalkanone selected from the group consisting of:



where R^1 is selected from the group consisting of hydrogen and alkyl of from 1 to 10 carbons, aryl of from 6 to 10 carbons, alkaryl of from 7 to 10 carbons, and aralkyl of from 7 to 10 carbons in the presence of a catalyst and in the absence of an oxygen containing gas at a temperature between about 200 and 420° C. and in a molar ratio of ammonia to cycloalkanone of between about 100:1 and 1:5, said catalyst selected from the group consisting of silica, alumina, silica-alumina, silica-magnesia containing 5 to 40 wt. precent magnesia, silica-chromia containing 5 to 40 wt. percent chromia, alumina-magnesia containing 5 to 40 wt. percent magnesia and alumina-chromia containing 5 to 40 wt. percent chromia and mixtures thereof.

5. A heterotricyclic compound selected from the group consisting of:



and



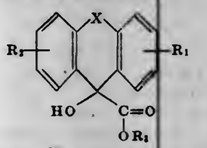
wherein R^1 is a substituent selected from the group consisting of alkyl of from 1 to 10 carbons, alkaryl of from 7 to 10 carbons, aralkyl of from 7 to 10 carbons and aryl of from 6 to 10 carbons, wherein two of said R^2, R^3 and R^4 groups are hydrogen and the other is the same as R^1 and wherein R^1 is never attached to the 4th and 10th ring position carbon.

3,349,093
5-HYDROXY-DIBENZOCYCLOHEPTEN-5-YL-CARBOXYLATES

Cornelis van der Stelt, Haarlem, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia, Amsterdam, Netherlands

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,420
Claims priority, application Great Britain, Oct. 31, 1964, 44,518/64
3 Claims. (Cl. 260—292)

1. A compound having the formula



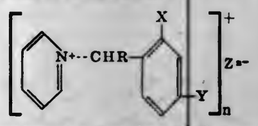
wherein X is selected from the group consisting of $-CH_2-CH_2-$ and $-CH=CH-$, R_1 and R_2 are selected from the group consisting of hydrogen, halogen, and lower alkyl, and R_3 is a tropane attached through carbon to the oxygen atom, and acid-addition salts thereof.

3,349,094
PYRIDINIUM SALTS

Norman Gunning Bromby, Graham Howard Rayner, and David Buchanan Wootton, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,965
Claims priority, application Great Britain, May 7, 1963, 17,986/63
8 Claims. (Cl. 260—297)

1. A compound of the formula



wherein R represents a member of the group consisting of hydrogen and lower alkyl group, one of the groups X and Y is hydroxyl and the other is selected from the group consisting of hydrogen, alkyl, unsubstituted or lower alkyl substituted cycloalkyl groups selected from the class consisting of cyclopentyl and cyclohexyl, benzyl, phenyl, vinyl and allyl, and Z is an anion selected from the group consisting of halide, nitrate, sulphate, phosphate, alkylsulphate, alkanesulphonate, substituted alkanesulphonate, arylsulphonate, aralkylsulphonate, sulphamate, arylcarboxylate, alkylcarboxylate, oxalate, formate, thiocarbamate, thiosulphate and polythionate,

and in which other valences on the benzene and pyridine rings are satisfied by substituents selected from the group consisting of hydrogen, alkyl, unsubstituted or lower alkyl substituted cycloalkyl groups selected from the class consisting of cyclopentyl and cyclohexyl, benzyl, vinyl and allyl,

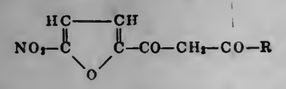
and n is the valence number of the anion Z.

3,349,095
1-(5'-NITROFURYL)-1,3-DIKETOPROPANE DERIVATIVES AND THEIR PREPARATION

Raphael Ralph G. Haber, Givatayim, and Eva Schoenberger, Ramat Yoseph, Israel, assignors to ABIC Limited, Ramat-Gan, Israel, a corporation of Israel

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,095
Claims priority, application Israel, Apr. 5, 1964, 21,102
9 Claims. (Cl. 260—297)

1. Diketones of the general formula



in which R is a member selected from the group consisting of phenyl, halophenyl, lower alkyl-substituted phenyl, pyridyl, furyl and thienyl.

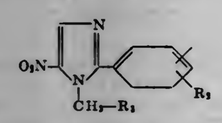
3,349,096
METHOD FOR PRODUCING 1-HYDROXYALKYL-2-ARYL-5-NITROIMIDAZOLES, INTERMEDIATES USED THEREIN, AND PRODUCTS PRODUCED THEREBY

Clarence S. Rooney, Bridgewater Township, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,039
22 Claims. (Cl. 260—299)

1. A process for the preparation of 1(A-hydroxyalkylated) 2-aryl-5-nitroimidazoles which comprises sequentially reacting a 2-aryl-4(5)-nitroimidazole with a Lewis acid from the group consisting of boron trifluoride, sulfur trioxide, stannic chloride, titanium tetrachloride, aluminum trichloride, and antimony pentachloride and a compound selected from the group consisting of 1,A-epoxyloweralkanes and 1,A-epoxy substituted loweralkanes when A is 2 or 3.

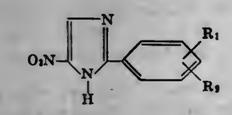
14. A compound having the formula:



wherein

R_2 is p-fluoro or p-nitro, R_3 is hydroxybromoethyl, hydroxychloroethyl or hydroxyethoxymethylene.

21. An equimolar complex of a Lewis acid from the group consisting of boron trifluoride, sulfur trioxide, stannic chloride, titanium tetrachloride, aluminum trichloride, and antimony pentachloride and a compound of the formula:



wherein

R_1 and R_2 are selected from the group consisting of: hydrogen, halo, nitro, thienyl, furyl, cyanato, cyano, thiocyano, carboxy, loweralkenoyl, loweralkanoyl, mononucleararyloweralkenoyl, mononucleararyloweralkanoyl, carbalkoxy, haloloweralkenyl, phenyldiazo, loweralkylsulfinyl, loweralkylsulfonyl, formyl, loweralkyl and substituted loweralkyl wherein the substituents are: loweralkanoylamino, hydroxy, phenoxycarbonyloxy, diloweralkoxy, loweralkoxy, diloweralkylcarbamyloxy, diloweralkylthioncarbamoyloxy, halo,

loweralkoxy and substituted loweralkoxy wherein the substituents are halo, carbamoyl and thiocarbamoyl.

substituted amino, wherein the substituents are haloloweralkanoyl,

diloweralkylcarbamoylloweralkyl

loweralkanoyl, mononucleararyloweralkanoyl,

substituted thio, wherein the substituents are loweralkyl, diloweralkylthioncarbamoyl, loweralkylthioncarbamoyl, thioncarbamoyl, loweralkoxythiocarbonyl,

sulfonamido and substituted sulfonamido, wherein the substituents are loweralkyl, mononucleararyl, mononuclearylloweralkyl;

carboxamido and substituted carboxamido, wherein the substituents are loweralkyl, mononucleararyl and mononuclearylloweralkyl; carbamoyloxy and substituted carbamoyloxy wherein the substituents are diloweralkyl;

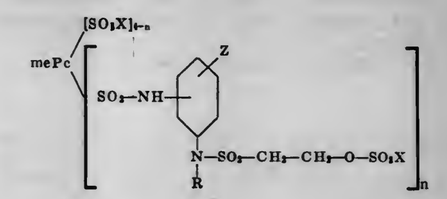
and diloweralkylthiocarbamoyloxy, wherein the terms loweralkyl, loweralkenyl, loweralkoxy, and loweralkanoyl, and loweralkenoyl hereinabove represent groups having from 1 to 5 carbon atoms, which comprises intimately contacting together said Lewis acid and a compound of the foregoing structural formula.

3,349,097
WATER-SOLUBLE PHTHALOCYANINE DYESTUFFS AND PROCESS FOR PREPARING THEM

Rudolf Kühne and Fritz Meininger, Frankfurt am Main, and Walter Noll, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,084
Claims priority, application Germany, Dec. 1, 1960, F 32,665
6 Claims. (Cl. 260—314.5)

1. A water-soluble phthalocyanine dyestuff of the formula



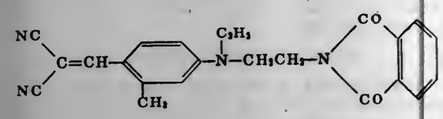
wherein mePc represents a member selected from the group consisting of copper phthalocyanine and nickel phthalocyanine, R represents a member selected from the group consisting of hydrogen and alkyl having from 1 to 5 carbon atoms, Z represents a member selected from the group consisting of hydrogen, chlorine, bromine, lower alkyl and lower alkoxy, X represents a member selected from the group consisting of hydrogen and alkali metal, and n represents an integer from 1 to 3.

3,349,098
METHINE COMPOUNDS CONTAINING THE CYANOMETHYLIDENE GROUP

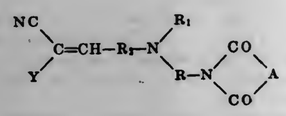
James M. Straley, David J. Wallace, and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 18, 1965, Ser. No. 465,208
16 Claims. (Cl. 260—326)

5. A compound having the formula



7. A methine compound having the formula



wherein

R=lower alkylene;

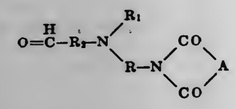
R_1=hydrogen, lower alkyl, lower hydroxyalkyl, lower cyanoalkyl, lower alkoxyalkyl, lower carboxylic acid acyloxyalkyl, lower carbalkoxyalkyl, lower haloalkyl, lower hydroxyhaloalkyl, lower alkylsulfonylalkyl, lower carbamoylalkyl, benzyl, lower phenoxyalkyl, lower cyanoalkyl, or lower alkylsulfonamidoalkyl;

R_2=phenylene or phenylene substituted with lower alkyl, lower hydroxyalkyl, lower acetoxyalkyl, lower carbalkoxyalkyl, lower carboxylic acid acylamidoalkyl, lower cyanoalkyl, lower alkoxyalkyl, lower phenoxyalkyl, lower alkoxy, lower hydroxyalkoxy, lower haloalkoxy, lower phenoxyalkoxy, halogen, hydroxyl, nitro, lower alkylthio, lower carbalkoxy, lower phenylalkylthio, acetamido, lower carboxylic acid acyloxy, carbamoyl, or lower alkylsulfonamido;

A=alkylene of 2 to 3 carbon atoms, alkylene of 2 to 3 carbon atoms substituted with lower alkyl, vinylene, vinylene substituted with lower alkyl, o-phenylene, o-phenylene substituted with lower alkyl, 1,2-cyclohexanediyl, 1,2-cyclohexanediyl substituted with lower alkyl, or bicyclo-[2.2.1]-5-heptene-2,3-diyl.

Y=cyano, carbamoyl, N-lower alkyl substituted carbamoyl, lower carbalkoxy or lower cyanocarbalkoxy; said compound being free of water solubilizing groups.

14. A compound having the formula



wherein

R=lower alkylene;

R_1=hydrogen, lower alkyl, lower hydroxyalkyl, lower cyanoalkyl, lower alkoxyalkyl, lower carboxylic acid acyloxyalkyl, lower haloalkyl, lower hydroxyhaloalkyl, or lower carbamoylalkyl;

R_2=phenylene or phenylene substituted with lower alkyl, lower alkoxy, or halogen; and

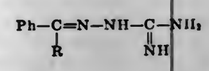
A=alkylene of 2 to 3 carbon atoms, alkylene of 2 to 3 carbon atoms substituted with lower alkyl, vinylene, vinylene substituted with lower alkyl, o-phenylene, o-phenylene substituted with lower alkyl, 1,2-cyclohexanediyl, 1,2-cyclohexanediyl substituted with lower alkyl, or bicyclo-[2.2.1]-5-heptene-2,3-diyl.

3,349,099
AMINOARYL-GUANYLHYDRAZONES

Adrian Marxer, Muttenz, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 27, 1963, Ser. No. 268,474, now Patent No. 3,211,746, dated Oct. 12, 1965. Divided and this application Apr. 8, 1965, Ser. No. 446,716
Claims priority, application Switzerland, July 22, 1959, 76,060/59; June 2, 1960, 6,328/60; June 20, 1960, 6,988/60; Jan. 16, 1961, 463/61; Jan. 20, 1961, 757/61; Apr. 28, 1961, 4,986/61; Apr. 3, 1962, 4,080/62
8 Claims. (Cl. 260—326.14)

1. A member selected from the group consisting of compounds of the formula



wherein Ph represents a member selected from the group consisting of meta-aminophenyl and para-aminophenyl and R stands for a member selected from the group consisting of hydrogen and lower alkyl, and their salts.

3,349,100
PRODUCTION OF ALKYLENE MONO-THIOLCARBONATE AND ALKYLENE SULFIDE

Jose L. Villa, Hightstown, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,061
14 Claims. (Cl. 260—327)

1. In a process of producing an alkylene monothiocarbonate product by reacting carbonyl sulfide with alkylene oxide in the presence of a basic catalytic compound at a temperature of from about 25° C. to about 90° C., the improvement which comprises forming a novel catalyst system by at least partially dissolving said catalytic compound in formamide prior to the reacting of the carbonyl sulfide with the alkylene oxide.

3,349,101
PROCESS FOR MAKING METHYLOL COUMARIN

Sidney C. Beach, Huntington, W. Va., assignor to The McGean Chemical Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,042
7 Claims. (Cl. 260—343.2)

1. The process of making methylol coumarin which comprises

(a) dissolving and reacting coumarin with an alkali metal hydroxide in aqueous solution to form the alkali metal coumarate;

(b) cooling the reaction mixture to ambient room temperature, adding formaldehyde while agitating and maintaining the reaction mixture at such ambient temperature;

(c) cooling the reaction mixture of step (b) substantially below ambient, maintaining it at such reduced temperature while acidifying to neutralize the solution and precipitate methylol coumarin;

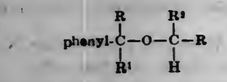
(d) decanting the solution and filtering to recover the methylol coumarin.

3,349,102
ETHERS USEFUL AS MOLLUSCACIDES AND PISCICIDES

Clive Beresford Challis Boyce, Herne, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,432
Claims priority, application Great Britain, June 29, 1962, 25,076/62
7 Claims. (Cl. 260—347.8)

6. An ether of the formula



wherein

R is phenyl or hydrogen;

R^1 is phenyl or thienyl;

R^2 is lower straight-chain alkenyl, mono-, chloro- or bromo-substituted lower alkyl, cyclopentyl, cyclohexyl or a heterocyclic radical selected from the group consisting of furyl, tetrahydrofuryl, tetrahydropyranyl and thienyl;

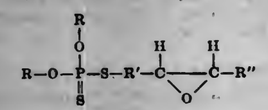
said R^1 and R^2 heterocyclic radicals being unsubstituted and being bonded to the indicated carbon atom of said ether by a bond to a carbon atom of the heterocyclic ring; and with the proviso that when R^1 is thienyl, R^2 is thienyl.

3,349,103
S-(DITHIOPHOSPHATYL)EPOXYALKANES

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,304
10 Claims. (Cl. 260—348)

1. An S-(dithiophosphatyl) epoxyalkane having the formula



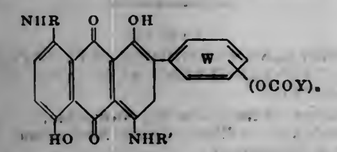
where R is selected from the group consisting of hydrogen and hydrocarbon of from 1 to 20 carbon atoms, R′ is alkylene of from 1 to 6 carbon atoms, R″ is selected from the group consisting of hydrogen, alkyl of from 1 to 6 carbon atoms and dithiophosphatyl, and the sum of R′ and R″ equals from 3 to 14 carbon atoms.

3,349,104
2-ACYLOXYPHENYL-4,8-DIAMINO-1,5-DIHYDROXY-ANTHRAQUINONES

Frank Lodge, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 5, 1963, Ser. No. 300,047
Claims priority, application Great Britain, Aug. 13, 1962, 30,984/62
4 Claims. (Cl. 260—376)

1. Water-insoluble dyestuffs of the formula:



wherein:

R and R′ are independently selected from the class consisting of hydrogen, lower alkyl and groups of the formula —COY;

Y is selected from the class consisting of lower alkyl, cyclohexyl, phenyl, tolyl, benzyl and vinyl;

n is a positive integer not exceeding 3;

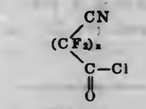
and any further substituent on the benzene ring W is selected from the class consisting of lower alkyl, cyclohexyl, phenyl and hydroxyl.

3,349,105
ω-CYANOPERFLUOROALKANOYL CHLORIDES

Carl J. Verbanic, Louisville, Ky., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Aug. 18, 1966, Ser. No. 573,195
4 Claims. (Cl. 260—404)

1. ω-Cyanoperfluoroalkanoyl chlorides of the formula



wherein x is from 1 to 12.

3,349,106
SOLVENT FOR OBTAINING VERY HIGH YIELDS OF ALDEHYDIC PRODUCTS FROM SOYBEAN OIL

Danny J. Moore, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed May 5, 1965, Ser. No. 453,526
2 Claims. (Cl. 260—406)

1. A process for obtaining substantially theoretical yields of methyl azelaaldehydate comprising:

(a) forming a reaction mixture consisting of methyl oleate and per part by weight thereof, about 1 to 10 parts by weight of an organic acid selected from the group consisting of acetic acid, glacial acetic acid, and propionic acid and, based on the weight of the organic acid component, about an equimolar quantity of an alcohol selected from the group consisting of ethnaol, propanol, butanol, 2-methoxyethanol, cyclohexyl alcohol, and benzyl alcohol;

(b) bubbling ozone-containing oxygen through the stirred reaction mixture until the theoretical amount of ozone is absorbed;

(c) bubbling hydrogen through the ozonized reaction mixture in the presence of palladium catalyst until reduction is essentially complete;

(d) forming a washable solution of the filtered and neutralized reaction mixture in a volatile solvent member selected from the group consisting of methylene chloride and diethyl ether;

(e) washing the solvent solution, and

(f) distilling the washed solution under reduced pressure to obtain methyl azelaaldehydate in yields of not less than about 92 percent of theory.

3,349,107
PROCESS FOR PREPARING CARBOXYLIC ACIDS AND THEIR ALKYL-ESTERS

Stephan Pawlenko, Bochum, Germany, assignor to Schering Aktiengesellschaft, Berlin, Germany

Filed Nov. 16, 1965, Ser. No. 508,091
8 Claims. (Cl. 260—410.9)

1. A process for the synthesis of aliphatic carboxylic acids having from 5 to 13 carbon atoms in the molecule and aliphatic carboxylic acid methyl esters having from 6 to 14 carbon atoms in the molecule, comprising reacting in a reaction space an olefin selected from the group consisting of monolefins branched at the double bond and having from 4 to 12 carbon atoms in the molecule with CO and a reaction component selected from the group consisting of water and methanol, in the presence of a catalyst selected from the group consisting of aque-

ous solutions of 74–85% by weight of hydroxoniumtetrafluoroborate $[H_3O][BF_4]$ and methanol solutions of 65–75% by weight of methoxoniumtetrafluoroborate $[CH_3OH_2][BF_4]$; the reaction being carried out in the range of 50 to 200 atmospheres pressure and a temperature in the range of 20 to 50° C.

3,349,108
MOLYBDENUM TRIOXIDE COMPLEX WITH DIETHYLENETRIAMINE

William Frank Marzluff, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,295
2 Claims. (Cl. 260—429)

1. A molybdenum trioxide complex with diethylenetriamine.

3,349,109
PROCESS FOR PRODUCING DIORGANOTIN S,O-MERCAPTOCARBOXYLATES

Alfred A. Lach, Perth Amboy, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,880
14 Claims. (Cl. 260—429.7)

1. The process for preparing diorganotin S,O-mercaptocarboxylates which comprises reacting a diorganotin oxide of the formula R'_2SnO, wherein R' is a saturated hydrocarbon, with a mixture containing a mercaptocarboxylic acid; $HSCR_2(CR_2)_nCOOH$, and a thio bis carboxylic acid, $S[CR_2(CR_2)_nCOOH]_2$, wherein n is 0–2 and R is selected from the group consisting of hydrogen and saturated hydrocarbon, said mercaptocarboxylic acid being present in at least one mole per mole of diorganotin oxide thereby forming diorganotin mercaptocarboxylate and water, and recovering said diorganotin mercaptocarboxylate substantially free of thio bis carboxylic acid.

3,349,110
N - (2 - HYDROXYPHENYLMETHYLENE) - ORGANO ARYL AMINES AND METAL SALTS THEREOF

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,504
11 Claims. (Cl. 260—439)

1. A compound selected from the group consisting of N-(2-hydroxyphenylmethylene)-Y-arylamine in which the aryl contains from 1 to 2 carbocyclic rings and Y is selected from the group consisting of hydrocarbyl and hydrocarbyloxy of at least 3 carbon atoms and metal salts thereof in which the metal is selected from the group consisting of nickel, copped, cobalt, lithium, antimony, cadmium, lead, tin, uranium, vanadium, zinc, iron and mercury.

3,349,111
PROCESS FOR THE PREPARATION OF 3,5-DIBROMO-4-HYDROXYBENZONITRILE

Raymond W. Luckenbaugh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 14, 1964, Ser. No. 337,530
5 Claims. (Cl. 260—465)

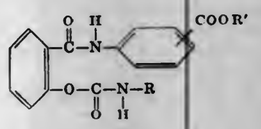
1. A process for producing 3,5-dibromo-4-hydroxybenzonitrile comprising reaction one mole of an aqueous suspension of p-hydroxybenzonitrile with 0 to 3.5 moles of aqueous alkali metal hydroxide or aqueous alkali metal carbonate, adding to the resulting reaction mixture 1 to 1.1 moles of bromine, after all said bromine has reacted adding to the reaction mixture one mole of chlorine, acidifying the reaction mixture and filtering to obtain the desired product.

3,349,112
ALKYL CARBAMATES OF CARBOALKOXY SALICYLANILIDES

Richard S. P. Hsi, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,166
4 Claims. (Cl. 260—471)

1. An alkylcarbamate of a carboalkoxysalicylanilide having the formula:



wherein R and R' are lower-alkyl radicals having from 1 to 6 carbon atoms, inclusive.

3,349,113
PREPARATION OF HYDROQUINONE DERIVATIVES

Urs Gloor, Riehen, Switzerland, Ram Niwas Goel, Bombay, India, and Albert Langemann, Basel, and Rudolf Rüegg, Bottmingen, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 8, 1963, Ser. No. 300,906
Claims priority, application Switzerland, Oct. 9, 1959, 79,226/59
2 Claims. (Cl. 260—476)

1. A process which comprises the steps of (1) forming a homogeneous reaction mixture consisting essentially of (a) an inert organic solvent, (b) a member selected from the group consisting of 2,3-dimethoxy-5-methyl-1,4-benzohydroquinone and the 4-lower alkanoates and the 4-benzoate thereof, (c) a member selected from the group consisting of the alcohols 3,7,11,15,19,23,27,31,35-nonamethyl-2,6,10,14,18,22,26,30,34-hexatriacontanonaen-1-ol, 3,7,11,15,19,23,27,31,35,39 - decamethyl - 1,6,10,14,18,22,26,30,34,38-tetracontadecaen-3-ol and 3,7,11,15,19,23,27,31,35,39 - decamethyl-2,6,10,14,18,22,26,30,34,38-tetracontadecaen-1-ol and the lower alkoxides and the lower alkanoates of each of said alcohols and (d) a Lewis acid condensing agent, (2) removing said solvent from said homogeneous reaction mixture and (3) heating the residue to a temperature not higher than about 80° C.

3,349,114
DIETHYLAMINOETHOXYETHYL ESTER OF α - PHENYLBUTYRIC ACID AND SALTS THEREOF

Jean Heusser, Adliswil-Zurich, Switzerland, assignor to Hommel A.G., Adliswil-Zurich, Switzerland, a corporation of Switzerland

No Drawing. Filed May 17, 1963, Ser. No. 281,339
2 Claims. (Cl. 260—477)

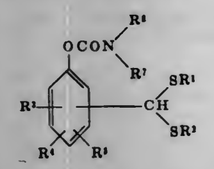
1. As new compounds, the diethylaminoethoxyethyl ester of α-phenylbutyric acid and salts thereof with physiologically acceptable acids.

3,349,115
SULFUR-CONTAINING CARBAMATE INSECTICIDES

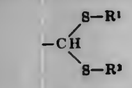
Edward D. Weil, Lewiston, and Hans L. Schlichting, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 19, 1963, Ser. No. 259,755
8 Claims. (Cl. 260—479)

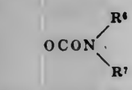
1. New compositions of the formula:



wherein R^1 and R^2 are selected from the group consisting of alkyl of up to 6 carbon atoms, substituted alkyl of up to 6 carbon atoms, wherein said substituent is selected from the group consisting of vinyl, chlorine, hydroxy, phenyl, lower alkylphenyl, benzyl, lower alkylbenzyl, chlorophenyl, cyclohexyl and chlorobenzyl, R^3, R^4 and R^5 are selected from the group consisting of hydrogen, chlorophenyl, bromophenyl, chlorobenzyl, bromobenzyl, lower alkyl and lower alkoxy, with only one of the groups of



and R^3, R^4 and R^5, other than hydrogen, being allowed to be ortho to the



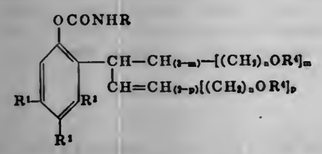
carbamate group, R^6 is selected from the group consisting of hydrogen and a lower alkyl, and R^7 is a lower alkyl.

3,349,116
ORTHO HYDROCARBYLOXY ALKENYLENE-PHENYL N-LOWER ALKYLCARBAMATES

Edward D. Weil, Lewiston, and Hans L. Schlichting, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,077
8 Claims. (Cl. 260—479)

1. A compound of the formula



wherein the substituent R is lower alkyl, the substituents R^1, R^2, and R^3 are each selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and di(lower alkyl) amino wherein when anyone of R^1, R^2 and R^3 is other than lower alkyl, at least one of said R^1, R^2 and R^3 is hydrogen, R^4 is a substituent selected from the group consisting of lower alkyl, allyl, cyclohexyl and benzyl, m is an integer from 0 to 1 inclusive, p is an integer from 0 to 1 inclusive, the sum of m and p always being equal to one and n is an integer from 0 to 1 inclusive.

3,349,117
CONDENSATION AND OXIDATION OF ALKYL-AROMATIC COMPOUNDS WITH TETRAVALENT CERIUM COMPOUNDS AS PROMOTERS

Charles M. Selwitz, Pitcairn, and Edmond R. Tucci, Ross Township, Allegheny County, Pa., assignors to Gulf Research & Development Company

Filed July 15, 1965, Ser. No. 472,119
19 Claims. (Cl. 260—488)

1. A process for the condensation of an alkyl-monocyclic aromatic compound having between 7 and 18 carbon atoms, said alkyl-monocyclic aromatic compound having between 1 and 4 alkyl groups, at least one of said alkyl groups having at least one hydrogen atom attached to a carbon atom which is directly connected to an aromatic ring, and which carbon atom also forms a part of said alkyl group, said alkyl group having between 1 and 10 carbon atoms and having no olefinic unsaturation between the alpha and beta carbon atoms of said alkyl group, the remaining open positions on said alkyl-monocyclic aromatic having substituents selected from the group consisting of hydrogen, halogen, NO_2 and —C≡N which comprises contacting at least one of said alkylaromatics in the substantial absence of a gas which contains free molecular oxygen and any oxygen-containing compounds selected from the group consisting of organic oxygen-containing compounds and water at a temperature between 60° C. and 300° C. with a promoter consisting of an anhydrous cerium salt wherein cerium has a valence of plus four and wherein said cerium salt has a water solubility at 25° C. of at least 0.05 gram per 100 grams of water.

9. A process for the condensation and oxidation of an alkyl-monocyclic aromatic compound having between 7 and 18 carbon atoms, said alkyl-monocyclic aromatic compound having between 1 and 4 alkyl groups, at least one of said alkyl groups having at least two hydrogen atoms attached to a carbon atom which is directly connected to an aromatic ring and which carbon atom also forms a part of said alkyl group, said alkyl group having between 1 and 10 carbon atoms and having no olefinic unsaturation between the alpha and beta carbon atoms of said alkyl group, the remaining open positions on said alkyl-monocyclic aromatic having substituents selected from the group consisting of hydrogen, halogen, NO_2 and C≡N which comprises contacting at least one of said alkylaromatics in the presence of a gas which contains free molecular oxygen and at a temperature between 60° C. and 300° C. with a promoter consisting of an anhydrous cerium salt wherein cerium has a valence of plus four and wherein said cerium salt has a water solubility at 25° C. of at least 0.05 gram per 100 grams of water, said contacting being in the substantial absence of oxygen-containing compounds selected from the group consisting of organic oxygen-containing compounds and water.

3,349,118
PRODUCTION OF ETHYLENE GLYCOL ACETATES

Charles F. Kohll and Taeke Jonkhoff, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 13, 1964, Ser. No. 411,110
Claims priority, application Netherlands, Dec. 9, 1963, 301,519
1 Claim. (Cl. 260—497)

The process of producing acetates of ethylene glycol by reacting ethylene, in a substantially anhydrous liquid medium of acetic acid containing a small amount of nitric acid, essentially with palladium acetate and nitric acid, the molar ratio of nitric acid to palladium acetate being at least 0.8, at a temperature between 20° and 120° C. and a pressure between 1 and 10 atmospheres.

3,349,119
OXIDATIVE CARBONYLATION OF OLEFINS IN THE PRESENCE OF INORGANIC ACID ANHYDRIDES

Donald M. Fenton, Anaheim, and Kenneth L. Olivier, Placentia, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,092
12 Claims. (Cl. 260—497)

1. The oxidative carbonylation of hydrocarbon olefins having from 2 to about 25 carbons that comprises contacting said olefin, oxygen and carbon monoxide with an organic reaction solvent at a temperature of 30° to about 300° C. and a pressure sufficient to maintain the solvent in liquid phase, said solvent containing 0.01 to about 5.0 weight percent of a catalyst comprising a platinum group metal and 0.1 to about 50 weight percent inorganic acid anhydride that is nonreactive with the organic reactants and products and the catalyst and insoluble in the reaction medium at reaction conditions, to thereby obtain an alpha,beta-ethylenically unsaturated acid having a total of one more carbon than said olefin.

3,349,120
DEHYDROCHLORINATION OF ALKYL CHLORIDES

Philip Lusman, Edinburgh, Scotland, assignor, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England

No Drawing. Filed May 1, 1964, Ser. No. 364,323
Claims priority, application Great Britain, May 6, 1963, 17,794/63
8 Claims. (Cl. 260—505)

1. In a process for the production of olefins which comprises passing a chloro-substituted paraffin having from 4 to 20 carbon atoms over a silica catalyst at a temperature in the range of from 200° C. to 500° C., the improvement which comprises suppressing skeletal isomerization by contacting the chloro-substituted paraffin with an untreated silica gel catalyst at a flow rate in the range of 5 to 30 liquid volumes of chlorinated paraffin per volume of catalyst per hour.

8. In a process for the production of alkylbenzene sulphonate detergent which comprises chlorinating a paraffin feedstock to produce chloro-paraffins, dehydrochlorinating the chloro-paraffins to produce olefins, alkylating benzene with the olefins so produced in the presence of an alkylation catalyst and sulphonating the resulting alkylate, the improvement which comprises suppressing skeletal isomerization by using a paraffin feedstock in the range C_{10}–C_{16} which contains at least 95% normal paraffins and dehydrochlorinating the chloro-paraffins to olefins by passing the chloro-paraffins over a silica gel catalyst at a flow rate in the range of 5 to 30 liquid volumes of chlorinated paraffin per volume of catalyst per hour.

3,349,121
PROCESS OF REACTING TOGETHER UNSATURATED AMIDES, FORMALDEHYDE, AND SECONDARY AMINES AND THE PRODUCTS FORMED THEREBY

Erwin Müller, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,456
Claims priority, application Germany, Oct. 15, 1959, F 29,613
7 Claims. (Cl. 260—513)

1. A process which comprises reacting at temperatures from 30 to 100° C. and at a pH of above 7

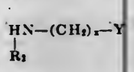
(1) a compound of the formula:



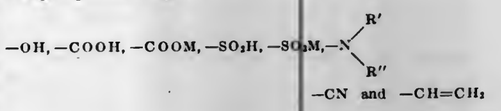
wherein R_1 and X are each selected from the group consisting of hydrogen and alkyl and cycloalkyl containing from 1 to 7 carbon atoms,

(2) formaldehyde, and

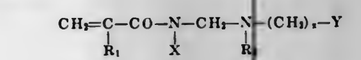
(3) a compound of the formula:



wherein x is an integer from 1 to 20, Y is selected from the group consisting of

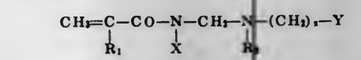


wherein M is selected from the group consisting of alkali-metal and ammonium, R′ and R″ are each selected from the group consisting of hydrogen and alkyl and cycloalkyl containing from 1 to 7 carbon atoms and R_2 is selected from the group consisting of alkyl and cycloalkyl having from 1–12 carbon atoms and $-(CH_2)_x-Y$ wherein x and Y are as aforesaid, to form a compound of the formula:

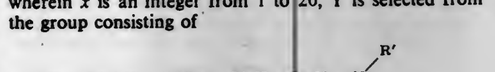


wherein R_1, x, R_2 and X and Y are as aforesaid.

2. A compound of the formula:



wherein x is an integer from 1 to 20, Y is selected from the group consisting of



wherein M is selected from the group consisting of alkali-metal and ammonium and R′ and R″ are each selected from the group consisting of hydrogen and alkyl and cycloalkyl having from 1 to 7 carbon atoms; R_2 is selected from the group consisting of alkyl and cycloalkyl having from 1 to 12 carbon atoms and $-(CH_2)_x-Y$ wherein x and Y are as aforesaid; and wherein R_1 and X are each selected from the group consisting of hydrogen and alkyl and cycloalkyl containing from 1 to 7 carbon atoms.

3,349,122
PROCESS FOR THE PRODUCTION OF ALKANE SULFONATES

Ernest Segessemann, Franklin Lakes, N.J., assignor to Atlas Refinery, Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,736
8 Claims. (Cl. 260—513)

1. A process for the production of an alkane sulfonate from an alkyl olefin having from eight to twenty-four carbon atoms comprising finely dispersing an oxygen-containing gas at a temperature in the range of about 90° C. to about 200° C. through the said olefin until the viscosity thereof is increased by about five to about tenfold to produce an oxygenated bodied olefin, and reacting the bodied olefin with an aqueous solution of a compound selected from the group consisting of sulfurous acid and a salt of sulfurous acid.

3,349,123
STABILIZATION OF NITROPHENYL ACYL HALIDES

Harry Flaxman, North Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Sept. 24, 1963, Ser. No. 311,202
22 Claims. (Cl. 260—544)

1. A composition stabilized against decomposition comprised of a nitrobenzoyl chloride and a stabilizing proportion of a compound selected from the group consisting of

(a) phosphorus compounds selected from the group consisting of phosphorus bromides, thiophosphoryl chloride, alkali metal phosphates, alkaline earth metal phosphates, tetrakis(hydroxyalkyl)phosphonium halides and mixtures thereof;

(b) boron compounds selected from the group consisting of boric acid, alkali metal borates, alkaline earth metal borates, lead borate, tri-(2-cyclohexylcyclohexyl)borate and mixtures thereof;

(c) chelating compounds selected from the group consisting of oxalic acid, citric acid, gluconic acid, tartaric acid, hydroxyethyl ethylene diamine triacetic acid, ethylene diamine tetraacetic acid, nitrilotriacetic acid, and 1,2-diaminocyclohexane tetraacetic acid, the alkali metal salts of such acids, the alkaline earth metal salts of such acids, and mixtures thereof; and

(d) mixtures thereof.

21. The method of purifying nitrobenzoyl chloride which comprises

(1) admixing nitrobenzoyl chloride with a stabilizing proportion of a compound selected from the group consisting of

(a) phosphorus compounds selected from the group consisting of phosphorus halides, thiophosphoryl chloride, alkali metal phosphates, alkaline earth metal phosphates, tetrakis(hydroxyalkyl)phosphonium halides and mixtures thereof;

(b) boron compounds selected from the group consisting of boric acid, alkali metal borates, alkaline earth metal borates, lead borate, tri-(2-cyclohexylcyclohexyl)borate and mixtures thereof;

(c) chelating compounds selected from the group consisting of oxalic acid, citric acid, gluconic acid, tartaric acid, hydroxyethyl ethylene diamine triacetic acid, nitrilotriacetic acid, and 1,2-diaminocyclohexane tetraacetic acid, the alkali metal salts of such acids, the alkaline earth metal salts of such acids, and mixtures thereof; and

(d) mixtures thereof and thereafter;

(2) distilling said mixture to obtain a purified nitrophenyl benzoyl chloride.

3,349,124
ORAL ANTIDIABETIC AGENT

William M. McLamore, Kew Gardens, N.Y., assignor to Chas. Pfizer Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 20, 1957, Ser. No. 660,064
1 Claim. (Cl. 260—553)

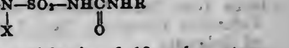
N(-p-chlorobenzenefonyl)-N-propylurea.

3,349,125
AROMATIC SULFONYL BIS-UREAS AND PROCESS OF PREPARATION

Rudi F. W. Rätz and Philip M. Pivawer, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,043
9 Claims. (Cl. 260—553)

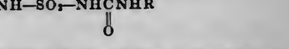
1. Substituted sulfonyl bis-ureas having the formula:



where each R represents aryl having 6–10 carbon atoms, halogenated phenyl or nitrated phenyl; and X represents a trichloromethylthio or dichlorofluoromethylthio moiety.

5. A process for preparing mono-trihalomethylthio) substituted sulfonyl bis-ureas which comprises reacting

(a) N,N′-sulfonyl-bis-ureas having the farmula



wherein R is aryl having 6–10 carbon atoms, halogenated phenyl or nitrated phenyl; with

(b) a trihalomethylsulfenyl halide in an N-lower alkyl carboxylic amide solvent and in the presence of a basic acid acceptor.

3,349,126
INTEGRATED AMMONIA AND UREA PROCESS

Henry Hsu, New Rochelle, and Wayne C. Jaeschke, Dobbs Ferry, N.Y., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Sept. 20, 1965, Ser. No. 496,223
12 Claims. (Cl. 260—555)

1. An integrated process for making ammonia and urea which comprises: passing ammonia synthesis gas from a synthesis gas preparation zone and containing carbon dioxide, nitrogen and hydrogen into a first zone maintained under conditions to separate carbon dioxide from the synthesis gas in an ammonia-containing liquid and to obtain a condensate comprising ammonium carbamate, passing the remaining ammonia synthesis gas to an ammonia synthesis zone, passing said condensate into a second zone maintained under urea synthesis conditions to produce urea therefrom.

3,349,127
METHOD OF TETRACYCLINE ISOLATION FROM FERMENTED MEDIA

Karel Čulík, Jaroslav Dašek, and Josef Palkoska, Prague, and Jiří Pelzbauer, Roztoky u Prahy, Czechoslovakia, assignors to Spofa, sdruzeni podniku pro zdravolnickou vyrobu, Prague, Czechoslovakia

No Drawing. Continuation of application Ser. No. 359,509, Apr. 13, 1964. This application June 22, 1966, Ser. No. 559,690
Claims priority, application Czechoslovakia, Apr. 16, 1963, 2,205/63
7 Claims. (Cl. 260—559)

1. A method of recovering tetracycline from a fermented medium including impurities adapted to be precipitated by addition of sodium dibutylnphthalene sulfonate and containing said tetracycline in the form of a solid dispersion of a salt thereof adapted to be dissolved at a pH of 2 or below and in a concentration higher than the concentration at which amphoteric tetracycline is soluble in an aqueous medium at a pH of between about 3 and 6, comprising the steps of acidifying said fermented medium to a pH of between about 1.5 and 2 so as to dissolve said tetracycline; admixing to the thus acidified fermented medium an effective amount of sodium dibutylnaphthalene sulfonate so as to precipitate said impurities; removing the thus precipitated impurities; raising the pH of the thus formed tetracycline-containing solution to between 3 and 6 so as to obtain said tetracycline in its

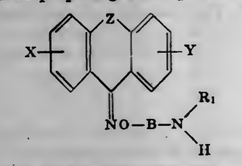
amphoteric form and to precipitate the major portion thereof in the form of crystals; and recovering the thus formed crystals of amphoteric tetracycline.

3,349,128
PRODUCTION OF O-(MONOALKYL AMINOALKYL) OXIMES OF DIBENZO-[a,d] CYCLOHEPTEN-5-ONES

Claude Ivan Judd, Mequon, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 28, 1966, Ser. No. 537,677
1 Claim. (Cl. 260—566)

The method of preparing a compound of the formula

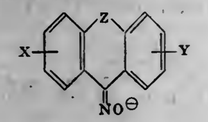


I

in which X and Y are hydrogen or halogen, Z is

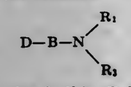
—CH=CH

or —CH_2—CH_2—, B is a lower alkylene, and R_1 is lower alkyl, phenyl or phenyl-lower alkyl which comprises reaction an anion of the formula

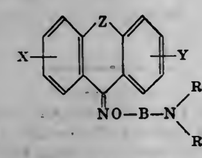


II

with a compound of the formula



in which D is a reactive halide, B is lower alkylene, and R_3 is α,α,α-trifluoroacetyl to form a compound of the formula



III

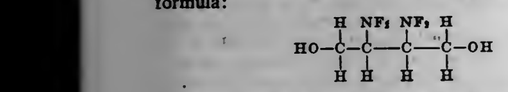
and then hydrolytically cleaving said R_3 to form a compound of Formula I.

3,349,129
DIFLUORAMINO-BUTANE-DIOL

Eugene L. Stogryn, Fords, and Perry A. Argabright and Ralph J. Leary, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 20, 1961, Ser. No. 154,390
5 Claims. (Cl. 260—584)

1. 2,3-bis(difluoroamino)-butane-1,4-diol having the formula:



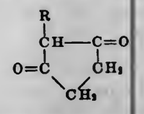
2. A process for preparing 2,3-bis(NF_2)-butane-1,4-diol which comprises, reacting 2,3-bis(NF_2)-1,4-diacetoxy-butane with methanol in the presence of a catalytic amount of a sulfonated aromatic catalyst under conditions of methanol reflux to distill methanol with methyl acetate, said methyl acetate being a by-product formed during the reaction, separating catalyst from a resulting oily product having the composition of 2,3-bis(difluoramino)-butane-1,4-diol, and removing any remaining excess methanol from said oily product.

3,349,130
NOVEL PROCESS FOR THE PREPARATION OF 2-ALKYL-CYCLOPENTANE-1,3-DIONES

Robert Bucourt, Clichy-sous-Bois, André Pierdet, Noisy-le-Sec, Germain Costerousse, Montrouge, Seine, Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, and Bernard Goffinet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Apr. 22, 1964, Ser. No. 361,887
Claims priority, application France, Apr. 26, 1963, 932,866; Feb. 17, 1964, 964,020
14 Claims. (Cl. 260—586)

1. A process for the preparation of 2-lower alkyl-cyclopentane-1,3-diones of the formula



wherein R is lower alkyl which comprises cyclizing a lower alkyl ester of 5-lower alkyl-levulinic acid in the presence of an alkali metal tertiary alcoholate at about reflux temperatures in an aprotic solvent selected from the group consisting of benzene hydrocarbons and lower alkyl ethers to form the corresponding 2-lower alkyl-cyclopentane-1,3-dione.

3,349,131
CONVERSION OF CYCLO-ALKANE CARBOXYLIC ACID TO CYCLO-ALKANONE

Eduard F. J. Duynstee, Geleen, Johan A. Bigot, Beek, and Jan L. J. P. Hennekens, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,837
Claims priority, application Netherlands, Feb. 17, 1964, 64—1,389
8 Claims. (Cl. 260—586)

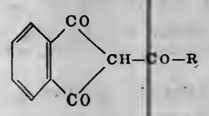
1. A process for converting lower alkyl substituted cyclo-alkane carboxylic acid of from 5 to 7 ring carbon atoms to the corresponding cyclo-alkanone which comprises pyrolysing said carboxylic acid in the liquid phase with a molecular-oxygen-containing gas stream in the absence of any added catalyst and at a temperature of at least 150° C. but does not exceed the decomposition point of the cyclo-alkanone product and is at most about 450° C., whereby the cyclo-alkanone corresponding to the cyclo-alkane carboxylic acid is formed substantially free from cyclo-alkene and cyclo-alkene carboxylic acid by-products.

3,349,132
PREPARATION OF NINHYDRIN

Bernard Pierre Brossard and Jacques Francis Paul Boichard, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,830
Claims priority, application France, Nov. 29, 1962, 917,040
5 Claims. (Cl. 260—590)

1. Process for the production of ninhydrin which comprises oxidising a 2-acyl-indane-1,3-dione of the formula:



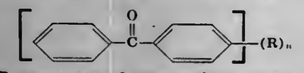
where R is alkyl, aryl or aralkyl, at from 70° C. to the reflux temperature of the mixture with 1.33 to 10 moles, per mole of acyl-indane-dione, of nitric acid of 10 to 50% concentration, based on the total weight of nitric acid, water and any other inert diluent present.

3,349,133
(2-PROPYNYLOXY) DERIVATIVES OF SUBSTITUTED BENZOPHENONE

George B. Sterling, Mogadore, Ohio, and Chester E. Pawloski, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,615
5 Claims. (Cl. 260—591)

1. A compound corresponding to the formula



wherein R represents 2-propynyloxy and *n* represents one of the integers 1 and 2.

3,349,134
TAR REMOVAL IN PHENOL PROCESS

Leendert Blom, Sittard, and Johannes L. F. M. Zwinkels, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Aug. 2, 1962, Ser. No. 214,209
Claims priority, application Netherlands, June 4, 1962, 279,255
1 Claim. (Cl. 260—621)

In a process for preparing a phenol by pyrolytic oxidation and decarboxylation in the liquid phase of a carboxyl compound of the group consisting of moncarboxylic acids of the benzene series and salts, esters and anhydrides of such acids in the presence of a copper compound catalyst dissolved in said liquid phase and in the presence of molecular oxygen and water vapor and in which process a tarry by-product is formed and separated off, the improvement comprising mixing said tarry by-product with a condensed ring compound of the group consisting of aromatic hydrocarbons containing a condensed unsaturated hydrocarbon ring system and halo, hydroxyl and carboxyl substituted derivatives of said aromatic hydrocarbons and extracting said mixture with an extraction liquid which is a solvent for said carboxylic acid wherein the condensed ring compound is added to the tarry by-product as it is being formed and the oxidation and decarboxylation are carried out in the presence of the condensed ring compound.

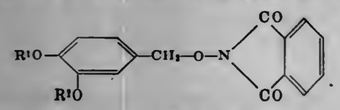
3,349,135
3,4-DIHYDROXY-BENZYLOXYAMINE

David John Drain, Welwyn Garden City, John Gordon Bernard Howes, Hertford, and Haydn Windsor Richard Williams, Welwyn, England, assignors to T. J. Smith & Nephew Limited, Kingston-Upon-Hull, England

No Drawing. Filed May 14, 1963, Ser. No. 280,422
Claims priority, application Great Britain, May 15, 1962, 18,554/62
The portion of the term of the patent subsequent to Dec. 28, 1982, has been disclaimed
7 Claims. (Cl. 260—621)

1. 3,4-dihydroxy-benzyloxyamine.

3. A method of preparing 3,4-dihydroxy-benzyloxyamine which comprises reacting at least two molecular proportions of hydrazine with a compound of formula:



wherein R^1 and R^2 are selected from the group consisting of aromatic acyl and aliphatic acyl groups.

3,349,136
2-BROMO-2-CHLORO-1,1-DIFLUOROCYCLO-PROPANE

Max M. Boudakian and George H. Hofmann, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,618
1 Claim. (Cl. 260—648)

2-bromo-2-chloro-1,1-difluorocyclopropane.

3,349,137
PROCESS FOR PURIFYING 2,2,2-TRIFLUORO-1-CHLORO-1-BROMOETHANE

Donald Thomas Cropp, Runcorn, and David John Gilman, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

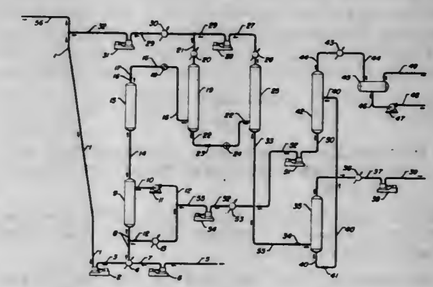
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,153
Claims priority, application Great Britain, Oct. 28, 1964, 43,979/64
7 Claims. (Cl. 260—653)

1. A process for the purification of impure 2,2,2-trifluoro-1-chloro-1-bromoethane containing as impurity a small amount of one or more of the compounds of the formula: —CF_3CX=$CYCF_3$ wherein X stands for hydrogen, bromine or chlorine and Y stands for bromine or chlorine which comprises intimately contacting said impure 2,2,2-trifluoro-1-chloro-1-bromoethane in the liquid phase with a halide selected from the group consisting of aluiminium chloride, aluminium bromide and antimony pentachloride and then separating the 2,2,2-trifluoro-1-chloro-1-bromoethane from the resulting mixture, the impurity being retained by said halide.

3,349,138
CYCLOCOOLIGOMERIZATION PROCESS

John R. Larson, Palatine, and Robert P. Zimmerman, Downers Grove, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed July 21, 1965, Ser. No. 473,599
5 Claims. (Cl. 260—666)



1. In the cyclocooligomerization of ethylene and butadiene, the continuous steps of

(a) charging ethylene, butadiene and a homogeneous nickel catalyst to a reaction zone at cyclocooligomerization reaction conditions and forming a reaction product comprising cyclodecadiene, cyclododecatriene and n-dicatriene,

(b) withdrawing the resultant reaction mixture and separating ethylene and butadiene therefrom,

(c) charging the residual reaction mixture to a separation column and flashing a portion of the reaction

product therefrom at a temperature of from about 100° F. to about 180° F. and at a pressure of from about 0.1 mm. to about 10 mm.

(d) recovering the catalyst from said separation column in solution with the residual reaction product and recycling the same to the aforesaid reaction zone.

3,349,139

PREPARATION OF CIS-DECALIN

Fred Jaffe, Cincinnati, Ohio, assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 9, 1965, Ser. No. 462,726

2 Claims. (Cl. 260—667)

1. A method for preparing cis decahydronaphthalene which comprises contacting hydrogen under a pressure of from about 0.5 to about 10 atmospheres with a reaction mixture comprising 1,2,3,4-tetrahydronaphthalene, from about 50 to about 600 g. of acetic acid per mole of said 1,2,3,4-tetrahydronaphthalene in the presence of a catalyst consisting essentially of about 0.4 to about 4.0 g. rhodium per mole of said 1,2,3,4-tetrahydronaphthalene, said rhodium being maintained on an alumina support, the reaction mixture being held at from about 5° to about 90° C.; maintaining said hydrogen pressure until hydrogen to decahydronaphthalene is substantially complete; and separating cis decahydronaphthalene from trans decahydronaphthalene by fractional distillation.

3,349,140

USING RUTHENIUM CATALYSTS TO PREPARE CIS-ISOMERS OF POLYCYCLIC AROMATICS

Alfred W. Weitkamp, Lansing, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Oct. 28, 1966, Ser. No. 590,215

9 Claims. (Cl. 260—667)

1. A process for the preparation of an increased amount of cis-isomers of hydrogenated polycyclic aromatic hydrocarbons having 2–3 fused cyclic units wherein said increased amount is greater than 90% of the total amount of cis-isomers and trans-isomers which process comprises contacting polycyclic aromatic hydrocarbons with a catalyst consisting essentially of ruthenium on a non-hydrogenating support in the presence of a hydrogen-affording gas under hydrogenation conditions, including a temperature between about 25° C. and about 200° C. and a superatmospheric pressure which does not exceed 3000 p.s.i.g.

3,349,141

DETERGENT ALKYLATE COMPOSITION OF SECONDARY PHENYL-SUBSTITUTED n-ALKANES

William Alan Sweeney, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,635

9 Claims. (Cl. 260—668)

1. A detergent alkylate composition consisting essentially of secondary phenyl-substituted n-alkanes, 5 to 50% by weight of said phenyl-substituted n-alkanes having 11 carbon atoms in the alkane portion of the molecule, the remainder of said phenyl-substituted n-alkane having 12 to 14 carbon atoms in the alkane portion of the molecule, said remainder consisting of a major proportion of mid-chain substituted phenyl alkanes, from 5 to 30% by weight of 4-phenyl alkanes, and a minor proportion of 2- and 3-phenyl alkanes not exceeding about 35% by weight.

3,349,142

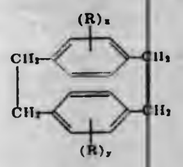
PROCESS FOR THE PREPARATION OF ALKYLATED DI-p-XYLYLENES

Ying L. Yeh, Highland Park, N.J., assignor to Union Carbide Corporation, a corporation of New York

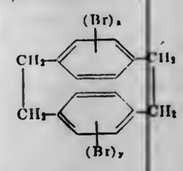
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,493

3 Claims. (Cl. 260—671)

1. Process for the preparation of alkylated di-p-xylylenes having the general formula:



where R is an alkyl having from 1 to 8 carbon atoms and x and y are integers having a value from 1 to 3 inclusive, which comprises contacting a brominated di-p-xylylene having the structural formula:



where x and y are integers having a value from 1 to 3, inclusive, with a lithium alkyl in the presence of an inert organic liquid solvent under anhydrous conditions and at a temperature between about 60° C. and 90° C., the lithium alkyl being used in amounts sufficient to replace all the bromine substituents thereon with the corresponding number of lithium atoms, and thereafter contacting the lithium substituted di-p-xylylene with a dialkyl sulfate to replace each lithium substituent with an alkyl group and form the corresponding alkylated di-p-xylylene.

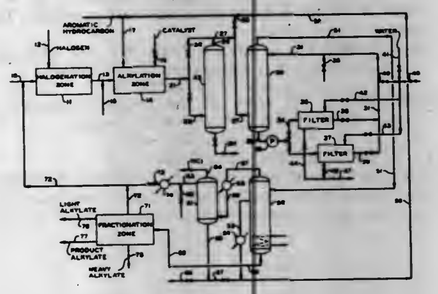
3,349,143

PROCESS FOR THE REMOVAL OF ALUMINUM CHLORIDE FROM HYDROCARBONS USING CONCENTRATED, AQUEOUS HYDROGEN CHLORIDE

Merritt V. De Lano, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 26, 1964, Ser. No. 378,257

9 Claims. (Cl. 260—671)



1. A process for removing aluminum chloride from a hydrocarbon stream, which process comprises the steps of: contacting said stream with a concentrated aqueous solution of hydrogen chloride whereby a precipitate of aluminum chloride forms in said hydrogen chloride solution; separating said precipitated aluminum chloride from said hydrogen chloride solution; and returning said last mentioned hydrogen chloride solution to said contacting step.

3,349,144

ALKYL ARYL PROCESS

Husni R. Alul, Olivette, and Sidney G. Clark and Gilbert J. McEwan, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,379

8 Claims. (Cl. 260—671)

1. In an alkylation process for reacting aromatic compounds with high molecular weight straight chain mono-olefins, contained in an alkylate precursor mixture containing high molecular weight straight chain paraffins and said mono-olefins, in the presence of substantially anhydrous hydrogen fluoride as the alkylation catalyst to form high molecular weight straight chain alkyl aryl compounds, the improvement which comprises carrying out the reaction under temperature conditions of from about 35° C. to about 65° C.

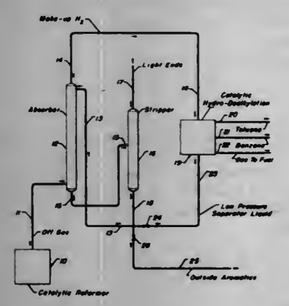
3,349,145

HYDRODEALKYLATION PROCESS USING IMPURE MAKE-UP HYDROGEN

Kenneth D. Uitti, Bensenville, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Aug. 26, 1965, Ser. No. 482,682

12 Claims. (Cl. 260—672)



1. In a process for the hydrodealkylation of an alkyl aromatic compound wherein said compound is hydrodealkylated at hydrodealkylating conditions in a reaction zone in the presence of hydrogen whereby hydrogen is consumed requiring replenishment thereof, the improvement which comprises withdrawing from a source of impure hydrogen a gas comprising hydrogen and a paraffinic hydrocarbon containing at least 3 carbon atoms per molecule, scrubbing said gas in an absorption zone with a lean oil consisting essentially of a C_9+ aromatic hydrocarbon, thereby absorbing a substantial portion of said paraffinic hydrocarbon in said lean oil, passing the resulting scrubbed gas of reduced paraffin content and substantially free of paraffins containing more than 4 carbon atoms per molecule to said reaction zone to replenish the hydrogen consumed therein, passing the resulting rich oil from said absorption zone to a stripping zone and stripping paraffins therefrom, and returning the resulting stripped oil to said absorption zone as said lean oil.

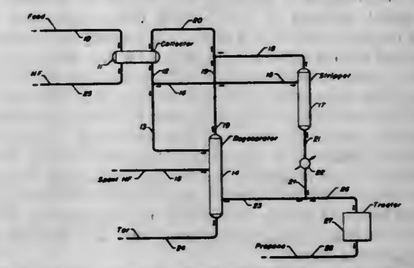
3,349,146

ALKYLATION CATALYST REGENERATION AND PURIFICATION OF C_3 EFFLUENT FRACTION

Paul A. Witt, Oak Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 1, 1966, Ser. No. 598,489

2 Claims. (Cl. 260—676)



1. Process comprising introducing relatively cold C_3 hydrocarbons contaminated with hydrogen fluoride and alkyl-fluoride compounds into a collecting zone, introducing hydrogen fluoride contaminated with material boiling above hydrogen fluoride into fractionation means, passing a portion of said collected C_3 hydrocarbons into separation means under conditions sufficient to produce a first overhead fraction comprising hydrogen fluoride and a bottoms fraction comprising C_3 hydrocarbons and alkyl-fluoride compounds, heating at least a portion of said bottoms fraction, passing a portion of the heated bottoms fraction into the lower end of said fractionation means, passing another portion of said collected C_3 hydrocarbons into the upper end of said fractionation means; said fractionation means maintained under conditions sufficient to produce a second overhead fraction comprising regenerated hydrogen fluoride and C_3 hydrocarbons and a residuum comprising said material, returning said first and second overhead fractions to said collecting zone, withdrawing from said zone a stream rich in hydrogen fluoride, subjecting another portion of the heated bottoms fraction to treatment under conditions sufficient to remove alkyl-fluoride compounds therefrom, and recovering C_3 hydrocarbons substantially free from hydrogen fluoride and alkyl-fluoride compounds.

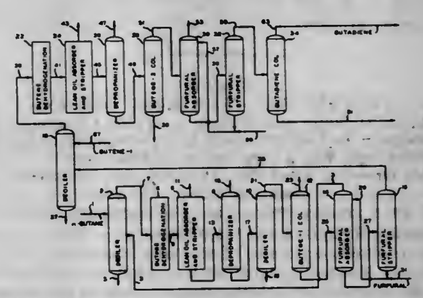
3,349,147

PURIFYING DEHYDROGENATION RECYCLE STREAM IN BUTADIENE MANUFACTURE

Harris A. Clay and Gene K. Reinmuth, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware.

Filed Aug. 31, 1964, Ser. No. 393,111

11 Claims. (Cl. 260—680)



4. In a process for producing butadiene comprising catalytically dehydrogenating a normal butane in a first

zone, recovering streams containing substantially butene-1, butene-2, and normal butane from the effluent of said first zone, deoiling and recycling said recovered normal butane stream to said first zone, introducing said butene-1 and butene-2-containing streams to a second zone for catalytically dehydrogenating them, recovering streams containing substantially butene-2, butene-1, and butadiene, deoiling and recycling the recovered butene-2 and butene-1 streams to said second dehydrogenation zone, the improvement which comprises passing said recovered normal butane-containing stream to a first deoiler zone as feed, passing fresh normal butane to first deoiler zone as reflux, recovering deoiled normal butane from said first deoiler zone and introducing same into said first dehydrogenating zone, passing said first recovered butene-2 containing stream to a second deoiling zone as feed thereto, passing a substantially pure butene-containing stream to said second deoiler zone as reflux thereto, recovering deoiled butene-2 stream therefrom, and introducing said deoiled butene-2 containing stream into said second dehydrogenation zone.

8. In a process for producing normal butenes comprising catalytically dehydrogenating normal butane in a zone, subjecting the effluent from said zone to absorption oil separation for removing light gases, fractionally distilling propane from said remaining effluent, deoiling the remaining effluent, removing butene-1 from the remaining effluent, subjecting the remaining effluent to selective solvent extraction for recovery of butene-2 and normal butane, deoiling the recovered normal butane, and recycling the deoiled normal butane to said zone, the improvement which comprises passing said recovered normal butane to a deoiling zone as feed thereto, introducing fresh normal butane to said deoiling zone as reflux thereto, and recovering deoiled normal butane from said deoiler and introducing same into said zone, and maintaining the solvent to effluent ratio in said solvent extraction less than 5.5:1.

3,349,148
POLYMERIZATION PROCESS

Warren V. Bush, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 8, 1964, Ser. No. 366,126
9 Claims. (Cl. 260—683.15)

1. A process for hydride shift polymerization of olefins having the formula $R_1CH{=}CHCHR_2R_3$ where R_1 is selected from the group consisting of hydrogen, methyl, and ethyl, R_2 is selected from the group consisting of methyl, ethyl, and propyl, and R_3 is a normal alkyl group having from 1 to about 20 carbon atoms which comprises reacting the monomer at a temperature below about 150° C. and above about −50° C. in the presence of a catalyst having the chemical formula $M(AlX_4)_n$ where M is a metal, X is selected from a group consisting of chlorine, bromine and iodine, and n is a whole number equal to the valence of M, and recovering a polymeric product with a number average molecular weight of at least about 300.

3,349,149
PROCESS FOR PREPARING OLEFINS

John G. McNulty and William L. Walsh, Glenshaw, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,581
5 Claims. (Cl. 260—683.15)

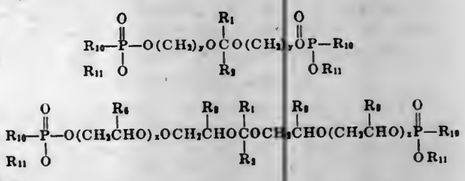
1. In a process wherein an alkylaluminum chloride is reacted with an olefin in the presence of a titanium chloride to obtain a telomer of said alkylaluminum chloride and said telomer is thereafter transalkylated with an olefin, the improvement which comprises treating said telomer prior to transalkylation with an aluminum powder obtained by contacting aluminum chloride with sodium.

3,349,150
POLYETHER DIPHOSPHONATES

Ingenuin Hechenbleikner, Kenwood, and Kenneth R. Molt, Cincinnati, Ohio, assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Original application Dec. 20, 1962, Ser. No. 245,976, now Patent No. 3,206,474, dated Sept. 14, 1965. Divided and this application July 9, 1964, Ser. No. 381,553
12 Claims. (Cl. 260—929)

1. A phosphonate having one of the formulae



where

R_1 and R_2 are selected from the group consisting of hydrogen, alkyl, alkenyl, phenyl, alkyl phenyl, chlorophenyl and nitrophenyl, individually, and



together form a cycloalkyl ring of 5 to 6 carbon atoms;
R_6 is selected from the group consisting of hydrogen and lower alkyl;
y is an integer of 4 to 20;
R_{10} is selected from the group consisting of alkyl, alkenyl, benzyl, alkyl benzene, epoxy lower alkyl and hydroxy lower alkyl;
R_{11} is selected from the group consisting of alkyl, alkenyl, phenyl, alkylphenyl, chlorophenyl, benzyl and alkylbenzyl; and
x is an integer of 1 to 100.

3,349,151
PREPARATION OF PHOSPHORUS COMPOUND CONTAINING FLUORINE

Charles F. Baranauckas, Niagara Falls, and Arlen W. Frank, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,115
6 Claims. (Cl. 260—986)

1. A process for the preparation of a phosphorus compound containing a P—F bond selected from the group consisting of phosphorofluoridate, phosphonofluoridate and phosphinic fluoride and haloolefins or acetylene compound comprising reacting a phosphorus compound having the formula

$$(R')_x{-}P{-}(OR)_{3-x}$$

where R is selected from the group consisting of alkyl having from 1 to about 20 carbons, aralkyl having from 7 to about 20 carbons, alkenyl having from 2 to about 20 carbons, substituted alkyl having from 1 to about 20 carbons, substituted aralkyl having from 7 to about 20 carbons, substituted alkenyl having from 2 to about 20 carbons, said substituent in each instance being inert under conditions of reaction, and mixtures thereof, R′ is selected from the group consisting of R and aryl, substituted aryl, said substituent being inert under conditions of reaction, and mixtures thereof, and x is 0 to 2, with a halocarbon having from 2 to 1000 carbons wherein at least one fluorine and one other halogen are on adjacent carbons.

3,349,152
METHOD OF PRODUCING A SINTERED URANIUM DIOXIDE NUCLEAR FUEL ELEMENT CONTAINING A BORIDE

Takaaki Watanabe and Tadashi Ogura, Urawa, and Yoshiaki Kondo and Masaji Nagasawa, Ohmiya, Japan, assignors to Mitsubishi Atomic Power Industries, Inc., Tokyo, Japan, a corporation of Japan

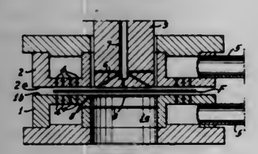
Filed Mar. 6, 1965, Ser. No. 440,121
Claims priority, application Japan, Mar. 19, 1964, 39/15,044
2 Claims. (Cl. 264—.5)

1. A method of producing sintered composite nuclear fuel elements comprising forming a mixture of uranium dioxide and a boride selected from the group consisting of zirconium boride, titanium boride and molybdenum boride and an organic forming agent selected from the group consisting of paraffin, polybutene and polyisobutylene and a hydrocarbon solvent for the forming agent into a member, maintaining the member in an atmosphere of hydrogen at a temperature of about the boiling point of the forming agent for more than 10 hours to remove the forming agent and to preliminarily sinter the member, exposing the preliminarily sintered member to a vacuum having an absolute pressure no greater than 10^{-4} mm. Hg without exposing the preliminarily sintered member to air, heating the preliminarily sintered member in the vacuum to a temperature above 1300° C. and maintaining the member at that temperature for a time sufficient to complete the sintering.

3,349,153
PROCESS FOR DEEP-DRAWING FILMS AND FOILS

Rudolf Beck, Wiesbaden, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany

Filed Oct. 1, 1963, Ser. No. 313,727
Claims priority, application Germany, Oct. 4, 1962, K 47,887
8 Claims. (Cl. 264—89)



1. A process for deep-drawing a deformable article which comprises clamping the article at the outer margin thereof, and deforming the article in an intermediate deforming zone while relieving the clamping pressure by conducting a compressed gas to at least one of the clamped surfaces, whereby the margin is permitted to slide inwardly and the original area of deformation of the article is increased.

3,349,154
DECREASED BLOCK IN POLYMER FILMS

Gaylon L. Dighton, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

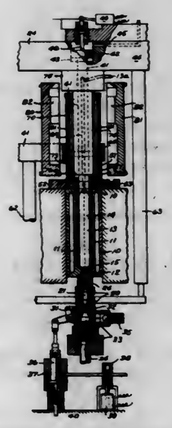
Filed May 27, 1964, Ser. No. 370,474
1 Claim. (Cl. 264—89)

A method for producing a non-blocking polymer film which consists essentially of extruding a thermoplastic material in a formative plastic state through an annular die orifice to form a seamless tubing; inflating said tubing with a gaseous inflating agent; cooling and collapsing the inflated tubing by constricting means thereby confining a bubble of gaseous inflating medium within the tubing; inflating the collapsed tubing a second time at room temperature with a gaseous inflating agent forming a second trapped gas bubble; collapsing the inflated tubing by constricting means and collecting the flattened tubing.

3,349,155
METHOD AND APPARATUS FOR MOLDING PLASTIC BOTTLES

Emery I. Valyi, 5200 Sycamore Ave., Riverdale, Bronx, N.Y. 10471

Continuation of application Ser. No. 353,004, Mar. 18, 1964. This application Nov. 22, 1966, Ser. No. 596,725
22 Claims. (Cl. 264—97)



1. A method of making hollow objects of moldable organic plastic material such method comprising injecting a parison in a parison die onto a blow core in an injection station, retracting the blow core with the parison thereon from said injection station into a blow station including a blow mold, expanding the parison by fluid pressure into said blow mold at the blow station to form said hollow object, retracting the blow core from said hollow object into a conditioning station and returning the blow core, after conditioning, to the injection station for the injection of the next parison.

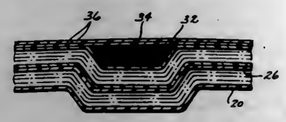
11. Apparatus for forming a hollow object of flowable organic plastic material comprising a parison die having an outer die member and a blow core, means introducing said plastic material into the parison die through said outer die member for forming the parison on said blow core, a blow mold adapted to cooperate with said blow core at a blow station, means retracting said blow core with the formed parison thereon from said parison die and introducing the same into said blow mold at said blow station, means supplying fluid pressure through the blow core to expand the parison into the blow mold for forming the hollow object, a conditioning chamber, means retracting the blow core from the formed hollow object in said blow mold into said conditioning chamber and means returning said blow core from said conditioning chamber to said parison die.

3,349,156
METHOD FOR THE PRODUCTION OF CORRUGATED TUBES
Wilhelm Zieg, Bavaria, Germany, assignor to Frankische Isolierrohr- und Metallwaren-Werke Gebrueder Kirchner, Bavaria, Germany
Original application Mar. 5, 1963, Ser. No. 263,680, now Patent No. 3,243,850, dated Apr. 5, 1966. Divided and this application Oct. 23, 1965, Ser. No. 510,734
Claims priority, application Germany, Feb. 21, 1959, F 27,771
6 Claims. (Cl. 264—99)



1. A method of making a corrugated tube comprising the steps of continuously extruding a tube of hardenable plastic material directly into a mold cavity having circumferentially closed and corrugated walls with the extruded end of said tube located within said circumferentially closed and corrugated walls of said cavity while simultaneously advancing the walls in the direction in which the tube is extruded; and feeding pressure fluid into the interior of the extruded tube to apply internal fluid pressure only to such portions of the extruded tube which are located in the mold cavity to expand the tube during continuous advancement of tube and walls to expand the tube into engagement with the corrugated walls of said mold cavity to obtain thereby a corrugated tube.

3,349,157
METHOD OF MOLDING MULTI-LAMINATE AIRFOIL STRUCTURES AND THE LIKE
John T. Parsons, Traverse City, Mich., assignor to Parsons Corporation, Traverse City, Mich., a corporation of Michigan
Filed Mar. 11, 1965, Ser. No. 438,922
4 Claims. (Cl. 264—255)



1. The method of molding airfoil structures and the like, comprising the steps of

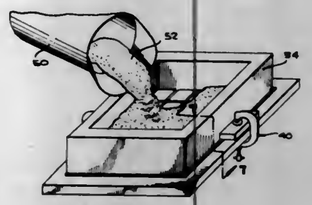
laying up upon and around the surface of a spanwise-grooved core a plurality of laminae of permeable flexible material characterized by strength in tension and pre-impregnated with plastic and together characterized by being thinned upon molding,

pressure-molding the laid-up laminae about the core, whereby the laid-up laminae shrink inwardly toward the core as they become thinned, and

simultaneously pressing sufficient portions of the wrapped laminae inward into each groove of the core to take up that excess peripheral length of the laminae which results from such thinning, thereby holding all the flexible material unwrinkled despite such inward shrinkage,

whereby to form upon such core a spanwise-grooved molded structure.

3,349,158
METHOD AND APPARATUS FOR MAKING MOSAICS
George R. Maynard, Baltimore, Md., assignor to Pandora Custom Craft, a partnership of Maryland
Continuation of applications Ser. No. 225,779, Sept. 24, 1962, and Ser. No. 433,845, Feb. 10, 1965. This application June 2, 1966, Ser. No. 554,913
2 Claims. (Cl. 264—261)



1. A method of making a composite mosaic like structure from a plurality of flat blocks of irregular shape, and which have top and bottom faces, which comprises the steps of first dumping a plurality of flat blocks into a shallow frame having a predetermined depth and a smooth bottom surface, said blocks being of varying thicknesses, the minimum thickness of which is at least equal to the depth of said frame, then arranging the blocks on said smooth bottom surface by hand in desired formation and in spaced relation, with their bottom faces in free engagement with the frame bottom, then applying and adhesively securing a sheet of flexible material over said top surfaces and having said sheet of a size to project beyond the outer sides of the outermost ones of the assembled blocks and to temporarily secure the blocks in the said spaced assembled relation, then removing the assembly of arranged blocks and the securing sheet material from the frame and inverting the entire assembly onto a flat surface of a support body with said sheet of flexible material between such surface and the blocks and projecting outwardly thereon beyond the outermost blocks, then placing a hollow form, having an open top and bottom, on the projecting part of the sheet of flexible material and in enclosing relationship with the assembled blocks and supported on the flexible material and the said support body, then securing the form and support body together and clamping the said projecting part of the sheet of flexible material therebetween, then introducing a flowable resinous bonding material into said hollow form and covering the uneven backs of the blocks in a substantial depth therewith and then forming the outer surface thereof into a planar face, the bonding material flowing between the blocks while the underlying material is held tightly in position to hold the blocks from shifting their position, then effecting the curing and hardening of the bonding material, then removing the bonded together blocks from the form, and lastly stripping off the flexible material.

3,349,159
METHOD AND APPARATUS FOR PLEATING MATERIAL
Sergius N. Ferris Luboshez, 6933 Pinetree Terrace, Falls Church, Va. 22041
Filed Aug. 31, 1964, Ser. No. 393,228
14 Claims. (Cl. 264—282)

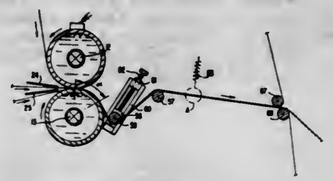
10. In the method of pleating sheet material in an apparatus, including the steps of:

(a) introducing the sheet material into and through said apparatus;

(b) pleating said material into a plurality of transverse pleats;

(c) simultaneously pressing-flat and heating said pleated material immediately after said material has been pleated;

(d) thereafter continously maintaining said pleated material in a pressed-flat condition by applying pressure substantially across each side of said sheet material during its continual movement through said apparatus;

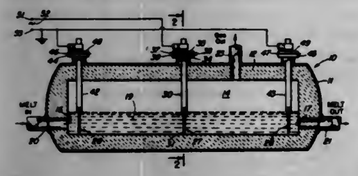


(e) cooling said material until the pleats are set in a permanent, pressed-flat condition; and

(f) removing said material in its pressed-flat condition from said pleating apparatus.

ELECTRICAL

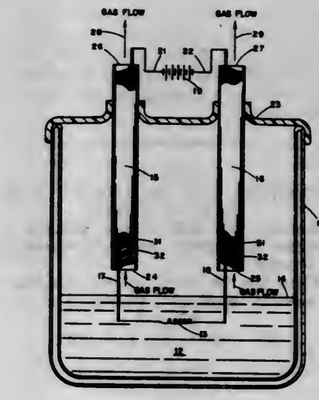
3,349,160
APPARATUS FOR PASSING ELECTRIC CURRENT THROUGH LIQUIDS
Bryan Rapson, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed July 13, 1964, Ser. No. 382,124
8 Claims. (Cl. 13—23)



1. Apparatus for passing an electric current through a liquid, comprising, in combination, structure defining an electrically insulated treating region; metal inlet and outlet conduits communicating with said treating region, for advancing liquid though said region along a path of flow extending between said conduits; a source of alternating electric current having a grounded terminal and at least one ungrounded terminal; and a plurality of electrodes disposed in said region in spaced relation to each other along said path of flow to effect passage of alternating electric current through said liquid in said region in a direction coaxial with said path of flow, said electrodes including first and second grounded electrodes respectively positioned adjacent said inlet and outlet conduits, and at least one other electrode positioned intermediate said first and second electrodes and connected to said one ungrounded terminal of said current source.

3,349,161
ELECTRICAL LEADS FOR CRYOGENIC DEVICES
William N. Latham, Groveland, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,139
9 Claims. (Cl. 174—15)

3. In an electrical lead wherein a cold gas in a cryogenic region passes through said electrical lead to a warmer region, the combination comprising: a hollow electrically-conductive member for receiving said gas; electrically-conductive heat transfer means disposed in and in thermal contact with said member, said heat transfer means having principal surfaces different portions of which define a plurality of first gas flow passages substantially parallel to the longitudinal axis of said electrically-conductive member, said first gas flow passages forming a plurality of second axial gas flow passages extending substantially the effective length of said members whereby said electrical lead has low thermal conductance and gas pressure drop in the direction of said longitudinal axis and a high heat transfer coefficient between said



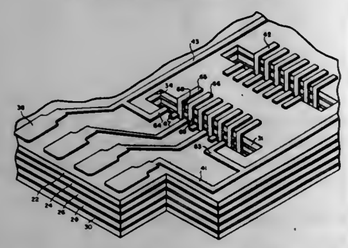


electrically-conductive member and gas flowing through said annular passage from said cryogenic region; and an inner member at least substantially impervious to the flow of gas whereby said gas flows substantially only through said first and second gas flow passages.

3,349,162
INTRA-CONNECTION TECHNIQUES FOR MULTI-LAYER PRINTED WIRING BOARDS

John C. Eckhardt, Roselle, and William L. Yessa, Lemont, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Aug. 23, 1965, Ser. No. 481,742
4 Claims. (Cl. 174—68.5)

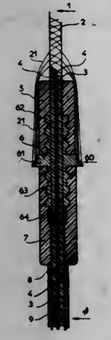


1. A multilayer circuit board comprising: a plurality of insulating sheets having a predetermined pattern of conductors printed thereon bonded together to form a composite board having printed conductors on several layers thereof (each of said sheets having a predetermined pattern of conductors printed thereon; a plurality of substantially rectangular slots), at least one aperture in said board extending from one to the other external surface thereof, certain of said conductors extending to and exposed at the walls of said aperture; and a plurality of strips of conducting material on the walls of said aperture and extending from said one to said other external surface of the board, electrically and selectively interconnecting the conductors existing on the several layers of the composite board.

3,349,163
TRANSITION CONNECTOR OF A SUBMARINE CABLE

Lucien Rocton, Malakoff, France, assignor to CIT-Compagnie Industrielle des Telecommunications, Paris, France

Filed Apr. 16, 1965, Ser. No. 448,654
Claims priority, application France, Apr. 16, 1964, 971,163
12 Claims. (Cl. 174—70)



1. A transition element of a transmission line comprising:

a cable having an insulated central conductor,

a metallic substantially cylindrical member having an axial bore, two end parts and a central part having an outer transverse dimension greater than that of said end parts, said cable tranversing said metallic member from one end to the other end through said central bore,

two insulating elements molded around said first end part and said second part respectively and separated by said central part,

the part of the cable extending from said first end part having a second conductor electrically connected with said central part,

the part of the cable extending from said second end part having a second conductor electrically connected with said second end part of the metallic member.

3,349,164
INSULATIVE STRESS RELIEF FILM

Gerald A. Wyatt, Shoreview, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Dec. 28, 1965, Ser. No. 517,038
8 Claims. (Cl. 174—73)

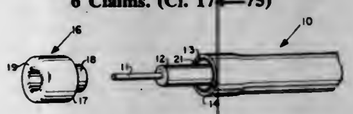


1. A thin insulating film having a breakdown voltage of at least about 200 volts per mil and a dielectric constant in the plane of the film of at least about ten and at least about one-fourth greater than the dielectric constant in the direction perpendicular thereto, said film consisting essentially of flexible and conformable organic plastic film-forming composition containing overlapping spaced thin small electrically conductive platelets uniformly distributed therethrough and planarly oriented in the plane of said film.

3,349,165
CABLE TERMINATION

Arie Zimmerman, Los Angeles, Calif. (% Anaconda Wire and Cable Co., 605 3rd Ave., New York, N.Y. 10016)

Filed Nov. 8, 1966, Ser. No. 592,920
6 Claims. (Cl. 174—75)



1. A termination in a cable having a tubular conducting member and an insulating jacket surrounding said member and bonded thereto, comprising:

(A) a unitary conducting ferrule comprising inner and outer concentric tubes circumferentially joined at one end,

(a) the inner of said tubes being substantially longer than the outer of said tubes,

(b) said inner tube being inserted directly under said conducting member, and

(c) said outer tube being applied over said jacket,

(d) said outer tube being compressed thereby locking said ferrule onto said cable and grounding said conducting member.

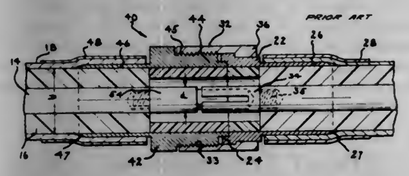
3,349,166
CONNECTOR FITTING

George William Ziegler, Jr., Carlisle, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Aug. 6, 1965, Ser. No. 477,899
11 Claims. (Cl. 174—88)

1. In a device for connecting coaxial cable of the type including a center conductor surrounded by a dielectric medium and an outer conductor having a given inner diameter held to a given close tolerance for efficient signal

transfer, a first metallic sleeve of a material having relatively high yield strength, said sleeve having an outer diameter only slightly larger than the inner diameter of said cable outer conductor so as to be fitted within the outer conductor of the coaxial cable of use with a minimum enlargement and working of the cable outer conductor and having an inner diameter extending along its length approximately equal to the inner diameter of the cable outer conductor and carried to a tolerance at least as close as the said given close tolerance of the inner diameter of the outer conductor of the cable of use, said sleeve having a

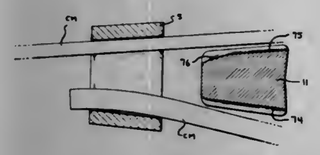


configuration and strength characteristics to receive substantial radial forces applied thereto, a second sleeve positioned over said cable outer conductor and said first sleeve to apply substantial radial forces to terminate the cable outer conductor to said first sleeve through engagement with said outer conductor, a metallic member of relatively soft and easily machinable material fitted over a portion of said first sleeve and permanently affixed thereto, said member having a surface configuration on the exterior thereof to provide a mechanical connection of said device to other means.

3,349,167
WEDGE TYPE ELECTRICAL CONNECTOR

James Lenhart Mixon, Jr., Harrisburg, and Frederick William Wahl, Middletown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Oct. 29, 1964, Ser. No. 407,510
3 Claims. (Cl. 174—94)

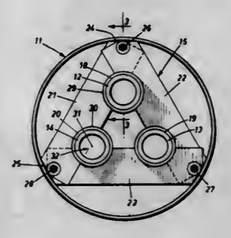


1. A connector assembly for joining cable members comprising a body member having inclined bight sections each for receiving a cable member therein, a wedge member for insertion into said body member, said wedge member having inclined sections corresponding substantially to said bight sections and extending the full length of said wedge member and including radiused sections to accommodate the cable members in engagement therewith, one of said radiused sections extending the entire length of said wedge member, the other of said radiused sections extending more than half the length of said wedge member and merging into a tapered radiused section toward the small end of said wedge member, said tapered radiused section having a greater angular inclination than the inclination of the other of said radiused sections, said tapered radiused section and said one of said radiused sections being engageable with respective cable members prior to said wedge member being driven within said body member whereby said wedge member is disposed at an angle with respect to said body, said tapered radiused section facilitating insertion and driving of said wedge member into said body member to join the cable members.

3,349,168
NON-SEGREGATED METAL CLAD BUS DUCT WITH INSULATING FRAMES FOR SUPPORTING BUS BARS

Robert H. Rehder, Peterborough, Ontario, Canada, and Nathan Swerdlow, Philadelphia, Pa., assignors to General Electric Company, a corporation of New York

Filed Nov. 16, 1965, Ser. No. 508,078
6 Claims. (Cl. 174—99)



1. In an enclosed bus bar assembly having a metal duct and a plurality of circular bus bars located inside the duct lengthwise thereof in spaced relation to each other and to the duct, means supporting said bus bars in said spaced relation comprising a plurality of multisided frames of closed configuration located at spaced intervals inside said duct transverse thereto, means securing at least some of said frames to the duct, each one of said frames comprising a plurality of rigid members made of insulating materials and having relatively broad and flat sides transverse to the duct and relatively narrow inner and outer edges, a pair of substantially semicircular notches in the inner edges of each member near its ends, means securing the ends of said members together in said frame with a flat side of one member engaging a flat side of an adjacent member and with the notches in the engaging members registering along only a portion of their periphery so as to define an opening of more than half a circle through the frame at each of its inside corners, each of said openings holding a circular bus-bar for support by the frame.

3,349,169
SUPERCONDUCTING CABLE

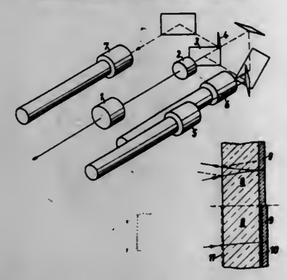
Lucien Donadieu, Sevres, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France

Filed Jan. 28, 1966, Ser. No. 523,770
Claims priority, application France, Aug. 3, 1965, 27,069
10 Claims. (Cl. 174—128)



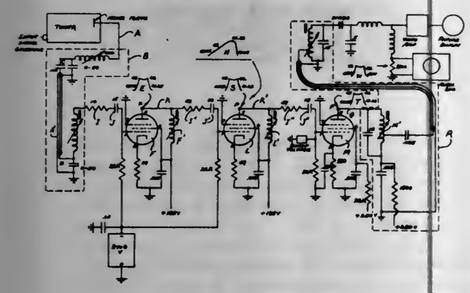
1. An electric cable comprising a central conductor at least partially made of a superconducting metal and at least one sheath covering said central conductor and having with the latter a great number of electrical contact points per unit of area, said sheath being made of a metal having at normal temperature an electrical conductivity higher than 2.10^7 mho/m. and having a ratio of the conductivity at a temperature of a few Kelvin degrees to the conductivity at normal ambient temperatures higher than 50, said sheath being formed of a plurality of braided wires, the metal of said sheath being selected from the group consisting of gold, copper, aluminum and silver.

3,349,170
COLOR TELEVISION PICKUP APPARATUS
Richard von Felgel-Farnholz, Darmstadt-Eberstadt, and Friedrich Michels, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany
Filed May 7, 1965, Ser. No. 453,931
Claims priority, application Germany, May 29, 1964, F 43,013
19 Claims. (Cl. 178—5.4)



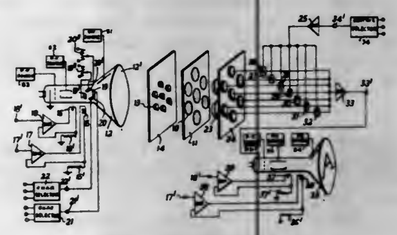
1. Color television pickup apparatus comprising in combination: color splitter means dividing incident light into a plurality of color components having individual predetermined wavelength ranges; a like plurality of electrically light-sensitive devices, each said device including a transparent envelope portion having a predetermined first refractive index, an intermediate layer of predetermined optical thickness of a material having a predetermined second refractive index in direct contact with said envelope portion, and a photosensitive coating of a material having a predetermined third refractive index in direct contact with said intermediate layer; said second refractive index having a value intermediate between the values of said first and third refractive indices; said photosensitive coating being each disposed to receive an individual said color component by transmission through a related envelope portion and intermediate layer; and the optical thickness of each said intermediate layer being chosen such that the photoelectric efficiency of the photosensitive coatings within the predetermined wavelength range is increased and outside of this range decreased whereby the light energy of said incident light transmitted to said photosensitive coating is increased while the light energy of said incident light reflected from said pickup apparatus is decreased.

3,349,171
I.F. BAND PASS STRUCTURE
Russell J. Callender, 115 Wildwood Beach Road, Mahtomedi, Minn. 55715
Filed Oct. 15, 1962, Ser. No. 230,322
9 Claims. (Cl. 178—5.8)



4. A broad band pass frequency determining system comprising: an input circuit, said input circuit including; a first inductance coil and a first series condenser; an output circuit, said output circuit including; a second inductance coil and a second series condenser, said input circuit and said output circuit being interconnected by a transmission line, one end of said transmission line being connected across the first series condenser of said input circuit and the other end of said transmission line being connected across the second series condenser of said output circuit, said input circuit and said output circuit having a common frequency range alignment at maximum amplitude frequency response band pass ranges; whereby the characteristic band pass frequency range of said system is controlled by the ratio of inductance reactance of said first and said second inductance coils, and the capacitance reactance of said first and said second series condensers, and the band pass frequency range of said system being inversely proportional to the capacitance value of said first and said second series condensers.

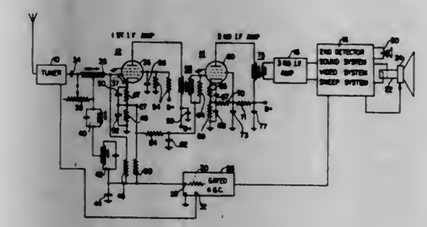
3,349,172
ELECTRONIC TYPE COMPOSING APPARATUS UTILIZING A PLURALITY OF DIFFERENT TYPE FACES
Derek John Mauchel, Horsham, Sussex, England, assignor to Communications Patents Limited
Filed Aug. 5, 1963, Ser. No. 300,007
Claims priority, application Great Britain, Aug. 9, 1962, 30,582/62
10 Claims. (Cl. 178—6.8)



1. Type composing apparatus for the representation of selected characters by cathode ray tube apparatus comprising a first cathode ray tube having deflection means for scanning selected areas of a screen of the tube, a plurality of character matrices each having a plurality of characters, a plurality of lenses for focusing an image of a selected area of the screen of the said cathode ray tube onto a character of each of the character matrices, light-responsive means for providing electric signals corresponding to the illuminated character of each matrix, means for selecting the electric signal from a single matrix, and a second cathode ray tube having deflection means for reproducing from the selected electric signal an image corresponding to the selected character of the selected matrix, the deflection means of the second cathode ray tube including correction means whereby variations in the position of the scanned areas on the screen of the first cathode ray tube, due to instabilities in the deflecting means of the first cathode ray tube, are offset by movements in the position of the character image reproduced by the second cathode ray tube.

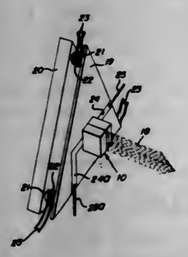
3,349,173
TELEVISION RECEIVER AGC CIRCUIT
Gerald L. Caprio, Mount Prospect, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 2, 1964, Ser. No. 335,061
2 Claims. (Cl. 178—7.3)

2. A gain control system for a receiver of wave signals, including in combination, first and second amplifiers connected in cascade for amplifying the signals, said second amplifier having an output, means coupled to said output and including an automatic gain control circuit for providing a first gain control potential varying with the level of the signals and having an output impedance, said first amplifier having a first electron amplifier tube with a control electrode for regulating the gain thereof and further having a common electrode carrying current therein, a first resistor coupled to said common electrode, a second resistor coupled between said first resistor and a reference point and having a value substantially greater than the value of said first resistor to cause current variations in said first tube to be reflected as a second gain control potential appearing across said second resistor, means coupling said automatic gain control circuit to said control electrode for applying said first gain



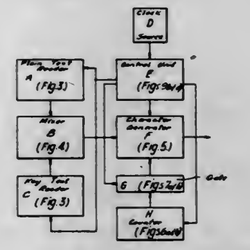
control potential thereto for controlling conduction of said first electron amplifier tube to vary the gain thereof and to vary said second gain control potential, said second amplifier having a second electron amplifier tube with input electrodes, means coupling said second resistor to said input electrodes for applying said second gain control potential thereto for varying the gain of said second tube, a filter capacitor coupled between said input electrodes for filtering said second gain control potential and subject to undesirably charge in response to noise pulses in the wave signals, said second resistor having a value substantially less than the value of said output impedance of said automatic gain control circuit for rapidly discharging said capacitor means to thereby reduce the effect of the noise pulses.

3,349,174
BEAM SCANNING DEVICE
Douglas M. Warschauer, Newton Center, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 342,175
5 Claims. (Cl. 178—7.6)



1. A device for electronically scanning a beam of radiation along a predetermined path comprising a support, a semiconductor laser element on the support and insulated therefrom and having regions of opposite conductivity, conductors connected with the respective regions of opposite conductivity for supplying power to the laser element for generation of an output beam of radiation, a base, at least a major portion of the support being spaced from said base, at least one electro-strictive rod connecting the support to the base, and a coil encircling said rod, the rod being expandable and contractable in response to variations in current passing through the coil, the changes in size of the rod resulting from such expansions and contractions moving the support and laser element with respect to the base to cause scansion of the beam along a predetermined path.

3,349,175
METHOD FOR SYNCHRONIZING CRYPTOGRAPHIC TELEPRINTER EQUIPMENT
Kare Ragnar Melsingset, Stabekk, and Ivar Mo, Veitvet, Norway, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 6, 1964, Ser. No. 335,801
Claims priority, application Norway, Jan. 22, 1963, 147,194/63
17 Claims. (Cl. 178—22)



1. Method for synchronizing cryptographic teleprinter equipment comprising the enciphering of a plain text at the transmitting end by processing it with a key material according to some predetermined rule, and recovering the plain text at the receiving end by processing the enciphered text with a duplicate of the said key material, characterized in this that the start pulse time positions and/or stop pulse time positions of the enciphered teleprinter characters are used for transmitting information in form of a serial number indicating the setting of said key material in relation to a predetermined starting time position.

3,349,176
CIRCUIT FOR PRODUCING COMPLEX VOLTAGES FOR CONTROLLING A DEVICE FOR WRITING LETTERS, NUMBERS AND SIGNS
Enzo Ascoli, Lausanne, Vaud, Switzerland, assignor to Paillard S.A., Sainte-Croix, Vaud, Switzerland, a corporation of Switzerland
Filed Oct. 17, 1963, Ser. No. 316,922
Claims priority, application Switzerland, Oct. 26, 1962, 12,626/62
4 Claims. (Cl. 178—30)

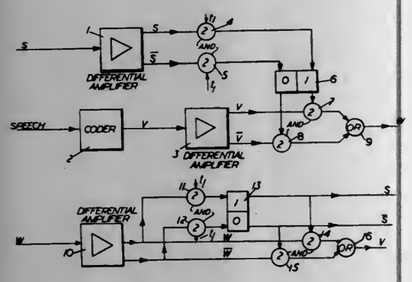
1. A circuit for supplying complex electric signals for controlling posting or tracing means excited by at least two electric signals representing two components following the coordinate axes of displacement to be effected for tracing an indicia selected from the group composed of signs, capital letters, lower case letters, and numbers of the type normally provided on a typewriter keyboard, comprising electric generator means connected to supply continuously two groups of periodic electric waves of

different forms and frequencies with each group comprising four voltage signals, the four voltage signals of the first group being of the same frequency and successively displaced in phase by 90°, the four voltage signals of the second group being of a frequency double that of the first group of voltage signals and successively displaced in phase by 90°, D.C. power source means connected to supply two continuous voltages of opposite polarity, gating circuit means connected with said D.C. power source and generator means and responsive to predetermined combinations of said voltage signals and continuous voltages therefrom to produce for each indicia selected complex output signals of predetermined voltage levels defining the deflection signal components along two coordinate axes for tracing the desired indicia.

3,349,177
SYSTEM FOR TRANSMITTING PULSE CODE GROUPS OR COMPLEMENTS THEREOF UNDER CONTROL OF INDEPENDENT BINARY SIGNAL

Kenneth William Cattermole, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 28, 1964, Ser. No. 363,117
Claims priority, application Great Britain, May 24, 1963, 20,847/63
13 Claims. (Cl. 178—68)

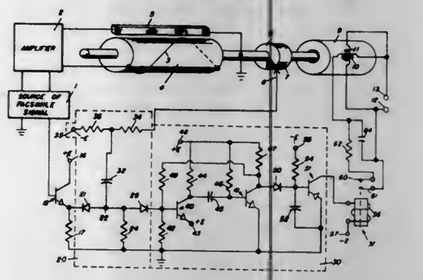


1. A pulse code modulation system in which samples of a signal wave to be conveyed over said system are represented by a restricted-disparity binary code signal comprising:
- a first source of code combinations including said code signals and an additional digit always in a first binary condition;
- a second source of an independent binary signal having either binary condition;
- first means coupled to said first source and said second source responsive to said first binary condition of said binary signal to provide said code combinations unaltered for transmission and responsive to the second binary condition of said binary signal to provide the complement of said code combinations for transmission, said code combinations provided for transmission having a disparity no greater than the disparity of said code signals;
- second means coupled to said first means responsive to the binary condition of said additional digit to reproduce said binary signal; and
- third means coupled to said second means responsive to said first binary condition of said reproduced binary signal to provide unaltered said unaltered code combinations for utilization and responsive to said second binary condition of said reproduced binary signal to provide the complement of said complemented code combinations for utilization.

3,349,178
FACSIMILE RECORDER PHASING APPARATUS UTILIZING A HYSTERESIS SYNCHRONOUS MOTOR WITH MEANS FOR VARYING THE EFFECTIVE IMPEDANCE OF ONE WINDING TO EFFECT SYNCHRONIZATION

Oliver Conway, Los Angeles, Calif., assignor to Hogan Faximile Corporation, New York, N.Y.

Filed Apr. 10, 1964, Ser. No. 358,845
7 Claims. (Cl. 178—69.5)

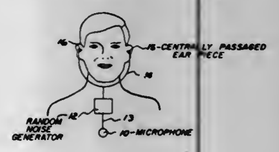


1. A facsimile recorder phasing apparatus including coincidence phasing circuit means, a split phase hysteresis motor including two windings, impedance means for varying the effective impedance of one winding of said split phase motor, and switching means controlled by said coincidence phasing circuit means for rendering said impedance ineffective.

3,349,179
ANTI-STUTTERING DEVICE AND METHOD

Marvin E. Klein, 18708 Appoline, Detroit, Mich. 48235

Filed Apr. 8, 1964, Ser. No. 358,252
2 Claims. (Cl. 179—1)



2. A device to alleviate, ameliorate and modify the symptoms of various speech defects, including stuttering, comprising:
- a microphone pick-up mounted on the user and sensitive only to vibrations produced by the larynx;
- an electronic random noise generator including a power source connected to said pick-up to create random noise frequencies in response to signal output from said pick-up;
- amplifying means connected to said generator;
- and a pair of audio frequency emitters connected to said amplifying means and projected into the user's ear canals, respectively, said audio frequency emitters being tapered inwardly to fit into the ear canal and having a central passage to transmit normal sound waves to the user's ear.

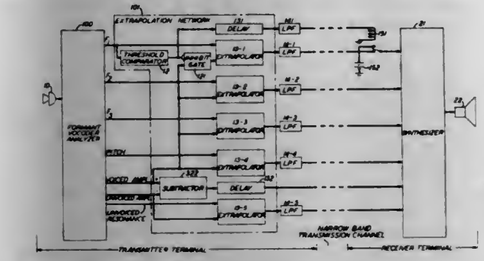
3,349,180
EXTRAPOLATION OF VOCODER CONTROL SIGNALS

Cecil H. Coker, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 7, 1964, Ser. No. 365,654
13 Claims. (Cl. 179—1)

1. A resonance vocoder transmitter terminal which comprises

a source of an incoming speech signal characterized by voiced portions and unvoiced portions,
an analyzer for deriving from said speech signal a plurality of information signals representative of selected characteristics of said speech signal,
a plurality of extrapolators for deriving from selected ones of said information signals extrapolated values of said selected signals at the transitions between said voiced and unvoiced portions of saiu speech signals,

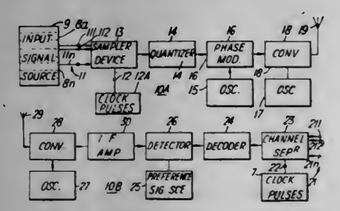


delaying means for synchronizing and remaining information signals from which extrapolated values are not derived with said selected information signals from which extrapolated values are derived.
and a plurality of smoothing means for averaging both said selected plurality of information signals and their corresponding extrapolated values and said remaining synchronized information signals to obtain a plurality of narrow band control signals representative of said selected characteristics of said speech signal.

3,349,181
PHASE SHIFT MODULATION RADIO COMMUNICATION SYSTEM

Sukehiro Ito, Minato-ku, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed May 8, 1964, Ser. No. 365,916
Claims priority, application Japan, May 9, 1963, 38/24,675
15 Claims. (Cl. 179—15)

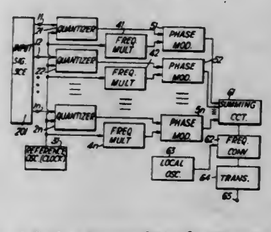


1. A phase shift modulation radio communication transmitter comprising:
- a source of information signals;
- transmitter means connected to said information signal source, said transmitter means including:
  - coding means for converting said signals into a multi-element code comprising a preselected number of discrete voltages of predetermined values, each voltage value constituting one code element;
  - means for converting said voltage code into a phase shifted further signal represented by a plurality of phase vectors having a number equal to said preselected number of voltage code elements and occupying angular positions between predetermined rectilineal coordinate axes, each further signal phase vector occupying an angular position between a predetermined two of said coordinate axes for representing one voltage code element;
  - and means for transmitting a carrier signal varying a preselected characteristic in a plurality of predetermined amounts in response to said further signal represented by said phase vectors, said carrier signal varying said preselected characteristic in each predetermined amount in response to said further signal represented by each of said phase vectors in turn for representating each of said voltage code elements in turn.

3,349,182
PHASE-MODULATED FREQUENCY DIVISION MULTIPLEX SYSTEM

Sukehiro Ito and Seijiro Yokoyama, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed June 17, 1964, Ser. No. 375,766
Claims priority, application Japan, June 28, 1963, 38/33,792
14 Claims. (Cl. 179—15)



1. A phase modulation transmitter for transmitting frequency separated information signals comprising:
- (A) an information signal source for providing more than one information output signal;
- (B) conversion means connected to said information signal source for receiving said information signal and for converting each of said information signals into at least one corresponding code train at a predetermined rate of conversion;
- (C) sub-carrier producing means for generating subcarrier waves spaced in frequency from each other by an integral multiple of said predetermined conversion rate;
- (D) phase modulating means connected to receive the outputs from said conversion means and said subcarrier producing means for phase modulating each of said subcarriers in accordance with the code contained in different code trains; and
- (E) means connected to said phase modulating means for transmitting the modulated subcarrier outputs thereof.

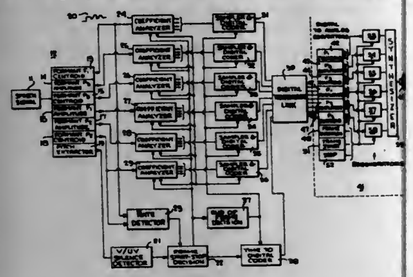
3,349,183
SPEECH COMPRESSION SYSTEM TRANSMITTING ONLY COEFFICIENTS OF POLYNOMIAL REPRESENTATIONS OF PHONEMES

Samuel Joseph Campanella, Springfield, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Oct. 29, 1963, Ser. No. 319,842
15 Claims. (Cl. 179—15.55)

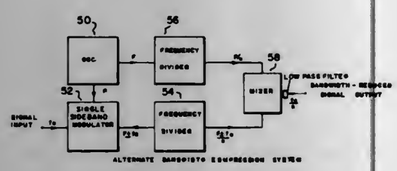
1. In a communication link, the combination comprising means responsive to a time varying signal for a deriving constant valued approximations thereof only over time intervals during which said signal is substantially continuous, each time interval bounded by instants of discon-

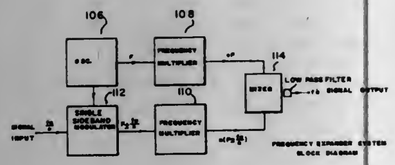
tinuity, said approximations comprising coefficients of terms of a polynomial function of time representative ap-



proximately of said signal, and means responsive to said constant valued approximations for regenerating said signal.

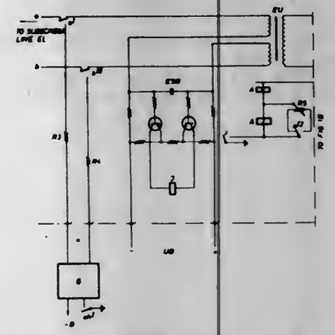
3,349,184
BANDWIDTH COMPRESSION AND EXPANSION BY FREQUENCY DIVISION AND MULTIPLICATION
Harvey L. Morgan, 5645 W. Mariposa, Phoenix, Ariz. 85031
Filed May 17, 1965, Ser. No. 456,465
4 Claims. (Cl. 179—15.55)





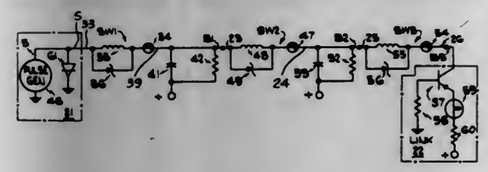
1. In a means for information transmission at reduced transmission media bandwidth, wherein: a complex variable frequency information-bearing signal having a bandwidth A is transmitted with a bandwidth A/n, where n is a number greater than 1, as a second complex variable frequency information-bearing signal having frequencies related to frequencies in said first complex variable frequency information-bearing signal by a ratio $1/n$, the serially connected combination of: $1/n$ bandwidth compression means, transmitter means, transmission media means, receiver means, and a times n bandwidth expander means, said bandwidth compression means consisting of the combination of modulation means having inputs of said first complex variable frequency information-bearing signal and continuous wave carrier, continuous wave oscillator means providing said continuous wave carrier to said modulation means, amplitude linear frequency division by a factor of n means, having input from said modulation means, second frequency division by a factor n means having input of said continuous wave carrier from said continuous wave oscillator means, demodulator means having inputs from said amplitude linear frequency division by a factor n means and said second frequency division by a factor n means, and low pass filter means having input from said demodulator means and output to said transmitter means, said times n bandwidth expander consisting of the combination of second modulation means having inputs from said receiver means and a second continuous wave carrier, a second continuous wave oscillator means providing said second continuous wave carrier to said second modulation means, amplitude linear frequency multiplication by a factor n means having input from said second modulation means, second frequency multiplication by a factor n means, having input of said second continuous wave carrier from said second continuous wave oscillator, second demodulator means having inputs from said amplitude linear frequency multiplication by a factor n means and said second frequency multiplication by a factor n means, and a low pass filter means having input from said second demodulator means and output of a replica of said first complex variable frequency information-bearing signal.

3,349,185
RINGING CURRENT CONVERTING CIRCUIT
Hans-Ulrich Knauer, Kornwestheim, Wurttemburg, and Johannes Matthieu, Stuttgart-Stammheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 25, 1964, Ser. No. 354,682
Claims priority, application Germany, Apr. 10, 1963, St 20,497
3 Claims. (Cl. 179—16)



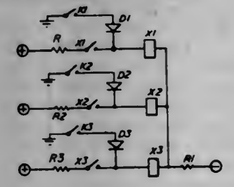
1. A telephone signaling system comprising a subscriber line repeater circuit extending from an intrinsically safe subscriber station to a telephone exchange, means in said line for transmitting A.C. signals which are not safe for use in the area of said station between said station and exchange while separating said station and said exchange with respect to direct current, said signals being transmitted over the extended period of time beginning with a seizure of said called line and ending with either an answer of the call by the called party or an abandonment of the call by the calling party, a ringing signal generator having an output current which is safe for use in the area of said station, means comprising an A.C. relay in said repeater operated responsive to a receipt of ringing current from said exchange for sending said output current to said station throughout said extended period of time, and means for applying said output current to the line leading to said station with a cycle selected to provide extra long ringing for causing sound in extremely noisy locations.

3,349,186
ELECTRONICALLY CONTROLLED GLASS REED SWITCHING NETWORK
John Bereznak, Oak Lawn, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 26, 1963, Ser. No. 333,430
4 Claims. (Cl. 179—18)



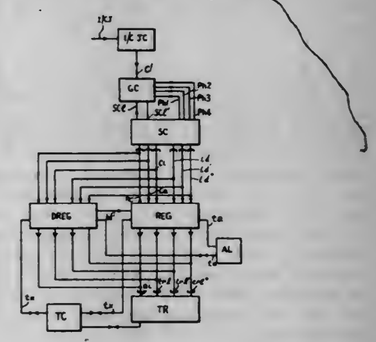
1. An electronic switching network comprising a plurality of horizontal and vertical multiples arranged to provide intersecting crosspoints, electronic crosspoint switch means connected across the multiples at each intersection, each of said crosspoints comprising a series circuit including a four layer diode and a winding for operating at least one glass reed relay contact, means comprising a capacitance device connected to each of said vertical multiples for causing said network to extend self-seeking, current controlled paths through said network for supervising switching in said network, the current in said winding building relatively slowly after completion of said path whereby said relay operates after a discrete interval of time, and means responsive to operation of said relay for completing a principal switch path through said network for carrying intelligence signals.

3,349,187
REED RELAY ARRAY
Frederick Harry Bray and John Anthony Weeks Butcher, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 16, 1964, Ser. No. 338,217
Claims priority, application Great Britain, Feb. 1, 1963, 4,264/63
7 Claims. (Cl. 179—18)



1. An electrical switching arrangement for establishing a connection from any one of a plurality of first circuits to a single second circuit, said arrangement comprising a high speed electro-magnetic relay associated with each first circuit-second circuit connection, common connection means for connecting one side of the winding of each of said high speed relays to a point connected to a D.C. supply source when the arrangement is in use, said common connection including a series resistor, an operating circuit individual to each of said first circuits connected to the other side of the winding of each of said high speed relays, said operating circuits each including an unidirectional conductive means, contact means in series with said unidirectional conductive means operated responsive to a calling condition of one of said first circuits for completing a selected one of said operating circuits by enabling current to flow in the winding of the said high speed relays associated with said calling first circuit through said unidirectional conductive means, a holding circuit for each of said relays also connected to the other side of said winding including a holding potential connected to the winding through a contact controlled by the high speed relay being held, said holding potential being of a polarity that back biases said unidirectional conductive means to lock out the other of said first circuit by causing a current in said series resistor which provides a voltage drop that prevents the operating circuits of all of the other high speed relays from operating so that only one high speed relay can operate at any one time, and further contact means on said high speed relays for completing the associated first-second circuit connection.

3,349,188
INCOMING JUNCTION SCANNING ARRANGEMENT IN AUTOMATIC TELEPHONE EXCHANGE SYSTEM
Harold James Stirling, Tonbridge, Kent, and James George Taylor, Bexley, Kent, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Mar. 26, 1964, Ser. No. 355,037
Claims priority, application Great Britain, Apr. 26, 1963, 16,533/63
16 Claims. (Cl. 179—18)



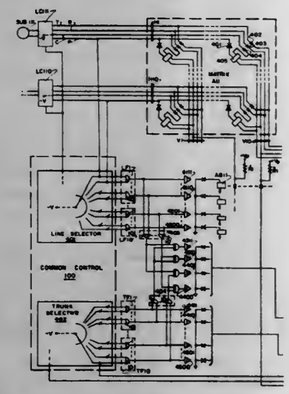
1. In an automatic telephone exchange system comprising incoming junction circuits, incoming junctions terminated on said incoming junction circuits, registers, and dial path means over which the registers can be connected selectively to incoming junction circuits, a scanning arrangement for scanning said incoming junctions comprising electronic scanning means operable during one part of each scan period for scanning a different one of said incoming junctions and responsive on detecting a calling condition on said junction to cause the seizure and coupling up of a free register to such calling incoming junction, said electronic scanning means being operable during another part of said scan period for scanning a group of said incoming junctions and responsive on detecting dial impulses on any calling incoming junction of said group, in respect of which calling incoming junction a register has already been taken into use, to cause such latter calling incoming junction to be connected over said dial path means to the appertaining register.

3,349,189

COMMUNICATION SWITCHING MARKER HAVING CONTINUITY TESTING AND PATH CONTROLLING ARRANGEMENT

John G. Van Bosse, Park Ridge, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Aug. 20, 1964, Ser. No. 390,835
6 Claims. (Cl. 179—18)



1. In a communication switching system operative to establish connections between a first set of terminals and a second set of terminals through a plurality of switching stages arranged in tandem between terminals of the first set and terminals of the second set, each of said stages having a plurality of relays arranged in coordinate arrays, each relay including a hold winding, with a normally open set of its hold path contacts connected in series with its hold winding, interstage links interconnecting adjacent stages, each including a hold conductor interconnecting the series combination of the hold winding and the normally open contacts of a relay in each of the adjacent stages, each said set of interstage links having a set of link test leads connected to respective hold conductors, busy links having the hold path contacts closed at each end and having holding current flowing through the hold windings to cause a given potential to appear on the hold conductor, and connect means operated during the testing for selecting a group of possible links for a given connection and for connecting the link test leads thereof to individual inputs in a path selector; the improvement comprising:

means to apply a test potential via impedance devices to each said hold conductor of each interstage link; and

a detecting means to test for the presence of said test potential at said path selector inputs via said connect means to thereby determine the continuity of said link test leads.

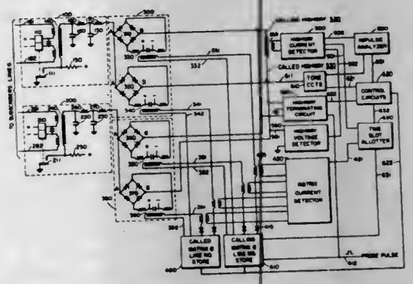
3,349,190

TRANSMISSION OF SUPERVISORY SIGNALS IN A TIME DIVISION MULTIPLEX SYSTEM

Glenn L. Richards, Webster, N.Y., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Continuation of application Ser. No. 268,011, Mar. 26, 1963. This application Dec. 19, 1966, Ser. No. 603,047
13 Claims. (Cl. 179—18)

1. In an automatic communication system; a plurality of communication circuits for originating and terminating communication connections, a communication channel common to said plurality of communication circuits, a plurality of individual gating means each selectively connecting a respective communication circuit to said channel upon actuation thereof, scanning means for actuating said gating means in a prescribed sequence, supervisory signal detector means coupled to said channel for detecting the presence and absence of supervisory signals in the form of current signals of given magnitude generated by said communication circuits, analyzer means connected to said detector means for indicating the terminating communication circuit designated by said supervisory signals, a tone signal circuit and control means responsive to said detector means detecting absence of said supervisory signals for connecting said tone signal circuit to the associated originating communication circuit and responsive to said analyzer means for simultaneously actuating the gating means associated with the originating communication circuit transmitting said supervisory signals and the terminating communication circuit designated by said supervisory signals periodically in a prescribed time slot of a repetitive communication time frame, said detector means including a channel terminating circuit selectively connected to and disconnected from said channel in response to said scanning means and said control means to provide a terminating circuit for said supervisory signals without interfering with voice signals in other time slots, said terminating circuit having an impedance substantially equal to the characteristic impedance of said channel.



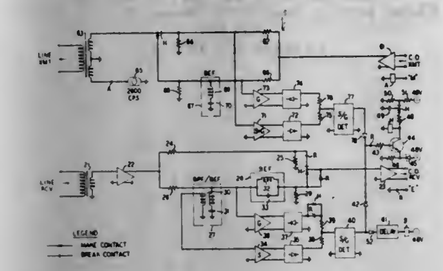
3,349,191

TALK-OFF PROTECTION FOR IN-BAND TELEPHONE SIGNALING SYSTEMS

Henry Mann, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 7, 1965, Ser. No. 424,077
4 Claims. (Cl. 179—84)

1. In a telephone system for sending complex voice-frequency message waves occupying a predetermined frequency band over a telephone trunk from a transmitting terminal to a receiving terminal, means at said transmitting terminal to send a substantially single-frequency tone over said trunk to said receiving terminal to signal and idle trunk condition, means at said receiving terminal to compare the received energy at the frequency of said tone to the received energy in the remainder of said band, means at said receiving terminal to generate an idle trunk indication when the ratio of the received energy at the frequency of said tone to the received energy in the remainder of said band exceeds a predetermined level, a band-elimination filter adapted to block transmission of energy at the frequency of said tone, means at said transmitting terminal to compare the energy in voice-frequency message waves at the frequency of said tone to the energy in the same voice-frequency message waves in the remainder of said band, and means at said transmitting terminal to insert said band-elimination filter to prevent transmission to said receiving terminal of energy in voice-frequency message waves at the frequency of said tone



when the ratio of such energy to the energy in the same voice-frequency message waves in the remainder of said band exceeds a predetermined level.

3,349,192

TAPE SENSER FOR DICTATING MACHINES

Marcel Jules Helene Staar, Brussels, Belgium, assignor to Usines Gustave Staar, S.A., Brussels, Belgium, a corporation of Belgium

Filed Oct. 3, 1962, Ser. No. 228,041
3 Claims. (Cl. 179—100.2)

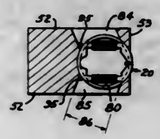
1. In a machine for sound recording and playback on a longitudinally movable tape, said machine having a recording and playback head movable transversely of the tape, and a tape cutting mechanism for severing the tape along a transverse cutting axis immediately downstream of the transverse axis of movement of the recording and playback head and thereby providing a free end of the tape, reversible power means having a single driving connection to said tape adjacent said recording and playback head and selectively operable to advance and backspace the tape relative to said head, the tape normally being fed in the advance direction downstream along said path with its free and threaded through said driving connection, and said recording and playback head, the tape being returnable upstream by backspacing for locating a section of the tape adjacent said head, a tape sensing element mounted in the path of said tape between said transverse cutting axis and the transverse axis of movement of said recording and playback head and engageable by the tape for sensing its presence and thereby indicating that the tape is threaded through said driving connection, and control means including said sensing element connected to interrupt the backspacing operation of said reversible power means responsive to the free end of the tape being backspaced past said sensing element and the tape being disengaged from said element, thereby to stop the tape before the free end reaches said driving connection.

3,349,193

MAGNETIC RECORDING HEAD WITH UNITARY SUPPORTING BODY

Charles L. Vice, 85 Gresham Lane, Atherton, Calif. 94025

Original application Sept. 27, 1962, Ser. No. 226,542, now Patent No. 3,271,843, dated Sept. 13, 1966. Divided and this application May 26, 1966, Ser. No. 553,109
7 Claims. (Cl. 179—100.2)



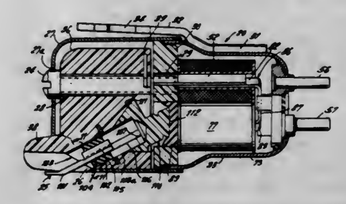
1. A magnetic recording head comprising: a rigid, continuous and unitary body having an internal cavity bounded at least in part by a pair of parallel, spaced-apart side walls and circularly arcuate surface having a radius and extending between the said walls, said body also having an opening in one face thereof, said opening communicating with said cavity; a gapped, wound core attached to the body in said cavity, said core comprising a stack of unitary laminations each having a pair of rigidly joined arms with a gap therebetween, and an outer periphery at the end of the stack away from the gap which includes a circularly arcuate surface having a radius and facing away from the gap, the radii being substantially equal, whereby the core may be inserted in the cavity and the arcuate surfaces bearing against each other, the elevational position of the core thereby being determined and supported, and the radial position of the core being subject to adjustment at the same elevation prior to permanent attachment of the core to the body.

3,349,194

MAGNETIC PHONOGRAPH PICKUP UTILIZING OFF CENTER MOUNTING OF ARMATURE

Harry B. Shaper, East Hills, N.Y., assignor to Dyna-Empire, Inc., Garden City, N.Y., a corporation of New York

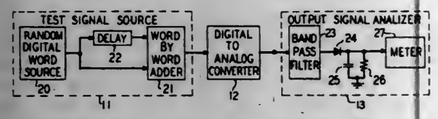
Filed Dec. 31, 1962, Ser. No. 248,586
10 Claims. (Cl. 179—100.41)



5. A phonograph pickup for transducing signals from a record sound groove having first and second channels diagonally offset in opposite directions from a horizontal plane; said pickup including a body means having an elongated recess; first and second electromagnetic systems each having pole face means; said pole face means of both of said systems combining to define a gap common to both of said systems with said recess extending through said gap with the longitudinal axis of said recess centered in said gap; an elongated subassembly; bearing means engaging a portion of said subassembly and supporting said subassembly for angular vibration within said recess; said subassembly including a stylus at one end thereof and an armature disposed remote from said one end and extending into said gap; said stylus extending beyond the confines of said recess through a lower end thereof and

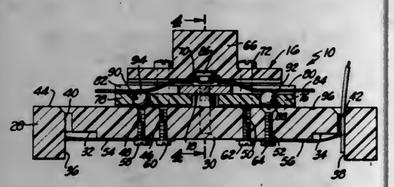
including a downwardly facing tip; said bearing means positioning said portion of said subassembly downward off-center with respect to the longitudinal axis of said recess to compensate for unwanted components of upward vertical movement of said armature during vibration of said subassembly.

3,349,195
APPARATUS FOR TESTING DIGITAL-TO-ANALOG CONVERTERS
James R. Gray, Martinsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 7, 1964, Ser. No. 365,674
4 Claims. (Cl. 179—175)



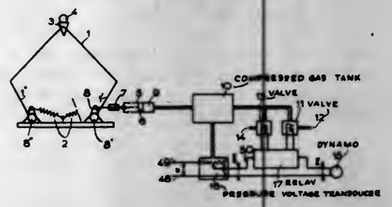
2. In combination, a source of a first sequence of essentially random n-digit binary code words, means connected to said source for delaying said first sequence to form a delayed sequence, a word-by-word adder for binarily combining said first sequence and said delayed sequence to form a sum sequence of $n+1$ digit binary code words, a decoder having an input and an output, means for supplying said sum sequence to said input, and means for measuring the frequency characteristics of the analog wave form appearing at said output.

3,349,196
WIRE CONTACT DEVICE
Karl R. Anderson, 3536 Lacksley Drive, Pasadena, Calif. 91107
Filed Feb. 10, 1964, Ser. No. 343,576
6 Claims. (Cl. 179—175.25)



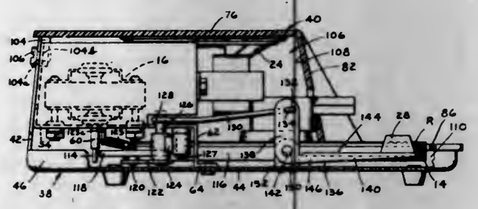
1. A wire contact device comprising a base plate having a face, a channel in said base plate interrupting said face and positioned below said face, said channel terminating in abutment, said abutment defining a plane at substantially right angles to the plane of said face, said abutment extending on both sides of said plane of said face where said plane intercepts said abutment, a hole through said base plate from the side opposite said face into said channel substantially tangent to said abutment, and a spring contact secured against said face and extending freely along said face for a distance at least equal to the width of said channel, and extending substantially to said abutment, said channel, the length of said face along which said spring contact freely extends and said spring contact being so dimensioned that when a wire is inserted through said hole into said channel and is partially withdrawn, the portion of said spring contact extending freely along said face is positioned away from said face and the end of said spring contact is positioned substantially at the juncture of said abutment, said channel and said hole.

3,349,197
PANTOGRAPH-TYPE CURRENT COLLECTOR
Abel Scheidecker, Esaubonne, France, assignor to Etablissements L. Faiveley, Saint-Ouen, Seine, France
Filed Oct. 21, 1964, Ser. No. 405,538
Claims priority, application France, Oct. 24, 1963, 951,601
5 Claims. (Cl. 191—67)



1. A current collector from an overhead line for an electrically powered vehicle in which the pressure applied to press the sliding element against the line varies with the speed of the vehicle comprising: an articulated structure supporting said collector, said structure being supported by said vehicle and having a substantially zero aerodynamic lift; means for supplying a varying mechanical pressure to said current collector; means for measuring the speed of the vehicle; means for measuring said pressure; electro-mechanical means for comparing the measurements; and means responsive to said comparison commanding the supply means of said pressure to vary said pressure as a function of the speed of the vehicle.

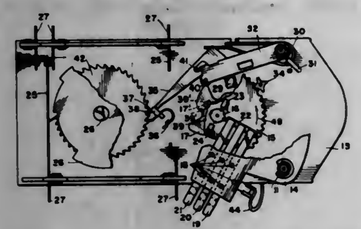
3,349,198
PORTABLE RECORDING APPARATUS WITH IMPROVED ACTUATING MEANS FOR A SWITCH
Bruno Ammon and L. C. James Kingsbury, Decatur, Ill., assignors to General Electric Company, a corporation of New York
Original application May 1, 1964, Ser. No. 364,111. Divided and this application Aug. 1, 1966, Ser. No. 569,213
4 Claims. (Cl. 200—5)



1. A rocker operated switch mechanism comprising a support, said support having at least one flat surface formed thereon, at least one switch unit mounted upon said support near one side of said support, said switch including a movable operating element, a pair of switch actuators located adjacent to each other and also adjacent to another side of said support, and motion transfer means for operating said switch in response to selective depression of said actuators, said motion transfer means including an elongated element of generally V-shaped cross-section, said elongated element including an external apex surface in pivotal engagement with a flat surface of said support, and a pair of elongated arms joined together at said apex, each of said actuators being secured to and arranged to operate an associated one of the arms of the elongated element thereby to pivot said elongated element, and a longitudinal extension of one of said arms mechanically coupled to the movable

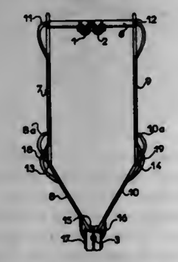
operating element of said switch unit thereby to actuate said switch unit in response to selective depression of said actuators.

3,349,199
TIMER HAVING AN ADJUSTABLE TIME INTERVAL
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 526,985
7 Claims. (Cl. 200—38)



5. A drive mechanism for a timer of the type having a plurality of control cams mounted on a camshaft so as to be rotated thereby, said mechanism comprising: a driving means; an escapement mechanism for rotating said camshaft, said escapement mechanism having a cam with a plurality of rise and fall contours for displacing a spring loaded follower arm; means for coupling said escapement mechanism to said driving means; solenoid operated means for restraining said follower arm in a displaced position, thereby preventing said escapement mechanism from rotating said camshaft; a plurality of switches for energizing said solenoid operated means at predetermined times so as to release said follower arm, thereby permitting said escapement mechanism to rotate said camshaft, each of said switches having a first contact member connected to said solenoid operated means; means for selectively connecting said second contact members of said switches to a power source for said solenoid operated means, thereby establishing a time interval for advancing said camshaft; and means for intermittently operating said switches, said intermittent operating means being coupled to and driven by said driving means.

3,349,200
POWER LINE CONTACT FOR DISCONNECT SWITCH
Jean Crepel, Bron, Rhone, and Alain Zacar, Venissieux, Rhone, France, assignors to Compagnie Generale d'Electricite, Paris, France
Filed Nov. 2, 1965, Ser. No. 506,045
Claims priority, application France, Feb. 10, 1965, 5,005
19 Claims. (Cl. 200—48)

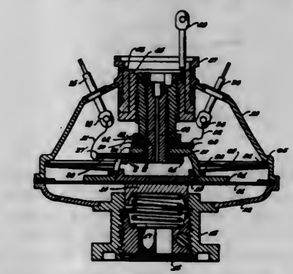


7. Suspension device for supporting the contact bar of a pantograph type disconnect switch from a pair of high voltage conductors comprising;

five rods articulated end-to-end in a pentagon arrangement, one of said rods serving as a crossbar securely mounted on said high voltage conductors transversely thereto,

said contact bar being supported essentially parallel to said conductors by a pentagon arrangement articulated at each end thereof.

3,349,201
ELECTRICAL SWITCH WITH PHASED CONTACT OPERATION
Allen V. C. Davis, 5600 Alta Canyada Road, La Canada, Calif. 91011
Filed Feb. 1, 1966, Ser. No. 536,203
6 Claims. (Cl. 200—67)

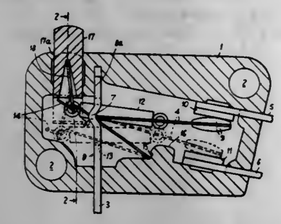


1. Switch apparatus comprising:
a housing (**10**);
stationary and movable contacts (**41, 29** of FIGS. 1–4; **41', 29** of FIGS. 6–9 in said housing;
a support member (**20**) for said movable contact movable toward and away from said stationary contact;
a preloaded disk spring (**22, 22'**) having laterally spaced, relatively fixed and axially movable portions, the movable portion of said disk spring engaging said support member (**20**) and operable when moved to cause said movable contact to make and break contact with said stationary contact;
a stop member (**41** of FIGS. 1–4; **41'** of FIGS. 6–9), said movable portion of said disk spring normally biasing said support member so that said movable contact engages said stationary contact,
said disk spring throughout a predetermined distance of movement to the movable portion thereof from said stop member having a deflection load characteristic that deviates from normal and includes a positive slope preceding a negative slope;
follower spring means including an auxiliary contact element (**61** of FIGS. 1–4; **72** of FIGS. 6–9);
a conductive connection (**63** of FIGS. 1–4; **31, 81** of FIGS. 6–9) between said auxiliary contact element and one of said stationary and movable contacts;
and means biasing said auxiliary contact element into engagement with the other of said stationary and movable contacts throughout said predetermined distance (cone shape of leaf spring **61** of FIGS. 1–4; tongue **70** of disk spring **22'** in FIGS. 6–9).

3,349,202
SNAP-ACTION ELECTRIC SWITCHES
Donald Courtney Beer, Newick, England, assignor to Otehall Limited, Sussex, England, a British company
Filed Aug. 21, 1964, Ser. No. 391,202
7 Claims. (Cl. 200—67)

1. In a snap-action electric switch of the type comprising movable contact means, and an over-centre mechanism connected to move said contact means between two positions on opposite sides of a dead centre position for

the mechanism and yieldingly retain said contact means in a selected one of said two positions, said over-centre mechanism comprising a spring member and two arm members, two of said members having ends mounted respectively by first and second hinges on fixed abutment means, said first and second hinges being in spaced relation and said first hinge being located in said dead centre position, the third one of said members interconnecting said two members and having third and fourth hinges connecting opposite ends thereof to said two members respectively, whereby an imaginary line joining the axes



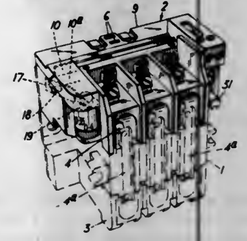
of said third and fourth hinges is normally located, under the action of said spring member, on one side of said first hinge, and said contact means being carried by one of said arm members, the improvement which comprises a plunger for actuating said over-centre mechanism, and a link pivotally attached to said plunger and hingedly connected to one of said members of said over-centre mechanism to actuate said mechanism in response to depression of the plunger to cause said imaginary line to move over-centre with respect to said first hinge and said contact carrying arm member to snap-over said contact means from said one position to the other position.

3,349,203
PRESSURE EQUALIZING SWITCH DEVICE
Byron E. Wolford, Minneapolis, Minn., assignor to Proximity Controls, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 17, 1966, Ser. No. 528,123
5 Claims. (Cl. 200—83)



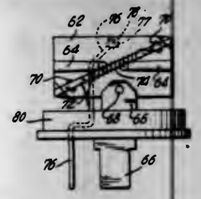
1. A pressure equalizing switch device comprising:
(a) casing means having an opening at the front side thereof;
(b) porous material extending across said opening and attached to said casing means so that said porous material is maintained in a generally taut, resilient condition;
(c) a switch mechanism contained in said casing means and including a first magnet movable by said porous material and a second magnet movable by said first magnet, said second magnet causing operation of said switch mechanism when said first magnet is moved rearwardly by deflection of said porous material due to pressure applied thereto by particulate matter; and
(d) said switch mechanism remaining unoperated when only fluid pressure is applied to said porous material due to the equalization of fluid pressure at both sides of said porous material.

3,349,204
THERMAL OVERLOAD MECHANISM FOR CONTACTOR-OPERATED MOTOR STARTERS
John William Fair, Walsall, England, assignor to J. A. Crabtree & Co., Limited, Walsall, England, a British company
Filed Mar. 11, 1965, Ser. No. 439,034
Claims priority, application Great Britain, Mar. 16, 1964, 10,930/64
8 Claims. (Cl. 200—116)



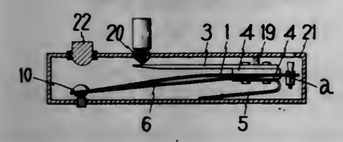
1. An overload box for a motor starting switch (1), said box (2) comprising front, rear and side walls, and a cover (9) seatable on the top of said walls to close said box, said box enclosing two elongated compartments and three similarly proportioned juxtaposed chambers disposed therebetween, each of said chambers having a floor and consisting of two closed outer chambers (5, 5b) and an apertured middle chamber (5a), said middle chamber provided with a first ventilation opening (6a) disposed in the front portion of its respective floor and front wall, and a second ventilating opening (6a) disposed in the rear portion of its respective floor, a bimetal element (7) disposed in each of said chambers, said cover provided with at least one exhaust opening (6), whereby a continuous passage of natural convective air currents entering through said ventilating openings flow upwardly in said middle chamber and escape through said exhaust opening to reduce the increased heat generated therein and substantially equalize the temperature in all of said three chambers.

3,349,205
SNAP ACTION DEVICE
Sidney Taylor, Menlo Park, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,996
9 Claims. (Cl. 200—122)



1. In a snap action device for control of directional signals of automotive vehicles of the type wherein a deformed vane of resilient conducting material snaps back and forth between circuit controlling positions to interrupt the flow of current to the automobile signal lamps in response to expansion and contraction of a pull ribbon secured at spaced points to the vane, the improvement which comprises at least one rib formed in the vane the said rib being concave relative to one surface of the vane and convex relative to the second opposite surface of the vane and tapering in at least one dimension from a maximum adjacent the periphery of the vane to a minimum adjacent the central portion of the vane to provide a deformation in the vane along one axis which biases the vane to make it monostable and thereby cause it always to seek and assume one circuit controlling position when the pull ribbon expands, said vane snapping to a second circuit controlling position in which the vane is curved along an axis angularly disposed to said first axis and at opposite curvature to said first deformation when the ribbon contracts.

3,349,206
THERMOSTAT SWITCH AND VARIABLE ADJUSTING MEANS THEREFOR
Yong Won Kim, 6 2-chome, Fukagawa-shirakawa-cho, Kato-ku, Tokyo, Japan
Filed Aug. 10, 1965, Ser. No. 478,677
3 Claims. (Cl. 200—138)



2. A thermostat comprising
a case,
a bimetal body,
a back plate,
one end of said bimetal body being fixed to said back plate,
an adjusting means provided at the other end of said bimetal body and disposed between said bimetal body and said back plate for movably attaching said bimetal body to said back plate, such that said metal body is curved to form an arcuate side section, and for permitting variable adjustment of the warping degree of said bimetal body,
one of said ends of said bimetal body being movable and carrying a contact movable with said bimetal body,
the other of said ends of said bimetal body mounted substantially stationary relative to and within said case,
a fixed contact fixed to said case and disposed in the path of said movable contact, as well as to be engaged by the latter upon actuating said bimetal body, to open and close, respectively, a circuit, and
said adjusting means comprises a screw means having a variable diameter along its axis.

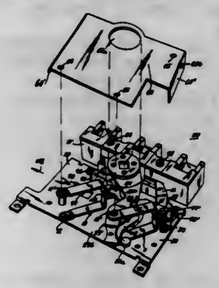
3,349,207
ACTUATING MECHANISM FOR ELECTRIC CIRCUIT BREAKER COMPRISING A ROD SOLELY IN TENSION IN ALL POSITIONS THEREOF OR SOLELY UNDER COMPRESSION IN ALL POSITIONS THEREOF
Jean Louis Gratzmuller, 66 Blvd. Maurice Barres, Neuilly-sur-Seine, France
Filed Apr. 2, 1962, Ser. No. 184,451
Claims priority, application France, Apr. 6, 1961, 857,857
2 Claims. (Cl. 200—150)

1. Circuit-breaker apparatus comprising a support: a contact member at an elevated position on said support reciprocable between a circuit-making position and a circuit-breaking position; spring means operatively connected for urging said contact member toward said circuit breaking position; actuator means mounted adjacent the base of said support; motion transmitting means interconnecting said actuator, said transmitting means contact member and including motion-amplifying and reversing means and a member made of insulating material interconnected between said actuator and said motion amplifying and reversing means; said last means comprising a first rack movable with said contact member, a second rack movable with said actuator, and a first and second coaxially coupled pinions respectively



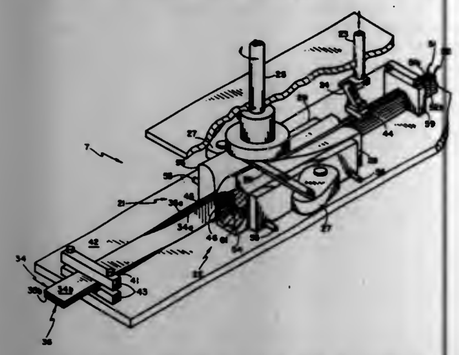
meshing with said first and second racks, and wherein said support comprises a fluid-filled casing including an upper casing portion containing said contact member therein and including another casing portion containing said first rack and first pinion therein, communication means connecting said casing sections for fluid flow therebetween, and sealing means sealing said another casing portion from the exterior.

3,349,208
TOGGLE LEVER ACTUATED MANUALLY-OPERATED CIRCUIT CONTROLLER
John B. Cataldo, Bloomfield Hills, Andrew J. Kralik, Detroit, Frank W. Kussy, Birmingham, and Robert W. Thomas, St. Clair Shores, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application July 27, 1962, Ser. No. 212,890, now Patent No. 3,217,130, dated Nov. 9, 1965. Divided and this application Aug. 2, 1965, Ser. No. 487,950
8 Claims. (Cl. 200—153)



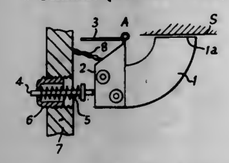
1. An operating mechanism for use in circuit interrupters comprising a toggle assembly having a stationary first end; the free second end of said assembly being adapted to reciprocate between a closed and an open position; a contact assembly coupled to said toggle assembly free end; operating spring means connected to said toggle assembly to provide high speed movement of said toggle assembly during closing and opening operations; said toggle assembly having a collapsible parallelogram configuration.

3,349,209
CRYOGENIC SWITCH
Jacob L. Zar, North Andover, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,425
13 Claims. (Cl. 200—166)



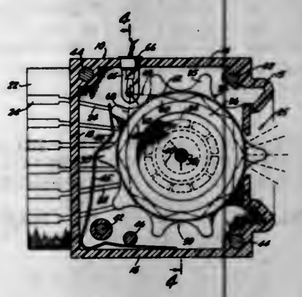
1. In a switch having an open and a closed position, the combination comprising:
(a) a switch block member including a first conductor comprising superconductive material in electrical contact with an exposed and at least substantially smooth first surface of normal metal;
(b) a switch blade member including a second conductor comprising superconductive material in electrical contact with an exposed second surface of normal metal, said second surface being adapted to at least substantially mate with said first surface when said switch is in its closed position and at least one of said conductors being movable with respect to the other conductor; and
(c) actuating means for moving said movable conductor and bring at least a substantial portion of said first and second surfaces into contact with each other under pressure.

3,349,210
ELECTRIC CONTACT BRUSHES
Anthony Derek Appleton, Newcastle-upon-Tyne, England, assignor to International Research & Development Company Limited, Fossway, Newcastle-upon-Tyne, England
Filed Aug. 3, 1966, Ser. No. 569,878
Claims priority, application Great Britain, Aug. 6, 1965, 33,850/65
4 Claims. (Cl. 200—166)



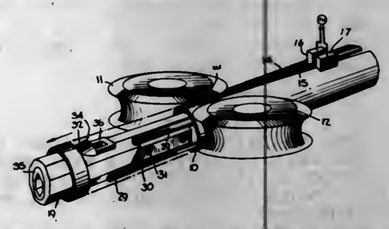
1. An electric current transfer device comprising: an electrically-conducting structure having a first contact face; a unitary, solid, electrically-conducting brush of arcuate shape having a uniform cross-section along the length of the arc and a second contact face at one end of said arcuate brush; a hinged supporting arm, said arcuate brush being mounted at its other end on said arm with the center of curvature of the arcuate brush coincident with the hinge axis; and biasing means exerting a torque on said arm to bias said contact faces into engagement, said contact faces lying in radial planes passing through said hinge axis.

3,349,211
THUMBWHEEL SWITCH WITH ILLUMINATED INDICATING STRUCTURE
Wallace A. Lien, Palos Verdes Estates, Calif., assignor, by mesne assignments, to B-D Equipment Co., Inc., Pasadena, Calif., a corporation of California
Filed Nov. 10, 1964, Ser. No. 410,170
10 Claims. (Cl. 200—167)



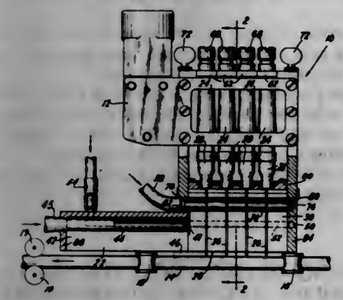
1. In an illuminated counter structure:
a rotatable wheel having an annular rim and a radial flange;
a transparent annular light conducting ring attached to said radial flange and positioned in surrounding relation to said rim to transmit light about said ring by reflection between the inner and outer walls of said ring;
the inner surface of said ring being spaced from said rim to minimize loss of light of said inner surface of said ring;
light diffusing indicia disposed upon the outer surface of said ring whereby to be illuminated by light reflected within said ring;
and a light source adjacent said ring to direct light into said ring through the outer surface thereof for reflection within said ring to illuminate said indicia.

3,349,212
WELDING AND SCARFING APPARATUS
Jack Morris, Monsey, and John Toohey, New Rochelle, N.Y., assignors to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 23, 1964, Ser. No. 420,639
12 Claims. (Cl. 219—59)



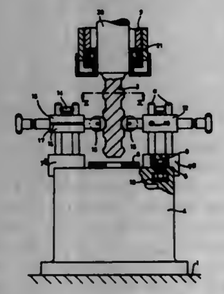
1. In apparatus for welding a longitudinal seam in metal tubing, which apparatus includes means for advancing the tubing longitudinally while pressing together at a weld point the metal edges which are to be welded together in forming the seam, means for raising the edges to welding temperature upon reaching the weld point, a scarfing tool assembly embodying a mandrel, a scarfing tool supported by said mandrel and formed with an annular cutting edge, means for mounting said mandrel inside the tubing in position relatively thereto to position the cutting edge of said tool along the path of the advancing weld seam within said welded tube effectively to scarf the internal bead formed by the weld, adjustment means for permitting the scarfing tool to be extended and retracted relatively to the circumference of said mandrel thus to permit variation of the depth of cut, means for permitting positioning relative to the mandrel of said tool in various annular positions to present different arcuate sections thereof for scarfing the bead, and means for directing the fragments scarfed from the bead through a portion of said mandrel and downstream in the advancing tube.

3,349,213
MULTI-ARC SEAM WELDING DEVICES
Eugene F. Gorman, Morris Plains, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 19, 1966, Ser. No. 573,595
9 Claims. (Cl. 219—60)



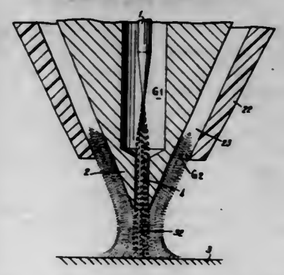
1. A multi-arc seam welding apparatus comprising a plurality of gas shielded arc electrode holders having electrodes extending therefrom and arranged in a file corresponding to the seam, a housing having a common chamber provided with a common slot through which said electrodes project, and a tubular gas lens mounted lengthwise in such chamber, external to said electrodes, and positioned between said electrode holders and the common slot of the chamber for continuously filling such chamber with shielding gas for uniform exit from such slot around the tips of said electrodes and over such seam.

3,349,214
ARRANGEMENT FOR GUIDING THE TOOL-FORMING ELECTRODE OF A MACHINE OPERATING THROUGH ELECTRIC EROSION
Claude Vuilleumier, Sonvilier, Bern, Switzerland, assignor to Société d'Outillage pour Frappe à Chaud S.A., Sonvilier, Switzerland, a firm
Filed June 25, 1964, Ser. No. 377,958
Claims priority, application Switzerland, June 25, 1963, 7,874/63
2 Claims. (Cl. 219—69)



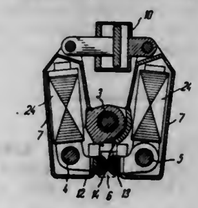
1. In a machine operating through electric erosion and adapted to produce bores provided with helical grooves, the combination of a frame adapted to carry a work piece, an electrode-carrier rigid with said frame above the location of the work, and provided with a vertical bore registering vertically with the location of the work piece to be machined, an electrode revolvably and axially shiftable in said bore, means for moving said electrode axially inside said bore, at least two supports rigidly secured to the frame and provided each with a bore the axis of which extends radially with reference to the axis of the bore in the electrode-carrier, a spindle adjustably fitted in the bore in each support, rollers carried by said spindles and engaging snugly the cooperating grooves of the electrode and constraining said electrode to rotate round its axis proportionally to its axial progression.

3,349,215
ARC PROCESS FOR WELDING WITH NON-CONSUMABLE ELECTRODES FOR WELDING THIN SHEETS
Alois Wagenleitner, Geneva, Maurice Montjovent, Nyon, and Heinz Liebisch, Geneva, Switzerland, assignors to Societe Anonyme des Ateliers de Secheron, Geneva, Switzerland, a corporation of Switzerland
Filed Dec. 15, 1966, Ser. No. 601,902
Claims priority, application Switzerland, May 11, 1964, 6,115/64
3 Claims. (Cl. 219—74)



1. A method of welding thin metallic sheets or the like, by means of a constricted electric arc under shielding atmosphere, comprising stabilizing and maintaining the arc rigid along its aerial path, by putting into contact with substantially the whole surface of this aerial path of the arc a shielding gaseous atmosphere substantially non-ionizable by the plasma of the arc.

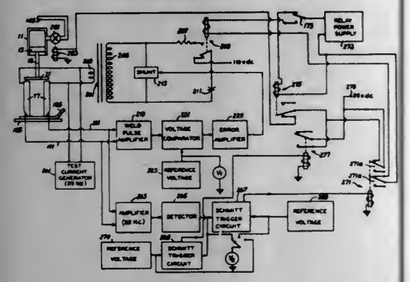
3,349,216
MACHINE FOR RESISTANCE BUTT-WELDING
Boris Evgenjevich Paton, Vasily Alexeevich Sakharnov, Vladimir Konstantinovich Lebedev, and Sergei Ivanovich Kuchuk-Jatsenko, Kiev, U.S.S.R., assignors to Institute electrosvarki im.E.O. Patona, Kiev, U.S.S.R.
Filed June 4, 1964, Ser. No. 372,643
4 Claims. (Cl. 219—101)



1. A resistance butt-welding machine comprising two clampers, each clamper including two casings; welding transformers mounted in the said casings of one of the clampers; current-carrying clamping jaws mounted on said casings of the clampers; a central rod serving, with a workpiece to be welded and being clamped, as an axis

for the turning of one of said clampers, said one clamper being mounted on one of the end portions of said central rod; a sleeve mounted on the other end portion of said central rod adapted for axial displacement and serving as an axis for the turning of the other said clamper, with said workpiece; two hydraulic cylinders mounted on one of the said clampers and creating upsetting force; two rods in the said hydraulic cylinders, located symmetrically with respect to workpieces to be welded and transmitting the upsetting force to said workpieces, said two rods passing through the said casings of the clampers and performing together therewith and said hydraulic cylinders turning with respect to said central rod in the direction of the force clamping the workpieces to be welded, until the latter are completely clamped; a slide valve follower used to control said hydraulic cylinders and mounted on one end portion of said central rod; and an electromechanical drive of said slide valve follower, mounted on said sleeve.

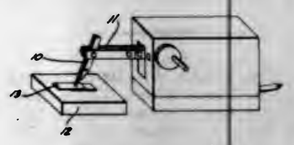
3,349,217
WELDING APPARATUS
John D. Helms and James A. Shank, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 14, 1963, Ser. No. 303,211
24 Claims. (Cl. 219—110)



1. A control for welding apparatus having a pair of weld electrodes adapted to interconnect with and cause a welding current to be conducted through a workpiece, said control comprising a power supply for said electrodes, said power supply including a welding transformer having primary and secondary windings, the latter being connected across said electrodes, and regulating means for controlling the current supplied to said electrodes, said regulating means comprising a controllable impedance connected across said primary winding, sensing means interconnected with said electrodes immediately adjacent said workpiece for sensing the voltage across said electrodes during a weld cycle of said apparatus, and a feedback circuit interconnected between said sensing means and said regulating means for varying said controllable impedance for maintaining the current through said workpiece below a preestablished level, and means included in said feedback circuit for selectively varying said preestablished level.

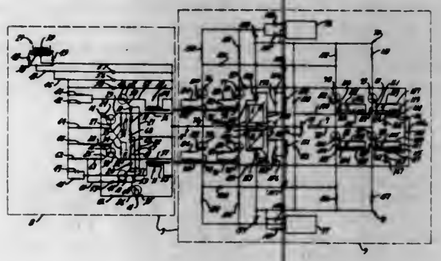
3,349,218
PRECISION ELECTRODE ASSEMBLY
William H. Hill, Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,829
2 Claims. (Cl. 219—119)

1. An electrode assembly comprising:
a rectangular holder member having a tapered tip of lesser cross section than the remainder of said holder, a slot in one surface extending between opposite sides of said member and at an angle of substantially 17° of arc therewith, a clamping surface adjacent to the surface containing said slot bounded by said tip and slot and of the same slope as said slot, said clamping surface having a retaining shoulder along one edge and a transverse bore having a bolt threaded therein and extending outward therefrom,



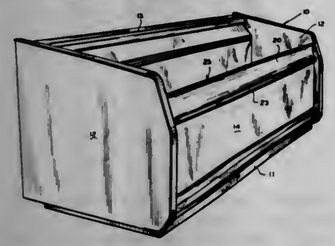
an electrode of thin ribbon material in said slot engaging said clamping surface and retaining shoulder and projecting beyond said tip, and
a clamping wedge having a threaded bore adapted to have said bolt secured therein to clamp said electrode to said clamping surface and to apply a predetermined force to said holder member,
whereby said force deflecting said tip to precisely position said electrode.

3,349,219
WELDING METHOD WITH CONTROLLED RECTIFIER WELDING POWER SOURCE
Paul W. Ramsey, Wauwatosa, Wis., assignor, by mesne assignments, to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 7, 1964, Ser. No. 358,046
1 Claim. (Cl. 219—131)



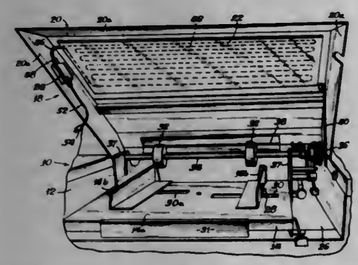
A method of self-regulated, self-adjusting arc alternating current welding, the steps comprising impressing a constant potential, alternating current across a bare steel continuous, consumable electrode, said current being derived from a low loss, constant potential controlled rectifier power source means, rapidly switching said constant potential, alternating current from one polarity to the opposite polarity in a pre-programmed sequence by means of a controlled rectifier switch means operatively connected to control the conduction of current to said electrode, switching from the first polarity operating potential to the opposite polarity operating potential in less than 20 microseconds to insure instantaneous arc reignition at the commencement of each opposite polarity half cycle, simultaneously feeding the tip of said consumable electrode at a preselected constant rate towards said workpiece while moving the electrode and the workpiece relative to each other, to thereby provide continuous and stable arc between said electrode and said workpiece while simultaneously changing the periods of the positive and negative conductive cycles according to said pre-programmed sequence.

3,349,220
RAIL AND WIRE SUPPORT CONSTRUCTION
James F. Kinney, Niles, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed June 24, 1965, Ser. No. 466,536
10 Claims. (Cl. 219—218)



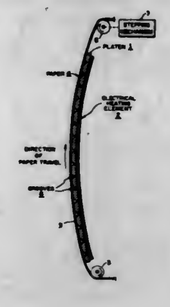
1. A combined rail and heater wire support, comprising an elongated generally channel-shaped member of sufficient rigidity to support a rail and including a rail-engaging web portion with a pair of leg portions extending from opposite longitudinal edges thereof in generally angular relation thereto, and at least one groove extending longitudinally adjacent a juncture of a leg portion with said web portion and opening exteriorly of the angle therebetween.

3,349,221
STORAGE AND SUPPLY ENCLOSURES FOR PHOTOELECTROSTATIC COPY SHEETS
John J. Schulze, Prospect Heights, and John Lloyd Tregay, Wilmette, Ill., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed July 17, 1964, Ser. No. 383,391
13 Claims. (Cl. 219—385)



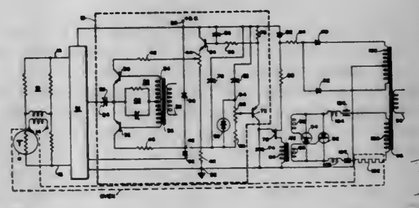
1. In combination with a photoelectrostatic copying machine, a storage and supply enclosure for electrostatic copy sheets comprising, a receptacle mounted on said machine for holding said electrostatic copy sheets in a position for insertion into said machine, a cover mounted for pivotal movement with respect to said receptacle and movable between an open position and a closed position, said cover having a downwardly extending flange adapted to overlie said receptacle and effectively isolate said electrostatic copy sheets when said cover is in its closed position, said cover in its open position providing access to said receptacle, and means positioned within the enclosure for controlling the moisture content of the electrostatic copy sheets in said receptacle, said moisture controlling means including a sheet form element having a width at least as great as the width of said copy sheets, said sheet form element mounted at least partly to said cover in a position to overlie said receptacle and said electrostatic copy sheets when said cover is in its closed position and adapted to be moved to a position spaced from said receptacle and said electrostatic copy sheets when said cover is moved to its open position.

3,349,222
DEVICE FOR CONTACT HEATING OF MOVING SHEET MATERIAL
Bevan H. Johnston, La Mesa, Calif., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed July 2, 1964, Ser. No. 379,823
2 Claims. (Cl. 219—388)



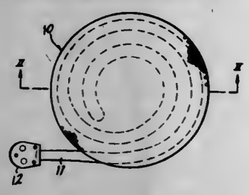
1. Apparatus for fixing a thermoplastic powder image including lines of printing to the surface of a sheet bearing said image, said apparatus including a stationary heat conducting platen having a surface and a plurality of lines of indentations in said surface which communicate with the outside atmosphere, means for directly heating said platen, and means for moving said sheet bearing said image in small increments across said surface in contact therewith at a substantial angle to said indentations thereby to fix said image, said small increments being adjusted so that the lines of printing lie in between the lines of indentations after each incremental step.

3,349,223
OVEN TEMPERATURE CONTROL STABILIZING NETWORK
Le Roy D. Barter, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Oct. 9, 1964, Ser. No. 402,759
12 Claims. (Cl. 219—413)



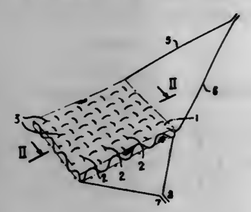
1. A controller comprising:
a sensor for detecting an error from a set point;
a stabilizing network including a storage device in series combination with a parallel combination of a resistor and a voltage breakdown device;
means connecting the output of said sensor across said series combination to derive an output signal comprising a combination in a selectable ratio of an error signal represented by the voltage across said resistor and a set point signal represented by the voltage across said storage device; and
means for feeding said output signal to an output device.

3,349,224
HEATING UNIT
Ulric R. Jaeger, Greenwich, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Jan. 25, 1965, Ser. No. 427,576
3 Claims. (Cl. 219—540)



1. A heating unit for use in electric ranges consisting essentially of
(A) a pervious metallic plate, and
(B) an electric heating element completely embedded in said pervious plate and joined thereto by a metallic bond,
whereby uniform heat distribution is obtained in said plate during operation, and heat conduction to heating utensils placed on said plate is facilitated.

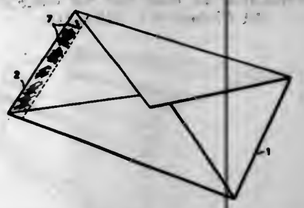
3,349,225
HEATING ELEMENT FOR ROADS AND THE LIKE
Robert Dubois, Prilly, Vaud, Switzerland, assignor to Colfico, S.A., Sion, Valais, Switzerland
Filed May 3, 1965, Ser. No. 452,507
Claims priority, application Switzerland, May 4, 1964, 5,812/64; Nov. 2, 1964, 14,143/64
1 Claim. (Cl. 219—545)



In combination with a heating coat for a road or wall surface including a first layer of synthetic resin laid on a said surface, a second layer of synthetic resin, a heating element between said first and second layers, said element consisting of at least one layer of fabric woven of threads of glass fibres and wires adapted to be heated electrically incorporated with said fabric and extending partly along the weft threads and partly along the warp threads of the fabric and means electrically insulating at their crossing points the heating wires extending along the warp with reference to the wires extending along the weft threads, said wires being spaced by 20 to 30 mm.

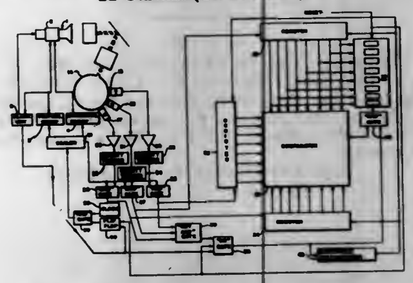
3,349,226
REGISTRATION RECORD
Norbert Goldstern, Spoorlaan 30, Tilburg, Netherlands
Filed Mar. 4, 1963, Ser. No. 262,705
Claims priority, application Germany, Mar. 6, 1962, G 34,408
3 Claims. (Cl. 235—61.12)

1. A registration record comprising a card, slip, sheet, or the like, for use in identifying characteristics of an object, the record comprising visually legible characters formed by a number of equally large perforations, the said characters being arranged on the record so that the characters as a whole can be photo-electrically scanned in a single scanning operation, and a light transparent layer covering the said perforations of the registration record, whereby the layer at least (a) provides a smooth



surface covering the edges of the perforations to prevent perforation edges of adjacent records in a pile from catching onto each other and (b) provides an airtight seal to prevent the flow of air through the perforations.

3,349,227
PARTICLE COUNTER
Alexander E. Martens, Greece, and James J. Chisholm, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Mar. 30, 1964, Ser. No. 355,818
11 Claims. (Cl. 235—92)

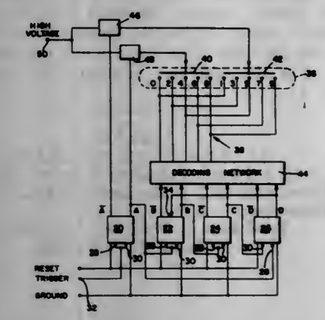


1. A particle counting device comprising a scanning means providing a multiple of scanning beams scanning adjacent lines on a particle carrying medium or image thereof, photosensing means generating multiple signals responsive to particle intercept by said scanning beams, electrical means amplifying and registering the time duration of particle intercept of each of said scanning beams, comparator means receiving the electrical signals from said registers and generating a count pulse in response to a predetermined comparative relationship between said multiple electrical signals, a display counter indicating the total count from said comparator and recording the number of discrete particles scanned by said beams.

3,349,228
DIGITAL COUNTER
Bernard M. Gordon, Magnolia, and Zaki Abdun-Nabi, Framingham, Mass., assignors, by mesne assignments, to Janus Control Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Aug. 11, 1964, Ser. No. 388,761
6 Claims. (Cl. 235—92)

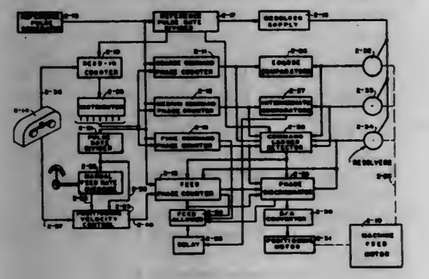
1. In a binary counter having a cascaded plurality of flip-flop stages, each of said flip-flops including a pair of regeneratively cross-coupled inverters, a pair of trigger input terminals each coupled through a respective capacitor to a diode connected to a control terminal of a respective inverter said input terminals being tied together, and a pair of steering resistive impedances each connecting a junction of a corresponding said diode and said capacitor to the output terminal of the respective inverter, the improvement comprising

means for inhibiting a change of state of one of said flip-flops and comprising a source of blocking DC voltage and means for applying said voltage to a point



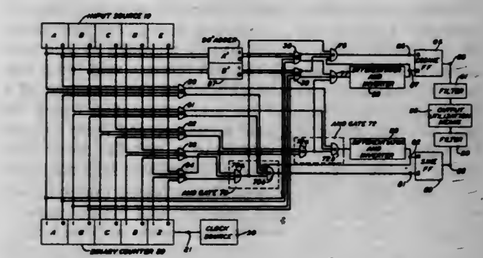
in the circuit of said one of said flip-flops at the junction of the corresponding one of said resistive impedances, said capacitors and its associated diode.

3,349,229
APPARATUS TO PERMIT BOTH CONTOURING AND NUMERICAL POSITIONING OPERATIONS WITH A COMMON CONTROL SYSTEM
John T. Evans, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed July 8, 1963, Ser. No. 293,384
16 Claims. (Cl. 235—151.11)



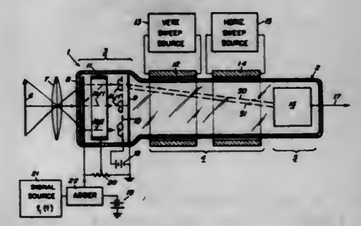
1. An object positioning system responsive to input data comprising in combination, position command means operative in response to said input data to generate a signal discretely representing the absolute position said object is to assume, position responsive means operative to produce a signal discretely representing the actual position of said object, velocity command means operative in response to said input data to produce a signal discretely representative of the velocity with which said object should traverse the distance between said absolute position and said actual position, feed means for selectively moving said object at a rate commensurate with the magnitude of a signal, first means controlled by the signals from said position command means and said position responsive means to generate a signal having a magnitude proportional to the distance between the commanded position and present position of said object, second means controlled by the signals from said velocity command means and said position responsive means and operative to produce a signal having a magnitude commensurate with the velocity with which said object is to traverse, and switching means for selectively applying the signals from said first means and said second means to said feed means.

3,349,230
TRIGONOMETRIC FUNCTION GENERATOR
Walter T. Hartwell, Wharton, Richard Klahn, Morris Plains, and Harold R. Shaffer, Dover, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 24, 1963, Ser. No. 333,025
18 Claims. (Cl. 235—154)



10. In combination, a source of angular input information signals, means for supplying signals varying linearly with time, logic means for detecting a coincidence and a direct anti-coincidence between each entire signal representation from said time-varying means and the entire signal representations from said input source, and bistable means connected to said logic means for producing symmetrical pulse-width-modulated signals.

3,349,231
ELECTRO-OPTICAL COMPUTER
Samuel T. Harmon, Ann Arbor, Mich., assignor, by mesne assignments, to Ann Arbor Trust Company, trustee, a corporation of Michigan
Filed May 14, 1963, Ser. No. 280,285
21 Claims. (Cl. 235—181)

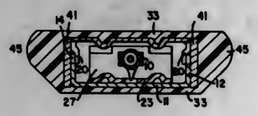


1. A device for performing the mathematical computation indicated by the equation

$$H(x, y) = \int_{ta}^{tb} I(x, y, t) f(t)\, dt$$

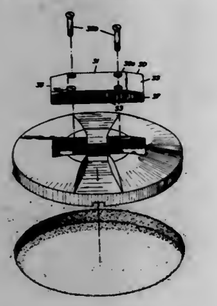
where $I(x, y, t)$ is an optical function and $f(t)$ an electrical function and ta and tb time limits comprising: means to emit first electrons in proportion to the intensity of said optical function; means to accept said first electrons and emit second electrons in response to bombardment by said first electrons; electrical means to apply said electrical function across said means to emit and said means to accept for accelerating said first electrons, said electrical means further including means to control the ratio of said first electrons to said second electrons so that the charge accumulation on said means to accept represents said mathematical computation.

3,349,232
ENCAPSULATED LIGHT SOURCE
Charles A. Robertson, Syracuse, and Frederick B. Small, Moravia, N.Y., assignors to Crouse-Hinds Company, Syracuse, N.Y.
Filed July 2, 1965, Ser. No. 469,141
5 Claims. (Cl. 240—1.2)



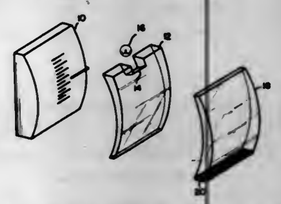
1. An encapsulated light source comprising a metallic container formed with an opening in one side wall thereof, a metallic lamp support fixedly mounted in said container in heat exchanging relation thereto, said lamp support having means for attachment to the envelope of a high temperature lamp at the areas thereof in which the lead in wires are sealed, said container and lamp support forming a heat sink for said lamp, a metallic cover positioned on the open top of said container, said container and cover being fully encapsulated in plastic material having elastomeric and optical qualities, said plastic material being shaped to form a lens in registration with said opening, and current conducting contact means fixedly mounted in said container and having a portion accessible exteriorly of said encapsulating material.

3,349,233
INSET PAVING LIGHT
James F. Angier, deceased, late of Takoma Park, Md., by John L. Cope, administrator, Takoma Park, Md., assignor to Structural Electric Products Corporation, Windsor Locks, Conn., a corporation of Delaware
Filed Jan. 31, 1966, Ser. No. 539,235
21 Claims. (Cl. 240—1.2)



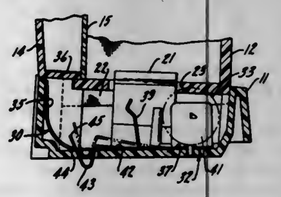
14. A lamp replacement unit comprising an elongated lamp, a lamp end mounting member at each end of said lamp and holding the ends of said lamp, and an electric contact portion on each lamp end mounting member and extending away from the ends of the lamp, the contact portion on each lamp end mounting member having a shape which is asymmetrical in a direction parallel to the direction of a longitudinal plane through the longitudinal central axis of said contact portion, the contact portions being adapted to be inserted into receiving electric contact members in a base of a lamp which base has at least one lens in the side thereof and which contact members have shapes complementary to the shapes of the contact portions at the respective ends of the lamp and said contact portion on said one lamp end mounting member being directionally oriented in the direction of said plane for easy insertion into the receiving electric contact member therefor so that the contact portions are engageable in said contact members when the lamp is in only one rotational position relative to the axis of the lamp, and when said contact portions have the same size, said contact portions being asymmetrically positioned relative to a longitudinal plane through the longitudinal axis of said lamp, and parallel to said first mentioned plane, whereby the lamp can be positioned in the receiving electric contact members in only one position both with respect to its end for end orientation and its rotational position about its axis and the filament in the lamp is at the optimum position with respect to the lens.

3,349,234
ILLUMINATING APPARATUS
William G. Schwarz, Columbia Heights, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,050
1 Claim. (Cl. 240—2.1)



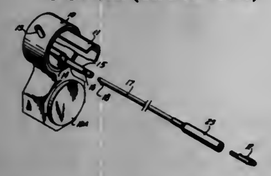
Apparatus for illuminating a curved surface comprising:
- a curved light distribution wedge positioned substantially parallel to the curved surface, said light distribution wedge being formed of a transparent material and having two cylindrical surfaces thereon, the center of curvature of said two cylindrical surfaces being separated;
- a source of light positioned proximate to the thick portion of said light distribution wedge so as to project light into the light distribution wedge; and
- a curved light trap wedge positioned substantially parallel to said light distribution wedge so as to internally reflect light emitted from the convex side of the light distribution wedge toward the base of said curved light trap wedge, said light trap wedge being formed of a transparent material and having two cylindrical surfaces thereon, the centers of curvature of said two cylindrical surfaces being separated, the thin portion of said light trap wedge being adjacent the thick portion of said light distribution wedge.

3,349,235
DIAL ILLUMINATING SYSTEM FOR CLOCKS
Walter F. Kolodziej, La Salle, and Eugene M. Michael, Spring Valley, Ill., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 473,435, July 20, 1965. This application Dec. 13, 1966, Ser. No. 601,435
4 Claims. (Cl. 240—2.1)



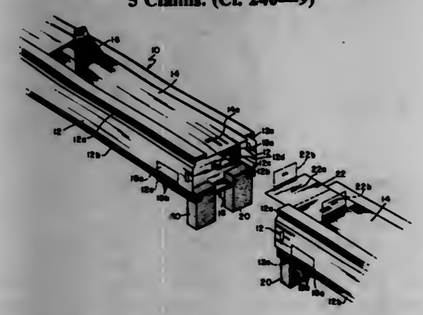
1. An assembly for illuminating a face comprising, in combination, a base attached to said face, a reflector mounted in said base having an electrically conductive bulb engaging portion and a reflecting surface for directing light from a bulb engaged by said portion toward said face, a battery holder mounted in said base having one battery pole contact in electrical contact with a bulb in said portion and a second battery pole contact with a switch arm extended towards said reflector, said base having an opening underlying said second switch arm, said switch arm being resiliently urged into circuit making engagement with said bulb engaging portion, and said switch arm also having a portion extending through said opening so that engagement of said base with a supporting surface deflects said switch arm and opens said circuit.

3,349,236
LAMP ASSEMBLY
Roman A. Sicho, Poestenskill, N.Y., assignor to Sicho Instruments Inc., Poestenskill, N.Y., a corporation of New York
Filed Nov. 30, 1965, Ser. No. 510,574
8 Claims. (Cl. 240—2.18)



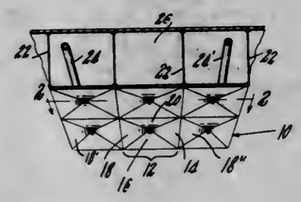
1. A lamp assembly comprising, a tungsten filament lamp including two lead-in conductors, a long thin cylindrical probe for supporting the lamp at one end thereof, said probe including an outer metal conductive tube, a first cylindrical insulator sleeve mounted in axial alignment within the outer tube, and an axial conductive rod within the insulator sleeve, said outer tube and axial rod adapted to supply electrical current to the lamp, a lamp bulb retaining means secured to one end of the probe and including a second hollow insulator sleeve in which is positioned one of the lead-in conductors from the lamp, a conductive disk secured to said second insulator sleeve, and a plurality of equally spaced hooked leaf-like extensions integral with said disk and extending along the sides of said bulb for adjusting the lamp position, the other of said lead-in conductors from the lamp arranged for contact with one of said extensions.

3,349,237
STRIP LIGHTING FIXTURE AND CONNECTOR THEREFOR
Donald L. Jackson, Moundsville, W. Va., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,809
5 Claims. (Cl. 240—9)



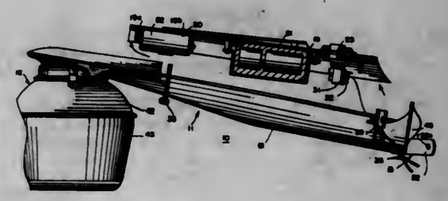
1. In a lighting system, the combination of: at least two elongated channels arranged in end-to-end relationship, the top thereof having a dovetail track formed therein; a snap-in lampholder bracket secured to each of said channels near each end thereof; and a snap-in dual purpose member comprising a plate having a pair of spaced legs normal thereto, one of said dual purpose members being snapped into each of the exposed ends of said channels, and one of said dual purpose members, with the legs broken off, bridging said abutting channels and fitted into and secured to said dovetail tracks thereof.

3,349,238
GLARE-FREE OFFICE LIGHTING DEVICE AND THE LIKE
Michael Henry Kruger, Chestnut Hill, Mass., assignor to Smithcraft Corporation, Chelsea, Mass., a corporation of Massachusetts
Filed Dec. 31, 1964, Ser. No. 422,751
9 Claims. (Cl. 240—9.5)



8. In combination, an elongated light bulb supported from the ceiling of a room, means for reflecting and depolarizing light rays moving upwardly, a light quality influencing panel supported below said light bulb, positioned to receive light rays from said light source and reflective surface which make angles with the vertical in the range of 25° to 45°, said panel being formed of a sheet of multi-layer reflective-type, transparent, polarizing material, the surface of said panel being disposed at such an angle to said rays in said 25°–45° range that at least some of said rays have an angle of incidence upon the surface of said panel of 60°, whereby light rays in said 25°–45° range are efficiently polarized, thereby to reduce reading glare.

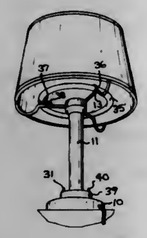
3,349,239
OUTDOOR LIGHTING LUMINAIRE
James H. Fahey, Jr., Chicago, Russell C. Dahl, Homewood, Carl J. Frederickson, Jr., Naperville, and Leon F. Bonk, Palos Park, Ill., assignors to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed June 21, 1965, Ser. No. 465,277
4 Claims. (Cl. 240—25)



1. An outdoor lighting luminaire comprising an elongated support forming a hollow housing, said housing including a generally channel shaped housing portion and a generally inverted channel shaped cover; means at one end of said support for securing said support to a suitable pole structure with said support inclined slightly upwardly from the horizontal; light source means carried by said support at its other end and including a lamp socket adapted to receive a high pressure mercury vapor lamp, and reflector means and refractor means both operatively

positioned relative said lamp socket; a female disconnect block having a plurality of horizontally opening plug receiving sockets and carried within said housing by said housing portion adjacent said one end of said support and adapted to be connected to line wires; conductor means electrically interconnecting said lamp socket and said block; a male disconnect block having a plurality of horizontally extending plugs removably received in respective ones of said plug receiving sockets and supported within said housing by said cover; ballast means supported within said housing by said cover; photocontrol receiving means carried by said cover; conductor means electrically interconnecting said male disconnect block, said ballast means, and said photocontrol receiving means; and lock means securing said cover to said support.

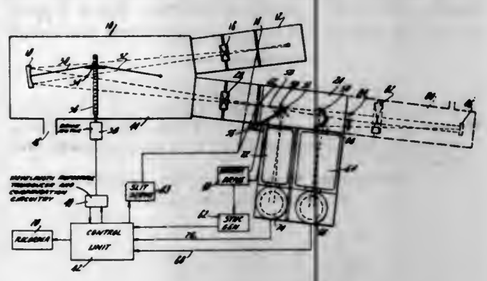
3,349,240
ELECTROLUMINESCENT LAMP SHADE AND LAMP STRUCTURE
George D. Brown, 7001 Bancroft St., Toledo, Ohio 43617
Filed Oct. 12, 1966, Ser. No. 586,228
3 Claims. (Cl. 240—108)



1. A device of the class described comprising, in combination, a lamp structure having shade supporting sockets, a shade having a rim portion juxtaposed to said sockets, said shade being of multiply structure having certain plies cooperating to render said shade electroluminescent, blade means on said rim portion for respective engagement with said sockets, certain of said blade and socket means being electrically conductive so that when energized said shade is rendered luminescent, circuit means for delivering alternating electrical potential to said electrically conductive blade and socket means, and switch means for said circuit means.

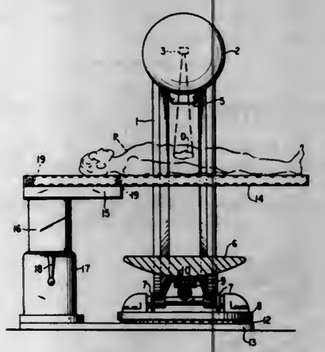
3,349,241
DOUBLE BEAM VACUUM ULTRA-VIOLET SPECTROPHOTOMETER USING A TOROIDAL MIRROR OSCILLATING ABOUT THE CENTER OF CURVATURE
Richard G. Schmitt, Carlisle, and Richard K. Brehm, Lexington, Mass., assignors to Jarrell-Ash Company, Waltham, Mass., a corporation of Massachusetts
Filed Apr. 5, 1965, Ser. No. 445,664
18 Claims. (Cl. 250—43.5)

14. A spectrophotometer for use in the vacuum ultraviolet region comprising an evacuable chamber defining entrance and exit slits, means in said chamber for transmitting monochromatic radiation along a beam path between said slits, means defining a first sample region having a sample center and a second sample region having a sample center, radiation detector means for sensing radiation emitted from each of said sample regions, indicator means coupled to said detector means for indicating radiation sensed by said detector means, a first toroidal mirror for reflecting radiation in said beam path passed by said exit slit, said first toroidal mirror focusing said radiation at the sample center of said first sample region, a second toroidal mirror disposed in said beam path between said exit slit and said first toroidal mirror for reflecting and focusing radiation from said beam path at the sample center of said second sample region, a support for said second mirror mounted for rotation about a center of curvature of said second mirror, a support drive for



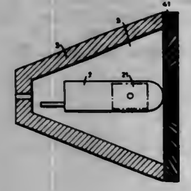
periodically rotating said second mirror about said center of curvature for moving said second mirror out of said beam path and allowing transmission of radiation of said first mirror, said second mirror, mirror support and support drive being mounted in an evacuable chamber, and means responsive to the movement of said second mirror relative to said beam path for controlling said indicator means.

3,349,242
APPARATUS FOR RADIATION THERAPY OF DISEASED TISSUES WITH MINIMUM EXPOSURE TO HEALTHY TISSUES
Carl B. Braestrup, 325 E. 72nd St., New York, N.Y. 10021
Filed Aug. 7, 1964, Ser. No. 388,151
9 Claims. (Cl. 250—54)



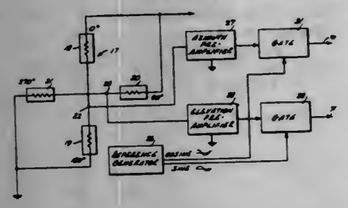
1. Apparatus for radiation therapy comprising, an arcuately curved element having vertical and horizontal axes the latter being disposed perpendicularly to the plane of the said element, a source of radiation fixed near one end of the curved element, a beam shield attached to said element opposite the said source, means for imparting rotative motion to said element around its horizontal axis, means for imparting rotative motion to said element around its vertical axis, a base in alignment with the said source and shield, and means for mounting said curved element on said base.

3,349,243
DEVICE FOR MEASURING NEUTRON CURRENT DENSITIES HAVING A CONCAVE NEUTRON REFLECTOR
Karl Janner, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin - Siemensstadt, Germany, a corporation of Germany
Filed Dec. 4, 1963, Ser. No. 327,951
Claims priority, application Germany, Dec. 7, 1962, S 82,760
5 Claims. (Cl. 250—83.1)



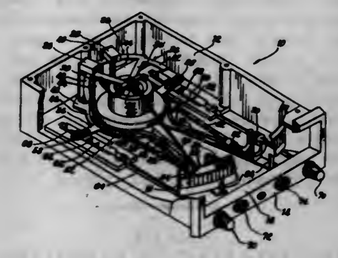
1. A device for measuring neutron current densities of a determined neutron spectrum, comprising a measuring probe responsive to impinging neutrons, a plate made of moderator material and located on one side of the measuring probe, and a concave neutron reflector forming with said plate a chamber surrounding said probe and spaced from said probe by air, said reflector having the shape of a hollow thick-walled truncated cone, the base of said cone being open and engaging at its periphery said plate of moderator material.

3,349,244
IR BACKGROUND NOISE DISCRIMINATOR THROUGH SELECTIVE TIME GATES
Raymond W. Briggs, Manhattan Beach, and Sheldon Jones, Palos Verdes Estates, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 25, 1964, Ser. No. 377,882
10 Claims. (Cl. 250—83.3)



1. In an infrared radiation detector system of a type including a crossed pair of radiation sensitive detector arms, a nutating optical system connected to selectively scan the individual arms of the crossed array with a nutating image of detected radiation to generate a pulse signal each time an arm is scanned, the pulses generated on one-half of each arm being of a positive reference potential and the pulse signals generated on the other one-half of each arm being of a negative reference potential, and a reference signal generating means connected to the nutating optical system for generating an AC reference signal having a time period equal to the time period of one nutation cycle, the combination therewith of: a first and a second amplifier means each connected to receive the pulsed signals generated from individual ones of the detector arms, and being operable to amplify the pulses; first and second electrical gating means connected to receive the signals from said first and said second amplifier means, respectively, each said gating means each including a bias circuit connected to be selectively biased by the AC reference signal against transmitting pulse signals of a first relative polarity during one-half of a nutation cycle, and to be relatively biased by the AC reference signal against transmitting pulse signals of an opposite relative polarity during the remaining one-half of the nutation cycle whereby only those signals generated by one-half of each arm will be detected at any instant.

3,349,245
CONTROL CONSTRUCTION TO MAINTAIN A RANGE OF VARIABLES USING LIGHT CONDUCTING ROD
Gerald R. Hosker, London, Ontario, Canada, assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 24, 1965, Ser. No. 482,177
10 Claims. (Cl. 250—231)



1. In a control construction including a movable member and means for moving said member to different positions responsive to changes in conditions, the improvement in said construction comprising a light source, a photo-sensitive detecting means, a light guide located between said source and said detecting means providing a path for transmitting light, a control flag and a memory flag operatively connected to said movable member, said control flag being adapted to be interposed in said path when said member reaches a predetermined position, and said memory flag being adapted to be interposed in said path as said member moves beyond said position, and including a mounting member, said source and said detecting means being connected to said mounting member at the opposite ends thereof, said light guide comprising a rigid light transmitting element extending along the length of said mounting member between said source and said detecting means and being attached to said mounting member, an arm extending outwardly from said mounting member, and means connected to said arm for adjusting the position of said mounting member with said source, said detecting means and said light guide being automatically repositioned during such adjustment.

3,349,246
COMPACT SUB-MINIATURE OPTICAL PICKUP ASSEMBLY
Israel L. Fischer, Harrington Park, Walter W. Lee, Allendale, Thomas J. Meloro, Jersey City, and Bernard Spieker, New Milford, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,836
3 Claims. (Cl. 250—239)

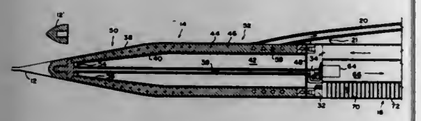
1. An optical sensing device comprising an elongated cylinder having an opening at an end of said cylinder,

a lens mounted within said opening, a photodetector and a transistor mounted within said cylinder, a plurality of conductors extending longitudinally in said cylinder, means electrically connecting said photodetector and a source of electrical energy through said conductors to said transistor for causing the transistor to produce electrical output signals in response to light signals directed to said photodetector through said lens, said longitudinal conductors being positioned in spaced relation within said cylinder, and said connecting means including resistor means extending longitudinally within said cylinder and



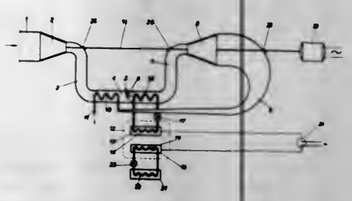
in a longitudinally spaced relation to said transistor and photodetector, and said transistor and resistor means being interposed between said conductors in a space therebetween, said resistor means rendering one pair of said longitudinal conductors effective to electrically connect said photodetector and transistor and another pair of said conductors effective for transmitting said electrical output signals from said transistor, and said longitudinal conductors being transversely compacted with said resistor means and transistor within said cylinder.

3,349,247
PORTABLE ELECTRIC GENERATOR
Orville J. Birkestrand, 7 High St., Westboro, Mass. 01581
Filed May 10, 1966, Ser. No. 548,887
11 Claims. (Cl. 290—1)



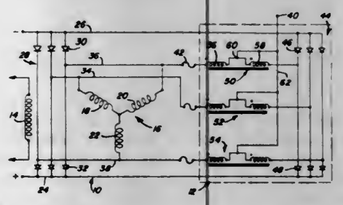
1. A portable electric generator, comprising
(a) a boiler adapted, upon the application of heat, to convert a liquid medium into a pressurized gaseous medium,
(b) a prime mover connected to said boiler and adapted to be driven by said gaseous medium,
(c) an electric generator drivingly connected to said prime mover and adapted to generate an electrical current upon operation of said prime mover, and,
(d) a condenser connected to said boiler and said prime mover for condensing the gaseous exhaust of said prime mover to a liquid medium for said boiler,
(e) said boiler, prime mover, generator and condenser being assembled in end-to-end relation as an integrated elongated manually portable structure with said boiler at one end thereof,
(f) said boiler including walls defining an annular chamber extending the length of said boiler, the outermost walls of said boiler serving as heat receiving surfaces and as part of the elongated structure,
(g) said walls being formed with a central inlet at the outermost end of said boiler to receive condensate feed therein and an outlet at the opposite end thereof for the discharge of steam to said prime mover, and
(h) conduit means extending from said inlet centrally through said boiler to said condenser.

3,349,248
ELECTRIC CURRENT GENERATOR IN COMBINATION WITH AN INTERNAL COMBUSTION ENGINE
Michel Robert Garnier, Sceaux, France, assignor to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed June 1, 1964, Ser. No. 371,315
Claims priority, application France, June 7, 1963, 937,462
7 Claims. (Cl. 290—2)



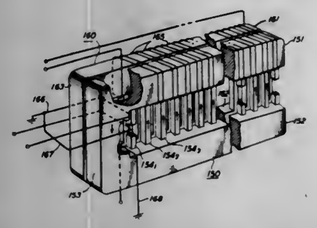
1. An installation for generating electric current comprising in combination, a gas turbine engine including a compressor, a combustion chamber provided with burners, an air supply passage connecting said compressor and said combustion chamber, and a turbine connected to said combustion chamber and having an exhaust conduit; a thermionic generator having a cathode and an anode; a first heat exchanger cooperating with said engine and said generator for withdrawing heat from said combustion chamber and applying said heat to said cathode to heat same and generate direct current; a second heat exchanger for transferring heat from the exhaust gases in said exhaust conduit to the air in said air supply passage; and an alternator operatively coupled to said engine and adapted to generate an alternating current.

3,349,249
ALTERNATOR POWER SUPPLY CIRCUIT
Richard K. Albano, 429 N. 5th St., Pocatello, Idaho 83201
Filed July 17, 1964, Ser. No. 383,300
5 Claims. (Cl. 307—13)



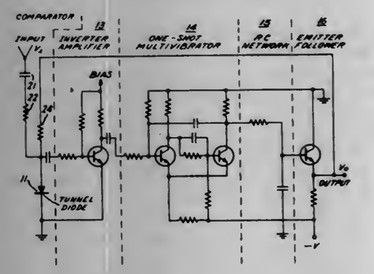
1. In combination with an alternator having a plurality of phase windings interconnected through rectifiers with DC loads having a neutral voltage line, a voltage balancing unit connected to said phase windings and the neutral line comprising, phase inverting means connected to each of said phase windings and the neutral line and rectifier means interconnecting said phase inverting means to the DC loads for supply of current through both the rectifiers associated with the alternator and the rectifier means.

3,349,250
MAGNETIC CONTROL CIRCUITS
Edmunde E. Newhall, Brookside, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application June 4, 1959, Ser. No. 818,130, now Patent No. 3,137,795, dated June 16, 1964. Divided and this application Dec. 11, 1963, Ser. No. 329,807
7 Claims. (Cl. 307—88)



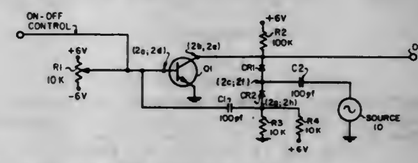
1. An electrical circuit comprising a first and a second magnetic structure, each of said structures being of a material displaying substantially rectangular hysteresis characteristics and each being apertured to form a pair of side rails having a drive leg and a succession of counting legs therebetween, said drive leg and said succession of counting legs defining a plurality of flux loops of progressively increasing lengths, a drive winding coupling the drive legs of both said first and said second core structure, drive means including a drive pulse source for initiating a drive pulse on said drive winding to induce a switching flux in the drive legs of both said first and said second core structures, and means for controlling the closure of said switching flux through discrete counting legs of said first core structure comprising a biasing winding coupling the flux loops of both said first and second structures in a manner such that each of the flux loops of each of said first and second core structures is coupled more turns than the next shortest flux loop of the same structure and each of the flux loops of the second core structure is coupled more turns than the corresponding flux loop of the first core structure, and means for energizing said biasing winding simultaneously with said drive pulse.

3,349,251
LEVEL SENSOR CIRCUIT
Donald L. Wilder, Vestal, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,281
7 Claims. (Cl. 307—88.5)



1. A tunnel diode signal level sensor for generating a D-C output signal proportional to the peaks of an input waveform comprising:
(a) a source of input signal;
(b) a means including integrating storage means for generating a D-C output signal;
(c) a tunnel diode;
(d) resistive means connected between said source and said generating means and to said tunnel diode for applying any difference between said input and output signals to said tunnel diode so that when said input signal exceeds the D-C output signal said difference will fire the tunnel diode;
(e) circuit means responsive to firing of said tunnel diode to generate an incremental error signal;
(f) said integrating storage means being responsive to said error signal for generating the D-C output signal.

3,349,252
MINORITY CARRIER STORAGE FLIP-FLOP
Bruce E. Briley, La Grange Park, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 351,999
4 Claims. (Cl. 307—88.5)

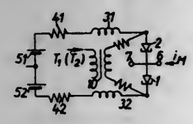


1. A bistable flip-flop circuit comprising:
an amplifying circuit including a transistor having a base, collector and emitter, said transistor being connected in grounded emitter configuration and having minority carrier storage capability;
signal input connections to said transistor for momentarily applying predetermined first and second signals which respectively initiate a change of state of said transistor from cutoff to conduction and vice versa;
a sinusoidal signal source;
first D.C. biasing means permanently connected to said collector;
said amplifying circuit including a semiconductor gate connected to said first biasing means and interposed between said signal source and said base, said biasing means normally biasing said gate to be open;
said gate being closed in response to the transistor assuming said conducting state upon application of said first momentary signal to effectively connect said source to said base, and said transistor thereupon being maintained in said conducting state due to the injection into said transistor of minority carriers in response to said connection of said source to said base;
and second D.C. biasing means permanently connected to said transistor and effective in response to said transistor assuming said cutoff state upon application of said second momentary signal to maintain said transistor in said cutoff state.

3,349,253
PERIODICALLY SELF-TRIGGERING TUNNEL DIODE CURRENT DISCRIMINATOR
Werner Bleickardt, Bern, Switzerland, assignor to Hasler, AG, Bern, Switzerland, a corporation of Switzerland
Filed Feb. 5, 1965, Ser. No. 430,708
Claims priority, application Switzerland, Feb. 7, 1964, 1,433/64
1 Claim. (Cl. 307—88.5)

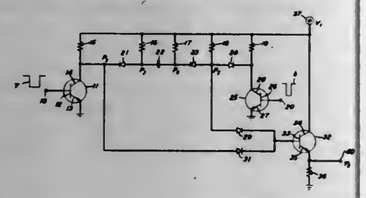
A discriminator circuit for the distinction of input current values above and below a predetermined value comprising, an input; an output; a trigger circuit; a pair of

tunnel diodes connected in series and having the same polarity; said input and said output connected to the connection between said pair of tunnel diodes; self-induction coil means; a resistance element; a direct current source connected in a closed series circuit with said resistance element, said self-induction coil means and said pair of tunnel diodes; said trigger circuit containing said pair of tunnel diodes; and the voltage of said direct current



source and said resistance element being so rated that the straight line representing the voltage of the direct current source reduced by the voltage drop at said resistance element has a single intersection with the current-voltage characteristic curve of the series connected tunnel diodes lying in the descending curve section between the first maximum current peak and the first minimum current point.

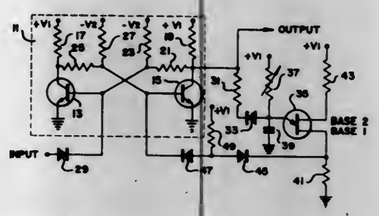
3,349,254
SIGNAL COMBINING CIRCUIT
Alan M. Gordon, Matawan Township, Monmouth, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 14, 1965, Ser. No. 448,147
6 Claims. (Cl. 307—88.5)



1. A combining circuit for selectively mixing two discrete pulse trains comprising,
logic means,
means for applying to said logic means a first train of pulses,
means for applying to said logic means a second train of pulses,
energy storage means,
means for varying the potential of said energy storage means in an exponential manner for a predetermined time after the cessation of each pulse of said first train of pulses,
and swtching means for altering the magnitude of the pulses of said second train in accordance with the varying potential of said energy storage means.

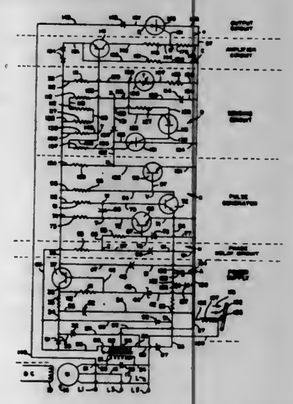
3,349,255
DELAY MULTIVIBRATOR
John A. McAvoy, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 20, 1965, Ser. No. 449,505
2 Claims. (Cl. 307—88.5)

1. A delay circuit comprising
a bistable circuit,
input triggering means for switching said bistable circuit from its first to its second state,
a unijunction transistor having a control electrode and an output electrode, series-connected RC timing means independent of said bistable circuit and attached to the control electrode of said unijunction transistor,
diode means coupling said timing means to said bistable circuit for clamping the voltage of said timing means below the firing voltage of said unijunction transistor while said bistable circuit is in its first state and for releasing said timing means to charge and fire said unijunction transistor for producing a pulse at said output terminal a predetermined time thereafter when said bistable circuit is switched to its second state,



biasing means for resetting said bistable circuit to its first state, and
diode clamping means coupling the output of said unijunction transistor to said biasing means for preventing said biasing means from operating until said unijunction transistor fires.

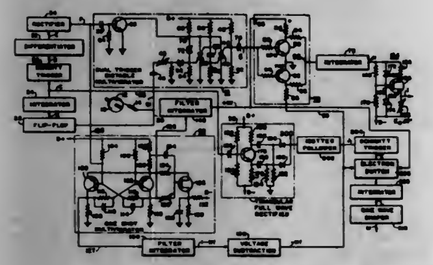
3,349,256
FREQUENCY SENSITIVE DEVICE
Thomas G. Rohner, Minneapolis, Minn., assignor to Electric Machinery Mfg. Company, Minneapolis, Minn., a corporation of Minnesota
Filed June 8, 1965, Ser. No. 462,178
6 Claims. (Cl. 307—88.5)



1. An alternating current frequency discriminator for use with an alternating current line producing a given alternating-current cycle and having a load energized thereby and requiring deenergization upon failure of the alternating current, said discriminator comprising:
(a) means for producing a voltage of saw-tooth form having a sloping leading edge and a substantially vertical trailing edge and with repeating pulses,
(b) means for terminating the voltage pulses at the end of each full alternating-current cycle, the maximum value of the voltage of each pulse varying in correspondence with the length of the cycle,
(c) a power supply for producing a direct current regulated voltage of a higher value than the maximum value of a normal pulse of the saw-tooth voltage,
(d) sensing means for matching the maximum voltage of each pulse with the direct current voltage,

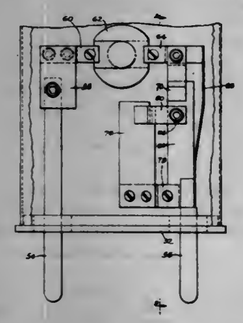
(e) means operated by said sensing means for producing a voltage signal when the saw-tooth voltage exceeds the direct current voltage, and
(f) an output circuit operated by said signal.

3,349,257
SINE WAVE SYNTHESIS CIRCUIT
Glen H. Thomas and Robert S. Morrow, Columbus, Ohio, assignors to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio
Filed Oct. 22, 1965, Ser. No. 501,175
9 Claims. (Cl. 307—88.5)



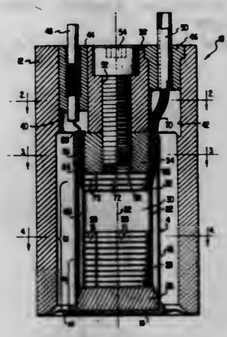
1. In apparatus for converting a pulsed input signal into a sine wave output signal, the combination of circuitry responsive to said pulsed input signal for producing a symmetrical square-wave signal which passes through one 360° cycle for each pulsed input signal, means coupled to the output of said circuitry for varying the amplitude of the symmetrical square-wave signal in inverse proportion to the repetition rate of pulses in said input signal, an integrator coupled to the output of said amplitude varying means for producing a triangular waveform of constant peak amplitude regardless of the repetition rate of pulses in said input signal, and a sine wave shaper coupled to the output of said integrator.

3,349,258
TEMPERATURE COMPENSATED QUARTZ CRYSTAL RESONATOR
George R. Bart, Schiller Park, Ill., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 14, 1964, Ser. No. 389,736
12 Claims. (Cl. 310—8.5)



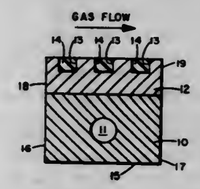
1. A quartz crystal resonator comprising a quartz crystal plate, a pair of mounting means secured to the edge of said plate at opposite sides thereof and temperature sensitive means adapted to move one of said mounting means increasingly with an increasing deviation of temperature from a norm to impose an S curve on said plate.

3,349,259
PIEZOELECTRIC PRESSURE TRANSDUCER
Walter P. Kistler, Clarence, N.Y., assignor to Kistler Instrument Corporation, Clarence, N.Y., a corporation of New York
Filed May 27, 1965, Ser. No. 459,242
14 Claims. (Cl. 310—8.7)



1. A piezoelectric transducer comprising a first piezoelectric means including at least one piezoelectric wafer, second piezoelectric means including a plurality of piezoelectric wafers, said first piezoelectric means producing a smaller output signal than said second piezoelectric means for a given force, a seismic mass between said first and second piezoelectric means, a base adjacent said first piezoelectric means, and a preloading sleeve acting between said base and said second piezoelectric means for urging both said piezoelectric means and said seismic means toward said base.

3,349,260
METHOD OF IMPROVING THE PERFORMANCE OF ELECTRODES IN MAGNETOHYDRODYNAMIC DEVICES
Jean Francois Louis, Boston, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Jan. 6, 1964, Ser. No. 335,772
12 Claims. (Cl. 310—11)



1. In the method of operating an MHD generator wherein a duct conveys a moving stream of thermally ionized and electrically conductive gas between opposed electrodes and through magnetic flux at said electrodes, the exposed end surface of said electrodes having recesses exposed to and disposed normal to the direction of flow of said gas, the steps comprising:
(a) providing in the gas upstream of said electrodes a ceramic material having an electron emissivity of at least about one ampere per square centimeter at about 1500° K.;
(b) maintaining the temperature of said gas at said electrodes in excess of about 2000° K.; and

(c) maintaining the temperature of each said end surface greater than that required to provide said electron emissivity and less than that at which said material softens.

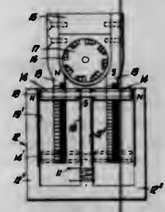
3,349,261
OSCILLATING DRIVE MEANS
Caperton B. Horsley, East Walpole, Mass., assignor to Braxton Corporation, Medfield, Mass., a corporation of Massachusetts
Filed Dec. 6, 1966, Ser. No. 607,113
7 Claims. (Cl. 310—36)



7. A torsionally oscillating resonant system for treatment of material comprising an action mass having a treating surface adapted to contact said material, a reaction mass balancing said action mass, a torsion bar elastically coupling said masses for oscillating in opposite phase, said masses and bar comprising a system having a resonant frequency of vibration at which said masses oscillate at the same frequency but in said opposite phase, and at which frequency the mass of said action and reaction masses is thereby reduced effectively to zero, and an electrodynamic drive for said system, said drive comprising an electrically conducting disc comprises in the reaction mass of said material treating system, an even plurality of passages through said disc, an even plurality of magnetic flux cores fixedly mounted adjacent said disc and each having portions extending through a respective passage, said passages and core portions being relatively proportioned for some freedom of oscillating movement of said disc relative to said core portions, means for producing an alternating magnetic flux in said core portions and so as to induce in said disc alternating current flowing radially inward and outward in disc portions intermediate the portions occupied by said passages and core portions, an even plurality of magnets fixedly mounted in juxtaposition to said intermediate disc portions, said magnets alternately of opposite polarity whereby to produce a force acting in a direction at right angles to said current flow and said magnetic flux and effective to drive said disc mass in one and the opposite direction upon the inducing and alternating of said current flow at or near the resonant frequency of said system.

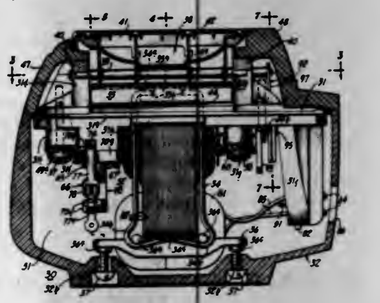
3,349,262
SLOW SPEED MOTOR
Charles Gibbons, 9 Field Technical Training Unit R.C.A.F. Station, Greenwood, Nova Scotia, Canada
Filed Sept. 25, 1964, Ser. No. 399,241
19 Claims. (Cl. 310—37)

1. An electric motor comprising an oscillating member; electromagnetic means for oscillating said member; a one-way clutch connecting said member to an output shaft, said member extending outwardly of said shaft; fixed oscillation limiting abutment means spaced from said member and extending generally parallel thereto; a buffer device mounted for longitudinal movement of one of said member and said abutment means and interposed there-



between; and means to selectively move said buffer device towards and away from said shaft, whereby to determine the angle of oscillation of the oscillating member and control the speed of the shaft.

3,349,263
ELECTRIC SHAVER
Ivar Jepson, Oak Park, Francis J. Schuessler, Chicago, Wilbur C. Jackson, Wheaton, and John E. Jensen, Des Plaines, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 12, 1963, Ser. No. 322,795
14 Claims. (Cl. 310—47)

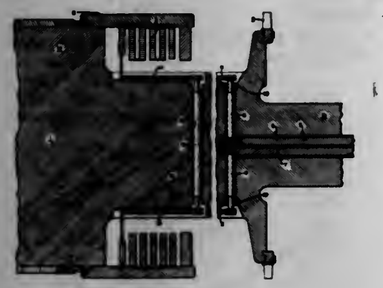


1. An electric shaver comprising a cutter assembly including a cutter shaft, an electric motor including an armature drivingly connected to said cutter shaft, a terminal plate supporting terminal means for said electric motor, a unitary mounting element, means for securing said cutter assembly to one side of said mounting element, means for securing said electric motor and terminal plate to the other side of said mounting element, said mounting element said cutter assembly said electrical motor and said terminal plate defining a unitary subassembly, cup-shaped casing means for receiving therein at least said electric motor and said terminal plate, and means for holding said subassembly in assembled relationship with said casing means whereby said cutter assembly projects from the open side of said casing means, and said motor and terminal plate are enclosed in said casing means.

3,349,264
FIELD COIL CONNECTION FOR FOUR-POLE ROTORS
David M. Willyoung, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 6, 1965, Ser. No. 493,348
3 Claims. (Cl. 310—185)

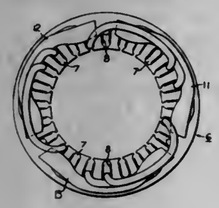
1. A four-pole dynamoelectric machine rotor having four circumferentially spaced poles of alternating first and second magnetic polarity, and having winding coils

thereon to provide said poles and electrically connected in series so that current will flow therethrough to provide consecutively a pole of a first magnetic polarity, a pole



of a second magnetic polarity, a pole of second magnetic polarity diametrically opposite the preceding pole, and lastly, a pole of first magnetic polarity.

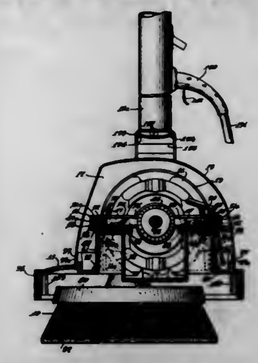
3,349,265
PHASE INSULATION FOR POLYPHASE DYNAMOELECTRIC MACHINES
Henry T. Murdock and Stanley M. Ringel, Cincinnati, Ohio, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 3, 1965, Ser. No. 460,988
2 Claims. (Cl. 310—194)



1. In combination with a polyphase dynamoelectric machine having a body with a plurality of circumferentially spaced slots including a plurality of coils placed therein with the end turns thereof extending beyond the end of the body, phase insulation comprising a sheetlike electrically insulating material positioned between the coil end turns of each phase, said insulating material having a configuration to cover only those slots which have a coil side therein and to leave the remaining unfilled coil slots uncovered.

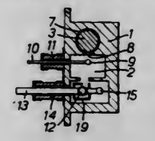
3,349,266
FLOOR CONDITIONER
Ivar Jepson, Oak Park, and Alfred F. Ernstberger, Broadview, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Aug. 22, 1958, Ser. No. 756,710, now Patent No. 3,068,503, dated Dec. 18, 1962. Divided and this application Aug. 28, 1962, Ser. No. 219,848
10 Claims. (Cl. 310—247)

6. In a brush holder of the type comprising a generally rectangular hollow body member open at one end and closed at the opposite end and adapted to contain a carbon brush and a spring for resiliently urging the brush outwardly through the open end of the body member, the improvement which comprises, a slot formed in one side of the brush holder intermediate the ends of said one side whereby the terminal end of a conductor extending through the slot and electrically connected to the carbon brush between the brush and the spring is retained in the



holder upon removal of the brush as a result of said terminal end being resiliently held against the end of said slot adjacent the open end of the holder by the spring.

3,349,267
HYDROGEN THYRATRON WITH HIGH HEATED DISSIPATION
Eric Jones, Chelmsford, England, assignor to English Electric Valve Company Limited, London, England, a British company
Filed Nov. 22, 1965, Ser. No. 509,041
Claims priority, application Great Britain, Nov. 24, 1964, 48,296/64
7 Claims. (Cl. 313—33)

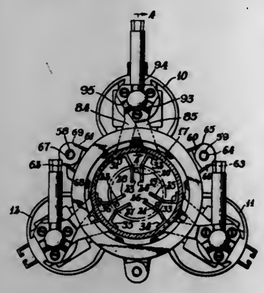


1. A hydrogen thyratron having a hydrogen-filled cavity defined by a metal envelope having housed therein a cathode electrode, a grid electrode and a cylindrical anode electrode, one of said cathode and grid electrodes being connected directly to said envelope and said cavity including a cylindrical recess slightly larger in diameter than the anode and housing the anode, communication between the recess and the rest of the cavity being made through a relatively small slot.

3,349,268
CONVERGENCE YOKE ASSEMBLY WITH BLUE PURITY MAGNET AND CONVERGE MAGNETS ADJUSTABLE FROM ONE DIRECTION
Leonard V. Babcock and Dominick A. Massa, Arlington Heights, and Roy H. Chlovari, Addison, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 420,019
4 Claims. (Cl. 313—77)

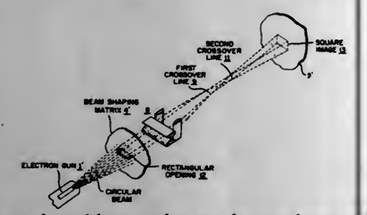
4. In a convergence assembly for a three color cathode ray display device having a neck, said assembly including a collar around the neck of said display device, static convergence means including three sets of magnetic pole pieces on said collar and spaced around the neck; a permanent magnet for each set of pole pieces, each magnet having an axis about which it is rotatably adjustable in position with respect to the associated set of pole pieces; means for manipulating each of said permanent magnets, said manipulating means being aligned with the axis of rotation of each magnet and a positioning surface for

each magnet, concentric with the axis of rotation thereof; means supporting each permanent magnet, said supporting means accommodating the positioning surface and the manipulating means in a plane at right angles to the axis of the neck of said display device and in a selected



one of a plurality of positional relationships within said plane and at different angles with respect to the surface of the neck of said display device, including a positional relationship in which the three manipulating means are accessible along parallel paths and from the same direction within said plane.

3,349,269
ASTIGMATIC LENS ARRANGEMENT FOR CATHODE RAY TUBES
Omer F. Hamann, La Jolla, Calif., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 327,006
2 Claims. (Cl. 313—78)



1. In a shaped-beam tube, an electron beam generator, means for shaping said beam to form a symbol, a screen for receiving an image of said symbol, and an astigmatic electron lens device positioned between said means for shaping said beam and said screen for focusing said beam, said astigmatic electron lens device including first and second pairs of partial cylindrical lens members, said lens members of each pair having their cylindrical surfaces opposed on opposite sides of the beam path, the axes of said lens members of said first pair being transverse to the axes of said lens members of said second pair and to the beam path.

3,349,270
SELF-ALIGNING ELECTRON GUN ASSEMBLY
Alexander Bell, Carlsbad, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,846
10 Claims. (Cl. 313—78)

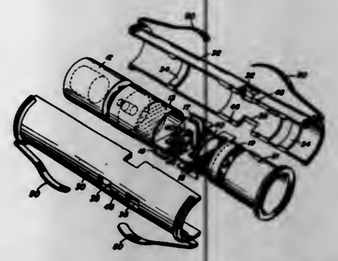
1. An electron gun construction for cathode ray tubes comprising

an electron beam generating means for generating an electron beam,

a plurality of electron optical elements for controlling the position and cross-section of said electron beam, including a plurality of pairs of electrostatic deflection plates,

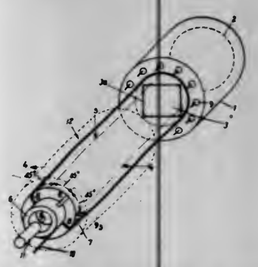
a tubular support member having a plurality of annular ribs disposed transversely to the axis thereof,

said electron beam generating means and said optical elements being mounted within said tubular member with said annular ribs providing the axial spacing therebetween,



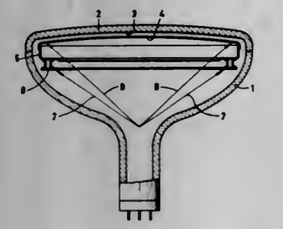
said tubular member being provided with a pair of diametrically disposed rectangular apertures for each pair of said electrostatic deflection plates provided, said pairs of deflection plates being positioned within said tubular member with each plate of a pair in contact with one of two parallel edges of a respective rectangular aperture.

3,349,271
MEANS FOR PREVENTING EDDY CURRENT DISTORTION OF THE MAGNETICALLY DEFLECTED SCANNED PATTERN IN CATHODE RAY TUBES
Georg Harkensee, Darmstadt, Germany, assignor to Fernseh GmbH, Darmstadt, Germany
Filed Feb. 17, 1965, Ser. No. 433,348
Claims priority, application Germany, Feb. 27, 1964, F 42,136
6 Claims. (Cl. 313—82)



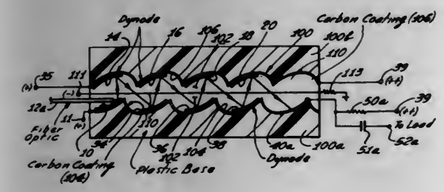
1. A cathode ray tube comprising, in combination, an evacuated envelope housing; an electron beam source within said housing for directing an electron beam substantially along the longitudinal axis of said housing; a target electrode within said housing and in the path of the electrode beam to be scanned by said electron beam; magnetic deflecting means acting on said electron beam for deflecting the same along orthogonal coordinate axes at said target electrode so as to scan said target electrode; a first electrode within said housing and surrounding said electron beam; a second electrode within said housing and surrounding said electron beam; and a plurality of contact members connecting said first and second electrodes and equally spaced about said longitudinal axis so that each contact member forms an angle of substantially 45 degrees with said coordinate axes, whereby geometrical distortion of the scanning pattern is minimized.

3,349,272
COLOR TELEVISION TUBE WITH SHADOW MASK PROVIDED WITH ELECTRON SHIELDING PLATE COATED WITH HEAT RADIATING MATERIAL
Robert Richard Bathelt, Emmasingel, Eindhoven, Jan Carel Francken, Groningen, and Constantius Johannes Waltherus Panis, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 594,242
Claims priority, application Netherlands, Dec. 16, 1965, 65—6,386
3 Claims. (Cl. 313—85)



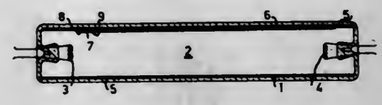
1. A cathode-ray tube for displaying color television images comprising an envelope, a fluorescent display screen supported by a portion of the inner wall of said envelope, a color selection member in proximity to said display screen, a frame consisting of ferromagnetic material to which said color selection member is secured, an annular plate on the side of said color selection member remote from said display screen which protects the frame from being struck by an electron beam, and means to secure said annular plate to the frame with reduced heat transfer from the annular plate to the frame.

3,349,273
PHOTOELECTRIC TRANSDUCER HEAD
David Paul Gregg, Los Angeles, Calif., assignor to Gaus Electrophysics, Los Angeles, Calif., a partnership
Filed Nov. 12, 1965, Ser. No. 507,291
8 Claims. (Cl. 313—95)



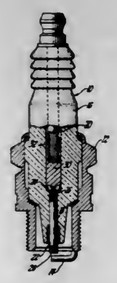
1. A photo-electric transducer including: photo-cathode means; at least two light-signal conducting means mounted adjacent said photo-cathode means for simultaneously introducing a corresponding number of light signals to different parts of said photo-cathode means; at least one dynode means positioned to receive electrons from said photo-cathode means resulting from the introduction of said light signals to said photo-cathode means; and an electrode traversing said dynode means and adapted to be established at a negative potential with respect to the potential of said dynode means so as to provide a barrier for the electrons and maintain the electrons from said different parts of said photo-cathode means in response to respective ones of said light signals in a separated condition.

3,349,274
LOW-PRESSURE MERCURY VAPOR DISCHARGE LAMP
Dirk Kolkman and Adolf Jan De Visser, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,162
Claims priority, application Netherlands, Mar. 6, 1964, 64—2,292
8 Claims. (Cl. 313—109)



1. A low-pressure mercury vapor discharge lamp comprising an elongate envelope containing an ionizable medium, a pair of electrodes positioned at opposite ends of the envelope between which a discharge plasma is formed, a layer of luminescent material supported by the inner surface of the envelope, and a conducting strip extending substantially between the electrodes but not connected thereto, said conducting strip having a width of about 1 to 10 mm. and being disposed between the luminescent layer and the envelope, said strip having a portion which is in electrically conducting contact with the discharge plasma, said portion being positioned between at least one electrode and a point spaced from said electrode, the distance between said electrode and said point being less than one-fifth of the distance between said pair of electrodes.

3,349,275
SPARK PLUG WITH A CONDUCTIVE GLASS SEAL ELECTRODE OF GLASS, COPPER AND ZINC
Jack E. Blum and James W. Ezell, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 16, 1966, Ser. No. 563,324
9 Claims. (Cl. 313—136)



9. A spark plug comprising a ceramic insulator having a centerbore therethrough, a center electrode in said centerbore, a terminal screw in said centerbore in spaced relation to said center electrode, and a dense, fused, electrically conductive mass positioned in said centerbore bonded to said terminal screw and said center electrode and to said ceramic insulator to form a hermetic conductive seal in said centerbore, said hermetic seal adapted to operate hermetically at temperatures up to 1650° F., said mass consisting essentially of 40 to 60 weight percent copper powder, 10 to 30 weight percent of a metal taken from the group consisting of zinc and manganese and 25 to 35 weight percent glass.

3,349,276

HIGH-PRESSURE MERCURY VAPOR HALOGEN LAMP HAVING AN ELECTRODE THERMALLY INSULATED FROM LEAD-IN CONDUCTOR

Cornelis Adrianus Joannes Jacobs and Antonius Josephus Gerardus Cornelis Driessen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,437
Claims priority, application Netherlands, Sept. 30, 1964, 64—11,355
7 Claims. (Cl. 313—211)



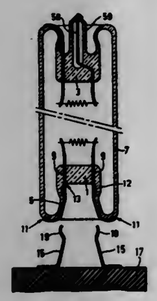
1. In a high-pressure mercury vapor halogen discharge lamp including a light-transmissible envelope enclosing a discharge space containing mercury and a halide, an electrode within said discharge space heated by a discharge and connected to a current supply wire, said electrode comprising an outer metal portion in electrical and heat conducting relationship with said current supply wire, said outer metal portion enclosing a space open on the side remote from the current supply wire, an emitter body positioned within said outer metal portion in poor thermal transfer relationship to said current supply member and occupying at least half of said space enclosed by said outer metal portion whereby the formation of a halide layer on said emitter body is inhibited.

3,349,277

ELECTRIC LAMP WITH EXTERNAL CURRENT SUPPLY CONTACT

Willem Frederik ter Hoeve, Ouderkerk aan den Amstel, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 2, 1964, Ser. No. 408,105
Claims priority, application Netherlands, Nov. 1, 1963, 300,048
6 Claims. (Cl. 313—318)



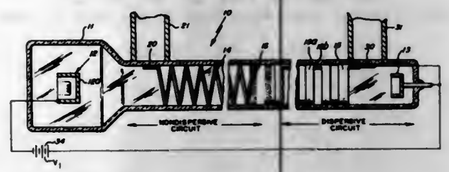
1. An electric lamp comprising an envelope, a stem having a flange portion sealed to said envelope, and a current conductor sealed in said stem and having a portion external to and contiguous with said stem serving as an external current contact, said external portion of said current conductor being sealed only at the end thereof between the flange and the bulb.

3,349,278

FORWARD WAVE TUBE WHEREIN THE INTERACTION PATH COMPRISES A SINGLE WIRE HELIX AND AN ADJACENT CONTRAWOUND HELIX

Mason W. Huse, Jr., Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Oct. 4, 1963, Ser. No. 313,907
1 Claim. (Cl. 315—3.6)



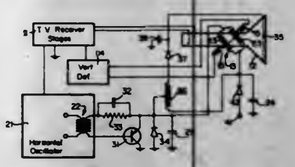
In combination:
means for producing an electron beam;
a collector electrode toward which said beam is directed;
a substantially nondispersive forward wave circuit including a single wire helix adjacent said means for producing an electron beam and terminated in a matched impedance at a distance from said means for producing an electron beam slightly less than the length of interaction between the electron beam and forward traveling waves in said forward wave circuit required before the amplification of the forward wave becomes nonlinear;
a dispersive forward wave circuit including a contrawound helix adjacent said nondispersive forward wave circuit for providing a further interaction path between said electron beam and said traveling waves;
and means for coupling output wave energy from said dispersive forward wave circuit.

3,349,279

ELECTRONIC CIRCUIT

Hugo W. Schafft, Des Plaines, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed June 3, 1964, Ser. No. 372,254
3 Claims. (Cl. 315—27)



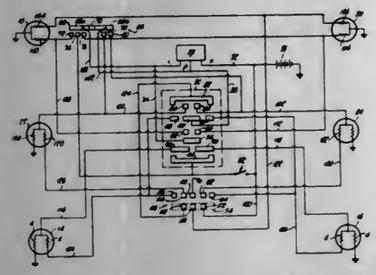
1. In a television receiver having a cathode ray tube, a horizontal deflection yoke having inductance, and a horizontal deflection system for energizing the yoke with a sawtooth current at a horizontal deflection frequency, to provide a horizontal sweep in the cathode ray tube, which current has trace and retrace portions, said deflection system including the combination of: a transistor having an input electrode and a pair of output electrodes, means to supply a drive signal to said input electrode for rendering said transistor conductive during at least part of the trace portion and non-conductive during at least the retrace portion to form the sawtooth current through the yoke, direct current operating voltage supply means, means connected in series with the yoke and said output electrodes for increasing the linearity of the horizontal sweep by correcting the shape of said sawtooth current while causing the voltage at the junction of said yoke and said last mentioned means to exceed the direct current operating voltage, said last mentioned means comprising a diode coupled to said voltage supply means to form a series circuit therewith, said last mentioned means further comprising capacitor means coupled in parallel electrical configuration with said diode and said supply means, said diode being poled with respect to said supply means to be conductive during the retrace portion of said sawtooth current.

3,349,280

SIGNAL LAMP FOR DUAL INTENSITY CIRCUITS AND THE LIKE

Hemming G. Siiberg, Union, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware

Filed Jan. 14, 1965, Ser. No. 425,595
1 Claim. (Cl. 315—77)



In a dual intensity signalling system for automotive vehicles having a battery; a shunt-type flasher connected to said battery; and a directional multi-element switch having neutral, left, and right positions; the improvement comprising left and right rear signalling lamps each having major and minor filaments of different candle power, one end of each of said filaments being connected to the directional switch for connection to the flasher during signalling, the other end of each minor filament being grounded; a day-night two position switch which in day position connects the other end of each major filament to ground and in night position connects said other end of each major filament to the battery through the directional switch when in neutral position for energizing the filaments of each lamp in series as tail lights; left and right pilot lamps each having major and minor filaments of different candle power, one end of each of said pilot lamp filaments being connected to said directional switch for connection to said flasher during signalling, the other end of each pilot lamp minor filament being grounded and the other end of each pilot lamp major filament being connected to said day-night switch for grounding in the day position thereof; left and right front signalling lamps; and an emergency two position switch which in emergency position connects said front signalling lamps and the filaments of both pilot lamps and of both rear signalling lamps to the flasher to flash all lamps simultaneously irrespective of the position of said directional switch.

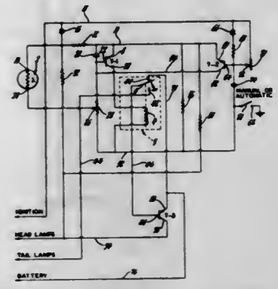
3,349,281

LIGHT SENSITIVE CONTROL SYSTEM FOR AUTOMOBILE LIGHTING CIRCUITS

Larry L. Collins, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 29, 1964, Ser. No. 421,868
4 Claims. (Cl. 315—83)

4. Apparatus for energizing the head lamps and tail lamps of an automotive vehicle in response to ambient light conditions comprising: a source of electrical power and a relay coil, a normally nonconductive switching device connected in series with the source and coil, a light sensing device connected to render the switching device conductive when the ambient light decreases to a predetermined value, a transistor having emitter, collector and base electrodes, a switch having an armature controlled by the relay coil and first and second terminals which may be separately contacted by the armature, bias means connected to the first terminal, the tail lamps being connected to the second terminal, the armature being connected to the base electrode of the transistor, the source being connected to the emitter electrode and the head



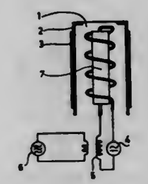
lamps being connected to the collector electrode, and means normally urging the armature into contact with the first terminal thereby to render the transistor nonconductive, but the last mentioned means being overridden by the relay coil, when energized, to bring the armature into contact with the second terminal thereby to render the transistor conductive, to energize the head lamps through the emitter-collector circuit of the transistor and to energize the tail lamps through the emitter-base circuit of the transistor, the armature and the second terminal.

3,349,282

METHOD AND ARRANGEMENT FOR MORE RAPIDLY HEATING INDIRECTLY HEATED CATHODES IN ELECTRON TUBES

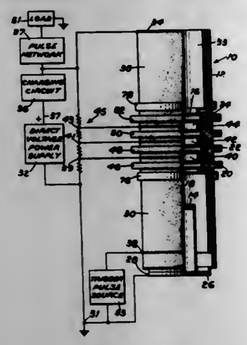
Helmut Krieger, Hamburg-Poppenbuttel, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 10, 1965, Ser. No. 462,807
Claims priority, application Germany, Aug. 22, 1964, D 34,937/64
6 Claims. (Cl. 315—94)



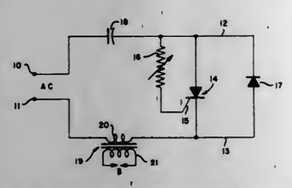
1. A circuit arrangement for rapidly heating an indirectly heated cathode in an electron discharge tube, said cathode having a heating element surrounded by a cathode support, said circuit arrangement comprising means to connect said heating element to a source of electrical energy for heating the same, and means to couple said heating element to a source of high-frequency energy, and means to inductively couple said heating element to said cathode support to heat the same.

3,349,283
HIGH VOLTAGE GAS DISCHARGE TUBE HAVING A PLURALITY OF GRIDS SPACED APART ALONG A CERAMIC ENVELOPE
Hermann Eduard Krefft, Matawan, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Dec. 9, 1965, Ser. No. 512,759
9 Claims. (Cl. 315—168)



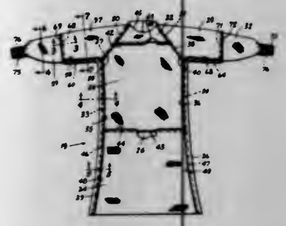
1. A high voltage gas discharge tube comprising an insulative envelope containing a gas therein; a cathode at one end of said envelope; an anode at the other end; a plurality of grids disposed in the space between said cathode and anode, and means supporting and sealing the ends of said grids, anode and cathode within the walls of said envelope, said ends extending through said walls to the outside of said tube envelope, said envelope including a wall portion having a plurality of planar annular insulative rings positioned alternately with and secured to said grids, said rings having transverse extensions projecting internally and externally from said wall and positioned between and spaced from said alternate grid ends, said wall having recesses between adjacent ring extensions, said extensions providing a relatively long discharge path between adjacent said ends.

3,349,284
SPARK GENERATING CIRCUIT HAVING A VOLTAGE DOUBLER AND SOLID STATE CONTROL COMPONENTS
William J. Roberts, St. Clair, Mich., assignor to Eltra Corporation, Toledo, Ohio, a corporation of New York
Filed Feb. 25, 1965, Ser. No. 435,187
7 Claims. (Cl. 315—223)



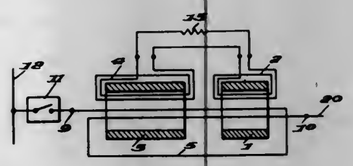
1. An igniter circuit for a fluid burning apparatus comprising, in combination, a pair of terminals for connection to a source of alternating current, a solid state controlled rectifier having an anode, cathode and control electrodes with the anode-cathode circuit connected across said terminals, a voltage doubling means including a capacitor operably connected to said anode, a spark generating means operably connected to said controlled rectifier whereby conduction of said controlled rectifier will energize said spark generating means, and a control means operably connected between said voltage doubler means and the control electrode of said controlled rectifier whereby said controlled rectifier will fire when the voltage drop across said control means is approximately twice the source voltage.

3,349,285
SURGICAL GOWN WITH STATIC ELECTRICITY DISCHARGE MEANS
Nathan L. Belkin, Olivette, Mo., assignor to Angelica Uniform Company, St. Louis, Mo., a corporation of Missouri
Filed May 8, 1967, Ser. No. 636,799
4 Claims. (Cl. 317—2)



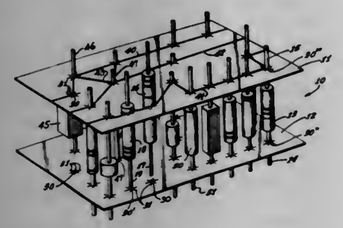
1. A surgical suit comprising an integral gown having front panels and rear panels sewed together to form a skirt for covering the body of a wearer with means to releasably fasten the back panels together to close the skirt about the body of the wearer, and panels sewed together to form sleeves for the gown, with the upper edges of the sleeves being sewed to the upper edges of the front and back panels, the front panels including a single upper front panel extending over the upper front portion of the jacket with side edges positioned toward the back of the jacket at least as far as vertical projections through the areas of the armpits, the sleeves having lower arm panels extending from the area of the elbows to the wrists, the said upper front panel and the said lower sleeves being constituted of a microporous barrier material of closely woven yarn, whereas the remaining panels of the gown are formed of conventional fabric material substantially less closely woven.

3,349,286
DEVICE FOR LIMITING SHORT-CIRCUITS
Hans Hartmann, Ennetbaden, Switzerland, assignor to Brown, Boveri & Company Limited, Baden, Switzerland, a joint-stock company
Continuation of application Ser. No. 228,182, Oct. 3, 1962. This application July 20, 1966, Ser. No. 566,710
5 Claims. (Cl. 317—11)



1. A short-circuit limiting device for use in reducing the adverse effect of short-circuit currents on an electrical switch connected to a line for interrupting the line, said short-circuit limiting device comprising a reactance unit and a pre-magnetizing transformer therefor, said reactance unit including a core and a secondary winding thereon and said pre-magnetizing transformer including a core and a secondary winding thereon interconnected with said secondary winding of said reactance unit, and a common primary for said reactance unit and pre-magnetizing transformer, said common primary being constituted by a cylinder having at least one turn and which surrounds said cores and secondary windings, the terminal ends of said cylinder being adapted for connection in the line in the vicinity of the switch.

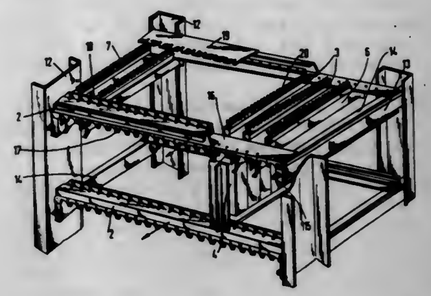
3,349,287
APPARATUS FOR FORMING MODULAR CIRCUITS
Phillip A. Johnson, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Dec. 24, 1964, Ser. No. 420,945
1 Claim. (Cl. 317—101)



An electrical circuit comprising:
a pair of component guides;
a first plurality of mutable holes cut in each of said component guides in a preselected pattern, said mutable holes including a central section and a predetermined number of slits extending outward from said central section, said component guides being positioned one above the other so that said plurality of mutable holes in one film align with said plurality of mutable holes in the other film;
a corresponding first plurality of electrical circuit elements including connecting leads, each of said circuit elements having a diameter equal to or less than the diameter of said mutable holes and at least one connecting lead of a diameter equal to or less than the diameter of said central section of said mutable hole, each of said circuit elements being positioned between said guides with its connecting leads protruding through corresponding ones of said mutable holes; and
electrical conductors appropritely connecting each of said protruding connecting leads and welded thereto for producing the electrical circuit.

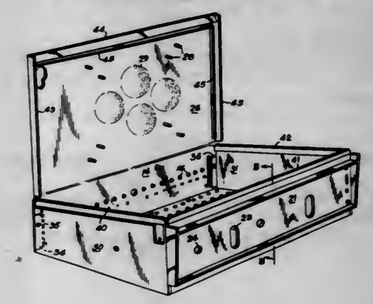
3,349,288
FRAMEWORK AND CONNECTION SYSTEM FOR REMOVABLE ELECTRICAL COMPONENTS
Willy Lohs and Günter Thom, Munich, Georg Neuber, Munich-Neuried, and Lorenz Heiss, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Apr. 5, 1965, Ser. No. 445,610
Claims priority, application Germany, Apr. 7, 1964, S 90,412
6 Claims. (Cl. 317—101)

1. An electrical equipment frame into which a plurality of plug-in inserts may be inserted, with the inserts having contacts spaced along the direction of insertion, comprising:
strip frames removably insertable into the equipment frame,
said equipment frame including means for supporting said strip frames within said equipment frame, each of said strip frames being movable along said direction of insertion in engagement with said supporting means, and



contact strips mounted in groups on said strip frames, said contact strips extending along said direction of insertion and engaging said contacts of said inserts when the latter are inserted.

3,349,289
HOUSING FOR ELECTRICAL APPARATUS MODULES
Robert J. Mueller, Bel Air, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed June 22, 1966, Ser. No. 559,500
9 Claims. (Cl. 317—101)



6. In combination, a housing for electrical apparatus modules, and at least one electrical apparatus module;
said housing being comprised of a blank;
said blank having a plurality of sides including,
a first side having a first and a second surface and having a plurality of first means constructed and positioned for receiving the mounting means from at least one electrical apparatus module, thereby enabling at least one electrical apparatus module to be mounted on said second surface of said first side;
a second and a third side, each having a first and a second surface and having a plurality of first and second apertures therethrough to permit electrical apparatus module control elements to be passed therethrough and to permit the lead wires of the electrical apparatus modules to be passed therethrough;
a fourth, fifth and sixth side, each having a first and a second surface;
each of said first, second, third, fourth, fifth and sixth sides having first, second, third, and fourth substantially straight edges;
a plurality of first connecting means connecting said first edge of said first side to said first edge of said second side, said third edge of said first side to said

first edge of said third side, said second edge of said first side to said first edge of said fifth side, said fourth edge of said first side to said first edge of said sixth side and said third edge of said second side to said first edge of said fourth side;

said second and said fourth edges of each of said second, third, fifth, and sixth sides having either one of second and third connecting means positioned adjacent thereto;

said second and third connecting means being so positioned that each of said second means is positioned to be engaged by one of said third means when said blank is formed into an enclosed housing;

a fourth connecting means positioned adjacent at least one of said second, third and fourth edges of said fourth side and comprising a second tab member extending substantially perpendicularly away from said second surface of said fourth side, and a rib member extending away from said second surface of said fourth side and being parallel to said second tab member and being spaced away therefrom, whereby said third edge of at least one of said third, fifth and sixth sides can be fitted securely into the space between said second tab member and said rib member;

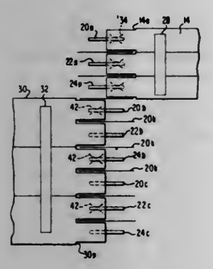
said second and said third connecting means being in engagement; said fourth connecting means being in engagement with said third edge of at least one of said second, fifth and sixth sides;

said second surface of said fourth side positioned opposite said second surface of said first side when said last-mentioned third edge is engaged by said fourth connecting means;

said module having electrical input terminals, electrical output terminals, and fifth connecting means connected to said first means for receiving module mounting means;

said modules having lead wires extending from the terminals thereof and being passed through said first aperture.

3,349,290
DOUBLE MODULE CIRCUIT BREAKER PANEL ASSEMBLY
Robert T. Casey, Southington, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 22, 1966, Ser. No. 604,037
7 Claims. (Cl. 317—119)



1. An electrical control device panel assembly comprising:

(a) a support;

(b) three bus bars supported in substantially parallel relation on said support;

(c) a plurality of stationary contacts supported on said support in a row extending generally parallel to said bus bars, each succeeding one of said contacts being connected to a different one of said bus bars in a predetermined repetitive sequence;

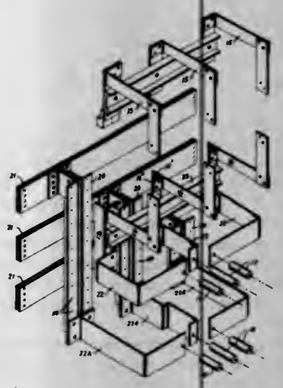
(d) said stationary contacts being equally spaced a predetermined distance apart;

(e) a plurality of first electrical control devices supported on said support, each of said first devices comprising an integral number of single pole units each having a width substantially equal to said predetermined distance and each of said single pole units including an electric contact in plug-in electrical engagement with one of said stationary contacts, and

(f) a plurality of second electrical control devices supported on said support, each of said second devices comprising an integral number of single pole units each having a width substantially double said predetermined distance and each of said single pole units including an electric contact in plug-in electrical engagement with one of said stationary contacts and each of said single-pole units also including clearance means providing clearance for another of said electrical contacts;

(g) whereby said panel assembly may comprise selectively any desired combination of single-pole, two-pole, and three-pole electrical control devices of the first and second type.

3,349,291
PREFABRICATED SWITCHBOARD CONSTRUCTION
William F. Olashaw, New Britain, Conn., assignor to General Electric Company, a corporation of New York
Filed Apr. 12, 1965, Ser. No. 447,335
9 Claims. (Cl. 317—120)



1. A prefabricated electrical switchboard comprising:

(a) a generally rectangular metallic cubicle having generally planar front and back walls, opposed side walls and top and bottom walls;

(b) a plurality of electrical devices supported in said cubicle adjacent said front wall, each of said electrical devices having a set of three in-coming terminals and a set of three out-going terminals at the back thereof within said cubicle;

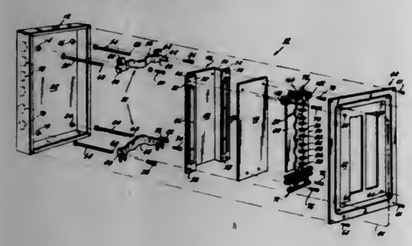
(c) a first set of three vertical electrical busbars supported in said cubicle and extending substantially perpendicular to said bottom wall in the space between said electrical devices and said back wall substantially in alignment in a plane extending parallel to said front wall;

(d) a second set of three vertical electrical busbars supported in said cubicle and extending substantially perpendicular to said bottom wall, said second set of busbars being disposed substantially in alignment in a plane extending substantially parallel to said front wall between said first set of vertical busbars and said back wall;

(e) three first adapter straps of conductive material, said first adapter straps each being bolted at one end to one of said terminals of said devices at one end and being bolted to one of said first set of vertical busbars at the other end;

(f) three second adapter straps of conductive materials, said second adapter straps each being bolted at one end to one of said terminals of said devices at one end and being bolted to one of said second set of vertical busbars at the other end, whereby at least one of said sets of said device terminals is connected by said adapter straps to one of said first and second sets of vertical busbars.

3,349,292
LOAD CENTER
James F. Meacham, Atlanta, Ga., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 1, 1966, Ser. No. 554,430
25 Claims. (Cl. 317—120)



17. A load center for distributing electrical energy from a plurality of incoming cables including a neutral cable and at least one energized cable, said load center comprising:

a bus bar assembly including at least a first bus bar, said first bus bar having terminal means spaced at predetermined locations therealong for permitting the connection of electrical apparatus thereto;

first and second terminal lugs to which an energized and neutral cable, respectively, may be connected;

a lug support molding located adjacent a first end of said first bus bar, said lug support molding having first means provided therein for mechanically and electrically connecting said one end of said bus bar to said first terminal lug and for securely positioning said first terminal lug and said one end of said bus bar with respect to said lug support molding without the necessity of additional securing means;

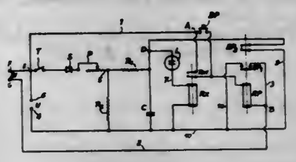
a neutral terminal assembly positioned adjacent a second end of said bus bar;

electrical conductor means for electrically connecting said neutral terminal assembly to said second terminal lug;

said lug support molding further including second means provided therein for mechanically and electrically connecting said electrical conductor means to said second terminal lug and for securely positioning said second terminal lug and electrical conductor means with respect to said lug support molding without the necessity of additional securing means;

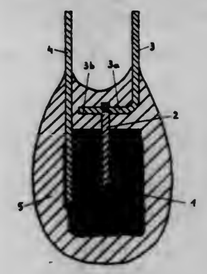
whereby said incoming energized and neutral cables may be connected to their respective terminal lugs adjacent said one end of said bus bar.

3,349,293
AUTOMATIC ELECTRON TIME-SWITCHES
Raymond Peffer, Compiegne, France, assignor to "Etablissements Gérard Mang," Paris, France
Filed Mar. 16, 1965, Ser. No. 440,099
Claims priority, application France, Mar. 17, 1964, 967,743
5 Claims. (Cl. 317—142)



1. Automatic electron time-switch comprising a main relay of which the energisation is controlled by depressing a push-button, and a time-lag system of which the energisation is also controlled by means of said relay, said main relay being of the so-called step-by-step type having two stable positions and controlling by means of its contacts on the one hand the passage and break of current to the load circuit and on the other hand the application of voltage to the time-lag system, this time-lag system comprising a condenser having connected across its terminals a branch circuit comprising a gas-filled lamp and the winding of a secondary relay controlling the closing of a conductor also adapted to supply energising current to said main relay.

3,349,294
SOLID ELECTROLYTIC CAPACITOR ENCAPSULATED IN SOLIDIFIED LIQUID INSULATING MATERIAL
Karl Heinimann, Nurnberg, Helmut Kassner, Lauf an der Pegnitz, and Maximilian J. Schmachtenberger, Kleinschwarzenlohe, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,996
Claims priority, application Germany, Apr. 25, 1964, St 17,222
9 Claims. (Cl. 317—230)



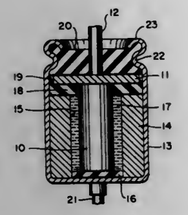
1. A capacitor comprising a body including an anode of film forming metal and a dielectric film on the surface of said anode, a solid electrolyte intimately disposed on said dielectric film, first electrical terminal means connected to said anode, second electrical terminal means connected to said electrolyte, an in situ solidified-liquid insulating compound disposed around said electrolyte and encapsulating the anode and portions of the first and second terminal means, at least one of said terminal means including transverse means in side-by-side spaced relation with the other of said terminal means, and with

said other terminal means providing means for retaining liquid insulating compound about said terminal means during the in situ solidifying.

3,349,295
ELECTROLYTIC CAPACITOR WITH TUBULAR ANODE AROUND CATHODE

Julian G. Sparkes, Chagrin Falls, Ohio, assignor to Industrial Electronic Rubber Co., Twinsburg, Ohio, a corporation of Ohio

Filed June 16, 1965, Ser. No. 464,458
4 Claims. (Cl. 317,230)

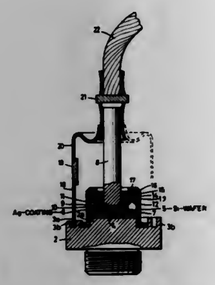


1. An electrolytic capacitor, comprising a cylindrical film-forming metal case open at one end,
an anode made of the same metal as said case in the form of a hollow cylinder and comprising a dielectric film thereon, said anode being disposed within said case with the outer surface of the former contacting and affixed to the inner surface of the case,
a cylindrical metal cathode located in the case with its major extent in uniform spaced relation interiorly of said anode, the anode and cathode spacing defining an annular void therebetween for receiving electrolyte,
and electrical insulation supporting the cathode in such arrangement and closing the open end of the case.

3,349,296
ELECTRONIC SEMICONDUCTOR DEVICE

Hubert Patalong, Ebermannstadt, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Oct. 26, 1962, Ser. No. 233,282
Claims priority, application Germany, Oct. 31, 1961, S 76,483
11 Claims. (Cl. 317—234)

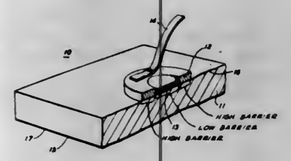


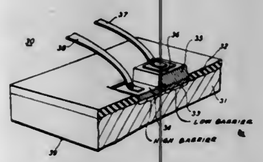
1. An electronic semiconductor device, comprising a substantially monocrystalline body and a metal contact member, said monocrystalline body consisting of semiconductor material and having a planar surface, said contact member having a planar surface in mechanical face-to-face pressure engagement with the planar surface of said monocrystalline body, and housing means including pressure maintaining means holding said contact member and said monocrystalline body in said face-to-face pressure engagement, the area of said pressure engagement being at least 10 mm.^{2} and the maintained pressure (higher) greater than 50 kg. per cm.^{2}.

3,349,297
SURFACE BARRIER SEMICONDUCTOR TRANSLATING DEVICE

Clarence R. Crowell, Scotch Plains, and Simon M. Sze, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 23, 1964, Ser. No. 377,266
8 Claims. (Cl. 317—234)





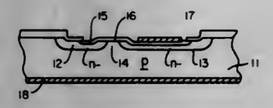
1. A semiconductor signal translating device comprising
a body of semiconductor material;
a first metal layer of many molecular layers' thickness plated on at least a portion of the surface of said body, and forming a surface barrier with said body;
a surface barrier electrode comprising a second metal layer plated on another portion of said surface, forming a surface barrier with said body, and making direct contact with said first metal layer, said second metal selected from the class of metals characterized by the property of having a barrier height in relation to said semiconductor lower than that of said first metal;
a metal lead attached to said first metal layer for making external electrical connection to said surface barrier electrode and
a separate substantially ohmic connection to another portion of said body of semiconductor material.

3,349,298
NOISE DIODES

William Shockley, Los Altos, Calif., and Roland H. Haitz, Dallas, Tex., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Oct. 29, 1965, Ser. No. 505,702
7 Claims. (Cl. 317—234)

1. Semiconductor noise generating apparatus, comprising:
a body of semiconductor material having a principal region of one conductivity type;
an annular region of opposite conductivity type inset into said principal region and adjacent a given surface of said body, the boundary between said regions forming a generally cylindrical P-N junction having an associated reverse bias breakdown voltage, said junction enclosing a filamentary portion of said principal region, said filamentary portion having an end section adjacent said given surface;
a layer of semiconductor material of said opposite conductivity type in said body disposed between said end section and said given surface, said layer having a higher concentration of conductivity-type-determining impurities than said generally cylindrical P-N junction and forming in cooperation with said end section a limited area P-N junction having a given reverse bias breakdown voltage substantially lower than the reverse bias breakdown voltage of said generally cylindrical P-N junction;

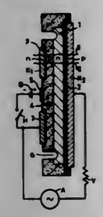


a first electrode on said body electrically connected to said layer;
a second electrode on said body electrically connected to said principal region; and
electrical bias means for applying between said electrodes a potential greater than said given voltage but less than said associated voltage thereby to cause reverse breakdown of only said limited area junction to produce a signal at said electrodes having a relatively stable noise component.

3,349,299
POWER RECTIFIER OF THE NPNP TYPE HAVING RECOMBINATION CENTERS THEREIN

Adolf Herlet, Pretzfeld, Upper Franconia, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Sept. 13, 1963, Ser. No. 308,830
Claims priority, application Germany, Sept. 15, 1962, S 81,478
5 Claims. (Cl. 317—235)



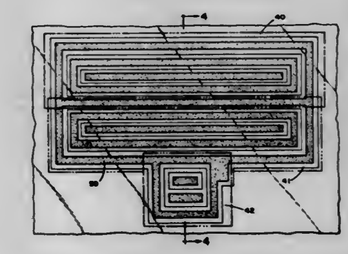
1. A semiconductor power rectifier, comprising a substantially monocrystalline semiconductor body containing in succession a first, a second, a third and a fourth layer, which layers have alternate respective types of conductivity, of which the first, second and third layers form a first transistor element and the second, third and fourth layers form a second transistor element, the second layer having a doping concentration of substantially 10^{17} cm.$^{-3}$ in a region adjacent to the first layer and of several powers of 10 lower in a region adjacent to the third layer, and the third layer having the lowest doping concentration of the four layers, and wherein the current gain of the first transistor element is substantially zero in the load current density range below 10 ma./cm.^{2} and begins to rise steeply in a load current density range between 10 and 100 ma./cm.^{2}, and wherein the current gain of the second transistor element has a value below unity and is substantially independent of load current in the load current density range between 10 and 100 ma./cm.^{2}.

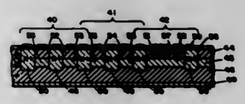
3,349,300
INTEGRATED FIELD-EFFECT DIFFERENTIAL AMPLIFIER

Ronald L. Koepp, Creve Coeur, Mo., and Dean C. Bailey, Cupertino, Calif., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Jan. 19, 1965, Ser. No. 426,545
7 Claims. (Cl. 317—235)

1. A semiconductor structure, including in combination,
a layered body of relatively thick P-type semiconductor material,
a first layer formed of N-type semiconductor material formed on said body and having a thickness less than said body,
a second layer formed of P-type semiconductor material and disposed on said first layer and having a thickness less than said body,
a first region of N+ type semiconductive material formed through said layers and extending into said body and forming three separate and isolated enclosed areas extending through both of said layers which are isolated and circumscribed by such N+ region,





second and third regions of N+ type semiconductor material formed within two of said enclosed areas and extending into said body through both layers, and
a fourth region of N+ semiconductive material formed in said second layer and lying within a third enclosed area, and
independent electrical connections to said second layer at said enclosed areas, to said N+ regions and to said body.

3,349,301
HIGH SPEED OPEN CAPACITANCE PROBE FOR FUEL SYSTEMS

Charles C. Bell, Croton, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York

Filed Oct. 13, 1964, Ser. No. 403,497
8 Claims. (Cl. 317—246)

8. In a capacitance probe for measuring a rapidly changing liquid level, the combination of an elongated electrode column having an inner electrode tube and a

plurality of outer electrode tubes equally spaced apart and equally spaced from said inner electrode, means for

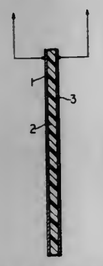


insulating said inner electrode from said outer electrodes, and capacitance point sensing means adjacent one end of said column.

ERRATUM

For Class 317—258 see:
Patent No. 3,348,568

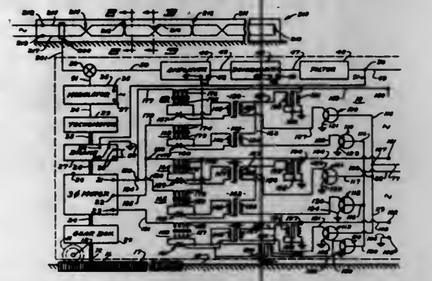
3,349,302
CAPACITORS
Herbert Ackland Pohl, Uppsala, Sweden, assignor to Sci-Tech Corporation, Princeton, N.J., a corporation of New Jersey
Filed July 21, 1964, Ser. No. 384,054
7 Claims. (Cl. 317—258)



1. A capacitor having a high capacitance in a minimum volume comprising metal conductors separated by a dielectric consisting of a microscopically-homogeneous, electronically-conductive, polymeric, eka-conjugated, organic molecular solid having a specific resistivity over about 10^3 ohm-centimeters at 25° C.

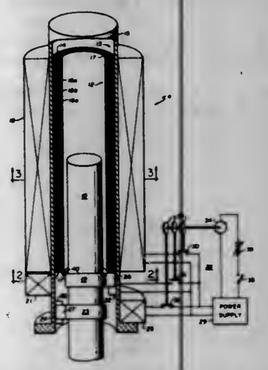
3,349,303
MECHANISM FOR PRECISELY POSITIONING A MOVING PART RELATIVE TO A COOPERATING PART
Thomas R. Burnight, Battle Creek, Mich., and Arthur R. Burch, Brooklyn Park, Minn., assignors to Hartman Metal Fabricators, Inc., Waterloo, N.Y., a corporation of New York
Filed Mar. 4, 1964, Ser. No. 349,217
9 Claims. (Cl. 318—18)

1. Positioning apparatus comprising in combination;
signal means having the characteristic of varying phase and magnitude with incremental distance from at least one stable null position thereon;
further means, said signal means and said further means being movable relative to each other;
motor means operatively connected to one of said means for providing movement of one of said means relative to the other said means;



control means, including means responsive to said signal means for reversibly energizing said motor means to position said signal means and said further means relative to one another whereby said means responsive to said signal means is positioned at said stable null position, said signal means comprising a pair of conductors having intersections at each of the stable null positions.

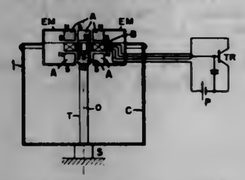
3,349,304
LONGITUDINAL MOVEMENT MECHANISM
William J. Wachter, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 5, 1965, Ser. No. 445,809
3 Claims. (Cl. 318—118)



1. A mechanism for longitudinal displacement of a rod enclosed by a housing, comprising:
(a) a magnetostrictive element surrounding said rod, said magnetostrictive element having a plurality of concentric alternating positive and negative magnetostrictive members, each member connected to the succeeding member at alternating ends beginning with the outer member fixed at one end to the inner surface of said housing,
(b) longitudinal moveable means attached to the free end of the innermost member of said magnetostrictive element for clamping said rod and moving said rod longitudinally in response to the magnetostrictive movement of said magnetostrictive element,
(c) means fixed to the inner surface of said housing for holding said rod from movement,
(d) magnetic means for actuating said magnetostrictive element and,

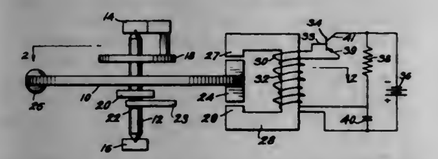
(e) a first and second energizing means for sequentially actuating said holding means and said clamping means.
2. The mechanism of claim 1 having a control means for pulsing said magnetic means and said first and second energizing means in a predetermined sequence for moving said rod in either direction.

3,349,305
ELECTROMECHANICAL OSCILLATORS
Jacques Jean Gustave Dietsch, Paris, France, assignor to Societe Anonyme des Etablissements Leon Hatot, Paris, France, a company of France
Filed June 2, 1964, Ser. No. 371,956
Claims priority, application France, June 12, 1963, 937,764
10 Claims. (Cl. 318—128)



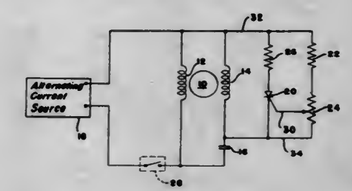
4. Electromechanical oscillator comprising, a flexible vibrator having a thin resiliently deformable wall of circular means cross section about an axis; two pairs of magnetic systems respectively fixed to said wall about two perpendicular planes containing said axis, means in said magnetic systems creating locally magnetic fields, the fields created by one of said pairs being substantially directed towards one point of said axis, the fields created by the other of said pairs being substantially directed away from said point; and energizing means cooperative with said magnetic systems to render said wall vibratory and to sustain it in vibration between two ellipsoidal shapes in cross section.

3,349,306
ELECTRICALLY DRIVEN TIMING DEVICE DEVOID OF PERMANENT MAGNET ELEMENTS
Willard E. Buck, Boulder, Colo., assignor to Buck Instrument Co., Boulder, Colo., a corporation of Colorado
Continuation of application Ser. No. 117,446, June 15, 1961. This application Mar. 25, 1966, Ser. No. 537,537
8 Claims. (Cl. 318—128)



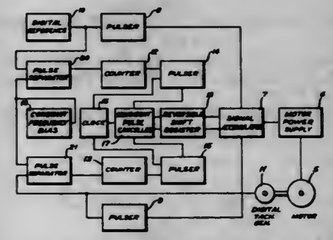
3. An electro-mechanical arrangement for driving a timing device comprising an oscillatable balance wheel carrying a ferro-magnetic member of low residual induction for rotation therewith, at least one ferro-magnetic core means having low residual induction with an air gap means positioned in the rotational paths of the ferro-magnetic member of the balance wheel, at least one coil means mounted on said core and circuit means connected to said coil which circuit means when the ferro-magnetic member is within the air gap of the core develops a current pulse through the coil and generates an electro-magnetic pulse which acts on said ferro-magnetic member to initiate and sustain the oscillation of the balance wheel, wherein the circuit means includes an amplifier, a pair of coils mounted on a core, said coils being magnetically coupled with one coil being connected to supply a signal to the amplifier and the other connected to receive a signal therefrom on increasing the mutual inductance of the coils due to the presence of the ferro-magnetic member within the air gap and means responsive to the signal from said amplifier to alter the bias thereon to prevent further signals from being transmitted thereby while the ferro-magnetic member is within the air gap.

3,349,307
ELECTRIC MOTOR CONTROL CIRCUIT
Joseph P. Licata and Frederick T. Tucker, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,739
15 Claims. (Cl. 318—221)



1. A speed control circuit for an alternating current motor of the type having at least a phase winding comprising a controllable switching device having a control electrode connected in parallel with said phase winding for reducing to substantially zero the potential applied to said phase winding over that portion of each cycle during which it is conducting, a high impedance circuit connected in parallel with said phase winding, means for taking from said high impedance circuit a control potential which increases in magnitude with motor speed and means for applying said control potential to said control electrode for triggering said controllable switching device to conduction when said motor reaches a predetermined speed.

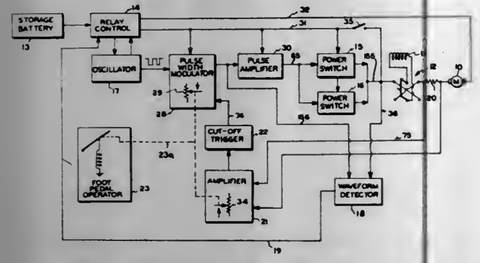
3,349,308
DIGITAL MOTOR SPEED AND POSITION REGULATOR FOR LOW SPEED OPERATION
Sanford M. Strand, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,676
7 Claims. (Cl. 318—314)



1. In a control system for a motor, a generator producing a first signal which varies between limits periodically at a fixed but adjustable frequency, a second generator producing a second signal which varies periodically between limits at a frequency variable in accordance with the speed of said motor, and means providing motor position phase correction whenever the time difference phase displacement between the aforementioned signals exceeds a predetermined amount, of means including a third generator providing a third signal which varies periodically, means for subjecting the first mentioned means to the sum of the cycles of said first and third signals, and means for subjecting said first mentioned means to the sum of

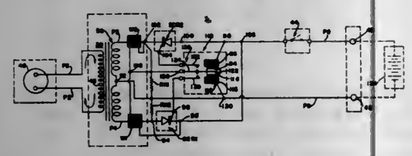
the cycles of said second and third signals thereby to insure that the frequency of corrective action of said first mentioned means is always equal to or greater than the frequency of said third signal.

3,349,309
INDUSTRIAL TRUCK POWER CIRCUIT
Alan C. Dannettell, Philadelphia, Pa., assignor to Yale & Towne, Inc., New York, N.Y., a corporation of Ohio
Filed Dec. 4, 1964, Ser. No. 415,974
13 Claims. (Cl. 318—341)



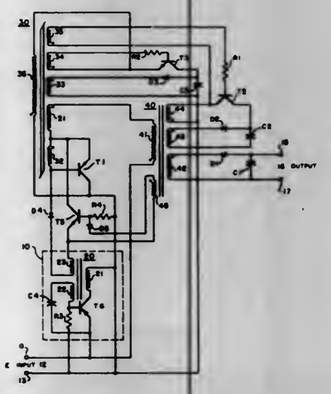
1. In a battery powered motor control system for controlling an electric traction motor to drive an industrial truck, said system having pulse producing means energized by the battery for producing a regular succession of power pulses to energize said motor, manually operated means for varying the time duration of said pulses to control the energization of said motor, and current limit control means responsive to an increasing amplitude of current through the motor for automatically reducing the time duration of the power pulses; the improvement that comprises a part of said current limit control means operable to adjust those means so as to offer no response while the current amplitude substantially increases to that of a full stalled motor current, and means through which the manually operated means while reducing the time duration of the pulses will so operate said part to adjust the limit control means, in effect removing a current limit and allowing the manually operated means full control of the motor current.

3,349,310
MULTI-PURPOSE AND SELF-POLARIZED POWER PACK
Joseph Ladoniczki, Orange City, Fla., assignor to Medaris, Cruger & Patterson, Inc., Winter Park, Fla., a corporation of Florida
Filed Mar. 19, 1964, Ser. No. 353,050
12 Claims. (Cl. 320—25)



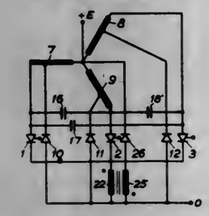
3. In a power pack including an alternating current supply, a polarized load, a transformer having an input and an output, connected at its input to said supply, and first and second controlled semiconductor rectifier means each having anode, cathode and gate terminals, connected, respectively, in opposed polarities with said transformer output and said polarized load; the combination of control means selectively applying gating signals to said first and second rectifier means comprising, respectively, first and second inductive winding means inductively coupled with the output of said transformer, adapted to be connected in series between the said cathode and gate terminals of the respective ones of said rectifier means, and means automatically responsive to the polarity of said polarized load selectively connecting one of said inductive winding means in series with the respectively associated gate and cathode terminals of one of said controlled rectifier means as a function of the polarity of said polarized load, whereby only that one of said rectifier means of compatible polarity with said polarized load is energized.

3,349,311
CONTROL CIRCUIT FOR UNSYMMETRICAL POWER CONVERTER
William L. Dudley, Shrewsbury, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 14, 1965, Ser. No. 496,203
4 Claims. (Cl. 321—2)



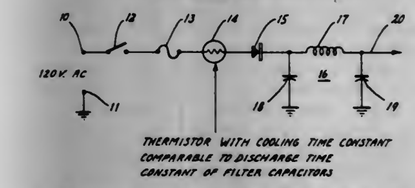
1. A converter for use with a low-voltage source of direct current, comprising, a first transformer having a first, a second, a third, a fourth, a fifth, and sixth winding; a second transformer having a first, a second, a third and a fourth winding; a first, power-switching transistor having an input and an output; a second, steering transistor having an input and an output; a third steering transistor having an input and an output; said first, power-switching transistor being connected in series with said first winding of said first transformer and said first winding of said second transformer across sad low-voltage source of direct current; said second winding of said first transformer connected to said input of said second, steering transistor; said third winding of said first transformer connected to said input of said third, steering transistor; a first diode; a first capacitor; said first diode connected in series with said fourth winding of said first transformer across said first capacitor; said fifth winding of said transformer connected in series with said output of said second transistor across said first capacitor; a second diode; a second capacitor; said second diode connected in series with said second winding of said second transformer across said second capacitor; said third winding of said second transformer connected in series with said output, of said third transistor across said second capacitor, a third diode; a third capacitor; said third diode connected in series with said fourth winding of said second transformer across said third capacitor to provide the output of said converter; and said sixth winding of said first transformer connected to the input of said first transistor.

3,349,312
IMPULSE COMMUTATED INVERTER WITH CONTROLLABLE OUTPUT VOLTAGE
Lars Bergman, Roslags-Nasby, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Sept. 23, 1965, Ser. No. 489,568
Claims priority, application Sweden, Oct. 1, 1964, 11,776/64
14 Claims. (Cl. 321—5)



1. An inverter with controllable output voltage having controlled semi-conductor rectifiers, commutation elements for turning off said rectifiers connected to said rectifiers and comprising a commutating circuit having at least one commutating reactor and at least one commutating capacitor, a control pulse generator means connected to the control electrodes of said rectifiers to supply control pulses thereto, said control pulse generator means including means for supplying two control pulses to each controllable rectifier during each cycle of the output voltage of the inverter, means for varying the time interval between said control pulses, the first control pulse having shorter duration than the period of oscillation of the commutating circuit, the second control pulse having a duration longer than said period of oscillation.

3,349,313
POWER SUPPLY CIRCUIT
Paul C. Wilmarth, Indianapolis, Ind., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,711
4 Claims. (Cl. 321—10)



1. A power supply circuit for television receivers and the like, comprising the series combination of a thermistor and a rectifier connected in said circuit, and a filter including shunt capacitance means connected across said circuit at the output side of said series combination, wherein said thermistor has a cooling time constant approximately equal to and not greater than the discharge time constant of said capacitance means.

3,349,314
INVERTER UTILIZING AN AUXILIARY CONTROLLED RECTIFIER FOR COMMUTATING THE POWER CONTROLLED RECTIFIERS
Ronald Glannamore, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,142
4 Claims. (Cl. 321—43)

3. A parallel inverter circuit for altering a source of D.C. current to an A.C. current source comprising:

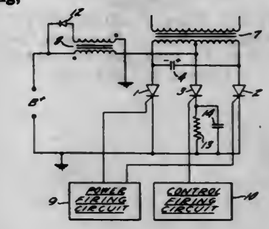
a transformer having a center tapped primary winding and a secondary winding,

a plurality of power rectifiers each having an anode, a cathode and a control electrode for activating the flow of current from the anode to the cathode,

a control rectifier having a pair of main electrodes and a control electrode for activating the flow of current between the main electrodes,

said power rectifiers connected across the primary winding,

one of the main electrodes of the control rectifier electrically connected to the center tap of the primary winding,

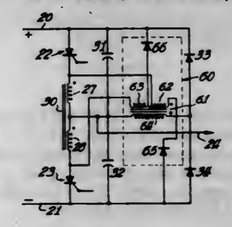


a series resonance circuit comprising an inductive reactance and a capacitive reactance,

said inductive reactance connected between the D.C. current source and the center tap of the primary, and

said capacitive reactance connected between the D.C. current source and the other of the pair of main electrodes of the control rectifier.

3,349,315
STATIC INVERTER SYSTEM WITH CURRENT SHARING BY BOTH COMMUTATING CHOKE WINDINGS DURING COMMUTATING ENERGY RECOVERY
George H. Studtmann, Mount Prospect, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 11, 1965, Ser. No. 431,825
11 Claims. (Cl. 321—45)

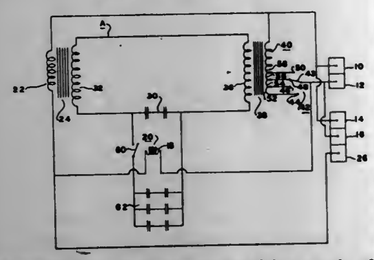


4. In an inverter circuit having a pair of D-C input conductors, first and second semiconductor switches respectively coupled to different ones of said conductors, first and second inductances conductively coupled in series between said semiconductor switches and magnetically coupled to each other, means for passing commutating energy into one of said inductances and thus storing energy in the assembly including the first and second magnetically coupled inductances as the one of said semiconductor switches coupled to said one inductance is gated on, the improvement which comprises:

an energy return circuit, including a transformer having a pair of primary windings and a secondary winding, a first diode for completing a first current conductive auxiliary path through one of said primary windings and through both of said first and second inductances as the amount of energy stored in the first inductance reaches a maximum value and begins to diminish, a second diode for completing a second current conductive auxiliary path

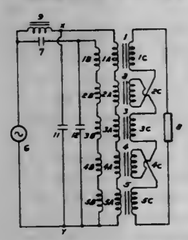
through the other of said primary windings and through both of said first and second inductances as the amount of energy stored in the second inductance reaches a maximum value and begins to diminish, and means including at least one rectifier coupled between said secondary winding and one of said D-C input conductors for returning the commutating energy stored in the inductances to the D-C input conductors.

3,349,316
STATIC PHASE CONVERTER
James F. Buffington, R.R. 3, Plymouth, Ind. 46563
Filed Feb. 23, 1965, Ser. No. 434,209
6 Claims. (Cl. 321—52)



1. A static phase converter, comprising a pair of inputs, a relay, a step-up transformer, the primary of said transformer being connected in series with the coil of said relay between said inputs, an output connected to the junction between said primary and said coil, a capacitor connected to the secondary of said transformer, a second step-up transformer, the secondary of said second transformer being connected in series between said capacitor and the secondary of said first mentioned transformer, a multi-position switch, the primary of said second transformer and said switch being connected in series between said inputs, a normally closed switch operated by said relay, and a capacitor connected to said second mentioned switch in series, said second mentioned switch and said second mentioned capacitor being connected in parallel with said first mentioned capacitor.

3,349,317
FREQUENCY MULTIPLIER WITH PARALLEL FERRO-RESONANCE CIRCUITS
Hiroshi Kobayashi and Sadamu Ohteru, both of Totsuka-machi, Shinjuku-ku, Tokyo, Japan 1–647
Filed Apr. 20, 1965, Ser. No. 449,493
3 Claims. (Cl. 321—68)



3. A frequency multiplier having a single phase alternating current source of predetermined frequency, wherein: two exciting windings are wound in pairs on each of n cores with each winding having a number of turns on each core selected so that the resultant magnetomotive forces made by the currents flowing in said two exciting windings in successive ferromagnetic cores have the same amplitude but are π/n radians apart where n is the degree of multiplication; each of said two windings having its turns on successive cores connected in series to form respective series-connected branches; each of two capacitors is connected in parallel with each of said series-connected branches forming an oscillating tank respectively; one of the source terminals is connected to one of the joints of one of said series-connected branches and one of said capacitors through a linear reactor in series, and is also connected to one of the joints of the other said series-connected branch and the other said capacitor through a capacitor in series; the other source terminal is connected to the other common joint of both series-connected branches and capacitors; a third winding is wound with turns on each of said n cores connected in series with alternative polarity one by one; the number of said third winding on successive cores is in proportion to a function

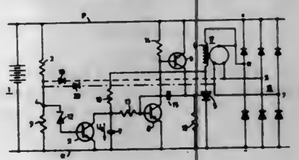
$$f\left(k\frac{\pi}{n}\right)$$

where k is the core number; and from said series-connected branch of third windings the voltage with n times multiplied frequency whose amplitude is modulated by the said function

$$f\left(k\frac{\pi}{n}\right)$$

can be supplied to load.

3,349,318
SYSTEM FOR CONTROLLING THYRISTORS BY PERIODICALLY RECURRING FIRING PULSES
Herbert Poppinger, Munich, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Sept. 16, 1964, Ser. No. 396,950
11 Claims. (Cl. 322—28)



1. A system for controlling thyristors by periodically recurring firing pulses, comprising

a load circuit including a thyristor to be controlled thereby, said thyristor having a gate control circuit;

voltage supply means providing a periodically intermittent output voltage whose cycle comprises an active interval during which a voltage is produced and a zero interval during which no voltage is produced;

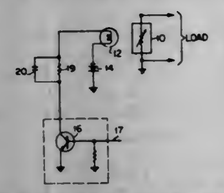
a capacitor connected to said voltage supply means to be charged therefrom each time one of the active intervals of the output voltage of said voltage supply means commences;

trigger means having a critical trigger voltage and connecting said capacitor to the gate control circuit of said thyristor for supplying thereto a firing pulse during each of the active intervals of the output voltage of said voltage supply means in dependence upon the charge voltage of said capacitor reaching a limit corresponding to the critical trigger voltage of said trigger means; and

charge control means for controlling the charging and discharging of said capacitor, said charge control means comprising a source of variable control voltage, a resistive semiconductor member having a variable resistance path connected parallel with said capacitor, and a resistance control circuit connected between said source of variable control voltage and said semiconductor member for controlling the charging and discharging of said capacitor to phase-shift

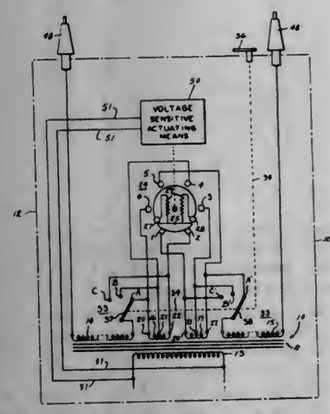
the instant of firing relative to the instant of starting of the active interval of the output voltage of said voltage supply means and terminating the subsequent discharging of said capacitor at the instant of starting of the next succeeding active interval, said capacitor having at said instant of starting a residual charge potential depending upon variations of the control voltage from said source of variable control voltage.

3,349,319
ARRANGEMENT FOR VARYING THE RESISTANCE VALUE OF PHOTO-SENSITIVE DEVICES
William Ross Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif. 94022
Filed Jan. 3, 1967, Ser. No. 606,680
6 Claims. (Cl. 323—21)



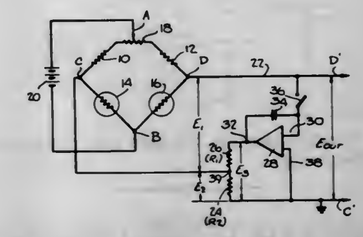
1. A resistance varying circuit arrangement comprising a photo-sensitive resistance element; a lamp for illuminating said element; and a power circuit for said lamp including a current-flow-control element responsive to application of biasing currents, and a resistor shunted by a capacitor.

3,349,320
TAP CHANGING TRANSFORMER HAVING MEANS TO CHANGE TAP RANGE
Gene R. Mathes, Zanesville, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,644
19 Claims. (Cl. 323—43.5)



16. An electrical transformer having a pair of inductively related windings, one of said windings having four separate winding sections the first and second of which are provided with taps, a tap changer having a plurality of stationary contacts with odd-numbered stationary contacts connected to the taps of said first winding section and even-numbered stationary contacts connected to the taps of said second winding section and a movable contact adapted to sequentially common adjacent pairs of said stationary contacts, and switch means for selectively connecting said third and fourth winding sections respectively to said taps on said first and second winding sections, whereby the voltage range over which said tap changer operates may be varied.

3,349,321
BRIDGE WITH AUTOMATIC ZERO
Graydon Wells Arksey, Edmonton, Alberta, Canada, assignor to Chemcell Limited, a corporation of Canada
Filed Dec. 24, 1964, Ser. No. 421,050
1 Claim. (Cl. 323—75)



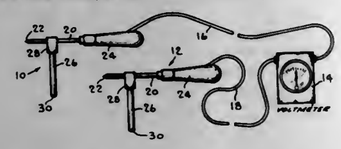
A zero-compensated condition-responsive bridge system including a normally balanced resistor network subject to zero drift, said network having at least one condition-responsive resistor and having a pair of null terminals that are nominally balanced in the normal condition of said condition-responsive resistor and having a direct-current energizing circuit, said bridge system including a pair of main output terminals, and zero-compensating means between one of said main output terminals and one of said null terminals of said resistor network, said compensating means including an inverting high-gain direct-current amplifier having input terminals including a reference terminal connected to one of the main terminals and including switching means for connecting another amplifier input terminal in common to one of said null terminals and to the other of said main output terminals, said amplifier also having an output circuit and having a negative feedback circuit between said other amplifier input terminal and said output circuit, a drift-signal storage capacitor interposed in said feedback circuit as a part thereof, a first resistor between said other input terminal of the amplifier and said storage capacitor, and a circuit including a further resistor and a switching device connected between said reference terminal of the amplifier and a point in the feedback circuit between said first resistor and said capacitor, and coordinated operating means for closing and opening both said switching device and said switching means, and said amplifier including a load resistor interposed in a circuit between said one main output terminal and the other of said pair of null terminals for injecting zero-shift compensation into the bridge system output.

3,349,322
METHOD OF AND APPARATUS FOR MEASURING STORAGE BATTERY CELL VOLTAGES
Paul V. Lowe, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 26, 1963, Ser. No. 304,411
2 Claims. (Cl. 324—29.5)

1. A method of testing a multi-cell storage battery, each cell of which is provided with battery plates and electrolyte, said storage battery further characterized by one end cell having an exposed positive terminal, an opposite end cell having an exposed negative terminal and at least one intermediate cell between said end cells,

said method comprising the following nonsequential steps:

(a) measuring the potential difference between the electrolytes of a pair of adjacent cells of the battery by inserting a first conductor into the electrolyte of one cell and inserting a second conductor into the electrolyte of the adjacent cell, said conductors being electrically connected to an electrical measuring means with both of said conductors being immersed in the separate electrolytes of the respective cells at the same time; and



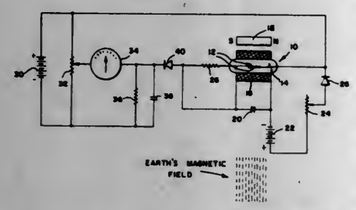
(b) repeating step (a) for each pair of adjacent cells of the battery.

3,349,323

APPARATUS AND METHODS EMPLOYING MAGNETIC REED SWITCHES AND STATIC AND VARYING BIAS FIELDS FOR DETECTING MAGNETIC PHENOMENA

Robert D. Mullen, 7534 Wilbur Ave., Reseda, Calif. 91335

Filed Aug. 19, 1964, Ser. No. 390,701
13 Claims. (Cl. 324—43)



1. Apparatus for measuring magnetic phenomena, comprising a switch having a pair of contacts which are normally in one position and which transfer to another position in response to a magnetic field, static bias magnetic field producing means fixed adjacent to said switch for transferring said contacts to said other position, varying bias magnetic field producing means fixed adjacent to said switch and periodically opposing said static bias field producing means and permitting said contacts to transfer to said one position, whereby said contacts transfer between said positions repetitively in accordance with the relative values of the fields produced by said static and varying field producing means, and means for detecting variation of the repetitive transfer of said contacts in response to a magnetic phenomenon which modifies said relative values.

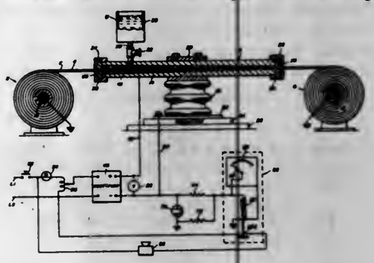
3,349,324

APPARATUS FOR LOCATING FAULTS IN INSULATED ELECTRIC CABLES INCLUDING ELONGATED TUBE MEANS HAVING A TAPERED BORE AND CONTAINING A CONDUCTING LIQUID ELECTRODE

Frederick W. Wakefield, Northboro, Mass., assignor to United States Steel Corporation, a corporation of Delaware

Filed Dec. 15, 1965, Ser. No. 513,988
7 Claims. (Cl. 324—54)

1. Apparatus for use in testing a moving insulated conductor with direct current which comprises an elongated tube having a tapered bore through which said insulated conductor passes, said bore decreasing in cross sectional area from the entry to exit end thereof, a conducting liquid filling said bore, said conducting liquid within said bore serving as a direct current electrode circuit means connected to said liquid for detecting faults



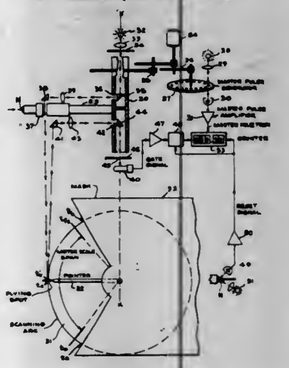
in the conductor, and means for sealing each end of said bore, each of said sealing means having an opening for said insulated conductor said sealing means closely surrounding the insulated conductor at said openings upon passage of said conductor therethrough.

3,349,325

AUTOMATIC METER-CALIBRATION APPARATUS HAVING FLYING SPOT POINTER SENSING MEANS

Eric Bajars, Elmhurst, Ill., assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 227,200, Oct. 1, 1962. This application Apr. 4, 1967, Ser. No. 633,344
8 Claims. (Cl. 324—74)



1. Apparatus for calibrating meter movements of the type having a rotary indicating pointer, comprising, in combination, means for securing a meter movement in a fixed position wherein the pointer of said movement is rotatable in a predetermined plane around a predetermined axis, means defining a plane surface behind said pointer and parallel to said predetermined plane, said surface being characterized by a light-reflectivity characteristic different from that of said pointer, a scanner disposed in front of said predetermined plane and mounted for rotation around said predetermined axis, said scanner being operative when rotated to direct toward said plane surface a narrow light beam moving in a circular path around said axis, said beam thereby intercepting said pointer once in each revolution, motive means for said scanner operative to rotate the same, impulse-generating means operatively connected to said motive means, said impulse generating means operating during scanner rotation to generate impulses having a repetition rate proportional to the angular velocity of said scanner, an impulse counter fed by said generating means,

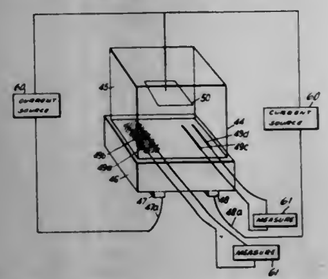
the number of pulses fed to said counter by said generating means being controllable independently of the angular velocity of said scanner whereby a very high number of pulses can be fed to the counter irrespective of the physical size of the scanner, means having a light-reflectivity characteristic different from that of said surface disposed adjacent said surface in the path of said light beam defining a reference position which is substantially fixed relative to said surface, photo-sensitive means responsive to light reflected from said surface for detecting when said beam passes said reference position and when said beam intercepts said pointer, and means controlled by said photo-sensitive means for actuating said impulse counter during the time intervals in which said light beam is traversing its circular path between said reference position and the position at which said beam intercepts said pointer, thereby providing a digital indication representing the magnitude of the angle defined by said reference position, said axis, and said intercept position.

3,349,326

ELECTROLYTIC CURRENT INTEGRATOR

Robert A. Hyman and Cyril Francis Drake, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 12, 1963, Ser. No. 270,130
9 Claims. (Cl. 324—94)



1. Apparatus for digital to analogue conversion comprising a vessel containing an electrolyte, an anode, a slice of semiconductor material which seals said vessel, one or more electrodes situated within the electrolyte, and one or more semiconductor material electrodes being formed on the outer face of the semiconductor material, and electrodes formed on the inner surface of said semiconductor slice, means for passing incremental quantities of electric current from the anode through the electrolyte and to the semiconductor material, electrolytic deposition of an electrically conducting material occuring on part of the inner surface of the semiconductor material in contact with the electrolyte, and measuring means wherein the resistivity of the electrolytic deposition on the inner surface of said slice may be measured, the result of said measurement being an analogue representation of the current applied to the device.

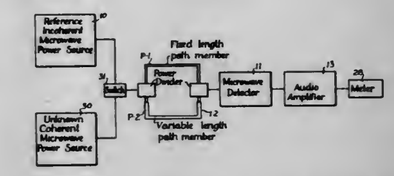
3,349,327

MICROWAVE POWER METER

Maurice W. Long, Atlanta, Ga., assignor to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia

Filed Jan. 7, 1964, Ser. No. 336,189
11 Claims. (Cl. 324—95)

1. In a power meter, first means for dividing an electro-magnetic power input at a first junction between a first path and a second path from said first junction to a second junction, second means for reciprocatingly varying the mechanical length of said first path relative to the length of said second path at a substantially constant rate so as to modulate an electro-magnetic power input at said first junction at a plurality of Doppler frequencies with the electro-magnetic power at each Doppler frequency being related in frequency and amplitude to electro-magnetic power in said electro-magnetic power input at a particular frequency, third means responsive to said plurality of Doppler frequencies at said second junction for demodulating said electro-magnetic power input and providing an output voltage envelope defined by a plurality of voltage components each having a frequency of one of said plurality of Doppler frequencies and an amplitude proportional to electro-magnetic power at said



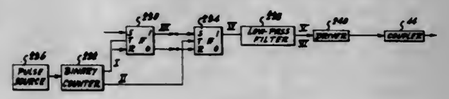
one of said plurality of Doppler frequencies, fourth means selectively responsive to said plurality of voltage components for providing a signal output having an amplitude proportional to amplitudes of selected ones of said plurality of voltage components, fifth means responsive to said signal output for indicating said amplitude of said signal output, sixth means including an incoherent power source for providing a known electro-magnetic power output at each of a plurality of frequencies within a range of frequencies, and seventh means for selectively providing said known electro-magnetic power output at said first junction as said electro-magnetic power input.

3,349,328

DIGITAL COMMUNICATION SYSTEM USING HALF-CYCLE SIGNALS AT BIT TRANSITIONS

Stanley H. Hunkins, Cherry Hill, and George W. Hernan, Haddonfield, N.J., assignors to Ultronic Systems Corp., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,129
3 Claims. (Cl. 325—38)



1. A digital communication system for transmitting binary information comprising transmitting and receiving means connected by a communication channel, said transmitting means including means for receiving two-level binary bit information having one level for one type of bits and another level for the opposite type of bits, in which the improvement comprises

(a) means for converting said binary bits into respective substantially full-cycle signals whose periods are substantially equal to the binary bit period and of opposite phase for opposite types of bits,

(b) whereby substantially half-cycle signals of bit period length are produced at transitions from one bit type to the other which are of opposite polarity for opposite transition directions,

(c) means for transmitting said full-cycle and half-cycle signals to said receiving means,

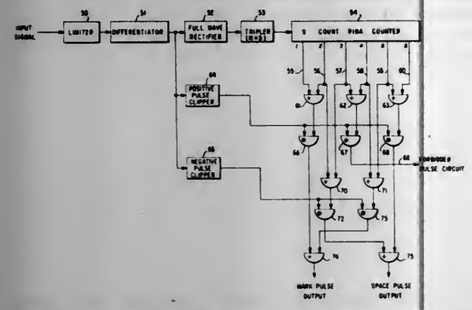
(d) and means at said receiving means for producing a two-level binary signal including means responsive to said half-cycle signals for producing different signal levels for opposite polarities of the half-cycle signals.

3,349,329

MEANS AND METHOD OF REDUCING JITTER DISTORTION OF BINARY DATA RECOVERED FROM A COMMUNICATION WAVE

Cecil A. Crafts, Santa Ana, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed July 30, 1963, Ser. No. 298,646
15 Claims. (Cl. 325—320)



15. A receiver for an angle modulated steady communication wave comprising

means developing timing pulses coincident with axis crossing times of said wave,

means developing a set of pulses of fixed time separation at a frequency 2N times the frequency of said wave where N represents a repeatable degree of angle modulation characteristic of said wave, said pulses being derived from successive positive and negative axis crossings of the wave,

means combining pairs of pulses derived from adjacent positive and negative axis crossings into a first set of pulses of repetition rate not exceeding N times the frequency of said wave, each corresponding to a degree of modulation of the instantly received wave,

means combining pairs of pulses derived from adjacent positive and negative axis crossings into a second set overlapping said first set,

means selecting pulses of said sets according to said degree of modulation to provide separate pulses at a rate N times the frequency of said wave for each set, thereby to separately indicate, in overlapping sequences, the degree of modulation indicated,

means for combining pulses from said sets into a composite set having not more than N variations representative of modulation.

3,349,330

DIPHASE TRANSCEIVER WITH MODULATOR-DEMODULATOR ISOLATION

William R. Wedmore, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Mar. 18, 1964, Ser. No. 352,912
13 Claims. (Cl. 325—320)

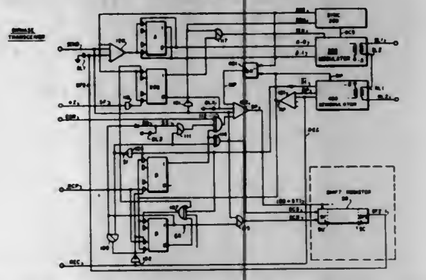
1. A system in which two transceivers are connected by a two-wire line, having a shift register associated with each transceiver;

each transceiver comprising a modulator, a demodulator, a carrier signal source, and synchronizing means coupled to the source to produce a repetitive train of timing pulses synchronized with the carrier, the modulator having an output transformer and the demodulator having an input transformer, with a secondary winding of the modulator transformer and a primary winding of the demodulator transformer connected in series between the two wires of said line;

the modulator comprising transmit switching means and modulating means;

the demodulator comprising receive switching means across a winding of said input transformer, and means to derive from received signals data signals and a repetitive train of timing pulses synchronized therewith;

means to supply a send signal and inhibit a receive signal at one transceiver to place it in a send mode, means responsive to the send signal to enable the transmit switching means to its on condition and to couple said train of timing pulses from said synchronizing means to the shift register to cause data signals to be supplied serially from the output from the shift register to the modulating means to modulate the carrier signal, the modulated signals being transmitted via said output transformer to the line, and means responsive to the receive signal being inhibited to actuate the receive switching means to a condition in which it places a low impedance across said input transformer so that there is low attenuation to the transmitted signal current;



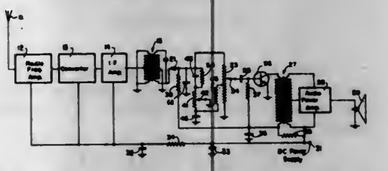
and means simultaneously effective at the other transceiver to inhibit a send signal and enable a receive signal, means responsive to the inhibit of the send signal thereat to block the train of synchronizing pulses from said synchronizing means and to disable the transmit switching means of the modulator, and means responsive to the enabled receive signal thereat to operate its receive switch to a high impedance state across the input transformer, and means also responsive to the enabled receive signal to couple timing pulses derived from the receive signals to the shift register and to apply received data signals to the input of the shift register to thereby shift the received data signals into the shift register.

3,349,331

DISTORTIONLESS VOLUME-TONE CONTROL CIRCUIT

Bjarne Anthun, Bensenville, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 13, 1964, Ser. No. 366,979
4 Claims. (Cl. 325—424)



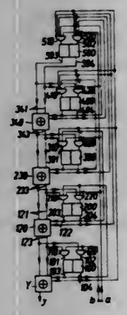
1. A radio receiver having a diode detector, including in combination, a direct current voltage divider having first and second legs and an intermediate point connected to the detector for biasing the same, said first leg of said divider being connected across the output of the detector and including a parallel combination of a resistor and a capacitor in series with a variable resistor, said capacitor and said variable resistor forming a tone control circuit for the radio receiver, and said resistor and said variable resistor changing the detector bias for variation in detector load according to the operation of the tone control circuit.

3,349,332

ELECTRONIC COUNTER FOR COUNTING IN THE GRAY CODE BINARY PULSES

Werner Bleickardt, Bern, Switzerland, assignor to Hasler, A.G., Bern, Switzerland, a Swiss company

Filed Oct. 4, 1965, Ser. No. 492,560
Claims priority, application Switzerland, Oct. 7, 1964, 12,916/64
5 Claims. (Cl. 328—42)



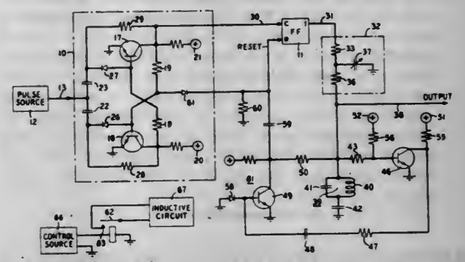
1. An electronic counter for counting in the Gray code binary pulses modulo 2^n, comprising two input poles for receiving alternately said binary pulses, and n stages, each stage including one flip-flop, having a set input and a reset input and a set output and a reset output and a first and a second and-gate, each and-gate having a plurality of inputs and one output, the output of the first and-gate is connected to the set input of the flip-flop and the output of the second and-gate is connected to the reset input of the flip-flop, one of said input poles is connected with one input of all and-gates but those of the first stage, the other of said input poles is connected with one input of both and-gates of the first stage, the set output of the flip-flop of each but the last two stages is connected with another input of both and-gates of the next stage, the reset output of the flip-flop of each but the last two stages is connected with a further input of both and-gates of all following stages but the next highest stage, said counter including means for connecting the last two stages as a ring counter consisting in connections between the set and reset output of the flip-flop of one of these stages with an input of the first and second and-gate of the other stage respectively and between the set output and the reset ouput of said other stage with an input of the second and the first and-gate of said one stage respectively, each but the last two stages include an exclusive-or-gate having a first and a second input and one output, the first input of the exclusive-or-gate of the third from last stage is connected to the output of the exclusive-or-gate of the following stage, the first input of the exclusive-or-gate of the second from last stage is connected to the set output of the flip-flop of the last stage, the second inputs of all exclusive-or-gates are connected to the set output of the flip-flop of the following stage, each stage but the last two include a connection between the output of the exclusive-or-gate and a further input of the second and-gate and means for keeping the first gate in a condition opposite to that of the second gate.

3,349,333

PHASE-STABLE FREQUENCY DIVIDER

Floyd K. Becker, Colts Neck, and Cecil W. Farrow, Monmouth Hills, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 28, 1965, Ser. No. 459,810
6 Claims. (Cl. 328—48)



4. In combination:

a counting circuit responsive to a train of pulses recurring at a fixed repetition frequency for providing an output signal having a frequency repetition rate related to said fixed repetition frequency, said counting circuit being responsive to a reset signal for bringing said counting circuit to a predetermined state, and

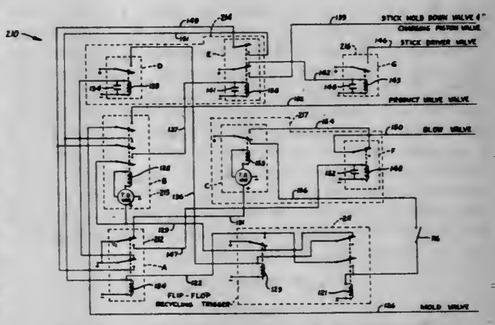
an inertial circuit responsive to said output signal for providing said reset signal.

3,349,334

TIMING CIRCUITRY

Frederick H. Blake, Los Altos, Calif., assignor to Michael J. Sobyro and Anna M. Sobyro, both of Chicago, Ill.

Filed Oct. 22, 1965, Ser. No. 501,801
9 Claims. (Cl. 328—71)



1. A timing circuit for providing a plurality of different duration control signals in a timed sequence, said timing circuit comprising

a flip-flop having first and second stable states of operation,

a first signal control means coupled to said flip-flop and adapted to provide first and second control signals upon activation of said flip-flop to said first stable state and to terminate said first control signal upon activation of said flip-flop to said second stable state,

a second signal control means operable to terminate said second control signal after a predetermined time delay,

a third signal control means providing a third control signal after a predetermined time delay in response to said first control signal,

a fourth signal control means providing a fourth control signal after a predetermined time delay in response to said third control signal, said flip-flop being responsive to one of the aforesaid signal control means to activate said flip-flop to said second stable state, whereby said first, third and fourth control signals are terminated,

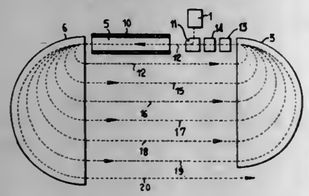
and a fifth signal control means providing a fifth control signal after a first predetermined time delay in response to activation of said second stable state of said flip-flop and terminating said fifth control signal after a second predetermined time delay in response to said activation, said fifth signal control means providing a recycle signal to said flip-flop after said second predetermined time delay, whereby said flip-flop is activated by said recycle signal to said first stable state and the cycle of operations is begun again.

3,349,335

ELECTRON ACCELERATOR MEANS WITH MEANS FOR REPEATEDLY PASSING THE INITIAL ELECTRONS THROUGH THE ACCELERATOR

Michael Crowley Crowley-Milling, Higher Disley, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Aug. 31, 1964, Ser. No. 393,066
Claims priority, application Great Britain, Sept. 3, 1963, 34,829/63
5 Claims. (Cl. 328—233)



1. An electron accelerator comprising a linear accelerator section, deflecting magnets adapted to deflect electrons leaving the outlet end of the linear accelerator section back to the inlet in re-entrant paths, means for introducting fresh electrons from an electron source laterally into the main electron stream approaching the inlet end of the linear accelerator, deflecting means for imparting a forward velocity component to said fresh electrons, compensating magnet means adapted to impart a compensating deflection to a main stream of electrons prior to said electrons entering the field of said deflecting magnets to cause all the electrons to pass from said deflecting magnets in substantially the same direction.

3,349,336

HIGH SPEED ADDER AMPLIFIER OF THE SOLID STATE TYPE

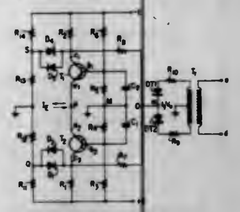
Agostino Luna, Milan, Italy, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Nov. 2, 1964, Ser. No. 408,152
Claims priority, application Italy, Dec. 30, 1963, 26,636/63
2 Claims. (Cl. 330—24)

1. An adder amplifier comprising:

a balanced input circuit including two complementary transistors, each transistor having an emitter, collector, and base element, said transistors arranged in a complementary-symmetry, common-base configuration, with said emitter elements connected together, a source of operating voltage for said transistors, a voltage divider circuit connected across said source, said divider having a tap connected to each of said collectors and an intermediate center-tap, said taps connected to said collectors being balanced with respect to said center tap and said source,

a bistable bridge circuit of the type having a tunnel diode in two legs on opposite sides of its diagonal to which control voltage is applied for changing its state of operation, and



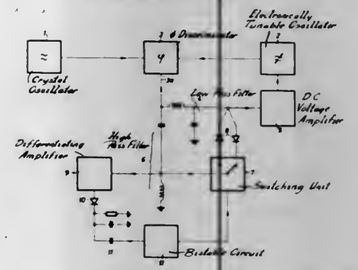
said center tap of said voltage divider being connected to said diagonal such that a change of direction of current flow to said emitters changes said control voltage to cause said bridge to change state.

3,349,337

FREQUENCY SYNCHRONIZING CIRCUIT

Martin Müller and Gerhard Walter, Pforzheim, Germany, assignors to International Standard Electric Corporation

Filed May 16, 1966, Ser. No. 550,552
Claims priority, application Germany, May 21, 1965, St 23,862
4 Claims. (Cl. 331—17)



1. A circuit arrangement for locking the frequency of a controlled oscillator to the frequency of a control oscillator by using a phase discriminator to compare the controlled frequency to the control frequency and to provide an AC signal when said control frequency and said controlled frequency are not matched, said arrangement comprising filter means for providing oscillator tuning control signals responsive to an output from said discriminator, said filter means comprising a low pass filter to provide a signal for keeping said controlled oscillator locked in with said control frequency and a high pass filter to provide a signal for locking said controlled frequency to said control frequency, and switch means for coupling the output of said high pass filter to control said controlled oscillator.

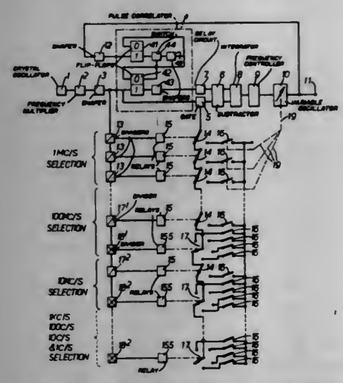
3,349,338

FREQUENCY SYNTHESIZERS INCLUDING PROVISIONS FOR THE PRECISE ELECTRICAL CONTROL OF A VARIABLE OSCILLATOR

Boleslaw Marian Sosin, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Jan. 17, 1966, Ser. No. 520,933
Claims priority, application Great Britain, Feb. 3, 1965, 4,768/65
5 Claims. (Cl. 331—18)

1. A frequency synthesizer comprising a variable frequency oscillator; means for producing a train of clock frequency signals; a selector for selecting different desired numbers of signals from the train of signals occurring in a predetermined unit of time, the selector comprising a gate in a channel to which said train is fed, a cascade series of dividers of predetermined division factors fed with said train and a plurality of changeover switches each actuated by the output from a different divider, each switch having a contact fed with the output from the switch controlled by the next divider in the series, and one or more other contacts to each of which a predetermined voltage can be selectively fed, the output from the switch actuated by the first divider in the series being applied to control the opening and



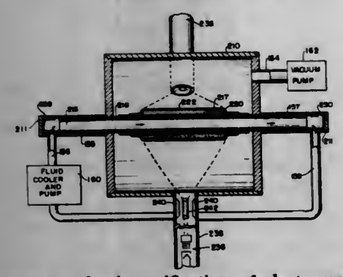
closing of the gate and the total number of contacts of each switch being equal to the division factor of the divider actuating the same, whereby differently selecting the said other contacts to which the predetermined voltage is fed determines the moments at which the gate is opened or closed; means for comparing the selected number of said clock signals from the selector with the number of oscillations from said variable frequency oscillator occurring in the same unit of time; and means for utilizing the difference between the number of signals in the selected number with the number of oscillations to adjust said oscillator to a frequency at which said difference is substantially zero.

3,349,339

OPTICALLY PUMPED LASER WITH CATHODOLUMINESCENT PUMPING LIGHT SOURCE

Luke Thorington, Berkeley Heights, N.J., assignor to Duro-Test Corporation, North Bergen, N.J., a corporation of New York

Filed May 23, 1966, Ser. No. 562,025
12 Claims. (Cl. 331—94.5)



1. Apparatus for intensification of electromagnetic radiation in a first predetermined wavelength range by stimulated emission of radiation comprising a volume of negative temperature material optically pumpable by light in a second predetermined wavelength range, evacuated containing means for said material, a portion of said containing means being at least partially transparent to radiation in said first predetermined wavelength range, a unitary reflecting layer comprising a cathodo-luminescent material for emitting light in said second predetermined wavelength range adjacent a portion of said volume of negative temperature material with said cathodo-luminescent material being positioned to emit light in said second predetermined wavelength range into said volume portion of negative temperature material, said layer further forming a surface partially surrounding said volume of negative temperature material, whereby light in said second predetermined wavelength range which is not absorbed by said negative temperature medium is reflected back through said medium, there being a path between said cathodo-luminescent material and said volume portion substantially transparent to light of said second predetermined wavelength range, and means for generating a stream of high velocity electrons to impinge on said layer to cause luminescence thereof in said second wavelength range.

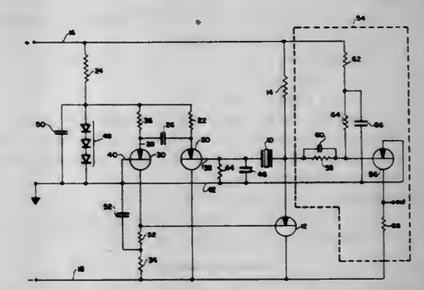
9. Apparatus for intensification of light in a first predetermined wavelength range by stimulated emission of radiation comprising a volume of negative temperature fluid optically pumpable by light in a second predetermined wavelength range, means enclosing said fluid means for circulating said fluid through said enclosing means, means for cooling said circulating fluid, said enclosing means having a window at least partially transparent to light in said first predetermined wavelength range, a layer of luminescent material emitting light in said second predetermined wavelength range substantially surrounding a portion of said enclosing means, said portion of said enclosing means being substantially transparent to light of said second predetermined wavelength range, an evacuated chamber surrounding said layer of luminescent material and means for generating a stream of high velocity electrons to impinge on said layer to cause luminescence thereof.

3,349,340

CRYSTAL CONTROLLED OSCILLATOR WITH REDUCED POWER SUPPLY NOISE SENSITIVITY

Leland Bryan Smith, Whittier, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Mar. 31, 1965, Ser. No. 444,305
4 Claims. (Cl. 331—116)



1. A crystal controlled oscillator capable of operating from a power supply containing sharp spike and square-wave noise in the frequency range of the oscillator, comprising;

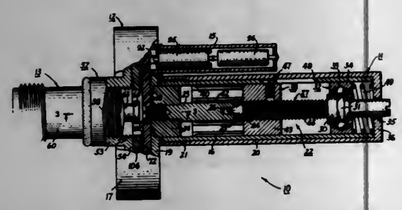
a crystal, a first emitter follower, a second emitter follower, and a common base amplification stage;

means connecting the output of said first emitter follower to said crystal to drive said crystal;

means connecting the output of said crystal through said second emitter follower to the input of said amplification stage to drive said amplification stage

and provide matching means for a variety of crystal impedances;
means connecting the output of said amplification stage to the input of said first emitter follower;
a pair of power supply lines of different potential and a common line of intermediate potential;
means for biasing said first and second emitter followers and said common base stage from said pair of lines and decoupling said second emitter follower stage and said amplification stage from variations in the potential of said pair of lines, including means coupling the bases of said second emitter follower and amplification stage to said common line, means including a series resistance and constant potential rectifier coupling one of said pair of lines to said common line, means for biasing the base emitter circuits of said second emitter follower stage and amplification stage from across said constant potential rectifier, and means coupling the collectors of said second emitter follower stage and said amplification stage to the other of said pair of lines; and,
means for taking an output from said first emitter follower.

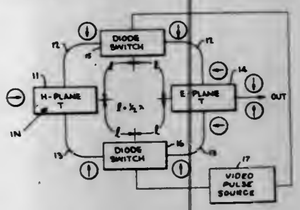
3,349,341
BROAD BAND SOLID STATE OSCILLATOR
Kenneth R. Schoniger, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.
Filed Sept. 16, 1966, Ser. No. 580,024
10 Claims. (Cl. 331—117)



1. A solid state microwave oscillator comprising, in combination:
A. a conductive housing;
B. a center conductor coaxially disposed within said housing;
C. a transistor mounted within said housing and having
(1) a collector terminal electrically connected to said center conductor,
(2) a base terminal electrically coupled to said housing, and
(3) an emitter terminal;
D. a conductive tuning coke mounted for axial movement within said housing to frequency-tune a collector tank circuit formed by said housing and said center conductor; and
E. an emitter tank circuit,
(1) said emitter terminal being electrically connected to said emitter tank circuit.

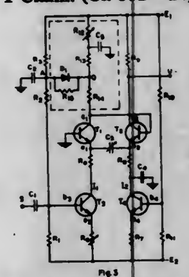
3,349,342
BINARY 180° DIODE PHASE MODULATOR
Robert V. Garver, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 7, 1964, Ser. No. 416,659
4 Claims. (Cl. 332—9)

1. A reciprocal microwave binary phase modulator comprising:
(a) a first transmission path equal in length to an integral number of wavelengths of the signal to be modulated;
(b) a second transmission path equal in length to an integral number of wavelengths of the signal to be modulated;
(c) an H-plane T network means connected to one end of said first and second transmission paths for coupling input signal energy into said first and second transmission paths;
(d) an E-plane T network means connected to the ends of said first and second transmission paths remote from said H-plane T network means for coupling energy out of either said first or said second transmission paths; and



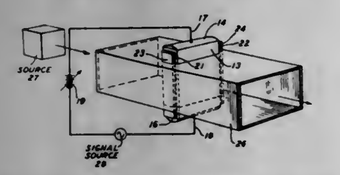
(e) means connected to said first and second transmission paths for preventing transmission of signal energy in one or the other of said first and second transmission paths, whereby pulse modulation of the signal energy is obtained by alternately preventing transmission of the signal energy in one or the other of said first and second transmission paths thereby causing the E-field of the output signal energy to be alternately shifted in phase by 180°.

3,349,343
WIDE BAND FREQUENCY MODULATOR, OF THE SOLID STATE TYPE, WITH LINEAR CHARACTERISTICS
Agostino Luna and Roberto Cafiati, Milan, Italy, assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 407,964
Claims priority, application Italy, Dec. 17, 1963, 42,061/63
1 Claim. (Cl. 332—14)



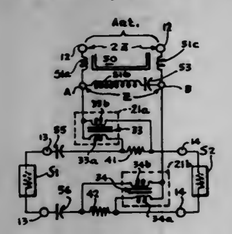
A frequency modulator comprising: an astable multivibrator including first and second alternately conducting transistors, each said transistor having a base, an emitter and a collector, and a capacitor connected between said emitters, the frequency of oscillation being dependent on the valves of said capacitance, the emitter current of said first transistor, and the voltage change at the collector of said first transistor when it passes from a nonconducting to a conducting condition, first and second current generators respectively connected to said two emitters to provide linear charging and discharging of said capacitance, said first current generator including an input terminal for receiving a modulating signal, the output current of said first current generator being dependent on the amplitude of said modulating signal, an output terminal connected to the collector of said second transistor, a source of direct current potentials coupled to said first and second current generators and to said two collectors, and a voltage divider linearizing network connected between said source of direct current potentials and the collector of said first transistor, said linearizing network including a diode connected in a shunt between said source and said first transistor, a resistor connected directly across said diode, a variable resistor in series between said source and said first transistor and a second capacitor shunted to ground between said variable resistor and said diode, said diode being poled to be non-conductive when said first transistor is non-conductive and conductive when said first transistor is conductive to maintain said voltage change constant.

3,349,344
SINGLE VALLEY BULK EFFECT TRAVELING WAVE HIGH FREQUENCY OSCILLATOR, AMPLIFIER AND MODULATOR
Alan G. Chynoweth and Dean E. McCumber, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 628,181
7 Claims. (Cl. 332—31)



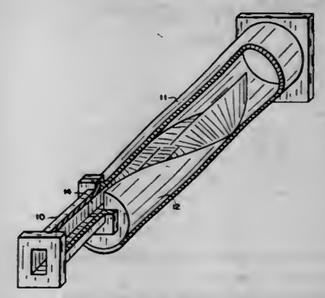
1. A high frequency device comprising a single crystal member having free carriers of a single kind and ionized impurities therein and having a one-valley characteristic, said member exhibiting a drifting single component plasma under the influence of an electric field, said plasma being characterized by a plasma oscillation frequency and a critical drift velocity at which a carrier excites one plasmon, and means for producing an amplifying plasma oscillations comprising means for producing carrier impurity scattering at a plasma drift velocity in excess of the critical drift velocity.

3,349,345
COUPLER FOR CONNECTING A PLURALITY OF LOAD PAIRS TO A SIGNAL SOURCE
John R. Winegard, 3000 Kirkwood St., Burlington, Iowa 52601
Filed Apr. 26, 1965, Ser. No. 450,856
4 Claims. (Cl. 333—8)



1. A low-loss coupler for connecting a pair of loads each having first and second terminals in substantially isolated relationship to each other while feeding the same from a signal source, comprising in combination:
impedance transformation means having a pair of input terminals and first and second output reference terminals;
means connecting said input terminals of said impedance transformation means to said source;
a first transformer means having first and second windings on a common magnetic core;
a second transformer means having first and second windings on a common magnetic core;
means defining a first series circuit from the first reference terminal through the first winding of the first transformer means, to the first input terminal of one load and from the second input terminal of said one load through the first winding of the second transformer to the second reference terminal;
means defining a second series circuit from the first reference terminal through the second winding of the first transformer means, to the first input terminal of the other load and from the second input terminal of the said other load through the second winding of the second transformer means to the second reference terminal, the respective windings of said first and second transformer means being so poled that current flow through said first series circuit produces a magnetomotive force in each of said associated cores substantially equal and opposite to the magnetomotive force produced in each of said associated cores due to the current flow through said second series circuit;
impedance means connecting the first input terminals of the respective loads;
impedance means connecting the second input terminals of the respective loads;
the respective windings of said first and second transformer means being further poled to produce voltage drops of like sense across each of said impedance means as the circuit is traced from one load through the other load, said impedance transformation means producing substantially an exact impedance match between the impedance of the loads as measured at the reference terminals and the impedance of the source.

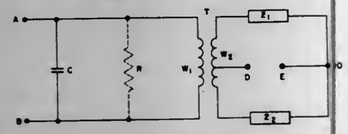
3,349,346
RECTANGULAR TO CIRCULAR WAVEGUIDE TRANSITION
Charles E. Enderby, Palo Alto, Calif., assignor to General Electric Company, a corporation of New York
Filed Mar. 8, 1965, Ser. No. 437,672
3 Claims. (Cl. 333—21)



1. A transition device between a rectangular waveguide having broad and narrow walls of predetermined transverse length and a circular waveguide having a predetermined radius, comprising: a first rectangular portion wherein one narrow wall is changed to an arcuate narrow wall over a predetermined longitudinal length, said arcuate narrow wall having a radius equal to the radius of said circular waveguide; a second portion of predetermined longitudinal length over which the internal cross-section area is increased by gradually increasing the circumferential length of said arcuate wall by pivoting said broad walls

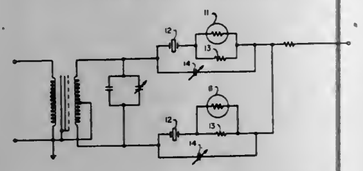
at their junctions with the other narrow wall to thereby form a semicircular cross-section at the end of said second portion; and a third portion of predetermined longitudinal length over which the internal cross-section area is gradually further increased by gradually folding at the center thereof the two halves of the straight wall of said semicircular cross-section until said two halves coincide in a radially extending knife edge at the end of said third portion, and a radially extending conductive ridge positioned to substantially bifurcate the length of the third portion of said transition device, whereby an undesirable TE_{11} mode is suppressed.

3,349,347
ELECTRIC WAVE FILTER
Franz L. Sauerland, Cleveland, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed Oct. 8, 1962, Ser. No. 229,118
1 Claim. (Cl. 333—72)



Electric bandpass filter of the hybrid lattice type comprising: a pair of input and a pair of output terminals; only one inductive transformer connected to one of said terminal pairs, a capacitance to tune said transformer to a passband frequency, a tap on said transformer connected to one of the remaining terminals, a pair of reactive lattice branch impedances containing respective electromechanical resonators of substantially different characteristic frequencies, selected to produce spaced poles of attenuation defining a passband therebetween, each connected between opposing sides of the transformer and between the remaining terminal, the value for the loaded Q of the transformer being approximately equal to 1.5 divided by the relative filter bandwidth.

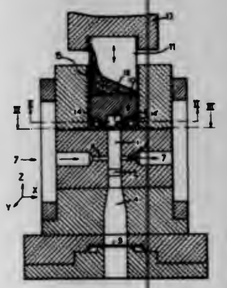
3,349,348
TEMPERATURE-COMPENSATED CIRCUIT ARRANGEMENT
George Emery Ice, Redwood City, Calif., assignor, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Jan. 10, 1963, Ser. No. 250,539
5 Claims. (Cl. 333—72)



1. An arrangement for temperature stabilizing over a predetermined temperature range the insertion loss of a quartz crystal filter which is connected in an alternating current circuit extending from an alternating current source to a load, and has a predetermined frequency pass band and the resistance of which varies substantially with temperature over said range, said arrangement comprising:

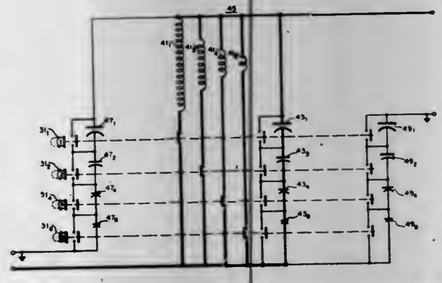
circuit means including a thermistor physically interposed in series with said crystal in said alternating current circuit, said circuit means having a resistance-temperature characteristic substantially complementary to that of said crystal such that upon a change in temperature the resistance of said circuit means changes inversely by an amount substantially equal to the amount of change in resistance of said crystal, thereby keeping the effective resistance of the series combination of said circuit means and said crystal, and hence the insertion loss thereof, substantially constant over said temperature range within said frequency pass band.

3,349,349
DEVICE FOR TUNING RECTANGULAR RESONATOR CAVITIES
Bernardus Bastiaan van Iperen and Wilhelmus Kuypers, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,873
Claims priority, application Netherlands, Sept. 18, 1964, 64—10,881
2 Claims. (Cl. 333—83)



1. A device for tuning a rectangular cavity resonator, which is excited in the TE 0 *m. n* mode and which is coupled at one end through an opening with an output waveguide and is closed at the other end, while it is traversed by a velocity-modulated electron beam in the direction of height (X-direction), characterized in that the cavity resonator is provided partially by a recess in a stationary, conducting body and partially by a recess in a movable, conducting body, which bodies are separated from each other by a gap of variable width located in a plane at right angles to the Z-direction of the cavity resonator at a distance equal to $(n+\frac{1}{2})$ half waves from the closed end of the cavity resonator.

3,349,350
FREQUENCY STEP FILTER
Otto E. Rittenbach, 17 Jumping Brook Drive, Neptune, N.J. 07753
Filed Dec. 4, 1964, Ser. No. 416,174
3 Claims. (Cl. 334—47)



2. A tuned circuit system comprising a like plurality of capacitive and inductive reactance components of mathematically progressively stepped values,

arranged in pairs of corresponding reactance and susceptance at similarly progressively stepped values of resonant frequency,

said inductive components being connected in parallel for use as an inductive reactance of a tuned circuit, but with switches in series with each,

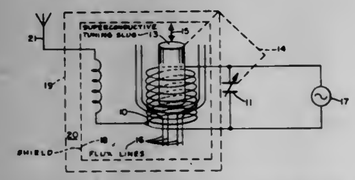
and said capacitive components being connected in series for use as a capacitive reactance of said tuned circuit, but with switches in shunt with each,

means to control said switches to connect said pairs individually for resonant operation at one of said stepped frequency values,

or in combination for resonant operation at a frequency value corresponding to the sum of the individual frequency values of the pairs so connected,

whereby a small number of capacitances and inductances can be used to provide a circuit tunable to a large number of frequency values variable in substantially equal steps.

3,349,351
CRYOGENIC RADIO FREQUENCY RESONANT CIRCUITS COMPRISING SUPERCONDUCTIVE INDUCTANCE AND CAPACITANCE
Jacob L. Zar, Ridgefield, Conn., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,251
5 Claims. (Cl. 334—70)



1. In a superconductor device the combination comprising:

(a) an elongated core of superconductive material;

(b) an inductance comprising a plurality of turns of a superconductive conductor wound around said core whereby the number of magnetic lines of flux linkage in said inductance is substantially reduced by the presence of said core;

(c) a variable capacitor of superconductive material coupled to said inductance to form a superconductive resonant circuit, said core, inductance and capacitor being maintained at a superconductive temperature;

(d) means coupling said core and said capacitor for simultaneously varying the capacitance of said capacitor and the position of said core in said inductance; and

(e) means for supplying to said resonant circuit an alternating current having a magnitude insufficient to transfer said core to the normal state.

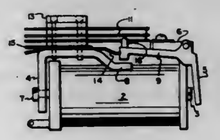
3,349,352
SEALED MAGNETIC SNAP SWITCH
Harold J. Zandt, 810 Whitewater Ave., Fort Atkinson, Wis. 53538
Substituted for abandoned application Ser. No. 374,610, June 12, 1964. This application May 6, 1966, Ser. No. 548,321
8 Claims. (Cl. 335—154)

1. A snap-acting magnetic switch comprising a hollow elongated support, terminal members secured in each end of the support, a first contact element secured to one of the terminal members inside said support, a flexible conductive non-magnetic reed member secured to the other said first contact element, said reed member being provided at its free end with a second contact element engageable with said first contact element, a first magnetic armature element fixedly-mounted in said support subjacent said reed member, a second magnetic armature element pivotally-mounted in said support above said reed



member, said armature elements having overlapping spaced inner end portions, and a bowed resilient longitudinal tongue element on the reed member pivotally-engaged with the inner end portion of said second magnetic armature element and cooperating therewith to exert biasing force on the free end of the reed member.

3,349,353
SNAP ACTION TYPE RELAY
Ralph D. Keenan, Park Ridge, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,830
2 Claims. (Cl. 335—188)

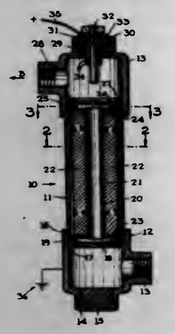


1. A relay including an electromagnet, a heelpiece, a plurality of contact springs, an armature having an arm for operating said contact springs, said contact springs and said heelpiece extending in a direction generally parallel to said operating arm, said armature being operable by said electromagnet against the action of said springs, and toggle means including a spring of the cantilever type having a bowed portion on one end thereof with the other end being secured to said heelpiece, said spring extending in a direction generally parallel to said operating arm, said operating arm including at one end thereof, a knife-edged slot, said bowed end portion of said spring being fitted into said slot so that upon the energization of said electromagnet and subsequent to the passing of said toggle means beyond its toggle point, said toggle means coacts with said armature to cause said contact springs to be operated with a snap action, and that upon the deenergization of said electromagnet and subsequent to the passing of said toggle means beyond said toggle point in the opposite direction under the action of said contact springs, pressure is exerted on said arm by said spring to hold said armature in its normal, unoperated position.

3,349,354
MEANS FOR IMPOSING ELECTRIC AND MAGNETIC FIELDS ON FLOWING FLUIDS
Saburo Miyata, Yokohama, Japan
(58 Shimo Takanawa, Minato-ku, Tokyo, Japan)
Filed June 2, 1965, Ser. No. 460,672
5 Claims. (Cl. 335—209)

1. A device for treating hydrocarbon fuel comprising a hollow casing of non-magnetic material having greater length than cross section, said casing having an inlet and an outlet for the fuel, an axial passage formed in

said casing, magnet means arranged circumferentially of fluid passage, said magnet means creating a high magnetic flux along the axis of the casing, said magnet means com-



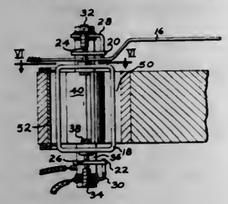
prising a plurality of axially extending discrete magnets arranged about said axial passage and having their like poles oriented toward said axis.

3,349,355

D'ARSONVAL TYPE ELECTRICAL INSTRUMENT HAVING MEANS FOR ADJUSTING THE DEFLECTIONAL CHARACTERISTICS IN SELECTED REGIONS ALONG THE SCALE OF THE INSTRUMENT

Ray L. Triplett, Largo, Fla., assignor to The Triplett Electrical Instrument Co., Bluffton, Ohio

Filed June 17, 1965, Ser. No. 464,672
5 Claims. (Cl. 335—222)



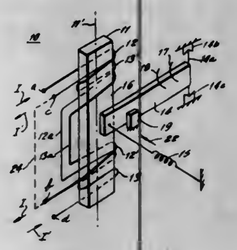
1. In combination; an electrical instrument of the D'Arsonval type having a permanent magnet frame with at least one arcuate pole face and a cylindrical core, said core and pole face being concentric, said core and pole face forming an arcuate air gap therebetween having a substantially radial field therein, a wound bobbin pivotally mounted in said instrument having at least one leg in said air gap and rotatable on its pivotal support as said leg moves in said air gap in the circumferential direction thereof, an indicator fixed to the bobbin so as to move therewith, a preprinted scale having graduations thereon over which the indicator of the instrument sweeps, the improvement comprising at least one magnetically permeable element adjustably disposed in said air gap adjacent said pole face which is relatively short in the circumferential direction of the air gap and operable to increase the flux density in the air gap in the circumferential range thereof in which said element is disposed, and means for clamping said element in adjusted circumferential position in said air gap, said magnetic frame having opposed sides and a pair of arcuately shaped pole faces joining said opposed sides and perpendicular thereto, said air gap being generally annular in shape and being substantially defined at its outer perimeter by said pole faces and at its inner periphery by the outer surface of said core and said permeable means comprising thin iron vane means extending at least partially along the axial length of one of said pole faces between the pertaining opposed sides thereof, at least one end of said vane means being bent over one of said sides, and clamp means adjustably securing said one end of said vane means to the said one of said opposed side.

3,349,356

ELECTROMAGNETIC LATCHING DEVICE

Takeo Shinohara, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan

Filed Nov. 17, 1965, Ser. No. 508,237
Claims priority, application Japan, Nov. 20, 1964, 39/65,488
7 Claims. (Cl. 335—254)



1. An electromagnet control assembly comprised of a ferromagnetic core;

first and second coils inductively associated with said core;

said first coil being comprised of a first plurality of windings surrounding a first region of said core and a second plurality of windings surrounding a second region of said core;

said first and second windings being spaced a predetermined distance from one another;

said second coil having a third plurality of windings wound about said first region and a fourth plurality of windings wound about said second core region, said plurality of first and second windings being connected in series;

said plurality of third and fourth windings being connected in series;

an armature member being pivotally mounted at one end thereof and having the opposite end thereof positioned adjacent the region of said core intermediate said first and second regions;

biasing means coupled to the free end of said armature for urging said armature generally away from said core;

said first and second coils being adapted to receive current signals for generating a magnetic flux pattern normal to the longitudinal axis of said core for attracting said armature member;

said core member being of a ferromagnetic material having a retentivity characteristic to maintain the attractive force upon said armature even after the current signals have been removed.

3,349,357

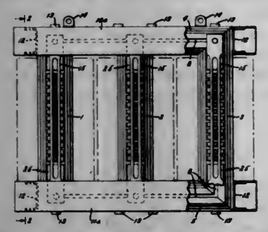
TRANSFORMER CORE REINFORCING PLATE

William J. McNutt and Wallace M. Johnson, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

Filed Aug. 31, 1965, Ser. No. 483,912
4 Claims. (Cl. 336—210)

1. A transformer core comprising a plurality of leg sections formed of stacked laminations of magnetic material, a pair of yoke sections formed of stacked laminations of magnetic material and disposed in substantially parallel

spaced relation across juxtaposed ends of said leg sections, a pair of elongate yoke clamps extending along opposite sides of each said yoke section in clamping relation with the laminations thereof, a pair of elongate reinforcing plates extending in clamping relation along opposite sides of at least two said leg sections and connected at opposite



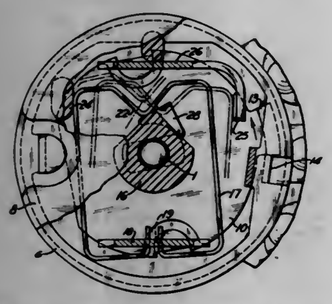
ends to said yoke clamps, each said reinforcing plate comprising a flat bar slotted longitudinally for substantially the full length of the adjacent leg section and a plurality of transverse cross arms fixed to said bar, and clamping bolts extending between aligned cross arms on opposite sides of the same leg section.

3,349,358

SNAP SWITCH

William F. Cassedy, Jr., Short Hills, N.J., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

Filed Sept. 9, 1966, Ser. No. 578,190
7 Claims. (Cl. 338—172)



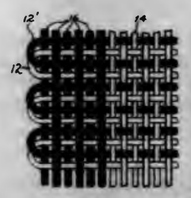
1. An electric snap switch comprising an insulating base, a central boss on said base provided with a pair of side surfaces converging to a point, a movable contact in the form of a metal spring strip bent into a loop surrounding said boss and disposed on edge close to the base, said loop having a flexible section extending across said point of the boss and provided centrally with an inwardly bent tapered portion forming a cam follower normally pressing against one of said boss side surfaces, the rest of the loop being spaced from the boss, a terminal mounted on said base at the side of the boss opposite its point, a portion of the loop opposite said cam follower being anchored to the terminal, a fixed contact mounted on the base in a position to be pressed against by the loop at one end of said flexible section while said cam follower presses against the side surface of the boss nearest the fixed contact, a stop on said base in a position to be pressed against by the loop at the opposite end of said flexible portion while said cam follower presses against the other side surface of the boss, a rotatable shaft having its axis located between said boss point and terminal, and a laterally tapered cam inside the loop rigidly connected with the shaft for rotation thereby into engagement with the side of said cam follower that is engaging a side surface of the boss and then across the point of the cam follower, the point of said cam projecting beyond the point of the boss so that said cam follower will be sprung outwardly by the cam far enough to snap over to the other side surface of the boss.

3,349,359

ELECTRICAL HEATING ELEMENT

Glen H. Morey, Terre Haute, Ind., assignor to Templeton Coal Company, Terre Haute, Ind., a corporation of Indiana

Filed Dec. 18, 1964, Ser. No. 419,443
14 Claims. (Cl. 338—208)



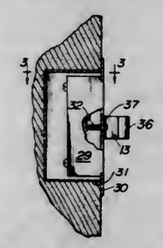
1. As a new article of manufacture; a length of fabric, and fabric consisting of interwoven warp and fill fibers, said fill fibers comprising electrically non-conductive fibers and electrically conductive fibers in a predetermined distributed relation, and said warp fibers consisting principally of electrically non-conductive fibers and including a concentration of electrically conductive fibers in predetermined regions spaced laterally of the fabric.

3,349,360

ELECTRICAL PLUG AND RECEPTACLE

Elek Grantz, 107 Crystal Ave., Lombard, Ill. 60148

Filed Mar. 24, 1966, Ser. No. 537,233
5 Claims. (Cl. 339—14)



1. A device of the class described comprising an electrical plug recessed inwardly from one end and having a bore extending therethrough for the insertion of a three-wire electric cord, a pair of parallel terminal contacts fixed in the recessed end of the plug and extending axially outwardly therefrom in spaced, parallel, axial relationship, a first element fixed on the plug with a portion thereof extending radially outward therefrom, a second element apertured for attachment to the face plate of a wall-mounted receptacle and positioned for automatic embracing contact with the first element when the prongs on the plug are inserted into the receptacle.

3,349,361

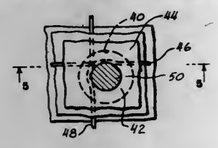
MATRIX SWITCH

Joseph M. Cartelli, 103 Ascan Ave., Forest Hills, N.Y. 11375

Filed Oct. 2, 1964, Ser. No. 400,980
18 Claims. (Cl. 339—18)

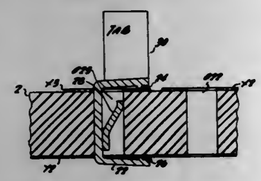
1. A matrix switch comprising a plurality of superposed decks, each deck comprising an insulation board having an array of holes passing therethrough, and having thin slots intersecting said holes, said slots having a depth less than the thickness of the board, a thin resilient metal

strip received edgewise in each slot, said strips having a height no greater than the depth of the slots, whereby the strips bridge the holes and may be deflected sideward in a hole by means of a pin inserted through the hole for contact with a side wall of a strip, the arrangement being



such that a strip of one deck may be electrically connected to a strip of another deck by insertion of a pin the holes in the decks being substantially larger than the diameter of the pin and so dimensioned that a strip is resiliently deflected by the pin.

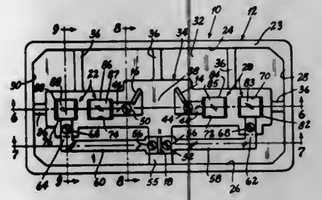
3,349,362
PROGRAMMING SWITCH
Joseph D. Leibowitz, Skokie, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 8, 1965, Ser. No. 437,868
7 Claims. (Cl. 339—18)



1. A programming switch comprising:
means enabling an operator to manually modify a conductive matrix, including isolated conductors supported on opposite faces of a printed circuit board, by rearranging conductive connections between selected isolated conductors on opposite faces of the board;
said means including a C-shaped spring body;
means on said spring body for contacting conductors on opposite faces of the board;
said C-shaped spring body including conductive portions for completing electrical connections between said conductors on two faces of the board; and
said C-shaped spring body including tab means connected to said spring body to provide a handle to enable manual positioning of said spring body in contact with desired faces of the board.

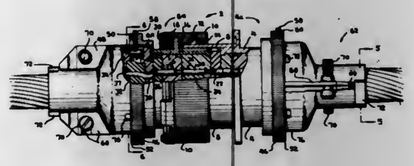
3,349,363
ELECTRICAL PLUG UNIT EMBODYING DUPLEX OUTLETS
Ronald D. Goodman, 5432 Itaska St., St. Louis, Mo. 63109
Filed Dec. 10, 1965, Ser. No. 513,000
8 Claims. (Cl. 339—155)

1. An electrical plug and outlet unit comprising:
a generally hollow rectangular body molded of nonconductive preferably plastic material including a top wall portion, a bottom wall portion, a pair of end wall portions and a front wall portion, all of said wall portions terminating in a continuous face portion;
a prong-supporting section of generally T-shaped configuration extending from the front wall portion to a plane inwardly of said face portions;
a plurality of rib segments in support of the prong-supporting section;
first and second conductor prongs and a ground prong rigidly mounted on the prong-supporting section and projecting beyond said face portion; said prongs being arranged in a pattern corresponding to that of the prong-receptive sockets in a three hole high voltage receptacle;
first and second longitudinally spaced electrical outlet constructions provided in the prong-supporting section, each outlet construction including a spring conductor clip and a similar ground clip;
electrical continuity means between the first conductor prong and the conductor clip of the first outlet construction;



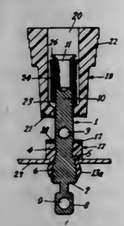
electrical continuity means between the second contact prong and the conductor clip of the second outlet construction;
electrical continuity means between the ground prong and the ground clip of the first and second outlet constructions; and
means for the ready insertion of the prongs of a conventional low voltage plug into engagement with the clips of each outlet construction, said means consisting of entrance openings that converge into prong guide slots formed in the front wall portion of the unit, each of said openings being in alignment with one of said clips.

3,349,364
CABLE CLAMP FOR ELECTRICAL CONNECTOR
Clarence Leonard Paullus, Carlisle, and Larry Ronald Stauffer, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed June 9, 1965, Ser. No. 462,591
6 Claims. (Cl. 339—105)



1. A cable clamp for use with a cylindrical connector, said connector having movable means mounted externally on its shell adjacent to its rearward end, said movable means controlling the retention of contacts in said connector whereby said contacts are retained in said connector when said movable means is in one position, said cable clamp having secured means at one end to secure said clamp to said connector, means effective between said movable means and said securing means for rendering said securing means at least partially inoperative when said movable means is in a position other than said one position, whereby said cable clamp cannot be mounted on said connector unless said movable means is in said one position and said contacts are retained in said connector.

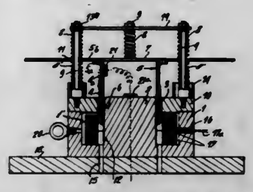
3,349,365
SPRING LOADED ELECTRICAL TERMINAL
Hilliard Dozier, Cincinnati, Ohio, assignor to U.S. Terminals, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 4, 1965, Ser. No. 477,128
6 Claims. (Cl. 339—254)



1. A spring loaded electrical terminal comprising a center pin, an insulator, and a displaceable knob member, said center pin comprising an elongated electrode having a central body portion for receiving a wire to be detachably connected to said terminal, said central body portion terminating at one end in an elongated distal portion and at its opposite end in an extension for attaching a second wire to said terminal, said center pin being surrounded by said insulator in an area intermediate said central body portion and said extension, said insulator acting as a means for securing said terminal to a supporting surface; said displaceable knob member comprising a body having a base end and a top end, a central bore extending through said body from one end to the other, said central bore having an inwardly directed shoulder adjacent the base end of said body, said knob member being fitted over the distal portion of said center pin with the base of said knob member facing said insulator, said insulator having a knob supporting surface facing the base of said knob member, a compression spring surrounding the distal portion of said center pin with the innermost end of said spring seated against said inwardly directed shoulder, the opposite end of said spring being operatively connected to said center pin, said spring being in compressed condition whereby to urge the knob member in the direction of the knob supporting surface of said insulator so as to enter into clamping engagement with a wire attached to the central body portion of said center pin, an annular ledge cut inwardly from the periphery of said center pin, and a coacting annular abutment on the base end of said knob member, said annular ledge and abutment coacting when engaged to maintain said knob member in a displaced position in which the central body portion of said center pin is exposed for the attachment of a wire thereto.

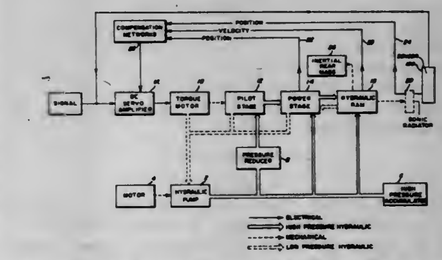
3,349,366
ELECTRO-ACOUSTIC SUBMARINE TRANSDUCER
Michel Max Hanff, Brest, France, assignor to Compagnie des Compteurs, Paris, France, a company of France
Filed Nov. 30, 1965, Ser. No. 510,513
Claims priority, application France, Dec. 3, 1964, 997,222, Patent 1,425,383
9 Claims. (Cl. 340—8)

1. In an electro-acoustic transducer structure for submarine use in the transmission of sound waves through the water, the combination comprising a free-flooding annular yoke member of magnetic material in direct contact with the water when said transducer structure is immersed therein, a core of magnetic material located concentrically within said annular yoke member and spaced radially therefrom to establish an annular gap therebetween, means for producing a continuous biasing field in a magnetic circuit through said yoke and core, a horn comprising a plate-like member and a downwardly extending tubular portion projecting into said annular gap, resilient means carried by said yoke member and supporting said horn for permitting a reciprocating motion thereof, a driver coil applied to said tubular portion of said horn within said gap and adapted to be energized with alternating current thereby to effect reciprocation of said



horn, and cooling means comprising a passageway extending through said yoke from the exterior thereof to said annular gap to provide for free circulation of the water in which said transducer structure is immersed into said annular gap thereby to remove heat from said driver coil.

3,349,367
ELECTROHYDROSONIC TRANSDUCER
Serge S. Wisotsky, Sharon, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 505,311
1 Claim. (Cl. 340—12)

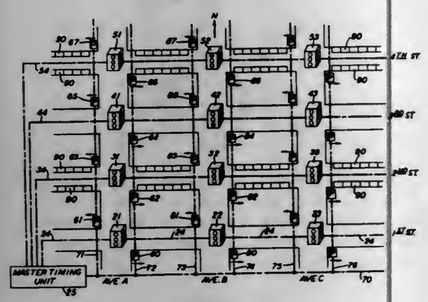


An electrohydrosonic transducer for imparting broad band, low frequency vibrational energy into a plastic medium comprising:
electrohydraulic servo valve means for oscillatory modulation of flow of entrapped high pressure fluid in response to excitation of low power level electrical control signals from an external source, said servo valve including a hydraulically loaded neutral positioning means;
a mechanical member communicating with said modulated fluid flow to closely follow the oscillatory movement;
a sonic radiator member rigidly coupled to one end of said mechanical member having a surface area in contiguous relationship with the elastic medium to translate the oscillatory movement of the mechanical member into displacement of the medium adjacent thereto;
said radiator surface area providing an acoustic radiation impedance wherein the reactive component exceeds the resistive component of said impedance;
said low power level electrical control signals derived from negative electrical feedback signal means to provide a DC positioning reference for the oscillating movement of said sonic radiator member and mechanical member;
and positive feedback electrical signals from a sensor in the elastic medium automatically locking the frequency of the transducer to the resonant frequency of the coupled medium.

3,349,368
COORDINATED CONTROL OF TRAFFIC FLOW AND PARKING

Josef Kates, Toronto, Ontario, Canada, assignor to Kates, Peat, Marwick & Co., Toronto, Ontario, Canada, a firm of Canada

Filed June 30, 1964, Ser. No. 379,215
7 Claims. (Cl. 340—41)

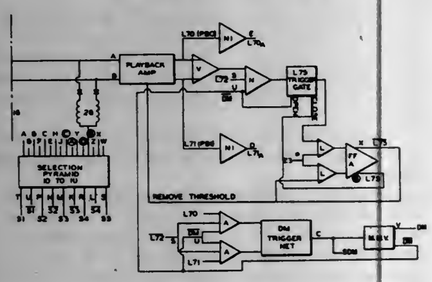


1. In a coordinated street traffic control system, in combination, first changeable visual means displayed in a given street to indicate a given local regulation currently in effect in said street, traffic signal means displayed at spaced intervals along said street, means for controlling said traffic signal means to permit control of traffic flow along said street, and common means for changing said controlling means to effect a desired offset in said traffic signal means concurrently with a change in the information content of said first visual means, whereby the type of control of traffic flow and the local regulations currently in effect may be coordinated.

3,349,369
APPARATUS FOR CHECKING READING ERRORS IN A MAGNETIC RECORD CARD SYSTEM

Alan K. Jensen, Dover, N.J., assignor to Litton Business Systems, Inc., a corporation of New York

Filed Sept. 13, 1962, Ser. No. 223,361
12 Claims. (Cl. 340—146.1)

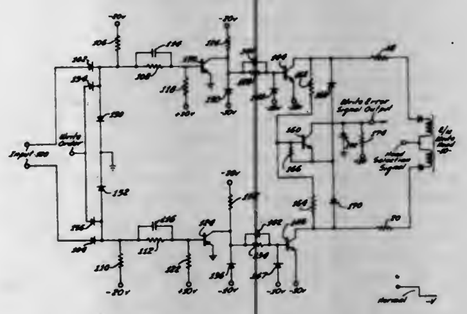


1. An apparatus adapted to check for the proper reading of a predetermined number of information signals during a reading operation of information recorded upon a record, said record having a plurality of single channel information sectors, each sector including a predetermined number of information signals and position checking pattern signals immediately following said information signals, said position checking pattern signals being arbitrarily selected and bearing no arithmetic relationship to said information signals associated therewith and being otherwise similar to valid information signals comprising: sensing means adapted to sense the information and position checking pattern signals; control means coupled to said sensing means to initiate a reading operation of the information signals recorded in a selected information sector; preset counting means coupled to said sensing means and adapted to count the predetermined number of information signals recorded in said selected information sector and produce a first signal when said predetermined number is reached; position checking pattern signal reference means for providing second signals indicative of the desired position checking pattern signals; checking means coupled to said position checking pattern signal reference means for receiving said second signals and coupled to said sensing means and adapted to receive said position checking pattern signals from said record and coupled to said counting means and responsive to said first signal to compare said desired position checking pattern signals from said reference means and said position checking pattern signals from said record sensed by said sensing means; and error indicating means coupled to said checking means to produce an error indication if said desired and received position checking pattern signals fail to agree whereby the gain or loss of information signals is indicated.

3,349,370
WRITE AMPLIFIER CIRCUIT

B. Charles Garrett, Sepulveda, Calif., assignor to General Precision Systems, Inc., a corporation of Delaware

Filed Mar. 10, 1964, Ser. No. 350,723
2 Claims. (Cl. 340—146.1)

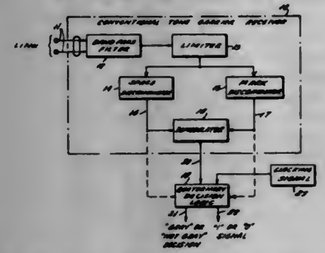


1. In an electric write circuit for recording binary signals on a magnetic medium in the form of a first magnetic state followed by a second magnetic state for binary "1," and in the second magnetic state followed by the first magnetic state for binary "0," said write circuit including: an electric winding having an intermediate tap thereon for receiving an activating signal, a first transistor coupled to one end of said winding, a second transistor coupled to the other end of said winding, and circuit means for applying complemented signals to said first and second transistors to record corresponding binary signals on the magnetic medium, said complemented signals alternately causing one of said transistors to be conductive and the other to be non-conductive during normal write operations; an error detector circuit including a further transistor; a control circuit coupling said further transistor to said first and second transistors to cause said further transistor to change its state of conductivity whenever said first and second transistors exhibit the same state of conductivity; and further circuitry coupled to said further transistor for deriving an error signal therefrom indicating such change in the state of conductivity of said further transistor.

3,349,371
QUATERNARY DECISION LOGIC

Abraham Brothman, Dumont, Lee Horowitz, Cedar Grove, Richard D. Reiser, Waldwick, and Elsa Horowitz, Cedar Grove, N.J., assignors, by mesne assignments, to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed Nov. 20, 1963, Ser. No. 324,956
18 Claims. (Cl. 340—146.1)



13. For use in a communications system capable of operating at a predetermined carrier frequency decision logic means for receiving binary bits of data, each bit having a duration equal to n times the duration of one cycle of said carrier frequency where n is an integer; said decision logic means comprising first means for initially determining the binary state of each bit received; second means for receiving each Nyquist interval of each bit there being at least two Nyquist intervals in each binary bit; said second means including third means for determining when each interval is ambiguous; fourth means responsive to said first means and said third means for generating a first signal when said first means identifies a bit as binary "1" and at least one of said intervals is unambiguous; fifth means responsive to said first means and said third means for generating a second signal when said first means identifies a bit as binary "1" and at least one of said intervals is ambiguous; sixth means responsive to said first and third means for generating a third signal when said first means identifies a bit as binary "0" and at least one of said intervals is unambiguous; seventh means responsive to said first and third means for generating a fourth signal when said first means identifies a bit as binary "0" and at least one of said intervals is ambiguous; eighth means for counting the number of ambiguous intervals in each bit received; ninth means responsive to said third, fourth, fifth, sixth and seventh means and the bit transmission rate for finally determining the state of each binary bit.

3,349,372
FIRST STROKE LOCATOR FOR A CHARACTER READER

Harold B. Currie, Gibbsboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 20, 1964, Ser. No. 383,679
7 Claims. (Cl. 340—146.3)

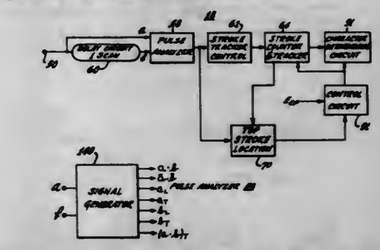
4. In a character reader for reading characters, different ones of said characters being formed of different outline traces, the outline traces of said characters exhibiting a plurality of topographical features including strokes, said character reader including a scanner for scanning said characters to derive video signals representing said characters, the combination comprising,

detector means for analyzing said video signals to detect strokes in a character,

stroke tracking means coupled to said detector means for assigning labels in sequence to each different stroke detected in a scan and for tracking said strokes from scan to scan,

classification means coupled to said stroke tracking means for classifying as the outermost stroke of a character the particular stroke initially detected in a particular scan of said character regardless of the label of said particular stroke and in the absence of the prior detection of another stroke in said particular scan,

reclassification means for transferring the classification of outermost stroke from said particular stroke to a different stroke when said different stroke is detected prior to said particular stroke in a scan subsequent to said particular scan, and

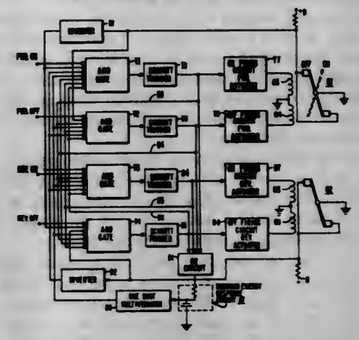


means for determining the absolute locations of the remaining strokes in said character with respect to an absolute alphabet of characters based on the detection of the outermost stroke and the sequential labeling of all of the remaining strokes in said character.

3,349,373
DIGITAL TAPE TRANSPORT SYSTEM

Robert A. Kleist, Harold A. Kurth, and Robert L. Thorne, Woodland Hills, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Apr. 5, 1963, Ser. No. 270,956
16 Claims. (Cl. 340—147)

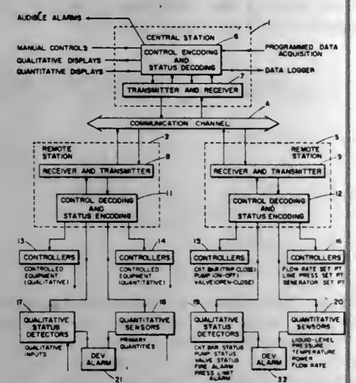


15. A positive actuator interlocking system for a magnetic tape system having a pair of opposite drive elements subject to concurrent or erroneous actuation by application of command signals, comprising separate gating means for receiving each of the different command signals, a pair of actuator means for separately actuating each of the driving elements, means connected to the output of each gating means for disabling each of the other gating means upon application of a correct command signal to one of the actuator means, timing means for disabling all of the gating means for a predetermined period after application of a command signal, and circuit means coupled to each of the actuator means for selectively preventing application of erroneous command signals in accordance with the actual position of the actuator means, said actuator means having different magnetic flux paths dependent upon the operating position of an actuator element, and said circuit means including means disposed along at least one of the flux paths of each of the actuator means for sensing the operating position of the actuator element.

3,349,374
SUPERVISORY CONTROL SYSTEM WITH MESSAGE TRAFFIC CONTROL

Reidar G. Gabrielson, Scottsdale, and Lawrence R. Smith, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 5, 1963, Ser. No. 299,859
17 Claims. (Cl. 340—163)



17. A digital communication system having a central station and a plurality of remote stations joined by a common communication channel with the central station having first transmitting means, first receiving means, and data processing means, and each of the remote stations having second transmitting means, second receiving means, and second data processing means, and the stations interchanging digitally encoded signals over the common channel, the improvement including in combination,

the first and second data processing means being operative to effect a first type of communication operation between the central and remote stations,

message security means in the first data processing means examining each received message for correctness and supplying a first signal upon detection of an incorrect message,

encoding means responsive to said first signal to supply a unique command signal to the first transmitting means for transmission to all the remote stations,

each remote station having means for indicating a recent message transmission therefrom,

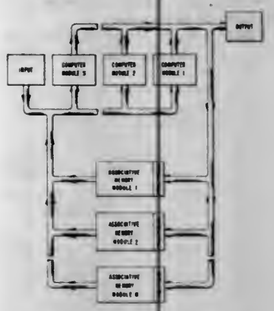
each of the second data processing means being independently jointly responsive to receipt of said unique command signal and the respective recent message transmission indications to initiate a retransmission of each of said recent messages, respectively, and each second data processing means including a timing means preset to time out a given cycle, the duration of which is different than the duration of any other remote station given cycle and inhibiting such retransmissions until expiration of said given cycles, respectively.

3,349,375
ASSOCIATIVE LOGIC FOR HIGHLY PARALLEL COMPUTER AND DATA PROCESSING SYSTEMS

Robert R. Seeber and Arwin B. Lindquist, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 7, 1963, Ser. No. 322,160
37 Claims. (Cl. 340—172.5)

1. In a computer system, a plurality of computer modules, a plurality of memory modules each having data input and data output connections, data transmission lines respectively between said data input and data output connections and said computer modules, means under autonomous control of said memory modules for selecting one of said transmission lines for transmitting data to a selected computer module, and means under autonomous

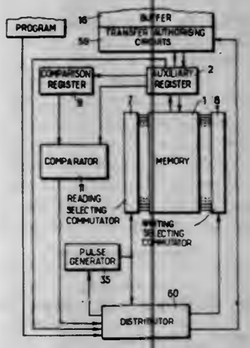


control of said computer modules for selecting one each of said transmission lines for transmitting data to a plurality of selected memory modules simultaneously.

3,349,376
DATA HANDLING AUTOMATIC SYSTEM

Claude Jean Baptiste Bouvier, Villiers sur Marne, France, assignor to Compagnie des Machines Bull (Societe Anonyme), Paris, France

Filed Mar. 3, 1964, Ser. No. 349,083
Claims priority, application France, Mar. 13, 1963, 927,817
7 Claims. (Cl. 340—172.5)



1. System for automatically handling data distributed in the form of words each comprising an identifying special character called a "coded mark" and variable number of normal characters, said system comprising a sequential access memory comprising bistable magnetic elements arranged in a plurality of rows and in n columns, each column being adapted to store any one of said characters, and including a read drive conductor and a write drive conductor, said elements being further coupled to a plurality of bit and sense conductors, said system further comprising two column selecting switches having a number n of stages, the first being associated with the memory for effecting the sequential extraction of the characters, and the second being associated with the memory for effecting the sequential introduction or the sequential restorage of characters,

an advance pulse generator operating cyclically and connected to the said first switch so that the latter advances by one stage at each pulse received from the generator,

an auxiliary register having a capacity of one character connected to input-output circuits of the said matrix memory to contain a character extracted or to be introduced,

a comparison register containing a reference coded mark identifying a word to be erased in the memory,

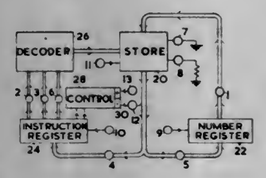
a comparator device connected to compare, from the said comparison register and from the said auxiliary register, the said reference coded mark with a coded mark extracted from the matrix memory, and

a logical control device comprising switching means under the control of the said comparator and adapted to transmit retarded advance pulses from the said generator to the said second switch as long as the compared coded marks are different, then to prevent the transmission of pulses to the said second switch as soon as the compared coded marks are identical and finally to permit further transmission of said pulses as soon as the compared coded marks are again different.

3,349,377
ELECTRICAL DIGITAL COMPUTING ENGINES

David Stone, Woking, Surrey, England, assignor to National Research Development Corporation, London, England

Filed July 13, 1964, Ser. No. 382,213
Claims priority, application Great Britain, July 15, 1963, 27,906/63
16 Claims. (Cl. 340—172.5)



1. An electrical digital computing engine comprising a store having ordinary locations and at least one block of special locations, means for transferring words from ordinary locations to special locations and from special locations to ordinary locations, the block of special locations comprising storage means for converting words written into the block of special locations into different logical functions thereof available at correspondingly different special location addresses and wherein the block of special locations has two destination addresses and at least two source addresses, each of which yields an output corresponding to a logical function of words written into the destination addresses.

3,349,378
DATA SIGNAL SENSING SYSTEM

David J. Crawford, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

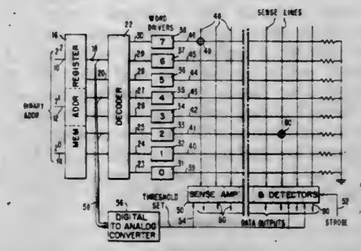
Filed May 14, 1965, Ser. No. 455,883
4 Claims. (Cl. 340—172.5)

1. In a memory the combination comprising:

a plurality of data word storage positions, each said storage position having a discrete address designation;

means for reading out the data signals stored in any data word storage position onto a plurality of sense lines, each said sense lines having the property of attenuating a data signal in accordance with the length of each said signal's travel along said line;

means coupled to said sense lines for detecting said read-out data signals; and

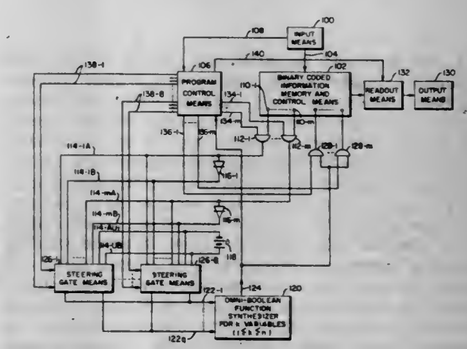


means for altering the ratio of the address predicted signal level at said detecting means with the signal acceptance threshold of said detecting means.

3,349,379
STORED PROGRAM BOOLEAN LOGIC SYSTEM INCORPORATING OMNI-BOOLEAN FUNCTION SYNTHESIZER

William F. Bartlett, Rochester, N.Y., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

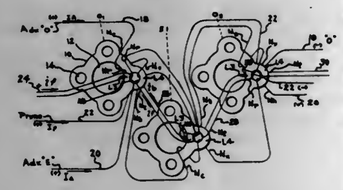
Filed June 1, 1965, Ser. No. 460,314
4 Claims. (Cl. 340—172.5)



1. A data processing system comprising binary coded information memory and control means including means for separately storing m binary variables, where m is a first plural integer; input means coupled to said binary coded information memory and control means for applying input binary data to said binary coded information memory and control means for storage therein; an omni-Boolean function synthesizer having a predetermined number of inputs and at least one output for producing at its output an output signal manifesting any Boolean function of a maximum of n binary variables, wherein n is a second integer smaller than m, in accordance with the binary values of signals applied to its respective inputs; first selectively-operated means coupled between said binary coded information memory and control means and said inputs to said synthesizer and having access to said m stored binary variables for selectively applying any of m binary variables, the complement thereof, a permanent binary "one" or a permanent binary "zero" to at least

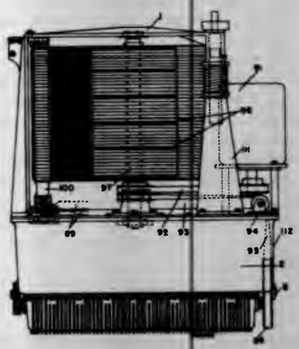
certain ones of said inputs of said synthesizer; second selectively-operated means coupled between the output of said synthesizer and said binary coded information memory and control means for selectively applying said output signal of said synthesizer to said means for separately storing *m* binary variables to effect the modification of at least certain ones of said *m* stored binary variables in response to the application of said output signal of said synthesizer thereto; a sequential step-by-step stored program control means coupled to said first and second selectively-operated means for controlling the selective operation thereof during each step of said program control means in accordance with the stored program in that step; and means for applying said output signal from said synthesizer to said program control means for controlling the stepping thereof in response thereto.

3,349,380
CIRCUIT FOR MULTI-APERTURE MAGNETIC CORE DEVICES
David Nitzan, Palo Alto, Calif., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 30, 1963, Ser. No. 305,779
9 Claims. (Cl. 340—174)



1. An improved magnetic core device of the type utilized to transfer intelligence in binary form comprising first, second, and third magnetic cores each having a major and a minor aperture, an advance winding threading said first and third cores in a sense to drive said cores into a clear state of magnetization responsive to an advance pulse applied thereto, an advance winding threading the second of said cores in a sense to drive said second core into a clear state of magnetization responsive to an advance pulse applied thereto, a prime winding threading the minor aperture of each of said cores and adapted to drive each core from a set state of magnetization to a primed set state by reversal of flux orientation in the outer leg adjacent the minor aperture of the core response to prime current applied thereto, a coupling loop linking the outer leg adjacent the transmitting aperture of the first core to the inner leg of the minor aperture of the second core, a coupling loop linking the outer leg adjacent the minor aperture of the second core to the inner leg adjacent the minor aperture of the third core, each coupling loop being adapted to transfer the intelligence state of a preceding core to a succeeding core responsive to the preceding core being driven into a clear state from a primed set state, a hold winding including hold turns linking the outer leg adjacent the minor aperture of the second core and connected to the advance winding linking the first and third cores, a hold winding including hold turns linking the outer leg of the minor apertures of the first and third cores and connected to the advance circuit linking the second core, the hold turns linking the outer legs of said cores in a sense to apply an MMF opposing the MMF caused by backward transfer current developed in coupling loops linking preceding cores responsive to a succeeding core being driven to the clear state from the primed set state to transfer intelligence to a further succeeding core.

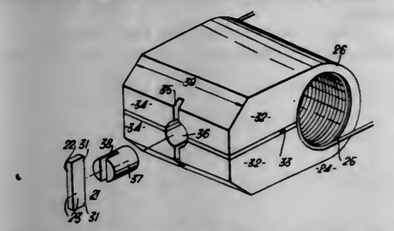
3,349,381
MECHANICAL MULTI-STAGE AGGREGATOR USED WITH A DISC FILE
John Handley, 39 Wilhelmina Ave., Coulsdon, Surrey, England
Filed Sept. 6, 1962, Ser. No. 221,920
Claims priority, application Great Britain, Sept. 6, 1961, 31,938/61; Sept. 26, 1961, 34,411/61; Nov. 7, 1961, 39,744/61; Dec. 5, 1961, 43,399/61; Feb. 16, 1962, 6,040/62; May 23, 1962, 19,921/62
17 Claims. (Cl. 340—174.1)



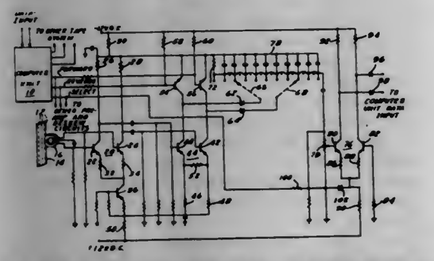
1. A magnetic disc file which comprises:
a parallel stack of spaced discs on a common drive shaft;
a parallel line of processing head arms which are on a spindle parallel to said common shaft and which are so positioned that said arms are interleaved with said discs;
and a mechanical multi-stage movement aggregator for turning said spindle in response to a multi-element signal code, so as to locate said processing heads at any desired one of a number of radially-spaced circular recording tracks on said discs;
wherein said aggregator comprises a multi-stage concertina linkage formed by a series of base-less triangular linkages which are pivoted to each other in series by pivots which are freely movable along parallel lines along which they are constrained to move, and means for individually moving the apex of each triangular linkage to any one of a plurality of spaced lines parallel to said pivot lines, the spacing being normal to said pivot lines.

3,349,382
INTEGRATED TRANSFORMER TRANSDUCER
Ronald Naylor, Cheadle, and Gordon George Scarrott, Wokingham, England, assignors to Ferranti, Limited, Lancashire, England, a company of the United Kingdom of Great Britain and Northern Ireland
Filed May 8, 1963, Ser. No. 278,877
Claims priority, application Great Britain, May 12, 1962, 18,333/62
6 Claims. (Cl. 340—174.1)

1. An electro-magnetic transducer unit for a magnetic storage system of the kind which in operation presents a storage medium having a surface moving relative to the transducer including the transducer itself in the form of a planar electrically conductive strip arranged for location with one of its narrower longitudinal surfaces closely parallel to the storage surface and with the broader longitudinal surfaces of the strip normal to the direction of movement of the medium in the vicinity of the transducer, and a transformer having a winding in the form of an open-ended loop of cylindrical form, a pair of integral interconnecting members extending from said open-ended loop and joining the ends of said loop to the ends of said strip, each to each, the central region of the strip being embedded in electrically non-conductive material of high permeability leaving said one narrower surface exposed, said non-conductive material being wholly enclosed by said pair of interconnecting members except for one surface in the plane of said one narrower surface, said pair of interconnecting members being broad enough in the direction of said movement and additionally so shaped as to limit to the vicinity of the transducer the magnetic field set up by it when used as a recording head.



3,349,383
BIDIRECTIONAL DESKEWER UTILIZING A DELAY LINE WITH TWO INPUTS
Sung Pal Chur, Inglewood, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Nov. 27, 1963, Ser. No. 326,490
7 Claims. (Cl. 340—174.1)



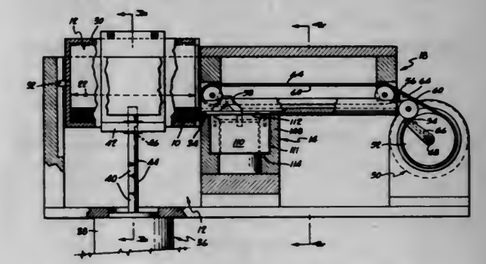
1. A circuit for eliminating static skew effects from signals reproduced from a bidirectionally driven magnetic tape transport mechanism, comprising: preamplifier means for amplifying the reproduced signals; delay line means including a pair of individual variably positioned tap means, both of the tap means being coupled to receive signals from the preamplifier means, the delay line means including a single output terminal; and gating means controllable in accordance with the direction of movement of the tape and coupled to the pair of tap means for providing the signals from the preamplifier means to one of the two tap means in accordance with the direction of travel.

3,349,384
AIR BEARING MAGNETIC TRANSDUCER ASSEMBLY
Morris A. Kohn, San Mateo County, Calif., assignor to Data-Disc, Incorporated, Palo Alto, Calif., a corporation of Nevada
Filed Feb. 27, 1964, Ser. No. 347,827
12 Claims. (Cl. 340—174.1)

1. In a transducer assembly wherein a recording transducer is disposed to record signals on a movable recording surface, a support member for carrying the transducer in constant following relation to movements of the surface in a direction normal thereto, said support member comprising a platform adapted to carry a transducer in recording relation to said surface, and an elongated resilient arm, said arm including a single narrow neck portion adjacent an end of same free to be resiliently twisted about the longitudinal axis of said arm and to bend about an axis transversely thereof, said arm being flexibly secured to and unitary with said platform via said neck portion at said end and adapted to resiliently urge said platform toward the surface while permitting constant surface-following movement thereof.



3,349,385
ROTATING TRANSDUCER IN A RANDOM ACCESS SYSTEM
Clarence K. Studley, Los Altos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 14, 1965, Ser. No. 448,151
3 Claims. (Cl. 340—174.1)

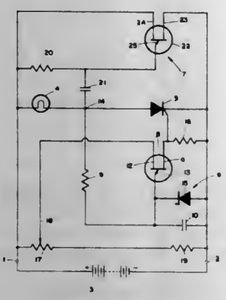


1. A memory system comprising a magnetic record plaque, drum means having a circumferential region bounded at at least one end by a plane located adjacent said plaque, a plurality of transducers mounted on said plane of said drum means on a plurality of different radially offset concentric circles thereof, means for rotating said drum means at a high speed, and means for positioning said plaque to selected stationary positions relative to said transducers, whereby information may be rapidly recorded on and read out from a plurality of tracks of said plaque during each revolution of said drum means.

3,349,386
BATTERY DISCHARGE INDICATOR
Wilhelm J. Zug, Raleigh, N.C., assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed Mar. 2, 1965, Ser. No. 436,515
4 Claims. (Cl. 340—249)

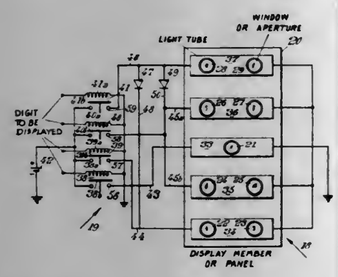
1. A battery discharge indicator comprising a pair of terminals adapted to be connected across the terminals of the battery under supervision, indicating means connected in series with a controlled switching element across said terminals, first circuit means including voltage regulating means connected to said switching element and said terminals and responsive to the difference between the voltage across said terminals and the voltage across said regulating means to supply a gating signal to said switching element to place said element in a state of conduction to energize said indicating means when the voltage across said terminals decreases to a predeter-

mined value relative to the voltage across said voltage regulating means and second circuit means connected to said switching element and responsive to the conduction thereof to bias said element in a non-conductive state to



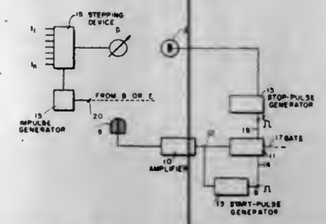
deenergize said indicating means, the alternate energization and deenergization of said indicating means providing an indication that the voltage of said battery is below said predetermined value.

3,349,387
DISPLAY PANEL HAVING SELECTIVELY LIGHTED AREAS FOR REPRESENTING A FIGURE FROM ZERO TO NINE
Fernand Sicard, Le Pecq, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Jan. 16, 1963, Ser. No. 251,780
Claims priority, application France, Jan. 23, 1962, 885,576
10 Claims. (Cl. 340—336)



1. A device for representing a figure ranging from "zero" to "nine," which device comprises, in combination, a display member of nine areas each capable of having two different visual appearances, one, a dark appearance in the state of rest and, second, a luminous appearance in the energized state, said nine areas being distributed over said display member according to a configuration which permits total perception of the number of said nine areas which have said luminous appearance, and control means capable of shifting from the dark appearance to the luminous appearance a number of said nine areas equal to the number of units contained in the figure to be displayed, said display member comprising in combination, at least one opaque mask provided with nine apertures which constitute said nine areas respectively, and five elements disposed behind said mask and adapted to be illuminated in response to the operation of said control means, one of said elements being disposed so that it can be seen through only one of said apertures the remaining four of said five elements being disposed to that each can be seen through two of said apertures.

3,349,388
ANALOG TO DIGITAL CONVERTER ARRANGEMENT
Leo M. Sprengers, Lier, and Henry Castelijns, Wilrijk, near Antwerp, Belgium, assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed June 15, 1964, Ser. No. 374,941
Claims priority, application Belgium, July 23, 1963, 635,281
6 Claims. (Cl. 340—347)

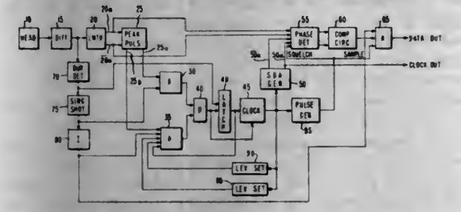


1. A system for sequentially converting a plurality of electrical analog signals appearing at a plurality of sources into digital electric signals, said system comprising:
a mirror galvanometer movement having a winding for receiving said analog signals, said galvanometer having a central axis;
means continuously rotating about said axis at a substantially constant angular speed of rotation;
means stationary with respect to said axis and cooperating with said continuously rotating means to provide a series of electrical pulses;
first control apparatus for receiving said series of electrical pulses and including means for providing a first control signal in a predetermined angular position of said continuously rotating means;
second control apparatus including a radiation source and a radiation detector, one of the last-mentioned two means being stationary and the other being mounted on said continuously rotating means, said radiation detector producing a second control signal in response to impingement on said detector of radiations from said source as reflected by said mirror when said galvanometer movement and said continuously rotating means have predetermined angular positions with respect to each other;
and scanning means electrically interposed between said plurality of signal sources and said galvanometer winding for sequentially connecting each of said analog signal sources to said winding in timed relationship with the rotation of said continuously rotating means.

3,349,389
DETECTION SYSTEM FOR BINARY DATA
Kestutis Simanavicius, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1964, Ser. No. 379,274
11 Claims. (Cl. 340—347)

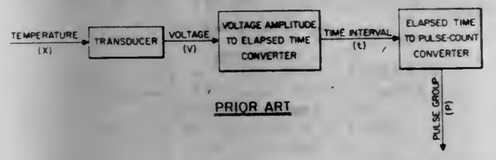
1. A binary data detection system comprising a source of complementary alternating electrical signals representing binary information; reference signal means responsive to said complementary alternating electrical signals, for producing complementary alternating reference signals having the same frequency as, and synchronized with, the portion of the said electrical signal effective thereon; output means, including means for combining said complementary electrical signals and said complementary reference signals, for providing an output signal representing the binary information; and control means responsive to said electrical signal for determining first and second synchronization periods, including means for restricting the

portion of said electrical signal effective on said reference signal means during said second synchronization period



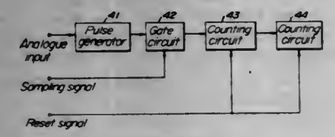
to limited degrees of instantaneous phase shift of said electrical signal.

3,349,390
NONLINEAR ANALOG TO DIGITAL CONVERTER
Irving Glassman, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 31, 1964, Ser. No. 393,054
13 Claims. (Cl. 340—347)



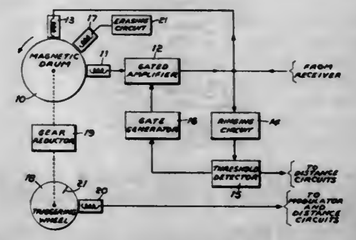
1. In a voltage to pulse-count converter having a pulse train generator, a switch receiving pulses from the output of said generator, and means to close said switch for a time-interval proportional to the voltage to be converted, the improvement comprising:
means connected between said generator and said switch for modifying the frequency of the pulse train fed to said switch in response to the reception by said switch of each of several preselected numbers of pulses.

3,349,391
COUNTING TYPE ANALOGUE-TO-DIGITAL CONVERTERS
Naokazu Kimura, Katsuta-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 1, 1964, Ser. No. 400,763
6 Claims. (Cl. 340—347)



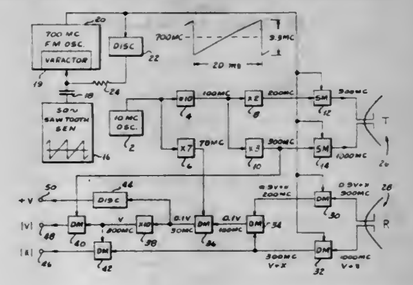
1. An analogue-to-digital converter capable of determining both positive and negative amplitude of an analogue signal, in combination, comprising:
pulse generating means responsive only to said analogue signal for generating a repetitive pulse signal, said pulse signal having a repetition rate proportional to the amplitude of said analogue signal,
gating means for gating said pulse signal for a fixed period of time in response to a sampling control signal, and
counting means connected to said gating means for counting the pulses in said pulse signal, said counting means having a base count equal to the number of pulses generated by said pulse generating means during said fixed period of time with said analogue signal equal to zero.

3,349,392
REPETITIVE PULSE DETECTOR
Maurice L. J. Jezo, Cedar Grove, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed May 17, 1966, Ser. No. 550,854
12 Claims. (Cl. 343—6.8)



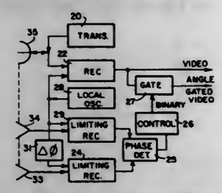
1. Apparatus for detecting pulses having a predetermined repetition rate which are interleaved in a random pulse train comprising:
a source of pulses having said predetermined repetition rate;
record means having a predetermined length;
means coupled to said source of pulses for recording said pulses on record means;
means for causing relative movement between said record means and said means for recording such that said means for recording traverses the length of said record means in a first time period slightly different from the repetition period of said pulses to be detected;
means for reading said record means; and
generating means coupled to said reading means and to said source of pulses for generating an output signal responsive to a predetermined number of pulses having a spacing substantially equal to the difference between said first time period and the repetition period of said pulses to be detected.

3,349,393
CW-FM DISTANCE MEASURING SYSTEM
John V. Hughes, Lytham St. Anne's, England, assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 4, 1964, Ser. No. 408,784
19 Claims. (Cl. 343—14)



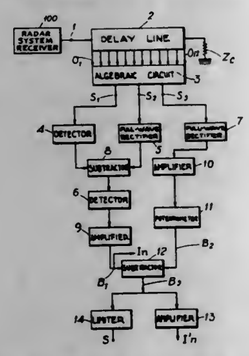
19. A system for measuring the distance of a reflecting target including in combination means for providing a first and a second frequency modulated signal of different frequencies, the signals having certain average frequencies and a constant instantaneous frequency difference, the average frequency of the first signal being an integral multiple of said difference frequency, and means for transmitting said signals toward the target.

3,349,394
RADAR SENSING SYSTEM
Thurman W. Carver, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Dec. 23, 1965, Ser. No. 516,055
12 Claims. (Cl. 343—16)



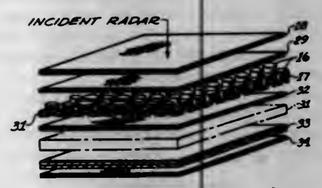
8. A radar receiver having antenna means for intercepting a signal from a single source, including in combination,
a plurality of phase comparison means each having two input connections and one output connection and supplying phase comparison indicating signals to said output connection,
a greater plurality of signal processing channels each having a signal receiving element receiving signals from the single source and with a limiting receiver supplying limited signals, derived from the respective received signals, each of said comparison means receiving two of said limited signals, respectively, from two channels, each comparison means receiving two signals being unique to such comparison means,
control means connected to said output connections and responsive to said indicating signals on said output connections indicating a predetermined phase comparison in at least one of said comparison means to supply a first binary signal and at other times supply a second binary signal,
and means responsive to said binary signals to accept or reject signals intercepted by said antenna means in accordance with said binary signals.

3,349,395
SYSTEM FOR ELIMINATING LONG ECHOES FROM RADAR SIGNALS AND SHAPING THESE SIGNALS
Roland Carré and Jean Robert, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Aug. 19, 1965, Ser. No. 480,853
Claims priority, application France, Aug. 28, 1964, 986,495
18 Claims. (Cl. 343—17.1)



1. A system for treating video signals of a pulse radar receiver having a video frequency output, said video signals comprising echo pulses of a duration t, non-desired echo pulses of a duration t', different from t, and noise, said system comprising: a delay line coupled to said output, and introducing at said video frequency a total delay equal to $nt/2$, where n is an integer greater than four, said line having $(n+1)$ output tappings, two of said tappings being terminal tappings and said tappings being spaced along said line for providing at said video frequency between any two successive tappings a delay equal to $t/2$; a multiple algebraic sum circuit having $(n+1)$ inputs, respectively coupled to said tappings, said circuit comprising first means for optimizing the amplitude of said useful pulses with respect to said nondesired pulses, said first means having a first output for providing a first signal, second means for providing a second signal having the same terminal portions as said first signal, said second means having a second output for providing said second signal, and third means for eliminating echo pulses from said video signals, said third means having a third output for providing a third signal; first subtracting means, coupled to said first and second outputs for subtracting said second signal from said first signal, said subtracting means having a fourth output; and second subtracting means coupled to said fourth and third outputs, said second subtracting means having an output providing treated video signals.

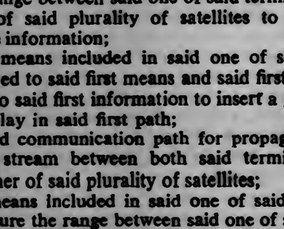
3,349,396
FLEXIBLE RADIATION ATTENUATOR
Robert G. Reed, Tulsa, Okla., assignor to North American Aviation, Inc.
Filed Feb. 3, 1966, Ser. No. 525,273
16 Claims. (Cl. 343—18)



9. A flexible radiation attenuator comprising:
a flexible conductive sheet;
a flexible absorber sheet coextensive with said conductive sheet and loosely overlying said conductive sheet;
a flexible spacer sheet interposed between said conductive and absorber sheets, said spacer sheet comprising a film of polyethylene embossed with an array of raised mesas having first and second surface portions fixedly spaced from each other; and
means for maintaining all of said sheets in relatively loose face-to-face juxtaposition.

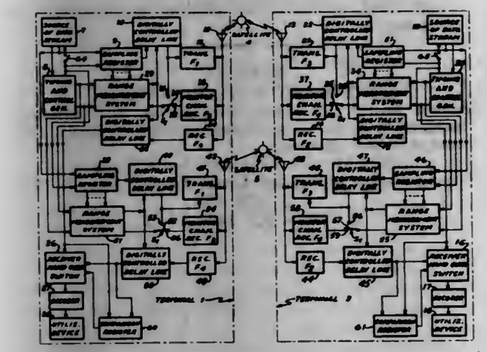
3,349,397
FLEXIBLE RADIATION ATTENUATOR
Joseph R. Rosenthal, Tulsa, Okla., assignor to North American Aviation, Inc.
Filed Feb. 3, 1966, Ser. No. 525,274
6 Claims. (Cl. 343—18)

1. A flexible radar attenuator comprising:
a flexible conductive sheet;
a plurality of flexible absorber sheets coextensive with said conductive sheet, each of said absorber sheets comprising a fabric having semiconductive particles secured thereto;
a plurality of flexible spacer sheets coextensive with said conductive sheet, each of said spacer sheets comprising a flexible foam having a thickness in the same order of magnitude as one-fourth of the wavelength of radiation in the frequency range of radar, said spacer sheets and absorber sheets loosely overlying each other in consecutive alternation; and



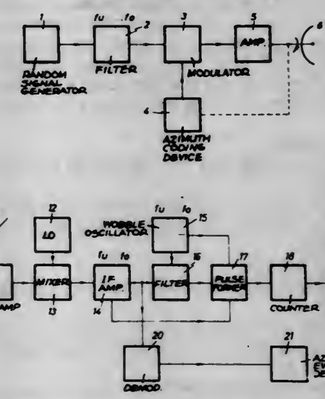
means for maintaining all of said sheets in relatively loose face-to-face juxtaposition for permitting minor relative lateral movement of said sheets without impairing the flexibility thereof.

3,349,398
SATELLITE COMMUNICATION SYSTEM
Andrew M. Werth, Paramus, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Aug. 27, 1964, Ser. No. 392,421
20 Claims. (Cl. 343—100)



13. A satellite communication system comprising:
a first terminal;
a second terminal;
a plurality of satellites mutually visible to both of said first and second terminals;
a first communication path between both said terminals through one of said plurality of satellites;
a source of data stream coupled to said first path for propagation therealong;
first means included in one of said terminals to measure the range between said one of said terminals and said one of said plurality of satellites to provide first range information;
second means included in said one of said terminals coupled to said first means and said first path responsive to said first information to insert a given amount of delay in said first path;
a second communication path for propagation of said data stream between both said terminals through another of said plurality of satellites;
third means included in said one of said terminals to measure the range between said one of said terminals and said another of said plurality of satellites to provide second range information;
fourth means included in said one of said terminals coupled to said third means and said second path responsive to said second information to insert a given amount of delay in said second path;
fifth means included in the other of said terminals to measure the range between said other of said terminals and said another of said plurality of satellites to provide third range information;
sixth means included in said other of said terminals coupled to said fifth means and said first path responsive to said third information to insert a given amount of delay in said first path;
seventh means included in said other of said terminals to measure the range between said other of said terminals and said another of said plurality of satellites to provide fourth range information; and
eighth means included in said other of said terminals coupled to said seventh means and said second path responsive to said fourth information to insert a given amount of delay in said second path;
the amount of delay inserted in said first path by said second means and said sixth means cooperating to maintain the length of said first path constant; and
the amount of delay inserted in said second path by said fourth means and said eighth means cooperating to maintain the length of said second path constant and equal to the length of said first path.

3,349,399
BEACON SYSTEM FOR SIMULTANEOUS AZIMUTH AND ELEVATION DETERMINATION
Manfred Böhm, Bietigheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,461
Claims priority, application Germany, Mar. 18, 1965, St 23,536, St 23,537
13 Claims. (Cl. 343—106)



1. A navigation system for simultaneously determining on board an aircraft the elevation angle and azimuth angle of said aircraft with respect to a transmitting station, comprising:
a transmitting station including:
means for radiating electromagnetic energy in a fan diagram pattern, said radiating means including means for simultaneously radiating a plurality of pencil beams within said fan diagram, each said pencil beam having a different frequency characteristic; and
means for rotating said fan diagram radiation pattern; and
a receiver on board said aircraft, said receiver including:
means for receiving said fan diagram;
means for detecting which of said plurality of pencil beams is received with maximum amplitude; and

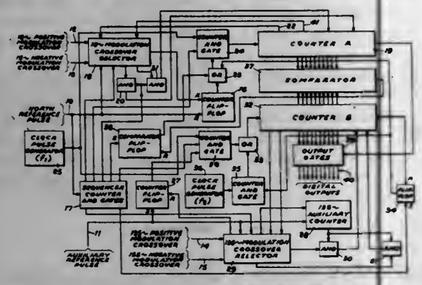
means coupled to said detecting means for determining the elevation angle of said aircraft with respect to said transmitting station.

3,349,400

DIGITAL BEARING MEASURING SYSTEM

Ralph L. Asher, Hackensack, and John B. Kennedy, Montville, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Mar. 31, 1966, Ser. No. 539,165
10 Claims. (Cl. 343—106)



1. In a direction finder system, a receiver located at a first position for determining the bearing of said first position from a beacon located at a second position, said beacon emitting a complex rotating signal which is decoded at said receiver as a fundamental wave, a harmonic wave, and spaced main and auxiliary reference pulses having predetermined repetition frequencies equal to the frequencies of said fundamental and harmonic waves, respectively, said reference pulses occurring whenever said beacon orients in predetermined directions, with said fundamental wave and main reference pulse supplying coarse bearing information and said harmonic wave and auxiliary reference pulses supplying fine bearing information comprising:

a first counter;

means for setting said first counter to a predetermined value;

means for causing said first counter to count after said setting thereof for a period of time relative to coarse bearing;

a second counter;

means for setting said second counter to a predetermined value;

means for causing said second counter to count after said setting thereof for a period of time relative to fine bearing; and

means for comparing the values stored in said counters.

3,349,401

DIGITAL BEARING MEASURING SYSTEM

John B. Kennedy, Montville, and Ralph L. Asher, Hackensack, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Aug. 25, 1966, Ser. No. 575,012
11 Claims. (Cl. 343—106)

1. In a bearing measuring system, a receiver adapted to detect bearing information from a beacon emitting a complex rotating signal including a fundamental wave, a harmonic wave, and spaced main and auxiliary reference signals having predetermined repetition frequencies equal to the frequencies of said fundamental and harmonic waves respectively, comprising:

a first counter;

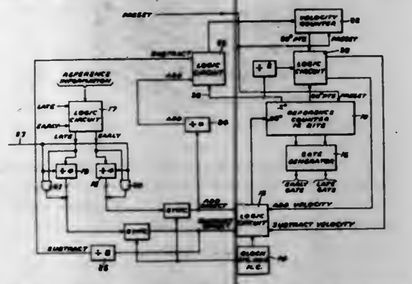
means for phase-locking said first counter to said reference signals;

a second counter;

means for deriving from said first counter a clock signal;

means for applying said clock signal to said second counter for causing said second counter to count;

means for comparing in time, selected bits of said first and second counters to derive the velocity error;



means for advancing or retarding said first counter in proportion to said velocity error;

a third counter;

means for phase-locking said third counter to said fundamental and harmonic waves; and

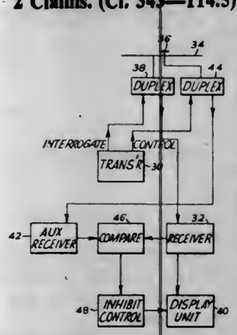
means responsive to the quantities held in said first and third counters for yielding measurement of bearing.

3,349,402

SECONDARY RADAR SYSTEMS

Kenneth Foster, Lillington, Leamington Spa, England, assignor to A. C. Cossor Limited, Harlow, Essex, England, a British company

Filed May 28, 1965, Ser. No. 459,688
Claims priority, application Great Britain, Nov. 3, 1960, 37,870/60
2 Claims. (Cl. 343—114.5)



1. In a secondary radar system ground station apparatus comprising a rotating directional aerial, a first receiver coupled to the directional aerial, a display means coupled to the first receiver to display answering signals received by the directional aerial from a transponder, a non-directional aerial, a second receiver coupled to the non-directional aerial, and a reflecting obstacle in the vicinity of said aerials which obstacle is periodically swept by the main beam of said rotating directional aerial, the improvement comprising:

comparator means coupled to said first and second receivers for providing an out-put signal when a signal is received by the second receiver and not simultaneously received by the first receiver; and

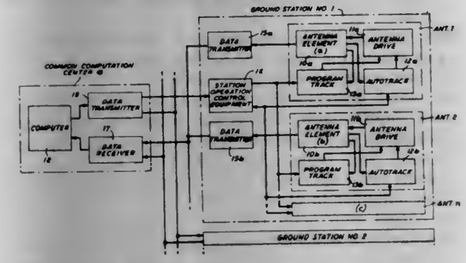
inhibiting means responsive to said comparator output signal to inhibit the display means for a predetermined interval of time, so as to prevent the display of a subsequent answering signal received by said rotating directional aerial via said obstacle being swept by the main beam of said rotating directional aerial.

3,349,403

GROUND STATION ANTENNA POINTING SYSTEM FOR SATELLITE COMMUNICATIONS

Hugh P. Kelly, New Providence, and Walter A. Klute, Mountainside, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 29, 1965, Ser. No. 451,869
8 Claims. (Cl. 343—117)



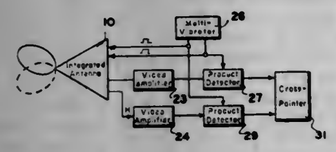
1. An antenna pointing system which comprises: a station equipped with at least one tracking antenna, means for pointing said antenna in response to applied control signals, means associated with said antenna for developing signals indicative of the momentary pointing direction of said antenna, a computation center; means for supplying said computation center with said momentary pointing direction signals, means for supplying said computation center with signals indicative of a desired pointing direction for said antenna, means at said computation center responsive both to said momentary and to said desired pointing direction signals for developing data signals which define for specified future instants the required pointing direction for said antenna to achieve said desired pointing direction, means for periodically supplying said data signals to said station, means at said station for interpolating between said required pointing directions defined for said specified future instants to produce control signals which define at other selected times the required pointing direction for said antenna, and means for supplying said control signals to said antenna pointing means.

3,349,404

INTEGRATED LOBE SWITCHING ANTENNA

John R. Copeland and William J. Robertson, Columbus, Ohio, assignors to The Ohio State University Research Foundation

Filed Feb. 11, 1965, Ser. No. 431,895
4 Claims. (Cl. 343—120)



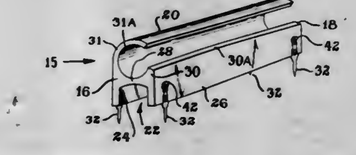
3. An integrated antenna comprising a contoured closed antenna supporting structure, a first pair of log-periodic dipole arrays positioned in said structure opposite each other, a second pair of log-periodic dipole arrays, means for positioning said arrays in said structure opposite each other and in cross direction to said first pair, said arrays comprising a thin conductive sheet, and means for adhering said thin conductive sheet to the contour of said structure; a beam forming circuit, a detector circuit, and an output circuit physically positioned between said antennas in said structure and electrically coupled to said arrays, an electromagnetic feed source coupling energy from said circuits, and a lobe switching circuit also connected to said other circuits for alternately switching the energy from said antennas to said feed source; and a delay line also positioned in said structure to be electrically coupled directly to said circuit and said feed, said delay line comprising a diode-switched delay line, means for adjusting said delay to twice that of said feed thereby causing a beam squint equal and opposite to that provided by said feed, and means to alternately open-circuit and short-circuit said delay line for switching between the two states of equal positively and negatively squinted positions.

3,349,405

ANTENNA MOUNTING ARTICLE

Thomas J. Wright, Itasca, Ill., assignor to Bel-Tronics Corporation, Addison, Ill., a corporation of Illinois

Filed July 22, 1964, Ser. No. 384,374
3 Claims. (Cl. 343—702)



1. A mounting member for an elongated ferrite core antenna, said mounting member comprising an elongated portion C-shaped in cross section for forming an enclosure about the antenna, said C-shaped portion being flexibly operable from an initial position to an open position to receive the antenna, said C-shaped portion being effective to close by reflex to its initial position to frictionally secure and support the antenna, and said mounting member further including an inverted portion U-shaped in cross section, said U-shaped portion having a pair of legs and a bight, a part of said C-shaped portion being contiguous with a part of said bight, and said legs being mountable on an associated surface support and being cooperable with said bight and said surface support to define a protective housing for other components which may be carried by said surface support.

3,349,406

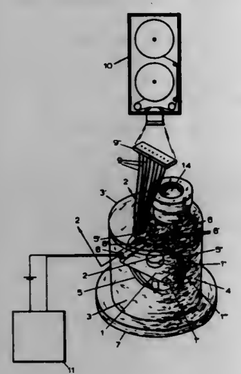
MONITORING POSITION-INDICATING RECORDER

Kenneth E. Perry, Wayland, and Paul Ferris Smith, Waltham, Mass., assignors to Geodyne Corporation, Waltham, Mass., a corporation of Massachusetts

Filed June 23, 1965, Ser. No. 466,247
7 Claims. (Cl. 346—107)

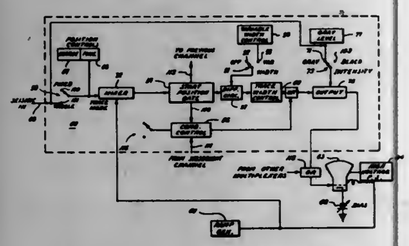
1. Apparatus having, in combination, an indicating device, means for mounting such indicating device to permit changes in position thereof along a predetermined axis, encoding disc means provided with a predetermined pattern of apertures and mounted along the said axis to rotate thereabout in response to the positional changes of the indicating device, flash illumination means disposed at one side of the disc periodically to transmit flashes of light along a predetermined line through whatever apertures of the encoding disc are alined with such line at the instants of light flash, a plurality of light conductors disposed with one set of ends thereof mounted

at the other side of above the disc along the said predetermined line and extending therefrom to provide at their other sets of ends a remote field of view, and recording means disposed to receive the light flashes transmitted through the encoding disc and conducted along the plurality of light conductors to the said field of view to record the aperture-coded information relating to changes in the position of the said indicating device, said indicating device, flash illumination means and encoding disc being disposed within a substantially light-transmitting fluid-



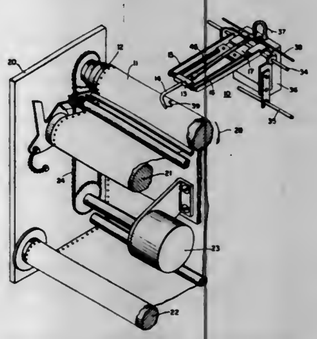
medium-containing housing, said conductors extending through a wall of the housing and having their said other sets of ends outside the housing, whereby changes of position of said indicating means within said housing may be optically transmitted for remote monitoring.

3,349,407
SEISMIC DISPLAY APPARATUS
Friedrich W. Hefer, William W. Witt, and Lee E. Siems, Houston, Tex., assignors to Geo Space Corporation (a division of Western Equities Inc.), Glenmont, Tex., a corporation of Nevada
Filed June 23, 1965, Ser. No. 466,298
10 Claims. (Cl. 346—110)



1. An electronic camera for displaying a seismographic signal, comprising:
an oscilloscope including an orthogonal deflection element and a control grid,
a ramp generator producing a repetitive cycle ramp sawtooth signal, the leading edge of which rises substantially instantaneously and the trailing edge of which descends at a substantially constant rate,
means coupled to said generator for applying said signal to said orthogonal deflection element,
an output amplifier connected to said control grid, the output D-C level from said amplifier determining the intensity of the display on the face of said oscilloscope,
means for selectively applying an A-C seismic voltage to said output amplifier for discreetly changing the amplitude of the output of said amplifier while it is conducting, and hence the intensity of the display on the face of said oscilloscope, in proportion to the amplitude of said seismic voltage,
first start position gate means receiving said sawtooth signal and said seismic voltage, said gate means becoming operative at a position on the trailing edge of each successive sawtooth cycle, and said position being determined by the amplitude of said seismic voltage for each successive cycle of said sawtooth signal,
differentiating means connected to said start position gate means for producing a pulse upon the operation of said start position gate means,
trace width control means triggered by said pulse from said differentiating means and producing an output as long as said pulse remains above a triggering amplitude, said output from said trace width control means being applied to said output amplifier to cause said amplifier to conduct, and
said output amplifier producing a voltage suitable for displaying a seismographic signal on the face of said oscilloscope when said seismic voltage is correlated with successive voltage cycles of said ramp sawtooth signal.

3,349,408
RECORDER
Raymond D. Gillen, North Wales, William T. Knipe, Sellersville, Will McAdam, Bluebell, and Norman E. Polster, Southampton, Pa., assignors to Leeds & Northrup Company, a corporation of Pennsylvania
Filed Aug. 12, 1965, Ser. No. 479,163
10 Claims. (Cl. 346—112)

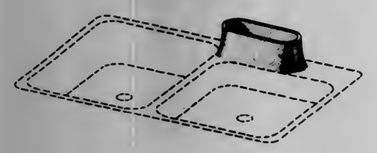


1. In a recorder, the combination with a chart on which there are to be recorded magnitudes of a condition, of a pen adapted to engage said chart to record said magnitudes of a condition, said pen consisting of a capillary tube, and means for providing relative motion between said pen and said chart, said chart coated at least in limited areas thereof with a first component of a two component marking system for the chemical production of a visible marking on said chart upon the application thereto of the second component of said marking system, said first and second components being independently selected from the class consisting of (a) a salt of a transition metal and (b) an organic compound capable of reacting with said salt to provide said visible marking on said chart, with the provision that when the first component is selected from (a) the second component must be selected from (b) and vice versa.

DESIGNS

OCTOBER 24, 1967

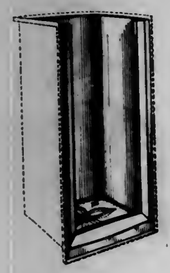
208,966
SINK
Jack N. Kaiser, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Original design application Oct. 23, 1965, Ser. No. 87,833, now Patent No. 207,249, dated Mar. 28, 1967. Divided and this application Feb. 21, 1967, Ser. No. 5,911
Term of patent 14 years
(Cl. D4—2)



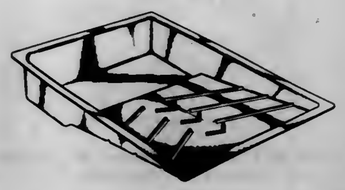
208,967
CORNER ANGLE SHOWER STALL
Lawrence E. Wolske, Benton Harbor, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 3,861
Term of patent 14 years
(Cl. D4—4)



208,968
SHOWER STALL
Lawrence E. Wolske, Benton Harbor, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 3,862
Term of patent 14 years
(Cl. D4—4)



208,969
PAINT ROLLER TRAY LINER
Ted L. Paxton, P.O. Box 2006, Riverside, Calif. 92506
Filed Nov. 7, 1966, Ser. No. 4,575
Term of patent 14 years
(Cl. D9—2)

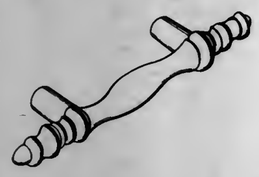


208,970
DOOR KNOCKER
Theodore A. Sawallesh, 3011 Westcott St., Falls Church, Va. 22042
Filed May 24, 1966, Ser. No. 2,416
Term of patent 14 years
(Cl. D10—7)

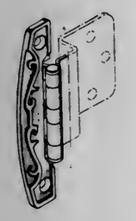




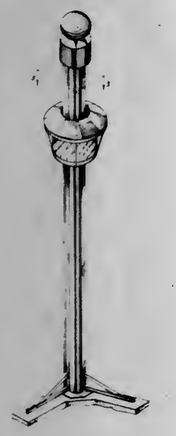
208,971
PULL
Leland George Stone, Mundelein, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Feb. 9, 1967, Ser. No. 5,743
Term of patent 14 years
(Cl. D10—8)



208,972
HINGE
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed July 11, 1966, Ser. No. 3,035
Term of patent 14 years
(Cl. D10—9)



208,973
RIDE CAR LIFT TOWER
Alan B. Hawes, 8504 Seaview Ave., Wildwood Crest, N.J. 08260
Filed Aug. 12, 1966, Ser. No. 3,440
Term of patent 14 years
(Cl. D13—1)



208,974
MEDALLION
Leland George Stone, Mundelein, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Jan. 9, 1967, Ser. No. 5,349
Term of patent 14 years
(Cl. D13—1)



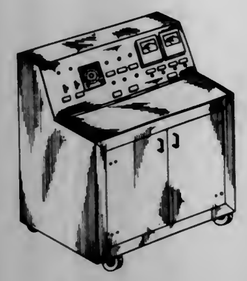
208,975
AUXILIARY SUN VISOR
Emil J. Koubele, Rte. 3, Box 482, Junction City, Oreg. 97448
Filed Apr. 4, 1967, Ser. No. 6,521
Term of patent 14 years
(Cl. D14—6)



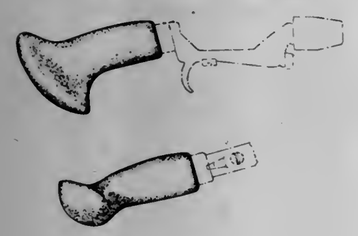
208,976
CHAIR
Ernst Moeckl, Stuttgart, Germany, assignor to Lubke K.G., Rheda, Westphalia, Germany, a corporation of Germany
Filed Nov. 19, 1965, Ser. No. 88,159
Term of patent 14 years
(Cl. D15—1)



208,977
MINIATURIZED FLUID MECHANICS LABORATORY CENTER
Donald A. Gilbrech, 417 Government Ave., Fayetteville, Ark. 72701
Filed July 28, 1966, Ser. No. 3,247
Term of patent 14 years
(Cl. D16—2)



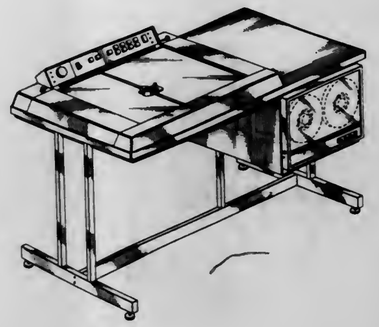
208,978
FISHING ROD HANDLE GRIP
Terry J. Kirk, 157 N. Bellevue, Memphis, Tenn. 38104
Filed Jan. 9, 1967, Ser. No. 5,344
Term of patent 14 years
(Cl. D22—23)



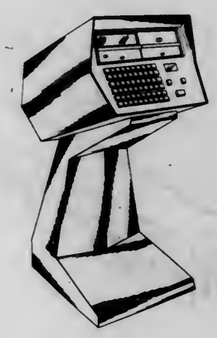
208,979
COMBINED WIPER AND REST FOR SOLDERING TOOLS
Robert C. Edgerton, Wichita, Kans., assignor to Vanguard Electronic Tools, Inc., Newton, Kans., a corporation of Kansas
Filed Aug. 29, 1966, Ser. No. 3,627
Term of patent 14 years
(Cl. D26—1)



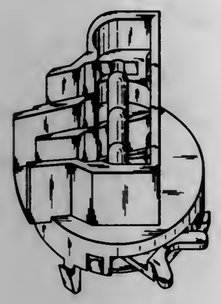
208,980
GRAPHICAL DATA DIGITIZER
John A. Dykmans, Saratoga, and John Connor, Fairfax, Calif., assignors to Calma Company, a corporation of California
Filed Feb. 25, 1966, Ser. No. 1,197
Term of patent 14 years
(Cl. D26—5)



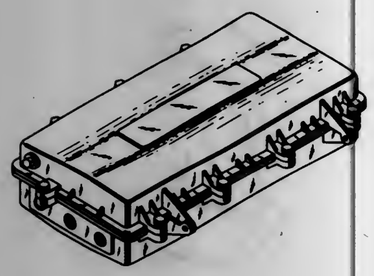
208,981
CONTROL CONSOLE
Lindsey B. Hansen, Ogden, Utah, assignor to Hardy Scales Company, Maywood, Calif., a corporation of California
Filed Oct. 26, 1966, Ser. No. 4,438
Term of patent 14 years
(Cl. D26—5)



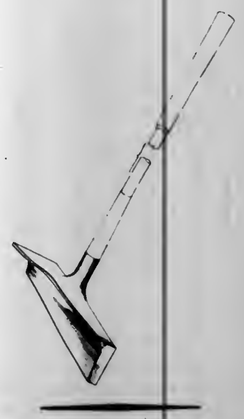
208,982
COMBINED ELECTRICAL SWITCH AND TERMINAL SOCKET
Dudley H. Campbell, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1966, Ser. No. 614
Term of patent 14 years
(Cl. D26—13)



208,983
OUTDOOR HIGH FREQUENCY AMPLIFIER CASE OR THE LIKE
Eric Winston, Melrose Park, Pa., assignor to Jerrold Electronics Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 27, 1966, Ser. No. 2,814
Term of patent 14 years
(Cl. D26—14)



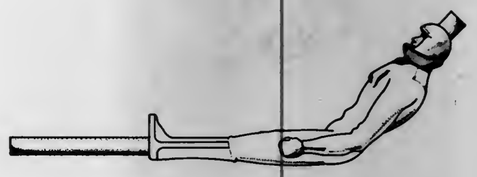
208,984
GOLF CLUB OR SIMILAR ARTICLE
Robert K. Huelsman, 136 Clifton St., Wallingford, Conn. 06492, and John C. Papke, 44 Houton Ave., Meriden, Conn. 06450
Filed June 30, 1966, Ser. No. 2,879
Term of patent 3½ years
(Cl. D34—5)



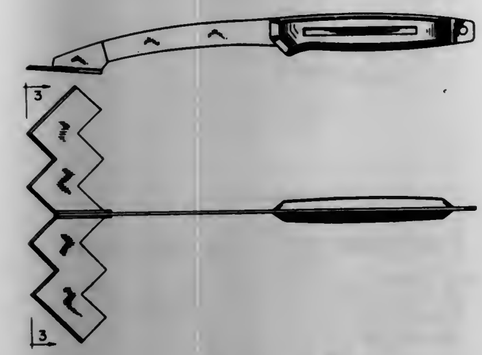
208,985
GOLF BAG
Howard J. Wilkens, Cincinnati, Ohio, assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 4,619
Term of patent 14 years
(Cl. D34—5)



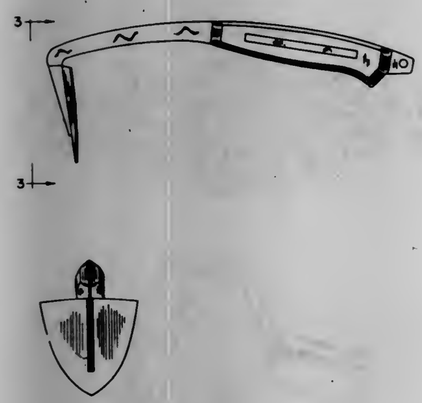
208,986
TOY BLOW LAUNCHER
Allen Cole, 1201 Raydale Road, Hyattsville, Md. 20783
Filed Sept. 1, 1966, Ser. No. 3,685
Term of patent 3½ years
(Cl. D34—15)



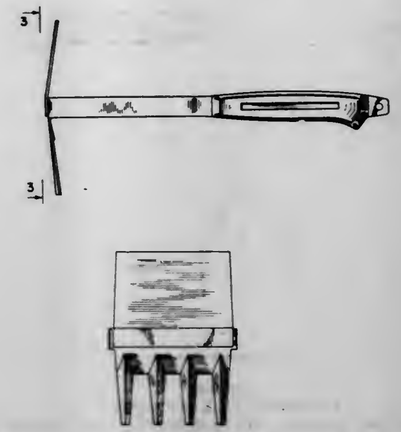
208,987
GARDEN CULTIVATOR
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,567
Term of patent 14 years
(Cl. D35—2)



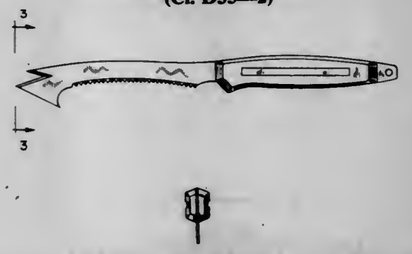
208,988
GARDEN HOE
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,568
Term of patent 14 years
(Cl. D35—2)



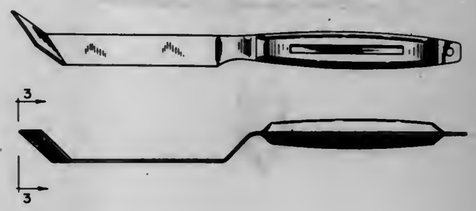
208,989
GARDEN TOOL
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,569
Term of patent 14 years
(Cl. D35—2)



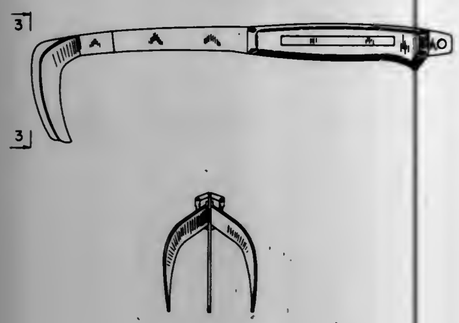
208,990
GARDEN KNIFE
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,570
Term of patent 14 years
(Cl. D35—2)



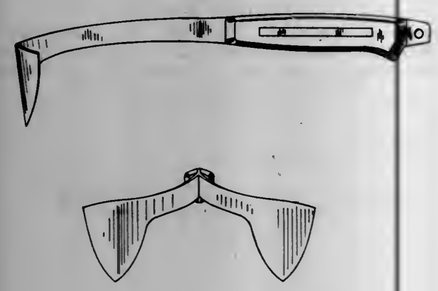
208,991
GARDEN TOOL
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,571
Term of patent 14 years
(Cl. D35—2)



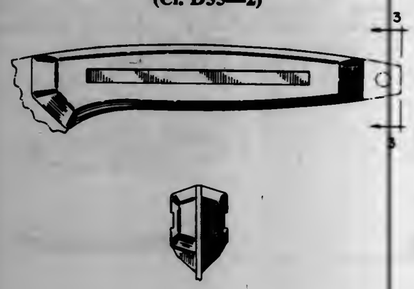
208,992
GARDEN CULTIVATOR
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,574
Term of patent 14 years
(Cl. D35—2)



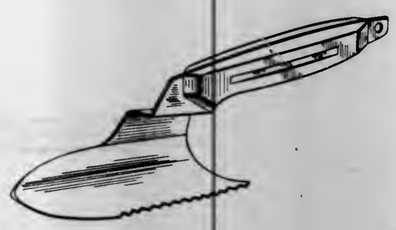
208,993
GARDEN CULTIVATOR
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,577
Term of patent 14 years
(Cl. D35—2)



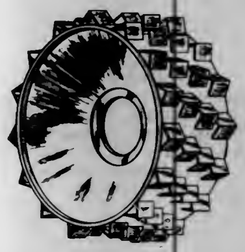
208,994
GARDEN IMPLEMENT HANDLE
Howard A. Anderson, Pittsburgh, Pa., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,578
Term of patent 14 years
(Cl. D35—2)



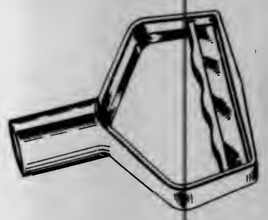
208,995
GARDEN TROWEL
Howard A. Anderson, Pittsburgh, Pa., and Henry J. Rosendall, Grand Rapids, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 24, 1966, Ser. No. 3,579
Term of patent 14 years
(Cl. D35—2)



208,996
VEHICULAR WHEEL FOR COMPACTING SANITARY FILL
Fred Joseph Caron, Citrus Heights, and Orville G. Barnum, San Mateo, Calif., assignors to Pactor Corporation, West Sacramento, Calif., a corporation of California
Filed May 18, 1966, Ser. No. 2,341
Term of patent 14 years
(Cl. D39—1)



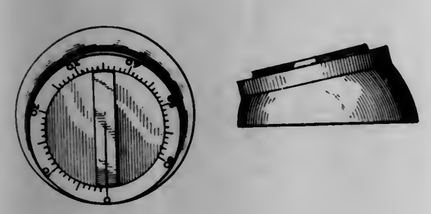
208,997
IMPLEMENT HANDLE
Howard A. Anderson, Pittsburgh, Pa., and Robert A. Yonkers, Grandville, Mich., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 15, 1966, Ser. No. 3,465
Term of patent 14 years
(Cl. D39—1)



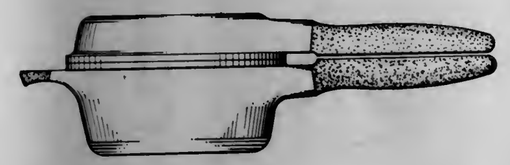
208,998
CLOCK
François B. Jeanrenaud, Saint-Blaise, Switzerland, assignor to Derby S.A., Neuchatel, Switzerland
Filed July 29, 1966, Ser. No. 3,252
Claims priority, application Switzerland Feb. 10, 1966
Term of patent 14 years
(Cl. D42—7)



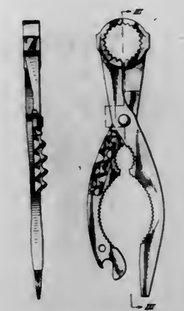
208,999
TIMER
Werner Staiger, 34 Postf., 7742 St. Georgen, Black Forest, Germany
Filed Nov. 23, 1966, Ser. No. 4,789
Term of patent 14 years
(Cl. D42—7)



209,000
COVERED COOKING POT
Masaru Yamazaki, 1123 Furue, Furuta-machi, Hiroshima Prefecture, Hiroshima, Japan
Filed June 13, 1966, Ser. No. 2,657
Claims priority, application Japan Apr. 20, 1966
Term of patent 14 years
(Cl. D44—1)



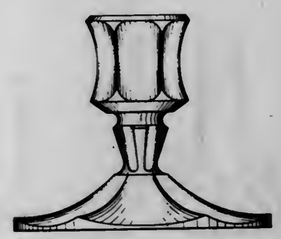
209,001
COMBINATION TOOL
Joseph N. Amigone, 3404 Main St., Buffalo, N.Y. 14214
Filed Dec. 8, 1965, Ser. No. 109
Term of patent 14 years
(Cl. D44—29)



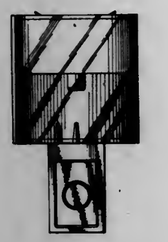
209,002
CANDLESTICK
Wallace W. Ward, Chatham, N.J., assignor to Diecasters Inc., Closter, N.J., a corporation of New Jersey
Filed Apr. 5, 1967, Ser. No. 6,538
Term of patent 14 years
(Cl. D48—2)



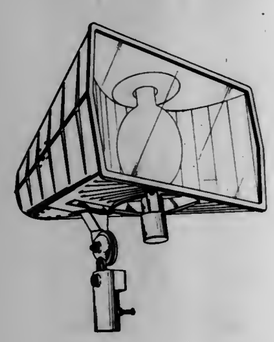
209,003
CANDLESTICK
Wallace W. Ward, Chatham, N.J., assignor to Diecasters Inc., Closter, N.J., a corporation of New Jersey
Filed Apr. 5, 1967, Ser. No. 6,539
Term of patent 14 years
(Cl. D48—2)



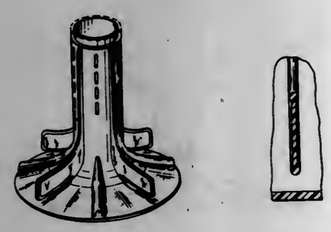
209,004
GAS LAMP
Ellwood E. Little, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Feb. 14, 1967, Ser. No. 5,809
Term of patent 14 years
(Cl. D48—4)



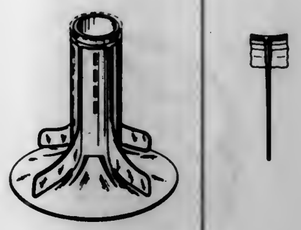
209,005
FLOODLIGHT
Buell Moore, Houston, Tex., assignor to Esquire, Inc., Houston, Tex., a corporation of Delaware
Filed May 6, 1966, Ser. No. 2,206
Term of patent 14 years
(Cl. D48—20)



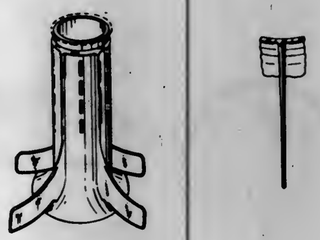
209,006
WASHING MACHINE AGITATOR
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 4,023
Term of patent 14 years
(Cl. D49—1)



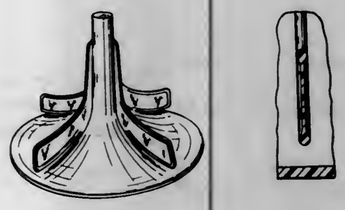
209,007
WASHING MACHINE AGITATOR
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 4,035
Term of patent 14 years
(Cl. D49—1)



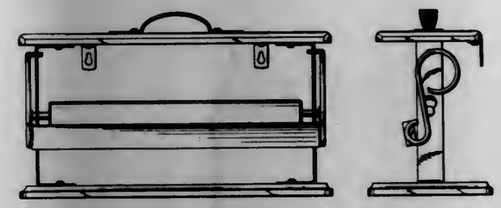
209,008
WASHING MACHINE AGITATOR
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 4,039
Term of patent 14 years
(Cl. D49—1)



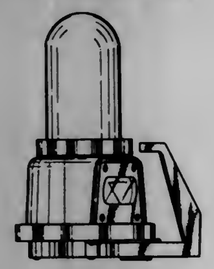
209,009
WASHING MACHINE AGITATOR
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 4,034
Term of patent 14 years
(Cl. D49—1)



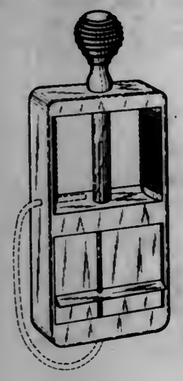
209,010
PAPER TOWEL HOLDER
Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey
Filed Nov. 4, 1966, Ser. No. 4,560
Term of patent 14 years
(Cl. D52—2)



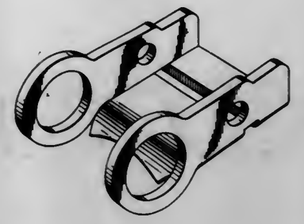
209,011
PORTABLE RADIATION DETECTOR
Mario Sollima, Colombes, Jean Guibourg, Bievres, and Serge Lebèfaude, Vaucresson, France, assignors to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France
Filed Apr. 11, 1966, Ser. No. 1,826
Claims priority, application France Oct. 15, 1965
Term of patent 7 years
(Cl. D52—6)



209,012
ANTI-FREEZE TESTER
Ronald E. McLin, Springfield, Ohio, assignor to Mid-Continent Manufacturing Co., Springfield, Ohio, a corporation of Ohio
Filed Dec. 2, 1966, Ser. No. 4,899
Term of patent 14 years
(Cl. D52—7)



209,013
BUCKLE FOR METAL BAND TIE STRAP
Archibald Edgar McElroy, 997 Skipack Pike, Blue Bell, Pa. 19422
Filed Dec. 21, 1966, Ser. No. 5,145
Term of patent 14 years
(Cl. D54—1)



209,014
SPOON OR SIMILAR ARTICLE OF FLATWARE
Hiroshi Soehara, Tsubame, Niigata, Japan, assignor to Soehara Mfg. Co., Ltd., Tsubame, Niigata, Japan, a corporation of Japan
Filed Apr. 10, 1967, Ser. No. 6,591
Claims priority, application Japan Feb. 9, 1967
Term of patent 14 years
(Cl. D54—12)



209,015
SPOON OR SIMILAR ARTICLE OF FLATWARE
Melvin A. Lea, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Apr. 19, 1967, Ser. No. 6,751
Term of patent 14 years
(Cl. D54—12)



209,016
PAIR OF SPECTACLES
Harry Weissman, Great Neck, N.Y. (% Paramount Optical Mfg. Corp., 60—06 39th Ave., Woodside, N.Y. 11377)
Filed Apr. 12, 1967, Ser. No. 6,663
Term of patent 14 years
(Cl. D57—1)



209,017
BARREL
Peter Derek Raymond Rice, Hilton, Huntingdon, England, assignor to Harcostar Limited, London, England, a British company
Filed May 27, 1966, Ser. No. 2,456
Claims priority, application Great Britain Nov. 29, 1965
Term of patent 14 years
(Cl. D58—3)

209,018
BOTTLE
Morris L. Holtz, 17 Holly Drive, Short Hills, N.J. 07078
Filed Dec. 7, 1966, Ser. No. 4,965
Term of patent 14 years
(Cl. D58—6)



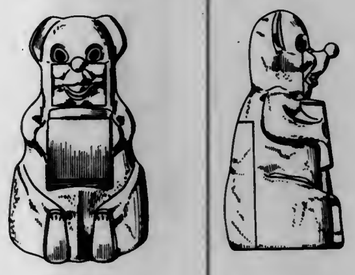
209,019
BOTTLE
Gerald W. Neese, Compton, and John E. Lenhart, Los Angeles, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed July 11, 1966, Ser. No. 3,031
Term of patent 14 years
(Cl. D58—8)



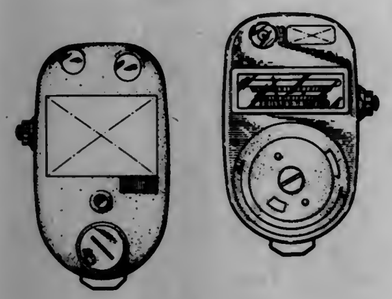
209,020
BOTTLE
James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Sept. 19, 1966, Ser. No. 3,917
Term of patent 14 years
(Cl. D58—4)



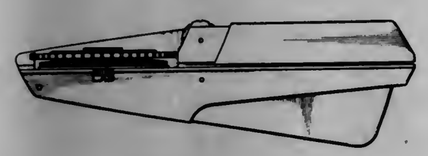
209,021
REFUSE RECEPTACLE
James R. Fagenstrom, 925 River Drive S., Great Falls, Mont. 59401
Filed Nov. 18, 1966, Ser. No. 4,730
Term of patent 14 years
(Cl. D58—17)



209,022
EXPOSURE METER
John Gugliotta, Clark, and Kenneth J. Riddle, Nutley, N.J., assignors to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 1,310
Term of patent 14 years
(Cl. D61—1)



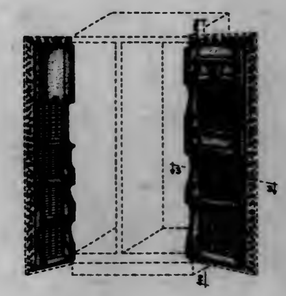
209,023
TAPE EMBOSSING TOOL
John H. Humphrey, Los Angeles, and Harry F. Scheirer and Leonard W. Cheslak, Garden Grove, Calif., assignors to Apsco Products, Los Angeles, Calif., a corporation of Illinois, a division of Maple Industries, Inc.
Filed Jan. 12, 1967, Ser. No. 5,401
Term of patent 14 years
(Cl. D64—10)



209,024
PORTABLE ADDING MACHINE OR SIMILAR ARTICLE
Pierre L. Crease, Kettering, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed June 13, 1966, Ser. No. 2,648
Term of patent 14 years
(Cl. D64—11)

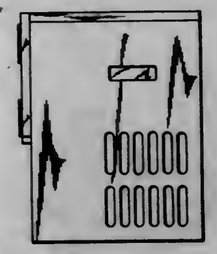


209,025
REFRIGERATED CABINET
John K. Wagner, deceased, late of Marengo, Iowa by Jeanette A. Wagner, administratrix, Marengo, Iowa, assignor to Amana Refrigeration, Inc., Amana, Iowa, a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 3,724
Term of patent 14 years
(Cl. D67—3)

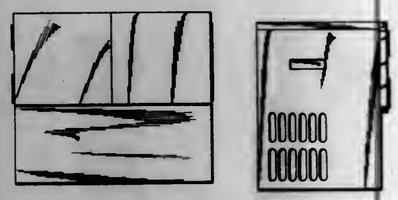


209,026
REFRIGERATOR CABINET FOR A KEG OF BEVERAGE
Kiyoshi Tobe, Tokyo, Japan, assignor to Nippon Electric Industry Company Limited, Tokyo, Japan
Filed Dec. 14, 1966, Ser. No. 5,034
Term of patent 14 years
(Cl. D67—3)

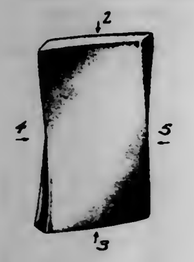




209,027
REFRIGERATOR CABINET FOR KEGS OF BEVERAGE
Kiyoshi Tobe, Tokyo, Japan, assignor to Nippon Electric Industries Company Limited, Tokyo, Japan
Filed Dec. 13, 1966, Ser. No. 5,035
Term of patent 14 years
(Cl. D67—3)



209,028
SOAP BAR
George Valian, 2701 Bellefontaine, Houston, Tex. 77025
Filed Oct. 26, 1966, Ser. No. 4,467
Term of patent 14 years
(Cl. D73—1)



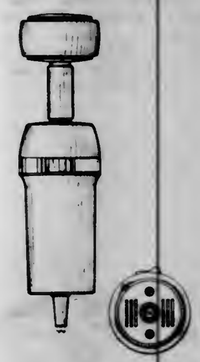
209,029
TELEPHONE INDEX OR THE LIKE
Richard McFadyen, Essex Fells, and William Macowski, Montclair, N.J., assignors to Ketcham & McDougall, Inc., Roseland, N.J., a corporation of New Jersey
Filed Mar. 17, 1966, Ser. No. 1,513
Term of patent 14 years
(Cl. D74—1)



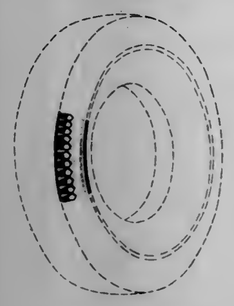
209,030
PEN
Raymond Felix Bonaud, Aubergenville, France, assignor to Le Foyer et Cie, Paris, France
Filed Dec. 6, 1966, Ser. No. 4,934
Claims priority, application France June 9, 1966
Term of patent 14 years
(Cl. D74—17)



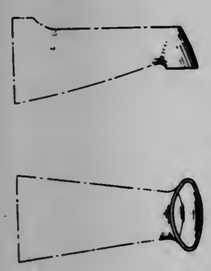
209,031
MASSAGING UNIT
Akihiko Teranishi, 8 3-chome, Yamawakimachi, Showaku, Nagoya, Japan
Filed Jan. 6, 1966, Ser. No. 499
Term of patent 14 years
(Cl. D83—1)



209,032
TIRE
Marco Maxemovich, Warren, Mich., assignor to Uniroyal Inc., a corporation of New Jersey
Filed Sept. 28, 1966, Ser. No. 4,073
Term of patent 14 years
(Cl. D90—20)



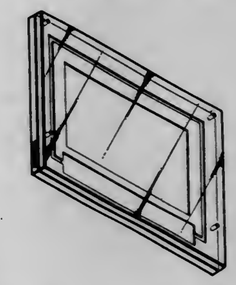
209,033
DIVERTER SPOUT
William H. Armstrong, Bloomfield Hills, Mich., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Sept. 8, 1965, Ser. No. 86,902
Term of patent 14 years
(Cl. D91—3)



209,034
BASE FOR A DRINKING FOUNTAIN
Donald D. Johnson, Bountiful, Utah, assignor to Buehner Research and Development, Salt Lake City, Utah, a limited partnership
Filed Apr. 25, 1966, Ser. No. 2,005
Term of patent 14 years
(Cl. D91—4)



209,035
COMBINED LICENSE AND NAME HOLDER
Tony Robert, 5701 Southwest Freeway, Houston, Tex. 77027
Filed Oct. 20, 1965, Ser. No. 87,627
Term of patent 14 years
(Cl. D96—3)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,774, 10–24–67, Cl. 11.

Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,774.

LIST OF DESIGN PATENTEES

Amana Refrigeration, Inc.: *See*—
Wagner, John K. and J. A. 209,025.

American Radiator & Standard Sanitary Corp.: *See*—
Kaiser, Jack N. 208,966.

Amerock Corp.: *See*—
Clayton, La Verne E. 208,972.
Stone, Leland G. 208,971.
Stone, Leland G. 208,974.

Amigone, Joseph N. Combination tool. 209,001, 10–24–67, Cl. D44—29.

Anderson, Howard A., to Bissell Inc. Garden implement handle. 208,994, 10–24–67, Cl. D35—2.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden cultivator. 208,987, 10–24–67, Cl. D35—2.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden knife. 208,990, 10–24–67, Cl. D35—2.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden cultivator. 208,992, 10–24–67, Cl. D35—2.

Anderson, Howard A., and R. A. Yonkers, to Bissell Inc. Implement handle. 208,997, 10–24–67, Cl. D39—1.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden hoe. 208,988, 10–24–67, Cl. D35—2.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden tool. 208,989, 10–24–67, Cl. D35—2.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden tool. 208,991, 10–24–67, Cl. D35—2.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden cultivator. 208,993, 10–24–67, Cl. D35—2.

Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden trowel. 208,995, 10–24–67, Cl. D35—2.

Appel, Mel, and M. Schnur, to Elpo Industries Inc. Paper towel holder. 209,010, 10–24–67, Cl. D52—2.

Apsco Products: *See*—
Humphrey, John H., Scheirer, and Cheslak. 209,023.

Barnum, Orville G.: *See*—
Caron, Fred J., and Barnum. 208,996.

Bissell Inc.: *See*—
Anderson, Howard A. 208,994.
Anderson, Howard A., and Rosendall. 208,987.
Anderson, Howard A., and Rosendall. 208,988.
Anderson, Howard A., and Rosendall. 208,989.
Anderson, Howard A., and Rosendall. 208,990.
Anderson, Howard A., and Rosendall. 208,991.
Anderson, Howard A., and Rosendall. 208,992.
Anderson, Howard A., and Rosendall. 208,993.
Anderson, Howard A., and Rosendall. 208,995.
Anderson, Howard A., and Yonkers. 208,997.

Bonaud, Raymond F., to Le Foyer et Cie. Pen. 209,030, 10–24–67, Cl. D74—17.

Borg-Warner Corp.: *See*—
Armstrong, William H. 209,033.

Brunswick Corp.: *See*—
Wilkens, Howard J. 208,985.

Buehner Research and Development: *See*—
Johnson, Donald D. 209,034.

Calma Co.: *See*—
Dykmans, John A., and Connor. 208,980.

Campbell, Dudley H., to Stackpole Carbon Co. Combined electrical switch and terminal socket. 208,982, 10–24–67, Cl. D26—13.

Caron, Fred J., and O. G. Barnum, to Pactor Corp. Vehicular wheel for compacting sanitary fill. 208,996, 10–24–67, Cl. D39—1.

Cheslak, Leonard W.: *See*—
Humphrey, John H., Scheirer, and Cheslak. 209,023.

Clayton, La Verne E., to Amerock Corp. Hinge. 208,972, 10–24–67, Cl. D10—9.

Cole, Allen. Toy blow launcher. 208,986, 10–24–67, Cl. D34—15.

Coleman Co., Inc., The: *See*—
Little, Ellwood E. 209,004.

Compagnie Francaise Thomson Houston-Hotchkiss Brandt: *See*—
Sollima, Mario, Guibourg, and Lebefaude. 209,011.

Connor, John: *See*—
Dykmans, John A., and Connor. 208,980.

Crease, Pierre L., to The National Cash Register Co. Portable adding machine or similar article. 209,024, 10–24–67, Cl. D64—11.

Derby S.A.: *See*—
Jeanrenaud, Francois B. 208,998.

Diecasters Inc.: *See*—
Ward, Wallace W. 209,002.
Ward, Wallace W. 209,003.

Dykmans, John A., and J. Connor, to Calma Co. Graphical data digitizer. 208,980, 10–24–67, Cl. D26—5.

Edgerton, Robert C., to Vanguard Electronic Tools, Inc. Combined wiper and rest for soldering tools. 208,979, 10–24–67, Cl. D26—1.

Elpo Industries Inc.: *See*—
Appel, Mel, and Schnur. 209,010.

Esquire, Inc.: *See*—
Moore, Buell. 209,005.

Fagenstrom, James R. Refuse receptacle. 209,021, 10–24–67, Cl. D58—17.

Gilbrech, Donald A. Miniaturized fluid mechanics laboratory center. 208,977, 10–24–67, Cl. D16—2.

Gugliotta, John, and K. J. Riddle, to Weston Instruments, Inc. Exposure meter. 209,022, 10–24–67, Cl. D61—1.

Guibourg, Jean: *See*—
Sollima, Mario, Guibourg, and Lebefaude. 209,011.

Hansen, Lindsey B., to Hardy Scales Co. Control console. 208,981, 10–24–67, Cl. D26—5.

Harcostar Ltd.: *See*—
Rice, Peter D. R. 209,017.

Hardy Scales Co.: *See*—
Hansen, Lindsey B. 208,981.

Hawes, Alan B. Ride car lift tower. 208,973, 10–24–67, Cl. D13—1.

Holtz, Morris L. Bottle. 209,018, 10–24–67, Cl. D58—6.

Huelsman, Robert K., and J. C. Papke. Golf club or similar article. 208,984, 10–24–67, Cl. D34—5.

Humphrey, John H., H. F. Scheirer, and L. W. Cheslak, to Apsco Products. Tape embossing tool. 209,023, 10–24–67, Cl. D64—10.

Jeanrenaud, Francois B., to Derby S.A. Clock. 208,998, 10–24–67, Cl. D42—7.

Jerrold Electronic Corp.: *See*—
Winston, Eric. 208,983.

Johnson, Donald D., to Buehner Research and Development. Base for a drinking fountain. 209,034, 10–24–67, Cl. D91—4.

Kaiser, Jack N., to American Radiator & Standard Sanitary Corp. Sink. 208,966, 10–24–67, Cl. D4—2.

Ketcham & McDougall, Inc.: *See*—
McFadyen, Richard, and Macowski. 209,029.

Kirk, Terry J. Fishing rod handle grip. 208,978, 10–24–67, Cl. D22—23.

Koubele, Emil J. Auxiliary sun visor. 208,975, 10–24–67, Cl. D14—6.

Lea, Melvin A., to Oneida Ltd. Spoon or similar article of flatware. 209,015, 10–24–67, Cl. D54—12.

Lebefaude, Serge: *See*—
Sollima, Marico, Guibourg, and Lebefaude. 209,011.

Le Foyer et Cie: *See*—
Bonaud, Raymond F. 209,030.

Lenhart, John E.: *See*—
Neese, Gerald W., and Lenhart. 209,019.

Little, Ellwood E., to The Coleman Co., Inc. Gas lamp. 209,004, 10–24–67, Cl. D48—4.

Lubke K.G.: *See*—
Moeckl, Ernst. 208,976.

Macowski, William: *See*—
McFadyen, Richard, and Macowski. 209,029.

Maxemovich, Marco, to Uniroyal Inc. Tire. 209,032, 10–24–67, Cl. D90—20.

Maytag Co., The: *See*—
Smith, Thomas R. 209,006.
Smith, Thomas R. 209,007.
Smith, Thomas R. 209,008.
Smith, Thomas R. 209,009.

McElroy, Archibald E. Buckle for metal band tie strap. 209,013, 10–24–67, Cl. D54—1.

McFadyen, Richard, and W. Macowski, to Ketcham & McDougall, Inc. Telephone index or the like. 209,029, 10–24–67, Cl. D74—1.

McLin, Ronald E., to Mid-Continent Mfg. Co. Anti-freeze tester. 209,012, 10–24–67, Cl. D52—7.

Mid-Continent Mfg. Co.: *See*—
McLin, Ronald E. 209,012.

Moeckl, Ernst, to Lubke K.G. Chair. 208,976, 10–24–67, Cl. D15—1.

Moore, Buell, to Esquire, Inc. Floodlight. 209,005, 10–24–67, Cl. D48—20.

National Cash Register Co., The: *See*—
Crease, Pierre L. 209,024.

Neese, Gerald W., and J. E. Lenhart, to Purex Corp., Ltd. Bottle. 209,019, 10–24–67, Cl. D58—8.

Nippon Electric Industry Co. Ltd.: *See*—
Tobe, Kiyoshi. 209,026.
Tobe, Kiyoshi. 209,027.

Oneida Ltd.: *See*—
Lea, Melvin A. 209,015.

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Stone, Leland G. 208,974.
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Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden cultivator. 208,993, 10–24–67, Cl. D35—2.
Anderson, Howard A., and H. J. Rosendall, to Bissell Inc. Garden trowel. 208,995, 10–24–67, Cl. D35—2.
Appel, Mel, and M. Schnur, to Elpo Industries Inc. Paper towel holder. 209,010, 10–24–67, Cl. D52—2.
Apsco Products: *See*—
Humphrey, John H., Scheirer, and Cheslak. 209,023.
Barnum, Orville G.: *See*—
Caron, Fred J., and Barnum. 208,996.
Bissell Inc.: *See*—
Anderson, Howard A. 208,994.
Anderson, Howard A., and Rosendall. 208,987.
Anderson, Howard A., and Rosendall. 208,988.
Anderson, Howard A., and Rosendall. 208,989.
Anderson, Howard A., and Rosendall. 208,990.
Anderson, Howard A., and Rosendall. 208,991.
Anderson, Howard A., and Rosendall. 208,992.
Anderson, Howard A., and Rosendall. 208,993.
Anderson, Howard A., and Rosendall. 208,995.
Anderson, Howard A., and Yonkers. 208,997.
Bonaud, Raymond F., to Le Foyer et Cie. Pen. 209,030. 10–24–67, Cl. D74—17.
Borg-Warner Corp.: *See*—
Armstrong, William H. 209,033.
Brunswick Corp.: *See*—
Wilkens, Howard J. 208,985.
Buehner Research and Development: *See*—
Johnson, Donald D. 209,034.
Calma Co.: *See*—
Dykmans, John A., and Connor. 208,980.
Campbell, Dudley H., to Stackpole Carbon Co. Combined electrical switch and terminal socket. 208,982. 10–24–67, Cl. D26—13.
Caron, Fred J., and O. G. Barnum, to Pactor Corp. Vehicular wheel for compacting sanitary fill. 208,996. 10–24–67, Cl. D39—1.
Cheslak, Leonard W.: *See*—
Humphrey, John H., Scheirer, and Cheslak. 209,023.
Clayton, La Verne E., to Amerock Corp. Hinge. 208,972. 10–24–67, Cl. D10—9.
Cole, Allen. Toy blow launcher. 208,986. 10–24–67, Cl. D34—15.
Coleman Co., Inc., The: *See*—
Little, Ellwood E. 209,004.
Compagnie Francaise Thomson Houston-Hotchkiss Brandt: *See*—
Sollima, Mario, Guibourg, and Lebefaude. 209,011.
Connor, John: *See*—
Dykmans, John A., and Connor. 208,980.
Crease, Pierre, L., to The National Cash Register Co. Portable adding machine or similar article. 209,024, 10–24–67, Cl. D64—11.
Derby S.A.: *See*—
Jeanrenaud, Francois B. 208,998.
Diecasters Inc.: *See*—
Ward, Wallace W. 209,002.
Ward, Wallace W. 209,003.
Dykmans, John A., and J. Connor, to Calma Co. Graphical data digitizer. 208,980, 10–24–67, Cl. D26—5.
Edgerton, Robert C., to Vanguard Electronic Tools, Inc. Combined wiper and rest for soldering tools. 208,979, 10–24–67, Cl. D26—1.
Elpo Industries Inc.: *See*—
Appel, Mel, and Schnur. 209,010.
Esquire, Inc.: *See*—
Moore, Buell. 209,005.
Fagenstrom, James R. Refuse receptacle. 209,021, 10–24–67, Cl. D58—17.
Glibrech, Donald A. Miniaturized fluid mechanics laboratory center. 208,977, 10–24–67, Cl. D16—2.
Gugliotta, John, and K. J. Riddle, to Weston Instruments, Inc. Exposure meter. 209,022, 10–24–67, Cl. D61—1.
Guibourg, Jean: *See*—
Sollima, Mario, Guibourg, and Lebefaude. 209,011.
Hansen, Lindsey B., to Hardy Scales Co. Control console. 208,981, 10–24–67, Cl. D26—5.
Harcostar Ltd.: *See*—
Rice, Peter D. R. 209,017.
Hardy Scales Co.: *See*—
Hansen, Lindsey B. 208,981.
Hawes, Alan B. Ride car lift tower. 208,973, 10–24–67, Cl. D13—1.
Holtz, Morris L. Bottle. 209,018, 10–24–67, Cl. D58—6.
Huelsman, Robert K., and J. C. Papke. Golf club or similar article. 208,984, 10–24–67, Cl. D34—5.
Humphrey, John H., H. F. Scheirer, and L. W. Cheslak, to Apsco Products. Tape embossing tool. 209,023, 10–24–67, Cl. D64—10.
Jeanrenaud, Francois B., to Derby S.A. Clock. 208,998, 10–24–67, Cl. D42—7.
Jerrold Electronic Corp.: *See*—
Winston, Eric. 208,983.
Johnson, Donald D., to Buehner Research and Development. Base for a drinking fountain. 209,034, 10–24–67, Cl. D91—4.
Kaiser, Jack N., to American Radiator & Standard Sanitary Corp. Sink. 208,966, 10–24–67, Cl. D4—2.
Ketcham & McDougall, Inc.: *See*—
McFadyen, Richard, and Macowski. 209,029.
Kirk, Terry J. Fishing rod handle grip. 208,978, 10–24–67, Cl. D22—23.
Koubele, Emil J. Auxiliary sun visor. 208,975, 10–24–67, Cl. D14—6.
Lea, Melvin A., to Oneida Ltd. Spoon or similar article of flatware. 209,015, 10–24–67, Cl. D54—12.
Lebefaude, Serge: *See*—
Sollima, Marico, Guibourg, and Lebefaude. 209,011.
Le Foyer et Cie: *See*—
Bonaud, Raymond F. 209,030.
Lenhart, John E.: *See*—
Neese, Gerald W., and Lenhart. 209,019.
Little, Ellwood E., to The Coleman Co., Inc. Gas lamp. 209,004, 10–24–67, Cl. D48—4.
Lubke K.G.: *See*—
Moeckl, Ernst. 208,976.
Macowski, William: *See*—
McFadyen, Richard, and Macowski. 209,029.
Maxemovich, Marco, to Uniroyal Inc. Tire. 209,032, 10–24–67, Cl. D90—20.
Maytag Co., The: *See*—
Smith, Thomas R. 209,006.
Smith, Thomas R. 209,007.
Smith, Thomas R. 209,008.
Smith, Thomas R. 209,009.
McElroy, Archibald E. Buckle for metal band tie strap. 209,013, 10–24–67, Cl. D54—1.
McFadyen, Richard, and W. Macowski, to Ketcham & McDougall, Inc. Telephone index or the like. 209,029, 10–24–67, Cl. D74—1.
McLin, Ronald E., to Mid-Continent Mfg. Co. Anti-freeze tester. 209,012, 10–24–67, Cl. D52—7.
Mid-Continent Mfg. Co.: *See*—
McLin, Ronald E. 209,012.
Moeckl, Ernst, to Lubke K.G. Chair. 208,976, 10–24–67, Cl. D15—1.
Moore, Buell, to Esquire, Inc. Floodlight. 209,005. 10–24–67, Cl. D48—20.
National Cash Register Co., The: *See*—
Crease, Pierre L. 209,024.
Neese, Gerald W., and J. E. Lenhart, to Purex Corp., Ltd. Bottle. 209,019, 10–24–67, Cl. D58—8.
Nippon Electric Industry Co. Ltd.: *See*—
Tobe, Kiyoshi. 209,026.
Tobe, Kiyoshi. 209,027.
Oneida Ltd.: *See*—
Lea, Melvin A. 209,015.

Owens-Illinois, Inc.: *See*—
Shepler, James A. 209,020.
Pactor Corp.: *See*—
Caron, Fred J., and Barnum. 208,996.
Papke, John C.: *See*—
Huelsman, Robert K., and Papke. 208,984.
Paxton, Ted L. Paint roller tray liner. 208,969, 10–24–67, Cl. D9—2.
Purex Corp., Ltd.: *See*—
Neese, Gerald W., and Lenhart. 209,019.
Rice, Peter D. R., to Harcostar Ltd. Barrel. 209,017, 10–24–67, Cl. D58—3.
Riddle, Kenneth J.: *See*—
Gugliotta, John, and Riddle. 209,022.
Robert, Tony. Combined license and name holder. 209,035, 10–24–67, Cl. D96—3.
Rosendall, Henry J.: *See*—
Anderson, Howard A., and Rosendall. 208,987.
Anderson, Howard A., and Rosendall. 208,988.
Anderson, Howard A., and Rosendall. 208,989.
Anderson, Howard A., and Rosendall. 208,990.
Anderson, Howard A., and Rosendall. 208,991.
Anderson, Howard A., and Rosendall. 208,992.
Anderson, Howard A., and Rosendall. 208,993.
Sawallesh, Theodore A. Door knocker. 208,970, 10–24–67, Cl. D10—7.
Scheirer, Harry F.: *See*—
Humphrey, John H., Scheirer, and Cheslak. 209,023.
Schnur, Martin: *See*—
Appel, Mel, and Schnur. 209,010.
Shepler, James A., to Owens-Illinois, Inc. Bottle. 209,020, 10–24–67, Cl. D58—8.
Smith, Thomas R., to The Maytag Co. Washing machine agitator. 209,006, 10–24–67, Cl. D49—1.
Smith, Thomas R., to The Maytag Co. Washing machine agitator. 209,007, 10–24–67, Cl. D49—1.
Smith, Thomas R., to The Maytag Co. Washing machine agitator. 209,008, 10–24–67, Cl. D49—1.
Smith, Thomas R., to The Maytag Co. Washing machine agitator. 209,009, 10–24–67, Cl. D49—1.
Soehara, Hiroshi, to Soehara Mfg. Co., Ltd. Spoon or similar article of flatware. 209,014, 10–24–67, Cl. D54—12.
Soehara Mfg. Co., Ltd.: *See*—
Soehara, Hiroshi. 209,014.
Sollima, Mario, J. Guibourg, and S. Lebefaude, to Compagnie Francaise Thomson Houston-Hotchkiss Brandt. Portable radiation detector. 209,011, 10–24–67, Cl. D52—6.
Stackpole Carbon Co.: *See*—
Campbell, Dudley H. 208,982.
Staiger, Werner. Timer. 208,999, 10–24–67, Cl. D42—7.
Stone, Leland G., to Amerock Corp. Pull. 208,971, 10–24–67, Cl. D10—8.
Stone, Leland G., to Amerock Corp. Medallion. 208,974, 10–24–67, D13—1.
Teranishi, Akihiko. Massaging unit. 209,031, 10–24–67, Cl. D82—1.
Tobe, Kiyoshi, to Nippon Electric Industry Co. Ltd. Refrigerator cabinet for keg of beverage. 209,026, 10–24–67, Cl. D67—3.
Tobe, Kiyoshi, to Nippon Electric Industry Co. Ltd. Refrigerator cabinet for kegs of beverage. 209,027, 10–24–67, Cl. D67—3.
Uniroyal Inc.: *See*—
Maxemovich, Marco. 209,032.
Vallan, George. Soap bar. 209,028, 10–24–67, Cl. D73—1.
Vanguard Electronic Tools, Inc.: *See*—
Edgerton, Robert C. 208,979.
Wagner, Jeanette A.: *See*—
Wagner, John K. 209,025.
Wagner, John K., deceased (by J. A. Wagner, administratrix), to Amana Refrigeration, Inc. Refrigerated cabinet. 209,025. 10–24–67, Cl. D67—3.
Ward, Wallace W., to Diecasters Inc. Candlestick. 209,002, 10–24–67, Cl. D48—2.
Ward, Wallace W., to Diecasters Inc. Candlestick. 209,003, 10–24–67, Cl. D48—2.
Weissman, Harry. Pair of spectacles. 209,016, 10–24–67, Cl. D57—1.
Weston Instruments, Inc.: *See*—
Cugliotta, John, and Riddle. 209,022.
Whirlpool Corp.: *See*—
Wolske, Lawrence E. 208,967.
Wolske, Lawrence E. 208,968.
Wilkens, Howard J., to Brunswick Corp. Golf bag. 208,985, 10–24–67, Cl. D34—5.
Winston, Eric, to Jerrold Electronic Corp. Outdoor high frequency amplifier case or the like. 208,983, 10–24–67, Cl. D26—14.
Wolske, Lawrence E., to Whirlpool Corp. Shower stall. 208,968, 10–24–67, Cl. D4—4.
Wolske, Lawrence E., to Whirlpool Corp. Corner angle shower stall. 208,967, 10–24–67, Cl. D4—4.
Yamazaki, Masaru. Covered cooking pot. 209,000, 10–24–67, Cl. D44—1.
Yonkers, Robert A.: *See*—
Anderson, Howard A., and Yonkers. 208,997.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A & T Development Corp.: *See*—
Avril, Arthur C. 3,348,818.
ACF Industries, Inc.: *See*—
Powell, Richard G., and Moran. 3,348,703.
Stevens, Eric S., and Kemp. 3,348,501.
Agfa Aktiengesellschaft: *See*—
Mäder, Helmut, Ulrich, Puschel, and von König. 3,348,945.
AMP Inc.: *See*—
Busler, Willard L. 3,348,286.
Mixon, James L. R., and Wahl. 3,349,167.
Nitzan, David. 3,349,380.
Paulius, Clarence L., and Stauffer. 3,349,364.
Ziegler, George W., Jr. 3,349,166.
Abbott Laboratories: *See*—
Woroch, Eugene L., and Smart. 3,348,999.
Adam, Gunter: *See*—
Marker, Hannes, and Adam. 3,348,854.
Abdun-Nabi, Zaki: *See*—
Gordon, Bernard M., and Abdun-Nabi. 3,349,228.
Abell, Jerrold J., and R. C. Berry, to Rogers Corp. Method of making a waterproof gas-permeable plastic sheet. 3,348,991, 10–24–67, Cl. 156—300.
Abell, Jerrold J., and K. J. Virkus, to Rogers Corp. Microporous plastic sheet material and method of making the same. 3,349,046, 10–24–67, Cl. 260—2.5.
Ackerman, Nathan. Fluid flow control device and mechanisms embodying the same. 3,348,576, 10–24–67, Cl. 137—625.43.
Adam, Gunter: *See*—
Marker, Hannes, and Adam. 3,348,854.
Adamovske Strojirny, narodni podnik: *See*—
Bohac, Frantisek, and Burda. 3,348,480.
Adams, Kenneth C., to Allis-Chalmers Mfg. Co. Wheel clamp. 3,348,884, 10–24–67, Cl. 301—9.
Adams, Phylander S. Automatic safety relief and back pressure valve. 3,348,615, 10–24–67, Cl. 166—97.
Adamson, Kenneth W. Apparatus for etching metal. 3,348,557, 10–24–67, Cl. 134—113.
Addison, George E., to Universal Oil Products Co. Solids sampling apparatus. 3,348,419, 10–24–67, Cl. 73—424.
Addor, Roger W., to American Cyanamid Co. Herbicidal and insecticidal composition. 3,348,940, 10–24–67, Cl. 71—90.
Addressograph-Multigraph Corp.: *See*—
Schulze, John J., and Tregay. 3,349,221.
Adirondack Steel Casting Co., Inc.: *See*—
Akitt, Norman B. 3,348,500.
Aerospace Research Corp.: *See*—
Kriesel, Marshall S., Vetter, and Muelling. 3,348,793.
Afico S.A. Lausanne: *See*—
Stumpf, Burton H. 3,348,746.
Agfa Aktiengesellschaft: *See*—
Baur, Carl, and Otzen. 3,348,898.
Winkler, Alfred, Engelsmann, Landbrecht, and Renner. 3,348,461.
Ahern, Charles J., to The Bendix Corp. Fluidic flip flop devices. 3,348,773, 10–24–67, Cl. 235—201.
Aiken, William R. Arrangement for varying the resistance value of photo-sensitive devices. 3,349,319, 10–24–67, Cl. 323—21.
Air Reduction Co., Inc.: *See*—
Varis, Lee. 3,348,566.
Akitt, Norman B., to Adirondack Steel Casting Co., Inc. Eight wheel railway truck with span bolster. 3,348,500, 10–24–67, Cl. 105—183.
Aktiebolaget Electrolux: *See*—
Lindgren, Nils K. 3,348,300.
Reistad, Bengt R. 3,348,402.
Aktiebolaget Gotaverken: *See*—
Olsson, Johan B. 3,348,602.
Aktiebolaget Kamyr: *See*—
Richter, Johan C. F. C. 3,348,390.
Aktieselskabet Bing & Grondahls Porcellaensfabrik and Bing & Grondahl OG Norden A/S: *See*—
Norlyng, Kristian H. 3,348,318.
Albano, Richard K. Alternator power supply circuit. 3,349,249, 10–24–67, Cl. 307—13.
Albaum, Harry G., to Miles Laboratories, Inc. Process and composition for the enzymatic determination of uric acid. 3,349,006, 10–24–67, Cl. 195—103.5.
Albright, Lyle F., and H. F. Haug, to Purdue Research Foundation. Process for production of alkali metal nitrates and chlorine. 3,348,909, 10–24–67, Cl. 23—102.
Alburger, James R. Gel-forming inspection penetrant and emulsifier compositions and processes. 3,349,041, 10–24–67, 252—301.2.
Alexander, Richard L., H. D. Lyons, F. E. Brown, and R. A. Long, to Gulf Oil Corp. Polyethylene process. 3,349,072, 10–24–67, Cl. 260—94.9.
Alexander, Stephen H., and S. R. Montgomery, to Monsanto Co. Polyester resin modified bituminous compositions. 3,349,051, 10–24–67, Cl. 260—28.5.
Algonquin Shipping and Trading Ltd.: *See*—
Campbell, George T. R., and Laskey. 3,348,515.
All Tech Industries, Inc.: *See*—
Heiss, Harvey. 3,348,841.
Allan, William H., to W. H. Miner Inc. Method and apparatus for lubricating friction draft gear. 3,348,633, 10–24–67, Cl. 184—1.
Allgayer, August, to Schuhmaschiner-Gesellschaft Hanke & Co. m.b.H. Machine for pulling over, heel forming and lasting of shoes. 3,348,250, 10–24–67, Cl. 12—10.1.
Allis-Chalmers Mfg. Co.: *See*—
Adams, Kenneth C. 3,348,884.
Grimes, Patrick G. 3,348,829.
Hawk, Dale W. 3,348,888.
Helan, Glenn A. 3,348,262.
Murdock, Henry T., and Ringel. 3,349,265.
Swiecicki, Ignacy. 3,348,806.
Wolff, George D. 3,348,488.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Bergman, Lars. 3,349,312.
Alul, Husni R., S. G. Clark, and G. J. McEwan, to Monsanto Co. Alkyl aryl process. 3,349,144, 10–24–67, Cl. 260—671.
Aluminium Laboratories Ltd.: *See*—
Rapson, Bryan. 3,349,160.
Amatau, Hideo, and H. Esashi, to Sony Corp. Reel container. 3,348,668, 10–24–67, Cl. 206—52.
American Air Filter Co., Inc.: *See*—
Bennett, Robert L. 3,348,366.
American Cast Iron Pipe Co.: *See*—
Baker, James R., and Phelps. 3,348,995.
American Cyanamid Co.: *See*—
Addor, Roger W. 3,348,940.
Barber, William A., and Woodberry. 3,348,974.
Marsluff, William F. 3,349,108.
Ziering, Lance K. 3,348,975.
American Gage & Machine Co.: *See*—
Bajars, Eric. 3,349,325.
Hosker, Gerald R. 3,349,245.
American Home Products Corp.: *See*—
Spencer, Kenneth E. V. 3,348,998.
American Hospital Supply Corp.: *See*—
Junkel, Wolfgang, and Nielsen. 3,348,799.
American Machine & Foundry Co.: *See*—
Brown, Jerry H., and Conning. 3,349,021.
McCarthy, Thomas J., and Groppe. 3,348,552.
Morris, Jack, and Toohey. 3,349,212.
Pinkham, Jesse R. 3,348,551.
American Maize Products Co.: *See*—
Taylor, Gerwin G. 3,348,972.
American Metal Climax, Inc.: *See*—
Toney, Henry W., and Huizenga. 3,348,441.
American Optical Co.: *See*—
Kavanagh, Arthur J., Koester, Thorburn, and Tackaberry. 3,348,547.
American Paper Products Co., The: *See*—
Gancarz, Walter F., and Marion. 3,348,478.
Ames, Victor H., and E. T. Dolin, to Whiting Corp. Railway car positioning mechanism. 3,348,498, 10–24–67, Cl. 104—176.
Ames, Victor H., and R. T. Fischer, to Whiting Corp. Industrial brake. 3,348,639, 10–24–67, Cl. 188—171.
Ammon, Bruno, and L. C. Kingsbury, to General Electric Co. Portable recording apparatus with improved actuating means for a switch. 3,349,198, 10–24–67, Cl. 200—5.
Ampex Corp.: *See*—
Chur, Sung P. 3,349,383.
Kleist, Robert A., Kurth, and Thorne. 3,349,373.
Studley, Clarence K. 3,349,385.
Amundsen, Russell M.: *See*—
Martin, John L., and Amundsen. 3,348,821.
Anaconda Wire and Cable Co.: *See*—
Burr, Harvey. 3,348,369.
Anderson, Karl R. Wire contact device. 3,349,196, 10–24–67, Cl. 179—175.25.
Anderson, Richard C.: *See*—
Chafetz, Harry, and Anderson. 3,349,092.
Andis Clipper Co.: *See*—
Andis, Matthew G. 3,348,308.
Andis, Matthew G., to Andis Clipper Co. Vacuum cleaner attachment for a hair clipper. 3,348,308, 10–24–67, Cl. 30—133.
Andretich, Robert G. Combined ski boot retainer and carrier. 3,348,665, 10–24–67, Cl. 206—1.
Andrew, Herbert F., to Imperial Chemical Industries Ltd. Water-soluble azo dyestuffs. 3,349,074, 10–24–67, Cl. 260—146.
Andrews, Edward F. Means and method for vapor and fog generation. 3,349,042, 10–24–67, Cl. 252—305.
Andrews, Norwood H. Method and apparatus for comminuting materials. 3,348,779, 10–24–67, Cl. 241—39.
Anetsberger Bros., Inc.: *See*—
Anetsberger, Richard J. and J. A. 3,348,472.
Anetsberger, John A.: *See*—
Anetsberger, Richard J. and J. A. 3,348,472.

Anetsberger, Richard J. and J. A., to Anetsberger Bros., Inc. Open hearth broiler. 3,348,472, 10–24–67, Cl. 99—447.
Angelica Uniform Co.: *See*—
Belkin, Nathaum L. 3,349,285.
Angler, James F., deceased (by J. L. Cope, administrator), to Structural Electric Products Corp. Inset paving light. 3,349,233, 10–24–67, Cl. 240—1.2.
Anheuser-Busch, Inc.: *See*—
Ellis, Nicholas D. 3,348,758.
Ann Arbor Trust Co.: *See*—
Harmon, Samuel T. 3,349,231.
Anner, Georg: *See*—
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,349,083.
Anstee, Leon L., to Sperry Rand Corp. Forage receiving and self-unloading unit. 3,348,707, 10–24–67, Cl. 214—44.
Antares, S.p.A.: *See*—
Grassi, Carlo. 3,348,892.
Anthun, Bjarne, to Motorola Inc. Distortionless volume-tone control circuit. 3,349,331, 10–24–67, Cl. 325—424.
Apollo Chemical Corp.: *See*—
Kukin, Ira. 3,348,932.
Appleton, Anthony D., to International Research & Development Co. Ltd. Electric contact brushes. 3,349,210, 10–24–67, Cl. 200—166.
Appleton, Daniel, and G. W. Cleversey, to United Shoe Machinery Corp. Shoe manufacturing. 3,348,251, 10–24–67, Cl. 12—147.
Aquatic Controls Corp.: *See*—
Just, Jerome O., and Stern. 3,348,624.
Argabright, Perry A.: *See*—
Stogryn, Eugene L., Argabright, and Leary. 3,349,129.
Arksey, Graydon W., to Chemcall Ltd. Bridge with automatic zero. 3,349,321, 10–24–67, Cl. 323—75.
Arnav Industries, Inc.: *See*—
Markevitch, Igor I. 3,348,249.
Arons, Irving J.: *See*—
Simons, Charles W., and Arons. 3,348,966.
Arthur, Robert M. Method and apparatus for analyzing gas absorption and expiration characteristics. 3,348,409, 10–24–67, Cl. 73—19.
Artisan Industries, Inc.: *See*—
Monty, Leo J. 3,348,600.
Ascoli, Enzo, to Paillard S. A. Circuit for producing complex voltages for controlling a device for writing letters, numbers and signs. 3,349,176, 10–24–67, Cl. 178—30.
Ash, Roy C., to International Harvester Co. Tipping-bin trucks or trailers. 3,348,714, 10–24–67, Cl. 214—508.
Ash, Thomas C., Jr., to Turon, Inc. Temperature measuring device. 3,348,415, 10–24–67, Cl. 73—362.
Ashby, Theodore L., to The Dow Chemical Co. Crosslinked water soluble polymer of diglycidyl ether and an alkanolamine. 3,349,053, 10–24–67, Cl. 260—29.2.
Asher, Ralph L., and J. B. Kennedy, to International Telephone and Telegraph Corp. Digital bearing measuring system. 3,349,400, 10–24–67, Cl. 343—106.
Asher, Ralph L.: *See*—
Kennedy, John B., and Asher. 3,349,401.
Ashton, Roy D.: *See*—
Elirott, Frederick. A. C., Ashton, and Gomersall. 3,348,467.
Ashworth Bros., Inc.: *See*—
Rolnestad, Gerald C. 3,348,659.
Asmus, Rodger W.: *See*—
Fenster, Abraham S., and Asmus. 3,348,475.
Assalit, Louis. Aerosol valve. 3,348,742, 10–24–67, Cl. 222—394.
Associated Electrical Industries Ltd.: *See*—
Crowley-Milling, Michael C. 3,349,335.
Stirling, Harold J., and Taylor. 3,349,188.
Assum, Johann, to Messerschmitt Aktiengesellschaft. Rotary piston machine. 3,348,529, 10–24–67, Cl. 123—8.
Astro Dynamics, Inc.: *See*—
Katz, Leonhard, and Sununu. 3,348,490.
Atchison, Elmer E. Golf game receptacles. 3,348,846, 10–24–67, Cl. 273—176.
Atlas Refinery, Inc.: *See*—
Segessemann, Ernest. 3,349,122.
Aulich, Willi, and E. Ley, to Metallgesellschaft Aktiengesellschaft. Method and apparatus for operating a filter belt. 3,348,682, 10–24–67, Cl. 210—66.
Automatic Electric Laboratories, Inc.: *See*—
Briley, Bruce E. 3,349,252.
Eckhardt, John C., and Yessa. 3,349,162.
Ice, George E. 3,349,348.
Keenan, Ralph D. 3,349,353.
Luna, Agostino, and Cafissi. 3,349,343.
Luna, Agostino. 3,349 336.
Miknaitis, Sigitas. 3,348,276.
Sprengers, Leo M., and Castelijns. 3,349,388.
Van Boose, John G. 3,349,189.
Wedmore, William R. 3,349,330.
Avco Corp.: *See*—
Latham, William N. 3,349,161.
Louis, Jean F. 3,349,260.
Zar, Jacob L. 3,349,209.
Zar, Jacob L. 3,349,351.
Aviation Corp.: *See*—
Benzel, Howard A. 3,348,538.
Avril, Arthur C., to A & T Development Corp. Apparatus and method for blending dry materials. 3,348,818, 10–24–67, Cl. 259—148.
Ayer, Donald E., and J. E. Pike, to The Upjohn Co. Steroidal [16,17-d]-2'isoxazolines of the pregnane series. 3,349,084, 10–24–67, Cl. 260—239.55.
Ayotte, Ronald D., to Sylvania Electric Products, Inc. Mercury dispenser. 3,348,588, 10–24–67, Cl. 141—61.
B-D Equipment Co., Inc.: *See*—
Lien, Wallace A. 3,349,211.
Babcock, Leonard V., D. A. Massa, and R. H. Chiovari, to Warwick Electronics Inc. Convergence yoke assembly with blue purity magnet and converge magnets adjustable from one direction. 3,349,268, 10–24–67, Cl. 313—77.
Bacon Felt Co.: *See*—
Becker, William E. 3,348,256.
Bahls, Gene C., F. C. McNutt, R. E. Price, V. Zidell, and L. C. Dick, to Brown Co. Unitized sealed layer carton load. 3,348,673, 10–24–67, Cl. 206—65.
Bahnson, Agnew H., Jr.: *See*—
King, James F., Jr., and Bahnson. 3,348,363.
Bahnson Co., The: *See*—
King, James F., Jr., and Bahnson. 3,348,363.
Baier, Hermann, to Deutsche Gold-und Silber Scheindeanstalt vormals Roessler. Hydrazine as an anti-staining agent for a peroxide bleaching solution. 3,348,903, 10–24–67, Cl. 8—111.
Bailey, Dean C.: *See*—
Koepp, Ronald L., and Bailey. 3,349,300.
Bajars, Eric, to American Gage & Machine Co. Automatic meter-calibration apparatus having flying spot pointer sensing. 3,349,325, 10–24–67, Cl. 324—74.
Bakelite Ltd.: *See*—
Lewis, Reginald N., and Horne. 3,349,060.
Baker, Dorothea S.: *See*—
Baker, Morton H., and Marindin. 3,348,281.
Baker, James Conveyors Ltd.: *See*—
Baker, James M. 3,348,660.
Baker, James M., to James Baker Conveyors Ltd. Conveyors. 3,348,660, 10–24–67, Cl. 198—165.
Baker, James R., and E. H. Phelps, to American Cast Iron Pipe Co. Method of coating metal surfaces with polyethylene utilizing a polyethylene primer and articles produced thereby. 3,348,995, 10–24–67, Cl. 161—216.
Baker, Morton H., deceased by D. S. Baker, administratrix, and F. R. Marindin, to Doran Bros., Inc. Fur felting machine. 3,348,281, 10–24–67, Cl. 28—5.
Baker Perkins, Inc.: *See*—
Cox, Bradley G. 3,348,816.
Balcerzak, Kazimierz Z.: *See*—
Ciborowski, Stanislaw M., and Balcerzak. 3,349,007.
Baldwin-Lima-Hamilton Corp.: *See*—
Brothman, Abraham, and Horowitz. 3,348,559.
Balenger, John W.: *See*—
Sarnoff, Stanley J., and Balenger. 3,348,545.
Ballard, Carlos E.: *See*—
Keener, Russell W., De Marsh, and Ballard. 3,348,842.
Ballreich, Kurt: *See*—
Stadler, Hans, Ballreich, and Gawlick. 3,348,985.
Balogh, Stephen, to Parker-Hannifin Corp. Dryer with improved desiccant compressing spring. 3,348,692, 10–24–67, Cl. 210—266.
Banner Metals, Inc.: *See*—
Wilson, James D. 3,348,723.
Bannert, Konrad Jerzy, and E. F. W. Thurston, to Ilford Ltd. Photographic light-sensitive materials. 3,348,949, 10–24–67, Cl. 96—104.
Barakat, Daher: *See*—
Stark, Richard A, and Barakat. 3,348,568.
Baranauckas, Charles F., and A. W. Frank, to Hooker Chemical Corp. Preparation of phosphorus compound containing fluorine. 3,349,151, 10–24–67, Cl. 260—986.
Baratoff, Paul, N. F. Kfoury, and B. Y. K. Mui, to Korfund Dynamics Corp. Spherical type of all-directional frictional damper. 3,348,796, 10–24–67, Cl. 248—20.
Barber, William A., and N. T. Woodberry, to American Cyanamid Co. Fuel cell containing a metallized paper electrode. 3,348,974, 10–24–67, Cl. 136—86.
Barkstrom, Reynold, R. L. Sutton, and D. B. Carlson, to International Harvester Company. Combination corn shelling and cob grinding apparatus. 3,348,780, 10–24–67, Cl. 241—101.
Barnes Engineering Co.: *See*—
Engborg, Nelson E. 3,348,408.
Barnes, Eugene F., and C. N. Urbanski, to Stewart-Warner Corp. 3,349,013, 10–24–67, Cl. 204—2.
Barnwell, Irving F. Steering wheel lock for automobiles. 3,348,391, 10–24–67, Cl. 70—211.
Bart, George R., to Victor Comptometer Corp. Temperature compensated quartz crystal resonator. 3,349,258, 10–24–67, Cl. 310—8.5.
Bartels, Alfred Friedrich, and H. Kroger, to Nordischer Maschinenbau Rud. Baader. Method and apparatus for the fully automatic feed of fish to fish working machines. 3,348,260, 10–24–67, Cl. 17—2.
Barter, Le Roy D., to Beckman Instruments, Inc. Oven temperature control stabilizing network. 3,349,223, 10–24–67, Cl. 219—413.
Bartholf, Francis B.: *See*—
Zaayenga, Ralph, and Bartholf. 3,349,052.
Bartlett, Howard J., to Norton Co. Refractory compound and method of production. 3,348,925, 10–24–67, Cl. 23—315.
Bartlett, William F., to Stromberg-Carlson Corp. Stored program boolean logic system incorporating omni-boolean function synthesizer. 3,349,379, 10–24–67, Cl. 340—172.5.
Bartlett, William H., to Duro-O-Wal National, Inc. Masonry reinforcement. 3,348,354, 10–24–67, Cl. 52—693.
Bartley, William W., to The McKay Machine Co. Roll pass for tubing or the like. 3,348,403, 10–24–67, Cl. 72—237.
Basile, Concetta A.: *See*—
Basile, Gino and C. A. 3,348,745.
Basile, Gino and Concetta A. Garment hanger with end loading slot. 3,348,745, 10–24–67, Cl. 223—88.
Bass, Sam L., Jr. Process for field reconstruction of well drilling stabilizers. 3,348,295, 10–24–67, Cl. 29—401.

Bathelt, Robert R., J. C. Francken, and C. J. W. Panis, to North American Philips Co. Inc. Color television tube with shadow mask provided with electron shielding plate coated with heat radiating material. 3,349,272, 10–24–67, Cl. 313—85.
Batti, Mario A., to Miles Laboratories, Inc. Fermentation process for production of citric acid. 3,349,005, 10–24–67, Cl. 195—36.
Bau, Robert G. Cosmetic stick container. 3,348,670, 10–24–67, Cl. 206—56.
Bauer, Carl, and C. Otzen, to Agfa Aktiengesellschaft. Variable focal length objective having eight axially spaced lenses. 3,348,898, 10–24–67, Cl. 350—184.
Bauer, Robert H.: *See*—
Burnes, Samuel P., and Bauer. 3,348502.
Baumgartner, August and W. Gegenschatz, to Zellweger, Ltd. Device for drawing warp threads into reeds. 3,348,282, 10–24–67, Cl. 28—14.
Bausch & Lomb Inc.: *See*—
Betensky, Ellis I. 3,348,896.
Dakin, Ralph K. 3,348,902.
Hudson, Lena M. 3,348,900.
Hudson, Lena M. 3,348,901.
Martens, Alexander E., and Chisholm. 3,349,227.
Baxter, Don, Inc.: *See*—
Stafford, Thomas P. 3,348,543.
Beach, John R., to Signode Corp. Method of tensioning strap and tool therefor. 3,348,584, 10–24–67, Cl. 140—93.2.
Beach, Sidney C., to The McGean Chemical Co. Process for making methyiol coumarin. 3,349,101, 10–24–67, Cl. 260—343.2.
Beck, Rudolf, to Kalle Aktiengesellschaft. Process for deep-drawing films and foils. 3,349,153, 10–24–67, Cl. 264—89.
Beck, William P., and D. C. Stahey, to Sunbeam Corp. Shaver head release. 3,348,307, 10–24–67, Cl. 30—43.92.
Berke, Margot, to Olin Mathieson Chemical Corp. Composition and process. 3,348,927, 10–24–67, Cl. 23—357.
Becker, Floyd K., and C. W. Farrow, to Bell Telephone Laboratories, Inc. Phase-stable frequency dividers. 3,349,333, 10–24–67, Cl. 328—48.
Becker, William E., to Bacon Felt Co. Crenelated polishing pad. 3,348,256, 10–24–67, Cl. 15—230.12.
Beckett, Madeline: *See*—
Leonard Robert F., and Beckett. 3,348,948.
Beckman Instruments, Inc.: *See*—
Barter, Le Roy D. 3,349,223.
Cannon, Raymond E. 3,348,658.
Hersch, Paul A., and Sambucetti. 3,349,011.
Smith, Leland B. 3,349,340.
Beeby, John E., to The Clorox Co. Combination shipping and display container. 3,348,667, 10–24–67, Cl. 206—45.33.
Beer, Donald C., to Otehall Ltd. Snap-action electric switches. 3,349,202, 10–24–67, Cl. 200—67.
Beers, Herbert F., Jr.: *See*—
Smith, William M., and Beers. 3,348,443.
Beik, Hermann, and G. Florian, to Werner Bahlsen. Bakery apparatus. 3,348,503, 10–24–67, Cl. 107—1.
Belkin, Nathan L., to Angelica Uniform Co. Surgical gown with static electricity discharge means. 3,349,285, 10–24–67, Cl. 317—2.
Bell & Howell Co.: *See*—
Jones, Viron V. 3,348,946.
Bell, Alexander, to Stromberg-Carlson Corp. Self-aligning electron gun assembly. 3,349,270, 10–24–67, Cl. 313—78.
Bell, Charles C., to Simmonds Precision Products, Inc. High speed open capacitance probe for fuel systems. 3,349,301, 10–24–67, Cl. 317—246.
Bell Telephone Laboratories, Inc.: *See*—
Becker, Floyd K., and Farrow. 3,349,333.
Chynoweth, Alan G., and McCumber. 3,349,344.
Coker, Cecil H. 3,349,180.
Crowell, Clarence R., and Sze. 3,349,297.
Gordon, Alan M. 3,349,254.
Gray, James R. 3,349,195.
Hartwell, Walter T., Klahn, and Shaffer. 3,349,230.
Kelly, Hugh P., and Klute. 3,349,403.
Mann, Henry. 3,349,191.
Newhall, Edmunde E. 3,349,250.
Reekstin, John P., Jr. 3,348,931.
Bellis, Kenneth E.: *See*—
Peak, Edward J., Bellis, and Marks. 3,348,606.
Belski, Richard C.: *See*—
Goodenough, Robert D., and Belski. 3,348,910.
Bel-Tronics Corp.: *See*—
Wright, Thomas J. 3,349,405.
Bendix Corp., The: *See*—
Ahern, Charles J. 3,348,773.
Fischer, Israel L., Lee, Meloro, and Spieker 3,349,246.
Umpfenbach, Herman J. 3,348,530.
Bennett, Robert L., to American Air Filter Co., Inc. Air sealing rewind construction for roll-type filter. 3,348,366, 10–24–67, Cl. 55—354.
Benzel, Howard A., to Aviation Corp. Breathing apparatus exhalation valve with suction control. 3,348,538, 10–24–67, Cl. 128—142.
Bereznak, John, to International Telephone and Telegraph Corp. Electronically controlled glass reed switching network. 3,349,186, 10–24–67, Cl. 179—18.
Bergman, Lars, to Alimanna Svenska Elektriska Aktiebolaget. Impulse commutated inverter with controliable output voltage. 3,349,312, 10–24–67, Cl. 321—5.
Berry, Ferdinand W. Synthetic plastic spacer for concrete reinforcements. 3,348,347, 10–24–67, Cl. 52—309.
Berry, Richard C.: *See*—
Abell, Jerroid J., and Berry. 3,348,991.
Betensky, Ellis I., to Bausch & Lomb Inc. Modified gauss type of optical objective for use in ultraviolet light. 3,348,896, 10–24–67, Cl. 350—2.
Bielak, Sigmund H., to Sunbeam Corp. Can opener. 3,348,305, 10–24–67, Cl. 30—4.
Bigot, Johan A.: *See*—
Duynstee, Eduard F. J., Bigot, and Hennekens. 3,349,131.
Birch, David W., and K. F. Hebdon, to Deievan Electronics Corp. Automatic winding machine. 3,348,782, 10–24–67, Cl. 242—9.
Bird Machine Co.: *See*—
Ferney, Francis X. 3,348,767.
Birkestrand, Orville J. Portable electric generator. 3,349,247. 10–24–67, Cl. 290—1.
Bishop, Leonard J.: *See*—
Klamp, Paul, and Bishop. 3,348,496.
Black and Decker Mfg. Co., The: *See*—
Sheps, Martin I. 3,348,887.
Blake, Frederick H., to M. J. and A. M. Sobyro. Timing circuitry. 3,349,334, 10–24–67, Cl. 328—71.
Blank, Charles E., Sr.: *See*—
Newcomb, Wallace K., Blank, and Van Loon. 3,348,849.
Blaw-Knox Co.: *See*—
Long, Herbert A., Brown, and Crincic. 3,348,833.
Bleickardt, Werner, to Hasler, A.G. Periodically self-triggering tunnel diode current discriminator. 3,349,253, 10–24–67, Cl. 307—88.5.
Bleickardt, Werner, to Hasler, A.G. An electronic counter for counting in the gray code binary pulses. 3,349,332, 10–24–67, Cl. 328—42.
Blenkarn, Kenneth A., and G. C. Howard, to Pan American Petroleum Corp. Offshore platform for ice conditions. 3,348,382, 10–24–67, Cl. 61—46.
Block Engineering, Inc.: *See*—
Young, Niels O. 3,348,446.
Blom, Leendert, and J. L. F. M. Zwinkels, to Stamicarbon N.V. Tar removal in phenol process. 3,349,134, 10–24–67, Cl. 260—621.
Blue, Emanuel M.: *See*—
Spurlock, Burwell, and Blue. 3,349,026.
Blum, Jack E., and J. W. Ezell, to General Motors Corp. Spark plug with a conductive glass seal electrode of glass, copper and zinc. 3,349,275, 10–24–67, Cl. 313—136.
Boeing Co., The: *See*—
Forshee, Amiel G. 3,348,386.
Bohac, Frantisek, and L. Burda, to Adamovske Strojirny, narodni podnik. Mechanism for axially reciprocating a distributing cylinder in a printing machine. 3,348,480, 10–24–67, Cl. 101—349.
Bohm, Manfred, to International Standard Electric Corp. Beacon system for simultaneous azimuth and elevation determination. 3,349,399, 10–24–67, Cl. 343—106.
Boice Gages, Inc.: *See*—
Boice, Ralph A. 3,348,421.
Boice, Ralph A., to Boice Gages, Inc. Slide propulsion means. 3,348,421, 10–24–67, Cl. 74—202.
Boichard, Jacques F. P.: *See*—
Brossard, Bernard P., and Boichard. 3,349,132.
Boldt, Werner F.: *See*—
Freeman, Walter R., and Boldt. 3,348,377.
Bollig, Georg: *See*—
Boos, Hermann, and Bollig. 3,348,704.
Bolza-Schunemann, Hans-Bernhard, to Schellpressenfabrik Koenig & Bauer Aktiengesellschaft. Folding blade carrier with tubular, double sun gearing. 3,348,837, 10–24–67, Cl. 270—77.
Bonk, Leon F.: *See*—
Fahey, James H., Jr., Dahl, Frederickson, and Bonk. 3,349,239.
Boos, Hermann, and G. Bollig, to Schloemann Aktiengesellschaft. Means for exchanging units, each consisting of a shear blade and its mounting, in machines for shearing metal sheets or plates. 3,348,704, 10–24–67, Cl. 214—1.
Borg-Warner Corp.: *See*—
Goldberg, Eugene P., and Von Linsowe. 3,348,597.
Olson, Gerald D., and Pettyjohn. 3,348,492.
Stephens, William T., and Prevallet. 3,348,491.
Studtmann, George H. 3,349,315.
Wilhelm Frank R. 3,348,242.
Borgs Fabriks AB.: *See*—
Mattsson, Sture B. 3,348,497.
Bose, Robert N., W. I. Tibbits, and R. I. Ranum, to Whirlpool Corp. Carbon dioxide generator. 3,348,922, 10–24–67, Cl. 23—281.
Boudakian, Max M., and G. H. Hofmann, to Olin Mathieson Chemical Corp. 2-bromo-2-chloro-1,1-difluorocyclopropane. 3,349,136, 10–24–67, Cl. 260—648.
Bourquin, Jean-Pierre: *See*—
Renz, Jany, Bourquin, Winkler, Gagnaux, Guldimann, Ruesch, and Schwarb. 3,349,087.
Bouvier, Claude J. B., to Compagnie des Machines Bull (Societe Anonyme). Data handling automatic system. 3,349,376, 10–24–67, Cl. 340—172.5.
Bowling, Joseph E., Jr., to The Pangborn Corp. Abrasive blasting wheels and vanes. 3,348,339, 10–24–67, Cl. 51—9.
Bowman, Carlos M.: *See*—
Kellom, David B., Bowman, Lamoria, and York. 3,348,928.
Boyce, Clive B. C., to Shell Oil Co. Ethers useful as molluscicides and piscicides. 3,349,102, 10–24–67, Cl. 260—347.8.
Boylan, Jack B.: *See*—
Seiwert, Joseph J., and Boylan. 3,349,049.
Boykin, Otis F. Method of making a thin film capacitor. 3,348,971, 10–24–67, Cl. 117—215.
Boyles, Elmo N. Guide means for disc brake friction pads. 3,348,636, 10–24–67, Cl. 188—73.
Boysen, Willard P., to Menasha Corp. Shipping container. 3,348,756, 10–24–67, Cl. 229—37.
Bradford, Francis H., to Grove Valve and Regulator Co. Fluid pressure regulator having a guided pressure responsive member. 3,348,573, 10–24–67, Cl. 137—505.

Braestrup, Carl B. Apparatus for radiation therapy of diseased tissues with minimum exposure to healthy tissues. 3,349,-242, 10–24–67, Cl. 250—54.

Braid, John E.: *See*—
Logan, William R., and Braid. 3,348,916.

Brane, Earl P., to Sta-Rite Industries, Inc. Compact water softening valve structure. 3,348,574, 10–24–67, Cl. 137—599.1.

Branson Instruments Inc.: *See*—
Henry, Elliott A. 3,348,410.

Braun, Bernhard. Polypropylene canula for continuous intravenous infusion. 3,348,544, 10–24–67, Cl. 128—214.4.

Braunstein, Morris: *See*—
Grossman, Jack J., and Braunstein. 3,348,962.

Brautovich, John J., to Powerfile. Storage and retrieval apparatus. 3,348,661, 10–24–67, Cl. 198—181.

Braxton Corp.: *See*—
Horsley, Caperton B. 3,349,261.

Bray, Frederick H., and J. A. W. Butcher, to International Standard Electric Corp. Reed relay array. 3,349,187, 10–24–67, Cl. 179—18.

Brehm, Richard K.: *See*—
Schmitt, Richard G., and Brehm. 3,349,241.

Brevets Aero-Mecaniques S.A.: *See*—
Dufour, Georges. 3,348,485.
Vickers, Roy G. 3,349,451.

Briggs, Raymond W., and S. Jones, to Hughes Aircraft Co. IR background noise discriminator through elective time gates. 3,349,244, 10–24–67, Cl. 250—83.3.

Brigham, Howard M.: *See*—
Mater, Charles E., West, and Brigham. 3,348,651.

Brignola, Dominic J., to United Shoe Machinery Corp. Expansion fastener with dual threaded engagement means. 3,348,-444, 10–24–67, Cl. 85—70.

Briley, Bruce E., to Automatic Electric Laboratories, Inc. Minority carrier storage flip-flop. 3,349,252, 10–24–67, Cl. 307—88.5.

British Aircraft Corp. (Operating) Ltd.: *See*—
Crowder, Jeffrey L., and Durrant. 3,348,790.

British Hydrocarbon Chemicals Ltd.: *See*—
Hill, Thomas. 3,349,067.
Lusman, Philip. 3,349,120.

British Iron and Steel Research Association, The: *See*—
Shipp, Peter J. 3,348,393.

British Nylon Spinners Ltd.: *See*—
Sissons, Christopher R. 3,348,993.

Brock, James D., to Industrial Boiler Co., Inc. Hot mix storage bin. 3,348,739, 10–24–67, Cl. 222—146.

Brodmann, George L., and A. Stewart, to E. I. du Pont de Nemours and Co. Brassiere pad and process. 3,348,549, 10–24–67, Cl. 128—481.

Brogdex Co.: *See*—
Russell, Kenneth F. 3,348,679.

Brokaw, George K. Phonetic teaching device. 3,348,320, 10–24–67, Cl. 35—35.

Bromby, Norman G., G. H. Rayner, and D. B. Wootton, to Imperial Chemical Industries Ltd. Pyridinium salts. 3,349,-094, 10–24–67, Cl. 260—297.

Brook, John W.: *See*—
Lagally, Paul, and Brook. 3,348,997.

Brooks, Edward M., to Carnation Co. Dessert product. 3,348,-953, 10–24–67, Cl. 99—139.

Brookshire, Grover J. Weft yarn brake for sulzer loom. 3,348,-582, 10–24–67, Cl. 139—194.

Broome, Arthur W. J., N. S. Crossley, and W. G. M. Jones, to Imperial Chemical Industries Ltd. Polyhalogenated di-hydroxybenzanilide derivatives. 3,349,090, 10–24–67, Cl. 260—268.

Brossard, Bernard P., and J. F. P. Boichard, to Rhone-Poulenc S.A. Preparation of ninhydrin. 3,349,132, 10–24–67, Cl. 260—590.

Brothman, Abraham, and L. M. Horowitz, to Baldwin-Lima-Hamilton Corp. Electronic governor. 3,348,559, 10–24–67, Cl. 137—30.

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Broverman, Irwin, and G. Jagaciak, to Olin Mathieson Chemical Corp. Method of fabricating a heat exchanger from a single cast ingot by rolling heat treating and bonding. 3,348,-290, 10–24–67, Cl. 29—157.3.

Brown Boveri & Co. Ltd.: *See*—
Hartman, Hans. 3,349,286.

Brown Co.: *See*—
Bahls, Gene C., McNutt, Price, Zidell, and Dick. 3,348,-673.
Taylor, Edward L. 3,348,904.

Brown, Edgar W., III. Jacks for elevating the platform of an offshore drilling rig. 3,348,808, 10–24–67, Cl. 254—106.

Brown, Francis E.: *See*—
Alexander, Richard L., Lyons, Brown, and Long. 3,349,-072.

Brown, Gaylord W., and D. J. Rise, to Brown Machine Co. of Michigan, Inc. Plastic article rim forming apparatus. 3,348,-266, 10–24–67, Cl. 18—0.

Brown, George D. Electroluminescent lamp shade and lamp structure. 3,349,240, 10–24–67, Cl. 240—108.

Brown, Harold F.: *See*—
Hulbert, Duncan R., Sheard, and Brown. 3,348,968.

Brown, Jerry H., and D. G. Conning, to American Machine & Foundry Co. Electrodialysis with moving membranes. 3,349,-021, 10–24–67, Cl. 204—180.

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Brown, Gaylord W., and Rise. 3,348,266.

Brown, Robert H., and A. H. Hecht, to Thiokol Chemical Corp. Flexible cutter shaft for cutting slots in a solid propellant in a rocket motor case. 3,348,426, 10–24–67, Cl. 74—501.

Brown, Thomas G.: *See*—
Lackenbauer, William E., and Brown. 3,348,471.

Brown, William E.: *See*—
Long, Herbert A., Brown, and Crincle. 3,348,833.

Brown, William M., to Continental Can Co., Inc. Carton for easy open bottles. 3,348,672, 10–24–67, Cl. 206—65.

Brownlee, Winston E., and J. L. Ritchey, to Parsons Corp. Flat-formed inflatable pressure bags. 3,348,476, 10–24–67, Cl. 100—211.

Bryant, Patrick S., to Imperial Chemical Industries Ltd. Polymerisation process. 3,349,066, 10–24–67, Cl. 260—85.5.

Buban, Elmer E.: *See*—
Miller, John C., Cotabish, and Buban. 3,348,537.

Buck Instrument Co.: *See*—
Buck, Willard E. 3,349,306.

Buck, Willard E., to Buck Instrument Co. Electrically driven timing device devoid of permanent magnet elements. 3,349,-306, 10–24–67, Cl. 318—128.

Buckles, Eldon R. Trailer with steerable wheeled prop. 3,348,-860, 10–24–67, Cl. 280—475.

Bucourt, Robert, A. Pierdet, G. Costerousse, R. Joly, J. Warnant, and B. Goffinet, to Roussel-UCLAF. Novel process for the preparation of 2-alkylcyclopentane-1,3-diones. 3,349,-130,10–24–67, Cl. 260—586.

Budd Co., The: *See*—
Mealing, Kenneth W. 3,348,699.

Buffington, James F. Static phase converter. 3,349,316, 10–24–67, Cl. 321—52.

Burch, Arthur R.: *See*—
Burnight, Thomas R., and Burch. 3,349,303.

Burch, Warren E., to Cities Service Oil Co. Continuous solvent extraction of decant, cycle and gas oils. 3,349,028, 10–24–67, Cl. 208—327.

Burda, Ladislav: *See*—
Bohac, Frantisek, and Burda. 3,348,480.

Burk, Lawrence R.: *See*—
De Shazor, James C., Jr., Burk, and Jackson. 3,348,361.

Burnight, Thomas R., and A. R. Burch, to Hartman Metal Fabricators Inc. Mechanism for precisely positioning a moving part relative to a cooperating part. 3,349,303, 10–24–67, Cl. 318—18.

Burns, Samuel P., and R. H. Bauer, to Freuhauf Corp. Multi-position hitch on railroad car. 3,348,502, 10–24–67, Cl. 105—368.

Burr, Harvey, to Anaconda Wire and Cable Co. Stranding apparatus. 3,348,369, 10–24–67, Cl. 57—58.7.

Burroughs Corp.: *See*—
Gardiner, John T., and Kjos. 3,348,784.
Glassman, Irving. 3,349,390.
Kondur, Nicholas, Jr. 3,348,770.
McAvoy, John A. 3,349,255.
Thut, Paul J. 3,348,404.

Burton, John, Machine Corp.: *See*—
Rice, Harold B., and Svenson. 3,348,734.

Busch, Richard E., to Sperry Rand Corp. Accumulation selecting mechanism for calculating machine. 3,348,768, 10–24–67, Cl. 235—60.

Busch, Richard E., to Sperry Rand Corp. Control mechanism for calculating machine. 3,348,769, 10–24–67, Cl. 235—60.

Bush, Warren V., to Shell Oil Co. Polymerization process. 3,349,148, 10–24–67, Cl. 260—683.15.

Busler, Willard L., to AMP Inc. Crimping and forming machine. 3,348,286, 10–24–67, Cl. 29—33.

Butcher, John A. W.: *See*—
Bray, Frederick H., and Butcher. 3,349,187.

Butcosk, Richard A., and W. F. Olszewski, to Mobil Oil Corp. Grease compositions. 3,349,034, 10–24–67, Cl. 252—28.

Butler, Henry E. Tape dispenser. 3,348,524, 10–24–67, Cl. 118—43.

Byers, Lynn E., and C. A. Long. Rotatable porch for a mobile home and method of mounting. 3,348,345, 10–24–67, Cl. 52—79.

Bywater, Stanley, and E. Whalley, to National Research Council. Hydrolyzed isopropenyl acetate polymers and process. 3,349,068, 10–24–67, Cl. 260—91.3.

CIT-Compagnie Industrielle des Telecommunications: *See*—
Rocton, Lucien. 3,349,163.

C.M.C. Corp.: *See*—
Jennings, Robert E. 3,348,355.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Carre, Roland, and Robert. 3,349,395.

Caco Mfg. Corp.: *See*—
Gorman, De Witt Y. 3,348,874.

Cadotte, John E. Acoustical panel having openings and ceramic surfacing material bonded to the panel. 3,348,996, 10–24–67, Cl. 162—114.

Cafissi, Roberto: *See*—
Luna, Agostino, and Cafissi. 3,349,343.

Caillet, René C. Device for clamping and lifting cargo hatch covers. 3,348,516, 10–24–67, Cl. 114—202.

Calgon Corp.: *See*—
Hatch, George B., and Guthrie. 3,349,031.
Krayer, William L. 3,348,771.

Calkins, Tracy H., and F. E. Duckwall, to Textron, Inc. Method and apparatus for manufacturing optical lenses. 3,348,340, 10–24–67, Cl. 51—91.

Callahan, Theodore F. Optical device for determining angles by measuring the orientation of one image with respect to another. 3,348,448, 10–24–67, Cl. 88—2.4.

Callender, Russell J. I.F. band pass structure. 3,349,171, 10–24–67, Cl. 178—5.8.

Calvin College and Seminary: *See*—
Dirkse, Thedford P. 3,348,973.

Campanella, Samuel J., to Melpar, Inc. Speech compression system transmitting only coefficients of polynomial representations of phonemas. 3,349,183, 10–24–67, Cl. 179—15.55.

Campbell, Arthur W., to Vego Chemical Corp. Cleaning composition. 3,349,036, 10–24–67, Cl. 252—101.

Campbell, George T. R., and N. V. Laskey, to Algonquin Shipping and Trading Ltd. Design of general cargo and bulk cargo vessel. 3,348,515, 10–24–67, Cl. 114—72.

Campbell, Ruffner, and W. L. Hayes, Jr., to International Resistance Co. Lead straightening machine. 3,348,586, 10–24–67, Cl. 140—147.

Canadian Patents and Development Ltd.: *See*—
Chaklader, Asoke C. D., and McKenzie. 3,348,957.

Cannon, Raymond E., to Beckman Instruments, Inc. Sample conveying chain for liquid scintillation spectrometer. 3,348,058, 10–24–67, Cl. 198—131.

Caprio, Gerald L., to Motorola Inc. Television receiver AGC circuit. 3,349,173, 10–24–67, Cl. 178—7.3.

Caramanna, George, to General Motors Corp. Removable closure for vehicle bodies. 3,348,877, 10–24–67, Cl. 296—137.

Carbonneau, Renne R., to Consolidated Development Corp. Toy gun with spring actuated projectile propelling means. 3,348,532, 10–24–67, Cl. 124—27.

Carlin, Francis X., to The International Nickel Co., Inc. Process for employing an auxiliary anode made of high purity nickel. 3,349,016, 10–24–67, Cl. 204—49.

Carlisle Chemical Works, Inc.: *See*—
Hechenbleikner, Ingenuin, and Molt. 3,349,150.

Carlson, Dwight B.: *See*—
Barkstrom, Reynold, Sutton, and Carlson. 3,348,780.

Carnation Co.: *See*—
Brooks, Edward M. 3,348,953.

Carr, Norman L., W. A. Horne, W. C. Offutt, and A. E. Somers, to Gulf Research & Development Co. Multi-stage hydrodesulfurization process. 3,349,027, 10–24–67, Cl. 208—210.

Carrasco, Julio B. Saw guide assembly. 3,348,591, 10–24–67, Cl. 143—168.

Carre, Roland, and J. Robert, to CSF-Compagnie Generale de Telegraphie Sans Fil. System for eliminating long echoes from radar signals and shaping these signals. 3,349,395, 10–24–67, Cl. 343—17.1.

Carrier Corp.: *See*—
Schlirf, John W. 3,348,420.

Carson, Frank J., and H. A. Leflet, Jr., to Libbey-Owens-Ford Glass Co. Method for bending glass sheet to a complex curvature. 3,348,935, 10–24–67, Cl. 65—103.

Cart-Trac, Inc.: *See*—
Miller, Eugene M., and Kelley. 3,348,786.

Cartelli, Joseph M. Matrix switch. 3,349,361, 10–24–67, Cl. 339—18.

Carter, Thomas L., to E. I. du Pont de Nemours and Co. Melt spinning filtration bed retaining screen. 3,348,263, 10–24–67, Cl. 18—8.

Caruso, Fred A.: *See*—
Long, Robert B., and Caruso. 3,348,908.

Carver, Robert V., to United States of America, Army. Binary 180° diode phase modulator. 3,349,342, 10–24–67, Cl. 332—9.

Carver, Thurman W., to Motorola, Inc. Radar sensing system. 3,349,394, 10–24–67, Cl. 343—16.

Cascioli, Anthony, 50% to J. Schuman. Combined hoop and tethered ball. 3,348,333, 10–24–67, Cl. 46—51.

Casey, Charles J. Pneumatic shock absorber. 3,348,835, 10–24–67, Cl. 267—65.

Casey, Robert T., to General Electric Co. Double module circuit breaker panel assembly. 3,349,290, 10–24–67, Cl. 317—119.

Cassedy, William F., Jr., to Stackpole Carbon Co. Snap switch. 3,349,358, 10–24–67, Cl. 338—172.

Cassel, Thomas R., to General Motors Corp. Resonator silencer. 3,348,629, 10–24–67, Cl. 181—48.

Castelijns, Henry: *See*—
Sprengers, Leo M., and Castelijns. 3,349,388.

Cataldo, John B., A. J. Krnlik, F. W. Kusey, and R. W. Thomas, to I-T-E Circuit Breaker Co. Toggle lever actuated manually-operated circuit controller. 3,349,208, 10–24–67, Cl. 200—153.

Cattermole, Kenneth W., to International Standard Electric Corp. System for transmitting pulse code groups or complements thereof under control of independent binary signal. 3,349,177, 10–24–67, Cl. 178—68.

Cavalier Mills, Inc.: *See*—
Platnick, Abraham J. 3,348,389.

Central Engineering Co., Inc.: *See*—
Daneman, Ben. 3,348,258.

Centralne Laboratorium Obrobki Plastycznej: *See*—
Rut, Tadeusz. 3,348,407.

Chabrier, Henri-Pierre, and A. Saint-Joanis. Alarm system. 3,348,772, 10–24–67, Cl. 235—201.

Chafetz, Harry, and R. C. Anderson, to Texaco Inc. Hexahydrodicyclopentapyridine and octahydrophenanthridine compounds and method of manufacture. 3,349,092, 10–24–67, Cl. 260—283.

Chaklader, Asoke C. D., and L. G. McKenzie, to Canadian Patents and Development Ltd. Process for manufacturing clay products. 3,348,957, 10–24–67, Cl. 106—67.

Chamberlin, Robert S.: *See*—
Stafford, Donald C., and Chamberlin. 3,348,834.

Char-Lynn Co.: *See*—
Easton, Wayne B. 3,348,493.

Chardack, William M. Implantable electrode with stiffening stylet. 3,348,548, 10–24–67, Cl. 128—418.

Chase Brass and Copper Co., Inc.: *See*—
Davenport, William H. 3,348,942.

Chas. Pfizer Co., Inc.: *See*—
McLamore, William M. 3,349,124.

Chassaignac, Stanton P. Knockdown chair. 3,348,882, 10–24–67, Cl. 297—440.

Chemagro Corp.: *See*—
Gier, Delta W. 3,348,939.

Chemceil Ltd.: *See*—
Arksey, Graydon W. 3,349,321.

Chemirad Corp.: *See*—
Lagally, Paul, and Brook. 3,348,997.

Cheng, Jen-Pu, to Petrolite Corp. Carbon and water recovery. 3,349,029, 10–24–67, Cl. 210—21.

Chesebrough-Pond's, Inc.: *See*—
Reveley, William G. 3,348,905.

Chevron Research Co.: *See*—
Paterson, Norman J. 3,349,023.
Spurlock, Burwell, and Blue. 3,349,026.
Sweeney, William A. 3,349,141.

Chicago, Bridge & Iron Co.: *See*—
Stafford, Donald C., and Chamberlin. 3,348,834.

Chinn, Leland J., to G. D. Searle & Co. 1-aminoalkyl-5-[(haloalkoxy)phenyl]-2-pyrrolepropionic acids. 3,349,091, 10–24–67, Cl. 260—268.

Chiovari, Roy H.: *See*—
Babcock, Leonard V., Massa, and Chiovari. 3,349,268.

Chisholm, James J.: *See*—
Martens, Alexander E., and Chisholm. 3,349,227.

Chur, Sung P., to Ampex Corp. Bidirectional deskewer utilizing a delay line with two inputs. 3,349,383, 10–24–67, Cl. 340—174.1.

Churchill, Ralph, Jr., to Parker-Hannifin Corp. Piston reversing actuator valve. 3,348,803, 10–24–67, Cl. 251—12.

Chynoweth, Alan G., and D. E. McCumber, to Bell Telephone Laboratories, Inc. Single valley bulk effect traveling wave high frequency oscillator amplifier and modulator. 3,349,-344, 10–24–67, Cl. 332—31.

Ciba Corp.: *See*—
Marxer, Adrian. 3,349,099.
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,349,083.
Trefzer, Robert. 3,348,827.

Ciborowski, Stanislaw M., and K. Z. Balcerzak, to Instytut Chemii Ogolnej. Distillation process for recovery of oxidation product of cyclohexane. 3,349,007, 10–24–67, Cl. 203—26.

Cincinnati Milling Machine Co., The: *See*—
Winblad, Robert A., and Wagner. 3,348,592.

Citrarel, Louis, and J. J. Giordano, to Thiokol Chemical Corp. Sealed structures and process therefor. 3,348,351, 10–24–67, Cl. 52—393.

Cities Service Oil Co.: *See*—
Burch, Warren E. 3,349,028.

Clark Equipment Co.: *See*—
Kinney, James F. 3,349,220.

Clark, Forest P., and R. T. Gladwell, Jr., to Corning Glass Works. Automatic molten glass level control apparatus. 3,348,936, 10–24–67, Cl. 65—160.

Clark, Sidney G.: *See*—
Alul, Ilsani R., Clark, and McEwan. 3,349,144.

Clarke, Francis R.: *See*—
Girard, Charles A., and Clarke. 3,348,947.

Clay, Harris A., and G. K. Reinmuth, to Phillips Petroleum Co. Purifying dehydrogenation recycle stream in butadiene manufacture. 3,349,147, 10–24–67, Cl. 260—680.

Cleversey, Gerald W.: *See*—
Appleton, Daniel, and Cleversey. 3,348,251.

Clevite Corp.: *See*—
Sauerland, Franz L. 3,349,347.

Clorox Co., The: *See*—
Beeby, John E 3,348,667.

Coats & Clarke Inc.: *See*—
Morin, Louis H. 3,348,744.

Cochran, William H., to Madison Research & Development Corp. Tufted products. 3,348,992, 10–24–67, Cl. 161—66.

Cocker, John, to Cocker Machine & Foundry Co. Automatic textile beam transfer apparatus. 3,348,785, 10–24–67, Cl. 242—47.

Cocker Machine & Foundry Co.: *See*—
Cocker, John. 3,348,785.

Cocker Saw Co., Inc.: *See*—
White, Harold W. 3,348,343.

Cockerham, Lloyd E., and R. F. Purcell, to Commercial Solvents Corp. Ethyl cellulose compositions. 3,348,958, 10–24–67, Cl. 106—176.

Cohn, Morris I., and R. D. Perdue, to Mineral Industries Corp. of America. Reducing particle size of clay and rheology control of clay-water systems. 3,348,778, 10–24–67, Cl. 241—5.

Coker, Cecil H., to Bell Telephone Laboratories, Inc. Extrapolation of vocoder control signals. 3,349,180, 10–24–67, Cl. 179—1.

Coleman Electronic Systems: *See*—
Lauper, Warner R. 3,348,435.

Colfico, S. A.: *See*—
Dubois, Robert. 3,349,225.

Colgate-Palmolive Co.: *See*—
Judd, Claude I. 3,349,128.
Shumway, Durland K. 3,348,919.

Collins, Edward C.: *See*—
Karlsson, Elof K., and Collins. 3,348,676.

Collins, Larry L., to General Motors Corp. Light sensitive control system for automobile lighting circuits. 3,349,281, 10–24–67, Cl. 315—83.

Colts, Inc.: *See*—
Roy, Robert E. 3,348,328.

Columbian Carbon Co.: *See*—
Dyess, James B., Jr., Tullis, and Waters. 3,348,519.

Combustion Engineering, Inc.: *See*—
Hill, Ernest C. 3,348,601.
Pearl, David R., and Kalika. 3,348,830.

Commercial Solvents Corp.: *See*—
Cockerham, Lloyd E., and Purcell. 3,348,958.
Commissariat A l'Energie Atomique: *See*—
Sicard, Fernand. 3,349,387.
Communications Patents Ltd.: *See*—
Manchel, Derek J. 3,349,172.
Compagnie des Compteurs: *See*—
Hanff, Michel M. 3,349,366.
Compagnie des Machines Bull (Societe Anonyme): *See*—
Bouvier, Claude J. B. 3,349,376.
Compagnie Generale d'Electricite: *See*—
Crepel, Jean, and Zacar. 3,349,200.
Donadieu, Lucien. 3,349,169.
Gallet, Georges, and Gnenel. 3,348,284.
Compur-Werk Gesellschaft mit beschrankter Haftung & Co.: *See*—
Fahlenberg, Paul. 3,348,462.
Conch International Methane Ltd.: *See*—
Crownover, Carl F., and Every. 3,349,020.
Harmens, Alexander. 3,348,384.
Concrete Thermal Casings, Inc.: *See*—
Ziegler, George E. 3,349,017.
Conning, David G.: *See*—
Brown, Jerry H., and Conning. 3,849,021.
Consolidated Development Corp.: *See*—
Carbonneau, Rene R. 3,348,532.
Consolidated Electronics Industries Corp.: *See*—
Tassara, Luigi. 3,348,304.
Continental Can Co., Inc.: *See*—
Brown, William M. 3,348,672.
Jasper, John C., and Rau. 3,348,727.
La Cross, George D. 3,348,726.
Continental Gummi-Werke Aktiengesellschaft: *See*—
Post, Hermann, and Weigel. 3,348,585.
Continental Mfg. Co.: *See*—
Smith, Russell G. 3,348,694.
Conway, Oliver, to Hogan Faximile Corp. Facsimile recorder phasing apparatus utilizing a hyateresis synchronous motor with means for varying the effective impedance of one winding to effect synchronization. 3,349,178, 10–24–67, Cl. 178—69.5.
Cope, John L.: *See*—
Angier, James F., and Cope. 3,349,233.
Copeland, John R., and W. J. Robertson, to The Ohio State University Research Foundation. Integrated Lobe switching antenna. 3,349,404, 10–24–67, Cl. 343—120.
Copeland, Lynn L. Fluid ventilated suit. 3,348,236, 10–24–67, Cl. 2—2.
Copeland, William M., S. V. Horecky, and T. H. Hayes, to Sunbeam Corp. Hair dryer. 3,348,317, 10–24–67, Cl. 34—99.
Coplin, John F.: *See*—
Wilde, Geoffrey L., and Coplin. 3,348,379.
Cootey, Thomas A., to Friedrich Refrigerators, Inc. Indoor-outdoor compensated thermostat. 3,348,607, 10–24–67, Cl. 165—28.
Corbett Associates, Inc.: *See*—
Corbett, Robert B. 3,348,802.
Corbett, Robert B., ½ to Sam Heppenstall & Associates, Inc., and Corbett Associates, Inc. Mold box. 3,348,802, 10–24–67, Cl. 249—163.
Cordon, Bernard M., and Z. Abdun-Nabi, to Janus Control Corp. Digital counter. 3,349,228, 10–24–67, Cl. 235—92.
Cornelissen, Jan, to Shell Oil Co. Catcher for cleaning water surfaces. 3,348,690, 10–24–67, Cl. 210—242.
Cornell, William C. Engine coolant filter element. 3,348,693, 10–24–67, Cl. 210—282.
Corning Glass Works: *See*—
Clark, Forest P., and Gladwell. 3,348,936.
Cory Corp.: *See*—
Eisendrath, David C. 3,348,468.
Cossor, A. C., Ltd.: *See*—
Foster, Kenneth. 3,349,402.
Costerousse, Germain: *See*—
Bucourt, Robert, Pierdet, Costerousse, Joly, Warnant, and Goffinet. 3,349,130.
Cotabish, Harry N.: *See*—
Miller, John C., Cotabish, and Buban. 3,348,537.
Cowles, John H., to The Torrington Co. Method of forming sheet metal bearing cup with external restraining flange. 3,348,511, 10–24–67, Cl. 113—117.
Cox, Bradley G., to Baker Perkins, Inc. Mixing machine. 3,348,816, 10–24–67, Cl. 259—41.
Crabtree, J. A., & Co., Ltd.: *See*—
Fair, John W. 3,349,204.
Crafts, Cecil A., to Robertshaw Controls Co. Means and method of reducing jitter distortion of binary data recovered from a communication wave. 3,349,329, 10–24–67, Cl. 325—320.
Cramer, Bernhard, to International Standard Electric Corp. Spherical type carrier apparatus and bearing yoke therefor. 3,348,649, 10–24–67, Cl. 197—52.
Crane Canada Ltd.: *See*—
Gervais, Laurent. 3,348,798.
Crawford, David J., to International Business Machines Corp. Data signal sensing system. 3,349,378, 10–24–67, Cl. 340—172.5.
Crepel, Jean, and A. Zacar, to Compagnie Generale d'Electricite. Power line contract for disconnect switch. 3,349,200, 10–24–67, Cl. 200—48.
Crickmer, Charles D., to Joy Mfg. Co. Pipe slip assembly and method for testing. 3,348,277, 10–24–67, Cl. 24—263.
Crider, Orin N.: *See*—
Gallagher, John E., Crider, and McCulloch. 3,348,604.
Crincic, Laddie J.: *See*—
Long, Herbert A., Brown, and Crincic. 3,348,833.
Cropp, Donald T., and D. J. Gilman, to Imperial Chemical Industries Ltd. Process for purifying 2,2,2-trifluoro-1-chloro-1-bromoethane. 3,349,137, 10–24–67, Cl. 260—653.
Crossley, Neville S.: *See*—
Broome, Arthur W. J., Crossley, and Jones. 3,349,090.
Crouse-Hinds Co.: *See*—
Robertson, Charles A., and Small. 3,349,232.
Crowell, Clarence R., and S. M. Sze, to Bell Telephone Laboratories, Inc. Surface barrier semiconductor translating device. 3,349,297, 10–24–67, Cl. 317—234.
Crowder, Jeffrey L., and W. H. Durrant, to British Aircraft Corp. (Operating) Ltd. Maintenance of temperature conditions in satellites. 3,348,790, 10–24–67, Cl. 244—1.
Crowley-Milling, Michael C., to Associated Electrical Industries Ltd. Electron accelerator means with means for repeatedly passing the initial electrons through the accelerator. 3,349,335, 10–24–67, Cl. 328—233.
Crown Zellerbach Corp.: *See*—
Neubauer, Arthur W. 3,348,526.
Crownover, Carl F., and R. L. Every, to Conch International Methane Ltd. Low temperature electrophoretic liquified gas separation. 3,349,020, 10–24–67, Cl. 204—180.
Csonka, Lajos, J. Szerecs, and J. Gonczy. Process for preparing surface-treated pigments. 3,348,959, 10–24–67, Cl. 106—308.
Culik, Karel, J. Dasek, J. Palkoska, and J. Pelzbauer, to Spofa Sdruzeni podniku pro zdravolnickou vyrobu. Method of tetracycline isolation from fermented edia. 3,349,127, 10–24–67, Cl. 260—559.
Cuility, Richard E., to W. J. Voit Rubber Corp. Pressure regulator, mouthpiece, exhaust duct and strap for underwater breathing apparatus. 3,348,540, 10–24–67, Cl. 128—147.
Cummings, Alan F., to North American Aviation, Inc. Foldable structure. 3,348,352, 10–24–67, Cl. 52—646.
Cumming, James C.: *See*—
Thompson, Robert R., and Cumming. 3,348,640.
Cunningham, Cabot L. World-wide time indicator. 3,348,321, 10–24–67, Cl. 35—46.
Cunningham, Walter F., to Superior-Tabbies, Inc. Index tabs. 3,348,324, 10–24–67, Cl. 40—23.
Curran, Martin J., Jr. Hydraulic balancing device. 3,348,810, 10–24–67, Cl. 254—133.
Currie, Harold B., to Radio Corp. of America. First stroke locator for a character reader. 3,349,372, 10–24–67, Cl. 340—146.3.
Curtis, Edward G., to The Dow Chemical Co. Method of covering a trayless package with heat shrinkable plastic film. 3,348,350, 10–24–67, Cl. 53—30.
Curtis, Wilfred A., and J. F. Keating. Trailer spare and third wheel. 3,348,861, 10–24–67, Cl. 280—475.
Cutler-Hammer, Inc.: *See*—
Luy, William R., and Trumble. 3,348,473.
Strand, Sanford M. 3,349,308.
Cyba, Henryk A., to Universal Oil Products Co. S-(Dithiophosphatyl) epoxyalkanes. 3,349,103, 10–24–67, Cl. 260—348.
Cyba, Henryk A., to Universal Oil Products Co. N-(2-hydroxyphenylmethylene)-organo aryl amines and metal salts thereof. 3,349,110, 10–24–67, Cl. 260—439.
DAV: *See*—
Vuarchex, Alexandre. 3,348,747.
Dahl, Robert E.: *See*—
Wolfe, Harold H., and Dahl. 3,348,550.
Dahl, Russell C.: *See*—
Fahey, James H., Jr., Dahl, Frederickson, and Bonk. 3,349,239.
Daimler-Benz Aktiengesellschaft: *See*—
Kosche, Rudolf. 3,348,642.
Dakin, Ralph K., to Bausch & Lomb Inc. Optical system for projection magnifier. 3,348,902, 10–24–67, Cl. 350—232.
Dalton, John, Jr., to Sylvania Electric Products Inc. Plaster frame. 3,348,865, 10–24–67, Cl. 287—189.36.
Dame, Harry J.: *See*—
Manning, John A., and Dame. 3,349,043.
Daneman, Ben, to Central Engineering Co., Inc. Vacuum-type debris collector. 3,348,258, 10–24–67, Cl. 15—314.
Daniel, Lawrence J.: *See*—
Gaddis, John H. 3,348,871.
Dannettell, Alan C., to Yale & Towne, Inc. Industrial truck power circuit. 3,349,309, 10–24–67, Cl. 318—341.
Das Chaklader, Asoke C., and L. G. McKenzi, to Canadian Patents and Development Ltd. Process for manufacturing clay products. 3,348,957, 10–24–67, Cl. 106—67.
Dasek, Jaroslav: *See*—
Culik, Karel, Dasek, Palkoska, and Pelzbauer. 3,349,127.
Data-Disc, Inc.: *See*—
Kohn, Morris A. 3,349,384.
Davenport, William H., to Chase Brass and Copper Co., Inc. Recovery of rhenium values. 3,348,942, 10–24–67, Cl. 75—62.
Davidson, James R., and R. M. Pierce, to Xerox Corp. Automatic toner control system. 3,348,523, 10–24–67, Cl. 118—7.
Davis, Allen V. C. Electrical switch with phased contact operation. 3,349,201, 10–24–67, Cl. 200—67.
Davis, Hunt, to Worthington Corp. Centrifugal pump to provide jet propulsion. 3,348,514, 10–24–67, Cl. 114—66.5.
Davis, Pauls, K. C. Firsch, and E. J. Fujiwara, to Wyandotte Chemicals Corp. Polyhalogenous copolymer compositions. 3,349,069, 10–24–67, Cl. 260—92.3.
Dawes, Bailey P., to P. B. Fioence, Inc., d.b.a. Pan Pacific Co. Liquid dispenser with dispensing cycle register. 3,348,736, 10–24–67, Cl. 222—38.
Day, Harry E., to Delta Associated Industries Corp. Production line. 3,348,285, 10–24–67, Cl. 29—33.
Dayco Corp.: *See*—
Richmond, Kenneth D. 3,348,422.

Dea Products, Inc.: *See*—
Fredrikson, Glenn S. 3,348,657.
Deason, Max W. Cantilever deck form. 3,348,801, 10–24–67, Cl. 249—19.
De Berry, James S., to Pharmaseal Laboratories. Hypodermic syringe storage unit. 3,348,894, 10–24–67, Cl. 312—209.
Defiance Button Machine Co.: *See*—
Orlando, John B. 3,348,287.
Degraw, Elleen, H. Method of applying slide fasteners. 3,348,509, 10–24–67, Cl. 112—265.
De Lano, Merrit V., Jr, to Phillips Petroleum Co. Process for the removal of aluminum chloride from hydrocarbons using concentrated, aqueous hydrogen chloride. 3,349,143, 10–24–67, Cl. 260—671.
Delevan Electronics Corp.: *See*—
Birch, David W., and Hebdon. 3,348,782.
Delta Associated Industries Corp.: *See*—
Day, Harry E. 3,348,285.
Demarest, Kenneth D., to Foster Wheeler Corp. Tube design for terrace wall furnace. 3,348,923, 10–24–67, Cl. 23—288.
De Marsh, Peter L.: *See*—
Keener, Russell W., De Marsh, and Ballard. 3,348,482.
Demrick, Carl J, Method for making steel wool soap pad. 3,348,296, 10–24–67, Cl. 29—419.
De Shazor, James C. Jr., L. R. Burk, and R. S. Jackson, to James C. De Shazor. Apparatus for assembling packages. 3,348,361, 10–24–67, Cl. 53—184.
De Shazor, James C.: *See*—
De Shazor, James C., Jr., Burk, and Jackson. 3,348,361.
Deutsche Gold-und Silber Scheideanstalt vormals Roessler: *See*—
Baier, Hermann. 3,348,903.
Dithmar, Karl, and Koblischek.
De Visser, Adolf J.: *See*—
Kolkman, Dirk, and De Visser. 3,349,274.
Dick, Lloyd C.: *See*—
Bahls, Gene C., McNutt, Price, Zidell, and Dick. 3,348,673.
Dietsch, Jacques J. G., to Societe Anonyme des Etablissements Leon Hatot. Electromechanical oscillators. 3,349,305, 10–24–67, Cl. 318—128.
Dighton, Gaylon L., to The Dow Chemical Co. Decreased block in polymer films. 3,349,154, 10–24–67, Cl. 264—89.
Dijkmeijer, Henricus E., to North American Philips Co. Inc. Method of manufacturing a mount for a semi-conductor device. 3,348,297, 10–24–67, Cl. 29—480.
Dimmick, George S.: *See*—
Haltzman, Harry H., Wright, and Dimmick. 3,348,735.
Dimmock, Eric P.: *See*—
Wilkinson, Horace A., and Dimmock. 3,348,820.
Dirkse, Thedford P., to Calvin College and Seminary. Secondary battery. 3,348,973, 10-24-67, Cl. 136—30.
Dishart, Harry S. Life saving safety devices for twin passenger aircraft or ships. 3,348,513, 10–24–67, Cl. 114—.5.
Dithmar, Karl, and P. Koblischek, to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler. Activated bleaching composition. 3,349,035, 10–24–67, Cl. 252—99.
Dix, Wayne L. Resiliently mounted basketball practice and rebound ring. 3,348,840. 10–24–67, Cl. 273—1.5.
Dixon, Guy E., T. M. Dixon, and R. I. Geyer, to Panelfold Doors, Inc. Acoustical folding door. 3,348,628, 10–24–67, Cl. 181—33.
Dixon, Thomas M.: *See*—
Dixon, Guy E. and T. M., and Geyer. 3,348,628.
Dodds, Beatrice O. Women's prosthetic loungewear. 3,348,241, 10–24–67, Cl. 3—36.
Dolin, Edward T.: *See*—
Ames, Victor H., and Dolin. 3,348,498.
Dollinger Corp.: *See*—
Wilber, Paul F. 3,348,684.
Dolomont, Allan A.: *See*—
Murphy, James F., and Dolomont. 3,348,979.
Donadieu, Lucien, to Compagnie General d'Electricite. Superconducting cable. 3,349,169, 10–24–67, Cl. 174—128.
Donohue, James M., to Xerox Corp. Automatic toner control system. 3,348,522, 10–24–67, Cl. 118—7.
Doran Brothers, Inc.: *See*—
Baker, Morton H., and Marindin. 3,348,281.
Dorr-Oliver Inc.: *See*—
Savage, Elton S. 3,349,030.
Dotto, Gianni A., to P. R. Mallory & Co., Inc. Timer having an adjustable time interval. 3,349,199, 10–24–67, Cl. 200—38.
Dow Chemical Co., The: *See*—
Ashby, Theodore L. 3,349,053.
Curtis, Edward G. 3,348,356.
Dighton, Gaylon L. 3,349,154.
Eicholtz, Clara V., E. F. and B. N. Trombley. 3,348,731.
Goodenough, Robert D., and Belski. 3,348,910.
Kellom, David B., Bowman, Lamoria, and York. 3,348,928.
Sterling, George B., and Pawloski. 3,349,133.
Tveter, Elmer C. 3,348,675.
Zingg, Warren M. 3,348,616.
Downing, William D.: *See*—
Newton, David W., and Downing. 3,348,293.
Dozier, Hilllard, to U.S. Terminals, Inc. Spring loaded electrical terminal. 3,349,365, 10–24–67, Cl. 339—254.
Drain, David J., J. G. B. Howes, and H. W. R. Williams, to T. J. Smith, & Nephew Ltd. 3,4-dihydroxy-benzyloxyamine. 3,349,135, 10–24–67, Cl. 260—621.
Drake, Cyril F.: *See*—
Hyman, Robert A., and Drake. 3,349,326.
Drechsler, Lee, and Zandell, Fred: *See*—
Koolnis, Stanley R. 3,348,754.
Dresser Industries, Inc.: *See*—
Venghiattis, Alexis A. 3,348,314.
Driessen, Antonius J. G. C.: *See*—
Jacobs, Cornelis A. J., and Driessen. 3,349,276.
Drum, Edward W., to Ransburg Electro-Coating Corp. Electrostatic spraying. 3,348,965, 10–24–67, Cl. 117—93.4.
Dubin, Lester, M. G. Paulson, and B. Shmurak, to Lambda Electronics Corp. Multi-positional power supply module and heat exchanger techniques. 3,348,609, 10–24–67, Cl. 165—47.
Dubois, Robert, to Colfico, S. A. Heating element for rods and the like. 3,349,225, 10–24–67, Cl. 219—545.
Duckwall, Frank E.: *See*—
Calkins, Tracy H., and Duckwall. 3,348,340.
Dudley, William L., to United States of America, Army. Control circuit for unsymmetrical power converter. 3,349,311, 10–24–67, Cl. 321—2.
Dudzik, Chester J., and G. E. Perkins, to Lessona Corp. Method and apparatus for processing glas yarn. 3,348,368, 10–24–67, Cl.57—35.
Dufour, Georges, to Brevets Aero-Mecaniques S.A. Armor piercing shell. 3,348,485, 10–24–67, Cl. 102—52.
Dull, Thomas J.: *See*—
Goldmeyer, Clifford, and Dull. 3,348,583.
Dully, Floyd I., and A. J. Maletzke, to General Motors Corp. Wheel cover. 3,348,885, 10–24–67, Cl. 301—37.
Dumas, Charles A.: *See*—
Zwarycz, Michael, and Dumas. 3,348,525.
Dunham White and Co. Ltd.: *See*—
Wheble, Alfred G. 3,348,752.
Dunn, Elman R., to Landis Tool Co. Abrasive disc spindle mounting. 3,348,341, 10–24–67, Cl. 51—111.
Dunton, Thornley A., to The International Nickel Co., Inc. Iron powder and core with controlled permeability coefficient. 3,348,982, 10–24–67, Cl. 148—105.
Du Pont de Nemours, E. I., and Co.: *See*—
Brodmann, George L., and Stewart. 3,348,549.
Carter, Thomas L. 3,348,263.
Hill, Harold W., Kwolek, and Sweeny. 3,349,062.
Holton, Roy T. 3,348,571.
Kruse, Jurgen M. 3,348,918.
Luckenbaugh, Raymond W. 3,349,111.
Pruckmayr, Gerfried. 3,349,061.
Dupre, Dennis D., 40% to L. P. Lottinger, Jr. Condenser unit air cleaner and housing. 3,348,365, 10–24–67, Cl. 55—350.
Duro-Test Corp.: *See*—
Thorington, Luke. 3,349,339.
Dur-O-Wal National, Inc.: *See*—
Bartlett, William H. 3,348,354.
Durrant, William H.: *See*—
Crowder, Jeffrey L., and Durrant. 3,348,790.
Duynstee, Eduard F. J., J. A. Bigot, and J. L. J. P. Hennekens, to Stamicarbon N.V. Conversion of cyclo-alkane carboxylic acid to cyclo-alkanone. 3,349,131, 10–24–67, Cl. 260—586.
Dyess, James B., Jr., D. B. Tullis, and G. T. Waters, to Columbian Carbon Co. Automatic glue dispensing apparatus. 3,348,519, 10–24–67, Cl. 118—2.
Dyna-Empire, Inc.: *See*—
Shaper, Harry B. 3,349,194.
Dynamit Nobel A.G.: *See*—
Rapp, Reinhold. 3,348,486.
Dynamit Nobel Aktiengesellschaft: *See*—
Stadler, Hans, Ballreich, and Gawlick. 3,348,985.
Eastman Kodak Co.: *See*—
Hiatt, Gordon D., and Rowley. 3,349,080.
Lappin, Gerald R. 3,349,059.
Nerwin, Hubert. 3,348,463.
Straley, James M., Wallace, and Weaver. 3,349,098.
Easton, Wayne B., to Char-Lynn Co. Fluid pressure remote control devices and systems. 3,348,493, 10–24–67, Cl. 103—130.
Eaton Yale & Towne, Inc.: *See*—
Nieminski, Robert A. 3,348,635.
Eastman Kodak Co.: *See*—
Price, William H. 3,348,899.
Weaver, Max A., and Wallace. 3,349,076.
Wallace, David J., and Weaver. 3,349,075.
Eberman, Augustus H., and H. A. Jensen, to Oscar Mayer & Co., Inc. Apparatus for cutting moving sheet material. 3,348,442, 10–24–67, Cl. 83—318.
Eckhardt, John C., and W. L. Yessa, to Automatic Electric Laboratories, Inc. Intra-connection techniques for multilayer printed wiring boards. 3,349,162, 10–24–67, Cl. 174—68.5.
Edick, Percy. Clay mixer and extruder. 3,348,815, 10–24–67, Cl. 259—6.
Eguchi, Yasukata, and S. Hanyu, to Janome Sewing Machine Co., Ltd. Needle-attaching device for sewing machines. 3,348,508, 10–24–67, Cl. 112—226.
Eicholtz, Clara V., E. F. and B. N. Trombley, to The Dow Chemical Co. Medical tablet container and dispenser. 3,348,731, 10–24–67, Cl. 221—5.
Eisendrath, David C., to Cory Corp. Coffee brewer. 3,348,468, 10–24–67, Cl. 99—282.
Eisenwerk Weserhutte A.G.: *See*—
Schmieder, Theodor. 3,348,663.
Eissfeldt, Werner. Generator of high frequency oscillations. 3,348,376, 10–24–67, Cl. 60—54.
Eisenwerk Wesergutte A.G.: *See*—
Schmieder, Theodor. 3,348,663.
Ekdahl, Wendell G., to Johns-Manville Corp. Refractory fiber composition. 3,348,956, 10–24–67, Cl. 106—65.
Electric Machinery Mfg. Co.: *See*—
Rohner, Thomas G. 3,349,256.
Electric Storage Battery Co., The: *See*—
Zug, Wilhelm J. 3,349,386.
Elliott, Burton, Bracelet for interchangeable brooches. 3,348,388, 10–24–67, Cl. 63—1.
Ellis, Nicholas D., to Anheuser-Busch, Inc. Carton. 3,348,758, 10–24–67, Cl. 229—44.

Ellrott, Albert C.: *See*—
Ellrott, Frederick, A. C., and C., and R. D. and D. H. Ashton, and Gomersall. 3,348,467.

Ellrott, Charles: *See*—
Ellrott, Frederick, A. C., and C., and R. D. and D. H. Ashton, and Gomersall. 3,348,467.

Ellrott, Frederick, A. C., and C., and R. D. and D. H. Ashton, and E. S. Gomersall. Stock feed pelleting machine. 3,348,467, 10–24–67, Cl. 99—235.

Eltra Corp.: *See*—
Roberts, William J. 3,349,284.

Emdeko Distributing, Inc.: *See*—
Storm, Frederick K., Jr., and Smiley. 3,348,254.

Emery Industries, Inc.: *See*—
Seiwert, Joseph J., and Boylan. 3,349,049.

Emkay, Inc.: *See*—
Huber, Karl. 3,348,553.

Enderby, Charles E., to General Electric Co. Rectangular to circular waveguide transition. 3,349,346, 10–24–67, Cl. 333—21.

Engborg, Nelson E., to Barnes Engineering Co. Reference source for calibration of thermographic instruments. 3,348,408, 10–24–67, Cl. 73—1.

Engelsmann, Dieter: *See*—
Winkler, Alfred, Engelsmann, Landbrecht, and Renner. 3,348,461.

Englander Co., Inc., The: *See*—
Fasanella, George S. 3,348,244.

English Electric Valve Co. Ltd.: *See*—
Jones, Eric. 3,349,267.

Enrietto, Joseph F., to Jones & Laughlin Steel Corp. Process for producing non-aging steels. 3,348,980, 10–24–67, Cl. 148—16.

Ericsson, Sven, and A. O. E. Lenander, to Platmanufaktur, AB. Method of producing conical vessels. 3,348,512, 10–24–67, Cl. 113—120.

Ernstberger, Alfred F.: *See*—
Jepson, Ivar, and Ernstberger. 3,349,266.

Esashi, Hanjiro: *See*—
Amatsu, Hideo, and Esashi. 3,348,668.

Esso Research and Engineering Co.: *See*—
Kennedy, Joseph P. 3,349,065.
Long, Robert B., and Caruso. 3,348,908.
Stogryn, Eugene L., Argabright, and Leary. 3,349,129.

Etablissements Gérard Mang: *See*—
Peffer, Raymond. 3,349,293.

Etablissements L. Faiveley: *See*—
Scheidecker, Abel. 3,349,197.

Ettlinger, Ralph, Jr. Silverware holding means for dishwashers. 3,348,729, 10–24–67, Cl. 220—83.

Ets, Herbert, to Dr. Carl Hahn KG. Apparatus for applying tampon removal cords. 3,348,866, 10–24–67, Cl. 289—18.

European Atomic Energy Community-Euratom: *See*—
Veaux, Michel, and Marchal. 3,348,396.

Evans, Cyril H., to Spillers Ltd. Process for preparing baked, starch-reduced products. 3,348,951, 10–24–67, Cl. 99—86.

Evans, John T., to General Electric Co. Apparatus to permit both contouring and numerical positioning operations with a common control system. 3,349,229, 10–24–67, Cl. 235—151.11.

Every, Richard L.: *See*—
Crownover, Carl F., and Every. 3,349,020.

Ezell, James W.: *See*—
Blum, Jack E., and Ezell. 3,349,275.

Fafnir Bearing Co., The: *See*—
Marsh, Donald R. 3,348,289.

Fahey, James H., Jr., R. C. Dahl, C. J. Frederickson, Jr., and L. F. Bonk, to Joslyn Mfg. and Supply Co. Outdoor lighting luminaire. 3,349,239, 10–24–67, Cl. 240—25.

Fahlenberg, Paul, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Photographic camera. 3,348,462, 10–24–67, Cl. 95—53.

Fair, John W., to J. A. Crabtree & Co., Ltd. Thermal overload mechanism for contactor-operated motor starters. 3,349,204, 10–24–67, Cl. 200—116.

Fair, Robert A.: *See*—
Sinclair, James A., and Fair. 3,348,614.

Fairchild Camera & Instrument Corp.: *See*—
Michalchik, Michael. 3,348,944.

Falk Corp., The: *See*—
Polzin, Clayton H. W. 3,348,430.

Falls Stamping and Welding Co., The: *See*—
Momchilovich, Milan, and Rhodes. 3,348,598.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Mayer, Rudi, Kunts, and Suling. 3,349,063.
Muller, Erwin. 3,349,121.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Kuhne, Rudolf, Meininger, and Noll. 3,349,097.

Farrow, Cecil W.: *See*—
Becker, Floyd K., and Farrow. 3,349,333.

Fasanella, George S., to The Englander Co., Inc. Modular furniture construction. 3,348,244, 10–24–67, Cl. 5—17.

Fauchere, Jean, to Societe Auxitra. Control of multiple servomotors actuated machines. 3,348,709, 10–24–67, Cl. 214—138.

Federal Carton Corp.: *See*—
McCormick, Frank. 3,348,666.

Feldco-Major, Inc.: *See*—
Wolf, Harold H., and Dahl. 3,348,550.

Fenster, Abraham S., and R. W. Asmus, to International Harvester Co. Hay waferizer. 3,348,475, 10–24–67, Cl. 100—177.

Fenton, Donald M., and K. L. Olivier, to Union Oil Co. of California. Oxidative carbonylation of olefins in the presence of inorganic acid anhydrides. 3,349,119, 10–24–67, Cl. 260—497.

Ferney, Francis X., to Bird Machine Co. Centrifugal separator. 3,348,767, 10–24–67, Cl. 233—7.

Fernseh G.m.b.H.: *See*—
Harkensee, Georg. 3,349,271.
Von Felgel-Farnholz, Richard, and Michels. 3,349,170.
Zahn, Heinrich. 3,348,749.

Ferranti Ltd.: *See*—
Naylor, Ronald, and Scarrott. 3,349,382.

Ferro Mfg. Corp.: *See*—
Littmann, Joseph C. 3,348,638.

Ferro, Patrick V., and A. B. Ham, to Reagents, Dade, Inc. Reagent and method for the quantitative determination of billirubin. 3,348,920, 10–24–67, Cl. 23—230.

Ferrotest G.m.b.H.: *See*—
Korf, Willy. 3,348,400.

Fiorese, Frank F.: *See*—
Umberger, Charles J., and Fiorese. 3,349,073.

Firsch, Kurt C.: *See*—
Davis, Pauls, Firsch, and Fujiwara. 3,349,069.

Fischer, Arno, to Halbergerhutte G.m.b.H. Rotary piston machine. 3,348,494, 10–24–67, Cl. 103—136.

Fischer, Israel L., W. W. Lee, T. J. Meloro, and B. Spieker, to The Bendix Corp. Compact sub-miniature optical pickup assembly. 3,349,246, 10–24–67, Cl. 250—239.

Fischer, Raymond C., to International Harvester Co. Cell-less planter. 3,348,504, 10–24–67, Cl. 111—34.

Fischer, Robert T.: *See*—
Ames, Victor H., and Fischer. 3,348,639.

Fischl, Frederick. Golf practice device including simulated divot means. 3,348,847, 10–24–67, Cl. 273—186.

Fisher, George E. Spport for refractory blocks. 3,348,930, 10–24–67, Cl. 29—183.

Fitzpatrick, Fernald J.: *See*—
Taylor, Ruel E., Jr., and Fitzpatrick. 3,348,477.

Flannigan, Harry B. Multipurpose sports equipment. 3,348,247, 10–24–67, Cl. 9—310.

Flaxman, Harry, to Hooker Chemical Corp. Stabilization of nitrophenyl acyl halides. 3,349,123, 10–24–67, Cl. 260—544.

Flexicore Co., Inc., The: *See*—
Shoe, Theodore W. 3,348,279.

Flint, John A., and J. E. George, to Power Jets (Research and Development) Ltd. Helicopter rotor. 3,348,618, 10–24–67, Cl. 170—135.4.

Floren, Carl E.: *See*—
Leopold, Wilbur R., Jr., and Floren. 3,348,862.

Florian, Georg: *See*—
Belk, Hermann, and Florian. 3,348,503.

Flowers, Stanley L. Automatic weight grading apparatus. 3,348,678, 10–24–67, Cl. 209—74.

Foerster, James A., to Wabash Magnetics, Inc. Method of making an encapsulated coil bobbin. 3,348,302, 10–24–67, Cl. 29—605.

Forbriger, Arthur W.: *See*—
Reiss, Carroll R., and Forbriger. 3,348,316.

Ford Instrument Co. Div.: *See*—
Zimmerman, Julius, and Pisan. 3,348,990.

Ford, James A., to Kirsch Co. Movable panel supports. 3,348,603, 10–24–67, Cl. 160—197.

Forshee, Amiel G., to The Boeing Co. Apparatus and method for pumping and storing gases. 3,348,386, 10–24–67, Cl. 62—48.

Forsyth, John P.: *See*—
Forsyth, Robert W. and J. P. 3,348,518.

Forsyth, Robert W. and J. P., to Lockheed Aircraft Corp. Amphibious star-wheeled vehicle. 3,348,518, 10–24–67, Cl. 115—1.

Foster, Joseph W., to Union Tank Car Co. Sewage treatment system. 3,348,687, 10–24–67, Cl. 210—195.

Foster, Kenneth, to A.C. Cossor, Ltd. Secondary radar systems. 3,349,402, 10–24–67, Cl. 343—114.5.

Foster Wheeler Corp.: *See*—
Demarest, Kenneth D. 3,348,923.

Fowler, Richard K.: *See*—
Seeloff, Melvin M., and Fowler. 3,348,831.

Francis, John P. Automobile windshield weather visor. 3,348,875, 10–24–67, Cl. 296—95.

Francken, Jan C.: *See*—
Bathelt, Robert R., Francken, and Panis. 3,349,272.

Frank, Arlen W.: *See*—
Baranauckas, Charles F., and Frank. 3,349,151.

Frankische Isolierrohr-und Metallwaren-Werke Gebrueder Kirchner: *See*—
Zieg, Wilhelm. 3,349,156.

Frechette, Kenneth R., to Royal Typewriter Co., Inc. Keyboard providing serial generation of two different codes responsive to one key depression. 3,348,648, 10–24–67, Cl. 197—16.

Frederickson, Carl J.: *See*—
Fahey, James H., Jr., Dahl, Frederickson, and Bonk. 3,349,239.

Fredrikson, Glenn S., to Dea Products, Inc. Spray etching device. 3,348,657, 10–24–67, Cl. 198—127.

Freeborn, Andrew L., to The Ohio Brass Co. Manufacturing valve balls. 3,348,398, 10–24–67, Cl. 72—80.

Freedman, John C., to Kelco Co. Gel forming alginate products and method of producing the same. 3,349,079, 10–24–67, Cl. 260—209.6.

Freeman, Walter R., and W. F. Boldt, to Wagner Electric Corp. Pressure generating means. 3,348,377, 10–24–67, Cl. 60—54.6.

Frentzen, Paul T.: *See*—
Mathews, Bentley B., and Frentzen. 3,348,680.

Fried, Josef, to E. R. Squibb & Sons, Inc. Acetals and ketals of 6-alkyl-16,17-dihydroxyprogesterone and intermediate therefor. 3,349,085, 10–24–67, Cl. 260—239.55.

Friedrich Refrigerators, Inc.: *See*—
Cootey, Thomas A. 3,348,607.

Fruehauf Corp.: *See*—
Burns, Samuel P., and Bauer. 3,348,502.

Frye, James A., to Halliburton Co. Valves. 3,348,569, 10–24–67, Cl. 137—269.5.

Fry-Fyter Co., The: *See*—
Macartney, Bruce J. 3,348,617.

Fujiwara, Edward J.: *See*—
Davis, Pauls, Firsch, and Fujiwara. 3,349,069.

Fukushima, Osamu, K. Noda, and T. Kishida, to Kurashiki Rayon Co., Ltd. Method of producing gas-permeable elastic polyurethane films. 3,348,963, 10–24–67, Cl. 117—63.

Fuller Co.: *See*—
Krauss, Werner. 3,348,589.

Fuller, Donald B., and J. Robinson, to Kollar Kap Corp. Soil pipe cover. 3,348,725, 10–24–67, Cl. 220—42.

Future Plastics, Inc.: *See*—
Murray, Coyt E. 3,348,581.

Gabrielson, Reidar G., and L. R. Smith, to Motorola Inc. Supervisory control system with message traffic control. 3,349,374, 10–24–67, Cl. 340—163.

Gaddis, John H., ½ to L. J. Daniel. Pipe and rod tool. 3,348,871, 10–24–67, Cl. 294—92.

Gage, Arthur F., to Rockwell-Standard Corp. Brake shoe lining with incorporated heating element. 3,348,641, 10–24–67, Cl. 188—250.

Gagnaux, Pierre: *See*—
Renz, Jany, Bourquin, Winkler, Gagnaux, Guldimann, and Ruesch. 3,349,087.

Galbierz, Jerome J.: *See*—
Hickin, Robert J., and Galbierz. 3,348,757.

Gallagher, John E., O. N. Crider, and B. McCulloch, to Slick Industrial Co. Window shades and shade rollers. 3,348,604, 10–24–67, Cl. 160—313.

Gallet, Georges, and C. Guenel, to Compangnie General d'Electricite. Method for manufacturing metal coated bands. 3,348,284, 10–24–67, Cl. 29—25.42.

Gancarz, Walter F., and W. A. Marion, to The American Paper Products Co. Rotary endless chain printing machine. 3,348,478, 10–24–67, Cl. 101—91.

Gardiner, John T., and M. J. Kjos, to Burroughs Corp. Tape transport assembly. 3,348,784, 10–24–67, Cl. 242—55.12.

Gardner, William B., J. F. Kuhlberg, and P. W. McLaughlin, to United Aircraft Corp. Gas turbine engine fuel control. 3,348,375, 10–24–67, Cl. 60—39.28.

Garnier, Michel R., to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Electric current generator in combination with an internal combustion engine. 3,349,248, 10–24–67, Cl. 290—2.

Garrett, B. Charles, to General Precision Systems, Inc. Write amplifier circuit. 3,349,370, 10–24–67, Cl. 340—146.1.

Garver, Robert V., to United States of America, Army. Binary 180 diode phase modulator. 3,349,342, 10–24–67, Cl. 332—9.

Gas Equipment Engineering Corp.: *See*—
Kamlani, Jeram S., and Lund. 3,348,385.

Gassner, Hans. Drive arrangement for false twisting devices. 3,348,370, 10–24–67, Cl. 57—77.45.

Gates, Lauren W., and R. E. Jones, to The Regents of the University of California. Fruit depositing device for harvester. 3,348,647, 10–24–67, Cl. 193—7.

Gaus Electrophysics: *See*—
Gregg, David P. 3,349,273.

Gawlick, Heinz: *See*—
Stadler, Hans, Ballreich, and Gawlick. 3,348,985.

Gegenschatz, Walter: *See*—
Baumgartner, August, and Gegenschatz. 3,348,282.

Geigy Chemical Corp.: *See*—
Leitner, George J., and Kleiner. 3,349,054.

General Electric Co.: *See*—
Ammon, Bruno, and Kingsbury. 3,349,198.
Casey, Robert T. 3,349,290.
Enderby, Charles E. 3,349,346.
Evans, John T. 3,349,229.
Laas, James L., and Venier. 3,349,004.
McNutt, William J., and Johnson. 3,349,357.
Olashaw, William F. 3,349,291.
Rehder, Robert H., and Swerdlow. 3,349,168.
Vaughn, Howard A., Jr. 3,349,048.
Waters, Everett W., Hufnagel, and Pierce. 3,348,414.
Wilder, Donald L. 3,349,251.
Willyoung, David M. 3,349,264.

General Foods Corp.: *See*—
Green, Julius. 3,348,954.

General Mills, Inc.: *See*—
Weiss, Verne E. 3,348,950.

General Motors Corp.: *See*—
Blum, Jack E., and Ezell. 3,349,275.
Caramanna, George. 3,348,877.
Cassel, Thomas R. 3,348,629.
Collins, Larry L. 3,349,281.
Dully, Floyd I., and Maletzke. 3,348,885.
Hitzelberger, Alan. 3,348,417.
Katz, Seymour. 3,348,969.
La Flame, Frank E. 3,348,775.
Licata, Joseph P., and Tucker. 3,349,307.
Pollak, Walter, and McLean. 3,348,876.
Symons, James D., and Weihand. 3,348,851.
Weadock, Richard, Jr. 3,348,397.
Zimmerle, Wilbur J. 3,348,413.

General Precision Systems, Inc.: *See*—
Garrett, B. Charles. 3,349,370.

General Refractories Co.: *See*—
Hertlein, Ronald G. 3,348,738.

General Telephone and Electronics Laboratories, Inc.: *See*—
Levine, Albert K., and Palilla. 3,348,924.

General Time Corp.: *See*—
Kolodziej, Walter F., and Michael. 3,349,235.

Geo Space Corp.: *See*—
Hefer, Friedrich W., Witt, and Stems. 3,349,407.

Geodyne Corp.: *See*—
Perry, Kenneth E., and Smith. 3,349,406.

George, James E.: *See*—
Flint, John A., and George. 3,348,618.

George, Peter D. Modular lathes. 3,348,438, 10–24–67, Cl. 82—23.

Georgia Tech Research Institute: *See*—
Long, Maurice W. 3,349,327.
Orr, Clyde, Jr., and Hendrix. 3,348,395.

Gerardi, Daniel A. Wheel mounter. 3,348,294, 10–24–67, Cl. 29—273.

Germani, Luciano, to S.A.R.T. Slampaggio Articoli Resine Termoplastiche s.r.l. Resilient pin, particularly for clothes. 3,348,272, 10–24–67, Cl. 24—137.

Gervais, Laurent, to Crane Canada Ltd. Laundry tub stand. 3,348,798, 10–24–67, Cl. 248—150.

Gess, Jerome M., to Scott Paper Co. Electrostatic conductive paper. 3,348,970, 10–24–67, Cl. 117—201.

Gevaert-Agfa N.V.: *See*—
Stievenart, Emile F., and Phelps. 3,348,839.

Geyer, Russell I.: *See*—
Dixon, Guy E., Dixon, and Geyer. 3,348,628.

Giannamore, Ronald, to United Aircraft Corp. Inverter utilizing an auxiliary controlled rectifier for commutating the power controlled rectifiers. 3,349,314, 10–24–67, Cl. 321—43.

Gibbons, Charles. Slow speed motor. 3,349,262, 10–24–67, Cl. 310—37.

Giddings & Lewis Machine Tool Co.: *See*—
Plummer, Harvey R. 3,348,434.

Gier, Delta W., to Chemagro Corp. Process for killing growing plants. 3,348,939, 10–24–67, Cl. 71—79.

Gilbert, Paul, and R. Watson. Power application. 3,348,960, 10–24–67, Cl. 117—17.5.

Gil-Boy Enterprises, Inc.: *See*—
Gilliam, James A. 3,348,330.

Glich, Heinrich G., to Union Carbide Corp. Poly(α,α,α′,α′-tetrachloro-p-xylene) films. 3,349,045, 10–24–67, Cl. 260—2.

Giles, William H., to Nu Roll Corp. Drive and drive control for supply rolls. 3,348,787, 10–24–67, Cl. 242—75.5.

Gillen, Raymond D., W. T. Knipe, W. McAdam, and N. E. Polster, to Leeds & Northrup Co. Recorder. 3,349,408, 10–24–67, Cl. 346—112.

Gilliam, James A., to Gil-Boy Enterprises, Inc. Minnow bucket. 3,348,330, 10–24–67, Cl. 43—57.

Gilman, David J.: *See*—
Cropp, Donald T., and Gilman. 3,349,137.

Giordano, Joseph J.: *See*—
Citarel, Louis, and Giordano. 3,348,351.

Giordano, Joseph J., to Thiokol Chemical Corp. Polysulfide polymers with stabilized properties. 3,349,057, 10–24–67, Cl. 260—45.75.

Girard, Charles A., and F. R. Clarke, to International Business Machines Corp. Diazo print process. 3,348,947, 10–24–67, Cl. 96—49.

Giros, Marcel A., to Societe Meuslenne de Constructions Mecaniques. Apparatus for continuously displacing a filamentary material in a treatment installation. 3,348,394, 10–24–67, Cl. 72—39.

Gladwell, Robert T., Jr.: *See*—
Clark, Forest P., and Gladwell. 3,348,936.

Glassman, Irving, to Burroughs Corp. Nonlinear analog to digital converter. 3,349,390, 10–24–67, Cl. 340—347.

Glaverbel: *See*—
Plumat, Emile. 3,348,937.

Globe-Union Inc.: *See*—
Lowe, Paul V. 3,349,322.

Gloor, Urs, R. N. Goel, A. Langemann, and R. Ruegg, to Hoffmann-La Roche Inc. Preparation of hydroquinone derivatives. 3,349,113, 10–24–67, Cl. 260—476.

Goda, Susumu, H. Gondo, and Y. Onoue, to Yawata Iron & Steel Co., Ltd. High tension low temperature tough steel. 3,348,981, 10–24–67, Cl. 148—36.

Goel, Ram N.: *See*—
Gloor, Urs, Goel, Langemann, and Ruegg. 3,349,113.

Goetzewerke Friedrich Goetze AG.: *See*—
Meyer, Franz J. 3,348,677.

Goffinet, Bernard: *See*—
Bucourt, Robert, Pierdet, Costerousse, Joly, Warnant, and Goffinet. 3,349,130.

Goldberg, Eugene P., and C. V. Von Linsowe, to Borg-Warner Corp. Vehicle tire. 3,348,597, 10–24–67, Cl. 152—323.

Goldmeyer, Clifford, and T. J. Dull, to The J. R. Greeno Co. Method of fabricating coil spring units. 3,348,583, 10–24–67, Cl. 140—92.4.

Goldstern, Norbert. Registration record. 3,349,226, 10–24–67, Cl. 235—61.12.

Goleb, Joseph A., to United States of America, Atomic Energy Commission. Determination of isotopic concentrations. 3,348,447, 10–24–67, Cl. 88—14.

Golinick, Cyril R., to Lach Co. Refuse vehicle. 3,348,708, 10–24–67, Cl. 214—83.3.

Gomersall, Ernest S.: *See*—
Ellrott, Frederick, A. C., and C., and R. D. and D. H. Ashton, and Gomersall. 3,348,467.

Gonczy, Jeno: *See*—
Csonka, Lajos, Szerecz, and Gonczy. 3,348,959.

Gondo, Hisashi: *See*—
Goda, Susumu, Gondo, and Onoue. 3,348,981.

Good, Paul J., to Minnesota Mining and Mfg. Immersion coating of strip material. 3,348,964, 10–24–67, Cl. 117—69.

Goodenough, Robert D., and R. C. Belski, to The Dow Chemical Co. Process for the manufacture of magnesium ammonium phosphate monohydrate. 3,348,910, 10–24–67, Cl. 23—105.

Goodman, Ronald D. Electrical plug unit embodying duplex outlets. 3,349,363, 10–24–67, Cl. 339—155.

Goodrich, B. F. Co., The: *See*—
Rinker, William F. 3,348,863.

Gordon, Alan M., to Bell Telephone Laboratories, Inc. Signal combining circuit. 3,349,254, 10–24–67, Cl. 307—88.5.

Gordon, Bernard M., and Z. Abdun-Nabi, to Janus Control Corp. Digital counter. 3,349,228, 10–24–67, Cl. 235—92.

Gorman, De Witt Y., to Caco Mfg. Corp. Combination boat-tent-trailer apparatus. 3,348,874, 10–24–67, Cl. 296—23.

Gorman, Eugene F., to Union Carbide Corp. Multi-arc seam welding devices. 3,349,213, 10–24–67, Cl. 219—60.

Gossen, P., & Co., G.m.b.H.: *See*—
Schmitt, Helmut. 3,348,460.

Gosudarstvenny Nauchno-Issledovateljsky Institute Organicheskikh Producktov i Krasitelei: *See*—
Kazankov, Mikhail V., and Ufimtsev. 3,349,089.

Gottauf, Georg, to Stahlgruber Otto Gruber & Co. Cutting tool for repairing articles. 3,348,310, 10–24–67, Cl. 30—360.

Gove, Emery T. Straddle type carrier. 3,348,711, 10–24–67, Cl. 214—392.

Grace, W. R., & Co.: *See*—
Jaffe, Fred. 3,349,139.
Love, Harold N. 3,348,728.
Simons, Charles W., and Arons. 3,348,966.
Sternau, Martin M. 3,348,358.

Grandy, Andrew J., to United States of America, Army. Flame cartridge. 3,348,484, 10–24–67, Cl. 102—32.

Grantz, Elek. Electrical plug and receptacle. 3,349,360, 10–24–67, Cl. 339—14.

Grassi, Carlo, to Antares, S.p.A. Carrying case for a portable typewriter. 3,348,892, 10–24–67, Cl. 312—208.

Grasso, Rocco, to Outboard Marine Corp. Sliding door. 3,348,337, 10–24–67, Cl. 49—449.

Gratzmuller, Jean L. Actuating mechanism for electric circuit breaker comprising a rod solely in tension in all positions thereof or solely under compression in positions thereof. 3,349,207, 10–24–67, Cl. 200—150.

Gray, James R., to Bell Telephone Laboratories, Inc. Apparatus for testing digital-to-analog converters. 3,349,195, 10–24–67, Cl. 179—175.

Green, Edward H. Aerosol valve construction. 3,348,743, 10–24–67, Cl. 222—402.24.

Green, Julius, to General Foods Corp. Process for preparing meat flavor and aroma compositions. 3,348,954, 10–24–67, Cl. 99—140.

Greeno, J. R., Co., The: *See*—
Goldmeyer, Clifford, and Dull. 3,348,583.

Gregg, David P. Parturitive phone. 3,348,535, 10–24–67, Cl. Cl. 128—2.05.

Gregg, David P., to Gaus Electrophysics. Photoelectric transducer head. 3,349,273, 10–24–67, Cl. 313—95.

Grimes, Patrick G., to Allis-Chalmers Mfg. Co. Aerator. 3,348,829, 10–24–67, Cl. 261—152.

Grob & Co. A.G.: *See*—
Koch, Bernhard R. 3,348,580.

Groppe, Ocee K.: *See*—
McCarthy, Thomas J., and Groppe. 3,348,552.

Grossman, Jack J., and M. Braunstein, to Hughes Aircraft Co. Method and apparatus for preparing single crystal thin films. 3,348,962, 10–24–67, Cl. 117—48.

Grothoff, Hans, to Spritztechnik G.m.b.H. Filling apparatus for aerosol packages. 3,348,587, 10–24–67, Cl. 141—20.

Grove Valve and Regulator Co.: *See*—
Bradford, Francis H. 3,348,573.
Piccardo, Jack E. 3,348,804.

Grunewald, Henry L., ½ to Roderick and R. H. MacLeod. Chain saws. 3,348,590, 10–24–67, Cl. 143—135.

Guenel, Claude: *See*—
Gallet, Georges, and Guenel. 3,348,284.

Guldimann, Simon: *See*—
Renz, Jany, Bourquin, Winkler, Gagnaux, Guldimann, and Ruesch. 3,349,087.

Gulf Oil Corp.: *See*—
Alexander, Richard L., Lyons, Brown, and Long. 3,349,072.

Gulf Research & Development Co.: *See*—
Carr, Norman L., Horne, Offutt, and Somers. 3,349,027.
Henke, Alfred M., Schmid, and Strom. 3,349,025.
McNulty, John G., and Walsh. 3,349,149.
Selwitz, Charles M., and Tucci. 3,349,117.

Gumboldt, Albert, E. Junghanns, G. Schleitzer, and H. D. Stemmer, to Hercules Inc. Polymerization and copolymerization of ethylene using halogen-containing promoters. 3,349,064, 10–24–67, Cl. 260—80.7.

Guthrie, Elizabeth A.: *See*—
Hatch, George B., and Guthrie. 3,349,081.

Gyromat Corp.: *See*—
Wiggins, Richard F. 3,348,774.

Haber, Ralph R. G. Process for the preparation of asymmetric amino triazine derivatives. 3,349,086, 10–24–67, Cl. 260—240.

Haber, Ralph R. G., and E. Schoenberger. 1-(5'-nitrofuryl)-1,3-diketopropane derivatives and their preparation. 3,349,095, 10–24–67, Cl. 260—297.

Haberhauer, Karl, and F. Hoever, to Maschinenfabrik Carl zangs Aktiengesellschaft. Embroidering machine. 3,348,506, 10–24–67, Cl. 112—98.

Haddad, James H.: *See*—
Mitchell, John G., and Haddad. 3,349,022.

Hadekel, Ruben, to Trico Products Corp. Windscreen wipers. 3,348,257, 10–24–67, Cl. 15—250.42.

Hahn, Dr. Carl KG: *See*—
Etz, Herbert. 3,348,866.

Haitz, Roland H.: *See*—
Shockley, William, and Haitz. 3,349,298.

Halaj, Ivan. Occupant-propelled rocker for children. 3,348,853, 10–24–67, Cl. 280—1.175.

Halbergerhutte G.m.b.H.: *See*—
Fischer, Arno. 3,348,494.

Hale, John K.: *See*—
Hurlburt, Joseph C., and Hale. 3,348,373.

Hall, Clarence N. 3-way automobile tie-down hook. 3,348,273, 10–24–67, Cl. 24—230.5.

Hall, Jon D.: *See*—
Hall, William H. and J. D. 3,348,656.

Hall, Vriel A. Portable source of fluid. 3,348,572, 10–24–67, Cl. 137—344.

Hall, William H. and J. D. Conveyor apparatus. 3,348,656, 10–24–67, Cl. 198—64.

Halliburton Co.: *See*—
Frye, James A. 3,348,569.

Haltsman, Harry H., T. M. Wright, and G. S. Dimmick, said Wright and said Dimmick assors. to said Haltsman. Liquid spray dispensing apparatus. 3,348,735, 10–24–67, Cl. 222—2.

Ham, Anna B.: *See*—
Ferro, Patrick V., and Ham. 3,348,920.

Hamann, Omer F., to Stromberg-Carlson Corp. Astigmatic lens arrangement for cathode ray tubes. 3,349,269, 10–24–67, Cl. 313—78.

Hamilton Mfg. Co.: *See*—
Katzfey, James M., and Peterson. 3,348,898.

Hammons, Robert B., to Minnesota-Ohio Oil Corp. Ribbon-blade razor having adjustment means for the blade. 3,348,306, 10–24–67, Cl. 30—40.1.

Handley, John. Mechanical multi-stage aggregator used with a disc file. 3,349,381, 10–24–67, Cl. 340—174.1.

Hanff, Michel M., to Compagnie des Compteurs. Electro-acoustic submarine transducer. 3,349,366, 10–24–67, Cl. 340—8.

Hanson, Jerry D. Trailer. 3,348,711, 10–24–67, Cl. 214—396.

Hanyu, Susumu: *See*—
Eguchi, Yasukata, and Hanyu. 3,348,508.

Harban, Arthur A.: *See*—
Mills, Kenneth R., and Harban. 3,349,058.

Harkensee, Georg, to Fernseh G.m.b.H. Means for preventing eddy currents distortion of the magnetically deflected scanned pattern in cathode ray tubes. 3,349,271, 10–24–67, Cl. 313—82.

Harmens, Alexander, to Conch International Methane Ltd. Process for the partial liquefaction of gas mixture. 3,348,384, 10–24–67, Cl. 62—28.

Harmon, Bennett B.: *See*—
Pollak, Edward C., Harmon, and Solomon. 3,348,868.

Harmon, Samuel T., to Ann Arbor Trust Co. Electro-optical computer. 3,349,231, 10–24–67, Cl. 235—181.

Harnischfegea Corp.: *See*—
Ramsey, Paul W. 3,349,219.

Harris, Carl H.: *See*—
Turner, George L., and Harris. 3,348,292.

Harrison, Mary C. X-ray demonstration prism. 3,348,319, 10–24–67, Cl. 35—8.

Hartman, Hans, to Brown, Boveri & Co. Ltd. Device for limiting short-circuits. 3,349,286, 10–24–67, Cl. 317—11.

Hartman Metal Fabricators Inc.: *See*—
Burnight, Thomas R., and Burch. 3,349,303.

Hartwell, Walter T., R. Klahn, and H. R. Shaffer, to Bell Telephone Laboratories, Inc. Trigonometric function generator. 3,349,230, 10–24–67, Cl. 235—154.

Harvey Aluminum (Inc.): *See*—
Harvey, Leo M. 3,348,459.

Harvey, Leo M., to Harvey Aluminum (Inc.). Interlocking matting and coupling bar therefor. 3,348,459, 10–24–67, Cl. 94—13.

Hashagen, Claude A. Overhead door operator. 3,348,836, 10–24–67, Cl. 49—200.

Hasler, A.G.: *See*—
Bleickardt, Werner. 3,349,253.
Bleickardt, Werner. 3,349,332.

Hatch, George B., and E. A. Guthrie, to Calgon Corp. Method and composition for removal of manganese from water. 3,349,031, 10–24–67, Cl. 210—50.

Haug, Hans F.: *See*—
Albright, Lyle F., and Haug. 3,348,909.

Hawk, Dale W., to Allis-Chalmers Mfg. Co. Motor scraper hitch. 3,348,888, 10–24–67, Cl. 308—72.

Hawk, Samuel A., to Xerox Corp. Automatic toner control system. 3,348,521, 10–24–67, Cl. 118—7.

Hayes, Allan M. Motor mount for boats. 3,348,794, 10–24–67, Cl. 248—4.

Hayes, Thomas H.: *See*—
Copeland, William M., Horecky, and Hayes. 3,348,317.

Hayes, William L., Jr.: *See*—
Campbell, Ruffner, and Hayes. 3,348,586.

Hazelett, Earl T., Jr. Panel fence construction. 3,348,813, 10–24–67, Cl. 256—19.

Hazen, Wayne C.: *See*—
Henrickson, Angus, and Hazen. 3,348,906.

Hebdon, Kenneth F.: *See*—
Birch, David W., and Hebdon. 3,348,782.

Hechenbleikner, Ingenuin, and K. R. Molt, to Carlisle Chemical Works, Inc. Polyether diphosphonates. 3,349,150, 10–24–67, Cl. 260—929.

Hecht, Alfred H.: *See*—
Brown, Robert H., and Hecht. 3,348,426.

Hefer, Friedrich W., W. W. Witt, and L. E. Stems, to Geo Space Corp. Seismic display apparatus. 3,349,407, 10–24–67, Cl. 346—110.

Hegranes, Grant M.: *See*—
O'Connell, Robert A., and Hegranes. 3,348,332.

Helan, Glenn A., to Allis-Chalmers Mfg. Co. Apparatus for controlling coating depth in a balling drum. 3,348,262, 10–24–67, Cl. 18—1.

Heim, William J., L. E. Schleutker, Jr., and J. A. Kuhn, to Milwaukee-Ferrometal Stamping Corp. Bracket for mounting parts on masonry. 3,348,346, 10–24–67, Cl. 52—239.

Heinlmann, Karl, H. Kassner, and M. J. Schmachtenberger, to International Standard Electric Corp. Solid electrolytic capacitor encapsulated in solidified liquid insulating material. 3,349,294, 10–24–67, Cl. 317—230.

Heiss, Harvey, to All Tech Industries, Inc. Electrically timed pool table. 3,348,841, 10–24–67, Cl. 273—11.

Heiss, Lorenz: *See*—
Lohns, Willy, Thom, Neuber, and Heiss. 3,349,288.

Heil-Coil Corp.: *See*—
Newton, David W., and Downing. 3,348,293.

Helms, John D., and J. A. Shank, to Texas Instruments Inc. Welding apparatus. 3,349,217, 10–24–67, Cl. 219—110.

Henby, Elijah B., to National Dust Collector Corp. Gas scrubber with improved liquid separator. 3,348,364, 10–24–67, Cl. 55—257.

Hendrix, Warren P.: *See*—
Orr, Clyde, Jr., and Hendrix. 3,348,395.

Henke, Alfred M., B. K. Schmid, and J. R. Strom, to Gulf Research & Development Co. Hydrocracking with a presulfided tungsten oxide composite catalyst from the group comprising of silver, zinc or thorium on a siliceous carrier. 3,349,025, 10–24–67, Cl. 208—111.

Hennekens, Jan L. J. P.: *See*—
Duynstee, Eduard F. J., Bigot, and Hennekens. 3,349,131.

Henning, Robert W., to Olin Mathieson Chemical Corp. Power operated piston tool. 3,348,751, 10–24–67, Cl. 227—8.

Henrickson, Angus, and W. C. Hazen, to Kerr-McGee Corp. Solvent extraction process for the recovery of vanadium values. 3,348,906, 10–24–67, Cl. 23—22.

Henry, Elliott A., to Branson Instruments Inc. Dynamic gain control for ultrasonic testers. 3,348,410, 10–24–67, Cl. 73—67.8.

Heppenstall, Sam, & Associates, Inc.: *See*—
Corbett, Robert B. 3,348,802.

Hercules Inc.: *See*—
Gumboldt, Albert, Junghanns, Schleitzer, and Stemmer. 3,349,064.

Hergeth, Adolf, to Hergeth K.G. Maschinenfabrik u. Apparatebau. Feeding devices for fiber treating machines. 3,348,886, 10–24–67, Cl. 302—12.

Hergeth K.G. Maschinenfabrik u. Apparatebau: *See*—
Hergeth, Adolf. 3,348,886.

Herlet, Adolf, to Siemens-Schuckertwerke Aktiengesellschaft. Power rectifier of the NPNP type having recombination centers therein. 3,349,299, 10–24–67, Cl. 317—235.

Hernan, George W.: *See*—
Hunkins, Stanley H., and Hernan. 3,349,328.

Heron, John A. Method and apparatus for forming cast objects using expendable patterns. 3,348,605, 10–24–67, Cl. 164—26.

Herrera, Arsenio. Saddle cinch and D-holder. 3,348,362, 10–24–67, Cl. 54—23.

Hersch, Paul A., and C. J. Sambucetti, to Beckman Instruments, Inc. Method and apparatus for monitoring CO_2. 3,349,011, 10–24–67, Cl. 204—1.

Hertlein, Ronald G., to General Refractories Co. Dispensing hopper having a container opener. 3,348,738, 10–24–67, Cl. 222—88.

Heusler, Karl: *See*—
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,349,083.

Heusser, Jean, to Hommel A.G. Diethylaminoethoxyethyl ester of α-phenylbutyric acid and salts thereof. 3,349,114, 10–24–67, Cl. 260—477.

Heyer, Inc.: *See*—
Springer, Edward M. 3,348,838.

Hiatt, Gordon D., and M. E. Rowley, to Eastman Kodak Co. Soluble epoxy derivatives of cellulose. 3,349,080, 10–24–67, Cl. 260—225.

Hickin, Robert J., and J. J. Galbierz, to Packaging Corp. of America. Carton construction. 3,348,737, 10–24–67, Cl. 229—37.

Hill, Ernest C., to Combustion Engineering, Inc. Means for reconcentrating liquid absorbent. 3,348,601, 10–24–67, Cl. 159—13.

Hill, Harold W., S. L. Kwolek, and W. Sweeny, to E. I. du Pont de Nemours and Co. Halogenated aromatic polyamides. 3,349,062, 10–24–67, Cl. 260—47.

Hill, Thomas, to British Hydrocarbon Chemicals Ltd. Catalyst, preparation thereof, and polymerization process utilizing said catalyst. 3,349,067, 10–24–67, Cl. 260—88.2.

Hill, William H., to Hughes Aircraft Co. Precision electrode assembly. 3,349,218, 10–24–67, Cl. 219—119.

Hilpert, Conrad R., to Twin Disc Clutch Co. Control for a power drive system and including shift-restricting inhibitors for a reversible transmission. 3,348,644, 10–24–67, Cl. 192—4.

Hinsken, Hermann, G. Trzeciak, and E. Rasel, to Kalle Aktiengesellschaft. Suspendible flat bag. 3,348,760, 10–24–67, Cl. 229—53.

Hinson, Arthur L., and D. C. Smith, to Owens-Illinois, Inc. Method of treating the surfaces of glass containers. 3,348,934, 10–24–67, Cl. 65—30.

Hirsch, Richard F. Security belts. 3,348,789, 10–24–67, Cl. 242—107.4.

Hitachi, Ltd.: *See*—
Kimura, Naokazu. 3,349,391.

Hitchins, John H. Store service. 3,348,634, 10–24–67, Cl. 186—1.

Hitzelberger, Alan, to General Motors Corp. Pressure ratio sensor. 3,348,417, 10–24–67, Cl. 73—407.

Hjulian, Julius A. Aerator converter. 3,348,777, 10–24–67, Cl. 239—424.5.

Hoch, Manfried L., to International Harvester Co. Forage harvester. 3,348,594, 10–24–67, Cl. 146—107.

Hoerbiger Ventilbwerke Aktiengesellschaft: *See*—
Sochting, Herbert, and Vock. 3,348,564.

Hoever, Franz: *See*—
Haberhauer, Karl, and Hoever. 3,348,506.

Hoffmann-La Roche Inc.: *See*—
Gloor, Urs, Goel, Langemann, and Buegg. 3,349,113.

Hofmann, George H.: *See*—
Boudakian, Max M., and Hofmann. 3,349,136.

Hogan Faximile Corp.: *See*—
Conway, Oliver. 3,349,178.

Holberson, Henry A., to The Youngstown Sheet and Tube Co. Motorized press ram adjusting means. 3,348,406, 10–24–67, Cl. 72—446.

Holland, W. W.: *See*—
Marx, Thomas I., and Lowe. 3,348,534.

Holton, Roy T., to E. I. du Pont de Nemours and Co. Removable head and seat needle valve. 3,348,571, 10–24–67, Cl. 137—340.

Hommel A.G.: *See*—
Heusser, Jean. 3,349,114.

Honeywell Inc.: *See*—
MacLennan, John R. 3,348,561.
Ogren, Harvey D. 3,348,562.
Schwarz, William G. 3,349,234.
Solomons, Cyril. 3,349,012.

Honig, Helmut: *See*—
Pellens, Ludwig, Honig, and Siegel. 3,348,907.

Hooker Chemical Corp.: *See*—
Barnauckas, Charles F., and Frank. 3,349,151.
Flaxman, Harry. 3,349,123.
Verbanic, Carl J. 3,349,105.
Weil, Edward D., and Schlichting. 3,349,115.
Weil, Edward D., and Schlichting. 3,349,116.

Horecky, Stanley V.: *See*—
Copeland, William M., Horecky, and Hayes. 3,348,317.

Hori, Shiro, and H. Shimazono, to Takeda Chemical Industries, Ltd. Enhancing flavour of foods using flavouring enzyme produced by a microorganism of the genus Trametes. 3,348,952, 10–24–67, Cl. 99—116.

Horne, Ian R.: *See*—
Lewis, Reginald N., and Horne. 3,349,060.

Horne, William A.: *See*—
Carr, Norman L., Horne, Offutt, and Somers. 3,349,027.

Horowitz, Elsa.: *See*—
Brothman, Abraham, Horowitz, Reiser, and Horowitz. 3,349,371.

Horowitz, Lee: *See*—
Brotheman, Abraham, Horowitz, Reiser, and Horowitz. 3,349,371.

Horowitz, Lee M.: *See*—
Brothman, Abraham, and Horowitz. 3,348,559.

Horsley, Caperton B., to Braxton Corp. Oscillating drive means. 3,349,261, 10–24–67, Cl. 310—36.

Hosker, Gerald R., to American Gage & Machine Co. Control construction to maintain a range by variables using light conducting rod. 3,349,245, 10–24–67, Cl. 250—231.

Hourdiaux, Jules. Curved screens for projecting motion picture films or the like. 3,348,897, 10–24–67, Cl. 350—125.

Howard, George C.: *See*—
Blenkarn, Kenneth A., and Howard. 3,348,382.

Howes, John G. B.: *See*—
Drain, David J., Howes, and Williams. 3,349,135.

Hsi, Richard S. P., to The Upjohn Co. Alkyl carbamates of carboalkoxy salicylanilides. 3,349,112, 10–24–67, Cl. 260—471.

Hsu, Henry, and W. C. Jaeschke, to Pullman Inc. Integrated ammonia and urea process. 3,349,126, 10–24–67, Cl. 260—555.

Huber, Karl, to Emkay, Inc. Smoker's mouthpiece. 3,348,563, 10–24–67, Cl. 131—194.

Hucke, Edward E., to Valley Co., Inc. Process of making an article having a hard carbide, boride or silicide outer region. 3,348,967, 10–24–67, Cl. 117—118.

Hudgins, Garland: *See*—
McDonald, James H. 3,348,539.

Hudson, Lena M., to Bausch & Lomb Inc. Four component symmetrical copying objective. 3,348,900, 10–24–67, Cl. 350—209.

Hudson, Lena M., to Bausch & Lomb Inc. Five component objective lens. 3,348,901, 10–24–67, Cl. 350—210.

Hudson Pulp & Paper Co.: *See*—
Taylor, Buel E., Jr., and Fitzpatrick. 3,348,477.

Huettenwerk Salzgitter Aktiengesellschaft: *See*—
Mueller, Erich H. K., Osann, and Mueller. 3,348,817.

Hufnagel, Robert H.: *See*—
Waters, Everett W., Hufnagel, and Pierce. 3,348,414.

Hughes Aircraft Co.: *See*—
Briggs, Raymond W., and Jones. 3,349,244.
Grossman, J. J., and Braunstein. 3,348,962.
Hill, William H. 3,349,218.

Hughes, John V., to United Aircraft Corp. CW–FM distance measuring system. 3,349,393, 10–24–67, Cl. 343—14.

Huizenga, Charles B.: *See*—
Toney, Henry W., and Huizenga. 3,348,441.

Hulbert, Duncan R., D. R. Sheard, and H. F. Brown, to Imperial Chemical Industries Ltd. Synthetic textile treated with polyalkenoxy agents and corrosion inhibiting salts to prevent static electric charges. 3,348,968, 10–24–67, Cl. 117—138.8.

Hunkins, Stanley H., and G. W. Hernan, to Ultronic Systems Corp. Digital communication system using half-cycle signals at bit transitions. 3,349,328, 10–24–67, Cl. 325—38.

Hunt-Pierce Corp.: *See*—
Pierce, Wayne M., Jr. 3,348,811.

Hunter, Edwin J., to Moist-O'Matic, Inc. Wave sprinkler providing a plurality of different velocities through a plurality of different nozzles. 3,349,776, 10–24–67, Cl. 239—242.

Hurlburt, Joseph C., and J. K. Hale, to Sperry Rand Corp. Chain connector. 3,348,373, 10–24–67, Cl. 59—93.

Huse, Mason W., Jr., to Raytheon Co. Forward wave tube wherein the interaction path comprises a single wire helix and an adjacent contrawound helix. 3,349,278, 10–24–67, Cl. 315—3.6.

Hydock, John K. Golf glove with grip locking means. 3,348,238, 10–24–67, Cl. 2—161.

Hydronautics, Inc.: *See*—
Johnson, Virgil E., Jr., and Webster. 3,348,517.

Hyman, Charles M., to International Harvester Co. Grain tank unloading system. 3,348,706, 10–24–67, Cl. 214—17.

Hyman, Robert A., and C. F. Drake, to International Standard Electric Corp. Electrolytic current integrator. 3,349,326, 10–24–67, Cl. 324—94.

Hyter, William H, to McDonnell Douglas Corp. Method and composition for the treatment of an aluminum surface. 3,349,014, 10–24–67, Cl. 204—15.

IIT Research Institute: *See*—
Nielsen, Erik R., and Stepp. 3,348,926.

I.M.S. Corp.: *See*—
O'Connell, Robert A., and Hegranes. 3,348,382.

I-T-E Circuit Breaker Co.: *See*—
Cataldo, John B., Kralik, Kusay, and Thomas. 3,349,208.
Meacham, James F. 3,349,292.

Ice, George E., to Automatic Electric Laboratories, Inc. Temperature-compensated circuit arrangement. 3,349,348, 10–24–67, Cl. 333—72.

Ignell, Rolf L.: *See*—
Rausing, Anders R., and Ignell. 3,348,719.

Ilford Ltd.: *See*—
Bannert, Konrad J., and Thurston. 3,348,949.

Illinois Tool Works Inc.: *See*—
Poupitch, Ouqljesa J. 3,348,674.

Industrial Air Products, Co.: *See*—
Kuhlmann, Kurt. 3,348,387.

Industrial Boiler Co., Inc.: *See*—
Brock, James D. 3,348,739.

Industrial Electronic Rubber Co.: *See*—
Sparkes, Julian G. 3,349,295.

Industriewerk Schaeffler: *See*—
Schaeffler, Georg, and Jahn. 3,348,889.

Ingersol-Rand Co.: *See*—
Newcomb, Wallace K., Blank, and Van Loon. 3,348,849.
Niedzwiecki, Joseph F. 3,348,291.

Imperial Chemical Industries Ltd.: *See*—
Andrew, Herbert F. 3,349,074.
Broome, Arthur W. J., Crossley, and Jones. 3,349,090.
Bromby, Norman G., Rayner, and Wootton. 3,349,004.
Bryant, Patrick S. 3,349,066.
Cropp, Donald T., and Gilman. 3,349,137.
Hulbert, Duncan R., Sheard, and Brown. 3,348,968.
Lodge, Frank. 3,349,104.
Sherrington, Peter J., Waterhouse, and Jones. 3,348,938.

Institute electrosvarki im. E. O. Patona: *See*—
Paton, Boris E., Sakharnov, Lebedev, and Kuchuk-Jatsenko. 3,349,216.

Instytut Chemii Ogolnej: *See*—
Ciborowski, Stanislaw M., and Balcerzak. 3,349,007.

Interlab, Inc.: *See*—
Layton, Howard M. 3,348,556.

Interlake Steel Corp.: *See*—
McConnell, Kennedy. 3,348,698.

International Business Machines Corp.: *See*—
Crawford, David J. 3,349,378.
Girard, Charles A., and Clarke. 3,348,947.
Roe, Jonathan U. 3,348,411.
Seeber, Robert R., and Lindquist. 3,349,375.
Simanavicius, Kestutis. 3,349,389.

International Harvester Co.: *See*—
Ash, Roy C. 3,348,714.
Barkstrom, Reynold, Sutton, and Carlson. 3,348,780.
Fenster, Abraham S., and Asmus. 3,348,475.
Fischer, Raymond C. 3,348,504.
Hoch, Manfried L. 3,348,593.
Hyman, Charles M. 3,348,706.
Karlsson, Elof K., and Collins. 3,348,676.
Orendorff, John W. 3,348,620.
Simak, Frank J. 3,348,575.
Swift, John F., and Wallace. 3,348,579.

International Nickel Co., Inc., The: *See*—
Carlin, Francis X. 3,349,016.
Dunton, Thornley A. 3,348,982.

International Paper Co.: *See*—
Marconet, Ronald P., Lutz, and Wolf. 3,348,456.

International Pipe & Ceramics Corp.: *See*—
Mayes, Robert M. 3,348,433.

International Rectifier Corp.: *See*—
Mueller, Robert J. 3,349,289.

International Research & Development Co, Ltd.: *See*—
Appleton, Anthony D. 3,349,210.

International Resistance Co.: *See*—
Campbell, Ruffner, and Hayes. 3,348,586.

International Research and Development Corp.: *See*—
Thomas, Glen H., and Morrow. 3,349,257.

International Salt Co.: *See*—
Jacoby, Charles H., and Ryon. 3,348,883.

International Standard Electric Corp.: *See*—
Bohm, Manfred. 3,349,399.
Bray, Frederick H., and Butcher. 3,349,187.
Cattermole, Kenneth W. 3,349,177.
Cramer, Bernhard. 3,348,649.
Heinimann, Karl, Kassner, and Schmachtenberger. 3,349,294.
Hyman, Robert A., and Drake. 3,349,326.
Muller, Martin, and Walter. 3,349,337.
Knauer, Hans-Ulrich, and Matthieu. 3,349,185.
Meisingset, Kare R., and Mo. 3,349,175.

International Telephone and Telegraph Corp.: *See*—
Asher, Ralph L., and Kennedy. 3,349,400.
Bereznak, John. 3,349,186.
Jezo, Maurice L. J. 3,349,392.
Kennedy, John B., and Asher. 3,349,401.
Krefft, Hermann E. 3,349,283.
Leibowitz, Joseph D. 3,349,362.
Shockley, William, and Haitz. 3,349,298.
Werth, Andrew M. 3,349,398.

Intertech, Inc.: *See*—
Utting, George R., and Mueller. 3,348,418.

Inventions Finance Corp.: *See*—
Nouel, Robert. 3,348,267.

Irani, Riyad R., to Monsanto Co. Novel acidizing composition and method. 3,348,613, 10–24–67, Cl. 166—42.

Isbrandt, Clarence B. Molten solder dispensing device. 3,348,753, 10–24–67, Cl. 228—53.

Ito, Sukehiro, to Nippon Electric Co., Ltd. Phase shift modulation radio communication system. 3,349,181, 10–24–67, Cl. 179—15.

Ito, Sukehiro, and S. Yokoyama, to Nippon Electric Co., Ltd. Phase modulated frequency division multiplex system. 3,349,182, 10–24–67, Cl. 179—15.

Ives (Engineers) Ltd.: *See*—
Robinson, Charles C. 3,348,436.

Jackson, Donald L., to Sylvania Electric Products, Inc. Strip lighting fixture and conector therefor. 3,349,237, 10–24–67, Cl. 240—9.

Jackson, Richard R. Anesthetic articles. 3,348,542, 10–24–67, Cl. 128—184.

Jackson, Richard S.: *See*—
De Shazor, James C., Jr., Burk, and Jackson. 3,348,361.

Jackson, Wilbur C.: *See*—
Jepson, Ivar, Schuessler, Jackson, and Jensen. 3,349,263.

Jacobi, Oskar. Coal face support systems. 3,348,381, 10–24–67, Cl. 61—45.

Jacobs, Cornelis A. J., and A. J. G. C. Driessen, to North American Philips Co. Inc. High pressure mercury vapour halogen having an electrode thermally insulated from lead-in conductor. 3,349,276, 10–24–67, Cl. 313—211.

Jacoby-Bender, Inc.: *See*—
Rodrigues, Emil. 3,348,372.

Jacoby, Charles H., and J. L. Ryon, Jr., to International Salt Co. Method for concomitant mining and beneficiation of soluble mineral. 3,348,883, 10–24–67, Cl. 299—4.

Jadek, Adam. Scaffold side member. 3,348,631, 10–24–67, Cl. 182—179.

Jaeger, Ulric R., to Olin Mathieson Chemical Corp. Heating unit. 3,349,224, 10–24–67, Cl. 219—540.

Jaeschke, Wayne C.: *See*—
Hsu, Henry, and Jaeschke. 3,349,126.

Jaffe, Fred, to W. R. Grace & Co. Preparation of cis-decalin. 3,349,139, 10–24–67, Cl. 260—667.

Jagaciak, George: *See*—
Broverman, Irwin, and Jagaciak. 3,348,290.

Jahn, Rudolf: *See*—
Schaeffler, Georg, and Jahn. 3,348,889.

Jahn, Ulrich: *See*—
Molnar, Istvan, Wagner-Jauregg, Jahn, and Mixich. 3,349,088.

James, Henry B. Method for transporting vehicles. 3,348,710, 10–24–67, Cl. 214—152.

Jankovsky, Ivan P., G. I. Kholodinsky, and V. M. Skljadnov. Air suspended vibrational moid. 3,348,278, 10–24–67, Cl. 25—41.

Janner, Karl, to Siemens-Schuckertwerke Aktiengesellschaft. Device for measuring neutron current densities having a concave neutron reflector. 3,349,243, 10–24–67, Cl. 250—83.1.

Janome Sewing Machine Co., Ltd.: *See*—
Eguchi, Yasukata, and Hanyu. 3,348,508.

Janus Control Corp.: *See*—
Cordon, Bernard M., and Abdun-Nabi. 3,349,228.

Jarrell-Ash Co.: *See*—
Schmitt, Richard G., and Brehm. 3,349,241.

Jasper, John C., and B. C. Ran, to Continental Can Co., Inc. Container. 3,348,727, 10–24–67, Cl. 220—54.

Jenkins, R. B., and Co., Inc.: *See*—
Jenkins, Robert B., Sr. 3,348,268.
Jenkins, Robert B., Sr. 3,348,269.

Jenkins, Robert B., Sr., to R. B. Jenkins and Co., Inc. Screen for carding machines. 3,348,268, 10–24–67, Cl. 19—95.

Jenkins, Robert B., Sr., to R. B. Jenkins and Co., Inc. Perforated screen for carding machines. 3,348,269, 10–24–67, Cl. 19—95.

Jennings, Robert E., to C. M. C. Corp. Ceramic coatings. 3,348,355, 10–24–67, Cl. 53—28.

Jensen, Allan K., to Litton Business Systems, Inc. Apparatus for checking reading errors in a magnetic card system record. 3,349,369, 10–24–67, Cl. 340—146.1.

Jensen, Hans A.: *See*—
Eberman, Augustus H., and Jensen. 3,348,442.

Jensen, Hermann B. F. Auxiliary operation control for automatic systems. 3,348,440, 10–24–67, Cl. 83—58.

Jensen, John E.: *See*—
Jepson, Ivar, Schuessler, Jackson, and Jensen. 3,349,263.

Jepson, Ivar, F. J. Schuessler, W. C. Jackson, and J. E. Jensen, to Sunbeam Corp. Electric shaver. 3,349,263, 10–24–67, Cl. 310—47.

Jepson, Ivar, and A. F. Ernstberger, to Sunbeam Corp. Floor conditioner. 3,349,266, 10–24–67, Cl. 310—247.

Jet Set Corp.: *See*—
Keener, Russell W., De Marsh, and Ballard. 3,348,482.

Jezo, Maurice L. J., to International Telephone and Telegraph Corp. Repetitive pulse detector. 3,349,392, 10–24–67, Cl. 343—6.8.

Johns Manville Corp.: *See*—
Ekdahl, Wendell G. 3,348,956.

Johnson, Carl E. Paper bag. 3,348,759, 10–24–67, Cl. 229—53.

Johnson, Elmer C., to The Vendo Co. Article dispensing apparatus having an electrically controlled article releasing assembly. 3,348,733, 10–24–67, Cl. 221—298.

Johnson, Phillip A., to Litton Systems, Inc. Transistor lead-forming tool. 3,348,405, 10–24–67, Cl. 72—325.

Johnson, Phillip A., to Litton Systems, Inc. Apparatus for forming modular circuits. 3,349,287, 10–24–67, Cl. 317—101.

Johnson, Virgil E., Jr., and W. C. Webster, to Hydronautics, Inc. Underwater suction anchors. 3,348,517, 10–24–67, Cl. 114—206.

Johnson, Wallace M.: *See*—
McNutt, William J., and Johnson. 3,349,357.

Johnston, Bevan H., to Stromberg-Carlson Corp. Device for contract heating of moving sheet material. 3,349,222, 10–24–67, Cl. 219—388.

Joly, Robert: *See*—
Bucourt, Robert, Pierdet, Costerousse, Joly, Warnant, and Goffinet. 3,349,130.

Jones, Daniel J. H.: *See*—
Sherrington, Peter J., Waterhouse, and Jones. 3,348,938.

Jones, Eric, to English Electric Valve Co. Ltd. Hydrogen thyratron with high heated dissipation. 3,349,267, 10–24–67, Cl. 313—33.

Jones, Jesse J. Pruning implement. 3,348,309, 10–24–67, Cl. 30—166.

Jones, John. Corner guide system. 3,348,312, 10–24–67, Cl. 33—85.

Jones & Laughlin Steel Corp.: *See*—
Enrietto, Joseph F. 3,348,980.

Jones, Robert E.: *See*—
Gates, Lauren W., and Jones. 3,348,647.

Jones, Sheldon: *See*—
Briggs, Raymond W., and Jones. 3,349,244.

Jones, Viron V., to Bell & Howell Co. Non-aqueous silver halide photographic emulsion processing. 3,348,946, 10–24–67, Cl. 96—29.

Jones, William G. M.: *See*—
Broome, Arthur W. J., Crossley, and Jones. 3,349,090.

Jonkhoff, Taeke: *See*—
Kohll, Charles F., and Jonkhoff. 3,349,118.

Joos, Bernhard. Process for treating human nails and hair with dimethylol thiourea compositions. 3,349,000, 10–24–67, Cl. 167—85.

Joslyn Mfg., and Supply Co.: *See*—
Fahey, James H., Jr., Dahl, Frederickson, and Bonk. 3,349,239.

Joy Mfg. Co.: *See*—
Crickmer, Charles D. 3,348,277.

Judd, Claude L., to Colgate-Palmolive Co. Production of O-(monoalkyl aminoalkyl) oximes of dibenzo-[a,d] cyclohepten-5-ones. 3,349,128, 10–24–67, Cl. 260—566.

Judy, Charles G.: *See*—
Viecell, Joseph L., and Judy. 3,348,822.

Junghanns, Ernst: *See*—
Gumboldt, Albert, Junghanns, Schleitzer, and Stemmer. 3,349 064.

Junkel, Wolfgang, and M. R. Nielsen, to American Hospital Supply Corp. Tray assembly. 3,348,799, 10–24–67. Cl. 248—283.

Just, Jerome O., and H. W. Stern, to Aquatic Controls Corp. Hydraulic propulsion system. 3,348,624, 10–24–67, Cl. 180—66.

Kagi, Jakob, to Sulzer Bros., Ltd. Method of heating working medium in the heat exchanger of a nuclear reactor installation. 3,349,003, 10–24–67, Cl. 176—60.

Kahn, Peter B., and T. A. Oldfield, to Plessey-UK Ltd. Actuating arrangements. 3,348,454, 10–24–67, Cl. 91—44.

Kali-Chimie Aktiengesellschaft: *See*—
Pellens, Ludwig, Honig, and Siegel. 3,348,907.

Kaliks, Peter W.: *See*—
Pearl, David R., and Kaliks. 3,348,830.

Kalle Aktiengesellschaft: *See*—
Beck, Rudolf. 3,349,153.
Hinsken, Hermann, Trzeciak, and Rasel. 3,348,760.

Kalvoda, Jaroslav: *See*—
Wettstein, Albert, Anner, Heusler, Kalvoda, and Ueberwasser. 3,349,083.

Kamlani, Jeram S., and G. Lund, to Gas Equipment Engineering Corp. Separation of gas mixtures. 3,348,385, 10–24–67, Cl. 62—29.

Karley, William J. Vehicle mounted aerating device for minnow buckets. 3,348,826, 10–24–67, Cl. 261—121.

Karlsson, Elof K., and E. C. Collins, to International Harvester Co. Rotary cleaning unit. 3,348,676, 10–24–67, Cl. 209—22.

Kasakoff, Sam. Coffee maker. 3,348,469, 10–24–67, Cl. 99—320.

Kasinkas, Edward M., to Scott Paper Co. Household bag construction. 3,348,762, 10–24–67, Cl. 229—80.

Kassner, Helmut: *See*—
Heinimann, Karl, Kassner, and Schmachtenberger. 3,349,294.

Kates, Josef, to Kates, Peat Marwick & Co. Coordinated control of traffic flow and parking. 3,349,368, 10–24–67, Cl. 340—41.

Kates, Peat Marwick & Co.: *See*—
Kates, Josef. 3,349,368.

Katz, Jacob: *See*—
Katz, Miriam and J. 3,348,921.

Katz, Leonhard, and J. H. Sununu, to Astro Dynamics, Inc. Combined electric motor and fluid pump apparatus. 3,348,490, 10–24–67, Cl. 103—87.

Katz, Miriam and J. Integrated chemical laboratory toy. 3,348,921, 10–24–67, Cl. 23—259.

Katz, Seymour, to General Motors Corp. Electroless nickel plating. 3,348,969, 10–24–67, Cl. 117—160.

Katzfey, James M., and W. J. Peterson, to Hamilton Mfg. Co. Physician's examining table. 3,348,893, 10–24–67, Cl. 312—209.

Kavanagh, Arthur J., C. J. Koester, M. R. Thorburn, and R. B. Tackaberry, to American Optical Co. Photocoagulating apparatus. 3,348,547, 10–24–67, Cl. 128—395.

Kazankov, Mikhail V., and V. N. Ufimtsev, to Gosudarstvenny Nauchno-Issledovateljsky Institute Organicheskikh Producktov i Krasitelei. Triazine dyes of the anthraquinone series. 3,349,089, 10–24–67, Cl. 260—249.

Kearney & Trecker Corp.: *See*—
Sedgwick, Robert K. 3,348,298.

Keating, James F.: *See*—
Curtis, Wilfred A., and Keating. 3,348,861.

Keenan, Ralph D., to Automatic Electric Laboratories, Inc. Snap action type relay. 3,349,353, 10–24–67, Cl. 335—188.

Keener, Russell W., P. L. De Marsh, and C. E. Ballard, to Jet Set Corp. Excavating apparatus and method for excavating materials. 3,348,482, 10–24–67, Cl. 102—23.

Kelco Co.: *See*—
Freedman, John C. 3,349,079.
Schweiger, Richard G. 3,349,077.
Schweiger, Richard G. 3,349,078.

Kelley, Jerry O.: *See*—
Miller, Eugene M., and Kelley. 3,348,786.

Kelley, Leon O. Cable laying plow with brace attachment. 3,348,383, 10–24–67, Cl. 61—72.6.

Kellom, David B., C. M. Bowman, I. F. Lamoria, and B. L. York, to The Dow Chemical Co. Process for preparing a beryllium borohydride. 3,348,928, 10–24–67, Cl. 23—361.

Kelly, Francis John, and F. Przybyla, to Mallory Battery Co. of Canada Ltd. Self supporting sintered zinc anode structure. 3,348,976, 10–24–67, Cl. 136—125.

Kelly, Hugh P., and W. A. Klute, to Bell Telephone Laboratories, Inc. Ground station antenna pointing system for satellite communications. 3,349,403, 10–24–67, Cl. 343—117.

Kelly, William S. Sanitary single-use toilet seat covers. 3,348,243, 10–24–67, Cl. 4—245.

Kelsey-Hayes Co.: *See*—
Trevarrow, David J., Jr. 3,348,721.
Trevarrow, David J., Jr. 3,348,722.

Kemp, Willard E.: *See*—
Stevens, Eric S., and Kemp. 3,348,501.

Kennedy, John B.: *See*—
Asher, Ralph L., and Kennedy. 3,349,400.

Kennedy, John B., and R. L. Asher, to International Telephone and Telegraph Corp. Digital bearing measuring system. 3,349,401, 10–24–67, Cl. 343—106.

Kennedy, Joseph P., to Esso Research and Engineering Co. Butyl rubber catalyst system utilizing AlR₂X with an HX promoter. 3,349,065, 10–24–67, Cl. 260—85.3.

Kent Engineering: *See*—
Van Noord, Andrew J. 3,348,425.

Kerr-McGee Corp.: *See*—
Henrickson, Angus, and Hazen. 3,348,906.

Kfoury, Nicholas F.: *See*—
Baratoff, Paul, Kfoury, and Mui. 3,348,796.

Kholodinsky, Grigory I.: *See*—
Jankovsky, Ivan P., Kholodinsky, and Skljadnov. 3,348,278.

Kieffer, Joseph D., III, to Rockwell Mfg. Co. Portable electric drill with chuck key retaining structure. 3,348,432, 10–24–67, Cl. 77—7.

Kimura, Naokazu, to Hitachi, Ltd. Counting type analogue-to-digital converters. 3,349,391, 10–24–67, Cl. 340—347.

Kim Yong, Won. Thermostat switch and variable adjusting means therefor. 3,349,206, 10–24–67, Cl. 200—138.

King, Edward C., and P. J. M. Pardoe-Matthews, to King Packaging Ltd. Vacuum molding machines. 3,348,265, 10–24–67, Cl. 18—19.

King, James F., Jr., and A. H. Bahnson, Jr., deceased (by Wachovia Bank and Trust Co., executor), to The Bahnson Co. Rotating eliminator. 3,348,363, 10–24–67, Cl. 55—227.

King Packaging Ltd.: *See*—
King, Edward C., and Pardoe-Matthews. 3,348,265.

King, Richard E., ½ each to Northern Natural Gas Co., and W. S. Moore Co. Pressure balancing method. 3,348,941, 10–24–67, Cl. 75—26.

Kingsbury, L. C. James: *See*—
Ammon, Bruno, and Kingsbury. 3,349,198.

Kinney, S. P., Engineers, Inc.: *See*—
Kinney, Selwyne P., and Carr. 3,348,832.

Kinney, James F., to Clark Equipment Co. Rail and wire support construction. 3,349,220, 10–24–67, Cl. 219—218.

Kinney, Selwyne P., and H. B. Carr, to S. P. Kinney Engineers, Inc. Automatic stove selection system for blast furnaces. 3,348,832, 10–24–67, Cl. 266—14.

Kirkhof Mfg. Corp.: *See*—
O'Brien, Robert E., and Markowski. 3,348,748.

Kirsch Co.: *See*—
Ford, James A. 3,348,603.

Kishida, Tamon: *See*—
Fukuahima, Osamu, Noda, and Kishida. 3,348,963.

Kistler Instrument Corp.: *See*—
Kistler, Walter P. 3,349,259.

Kistler, Walter P., to Kistler Instrument Corp. Piezoelectric pressure transducer. 3,349,259, 10–24–67, Cl. 310—8.7.

Kjos, Magne J.: *See*—
Gardiner, John T., and Kjos. 3,348,784.

Klahn, Richard: *See*—
Hartwell, Walter T., Klahn, and Shaffer. 3,349,230.

Klamp, Paul, and L. J. Bishop, to Mechanical Handling Systems, Inc. Accumulating carrier for power and free conveyor system. 3,348,496, 10–24–67, Cl. 104—96.

Klein, Marvin E. Anti-stuttering device and method. 3,349,179, 10–24–67, Cl. 179—1.

Kleiner, Eduard K.: *See*—
Leitner, George J., and Kleiner. 3,349,054.

Kleist, Robert A., H. A. Kurth, and R. L. Thorne, to Ampex Corp. Digital tape transport system. 3,349,373, 10–24–67, Cl. 340—147.

Kliklok Corp.: *See*—
Pierce, Chester J., Jr., and Pagendarm. 3,348,655.

Klute, Walter A.: *See*—
Kelly, Hugh P., and Klute. 3,349,403.

Knauer, Hans-Ulrich, and J. Matthieu, to International Standard Electric Corp. Ringing current converting circuit. 3,349,185, 10–24–67, Cl. 179—16.

Knipe, William T.: *See*—
Gillen, Raymond D., Knipe, McAdam, and Polster. 3,349,408.

Knutson, Robert C., to Rosemount Engineering Co. Method of applying electrical contacts. 3,348,299, 10–24–67, Cl. 29—578.

Kobayashi, Hiroshi, and S. Ohteru. Frequency multiplier with parallel ferro-resonance circuits. 3,349,317, 10–24–67, Cl. 321—68.

Koblischek, Peter: *See*—
Dithmar, Karl, and Koblischek. 3,349,035.

Koch, Bernhard R., to Grob & Co. A.G. Frame stave for a heddel frame. 3,348,580, 10–24–67, Cl. 139—91.

Koepp, Ronald L., and D. C. Bailey, to Motorola, Inc. Integrated field-effect differential amplifier. 3,349,300, 10–24–67, Cl. 317—235.

Koester, Charles J.: *See*—
Kavanagh, Arthur J., Koester, Thorburn, and Tackaberry. 3,348,547.

Kohll, Charles F., and T. Jonkhoff, to Shell Oil Co. Production of ethylene glycol acetates. 3,349,118, 10–24–67, Cl. 260—497.

Kohn, Karin. Heat protecting head shield for hair drier. 3,348,240, 10–24–67, Cl. 2—174.

Kohn, Morris A., to Data-Disc, Inc. Air bearing magnetic transducer assembly. 3,349,384, 10–24–67, Cl. 340—174.1.

Kolczynski, James R.: *See*—
Kressin, Donald M., Westbrook, Magell, and Kolczynski. 3,349,040.

Kolinski, William B. Automatic tongs. 3,348,872, 10–24–67, Cl. 294—110.

Kolkman, Dirk, and A. J. De Visser, to North American Philips Co. Inc. Low-pressure mercury vapor discharge lamp. 3,349,274, 10–24–67, Cl. 313—109.

Kollar Kap Corp.: *See*—
Fuller, Donald B., and Robinson. 3,348,725.

Kolodziej, Walter F., and E. M. Michael, to General Time Corp. Dial illuminating system for clocks. 3,349,285, 10–24–67, Cl. 240—2.1.

Kondo, Yoshiaki: *See*—
Watanabe, Takaaki, Ogura, Kondo, and Nagasawa. 3,349,152.

Kondur, Nicholas, Jr., to Burroughs Corp. Accounting machine read-in device. 3,348,770, 10–24–67, Cl. 235—61.

Koolnis, Stanley R., to L. Drechsler, and F. Zandell. Reclosable dispensing container with snap lock. 3,348,734, 10–24–67, Cl. 229—17.

Korf, Willy, to Ferrotest G.m.b.H. Process and apparatus for straightening metallic rod stock. 3,348,400, 10–24–67, Cl. 72—161.

Korfund Dynamics Corp.: *See*—
Baratoff, Paul, Kfoury, and Mui. 3,348,796.

Kosche, Rudolf, to Daimler-Benz Aktiengesellschaft. Disc brake. 3,348,642, 10–24–67, Cl. 188—251.

Kraissl, Frederick, Jr. Concentric filter elements having assembling and locking means. 3,348,689, 10–24–67, Cl. 210—238.

Kralik, Andrew J.: *See*—
Cataldo, John B., Kralik, Kussy, and Thomas. 3,349,208.

Krauss, Werner, to Fuller Co. Pneumatic loading apparatus. 3,348,589, 10–24–67, Cl. 141—284.

Krayer, William L., to Calgon Corp. Force balance computing apparatus. 3,348,771, 10–24–67, Cl. 235—200.

Krefft, Hermann E., to International Telephone and Telegraph Corp. High voltage gas discharge tube having a plurality of grids spaced apart along a ceramic envelope. 3,349,283, 10–24–67, Cl. 315—168.

Kressin, Donald M., S. C. Westbrook, Jr., O. L. Magell, and J. R. Kolczynski, to Wallace & Tiernan, Inc. Peroxide curing of unsaturated polyester resins and formulations therefor. 3,349,040, 10–24–67, Cl. 252—182.

Kretz, Vincent C., to Nelson Equipment Co. Vehicle with bucket. 3,348,715, 10–24–67, Cl. 214—767.

Krieg, Charles D., to Petrolite Corp. Method preventing the swelling of clays in subterranean formations. 3,349,032, 10–24–67, Cl. 252—8.55.

Kriesel, Marshall S., O. H. Vetter, and E. L. Muelling, to Aerospace Research Corp. Means for attaching reefing line cutter to load carrying parachutes. 3,348,793, 10–24–67, Cl. 244—152.

Kroger, Herbert: *See*—
Bartels, Alfred F. A., and Kroger. 3,348,260.

Kruger, Michael H., to Smitheraft Corp. Lighting and ventilating troffer assembly. 3,348,465, 10–24–67, Cl. 98—40.

Kruger, Michael H., to Smitheraft Corp. Glare-free office lighting device and the like. 3,349,238, 10–24–67, Cl. 240—9.5.

Kruse, Jurgen M., to E. I. du Pont de Nemours and Co. Diamond purification. 3,348,918, 10–24–67, Cl. 23—209.9.

Kuchuk-Jatsenko, Sergei I.: *See*—
Paton, Boris E., Sakharnov, Labedev, and Kuchuk-Jatsenko. 3,349,216.

Kuhn, Paul, to Pathe Equipment Co., Inc. Differential tension control device for automatic multi-needle quilting machines. 3,348,507, 10–24–67, Cl. 112—118.

Kuhlberg, Joel F.: *See*—
Gardner, William B., Kuhlberg, and McLaughlin. 3,348,375.

Kuhlmann, Kurt, to Industrial Air Products Co. Method and apparatus for evaporating liquefied gases. 3,348,387, 10–24–67, Cl. 62—52.

Kuhn, John A.: *See*—
Helm, William J., Schleutker, and Kuhn. 3,348,346.

Kuhne, Rudolf, F. Meininger, and W. Noll, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-soluble phthalocyanine dyestuffs and process for preparing them. 3,349,097, 10–24–67, Cl. 260—314.5.

Kukin, Ira, to Apollo Chemical Corp. Additive compositions to improve burning properties of liquid and solid. 3,348,932, 10–24–67, Cl. 44—4.

Kuntz, Egon: *See*—
Mayer, Rudi, Kuntz, and Suling. 3,349,063.

Kurashiki Rayon Co., Ltd.: *See*—
Fukushima, Osamu, Noda, and Kishida. 3,348,963.

Kurth, Harold A.: *See*—
Kleist, Robert A., Kurth, and Thorne. 3,349,373.

Kussy, Frank W.: *See*—
Cataldo, John B., Kralik, Kussy, and Thomas. 3,349,208.

Kuypers, Wilhelmus: *See*—
Van Iperen, Bernardus B., and Kuypers. 3,349,349.

Kwolek, Stephanie L.: *See*—
Hill, Harold W., Kwolek, and Sweeny. 3,349,062.

La Bouchage Mecanique: *See*—
Musy, Charles. 3,348,718.

Lach, Alfred A., to M & T Chemicals Inc. Process for producing diorganotin S,O-mercaptocarboxylates. 3,349,109, 10–24–67, Cl. 260—429.7.

Lachance, Armand A. Handle construction. 3,348,326, 10–24–67, Cl. 40—308.

Lach Co.: *See*—
Gollnick, Cyril R. 3,348,708.

Lackenbauer, William E., and T. G. Brown. Charcoal broiler. 3,348,471, 10–24–67, Cl. 99—421.

Ladish, Charles E.: *See*—
Wartman, Lloyd H., and Ladish. 3,349,056.

Ladonicski, Joseph, to Medaris Cruger & Patterson, Inc. Multi-purpose and self-polarized power pack. 3,349,310, 10–24–67, Cl. 320—25.

La Flame, Frank E., to General Motors Corp. Reaction jet spray arm for dishwashers having simultaneous rotation about perpendicular axis. 3,348,775, 10–24–67, Cl. 239—227.

Lagally, Paul, and J. W. Brook, to Chemirad Corp. Polyvinyl alcohol, alkyleneimine, epichlorohydrin condensation product and method of forming cellulosic webs therewith. 3,348,997, 10–24–67, Cl. 162—164.

Laing, Nikolaus. Air humidifier devices. 3,348,828, 10–24–67, Cl. 261—142.

Lambda Electronics Corp.: *See*—
Dublin, Lester, Paulson, and Shmurak. 3,348,609.

Lamens, Martin. Telescopically sighted fire arms. 3,348,327, 10–24–67, Cl. 42—1.

Lamoria, Lz F.: *See*—
Kellom, David B., Bowman, Lamoria, and York. 3,348,928.

Lamour, Georges. Chef's hat. 3,348,239, 10–24–67, Cl. 2—171.3.

Lancerotto, Fabio, to Nuova San Giorgio S.p.A. Spindle-rail-lifting device for fly-frames. 3,348,371, 10–24–67, Cl. 57—99.

Landbrecht, Franz: *See*—
Winkler, Alfred, Engelsmann, Landbrecht, and Renner. 3,348,461.

Lander, Walter: *See*—
Stevens, Peter P., Jr. 3,348,595.

Landis Tool Co.: *See*—
Dunn, Elman R. 3,348,341.

Lane, Charles A.: *See*—
Lucking, Anthony J., and Lane. 3,348,848.

Lane, Robert W., and E. F. Mathers, to The Airolite Co. Vertical blade louver. 3,348,466, 10–24–67, Cl. 98—121.

Langemann, Albert: *See*—
Gloor, Urs, Goel, Langemann, and Ruegg. 3,349,113.

Langley, Thomas J.: *See*—
Parks, John W., Olson, and Langley. 3,348,696.

Lappin, Gerald R., to Eastman Kodak Co. Color stabilized poly-a-olefin compositions. 3,349,059, 10–24–67, Cl. 260—45.85.

Laporte Chemicals Ltd.: *See*—
Logan, William R., and Braid. 3,348,916.

Lardner, Robert E., to Western Pneumatics Ltd. Hydraulic hoist for tow trucks. 3,348,809, 10–24–67, Cl. 254—124.

Larson, John R., and R. P. Zimmerman, to Universal Oil Products Co. Cyclocooligomerisation process. 3,349,138, 10–24–67, Cl. 260—666.

Lasbray, Ian K. B., to Short Bros. & Harland Ltd. Transfer devices. 3,348,359, 10–24–67, Cl. 53—52.

Laskey, Norman V.: *See*—
Campbell, George T. R., and Laskey. 3,348,515.

Lass, James L., and D. A. Venier, to General Electric Co. Nuclear reactor fuel bundle. 3,349,004, 10–24–67, Cl. 176—78.

Latham, William N., to Avco Corp. Electrical leads for cryogenic devices. 3,349,161, 10–24–67, Cl. 174—15.

Lauper, Warner R., to Coleman Electronic Systems. Multi-axis machine misalignment compensator. 3,348,435, 10–24–67, Cl. 77—63.

Lawrence, Paul A. Utility fastener. 3,348,275, 10–24–67, Cl. 24—255.

Layton, Howard M., to Interlab, Inc. Temperature regulation of fluid baths. 3,348,550, 10–24–67, Cl. 134—57.

Leach, Sam L.: *See*—
Rice, Harold D., and Leach. 3,348,264.

Leary, Ralph J.: *See*—
Stogryn, Eugene L., Argabright, and Leary. 3,349,129.

Lebedev, Vladimir K.: *See*—
Paton, Boris E., Sakharnov, Lebedev, and Kuchuk-Jatsenko. 3,349,216.

Ledoga S.p.A.: *See*—
Nobile, Luciano. 3,349,081.

Lee, Walter W.: *See*—
Fischer, Israel L., Lee, Meloro, and Spieker. 3,349,246.

Leeds & Northrup Co.: *See*—
Gillen, Raymond D., Knipe, McAdam, and Polster. 3,349,408.
Teague, Albert B. 3,348,978.

Leflet, Herbert A., Jr.: *See*—
Carson, Frank J., and Leflet. 3,348,935.

Leibowitz, Joseph D., to International Telephone and Telegraph Corp. Programming switch. 3,349,263, 10–24–67, Cl. 339—18.

Leitner, Kajetan. Nuts especially adapted for thin-wall mounting. 3,348,596, 10–24–67, Cl. 151—41.73.

Leitner, George J., and E. K. Kleiner, to Geigy Chemical Corp. Textile decorating methods using curable polymeric compositions containing mixtures of polycycloaliphatic polyepoxide and triazine. 3,349,054, 10–24–67, Cl. 260—29.6.

Lemelson, Jerome H. Game playing board containing scoring areas formed by electrically conductive strips. 3,348,844, 10–24–67, Cl. 273—121.

Lemley, Kenneth F. High pressure fail-safe gate-operating apparatus. 3,348,378, 10–24–67, Cl. 60—57.

Lenander, Allan O. E.: *See*—
Ericsson, Sven, and Lenander. 3,348,512.

Lepetit S.p.A.: *See*—
Maggi, Nicola, and Sensi. 3,349,082.

Leonard Robert F., and M. Beckett, to Litho Chemical & Supply Co., Inc. Presensitized deep etch lithographic plates. 3,348,948, 10–24–67, Cl. 96—75.

Leopold, Wilbur R., Jr., and C. E. Floren, to Mueller Co. Transition fitting. 3,348,862, 10–24–67, Cl. 285—39.

Lessona Corp.: *See*—
Dudzik, Chester J., and Perkins. 3,348,368.

Levine, Albert K., and F. C. Palilla, to General Telephone and Electronics Laboratories, Inc. Recovering excess vanadate phosphor removed from a cathodoluminescent screen. 3,348,924, 10–24–67, Cl. 23—312.

Lewis, Reginald N., and I. R. Horne, to Bakelite Ltd. Polyepoxide carbocyclic diamine compositions. 3,349,060, 10–24–67, Cl. 260—47.

Ley, Edwin: *See*—
Aulich, Willi, and Ley. 3,348,682.

Libbey-Owens-Ford Glass Co.: *See*—
Carson, Frank J., and Leflet. 3,348,935.

Licata, Joseph P., and F. T. Tucker, to General Motors Corp. Electric motor control circuit. 3,349,307, 10–24–67, Cl. 318—221.

Liebisch, Heinz: *See*—
Wagenleitner, Alois, Montjovent, and Liebisch. 3,349,215.

Lien, Wallace A., to B-D Equipment Co., Inc. Thumbwheel switch with illuminated indicating structure. 3,349,211, 10–24–67, Cl. 200—167.

Lightowler, Henry C. Cleaning apparatus. 3,348,252, 10–24–67, Cl. 15—36.

Lindgren, Nils K., to Aktiebolaget Electrolux. Method of manufacturing electric motors. 3,348,300, 10–24–67, Cl. 29—596.

Lindquist, Arwin B.: *See*—
Seeber, Robert R., and Lindquist. 3,349,375.

Ling, Thomas S., and S. W. Maxfield, to Scott, George & Son (London) Ltd. Apparatus for heat or cold treating material under pressure. 3,348,608, 10–24–67, Cl. 165—40.

L'Institut Francais du Petrole, Des Carburats et Lubrifiants: *See*—
Soubis, Jean-Pierre. 3,348,824.

Litho Chemical & Supply Co., Inc.: *See*—
Leonard, Robert F., and Beckett. 3,348,948.

Littmann, Joseph C., to Ferro Manufacturing Corp. Power actuated parking brake. 3,348,638, 10–24–67, Cl. 188—162.

Litton Business Systems, Inc.: *See*—
Jensen, Alan K. 3,349,869.

Litton Systems, Inc.: *See*—
Johnson, Phillip A. 3,348,405.
Johnson, Phillip A. 3,349,287.

Little, Arthur D., Inc.: *See*—
Sauer, Charles W. 3,348,986.

Lockheed Aircraft Corp.: *See*—
Forsyth, Robert W. and J. P. 3,348,518.

Lode, Tenny D. Altitude measurement. 3,348,412, 10–24–67, Cl. 73—178.

Lodge Frank, to Imperial Chemical Industries Ltd. 2-acyloxyphenyl-4,8-diamino-1, 5-dihydroxy-anthraquinones. 3,349,104, 10–24–67, Cl. 260—376.

Loebeck, Gordon J., ½ to Dale Vercellotti, and ½ to Albina J. Mouish. Finger bandage. 3,348,541, 10–24–67, Cl. 128—157.

Logan, William R., and J. E. Braid, to Laporte Chemicals Ltd. Hydrogen peroxide. 3,348,916, 10–24–67, Cl. 23—207.

Lodge & Shipley Co., The: *See*—
Sporck, Claus L. 3,348,401.

Lohman, Everett Bernell. Mop having a detachable head. 3,348,255, 10–24–67, Cl. 15—229.

Lohs, Willy, G. Thom, G. Neuber, and L. Heise, to Siemens Aktiengesellschaft. Framework and connection system for removable electrical components. 3,349,288, 10–24–67, Cl. 317—101.

Lohstoeter, John E., and J. L. Young, to Scientism Laboratories. Apparatus for dewatering and dehydrating slimes and the like. 3,348,599, 10–24–67, Cl. 159—2.

Long, Charles A.: *See*—
Byers, Lynn E., and Long. 3,348,345.

Long, Herbert A., W. E. Brown, and L. J. Crincic, to Blaw-Knox Co. Deskulling apparatus. 3,348,833, 10–24–67, Cl. 266—36.

Long, Maurice W., to Georgia Tech Research Institute. Microwave power meter. 3,349,327, 10–24–67, Cl. 324—95.

Long, Robert B., and F. A. Caruso, to Esso Research and Engineering Co. Simplified preparations of copper halide adsorbents. 3,348,908, 10–24–67, Cl. 23—97.

Long, Russell A.: *See*—
Alexander, Richard L., Lyons, Brown, and Long. 3,349,072.

Loomes, Peter D.: *See*—
Williamson, David T. N., and Loomes. 3,348,455.

Lottinger, Lee P., Jr.: *See*—
Dupre, Dennis D. 3,348,365.

Louis, Jean F., to Avco Corp. Method of improving the performance of electrodes in magnetohydrodynamic devices. 3,349,260, 10–24–67, Cl. 310—11.

Love, Harold Norris, to W. R. Grace & Co. Pressure vessels. 3,348,728, 10–24–67, Cl. 220—63.

Lowe, Claude W.: *See*—
Marx, Thomas I., and Lowe. 3,348,534.

Lowe, Paul V., to Globe-Union Inc. Method of and apparatus for measuring storage battery cell voltages. 3,349,322, 10–24–67, Cl. 324—29.5.

Luboshez, Sergius N. F. Method and apparatus for pleating material. 3,349,159, 10–24–67, Cl. 264—282.

Luckenbaugh, Raymond W., to E. I. du Pont de Nemours and Co. Process for the preparation of 3,5-dibromo-4-hydroxybenzonitrile. 3,349,111, 10–24–67, Cl. 260—465.

Lucking, Anthony J., and C. A. Lane, to Waddington & Duval (Holdings) Ltd. Tubular body mounting and sealing element of a septum insert for containers. 3,348,848, 10–24–67, Cl. 277—26.

Luna, Agostino, to Automatic Electric Laboratories, Inc. High speed adder amplifier of the solid state type. 3,349,336, 10–24–67, Cl. 330—24.

Luna, Agostino, and R. Cafissi, to Automatic Electric Laboratories, Inc. Wide band frequency modulator, of the solid state type, with linear characteristics. 3,349,343, 10–24–67, Cl. 332—14.

Lund, Gunnar: *See*—
Kamlani, Jeram S., and Lund. 3,348,385.

Lusman, Philip, to British Hydrocarbon Chemicals Ltd. Dehydrochlorination of alkyl chlorides. 3,349,120, 10–24–67, Cl. 260—505.

Lustig, Esther: *See*—
Simonoff, Natalie. 3,348,237.

Lutz, Virgil L.: *See*—
Marconet, Ronald P., Lutz, and Wolf. 3,348,456.

Luy, William R., and J. H. Trumble, to Cutler-Hammer, Inc. Inline feeder device for tying machine. 3,348,473, 10–24–67, Cl. 100—4.

Lyons, Harold D.: *See*—
Alexander, Richard L., Lyons, Brown, and Long. 3,349,072.

MB Associates: *See*—
Sawle, David R. 3,348,452.

MSL Industries, Inc.: *See*—
Milkert, Edwin. 3,348,248.

M&T Chemicals Inc.: *See*—
Lach, Alfred A. 3,349,109.
Passal, Frank. 3,349,015.

Maag Gear Wheel & Machine Co., Ltd.: *See*—
Sigg, Hans. 3,348,645.

Macartney, Bruce J., to The Fry-Fyter Co. Fusible link. 3,348,617, 10–24–67, Cl. 169—42.

MacEwen, George E., to Phillips Petroleum Co. Gable top container. 3,348,755, 10–24–67, Cl. 229—17.

Mackie, James & Sons Ltd.: *See*—
Mackie, John K. P. 3,348,783.

Mackie, John K. P., to James Mackie & Sons Ltd. Winding apparatus. 3,348,783, 10–24–6,7 Cl. 242—54.4.

MacLennan, John R., to Honeywell Inc. Control apparatus for gas burners. 3,348,561, 10–24–67, Cl. 137—66.

Mac Leod, Roderick, R. H.: *See*—
Grunewald, Henry L. 3,348,590.

Macrosonic Process Corp.: *See*—
Shaw, Robert P. 3,348,814.

Mäder, Helmut, H. Ulrich, W. Puschel, and A. von König, to AGFA Aktiengesellschaft. Heat developable light-sensitive photographic material. 3,348,945, 10–24–67, Cl. 96—29.

Madison Research & Development Corp.: *See*—
Cochran, William H., II. 3,348,992.

Magell, Orville L.: *See*—
Kressin. Donald M., Westbrook, Magell, and Kolczynski. 3,349,040.

Maggi, Nicola, and P. Sensi, to Lepetit S.p.A. Mannich bases of rifamycin sv. 3,349,082, 10–24–67, Cl. 260—239.3.

Maletzke, Arnold J.: *See*—
Dully, Floyd I., and Maletzke. 3,348,885.
Mallory Battery Co. of Canada Ltd.: *See*—
Kelly, Francis J., and Praybyla. 3,348,976.
Mallory, P. R., & Co., Inc.: *See*—
Dotto, Gianni A. 3,349,199.
Stark, Richard A., and Barakat. 3,348,568.
Wiser, Joseph E. 3,348,423.
Mann, Henry, to Bell Telephone Laboratories, Inc. Talk-off protection for in-band telephone signaling systems. 3,349,-191, 10–24–67, Cl. 179—84.
Manning Development Corp.: *See*—
Manning, John A., and Dame. 3,349,043.
Manning, John A., deceased (by H. J. Dame), to Manning Development Corp. Method and compositions for controlling oxidation of metal surfaces. 3,349,043, 10–24–67, Cl. 252—407.
Marchal, Francois: *See*—
Veaux, Michel, and Marchal. 3,348,396.
Marconet, Ronald P., V. L. Luts, and R. C. Wolf, to International Paper Co. Scrap stripping apparatus. 3,348,456, 10–24–67, Cl. 93—36.
Marconi Co. Ltd., The: *See*—
Sosin, Boleslaw M. 3,349,338.
Marindin, Frederick R.: *See*—
Baker, Morton H., D. S., and Marindin. 3,348,281.
Marion, William A.: *See*—
Gancarz, Walter F., and Marion. 3,348,478.
Marker, Hannes, and G. Adam, said Adam assor. to said Marker. Toe iron for safety ski bindings. 3,348,854, 10–24–67, Cl. 280—11.35.
Marker, Hannes. Safety toe iron for ski bindings. 3,348,855, 10–24–67, Cl. 280—11.35.
Marker, Hannes. Toe iron for safety ski bindings. 3,348,856, 10–24–67, Cl. 280—11.35.
Markevitch, Igor I., to Arnav Industries, Inc. Multiple shoe lasting. 3,348,249, 10–24–67, Cl. 12—1.
Markowski, Edward C.: *See*—
O'Brien, Robert E., and Markowski. 3,348,748.
Marks, Glenn S.: *See*—
Ptak, Edward J., Bellis, and Marks. 3,348,606.
Marsh, Donald R., to The Fafnir Bearing Co. Method of making a bearing mount assembly. 3,348,289, 10–24–67, Cl. 29—148.4.
Martens, Alexander E., and J. J. Chisholm, to Bausch & Lomb Inc. Particle counter. 3,349,227, 10–24–67, Cl. 235—92.
Martin, John L., and R. M. Amundsen, to Whirlpool Corp. Humidier. 3,348,821, 10–24–67, Cl. 261—29.
Marwick, Peat, Kates & Co.: *See*—
Kates, Josef. 3,349,368.
Marx, Thomas I., and C. W. Lowe, to W. W. Holland and W. L. Davis. Automatic sphygmomanometer. 3,348,534, 10–24–67, Cl. 128—2.05.
Marzer, Adrian, to Ciba Corp. Aminoaryl-guanylhydrazones. 3,349,099, 10–24–67, Cl. 260—326.14.
Marsluff, William F., to American Cyanamid Co. Molybdenum trioxide complex with diethylenetriamine. 3,349,108, 10–24–67, Cl. 260—429.
Maschinenfabrik Carl zangs Aktiengesellschaft: *See*—
Haberhauer, Karl, and Hoever. 3,348,506.
Massa, Dominick A.: *See*—
Babcock, Leonard V., Massa, and Chiovari. 3,349,268.
Matchen, Ben: *See*—
Watson, George R., and Matchen. 3,348,915.
Mater, Charles E., G. C. West, and H. M. Brigham, to Reeves Brothers, Inc. Microporous typewriter ribbons. 3,348,651, 10–24–67, Cl. 197—172.
Mathers, Earl F.: *See*—
Lane, Robert W., and Mathers. 3,348,466.
Mathes, Gene R., to McGraw-Edison Co. Tap changing transformer having means to change tap range. 3,349,320, 10–24–67, Cl. 323—43.5.
Mathews, Bentley B., and P. T. Frentzen, said Frentzen assor. to said Mathews. Segregation apparatus and method. 3,348,680, 10–24–67, Cl. 209—84.
Matthieu, Johannes: *See*—
Knauer, Hans-Ulrich, and Matthieu. 3,349,185.
Mattsson, Sture B., to Borgs Fabriks AB. Switching means for track system. 3,348 497, 10–24–67, Cl. 104—130.
Mauchel, Derek J., to Communications Patents Ltd. Electronic type composing apparatus utilising a plurality of different type faces. 3,349,172, 10–24–67, Cl. 178—6.8.
Mauro, Anthony. Pivotable sash window. 3,348,335, 10–24–67, Cl. 49—181.
Maxfield, Samuel W.: *See*—
Ling, Thomas S., and Maxfield. 3,348,608.
Mayer, Oscar, & Co., Inc.: *See*—
Eberman, Augustus H., and Jensen. 3,348,442.
May-Pressenbau G.m.b.H.: *See*—
Nagele, Rudolf, and Poocza. 3,348,429.
Mayer, Rudi, E. Kuntz, and C. Suling, to Farbenfabriken Bayer Aktiengesellschaft. Acrylonitrile-thiosulfuric acid compound copolymers. 3,349,065, 10–24–67, Cl. 260—79.3.
Mayes, Robert M., to International Pipe & Ceramics Corp. Tapping assembly. 3,348,433, 10–24–67, Cl. 77—42.
Maybue, Luther F., to Phillips Petroleum Co. Maintaining pressure in a hydrocarbon thermal-cracking zone. 3,349,-024, 10–24–67, Cl. 208—95.
Maynard, George R., to Randora Custom Craft. Method and apparatus for making mosaics. 3,349,158, 10–24–67, Cl. 264—261.
Mazor, Herman. Laundry tie-up device. 3,348,270, 10–24–67, Cl. 24—16.
McAdam, Will: *See*—
Gillen, Raymond D., Knipe, McAdam, and Polster. 3,349,-408.
McAvoy, John A., to Burroughs Corp. Delay multivibrator. 3,349,255, 10–24–67, Cl. 307—88.5.
McCall, Leonard. Truck unloading chute. 3,348,646, 10–24–67, Cl. 193—5.
McCarthy, Thomas J., and O. K. Groppe, to American Machine & Foundry Co. Filter tipping device. 3,348,552, 10–24–67, Cl. 131—94.
McConnell, Kennedy, to Interlake Steel Corp. Pallet rack. 3,348,898, 10–24–67, Cl. 211—24.
McCormick, Frank, to Federal Carton Corp. Soup carton. 3,348,666, 10–24–67, Cl. 206—44.
McCoy, John W. Hairbrush and/or comb cleaner. 3,348,253, 10–24–67, Cl. 15—88.
McCulloch, Bryson: *See*—
Gallagher, John E., Crider, and McCulloch. 3,348,604.
McCumber, Dean E.: *See*—
Chynoweth, Alan G., and McCumber. 3,349,344.
McDonald, James H., ½ to G. Hudgins. Underwater mask with combination speaking diapuragm and demand valve. 3,348,539, 10–24–67, Cl. 128—142.2.
McDonnell Douglas Corp.: *See*—
Hyter, William H. 3,349,014.
McEwan, Gilbert J.: *See*—
Aiul, Husni, Clark, and McEwan. 3,349,144.
McGean Chemical Co., The: *See*—
Beach, Sidney C. 3,349,101.
McGraw-Edison Co.: *See*—
Mathes, Gene R. 3,349,320.
McIlvaine, Robert L., to National Engineering Co. Apparatus for conditioning particulate material. 3,348,819, 10–24–67, Cl. 259—151.
McIlvaine, Robert L., to National Dust Collector Corp. Apparatus for collecting contaminants from gases. 3,348,825, 10–24–67, Cl. 261—93.
McKay Machine Co., The: *See*—
Bartley, William W. 3,348,403.
Prieur, Hubertus. 3,348,399.
McKenzie, Lawrence G.: *See*—
Chakiader, Asoke C. D., and McKenzie. 3,348,957.
McKinlay, Robert M., to Westland Aircraft Ltd. Refueling of rotary wing or vertical takeoff aircraft. 3,348,791, 10–24–67, Cl. 244—2.
McLamore, William M., to Chas. Pfizer Co., Inc. Oral antidiabetic agent. 3,349,124, 10–24–67, Cl. 260—558.
McLaughlin, Peter W.: *See*—
Gardner, William B., Kuhlberg, and McLaughlin. 3,348,-875.
McLean, William E.: *See*—
Pollak, Walter, and McLean. 3,348,876.
McNulty, John G., and W. L. Walsh, to Gulf Research & Development Co. Process for preparing olefins. 3,349,149, 10–24–67, Cl. 260—683.15.
McNutt, Frank C.: *See*—
Bahls, Gene C., McNutt, Price, Zidell, and Dick. 3,348,-673.
McNutt, William J., and W. M. Johnson, to General Electric Co. Transformer core reinforcing plate. 3,349,357, 10–24–67, Cl. 336—210.
Meacham, James F., to I-T-E Circuit Breaker Co. Load center. 3,349,292, 10–24–67, Cl. 317—120.
Mead Corp., The: *See*—
Wood, Prentice J. 3,348,671.
Mealing, Kenneth W., to The Budd Co. Ladder-type rack, as for passenger vehicles. 3,348,909, 10–24–67, Cl. 211—90.
Mechanical Handling Systems, Inc.: *See*—
Klamp, Paul, and Bishop. 3,348,496.
Medallion Industries, Inc.: *See*—
Seemann, Winston. 3,348,829.
Medaris Cruger & Patterson, Inc.: *See*—
Ladonicaki, Joseph. 3,349,310.
Medi-Tech Laboratories: *See*—
Tambascia, John J. 3,348,536.
Meinherz, Joachim, and H. Waldenburger, to Societe de Mecanographie Japy. Ribbon feed mechanism for typewriters, computers, and similar machines. 3,348,650, 10–24–67, Cl. 197—151.
Meininger, Fritz: *See*—
Kuhne, Rudolf, Meininger, and Noll. 3,349,097.
Meisingset, Kare R., and I. Mo, to International Standard Electric Corp. Method for synchronizing crytographic teleprinter equipment. 3,349,175, 10–24–67, Cl. 178—22.
Melbye, David H. Towing device embodying two trailers. 3,348,859, 10–24–67, Cl. 280—415.
Meloro, Thomas J.: *See*—
Fischer, Israel L., Lee, Meloro, and Spieker. 3,349,246.
Melpar, Inc.: *See*—
Campanella, Samuel J. 3,349,183.
Podall, Harold E. 3,349,019.
Menasha Corp.: *See*—
Boysen, Willard P. 3,348,756.
Mennerdahl, Carl E. Hoisting crane. 3,348,701, 10–24–67, Cl. 212—31.
Mercier, Jean. Pressure vessels. 3,348,578, 10–24–67, Cl. 138—30.
Merck & Co., Inc.: *See*—
Rooney, Clarence S. 3,349,096.
Merola, Anthony. Table and chairs. 3,348,879, 10–24–67, Cl. 297—157.
Messenger, Joseph U., to Mobil Oil Corp. Cementing casing in oil-wet wells. 3,348,612, 10–24–67, Cl. 166—29.
Messerschmitt Aktiengesellschaft: *See*—
Assum, Johann. 3,348,529.
Messerschmidt, Sebastian. Apparatus for lapping and grinding balls. 3,348,838, 10–24–67, Cl. 51—3.
Metallgesellschaft Aktiengesellschaft: *See*—
Aulich, Willi, and Ley. 3,348,682.
Metalurgitschen Lavod Lenin: *See*—
Valtschev, Alexander J., and Valtscheva. 3,348,929.
Meyer, Ernst. Induction pump. 3,348,489, 10–24–67, Cl. 103—53.

Meyer, Frans J., to Goetzewerke Friedrich Goetze AG. Distribution device for bulk goods. 3,348,677, 10–24–67, Cl. 209—74.
Michael, Eugene M.: *See*—
Kolodziej, Walter F., and Michael. 3,349,235.
Michaels, Edwin B., and C. A. Wetmore, to Stamford Chemical Industries, Inc. Detergent compositions. 3,349,038, 10–24–67, Cl. 252—161.
Michalchik, Michael, to Fairchild Camera & Instrument Corp. Photoengraving resist. 3,348,944, 10–24–67, Cl. 96—1.8.
Michalko, Edward, to Universal Oil Products Co. Method for preparing high rate zeolitic molecular sieve particles. 3,348,-911, 10–24–67, Cl. 23—112.
Michels, Friedrich: *See*—
Von Feigel-Farnhols, Richard, and Michels. 3,349,170.
Miknaitis, Sigitas, to Automatic Electric Laboratories, Inc. Core cup retaining device. 3,348,276, 10–24–67, Cl. 24—263.
Miles Laboratories, Inc.: *See*—
Albaum, Harry G. 3,349,006.
Batti, Mario A. 3,349,005.
Milkert, Edwin, to MSL Industries, Inc. Automatic tapping machine and method. 3,348,248, 10–24–67, Cl. 10—129.
Miller, Berton G.: *See*—
Miller, Richard P. and B. G. 3,348,577.
Miller, Eugene M., and J. O. Kelley, to Cart-Trac, Inc. Sound tape cartridge. 3,348,786, 10–24–67, Cl. 242—55.13.
Miller, George. Fluid pump and heater system. 3,348,487, 10–24–67, Cl. 103—1.
Miller, John C., H. N. Cotabish, and E. E. Buban, to Mine Safety Appliances Co. Combination breathing valve and speaking diaphragm unit. 3,348,537, 10–24–67, Cl. 128—141.
Miller, Neil C., to Phillips Petroleum Co. Filter apparatus and filter aid feeding and controlling system. 3,348,685, 10–24–67, Cl. 210—101.
Miller, Richard P. and B. G. Push button faucet. 3,348,577, 10–24–67, Cl. 137—637.1.
Miller, Ruth S. Paper-clip fastener. 3,348,271, 10–24–67, Cl. 24—66.
Millmastic Onyx Corp.: *See*—
Zuccarelli, Vincent. 3,349,033.
Mills, Emmett R. Article handling apparatus. 3,348,653, 10–24–67, Cl. 198—24.
Mills, Kenneth R., and A. A. Harban, to Phillips Petroleum Co. Organic phosphites for prevention of void formation in polymer olefin structures. 3,349,058, 10–24–67, Cl. 260—45.85.
Mills, Thomas W. Construction unit. 3,348,350, 10–24–67, Cl. 52—542.
Milwaukee-Ferrometal Stamping Corp.: *See*—
Heim, William J., Schleutker, and Kuhn. 3,348,346.
Mine Safety Appliances Co.: *See*—
Miller, John C., Cotabish, and Buban. 3,348,537.
Miner, W. H., Inc.: *See*—
Allan, William H. 3,348,633.
Mineral Industries Corp. of America: *See*—
Cohn, Morris I., and Perdue. 3,348,778.
Minnesota Mining and Mfg. Co.: *See*—
Good, Paul J. 3,348,964.
Nestor, Leonard R. 3,348,917.
Wyatt, Gerald A. 3,349,164.
Minnesota-Ohio Oil Corp.: *See*—
Hammons, Robert B. 3,348,306.
Mitchell, John G., and J. H. Haddad, to Mobil Oil Corp. Method and apparatus for retorting oil shale. 3,349,022, 10–24–67, Cl. 208—11.
Mitsubishi Atomic Power Industries, Inc.: *See*—
Watanabe, Takaaki, Ogura, Kondo, and Nagasawa. 3,349,-152.
Mixich, George: *See*—
Molnar, Istvan, Wagner-Jauregg, Jahn, and Mixich. 3,349,088.
Mixon, James L., and F. W. Wahl, to AMP Inc. Wedge type electrical connector. 3,349,167, 10–24–67, Cl. 174—94.
Miyata, Saburo. Means for imposing electric and magnetic fields on flowing fluids. 3,349,354, 10–24–67, Cl. 335—209.
Mo, Ivar: *See*—
Meisingset, Kare R. 3,349,175.
Mobil Oil Corp.: *See*—
Butcosk, Richard A., and Olszewski. 3,349,034.
Messenger, Joseph U. 3,348,612.
Mitchell, John G., and Haddad. 3,349,022.
Salem, Alexander N. 3,349,050.
Sinclair, James A., and Fair. 3,348,614.
Moist-O'Matic, Inc.: *See*—
Hunter, Edwin J. 3,348,776.
Molins Organisation Ltd., The: *See*—
Williamson, David T. N., and Loomes. 3,348,455.
Molnar, Istvan, T. Wagner-Jauregg, U. Jahn, and G. Mixich, to Siegfried Aktiengesellschaft. Therapeutically valuable 1,2-dihydro-1,2,4-benzotriazine derivatives and process for preparation thereof. 3,349,088, 10–24–67, Cl. 260—248.
Molt, Kenneth R.: *See*—
Hechenbleikner, Ingenuin, and Molt. 3,349,150.
Momchilovich, Milan, and W. F. Rhodes, to The Falls Stamping and Welding Co. Burner and its operation. 3,348,598, 10–24–67, Cl. 158—4.
Monier Research & Development Pty. Ltd.: *See*—
Wilkinson, Horace A., and Dimmock. 3,348,820.
Monsanto Co.: *See*—
Alexander, Stephen H., and Montgomery. 3,349,051.
Aiul, Husni R., Clark, and McEwan. 3,349,144.
Irani, Riyad R. 3,348,613.
Montecatini Edison S.p.A.: *See*—
Veronica, Giacinto. 3,348,913.
Montgomery, Stewart R.: *See*—
Alexander, Stephen H., and Montgomery. 3,349,051.
Montjovent, Maurice: *See*—
Wagenleitner, Alois, Montjovent, and Liebisch. 3,349,215.
Monty, Leo J., to Artison Industries, Inc. Thin film type fluid processing apparatus. 3,348,600, 10–24–67, Cl. 159—6.
Moore, Danny J., to United States of America, Agriculture. Solvent for obtaining very high yields of aldehydic products from soybean oil. 3,349,106, 10–24–67, Cl. 260—406.
Moran, George D.: *See*—
Powell, Richard G., and Moran. 3,348,703.
Morey, Glen H., to Templeton Coal Co. Electrical heating element. 3,349,359, 10–24–67, Cl. 338—208.
Morgan, Harvey L. Bandwidth compression and expansion by frequency division and multiplication. 3,349,184, 10–24–67, Cl. 179—15.55.
Morin, Louis H., to Coats & Clark Inc. Composite self-sealing cap. 3,348,744, 10–24–67, Cl. 222—494.
Morris, Jack, and J. Toohey, to American Machine & Foundry Co. Welding and scarfing apparatus. 3,349,212, 10–24–67, Cl. 219—59.
Morrow, Robert S.: *See*—
Thomas, Glen H., and Morrow. 3,349,257.
Motorola Inc.: *See*—
Anthun, Bjarne. 3,349,331.
Caprio, Gerald L. 3,349,173.
Motorola, Inc.: *See*—
Carver, Thurman W. 3,349,394.
Gabrielson, Reidar G., and Smith. 3,349,374.
Koepp, Ronald L., and Bailey. 3,349,300.
Schaft, Hugo W. 3,349,279.
Mueller, Christian: *See*—
Mueller, Erich H. K., Osann, and C. Mueller. 3,348,817.
Mueller Co.: *See*—
Leopold, Wilbur R., Jr., and Floren. 3,348,862.
Mueller, Erich H. K., B. Osann, and C. Mueller, to Huettenwerk Salzgitter Aktiengesellschaft. Process and apparatus for intermixing liquids, more especially metal smelts. 3,348,-817, 10–24–67, Cl. 259—72.
Mueller, Peter G.: *See*—
Utting, George R., and Mueller. 3,348,418.
Mueller, Robert J., to International Rectifier Corp. Housing for electrical apparatus modules. 3,349,289, 10–24–67, Cl. 317—101.
Muelling, Earl L.: *See*—
Kriesel, Marshall S., Vetter, and Muelling. 3,348,793.
Mugele, Kurt, to Siemens-Schuckertwerke Aktiengesellschaft. Device for closing openings such as pressure openings in gas pumps. 3,348,766, 10–24–67, Cl. 230—79.
Muhlemann, Ernst, to Oerlikon-Buhrle Holding AG. Firearm with firing pin retarding means. 3,348,453, 10–24–67, Cl. 89—180.
Mui, Billy Y. K.: *See*—
Baratoff, Paul, Kfoury, and Mui. 3,348,796.
Mullen, Robert D. Apparatus and methods employing magnetic reed switches and static and varying bias fields for detecting magnetic phenomena. 3,349,323, 10–24–67, Cl. 324—43.
Muller, Erwin, to Farbenfabriken Bayer Aktiengesellschaft. Process of reacting together unsaturated amides, formaldehyde, and secondary amines and the products formed thereby. 3,349,121, 10–24–67, Cl. 260—513.
Muller, Martin, and G. Walter, to International Standard Electric Corp. Frequency synchronizing circuit. 3,349,337, 10–24–67, Cl. 331—17.
Murphy, James F., and A. A. Dolomont, to Olin Mathieson Chemical Corp. Process for treating aluminum weld wire. 3,348,979, 10–24–67, Cl. 148—6.2.
Murray, Coyt E., to Future Plastics, Inc. Plastic lug strap. 3,348,581, 10–24–67, Cl. 139—153.
Murdock, Henry T., and S. M. Ringel, to Allis-Chalmers Mfg. Co. Phase insulation for polyphase dynamoelectric machines. 3,349,265, 10–24–67, Cl. 310—194.
Muse, Charles, to La Bouchage Mecanique. Bottle closure. 3,348,718, 10–24–67, Cl. 215—42.
Myers, Morgan J. Upright burial casket, vault and carrier. 3,348,280, 10–24–67, Cl. 127—2.
N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia: *See*—
Van der Stelt, Cornelis. 3,349,093.
Nadel, Isifore G. Method of making solid propellants in textile form. 3,348,445, 10–24–67, Cl. 86—1.
Nagele, Rudolf, and A. Poocza, to May-Pressenbau G.m.b.H. Overload safety device in machines. 3,348,429, 10–24–67, Cl. 74—584.
Nakata, Yuichi. Container. 3,348,716, 10–24–67, Cl. 215—6.
National Acme Co., The: *See*—
Ptak, Edward J., Bellis, and Marks. 3,348,606.
National Dust Collector Corp.: *See*—
Henby, Elijah B. 3,348,364.
McIlvaine, Robert L. 3,348,825.
National Engineering Co.: *See*—
McIlvaine, Robert L. 3,348,819.
National Research Council: *See*—
Bywater, Stanley, and Whalley. 3,349,068.
National Research Development Corp.: *See*—
Stone, David. 3,349,377.
Naylor, Ronald, and G. G. Scarrott, to Ferranti Ltd. Integrated transformer transducer. 3,349,382, 10–24–67, Cl. 340—174.1.
Nealy, Robert H. Valve assembly for isolating controlled fluid from valve housing. 3,348,570, 10–24–67, Cl. 137—315.
Nebraska Packing Co.: *See*—
Roland, Max, W. J. Stratton, and A. W. Stratton, Jr. 3,348,360.
Nelson Equipment Co.: *See*—
Kretz, Vincent C. 3,348,715.
Nerwin, Hubert, to Eastman Kodak Co. One-piece light-controlling structure. 3,348,463, 10–24–67, Cl. 95—64.

Nestor, Leonard R., to Minnesota Mining and Mfg. Co. Glass containing dissolved carbon, methods of making and using, and obtaining graphite. 3,348,917, 10–24–67, Cl. 23—209.1.

Neubauer, Arthur W., to Crown Zellerbach Corp. Coating apparatus for coating webs. 3,348,526, 10–24–67, Cl. 118—410.

Neuber, Georg: *See*—
Lohs, Willy, Thom, Neuber, and Heiss. 3,349,288.

Newcomb, Wallace K., C. E. Blank, Sr., and D. F. Van Loon, to Ingersoll-Rand Co. Metallic packing. 3,348,849, 10–24–67, Cl. 277—27.

Newhall, Edmunde E., to Bell Telephone Laboratories, Inc. Magnetic control circuits. 3,349,250, 10–24–67, Cl. 307—88.

Newton, David W., and W. D. Downing, to Heli-Coil Corp. Wire coil installing tool. 3,348,293, 10–24–67, Cl. 29—240.5.

Niedzwiecki, Joseph F., to Ingersoll-Rand Co. Fluid operated stud driver tool. 3,348,291, 10–24–67, Cl. 29—212.

Nieland, Paul J., to The Telex Corp. Tape drive actuating mechanism for tape handling machines. 3,348,750, 10–24–67, Cl. 226—90.

Nielsen, Erik R., and W. L. Stepp, to IIT Research Institute. Stable phosphonitrilic polymers. 3,348,926, 10–24–67, Cl. 23—357.

Nielsen, Milton R.: *See*—
Junkel, Wolfgang, and Nielsen. 3,348,799.

Nieminski, Robert A., to Eaton Yale & Towne, Inc. Control system for load lifting apparatus. 3,348,635, 10–24–67, Cl. 187—9.

Nippon Electric Co., Ltd.: *See*—
Ito, Sukehiro. 3,349,181.
Ito, Sukehiro, and Yokoyama. 3,349,182.
Shinohara, Takeo. 3,349,356.

Nippon Telegraph and Telephone Public Corp.: *See*—
Odani, Yuzo, and Sunazawa. 3,348,983.

Nitzan, David, to AMP Inc. Circuit for multi-aperture magnetic core devices. 3,349,380, 10–24–67, Cl. 340—174.

Nobile, Luciano, to Ledoga S.p.A. Process for preparing sucrose esters of high molecular weight fatty acids. 3,349,081, 10–24–67, Cl. 260—234.

Noda, Kazuo: *See*—
Fukushima, Osamu, Noda, and Kishida. 3,348,963.

Nodaway Valley Foods, Inc.: *See*—
Stewart, Aubrey P., Jr. 3,348,955.

Noll, Walter: *See*—
Kuhne, Rudolf, Meininger, and Noll. 3,349,097.

Nordischer Maschinenbau Rud. Baader: *See*—
Bartels, Alfred F. A., and Kroger. 3,348,260.

Norlyng, Kristian H., to Aktieselskabet Bing & Grondahls Porcelainsfabrik and Bing & Grondahl OG Norden A/S. Drying equipment. 3,348,318, 10–24–67, Cl. 34—105.

North American Aviation, Inc.: *See*—
Cummings, Alan F. 3,348,352.
Reed, Robert G. 3,349,396.
Rosenthal, Joseph R. 3,349,397.

North American Philips Co. Inc.: *See*—
Dijkmeijer, Henricus E. 3,348,297.
Bathelt, Robert R., Francken, and Panis. 3,349,272.
Kolkman, Dirk, and De Visser. 3,349,274.
Krieger, Helmut. 3,349,282.
Jacobs, Cornelis A. J., and Driessen. 3,349,276.
Ter Hoeve, Willem F. 3,349,277.
Van Iperen, Bernardus B., and Kuypers. 3,349,349.

Northern Natural Gas Co.: *See*—
King, Richard E. 3,348,941.

Norton Co.: *See*—
Bartlett, Howard J. 3,348,925.
Watson, George R., and Matchen. 3,348,915.

Nouel, Robert, to Inventions Finance Corp. Securing device for rotary mold apparatus. 3,348,267, 10–24–67, Cl. 18—20.

Nowak, Raymond F., to Vandercook & Sons, Inc. Traveling inking roll supporting system. 3,348,481, 10–24–67, Cl. 101—354.

Nuova San Giorgio S.p.A.: *See*—
Lancerotto, Fabio. 3,348,371.

Nu Roll Corp.: *See*—
Giles, William H. 3,348,787.

O'Brien, Robert E., and E. C. Markowski, to Kirkhof Mfg. Corp. Plastic sheet advancing apparatus. 3,348,748, 10–24–67, Cl. 226—53.

O'Connell, Robert A., and G. M. Hegranes, to I. M. S. Corp. Ultra-violet light insect trap. 3,348,332, 10–24–67, Cl. 43—113.

Odani, Yuzo, and M. Sunazawa, to Nippon Telegraph and Telephone Public Corp. Process for producing square hysteresis magnetic alloys. 3,348,983, 10–24–67, Cl. 148—120.

O'Donnell, William R., to Valve Corp. of America. Tamperproof actuator for hand-held dispensers. 3,348,740, 10–24–67, Cl. 222—153.

Oerlikon-Buhrle Holding AG.: *See*—
Muhlemann, Ernst. 3,348,453.

Offutt, William C.: *See*—
Carr, Norman L., Horne, Offutt, and Somers. 3,349,027.

Ogren, Harvey D., to Honeywell, Inc. Control apparatus. 3,348,562, 10–24–67, Cl. 137—81.5.

Ogura, Tadashi: *See*—
Watanabe, Takaaki, Ogura, Kondo, and Nagasawa. 3,349,152.

Ohio Brass Co., The: *See*—
Freeborn, Andrew L. 3,348,398.

Ohio State University Research Foundation, The: *See*—
Copeland, John R., and Robertson. 3,349,404.

Ohteru, Sadamu: *See*—
Kobayashi, Hiroshi, and Ohteru. 3,349,317.

Olashaw, William F., to General Electric Co. Prefabricated switchboard construction. 3,349,291, 10–24–67, Cl. 317—120.

Oldfield, Thomas A.: *See*—
Kahn, Peter B., and Oldfield. 3,348,454.

Olin Mathieson Chemical Corp.: *See*—
Becke, Margot. 3,348,927.
Broverman, Irwin, and Jagaciak. 3,348,290.
Boudakian, Max M., and Hofmann. 3,349,136.
Henning, Robert W. 3,348,751.
Jaeger, Ulric R. 3,349,224.
Murphy, James F., and Dolomont. 3,348,979.
Rats, Rudi F. W., and Pivawer. 3,349,125.

Olivier, Kenneth L.: *See*—
Fenton, Donald M., and Olivier. 3,349,119.

Olson, Gerald D., and A. E. Pettyjohn, to Borg-Warner Corp. Reversible wear plate pump. 3,348,492, 10–24–67, Cl. 103—126.

Olson, Ralph A.: *See*—
Parks, John W., Olson, and Langley. 3,348,696.

Olsson, Johan B., to Aktiebolaget Gotaverken. Hatch covers. 3,348,602, 10–24–67, Cl. 160—188.

Olszewski, William F.: *See*—
Butcosk, Richard A., and Olszewski. 3,349,034.

Omstell Industries, Inc.: *See*—
Stewart, Richard P. 3,348,322.

Onoue, Yasumitsu: *See*—
Goda, Susumu, Gondo, and Onoue. 3,348,981.

Orendorff, John W., to International Harvester Co. Hitch for implements. 3,348,620, 10–24–67, Cl. 172—316.

Orlando, John B., to Defiance Button Machine Co. Upholstering method. 3,348,287, 10–24–67, Cl. 29—91.1.

Orr, Clyde, Jr., and W. P. Hendrix, to Georgia Tech Research Institute. Specimen mounting device for porosity determination apparatus. 3,348,395, 10–24–67, Cl. 73—38.

Orshansky, Elias, Jr. Fixed displacement motor or pump. 3,348,495, 10–24–67, Cl. 103—175.

Osann, Bernard: *See*—
Mueller, Erich H. K., Osann, and C. Mueller. 3,348,817.

Otehall Ltd.: *See*—
Beer, Donald C. 3,349,202.

Otto, Klaus: *See*—
Stark, Gustav, and Otto. 3,348,987.

Otzen, Christian: *See*—
Baur, Carl, and Otzen. 3,348,898.

Outboard Marine Corp.: *See*—
Grasso, Rocco. 3,348,337.

Owens-Corning Fiberglas Corp.: *See*—
Rees, Willis M., and Shannon. 3,348,994.

Owens-Illinois, Inc.: *See*—
Hinson, Arthur L., and Smith. 3,348,934.

PID Corp.: *See*—
Rice, Harold D., and Leach. 3,348,264.

Packaging Corp. of America: *See*—
Hickin, Robert J., and Galbiers. 3,348,757.

Pagendarm, Lawrence J.: *See*—
Pierce, Chester J., Jr., and Pagendarm. 3,348,655.

Paillard S.A.: *See*—
Ascoli, Enzo. 3,349,176.

Paillet, Robert, to Societe Les piles Wonder. 3,348,977, 10–24–67, Cl. 136—133.

Palilla, Frank C.: *See*—
Levine, Albert K., and Palilla. 3,348,924.

Palkoska, Josef: *See*—
Culik, Karel, Dasek, Palkoska, and Pelzbauer. 3,349,127.

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Blenkarn, Kenneth A., and Howard. 3,348,382.

Pan Pacific Co.: *See*—
Dawes, Bailey P. 3,348,736.

Pandolfi, Richard A., to Potter Instrument Co., Inc. Error detecting printer in high speed printing apparatus. 3,348,479, 10–24–67, Cl. 101—93.

Panelfold Doors, Inc.: *See*—
Dixon, Guy E. and T. M., and Geyer. 3,348,628.

Pangborn Corp., The: *See*—
Bowling, Joseph E., Jr. 3,348,339.

Panis, Constantius J. W.: *See*—
Bathelt, Robert R., Francken, and Panis. 3,349,272.

Papst, Hermann. Boundary layer control. 3,348,622, 10–24–67, Cl. 180—54.

Pardoe-Matthews, Peter J. M.: *See*—
King, Edward C., and Pardoe-Matthews. 3,348,265.

Parker-Hannifin Corp.: *See*—
Balogh, Stephen. 3,348,692.
Churchill, Ralph, Jr. 3,348,803.

Parks, John W., R. A. Olson, and T. J. Langley, to Union Tank Car Co. Sewage treatment system. 3,348,696, 10–24–67, Cl. 210—530.

Parsons Corp.: *See*—
Brownlee, Winston E., and Ritchey. 3,348,476.
Parsons, John T. 3,349,157.

Parsons, John T., to Parsons Corp. Method of molding multilaminate airfoil structures and the like. 3,349,157, 10–24–67, Cl. 264—255.

Passal, Frank, to M&T Chemicals, Inc. Electrodeposition of bridght nickel. 3,349,015, 10–24–67, Cl. 204—49.

Patalong, Hubert, to Siemens-Schuckertwerke Aktiengesellschaft. Electronic semiconductor device. 3,349,296, 10–24–67, Cl. 317—234.

Paterson, Norman J., to Chevron Research Co. Combination cracking process for maximizing middle distillate production. 3,349,023, 10–24–67, Cl. 208—68.

Pathe Equipment Co., Inc.: *See*—
Kuhn, Paul. 3,348,507.

Paton, Boris E., V. A. Sakharnov, V. K. Lebedev, and S. I. Kuchuk-Jatsenko, to Institute electrosvarki im. E.O. Patona. Machine for resistance butt-welding. 3,349,216, 10–24–67, Cl. 219—101.

Patterson, Carl R., to Whirlpool Corp. Manual filter for a washing machine. 3,348,688, 10–24–67, Cl. 210—238.

Paullus, Clarence L., and L. R. Stauffer, to AMP Inc. Cable clamp for electrical connector. 3,349,364, 10–24–67, Cl. 339—105.

Paulson, Maurice G.: *See*—
Dubin, Lester, Paulson, and Shmurak. 3,348,609.

Pawlenko, Stephan, to Schering Aktiengesellschaft. Process for preparing carboxylic acids and their alkyl-esters. 3,349,107, 10–24–67, Cl. 260—410.9.

Pawloski, Chester E.: *See*—
Sterling, George B., and Pawloski. 3,349,133.

Pearl, David R., and P. W. Kalika, to Combustion Engineering, Inc. Combined wet scrubber and heat exchange apparatus. 3,348,830, 10–24–67, Cl. 261—161.

Peffer, Raymond, to Etablissements Gérard Mang. Automatic electron time-switches. 3,349,293, 10–24–67, Cl. 317—142.

Pellens, Ludwig, H. Honig, and R. Siegel, to Kali-Chimie Aktiengesellschaft. Process for preparing a highly porous sodium perborate. 3,348,907, 10–24–67, Cl. 23—60.

Pelzbauer, Jiri: *See*—
Culik, Karel, D., Palkoska, and Pelzbauer. 3,349,127.

Perdue, Roy D.: *See*—
Cohn, Morris I., and Perdue. 3,348,778.

Peres, Agustin. Vitreous tile and mounting structure therefor. 3,348,348, 10–24–67, Cl. 52—391.

Perez, Horacio E. Self-energizing disc brakes. 3,348,637, 10–24–67, Cl. 188—152.

Perkins, Guy E.: *See*—
Dudzik, Chester J., and Perkins. 3,348,368.

Perry, Kenneth E., and P. F. Smith, to Geodyne Corp. Monitoring position-indicating recorder. 3,349,406, 10–24–67, Cl. 346—107.

Persons-Majestic Mfg. Co.: *See*—
Saunders, Henry A. 3,348,697.

Petersen, Walter. Reinforced plastic glass holding frame. 3,348,349, 10–24–67, Cl. 52—198.

Peterson, Joseph C. Additive for stainless steel pickling baths. 3,349,037, 10–24–67, Cl. 252—146.

Peterson, Warren J.: *See*—
Katzfey, James M., and Peterson. 3,348,893.

Petrolite Corp.: *See*—
Cheng, Jen-Pu. 3,349,029.
Krieg, Charles D. 3,349,032.

Pettibone, Michael H.: *See*—
Porath, Phillip H., and Pettibone. 3,348,912.

Pettyjohn, Austin E.: *See*—
Olson, Gerald D., and Pettyjohn. 3,348,492.

Phelps, Edwin H.: *See*—
Baker, James R., and Phelps. 3,348,995.

Philco Ford Corp.: *See*—
Wilmarth, Paul C. 3,349,313.

Phillips Petroleum Co.: *See*—
Clay, Harris A., and Reinmuth. 3,349,147.
De Lano, Merritt V., Jr. 3,349,143.
MacEwen, George E. 3,348,755.
Mayhue, Luther F. 3,349,024.
Miller, Neil C. 3,348,885.
Mills, Kenneth R., and Harban. 3,349,058.
Plaster, William E. 3,349,010.
Ruehlen, Forrest N. 3,349,009.
Rush, Elton E. 3,348,367.
Strobel, Charles W. 3,349,071.
Vives, Van C. 3,349,008.

Pharmaseal Laboratories: *See*—
De Berry, James S. 3,348,894.

Phleps, Konrad: *See*—
Stievenart, Emile F., and Phleps. 3,348,839.

Piccardo, Jack E., to Grove Valve and Regulator Co. Valve construction. 3,348,804, 10–24–67, Cl. 251—214.

Pichette, Edmond A. Offset-adjustable tool holder. 3,348,437, 10–24–67, Cl. 82—2.

Pierce, Chester J., Jr., and L. J. Pagendarm, to Kliklok Corp. Device for disentangling and conveying flanged receptacles. 3,348,555, 10–24–67, Cl. 198—34.

Pierce, Lowell J.: *See*—
Waters, Everett W., Hufnagel, and Pierce. 3,348,414.

Pierce, Roy M.: *See*—
Davidson, James R., and Pierce. 3,348,523.

Pierce, Wayne M., Jr., to Hunt-Pierce Corp. Wire placing device. 3,348,811, 10–24–67, Cl. 254—134.3.

Pierdet, Andre: *See*—
Bucourt, Robert, Pierdet, Costerousse, Joly, Warnant, and Goffinet. 3,349,130.

Pike, John E.: *See*—
Ayer, Donald E., and Pike. 3,349,084.

Pinkham, Jesse R., to American Machine & Foundry Co. Cigarette making machine. 3,348,551, 10–24–67, Cl. 131—84.

Pisan, George: *See*—
Zimmerman, Julius, and Pisan. 3,348,990.

Pivawer, Philip M.: *See*—
Rats, Rudi F. W., and Pivawer. 3,349,125.

Plaster, William E., to Phillips Petroleum Co. Method and apparatus for controlling polymer deposition in reboiler. 3,349,010, 10–24–67, Cl. 203—99.

Platmanufaktur, AB: *See*—
Ericsson, Sven, and Lenander. 3,348,512.

Platnick, Abraham J., to Cavalier Mills, Inc. Laying threads between and across knitted fabric. 3,348,389, 10–24–67, Cl. 66—128.

Plessey-UK Ltd.: *See*—
Kahn, Peter B., and Oldfield. 3,348,454.

Plumat, Emile, to Glaverbel. Spout for the discharge of molten glass. 3,348,937, 10–24–67, Cl. 65—333.

Plummer, Harvey R., to Giddings & Lewis Machine Tool Co. Boring bar assembly for deep hole boring. 3,348,434, 10–24–67, Cl. 77—58.

Podall, Harold E., to Melpar, Inc. Photochemical process for the production of linear transition metal coordination polymers from metal carbonyls. 3,349,019, 10–24–67, Cl. 204—159.11.

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Poitevin de Fontguyon, Marie P. Device for the stable determination of the vertical above a given point. 3,348,315, 10–24–67, Cl. 33—206.

Pollak, Edward C., B. B. Harmon, and W. Solomon. Safety lock for double doors. 3,348,868, 10–24–67, Cl. 292—280.

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Pollock, Bernard D., to United States of America, Atomic Energy Commission. Refractory metal dispersion. 3,348,943, 10–24–67, Cl. 75—204.

Polster, Norman E.: *See*—
Gillen, Raymond D., Knipe, McAdam, and Polster. 3,349,408.

Polzin, Clayton H. W., to The Falk Corp. Speed reducer. 3,348,430, 10–24–67, Cl. 74—606.

Poocza, Antal: *See*—
Nagele, Rudolf, and Poocza. 3,348,429.

Poppinger, Herbert, to Siemens-Schuckertwerke Aktiengesellschaft. System for controlling thyristors by periodically recurring firing pulses. 3,349,318, 10–24–67, Cl. 322—28.

Porath, Phillip R., and M. H. Pettibone, to Utah Construction & Mining Co. Method of preparing manganese sulfate from pyrite reduced manganese dioxide ores. 3,348,912, 10–24–67, Cl. 23—117.

Porter, Roy L. Aircraft guidance system. 3,348,792, 10–24–67, Cl. 244—80.

Post, Hermann, and F.-W. Weigel, to Continental Gummi-Werke Aktiengesellschaft. Method of making industrial belts with strength wire members therein and apparatus for straightening and tensioning such strength wire members. 3,348,585, 10–24–67, Cl. 140—147.

Postolowski, John. Indexing apparatus. 3,348,431, 10–24–67, Cl. 74—822.

Potasse et Engrais Chimiques: *See*—
Quanquin, Bernard, and Trimbach. 3,348,914.

Potter, Harold R. Automatic electric drive system. 3,348,623, 10–24–67, Cl. 180—65.

Potter Instrument Co., Inc.: *See*—
Pandolfi, Richard A. 3,348,479.

Potts, James E., to Union Carbide Corp. Controllable degradation of α-olefin polymers using irradiation. 3,349,018, 10–24–67, Cl. 204—159.2.

Poupitch, Ouglijesa J., to Illinois Tool Works Inc. Container carrier and package. 3,348,674, 10–24–67, Cl. 206—65.

Powell, Richard G., and G. D. Moran, to ACF Industries, Inc. Shock absorber. 3,348,703, 10–24–67, Cl. 213—8.

Power Jets (Research and Development) Ltd.: *See*—
Flint, John A., and George. 3,348,618.

Powerfile: *See*—
Brautovich, John J. 3,348,661.

Powers, Richard E., to Powers Wire Products Co., Inc. Body unit comprising a stick of severable fasteners. 3,348,669, 10–24–67, Cl. 206—56.

Powers Wire Products Co., Inc.: *See*—
Powers, Richard E. 3,348,669.

Pradon, Jacques. Arrangements for the stocking of bulk products with a collapsible tripper. 3,348,662, 10–24–67, Cl. 198—186.

Prevallet, David N.: *See*—
Stephens, William T., and Prevallet. 3,348,491.

Price, Robert E.: *See*—
Bahls, Gene C., McNutt, Price, Zidell, and Dick. 3,348,673.

Price, William H., to Eastman Kodak Co. Zoom objective. 3,348,899, 10–24–67, Cl. 350—184.

Prieur, Hubertus, to The McKay Machine Co. Methods of and apparatus for forming tubular members. 3,348,399, 10–24–67, Cl. 72—97.

Produits Chimiques Pechiney-Saint-Gobain: *See*—
Renault, Daniel A. M. H. 3,349,039.

Propper Mfg. Co., Inc.: *See*—
Speelman, Irving A. 3,348,627.

Proximity Controls, Inc.: *See*—
Wolford, Byron F. 3,349,203.

Pruckmayr, Gerfried, to E. I. du Pont de Nemours and Co. Amide-ester isomers. 3,349,061, 10–24–67, Cl. 260—47.

Przybyla, Franciszek: *See*—
Kelly, Francis J., and Przybyla. 3,348,976.

Ptak, Edward J., K. E. Bellis, and G. S. Marks, to The National Acme Co. Molding machine transfer mechanism. 3,348,606, 10–24–67, Cl. 164—219.

Pullman Inc.: *See*—
Hsu, Henry, and Jaeschke. 3,349,126.

Purcell, Robert F.: *See*—
Cockerham, Lloyd E., and Purcell. 3,348,958.

Purdy, George W. Combination land leveler. 3,348,323, 10–24–67, Cl. 37—180.

Purdue Research Foundation: *See*—
Albright, Lyle F., and Haug. 3,348,909.

Puschel, Walter: *See*—
Mader, Helmut, Ulrich, Puschel, and von Konig. 3,348,945.

Quanquin, Bernard, and H. Trimbach, to Potasse et Engrais Chemiques. Process for recovering oxides of nitrogen. 3,348,914, 10–24–67, Cl. 23—161.

Quirk, Robert F.: *See*—
Ropp, Richard C., and Quirk. 3,348,961.

Radio Corp. of America: *See*—
Currie, Harold B. 3,349,372.
Ramsey, Paul W., to Harnischfegea Corp. Welding method with controlled rectifier welding power source. 3,349,219, 10–24–67, Cl. 219—131.
Randora Custom Craft: *See*—
Maynard, George R. 3,349,138.
Ransburg Electro-Coating Corp.: *See*—
Drum, Edward W. 3,348,965.
Ranum, Rolf I.: *See*—
Bose, Robert N., Tibbits, and Ranum. 3,348,922.
Rapp, Reinhold, to Dynamit Nobel A.G. Plastic-lead mushrooming bullet. 3,348,486, 10–24–67, Cl. 102—92.38.
Rapson, Bryan, to Aluminum Laboratories Ltd. Apparatus for passing electric current through liquids. 3,349,160, 10–24–67, Cl. 13—23.
Rasel, Ewald: *See*—
Hinshen, Hermann, Trzeciak, and Rasel. 3,348,760.
Ratz, Rudi F. W., and P. M. Pivawer, to Olin Mathieson Chemical Corp. Aromatic sulfonyl bis-ureas and process of preparation. 3,349,125, 10–24–67, Cl. 260—553.
Rau, Blase C.: *See*—
Jasper, John C., and Rau. 3,348,727.
Rausing, Anders R., and R. L. Ignell, to Tetra Pak Rausing & Co. KG. Closure means. 3,348,719, 10–24–67, Cl. 215—17.
Rayner, Graham H.: *See*—
Bromby, Norman G., Rayner, and Wootton. 3,349,094.
Raytheon Co.: *See*—
Ruse, Mason W., Jr. 3,349,278.
Warschauer, Douglas M. 3,349,174.
Wisotsky, Serge S. 3,349,367.
Reagents, Dade, Inc.: *See*—
Ferro, Patrick V., and Ham. 3,348,920.
Realistic Co., The: *See*—
Reiss, Carroll R., and Forbriger. 3,348,316.
Reed, Robert G., to North American Aviation, Inc. Flexible radiation attenuator. 3,349,396, 10–24–67, Cl. 343—18.
Reekstin, John P., Jr., to Bell Telephone Laboratories, Inc. Memory element with a magnetically isotropic iron-nickel-copper alloy. 3,348,931, 10–24–67, Cl. 29—183.5.
Rees, John A. J., to Rolls-Royce Ltd. Power plant for vtol or stol aircraft having means to augment jet thrust when the same is directed vertically. 3,348,380, 10–24–67, Cl. 60—229.
Rees, Willis M., and R. F. Shannon, to Owens-Corning Fiberglas Corp. High temperature fibrous board. 3,348,994, 10–24–67, Cl. 161—170.
Reeves Bros., Inc.: *See*—
Mater, Charles E., West, and Brigham. 3,348,651.
Regents of the University of California, The: *See*—
Gates, Lauren W., and Jones. 3,348,647.
Rehder, Robert H., and N. Swerdlow, to General Electric Co. Non-segregated metal clad bus duct with insulating frames and for supporting bus bars. 3,349,168, 10–24–67, Cl. 174—99.
Reid, Watney Combe & Co., Ltd.: *See*—
Turner, Eric C. 3,348,565.
Reinmuth, Gene K.: *See*—
Clay, Harris A., and Reinmuth. 3,349,147.
Reisberg, Joseph, to Shell Oil Co. Surfactants for oil recovery by waterfloods. 3,348,611, 10–24–67, Cl. 166—9.
Reiser, Richard D.: *See*—
Brothman, Abraham, Horowitz, Reiser, and Horowitz. 3,349,371.
Reiss, Carroll R., and A. W. Forbriger, to The Realistic Co. Dryer hood. 3,348,316, 10–24–67, Cl. 34—99.
Reistad, Bengt R., to Aktiebolaget Electrolux. Method of making coil for absorption refrigeration apparatus. 3,348,402, 10–24–67, Cl. 72—217.
Re Lo Mfg. Co.: *See*—
Sorg, Harry H., Jr. 3,348,483.
Renault, Daniel A. M. H., to Produits Chimiques Pechiney-Saint-Gobain. Cleaning composition. 3,349,039, 10–24–67, Cl. 252—172.
Renner, Elmer J., to Stephens-Adamson Mfg. Co. Natural frequency vibrating feeder. 3,348,664, 10–24–67, Cl. 198—220.
Renner, Otfried: *See*—
Winkler, Alfred, Engelsmann, Landbrecht, and Renner. 3,348,461.
Renz, Jany, J.-P. Bourquin, H. Winkler, P. Gagnaux, S. Guldimann, L. Ruesch, and G. Schwarb, to Sandoz Ltd. (also known as Sandoz A.G.). Thieno-benzothiazine derivatives. 3,349,087, 10–24–67, Cl. 260—243.
Reveley, William G., to Chesebrough-Pond's, Inc. Method for sterilization of an ointment impregnated gauze. 3,348,905, 10–24–67, Cl. 21—56.
Reynolds, Aaron G. and E. R., to Reynolds Research & Mfg. Corp. Rotary tiller. 3,348,619, 10–24–67, Cl. 172—66.
Reynolds, Eugene R.: *See*—
Reynolds, Aaron G. and E. R. 3,348,619.
Reynolds Research & Mfg. Corp.: *See*—
Reynolds, Aaron G. and E. R. 3,348,619.
Reynolds, Schuyler. Spinning toy having an extensible skirt. 3,348,334, 10–24–67, Cl. 46—119.
Rheem Mfg. Co.: *See*—
Tipper, Maynard J. G. 3,348,458.
Rhodes, Wallace F.: *See*—
Momchilovich, Milan, and Rhodes. 3,348,598.
Rhone-Poulenc S.A.: *See*—
Brossard, Bernard P., and Boichard. 3,349,132.
Rice, Harold B., and H. R. Swenson, to John Burton Machine Corp. Method and apparatus for emptying liquid containers. 3,348,734, 10–24–67, Cl. 222—1.
Rice, Harold D., and S. L. Leach, to PID Corp. Apparatus for making pictorial parallax panoramagran units. 3,348,264, 10–24–67, Cl. 18—10.
Richards, Glenn L., to Stromberg-Carlson Corp. Transmission of supervisory signals in a time division multiplex system. 3,349,190, 10–24–67, Cl. 179—18.
Richardson, William D., to Tuthell Pump Co. Bung arrangement for beer barrels. 3,348,730, 10–24–67, Cl. 217—108.
Richmond, Kenneth D., to Dayco Corp. Transmission belt and method of manufacture. 3,348,422, 10–24–67, Cl. 74—233.
Richter, Johan C. F. C., to Aktiebolaget Kamyr. Cellulosic material process vessel liquid distribution device. 3,348,390, 10–24–67, Cl. 68—181.
Ringel, Stanley M.: *See*—
Murdock, Henry T., and Ringel. 3,349,265.
Rinker, William F., to The B. F. Goodrich Co. Hose coupling. 3,348,863, 10–24–67, Cl. 285—233.
Rise, Donald J.: *See*—
Brown, Gaylord W., and Rise. 3,348,266.
Ritchey, Jack L.: *See*—
Brownlee, Winston E., and Ritchey. 3,348,476.
Rittenbach, Otto E. Frequency step filter. 3,349,350, 10–24–67, Cl. 334—47.
Robert, Jean: *See*—
Carre, Roland, and Robert. 3,349,395.
Roberts, Douglas, to Witco Chemical Co. Ltd. Process for manufacturing impregnated cellular materials. 3,348,989, 10–24–67, Cl. 156—285.
Roberts, Ralph R., and B. Schwartz. Intermixing syringe. 3,348,546, 10–24–67, Cl. 128—218.
Roberts, William J., to Eltra Corp. Spark generating circuit having a voltage doubler and solid state control components. 3,349,284, 10–24–67, Cl. 315—223.
Robertshaw Controls Co.: *See*—
Crafts, Cecil A. 3,349,329.
Robertson, Charles A., and F. H. Small, to Crouse-Hinds Co. Encapsulated light source. 3,349,232, 10–24–67, Cl. 240—1.2.
Robertson, William J.: *See*—
Copeland, John R., and Robertson. 3,349,404.
Robinson, Charles C., to Ives (Engineers) Ltd. Hand brace for wheel nuts having an angularly adjustable U-crank arm. 3,348,436, 10–24–67, Cl. 81—177.9.
Robinson, James: *See*—
Fuller, Donald B., and Robinson. 3,348,725.
Rockwell Mfg. Co.: *See*—
Kieffer, Joseph D., III. 3,348,432.
Rockwell-Standard Corp.: *See*—
Gage, Arthur F. 3,348,641.
Thompson, Robert R., and Cumming. 3,348,640.
Rocton, Lucien, to CIT-Compagnie Industrielle des Telecommunications. Transition connector of a submarine cable. 3,349,163, 10–24–67, Cl. 174—70.
Rodrigues, Emil, to Jacoby-Bender, Inc. Bracelet linkage with detachable link assemblies. 3,348,372, 10–24–67, Cl. 59—79.
Roe, Jonathan U., to International Business Machines Corp. Record card verifying machine. 3,348,411, 10–24–67, Cl. 73—156.
Rogers Corp.: *See*—
Abell, Jerrold J., and Berry. 3,348,991.
Abell, Jerrold J., and Virkus. 3,349,046.
Rogers, Walter C., Jr., to Royal Development Co., Inc. Skirt lifter for chair with footrest. 3,348,878, 10–24–67, Cl. 297—68.
Rohner, Thomas G., to Electric Machinery Mfg. Co. Frequency sensitive device. 3,349,256, 10–24–67, Cl. 307—88.5.
Rolnerstad, Gerald C., to Ashworth Bros., Inc. Conveyor system. 3,348,659, 10–24–67, Cl. 198—136.
Roland, Max, W. J. Stratton, and A. W. Stratton, Jr., to W. J. Stratton. End closure of film packages. 3,348,360, 10–24–67, Cl. 53—138.
Rollin, Libby. Convertible two-wheeled carrier. 3,348,857, 10–24–67, Cl. 280—36.
Rolls-Royce Ltd.: *See*—
Rees, John A. J. 3,348,380.
Wilde, Geoffrey L., and Coplin. 3,348,379.
Romerhaus, Bert W., to Whirlpool Corp. Pressure equalizing means for compressors and the like. 3,348,764, 10–24–67, Cl. 230—22.
Rooney, Clarence S., to Merck & Co., Inc. Method of producing 1-hydroxyalkyl-2-aryl-5-nitroimidazoles, intermediates used therein, and products produced thereby. 3,349,096, 10–24–67, Cl. 260—299.
Ropp, Richard C., and R. F. Quirk, to Sylvania Electric Products, Inc. Process for the fabrication of improved fluorescent lamps. 3,348,961, 10–24–67, Cl. 117—33.5.
Roquerre, Don D. Motor idling speed control proportioning valve. 3,348,828, 10–24–67, Cl. 261—41.
Rosaen, Borje O., to The Rosaen Filter Co. Filter material. 3,348,695, 10–24–67, Cl. 210—489.
Rosaen Filter Co., The: *See*—
Rosaen, Borje O. 3,348,695.
Rosario Cartagena, Victor. Metal window frame. 3,348,353, 10–24–67, Cl. 52—658.
Rose, Floyd R. Outdoor sporting equipment including a wheel mounted boat assembly. 3,348,858, 10–24–67, Cl. 280—43.2.
Rosemount Engineering Co.: *See*—
Knutson, Robert C. 3,348,299.
Rosenthal, Joseph R., to North American Aviation, Inc. Flexible radiation attenuator. 3,349,397, 10–24–67, Cl. 343—18.
Rossnan, Michael. Apparatus for jacking motor vehicles. 3,348,807, 10–24–67, Cl. 254—94.
Rosso, Charles. Hinged lid box. 3,348,724, 10–24–67, Cl. 220—31.
Roussel-UCLAF: *See*—
Bucourt, Robert, Pierdet, Costerousse, Joly, Warnant, and Goffinet. 3,349,130.
Rowley, Martin E.: *See*—
Hiatt, Gordon D., and Rowley. 3,349,080.
Roy, Robert E., to Colt's, Inc. Adjustable buttstock assembly. 3,348,328, 10–24–67, Cl. 42—73.

Royal Development Co., Inc.: *See*—
Rogers, Walter C., Jr. 3,348,878.
Royal Typewriter Co., Inc.: *See*—
Frechette, Kenneth R. 3,348,648.
Ruegg, Rudolf: *See*—
Gloor, Urs, Goel, Langemann, and Ruegg. 3,349,118.
Ruehlen, Forrest N., to Phillips Petroleum Co. Separation of hydrocarbons by distilling with a fluorocarbon. 3,349,009, 10–24–67, Cl. 203—67.
Ruesch, Leo: *See*—
Renz, Jany, Bourquin, Winkler, Gagnaux, Guldimann, and Ruesch. 3,349,087.
Rush, Elton E., to Phillips Petroleum Co. Filter bag and method of making same. 3,348,367, 10–24–67, Cl. 55—381.
Russell, Kenneth F., to Brogdex Co. Grommet means for sizing apparatuses. 3,348,679, 10–24–67, Cl. 209—84.
Rut, Tadeusz, to Centralne Laboratorium Obrobki Plastycznej. Device and particularly forging apparatus for simultaneous upsetting and bending of material like bars, rods or ingots. 3,348,407, 10–24–67, Cl. 72—450.
Ryon, John L., Jr.: *See*—
Jacoby, Charles H., and Ryon. 3,348,683.
S.A.R.T. Stampaggio Articoli Resine Termoplastiche: *See*—
Germani, Luciano. 3,348,272.
Sackett, Walter J., Sr. Apparatus for reducing size of materials. 3,348,781, 10–24–67, Cl. 241—264.
Saint-Joanis, Andre: *See*—
Chabrier, Henri-Pierre, and Saint-Joanis. 3,348,772.
Sakharnov, Vasily A.: *See*—
Paton, Boris E., Sakharnov, Lebedev, and Kuchuk-Jatsenko. 3,349,216.
Salem, Alexander N., to Mobil Oil Corp. Coating composition. 3,349,050, 10–24–67, Cl. 260—22.
Sambucetti, Carlos J.: *See*—
Hersch, Paul A., and Sambucetti. 3,349,011.
Sanctuary, Robert E., to Worcester Valve Co., Inc. Ball valve. 3,348,805, 10–24–67, Cl. 251—315.
Sandoz Ltd.: *See*—
Renz, Jany, Bourquin, Winkler, Gagnaux, Guldimann, Ruesch, and Schwarb. 3,349,087.
Sangamo Electric Co.: *See*—
Brothman, Abraham, Horowitz, Reiser, and Horowitz. 3,349,371.
Sarnoff, Stanley J., and J. W. Balenger, said Balenger assor. to said Sarnoff. Latched cartridge. 3,348,545, 10–24–67, Cl. 128—218.
Sauer, Charles W., to United States of America, Army. Process of preparing plastic coated high explosives particles and articles. 3,348,986, 10–24–67, Cl. 149—11.
Sauerland, Franz L., to Clevite Corp. Electric wave filter. 3,349,347, 10–24–67, Cl. 333—72.
Saunders, Henry A., to Persons-Majestic Mfg. Co. Unicycle stand construction. 3,348,697, 10–24–67, Cl. 211—22.
Saunders, Walter S. Means for reducing lateral wind resistance and consequent body away and yaw in vehicles. 3,348,873, 10–24–67, Cl. 296—1.
Savage, Elton S., to Door-Oliver Inc. Process and apparatus for the clarification treatment of solids-carrying liquids. 3,349,030, 10–24–67, Cl. 210—46.
Sawle, David R., to MB Associates. Miniature rocket defense system. 3,348,452, 10–24–67, Cl. 89—1.807.
Scales, Michael J. Pipe joint and seal. 3,348,850, 10–24–67, Cl. 277—101.
Scarrott, Gordon G.: *See*—
Naylor, Ronald, and Scarrott. 3,349,382.
Schaeffler, Georg, and R. Jahn, to Industriewerk Schaeffler. Sealed needle bearing. 3,348,889, 10–24–67, Cl. 308—187.2.
Schafft, Hugo W., to Motorola, Inc. Electronic circuit. 3,349,279. 10–24–67, Cl. 315—27.
Schalkowsky, Samuel. Sun referenced orienting devices. 3,348,374. 10–24–67. Cl. 60—26.
Schaverien, Edward M. Actuating mechanism for water taps. 3,348,424. 10–24–67. Cl. 74—424.6.
Scheidecker, Abel, to Etablissements L. Faiveley. Pantograph-type current collector. 3,349,197, 10–24–67, Cl. 191—67.
Schering Aktiengesellschaft: *See*—
Pawlenko, Stephan. 3,349,107.
Schilling, Charles G., to United States Steel Corp. Machine base. 3,348,795. 10–24–67. Cl. 248—19.
Shimabukuro, George T.: *See*—
Tanguay, Armand R., and Shimabukuro. 3,348,288.
Shimazono, Hirao: *See*—
Hori, Shiro, and Shimazono. 3,348,952.
Schleitser, Gerhard: *See*—
Gumboldt, Albert, Junghanns, Schleitser, and Stemmer. 3,349,064.
Schleuther, Larry E., Jr.: *See*—
Heim, William J., Schleuther, and Kuhn. 3,348,346.
Schlichting, Hans L.: *See*—
Weil, Edward D., and Schlichting. 3,349,115.
Schlichting, Hans: *See*—
Weil, Edward D., and Schlichting. 3,349,116.
Schlirf, John W., to Carrier Corp. Mechanical overspeed trip for rotating machinery. 3,348,420, 10–24–67, Cl. 73—538.
Schloemann Aktiengesellschaft: *See*—
Boos, Hermann, and Bollig. 3,348,704.
Schlumberger Technology Corp.: *See*—
Schuster, Nick A. 3,348,621.
Schmachtenberger, Maximilian J.: *See*—
Heinimann, Karl, Kassner, and Schmachtenberger. 3,349,294.
Schmid, Bruce K.: *See*—
Henke, Alfred M., Schmid, and Strom. 3,349,025.
Schmidt-sche Heissdampf-Gesellschaft m.b.H.: *See*—
Vollhardt, Fromut. 3,348,610.
Schmieder, Theodor, to Eisenwerk Weserhutte A.G. Supporting structure for movable belt conveyors. 3,348,663, 10–24–67. Cl. 198—192.
Schmitt, Helmut, to P. Goossen & Co., G.m.b.H. Electronically controlled aperture and shutter arrangements for use with camera. 3,348,460, 10–24–67, Cl. 95—10.
Schmitt, Richard G., and R. K. Brehm, to Jarrell-Ash Co. Double beam vacuum ultra-violet spectrophotometer using a toroidal mirror oscillating about the center of curvature. 3,349,241, 10–24–67, Cl. 250—43.5.
Shmurak, Benjamin: *See*—
Dubin, Lester, Paulson, and Shmurak. 3,348,609.
Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft: *See*—
Bolza-Schunemann, Hans-Bernhard. 3,348,837.
Schoenberger, Eva: *See*—
Haber, Raphael R. G., and Schoenberger. 3,349,095.
Schoniger, Kenneth R., to Trak Microwave Corp. Broad band solid state oscillator. 3,349,341, 10–24–67, Cl. 331—117.
Schreiber, Joseph. Master-keying system. 3,348,892, 10–24–67, Cl. 70—358.
Schuessler, Francis J.: *See*—
Jepson, Ivar, Schuessler, Jackson, and Jensen. 3,349,263.
Schuhmaschiner-Gesellschaft Hanke & Co. m.b.H.: *See*—
Allgayer, August. 3,348,250.
Schulte, Paul H. Process for manufacture of magnetic record-playback heads. 3,348,301, 10–24–67, Cl. 29—603.
Schulz, Ernst O., to Veb Schaumglaswerk Tanbenbach. Method for making foam glass. 3,348,933, 10–24–67, Cl. 65—22.
Schulze, John J., and J. L. Tregay, to Addressograph-Multigraph Corp. Storage and supply enclosures for photoelectrostatic copy sheets. 3,349,221, 10–24–67, Cl. 219—385.
Schuman, Jack: *See*—
Cascioli, Anthony. 3,348,333.
Schumm, Erich. Towel dispenser. 3,348,891, 10–24–67, Cl. 312—38.
Schuster, Nick A., to Schlumberger Technology Corp. Apparatus for well completion. 3,348,621, 10–24–67, Cl. 175—4.52.
Schwartz, Boris: *See*—
Roberts, Ralph R., and Schwartz. 3,348,546.
Schwarz, Heins W. Article dispensing device. 3,348,732, 10–24–67, Cl. 221—123.
Schwarz, William G., to Honeywell Inc. Illuminating apparatus. 3,349,234, 10–24–67, Cl. 240—2.1.
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Schweiger, Richard G., to Kelco Co. Process of preparing sulfate esters of algin and products obtained thereby. 3,349,078. 10–24–67, Cl. 260—209.6.
Sci-Tech Corp.: *See*—
Pohl, Herbert A. 3,349,302.
Scientism Laboratories: *See*—
Lohstoeter, John E., and Young. 3,348,599.
Scott, George & Son (London) Ltd.: *See*—
Ling, Thomas S., and Maxfield. 3,348,608.
Scott Paper Co.: *See*—
Gess, Jerome M. 3,348,970.
Kasinkas, Edward M. 3,348,762.
Searle, G. D., & Co.: *See*—
Chinn, Leland J. 3,349,091.
Sedgwick, Robert K., to Kearney & Trecker Corp. Mechanical tool changer for a machine tool. 3,348,298, 10–24–67, Cl. 29—568.
Seeber, Robert R., and A. B. Lindquist, to International Business Machines Corp. Associative logic for highly parallel computer and data processing systems. 3,349,375, 10–24–67, Cl. 340—172.5.
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Seemann, Winston, to Medallion Industries, Inc. Fishing tackle box. 3,348,329, 10–24–67, Cl. 43—26.
Segessemann, Ernest, to Atlas Refinery, Inc. Process for the production of alkane sulfonates. 3,349,122, 10–24–67, Cl. 260—513.
Segur, Asa B. Method for removing meat from poultry legs. 3,348,261, 10–24–67, Cl. 17—45.
Selwert, Joseph J., and J. B. Boylan, to Emery Industries, Inc. Urethane coatings from hydroxyl terminated polyesters prepared from dimer acids. 3,349,049, 10–24–67, Cl. 260—22.
Selwits, Charles M., and E. R. Tucci, to Gulf Research & Development Co. Condensation and oxidation of alkyl-aromatic compounds with tetravalent cerium compounds as promoters. 3,349,117, 10–24–67, Cl. 260—488.
Sensi, Piero: *See*—
Maggi, Nicola, and Sensi. 3,349,082.
Settlemire, Eugene F. Rolling sales dispensing unit and multiple cash drawer for gasoline stations. 3,348,895, 10–24–67, Cl. 312—212.
Shaeffer, Robert J., to Teleflex Inc. Remote control assembly. 3,348,428, 10–24–67, Cl. 74—502.
Shaffer, Harold R.: *See*—
Hartwell, Walter T., Klahn, and Shaffer. 3,349,230.
Stahly, Daniel C.: *See*—
Beck, William P., and Stahly. 3,348,307.
Shank, James A.: *See*—
Helms, John D., and Shank. 3,349,217.
Shannon, Richard F.: *See*—
Rees, Willis M., and Shannon. 3,348,994.
Shaper, Harry B., to Dyna-Empire, Inc. Magnetic phonograph pickup-ntilizing off center mounting of armature. 3,349,194, 10–24–67, Cl. 179—100.41.
Shaw, Robert P., to Macrosonic Process Corp. Method and means for producing physical, chemical and physico-chemical effects by large-amplitude sound waves. 3,348,814, 10–24–67, Cl. 259—1.

Sheard, Dennis R.: *See*—
Hulbert, Duncan R., Sheard, and Brown. 3,348,963.

Sheard, Eric A., to Thiokol Chemical Corp. Curable liquid polysulfide resin stably admixed with calcium peroxide. 3,349,047, 10–24–67, Cl. 260—18.

Shell Oil Co.: *See*—
Boyce, Clive B. C. 3,349,102.
Bush, Warren V. 3,349,148.
Cornelissen, Jan. 3,348,600.
Kohll, Charles F., and Jonkhoff. 3,349,118.
Reisberg, Joseph. 3,348,611.
Spitser, Ernat L. Th. M. 3,349,044.
Thayer, David S. 3,349,070.

Sheps, Martin I., to The Black and Decker Mfg. Co. Combination tolerance ring and bearing journal member. 3,348,887, 10–24–67, Cl. 308—26.

Sherman, H. B., Mfg. Co.: *See*—
Turner, George L., and Harris. 3,348,292.

Sherrington, Peter J., P. Waterhouse, and D. J. H. Jones, to Imperial Chemical Industries Ltd. Process for producing granular mixed fertilizer. 3,348,938, 10–24–67, Cl. 71—28.

Shimazono, Hirao: *See*—
Hori, Shiro, and Shimazono. 3,348,952.

Shindler, Harry A. Carriers particularly for victims of high energy radiation. 3,348,245, 10–24–67, Cl. 5—82.

Shinohara, Takeo, to Nippon Electric Co. Ltd. Electromagnetic latching device. 3,349,356, 10–24–67, Cl. 335—254.

Shipp, Peter J., to The British Iron and Steel Research Association. Rolling. 3,348,393, 10–24–67, Cl. 72—8.

Shockley, William, and R. H. Haitz, to International Telephone and Telegraph Corp. Noise diodes. 3,349,298, 10–24–67, Cl. 317—234.

Shoe, Theodore W., to The Flexicore Co., Inc. Stripping system for concrete slab casting form. 3,348,279, 10–24–67, Cl. 25—120.

Short Bros. & Harland Ltd.: *See*—
Lasbrey, Ian K. B. 3,348,359.

Shumway, Durland K., to Colgate-Palmolive Co. Process for producing hydrogen from finely divided metals and water at ambient temperatures. 3,348,919, 10–24–67, Cl. 23—211.

Sicard, Fernand, to Commissariat a l'Energie Atomique. Display panel having selectively lighted areas for representing a figure from zero to nine. 3,349,387, 10–24–67, Cl. 340—336.

Sicho Instruments Inc.: *See*—
Sicho, Roman A. 3,349,236.

Sicho, Roman A., to Sicho Instruments Inc. Lamp assembly. 3,349,236, 10–24–67, Cl. 240—2.18.

Siegel, Rudolf: *See*—
Pellens, Ludwig, Honig, and Siegel. 3,348,907.

Siegfried Aktiengesellschaft: *See*—
Molnar, Istvan, Wagner-Jauregg, Jahn, and Mixich. 3,349,088.

Siemens Aktiengesellschaft: *See*—
Lohs, Willy, Thom, Neuber, and Heiss. 3,349,288.

Siemens & Halske Aktiengesellschaft, Berlin and Munich: *See*—
Pammer, Erich. 3,348,984.

Siemens-Schuckertwerke Aktiengesellschaft: *See*—
Herlet, Adolf. 3,349,299.
Janner, Karl. 3,349,243.
Mugele, Knrt. 3,348,766.
Patalong, Hubert. 3,349,296.
Poppinger, Herbert. 3,349,318.
Stark, Gustav, and Otto. 3,348,987.

Sievert Electric Co.: *See*—
Wennerstrom, Carl G., and Sievert. 3,348,702.

Sievert, Paul M.: *See*—
Wennerstrom, Carl G., and Sievert. 3,348,702.

Sigg, Hans, to Maag Gear Wheel & Machine Co., Ltd. Dog clutch. 3,348,645, 10–24–67, Cl. 192—67.

Sigmatex A.G.: *See*—
Weman, Per O. 3,348,274.
Weman, Per O. 3,348,881.

Signode Corp.: *See*—
Beach, John R. 3,348,584.

Silberg, Hemming G., to Wagner Electric Corp. Signal lamp for dual intensity circuits and the like. 3,349,280, 10–24–67, Cl. 315—77.

Sillars, Frederick S. Method of and apparatus for manufacturing tubular bodies. 3,348,510, 10–24–67, Cl. 113—7.

Simak, Frank J., to International Harvester Co. Hydraulically actuatable fluid coupling. 3,348,575, 10–24–67, Cl. 137—614.05.

Simanavicius, Kestutis, to International Business Machines Corp. Detection system for binary data. 3,349,389, 10–24–67, Cl. 340—347.

Simmonds Precision Products, Inc.: *See*—
Bell, Charles C. 3,349,301.

Simmons, Christopher. Powder application. 3,348,527, 10–24–67, Cl. 118—429.

Simonoff, Natalie, to Esther Lustig. Reversible wrap around garment. 3,348,237, 10–24–67, Cl. 2—74.

Simons, Charles W., and I. J. Arons, to W. R. Grace & Co. Preparation of blister-free elastomeric films and coatings. 3,348,966, 10–24–67, Cl. 117—95.

Sinclair, James A., and R. A. Fair, to Mobil Oil Corp. Hydrate prevention in gas production. 3,348,614, 10–24–67, Cl. 166—45.

Sissons, Christopher R., to British Nylon Spinners Ltd. Fabrics. 3,348,993, 10–24–67, Cl. 161—67.

Skljadnov, Viktor M.: *See*—
Jankovsky, Ivan, Pavlovich, Kholodinsky, and Skljadnov. 3,348,278.

Slick Industrial Co.: *See*—
Gallagher, John E., Crider, and McCulloch. 3,348,604.

Small, Frederick B.: *See*—
Robertson, Charles A., and Small. 3,349,232.

Smart, William D.: *See*—
Woroch, Eugene L., and Smart. 3,348,999.

Smierciak, Walter, to Wilton Corp. Clamping means having hydraulic power assisting devices. 3,348,836, 10–24–67, Cl. 269—25.

Smiley, Eldridge H.: *See*—
Storm, Frederick K., Jr., and Smiley. 3,348,254.

Smith, Donald D. Earth working and planting apparatus. 3,348,505, 10–24–67, Cl. 111—73.

Smith, Dudley C.: *See*—
Hinson, Arthur L., and Smith. 3,348,934.

Smith, Lawrence R.: *See*—
Gabrielson, Reidar G. 3,349,374.

Smith, Leland Bryan, to Beckman Instruments, Inc. Crystal controlled oscillator with reduced power supply noise sensitivity. 3,349,340, 10–24–67, Cl. 331—116.

Smith, Paul F.: *See*—
Perry, Kenneth E., and Smith. 3,349,406.

Smith, Russell G., to Continental Mfg. Co. Strainer valve plug and valve. 3,348,694, 10–24–67, Cl. 210—390.

Smith, T. J., and Nephew Ltd.: *See*—
Drain, David J., Howes, and Williams. 3,349,135.

Smith, William M., and H. F. Beers, Jr., to The Warner & Swasey Co. Shearproof metal punch. 3,348,443, 10–24–67, Cl. 83—686.

Smithcraft Corp.: *See*—
Kruger, Michael H. 3,349,288.
Kruger, Michael H. 3,348,465.

Snelgrove, Lawrence S. Overlapping tab index. 3,348,325, 10–24–67, Cl. 40—104.

Snyder Manufacturing Co.: *See*—
Trexler, Philip C. 3,348,890.

Sobyro, Michael J. and Anna M.: *See*—
Blake, Frederick H. 3,349,334.

Sochting, Herbert, and E. Vock, to Hoerbiger Ventilwerke Aktiengesellschaft. Device for the automatic draining of liquids from compressed-gas systems. 3,348,564, 10–24–67, Cl. 137—193.

Societe Anonyme des Ateliers de Secheron Geneva: *See*—
Wagenleitner, Alois, Montjovent, and Liebisch. 3,349,215.

Societe Anonyme des Etablissements Leon Hatot: *See*—
Dietsch, Jacques J. G. 3,349,305.

Societe Auxitra: *See*—
Fauchere, Jean. 3,348,709.

Societe de Mecanographie Japy: *See*—
Meinhers, Joachim, and Waldenburger. 3,348,650.

Societe d'Outillage pour Frappe a Chaud SA: *See*—
Vuilleumier, Claude. 3,349,214.

Societe Les piles Wonder: *See*—
Paillet, Robert. 3,348,977.

Societe Meusienne de Constructions Mecaniques: *See*—
Giros, Marcel A. 3,348,394.

Societe Nationale d'Etude et de Construction de Moteurs d'Aviation: *See*—
Garnier, Michel R. 3,349,248.

Solomon, Nathan L. Tubular hair curler with means for enclosing a coil spring. 3,348,554, 10–24–67, Cl. 132—39.

Solomon, William: *See*—
Pollak, Edward C., Harmon, and Solomon. 3,348,868.

Solomons, Cyril, to Honeywell Inc. Potentiometric sensor with presaturator. 3,349,012, 10–24–67, Cl. 204—1.

Somers, Allen E.: *See*—
Carr, Norman L., Horne, Offutt, and Somers. 3,349,027.

Sony Corp.: *See*—
Amatsu, Hideo, and Esashi. 3,348,668.

Sorg, Harry H., Jr., to Re Lo Mfg. Co. Can for explosive charge. 3,348,483, 10–24–67, Cl. 10—24.

Sosin, Boleslaw M., to The Marconi Co. Ltd. Frequency synthesizers, including provisions for the precise electrical control of a variable oscillator. 3,349,338, 10–24–67, Cl. 331—18.

Soubis, Jean-Pierre, to L'Institut Francais du Petrole, Des Carburats et lubrifiants. Automatic arrangement for a carburetor. 3,348,824, 10–24–67, Cl. 261—41.

Sowder, Tony R. Tram carrier sway indicator and control. 3,348,499. 10–24–67, Cl. 104—178.

Spalding, Dudley B. Pressure exchangers. 3,348,765, 10–24–67, Cl. 230—69.

Sparkes, Julian G., to Industrial Electronic Rubber Co. Electrolytic capacitor with tubular anode around cathode. 3,349,295, 10–24–67, Cl. 317—230.

Speelman, Irving A., to Propper Mfg. Co., Inc. Binaural tube supporting structure for stethoscopes. 3,348,627, 10–24–67, Cl. 181—24.

Spencer, Kenneth E. V., to American Home Products Corp. 2,4,6-trichloro-phenoxyacetyl N-methyl amphetamine and products containing same. 3,348,998, 10–24–67, Cl. 167—65.

Sperry Rand Corp.: *See*—
Anstee, Leon L. 3,348,707.
Busch, Richard E. 3,348,768.
Busch, Richard E. 3,348,769.
Hurlburt, Joseph C., and Hale. 3,348,373.
Zimmerman, Julius, and Pisan. 3,348,990.

Spieker, Bernard: *See*—
Fischer, Israel L., Lee, Meloro, and Spieker. 3,349,246.

Spillers Ltd.: *See*—
Evans, Cyril H. 3,348,951.

Spitzer, Carroll F. Filter unit and vacuum attachment therefor. 3,348,686, 10–24–67, Cl. 210—169.

Spitzer, Ernest L. Th. M., to Shell Oil Co. Process for polymerization of vic-epoxy compounds with aluminum hydrocarbyl-salicylic acid catalysts. 3,349,044, 10–24–67, Cl. 260—2.

Spofa Sdruzeni podniku pro zdravotnickou vyrobu: *See*—
Culik, Karel, Dasek, Palkoska, and Pelzbauer. 3,349,127.

Sporck, Claus L., to The Lodge & Shipley Co. Methods and equipment for the widening of stack. 3,348,401, 10–24–67, Cl. 72—178.

Sprengers, Leo M., and H. Castelijns, to Automatic Electric Laboratories, Inc. Analog to digital converter arrangement. 3,349,388, 10–24–67, Cl. 340—347.

Springer, Edward M., to Heyer, Inc. Sheet feeding mechanism. 3,348,838, 10–24–67, Cl. 271—24.

Spritztechnik G.m.b.H.: *See*—
Grothoff, Hans. 3,348,587.

Spurlock, Burwell, and E. M. Blue, to Chevron Research Co. Reforming process employing a deactivated isomerization catalyst. 3,349,026, 10–24–67, Cl. 208—140.

Squibb, E. R., & Sons, Inc.: *See*—
Fried, Josef. 3,349,085.

Staar, Marcel J. H., to Usines Gustave Staar, S.A. Tape senser for dictating machines. 3,349,192, 10–24–67, Cl. 179—100.2.

Stackpole Carbon Co.: *See*—
Cassedy, William F., Jr. 3,349,358.

Stadler, Hans, K. Ballreich, and H. Gawlick, to Dynamit Nobel Aktiengesellschaft. Gas-generating pyrotechnic composition consisting essentially of ammonium nitrate and aminotetrazole. 3,348,995, 10–24–67, Cl. 149—2.

Stafford, Donald C., and R. S. Chamberlin, to Chicago Bridge & Iron Co. Rotatable vessel for heat-generating reactions. 3,348,834, 10–24–67, Cl. 266—36.

Stafford, Thomas P., to Don Baxter Inc. Parenteral liquid administration apparatus. 3,348,543, 10–24–67, Cl. 128—214.

Stahlgruber Otto Gruber & Co.: *See*—
Gottauf, Georg. 3,348,310.

Stamicarbon N.V.: *See*—
Blom, Leendert, and Zwinkels. 3,349,134.
Duynstee, Eduard F. J., Bigot, and Hennekens. 3,349,131.

Stamford Chemical Industries, Inc.: *See*—
Michaels, Edwin B., and Wetmore. 3,349,038.

Standard Oil Co.: *See*—
Weitkamp, Alfred W. 3,349,140.

Stanley, George L. Automatic target stand. 3,348,843, 10–24–67, Cl. 273—105.6.

Stanley, Robert K., to Techniservice Corp. Method for cramping textile strands. 3,348,283, 10–24–67, Cl. 28—72.

Stanton, Richard M., to United States of America, Army. Molten metal proton target assembly. 3,349,001, 10–24–67, Cl. 176—11.

Star Cutter Co.: *See*—
Windsor, Meredith M., and Weber. 3,348,439.

Sta-Rite Industries, Inc.: *See*—
Brane, Earl P. 3,348,574.

Stark, Gustav, and K. Otto, to Siemens-Schuckertwerke Aktiengesellschaft. Method of producing thin layers of galvanomagnetic semiconductor material, particularly Hall generators of $A^{III}B^{V}$ compounds. 3,348,987, 10–24–67, Cl. 156—17.

Stark, Richard A., and D. Barakat, to P. R. Mallory & Co., Inc. Coated ceramic capacitor. 3,348,568, 10–24–67, Cl. 317—258.

Stauffer, Larry R.: *See*—
Paullus, Clarence L., and Stauffer. 3,349,364.

Stearns, Charles F., to United Aircraft Corp. Acceleration force compensator for aircraft prime mover. 3,348,560, 10–24–67, Cl. 137—38.

Stemmer, Hans D.: *See*—
Gumboldt, Albert, Junghanns, Schleitzer, and Stemmer. 3,349,064.

Stems, Lee E.: *See*—
Hefer, Friedrich W., Witt, and Stems. 3,349,407.

Stephens-Adamson Mfg. Co.: *See*—
Renner, Elmer J. 3,348,664.

Stephens, William T., and D. N. Prevallet, to Borg-Warner Corp. Hydraulic pump and pump. 3,348,491, 10–24–67, Cl. 103—87.

Stepp, William L.: *See*—
Nielsen, Erik R., and Stepp. 3,348,926.

Sterling, George B., and C. E. Pawloski, to The Dow Chemical Co. (2-propynyloxy) derivatives of substituted benzophen. 3,349,133, 10–24–67, Cl. 260—591.

Stern, Howard W.: *See*—
Just, Jerome O., and Stern. 3,348,624.

Stern, Philip L. Football kicking apparatus and method. 3,348,842, 10–24–67, Cl. 273—55.

Sternau, Martin M., to W. R. Grace & Co. Method of scaling a container. 3,348,358, 10–24–67, Cl. 53—42.

Stevens, Eric S., and W. E. Kemp, to ACF Industries, Inc. Sliding gate hopper car discharge structure. 3,348,501, 10–24–67, Cl. 105—248.

Stevens, Peter P., Jr., to W. Lander. Bag closure structure. 3,348,595, 10–24–67, Cl. 150—3.

Stewart, Albert: *See*—
Brodmann, George L., and Stewart. 3,348,549.

Stewart, Aubrey P., Jr., to Nodaway Valley Foods, Inc. Process for stabilizing sterilized milk. 3,348,955, 10–24–67, Cl. 99—151.

Stewart, Richard P., to Omstell Industries, Inc. Moldboard wing. 3,348,822, 10–24–67, Cl. 37—156.

Stewart-Warner Corp.: *See*—
Barnes, Eugene F., and Urbanski. 3,349,013.

Stievenart, Emile F., and K. Phleps, to Gevaert-Afga N.V. Photographic copying apparatus stripping mechanism. 3,348,839, 10–24–67, Cl. 271—64.

Stirling, Harold J., and J. G. Taylor, to Associated Electrical Industries Ltd. Incoming junction scanning arrangement in automatic telephone exchange system. 3,349,188, 10–24–67, Cl. 179—18.

Stogryn, Eugene L., P. A. Argabright, and R. J. Leary, to Esso Research and Engineering Co. Difluoramino-butanediol. 3,349,129, 10–24–67, Cl. 260—584.

Stone, David, to National Research Development Corp. Electrical digital computing engines. 3,349,377, 10–24–67, Cl. 340—172.5.

Storm, Frederick K., Jr., and E. H. Smiley, to Emdeko Distributing, Inc. Floor treating machine. 3,348,254, 10–24–67, Cl. 15—49.

Story, Malcolm C. Wire stretcher. 3,348,812, 10–24–67, Cl. 254—161.

Straley, James M., D. J. Wallace, and M. A. Weaver, to Eastman Kodak Co. Methine compounds containing the cyanomethylidene group. 3,349,098, 10–24–67, Cl. 260—326.

Strand, Sanford M., to Cutler-Hammer, Inc. Digital motor speed and position regulator for low speed operation. 3,349,308, 10–24–67, Cl. 318—314.

Stratton, Axel W., Jr.: *See*—
Roland, Max, Stratton, and Stratton. 3,348,860.

Stratton, Wendell J.: *See*—
Roland, Max, Stratton, W. J., and A. W., Jr. 3,348,860.

Strobel, Charles W., to Phillips Petroleum Co. Reducing cold flow of diene polymers. 3,349,071, 10–24–67, Cl. 260—94.7.

Strom, James R.: *See*—
Henke, Alfred M., Schmid, and Strom. 3,349,025.

Stromberg-Carlson Corp.: *See*—
Bartlett, William F. 3,349,379.
Bell, Alexander. 3,349,270.
Hamann, Omer F. 3,349,209.
Johnston, Bevan H. 3,349,222.
Richards, Glenn L. 3,349,190.

Structural Electric Products Corp.: *See*—
Angier, James F., and Cope. 3,349,233.

Stuart, Charles W., Jr. Putting aid for a golf putter. 3,348,845, 10–24–67, Cl. 273—165.

Stubblefield, Thomas A., and V. B. Yaw. Touch latch. 3,348,867, 10–24–67, Cl. 292—122.

Studley, Clarence K., to Ampex Corp. Rotating transducer in a random access system. 3,349,385, 10–24–67, Cl. 340—174.1.

Studtmann, George H., to Borg-Warner Corp. Static inverter system with current sharing by both commutating choke windings during commutating energy recovery. 3,349,315, 10–24–67, Cl. 321—45.

Stumpf, Burton H., to Afico S.A. Lausanne. Shooting jacket. 3,348,746, 10–24–67, Cl. 224—1.

Sturdevant, Ernest W. Adapter unit for copying machines. 3,348,464, 10–24–67, Cl. 95—73.

Suling, Carlhans: *See*—
Mayer, Rudi, Kuntz, and Suling. 3,349,063.

Sulzer Brothers, Ltd.: *See*—
Kagi, Jakob. 3,349,003.

Sun Oil Co.: *See*—
Zaayenga, Ralph, and Bartholf. 3,349,052.

Sunazawa, Manabu: *See*—
Odani, Yuzo, and Sunazawa. 3,348,983.

Sunbeam Corp.: *See*—
Beck, William P., and Stahly. 3,348,307.
Bielak, Sigmund H. 3,349,305.
Copeland, William M., Horecky, and Hayes. 3,348,317.
Jepson, Ivar, and Ernstberger. 3,349,266.
Jepson, Ivar, Schuessler, Jackson, and Jensen. 3,349,263.
Swanson, Charles E. 3,348,470.
Viecell, Joseph L., and Judy. 3,348,822.

Sununu, John H.: *See*—
Katz, Leonhard, and Sununu. 3,348,490.

Superior-Tabbies, Inc.: *See*—
Cunningham, Walter F. 3,348,324.

Sutton, Ralph L.: *See*—
Barkstrom, Reynold, Sutton, and Carlson. 3,348,780.

Swager, William E. Climbing device. 3,348,632, 10–24–67, Cl. 182—230.

Swann, David T. Adjustable back support cushions. 3,348,880, 10–24–67, Cl. 297—230.

Swanson, Charles E., to Sunbeam Corp. Waffle baker or the like. 3,348,470, 10–24–67, Cl. 99—331.

Sweeney, William A., to Chevron Research Co. Detergent alkylate composition of secondary phenyl-substituted N-alkanes. 3,349,141, 10–24–67, Cl. 260—668.

Sweeny, Wilfred: *See*—
Hill, Harold W., Kwolek, and Sweeny. 3,349,062.

Swenson, Harold R.: *See*—
Rice, Harold B., and Swenson. 3,348,734.

Swerdlow, Nathan: *See*—
Rehder, Robert H., and Swerdlow. 3,349,168.

Swiecicki, Ignacy, to Allis Chalmers Mfg. Co. Spoilers for turbine blades. 3,348,806, 10–24–67, Cl. 253—59.

Swift, John F., and R. E. Wallace, to International Harvester Co. Self adjusting pulsating fluid pressure damping accumulator. 3,348,579, 10–24–67, Cl. 138—31.

Sylvania Electric Products, Inc.: *See*—
Ayotte, Ronald D. 3,348,588.
Dalton, John, Jr. 3,348,865.
Jackson, Donald L. 3,349,237.
Ropp, Richard C., and Quirk. 3,348,961.

Symons, James D., and L. H. Weinard, to General Motors Corp. Seal. 3,348,851, 10–24–67, Cl. 277—134.

Sze, Simon M.: *See*—
Crowell, Clarence R., and Sze. 3,349,297.

Szerecz, Janos: *See*—
Csonka, Lajos, Szerecz, and Goncsy. 3,348,959.

Tackaberry, Robert B.: *See*—
Kavanagh, Arthur J., Koester, Thorburn, and Tackaberry. 3,348,547.

Taguchi, Akira. Manufacture of electroconductive inks containing polyvinyl methyl-maleic acid copolymers or salts thereof as adhesive. 3,349,055, 10–24–67, Cl. 260—29.6.

Takeda Chemical Industries, Ltd.: *See*—
Rori, Shiro, and Shimazono. 3,348,952.
Tambascia, John J., to Medi-Tech Laboratories. Heart-lung resuscitator. 3,348,536, 10–24–67, Cl. 128—53.
Tanguay, Armand E., and G. T. Shimabukuro, to Xerox Corp. Drum clamp. 3,348,288, 10–24–67, Cl. 29—118.
Tassara, Luigi, to Consolidated Electronics Industries Corp. Method of making encapsulated resistors of high precision. 3,348,304, 10–24–67, Cl. 29—610.
Tatevossian, Leon. Transportable building construction with an extendable body structure. 3,348,344, 10–24–67, Cl. 52—22.
Taylor, Edward L., to Brown Co. Paper parchmentized with ortho-phosphoric acid. 3,348,904, 10–24–67, Cl. 8—119.
Taylor, Gerwin G., to American Maize Products Co. Apparatus for continuous conversion of starch. 3,348,972, 10–24–67, Cl. 127—28.
Taylor, James G.: *See*—
Stirling, Harold J., and Taylor. 3,349,188.
Taylor, Ruel E., Jr., and F. J. Fitzpatrick, to Hudson Pulp & Paper Corp. Paper converting, and particularly producing improved paper towels. 3,348,477, 10–24–67, Cl. 101—23.
Taylor, Sidney, to Wagner Electric Corp. Snap action device. 3,349,205, 10–24–67, Cl. 200—122.
Taylor-Winfield Corp., The: *See*—
Seeloff, Melvin M., and Fowler. 3,348,831.
Teague, Albert B., to Leeds & Northrup Co. Transducers for radiation pyrometers. 3,348,978, 10–24–67, Cl. 136—214.
Techniservice Corp.: *See*—
Stanley, Robert K. 3,348,283.
Teleflex Inc.: *See*—
Shaeffer, Robert J. 3,348,428.
Wilkey, Thomas E. 3,348,427.
Telex Corp., The: *See*—
Nieland, Paul J. 3,348,750.
Temco, Inc.: *See*—
Wilhoite, Murray O. 3,348,533.
Templeton Coal Co.: *See*—
Morey, Glen H. 3,349,359.
Tennessee Pictures, Inc.: *See*—
Rice, Harold D., and Leach. 3,348,264.
Ter Hoeve, Willem F., to North American Philips Co. Inc. Electric lamp with external current supply contact. 3,349,277, 10–24–67, Cl. 313—318.
Tetra Pak Rausing & Co. KG: *See*—
Rausing, Anders R., and Ignell. 3,348,719.
Texaco Inc.: *See*—
Chafets, Harry, and Anderson. 3,349,092.
Texas Instruments Inc.: *See*—
Helms, John D., and Shank. 3,349,217.
Textron, Inc.: *See*—
Calkins, Tracy H., and Duckwall. 3,348,340.
Thayer, David S., to Shell Oil Co. Bulk polymerization process. 3,349,070, 10–24–67, Cl. 260—93.5.
Thiokol Chemical Corp.: *See*—
Brown, Robert H., and Hecht. 3,348,426.
Citarel, Louis, and Giordano. 3,348,351.
Giordano, Joseph J. 3,349,057.
Sheard, Eric A. 3,349,047.
Villa, Jose L. 3,349,100.
Thom, Günter: *See*—
Lohs, Willy, Thom, Neuber, and Heisa. 3,349,288.
Thomas Fritz. Barrel washing machine. 3,348,555, 10–24–67, Cl. 134—43.
Thomas, Glen H., and R. S. Morrow, to International Research and Development Corp. Sine wave synthesis circuit. 3,349,257, 10–24–67, Cl. 307—88.5.
Thomas, Robert W.: *See*—
Cataldo, John B., Kralik, Kusse, and Thomas. 3,349,208.
Thompson, Robert R., and J. C. Cumming, to Rockwell-Standard Corp. Laminated articles and methods of bonding and debonding therefor. 3,348,640, 10–24–67, Cl. 188—250.
Thorburn, Milton R.: *See*—
Kavanagh, Arthur J., Koester, Thorburn, and Tackaberry. 3,348,547.
Thorington, Luke, to Duro-Test Corp. Optically pumped laser with cathodo luminescent pumping light source. 3,349,339, 10–24–67, Cl. 331—94.5.
Thorne, Robert L.: *See*—
Kleist, Robert A., Kurth, and Thorne. 3,349,373.
Thorner, Robert H. Vehicle speed regulator device. 3,348,625, 10–24–67, Cl. 180—108.
Thorner, Robert H. Vehicle speed regulating device. 3,348,626, 10–24–67, Cl. 180—108.
Thurston, Elvin F. W.: *See*—
Bannert, Konrad J., and Thurston. 3,348,949.
Thut, Paul J., to Burroughs Corp. Method for producing accurate type. 3,348,404, 10–24–67, Cl. 72—340.
Tibbits, William I.: *See*—
Bose, Robert N., Tibbits, and Ranum. 3,348,922.
Tile Council of America, Inc.: *See*—
Wagner, Herman B., and Weller. 3,348,988.
Tipper, Maynard J. G., to Rheem Mfg. Co. Pleater for sheet material and means for tying and cutting casings. 3,348,458, 10–24–67, Cl. 93—84.
Toney, Henry W., and C. B. Huizenga, to American Metal Climax, Inc. Apparatus for cutting billets by means of apertured dies. 3,348,441, 10–24–67, Cl. 83—123.
Toohey, John: *See*—
Morris, Jack, and Toohey. 3,349,212.
Torrington Co., The: *See*—
Cowles, John H. 3,348,511.
Townsend, Miles A., to Twin Disc Clutch Co. Electro-hydraulic controls for power drive system. 3,348,643, 10–24–67, Cl. 192—3.5.
Trak Microwave Corp.: *See*—
Schontger, Kenneth R. 3,349,341.
Travaglio, Dalny, to Warner-Lambert Pharmaceutical Co. Sample conditioning unit. 3,348,691, 10–24–67, Cl. 210—255.
Trbojevich, Nikola J. Nuclear reactor. 3,349,002, 10–24–67, Cl. 176—21.
Treanor, Eugene J. Closures for containers. 3,348,717, 10–24–67, Cl. 215—9.
Trefzer, Robert, to Ciba Ltd. Gas washing bottle. 3,348,827, 10–24–67, Cl. 261—121.
Tregay, John L.: *See*—
Schulze, John J., and Tregay. 3,349,221.
Trevarrow, David J., Jr., to Kelsey-Hayes Co. Barrel. 3,348,721, 10–24–67, Cl. 220—3.
Trevarrow, David J., Jr., to Kelsey-Hayes Co. Barrel. 3,348,722, 10–24–67, Cl. 220—3.
Trexler, Philip C., to Snyder Mfg. Co. Isolator method and apparatus. 3,348,890, 10–24–67, Cl. 312—3.
Triangle Package Machinery Co.: *See*—
Virta, Norman A., and Zanotti. 3,348,474.
Trico Products Corp.: *See*—
Hadekel, Ruben. 3,348,257.
Trimbach, Honore: *See*—
Quanquin, Bernard, and Trimbach. 3,348,914.
Triplett Electrical Instrument Co., The: *See*—
Triplett, Ray L. 3,349,355.
Triplett, Ray L., to The Triplett Electrical Instrument Co. D'Arsonval type electrical instrument having means for adjusting the deflectional characteristics in selected regions along the scale of the instrument. 3,349,355, 10–24–7, Cl. 335—222.
Trombley, Bertrand N.: *See*—
Eicholtz, Clara V., Trombly, and Trombley. 3,348,731.
Trombly, Edgar F.: *See*—
Eicholtz, Clara V., Trombly, and Trombley. 3,348,731.
Trumble, John H.: *See*—
Luy, William R., and Trumble. 3,348,473.
Trzeciak, Georg: *See*—
Hinsken, Hermann, Trzeciak, and Rasel. 3,348,760.
Tucci, Edmond R.: *See*—
Selwitz, Charles M., and Tucci. 3,349,117.
Tucker, Burl E., Jr.: *See*—
Yingst, Thomas O., and Tucker. 3,348,737.
Tucker, Frederick T.: *See*—
Licata, Joseph P., and Tucker. 3,349,307.
Tullis, Daniel B.: *See*—
Dyess, James B., Jr., Tullis, and Waters. 3,348,519.
Turbyfill, Charles W. Golf flag pin base. 3,348,797, 10–24–67, Cl. 248—44.
Turner, Eric C., to Reid, Watney Combe & Co., Ltd. Dispensing of carbonated beverages. 3,348,565, 10–24–67, Cl. 137—212.
Turner, George L., and C. H. Harris, to H. B. Sherman Mfg. Co. Apparatus for mounting hose couplings. 3,348,292, 10–24–67, Cl. 29—237.
Turon, Inc.: *See*—
Ash, Thomas C., Jr. 3,348,415.
Turpin, Eugene W. Clamping apparatus for open center tire rims. 3,348,593, 10–24–67, Cl. 144—288.
Tuthell Pump Co.: *See*—
Richardson, William D. 3,348,720.
Tveter, Elmer C., to The Dow Chemical Co. Sink-float separation process. 3,348,675, 10–24–67, Cl. 209—5.
Twin Disc Clutch Co.: *See*—
Hilpert, Conrad R. 3,348,644.
Townsend, Miles A. 3,348,643.
U.S. Terminals, Inc.: *See*—
Dozier, Hilliard, 3,349,365.
Ufimtsev, Valentin N.: *See*—
Kazankov, Mikhail V., and Ufimtsev. 3,349,089.
Uitti, Kenneth D., to Universal Oil Products Co. Hydrodealkylation process using impure make-up hydrogen. 3,349,145, 10–24–67, Cl. 260—672.
Ulderup, Jurgen. Coupling member and process for making same. 3,348,864, 10–24–67, Cl. 287—90.
Ulrich, Hans: *See*—
Mäder, Helmut, Ulrich, Puschel, and von König. 3,348,945.
Ultronic Systems Corp.: *See*—
Hunkins, Stanley H., and Herman. 3,349,328.
Umberger, Charles J., and F. F. Fiorese. Processes preparing diazoamino compounds and azo amino compounds. 3,349,073, 10–24–67, Cl. 260—140.
Umeda, Satsuro. Method of mounting a center magnet within a cylindrical metallic yoke. 3,348,303, 10–24–67, Cl. 29—606.
Umpfenbach, Herman J., to The Bendix Corp. Choke control device. 3,348,530, 10–24–67, Cl. 123—119.
Uniflex, Inc.: *See*—
Vetter, Erich. 3,348,761.
Union Carbide Corp.: *See*—
Glich, Heinrich G. 3,349,045.
Gorman, Eugene F. 3,349,213.
Potts, James E. 3,349,018.
Wartman, Lloyd H., and Ladish. 3,349,056.
Yeh, Ying L. 3,349,142.
Union Oil Co. of California: *See*—
Fenton, Donald M., and Olivier. 3,349,119.
Union Tank Car Co.: *See*—
Foster, Joseph W. 3,348,687.
Parks, John W., Olson, and Langley. 3,348,696.
United Aircraft Corp.: *See*—
Gardner, William B., Kuhlberg, and McLaughlin. 3,348,375.
Giannamore, Ronald. 3,349,314.
Hughes, John V. 3,349,393.
Stearns, Charles F. 3,348,560.

United Shoe Machinery Corp.: *See*—
Appleton, Daniel, and Cleversey. 3,348,251.
Brigaola, Dominic J. 3,348,444.
United States of America
Agriculture: *See*—
Moore, Danny J. 3,349,106.
Army: *See*—
Dudley, William L. 3,349,311.
Garver, Robert V. 3,349,342.
Grandy, Andrew J. 3,348,484.
Sauer, Charles W. 3,348,986.
Stanton, Richard M. 3,349,001.
Atomic Energy Commission: *See*—
Golob, Joseph A. 3,348,447.
Pollock, Bernard D. 3,348,943.
Wachter, William J. 3,349,304.
United States Envelope Co.: *See*—
Zwarycz, Michael, and Dumas. 3,348,525.
United States Steel Corp.: *See*—
Schilling, Charles G. 3,348,795.
Wakefield, Frederick W. 3,349,324.
Universal Match Corp.: *See*—
Yingst, Thomas O., and Tucker. 3,348,737.
Universal Oil Products Co.: *See*—
Addison, George E. 3,348,419.
Cyba, Henryk A. 3,349,103.
Cyba, Henryk A. 3,349,110.
Larson, John R., and Zimmerman. 3,349,138.
Michalko, Edward. 3,348,911.
Uitti, Kenneth D. 3,349,145.
Witt, Paul A. 3,349,146.
Upjohn Co., The: *See*—
Ayer, Donald E., and Pike. 3,349,084.
Hsi, Richard S. P. 3,349,112.
Urbanski, Carole N.: *See*—
Baines, Eugene F., and Urbanski. 3,349,013.
Urmenyi, Laszlo. Device for detecting surface elevations in sheet material. 3,348,313, 10–24–67, Cl. 33—148.
Usines Gustave Staar, S. A.: *See*—
Staar, Marcel J. H. 3,349,192.
Utah Construction & Mining Co.: *See*—
Porath, Phillip R., and Pettibone. 3,348,912.
Utting, George R., and P. G. Mueller, to Intertech, Inc. Automatic sample changer. 3,348,418, 10–24–67, Cl. 73—421.
Valley Co., Inc.: *See*—
Hucke, Edward E. 3,348,967.
Valtschev, Alexander J., and T. N. Valtscheva, to Metalurgitschen Lavod Lenin. Protecting carbon materials from oxidation. 3,348,929, 10–24–67, Cl. 29—180.
Valtscheva, Aemenushka N.: *See*—
Valtschev, Alexander J., and Valtscheva. 3,348,929.
Valve Corp. of America: *See*—
O'Donnell, William R. 3,348,740.
Valyi, Emery I. Method and apparatus for molding plastic bottles. 3,349,155, 10–24–67, Cl. 264—97.
Van Bosse, John G., to Automatic Electric Laboratories, Inc. Communication switching marker having continuity testing and path controlling arrangement. 3,349,189, 10–24–67, Cl. 179—18.
Van Loon, Donald F.: *See*—
Newcomb, Wallace K., Blank, and Van Loon. 3,348,849.
Vandercook & Sons, Inc.: *See*—
Nowak, Raymond F. 3,348,481.
Van der Stelt, Cornelis, to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia. 5-hydroxydibenzocycloheptен-5-YL-carboxylates. 3,349,093, 10–24–67, Cl. 260—292.
Van Iperen, Bernardus B., and W. Kuypers, to North American Philips Co., Inc. Device for tuning rectangular resonator cavities. 3,349,349, 10–24–67, Cl. 333—83.
Van Noord, Andrew J., to Kent Engineering. Remote control rear view mirror. 3,348,425, 10–24–67, Cl. 74—501.
Varis, Lee, to Air Reduction Co., Inc. Self cleaning valve structure. 3,348,566, 10–24–67, Cl. 137—242.
Vaughn, Howard A., Jr., to General Electric Co. Method for making linear polydiarylsiloxanes. 3,349,048, 10–24–67, Cl. 260—18.
Veaux, Michel, and F. Marchal, to European Atomic Energy Community-Euratom. Magnetic forming apparatus, device and method for making deep grooves on parts made of conducing materials, particularly tubes made of metal or ceramic-metal materials. 3,348,396, 10–24–67, Cl. 72—56.
Veb Schaumglaswerk Taubenbach: *See*—
Schulz, Ernst O. 3,348,933.
Vego Chemical Corp.: *See*—
Campbell, Arthur W. 3,349,036.
Vendo Co., The: *See*—
Johnson, Elmer C. 3,348,733.
Venier, Dominic A.: *See*—
Lass, James L., and Venier. 3,349,004.
Venghiattis, Alexis A., to Dresser Industries, Inc. Well bore caliper. 3,348,314, 10–24–67, Cl. 33—178.
Verbamic, Carl J., to Hooker Chemical Corp. ω-Cyanoperfluoroalkanoyl chlorides. 3,349,105, 10–24–67, Cl. 260—404.
Vercellotti, Dale: *See*—
Loebeck, Gordon J. 3,348,541.
Veronica, Giacinto, to Montecatini Edison S.p.A. Process for recovering potassium sulfate from final mother liquors of kainite. 3,348,913, 10–24–67, Cl. 23—121.
Vetter, Erich, to Uniflex, Inc. Hangable packaging receptacle. 3,348,761, 10–24–67, Cl. 229—54.
Vetter, Ottomar H.: *See*—
Kriesel, Marshall S., Vetter, and Muelling. 3,348,793.
Vice, Charles L. Magnetic recording head with unitary supporting body. 3,349,193, 10–24–67, Cl. 179—100.2.
Vickers, Roy G., to Brevets Aero-Mecaniques S.A. Gun turrets. 3,349,451, 10–24–67, Cl. 89—36.
Victor Comptometer Corp.: *See*—
Bart, George R. 3,349,258.
Vidal, Eugene L. Boat structure. 3,348,246, 10–24–67, Cl. 9—2.
Viecelli, Joseph L., and C. G. Judy, to Sunbeam Corp. Humidifying device. 3,348,822, 10–24–67, Cl. 261—34.
Villa, Jose L., to Thiokol Chemical Corp. Production of alkylene mono-thiocarbonate and alkylene sulfide. 3,349,100, 10–24–67, Cl. 260—327.
Vinokur, David. Power driven spinning reel assembly. 3,348,788, 10–24–67, Cl. 242—84.21.
Vinyard, Herbert O. Refuse gathering machine. 3,348,652, 10–24–67, Cl. 198—7.
Virkus, Kenneth J.: *See*—
Abell, Jerrold J., and Virkus. 3,349,046.
Virta, Norman A., and R. E. Zanotti, to Triangle Package Machinery Co. Heatsealing machines. 3,348,474, 10–24–67, Cl. 100—93.
Vives, Van C., to Phillips Petroleum Co. Azeotropic distillation of paraffin-halogenated paraffin mixtures. 3,349,008, 10–24–67, Cl. 203—60.
Vock, Erwin: *See*—
Sochting, Herbert, and Vock. 3,348,564.
Voigtander A.G.: *See*—
Zillmer, Erich. 3,348,449.
Zillmer, Erich. 3,348,450.
Voit, W. J., Rubber Corp.: *See*—
Cullity, Richard E. 3,348,540.
Vollhardt, Fromut, to Schmidt-sche Heissdampf-Gesellschaft m.b.H. Heat exchangers for cooling fresh cracked gases or the like. 3,348,610, 10–24–67, Cl. 165—158.
Volpin, Alexander S. Compound pressure sealant-sealed valve. 3,348,567, 10–24–67, Cl. 137—246.12.
Von Felgel-Farnholz, R., and F. Michels, to Fernseh G.m.b.H. Color television pickup apparatus. 3,349,170, 10–24–67, Cl. 178—5.4.
Von Konig, Anita: *See*—
Mader, Helmut, Ulrich, Puschel, and Von Konig. 3,348,945.
Von Linsowe, Carl V.: *See*—
Goldberg, Eugene P., and Von Linsowe. 3,348,597.
Vuarchex, Alexandre, to DAV. Ski carrier. 3,348,747, 10–24–67, Cl. 224—42.1.
Vuilleumier, Claude, to Societe d'Outillage pour Frappe a Chaud SA. Arrangement for guiding the tool-forming electrode of a machine operating through electric erosion. 3,349,214, 10–24–67, Cl. 219—69.
Wabash Magnetics, Inc.: *See*—
Foerster, James A. 3,348,302.
Wachovia Bank and Trust Co.: *See*—
King, James F., Jr., and Bahnson. 3,348,363.
Wachter, William J., to United States of America, Atomic Energy Commission. Longitudinal movement mechanism. 3,349,304, 10–24–67, Cl. 318—118.
Waddington & Duval (Holdings) Ltd.: *See*—
Lucking, Anthony J., and Lane. 3,348,848.
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Wagner Electric Corp.: *See*—
Freeman, Walter R., and Boldt. 3,348,377.
Silberg, Hemming G. 3,349,280.
Taylor, Sidney. 3,349,205.
Wagner, Herman B., and E. E. Weller, to Tile Council of America, Inc. Method of installing tile with an epoxy resin composition. 3,348,988, 10–24–67, Cl. 156—71.
Wagner-Jauregg, Theodor: *See*—
Molnar, Istvan, Wagner-Jauregg, Jahn, and Mixich. 3,349,088.
Wagner, Roland W.: *See*—
Winblad, Robert A., and Wagner. 3,348,592.
Wahl, Frederick W.: *See*—
Mixon, James L., and Wahl. 3,349,167.
Wainberg, Daniel. Container forming machine. 3,348,457, 10–24–67, Cl. 93—51.
Wakefield, Frederick W., to United States Steel Corp. Apparatus for locating faults in insulated electric cables including elongated tube means having a tapered bore and containing a conducting liquid electrode. 3,349,324, 10–24–67, Cl. 324—54.
Waldenburger, Hermann: *See*—
Meinherz, Joachim, and Waldenburger. 3,348,650.
Wallace, David J., and M. A. Weaver, to Eastman Kodak Co. Mono azo dyes for hydrophobic fibers. 3,349,075, 10–24–67, Cl. 260—158.
Wallace, David J.: *See*—
Weaver, Max A., and Wallace. 3,349,076.
Straley, James M., Wallace, and Weaver. 3,349,098.
Wallace, Ralph E.: *See*—
Swift, John F., and Wallace. 3,348,579.
Wallace & Tiernan, Inc.: *See*—
Kressin, Donald M., Westbrook, Magell, and Kolczynski. 3,349,040.
Walsh, William L.: *See*—
McNulty, John G., and Walsh. 3,349,149.
Walter, Gerhard: *See*—
Muller, Martin, and Walter. 3,349,337.
Warnant, Julien: *See*—
Bucourt, Robert, Pierdet, Costerousse, Joly, Warnant, and Goffinet. 3,349,130.
Warner Electric Corp.: *See*—
Silberg, Hemming G. 3,349,280.
Taylor, Sidney. 3,349,205.
Warner-Lambert Pharmaceutical Co.: *See*—
Travaglio, Dalny. 3,348,691.

Warner & Swasey Co., The: *See*—
Smith, William M., and Beers. 3,348,443.
Warschauer, Douglas M., to Raytheon Co. Beam scanning device. 3,349,174, 10–24–67, Cl. 178—7.6.
Warsen, Joseph S. Golf practice device. 3,348,416, 10–24–67, Cl. 73—379.
Wartman, Lloyd H., and C. E. Ladish, to Union Carbide Corp. Polyolefin compositions stabilized with epoxyalkanoamides. 3,349,056, 10–24–67, Cl. 260—30.4.
Warwick Electronics Inc.: *See*—
Babcock, Leonard V., Massa, and Chiovari. 3,348,268.
Watanabe, Takaaki, T. Ogura, Y. Kondo, and M. Nagasawa, to Mitsubishi Atomic Power Industries, Inc. Method of producing a sintered uranium dioxide nuclear fuel element containing a boride. 3,349,152, 10–24–67, Cl. 264—.5.
Waterhouse, Peter: *See*—
Sherrington, Peter J., Waterhouse, and Jones. 3,348,938.
Waters, Everett W., R. H. Hufnagel, and L. J. Pierce, to General Electric Co. Gas turbine temperature measuring apparatus. 3,348,414, 10–24–67, Cl. 73—341.
Waters, George T.: *See*—
Dyess, James B., Jr., Tullis, and Waters. 3,348,519.
Watson, George R., and B. Matchen, to Norton Co. Method for producing a crystalline carbide, boride or silicide. 3,348,915, 10–24–67, Cl. 23—204.
Watson, Ronald: *See*—
Gilbert, Paul, and Watson. 3,348,960.
Weadock, Richard, Jr., to General Motors Corp. Magnetic forming apparatus. 3,348,397, 10–24–67, Cl. 72—56.
Weaver, Max A.: *See*—
Wallace, David J., and Weaver. 3,349,075.
Weaver, Max A., and D. J. Wallace, to Eastman Kodak Co. Mono azo dyes. 3,349,076, 10–24–67, Cl. 260—158.
Weaver, Max A.: *See*—
Straley, James M., Wallace, and Weaver. 3,349,098.
Weber, Charles A.: *See*—
Windsor, Meredith M., and Weber. 3,348,439.
Webster, William C.: *See*—
Johnson, Virgil E., Jr., and Webster. 3,348,517.
Wedmore, William R., to Automatic Electric Laboratories, Inc. Diphase transceiver with modulator-demodulator isolation. 3,349,330, 10–24–67, Cl. 325—320.
Weigel, Friedrich-Wilhelm: *See*—
Post, Hermann, and Weigel. 3,348,585.
Weil, Edward D., and H. L. Schlichting, to Hooker Chemical Corp. Sulfur-containing carbamate insecticides. 3,349,115, 10–24–67, Cl. 260—479.
Weil, Edward D., and H. Schlichting, to Hooker Chemical Corp. Ortho hydrocarbyloxy alkenylenephenyl N-lower alkyl carbamates. 3,349,116, 10–24–67, Cl. 260—479.
Weinand, Louis H.: *See*—
Symons, James D., and Weinand. 3,348,851.
Weiss, Verne E., to General Mills, Inc. Snack product and process. 3,348,950, 10–24–67, Cl. 99—80.
Weissman, Bernard. Method of splinting teeth. 3,348,311, 10–24–67. Cl. 128—89.
Weitkamp, Alfred W., to Standard Oil Co. Using ruthenium catalysts to prepare cis-isomers of polycyclic aromatics. 3,349,140, 10–24–67, Cl. 260—667.
Weller, Ernest E.: *See*—
Wagner, Herman B., and Weller. 3,348,988.
Weman, Per O., to Sigmatex A.G. Fastening buckle for safety belts or the like. 3,348,274, 10–24–67, Cl. 24—233.
Weman, Per O., to Sigmatex A.G. Fastening means for a three-point safety belt, particularly for motor vehicles. 3,348,881, 10–24–67, Cl. 297—388.
Wennerstrom, Carl G., and P. M. Sievert, to Sievert Electric Co. Multipurpose crane. 3,348,702, 10–24–67, Cl. 212—54.
Werner Bahlsen: *See*—
Belk, Hermann, and Florian. 3,348,503.
Werth, Andrew M., to International Telephone and Telegraph Corp. Satellite communication system. 3,349,398, 10–24–67, Cl. 343—100.
West, George C.: *See*—
Mater, Charles E., West, and Brigham. 3,348,651.
Westbrook, Solomon C., Jr.: *See*—
Kressin, Donald M., Westbrook, Magell, and Kolczynski. 3,349,040.
Western Pneumatics Ltd.: *See*—
Lardner, Robert E. 3,348,809.
Westland Aircraft Ltd.: *See*—
McKinlay, Robert M. 3,348,791.
Weston, Thomas C. Coin saving books. 3,348,763, 10–24–67, Cl. 229—92.9.
Wetmore, Clayton A.: *See*—
Michaels, Edwin B., and Wetmore. 3,349,038.
Wettstein, Albert, G. Anner, K. Heusler, J. Kalvoda, and H. Ueberwasser, to Ciba Corp. Process for the production of 6β:19-oxido-steroids. 3,349,083, 10–24–67, Cl. 260—239.55.
Whalley, Edward: *See*—
Bywater, Stanley, and Whalley. 3,349,068.
Wheble, Alfred G., to Dunham White and Co. Ltd. Staple magazines. 3,348,752, 10–24–67, Cl. 227—109.
Whirlpool Corp.: *See*—
Bose, Robert N., Tibbits, and Ranum. 3,348,922.
Martin, John L., and Amundsen. 3,348,821.
Patterson, Carl R. 3,348,688.
Romerhaus, Bert W. 3,348,764.
White, Harold W., to Cocker Saw Co., Inc. Workpiece regulating drive units for grinding machines. 3,348,843, 10–24–67, Cl. 51—237.
White, Herbert A., Jr. Cooling apparatus. 3,348,528, 10–24–67, Cl. 122—360.
Whiting Corp.: *See*—
Ames, Victor H., and Dolin. 3,348,498.
Ames, Victor H., and Fischer. 3,348,639.
Wiechers, Jerome C. Coaster and method of making same. 3,348,800, 10–24–67, Cl. 248—346.1.
Wiegand, Donald E., to Wood Conversion Co. Filtration of perchloroethylene and filter fabric. 3,348,681, 10–24–67, Cl. 210—65.
Wiggins, Richard F., to Gyromat Corp. Semi-automatic color change system for paint spray installation. 3,348,774, 10–24–67, Cl. 239—70.
Wikdahl, Nils A. L. Method of separating particles in liquid suspension in a hydrocyclone for separating articles in liquid suspension. 3,348,688, 10–24–67, Cl. 210—84.
Wilber, Paul F., to Dollinger Corp. Sump filter with indicator. 3,348,684, 10–24–67, Cl. 210—90.
Wilde, Geoffrey L., and J. F. Coplin, to Rolls-Royce Ltd. Turbojet engine with compressor bypass and AFT fan. 3,348,379, 10–24–67, Cl. 60—226.
Wilder, Donald L., to General Electric Co. Level sensor circuit. 3,349,251, 10–24–67, Cl. 307—88.5.
Wilhelm, Frank R., to Borg-Warner Corp. Water closet device. 3,348,242, 10–24–67, Cl. 4—41.
Wilhelmsen, Irven R.: *See*—
Wilhelmsen, Robert I. and I. R. 3,348,259.
Wilhelmsen, Robert I. and I. R., to Wilhelmsen Sheet Metal, Inc. Hinge. 3,348,259, 10–24–67, Cl. 16—128.
Wilhelmsen Sheet Metal, Inc.: *See*—
Wilhelmsen, Robert I. and I. R. 3,348,259.
Wilhoite, Murray O., to Temco, Inc. Baseboard heater. 3,348,533, 10–24–67, Cl. 126—90.
Wilkey, Thomas E., to Teledex Inc. Remote control assembly. 3,348,427, 10–24–67, Cl. 74—502.
Wilkinson, Horace A., and E. P. Dimmock, to Monier Research & Development pty., Ltd. (formerly Monier Mechanical Research pty., Ltd.). Tube mixer for mortar. 3,348,820, 10–24–67, Cl. 259—161.
Will, Frederick R. Motorcycle carrier. 3,348,713, 10–24–67, Cl. 214—450.
Williams, Drew A. Live animal trap. 3,348,331, 10–24–67, Cl. 43—61.
Williams, Haydn W. R.: *See*—
Drain, David J. Howes, and Williams. 3,349,135.
Williamson, David T. N., and P. D. Loomes, to The Molins Organisation Ltd. Apparatus for producing composite filter plugs. 3,348,455, 10–24–67, Cl. 93—1.
Williford, Elmer L. Material positioning apparatus for building construction. 3,348,700, 10–24–67, Cl. 212—13.
Willyoung, David M., to General Electric Co. Field coil connection for four-pole rotors. 3,349,264, 10–24–67, Cl. 310—185.
Wilmarth, Paul C., to Philco Ford Corp. Power supply circuit. 3,349,318, 10–24–67, Cl. 321—10.
Wilson, Curtis L. Automatic chuck. 3,348,852, 10–24–67, Cl. 279—58.
Wilson, James D., to Banner Metals, Inc. Receptacle. 3,348,723, 10–24–67. Cl. 220—6.
Wilton Corp.: *See*—
Smierciak, Walter. 3,348,836.
Winblad, Robert A., and R. W. Wagner, to The Cincinnati Milling Machine Co. Timber harvesting machine. 3,348,592, 10–24–67, Cl. 144—3.
Windsor, Meredith M., and C. A. Weber, to Star Cutter Co. Arbor drive. 3,348,439, 10–24–67, Cl. 82—40.
Winegard, John R. Coupler for connecting a plurality of load pairs to a signal source. 3,349,345, 10–24–67, Cl. 333—8.
Winkler, Alfred, D. Engelsmann, F. Landbrecht, and O. Renner, to Agfa Aktiengesellschaft. Accessory clip for photographic cameras. 3,348,461, 10–24–67, Cl. 95—11.5.
Winkler, Hans: *See*—
Rens, Jany, Bourquin, Winkler, Gagnaux, Guldimann, and Ruesch. 3,349,087.
Wiser, Joseph E., to P. R. Mallory & Co., Inc. Transmission device for a timer. 3,348,423, 10–24–67, Cl. 74—424.5.
Wisotsky, Serge S., to Raytheon Co. Electrohydrosonic transducer. 3,349,367, 10–24–67, Cl. 340—12.
Witco Chemical Co. Ltd.: *See*—
Roberts, Douglas. 3,348,989.
Witt, Paul A., to Universal Oil Products Co. Alkylation catalyst regeneration and purification of C_5 effluent fraction. 3,349,146, 10–24–67, Cl. 260—676.
Witt, William W.: *See*—
Hefer, Friedrich W., Witt, and Stems. 3,349,407.
Wolf, Harold H., and R. E. Dahl, to Feldco-Major, Inc. Ring binder. 3,348,550, 10–24–67, Cl. 129—24.
Wolf, Robert C.: *See*—
Marconet, Ronald P., Lutz, and Wolf. 3,348,456.
Wolff, George D., to Allis-Chalmers Mfg. Co. Distributor fuel injection pump with precharging and pilot injection. 3,348,488, 10–24–67. Cl. 103—2.
Wolford, Byron F., to Proximity Controls, Inc. Pressure equalizing switch device. 3,349,203, 10–24–67, Cl. 200—83.
Wood Conversion Co.: *See*—
Wiegand, Donald E. 3,348,681.
Wood, Prentice P., to The Mead Corp. Bottle carrier. 3,348,671, 10–24–67, Cl. 206—65.
Woodberry, Norman T.: *See*—
Barber, William A., and Woodberry. 3,348,974.
Wooten, Chris E. Dispenser apparatus adapted to be carried by a user. 3,348,741, 10–24–67, Cl. 222—175.
Wootton, David B.: *See*—
Bromby, Norman G., Rayner, and Wootton. 3,349,094.
Worcester Valve Co., Inc.: *See*—
Sanctuary, Robert E. 3,348,805.
Woroch, Eugene L., and W. D. Smart, to Abbott Laboratories. Compositions effective to enhance the learning rate and retention level in animals comprising 2-imino-5-phenyl-4-oxazolidinone and a relatively insoluble base. 3,348,999, 10–24–67, Cl. 167—65.
Worthington Corp.: *See*—
Davis, Hunt. 3,348,514.

Wright, Theodore M.: *See*—
Haltzman, Harry H., Wright, and Dimmick. 3,348,735.
Wright, Thomas J., to Bel-Tronics Corp. Antenna mounting article. 3,349,405, 10–24–67, Cl. 343—702.
Wright, William H., to The C. W. Zumbiel Co. Carriers for bottles and other articles. 3,348,730, 10–24–67, Cl. 220—111.
Wyandotte Chemicals Corp.: *See*—
Davis, Pauls, Firsch, and Fujiwara. 3,349,069.
Wyatt, Gerald A., to Minnesota Mining and Mfg. Co. Insulative stress relief film. 3,349,164, 10–24–67, Cl. 174—73.
Xerox Corp.: *See*—
Davidson, James R., and Pierce. 3,348,523.
Donohue, James M. 3,348,522.
Hawk, Samuel A. 3,348,521.
Tanguay, Armand R., and Shimabukuro. 3,348,288.
Yale & Towne, Inc.: *See*—
Dannettell, Alan C. 3,349,309.
Yamamoto, Masatada. Escape device. 3,348,630, 10–24–67, Cl. 182—48.
Yano, Hiroshi. Toy gun having a divided magazine. 3,348,531, 10–24–67, Cl. 124—27.
Yanow, Harold H. Weather tent for cargo hatches. 3,348,705, 10–24–67, Cl. 214—15.
Yaw, Viola B.: *See*—
Stubblefield, Thomas A., and Yaw. 3,348,867.
Yawata Iron & Steel Co., Ltd.: *See*—
Goda, Susumu, Gondo, and Onoue. 3,348,981.
Yeh, Ying L., to Union Carbide Corp. Process for the preparation of alkylated di-p-xylylenes. 3,349,142, 10–24–67, Cl. 260—671.
Yessa, William L.: *See*—
Eckhardt, John C., and Yessa. 3,349,162.
Yingst, Thomas O., and B. E. Tucker, Jr., to Universal Match Corp. Dispensers. 3,348,737, 10–24–67, Cl. 222—58.
Yokoyama, Seijiro: *See*—
Ito, Sukehiro, and Yokoyama. 3,349,182.
Yong Won Kim. Thermostat switch and variable adjusting means therefor. 3,349,206, 10–24–67, Cl. 200—138.
York, Buddy L.: *See*—
Kellom, David B., Bowman, Lamoria, and York. 3,348,928.
Young, John L.: *See*—
Lohstoeter, John E., and Young. 3,348,599.
Young, Niels O., to Block Engineering, Inc. Interferometry. 3,348,446, 10–24–67, Cl. 88—14.
Youngstown Sheet and Tube Co., The: *See*—
Holberson, Henry A. 3,348,406.
Yuen, Yung K. Umbrellas, sunshades and the like. 3,348,558, 10–24–67, Cl. 135—46.
Zaayenga, Ralph, and F. B. Bartholf, to Sun Oil Co. Thermoplastic fibers and method of preparing same. 3,349,052, 10–24–67, Cl. 260—28.5.
Zacar, Alain: *See*—
Crepel, Jean and Zacar. 3,349,200.
Zachek, Joseph P. Finishing machine. 3,348,342, 10–24–67, Cl. 51—180.
Zahn, Heinrich, to Fernseh G.m.b.H. Apparatus for the rapid intermittent transport of perforated film. 3,348,749, 10–24–67, Cl. 226—59.
Zandt, Harold J. Sealed magnetic snap switch. 3,349,352, 10–24–67, Cl. 335—154.
Zanotti, Richard E.: *See*—
Virta, Norman A., and Zanotti. 3,348,474.
Zar, Jacob L., to Avco Corp. Cryogenic switch. 3,349,209, 10–24–67, Cl. 200—166.
Zar, Jacob L., to Avco Corp. Cryogenic radio frequency resonant circuits comprising superconductive inductance and capacitance. 3,349,351, 10–24–67, Cl. 334—70.
Zellweger, Ltd.: *See*—
Baumgartner, August, and Gegenschatz. 3,348,282.
Zern, Warren B. Slide fastener actuating devices. 3,348,869, 10–24–67, Cl. 294—19.
Zern, Warren B. Slide fastener actuating devices. 3,348,870, 10–24–67, Cl. 294—19.
Zidell, Victor: *See*—
Bahls, Gene C, McNutt, Price, Zidell and Dick. 3,348,673.
Zieg, Wilhelm, to Frankische Isolierrohr-und Metallwaren-Werke Gebrueder Kirchner. Method for the production of corrugated tubes. 3,349,156, 10–24–67, Cl. 264—99.
Ziegler, George E., to Concrete Thermal Casings, Inc. Method and stricture of cathodically protecting metallic casings of heat distribution systems. 3,349,017, 10–24–67, Cl. 204—147.
Ziegler, George W., Jr., to AMP Inc. Connector fitting. 3,349,166, 10–24–67, Cl. 174—88.
Ziering, Lance K., to American Cyanamid Co. Process for preparing fuel cell electrode containing 45% of a waterproofing agent. 3,348,975, 10–24–67, Cl. 136—120.
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Zillmer, Erich, to Voigtlander A. G. Photographic slide projector. 3,348,449, 10–24–67, Cl. 88—27.
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Zimmerman, Arie. Cable termination. 3,349,165, 10–24–67, Cl. 174—75.
Zimmerman, Julius, and G. Pisan, to Sperry Rand Corp., Ford Instrument Co. Division. Process for electrically interconnecting elements on different layers of a multilayer printed circuit assembly. 3,348,990, 10–24–67, Cl. 156—293.
Zimmerman, Robert P.: *See*—
Larson, John R., and Zimmerman. 3,349,138.
Zingg, Warren M., to The Dow Chemical Co. Jetting device. 3,348,616, 10–24–67, Cl. 166—223.
Zuccarelli, Vincent, to Millmastic Onyx Corp. Stable microbiologically active laundry softener. 3,349,033, 10–24–67, Cl. 252—8.75.
Zug, Wilhelm J., to The Electric Storage Battery Co. Battery discharge indicator. 3,349,386, 10–24–67, Cl. 340—249.
Zumbiel, C. W., Co., The: *See*—
Wright, William H. 3,348,730.
Zwarycz, Michael, and C. A. Dumas, to United States Envelope Co. Container gumming apparatus. 3,348,525, 10–24–67, Cl. 118—220.
Zweben, Harold. Coiled tube uncoiling device and method. 3,348,357, 10–24–67, Cl. 53—32.
Zwinkels, Johannes L. F. M.: *See*—
Blom, Leendert, and Zwinkels. 3,349,134.

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2— 2 : 3,348,236
74 : 3,348,237
161 : 3,348,238
171.3 : 3,348,239
174 : 3,348,240
3— 36 : 3,348,241
4— 41 : 3,348,242
245 : 3,348,243
5— 17 : 3,348,244
82 : 3,348,245
8—111 : 3,348,903
119 : 3,348,904
9— 2 : 3,348,246
310 : 3,348,247
10—129 : 3,348,248
12— 1 : 3,348,249
10.1 : 3,348,250
147 : 3,348,251
13— 23 : 3,349,160
15— 36 : 3,348,252
38 : 3,348,253
49 : 3,348,254
229 : 3,348,255
230.12: 3,348,256
250.42: 3,348,257
314 : 3,348,258
16—128 : 3,348,259
17— 2 : 3,348,260
45 : 3,348,261
18— 1 : 3,348,262
8 : 3,348,263
10 : 3,348,264
19 : 3,348,265
3,348,266
20 : 3,348,267
19— 95 : 3,348,268
3,348,269
21— 56 : 3,348,905
23— 22 : 3,348,906
60 : 3,348,907
97 : 3,348,908
102 : 3,348,909
105 : 3,348,910
112 : 3,348,911
117 : 3,348,912
121 : 3,348,913
161 : 3,348,914
204 : 3,348,915
207 : 3,348,916
209.1 : 3,348,917
209.9 : 3,348,918
211 : 3,348,919
230 : 3,348,920
259 : 3,348,921
281 : 3,348,922
288 : 3,348,923
312 : 3,348,924
315 : 3,348,925
357 : 3,348,926
3,348,927
361 : 3,348,928
24— 16 : 3,348,270
66 : 3,348,271
137 : 3,348,272
230.5 : 3,348,273
233 : 3,348,274
255 : 3,348,275
263 : 3,348,276
3,348,277
25— 41 : 3,348,278
120 : 3,348,279
27— 2 : 3,348,280
28— 5 : 3,348,281
44 : 3,348,282
72 : 3,348,283
29— 25.42: 3,348,284
33 : 3,348,285
3,348,286
91.1 : 3,348,287
118 : 3,348,288
148.4 : 3,348,289
157.3 : 3,348,290
180 : 3,348,929
183 : 3,348,930
183.5 : 3,348,931
212 : 3,348,291
237 : 3,348,292
240.5 : 3,348,293
273 : 3,348,294
401 : 3,348,295
29—419 : 3,348,296
480 : 3,348,297
568 : 3,348,298
578 : 3,348,299
596 : 3,348,300
603 : 3,348,301
605 : 3,348,302
606 : 3,348,303
610 : 3,348,304
30— 4 : 3,348,305
40.1 : 3,348,306
43.92: 3,348,307
133 : 3,348,308
166 : 3,348,309
360 : 3,348,310
32— 6 : 3,348,311
33— 85 : 3,348,312
148 : 3,348,313
178 : 3,348,314
206 : 3,348,315
34— 99 : 3,348,316
3,348,317
105 : 3,348,318
35— 8 : 3,348,319
35 : 3,348,320
46 : 3,348,321
37—155 : 3,348,322
180 : 3,348,323
40— 23 : 3,348,324
104 : 3,348,325
308 : 3,348,326
42— 1 : 3,348,327
73 : 3,348,328
43— 26 : 3,348,329
57 : 3,348,330
61 : 3,348,331
113 : 3,348,332
44— 4 : 3,348,932
46— 51 : 3,348,333
119 : 3,348,334
49—181 : 3,348,335
200 : 3,348,336
449 : 3,348,337
51— 3 : 3,348,338
9 : 3,348,339
91 : 3,348,340
111 : 3,348,341
180 : 3,348,342
237 : 3,348,343
52— 22 : 3,348,344
79 : 3,348,345
239 : 3,348,346
309 : 3,348,347
391 : 3,348,348
393 : 3,348,351
498 : 3,348,349
542 : 3,348,350
646 : 3,348,352
658 : 3,348,353
693 : 3,348,354
53— 28 : 3,348,355
30 : 3,348,356
32 : 3,348,357
42 : 3,348,358
52 : 3,348,359
138 : 3,348,360
184 : 3,348,361
54— 23 : 3,348,362
55—227 : 3,348,363
257 : 3,348,364
350 : 3,348,365
354 : 3,348,366
381 : 3,348,367
57— 35 : 3,348,368
58.7 : 3,348,369
77.45: 3,348,370
99 : 3,348,371
59— 79 : 3,348,372
93 : 3,348,373
60— 26 : 3,348,374
39.28: 3,348,375
54 : 3,348,376
54.6 : 3,348,377
57 : 3,348,378
226 : 3,348,379
229 : 3,348,380
61— 45 : 3,348,381
46 : 3,348,382
72.6 : 3,348,383
62— 28 : 3,348,384
62— 29 : 3,348,385
48 : 3,348,386
52 : 3,348,387
63— 1 : 3,348,388
65— 22 : 3,348,933
30 : 3,348,934
103 : 3,348,935
160 : 3,348,936
333 : 3,348,937
66—128 : 3,348,389
68—181 : 3,348,390
70—211 : 3,348,391
358 : 3,348,392
71— 28 : 3,348,938
79 : 3,348,939
90 : 3,348,940
72— 8 : 3,348,393
39 : 3,348,394
56 : 3,348,396
3,348,397
80 : 3,348,398
97 : 3,348,399
161 : 3,348,400
178 : 3,348,401
217 : 3,348,402
237 : 3,348,403
325 : 3,348,405
340 : 3,348,404
446 : 3,348,406
450 : 3,348,407
73— 1 : 3,348,408
19 : 3,348,409
38 : 3,348,395
67.8 : 3,348,410
156 : 3,348,411
178 : 3,348,412
313 : 3,348,413
341 : 3,348,414
362 : 3,348,415
379 : 3,348,416
407 : 3,348,417
421 : 3,348,418
424 : 3,348,419
538 : 3,348,420
74—202 : 3,348,421
233 : 3,348,422
424.5 : 3,348,423
424.6 : 3,348,424
501 : 3,348,425
3,348,426
502 : 3,348,427
3,348,428
584 : 3,348,429
606 : 3,348,430
822 : 3,348,431
75— 26 : 3,348,941
62 : 3,348,942
204 : 3,348,943
77— 7 : 3,348,432
42 : 3,348,433
58 : 3,348,434
63 : 3,348,435
81—177.9 : 3,348,436
82— 2 : 3,348,437
23 : 3,348,438
40 : 3,348,439
83— 58 : 3,348,440
123 : 3,348,441
318 : 3,348,442
686 : 3,348,443
85— 70 : 3,348,444
86— 1 : 3,348,445
88— 2.4 : 3,348,448
14 : 3,348,446
3,348,447
27 : 3,348,449
28 : 3,348,450
89— 1.807 3,348,452
36 : 3,348,451
180 : 3,348,453
91— 44 : 3,348,454
93— 1 : 3,348,455
36 : 3,348,456
51 : 3,348,457
84 : 3,348,458
94— 13 : 3,348,459
95— 10 : 3,348,460
11.5 : 3,348,461
53 : 3,348,462
64 : 3,348,463
95— 73 : 3,348,464
96— 1.8 : 3,348,944
29 : 3,348,945
3,348,946
49 : 3,348,947
75 : 3,348,948
104 : 3,348,949
98— 40 : 3,348,465
121 : 3,348,466
99— 80 : 3,348,950
86 : 3,348,951
116 : 3,348,952
139 : 3,348,953
140 : 3,348,954
151 : 3,348,955
235 : 3,348,467
282 : 3,348,468
320 : 3,348,469
331 : 3,348,470
421 : 3,348,471
447 : 3,348,472
100— 4 : 3,348,473
93 : 3,348,474
177 : 3,348,475
211 : 3,348,476
101— 23 : 3,348,477
91 : 3,348,478
93 : 3,348,479
349 : 3,348,480
354 : 3,348,481
102— 23 : 3,348,482
24 : 3,348,483
32 : 3,348,484
52 : 3,348,485
92.3 : 3,348,486
103— 1 : 3,348,487
2 : 3,348,488
53 : 3,348,489
87 : 3,348,490
3,348,491
126 : 3,348,492
130 : 3,348,493
136 : 3,348,494
173 : 3,348,495
104— 96 : 3,348,496
130 : 3,348,497
176 : 3,348,498
178 : 3,348,499
105—183 : 3,348,500
248 : 3,348,501
368 : 3,348,502
106— 65 : 3,348,956
67 : 3,348,957
176 : 3,348,958
308 : 3,348,959
107— 1 : 3,348,503
111— 34 : 3,348,504
73 : 3,348,505
112— 98 : 3,348,506
118 : 3,348,507
226 : 3,348,508
265 : 3,348,509
113— 7 : 3,348,510
117 : 3,348,511
120 : 3,348,512
114— .5 : 3,348,513
66.5 : 3,348,514
72 : 3,348,515
202 : 3,348,516
206 : 3,348,517
115— 1 : 3,348,518
117— 17.5 : 3,348,960
33.5 : 3,348,961
48 : 3,348,962
63 : 3,348,963
69 : 3,348,964
93.4 : 3,348,965
95 : 3,348,966
118 : 3,348,967
138.8 : 3,348,968
160 : 3,348,969
201 : 3,348,970
215 : 3,348,971
118— 2 : 3,348,519
3,348,520
7 : 3,348,521
3,348,522
3,348,523
43 : 3,348,524
220 : 3,348,525
118—410 : 3,348,526
429 : 3,348,527
122—360 : 3,348,528
123— 8 : 3,348,529
119 : 3,348,530
124— 27 : 3,348,531
3,348,532
126— 90 : 3,348,533
127— 28 : 3,348,972
128— 2.05: 3,348,534
3,348,535
53 : 3,348,536
141 : 3,348,537
142 : 3,348,538
142.2 : 3,348,539
147 : 3,348,540
157 : 3,348,541
184 : 3,348,542
214 : 3,348,543
214.4 : 3,348,544
218 : 3,348,545
3,348,546
395 : 3,348,547
418 : 3,348,548
481 : 3,348,549
129— 24 : 3,348,550
131— 84 : 3,348,551
94 : 3,348,552
194 : 3,348,553
132— 39 : 3,348,554
134— 43 : 3,348,555
57 : 3,348,556
113 : 3,348,557
135— 46 : 3,348,558
136— 30 : 3,348,973
86 : 3,348,974
120 : 3,348,975
125 : 3,348,976
133 : 3,348,977
214 : 3,348,978
137— 30 : 3,348,559
38 : 3,348,560
66 : 3,348,561
81.5 : 3,348,562
101 : 3,348,563
193 : 3,348,564
212 : 3,348,565
242 : 3,348,566
246.12: 3,348,567
269.5 : 3,348,569
315 : 3,348,570
340 : 3,348,571
344 : 3,348,572
505 : 3,348,573
599.1 : 3,348,574
614.05: 3,348,575
625.43: 3,348,576
637.1 : 3,348,577
3,348,578
31 : 3,348,579
139— 91 : 3,348,580
153 : 3,348,581
194 : 3,348,582
140— 92.4 : 3,348,583
93.2 : 3,348,584
147 : 3,348,585
3,348,586
141— 20 : 3,348,587
61 : 3,348,588
284 : 3,348,589
143—135 : 3,348,590
168 : 3,348,591
144— 3 : 3,348,592
288 : 3,348,593
146—107 : 3,348,594
148— 6.2 : 3,348,979
16 : 3,348,980
36 : 3,348,981
105 : 3,348,982
120 : 3,348,983
174 : 3,348,984
149— 2 : 3,348,985
11 : 3,348,986
150— 3 : 3,348,595
151— 41.73: 3,348,596
152—323 : 3,348,597
156— 17 : 3,348,987
71 : 3,348,988
285 : 3,348,989
293 : 3,348,990
156—300 : 3,348,991
158— 4 : 3,348,598
159— 2 : 3,348,599
6 : 3,348,600
13 : 3,348,601
160—188 : 3,348,602
197 : 3,348,603
313 : 3,348,604
161— 66 : 3,348,992
67 : 3,348,993
170 : 3,348,994
216 : 3,348,995
162—114 : 3,348,996
164 : 3,348,997
164— 26 : 3,348,605
219 : 3,348,606
165— 28 : 3,348,607
40 : 3,348,608
47 : 3,348,609
158 : 3,348,610
166— 9 : 3,348,611
29 : 3,348,612
42 : 3,348,613
45 : 3,348,614
97 : 3,348,615
223 : 3,348,616
167— 65 : 3,348,998
3,348,999
85 : 3,349,000
169— 42 : 3,348,617
170—135.4 : 3,348,618
172— 66 : 3,348,619
316 : 3,348,620
174— 15 : 3,349,161
68.5 : 3,349,162
70 : 3,349,163
73 : 3,349,164
75 : 3,349,165
88 : 3,349,166
94 : 3,349,167
99 : 3,349,168
128 : 3,349,169
175— 4.52: 3,348,621
176— 11 : 3,349,001
21 : 3,349,002
60 : 3,349,003
78 : 3,349,004
178— 5.4 : 3,349,170
5.8 : 3,349,171
6.8 : 3,349,172
7.3 : 3,349,173
7.6 : 3,349,174
22 : 3,349,175
30 : 3,349,176
68 : 3,349,177
69.5 : 3,349,178
179— 1 : 3,349,179
3,349,180
15 : 3,349,181
3,349,182
15.55: 3,349,183
3,349,184
16 : 3,349,185
18 : 3,349,186
3,349,187
3,349,188
3,349,189
3,349,190
84 : 3,349,191
100.2 : 3,349,192
3,349,193
100.41: 3,349,194
175 : 3,349,195
175.25: 3,349,196
180— 54 : 3,348,622
65 : 3,348,623
66 : 3,348,624
108 : 3,348,625
3,348,626
181— 24 : 3,348,627
33 : 3,348,628
48 : 3,348,629
182— 48 : 3,348,630
179 : 3,348,631
230 : 3,348,632
184— 1 : 3,348,633
186— 1 : 3,348,634
187— 9 : 3,348,635
188— 73 : 3,348,636
152 : 3,348,637

188– 162 : 3,348,638
171 : 3,348,639
250 : 3,348,640
3,348,641
251 : 3,348,642
191– 67 : 3,349,197
192– 3.5 : 3,348,643
4 : 3,348,644
67 : 3,348,645
193– 5 : 3,348,646
7 : 3,348,647
195– 36 : 3,349,005
103.5 : 3,349,006
197– 16 : 3,348,648
52 : 3,348,649
151 : 3,348,650
172 : 3,348,651
198– 7 : 3,348,652
24 : 3,348,653
33 : 3,348,654
34 : 3,348,655
64 : 3,348,656
127 : 3,348,657
131 : 3,348,658
136 : 3,348,659
168 : 3,348,660
181 : 3,348,661
186 : 3,348,662
192 : 3,348,663
220 : 3,348,664
200– 5 : 3,349,198
38 : 3,349,199
48 : 3,349,200
67 : 3,349,201
3,349,202
83 : 3,349,203
116 : 3,349,204
122 : 3,349,205
138 : 3,349,206
150 : 3,349,207
153 : 3,349,208
166 : 3,349,209
3,349,210
167 : 3,349,211
203– 26 : 3,349,007
60 : 3,349,008
67 : 3,349,009
99 : 3,349,010
204– 1 : 3,349,011
3,349,012
2 : 3,349,013
15 : 3,349,014
49 : 3,349,015
3,349,016
147 : 3,349,017
159.11: 3,349,019
159.2 : 3,349,018
180 : 3,349,020
3,349,021
206– 1 : 3,348,665
44 : 3,348,666
45.33: 3,348,667
52 : 3,348,668
56 : 3,348,669
3,348,670
65 : 3,348,671
3,348,672
3,348,673
3,348,674
208– 11 : 3,349,022
68 : 3,349,023
95 : 3,349,024
111 : 3,349,025
140 : 3,349,026
210 : 3,349,027
327 : 3,349,028
209– 5 : 3,348,675
22 : 3,348,676
74 : 3,348,677
3,348,678
84 : 3,348,679
3,348,680
210– 21 : 3,349,029
46 : 3,349,030
50 : 3,349,031
65 : 3,348,681
66 : 3,348,682
84 : 3,348,683
90 : 3,348,684
101 : 3,348,685
169 : 3,348,686
195 : 3,348,687
238 : 3,348,688
3,348,689
242 : 3,348,690
255 : 3,348,691
266 : 3,348,692
282 : 3,348,693
390 : 3,348,694
489 : 3,348,695
530 : 3,348,696
211– 22 : 3,348,697
24 : 3,348,698
90 : 3,348,699
212– 13 : 3,348,700
31 : 3,348,701

212– 54 : 3,348,702
213– 8 : 3,348,703
214– 1 : 3,348,704
15 : 3,348,705
17 : 3,348,706
44 : 3,348,707
83.3 : 3,348,708
138 : 3,348,709
152 : 3,348,710
392 : 3,348,711
396 : 3,348,712
450 : 3,348,713
508 : 3,348,714
767 : 3,348,715
215– 6 : 3,348,716
9 : 3,348,717
42 : 3,348,718
47 : 3,348,719
217–108 : 3,348,720
219– 59 : 3,349,212
60 : 3,349,213
69 : 3,349,214
74 : 3,349,215
101 : 3,349,216
110 : 3,349,217
119 : 3,349,218
131 : 3,349,219
218 : 3,349,220
385 : 3,349,221
388 : 3,349,222
413 : 3,349,223
540 : 3,349,224
545 : 3,349,225
220– 5 : 3,348,721
3,348,722
6 : 3,348,723
31 : 3,348,724
42 : 3,348,725
54 : 3,348,726
3,348,727
63 : 3,348,728
83 : 3,348,729
111 : 3,348,730
221– 5 : 3,348,731
123 : 3,348,732
298 : 3,348,733
222– 1 : 3,348,734
2 : 3,348,735
38 : 3,348,736
58 : 3,348,737
88 : 3,348,738
146 : 3,348,739
153 : 3,348,740
175 : 3,348,741
394 : 3,348,742
402.24: 3,348,743
494 : 3,348,744
223– 88 : 3,348,745
224– 1 : 3,348,746
42.1 : 3,348,747
226– 53 : 3,348,748
59 : 3,348,749
90 : 3,348,750
227– 8 : 3,348,751
109 : 3,348,752
228– 53 : 3,348,753
229– 17 : 3,348,754
3,348,755
37 : 3,348,756
3,348,757
44 : 3,348,758
53 : 3,348,759
3,348,760
54 : 3,348,761
80 : 3,348,762
92.9 : 3,348,763
230– 22 : 3,348,764
69 : 3,348,765
79 : 3,348,766
233– 7 : 3,348,767
235– 60 : 3,348,768
3,348,769
61 : 3,348,770
61.12: 3,349,226
92 : 3,349,227
3,349,228
151.11: 3,349,229
154 : 3,349,230
181 : 3,349,231
200 : 3,348,771
201 : 3,348,772
3,348,773
239– 70 : 3,348,774
227 : 3,348,775
242 : 3,348,776
424.5 : 3,348,777
240– 1.2 : 3,349,232
3,349,233
2.1 : 3,349,234
3,349,235
2.18: 3,349,236
9 : 3,349,237
9.5 : 3,349,238
25 : 3,349,239
108 : 3,349,240
241– 5 : 3,348,778

241– 39 : 3,348,779
101 : 3,348,780
264 : 3,348,781
242– 9 : 3,348,782
47 : 3,348,785
54.4 : 3,348,783
55.12: 3,348,784
55.13: 3,348,786
75.5 : 3,348,787
84.21: 3,348,788
107.4 : 3,348,789
244– 1 : 3,348,790
2 : 3,348,791
80 : 3,348,792
152 : 3,348,793
248– 4 : 3,348,794
19 : 3,348,795
20 : 3,348,796
44 : 3,348,797
150 : 3,348,798
283 : 3,348,799
346.1 : 3,348,800
249– 19 : 3,348,801
163 : 3,348,802
250– 43.5 : 3,349,241
54 : 3,349,242
83.1 : 3,349,243
83.3 : 3,349,244
231 : 3,349,245
239 : 3,349,246
251– 12 : 3,348,803
214 : 3,348,804
315 : 3,348,805
252– 8.55: 3,349,032
8.75: 3,349,033
28 : 3,349,034
99 : 3,349,035
101 : 3,349,036
146 : 3,349,037
161 : 3,349,038
172 : 3,349,039
182 : 3,349,040
301.2 : 3,349,041
305 : 3,349,042
407 : 3,349,043
253– 59 : 3,348,806
254– 94 : 3,348,807
106 : 3,348,808
124 : 3,348,809
133 : 3,348,810
134.3 : 3,348,811
161 : 3,348,812
256– 19 : 3,348,813
259– 1 : 3,348,814
6 : 3,348,815
41 : 3,348,816
72 : 3,348,817
148 : 3,348,818
151 : 3,348,819
161 : 3,348,820
260– 2 : 3,349,044
3,349,045
2.5 : 3,349,046
18 : 3,349,047
3,349,048
22 : 3,349,049
3,349,050
28.5 : 3,349,051
3,349,052
29.2 : 3,349,053
29.6 : 3,349,054
3,349,055
30.4 : 3,349,056
45.75: 3,349,057
45.85: 3,349,058
3,349,059
47 : 3,349,060
3,349,061
3,349,062
79.3 : 3,349,063
80.7 : 3,349,064
85.3 : 3,349,065
85.5 : 3,349,066
88.2 : 3,349,067
91.3 : 3,349,068
92.3 : 3,349,069
93.5 : 3,349,070
94.7 : 3,349,071
94.9 : 3,349,072
140 : 3,349,073
146 : 3,349,074
152 : 3,349,076
158 : 3,349,075
209 : 3,349,077
209.6 : 3,349,078
3,349,079
225 : 3,349,080
234 : 3,349,081
239.3 : 3,349,082
239.55: 3,349,083
3,349,084
3,349,085
240 : 3,349,086
243 : 3,349,087
248 : 3,349,088
249 : 3,349,089

260– 268 : 3,349,090
3,349,091
283 : 3,349,092
292 : 3,349,093
297 : 3,349,094
3,349,095
299 : 3,349,096
314.5 : 3,349,097
326 : 3,349,098
326.14: 3,349,099
327 : 3,349,100
343.2 : 3,349,101
347.8 : 3,349,102
348 : 3,349,103
376 : 3,349,104
404 : 3,349,105
406 : 3,349,106
410.9 : 3,349,107
429 : 3,349,108
429.7 : 3,349,109
439 : 3,349,110
465 : 3,349,111
471 : 3,349,112
476 : 3,349,113
477 : 3,349,114
479 : 3,349,115
3,349,116
488 : 3,349,117
497 : 3,349,118
3,349,119
505 : 3,349,120
513 : 3,349,121
3,349,122
544 : 3,349,123
553 : 3,349,124
3,349,125
555 : 3,349,126
559 : 3,349,127
566 : 3,349,128
584 : 3,349,129
586 : 3,349,130
3,349,131
590 : 3,349,132
591 : 3,349,133
621 : 3,349,134
3,349,135
648 : 3,349,136
653 : 3,349,137
666 : 3,349,138
667 : 3,349,139
3,349,140
668 : 3,349,141
671 : 3,349,142
3,349,143
3,349,144
672 : 3,349,145
676 : 3,349,146
680 : 3,349,147
683.15: 3,349,148
3,349,149
929 : 3,349,150
986 : 3,349,151
261– 29 : 3,348,821
34 : 3,348,822
41 : 3,348,823
3,348,824
98 : 3,348,825
121 : 3,348,826
3,348,827
142 : 3,348,828
152 : 3,348,829
161 : 3,348,830
264– .5 : 3,349,152
89 : 3,349,153
3,349,154
97 : 3,349,155
99 : 3,349,156
255 : 3,349,157
261 : 3,349,158
282 : 3,349,159
266– 4 : 3,348,831
14 : 3,348,832
36 : 3,348,833
3,348,834
267– 65 : 3,348,835
269– 25 : 3,348,836
270– 77 : 3,348,837
271– 24 : 3,348,838
64 : 3,348,839
273– 1.5 : 3,348,840
11 : 3,348,841
55 : 3,348,842
105.6 : 3,348,843
121 : 3,348,844
165 : 3,348,845
176 : 3,348,846
186 : 3,348,847
277– 26 : 3,348,848
27 : 3,348,849
101 : 3,348,850
134 : 3,348,851
279– 58 : 3,348,852
280– 1.175 3,348,853
11.35: 3,348,854
3,348,855

280– 11.35: 3,348,856
36 : 3,348,857
43.2 : 3,348,858
415 : 3,348,859
475 : 3,348,860
3,348,861
285– 39 : 3,348,862
252 : 3,348,863
287– 90 : 3,348,864
189.36: 3,348,865
289– 18 : 3,348,866
290– 1 : 3,349,247
2 : 3,349,248
292–122 : 3,348,867
280 : 3,348,868
294– 19 : 3,348,869
3,348,870
92 : 3,348,871
110 : 3,348,872
296– 1 : 3,348,873
23 : 3,348,874
95 : 3,348,875
121 : 3,348,876
137 : 3,348,877
297– 68 : 3,348,878
157 : 3,348,879
230 : 3,348,880
388 : 3,348,881
440 : 3,348,882
299– 4 : 3,348,883
301– 9 : 3,348,884
37 : 3,348,885
302– 12 : 3,348,886
307– 13 : 3,349,249
88 : 3,349,250
88.5 : 3,349,251
3,349,252
3,349,253
3,349,254
3,349,255
3,349,256
3,349,257
308– 26 : 3,348,887
72 : 3,348,888
187.2 : 3,348,889
310– 8.5 : 3,349,258
8.7 : 3,349,259
11 : 3,349,260
36 : 3,349,261
37 : 3,349,262
47 : 3,349,263
185 : 3,349,264
194 : 3,349,265
247 : 3,349,266
312– 3 : 3,348,890
38 : 3,348,891
208 : 3,348,892
209 : 3,348,893
3,348,894
212 : 3,348,895
313– 33 : 3,349,267
77 : 3,349,268
78 : 3,349,269
3,349,270
82 : 3,349,271
85 : 3,349,272
95 : 3,349,273
109 : 3,349,274
136 : 3,349,275
211 : 3,349,276
318 : 3,349,277
315– 3.6 : 3,349,278
27 : 3,349,279
77 : 3,349,280
83 : 3,349,281
94 : 3,349,282
168 : 3,349,283
223 : 3,349,284
317– 2 : 3,349,285
11 : 3,349,286
101 : 3,349,287
3,349,288
3,349,289
119 : 3,349,290
120 : 3,349,291
3,349,292
142 : 3,349,293
230 : 3,349,294
3,349,295
234 : 3,349,296
3,349,297
3,349,298
235 : 3,349,299
3,349,300
246 : 3,349,301
258 : 3,348,568
3,349,302
318– 18 : 3,349,303
118 : 3,349,304
128 : 3,349,305
3,349,306
221 : 3,349,307
314 : 3,349,308
341 : 3,349,309
320– 25 : 3,349,310

321– 2 : 3,349,311
5 : 3,349,312
10 : 3,349,313
43 : 3,349,314
45 : 3,349,315
52 : 3,349,316
68 : 3,349,317
322– 28 : 3,349,318
323– 21 : 3,349,319
43.5 : 3,349,320
75 : 3,349,321
324– 29.5 : 3,349,322
43 : 3,349,323
54 : 3,349,324
74 : 3,349,325
94 : 3,349,326
95 : 3,349,327
325– 38 : 3,349,328
320 : 3,349,329
3,349,330
424 : 3,349,331
328– 42 : 3,349,332
48 : 3,349,333
71 : 3,349,334
233 : 3,349,335
330– 24 : 3,349,336
331– 17 : 3,349,337
18 : 3,349,338
94.5 : 3,349,339
116 : 3,349,340
117 : 3,349,341
332– 9 : 3,349,342
14 : 3,349,343
31 : 3,349,344
333– 8 : 3,349,345
21 : 3,349,346
72 : 3,349,347
3,349,348
83 : 3,349,349
334– 47 : 3,349,350
70 : 3,349,351
335–154 : 3,349,352
188 : 3,349,353
209 : 3,349,354
222 : 3,349,355
254 : 3,349,356
336–210 : 3,349,357
338–172 : 3,349,358
208 : 3,349,359
339– 14 : 3,349,360
18 : 3,349,361
3,349,362
105 : 3,349,364
155 : 3,349,363
254 : 3,349,365
340– 8 : 3,349,366
12 : 3,349,367
41 : 3,349,368
146.1 : 3,349,369
3,349,370
3,349,371
146.3 : 3,349,372
147 : 3,349,373
163 : 3,349,374
172.5 : 3,349,375
3,349,376
3,349,377
3,349,378
3,349,379
174 : 3,349,380
174.1 : 3,349,381
3,349,382
3,349,383
3,349,384
3,349,385
249 : 3,349,386
336 : 3,349,387
347 : 3,349,388
3,349,389
3,349,390
3,349,391
343– 6.8 : 3,349,392
14 : 3,349,393
16 : 3,349,394
17.1 : 3,349,395
18 : 3,349,396
3,349,397
100 : 3,349,398
106 : 3,349,399
3,349,400
3,349,401
114.5 : 3,349,402
117 : 3,349,403
120 : 3,349,404
702 : 3,349,405
346–107 : 3,349,406
110 : 3,349,407
112 : 3,349,408
350– 2 : 3,348,896
125 : 3,348,897
184 : 3,348,898
3,348,899
209 : 3,348,900
210 : 3,348,901
232 : 3,348,902

D 4– 2 : 208,966
4 : 208,967
208,968
D 9– 2 : 208,969
D10– 7 : 208,970
8 : 208,971
9 : 208,972
D13– 1 : 208,973
208,974
D14– 6 : 208,975
D15– 1 : 208,976
D16– 2 : 208,977

D22– 23 : 208,978
D26– 1 : 208,979
5 : 208,980
208,981
13 : 208,982
14 : 208,983
D34– 5 : 208,984
15 : 208,986
D35– 2 : 208,987
208,988
208,989

D35– 2 : 208,990
208,991
208,992
208,993
208,994
208,995
208,996
208,997
D42– 7 : 208,998
208,999
D44– 1 : 209,000
29 : 209,001

D48– 2 : 209,002
209,003
4 : 209,004
20 : 209,005
D49– 1 : 209,006
209,007
209,008
209,009
D52– 2 : 209,010
6 : 209,011
7 : 209,012
D54– 1 : 209,013

D54– 12 : 209,014
209,015
209,016
D57– 1 : 209,017
D58– 3 : 209,018
6 : 209,019
209,020
17 : 209,021
D61– 1 : 209,022
D64– 10 : 209,023
11 : 209,024

D67– 3 : 209,025
209,026
209,027
D73– 1 : 209,028
D74– 1 : 209,029
17 : 209,030
D83– 1 : 209,031
D90– 20 : 209,032
D91– 3 : 209,033
4 : 209,034
D96– 3 : 209,035

CLASSIFICATION OF PLANTS

P. – 11 : 2,774

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,348,335
3,348,355
3,348,426
3,348,995
4 : 3,348,591
3,348,657
3,348,801
3,348,813
3,348,852
3,348,895
3,349,184
3,349,374
3,349,394
5 : 3,348,323
6 : 3,348,241
3,348,253
3,348,254
3,348,255
3,348,259
3,348,288
3,348,320
3,348,321
3,348,336
3,348,348
3,348,350
3,348,352
3,348,360
3,348,361
3,348,405
3,348,435
3,348,437
3,348,452
3,348,458
3,348,459
3,348,495
3,348,518
3,348,520
3,348,535
3,348,540
3,348,543
3,348,557
3,348,561
3,348,572
3,348,573
3,348,593
3,348,595
3,348,643
3,348,647
3,348,655
3,348,658
6 : 3,348,661
3,348,667
3,348,669
3,348,670
3,348,675
3,348,679
3,348,680
3,348,691
3,348,693
3,348,705
3,348,710
3,348,711
3,348,713
3,348,723
3,348,734
3,348,736
3,348,768
3,348,769
3,348,776
3,348,784
3,348,788
3,348,789
3,348,804
3,348,846
3,348,853
3,348,867
3,348,894
3,348,912
3,348,921
3,348,943
3,348,946
3,348,953
3,348,962
3,349,004
3,349,011
3,349,014
3,349,023
3,349,026
3,349,041
3,349,077
3,349,078
3,349,079
3,349,119
3,349,141
3,349,148
3,349,165
3,349,178
3,349,193
3,349,196
3,349,201
6 : 3,349,211
3,349,218
3,349,222
3,349,223
3,349,244
3,349,269
3,349,270
3,349,273
3,349,287
3,349,289
3,349,298
3,349,319
3,349,323
3,349,329
3,349,334
3,349,340
3,349,346
3,349,348
3,349,370
3,349,373
3,349,380
3,349,383
3,349,384
3,349,385
7 : 3,348,823
8 : 3,348,362
3,348,906
3,349,306
9 : 3,348,245
3,348,246
3,348,281
3,348,289
3,348,290
3,348,293
3,348,294
3,348,328
3,348,375
3,348,385
3,348,408
3,348,410
3,348,418
3,348,511
3,348,648
3,348,672
3,348,740
3,348,751
3,348,774
3,348,792
3,348,811
3,348,830
9 : 3,348,905
3,348,942
3,348,974
3,348,975
3,348,979
3,348,991
3,348,992
3,349,030
3,349,038
3,349,046
3,349,108
3,349,125
3,349,136
3,349,224
3,349,290
3,349,291
3,349,314
3,349,351
10 : 3,348,549
3,349,061
3,349,111
3,349,249
11 : 3,348,271
12 : 3,348,239
3,348,306
3,348,356
3,348,567
3,348,574
3,348,628
3,348,636
3,348,637
3,348,841
3,348,920
3,349,042
3,349,310
3,349,341
3,349,355
13 : 3,348,395
3,348,634
3,348,671
3,349,292
3,349,327
17 : 3,348,244
3,348,248
3,348,261
3,348,276
3,348,305
3,348,307
3,348,317
3,348,324
17 : 3,348,329
3,348,341
3,348,364
3,348,369
3,348,419
3,348,447
3,348,468
3,348,470
3,348,472
3,348,474
3,348,481
3,348,488
3,348,498
3,348,504
3,348,541
3,348,550
3,348,563
3,348,568
3,348,575
3,348,579
3,348,584
3,348,594
3,348,597
3,348,604
3,348,620
3,348,639
3,348,644
3,348,664
3,348,665
3,348,674
3,348,676
3,348,685
3,348,698
3,348,702
3,348,720
3,348,725
3,348,726
3,348,727
3,348,728
3,348,729
3,348,743
3,348,746
3,348,753
3,348,756
3,348,777
3,348,780
3,348,786
3,348,799
3,348,803
3,348,819
17 : 3,348,822
3,348,825
3,348,834
3,348,836
3,348,838
3,348,847
3,348,859
3,348,862
3,348,911
3,348,926
3,348,971
3,348,972
3,348,999
3,349,013
3,349,017
3,349,091
3,349,103
3,349,106
3,349,110
3,349,138
3,349,140
3,349,145
3,349,146
3,349,162
3,349,173
3,349,186
3,349,189
3,349,198
3,349,221
3,349,235
3,349,239
3,349,252
3,349,258
3,349,263
3,349,266
3,349,268
3,349,279
3,349,315
3,349,325
3,349,330
3,349,331
3,349,353
3,349,360
3,349,362
3,349,405
18 : 3,348,302
3,348,340
3,348,409
3,348,423
3,348,492

18 : 3,348,493
3,348,623
3,348,632
3,348,738
3,348,764
3,348,840
3,348,860
3,348,958
3,348,965
3,349,005
3,349,036
3,349,281
3,349,313
3,349,316
3,349,359
19 : 3,348,275
3,348,345
3,348,354
3,348,706
3,348,712
3,348,888
3,348,955
3,349,345
20 : 3,348,264
3,348,397
3,348,505
3,348,696
3,348,843
21 : 3,348,366
3,348,947
3,349,105
22 : 3,348,295
3,348,365
3,348,652
3,348,700
3,349,028
23 : 3,348,477
3,348,581
24 : 3,348,464
3,348,517
3,348,545
3,348,686
3,348,781
3,348,807
3,348,887
3,348,997
3,349,158
3,349,233
3,349,342
25 : 3,348,251
3,348,256
3,348,326
3,348,414
3,348,438
3,348,446
3,348,465
3,348,471
3,348,490
3,348,510
3,348,525
3,348,532
3,348,534
3,348,542
3,348,547
3,348,560
3,348,600
3,348,697
3,348,767
3,348,778
3,348,805
3,348,875
3,348,890
3,348,966
3,348,986
3,349,001
3,349,043
3,349,161
3,349,174
3,349,209
3,349,228
3,349,238
3,349,241
3,349,247
3,349,260
3,349,261
3,349,324
3,349,357
3,349,367
3,349,406
26 : 3,348,266
3,348,285
3,348,292
3,348,296
3,348,392
3,348,417
3,348,425
3,348,439
26 : 3,348,441
3,348,476
3,348,496
3,348,502
3,348,530
3,348,603
3,348,625
3,348,626
3,348,629
3,348,638
3,348,640
3,348,641
3,348,656
3,348,673
3,348,688
3,348,695
3,348,722
3,348,731
3,348,748
3,348,770
3,348,773
3,348,794
3,348,815
3,348,816
3,348,821
3,348,851
3,348,858
3,348,876
3,348,877
3,348,883
3,348,885
3,348,904
3,348,910
3,348,922
3,348,928
3,348,967
3,348,969
3,348,973
3,349,002
3,349,015
3,349,021
3,349,069
3,349,084
3,349,112
3,349,157
3,349,179
3,349,208
3,349,220
3,349,231
3,349,255
3,349,275
3,349,278
3,349,284
3,349,303
27 : 3,348,247
3,348,299
3,348,562
3,348,681
3,348,733
3,348,750
3,348,793
3,348,917
3,348,941
3,348,950
3,348,996
3,349,012
3,349,037
3,349,164
3,349,171
3,349,203
3,349,234
3,349,256
29 : 3,348,331
3,348,377
3,348,422
3,348,483
3,348,501
3,348,613
3,348,646
3,348,687
3,348,737
3,348,758
3,348,939
3,349,029
3,349,051
3,349,144
3,349,285
3,349,300
3,349,363
30 : 3,348,812
31 : 3,348,322
33 : 3,348,588
3,348,861
34 : 3,348,249
3,348,351
3,348,415
3,348,433
34 : 3,348,445
3,348,475
3,348,487
3,348,507
3,348,536
3,348,546
3,348,553
3,348,554
3,348,559
3,348,566
3,348,570
3,348,617
3,348,689
3,348,735
3,348,779
3,348,844
3,348,908
3,348,918
3,348,919
3,348,923
3,348,931
3,348,932
3,348,934
3,348,940
3,348,956
3,349,016
3,349,018
3,349,034
3,349,045
3,349,047
3,349,057
3,349,065
3,349,070
3,349,085
3,349,096
3,349,100
3,349,109
3,349,122
3,349,129
3,349,142
3,349,180
3,349,191
3,349,195
3,349,205
3,349,213
3,349,230
3,349,246
3,349,250
3,349,254
3,349,280
3,349,283
3,349,297
3,349,311
3,349,328
3,349,333
3,349,339
3,349,344
3,349,350
3,349,358
3,349,369
3,349,371
3,349,372
3,349,392
3,349,398
3,349,400
3,349,401
3,349,403
35 : 3,348,332
3,348,724
36 : 3,348,237
3,348,240
3,348,243
3,348,270
3,348,287
3,348,311
3,348,343
3,348,344
3,348,357
3,348,358
3,348,372
3,348,388
3,348,389
3,348,391
3,348,404
3,348,411
3,348,416
3,348,421
3,348,431
3,348,432
3,348,463
3,348,469
3,348,479
3,348,500
3,348,509
3,348,513
3,348,514
36 : 3,348,522
3,348,523
3,348,524
3,348,538
3,348,548
3,348,556
3,348,576
3,348,578
3,348,609
3,348,627
3,348,633
3,348,654
3,348,666
3,348,684
3,348,692
3,348,744
3,348,745
3,348,754
3,348,755
3,348,761
3,348,782
3,348,787
3,348,796
3,348,810
3,348,814
3,348,842
3,348,849
3,348,850
3,348,857
3,348,868
3,348,882
3,348,896
3,348,899
3,348,900
3,348,901
3,348,902
3,348,924
3,348,925
3,348,944
3,348,948
3,348,954
3,348,964
3,348,990
3,349,006
3,349,022
3,349,033
3,349,040
3,349,048
3,349,054
3,349,073
3,349,080
3,349,092
3,349,115
3,349,116
3,349,123
3,349,124
3,349,126
3,349,151
3,349,155
3,349,190
3,349,194
3,349,212
3,349,227
3,349,232
3,349,236
3,349,242
3,349,251
3,349,259
3,349,264
3,349,301
3,349,307
3,349,361
3,349,375
3,349,378
3,349,379
3,349,389
37 : 3,348,268
3,348,269
3,348,309
3,348,363
3,348,551
3,348,571
3,348,582
3,348,586
3,348,785
3,348,845
3,348,878
3,348,936
3,349,386
39 : 3,348,238
3,348,242
3,348,279
3,348,316
3,348,330
3,348,334
3,348,398
39 : 3,348,399
3,348,401
3,348,406
3,348,413
3,348,456
3,348,466
3,348,478
3,348,491
3,348,521
3,348,583
3,348,592
3,348,598
3,348,606
3,348,678
3,348,694
3,348,730
3,348,757
3,348,775
3,348,818
3,348,831
3,348,863
3,348,880
3,348,935
3,348,994
3,349,049
3,349,050
3,349,133
3,349,139
3,349,150
3,349,199
3,349,240
3,349,257
3,349,265
3,349,295
3,349,320
3,349,347
3,349,365
3,349,404
40 : 3,348,367
3,348,382
3,348,569
3,348,601
3,348,616
3,349,008
3,349,009
3,349,010
3,349,020
3,349,024
3,349,058
3,349,062
3,349,071
41 : 3,348,387
42 : 3,348,236
3,348,283
3,348,286
3,348,291
3,348,333
3,348,339
3,348,373
3,348,374
3,348,378
3,348,403
3,348,420
3,348,427
3,348,428
3,348,443
3,348,444
3,348,484
3,348,528
3,348,537
3,348,577
3,348,599
3,348,635
3,348,699
3,348,707
3,348,721
3,348,759
3,348,762
3,348,771
3,348,795
3,348,802
3,348,806
3,348,832
3,348,833
3,348,835
3,348,869
3,348,870
3,348,873
3,348,879
3,348,909
3,348,930
3,348,961
42 : 3,348,970
3,348,978
3,348,980
3,348,988
3,349,025
3,349,027
3,349,031
3,349,052
3,349,117
3,349,149
3,349,166
3,349,167
3,349,304
3,349,309
3,349,364
3,349,390
3,349,408
43 : 3,348,301
3,348,353
44 : 3,348,368
46 : 3,348,826
47 : 3,348,263
3,348,533
3,348,739
3,349,059
3,349,075
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56 : 3,348,614

Design Patents

5 : 208,977
6 : 208,969
208,980
208,996
209,019
209,023
9 : 208,984
17 : 208,971
208,972
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19 : 209,006
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20 : 208,979
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21 : 208,966
24 : 208,986
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34 : 208,973
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39 : 208,985
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42 : 208,995
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209,013
47 : 208,978
48 : 209,005
209,028
49 : 208,981
209,034
51 : 208,970

Plant Patents

36 : 2,774

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

October 24, 1967 Volume 843 Number 4

TRADEMARKS

NOTICES

Veterans Day Holiday

Since Veterans Day falls this year on a Saturday, the preceding day, Friday, November 10, is considered to be a holiday within the District of Columbia and the Patent Office will be closed for business on that day. Accordingly, any action due on November 10, or November 11, 1967, is to be considered timely if taken on November 13, 1967.

By direction of the Acting Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Oct. 11, 1967.

Notice of Tentative Recordation of a Trade Name

[T.D. 67-234]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 2, 1967

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

"BEAUNIT CORPORATION," is a trade name used by Beaunit Corporation (also doing business as Beaunit Fibers and Beaunit Textiles), a corporation organized under the laws of the State of New York, located at 261 Madison Avenue, New York, New York, 10016. The trade name is used in connection with man-made fibers, knitted and woven fabrics and garments, manufactured in the United States.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after October 31, 1967, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1967, of any opposition proceedings.

Until 45 days after October 31, 1967, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits

CONDITION OF TRADEMARK APPLICATIONS AS OF AUGUST 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,726
Date of oldest new application	Oct. 18, 1966
Date of oldest amended application (filing date)	July 5, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-25-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-25-66	1-14-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-18-66	7-5-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-24-66	10-30-64
Renewals (All Classes)	7-3-67	.....
Sec. 12(c) Publications (All Classes)	6-29-67	.....

Applications filed during the month of August 1967—2,513

Registrations Issued ---------- 352—No. 837,354 to No. 837,705
Renewals Issued ---------- 56

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

LESTER D. JOHNSON,
Commissioner of Customs.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 69,530 (VOGUE), The Conde Nast Publications, Inc., Weekly magazine; **Reg. No. 504,006**, same, Magazine published twenty times yearly, filed Aug. 9, 1967, D.C., S.D.N.Y., Doc. 67–C–3045, *The Conde Nast Publications, Inc.* v. *American Greetings Corporation.*

Reg. No. 358,526 (ECONOMY BRAND), Basic Vegetable Products, Inc., Onion powder and garlic powder; **3,228,413**, F. R. Stevens, KEG TAPPING DEVICE, filed Aug. 2, 1967, D.C., Conn. (New Haven), Doc. 12100, *Mack Johnston, Inc. and Long Beach Plastic Co., Inc.* v. *Franklyn R. Hoff et al.*

Reg. No. 504,006. (See Reg. No. 69,530.)

Reg. No. 547,321 (AAA), American Automobile Association, Services rendered to motor vehicle owners, motorists and travelers generally, filed Aug. 7, 1967, D.C., Nev. (Las Vegas), Doc. 1047–Civ(s), *American Automobile Association* v. *George E. Goldberg, doing business as Flamingo Capri Motel.*

Reg. No. 569,760 (HERTZ DRIV-UR-SELF SYSTEM, THE WORLD'S LARGEST AND DESIGN), Herts Drivurself System, Rental of automobiles and trucks; **Reg. No. 614,123** (HERTZ), Herts Drivurself System, Inc., Rental of automobiles and trucks; **Reg. No. 694,366** (HERTZ AND DESIGN), Hertz System, Inc., Rental of automobiles and trucks; **Reg. No. 699,572** (THE HERTZ IDEA), same, Rental of vehicles; **Reg. No. 750,299** (HERTZ AND DESIGN), same, Rental and leasing of equipment, tools, machinery, hard goods of all kinds for industrial and home purposes; **Reg. No. 750,300** (HERTZ), same, Rental and leasing office equipment, tools, machines, hard goods of all kinds for industrial and home purposes; **Reg. No. 759,388** (HERTZ PUTS YOU IN THE DRIVER'S SEAT), same, Rental of automobiles; **Reg. No. 759,390** (LET HERTZ PUT YOU IN THE DRIVER'S SEAT), same, Rental of automobiles; **Reg. No. 772,039** (HERTZ 3–R), same, Combined plane, car rental and motel/hotel reservation service; **Reg. No. 805,797** (HERTZUBURBAN), same, Vehicle rental services, filed Aug. 2, 1967, D.C., S.D., Fla. (Miami), Doc. 67–782–Civ–CF, *Hertz Equipment Rental Corporation et al.* v. *Hertz Equipment International Inc.*

Reg. No. 614,123. (See Reg. No. 569,760.)

Reg. No. 671,993 (STA-PRESS), A. Solomon Co., Men's and boys' suits, sport coats, and trousers; **Reg. No. 817,029** (STA-PREST), Levi Strauss & Co., Garments, particularly trousers, filed Aug. 3, 1967, D.C., S.D., Fla. (Miami), Doc. 67–785–Civ–CA, *Levi Strauss & Co.* v. *Sta-Press, Inc.*

Reg. No. 694,366. (See Reg. No. 569,760.)

Reg. No. 699,572. (See Reg. No. 569,760.)

Reg. No. 737,924 (DUO-TANG), Ellingsworth Mfg. Co., Looseleaf covers and looseleaf index dividers; **Reg. No. 742,531**, same, Portfolios, filed Aug. 7, 1967, D.C.N.J. (Newark), Doc. 828–67, *Ellingsworth Manufacturing Co.* v. *Tang Binder.*

Reg. No. 742,531. (See Reg. No. 737,924.)

Reg. No. 750,299. (See Reg. No. 569,760.)

Reg. No. 750,300. (See Reg. No. 569,760.)

Reg. No. 759,388. (See Reg. No. 569,760.)

Reg. No. 759,390. (See Reg. No. 569,760.)

Reg. No. 772,039. (See Reg. No. 569,760.)

Reg. No. 774,765 (REPUBLIC PACKAGING AND DESIGN), Republic Packaging Corporation, Custom designed packaging made of various materials for the shipment and storage of manufactured articles, filed Apr. 29, 1965, D.C., S.D.N.Y., Doc. 65–C–1304, *Republic Packaging Corp.* v. *Republic Packaging Co., Inc.* Stipulation and order dismissing action, Aug. 8, 1967.

Reg. No. 805,797. (See Reg. No. 569,760.)

Reg. No. 817,029. (See Reg. No. 671,993.)

3,228,413. (See Reg. No. 358,526.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 236,170. Precision Papers, Inc., Brooklyn, N.Y. Filed Jan. 11, 1966.



Applicant disclaims the words "World Headquarters" and "For Papers and Chemicals for the Needle Trades" separate and apart from the mark as shown.

Class 6—Chemicals and Chemical Compositions

For Chemicals for the Needle Trade—Namely, Anti-Friction Chemicals, Fabric Anti-Fray Chemicals and Pattern-Strengthening Chemicals.

Class 16—Protective and Decorative Coatings

For Sealing and Hardening Compositions.

Class 37—Paper and Stationery

For Paper for the Needle Trade—Namely, Marking Papers, Pattern Papers, Separating Papers and Interleaving Paper.

First use June 1963.

SN 240,396. Wells Dairies Cooperative, Columbus, Ga. Filed Mar. 7, 1966.



Class 45—Soft Drinks and Carbonated Waters

For Imitation Orange Drink.

Class 46—Foods and Ingredients of Foods

For Homogenized Fluid Milk, Buttermilk, Skim Milk, Whipping Cream, Half and Half Cream, Reconstituted Orange Juice Sold in Cartons, Milk Shakes, Eggnog, Butter, Ice Cream, Ice Milk, Cottage Cheese, Spiced Party Dips, Sour Cream, Multi-Vitamin Milk, Modified Chocolate Milk, Chocolate Milk, and Sherbets.

First use Nov. 10, 1965.

SN 241,721. Art Metal, Inc., Jamestown, N.Y. Filed Mar. 24, 1966.



The mark consists of a design monogram with the letters "AM."

Class 32—Furniture and Upholstery

For Articles of Furniture—Namely, Desks, Tables, Cabinets, Stands, Chairs, Files, Book Cases, Shelving, Partitions, Counters, Couches, Card Holders, Rotary Card Holders, Swinging Card Holders, and Reference Panels.

Class 37—Paper and Stationery

For Filing Supplies—Namely, Filing Folders, Guides, Index Strips, Tabs, Card Guides, and Filing Cards.

First use Jan. 4, 1966.

SN 244,055. Fuller-Dees Marketing Group, Inc., d.b.a. Fuller Fund Raising Company, Montgomery, Ala. Filed Apr. 22, 1966.

FAMILY-PAK

Class 29—Brooms, Brushes, and Dusters

For Toothbrushes.
First use on or about Sept. 1, 1963.

Class 40—Fancy Goods, Furnishings, and Notions

For Combs.
First use on or about Jan. 21, 1966.

SN 247,158. Sinclair Refining Company, New York, N.Y. Filed June 2, 1966.



Owner of Reg. Nos. 691,904, 695,176, and others.

Class 1—Raw or Partly Prepared Materials

For Charcoal Lighter Fluids, Charcoal Brickettes and Asphalt.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Barbecue Cooking Kits, Oil Fired Equipment—Namely, Furnaces, Boilers, Water Heaters, Tobacco Curers; and Air Conditioners.

First use at least June 1960.

SN 247,655. A. W. Chesterton Company, Everett, Mass. Filed June 9, 1966.

CHESTERTON

Owner of Reg. Nos. 801,875 and 429,721.

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions—Namely, Belt Dressing in Spray and Liquid Forms.
First use at least as early as Mar. 31, 1950.

Class 15—Oils and Greases

For Oils—Namely, Cutting Oils, Penetrating Oils, Gear and Wire Rope Lubricants in Spray and Liquid Form, All-Purpose Dry Resinous Lubricants in Spray Form.
First use at least as early as Oct. 10, 1954.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools—Namely, Gauge Glass Cutters, Tools for Cutting, Inserting, and Removing Packings and Boiler Scrapers.
First use at least as early as 1925.

Class 26—Measuring and Scientific Appliances

For Pressure-Gauge Glasses.
First use at least as early as 1925.

Class 29—Brooms, Brushes, and Dusters

For Brushes—Namely, Wire Brushes.
First use at least as early as 1925.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Boiler Tube Blowers.
First use at least as early as 1925.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Sealing Materials—Namely, Mechanical Packings, Gaskets, Non-Metallic Washers, Hydraulic Seals and Rings, Seals and Tapes for Mechanical and Threaded Joints.
First use at least as early as 1884.

SN 248,597. Continental Oil Company, Ponca City, Okla. Filed June 21, 1966.

CONOCO

Owner of Reg. Nos. 283,697, 804,481, and others.

Class 1—Raw or Partly Prepared Materials

For Charcoal Starter.
First use on or about May 10, 1963.

Class 6—Chemicals and Chemical Compositions

For Cigarette Lighter Fluid, Windshield Ice Melting Solution, Hydraulic Brake Fluid, Petrolatum.
First use on or about Dec. 21, 1954.

Class 15—Oils and Greases

For Gasoline; Diesel Oil; Lubricating Oils Including Motor Oils, Upper Cylinder Lubricants and Industrial Lubricants; Hydraulic Oil; Form Oils; Automatic Transmission Fluid; Greases; Pipe Thread Lubricants and Compounds.
First use on or about Apr. 28, 1914.

Class 16—Protective and Decorative Coatings

For Wax-Containing Hot Melts for Application to Paper Cardboard and Other Substrates.
First use on or about Oct. 7, 1964.

SN 250,027. Relief Printing Corporation, Boston, Mass. Filed July 11, 1966.

RELIEF-A-GRAVED

Class 37—Paper and Stationery

For Letterheads and Envelopes.

Class 38—Prints and Publications

For Printed Name Cards, Announcements and Invitations, Both Business and Social.

First use June 8, 1966.

SN 251,633. International Club, Inc., New York, N.Y. Filed Aug. 3, 1966.

INTERNATIONAL CLUB

Owner of Reg. No. 687,351.

Class 51—Cosmetics and Toilet Preparations

For Shaving Lotion, Shaving Foam, Talc, Cologne and Personal Deodorant.
First use Nov. 5, 1957.

Class 52—Detergents and Soaps

For Toilet Soap.
First use June 11, 1965.

SN 252,984. United States Rubber Company, New York, N.Y. Filed Aug. 24, 1966.

FILATEX

Owner of Reg. Nos. 340,835, 345,043, and others.

Class 1—Raw or Partly Prepared Materials

For Filament Wound Structures of Fiber Reinforced Plastic of a Semi-Finished Nature.

Class 2—Receptacles

For Textile Reinforced Containers for Use, for Example, for Storing Gasoline and Other Liquids.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Hose.

First use June 29, 1966.

SN 255,034. Bio-Medical Electronics Consultants, Inc., Rockville, Md. Filed Sept. 26, 1966.

BME

Class 26—Measuring and Scientific Appliances

For Constant Current Stimulators, Stimulus Isolation Units, Laboratory Stimulators, Pulse Generators, Calibrators, Current Selector Panels, Physiological Amplifier Systems, Microscope Pantographs, Window Discriminators, Mossbauer Spectrometer Transducers, and Mossbauer Spectrometers, All of Which Instruments Are for Laboratory Application.
First use January 1964.

Class 100—Miscellaneous

For Consulting, Designing, and Adapting Scientific Instruments to Specification and Order of Others.
First use August 1964.

SN 255,947. Hurletron Incorporated, Danville, Ill. Filed Oct. 7, 1966.

INSETROL

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus Particularly for Controlling Elongate Web Handling Apparatus, Comprising: Web Position Scanners, Selsyn Generators, Electric to Pneumatic Transducers, Control Consoles, Stroboscopic Viewers, Cylinder Position Monitors, and Automatic Web Paster Controls.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automatic Apparatus for Inserting Preprinted Sections of Paper Into a Newspaper Being Printed in a Printing Press and Components and Parts Thereof.

First use on or about Aug. 29, 1966.

SN 255,948. Hurletron Incorporated, Danville, Ill. Filed Oct. 7, 1966.

MANUTROL

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus Particularly for Controlling Elongate Web Handling Apparatus, Comprising: Web Position Scanners, Selsyn Generators, Electric to Pneumatic Transducers, Control Consoles and Stroboscopic Viewers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Semi-Automatic Apparatus for Inserting Preprinted Sections of Paper Into a Newspaper Being Printed in a Printing Press and Components and Parts Thereof.

First use on or about Sept. 21, 1966.

SN 256,895. Douglas M. Homs Company, Inc., Burlingame, Calif. Filed Oct. 21, 1966.

HOMS

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Paper Cutters, Paper Trimmers, Hand Stamps, Numbering Machines, Dating Machines, Portable Hand Printing Machines, Staplers and Numbering Machine Platforms, and Holding Devices and Pedals for Numbering Machines.
First use about 1956.

Class 26—Measuring and Scientific Appliances

For Weighing Equipment—Namely, Spring, Beam, Floor, Postage, Checkweight, Bench Dial and Portable Dial Scales, Combination Counting and Weighing Scales, Laboratory Balances, Tare Beams, and Scale Parts; Tally Counters.
First use about 1954.

Class 37—Paper and Stationery

For Visible Card Index Binders.
First use about 1956.

SN 257,331. Sigma Instruments Inc., Braintree, Mass. Filed Oct. 27, 1966.



Owner of Reg. No. 818,201.

Class 21—Electrical Apparatus, Machines, and Supplies

For Relays, Photo Relays, Current Sensors, Flashers, Amplifiers, Adapters for Lighting Controls for Luminaries, Circuitry for Controlling Capacitors To Correct the Power Factor, Excluding Capacitors per se, Lightning Arrestors, Pick-Up Assemblies for Power Lines; Electronic Equipment for Electric Utility Systems—Namely, Sensing Equipment, Capacitor Switching Equipment, Excluding Capacitors per se, Load Survey and Protective Relaying Equipment.

Class 26—Measuring and Scientific Appliances

For Timers, Voltage Controls, Lighting Controls, Register Controls, Scanners, Photo Relay Receivers and Light Sources, Miss Detectors.

First use January 1963.

SN 257,453. Wolfgang Horst/Bentz, d.b.a. Melitta-Werke Bentz, & Sohn, Minden, Westphalia, Germany. Filed Oct. 28, 1966.

MELITTA 1X6

Owner of German Reg. No. 813,086, dated Dec. 1, 1965; and U.S. Reg. Nos. 624,591, 748,225, and others.

Class 30—Crockery, Earthenware, and Porcelain

For Filter-Type Coffeemakers and Coffeepots Made of Crockery, Earthenware, and Porcelain.

Class 31—Filters and Refrigerators

For Filters for Coffeemakers and Filter Paper Therefor.

Class 33—Glassware

For Filter-Type Coffeemakers and Coffeepots Made of Glass.

First use July 15, 1965; in commerce Oct. 20, 1965.

SN 257,529. Sternco Industries, Inc., Allendale, N.J. Filed Oct. 28, 1966.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Aquarium Pumps and Accessories Therefor.

Class 44—Dental, Medical, and Surgical Appliances

For Nail Trimmers and Files for Animal Pets.

First use Sept. 4, 1962.

SN 262,374. Hallmark Cards, Incorporated, d.b.a. Ambassador Cards, Kansas City, Mo. Filed Jan. 12, 1967.

STYLES-A-PARTY

Owner of Reg. Nos. 689,926 and 738,237.

Class 2—Receptacles

For Decorative Paper Plates and Cups.

Class 37—Paper and Stationery

For Decorative Centerpieces, Table Covers, Place Covers, Napkins, Coasters, Guest Towels, Place Cards, Invitations, Home Decorations, and Tallies, All Made of Paper.

First use Dec. 28, 1966.

SN 262,842. American Shoe Specialties Company, Inc., New York, N.Y. Filed Jan. 19, 1967.

AMERICAN

Owner of Reg. Nos. 708,768, and 733,465, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Grommets, Washers, Eyelets, and Rivets.
First use on or before Sept. 13, 1944.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Foot Presses for Attaching Metal Specialties, Foot Presses for Covering and Dies for Covering Molds and Molds for Making Buttons and Buckles.
First use during or before 1951.

Class 28—Jewelry and Precious-Metal Ware

For Rhinestones, Rhinestone Settings, and Pearls.
First use on or before Sept. 13, 1944.

Class 40—Fancy Goods, Furnishings, and Notions

For Metal Belt Buckles and Metal Shoe Buckles.
First use Sept. 13, 1944.

SN 262,853. C. & C. Button & Trimming Co., Inc., New York, N.Y. Filed Jan. 19, 1967.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Washers, Eyelets, and Rivets.
First use on or before Sept. 13, 1944.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Foot Presses for Attaching Metal Specialties, Foot Presses for Covering and Dies for Covering Molds and Molds for Making Buttons and Buckles.
First use during or before 1951.

Class 28—Jewelry and Precious-Metal Ware

For Rhinestones, Rhinestone Settings, and Pearls.
First use on or before Sept. 13, 1944.

Class 40—Fancy Goods, Furnishings, and Notions

For Metal Belt Buckles and Metal Shoe Buckles.
First use Sept. 13, 1944.

SN 264,777. Clairol Incorporated, New York, N.Y. Filed Feb. 16, 1967.

KERANATOR

Class 51—Cosmetics and Toilet Preparations

For Hair Tinting, Dyeing and Coloring Preparation, a Lip Color, a Complexion Color, and a Hair Conditioner.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Sept. 26, 1966.

SN 268,366. Malco Manufacturing Company, Inc., Chicago, Ill. Filed Apr. 5, 1967.

MALCO

Owner of Reg. No. 673,790.

Class 21—Electrical Apparatus, Machines, and Supplies

For Bus Bars, Connectors, Clamps, Panel Jacks, Binding Posts, and Electronic Hardware—Namely, Brackets, Shells, Center Shields, and Terminals for Use in Connection With Components.
First use Apr. 15, 1946.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Crimping Devices for Use With Electronic Terminals.
First use before 1950.

SN 271,895. E. C. De Witt & Co., Inc., Chicago, Ill. Filed May 19, 1967.

NIGHT BEAT

Class 51—Cosmetics and Toilet Preparations

For Eau de Cologne, After Shave Lotion, and Talcum Powder.

Class 52—Detergents and Soaps

For Toilet Soap.

First use May 9, 1967.

SN 274,564. Safeway Stores, Incorporated, Oakland, Calif. Filed June 23, 1967.

Owner of Reg. Nos. 671,186, 771,051, and 803,574.

Class 18—Medicines and Pharmaceutical Preparations

For Analgesic Tablets.
First use Mar. 23, 1967.

Class 29—Brooms, Brushes, and Dusters

For Toothbrushes.
First use Apr. 20, 1967.

Class 51—Cosmetics and Toilet Preparations

For Toothpaste.
First use May 1, 1967.

SN 274,835. Pearl-Wick Corporation, Long Island City, N.Y. Filed June 27, 1967.

PEARL-WICK

Owner of Reg. Nos. 291,055, 732,305, and 732,488.

Class 26—Measuring and Scientific Appliances

For Bathroom Scales.
First use March 1966.

Class 32—Furniture and Upholstery

For Bathroom Cabinets, Bathroom Combination Cabinet and Shelf, Combination Clothes Rack and Shelf, Combination Clothes Rack and Ottoman, Vanity Tables, Bathroom Shelves, and Foot Stools.
First use February 1929.

Class 52—Detergents and Soaps

For Bath Soaps.
First use Mar. 1, 1967.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 249,414. De Kalb Agricultural Association, Inc., De Kalb, Ill. Filed July 1, 1966.



Owner of Reg. Nos. 337,915, 707,928, and others.
For Seed Corn, Hybrid Seed, and Baby Chicks.
First use January 1956; Jan. 19, 1936, in a different form.

SN 256,137. Promoci, Promotion des Cultures Industrielles, Paris, France. Filed Oct. 10, 1966.

EURONAT

Owner of French Reg. No. 708,692, dated June 23, 1966.
For Natural and Synthetic Rubber for Industrial Use.

SN 257,871. Ed. F. Mangelsdorf & Bro., Inc., St. Louis, Mo. Filed Nov. 3, 1966.

M

Owner of Reg. No. 302,640.
For Field Seeds and Grain Seeds.
First use 1919.

SN 258,417. Sepsco Inc., Atlanta, Ga. Filed Nov. 10, 1966.

zelar

For Oriented Polyethylene Terephthalate (Polyester) Base Film Used as a Transparent Plastic Film for Use in Making Transparencies on Photocopy Duplicating Machines.
First use June 30, 1966.

SN 258,973. Crawford F. Barnett, Atlanta, Ga. Filed Nov. 18, 1966.



JASON

For Sheep.
First use Nov. 5, 1966.

SN 276,914. Beaunit Corporation, New York, N.Y. Filed July 27, 1967.

PUFF STUFF

For Staple Fiber Filling Material.
First use on or about July 17, 1967.

SN 276,981. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed July 28, 1967.

ISOTEMP

For Metallic and Synthetic Filaments for Power-Driven Brushes.
First use at least as early as June 2, 1967.

Class 2—Receptades

SN 249,159. Hedwin Corporation, New York, N.Y. Filed June 28, 1966.

Hedpak

Owner of Reg. Nos. 581,809, 784,215, and others.
For Plastic Vessels for Containing Liquids.
First use Feb. 15, 1966.

SN 250,996. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed July 25, 1966.

MEL PRO

For Plastic Dinnerware.
First use June 16, 1966.

SN 250,998. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed July 25, 1966.

PROMAID

For Plastic Dinnerware.
First use June 16, 1966.

SN 253,410. American Can Company, New York, N.Y. Filed Aug. 30, 1966.

CARRY/ETTE

For Paper Cartons.
First use July 5, 1966.

SN 253,448. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Aug. 30, 1966.

SINGLE SHOT

For Paperboard Cartons.
First use Apr. 20, 1966.

SN 254,373. The Ceilcote Company, Inc., Berea, Ohio. Filed Sept. 13, 1966.

CEILFLEX

For Partially or Wholly Fabricated Loose Plastic Bag Tank Liners.
First use Dec. 1, 1964.

SN 256,176. Kelley Manufacturing Company, Houston, Tex. Filed Sept. 14, 1966.

ECONO-WARE

For Containers—Namely, Tubs, Pails, and Garbage Cans.
First use at least as early as July 1, 1964.

SN 256,177. Kelley Manufacturing Company, Houston, Tex. Filed Sept. 14, 1966.

VALU-WARE

For Containers—Namely, Tubs, Pails, and Garbage Cans.
First use at least as early as July 1, 1964.

SN 257,076. Phillips Petroleum Company, Bartlesville, Okla. Filed Oct. 24, 1966.

GOLD STAR

For Garment Bags Sold in Roll Form.
First use May 23, 1966.

SN 261,619. American Can Company, New York, N.Y. Filed Dec. 29, 1966.

SHEATH-PAK

Owner of Reg. No. 794,973.
For Polyethylene Bread Packaging Bags.
First use May 13, 1966.

SN 262,727. Ernest J. Wolski, d.b.a. Ackrey Products, Cincinnati, Ohio. Filed Jan. 17, 1967.

HEART SAVER

For Pill Dispensers.
First use Oct. 10, 1966.

SN 265,747. Sweetheart Plastics, Inc., Wilmington, Mass. Filed Mar. 1, 1967.

CASUAL TUMBLETS

For Disposable Plastic Container for Food and Beverages.
First use Dec. 12, 1966.

SN 266,024. James R. Fagenstrom, d.b.a. The Fagenstrom Co., Great Falls, Mont. Filed Mar. 6, 1967.



For Litter Receptacle.
First use Dec. 15, 1966.

SN 266,890. Jaki-Bird Products, Inc., Baldwin Park, Calif. Filed Mar. 16, 1967.

ROCKET LAUNCH

For Plastic Containers Designed To Carry Lunches or Other Articles for Children.
First use Sept. 26, 1966.

SN 271,318. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 12, 1967.

STERI-LOK

For Peel-Open Packages Made From Plastic Sheet Material.
First use May 1, 1967.

SN 276,512. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 21, 1967.

INNOVAIR

For Empty Pressurized Container.
First use July 14, 1967.

SN 277,005. Geigy Chemical Corporation, Ardsley, N.Y. Filed July 28, 1967.

GY-PAC

Owner of Reg. Nos. 712,419, 715,941, and others.
For Empty Pressurized Containers.
First use July 21, 1967.

Class 4—Abrasives and Polishing Materials

SN 249,482. Amway Corporation, Ada, Mich. Filed July 5, 1966.

SCRUB BUDS

For Abrasives and Polishing Materials—Namely, Abrasive Sponges.
First use on or about June 7, 1966.

SN 260,584. Gregg L. Ramsey, d.b.a. Wright Buffing Wheel Company, Lisbon, Ohio. Filed Dec. 12, 1966.

QUICK-AS-WINK

Owner of Reg. No. 416,255.
For Buffing Wheels.
First use Jan. 16, 1930.

SN 261,629. Calgon Corporation, Pittsburgh, Pa. Filed Dec. 29, 1966.



Applicant disclaims the words "Spray Polish" apart from the mark as shown. The drawing is lined for the color yellow.
For Liquid Sprayable Wax for Use in Car Wash Establishments.
First use Sept. 23, 1966.

SN 264,855. Roto-Finish Company, Kalamazoo, Mich. Filed Feb. 16, 1967.

ROTO-FORMS

Owner of Reg. Nos. 397,895, 647,055, and others.
For Abrasive and Polishing Solid Media for Use in Deburring, Cleaning, Descaling, Burnishing, Finishing, and Polishing Operations.
First use Nov. 21, 1966.

SN 266,017. The Drackett Company, Cincinnati, Ohio. Filed Mar. 6, 1967.

SUSTAIN

For Abrasives and Polishing Materials—Namely, Floor Cleaner and Polish.
First use Nov. 23, 1966.

SN 278,447. Armour and Company, d.b.a. Armour Grocery Products Company, Chicago, Ill. Filed Aug. 17, 1967.

BRUCE ONE STEP

The words "One Step" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 378,111 and 616,659.
For Cleaning and Polishing Wax.
First use on or prior to July 3, 1967.

Class 5—Adhesives

SN 238,320. United States Rubber Company, New York, N.Y. Filed Feb. 7, 1966.

SPONGE-SEALZ

Owner of Reg. Nos. 628,474, 771,666, and others.
For Adhesives for the Installation of Carpets.
First use May 5, 1965.

SN 241,310. Corn Products Company, New York, N.Y. Filed Mar. 18, 1966.

GLOBE

Owner of Reg. Nos. 63,928, 189,404, and others.
For Starch and Dextrins as Adhesives and Ingredients Thereof.
First use as early as Apr. 15, 1902.

SN 241,311. Corn Products Company, New York, N.Y. Filed Mar. 18, 1966.



Owner of Reg. Nos. 63,928, 189,404, and others.
For Starch and Dextrins as Adhesives and Ingredients Thereof.
First use as early as Apr. 15, 1902.

SN 260,714. Arvey Corporation, Chicago, Ill. Filed Dec. 14, 1966.

"X-LITE"

For Pressure Sensitive Colored Plastic.
First use on or about Nov. 14, 1966.

SN 263,015. Cavrok Manufacturing Company, Rockville, Conn. Filed Jan. 23, 1967.

CAVBOND

For Rubber-Based Adhesive Compounded With Resins and a Special Polymer Blend.
First use Dec. 15, 1966.

SN 265,527. Hughes Chemical Company, Detroit, Mich. Filed Feb. 27, 1967.



The word "Glue" is disclaimed apart from the mark as shown.
For Naturally Based Adhesives Such as Starch, Dextran, Casein, and Rubber-Based Adhesives; Synthetically Based Adhesives Such as Epoxy- and Polyvinylacetate-Based Adhesives; Rubber Cements, Neoprene Cements, and Liquid Animal Glues.
First use on or before Jan. 1, 1930.

SN 275,584. Imperial Adhesives Inc., Cincinnati, Ohio. Filed July 10, 1967.

WHISPER SPRAY

For Synthetic Resinous Adhesives.

First use at least as early as Feb. 24, 1967.

Class 6—Chemicals and Chemical Compositions

SN 233,798. W. R. Grace & Co., New York, N.Y. Filed Dec. 2, 1965.

CHROMOKIT

For Spot Test Kit for Determining Chromate Concentrations in Cooling Water.

First use at least as early as June 26, 1950.

SN 246,803. Metal Lubricants Co., Chicago, Ill. Filed May 27, 1966.



For Rust Preventives.

First use on or about Oct. 1, 1965.

SN 251,548. Laporte Chemicals Limited, London, England. Filed August 2, 1966.

L I L

Owner of British Reg. No. 788,077, dated Mar. 4, 1959.

For Chemical Products for Use in Industry and Science—Namely, Inorganic and Organic Peroxides, Inorganic Acids, Catalysts, Titanium Dioxide, and Organic Titanium Compounds.

SN 252,017. Thomas J. Little Co., Inc., Gloucester, Mass. Filed Aug. 9, 1966.

VYNA-SOL

For Solvent for Rigid Vinyl Plastic Sheet and Film.

First use Apr. 1, 1966.

SN 252,353. Continental Printing Ink Company, Philadelphia, Pa. Filed Aug. 15, 1966.

C.R.W.

For Etching Solutions and Additives, Blanket Mask and Hardener, Static Removing Solution, and Ink Skinning Preventive Which Comprises Essentially Oil of Cloves.

First use September 1965.

SN 256,686. Synarome H. Frayssé & Compagnie, Asnieres (Hauts-de-Seine), France. Filed Oct. 18, 1966.

COSMODOR

Owner of French Reg. No. 486,471, dated Mar. 3, 1960 (Seine); Natl. Inst. No. 140,301.

For Essential Oils and Aromatic Substances for Use in the Manufacture of Perfumery Preparations.

SN 261,074. Guardian Chemical Corporation, Long Island City, N.Y. Filed Dec. 19, 1966.

NORTH WOODS

For Aerosols and Sprays Containing Pine and Spruce Essences.

First use Nov. 28, 1966.

SN 262,868. R. D. Hanish Company, Columbus, Ohio. Filed Jan. 19, 1967.

VITAFILM

For Liquid Chemical Composition for Dressing and Preserving Motion Picture and Other Camera Film.

First use January 1938.

SN 265,791. Calgon Corporation, Pittsburgh, Pa. Filed Mar. 2, 1967.

PD-8

For Composition for Preventing Scale and Priming in Vacuum-Type Single and Multiple-Effect Salt Water Evaporators.

First use Feb. 24, 1967.

SN 265,886. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Mar. 3, 1967.

LANESTREN

For Dyestuffs.

First use June 1, 1962; in commerce Jan. 25, 1967.

SN 266,762. Hillyard Enterprises, Inc., St. Joseph, Mo. Filed Mar. 15, 1967.

HIL-AIRE

For Glycolized Multi-Purpose Air Deodorizer.

First use July 15, 1953.

SN 269,388. Arden-Mayfair, Inc., d.b.a. Low Cost Markets, Los Angeles, Calif. Filed Apr. 18, 1967.

GLFAIR

For Fabric Finish in Spray Container.

First use Mar. 1, 1967.

SN 275,818. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 12, 1967.

3M

For Surface Active Agents or Surfactants.

First use June 1, 1967.

Class 7—Cordage

SN 242,510. South Eastern Cordage Co., Cleveland, Ohio. Filed Apr. 1, 1966.

PLANTATION

For Cordage Including Twine, Cords, Ropes, and String.

First use December 1946.

Subj. to Intf. with SN 237,240.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 241,133. Etablissements Genoud & Cie., Venissieux, Rhone, France. Filed Mar. 16, 1966.

STICK

Owner of French Reg. No. 34,271, dated Apr. 29, 1964 (Lyon); Natl. Inst. No. 225,577.

For Cigarette Lighters and Cartridges Thereof.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 266,812. Trojan Powder Company, Allentown, Pa. Filed Mar. 15, 1967.

SPARTAN

For Liquid Sensitized High Explosives.

First use Mar. 10, 1967.

Class 12—Construction Materials

SN 240,868. Dura-Bilt Metal Products, Inc., Wellsburg, N.Y. Filed Mar. 14, 1966.

DURA-BILT

For Carports; Privacy Paneling; and Mobile Home Skirting.

First use Mar. 15, 1962.

SN 243,335. The Mead Corporation, Dayton, Ohio. Filed Apr. 13, 1966.

PASTED OAK

For Laminated Solid Fiber Board.

First use Mar. 18, 1959.

SN 247,889. Birma Products Corporation, Sayreville, N.J. Filed June 13, 1966.

CLO CEL

For Resilient Cellular Tubing for Insulating Water Pipes Against the Formation of Condensation Thereon.

First use Apr. 1, 1958.

SN 247,921. Hillyard Enterprises, Inc., St. Joseph, Mo. Filed June 13, 1966.

Hillyard ULTRATHANE

Applicant disclaims the surname "Hillyard" apart from the mark as shown. Owner of Reg. Nos. 439,646 and 559,372.

For Urethane Ester, Single Component, Wood Sealing Undercoating for Floor Polishes.

First use Apr. 23, 1964.

SN 249,326. W. R. Grace & Co., New York, N.Y. Filed June 30, 1966.

VESCO-SEAL

For Slip Resistant Surface Sealing and Finishing Composition for Concrete and Wood Floors.

First use June 21, 1939.

SN 250,336. American Velodur Metal, Inc., Brookline, Mass. Filed July 15, 1966.

VELODUR

For Separately Packaged Compounds, Comprising a Resin and Metal-Particle-Containing Base Together With an Activator Therefor, for Use in Bonding and Repairing Articles of All Types.

First use Mar. 2, 1966.

SN 252,201. Morton Manufacturing Company, Chicago, Ill. Filed Aug. 11, 1966.

TREAD-GRIP

For Safety Metal Flooring Having Raised Perforated Bosses.

First use July 27, 1966.

SN 255,116. Nichols Wire & Aluminum Co., Davenport, Iowa. Filed Sept. 26, 1966.



The mark consists of the letters "N" and "A."
For Rolled Sheet Metal for Valley and Flashing, Building Corners, Gutters and Accessory Rain Carrying Equipment, Soffit System, Corrugated and Lap Drain Roofing, Building Trim, Awnings, Privacy Panels, and General Purpose Sheet Metal.
First use June 21, 1965.

SN 255,235. L. M. Scofield Company, Los Angeles, Calif. Filed Sept. 27, 1966.

EMERCHROME

For Cement Mixes Consisting of Pigments, Hydraulic Cements, Surfactants, and Aggregates.
First use Nov. 14, 1958.

SN 255,432. W. R. Grace & Co., New York, N.Y. Filed Sept. 29, 1966.

TUFHIDE

For Polystyrene Insulation Board.
First use Aug. 11, 1966.

SN 256,116. Munters Corporation, Fort Myers, Fla. Filed Oct. 10, 1966.

TUFEDG

For Cooling Tower Fill, Comprising a Series of Corrugated, Facially-Opposed Sheets of Asbestos Paper or Plastic Material With Reinforced Edges.
First use July 23, 1965.

SN 256,603. Speakman Company, Wilmington, Del. Filed Oct. 17, 1966.

PRIVATEER

For Shower Stalls.
First use Aug. 11, 1966.

SN 259,043. Garland Manufacturing Company, Detroit, Mich. Filed Nov. 10, 1966.

ELECTRA DOOR

The word "Door" is disclaimed apart from the mark as shown.
For Garage Doors.
First use Aug. 17, 1966.

SN 259,073. Associated Pile & Fitting Corp., Clifton, N.J. Filed Nov. 21, 1966.

FORM-O-MATIC

For Pre-Fabricated Pile Forms.
First use May 16, 1966.

SN 264,153. Kalflex Inc., Woodside, N.Y. Filed Feb. 7, 1967.

COR-LAM

For Metal, Plastic, Glass, and the Like Panels Faced With Wood, Veneer or Other Decorative Surfaces for Architectural and Industrial Wall Paneling, Table Tops, Doors, Furniture, Displays, and Similar Uses.
First use Jan. 18, 1967.

SN 264,196. The Cambridge Tile Manufacturing Company, Cincinnati, Ohio. Filed Feb. 8, 1967.

CAMDURA

For Seamless Flooring Components—Namely, Underlay, Flakes, Catalyst, and Sun Shield, Sold Together.
First use Jan. 23, 1967.

SN 264,739. Herculite Corporation, Chester, Pa. Filed Feb. 15, 1967.

DEKRA

For Precast Artificial Stone Sills, Coping, and Flooring.
First use Jan. 10, 1967.

SN 265,107. The Robinson Clay Product Company, Akron, Ohio. Filed Feb. 20, 1967.

ROBINSUL

For Insulating Firebrick.
First use on or about Sept. 24, 1943.

SN 275,499. U.S. Plywood-Champion Papers, Inc., New York, N.Y. Filed July 7, 1967.

IONIC

For Lumber, Wood, and Wood Fiber Products Used in the Construction, Building, Industrial, and Furniture Fields, i.e., Panels for Walls, Doors, and Partitions.
First use Apr. 19, 1967.

SN 277,757. General Refractories Company, Philadelphia, Pa. Filed Aug. 8, 1967.

FUSECRETE

Owner of Reg. No. 690,070.
For High-Alumina Castable for the Refractory Industry.
First use Feb. 16, 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 246,489. Societe Financiere Francaise de Licenses et Brevets, Choisy-le-Roi, France. Filed May 24, 1966.



Owner of French Reg. No. 482,278, dated Aug. 6, 1959 (Seine); Natl. Inst. No. 130,173; and U.S. Reg. No. 736,254.
For Slide Fasteners.

SN 246,490. Societe Financiere Francaise de Licenses et Brevets, Choisy-le-Roi, France. Filed May 24, 1966.



Owner of French Reg. No. 526,654, dated Dec. 28, 1964 (Seine); Natl. Inst. No. 239,629; and U.S. Reg. No. 736,254.
For Slide Fasteners.

SN 249,825. Aristovoulos George Petzetakis, Kiphissia, Athens, Greece. Filed July 8, 1966.

HELIFLEX

Owner of Greek Reg. No. 36,229, dated Dec. 11, 1964.
For Flexible Pipes, Hose, Hosing, Tubes and Tubing, All for Conveying Flowable Media.

SN 255,117. Nichols Wire & Aluminum Co., Davenport, Iowa. Filed Sept. 26, 1966.



The mark consists of the letters "NA."
For Nails, Turf Retainers and Lawn Edging, Flower Wickets, Trellis and Trellis Stakes, Charcoal Igniters, General Purpose and Hose Hanger, Driveway Marker, Wire Mesh for Covering Gutters, Chain Link Fencing Including Fence Ties, Stakes, Brace and Tension Bands, Fittings and Fabric, and Spikes Useful for Inserting in Potatoes When Baking.
First use Oct. 9, 1964.

SN 256,148. Societe Financiere Francaise de Licenses et Brevets, Choisy-le-Roi, France. Filed Oct. 10, 1966.



Owner of French Reg. No. 708,403, dated Jan. 20, 1966.
For Slide Fasteners.

SN 258,176. United Aircraft Products, Inc., Dayton, Ohio. Filed Nov. 7, 1966.



Owner of Reg. No. 577,622 and others.
For Flow Control Valves in Fluid Flowing Systems.
First use April 1964.

SN 260,223. Alliance Caster Corporation, Los Angeles, Calif. Filed Dec. 7, 1966.

ALLIANCE

For Casters.
First use Oct. 16, 1964.

SN 262,769. Del-Tra Company, Oakland, Calif. Filed Jan. 18, 1967.

SAF-T-STA

For Cargo Holders.
First use Oct. 1, 1959.

SN 262,809. Robinair Manufacturing Corporation, Montpelier, Ohio. Filed Jan. 18, 1967.

DUO-TEST

Owner of Reg. No. 571,814.
For Fluid Line Driers and Srtainers, Charging Lines, Couplings and Fittings for Refrigeration and Air Conditioning Equipment, Vacuum Pumps, Vacuum Gauges and Tubes, and Pipe Thread Sealer Compound and Vacuum Pump Oil.
First use on or about July 29, 1949.

SN 263,189. The McKay Company, Pittsburgh, Pa. Filed Jan. 24, 1967.

LANDLUGGER

For Square Stock Alloy Dragline Chain.
First use Nov. 29, 1966.

SN 263,190. The McKay Company, Pittsburgh, Pa. Filed Jan. 24, 1967.

LEVALLOY

For Magnet Chains, Magnet Chain Assemblies, and Chain Attachments.
First use September 1966.

SN 263,211. Sterling Metalware Company, Philadelphia, Pa. Filed Jan. 24, 1967.



Owner of Reg. No. 766,991.
For Food Service Equipment—Namely, Back Bars, Bain Maries, Bakers' Tables, Bar Sinks, Bread Cabinets, Buffet Units, Cafeteria Counters, Cooks' Tables, Dish Tables, Drain Boards, Drain Pans, Food Warmers, Pan and Storage Racks, Plate Warmers, Pot Racks, Sinks, Steam Tables, Dish Trucks, Underbar Workboards, Updraft Exhaust Units, Urn Stands, Wall Panels, Water Coolers, and Work Tables.
First use Mar. 1, 1963.

SN 267,921. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Fluid, Semi-Fluid and Gas Handling Valves, Safety and Relief Valves and Air Vent and Water Drain Valves, Sluice Gates, Valve Operating and Actuating Mechanisms and Parts, Controls and Components of the Foregoing; Pipe, Piping, Tube, Tubing, Pipe Assemblies and Constructions, Pressure Regulators, Exhaust Heads, Back Flow Preventers, Separators, Drip Pockets and Joints, Supports, Hangers, Fittings and Parts, Controls and Components of the Foregoing; Baths, Bathtubs, Lavatories, Sinks, Bidets, Bowls, Water Closets, Tubs, Tanks, Urinals, Water Closet Seats, Covers, Holders for Towels and Toilet Tissue, Holders for Tumblers, Soap and Tooth Brushes, Plumbing Brass, Fixtures, Fittings, Bathroom Cabinets, Bars, Shelves, Racks, Vanities, Drain Boards, Rim Guards and Trays and Parts, Controls and Components of the Foregoing.
First use Mar. 8, 1967.

SN 276,793. Mutz Corporation, Indianapolis, Ind. Filed July 26, 1967.

MASTER-FIT

For Pipe and Fittings for Air Distribution Systems.
First use December 1949.

Class 15—Oils and Greases

SN 253,113. H. H. Barrus, Inc., Costa Mesa, Calif. Filed Aug. 25, 1966.

PARTALL

For Mold Release Agents.
First use Nov. 2, 1953.

SN 261,845. Illinois Water Treatment Co., Rockford, Ill. Filed Jan. 3, 1967.

SLIP·ZIP

For Stainless Spray Lubricant for Zippers.
First use on or about Dec. 3, 1965.

SN 262,883. Phillips Petroleum Company, Bartlesville, Okla. Filed Jan. 19, 1967.

OSIRIS

For Lubricating Oils.
First use Oct. 11, 1966.

SN 265,367. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Feb. 23, 1967.

LUJOB

For Lubricant, Especially for Food Plant Conveyors.
First use Jan. 7, 1966.

SN 277,601. Stauffer Chemical Company, New York, N.Y. Filed Aug. 7, 1967.

Stauffer JET

For Aircraft Lubricant.
First use at least as early as Dec. 29, 1965.

Class 16—Protective and Decorative Coatings

SN 258,726. Royaltone, Inc., d.b.a. Royal Paint & Varnish Co., San Francisco, Calif. Filed Nov. 15, 1966.

COLOR FAIR

For Polyvinyl Type Wall Paint and Paint Thinner.
First use Aug. 12, 1964.

SN 264,649. M. A. Bruder and Sons, Incorporated, Philadelphia, Pa. Filed Feb. 14, 1967.

PLY-LASTIC

For Vinyl Membrane Surface Coating.
First use May 11, 1966.

SN 264,783. Acheson Industries, Inc., Port Huron, Mich. Filed Feb. 16, 1967.

AERODAG

Owner of Reg. No. 340,165.
For Aerosol Packaged Pigments in a Finely Divided State Dispersed in Combinations of Solvents and Propellants for Applying Thin Films and Protective Coatings for Corrosion Inhibition, Conductivity, Coloring, Decorating, and Optical Hiding.
First use Feb. 14, 1966.

SN 272,242. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 24, 1967.

GREEN LITE

For Powder Useful for Striping Roadways, Highways, Parking Lots, and the Like.
First use Mar. 13, 1967.

SN 278,771. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Aug. 22, 1967.

PITTHANE

Owner of Reg. Nos. 722,922 and 755,806.
For Urethane Coatings.
First use at least as early as June 9, 1967.

Class 17—Tobacco Products

SN 249,763. Helme Products, Inc., New York, N.Y. Filed July 7, 1966.

DIXIE

Owner of Reg. No. 787,048.
For Plug and Scrap Chewing Tobacco.
First use June 10, 1966.

SN 262,666. The American Tobacco Company, New York, N.Y. Filed Jan. 17, 1967.

OCTOBER

For Cigarettes.
First use Jan. 9, 1967.

Class 18—Medicines and Pharmaceutical Preparations

SN 257,527. Sternco Industries, Inc., Allendale, N.J. Filed Oct. 28, 1966.



Owner of Reg. No. 813,736.
For Medical Preparations for Aquarium Fish.
First use Sept. 4, 1962.

SN 257,535. Sternco Industries, Inc., Allendale, N.J. Filed Oct. 28, 1966.



Owner of Reg. No. 813,736.
For Medical Preparations for Aquarium Fish.
First use Sept. 4, 1962.

SN 259,140. Nature Food Centres, Inc., d.b.a. Nature Food Centres, Cambridge, Mass. Filed Nov. 21, 1966.

PECTOMINT

For Antacid Tablets.
First use Aug. 9, 1966.

SN 259,178. G. D. Searle & Co., Skokie, Ill. Filed Nov. 21, 1966.

OVULEN-21

Owner of Reg. No. 757,201.
For Pharmaceutical Preparations Containing Steroid Hormones and Presented in Packaging Adapted for a Particular Program of Administration.
First use Nov. 15, 1966.

SN 259,582. Richardson-Merrell Inc., New York, N.Y. Filed Nov. 28, 1966.

PRENAUSEN

Owner of Reg. No. 707,734.
For Vitamin B6 Supplement.
First use Nov. 23, 1966.

SN 259,771. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Nov. 30, 1966.

KETO-GUARD

For Animal Feed Supplement for Use as an Aid in the Prevention and Treatment of Ketosis.
First use Sept. 2, 1966.

SN 259,909. Endo Laboratories Inc., Garden City, N.Y. Filed Dec. 2, 1966.

HYCORPHAN

Owner of Reg. No. 400,895.
For Medicinal Preparation Used as an Antitussive.
First use Oct. 15, 1966.

SN 260,177. Person & Covey, Inc., Glendale, Calif. Filed Dec. 6, 1966.

A.C.N.

For Tablets for Treatment of Acne.
First use May 2, 1957.

SN 260,313. American Cyanamid Company, Wayne, N.J. Filed Dec. 8, 1966.

TERCINE

Owner of Reg. Nos. 540,146 and 669,199.
For Antibiotic Preparation.
First use Nov. 16, 1966.

SN 260,575. Pacific Chemical Laboratories, Inc., San Francisco, Calif. Filed Dec. 12, 1966.

BARIDOL

For Processed Barium Sulphate for X-Ray Diagnosis.
First use June 1, 1951.

SN 260,814. Bentex Pharmaceutical Company, Houston, Tex. Filed Dec. 15, 1966.

SINUSULE

For Capsule for Colds and Hayfever.
First use Oct. 27, 1966.

SN 260,815. Bentex Pharmaceutical Company, Houston, Tex. Filed Dec. 15, 1966.

OBETABS

For Tablet for Obesity.
First use Nov. 14, 1966.

SN 260,964. Schering Corporation, Bloomfield, N.J. Filed Dec. 16, 1966.

Coricidin

Owner of Reg. No. 533,777.
For Pharmaceutical Preparations for Symptomatic Relief of Colds and Accompanying Aches, Pains, Fever and Simple Headache, Cough and Nasal Congestion.
First use Aug. 15, 1966.

SN 260,965. Schering Corporation, Bloomfield, N.J. Filed Dec. 16, 1966.

Coricidin 'D'

Owner of Reg. No. 533,777.
For Decongestant-Antihistaminic-Analgesic Preparation.
First use Aug. 15, 1966.

SN 260,977. Topco Associates, Inc., Skokie, Ill. Filed Dec. 16, 1966.

TOPCO

For Medicinal Preparations—Namely, Aspirin, Rubbing Alcohol, Hydrogen Peroxide, and Petroleum Jelly.
First use Nov. 28, 1966.

SN 261,102. The Purdue Frederick Company, Yonkers, N.Y. Filed Dec. 19, 1966.

SURGI-PREP

Owner of Reg. No. 771,964.
For Antiseptic Preparation.
First use Dec. 7, 1966.

SN 261,199. Ciba Limited, Basel, Switzerland. Filed Dec. 21, 1966.

SISTOMETRIL

Owner of Swiss Reg. No. 199,368, dated Aug. 2, 1963.
For Preparation for Treatment of Menstrual Disorders.

SN 261,200. Ciba Limited, Basel, Switzerland. Filed Dec. 21, 1966.

COSULONG

Owner of Swiss Reg. No. 215,531, dated Jan. 24, 1966.
For Veterinary Preparation for Treatment of Infectious Diseases.

SN 264,903. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1967.

CURTAIL

For Analgesic.
First use Jan. 23, 1967.

SN 265,801. Colorcon, Inc., West Point, Pa. Filed Mar. 2, 1967.

OPASEAL

For Pharmaceutical Sealant.
First use Jan. 30, 1967.

SN 266,345. Metro Med, Inc., Houston, Tex. Filed Mar. 9, 1967.

TET-CY

For Tetracycline Capsules.
First use Oct. 13, 1964.

SN 266,895. Keystone Laboratories, Inc., d.b.a. Keystone Company, Memphis, Tenn. Filed Mar. 16, 1967.

Cold Aid

Owner of Reg. No. 697,271.
For Tablets for Symptomatic Relief of Minor Aches and Pains, Cough Syrup, Chest Rub, and Mouth Wash and Gargle.
First use Nov. 15, 1958.

SN 267,001. Beta Laboratories Inc., Palo Alto, Calif. Filed Mar. 17, 1967.

DRIVE

For Protein Based Mineral and Vitamin Feed Supplements for Animals.
First use July 15, 1958.

SN 267,184. St. Aubrey Associates, Inc., New York, N.Y. Filed Mar. 20, 1967.

Erliworm

For Medicine for the Deworming of Puppies and Kittens.
First use July 18, 1966.

SN 267,239. Ford Laboratories, Inc., Moonachie, N.J. Filed Mar. 21, 1967.

INSUR-ALL

First use Feb. 21, 1967.
For Multiple Vitamin Tablets.

SN 277,406. American Home Products Corporation, New York, N.Y. Filed Aug. 3, 1967.

TRILIEM

Owner of Reg. No. 800,922.
For Analgesic Calmative Preparation.
First use June 28, 1967.

Class 19—Vehicles

SN 242,096. Aktiebolaget Westerasmaskiner, Morgongava, Sweden. Filed Mar. 29, 1966.

SNOTRIC

Priority claimed under Sec. 44(d) on Swedish application filed Sept. 29, 1965; Reg. No. 116,028, dated Apr. 22, 1966.
For Self-Propelled Snow Vehicles.
First use Sept. 29, 1965; in commerce Mar. 15, 1966.

SN 245,037. Wilson Trailer Company, Sioux City, Iowa. Filed May 5, 1966.

THE STRONGATED TRAILER

No claim is made to the word "Trailer" apart from the mark as shown.
For Livestock Trailers, Horse Trailers, and Grain Trailers of the Flat Bed, Van and Dump Types.
First use Mar. 28, 1966.

SN 260,018. Chris-Craft Industries, Inc., Pompano Beach, Fla. Filed Dec. 5, 1966.

ROAMER

Owner of Reg. No. 621,718.
For Boats.
First use June 10, 1945.

SN 265,987. Chris-Craft Industries, Inc., Pompano Beach, Fla. Filed Mar. 6, 1967.

CORINTHIAN

For Boats.
First use Dec. 5, 1961.

SN 265,988. Chris-Craft Industries, Inc., Pompano Beach, Fla. Filed Mar. 6, 1967.

CORSAIR

For Boats.
First use Sept. 23, 1953.

Class 20—Linoleum and Oiled Cloth

SN 247,780. Congoleum-Nairn Inc., Kearny, N.J. Filed June 10, 1966.

PROFILE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Apr. 8, 1966.

SN 267,402. Canadian Wallpaper Manufacturers Limited, New Toronto, Toronto, Ontario, Canada. Filed Mar. 28, 1967.

Sun-Vinyl

Owner of U.S. Reg. No. 800,623.
For Vinyl Wall Coverings.
First use Feb. 7, 1967; in commerce Feb. 7, 1967.

SN 276,722. Fabric Leather Corporation, New Hyde Park, N.Y. Filed July 25, 1967.

VYLAM

For Vinyl Floor and Wall Tiles.
First use July 18, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 204,420. Hans-J. Tappert, d.b.a. Hans W. Tappert, Munich, Germany. Filed Oct. 20, 1964.

blink o stop

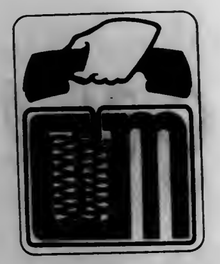
The word "Blink" is disclaimed apart from the mark as shown. Priority claimed under Sec. 44(d) on German application filed Apr. 21, 1964; Reg. No. 792,340, dated July 31, 1964.
For Turn Indicator Lights and Retractable Indicator Light Arms.

SN 235,281. Dayton Electronic Products Company, Dayton, Ohio. Filed Dec. 27, 1965.

S/6

For FM Multiplex Receivers and Tuners.
First use Nov. 16, 1965.

SN 238,105. Phonemaster, Inc., Dallas, Tex. Filed Feb. 4, 1966.



Without waiving its common law rights herein, no claim is made to the pictured representation of the telephone receiver apart from the mark as shown.
For Automatic Telephone Answering Machine.
First use at least as early as Oct. 22, 1965.

SN 240,126. C. Wayne True, d.b.a. True Service & Supply, Watertown, S. Dak. Filed Mar. 3, 1966.

TRUE TEMP

For Electrical Heaters for Heating Pipes To Automatically Prevent Freezing of Liquids Therein.
First use at least as early as October 1964.

SN 241,003. Xerox Corporation, Rochester, N.Y. Filed Mar. 14, 1966.

XEROX

Owner of Reg. Nos. 525,717, 596,380, and others.
For Facsimile Transmitting and Receiving Apparatus.
First use May 15, 1964.

SN 241,470. Industrial Instrumentations, Inc., Marblehead, Mass. Filed Mar. 21, 1966.

ACC/PERT

For Electronic Security and Monitoring System Utilizing a Card Evaluation Unit To Control Access, or Actuate Alarms, According to Pre-Arranged Program Boards; and Components for Such Systems—Namely, Card Readers and Authorization Control and Printout Units.
First use Apr. 17, 1965.

SN 248,250. Power Control Corporation, Pittsburgh, Pa. Filed June 16, 1966.

MOTOGARD

For Electrical Apparatus Including Overtemperature Protective Systems for Electrical Motors.
First use Feb. 28, 1966.

SN 248,666. Teledyne, Inc., d.b.a. Amelco Semiconductor, Mountain View, Calif. Filed June 22, 1966.

AMELCO

For Semiconductor Devices—Namely, Transistors, Integrated Circuits, and Microcircuits.
First use as early as Apr. 30, 1962.

SN 251,690. The Alliance Manufacturing Company, Inc., Alliance, Ohio. Filed Aug. 4, 1966.

GENIE-COLOR

For Electrical and Electronic Amplifier for Use in Conjunction With Television Apparatus.
First use Oct. 31, 1964.

SN 253,879. Industrial Electronic Engineers, Inc., Van Nuys Calif. Filed Sept. 6, 1966.

IEE

For Alphanumeric Display Units and Associated Components for Visual Display of Numeric, Alphabetic, and Symbolic Intelligence.
First use Nov. 18, 1965.

SN 254,567. Tomic Sales & Engineering Corporation, Detroit, Mich. Filed Sept. 15, 1966.

TOMIC TWISTERS

Owner of Reg. No. 731,078.
For Electrical Conduit Couplers.
First use July 1, 1966.

SN 261,929. Insul-8-Corp., San Carlos, Calif. Filed Jan. 4, 1967.



Owner of Reg. Nos. 578,786, 754,978, and others.
For Trolley Conductor Systems and Components Thereof, for Conducting Electrical Current to Mobile Machines.
First use in or about January 1957.

SN 262,039. International Electronics Corporation, Melville, N.Y. Filed Jan. 6, 1967.



Owner of Reg. No. 758,742.
For Electron Tubes.
First use May 10, 1965.

SN 262,105. AMP Incorporated, Harrisburg, Pa. Filed Jan. 9, 1967.

SHUR-PLUG

For Electrical Connectors.
First use 1948.

SN 262,148. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 9, 1967.

R-200-B

For Radio Tuners.
First use Apr. 21, 1966.

SN 262,149. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 9, 1967.

TFM-1000

For Radio Tuners.
First use Apr. 29, 1966.

SN 262,150. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 9, 1967.

XP-9B

For Speakers.
First use Nov. 17, 1966.

SN 262,151. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 9, 1967.

700-T

For Radio Receivers.
First use July 20, 1966.

SN 262,580. General Instrument Corporation, Newark, N.J. Filed Jan. 16, 1967.

DECAP

For Thermoelectric Generators.
First use Aug. 8, 1966.

SN 262,697. Fisher Radio Corporation, Long Island City, N.Y. Filed Jan. 17, 1967.

XP-33

For Speakers.
First use Apr. 27, 1966.

SN 262,731. Amperex Electronic Corporation, Hicksville, N.Y. Filed Dec. 23, 1966.

AMPEREX

Owner of Reg. Nos. 513,760 and 586,022.
For Semiconductors, Audio Amplifiers, Heat Sinks, AM/FM RF Tuners, AM/FM IF Strips, Integrated Circuits, and Printed Circuit Assemblies.
First use June 1952.

SN 263,311. The Zeller Corporation, Defiance, Ohio. Filed Jan. 25, 1967.

SP

For Spark Plugs.
First use Nov. 1, 1966.

SN 263,598. North American Philips Company, Inc., New York, N.Y. Filed Jan. 30, 1967.

KEYTONE

For Telephone Receiver.
First use Nov. 30, 1966.

SN 263,734. Amperex Electronic Corporation, Hicksville, N.Y. Filed Feb. 1, 1967.

NEOTRON

For Electronic Tubes.
First use Jan. 20, 1967.

SN 264,248. Research Instruments, Inc., Waltham, Mass. Filed Feb. 8, 1967.



For Closed Circuit Television Cameras and Monitors, Power Supplies and Amplifiers.
First use January 1965.

SN 267,483. Empire Tube Sales, Inc., Jacksonville, Fla. Filed Mar. 24, 1967.

MAGIC-HUE

For Television Picture Tubes.
First use Mar. 15, 1967.

SN 268,709. Crane Co., New York, N.Y. Filed Apr. 10, 1967.

crane

For Electric Motors, Electronic Power Supplies, Electronically and Hydraulically Operated Actuators, Electro-Hydraulic Servo Actuators, Time Delay Relays, Electronic Controls and Parts, Controls and Components of the Foregoing.
First use Mar. 27, 1967.

SN 268,710. Crane Co., New York, N.Y. Filed Apr. 10, 1967.

crane

For Electric Motors, Electronic Power Supplies, Electronically and Hydraulically Operated Actuators, Electro-Hydraulic Servo Actuators, Time Delay Relays, Electronic Controls and Parts, Controls and Components of the Foregoing.
First use Mar. 27, 1967.

SN 269,311. The Hobart Manufacturing Company, Troy, Ohio. Filed Apr. 17, 1967.

KITCHENAID

Owner of Reg. Nos. 549,810, 777,997, and others.
For Food Waste Disposers.
First use Apr. 6, 1967.

SN 272,674. Womack Electronics, Inc., Danville, Va. Filed May 31, 1967.

life-span

For Television Picture Tubes and Television Antennas.
First use Jan. 6, 1967.

Class 22—Games, Toys, and Sporting Goods

SN 238,659. Parkway Fabricators, South Amboy, N.J. Filed Feb. 11, 1966.

NYLOPRENE

For Protective Skindiving Wet Suits, Specifically, Jackets, Pants, Boots, Caps, and Gloves.
First use August 1961.

SN 241,516. O. O. Ressel, d.b.a. Woodrow Wilson Co., Newport Beach, Calif. Filed Mar. 21, 1966.

CA$H Parlay

For Envelopes To Be Used by Others in Promoting the Sale of Their Goods Through a Customer Participation Game.
First use Mar. 14, 1966.

SN 242,131. Impulse Mechanisms, Inc., Smithtown, N.Y. Filed Mar. 29, 1966.

IMPULSE

For Equipment Sold as a Unit for Playing a Recreational-Type Parlor Game.
First use February 1965.

SN 244,368. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Apr. 26, 1966.

FLYING FINS

The word "Flying" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein.
For Toys—Namely, Gliders Having Fanciful Representations.
First use Mar. 15, 1966.

SN 246,168. Gateway Promotions, Inc., St. Louis, Mo. Filed May 20, 1966.

OPERATION "BLAST-OFF"

For Equipment Comprising Tickets and Holders Therefor for Playing a Sales or Trade Promotional Game.
First use Aug. 15, 1965.

SN 253,216. Gateway Promotions, Inc., St. Louis, Mo. Filed Aug. 26, 1966.

GOLD SEAL

For Tickets and Ticket Savers for Use by Retail Outlets To Promote and Stimulate the Sale of Their Goods Through Sales Incentive Games and Trade Promotion Programs.
First use Oct. 1, 1964.

SN 258,106. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed Nov. 7, 1966.

Willy Burger

The name "Willy Burger" is fictitious.
For Toy Kit Comprising Parts Sold as a Unit for Making Unusual Toy Figures.
First use on or about Oct. 14, 1966.

SN 259,435. Kent Sporting Goods Co., Ashland, Ohio. Filed Nov. 25, 1966.

KENT

For Baseballs, Soft Balls, Basket Balls, Footballs, Volley Balls, Golf Balls, Tether Balls, Golf Bags, Football Uniforms, Flotative Boat Cushions, Ski Belts, Life Jackets, and Life Vests.
First use on or about Mar. 1, 1966.
Subj. to Intf. with SN 269,816 and SN 270,096.

SN 259,804. Carlton Shuttlecocks Limited, Essex, England. Filed Dec. 1, 1966.

3 point 9

For Rackets, Especially Badminton Rackets.
First use Aug. 16, 1966; in commerce Sept. 27, 1966.

SN 260,312. Ajay Golf Products, Inc., Delavan, Wis. Filed Dec. 8, 1966.

TOTE·N·SEAT

For Portable Golf Club Carrier and Seat.
First use Aug. 1, 1966.

SN 260,871. Textron Inc., Providence, R.I. Filed Dec. 8, 1966.

HOMELITE

Owner of Reg. No. 546,629.
For Toy Chain Saws.
First use Nov. 8, 1966.

SN 263,656. Milton Bradley Company, Springfield, Mass. Filed Jan. 31, 1967.

PRO FOOTBALL

The word "Football" is disclaimed apart from the mark as shown.
For Equipment Sold as a Unit for Playing a Football-Type Board Game.
First use Mar. 30, 1964.
Subj. to Intf. with SN 263,727.

SN 267,113. American Character, Inc., New York, N.Y. Filed Mar. 20, 1967.

SLEEPY WEEPY

For Dolls.
First use Feb. 1, 1967.

SN 267,205. Don L. Tuthill, d.b.a. The Park Manufacturing Company, Cincinnati, Ohio. Filed Mar. 20, 1967.

JAKE'S BAIT

Applicant disclaims the word "Bait" apart from the mark as shown.
For Artificial Fishing Lures.
First use June 30, 1936.

SN 267,503. Brunswick Corporation, Chicago, Ill. Filed Mar. 24, 1967.

PRO-FORM

For Golf Clubs.
First use Mar. 18, 1966.

SN 267,617. De Luxe Topper Corporation, Elizabeth, N.J. Filed Mar. 27, 1967.

CHARLEY 'N ME

For Equipment for Playing a Board Game.
First use Feb. 20, 1967.

SN 268,154. Donald W. Clause, d.b.a. Donco Wholesale Distributors, Lakeview, Oreg. Filed Apr. 3, 1967.

TRIMTWIST

For Swivel Exercise Board.
First use Nov. 30, 1966.
Subj. to Intf. with SN 275,892.

SN 270,849. Eldon Industries, Inc., Hawthorne, Calif. Filed May 8, 1967.

SECRET SQUIRT

Applicant disclaims the word "Squirt" apart from the mark as shown.
For Toy Water Guns in the Form of a Pen, a Knife, and a Camera.
First use Mar. 4, 1967.

SN 271,407. Eldon Industries, Inc., Hawthorne Calif. Filed May 15, 1967.

CRAY-O-MATIC

For Toy Electric Crayon Coloring Implement.
First use Mar. 25, 1967.

SN 275,892. Trim-Twist, Inc., Coral Gables, Fla. Filed July 13, 1967.

TRIM TWIST

For Swivel Exercising Board.
First use Nov. 1, 1965.
Subj. to Intf. with SN 268,154.

SN 277,819. Bellamy Displays, Finn Division, Jacksonville, Fla. Filed Aug. 8, 1967.

WHEE LEES

For Roller Skates.
First use July 25, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 235,949. Alfred Hagelstein Maschinenfabrik, Lubeck-Travemunde, Germany. Filed Jan. 7, 1966.

HATRA

Owner of German Reg. No. 680,282, dated Aug. 10, 1954.
For Machines and Machine Parts—Namely, Road Construction Machines, Road Rollers, Excavators, Cranes, and Dredges and Transmissions.

SN 236,495. Kratky Automotive Products, Inc., Chicago, Ill. Filed Jan. 14, 1966.

KAPCO

For Rebuilt Automotive Pumps and Clutches.
First use Nov. 5, 1965.

SN 236,875. The Bauer Bros. Co., Springfield, Ohio. Filed Jan. 20, 1966.

M&D

For Pulp Preparation Equipment—Namely, Digesters Adaptable as Pulp Washers, Bleachers, and the Like.
First use December 1958.

SN 245,934. Maag Gear-Wheel Company Limited, Zurich, Switzerland. Filed May 18, 1966.

MAAG
ZURICH

For Machines for Cutting, Grinding, and Testing Gears; Gears of All Kinds and Gear Boxes.
First use in or about 1913; in commerce in or about 1922.

SN 250,202. Dan Polos Industries, Inc., Addison, Ill. Filed May 6, 1966.



Applicant disclaims the wording except in association with the composite mark.
For Concrete Drill Anchors.
First use Oct. 27, 1965.

SN 250,203. Dan Polos Industries, Inc., Addison, Ill. Filed May 6, 1966.



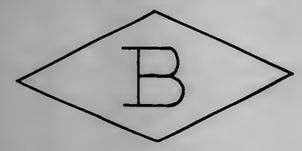
Applicant disclaims the wording except in association with the composite mark.
For Concrete Drill Anchors.
First use Oct. 27, 1965.

SN 250,205. Dan Polos Industries, Inc., Addison, Ill. Filed May 6, 1966.



Applicant disclaims the wording except in association with the composite mark.
For Concrete Drill Anchors.
First use Oct. 27, 1965.

SN 252,660. Jefferson Union Company, Lexington, Mass. Filed Aug. 18, 1966.



For Three-Wheel Metal Pipe Cutters and Parts Thereto.
First use Feb. 1, 1899.

SN 254,463. Original Equipment Manufacturers, Inc., Chicago, Ill. Filed Sept. 14, 1966.

O.E.M.

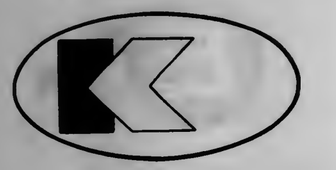
For Tart and Pie Presses and Molds for Shaping a Lattice Dough Topping for Tarts and Pies.
First use Aug. 11, 1966.

SN 256,100. Judd Ringer Corporation, Minneapolis, Minn. Filed Oct. 10, 1966.

FEEDER KANE

Applicant hereby disclaims the word "Feeder" apart from the mark without disclaiming any common law rights that applicant may have acquired in the word "Feeder." Owner of Reg. No. 619,884.
For Manually Operable Devices for Injecting Fertilizer Solutions Into Soil.
First use Sept. 13, 1966.

SN 256,286. Kennametal Inc., Latrobe, Pa. Filed Oct. 12, 1966.



Owner of Reg. Nos. 528,690, 785,216, and others.
For Metal Products in the Form of Tools and Parts for Machinery—Namely, Mining Tools.
First use Mar. 22, 1966.

SN 256,525. Construction Machinery Co., Waterloo, Iowa. Filed Oct. 17, 1966.



The representation of the goods and the world map are disclaimed apart from the mark as shown.
For Devices for Pushing Pipes Through Earth.
First use in or about November 1961; on or about Feb. 15, 1965, as to the design.

SN 257,517. Gustav J. Schutterman, d.b.a. Progredo Trading Co., New York, N.Y. Filed Oct. 28, 1966.

BIRGIT

For Flatware of Stainless Steel.
First use on or about Feb. 15, 1960.

SN 258,301. FMC Corporation, San Jose, Calif., assignee of Harry J. Ferguson Co., Jenkintown, Pa. Filed Nov. 9, 1966.

"STREAMLINER"

Owner of Reg. No. 422,406.
For Roller Gravity, Wheel Gravity, Belt, Chain, Slat and Trolley-Conveyors.
First use April 1941.

SN 258,426. Super Mold Corporation of California, Lodi, Calif. Filed Nov. 10, 1966.



For Tire Retreading Apparatus—Namely, a Machine To Initially Form by Extruding and To Thereafter Directly Apply a New Tread to a Worn Tire Preparatory to Vulcanization.
First use Oct. 3, 1966.

SN 258,879. Andis Clipper Co., Racine, Wis. Filed Nov. 17, 1966.

MASTER

For Hair Clippers.
First use on or about June 15, 1929.

SN 260,425. Russell T. Gilman, Inc., Grafton, Wis. Filed Dec. 9, 1966.

MODULE-MATIC

For Metal Working Machines.
First use July 6, 1966.

SN 261,506. Noble Manufacturing Company, Sac City, Iowa. Filed Dec. 27, 1966.

NOBLE

For Farm Equipment—Namely, Harrow Drawbars, Harrows, Mulchers, Herbicide Applicators, and Insecticide Applicators.
First use Mar. 30, 1963; at least as early as 1947 as to "Noble"; Sept. 28, 1959, in a different form.

SN 261,507. Noble Manufacturing Company, Sac City, Iowa. Filed Dec. 27, 1966.

NOBLE

For Farm Equipment—Namely, Harrow Drawbars, Harrows, Mulchers, Herbicide Applicators, and Insecticide Applicators.
First use at least as early as 1947.

SN 267,922. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Fluid, Semi-Fluid and Gas Handling Pumps and Parts, Controls and Components of the Foregoing; Linear Actuators, Hydraulic Motors, Hydraulic Power Packs, Braking Devices and Parts, Controls and Components of the Foregoing.
First use Mar. 15, 1967.

SN 267,923. Crane Co., New York, N.Y. Filed Mar. 30, 1967.

crane

For Fluid, Semi-Fluid and Gas Handling Pumps and Parts, Controls and Components of the Foregoing; Linear Actuators, Hydraulic Motors, Hydraulic Power Packs, Braking Devices and Parts, Controls and Components of the Foregoing.
First use Mar. 10, 1967.

Class 25—Locks and Safes

SN 255,007. Loxem Manufacturing Corporation, Midland Park, N.J. Filed Sept. 23, 1966.

LOXEM

For Locks and Locking Devices—Namely, Door Locks, Security Bars, Padlocks, Chain Locks, Keepers, Strike Plates, Auxiliary Locks, and Parts of the Foregoing.
First use Nov. 1, 1954.

Class 26—Measuring and Scientific Appliances

SN 229,242. Halmar Electronics, Incorporated, Columbus, Ohio. Filed Oct. 4, 1965.

DYNAMP

For Apparatus for Measuring Electrical Currents.
First use Jan. 11, 1963.

SN 240,288. Fox Valley Instrument Company, Cheboygan, Mich. Filed Mar. 7, 1966.

RINGTAC

For Internal Combustion Engine Tachometers.
First use Feb. 15, 1966.

SN 240,721. Ronald W. Emmitt, d.b.a. Emmitt Scientific, Farmington, Mich. Filed Mar. 11, 1966.

For Racks for Test Tubes, Cuvette Serum Storage and the Like, and for Laboratory, Hospital, and Medical Equipment and Reagents.
First use Dec. 1, 1965.

SN 241,466. Hughes Aircraft Company, Culver City, Calif. Filed Mar. 21, 1966.

ZAPPING • PAPER

The word "Paper" is disclaimed apart from the mark as a whole.
For Coated Paper for Testing Energy Level in Laser Beams.
First use on or about Jan. 14, 1966.

SN 241,738. Bell Research Inc., Chester, W. Va. Filed Mar. 24, 1966.

BELL

For Heat Measuring Devices—Namely, Pyrometric Cones, Cone Plaques, Keys, and Gauges To Measure Shrinkage of Keys.
First use April 1954.

SN 249,513. Dennert & Pape Aristo-Werke KG, Hamburg-Altona, Germany. Filed July 5, 1966.

ARISTOMAT

Owner of German Reg. No. 808,942, dated Aug. 30, 1965; and U.S. Reg. Nos. 614,367 and 721,596.
For Mathematical, Surveying and Cartographic Instruments, Especially Planimeters, Integrators, Pantographs, Coordinatographs, Measuring and Controlling Instruments (Such as Numerically Controlled Drafting Equipment for Programming Production Sequences Relating to Plane Sections of Complex Bodies, in the Nature of Rib-Frames for Ships' Hulls, Curved Forms Which Have Been Developed and Faired by Processing on an Electric Computer, and Many Varieties of Drawings, Charts and Plans for Surveying) and Calculating Machines.
First use October 1963; in commerce October 1963.

SN 252,655. Gilson Screen Company, Malinta, Ohio. Filed Aug. 18, 1966.

GILSO-MATIC

For Stationary and Portable Testing Screens for Sizing Test Samples of Crushed Stone, Sand and Gravel, Slag, Coal and Coke, Ores and Similar Materials, and Accessories and Parts Thereof.
First use September 1965.

SN 255,305. The Executive Line, Inc., Chatham, N.Y. Filed Sept. 28, 1966.

EXECUTIVE POCKET CHUM

Owner of Reg. Nos. 422,820, 798,108, and others.
For Steel Pocket Slide Caliper.
First use Jan. 1, 1946.

SN 260,709. American Instrument Company, Inc., Silver Spring, Md. Filed Dec. 14, 1966.

ASSAYOMAT

For Automated Ultraviolet Assay System for Tableted Pharmaceuticals.
First use Oct. 24, 1966.

SN 260,710. American Instrument Company, Inc., Silver Spring, Md. Filed Dec. 14, 1966.

ASSAY-A-GRAM

For Program Boards for Automated Ultraviolet Assay System for Tableted Pharmaceuticals.
First use Oct. 24, 1966.

SN 261,168. Technicon Corporation, Ardsley, N.Y., by merger and change of name from Technicon Instruments Corporation, Ardsley, N.Y. Filed Dec. 20, 1966.

SMA

For Apparatus for the Automatic Chemical Quantitative Analysis of Sample Liquids in Respect to Several Known Ingredients Therein, and for Recording Results of the Analyses.
First use Apr. 19, 1966.

SN 261,185. Allied Impex Corp., New York, N.Y. Filed Dec. 21, 1966.

SENSOREX

For Photographic Cameras.
First use Aug. 9, 1966.

SN 261,951. Thermo Electric Co. Inc., Saddle Brook, N.J. Filed Jan. 4, 1967.

SUPERMITE

Owner of Reg. Nos. 654,450 and 750,146.
For Apparatus for Measuring Temperature.
First use Oct. 24, 1966.

SN 262,133. American Hospital Supply Corporation, Evanston, Ill., assignee of Dade Reagents, Inc., Miami, Fla. Filed Jan. 9, 1967.

CAPILETS

For Micro-Hematocrit Capillary Tubes.
First use on or before Feb. 8, 1966.

SN 262,135. Debs Sunglass Corporation, North Hollywood, Calif. Filed Jan. 9, 1967.

SPEC-TRIM

For Sunglasses.
First use Dec. 6, 1966.

SN 262,353. Sea & Ski Corporation, Reno, Nev. Filed Jan. 11, 1967.

SEA & SKI

Owner of Reg. Nos. 746,568, 777,925, and others.
For Sunglasses.
First use Oct. 31, 1961.

SN 262,355. Sea & Ski Corporation, Reno, Nev. Filed Jan. 11, 1967.



The mark consists of a stylized "S" and design. Owner of Reg. Nos. 774,268 and 781,692.
For Sunglasses.
First use Aug. 31, 1964.

SN 262,434. National Housewares, Inc., Salt Lake City, Utah. Filed Jan. 12, 1967.

EMDEKO

For Movie Camera and Movie Projector.
First use June 12, 1964, on movie camera.

SN 262,585. Hamilton Manufacturing Company, Two Rivers, Wis. Filed Jan. 16, 1967.

STRATASTEEL

Owner of Reg. No. 729,414.
For Drafting Tables and Drafting Boards.
First use Dec. 9, 1966.

SN 262,792. International Playtex Corporation, Dover, Del. Filed Jan. 18, 1967.

EYES RIGHT

For Sunglasses.
First use Jan. 9, 1967.

SN 262,895. William Gilmore Smith, Lutherville, Md. Filed Jan. 19, 1967.

Mini-Scope

For Simple Lens Microscope.
First use Oct. 1, 1964.

SN 263,254. Cubic Corporation, San Diego, Calif. Filed Jan. 25, 1967.

AUTOTAPE

Owner of Reg. No. 721,936.
For Electronic Distance Measuring Equipment, and Parts and Accessories Therefor.
First use July 21, 1964.

SN 263,401. Robertshaw Controls Company, Richmond, Va. Filed Jan. 26, 1967.

INTERSTATE

For Thermostats.
First use Dec. 30, 1966.

SN 263,583. Laboratory for Electronics, Inc., Waltham, Mass. Filed Jan. 30, 1967.

SCAT

For X-Ray Apparatus, Parts and Associated Display Systems Therefor and for Use in Connection Therewith.
First use July 30, 1964.

SN 263,584. Laboratory for Electronics, Inc., Waltham, Mass. Filed Jan. 30, 1967.

HARLECH

For X-Ray Apparatus, Parts and Associated Equipment Therefor and for Use in Connection Therewith.
First use Aug. 28, 1964.

SN 274,037. Kleer-Vu Industries, Inc., New York, N.Y. Filed June 16, 1967.

JACKET MASTER

For Jackets for Strips and/or Individual Sections of Microfilm.
First use Nov. 10, 1966.

SN 274,038. Kleer-Vu Industries, Inc., New York, N.Y. Filed June 16, 1967.

FICHE-JAC

For Jackets for Strips and/or Individual Sections of Microfilm.
First use Nov. 10, 1966.

SN 274,039. Kleer-Vu Industries, Inc., New York, N.Y. Filed June 16, 1967.

ADHESIVE MASTER

For Jackets for Strips and/or Individual Sections of Microfilm.
First use Nov. 10, 1966.

SN 274,040. Kleer-Vu Industries, Inc., New York, N.Y. Filed June 16, 1967.

MASTER FICHE

For Jackets for Strips and/or Individual Sections of Microfilm.
First use Nov. 10, 1966.

SN 274,041. Kleer-Vu Industries, Inc., New York, N.Y. Filed June 16, 1967.

FICHE MASTER

For Jackets for Strips and/or Individual Sections of Microfilm.
First use Nov. 10, 1966.

SN 277,502. Paillard Incorporated, Linden, N.J. Filed Aug. 4, 1967.

LYTAR

For Optical Lenses and Photographic Projectors.
First use 1953.

Class 27 — Horological Instruments

SN 269,464. Max Smedresman, Queens Village, N.Y. Filed Apr. 18, 1967.

O'C LOCK

For Clocks.
First use Mar. 9, 1967.

SN 269,995. Manufacture des Montres Universal Perret Freres S.A., Geneva, Switzerland. Filed Apr. 25, 1967.

UNIVERSONIC

For Watches and Parts Thereof.
First use Apr. 12, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 267,590. Norman Allan & Company, Detroit, Mich. Filed Mar. 27, 1967.

D'NACO

Owner of Reg. No. 604,841.
For Rings, Bracelets, Necklaces, Earrings, Brooches, and Cufflinks.
First use in 1951.

SN 268,044. Gorham Corporation, Providence, R.I. Filed Mar. 31, 1967.

ALENÇON LACE

Owner of Reg. No. 795,219.
For Sterling Silver Flatware and Table Cutlery.
First use Jan. 27, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 255,605. English Sewing Limited, Manchester, England. Filed Oct. 3, 1966.

SELVYT

Owner of British Reg. No. 105,547, dated May 5, 1892.
For Dusters and Polishing Cloths Made of Cotton, Not in the Piece.

SN 256,197. Burjon, Incorporated, Lyndhurst, N.J. Filed Oct. 11, 1966.

PUFF-PAK

For Disposable Powder Dispenser.
First use Oct. 4, 1966.

Class 31 — Filters and Refrigerators

SN 237,194. American Machine & Foundry Company, New York, N.Y. Filed Jan. 25, 1966.

AMF

Owner of Reg. No. 762,328.
For Fluid Treating Equipment and Filtering Apparatus, Components Therefor and Parts Thereof, and Including Cartridges, Liquid Filtering and Purifying Assemblies, Liquid Processing Systems Having Condensing, Distilling and Evaporating Equipment, Appliances for Removing Dissolved Minerals and Suspended Matter From Fluid, and Mechanical Straining and Filtering Assemblies.
First use Apr. 11, 1963.

SN 247,482. Chiyoda Chemical Engineering & Construction Company Limited, Minato-ku, Tokyo, Japan. Filed June 7, 1966.

HI-AQUA-FINER

Owner of Japanese Reg. No. 671,512, dated Mar. 30, 1965.
For Municipal and Industrial Water and Waste Water Treatment Plants, and Parts Thereof.

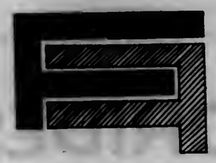
Class 32 — Furniture and Upholstery

SN 237,601. Stempel Manufacturing Co., Dallas, Tex. Filed Jan. 28, 1966.

CON-TEMPO-TRAY

For Desk Letter Trays.
First use Nov. 10, 1965.

SN 247,649. Triad Corporation, d.b.a. Foam Furniture Designs, Morton Grove, Ill. Filed June 8, 1966.



The drawing is lined to reproduce the lines as shown on the specimens.
For Seating, Lounging and Sleeping Equipment—Namely, Chairs, Stools, Sofas, and Sectionals.
First use on or about Mar. 1, 1966.

SN 249,598. Town House Furniture, Ltd., St. Louis, Mo. Filed July 5, 1966.

TOWN HOUSE

For Living Room Furniture, Excluding Mattresses, Springs, Beds, Bed and Sofa Combinations and Lounges.
First use Apr. 1, 1959.

SN 249,839. Hausmann Industries, Inc., Bronx, N.Y. Filed July 8, 1966.

HAUSMANN

The name "Hausmann" is disclaimed, apart from the mark as shown.
For Medical Rehabilitation and Therapeutic Furniture.
First use Dec. 28, 1965.

SN 254,260. The Daniel Corporation, Akron, Ohio. Filed Sept. 12, 1966.

DC DANCOR

For Restaurant Fixtures—Namely, Waitress Stands, Booths, Bars, Back Bars, Lunch Counters; Store Fixtures—Namely, Glass Showcases, Center Island Units, Special Display Platforms, Wrap Counters; Office Furniture, Conference and Occasional Tables, Custom Office Furniture—Namely, Desks and Credenzas; and Antique Period Furniture for the Home—Namely, Carved Divider Screens, and Chests.
First use on or about Mar. 1, 1965.

SN 255,545. Claude D. Patterson, Jr., d.b.a. Patterson Furniture Company, McKees Rocks, Pa. Filed Sept. 30, 1966.

first impression

The representation of the chair is disclaimed apart from the mark as shown.
For Office and Reception Rom Furniture.
First use on or about Sept. 24, 1964.

SN 258,913. Albert M. Lock & Son, Inc., Boston, Mass. Filed Nov. 17, 1966.

PRIDES CROSSING

For Furniture for Living Rooms, Dining Rooms, Bedrooms, Occasional Furniture, and Framed Mirrors.
First use Apr. 8, 1966.

SN 260,773. Simmons Company, New York, N.Y. Filed Dec. 14, 1966.

PACE

Related company owner of Reg. No. 438,665.
For Bedroom Furniture.
First use Dec. 5, 1966.

SN 261,567. Broyhill Furniture Factories, Lenoir, N.C. Filed Dec. 28, 1966.

SPECTACOLOR

For Upholstery Fabrics Sold Only as a Component Part of Furniture.
First use Oct. 21, 1966.

SN 263,921. Kessler Industries, Inc., El Paso, Tex. Filed Feb. 3, 1967.

KESSLER

For Aluminum and Wrought Iron Furniture—Namely, Tables, Chairs, Couches, Stands, Beds, Decorator Shields, Benches, Ottomans, Headboards; Night Stands, Chests and Dressers Constructed of a Combination of Aluminum, Steel, Plastic and Wood.
First use May 17, 1959.

SN 264,215. Hoover Ball and Bearing Company, Saline, Mich. Filed Feb. 8, 1967.

Uni-flot

For Wire Springs for Seat Structures.
First use Dec. 27, 1966.

SN 264,266. Williams Furniture Corporation, Sumter, S.C. Filed Feb. 8, 1967.

VILLAGE SQUARE

For Living Room, Dining Room, Bedroom, and Occasional Furniture.
First use on or about Nov. 15, 1960.

SN 264,267. Williams Furniture Corporation, Sumter, S.C. Filed Feb. 8, 1967.

BUNK HOUSE

For Bedroom and Occasional Furniture.
First use on or about Oct. 15, 1965.

SN 264,873. Williams Furniture Corporation, Sumter, S.C. Filed Feb. 16, 1967.

YOUNG MISS

For Bedroom and Occasional Furniture.
First use on or about Apr. 15, 1965.

SN 265,424. The Lane Company, Inc., Altavista, Va. Filed Feb. 24, 1967.

EXCLUSIVELY YOURS

For Case Goods, Tables, Chairs, and Bedroom Furniture.
First use Jan. 4, 1967.

SN 265,743. Southern Cross Industries, Inc., Atlanta, Ga.
First use Feb. 16, 1967.

MOON RIVER

For Mattresses and Box Springs.
First use Feb. 16, 1967.

SN 266,752. France Bed Co., Ltd., Tokyo, Japan. Filed Mar. 15, 1967.

MOLBON

For Beds.
First use Aug. 1, 1966; in commerce Dec. 1, 1966.

SN 266,879. Gottlob Gussmann, Süddeutsche Bettpolsterfabrik, Pleidelsheim, Wurttemberg, Germany. Filed Mar. 16, 1967.

ferrolastic

Owner of German Reg. No. 723,862, dated Mar. 24, 1959.
For Mattresses, Upholstered Furniture, Spring Cores and Springs for Mattresses, and Upholstered Furniture Seats.

SN 267,234. The Englander Company, Inc., New York, N.Y. Filed Mar. 21, 1967.

VALIANT

For Mattresses and Springs.
First use on or about Jan. 14, 1960.

SN 268,208. Mitchell Manufacturing Company, Milwaukee, Wis. Filed Apr. 3, 1967.

GEMINI

For Unitary Table and Bench Structures.
First use Feb. 24, 1967.

SN 268,216. Ostermoor & Company, Inc., Bridgeport, Conn. Filed Apr. 3, 1967.

MARQUIS

For Mattresses.
First use Dec. 21, 1966.

Class 33—Glassware

SN 240,328. Owens-Illinois, Inc., Toledo, Ohio. Filed Mar. 7, 1966.

GOLDEN HAZE

For Cups, Pitchers, Tankards, Bowls, Tumblers, Goblets, and Stemware, Said Goods Being Formed From Glass.
First use Jan. 11, 1966.

SN 251,443. Lorri Crystal, Inc., Brooklyn, N.Y. Filed Aug. 1, 1966.

CRYSTAL BY LORRI

Applicant disclaims the term "Crystal by" apart from the mark as shown.
For Table Glassware and Crystal Stemware.
First use June 1956.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 252,719. California Heat Pump Corporation, Burbank, Calif. Filed Aug. 19, 1966.

CHP

For Heating and Air Conditioning Equipment for Commercial and Domestic Use.
First use May 1962.

SN 258,006. Universal Oven Company Incorporated, Westbury, N.Y. Filed Nov. 4, 1966.

SWEET HEARTH

For Commercial Ovens for the Bakery Trade.
First use Mar. 31, 1966.

SN 261,534. Titan Sales Corporation, Kansas City, Mo. Filed Dec. 27, 1966.

SENECA

For Portable Electric Space Heaters.
First use in or about 1956.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 258,524. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 14, 1966.

WHISPERDISC

For Molded Brake Pads, Made of Brake Lining Materials, for Vehicle Disc Brakes.
First use Aug. 5, 1966.

Class 36 — Musical Instruments and Supplies

SN 108,646. F. Rudolf Linek, d.b.a. Roxy, Hamburg-Wandsbek, Germany. Filed Nov. 17, 1960.

ROXY

For Stringed Musical Instruments—Namely, Guitars (Electric, Acoustic, Semi-Acoustic), Violins, Basses, Cellı, Flutes, Balalaikas, Mandolins, Ukuleles, Zithers, Pianos; Wind Musical Instruments—Namely, Organs, Accordions, Mouthorgans, Brass-Wind Musical Instruments, Trumpets, Cornets, Bugles, Trombones, Tubes, Bass-Horns, Flugelhorn, Saxophones, Metal Flutes, Metal Piccolos, Clarinets, Flutes, Recorders, Oboes, Bassoons, English Horns, Saxophones; Percussion Musical Instruments—Namely, Drums, Cymbals, Bells, Drum-Sticks, Drum-Brushes, Drum-Heads, Triangles; and Electronic Musical Instruments—Namely, Fretted Stringed Instruments, and Organs, Together With Their Cases, Accessories, and Parts.
First use July 1957; in commerce July 1957.

SN 238,606. Budget Sound, Inc., Burbank, Calif. Filed Feb. 11, 1966.

SOMERSET

For Pre-Recorded Magnetic Tape and Phonograph Records.
First use Oct. 12, 1956.

SN 246,410. Ulysses Samuel Warren, d.b.a. Jerma Records, Chicago, Ill. Filed May 23, 1966.

JERMÄ

For Phonograph Records.
First use Apr. 21, 1966.

SN 252,088. Jean Foufounis, Lausanne, Switzerland. Filed Aug. 10, 1966.

SYMPHOMATIC

Priority claimed under Sec. 44(d) on Swiss Reg. No. 216,588, dated Feb. 10, 1966.
For Phonograph Record Players.

SN 267,353. Chas. Pfriemer, Inc., Easton, Pa. Filed Mar. 22, 1967.

PARA-SONIC

For Piano Parts, Specifically Piano Hammers and Piano Hammer Felts.
First use Jan. 26, 1967.

SN 278,162. Camelot Productions, Inc., Hollywood, Calif. Filed Aug. 14, 1967.

AWARD

For Amplifier Units for Electric Guitars.
First use June 8, 1967.

Class 37 — Paper and Stationery

SN 247,476. Art Leather Mfg. Co., Inc., Brooklyn, N.Y. Filed June 7, 1966.

PERMA-BOUND

For Folding Plastic Photograph Holders and Mounting Corners.
First use June 1, 1963.

SN 249,520. The Fleming Co. Incorporated, Topeka, Kans. Filed July 5, 1966.

PLUSH

For Paper Products—Namely, Facial Tissue, Toilet Tissue, Paper Towels, and Paper Napkins.
First use Oct. 15, 1965.

SN 250,802. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 22, 1966.

JIFFMASTER

For Copy Paper.
First use at least as early as Dec. 31, 1965.

SN 252,072. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed Aug. 10, 1966.

CAPRI TEXT

No claim is made to the word "Text" apart from the mark shown.
For Coated Printing Paper for Industrial Uses.
First use July 9, 1966.

SN 252,073. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed Aug. 10, 1966.

CONSOBRITE

Owner of Reg. Nos. 578,581, 650,099, and others.
For Coated Printing Paper.
First use June 20, 1966.

SN 260,912. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed Dec. 16, 1966.

7099B

Owner of Reg. Nos. 595,540 and 821,150.
For Pencil-Shaped Wood-Encased Typewriter Erasers.
First use Sept. 28, 1954.

SN 261,090. Hans L. Levi, New York, N.Y. Filed Dec. 19, 1966.

GRAPHI-CORR

For Corrugated Board.
First use November 1966.

SN 262,509. The Reynolds Manufacturing Company, Holyoke, Mass. Filed Jan. 18, 1967.

NEW FRONTIERS

For Composition Notebooks.
First use May 27, 1966.

SN 262,881. The Parker Pen Company, Janesville, Wis. Filed Jan. 19, 1967.

EMPHASIS

For Fountain Pens, Mechanical Pencils, Ball Point Pens, Marking Pens, and Desk Sets.
First use Sept. 7, 1960.

SN 262,952. James Doyle McDuffie, Charlotte, N.C. Filed Jan. 20, 1967.

I.D. MAIL-O-MATIC

For Special Pocket Window Envelopes.
First use Mar. 1, 1966.

SN 262,977. Sorg Products Co., Ligonier, Ind. Filed Jan. 20, 1967.

PLACETTES

Owner of Reg. No. 593,259.
For Paper Napkins, Paper Towels, Paper Placemats, and Paper Coasters.
First use Jan. 2, 1964.

SN 263,485. Scripto, Inc., Atlanta, Ga. Filed Jan. 27, 1967.



For Writing Instruments, Their Parts, and Accessories—Namely, Mechanical Pencils, Pencil Leads, Pencil Erasers; Ball Point Pens, Ball Point Refills; Fountain Pens, Fountain Pen Refills, Fountain Pen Nibs; Pen and Pencil Sets, Pen and Pencil Desk Sets; Pen and Pencil Erasers and Refills Therefor; Fiber Tip Pens, and Marking Pens.
First use Nov. 23, 1966.

SN 265,472. Gary Industries Inc., d.b.a. Acco Products, Chicago, Ill. Filed Feb. 27, 1967.

ACCOHIDE

Owner of Reg. No. 155,996 and others.
For Loose-Leaf Binders.
First use Nov. 16, 1966.

SN 267,581. Calgon Corporation, Pittsburgh, Pa. Filed Mar. 27, 1967.

BIOCHEK 60

Owner of Reg. Nos. 824,285 and 808,741.
For Tissue Containing a Bacteriostat.
First use June 21, 1964.

SN 273,200. Magic Marker Corporation, Brooklyn, N.Y. Filed June 6, 1967.

MAGIMARK

Owner of Reg. Nos. 641,610 and 712,865.
For Felt Nib Marking Pens.
First use on or about Jan. 1, 1967.

SN 275,901. Visirecord, Inc., Coplague, N.Y. Filed July 18, 1967.

PERMAtrack

For Edge-Punched Cards.
First use June 28, 1967.

Class 38 — Prints and Publications

SN 244,938. Xerox Corporation, Rochester, N.Y., assignee of University Microfilms, Inc., Ann Arbor, Mich. Filed May 4, 1966.

MARCH OF AMERICA

For Books.
First use Mar. 15, 1966.

SN 245,182. James W. Fair, Tyler, Tex. Filed May 9, 1966.

STUDY-SCOPE

For Educational Device—Namely, Telescoping Tubes in Which Is Inserted Printed Educational Material Viewable Through Observation Windows in the Outer Tube.
First use Apr. 5, 1966.

SN 247,679. William Earl Church, d.b.a. Automobile Salesman's Advisory Letter, San Diego, Calif. Filed June 9, 1966.

AUTOMOBILE SALESMAN'S ADVISORY LETTER
BY WILLIAM E. CHURCH • SAN DIEGO, CALIFORNIA

The wording "Automobile Salesman's Advisory Letter" and "By William E. Church, San Diego, California" is disclaimed apart from the mark as a whole.
For Series of Letters Dealing With Salesmanship.
First use Jan. 5, 1966.

SN 249,750. Farm Journal, Inc., Philadelphia, Pa. Filed July 7, 1966.

The Farmer's Wife

Owner of Reg. No. 503,657.
For Section of Magazine.
First use Sept. 18, 1965.

SN 250,280. Henry King Ketcham, Geneva, Switzerland. Filed July 14, 1966.

HALF HITCH

For Newspaper and Magazine Cartoon Feature.
First use May 6, 1944; in commerce May 6, 1944.

SN 250,359. Crystal Greetings, Inc., Waukegan, Ill. Filed July 15, 1966.

A Crystal CARD

The word "Card" is disclaimed.
For Greeting Cards.
First use on or about Aug. 28, 1964.

SN 253,190. Evangelist Kenny Joseph, Nerima-ku, Tokyo, Japan. Filed Aug. 22, 1966.

REAP

For Quarterly Magazine.
First use Jan. 1, 1962; in commerce Jan. 1, 1962.

SN 254,767. Agricultural and Industrial Corporation, New York, N.Y. Filed Sept. 20, 1966.



The lining in the drawing represents orange color. The words "World Fertilizer Review" are disclaimed without prejudice or affection of applicant's rights now existing or thereafter arising in the disclaimed matter.
For Periodical Reviewing Magazine for the Fertilizing Industry.
First use March 1966.

SN 256,445. Harry A. Grace, d.b.a. Grace Associates, Santa Monica, Calif. Filed Oct. 14, 1966.

Vyoupoint

For Publications—Namely, Booklets and Pamphlets Which Are Aids for Teaching and Research.
First use Oct. 7, 1966.

SN 257,196. Bernice C. Scheib, d.b.a. Carol-Bee Studio, North Bay Village, Fla. Filed Oct. 25, 1966.

CAROL-BEE STUDIO

Applicant claims no exclusive rights in the word "Studio."
For Photographs.
First use Oct. 1, 1965.

SN 259,010. Master Publications, Inc., Santa Monica, Calif. Filed Nov. 18, 1966.

TECH-MASTER

Owner of Reg. Nos. 686,915, 812,570, and others.
For Manuals for the Repair and Maintenance of Refrigerators and Air Conditioners.
First use July 6, 1966.

SN 259,086. Civic Publications, Inc., Minneapolis, Minn. Filed Nov. 21, 1966.

see

For Weekly Magazine of Entertainment and Travel Guide Information.
First use Oct. 24, 1966.

SN 260,070. Edwin C. Perona Corp., New York, N.Y. Filed Dec. 5, 1966.

"EL MOROCCO"
INTERNATIONAL NEWS

The words "International News" are disclaimed separate and apart from the rest of the mark shown. Owner of Reg. No. 714,422.
For News Magazine of Special Interest to Applicant's Guests.
First use Oct. 3, 1966.

SN 264,942. Philip C. Lewis, d.b.a. DocuDrama, Tenafly, N.J. Filed Feb. 17, 1967.

DocuDrama

For Scripts.
First use September 1957.

SN 265,114. Sister Formation Conference, Washington, D.C. Filed Feb. 20, 1967.

SISTER FORMATION CONFERENCE

For Pamphlets Issued Periodically.
First use Feb. 5, 1966.

Class 39—Clothing

SN 221,504. Kennedy's, Inc., Boston, Mass. Filed June 18, 1965.

KENNEDY'S

For Clothing for Men and Boys—Namely, Suits, Topcoats, Overcoats, Slacks, Sport Coats, Ski Wear, Sport Shirts, Robes, Bathing Wear, Pajamas, Shirts, Shorts, Hosiery, Handkerchiefs, Mufflers, Gloves, Raincoats, Sweaters, Underwear, Trousers, Vests, Jackets, Hats, Caps, Belts, Collars, Garters, Neckwear, Shoes and Slippers; and Clothing for Women and Girls—Namely, Suits, Dresses, Coats, Sweaters, Underwear, Hosiery, Slacks, Skirts, Swim Wear, Shorts, Ski Wear, Jackets, Blouses, Shirts and Shoes.
First use 1892.

SN 228,561. Kennedy's, Inc., Boston, Mass. Filed July 16, 1965.



For Clothing for Men and Boys—Namely, Suits, Topcoats, Overcoats, Slacks, Sport Coats, Ski Wear, Sport Shirts, Robes, Bathing Wear, Pajamas, Shirts, Shorts, Hosiery, Handkerchiefs, Mufflers, Gloves, Raincoats, Sweaters, Underwear, Trousers, Vests, Jackets, Hats, Caps, Belts, Collars, Garters, Neckwear, Shoes and Slippers; and Clothing for Women and Girls—Namely, Suits, Dresses, Coats, Sweaters, Underwear, Hosiery, Slacks, Skirts, Swim Wear, Shorts, Ski Wear, Jackets, Blouses, Shirts and Shoes.
First use about Nov. 19, 1959.

SN 245,889. A.S.M. Co., Inc., Los Angeles, Calif. Filed May 18, 1966.

Ninth Street East Ltd.

For Men's and Women's Sportswear—Namely, Pants, Shirts, Jackets, Sweaters; Women's Skirts, Capri Slacks, Women's Shirts; and Women's and Men's Hats.
First use Mar. 1, 1966.

SN 248,636. Puritan Fashions Corporation, New York, N.Y. Filed June 21, 1966.



For Women's Wear—Namely, Dresses, Skirts, Blouses, Suits, Slacks, Shorts, Jackets, Coats, Raincoats, Millinery, Shoes, Boots, Swimsuits, Robes, Ties, Scarves, Sweaters, Belts, Gloves, Socks, Stockings; and Men's Ties.
First use Oct. 7, 1965.

SN 250,065. Wentworth Manufacturing Company, Lake City, S.C. Filed July 11, 1966.

Plaza East

For Women's Dresses.
First use June 28, 1966.

SN 250,372. Sally Gee, Inc., d.b.a. Sally Gee Creations, New York, N.Y. Filed July 15, 1966.

PEBLON BY SALLY GEE

The term "Sally Gee" is a fictitious name for "Sally Goldenstein" a living individual whose consent is of record. The word "Peblon" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 748,503 and 768,813.
For Ladies' Sweaters.
First use Feb. 15, 1965; 1940 as to "Sally Gee."

SN 251,634. Kabushiki Kaisha Arai Hirotake Shoten, Omiya-shi, Saitama-ken, Japan. Filed Aug. 3, 1966.



For Safety Hats and Safety Helmets, as Well as Parts Thereof.
First use Dec. 24, 1957; in commerce Feb. 20, 1964.

SN 255,910. Melville Shoe Corporation, New York, N.Y. Filed Oct. 6, 1966.

CHIEF LIGHTFOOT MOCS

Without waiver of common law and other rights, no registration rights are claimed for the word "Mocs" apart from the complete mark.
For Men's and Boys' Shoes.
First use Oct. 5, 1966.

SN 256,285. Kanematsu-Gosho (U.S.A.) Inc., New York, N.Y., assignee of Kanematsu New York, Inc., New York, N.Y. Filed Oct. 12, 1966.

KANETTES

For Footwear—Namely, Shoes, Moccasins, Sandals, Slippers, Thongs, and Zoris.
First use July 15, 1966.

SN 256,861. Regulated Cottons Inc., New York, N.Y. Filed Oct. 20, 1966.



Applicant claims exclusive right to use of the word "Imports" as a part of its mark, but not otherwise. The translation of the Italian word "Principe" is "prince."
For Men's Raincoats.
First use Oct. 13, 1966.

SN 256,952. Merchandising International S.A., Geneva, Switzerland. Filed Oct. 21, 1966.



Priority claimed under Sec. 44(d) on Swiss Reg. No. 219,155, dated July 26, 1966.
For Shoes and Parts.

SN 257,155. BGS Shoe Corporation, Manchester, N.H. Filed Oct. 25, 1966.

BUSKENS

Owner of Reg. Nos. 425,025 and 607,053.
For Women's and Misses' Shoes of Leather, Rubber, Fabric, or Combinations Thereof.
First use Nov. 15, 1944.

SN 258,271. The Enro Shirt Company, Inc., Louisville, Ky. Filed Oct. 26, 1966.

Lobster

The drawing is lined for red.
For Shirts, Pajamas, and Blouses.
First use Sept. 1, 1966.

SN 259,229. E-Z Mills, Inc., New York, N.Y. Filed Nov. 22, 1966.

LITTLE HONEY

For Infants' and Children's Shirts, Pants, and Skirts.
First use Oct. 14, 1966.

SN 259,491. Van Laack, Schmits & Eltschig, Monchen-Gladbach, Germany. Filed Nov. 25, 1966.



No claim is made to the words "La Chemise" apart from the mark as shown. Owner of German Reg. No. 804,619, dated Nov. 28, 1964.
For Men's Shirts.

SN 260,512. Anderson Brothers Consolidated Companies, Danville, Va. Filed Dec. 12, 1966.

ANDERSON BROTHERS

For Coveralls, Pants, Shirts, Slacks, Blouses, Caps, Coats, and Jackets.
First use 1934.

SN 261,234. David V. Leonard, Chicago, Ill. Filed Dec. 21, 1966.



For Sweatshirts.
First use May 19, 1966.

SN 262,452. Max Ulman, Inc., New York, N.Y. Filed Jan. 12, 1967.

SPY SMOCKS

Applicant disclaims the word "Smocks" apart from the mark as shown.
For Dresses, Housecoats, Brunch Coats, Smocks, and Back-Wraps.
First use on or about Oct. 3, 1966.

SN 262,890. A. Sagner's Son, Frederick, Md. Filed Jan. 19, 1967.

CLUBMAN

Owner of Reg. Nos. 639,721 and 802,310.
For Women's and Girls' Wear—Namely, Suits, Skirts, Dresses, Belts, Sweaters, Handkerchiefs, Gloves, Hats, Underwear, Raincoats, Housecoats, and Hosiery-Belts, and Men's Suits.
First use 1949 on men's suits.

SN 264,692. J. P. Stevens & Co., Inc., New York, N.Y. Filed Feb. 14, 1967.

HIPLETS

For Hosiery.
First use Feb. 3, 1967.

SN 269,744. Craig's, Ltd., Houston, Tex. Filed Apr. 21, 1967.

CRAIG'S

For Dresses, Suits, Coats, Skirts, Slacks, Shorts, Sweaters, Blouses, Pajamas, Nightgowns, Lingerie, Hosiery, Socks, and Shoes.
First use during or about 1933.

SN 275,884. The Villager, Inc., Philadelphia, Pa. Filed July 12, 1967.

VILLAGE GREEN

Owner of Reg. Nos. 702,965, 824,955, and others.
For Sportswear—Namely, Dresses, Shirts, Blouses, Slacks, Jackets, Sweaters, Shorts, Skirts, and Coats.
First use May 29, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 253,996. Showplace Carpets, Inc., New York, N.Y. Filed Sept. 7, 1966.

SHOWPLACE

For Rugs and Carpets.
First use Nov. 10, 1965.

SN 258,489. California Weavers, Inc., Los Angeles, Calif. Filed Nov. 14, 1966.

SHAGRILA

For Nylon Shag Carpets and Rugs.
First use June 14, 1966.

SN 258,702. Liberty Fabrics of New York, Inc., New York, N.Y. Filed Nov. 15, 1966.

Satendré

For Knitted Fabrics Made of Elastic Yarn.
First use May 2, 1966.

SN 263,588. M. Lowenstein & Sons, Inc., New York, N.Y. Filed Jan. 30, 1967.

THERMO-FOAM

For Draperies Made of Cotton and/or Synthetic Fibers.
First use Dec. 5, 1966.

SN 264,825. Harry Hirshberg Company, Inc., Haverhill, Mass. Filed Feb. 16, 1967.

LEEBAC

For Fabric Material for the Manufacture of Footwear.
First use Nov. 22, 1966.

SN 278,164. Deering Milliken, Inc., New York, N.Y. Filed Aug. 14, 1967.

EXPO

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Aug. 8, 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 242,273. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Mar. 30, 1966.

LIPPES LOOP

The term "Lippes" is the name of a living individual, whose consent is of record. Applicant disclaims the term "Loop" separate and apart from the mark as shown on the drawing, reserving unto itself all common law rights which it may have in said term. Owner of Reg. No. 788,223.
For Medical Devices for Intrauterine Application.
First use at least as early as Jan. 24, 1966.

SN 261,996. Ortho International Services, Inc., Wilmington, Del. Filed Jan. 5, 1967.

BOOMERANG

For Wire for Orthodontic Purposes.
First use August 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 259,374. PepsiCo, Inc., New York, N.Y. Filed Nov. 25, 1966.

SNO BALL

For Carbonated Soft Drinks Dispensed From Drink Dispensing Machines.
First use July 1, 1966.

SN 261,142. City Club Beverage Corp., Brooklyn, N.Y. Filed Dec. 20, 1966.

DEL PAIS

The words "Del Pais" are Spanish meaning "of the country."
For Carbonated Soft Drinks.
First use Feb. 8, 1966.

SN 264,417. Hinckley & Schmitt, Inc., d.b.a. Sunaire Water Company, Chicago, Ill. Filed Feb. 10, 1967.

SUNAIRE

For Distilled Water.
First use prior to 1959.

SN 264,950. Mugs Up Root Beer Company, Inc., d.b.a. Mugs Up Root Beer Co., Kansas City, Mo. Filed Feb. 17, 1967.

MUGS UP

For Root Beer and Root Beer Concentrate.
First use May 1, 1951.

Class 46—Foods and Ingredients of Foods

SN 234,818. The Glidden Company, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Dec. 17, 1965.

Glidden

Owner of Reg. No. 651,268.
For Vegetable Shortening, Animal Fat Shortening, Powder Mixes for Making Liquid Sauces for Use on Meats and as All-Purpose Seasonings, Whipped Topping Bases; Canned Salads—Namely, Potato and Macaroni Salads; Vegetable Oils, Margarine, Gravy Mixes, Onions in Minced, Fried, Dehydrated and Liquid Forms, Spices, Salt, Pepper, Herbs, Canned Vegetables, Grated Orange Peels, Fried Potato Sticks, Dehydrated Vegetables, Icings, Mince Meat, Shredded and Flaked Coconut, Frozen Puff Pastry Dough, Chili Powder, Pickles, Flavoring Extracts, Food Colors, Edible Food Decorations (Crystal Sugars), and Meat Tenderisers.
First use February 1964.

SN 240,332. Pay Way Feed Mills, Inc., Kansas City, Mo. Filed Mar. 7, 1966.

GOLDEN YOLK

For Poultry Feeds and Feed Supplements.
First use Nov. 19, 1958.

SN 241,520. Pacific Gamble Robinson Co., d.b.a. Pacific Fruit and Produce Company and Gamble Robinson Company, Seattle, Wash. Filed Mar. 21, 1966.

SNOSHOE

For Fresh Apples.
First use on or before Aug. 18, 1964.

SN 246,637. Armour and Company, Chicago, Ill. Filed May 26, 1966.

LA LUNA

The Italian word "La" and the Latin word "Luna," respectively, are equivalent to the English words "the" and "moon." Owner of Reg. No. 693,955.
For Sausage.
First use Dec. 31, 1958.

SN 246,969. Victor Ryckebosch, Inc., Lancaster, Calif. Filed May 31, 1966.

CONTESSA

For Domesticated and Wild Fowl, Fresh Dressed, Fresh Frozen, Frozen, Ready To Cook, Cooked, Frozen and Fully Cooked; and Poultry Feed.
First use Apr. 26, 1966.

SN 248,226. General Foods Corporation, White Plains, N.Y. Filed June 16, 1966.

PAR

For Instant Imitation Fruit Drink Mix.
First use Apr. 27, 1966.

SN 249,486. Armour and Company, Chicago, Ill. Filed July 5, 1966.

GOLDEN STAR

Owner of Reg. Nos. 713,925 and 790,066.
For Frozen Poultry.
First use on or prior to June 17, 1966.

SN 249,487. Armour and Company, Chicago, Ill. Filed July 5, 1966.



Owner of Reg. Nos. 713,925 and 790,066.
For Frozen Poultry.
First use June 17, 1966.

SN 249,956. Paul M. Cooter, d.b.a. The Cooter Company, Atherton, Calif. Filed July 11, 1966.

NU CREST

Owner of Reg. Nos. 397,302 and 397,456.
For Canned Fruit and Vegetable Juices.
First use Oct. 1, 1937.

SN 249,957. Paul M. Cooter, d.b.a. The Cooter Company, Atherton, Calif. Filed July 11, 1966.

Moon Rose

Owner of Reg. Nos. 349,693 and 359,659.
For Canned Fruits and Vegetables; Preserves and Jellies; Fruit Juices and Vegetable Juices; Canned Meats; and Dehydrated and Dried Fruits.
First use Apr. 24, 1937.

SN 250,010. The Midland Grocery Company, Columbus, Ohio. Filed July 11, 1966.

CLARION

Owner of Reg. No. 424,956.
For Canned Fruits and Vegetables, Canned Fish, Canned Soup, Fruit Preserves, Pickles, Olives, Salad Dressing, Vinegar, Salt, Catsup, Mustard, Peanut Butter, Canned Evaporated Milk, Canned and Dry Dog Food, Meats (Both Canned and Bottled).
First use Oct. 8, 1945.

SN 253,482. Beatrice Foods Co., Chicago, Ill. Filed Aug. 15, 1967.

LIGHT BITE

For Partially Defatted Peanuts.
First use Aug. 12, 1966.

SN 255,588. Arby's Inc., Youngstown, Ohio. Filed Oct. 3, 1966.

ARBY'S SAUCE

No claim is made to the word "Sauce" apart from the mark as shown. Owner of Reg. No. 801,497.
For Meat Sauce.
First use July 23, 1964.

SN 255,746. Farmbest, Inc., Denison, Iowa. Filed Oct. 3, 1966.

farm-king brand

The word "Brand" is disclaimed. The drawing is lined for pink, purple, red, and gold.
For Canned Ham and Smoked, Boneless, Fully Cooked Ham in Cryovac Casing.
First use Feb. 7, 1966.

SN 256,373. Ralston Purina Company, St. Louis, Mo. Filed Oct. 13, 1966.

BIR

For Dairy Feed Supplement of a Food Nature.
First use Mar. 1, 1962.

SN 257,533. Sternco Industries, Inc., Allendale, N.J. Filed Oct. 28, 1966.



Owner of Reg. No. 813,736.
For Food for Aquarium Fish.
First use Sept. 4, 1962.

SN 257,536. Sternco Industries, Inc., Allendale, N.J. Filed Oct. 28, 1966.



Owner of Reg. No. 813,736.
For Food for Aquarium Fish.
First use Sept. 4, 1962.

SN 257,722. Diamond Alkali Company, Cleveland, Ohio, by merger from Nopco Chemical Company, Newark, N.J. Filed Nov. 1, 1966.

NOPCO ctc

Owner of Reg. Nos. 359,712, 718,133, and others.
For Chlortetracycline Feed Premix for Use in the Manufacture of Feeds.
First use Oct. 6, 1966.

SN 257,957. Heath Industries, Incorporated, Gloucester, Mass. Filed Nov. 4, 1966.

BREAKWATER

The drawing is lined for the color red.
For Frozen Seafood—Namely, Lobster.
First use on or about Sept. 15, 1966.

SN 260,099. B. F. Trappey's Sons, Inc., New Iberia, La. Filed Dec. 5, 1966.

SERANO

For Pickled Peppers.
First use Nov. 10, 1966.

SN 260,565. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed Dec. 12, 1966.

PSYCHIATRIC

Owner of Reg. No. 791,935 and others.
For Chewing Gum.
First use Nov. 28, 1966.

SN 262,077. Warner-Lambert Pharmaceutical Company, Morris Plains, N.Y. Filed Jan. 6, 1967.

CLORETS

Owner of Reg. Nos. 555,672, 616,636, and others.
For Breath Purifying Mints.
First use Apr. 15, 1952.

SN 262,338. Jerissa Nut Company, Inc., Brooklyn, N.Y. Filed Jan. 11, 1967.

MANI DANY

For Roasted and Salted Nuts.
First use Dec. 20, 1966.

SN 273,008. Kellogg Company, Battle Creek, Mich. Filed June 5, 1967.

KEL-CHIK

Owner of Reg. Nos. 693,590, 793,729, and 829,890.
For Animal Feed—Namely, for Mink and Other Fur-Bearing Animals.
First use May 25, 1967.

SN 277,114. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed July 31, 1967.

STOLEN GOODIES

The word "Goodies" is disclaimed apart from the mark as shown and without waiver of common law rights.
For Candy.
First use July 28, 1967.

SN 277,115. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed July 31, 1967.

STOLEN GOODS

The word "Goods" is disclaimed apart from the mark as shown and without waiver of common law rights.
For Candy.
First use July 28, 1967.

SN 277,859. General Mills, Inc., Minneapolis, Minn. Filed Aug. 9, 1967.

KING KRISPERS

For Ready To Eat Breakfast Cereal.
First use Mar. 29, 1967.

Class 47 — Wines

SN 263,280. Marlboro Industries, Inc., Marlboro, N.Y. Filed Jan. 25, 1967.

CHAUMONT

For Wines and Champagne.
First use January 1948.

Class 49 — Distilled Alcoholic Liquors

SN 230,389. Lemon Hart & Son Limited, London, England. Filed Oct. 18, 1965.

LEMON HART

"Lemon Hart" is not the name of any known living individual. Owner of U.S. Reg. Nos. 597,461 and 597,462.
For Pre-Mixed Rum Cocktail.
First use May 28, 1965; in commerce May 28, 1965.

SN 235,099. Gordon Graham-Stewart Limited, d.b.a. C. & W. Stewart (Aberdeen), Aberdeen, England. Filed Dec. 22, 1965.

YELLOW LABEL

Applicant disclaims any exclusive right to a label colored yellow. Owner of British Reg. No. 772,564, dated Dec. 27, 1957.
For Scotch Whisky.

SN 256,194. Mr. Boston Distiller Inc., Boston, Mass. Filed Oct. 11, 1966.

DESMOND & DUFF

Owner of Reg. No. 738,846.
For Scotch Whisky.
First use June 7, 1961.

SN 260,671. Robert McNish & Company Limited, d.b.a. Charles Donald & Co., Glasgow, Scotland. Filed Dec. 13, 1966.

DONALD'S

For Whisky.
First use 1950; in commerce Oct. 30, 1966.

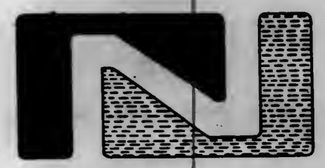
Class 50 — Merchandise Not Otherwise Classified

SN 252,255. Fitchburg Coated Products, Inc., Moosic, Pa. Filed Aug. 12, 1966.

WASH-AWAY

For Adhesive Coated Papers, Fabrics, Films, and Foils.
First use on or about June 1, 1966.

SN 256,466. National Lock Co., Rockford, Ill. Filed Oct. 14, 1966.



The drawing is lined for gray, but no claim is made to color as part of the mark. Owner of Reg. Nos. 415,102, 751,919, and others.
For Display and Advertising Signs, Boards, Panels, and Racks for Displaying Cabinet, Chest, Refrigerator, Range, Bathroom, Household, and Office Furniture, Window, Door, and Builders' Hardware and Accessories, and General Household Hardware.
First use Aug. 31, 1962.

SN 256,836. W. R. Grace & Co., Cambridge, Mass. Filed Oct. 20, 1966.

FLOWED-IN

For Chemical Compositions for Forming Sealing Gaskets for Containers, Such as Sanitary Cans, Metal and Glass Containers, and the Like.
First use January 1966.

SN 262,823. Tweedy Transparencies, East Orange, N.J. Filed Jan. 18, 1967.

TWEEDY

For Projection Transparencies and Transparent Materials Designed as Teaching Aids.
First use 1956.

SN 263,937. The Oak Rubber Company, Ravenna, Ohio. Filed Feb. 3, 1967.



Owner of Reg. Nos. 654,090, 757,688, and 821,340.
For Inflatable Advertising Devices—Namely, Rubber Balloons and Rubber or Plastic Sport Balls.
First use June 24, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 246,758. DL Skin Care Products, Inc., Buffalo, N.Y. Filed May 27, 1966.

TENDERMA

For Skin Lotion.
First use Mar. 31, 1966.

SN 247,675. Bristol-Myers Company, New York, N.Y. Filed June 9, 1966.



The drawing is lined for the color red. Owner of Reg. No. 820,441.
For Hair Groom.
First use Dec. 10, 1965.

SN 247,753. Rose Valois, Paris, France. Filed June 8, 1966.

MAROTTE

Owner of French Reg. No. 524,096, dated Sept. 4, 1964 (Seine); Natl. Inst. No. 231,651.
For Perfumes, Powders, Creams, Lotions for Face Make-Up and Face Make-Up Removing, Skin Lotions, Hair Lotions, Hand Creams, and Toiletry Talc Powder.

SN 251,729. J. & E. Atkinson Limited, London, England. Filed Aug. 4, 1966.



For Eau de Cologne, Toilet Water, and After Shave Lotions.
First use Aug. 1, 1962; in commerce Aug. 1, 1962.

SN 252,802. Arts et Techniques de l'Information, d.b.a. Fontarel, Neuilly-sur-Seine (Seine), France. Filed Aug. 22, 1966.

FONTAREL

Owner of French Reg. No. 514,544, dated July 4, 1963 (Seine); Natl. Inst. No. 208,438.
For Cream for Facial and Hand Care.

SN 254,985. John H. Breck, Inc., Springfield, Mass. Filed Sept. 23, 1966.

PURE 'N SIMPLE

Owner of Reg. No. 811,478.
For Facial Cream.
First use Sept. 13, 1966.

SN 254,986. John H. Breck, Inc., Springfield, Mass. Filed Sept. 23, 1966.

PURE AND SIMPLE

Owner of Reg. No. 811,478.
For Facial Cream.
First use Sept. 13, 1966.

SN 258,907. International Playtex Corporation, Dover, Del., by change of name from International Latex Corporation, Dover, Del. Filed Nov. 15, 1966.



Owner of Reg. Nos. 627,138, 640,481, and 823,057.
For Body Powder, Body Refresher, Body Moisturizer, Talcum Powder, and Body Lotions.
First use Sept. 22, 1966.

SN 262,730. Walton-Richardson Co., Newark, N.J. Filed Jan. 11, 1967.



For Toiletries—Namely, Hair Sprays, Face Creams, Face Powder, Perfume and Cologne.
First use January 1965.

SN 264,904. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1967.

CURTAIL

For Dentifrice.
First use Jan. 23, 1967.

SN 265,040. John H. Breck, Inc., Springfield, Mass. Filed Feb. 20, 1967.

GO GO COLOR

Owner of Reg. Nos. 820,433, 820,434, and 826,602.
For Hair Coloring Preparation.
First use Jan. 20, 1967.

SN 265,396. John H. Breck, Inc., Springfield, Mass. Filed Feb. 24, 1967.

NEW IMAGE

Owner of Reg. Nos. 799,630 and 799,629.
For Hair Coloring Preparation.
First use Feb. 10, 1967.

SN 265,694. Clairol Incorporated, New York, N.Y. Filed Mar. 1, 1967.

FACE TO FACE

For Skin Cream, Moisture Make-Up, Face Powder, Complexion Color, and Rouge.
First use Oct. 24, 1966.

SN 265,695. Clairol Incorporated, New York, N.Y. Filed Mar. 1, 1967.

COME ON STRONG

For Toenail and Fingernail Hardener.
First use Oct. 24, 1966.

SN 266,098. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 6, 1967.

AS ONE

For Cologne.
First use Feb. 3, 1967.

SN 266,100. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 6, 1967.

ABANDON

For Cologne.
First use Feb. 3, 1967.

SN 270,219. Avon Products, Inc., New York, N.Y. Filed Apr. 28, 1967.

TODAY

Owner of Reg. Nos. 805,752 and 807,890.
For Perfume, Solid Perfume, Perfume Oil, Cologne, Cologne Mist, Dusting Powder, Powder Sachet, and Cream Sachet.
First use Apr. 14, 1967.

SN 270,792. Lan-Lay, Inc., San Francisco, Calif. Filed May 5, 1967.

PREEN

For Hair Tonic and Hair Spray.
First use 1937.

SN 273,576. Redken Laboratories, Inc., Van Nuys, Calif. Filed June 12, 1967.

ASSISTE

For Hair Color Setting Solution.
First use November 1961.

SN 278,069. Lever Brothers Company, New York, N.Y. Filed Aug. 11, 1967.

TODAY'S GIRL

For Hair Spray.
First use Aug. 3, 1967.

Class 52 — Detergents and Soaps

SN 206,629. Standard International Corporation, Andover, Mass., by merger of Lestoil Products Inc., Holyoke, Mass. Filed Nov. 20, 1964.

JET SPRAY

Applicant disclaims any exclusive rights to the word "Spray" apart from the mark as shown in the drawing.
Owner of Reg. Nos. 661,199, 754,272, and others.
For Household Cleaner.
First use July 9, 1956.

SN 253,531. Lewis H. Hollinger, d.b.a. Ace Window Cleaning Co., Amarillo, Tex. Filed Aug. 31, 1966.

Stain Tastic

The drawing is lined for the colors red and blue.
For Composition for Cleaning Window Glass.
First use Apr. 18, 1966.

SN 270,220. Avon Products, Inc., New York, N.Y. Filed Apr. 28, 1967.

TODAY

Owner of Reg. Nos. 805,752 and 807,890.
For Toilet Soap.
First use Apr. 14, 1967.

SN 273,577. Redken Laboratories, Inc., Van Nuys, Calif. Filed June 12, 1967.

AMINO-PON BEAUTY BAR

The words "Beauty Bar" are disclaimed apart from the mark as shown. Owner of Reg. No. 832,307.
For Non-Alkaline, Soap-Like Bars for Skin Cleansing Purposes.
First use Jan. 31, 1967.

SN 277,492. Curley Company, Incorporated, Camden, N.J. Filed Aug. 4, 1967.

SOFT'N LOVELY

Owner of Reg. No. 767,766.
For Detergent for Dishes and Fabrics.
First use July 6, 1967.

SN 278,068. Domestos Limited, Newcastle-upon-Tyne, England. Filed Aug. 11, 1967.

DOT

Owner of British Reg. No. 343,477, dated June 19, 1912.
For Detergent for General Washing and Cleansing.

SN 278,068. Lever Brothers Company, New York, N.Y. Filed Aug. 11, 1967.

EN-ZOLVE

For Enzyme Additive Incorporated as an Ingredient in Laundry Detergent.
First use Aug. 3, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 236,531. Westwood Blue Print Co., Los Angeles, Calif. Filed Jan. 14, 1966.

For Furnishing Photostats, Blueprints, and Other Types of Copies of Printed, Written, and Drawn Material or the Like, Through Various Reproduction Processes.
First use on or before Feb. 15, 1965.

SN 250,134. Colonel Dixie Systems, Inc., Mobile, Ala. Filed July 13, 1966.

Colonel DIXIE

For Restaurant Services.
First use at least as early as Apr. 3, 1963.
Subj. to Intf. with SN 230,140.

Class 101 — Advertising and Business

SN 197,039. Miriam S. Perloff, d.b.a. Secretarial & Office Services, Washington, D.C. Filed July 8, 1964.

SOS

Applicant claims use of the mark in the metropolitan Washington area comprising the District of Columbia and suburban Virginia and Maryland.
For Employment Services—Namely, Providing Secretaries and Other Office Personnel on a Part-Time or Temporary Basis.
First use Jan. 1, 1945.
Published Subj. to Con. Use Proc. with Reg. Nos. 602,832, 611,902, and 666,697.

SN 243,482. Promotional Sales Company, Inc., Greensboro, N.C. Filed Apr. 14, 1966.

YOUR DESIRE

For Sales Promotion of the Goods and Services of Others Through the Medium of a Coupon Redemption Plan.
First use Nov. 2, 1965.

SN 245,380. The Birmingham News Company, Birmingham, Ala. Filed May 11, 1966.



The representation of the figure on the drawing is not one of a particular individual.
For Providing Space in Publications for the Advertising of Others.
First use Feb. 3, 1965.

SN 246,760. Data Mate Incorporated, Boston, Mass. Filed May 27, 1966.

data mate

For Computerized Matching Service Providing Opportunities for Men and Women To Meet Persons of Similar Interests, Backgrounds, and Personalities.
First use Mar. 15, 1966.

SN 251,777. American Girl Service, Inc., New York, N.Y. Filed Aug. 5, 1966.

AMERICAN TECHNICAL SERVICE

Applicant claims no exclusive rights to the words "Technical Service" apart from the service mark as shown. Owner of Reg. Nos. 773,837 and 814,189.

For Employment Agency and Temporary Help Services—Namely, Furnishing Permanent and Temporary Technical Personnel Such as Engineers, Chemists, Draftsmen, Laboratory Technicians, and the Like.

First use Feb. 5, 1964.

SN 251,778. American Girl Service, Inc., New York, N.Y. Filed Aug. 5, 1966.

AMERICAN MINUTE-MAN SERVICE

Applicant claims no exclusive rights to the word "Service" apart from the service mark as shown. Owner of Reg. Nos. 773,837 and 814,189.

For Employment Agency and Temporary Help Services—Namely, Furnishing Temporary Male Industrial Personnel and Laborers.

First use Feb. 5, 1964.

SN 255,630. Lance Productions, Inc., Clayton, Mo. Filed Oct. 3, 1966.

POST-TIME

For Promoting the Sale of Goods and Services of Others by Means of a Game—Namely, by Means of a Television Show Featuring Taped Horse Races Whereby a Ticket Holder May Become Eligible To Win a Prize.

First use July 27, 1966.

Class 105—Transportation and Storage

SN 241,957. Novo Industrial Corporation, New York, N.Y., assignee of Air Dispatch, Inc., Philadelphia, Pa. Filed Mar. 28, 1966.

"FREIGHT TO FLY-CALL ADI"

The words "Freight To Fly" are disclaimed apart from the mark as shown.

For Air Freight Forwarding.

First use Oct. 1, 1963.

SN 261,523. Sandberg Travel Bureau, Inc., d.b.a. Sandberg Travel Tours, Los Angeles, Calif. Filed Dec. 27, 1966.

ROYAL VIKING TOUR

The word "Tour" is disclaimed apart from the mark as shown.

For Services in the Arranging and Conducting of Travel Tours.

First use Aug. 1, 1964.

SN 278,163. Cannonball, Inc., Chicago, Ill. Filed Aug. 14, 1967.

CANNONBALL INC.

For Special Delivery of Messages and Packages by Automotive Vehicles; Transporting of Household Goods and Freight by Truck.

First use 1933.

Class 106—Material Treatment

SN 237,259. Stervo Dyeing & Finishing Co., Clifton, N.J. Filed Jan. 25, 1966.



The drawing is lined for red.

For Dyeing and Finishing Piece Goods of Others.

First use on or about Dec. 1, 1965.

SN 273,553. J. H. Baxter & Co., San Mateo, Calif. Filed June 12, 1967.

J.H.Baxter

"J. H. Baxter" is the name of the founder of applicant's corporation, now deceased. Owner of Reg. No. 826,699.

For Processing Service for the Preservation of Wood and Wood Products of Others.

First use 1915.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 259,761. Retail Clerks International Association, Washington, D.C. Filed Nov. 30, 1966.

ACB ACTIVE BALLOT CLUB

For Indicating Membership in the Active Ballot Club.

First use May 7, 1957.

SN 273,958. Guild of Prescription Opticians of America, Inc., Washington, D.C. Filed June 15, 1967.

GUILD OPTICIANS INTERNATIONAL

Applicant disclaims exclusive right to use of the prescription mark (℞), apart from the mark as shown. Owner of Reg. Nos. 622,201, 751,449, and others.

For Indicating Membership in Applicant Association.

First use May 7, 1958.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

837,354. FORMDAIR. Goodyear Aerospace Corporation. SN 243,985. Pub. 8–8–67. Filed 4–21–66.

837,355. AI (DESIGN). Allen Industries, Inc. SN 244,873. Pub. 8–8–67. Filed 5–4–66.

837,356. OLD KENTUCKY BRAND LUMBER JACKS AND DESIGN. Kentucky Fireplace Logs, Inc. SN 252,579. Pub. 8–8–67. Filed 8–17–66.

837,357. ENCORE AND DESIGN. Dewine & Hamma Seed Company, Inc. SN 253,424. Pub. 8–8–67. Filed 8–30–66.

837,358. DEWEY AND ALMY. W. R. Grace & Co. SN 255,891. Pub. 8–8–67. Filed 10–6–66.

837,359. CEEFLINE. Carl Freudenberg Kommanditgesellschaft. SN 270,314. Pub. 8–8–67. Filed 5–1–67.

837,360. TANOTIZED. York Feather & Down Corp. SN 271,995. Pub. 8–8–67. Filed 5–22–67.

Class 2—Receptades

837,361. ACE OF SPADES. Gessner Products Company, Inc. SN 252,843. Pub. 8–8–67. Filed 8–22–66.

837,362. FLAP-CHEK. Lockwood Folding Box Corporation. SN 255,102. Pub. 8–8–67. Filed 9–26–66.

837,363. "BARTUF." American Can Company. SN 255,180. Pub. 8–8–67. Filed 9–27–66.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

837,364. AMWAY. Amway Corporation. SN 258,471. Pub. 8–8–67. Filed 11–14–66.

837,365. THE JOHNSON IDEAL HALTER. The Johnson Ideal Halter Co. SN 262,268. Pub. 8–8–67. Filed 1–10–67.

837,366. WHATZIT. American Luggage Works, Inc. SN 263,438. Pub. 8–8–67. Filed 1–27–67.

837,367. CONSUL. Amity Leather Products Co. SN 263,883. Pub. 8–8–67. Filed 2–3–67.

Class 4—Abrasives and Polishing Materials

837,368. TOUGH-TRED. Dynasurf Chemical Corporation. SN 242,223. Pub. 8–8–67. Filed 3–30–66.

837,369. FIEBING'S MILWAUKEE LEATHER FINISHES AND DESIGN. Fiebing Chemical Company. MULTIPLE CLASS (Classes 4, 6, 15, 16, and 52). SN 243,289. Pub. 8–8–67. Filed 4–13–66.

837,370. ARMOUR AND STAR DESIGN. Armour and Company, d.b.a. Armour Abrasives Company. SN 247,765. Pub. 8–8–67. Filed 6–10–66.

837,371. OPTIMUM. Chemical Service of Baltimore, Inc. SN 251,796. Pub. 8–8–67. Filed 8–5–66.

837,372. EASY LIFE. National Tea Co. SN 256,581. Pub. 8–8–67. Filed 10–17–66.

837,373. ACHIEVE. S. C. Johnson & Son, Inc. SN 271,565. Pub. 8–8–67. Filed 5–16–67.

Class 5—Adhesives

837,374. PPG INDUSTRIES AND DESIGN. Pittsburgh Plate Glass Company. SN 266,086. Pub. 8–8–67. Filed 3–6–67.

Class 6—Chemicals and Chemical Compositions

837,369. (See Class 4 for this trademark.)

837,375. CHECKPEST. Wood Treating Chemicals Co. SN 233,546. Pub. 8–8–67. Filed 11–29–65.

837,376. LIGHTNING WHITE. A. E. Staley Manufacturing Company. SN 249,082. Pub. 8–8–67. Filed 6–27–66.

837,377. ARKOMON. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. SN 249,228. Pub. 8–8–67. Filed 6–29–66.

837,378. MORTON. Morton International, Inc. SN 249,551. Pub. 8–8–67. Filed 7–5–66.

837,379. TIARA. Pittsburgh Plate Glass Company. SN 252,585. Pub. 8–8–67. Filed 8–17–66.

837,380. VIC-KUM AND DESIGN. Vic-Kum Chemicals, Inc. MULTIPLE CLASS (Classes 6 and 52). SN 253,068. Pub. 8–8–67. Filed 8–24–66.

837,381. PLANTVAX. United States Rubber Company. SN 253,371. Pub. 8–8–67. Filed 8–29–66.

837,382. DREWPLAST. Drew Chemical Corporation. SN 254,138. Pub. 8–8–67. Filed 9–9–66.

837,383. RUST PEL. The Mitchell-Bradford Chemical Co. SN 255,707. Pub. 8–8–67. Filed 10–4–66.

837,384. SUPERLITH. C. J. Osborn Co. SN 256,765. Pub. 8–8–67. Filed 10–19–66.

837,385. REAX. West Virginia Pulp and Paper Company. SN 256,990. Pub. 8–8–67. Filed 10–21–66.

837,386. REAX. West Virginia Pulp and Paper Company. SN 256,992. Pub. 8–8–67. Filed 10–21–66.

837,387. YEAR AROUND. Union Oil Company of California. SN 259,687. Pub. 8–8–67. Filed 11–29–66.

837,388. PP BLOCKS. St. Louis Janitor Supply Co., d.b.a. Navy Brand Manufacturing Company. SN 260,194. Pub. 8–8–67. Filed 12–6–66.

837,389. POLYHALL. Stein Hall & Co., Inc. SN 260,198. Pub. 8–8–67. Filed 12–6–66.

837,390. CARBO-TEC. Milchem Incorporated. SN 260,344. Pub. 8–8–67. Filed 12–8–66.

837,391. AQUANOX. Milchem Incorporated. SN 260,345. Pub. 8–8–67. Filed 12–8–66.

837,392. DESAL. Milchem Incorporated. SN 260,346. Pub. 8–8–67. Filed 12–8–66.

837,393. AQUABRAK. Milchem Incorporated. SN 260,347. Pub. 8–8–67. Filed 12–8–66.

837,394. MALROS. Butler Malros Limited. SN 260,405. Pub. 8–8–67. Filed 12–9–66.

837,395. UNI-SCREEN. American Metal Climax, Inc., d.b.a. Southwest Potash Corporation. SN 260,639. Pub. 8–8–67. Filed 12–13–66.

837,396. CPG. Pittsburgh Activated Carbon Company. SN 260,765. Pub. 8–8–67. Filed 12–14–66.

837,397. MONTREK. The Dow Chemical Company. SN 263,364. Pub. 8–8–67. Filed 1–26–67.

837,398. CRC AND DESIGN. C. J. Webb, Inc. MULTIPLE CLASS (Classes 6 and 15). SN 263,645. Pub. 8–8–67. Filed 1–31–67.

837,399. CRC AND DESIGN. C. J. Webb, Inc. MULTIPLE CLASS (Classes 6 and 15). SN 263,646. Pub. 8–8–67. Filed 1–31–67.

837,400. KROLOR. E. I. du Pont de Nemours and Company. SN 269,026. Pub. 8–8–67. Filed 4–13–67.

837,401. MALORAN. Ciba Limited. SN 269,291. Pub. 8–8–67. Filed 4–17–67.

837,402. SAPECRON. Ciba Limited. SN 269,292. Pub. 8–8–67. Filed 4–17–67.

837,403. NUVACRON. Ciba Limited. SN 269,832. Pub. 8–8–67. Filed 4–24–67.

837,404. VICRON. Chas. Pfizer & Co., Inc. SN 271,016. Pub. 8–8–67. Filed 5–9–67.

837,405. SPATAGON. Trans World Research. SN 271,082. Pub. 8–8–67. Filed 5–9–67.

Class 7—Cordage

837,406. HAY CHIEF, ETC. AND DESIGN. H. Paul Dee, d.b.a. Paul Dee Co. SN 250,743. Pub. 8–8–67. Filed 7–21–66.

Class 8—Smokers' Articles, Not Including Tobacco Products

837,407. TAR-AWAY. Tar Gard Company. SN 245,767. Pub. 8–8–67. Filed 5–16–66.

837,408. JOBEY. Wally Frank, Ltd. SN 257,049. Pub. 8–8–67. Filed 10–24–66.

Class 9—Explosives, Firearms, Equipments, and Projectiles

837,409. BUCKBUSTER. Ithaca Gun Company, Incorporated., d.b.a. Ithaca Gun Co., Inc. SN 270,839. Pub. 8–8–67. Filed 5–8–67.

Class 10—Fertilizers

837,410. TURF/55. Solar Nitrogen Chemicals, Inc., d.b.a. Hoosier Soil Service, Inc. SN 245,977. Pub. 8–8–67. Filed 5–18–66.

837,411. TURF/40. Solar Nitrogen Chemicals, Inc., d.b.a. Hoosier Soil Service, Inc. SN 245,978. Pub. 8–8–67. Filed 5–18–66.

837,412. TURF/36. Solar Nitrogen Chemicals, Inc., d.b.a. Hoosier Soil Service, Inc. SN 245,979. Pub. 8–8–67. Filed 5–18–66.

837,413. TURF/24. Solar Nitrogen Chemicals, Inc., d.b.a. Hoosier Soil Service, Inc. SN 245,980. Pub. 8–8–67. Filed 5–18–66.

837,414. TURF/20. Solar Nitrogen Chemicals, Inc., d.b.a. Hoosier Soil Service, Inc. SN 245,981. Pub. 8–8–67. Filed 5–18–66.

837,415. TURF/38. Solar Nitrogen Chemicals, Inc., d.b.a. Hoosier Soil Service, Inc. SN 245,984. Pub. 8–8–67. Filed 5–18–66.

837,416. MISCELLANEOUS DESIGN. Greenlife Products Company. SN 264,667. Pub. 8–8–67. Filed 2–14–67.

837,417. SOILTRATE. Farmcraft, Inc. SN 265,295. Pub. 8–8–67. Filed 2–23–67.

837,418. SUPPORT. Wyandotte Chemicals Corporation. SN 265,759. Pub. 8–8–67. Filed 3–1–67.

Class 12—Construction Materials

837,419. EV-ROK. Everguard Coatings (International) Limited. SN 229,965. Pub. 8–8–67. Filed 10–12–65.

837,420. "ALCET." Remington Arms Company, Inc. SN 245,855. Pub. 8–8–67. Filed 5–17–66.

837,421. STEEL-ROCK. Ranco Industrial Products Corporation. SN 251,074. Pub. 8–8–67. Filed 7–26–66.

837,422. ARCHI-STRUCTURAL. Daryl Industries, Inc. SN 251,612. Pub. 8–8–67. Filed 8–3–66.

837,423. CHIKINSUL. Johns-Manville Corporation. SN 253,440. Pub. 8–8–67. Filed 8–30–66.

837,424. VEL-COUSTIC. Johns-Manville Corporation. SN 253,441. Pub. 8–8–67. Filed 8–30–66.

837,425. BRUSHTEX. National Gypsum Company. SN 254,555. Pub. 8–8–67. Filed 9–15–66.

837,426. SHADOWCAST. The Celotex Corporation. SN 258,782. Pub. 8–8–67. Filed 11–16–66.

837,427. TEMPER-TONE 360. Johns-Manville Corporation. SN 259,004. Pub. 8–8–67. Filed 11–18–66.

837,428. KAR-BARR. Seaboard Appliances, Inc. SN 266,103. Pub. 8–8–67. Filed 3–6–67.

837,429. LASTING PROTECTION. Lasting Products Company. SN 268,649. Pub. 8–8–67. Filed 4–27–67.

837,430. LIF-TO-GRADE CASTINGS AND DESIGN. Foundry Products and Methods, Incorporated. SN 271,204. Pub. 8–8–67. Filed 5–11–67.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

837,431. AQUA-LASER. Charles W. Ranson. SN 251,085. Pub. 8–8–67. Filed 7–26–66.

837,432. PATIO PRINCE. Lavergne I. Lounsbury, d.b.a. "Buck" Lounsbury Associates. SN 252,892. Pub. 8–8–67. Filed 8–15–66.

837,433. STA-GOOD. Mattox and Moore, Inc. SN 252,895. Pub. 8–8–67. Filed 8–15–66.

837,434. ADJUSTO. Slick Industrial Company. SN 252,425. Pub. 8–8–67. Filed 8–15–66.

837,435. FAMILY-GARD. Edwards Company, Inc. SN 254,040. Pub. 8–8–67. Filed 9–8–66.

837,436. THERMIC-RAY. Norris Industries, Inc. SN 254,310. Pub. 8–8–67. Filed 9–12–66.

837,437. SPIRIT OF '76 AND DESIGN. National Lock Co. SN 254,614. Pub. 8–8–67. Filed 9–16–66.

837,438. PRIMROSE. National Lock Co. SN 254,615. Pub. 8–8–67. Filed 9–16–66.

837,439. PV AND DESIGN. Pacific Valves, Inc. SN 254,711. Pub. 8–8–67. Filed 9–19–66.

837,440. TIME SAVER. Dowco Products, Inc. SN 255,074. Pub. 8–8–67. Filed 9–26–66.

837,441. SEE WHO. Ajax Hardware Corporation. SN 255,582. Pub. 8–8–67. Filed 10–3–66.

837,442. TENSIONUTS AND DESIGN. C.E.M. Company, Inc. SN 255,774. Pub. 8–8–67. Filed 10–5–66.

Class 15—Oils and Greases

837,369. (See Class 4 for this trademark.)

837,398. (See Class 6 for this trademark.)

837,399. (See Class 6 for this trademark.)

837,443. REXCO. H. H. Barrus, Inc. SN 249,829. Pub. 8–8–67. Filed 7–8–66.

837,444. AQUAROLL. Harry Miller Corp. SN 271,750. Pub. 8–8–67. Filed 5–18–67.

Class 16—Protective and Decorative Coatings

837,369. (See Class 4 for this trademark.)

837,445. VELVET ROLL. Dal-Worth Paint Mfg. Co. SN 243,227. Pub. 8–8–67. Filed 4–12–66.

837,446. RED MILLS. Red Mills Paint & Chemical Co. Inc. SN 245,013. Pub. 8–8–67. Filed 5–5–66.

837,447. ALVCO HI SLIP. Lawter Chemicals, Inc. SN 245,207. Pub. 8–8–67. Filed 5–9–66.

837,448. SHEEN. Heatbath Corporation. SN 252,787. Pub. 8–8–67. Filed 8–19–66.

837,449. NU-BRITE. Nu-Brite Chemical Company, Inc. SN 267,791. Pub. 8–8–67. Filed 3–29–67.

Class 17—Tobacco Products

837,450. LOTUS IV. General Cigar Company, Limited. SN 245,187. Pub. 8–8–67. Filed 5–9–66.

Class 18—Medicines and Pharmaceutical Preparations

837,451. VARETS. William H. Rorer, Inc. SN 234,706. Pub. 9–6–66. Filed 12–14–65.

837,452. KANEBO. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 247,803. Pub. 8–8–67. Filed 6–10–66.

837,453. K AND BELL (DESIGN). Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 247,807. Pub. 8–8–67. Filed 6–10–66.

837,454. KANEBO AND BELL DESIGN. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 247,809. Pub. 8–8–67. Filed 6–10–66.

837,455. MENFULA. Taisho Pharmaceutical Co., Ltd. SN 251,666. Pub. 8–8–67. Filed 8–3–66.

837,456. HOG-PLUS. Ralston Purina Company. SN 251,952. Pub. 8–8–67. Filed 8–8–66.

837,457. NASOCON. Smith, Miller & Patch, Inc. SN 253,247. Pub. 8–8–67. Filed 8–26–66.

837,458. PANBIOTIC. Bristol-Myers Company. SN 255,873. Pub. 8–8–67. Filed 10–6–66.

837,459. RAUCITOL. Europharma International, Inc. SN 257,138. Pub. 8–8–67. Filed 10–25–66.

837,460. ACORINE. The Purdue Frederick Company. SN 266,174. Pub. 8–8–67. Filed 3–7–67.

837,461. COTOLENE. H. Kohnstamm & Co., Inc. MULTIPLE CLASS (Classes 18 and 46). SN 267,091. Pub. 8–8–67. Filed 3–20–67.

837,462. ALKALOL. The Alkalol Company. SN 269,250. Pub. 8–8–67. Filed 4–17–67.

837,463. PALS. Mead Johnson & Company. SN 271,412. Pub. 8–8–67. Filed 5–15–67.

Class 19—Vehicles

837,464. INSTANT CAMPER. William Ceravolo. SN 245,163. Pub. 8–8–67. Filed 5–9–66.

837,465. W AND ARROW IN HEXAGON (DESIGN). The Weatherhead Company. MULTIPLE CLASS (Classes 19, 21, and 31). SN 245,635. Pub. 8–8–67. Filed 5–13–66.

837,466. TEXSON. Tex Willett Co., Inc. SN 255,734. Pub. 8–8–67. Filed 10–4–66.

837,467. HACIENDA. Guerdon Industries, Inc. SN 255,801. Pub. 8–8–67. Filed 10–5–66.

837,468. CITADEL. Palmetto Homes of Laurens, Inc. SN 256,472. Pub. 8–8–67. Filed 10–14–66.

Class 21—Electrical Apparatus, Machines, and Supplies

837,465. (See Class 19 for this trademark.)

837,469. MISCELLANEOUS DESIGN. Murata Manufacturing Co., Ltd. SN 227,169. Pub. 8–8–67. Filed 9–3–65.

837,470. ROYAL. International Telephone and Telegraph Corporation. SN 235,674. Pub. 8–8–67. Filed 1–3–66.

837,471. GSR. Atlantic Research Corporation. SN 236,709. Pub. 8–8–67. Filed 1–18–66.

837,472. TEKLINE. Litton Precision Products, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 237,233. Pub. 6–27–67. Filed 1–25–66.

837,473. LINE GUARD. Proctor & Associates Company. SN 237,381. Pub. 8–8–67. Filed 1–26–66.

837,474. SANSUI. Sansui Electric Company Limited. SN 239,664. Pub. 8–8–67. Filed 2–25–66.

837,475. VARICAP. TRW Semiconductors, Inc. SN 241,541. Pub. 8–8–67. Filed 3–21–66.

837,476. VISHAY. Vishay Instruments, Inc. SN 243,274. Pub. 8–8–67. Filed 4–12–66.

837,477. ANOLUME. Holophane Company, Inc. SN 248,835. Pub. 8–8–67. Filed 6–17–66.

837,478. VARIZISTOR AND DESIGN. Vacco Industries. SN 252,433. Pub. 8–8–67. Filed 8–15–66.

837,479. NORFIN. Collator Corporation. SN 252,548. Pub. 8–8–67. Filed 8–17–66.

837,480. MISCELLANEOUS DESIGN. EG & G, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 253,582. Pub. 8–8–67. Filed 9–1–66.

837,481. SPORTLINE. Anzac Industries, Inc. SN 254,107. Pub. 8–8–67. Filed 9–9–66.

837,482. BRISTLES-OF-WATER. The Maytag Company. SN 254,173. Pub. 8–8–67. Filed 9–9–66.

837,483. CHEMELCO. Chemel Corporation. SN 254,374. Pub. 8–8–67. Filed 9–13–66.

837,484. MEDWIRE. Medwire Corp. SN 254,398. Pub. 8–8–67. Filed 9–13–66.

837,485. MAYTAG AND DESIGN. The Maytag Company. SN 254,457. Pub. 8–8–67. Filed 9–14–66.

837,486. PORTO-SHINE. G. T. McOnie & Co. SN 254,611. Pub. 8–8–67. Filed 9–16–66.

837,487. GAKKEN FAX. Gakken Co., Ltd. SN 254,680. Pub. 8–8–67. Filed 9–19–66.

837,488. INSTA-MOUNT. Metra Electronics Corporation. SN 255,107. Pub. 8–8–67. Filed 9–26–66.

837,489. APT. In-Sink-Erator Manufacturing Company. SN 255,322. Pub. 8–8–67. Filed 9–28–66.

837,490. SPONGE-A-TRON. International Telephone and Telegraph Corporation. SN 255,325. Pub. 8–8–67. Filed 9–28–66.

837,491. FLEXLEAD. L. Frank Markel & Sons. SN 255,538. Pub. 8–8–67. Filed 9–30–66.

Class 22—Games, Toys, and Sporting Goods

837,492. RAGGEDY ANDY. Knickerbocker Toy Co. Inc. SN 216,309. Pub. 8–8–67. Filed 4–12–65.

837,493. MATCH & WIN. Glendinning Companies, Inc., by merger and change of name from Glendinning Enterprises, Inc. SN 217,624. Pub. 3–7–67. Filed 4–29–65.

837,494. SUPER MINI-BALL. Wham-O Manufacturing Company. SN 237,503. Pub. 8–8–67. Filed 1–27–66.

837,495. MAGICATNIP. Lowe's, Inc. SN 238,648. Pub. 8–8–67. Filed 2–11–66.

837,496. ARROWMATE. Rose Tool & Plastics Inc., d.b.a. Arrowmate Products Co. SN 239,544. Pub. 12–27–66. Filed 2–24–66.

837,497. RC CRAFT. World Engines Incorporated. SN 240,692. Pub. 8–8–67. Filed 3–10–66.

837,498. MV2. Les Plastiques Synthetiques S.A. SN 247,133. Pub. 8–8–67. Filed 6–2–66.

837,499. GUNK-O. Plaza Playthings, Inc. SN 247,403. Pub. 8–8–67. Filed 6–6–66.

837,500. QUICK-TICK AND DESIGN. Milton Bradley Company. SN 247,573. Pub. 8–8–67. Filed 6–8–66.

837,501. TRU-SPIN. True Temper Corporation. SN 248,266. Pub. 8–8–67. Filed 6–16–66.

837,502. SCRATCH GOLF. Golf Digest, Inc. SN 251,131. Pub. 8–8–67. Filed 7–27–66.

837,503. HYDRO-KITE. Jason C. Hubbart. SN 255,092. Pub. 8–8–67. Filed 9–26–66.

837,504. COLLINS RIG-O-JIG. H. Everett Collins. SN 256,701. Pub. 8–8–67. Filed 10–19–66.

837,505. BAHAMA. Dover Industries Inc. SN 257,172. Pub. 8–8–67. Filed 10–25–66.

837,506. POP.KINS. Hassenfeld Bros. Inc. SN 257,625. Pub. 8–8–67. Filed 10–31–66.

837,507. JIM BUOY. Cal-June Corporation. SN 258,041. Pub. 8–8–67. Filed 11–7–66.

837,508. JOY. Cameo Doll Products Co., Inc. SN 258,490. Pub. 8–8–67. Filed 11–14–66.

837,509. OVER & UNDER. Eldon Industries, Inc. SN 264,135. Pub. 8–8–67. Filed 2–7–67.

837,510. MIKEPHIL. Joseph B. Zahn & Sons, Inc. SN 264,272. Pub. 8–8–67. Filed 2–8–67.

837,511. SOOPER-GOOPER. Mattel, Inc. SN 265,768. Pub. 8–8–67. Filed 3–2–67.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

837,512. LINE TAMER. MTS Systems Corporation, assignee of Research Incorporated. SN 229,873. Pub. 3–28–67. Filed 10–11–65.

837,513. SOROBAN AND DESIGN. Soroban Engineering, Inc. MULTIPLE CLASS (Classes 23 and 26). SN 231,261. Pub. 8–8–67. Filed 10–22–65.

837,514. DOVE WITH WAVE (DESIGN). Degremont S.A. SN 236,975. Pub. 8–8–67. Filed 1–21–66.

837,515. GORMAN-RUPP. The Gorman-Rupp Company. SN 238,213. Pub. 8–8–67. Filed 2–7–66.

837,516. PLASTALOY. Bumgardner & Company. SN 239,716. Pub. 8–8–67. Filed 2–28–66.

837,517. CODARC. Control Print Corporation. SN 246,541. Pub. 8–8–67. Filed 5–25–66.

837,518. NORFIN. Collator Corporation. SN 252,546. Pub. 8–8–67. Filed 8–17–66.

837,519. PEER-SOL. Park-Air Corp. SN 252,677. Pub. 8–8–67. Filed 8–18–66.

837,520. ATLAS. Atlas Supply Company. SN 254,031. Pub. 8–8–67. Filed 9–8–66.

837,521. OSC. The Gorman-Rupp Company. SN 254,277. Pub. 8–8–67. Filed 9–12–66.

837,522. VANGUARD JR. Owatonna Tool Company. SN 254,464. Pub. 8–8–67. Filed 9–14–66.

837,523. GLUSIL. Sprinter-Pack Aktiebolag. SN 254,734. Pub. 8–8–67. Filed 9–19–66.

837,524. MIGHTY MITE AND DESIGN. International Enterprises of America, Inc. SN 255,096. Pub. 8–8–67. Filed 9–26–66.

Class 26—Measuring and Scientific Appliances

837,472. (See Class 21 for this trademark.)

837,480. (See Class 21 for this trademark.)

837,513. (See Class 23 for this trademark.)

837,525. FORMASTOR. Fuji Electronic Industrial Co., Ltd. SN 230,635. Pub. 8–8–67. Filed 10–20–65.

837,526. PORTA-LAB. Porta-Lab, Inc. SN 242,746. Pub. 5–23–67. Filed 4–5–66.

837,527. AUTOCYTOMETER. Fisher Scientific Company. SN 255,198. Pub. 8–8–67. Filed 9–27–66.

837,528. POL-TEK. Chapman Chemical Company. SN 255,418. Pub. 8–8–67. Filed 9–29–66.

837,529. FAXITRON. Field Emission Corporation. SN 255,525. Pub. 8–8–67. Filed 9–30–66.

Class 28—Jewelry and Precious-Metal Ware

837,530. TRUBRITE. Basco Jewelers, Inc. SN 249,937. Pub. 8–8–67. Filed 7–11–66.

Class 29—Brooms, Brushes, and Dusters

837,531. HUSKY. Rubberset Company. SN 248,054. Pub. 8–8–67. Filed 6–14–66.

837,532. FORHAN'S. Chemway Corporation. SN 248,676. Pub. 8–8–67. Filed 6–22–66.

837,533. FOUR HUNDRED. Cosby Brush & Import Co., Inc. SN 252,728. Pub. 8–8–67. Filed 8–19–66.

837,534. VISTA. Simonix Company. SN 263,514. Pub. 8–8–67. Filed 1–30–67.

837,535. STYLE LINE. Lever Brothers Company. SN 266,287. Pub. 8–8–67. Filed 3–9–67.

Class 31—Filters and Refrigerators

837,465. (See Class 19 for this trademark.)

Class 32—Furniture and Upholstery

837,536. VISTRON. The Standard Oil Company. SN 260,970. Pub. 8–8–67. Filed 12–16–66.

Class 34—Heating, Lighting, and Ventilating Apparatus

837,537. MSL AND DESIGN. MSL Industries, Inc. SN 256,754. Pub. 8–8–67. Filed 10–19–66.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

837,538. CHICAGO ALLIS. Chicago-Allis Mfg. Corp. SN 241,635. Pub. 8–8–67. Filed 3–23–66.

Class 36—Musical Instruments and Supplies

837,539. TRAVELTIME. Metra Electronics Corporation. SN 255,106. Pub. 8–8–67. Filed 9–26–66.

837,540. ERIC. American Record Sales, Inc., d.b.a. Eric Record Co. SN 271,748. Pub. 8–8–67. Filed 5–18–67.

Class 37—Paper and Stationery

837,541. G CARD-GARD AND DESIGN. Donald N. Volger. SN 231,790. Pub. 8–8–67. Filed 10–28–65.

837,542. BENCHKOTE. W. & E. Balston, Limited. SN 237,918. Pub. 8–8–67. Filed 2–3–66.

837,543. BUNDLE/PAK. International Paper Company. SN 243,875. Pub. 8–8–67. Filed 4–20–66.

Class 38—Prints and Publications

837,544. PANELART. Panelart, Inc., assignee of John H. Bermann, d.b.a. Panelart. SN 213,093. Pub. 8–8–67. Filed 3–2–65.

837,545. MEALTIME MASTERPIECES AND DESIGN. Max O. Cullen, d.b.a. Meat Marketing. SN 240,263. Pub. 8–8–67. Filed 3–7–66.

837,546. ABRASIVE TECH. Norton Company. SN 242,634. Pub. 8–8–67. Filed 4–4–66.

837,547. WISCONSIN TALES AND TRAILS, THE WISCONSIN MAGAZINE. Wisconsin Tales & Trails, Inc. SN 247,172. Pub. 8–8–67. Filed 6–2–66.

837,548. GROW-AHEAD BOOKS AND DESIGN. For Children, Inc. SN 248,457. Pub. 8–8–67. Filed 6–20–66.

837,549. L LARGEPRINT. William Carroll. SN 248,968. Pub. 8–8–67. Filed 6–27–66.

837,550. CONSTANZE. Gruner+Jahr G.m.b.H. & Co. SN 251,917. Pub. 8–8–67. Filed 8–8–66.

837,551. CASH-A-CHECK. Volume, Inc. SN 251,973. Pub. 8–8–67. Filed 8–8–66.

837,552. ENIGMA. John J. B. Jacobs II. SN 253,702. Pub. 8–8–67. Filed 9–2–66.

837,553. LOVE BUGS. Norcross, Inc. SN 254,707. Pub. 8–8–67. Filed 9–19–66.

837,554. AN ASTOR BOOK. Ivan Obolensky, Inc. SN 254,787. Pub. 8–8–67. Filed 9–20–66.

837,555. VOCATIO. Review Publishing, Inc., d.b.a. Ramco Publishing Company. SN 255,645. Pub. 8–8–67. Filed 10–3–66.

837,556. CUSTOMTEXT. John C. Streed, d.b.a. Logress Press. SN 255,653. Pub. 8–8–67. Filed 10–3–66.

837,557. PEPSI-COLA WORLD. PepsiCo, Inc. SN 261,961. Pub. 8–8–67. Filed 1–5–67.

837,558. REALITES. Societe d'Etudes et de Publications Economiques. SN 265,958. Pub. 8–8–67. Filed 3–6–67.

Class 39—Clothing

837,559. "FABRIC 270." Metzger Brothers, Inc., d.b.a. Metzger's. SN 246,581. Pub. 8–8–67. Filed 5–25–66.

837,560. LINDA MAE. Diana Stores Corporation. SN 257,469. Pub. 8–8–67. Filed 10–28–66.

837,561. FOX HILL. Fox Hill Associates, Ltd. SN 257,776. Pub. 8–8–67. Filed 11–2–66.

837,562. LITTLE FOXES. Fox Hill Associates, Ltd. SN 257,777. Pub. 8–8–67. Filed 11–2–66.

837,563. SUN BUGS. United States Rubber Company. SN 258,619. Pub. 8–8–67. Filed 11–14–66.

837,564. MANN RANCH. Mann Manufacturing, Inc. SN 259,009. Pub. 8–8–67. Filed 11–18–66.

837,565. KOR-VAL. Spartans Industries, Inc. SN 260,892. Pub. 8–8–67. Filed 12–15–66.

Class 40—Fancy Goods, Furnishings, and Notions

837,566. GALAXY. Michael Slanec, d.b.a. Glamour Wigs of Niles. SN 246,782. Pub. 8–8–67. Filed 5–27–66.

837,567. DOMINIQUE. Dominique, Inc. SN 265,813. Pub. 8–8–67. Filed 3–2–67.

837,568. MONSIEUR LUCIEN. Monsieur Lucien, Inc. SN 266,062. Pub. 8–8–67. Filed 3–6–67.

837,569. JORLI. Advance Brands, Inc. SN 266,133. Pub. 8–8–67. Filed 3–7–67.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

837,570. POLY BAC. Patchogue Plymouth Company (joint venture). SN 243,474. Pub. 8–8–67. Filed 4–14–66.

837,571. THOMPSINE. TRW Inc. SN 246,397. Pub. 8–8–67. Filed 5–23–66.

837,572. POLYDOT. Stalex International Limited. SN 251,662. Pub. 8–8–67. Filed 8–3–66.

837,573. CONWED. Wood Conversion Company. SN 256,620. Pub. 8–8–67. Filed 10–17–66.

837,574. DUCKS BACK. Western Textile Co. Inc. SN 266,977. Pub. 8–8–67. Filed 3–17–67.

Class 44—Dental, Medical, and Surgical Appliances

837,575. SILVER CROSS AND DESIGN. Alexander J. Berndt, d.b.a. Silver Cross Oxygen Institute. SN 205,244. Pub. 5–10–66. Filed 11–2–64.

837,576. HEALTH HOUSE. Lumar Industries, Inc., assignee of Marvin W. Litman, d.b.a. Health House. SN 237,365. Pub. 8–8–67. Filed 1–26–66.

837,577. DYNATONE. Dynatone Inc. SN 251,292. Pub. 8–8–67. Filed 7–29–66.

837,578. AUTOCOLOR. Del Laboratories, Inc. SN 255,968. Pub. 8–8–67. Filed 10–7–66.

837,579. TELMARK. Telmark, Inc. SN 259,184. Pub. 8–8–67. Filed 11–21–66.

837,580. DUO-SONIC. Bard-Parker Company, Inc. SN 259,217. Pub. 8–8–67. Filed 11–22–66.

837,581. REIGNING BEAUTY. Belk Stores Services, Inc. SN 259,400. Pub. 8–8–67. Filed 11–25–66.

837,582. BIC AND DESIGN. Howard Eugene Burnett, d.b.a. Burnett Instrument Company. SN 259,403. Pub. 8–8–67. Filed 11–25–66.

Class 45—Soft Drinks and Carbonated Waters

837,583. BINGO AND DESIGN. Kajeco, Inc. SN 234,204. Pub. 8–8–67. Filed 12–8–65.

837,584. J. HUNGERFORD SMITH'S. United Fruit Company. CONSOLIDATED CERTIFICATE. SN 243,027, pub. 8–8–67, filed 4–8–66, Cl. 45; SN 243,028, pub. 8–8–67, filed 4–8–66, Cl. 46.

837,585. DEVIL SHAKE. PepsiCo, Inc. SN 247,660. Pub. 1–24–67. Filed 6–9–66.

837,586. SWINGIN'. Ohio Pure Foods, Inc. SN 251,455. Pub. 8–8–67. Filed 8–1–66.

Class 46—Foods and Ingredients of Foods

837,461. (See Class 18 for this trademark.)

837,584. CONSOLIDATED CERTIFICATE. See Class 45.

837,587. KOOL KOOKIE. Orrin K. Rosenquist, d.b.a. United Industries. SN 189,374. Pub. 4–27–65. Filed 3–23–64.

837,588. BACO-CHIPS. General Mills, Inc. SN 227,278. Pub. 4–12–66. Filed 9–7–65.

837,589. YUM-YUM-BURGER. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,340. Pub. 8–8–67. Filed 10–22–65.

837,590. ZERO-KIST. Prosser Packers, Inc. SN 235,603. Pub. 8–8–67. Filed 11–29–65.

837,591. CITY'S FINEST MEATS AND DESIGN. Eddy Provision Co., Inc. SN 237,946. Pub. 8–8–67. Filed 2–3–66.

837,592. DIAMOND PROCESS. Rich Products Corporation (Delaware corporation), assignee of Rich Products Corporation (New York corporation). SN 238,295. Pub. 8–8–67. Filed 2–7–66.

837,593. SNACK MASTER. Snack Master Foods, Incorporated. SN 240,028. Pub. 8–8–67. Filed 3–2–66.

837,594. MULTI-FERM. J. T. Gibbons, Inc. SN 240,429. Pub. 8–8–67. Filed 3–8–66.

837,595. PRIDE-FRIED CHICKEN. Jerrico, Inc., d.b.a. Jerry's. SN 240,621. Pub. 8–8–67. Filed 3–10–66.

837,596. TRADEWELL. Tradewell Stores, Inc. SN 241,549. Pub. 8–8–67. Filed 3–21–66.

837,597. RESEARCH FOR LIFE. Mead Johnson & Company. SN 244,594. Pub. 8–8–67. Filed 4–29–66.

837,598. MEAD JOHNSON LABORATORIES RESEARCH FOR LIFE. Mead Johnson & Company. SN 244,595. Pub. 8–8–67. Filed 4–29–66.

837,599. MEAD JOHNSON RESEARCH FOR LIFE. Mead Johnson & Company. SN 244,597. Pub. 8–8–67. Filed 4–29–66.

837,600. FROSTED CORN BURSTS. General Mills, Inc. SN 246,902. Pub. 8–8–67. Filed 5–31–66.

837,601. GROTESQUE HUMAN FACE (DESIGN). Campbell Soup Company. SN 247,003. Pub. 8–8–67. Filed 6–1–66.

837,602. GS AND DESIGN. General Spice, Incorporated. SN 247,221. Pub. 8–8–67. Filed 6–3–66.

837,603. TOWER OF TREATS. Harry and David. SN 247,505. Pub. 8–8–67. Filed 6–7–66.

837,604. FILIPPO BERIO. Societa per Azioni Lucchese Olii e Vini, d.b.a. Filippo Berio & C. SN 249,450. Pub. 8–8–67. Filed 7–1–66.

837,605. BLACK & WHITE ETC. AND DESIGN. VAN MELLE N.V. SN 249,599. Pub. 8–8–67. Filed 7–5–66.

837,606. FARM BEST. Home Town Foods, Inc. SN 251,135. Pub. 8–8–67. Filed 7–27–66.

837,607. TOP TATER AND DESIGN. Central Sands Produce, Inc. SN 251,379. Pub. 8–8–67. Filed 8–1–66.

837,608. PURPLE MARTIN AND DESIGN. Donald E. Lister, d.b.a. Ackles Orchard. SN 252,485. Pub. 8–8–67. Filed 8–16–66.

837,609. KLAZY NOODLES. Chinese Maid, Inc., d.b.a. Min-Sun Trading Co. SN 252,817. Pub. 8–8–67. Filed 8–22–66.

837,610. GOLDEN-RICH. Superior Tea & Coffee Co. SN 252,908. Pub. 8–8–67. Filed 8–22–66.

837,611. FROSTI DEVILS. The Borden Company. SN 255,772. Pub. 8–8–67. Filed 10–5–66.

837,612. SEVEN WONDERS. Colgate-Palmolive Company. SN 255,778. Pub. 8–8–67. Filed 10–5–66.

837,613. HOUSE OF ROTHMUND'S. Eugene Rothmund, Inc., d.b.a. The House of Rothmund. SN 255,888. Pub. 8–8–67. Filed 10–6–66.

837,614. CORKY. Staff Supermarket Associates, Inc. SN 256,880. Pub. 8–8–67. Filed 10–20–66.

837,615. LO-VISCO AND DESIGN. Dolton Manufacturing Company. SN 257,042. Pub. 8–8–67. Filed 10–24–66.

837,616. D AND DESIGN. B. A. Bernard & Co., Inc. SN 257,158. Pub. 8–8–67. Filed 10–25–66.

837,617. SIERRA NEVADA AND DESIGN. Olympia Growers, Incorporated. SN 261,779. Pub. 8–8–67. Filed 1–3–67.

837,618. HERB-CUT. Gentry Corporation. SN 261,834. Pub. 8–8–67. Filed 1–3–67.

837,619. DIXIE RIBS. Dixie Kitchens, Inc. SN 262,732. Pub. 8–8–67. Filed 12–29–66.

837,620. SUGARCANE 99. E. R. Squibb & Sons, Inc. SN 263,642. Pub. 8–8–67. Filed 1–31–67.

837,621. CHERRY BANANA BUBBLE GUM TWINS AND DESIGN. Philadelphia Chewing Gum Corporation. SN 263,650. Pub. 8–8–67. Filed 1–31–67.

837,622. SORITOS. Frito-Lay, Inc. SN 266,188. Pub. 8–8–67. Filed 3–8–67.

837,623. CAL FRESH. Arden-Mayfair, Inc., d.b.a. Low Cost Markets. SN 267,488. Pub. 8–8–67. Filed 3–24–67.

837,624. MT. OSO AND DESIGN. Patterson Farms, Inc. SN 269,258. Pub. 8–8–67. Filed 4–17–67.

837,625. IPC AND DESIGN. International Proteins Corporation. SN 269,485. Pub. 8–8–67. Filed 4–19–67.

837,626. MAPCO AND DESIGN. International Proteins Corporation. SN 269,486. Pub. 8–8–67. Filed 4–19–67.

837,627. METRECAL SHAKE. Mead Johnson & Company. SN 271,210. Pub. 8–8–67. Filed 5–11–67.

837,628. BELL AND DESIGN. Bell Fruit Farm. SN 271,574. Pub. 8–8–67. Filed 5–16–67.

837,629. SHOW STOPPER. Sousa Bros. Packing Co. SN 271,993. Pub. 8–8–67. Filed 5–22–67.

Class 50—Merchandise Not Otherwise Classified

837,630. ROL-A-CHART. William A. Steward, d.b.a. Wm. A. Steward Company. SN 240,553. Pub. 8–8–67. Filed 3–9–66.

837,631. SANTA LAND. New York Merchandise Company, Inc. SN 251,769. Pub. 8–8–67. Filed 8–5–66.

837,632. ROUND THE CLOCK. Hawkeye Steel Products, Incorporated. SN 262,485. Pub. 8–8–67. Filed 1–13–67.

837,633. STAN-TITE. Stan-Tite, Inc. SN 266,825. Pub. 8–8–67. Filed 3–16–67.

837,634. SHICK TRIP KIT. Eversharp, Inc. SN 270,026. Pub. 8–8–67. Filed 4–26–67.

837,635. WALLNUTS. Roncraft, Inc. SN 272,246. Pub. 8–8–67. Filed 5–24–67.

Class 51—Cosmetics and Toilet Preparations

837,636. VIDAL AND DESIGN. A. Vidal S.A.S. SN 213,500. Pub. 8–8–67. Filed 3–5–65.

837,637. FEMINAIRE AND DESIGN. Fore Co. SN 218,981. Pub. 3–28–67. Filed 5–17–65.

837,638. SWAGGER. Ann Shaffer. SN 226,296. Pub. 8–8–67. Filed 8–23–65.

837,639. LOVING CARE. Clairol Incorporated. SN 231,737. Pub. 8–8–67. Filed 10–28–65.

837,640. VIA LACTEA. Faberge, Inc. SN 233,889. Pub. 8–8–67. Filed 12–3–65.

837,641. NEXT-TO-NATURAL. Yardley & Company Limited. SN 244,053. Pub. 8–8–67. Filed 4–21–66.

837,642. PIER AUGE. Pierre, Jules Augé, d.b.a. Pier Augé. MULTIPLE CLASS (Classes 51 and 52). SN 245,881. Pub. 8–8–67. Filed 5–18–66.

837,643. HI-LIGHTNIN. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 248,939. Pub. 8–8–67. Filed 6–27–66.

837,644. BRIGHT-LIGHTNING. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 248,940. Pub. 8–8–67. Filed 6–27–66.

837,645. FLAG & SAIL. Vi-Jon Laboratories, Incorporated, d.b.a. Huntley. SN 249,367. Pub. 8-8-67. Filed 6-30-66.

837,646. GLIMMERICK. Yardley of London, Inc. SN 249,899. Pub. 8-8-67. Filed 7-8-66.

837,647. VILLA D'ESTE. Latour Products, Inc. SN 253,444. Pub. 8-8-67. Filed 8-30-66.

837,648. SILHOUETTE OF A WOMAN. Sarong, Inc. SN 253,995. Pub. 8-8-67. Filed 9-7-66.

837,649. VIA APPIA. Humphreys Medicine Company, Incorporated. SN 255,438. Pub. 8-8-67. Filed 9-29-66.

837,650. CAPER. Colgate-Palmolive Company. SN 258,498. Pub. 8-8-67. Filed 11-14-66.

837,651. SEX AND DESIGN. Dorita Weksler, d.b.a. D'Orita Cosmetics. SN 258,631. Pub. 8-8-67. Filed 11-14-66.

837,652. TAN-GAN-YI-KA. Pharmaceutical Specialties, Inc. SN 259,845. Pub. 8-8-67. Filed 12-1-66.

837,653. YOUTH SHEEN. Estee Lauder Incorporated. SN 265,011. Pub. 8-8-67. Filed 2-20-67.

837,654. RADAR. The Procter & Gamble Company. SN 267,097. Pub. 8-8-67. Filed 3-20-67.

837,655. BRAND X. Chadbourn Gotham, Inc. SN 269,954. Pub. 8-8-67. Filed 4-25-67.

837,656. EAGLE DESIGN. Eversharp, Inc. SN 270,027. Pub. 8-8-67. Filed 4-26-67.

837,657. D-R. D-R Aerosol Inc., d.b.a. Drexel-Rayler. SN 271,405. Pub. 8-8-67. Filed 5-15-67.

Class 52 — Detergents and Soaps

837,369. (See Class 4 for this trademark.)

837,380. (See Class 6 for this trademark.)

837,642. (See Class 51 for this trademark.)

837,643. (See Class 51 for this trademark.)

837,644. (See Class 51 for this trademark.)

837,658. DRAIN DEMON. Calgon Corporation. SN 247,324. Pub. 8-8-67. Filed 6-6-66.

837,659. DRAINTONE. Calgon Corporation. SN 247,325. Pub. 8-8-67. Filed 6-6-66.

837,660. SPINDET. Hercules Glue Co., Ltd., d.b.a. Colloidal Products Corporation. SN 255,437. Pub. 8-8-67. Filed 9-29-66.

837,661. YOU SHAMPOO. Clairol Incorporated. SN 255,515. Pub. 8-8-67. Filed 9-30-66.

837,662. ZEPHYR. Calgon Corporation. SN 261,626. Pub. 8-8-67. Filed 12-29-66.

Service Marks

Class 100 — Miscellaneous

837,663. YUM-SNAKS. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,345. Pub. 8-8-67. Filed 10-22-65.

837,664. GOLDEN JET FLIGHT KITCHEN. Continental Air Lines, Inc. SN 235,819. Pub. 8-8-67. Filed 1-4-66.

837,665. OIC WE HELP OURSELVES AND DESIGN. Opportunities Industrialization Center Incorporated. SN 240,534. Pub. 8-8-67. Filed 3-9-66.

837,666. POSITIVE CENTRIC SYSTEM SPINELLA LABS AND DESIGN. S. Charles Spinella. SN 243,729. Pub. 8-8-67. Filed 4-18-66.

837,667. DSI DISTRIBUTION SERVICES, INC. AND DESIGN. Distribution Services, Inc. SN 243,777. Pub. 8-8-67. Filed 4-19-66.

837,668. NUMERAL 3 (DESIGN). Award Exhibits, Inc. SN 244,294. Pub. 8-8-67. Filed 4-26-66.

837,669. WEEKENDER. The Weekender Corporation. SN 250,883. Pub. 8-8-67. Filed 7-22-66.

837,670. STIRRUP CUP LOUNGE. Marriott Hot-Shoppes, Inc. SN 271,893. Pub. 8-8-67. Filed 5-19-67.

Class 101 — Advertising and Business

837,671. SAILBOAT (DESIGN). Bacon and Associates, Inc., assignee of Bacon & Associates. SN 183,944. Pub. 8-8-67. Filed 10-8-63.

837,672. GRAB BAG. Glendinning Companies, Inc., by merger and change of name from Glendinning Enterprises, Inc. SN 229,003. Pub. 4-4-67. Filed 9-30-65.

837,673. INSTANT PRINTING. Christopher J. Bravos, d.b.a. Globe Copy Company. SN 233,449. Pub. 11-8-66. Filed 11-29-65.

837,674. BONANZA AND DESIGN. Joseph M. Smith. SN 243,591. Pub. 8-8-67. Filed 4-15-66.

837,675. THE CARRIAGE TRADE AND DESIGN. Scottsdale Antique Galleries, Ltd., d.b.a. The Carriage Trade. SN 254,634. Pub. 8-8-67. Filed 9-16-66.

Class 102 — Insurance and Financial

837,676. MISCELLANEOUS DESIGN. Satellite Finance Co. SN 236,293. Pub. 8-8-67. Filed 1-12-66.

837,677. Y.E.S. Lincoln Liberty Life Insurance Company. SN 239,162. Pub. 8-8-67. Filed 2-18-66.

837,678. MULTIPLE HEXAGONAL DESIGN. Group Securities, Inc. SN 243,443. Pub. 8-8-67. Filed 4-14-66.

837,679. INSURANCE THAT STARTS WITH YOU. Utica Mutual Insurance Company. SN 246,216. Pub. 8-8-67. Filed 5-20-66.

837,680. THE HAPPY BANK. The First National Bank and Trust Company of Kalamazoo. SN 248,993. Pub. 8-8-67. Filed 6-27-66.

837,681. JUNIOR INVESTORS OF AMERICA ETC. AND DESIGN. Junior Investors of America, Inc. SN 256,449. Pub. 8-8-67. Filed 10-14-66.

Class 105 — Transportation and Storage

837,682. ITM. Incentive Travel Management. SN 247,027. Pub. 8-8-67. Filed 6-1-66.

837,683. TRANSCONTINENTAL ETC. AND DESIGN. Transcontinental Gas Pipe Line Corporation. SN 253,459. Pub. 8-8-67. Filed 8-30-66.

837,684. AW. Air Wisconsin, Inc. SN 257,137. Pub. 8-8-67. Filed 10-25-66.

Class 107 — Education and Entertainment

837,685. H AND DESIGN. Houston Sports Association, Inc. SN 253,758. Pub. 8-8-67. Filed 9-2-66.

Collective Membership Mark

Class 200

837,686. R·M·M·E·A AND DESIGN. Rolling Mill Machinery & Equipment Association. SN 228,275. Pub. 8-8-67. Filed 9-21-65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

837,687. Blackall Welding Service, Indianapolis, Ind. SN 228,122. Filed P.R. 9-20-65; Am. S.R. 7-10-67.

FLI-TITE

For Sanitary Type Equipment—Namely, Refuse Tanks and Containers.
First use Sept. 3, 1965.

837,688. P. Puchkoff & Sons Inc., Brooklyn, N.Y. SN 258,145. Filed P.R. 11-7-66; Am. S.R. 8-21-67.

POLYTOTE

For Polyethylene Shoe Tote-Bags.
First use May 24, 1966.

Class 11 — Inks and Inking Materials

837,689. Van Son Holland Ink Corporation of America, Mineola, N.Y. SN 253,933. Filed P.R. 9-6-66; Am. S.R. 8-21-67.

GLOSS-KOTE

For Printing Inks.
First use June 15, 1966.

Class 12 — Construction Materials

837,690. W. R. Grace & Co., New York, N.Y. SN 259,917. Filed P.R. 12-2-66; Am. S.R. 8-21-67.

POLY LOG

For Polystyrene Billets.
First use Nov. 1, 1963.

Class 16 — Protective and Decorative Coatings

837,691. Penniman Chemicals, Inc., Pleasantville, N.Y. SN 235,793. Filed P.R. 1-4-66; Am. S.R. 8-22-67.

COLOR COMPLIMENT

For Finishes Used in Connection With Color Coating Footwear, Handbags, Belts, Headbands, Buttons and Other Such Accessories, Leather Articles, Synthetic Leather Articles, and Articles Fabricated Out of Leather and Synthetic Leather; Lacquers; and Pods Containing Finish, Lacquer, and Protective Coatings Available in Capsule-Like Containers.
First use July 14, 1965.

837,692. The United States Refining Company, Cleveland, Ohio. SN 251,487. Filed P.R. 8-1-66; Am. S.R. 8-16-67.



For Rust Inhibitive Alkyd Epoxy Enamel.
First use June 1, 1965.

Class 19 — Vehicles

837,693. Eagle-Picher Industries, Inc., Cincinnati, Ohio. SN 254,140. Filed P.R. 9-9-66; Am. S.R. 8-10-67.

CARPAD

For Resilient Floor Mats for Vehicles.
First use July 20, 1966.

Class 26 — Measuring and Scientific Appliances

837,694. Abram Mansour, Los Angeles, Calif. SN 257,972. Filed P.R. 11-4-66; Am. S.R. 8-22-67.

BARLOW

For Measuring Tapes.
First use Sept. 2, 1958.

837,695. Kleer-Vu Industries, Inc., New York, N.Y. SN 269,538. Filed P.R. 4-19-67; Am. S.R. 8-17-67.

REPEATER

For Aperture Card Copy Maker.
First use Aug. 15, 1966.

Class 30 — Crockery, Earthenware, and Porcelain

837,696. Porcelana Americana S.A., Buenos Aires, Argentina. SN 252,591. Filed P.R. 8-17-66; Am. S.R. 8-23-67.

HARTFORD

For Bone China Crockery and Porcelain Articles—Namely, Cups, Plates, Saucers, Tea Pots, and Vases.
First use 1947; in commerce Apr. 6, 1963.

Class 32 — Furniture and Upholstery

837,697. Spiegel Industries Corp., Teaneck, N.J. SN 266,598. Filed 3–13–67.



For Combination Valet Stands and Seats.
First use Sept. 7, 1965.

Class 37 — Paper and Stationery

837,698. Oxford Paper Company, New York, N.Y. SN 234,228. Filed P.R. 12–8–65; Am. S.R. 7–24–67.

SHEERWHITE

For Uncoated Offset Papers Used for Commercial Printing Purposes, Sold Primarily to Commercial Printers.
First use July 24, 1965.

Class 39 — Clothing

837,699. Morganton Hosiery Mills, Inc., Morganton, N.C. SN 256,462. Filed P.R. 10–14–66; Am. S.R. 8–25–67.

ANKLE SHEERS

For Anklets.
First use July 31, 1964.

837,700. Morganton Hosiery Mills, Inc., Morganton, N.C. SN 256,463. Filed P.R. 10–14–66; Am. S.R. 8–25–67.



For Anklets.
First use July 31, 1964.

Class 51 — Cosmetics and Toilet Preparations

837,701. Arlan's Dept. Stores, Inc., New York, N.Y. SN 231,013. Filed P.R. 10–22–65; Am. S.R. 2–1–67.

Arlan's

For Toothpaste and Hairspray.
First use August 1961.

837,702. Clairol Incorporated, New York, N.Y. SN 261,361. Filed 12–23–66.

MOONHAZE

For Hair Tinting, Dyeing and Coloring Preparation.
First use June 25, 1964.

Class 52 — Detergents and Soaps

837,703. Arlan's Dept. Stores, Inc., New York, N.Y. SN 231,014. Filed P.R. 10–22–65; Am. S.R. 2–1–67.

Arlan's

For Low Suds Detergent for Household Use and Dishwashing Detergent Lotion, Oven Cleaner, Hair Shampoo, and Rug Shampoo.
First use June 1962.

Service Marks

Class 100 — Miscellaneous

837,704. Napili Kai, Ltd., Napili, Lahaina, County of Maui, Hawaii. SN 247,946. Filed P.R. 6–13–66; Am. S.R. 8–14–67.

NAPILI KAI

For Hotel and Restaurant Service.
First use Sept. 15, 1961.

Class 101 — Advertising and Business

837,705. The Hat Institute, Philadelphia, Pa. SN 228,681. Filed P.R. 9–27–65; Am. S.R. 1–16–67.



The drawing is lined for the colors blue and red.
For Promoting the Business of Hat Manufacturers by Creating and Placing in Various News Media Advertisements Relating to Hat Design, Particularly Women's Hats, Especially of Foreign Origin.
First use July 13, 1965.

TRADEMARK REGISTRATIONS RENEWED

231,276. ARTOFEX. Cl. 23. 8–16–27.
231,868. LOCKNIT. Cl. 39. 8–30–27.
231,906. TOWNCRAFT. Cl. 39. 8–30–27.
232,330. POLYCHROMOS. Cl. 37. 9–6–27.
232,337. SHUR-BAKE AND DESIGN. Cl. 46. 9–6–27.
232,678. CRACKER JACK. Cl. 46. 9–13–27.
232,932. GROWENA. Cl. 46. 9–20–27.
233,020. REPRESENTATION OF TWO WOODEN SOLDIERS. Cl. 39. 9–20–27.
233,081. SWANKS. Cl. 39. 9–20–27.
233,514. ELFEEN. Cl. 42. 10–4–27.
233,611. NAJADEEN. Cl. 42. 10–4–27.
233,840. ALGEREEN. Cl. 42. 10–11–27.
233,841. NYMPHEEN. Cl. 42. 10–11–27.
234,050. MANNA. Cl. 46. 10–18–27.
234,062. CORN KRISPIES. Cl. 46. 10–18–27.
234,257. KOZAK. Cl. 52. 10–18–27.
234,272. THE MONROE EVENING NEWS. Cl. 38. 10–18–27.
234,879. QUILTKRAFT. Cl. 40. 11–8–27.
235,344. TOPAZ. Cl. 39. 11–15–27.
236,145. EXALTONE. Cl. 51. 12–6–27.
236,146. CEDAROME. Cl. 51. 12–6–27.
236,240. MAGNOLYS. Cl. 51. 12–6–27.
236,472. GOLD BOND. Cl. 12. 12–13–27.
238,186. DIAMOND SHAPED DESIGN. Cl. 13. 1–31–28.
239,000. VANITESE. Cl. 39. 2–21–28.
430,150. MOLY-CHROM. Cl. 23. 6–10–47.
431,368. MCQUAY-NORRIS. Cl. 23. 7–15–47.
432,100. ACME VISI-FILER. Cl. 32. 8–19–47.
432,299. MCQUAY-NORRIS. Cl. 35. 8–26–47.
432,383. THIOVANIC. Cl. 6. 9–2–47.
432,511. BROADMOOR. Cl. 42. 9–2–47.
432,541. COLGATE. Cl. 51. 9–2–47.
432,567. LIDO. Cl. 27. 9–9–47.
432,654. M.D.A. Cl. 6. 9–9–47.
432,809. EGGOYL. Cl. 52. 9–16–47.
433,177. THIOVANOL. Cl. 6. 9–30–47.
433,210. DISCREET. Cl. 51. 9–30–47.
433,607. EL GRECO. Cl. 29. 10–21–47.
433,867. HATHAWAY. Cl. 42. 11–4–47.
433,883. PARKO AND DESIGN. Cl. 4. 11–4–47.
433,908. BLUEBIRD. Cl. 36. 11–4–47.
434,277. MULTIRITMO. Cl. 27. 11–18–47.
434,811. DOT. Cl. 21. 11–18–47.
434,812. DOT SYMBOL. Cl. 21. 12–9–47.
434,822. HYPAK. Cl. 44. 12–9–47.
435,262. BONOCHORD. Cl. 44. 12–16–47.
435,338. SUPER PELLS. Cl. 9. 12–16–47.
435,390. DELIGHTFORM. Cl. 39. 12–23–47.
435,536. APAC. Cl. 26. 12–30–47.
436,012. THE CIRCLE. Cl. 38. 1–20–48.
436,210. TENINO AND DESIGN. Cl. 46. 1–27–48.
436,339. UNION METAL. Cl. 23. 2–3–48.
436,375. HEXAGONAL AND OVAL DESIGN. Cl. 21. 2–3–48.
436,399. EAGLE AND DESIGN. Cl. 46. 2–10–48.
436,637. B.Q.R. Cl. 18. 2–17–48.
436,727. HURRICANE. Cl. 35. 2–17–48.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

733,608. TONE. Cl. 4. 7–3–62.

Section 8

137,416. WESTBROOK ELEVATORS. Cl. 23. 11–23–20.
142,947. REPRESENTATION OF A TRIANGLE AND RECTANGLE DESIGN. Cl. 4. Cl. 5–24–21.
389,277. KAMA-LUX. Cl. 39. 7–29–41.
389,519. SLUMBERSOUND. Cl. 32. 8–5–41.
389,704. SPARK O' LIFE. Cl. 46. 8–19–41.

The following registrations issued Sept. 5, 1961

720,806. STRATODUR. Cl. 2.
720,812. SHIP SAFE. Cl. 2.
720,819. TOTABLES. Cl. 3.
720,821. KOMPACT. Cl. 4.
720,823. 44. Cl. 4.
720,830. KEM FIX. Cl. 6.
720,831. WATCO. Cl. 6.
720,838. RUSTY. Cl. 6.
720,843. MONOCITE. Cl. 6.
720,846. Z-MET. Cl. 6.
720,861. TRICUPLER. Cl. 13.
720,868. SILTEMP. Cl. 14.
720,870. LACOLOID. Cl. 16.
720,872. JOHN COTTON OF EDINBURGH AND DESIGN. Cl. 17.
720,874. SUPERDREN. Cl. 18.
720,877. ROCKABYL. Cl. 18.
720,878. HUSHABYL. Cl. 18.
720,883. REIVOUL. Cl. 18.
720,893. BEAM'S. Cl. 19.
720,899. SMOOTHEE. Cl. 21.
720,906. SPEED-O-FAX. Cl. 21.
720,909. PIX-SEE AND DESIGN. Cl. 21.
720,914. IN-DICATOR. Cl. 21.
720,916. EBERT 100. Cl. 21.
720,917. SOUND SPAN. Cl. 21.
720,919. BEACH-BOY JR. Cl. 22.
720,920. BEACH BOY SR. Cl. 22.
720,921. BEACHMASTER. Cl. 22.
720,922. MAGNA-CARDS. Cl. 22.
720,923. TABLEMASTER. Cl. 22.
720,927. AMERICAN AND DESIGN. Cl. 23.
720,945. MILLAR MULTIMATIC AND DESIGN. Cl. 23.
720,948. CORK-ACE. Cl. 23.
720,950. ELECTRASEAL. Cl. 25.
720,954. BINOMASTER. Cl. 26.
720,957. STRATODUR. Cl. 26.
720,960. SONORIZER. Cl. 26.
720,972. GRAMERCY. Cl. 26.
720,974. LABCRAFT. Cl. 26.
720,975. "STRIPE-LINE PATTERNS." Cl. 26.
720,976. VOLUPETTOR. Cl. 26.
720,980. RIST-KOMFORT. Cl. 28.
720,986. ACOUSTIPHONIC. Cl. 32.
720,987. NETHFACTS. Cl. 32.
720,989. FANFARE. Cl. 32.
720,990. MADELEINE. Cl. 32.
720,991. SUSSEX. Cl. 32.
720,992. MONTE CRISTO. Cl. 32.
720,993. WESTBURY. Cl. 32.
720,994. TRANSNORDIC. Cl. 32.
720,995. ANTOINETTE. Cl. 32.
720,996. TELEMARKE. Cl. 32.
720,997. FUNCTIONAIRE. Cl. 32.
720,998. FASCINATION. Cl. 32.
720,999. ELTHAM. Cl. 32.
721,000. BRANDOM KITCHENS AND DESIGN. Cl. 32.
721,002. STRATODUR. Cl. 32.
721,005. PLATTER LADDER. Cl. 32.
721,006. HALLMARK DESIGN. Cl. 32.
721,016. POCKET-PLANNER. Cl. 37.
721,017. GHEMI-"SUPER"-JET. Cl. 37.
721,020. PENCOA AND DESIGN. Cl. 37.
721,023. VERTIMASK. Cl. 37.
721,024. VISI-SCORE. Cl. 37.
721,028. DIAMOND DOLLARS. Cl. 38.
721,029. DIAMOND DIVIDENDS. Cl. 38.
721,030. ASSOCIATION NEWSLETTER. Cl. 38.
721,032. THE MAGICAT THEATER. Cl. 38.
721,038. HOUSTON NOW. Cl. 38.
721,042. THE MILNER DUMACRAT. Cl. 38.
721,045. MUSIC LIFE. Cl. 38.

721,046. YANKEE COLOUR AND DESIGN. Cl. 38.
721,057. FRENCH SCOOP. Cl. 39.
721,058. SWEVEL AND DESIGN. Cl. 39.
721,059. NINA RICCI. Cl. 39.
721,060. THE UNQUESTIONABLE BRA. Cl. 39.
721,061. "STORMNIK." Cl. 39.
721,065. THE "CONCHO." Cl. 39.
721,066. THE WESTERN QUEEN ROLL-UR-OWN. Cl. 39.
721,067. THE DUSTER ROLL-UR-OWN AND DESIGN. Cl. 39.
721,068. THE RIVER BOAT ROLL-UR-OWN. Cl. 39.
721,069. THE RATTLER ROLL-UR-OWN. Cl. 39.
721,070. THE CHEYENNE TRAIL ROLL-UR-OWN AND DESIGN. Cl. 39.
721,071. THE GUN SLINGER ROLL-UR-OWN AND DESIGN. Cl. 39.
721,072. THE TOMBSTONE ROLL-UR-OWN. Cl. 39.
721,073. 'ON CALL.' Cl. 39.
721,074. JAMES NELSON. Cl. 39.
721,080. TWINKLE-DON. Cl. 42.
721,083. JOLISSA. Cl. 42.
721,086. STRATODUR. Cl. 44.
721,087. DENTEPOX. Cl. 44.
721,094. KELLASE. Cl. 46.
721,096. SKY ROCKET AND DESIGN. Cl. 46.
721,097. CORN CABIN AND DESIGN. Cl. 46.
721,098. CORN CABIN DELICIOUS POPCORN PRODUCTS AND DESIGN. Cl. 46.
721,102. GOLD SEAL. Cl. 46.
721,104. QUINT Q. Cl. 46.
721,114. OKEEFE OLD STOCK ALE AND DESIGN. Cl. 48.
721,115. QUEEN'S CASTLE. Cl. 49.
721,116. THRIFTY KRIS. Cl. 50.
721,117. SB AND DESIGN. Cl. 50.
721,119. LIP-ROLET. Cl. 51.
721,120. LOVE AFFAIR. Cl. 51.
721,121. GOLDEN FLASK OF BEAUTY. Cl. 51.
721,123. ADAQUA. Cl. 51.
721,124. SIMONE COCHARD AND DESIGN. Cl. 51.
721,126. PLACE SETTING. Cl. 51.
721,127. CREME DE CENTA. Cl. 51.
721,128. SERA CENTA. Cl. 51.
721,129. BEAUTE DE CENTA. Cl. 51.
721,131. TAJ MAHAL. Cl. 51.
721,137. R AND DESIGN. Cl. 100.
721,139. SAF-T-SAKE AND DESIGN. Cl. 101.
721,141. IRIS. Cl. 101.
721,142. CREDIT COMMAND. Cl. 102.
721,146. DESIGN OF SERIES OF BANDS. Cl. 105.
721,148. ALBM CLUB. Cl. 107.
721,151. CLEAR-VU. Cl. 13.
721,154. DANA HULL-GARD AND DESIGN. Cl. 19.
721,158. CERTIFIED USED CAR PRICES. Cl. 38.
721,159. CATTLEFAX AND DESIGN. Cl. 38.
721,160. SYLKEN. Cl. 42.

Section 13

384,443. "AMA POLA." Cl. 46. 1–21–41.
438,161. ACRO-GRIP. Cl. 23. 4–13–48.
443,786. BILLY BOY. Cl. 22. 2–28–50.
634,852. NATIONAL RESTAURANT NEWS DIGEST. Cl. 38. 9–25–56.
737,743. MINICLAMP. Cl. 13. 9–18–62.
748,370. QUOTEMASTER. Cl. 21. 4–23–63.
758,176. TREASURE VALLEY TV AND DESIGN. Cl. 46. 10–8–63.
822,278. BRUCO. Cl. 18. 1–17–67.
882,688. 6 IN 1. Cl. 15. 1–24–67.

Erratum

In the OFFICIAL GAZETTE of Aug. 29, 1967, at page TM 247 under Trademark Registrations Cancelled Section 8

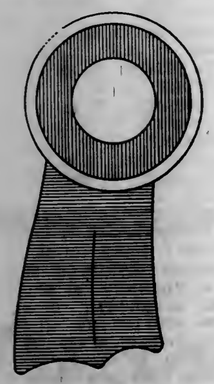
718,258. MISSILES AND ROCKETS ASTROLOG. Cl. 38.

should be deleted.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

62,684. FATHER JOHN'S. Cls. 6 and 18. 5–21–07. Carleton & Hovey. Father John's Medicine Company, Inc., Lowell, Mass. Amended: In the statement, column 2, line 4, "lung and throat" is deleted, lines 5 and 6 are deleted and *coughs due to colds by its soothing effect on the throat.* is inserted.

228,411. BLUE RIBBON DESIGN. Cl. 48. 5–31–27. Pabst Corporation. Pabst Brewing Company, Milwaukee, Wis. Amended: In the statement, column 1, line 9, after "blue" *and red* is inserted, and the drawing is amended to appear:



434,976. CHEVRON. Cl. 6. 12–9–47. Standard Oil Company of California, San Francisco, Calif. Amended to appear:

CHEVRON

742,310. SPEED KING. Cl. 23. 12–18–62. Slocum Manufacturing Company, Inc. Speed King Manufacturing Company, Inc., Ensign, Kans. Amended to appear:

SPEED KING

770,535. MISCELLANEOUS DESIGN. Cl. 103. 5–26–64. Morgan Construction Company, Worcester, Mass. Corrected to appear:



796,169. SSS. Cl. 200. 9–14–65. Standardised Sanitation Systems, Inc., San Francisco, Calif. Corrected: In the statement, column 1, line 1, "California" should be deleted and *Delaware* should be inserted.

820,029. ALLERCREME A FOR MEN. Cl. 51. 12–6–66. Texas Pharmacal Company. Jeffco, Inc., San Antonio, Tex. Corrected: In the statement, column 1, before line 1, *Texas Pharmacal Company by change of name from* should be inserted.

828,862. GOOD NA-BOR. Cl. 46. 5–16–67. Plee-Zing, Inc., doing business as Household Products Co., Evanston, Ill. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Delaware* should be inserted.

832,330. PRINCETON PRODUCTS, ETC. AND DESIGN. Cl. 1. 7–25–67. Wm. Flemer's Sons, Inc., doing business as Princeton Nurseries, Princeton, N.J. Corrected: In the statement, column 1, line 1, "William Felmer's" should be deleted and *Wm. Flemer's* should be inserted.

832,946. ACME VIRGINIA LEE AND DESIGN. Cl. 39. 8–1–67. Acme Markets, Inc., Philadelphia, Pa. Corrected: In the statement, column 2, line 3, "562,205" should be deleted and *562,505* should be inserted.

833,223. DIAX. Cl. 21. 8–8–67. Diax Corporation. Tensor Corporation, Brooklyn, N.Y. Corrected: In the statement, column 1, before line 1, *Tensor Corporation by change of name from* should be inserted.

833,508. SPECIAL CUTS. Cl. 46. 8–8–67. The Quaker Oats Company, Chicago, Ill. Corrected: In the statement, column 2, line 3 should be deleted.

833,745. PLAY-A-GAME. Cl. 42. 8–15–67. Oxford Drapery Company, Boston, Mass. Corrected: In the statement, column 2, line 2, "1066" should be deleted and *1966* should be inserted.

INDEX OF REGISTRANTS

OCTOBER 24, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

A.M.S. Packing Co.: *See*—
Mule, Anthony.
Ackles Orchard: *See*—
Lister, Donald E.
Acme Markets, Inc., Philadelphia, Pa. 832,946, cor. Cl. 39.
Acme Visible Records, Inc., Crozet, Va. 432,100, ren. 10–24–67. Cl. 32.
Adaqua, Inc., Sepulveda, Calif. 721,123, canc. Cl. 51.
Advance Brands, Inc., Chicago, Ill. 837,569, pub. 8–8–67. Cl. 40.
Aeschbach, F., S.A., Aarau, Switzerland. 231,276, ren. 10–24–67. Cl. 23.
Ahrens Publishing Co., Inc., New York, N.Y. 634,852, canc. Cl. 38.
Air Wisconsin, Inc., Appleton, Wis. 837,684, pub. 8–8–67. Cl. 105.
Ajax Hardware Corp., City of Industry, Calif. 837,441, pub. 8–8–67. Cl. 13.
Albicrome Products: *See*—
Cromit Products Corp.
Alkaloi Co., The, Taunton, Mass. 837,462, pub. 8–8–67. Cl. 18.
Allen & Hanburys, Ltd., London, to Bonochord Ltd., Beckenham, Kent, England. 435,262, ren. 10–24–67. Cl. 44.
Allen Industries, Inc., Detroit, Mich. 837,355, pub. 8–8–67. Cl. 1.
American Can Co., New York, N.Y. 837,363, pub. 8–8–67. Cl. 2.
American Cellulose & Chemical Mfg. Co., Ltd., by change of name Celanese Corp. of America, New York, to Celanese Corp., New York, N.Y. 231,868, ren. 10–24–67. Cl. 39.
American Luggage Works, Inc., Warren, R.I. 837,366, pub. 8–8–67. Cl. 3.
American Metal Climax, Inc., d.b.a. Southwest Potash Corp., New York, N.Y. 837,395, pub. 8–8–67. Cl. 6.
American Photographic Appliance Corp., Shelburne, Mass. 435,536, ren. 10–24–67. Cl. 26.
American Record Sales, Inc., d.b.a. Eric Record Co., Philadelphia, Pa. 837,540, pub. 8–8–67. Cl. 36.
American Twist Drill Co., Detroit, Mich. 720,927, canc. Cl. 23.
Amity Leather Products Co., West Bend, Wis. 837,367, pub. 8–8–67. Cl. 3.
Amsted Industries Inc.: *See*—
Diamond Chain and Mfg. Co.
Amway Corp., Ada, Mich. 837,364, pub. 8–8–67. Cl. 3.
Anzac Industries, Inc., Cleveland, Ohio. 837,481, pub. 8–8–67. Cl. 21.
Arden-Mayfair, Inc., d.b.a. Low Cost Markets, Los Angeles, Calif. 837,623, pub. 8–8–67. Cl. 46.
Arkwright Inc., New York, N.Y. 432,511, ren. 10–24–67. Cl. 42.
Arlan's Dept. Stores, Inc., New York, N.Y. 837,701. Cl. 51.
Arlan's Dept. Stores, Inc., New York, N.Y. 837,703. Cl. 52.
Armour Abrasives Co.: *See*—
Armour & Co.
Armour & Co., d.b.a. Armour Abrasives Co., Chicago, Ill. 837,370, pub. 8–8–67. Cl. 4.
Arnold, Schwinn & Co., to Schwinn Bicycle Co., Chicago, Ill. 436,727, ren. 10–24–67. Cl. 35.
Arrowmate Products Co.: *See*—
Rose Tool & Plastics, Inc.
Association Institute, New York, N.Y. 721,030, canc. Cl. 38.
Atlantic Research Corp., Alexandria, Va. 837,471, pub. 8–8–67. Cl. 21.
Atlas Supply Co., Springfield, N.J. 837,520, pub. 8–8–67. Cl. 23.
Auge, Pier: *See*—
Auge, Pierre Jules.
Auge, Pierre Jules, d.b.a. Pier Auge, Monaco. 837,642, pub. 8–8–67. Multiple Class (Classes 51 and 52).
Award Exhibits, Inc., Chicago, Ill. 837,668, pub. 8–8–67. Cl. 100.
Bacon & Associates: *See*—
Beacon and Associates, Inc.
Balston, W. & R., Ltd., Kent, England. 837,542, pub. 8–8–67. Cl. 37.
Bard-Parker Co., Inc., Danbury, Conn. 837,580, pub. 8–8–67. Cl. 44.
Barrus, H. H., Inc., Costa Mesa, Calif. 837,443, pub. 8–8–67. Cl. 15.
Basco Jewelers, Inc., Philadelphia, Pa. 837,530, pub. 8–8–67. Cl. 28.
Bassett Furniture Industries, Inc., Bassett, Va. 720,989–99, canc. Cl. 32.
Beacon and Associates, Inc., from Bacon & Associates, Annapolis, Md. 837,671, pub. 8–8–67. Cl. 101.
Beam's Inc., Oklahoma City, Okla. 720,893, canc. Cl. 19.
Beautron Corp., Dallas, Tex. 721,127–9, canc. Cl. 51.
Beauty Care, Inc., New York, N.Y. 721,121, canc. Cl. 51.
Becton, Dickinson and Co., East Rutherford, N.J. 434,822, ren. 10–24–67. Cl. 44.
Beeman's Inc.: *See*—
Beeman's Laboratory, Inc.
Beeman's Laboratory, Inc., Atlanta, Ga., to Beeman's Inc., Daytona Beach, Fla. 436,687, ren. 10–24–67. Cl. 18.
Belk Stores Services, Inc., Charlotte, N.C. 837,581, pub. 8–8–67. Cl. 44.
Bell Fruit Farm, Boonville, Mo. 837,628, pub. 8–8–67. Cl. 46.
Bel-Ray Co., Inc., Farmingdale, N.J. 882,688, canc. Cl. 15.
Berkshire Hathaway, Inc.: *See*—
Hathaway Mfg. Co., The.
Bermann, John H.: *See*—
Panelart, Inc.
Bernard, B. A., & Co., Inc., Camden, N.J. 837,616, pub. 8–8–67. Cl. 46.
Berndt, Alexander J., d.b.a. Silver Cross Oxygen Institute, Dumont, N.J. 837,575, pub. 5–10–66. Cl. 44.
Blackall Welding Service, Indianapolis, Ind. 837,687. Cl. 2.
Bohm, Pierre: *See*—
Cochard de Nelly, Simone.
Bond Stores, Inc., New York, N.Y. 233,020, ren. 10–24–67. Cl. 39.
Bonochord Ltd.: *See*—
Allen & Hanbury, Ltd.
Borden Co., The: *See*—
Cracker Jack Co., The.
Borden Co., The, New York, N.Y. 837,611, pub. 8–8–67. Cl. 46.
Bradley, Milton, Co., Springfield, Mass. 837,500, pub. 8–8–67. Cl. 22.
Brandom, Herbert M., Salt Lake City, Utah. 721,000, canc. Cl. 32.
Braun Brothers Packing Co., The, Troy, Ohio. 721,102, canc. Cl. 46.
Bravos, Christopher J., d.b.a. Globe Copy Co., Chicago, Ill. 837,673, pub. 11–8–66. Cl. 101.
Brillo Mfg. Co., Inc., New York, from Brillo Mfg. Co., Inc., Brooklyn, N.Y. 142,947, canc. Cl. 4.
Bristol-Myers Co., New York, N.Y. 433,210, ren. 10–24–67. Cl. 51.
Bristol-Myers Co., New York, N.Y. 837,458, pub. 8–8–67. Cl. 18.
British Paints Ltd., Newcastle-upon-Tyne, England. 720,870, canc. Cl. 16.
Brooks & Bohm (Whisky-Shippers) Ltd., Westminster, London, England. 721,115, canc. Cl. 49.
Bumgardner & Co., Wheeling, W. Va. 837,516, pub. 8–8–67. Cl. 23.
Burnett, Howard E., d.b.a. Burnett Instrument Co., Lawrence, Kans. 837,582, pub. 8–8–67. Cl. 44.
Burnett Instrument Co.: *See*—
Burnett, Howard E.
C.E.M. Co., Inc., Danielson, Conn. 837,442, pub. 8–8–67. Cl. 13.
Calgon Corp., Pittsburgh, Pa. 837,658–9, pub. 8–8–67. Cl. 52.
Calgon Corp., Pittsburgh, Pa. 837,662, pub. 8–8–67. Cl. 52.
Cal-June Corp., North Hollywood, Calif. 837,507, pub. 8–8–67. Cl. 22.
Cameo Doll Products Co., Inc., Port Allegany, Pa. 837,508, pub. 8–8–67. Cl. 22.
Campbell Soup Co., Camden, N.J. 837,601, pub. 8–8–67. Cl. 46.
Carleton & Hovey. Father John's Medicine Co., Inc., Lowell, Mass. 62,684. Am. 7(d). Multiple Class (Classes 6 and 18).
Carolina Container Co., High Point, N.C. 720,812, canc. Cl. 2.
Carriage Trade, The: *See*—
Scottsdale Antique Galleries, Ltd.
Carroll, William, North Hollywood, Calif. 837,549, pub. 8–8–67. Cl. 38.
Celanese Corp.: *See*—
American Cellulose & Chemical Mfg. Co., Ltd.
Celotex Corp., The, Tampa, Fla. 837,426, pub. 8–8–67. Cl. 12.
Central Sands Produce, Inc., Bancroft, Wis. 837,607, pub. 8–8–67. Cl. 46.
Ceravolo, William, Burbank, Calif. 837,464, pub. 8–8–67. Cl. 19.
Chadbourn Gotham, Inc., Charlotte, N.C. 837,655, pub. 8–8–67. Cl. 51.
Chapman Chemical Co., Memphis, Tenn. 837,528, pub. 8–8–67. Cl. 26.
Chassemont, Irene, S.A., Biel, Switzerland. 721,119, canc. Cl. 51.
Chemel Corp., Ambler, Pa. 837,483, pub. 8–8–67. Cl. 21.
Chemical Service of Baltimore, Inc., Baltimore, Md. 837,371, pub. 8–8–67. Cl. 4.
Chemway Corp., Wayne, N.J. 837,532, pub. 8–8–67. Cl. 29.
Chicago-Allis Mfg. Corp., Chicago, Ill. 837,538, pub. 8–8–67. Cl. 35.
Chinese Maid, Inc., d.b.a. Min-Sun Trading Co., Chicago, Ill. 837,609, pub. 8–8–67. Cl. 46.
Ciba, Ltd., Basel, Switzerland. 837,401–3, pub. 8–8–67. Cl. 6.
Clairol Inc., New York, N.Y. 837,639, pub. 8–8–67. Cl. 51.
Clairol Inc., New York, N.Y. 837,643–4, pub. 8–8–67. Multiple Class (Classes 51 and 52).
Clairol Inc., New York, N.Y. 837,661, pub. 8–8–67. Cl. 52.
Clairol, Inc., New York, N.Y. 837,702. Cl. 51.
Clatfelter, H. C., & Co., Ferndale, Mich. 438,161, canc. Cl. 23.
Cochard de Nelly, Simone, from Pierre Bohm, Buenos Aires, Argentina. 721,124, canc. Cl. 51.

INDEX OF REGISTRANTS

Colgate-Palmolive Co.: *See*—
Colgate-Palmolive-Peet Co.

Colgate-Palmolive Co., New York, N.Y. 837,612, pub. 8–8–67. Cl. 46.

Colgate-Palmolive Co., New York, N.Y. 837,650, pub. 8–8–67. Cl. 51.

Colgate-Palmolive-Peet Co., Jersey City, N.J., to Colgate-Palmolive Co., New York, N.Y. 432,541, ren. 10–24–67. Cl. 51.

Collator Corp., Seattle, Wash. 837,479, pub. 8–8–67. Cl. 21.

Collator Corp., Seattle, Wash. 837,518, pub. 8–8–67. Cl. 23.

Collins, H. Everett, St. Simons Island, Ga. 837,504, pub. 8–8–67. Cl. 22.

Colloidal Products Corp.: *See*—
Hercules Glue Co., Ltd.

Continental Air Lines, Inc., Los Angeles, Calif. 837,664, pub. 8–8–67. Cl. 100.

Control Print Corp., North Arlington, N.J. 837,517, pub. 8–8–67. Cl. 23.

Corn Cabin Co., South Elgin, Ill. 721,097–8, canc. Cl. 46.

Corn Products Co.: *See*—
Rit Products Corp.

Cosby Brush & Import Co., Inc., New York, N.Y. 837,533, pub. 8–8–67. Cl. 29.

Cotton, John, Ltd., Edinburgh, Scotland. 720,872, canc. Cl. 17.

Council Mfg. Corp., Fort Smith, Ark., from The Yum-Burger Corp. of America, Springfield, Mo. 837,589, pub. 8–8–67. Cl. 46.

Council Mfg. Corp., Fort Smith, Ark., from The Yum-Burger Corp. of America, Springfield, Mo. 837,663, pub. 8–8–67. Cl. 100.

Cracker Jack Co., The, Chicago, Ill., to The Borden Co., New York, N.Y. 232,678, ren. 10–24–67. Cl. 46.

Cromit Products Corp., d.b.a. Albicrome Products, South Boston, Mass. 720,838, canc. Cl. 6.

Crosman Arms Co., Inc., Fairport, N.Y. 435,338, ren. 10–24–67. Cl. 9.

Cullen, Max O., d.b.a. Meat Marketing, Chicago, Ill. 837,545, pub. 8–8–67. Cl. 38.

D-R Aerosol Inc., d.b.a. Drexel-Rayler, Philadelphia, Pa. 837,657, pub. 8–8–67. Cl. 51.

Dal-Worth Paint Mfg. Co., Mesquite, Tex. 837,445, pub. 8–8–67. Cl. 16.

Dana Corp., Toledo, Ohio. 721,154, canc. Cl. 19.

Daryl Industries, Inc., Miami, Fla. 837,422, pub. 8–8–67. Cl. 12.

Dee, H. Paul, d.b.a. Paul Dee Co., Marshalltown, Iowa. 837,406, pub. 8–8–67. Cl. 7.

Dee, Paul, Co.: *See*—
Dee, H. Paul.

Degremont S.A., Suresnes, Seine, France. 837,514, pub. 8–8–67. Cl. 23.

Del Laboratories, Inc., Farmingdale, N.Y. 837,578, pub. 8–8–67. Cl. 44.

Delightform Foundations, Inc., Easton, Pa. 435,390, ren. 10–24–67. Cl. 39.

Delta Brush Mfg. Corp., Mount Vernon, N.Y. 433,607, ren. 10–24–67. Cl. 29.

Denis Industries, Ltd., New York, N.Y. 720,948, canc. Cl. 23.

Dewine & Hamma Seed Co., Inc., Yellow Springs, Ohio. 837,357, pub. 8–8–67. Cl. 1.

Diamond Chain and Mfg. Co., Indianapolis, Ind., to Amsted Industries Inc., Chicago, Ill. 238,186, ren. 10–24–67. Cl. 13.

Diamond Dealers of America, Inc., Pittsburgh, Pa. 721,028–9, canc. Cl. 38.

Diana Stores Corp., North Bergen, N.J. 837,560, pub. 8–8–67. Cl. 39.

Diax Corp. Tensor Corp., Brooklyn, N.Y. 833,223, cor. Cl. 21.

Distillers Co. (Biochemicals) Ltd., The, Speke, Liverpool, England. 720,877–8, canc. Cl. 18.

Distribution Services, Inc., Washington, D.C. 837,667, pub. 8–8–67. Cl. 100.

Dixie Kitchens, Inc., Omaha, Nebr. 837,619, pub. 8–8–67. Cl. 46.

Dixon, Jeane L., Washington, D.C. 721,032, canc. Cl. 38.

Dolton Mfg. Co., Dolton, Ill. 837,615, pub. 8–8–67. Cl. 46.

Dominique, Inc, Miami Beach, Fla. 837,567, pub. 8–8–67. Cl. 40.

D'Orita Cosmetics: *See*—
Weksler, Dorita.

Dover Industries, Inc., Roosevelt, N.Y. 837,505, pub. 8–8–67. Cl. 22.

Dow Chemical Co., The, Midland, Mich. 837,397, pub. 8–8–67. Cl. 6.

Dowco Products, Inc., Dallas, Tex. 837,440, pub. 8–8–67. Cl. 13.

Drew Chemical Corp., New York, N.Y. 837,382, pub. 8–8–67. Cl. 6.

Drexel-Rayler: *See*—
D-R Aerosol.

Du Pont de Nemours, E. I., and Co., Wilmington, Del. 720,843, canc. Cl. 6.

Du Pont de Nemours, E. I., and Co., Wilmington, Del. 837,400, pub. 8–8–67. Cl. 6.

Dura-Tan Co., Inc., New York, N.Y. 720,819, canc. Cl. 3.

Dyna-Slide Co., The: *See*—
Hedberg, Donald D.

Dynasurf Chemical Corp., Baltimore, Md. 837,368, pub. 8–8–67. Cl. 4.

Dynatone, Inc., Wichita, Kans. 837,577, pub. 8–8–67. Cl. 44.

EG & G, Inc., Bedford, Mass. 837,480, pub. 8–8–67. Multiple Class (Classes 21 and 26).

Eagle-Picher Industries, Inc., Cincinnati, Ohio. 837,693. Cl. 19.

Ebert Electronics Corp., Queens Village, N.Y. 720,916, canc. Cl. 21.

Eddy Provision Co., Inc., Bronx, N.Y. 837,591, pub. 8–8–67. Cl. 46.

Edwards Co, Inc., Norwalk, Conn. 720,914, canc. Cl. 21.

Edwards Co., Inc., Norwalk, Conn. 837,435, pub. 8–8–67. Cl. 13.

Eldon Industries, Inc., Hawthorne, Calif. 837,509, pub. 8–8–67. Cl. 22.

Enchantress of Florida, Ltd., New York, N.Y. 721,060, canc. Cl. 39.

Endicott Johnson Corp., Endicott, N.Y. 233,081, ren. 10–24–67. Cl. 39.

Eric Record Co.: *See*—
American Record Sales, Inc.

Estee Lauder Inc., New York, N.Y. 837,653, pub. 8–8–67. Cl. 51.

Europharma International, Inc., Panama, Panama. 837,459, pub. 8–8–67. Cl. 18.

Evander, Bruce M., Oakland, Calif. 821,141, canc. Cl. 101.

Evans Chemetics Inc., New York, N.Y. 432,383, ren. 10–24–67. Cl. 6.

Evans Chemetics Inc., New York, N.Y. 433,177, ren. 10–24–67. Cl. 6.

Everguard Coatings (International), Ltd., Niagara Falls, Ontario, Canada. 837,419, pub. 8–8–67. Cl. 12.

Eversharp, Inc., Milford, Conn. 837,634, pub. 8–8–67. Cl. 50.

Eversharp, Inc., Milford, Conn. 837,656, pub. 8–8–67. Cl. 51.

Faber, A. W., Inc., to A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. 232,330, ren. 10–24–67. Cl. 37.

Faber-Castell, A. W., Pencil Co., Inc.: *See*—
Faber, A. W., Inc.

Faberge, Inc., New York, N.Y. 837,640, pub. 8–8–67. Cl. 51.

Fairy Mills, Inc., Shillington, Pa., from Pauline Gordon, Inc., New York, N.Y. 721,057, canc. Cl. 39.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt/Main, Germany. 837,377, pub. 8–8–67. Cl. 6.

Farmcraft, Inc., Des Moines, Iowa. 837,417, pub. 8–8–67. Cl. 10.

Federal Enameling & Stamping Co., Pittsburgh, Pa. 721,151, canc. Cl. 13.

Fiebing Chemical Co., Milwaukee, Wis. 837,369, pub. 8–8–67. Multiple Class (Classes 4, 6, 15, 16, and 52).

Field Emission Corp., McMinnville, Oreg. 837,529, pub. 8–8–67. Cl. 26.

Filippo Berio & C.: *See*—
Societa per Azioni Lucchese Olii e Vini.

Fine Art Designers, Inc., New York, N.Y. 720,975, canc. Cl. 26.

Firmenich Inc.: *See*—
Naef, M., & Co.

First National Bank & Trust Co. of Kalamazoo, Kalamazoo, Mich. 837,680, pub. 8–8–67. Cl. 102.

Fisher Scientific Co., Pittsburgh, Pa. 837,527, pub. 8–8–67. Cl. 26.

Flemer's, Wm., Sons, Inc., d.b.a. Princeton Nurseries, Princeton, N.J. 832,330, cor. Cl. 1.

For Children, Inc., Columbus, Ohio. 837,548, pub. 8–8–67. Cl. 38.

Fore Co., Palisades Park, N.J. 837,637, pub. 3–28–67. Cl. 51.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 233,514, ren. 10–24–67. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 233,611, ren. 10–24–67. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co, Inc., New York, N.Y. 233,800–1, ren. 10–24–67. Cl. 42.

Foundry Products & Methods, Inc., Benson, N.C. 837,430, pub. 8–8–67. Cl. 12.

Fox Hill Associates, Ltd., New York, N.Y. 837,561–2, pub. 8–8–67. Cl. 39.

Frank, Wally, Ltd., New York, N.Y. 837,408, pub. 8–8–67. Cl. 8.

Frederick, Purdue, Co., The, Yonkers, N.Y. 837,460, pub. 8–8–67. Cl. 18.

Freudenberg, Carl, Kommanditgesellschaft, Weinheim/Bergstrasse, Germany. 837,359, pub. 8–8–67. Cl. 1.

Frito-Lay, Inc., Dallas, Tex. 837,622, pub. 8–8–67. Cl. 46.

Fuji Electronic Industrial Co., Ltd., Tokyo, Japan. 837,525, pub. 8–8–67. Cl. 26.

Gakken Co., Ltd., Tokyo, Japan. 837,487, pub. 8–8–67. Cl. 21.

General Cigar Co., Ltd., Montreal, Quebec, Canada. 837,450, pub. 8–8–67. Cl. 17.

General Merchandise Co., Milwaukee, Wis. 721,142, canc. Cl. 102.

General Mills, Inc.: *See*—
Red Star Milling Co., The.

General Mills, Inc., Minneapolis, Minn. 837,588, pub. 4–12–66. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 837,600, pub. 8–8–67. Cl. 46.

General Spice, Inc., Linden, N.J. 837,602, pub. 8–8–67. Cl. 46.

Gentry Corp., Glendale, Calif. 837,618, pub. 8–8–67. Cl. 46.

Gessner Products Co., Inc., Ambler, Pa. 837,361, pub. 8–8–67. Cl. 2.

Gibbons, J. T., Inc., New Orleans, La. 837,594, pub. 8–8–67. Cl. 46.

Given, John M., Co., The, New York, N.Y., Chicago, Ill., and Pittsburgh, Pa., to Topaz Hosiery Mills, Inc., New York, N.Y. 235,344, ren. 10–24–67. Cl. 39.

Glamour Wigs of Niles: *See*—
Sianco, Michael.

Glendinning Companies, Inc., from Glendinning Enterprises, Inc., Westport, Conn. 837,493, pub. 8–7–67. Cl. 22.

Glendinning Companies, Inc., from Glendinning Enterprises, Inc., Westport, Conn. 837,672, pub. 4–4–67. Cl. 101.

Glendinning Enterprises, Inc.: *See*—
Glendinning Companies, Inc.

Globe Copy Co.: *See*—
Bravos, Christopher J.

Golf Digest, Inc., South Norwalk, Conn. 837,502, pub. 8–8–67. Cl. 22.

Goodyear Aerospace Corp., Akron, Ohio. 837,354, pub. 8–8–67. Cl. 1.

Gordon, Pauline, Inc.: *See*—
Fairy Mills, Inc.

Gorman-Rupp Co., The, Mansfield, Ohio. 837,515, pub. 8–8–67. Cl. 23.

Gorman-Rupp Co., The, Mansfield, Ohio. 837,521, pub. 8–8–67. Cl. 23.

Goya Ltd., London, England. 721,120, canc. Cl. 51.

Grace, W. R., & Co., Cambridge, Mass. 837,358, pub. 8–8–67. Cl. 1.

Grace, W. R., & Co., New York, N.Y. 837,690. Cl. 12.

Greenlife Products Co., West Point, Va. 837,416, pub. 8–8–67. Cl. 10.

Group Securities, Inc., Jersey City, N.J. 837,678, pub. 8–8–67. Cl. 102.

Gruner & Jahr G.m.b.H., Hamburg, Germany. 837,550, pub. 8–8–67. Cl. 38.

Guerdon Industries, Inc., Southfield, Mich. 837,467, pub. 8–8–67. Cl. 19.

Hall, Hartwell & Co., Inc., Troy, to J. C. Penny Co., New York, N.Y. 231,906, ren. 10–24–67. Cl. 39.

Harry & David, Medford, Oreg. 837,603, pub. 8–8–67. Cl. 46.

Hassenfeld Bros., Inc., Pawtucket, R.I. 837,506, pub. 8–8–67. Cl. 22.

Hat Institute, The, Philadelphia, Pa. 837,705. Cl. 101.

Hathaway Mfg. Co., The, to Berkshire Hathaway, Inc., New Bedford, Mass. 433,867, ren. 10–24–67. Cl. 42.

Hawkeye Steel Products, Inc., Waterloo, Iowa. 837,632, pub. 8–8–67. Cl. 50.

Health House: *See*—
Lumar Industries, Inc.

Heatbath Corp., Springfield, Mass. 837,448, pub. 8–8–67. Cl. 16.

Hedberg, Donald D., d.b.a. The Dyna-Slide Co., Chicago, Ill. 721,023, canc. Cl. 37.

Hercules Glue Co., Ltd., d.b.a. Colloidal Products Corp., Sausalito, Calif. 837,660, pub. 8–8–67. Cl. 52.

Heyden Chemical Corp., to Tenneco Chemicals, Inc., New York, N.Y. 432,654, ren. 10–24–67. Cl. 6.

Holophane Co., Inc., New York, N.Y. 837,477, pub. 8–8–67. Cl. 21.

Home Town Foods, Inc., Jacksonville, Fla. 837,606, pub. 8–8–67. Cl. 46.

Hoosier Soil Service, Inc.: *See*—
Solar Nitrogen Chemicals, Inc.

House of Rothmund, The: *See*—
Rothmund, Eugene, Inc.

Houston Post Co., The, Houston, Tex. 721,038, canc. Cl. 38.

Houston Sports Assn., Inc., Houston, Tex. 837,685, pub. 8–8–67. Cl. 107.

Hubbart, Jason C., Frenso, Calif. 837,503, pub. 8–8–67. Cl. 22.

Humphreys Medicine Co., Inc., Rutherford, N.J. 837,649, pub. 8–8–67. Cl. 51.

Huntley: *See*—
Vi-Jon Laboratories, Inc.

Incentive Travel Management, New York, N.Y. 837,682, pub. 8–8–67. Cl. 105.

Indian Head Inc.: *See*—
Ulmann, Bernhard, Co., Inc.

Industrial Chemicals, Inc., South Bend, Ind. 720,831, canc. Cl. 6.

In-Sink-Erator Mfg. Co., Racine, Wis. 837,489, pub. 8–8–67. Cl. 21.

International Enterprises of America, Inc., Portland, Oreg. 837,524, pub. 8–8–67. Cl. 23.

International Paper Co., New York, N.Y. 837,543, pub. 8–8–67. Cl. 37.

International Proteins Corp., New York, N.Y. 837,625–6, pub. 8–8–67. Cl. 46.

International Telephone & Telegraph Corp., New York, N.Y. 837,470, pub. 8–8–67. Cl. 21.

International Telephone & Telegraph Corp., New York, N.Y. 837,490, pub. 8–8–67. Cl. 21.

Ithaca Gun Co., Inc., Ithaca, N.Y. 837,409, pub. 8–8–67. Cl. 9.

Jacobs, John J. B., II, Arlington, Va. 837,552, pub. 8–8–67. Cl. 38.

Jerrico, Inc., d.b.a. Jerry's, Lexington, Ky. 837,595, pub. 8–8–67. Cl. 46.

Jerry's: *See*—
Jerrico, Inc.

Johns-Manville Corp., New York, N.Y. 837,423–4, pub. 8–8–67. Cl. 12.

Johns-Manville Corp., New York, N.Y. 837,427, pub. 8–8–67. Cl. 12.

Johnson Ideal Halter Co., The, Aurora, Ill. 837,365, pub. 8–8–67. Cl. 3.

Johnson, S. C., & Son, Inc., Racine, Wis. 837,373, pub. 8–8–67. Cl. 4.

Junior Investors of America, Inc., St. Petersburg, Fla. 837,681, pub. 8–8–67. Cl. 102.

Kajeco, Inc., Pawling, N.Y. 837,583, pub. 8–8–67. Cl. 45.

Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 837,452–4, pub. 8–8–67. Cl. 18.

Kanegafuchi Spinning Co., Ltd.: *See*—
Kanegafuchi Boseki Kabushiki Kaisha.

Kansas Mills Co., The, Wichita, Kans. 389,704, canc. Cl. 46.

Kellogg Co., Battle Creek, Mich. 234,062, ren. 10–24–67. Cl. 46.

Kellogg, Spencer, and Sons, Inc., Buffalo, N.Y. 721,094, canc. Cl. 46.

Kelly, William, Milling Co., The, Hutchinson, Kans. 721,096, canc. Cl. 46.

Kenmar Mfg. Co., The, East Palestine, Ohio. 721,006, canc. Cl. 32.

Kentucky Fireplace Logs, Inc., Orange, Va. 837,356, pub. 8–8–67. Cl. 1.

Kestenman Bros. Mfg. Co., Providence, R.I. 720,980, canc. Cl. 28.

Kiehart Corp., New York, N.Y. 720,899, canc. Cl. 21.

Kleer-Vu Industries, Inc., New York, N.Y. 837,695. Cl. 26.

Knickerbocker Toy Co., Inc., New York, N.Y. 837,492, pub. 8–8–67. Cl. 22.

Kobnstamm, H., & Co., Inc., New York, N.Y. 837,461, pub. 8–8–67. Multiple Class (Classes 18 and 46).

Kozak: *See*—
Walker, Edward C.

Kozak Auto Drywash, Inc.: *See*—
Walker, Edward C.

Lan-Cor Corp., Salt Lake City, Utah. 721,045, canc. Cl. 38.

Larima Imports Ltd., New York, N.Y. 721,058, canc. Cl. 39.

Lasting Products Co., Baltimore, Md. 837,429, pub. 8–8–67. Cl. 12.

Latour Products, Inc., Northvale, N.J. 837,647, pub. 8–8–67. Cl. 51.

Lawter Chemicals, Inc., Chicago, Ill. 837,447, pub. 8–8–67. Cl. 16.

Les Plastiques Synthetiques S.A., Haute-Savoie, France. 837,498, pub. 8–8–67. Cl. 22.

Lever Brothers Co., New York, N.Y. 837,535, pub. 8–8–67. Cl. 29.

Lilienthal, Felix, & Co., Inc., New York, N.Y. 721,116, canc. Cl. 50.

Lincoln Liberty Life Insurance Co., Houston, Tex. 837,677, pub. 8–8–67. Cl. 102.

Lister, Donald E., d.b.a. Ackles Orchard, Griggsville, Ill. 837,608, pub. 8–8–67. Cl. 46.

Litman, Marvin W.: *See*—
Lumar Industries, Inc.

Litton Precision Products, Inc., Minneapolis, Minn. 837,472, pub. 6–27–67. Multiple Class (Classes 21 and 26).

Lockwood Folding Box Corp., Norristown, Pa. 837,362, pub. 8–8–67. Cl. 2.

Logress Press: *See*—
Streed, John C.

Lounsbury, "Buck": *See*—
Lounsbury, Lavergne I.

Lounsbury, Lavergne I., d.b.a. "Buck" Lounsbury Associates, Chicago, Ill. 837,432, pub. 8–8–67. Cl. 13.

Louvier, Alexander S., d.b.a. S. Louvier & Co., Port Arthur, Tex. 720,883, canc. Cl. 18.

Louvier, S., & Co.: *See*—
Louvier, Alexander S.

Low Cost Markets: *See*—
Arden-Mayfair, Inc.

Lowe's, Inc., Cassopolis, Mich. 837,495, pub. 8–8–67. Cl. 22.

Lumar Industries, Inc., Kansas City, Mo., from Marvin W. Litman, d.b.a. Health House, Prairie Village, Kans. 837,576, pub. 8–8–67. Cl. 44.

MSL Industries, Inc., Chicago, Ill. 837,537, pub. 8–8–67. Cl. 34.

MTS Systems Corp., from Research, Inc., Minneapolis, Minn. 837,512, pub. 3–28–67. Cl. 23.

Magnetic Cards of California, Inc., Santa Monica, Calif. 720,919–23, canc. Cl. 22.

Malros, Butler, Ltd., Bristol, England. 837,894, pub. 8–8–67. Cl. 6.

Manischewitz, B., Co., The, Newark, N.J. 234,050, ren. 10–24–67. Cl. 46.

Mann Mfg., Inc., El Paso, Tex. 837,564, pub. 8–8–67. Cl. 39.

Mansour, Abram, Los Angeles, Calif. 837,694. Cl. 26.

March & Mendl, Inc., New York, N.Y. 721,061, canc. Cl. 39.

March & Mendl, Inc., New York, N.Y. 721,065, canc. Cl. 39.

Markel, L. Frank, & Sons, Norristown, Pa. 837,491, pub. 8–8–67. Cl. 21.

Marriott Hot-Shoppes, Inc., Washington, D.C. 837,670, pub. 8–8–67. Cl. 100.

Mattel, Inc., Hawthorne, Calif. 837,511, pub. 8–8–67. Cl. 22.

Mattox & Moore, Inc., Indianapolis, Ind. 837,433, pub. 8–8–67. Cl. 13.

Mauser, Kommandit-Gesellschaft, Koln-Ehrenfeld, Germany. 720,806, canc. Cl. 2.

Mauser, Kommandit-Gesellschaft, Koln-Ehrenfeld, Germany. 720,957, canc. Cl. 26.

Mauser, Kommandit-Gesellschaft, Koln-Ehrenfeld, Germany. 721,002, canc. Cl. 32.

Mauser, Kommandit-Gesellschaft, Koln-Ehrenfeld, Germany. 721,086, canc. Cl. 44.

Maytag Co., The, Newton, Iowa. 837,482, pub. 8–8–67. Cl. 21.

Maytag Co., The, Newton, Iowa. 837,485, pub. 8–8–67. Cl. 21.

McDonald, J. M., Co., Hastings, Nebr. 721,080, canc. Cl. 42.

McOnie, G. T., & Co., Sydney, New South Wales, Australia. 837,486, pub. 8–8–67. Cl. 21.

McQuay-Norris Mfg. Co., St. Louis, Mo. 431,368, ren. 10–24–67. Cl. 23.

McQuay-Norris Mfg. Co., St. Louis, Mo. 432,299, ren. 10–24–67. Cl. 35.

Mead Johnson & Co., Evansville, Ind. 837,463, pub. 8–8–67. Cl. 18.

Mead Johnson & Co., Evansville, Ind. 837,597–9, pub. 8–8–67. Cl. 46.

Mead Johnson & Co., Evansville, Ind. 837,627, pub. 8–8–67. Cl. 46.

Meat Marketing: *See*—
Cullen, Max O.
Medwire Corp., Mount Vernon, N.Y. 837,484, pub. 8–8–67. Cl. 21.
Merck & Co., Inc., Rahway, N.J. 720,846, canc. Cl. 6.
Mero, Peter G. S., % Electrowriter International Corp., Chicago, Ill. 748,370, canc. Cl. 21.
Metra Electronics Corp., Brooklyn, N.Y. 837,488, pub. 8–8–67. Cl. 21.
Metra Electronics Corp., Brooklyn, N.Y. 837,539, pub. 8–8–67. Cl. 36.
Metzger Brothers, Inc., d.b.a. Metzger's, Mobile, Ala. 837,559, pub. 8–8–67. Cl. 39.
Metzger's: *See*—
Metzger Brothers, Inc.
Mido Societe Anonyme, to Mido G. Schaeren & Co., S.A., Bienne, Switzerland. 434,277, ren. 10–24–67. Cl. 27.
Milchem, Inc., Houston, Tex. 837,390–3, pub. 8–8–67. Cl. 6.
Millar Elevator Industries, Inc., New York, N.Y. 720,945, canc. Cl. 23.
Miller, Harry, Corp., Philadelphia, Pa. 837,444, pub. 8–8–67. Cl. 15.
Milner Enterprises, Inc., Jackson, Miss. 721,042, canc. Cl. 38.
Min-Sun Trading Co.: *See*—
Chinese Maid, Inc.
Mitchell-Bradford Chemical Co., The, Milford, Conn. 837,383, pub. 8–8–67. Cl. 6.
Monroe Evening News Co., to Monroe Publishing Co., Monroe, Mich. 234,272, ren. 10–24–67. Cl. 38.
Monroe Publishing Co.: *See*—
Monroe Evening News Co.
Monsieur Lucien, Inc., New York, N.Y. 837,568, pub. 8–8–67. Cl. 40.
Morgan Construction Co., Worcester, Mass. 770,535, cor. Cl. 103.
Morganton Hosiery Mills, Inc., Morganton, N.C. 837,699–700. Cl. 39.
Morton International, Inc., Chicago, Ill. 837,378, pub. 8–8–67. Cl. 6.
Mountain States Wholesale Co., Boise, Idaho. 758,176, canc. Cl. 46.
Mule, A., & Sons: *See*—
Mule, Anthony.
Mule, Anthony, d.b.a. A. Mule & Sons, & A.M.S. Packing Co., Brooklyn, N.Y. 384,443, canc. Cl. 46.
Murata Mfg. Co., Ltd., Kyoto, Fu, Japan. 837,469, pub. 8–8–67. Cl. 21.
Naef, M., & Co., Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 236,145–6, ren. 10–24–67. Cl. 51.
Naef, M., & Co., Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 236,240, ren. 10–24–67. Cl. 51.
Napili Kai, Ltd., County of Maui, Hawaii. 837,704. Cl. 100.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 436,375, ren. 10–24–67. Cl. 21.
National Gypsum Co., Buffalo, N.Y. 236,472, ren. 10–24–67. Cl. 12.
National Gypsum Co., Buffalo, N.Y. 837,425, pub. 8–8–67. Cl. 12.
National Lock Co., Rockford, Ill. 837,437–8, pub. 8–8–67. Cl. 13.
National Tea Co., Chicago, Ill. 837,372, pub. 8–8–67. Cl. 4.
Navy Brand Mfg. Co.: *See*—
St. Louis Janitor Supply Co.
Nelson, James, Valley Mills, Nelson, England. 721,074, canc. Cl. 39.
Netherland Furniture Factories, Ltd., The, New York, N.Y. 720,987, canc. Cl. 32.
New York Merchandise Co., Inc., New York, N.Y. 837,631, pub. 8–8–67. Cl. 50.
Nicholas International Ltd., Toronto, Ontario, Canada. 720,874, canc. Cl. 18.
Norcross, Inc., New York, N.Y. 837,553, pub. 8–8–67. Cl. 38.
Norris Industries, Inc., Los Angeles, Calif. 837,436, pub. 8–8–67. Cl. 13.
Norton Co., Worcester, Mass. 720,823, canc. Cl. 4.
Norton Co., Watervliet, N.Y. 837,546, pub. 8–8–67. Cl. 38.
Nu-Brite Chemical Co., Inc., Taunton, Mass. 837,449, pub. 8–8–67. Cl. 16.
Oakland Engineering Co., Inc., Oakland, Calif. 443,786, canc. Cl. 22.
Obolensky, Ivan, Inc., New York, N.Y. 837,554, pub. 8–8–67. Cl. 38.
Ohio Pure Foods, Inc., Akron, Ohio. 837,586, pub. 8–8–67. Cl. 45.
O'Keefe Brewing Co., Toronto, Ontario, Canada. 721,114, canc. Cl. 48.
Old Empire, Inc., d.b.a. Taj Mahal, Newark, N.J. 721,131, canc. Cl. 51.
Olympia Growers, Inc., Los Angeles, Calif. 837,617, pub. 8–8–67. Cl. 46.
Omicron Delta Kappa Society, The, Cincinnati, Ohio. 436,012, ren. 10–24–67. Cl. 38.
Opportunities Industrialization Center, Inc., Philadelphia, Pa. 837,665, pub. 8–8–67. Cl. 100.
Osborn, C. J., Co., Linden, N.J. 837,384, pub. 8–8–67. Cl. 6.
Owatonna Tool Co., Owatonna, Minn. 837,522, pub. 8–8–67. Cl. 23.
Oxford Drapery Co., Boston, Mass. 833,745, cor. Cl. 42.
Oxford Paper Co., New York, N.Y. 837,698. Cl. 37.
P-G Products Mfg. Co., Inc., New York, N.Y. 720,861, canc. Cl. 13.
Pabst Corp., Pabst Brewing Co., Milwaukee, Wis. 228,411. Am. 7(d). Cl. 48.
Pacific Valves, Inc., Long Beach, Calif. 837,439, pub. 8–8–67. Cl. 13.
Paillard Inc., New York, N.Y. 720,960, canc. Cl. 26.
Palmetto Homes of Laurens, Inc., Laurens, S.C. 837,468, pub. 8–8–67. Cl. 19.
Panelart: *See*—
Panelart, Inc.
Panelart, Inc., from John H. Bermann, d.b.a. Panelart, New York, N.Y. 837,544, pub. 8–8–67. Cl. 38.
Park-Air Corp., Boston, Mass. 837,519, pub. 8–8–67. Cl. 23.
Park Chemical Co., Detroit, Mich. 483,883, ren. 10–24–67. Cl. 4.
Patchogue Plymouth Co., New York, N.Y. 837,570, pub. 8–8–67. Cl. 42.
Patterson Farms, Inc., Westley, Calif. 837,624, pub. 8–8–67. Cl. 46.
Pen Corp. of America, New York, N.Y. 721,020, canc. Cl. 37.
Penney, J. C., Co.: *See*—
Hall, Hartwell & Co., Inc.
Penniman Chemicals, Inc., Pleasantville, N.Y. 837,691. Cl. 16.
PepsiCo., Inc., New York, N.Y. 837,557, pub. 8–8–67. Cl. 38.
PepsiCo., Inc., New York, N.Y. 837,585, pub. 1–24–67. Cl. 45.
Petaluma Co-Operative Creamery, Petaluma, Calif. 721,104, canc. Cl. 46.
Pfizer, Chas., & Co., Inc., New York, N.Y. 837,404, pub. 8–8–67. Cl. 6.
Pharmaceutical Specialties, Inc., San Francisco, Calif. 837,652, pub. 8–8–67. Cl. 51.
Philadelphia Chewing Gum Corp., Havertown, Pa. 837,621, pub. 8–8–67. Cl. 46.
Phillips-Brooks Atlanta Co.: *See*—
Phillips & Brooks, Inc.
Phillips & Brooks, Inc., from Phillips-Brooks Atlanta Co., Atlanta, Ga. 720,986, canc. Cl. 32.
Pierre, Daniel F., Beverly, Mass. 721,158, canc. Cl. 38.
Pittsburgh Activated Carbon Co., Pittsburgh, Pa. 837,396, pub. 8–8–67. Cl. 6.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 837,374, pub. 8–8–67. Cl. 5.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 837,379, pub. 8–8–67. Cl. 6.
Plaza Playthings, Inc., Trenton, N.J. 837,499, pub. 8–8–67. Cl. 22.
Plee-Zing, Inc., d.b.a. Household Products Co., Evanston, Ill. 828,862, cor. Cl. 46.
Polaris Engineering Corp., Chicago, Ill. 720,909, canc. Cl. 21.
Polychrome Corp., Yonkers, N.Y. 720,830, canc. Cl. 6.
Porcelana Americana S.A., Buenos Aires, Argentina. 837,696. Cl. 30.
Portable Structures, Inc., Minneapolis, Minn. 737,743, canc. Cl. 13.
Porta-Lab, Inc., East Syracuse, N.Y. 837,526, pub. 5–23–67. Cl. 26.
Porter Chemical Co., The, Hagerstown, Md. 720,974, canc. Cl. 26.
Proctor & Associates Co., Redmond, Wash. 837,473, pub. 8–8–67. Cl. 21.
Procter & Gambel Co., The, Cincinnati, Ohio. 837,654, pub. 8–8–67. Cl. 51.
Prosser Packers, Inc., Prosser, Wash. 837,590, pub. 8–8–67. Cl. 46.
Protection Equipment Co., Inc., Hopkins, Mass. 720,950, canc. Cl. 25.
Puchkoff, P., & Sons, Inc., Brooklyn, N.Y. 837,688. Cl. 2.
Quaker Oats Co., The, Chicago, Ill. 833,508, cor. Cl. 46.
Qualitex, Inc., New York, N.Y. 721,160, canc. Cl. 42.
Rabin-Winters Corp., d.b.a. Bruco, El Segundo, Calif. 822,278, canc. Cl. 18.
Radio Corp. of America, New York, N.Y. 433,908, ren. 10–24–67. Cl. 36.
Raetsch, E. R., d.b.a. E. R. Raetsch and Associates, Chicago, Ill. 430,150, ren. 10–24–67. Cl. 23.
Raetsch, E. R., and Associates: *See*—
Raetsch, E. R.
Ralston Purina Co., St. Louis, Mo. 232,932, ren. 10–24–67. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 837,456, pub. 8–8–67. Cl. 18.
Ramco Publishing Co.: *See*—
Review Publishing, Inc.
Ranco Industrial Products Corp., Cleveland, Ohio. 837,421, pub. 8–8–67. Cl. 12.
Ranson, Charles W., Los Angeles, Calif. 837,431, pub. 8–8–67. Cl. 13.
Raygram Corp., Mount Vernon, N.Y. 720,972, canc. Cl. 26.
Red Mills Paint & Chemical Co., Inc., Jersey City, N.J. 837,446, pub. 8–8–67. Cl. 16.
Red Star Milling Co., The, Wichita, Kans., to General Mills, Inc., Minneapolis, Minn. 232,337, ren. 10–24–67. Cl. 46.
Regency Craft, Inc., New York, N.Y. 721,016, canc. Cl. 37.
Remington Arms Co., Inc., Bridgeport, Conn. 837,420, pub. 8–8–67. Cl. 12.
Rescon Electronics Corp., Waltham, Mass. 721,137, canc. Cl. 100.
Research, Inc.: *See*—
MTS Systems Corp.
Research Reports, Inc., Indianapolis, Ind. 721,159, canc. Cl. 38.
Review Publishing, Inc., d.b.a. Ramco Publishing Co., St. Paul, Minn. 837,555, pub. 8–8–67. Cl. 38.
Revlon, Inc., New York, N.Y. 721,126, canc. Cl. 51.
Ricci, Nina, S.A.R.L., Paris, France. 721,059, canc. Cl. 39.
Rich Products Corp., from Rich Products Corp., Buffalo, N.Y. 837,592, pub. 8–8–67. Cl. 46.
Rit Products Corp., Chicago, Ill., to Corn Products Co., New York, N.Y. 432,809, ren. 10–24–67. Cl. 52.
Rolling Mill Machinery & Equipment Assn., Pittsburgh, Pa. 837,686, pub. 8–8–67. Cl. 200.

Roncraft, Inc., Hialeah, Fla. 837,635, pub. 8–8–67. Cl. 50.
Rorer, William H., Inc., Fort Washington, Pa. 837,451, pub. 9–6–66. Cl. 18.
Rose Tool & Plastics, Inc., d.b.a. Arrowmate Products Co., Milwaukee, Wis. 837,496, pub. 12–27–66. Cl. 22.
Rosenquist, Orrin K., d.b.a. United Industries, Salt Lake City, Utah. 837,587, pub. 4–27–65. Cl. 46.
Rothmund, Eugene, Inc., d.b.a. The House of Rothmund, Sommerville, Mass. 837,613, pub. 8–8–67. Cl. 46.
Rubberset Co., East Newark, N.J. 837,531, pub. 8–8–67. Cl. 29.
Safety Sake Enterprises, Inc., Washington, D.C. 721,139, canc. Cl. 101.
St. Louis Janitor Supply Co., d.b.a. Navy Brand Mfg. Co., St. Louis, Mo. 837,388, pub. 8–8–67. Cl. 6.
Salinas Valley Vegetable Exchange, Salinas, Calif. 436,399, ren. 10–24–67. Cl. 46.
Sansui Electric Co., Ltd., Tokyo, Japan. 837,474, pub. 8–8–67. Cl. 21.
Sarong, Inc., Dover, Del. 837,648, pub. 8–8–67. Cl. 51.
Satellite Finance Co., Chicago, Ill. 837,676, pub. 8–8–67. Cl. 102.
Schaeren, Mido G., & Co. S.A.: *See*—
Societe Anonyme Mido.
Schwinn Bicycle Co.: *See*—
Arnold, Schwinn & Co.
Scottsdale Antique Galleries, Ltd., d.b.a. The Carriage Trade, Scottsdale, Ariz. 837,675, pub. 8–8–67. Cl. 101.
Seaboard Appliances, Inc., Valley Stream, N.Y. 837,428, pub. 8–8–67. Cl. 12.
Sears, Roebuck and Co., Chicago, Ill. 389,519, canc. Cl. 32.
Seufert Brothers Co., to Francis A. Seufert & Co., The Dalles, Oreg. 436 210, ren. 10–24–67. Cl. 46.
Seufert, Francis A., & Co.: *See*—
Seufert Brothers Co.
Shaffer, Ann, Los Angeles, Calif. 837,638, pub. 8–8–67. Cl. 51.
Siegler Corp., The, Paramus, N.J. 720,917, canc. Cl. 21.
Silver Cross Oxygen Institute: *See*—
Berndt, Alexander J.
Simonis Co., Chicago, Ill. 733,608, canc. Cl. 4.
Simonis Co., Chicago, Ill. 837,534, pub. 8–8–67. Cl. 29.
Sklenena Bisuterie. Narodni podnik, Jablonec Nad Nisou, Czecholovakia. 721,117, canc. Cl. 50.
Slanco, Michael, d.b.a. Glamour Wigs of Niles, Niles, Ohio. 837,566, pub. 8–8–67. Cl. 40.
Slick Industrial Co., Chicago Heights, Ill. 837,434, pub. 8–8–67. Cl. 13.
Slocum Mfg. Co., Inc., Speed King Mfg. Co., Inc., Ensign, Kans. 742,810. Am. 7(d). Cl. 23.
Smith, Joseph M., Morristown, Tenn. 837,674, pub. 8–8–67. Cl. 101.
Smith, Miller & Patch, Inc., New York, N.Y. 837,457, pub. 8–8–67. Cl. 18.
Snack Master Foods, Inc., Pittsburgh, Pa. 837,593, pub. 8–8–67. Cl. 46.
Societa per Azioni Lucchese Olii E Vini, d.b.a. Filippo Berio & C., Lucca, Italy. 837,604, pub. 8–8–67. Cl. 46.
Societe Anonyme Mido, assor. to Mido Watch Co. of America, Inc., New York, N.Y., to Mido G. Schaeren & Co., S.A., Bienne, Switzerland. 432,567, ren. 10–24–67. Cl. 27.
Societe d'Etudes et de Publications Economiques, Paris, 837,558, pub. 8–8–67. Cl. 38.
Solar Nitrogen Chemicals, Inc., d.b.a. Hoosier Soil Service, Inc., Lima, Ohio. 837,410–15, pub. 8–8–67. Cl. 10.
Soroban Engineering, Inc., Palm Bay, Fla. 837,513, pub. 8–8–67. Multiple Class (Classes 23 and 26).
Southwest Potash Corp.: *See*—
American Metal Climax, Inc.
Souza Bros. Packing Co., Santa Maria, Calif. 837,629, pub. 8–8–67. Cl. 46.
Spartans Industries, Inc., New York, N.Y. 837,565, pub. 8–8–67. Cl. 39.
Spiegel Industries, Teaneck, N.J. 837,697. Cl. 32.
Spinella, S. Charles, Jackson Heights, N.Y. 837,666, pub. 8–8–67. Cl. 100.
Sport Specialty Shoemakers, Inc., St. Louis, Mo. 721,073, canc. Cl. 39.
Sportscore Co., Glendale, Calif. 721,024, canc. Cl. 37.
Sprinter-Pack Aktiebolag, Halmstad, Sweden. 837,523, pub. 8–8–67. Cl. 23.
Squibb, E. R., & Sons, Inc., New York, N.Y. 837,620, pub. 8–8–67. Cl. 46.
Staff Supermarket Associates, Inc., Jericho, N.Y. 837,614, pub. 8–8–67. Cl. 46.
Staflex International, Ltd., London, England. 837,572, pub. 8–8–67. Cl. 42.
Staley, A. E., Mfg. Co., Decatur, Ill. 837,376, pub. 8–8–67. Cl. 6.
Standard Oil Co. of Calif., San Francisco, Calif. 434,976. Am. 7(d). Cl. 6.
Standard Oil Co., The, Cleveland, Ohio. 837,536, pub. 8–8–67. Cl. 32.
Standard Scientific Supply Corp., New York, N.Y. 720,976, canc. Cl. 26.
Standardized Sanitation Systems, Inc., San Francisco, Calif. 820,029, cor. Cl. 51.
Stan-Tite, Inc., Youngstown, Ohio. 837,633, pub. 8–8–67. Cl. 50.
Stein Hall & Co., Inc., New York, N.Y. 837,389, pub. 8–8–67. Cl. 6.
Stetson, John B., Co., Philadelphia, Pa. 389,277, canc. Cl. 39.
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Huffmann Co.
Stevens, J. P., & Co., New York, N.Y. 721,083, canc. Cl. 42.
Steward, William A., d.b.a. Wm. A. Steward Co., Somerset, Calif. 837,630, pub. 8–8–67. Cl. 50.
Steward, Wm. A., Co.: *See*—
Steward, William A.
Streed, John C., d.b.a. Logress Press, Excelsior, Minn. 837,556, pub. 8–8–67. Cl. 38.
Superior Tea & Coffee Co., Chicago, Ill. 837,610, pub. 8–8–67. Cl. 46.
TRW, Inc., Cleveland, Ohio. 837,571, pub. 8–8–67. Cl. 42.
TRW Semiconductors, Inc., Lawndale, Calif. 837,475, pub. 8–8–67. Cl. 21.
Taisei Kogaku Kogyo Kabushiki Kaisha, d.b.a. Taisei Optical Industry Co., Ltd., Saitama-ken, Japan. 720,954, canc. Cl. 26.
Taisei Optical Industry Co., Ltd.: *See*—
Taisei Kogaku Kogyo Kabushiki Kaisha.
Taisho Pharmaceutical Co., Ltd., Tokyo, Japan. 837,455, pub. 8–8–67. Cl. 18.
Taj Mahal: *See*—
Old Empire, Inc.
Tar Gard Co., San Francisco, Calif. 837,407, pub. 8–8–67. Cl. 8.
Tecton, Inc., Houston, Tex. 721,005, canc. Cl. 32.
Tegre Sales Co., Inc., New York, N.Y. 721,017, canc. Cl. 37.
Telmark, Inc., Lincolnwood, Ill. 837,579, pub. 8–8–67. Cl. 44.
Tenneco Chemicals, Inc.: *See*—
Heyden Chemicals Corp.
Texas Harvest Hat Co., Laredo, Tex. 721,066–72, canc. Cl. 39.
Topaz Hosiery Mills, Inc.: *See*—
Given, John M., Co., The.
Totem International Shipping Corp., Nassau, Bahamas. 721,146, canc. Cl. 105.
Tradewell Stores, Inc., Kent, Wash. 837,596, pub. 8–8–67. Cl. 46.
Trans World Research, Los Angeles, Calif. 837,405, pub. 8–8–67. Cl. 6.
Transcontinental Gas Pipe Line Corp., Houston, Tex. 837,683, pub. 8–8–67. Cl. 105.
True Temper Corp., Cleveland, Ohio. 837,501, pub. 8–8–67. Cl. 22.
Turtle Wax, Inc., Chicago, Ill. 720,821, canc. Cl. 4.
Ulmann, Bernhard, Co., Inc., to Indian Head Inc., New York, N.Y. 234,879, ren. 10–24–67. Cl. 40.
Union Carbide Corp.: *See*—
National Carbon Co., Inc.
Union Carbide Corp., New York, N.Y. 720,868, canc. Cl. 14.
Union Metal Mfg. Co., The, Canton, Ohio. 436,339, ren. 10–24–67. Cl. 23.
Union Oil Co. of Calif., Los Angeles, Calif. 837,387, pub. 8–8–67. Cl. 6.
United-Carr Fastener Corp., Cambridge, to United-Carr Inc., Boston, Mass. 434,811–12, ren. 10–24–67. Cl. 21.
United-Carr, Inc.: *See*—
United-Carr Fastener Corp.
United Fruit Co., Boston, Mass. 837,584, pub. 8–8–67. Multiple Class (Classes 45 and 46).
United Industries: *See*—
Rosenquist, Orrin K.
United States Refining Co., The, Cleveland, Ohio. 837,692. Cl. 16.
United States Rubber Co., New York, N.Y. 837,381, pub. 8–8–67. Cl. 6.
United States Rubber Co., New York, N.Y. 837,563, pub. 8–8–67. Cl. 39.
Utica Mutual Insurance Co., Utica, N.Y. 837,679, pub. 8–8–67. Cl. 102.
Vacco Industries, South El Monte, Calif. 837,478, pub. 8–8–67. Cl. 21.
Van Melle N.V., Rotterdam, Netherlands. 837,605, pub. 8–8–67. Cl. 46.
Van Son Holland Ink Corp. of America, Mineola, N.Y. 837,689. Cl. 11.
Vanity Fair Mills, Inc.: *See*—
Vanity Fair Silk Mills, Inc.
Vanity Fair Silk Mills, to Vanity Fair Mills, Inc., Reading, Pa. 239,000, ren. 10–24–67. Cl. 39.
Vic-Kum Chemicals, Inc., Racine, Wis. 837,380, pub. 8–8–67. Multiple Class (Classes 6 and 52).
Vidal, A., S.A.S., Porto Marghera, Venice, Italy. 837,636, pub. 8–8–67. Cl. 51.
Vi-Jon Laboratories, Inc., d.b.a. Huntley, St. Louis, Mo. 837,645, pub. 8–8–67. Cl. 51.
Vishay Instruments, Inc., Malvern, Pa. 837,476, pub. 8–8–67. Cl. 21.
Volger, Donald N., Los Angeles, Calif. 837,541, pub. 8–8–67. Cl. 37.
Volume, Inc., Brecksville, Ohio. 837,551, pub. 8–8–67. Cl. 38.
Walker, Edward C., d.b.a. Kosak, to Kosak Auto Drywash, Inc., Batavia, N.Y. 234,257, ren. 10–24–67. Cl. 52.
Ware House of Music, Inc., Seattle, Wash. 721,148, canc. Cl. 107.
Weatherhead Co., The, Cleveland, Ohio. 837,465, pub. 8–8–67. Multiple Class (Classes 19, 21, and 31).
Webb, C. J., Inc., Dresher, Pa. 837,398–9, pub. 8–8–67. Multiple Class (Classes 6 and 15).
Weekender Corp., The, Virginia Beach, Va. 837,669, pub. 8–8–67. Cl. 100.
Weksler, Dorita, d.b.a. D'Orita Cosmetics, Los Angeles, Calif. 837,651, pub. 8–8–67. Cl. 51.
West Virginia Pulp & Paper Co., New York, N.Y. 837,385–6, pub. 8–8–67. Cl. 6.
Westbrook Elevator Mfg. Co., Danville, Va. 137,416, canc. Cl. 23.
Western Textile Co., Inc., Chicago, Ill. 837,574, pub. 8–8–67. Cl. 42.
Westwood Dental Mfg., Inc., Los Angeles, Calif. 721,087, canc. Cl. 44.

Wham-O Mfg. Co., San Gabriel, Calif. 837,494, pub. 8–8–67. Cl. 22.
Willett, Tex, Co., Inc., Waterloo, Iowa. 837,466, pub. 8–8–67. Cl. 19.
Wisconsin Tales & Trails, Inc., Madison, Wis. 837,547, pub. 8–8–67. Cl. 38.
Wood Conversion Co., St. Paul, Minn. 837,573, pub. 8–8–67. Cl. 42.
Wood Treating Chemicals Co., St. Louis, Mo. 837,375, pub. 8–8–67. Cl. 6.
Woodland Oil & Gas Co., Inc., New York, N.Y. 720,906, canc. Cl. 21.
World Engines, Inc., Cincinnati, Ohio. 837,497, pub. 8–8–67. Cl. 22.
Wyandotte Chemicals Corp., Wyandotte, Mich. 837,418, pub. 8–8–67. Cl. 10.
Yankee Colour Corp., Framingham, Mass. 721,046, canc. Cl. 38.
Yardley & Co., Ltd., London, England. 837,641, pub. 8–8–67. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 837,646, pub. 8–8–67. Cl. 51.
York Feather & Down Corp., Brooklyn, N.Y. 837,360, pub. 8–8–67. Cl. 1.
Yum-Burger Corp. of America, The: *See*—Council Mfg. Corp.
Zahn, Joseph B., & Sons, Inc., New York, N.Y. 837,510, pub. 8–8–67. Cl. 22.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
October 31, 1967 Volume 843 Number 5

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1967

Examiner affirmed	186
Examiner affirmed in part	18
Examiner reversed	47
Total	251

Veterans Day Holiday

Since Veterans Day falls this year on a Saturday, the preceding day, Friday, November 10, is considered to be a holiday within the District of Columbia and the Patent Office will be closed for business on that day. Accordingly, any action due on November 10, or November 11, 1967, is to be considered timely if taken on November 13, 1967.

By direction of the Acting Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Oct. 11, 1967.

Notice of Tentative Recordation of a Trade Name

[T.D. 67–234]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 2, 1967

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

"BEAUNIT CORPORATION," is a trade name used by Beaunit Corporation (also doing business as Beaunit Fibers and Beaunit Textiles), a corporation organized under the laws of the State of New York, located at 261 Madison Avenue, New York, New York, 10016. The trade name is used in connection with man-made fibers, knitted and woven fabrics and garments, manufactured in the United States.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after October 31, 1967, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1967, of any opposition proceedings.

Until 45 days after October 31, 1967, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

LESTER D. JOHNSON,
Commissioner of Customs.

Disclaimers

Des. No. 203,593.—*Paul H. Schulte*, Rio Piedras, Puerto Rico. ERASE HEAD FOR A MAGNETIC TAPE RECORDER OR SIMILAR ARTICLE. Patent dated Feb. 1, 1966. Disclaimer filed Aug. 21, 1967, by the inventor.

Hereby enters this disclaimer to the claim of said patent.

Des. No. 203,594.—*Paul H. Schulte*, Rio Piedras, Puerto Rico. COMBINED RECORD AND PLAYBACK HEAD FOR A MAGNETIC TAPE RECORDER OR SIMILAR ARTICLE. Patent dated Feb. 1, 1966. Disclaimer filed Aug. 21, 1967, by the inventor.

Hereby enters this disclaimer to the claim of said patent.

2,892,466.—*Robert E. Stilwell*, Santa Clara, and *James K. Campbell*, San Jose, Calif. PORTABLE IRRIGATION SYSTEM. Patent dated June 30, 1959. Disclaimer filed July 12, 1967, by the assignee, *FMC Corporation*.

Hereby enters this disclaimer to claims 1, 2, 3, 4 and 6 of said patent.

2,899,385.—*Leo F. Connell*, Wynnewood, *Harold F. Elkin*, Bala Cynwyd, and *William E. Soden*, Swarthmore, Pa. PROCESS FOR THE TREATMENT OF CONTAMINATED WASTE WATERS. Patent dated Aug. 11, 1959. Disclaimer filed Aug. 7, 1967, by the assignee, *Sun Oil Company*.

Hereby enters this disclaimer to claims 1, 2 and 3 of said patent.

2,960,328.—*Malcolm C. Tate*, Stamford, Conn. WEIGHING APPARATUS AND SYSTEMS. Patent dated Nov. 15, 1960. Disclaimer filed Oct. 4, 1967, by the assignee, *The A. H. Emery Company*.

Hereby enters this disclaimer to claims 1 through 12 of said patent.

New Applications Received During September 1967

Patents	6995
Designs	347
Plant Patents	17
Reissues	19
Total	7378

Issue—October 31, 1967

Patents	1309	No. 3,349,409 to No. 3,350,717, incl.
Designs	93	No. 209,036 to No. 209,128, incl.
Total	1402	

3,082,992.—*Edgar Herbert Vickery*, Oakland, Calif. SEALED BALL VALVE. Patent dated Mar. 26, 1963. Disclaimer filed Oct. 3, 1967, by the assignee, *Fisher Governor Company*.

Hereby enters this disclaimer to claims 1 to 6 inclusive of said patent.

3,108,656.—*Lester Asplundh*, Bryn Athyn, Pa. LIFTING APPARATUS FOR ELECTRIC-LINE CONSTRUCTION OR MAINTENANCE WORKERS. Patent dated Oct. 29, 1963. Disclaimer filed July 28, 1967, by the assignee, *Asplundh Tree Expert Co.*

Hereby enters this disclaimer to claims 3, 5 and 14 of said patent.

3,116,665.—*Sam Reisner*, Santa Monica, Calif. KEY DUPLICATING MACHINE. Patent dated Jan. 7, 1964. Disclaimer filed July 5, 1967, by the assignee, *Osco Corporation*.

Hereby enters this disclaimer to claims 5, 6 and 7 of said patent.

3,119,712.—*Edward J. Esswein, Jr.*, Pittsburgh, Pa. SANITARY CAN COATING COMPOSITION COMPRISING A BLEND OF VINYL CHLORIDE COPOLYMERS AND ARTICLE COATED THEREWITH. Patent dated Jan. 28, 1964. Disclaimer filed Aug. 7, 1967, by the assignee, *Mobil Oil Corporation*.

Hereby enters this disclaimer to claims 1 to 5 and 8 to 13 of said patent.

3,214,753.—*Robert J. Dodge*, Houston, Tex. SOUND SIGNAL SYSTEM. Patent dated Oct. 26, 1965. Disclaimer filed Aug. 2, 1967, by the assignee, *Automatic Power, Inc.*

Hereby enters this disclaimer to claims 1, 3, 4 and 5 of said patent.

3,271,418.—*Charles J. Plank*, Woodbury, and *Edward J. Rosinski*, Deptford, N.J. CATALYTIC CONVERSION OF HYDROCARBONS WITH A CRYSTALLINE ALUMINOSILICATE IN A SILICA-ALUMINA MATRIX. Patent dated Sept. 6, 1966. Disclaimer filed July 27, 1967, by the assignee, *Mobil Oil Corporation*.

Hereby disclaims the terminal portion of the term of the patent subsequent to July 7, 1981.

3,295,645.—*William H. St. Thomas*, Gloversville, N.Y. CARRIER. Patent dated Jan. 3, 1967. Disclaimer filed Aug. 23, 1967, by the inventor and the assignee, *St. Thomas Inc.*

Hereby enter this disclaimer to claim 2 of said patent.

3,302,615.—*Helmut G. Tietje*, Westwood, N.J. CONTROLLED ENVIRONMENTAL SYSTEM FOR HANDLING AND REARING LABORATORY AND RESEARCH ANIMALS. Patent dated Feb. 7, 1967. Disclaimer filed July 21, 1967, by the assignee, *Becton, Dickinson and Company*.

Hereby enters this disclaimer to claims 5 and 8 of said patent.

3,320,742.—*Robert C. Truax*, Shingle Springs, Calif. PRESSURIZATION SYSTEM AND METHOD FOR EFFECTING PROPELLANT FLOW IN A LIQUID PROPELLANT ROCKET. Patent dated May 23, 1967. Disclaimer filed Aug. 8, 1967, by the assignee, *Aerojet-General Corporation*.

Hereby enters this disclaimer to claims 4, 5, 6 and 7 of said patent.

3,328,366.—*Kohei Nakaguchi, Masaaki Hirooka*, and *Toshimichi Fujita*, Niihama-shi, Japan. POLYMERIZATION OF ETHYLENE AND AN ALPHA-OLEFIN IN THE PRESENCE OF AN ALKYL ALUMINUM HALIDE, A VANADIUM COMPOUND AND AN ORGANIC COMPOUND CONTAINING SULFUR, OXYGEN AND A HALOGEN. Patent dated June 27, 1967. Disclaimer filed May 2, 1967, by the assignee, *Sumitomo Chemical Company, Limited*.

Hereby disclaims the terminal portion of the term of said patent subsequent to May 2, 1984.

Adjudicated Patents

(Ct. Cl.) Farrell Patent No. 2,707,928 (114—203), for SHIP'S HATCH AND COVER. Claim 2 *Held* not infringed. *Farrell Marine Devices, Inc.* v. *United States*, 377 F.2d 560; 152 USPQ 328.

(C.A. Ind.) Pambello Patent No. 3,054,637 (297—4), for PORTABLE CONVERTIBLE CHAIR CRADLE FOR CHILD. Claims 6 to 8 *Held* invalid. *Pambello* v. *Hamilton Cosco, Inc.*, 377 F.2d 445; 153 USPQ 658.

(C.A. Conn.) Monahan Patent No. 3,160,361 (242—55.2), for UNITARY PAPER TOWELLING RACK, *Held* invalid. *Monoplastics, Inc.* v. *Caldor, Inc.*, 378 F.2d 20; 153 USPQ 826.

(D.C. Mich.) Holloway Patent No. 2,460,636 (60—97), for HOLE-MOUNTED RUBBER LIGHT SOCKETS FOR REFRIGERATORS, *Held* invalid. *Holwin Corp.* v. *Pent Elec. Co.*, 269 F. Supp. 91; — USPQ—.

(D.C. Del.) Young Patent No. 2,802,448 (120—45.40), for FOUNTAIN CONSTRUCTION AND INK CARTRIDGE THEREFOR, *Held* invalid. *Waterman-Bic Pen Corp.* v. *W. A. Sheaffer Pen Co., Division of Textron Inc.* 267 F. Supp. 849; 153 USPQ 499.

(D.C. Calif.) Anderson Patent No. 2,895,725 (263—33), for ROTARY KILN CONSTRUCTION. Claims 3, 4, 7 and 8 *Held* invalid. *Monolith Portland Midwest Co.* v. *Kaiser Aluminum & Chemical Corp.*, 267 F. Supp. 726; 152 USPQ 380.

(D.C.N.Y.) Tate Patent No. 2,960,328 (177—254), for WEIGHING APPARATUS AND SYSTEMS, *Held* invalid. *A. H. Emery Co.* v. *Marcan Products Corp.*, 268 F. Supp. 289; 153 USPQ 337.

(D.C. Ill.) Wright Patent No. 3,089,923 (200—5), for SECTIONAL DIGITAL SWITCH. Claims 1 to 6 *Held* invalid and not infringed. *Endevco Corp.* v. *Chicago Dynamic Industries, Inc.*, 268 F. Supp. 640; 153 USPQ 331.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Requests for Identifiable Records

The following new rule, in a new § 1.15, is adopted to take effect upon publication in the Federal Register, in order to implement further Section 552, Title 5, United States Code, as amended by Public Law 90–23, June 5, 1967 (81 Stat. 54) and Department Order 64, Revised, 32 F.R. 9734, July 4, 1967. Promulgation of the rule being required by the identified statute and order, notice and public hearings are deemed unnecessary. The remaining requirements for rules of the said statute and order are deemed to be complied with by rules already extant in this chapter, with particular reference to Sections 1.11, 1.12, 1.13, 1.14, and 2.27.

The purpose of the rule is to describe the procedure to be followed and the fees to be paid with respect to making identifiable Patent Office records available to any person requesting them, as provided in 5 U.S.C. 552(a)(3). The rule is not intended to apply to types of Patent Office records already provided as part of the regular informational activity of the Patent Office.

The full text of the new rule is as follows:

§ 1.15 *Requests for identifiable records.*

(a) Requests for records not disclosed to the public as part of the regular informational activity of the Patent Office and which are not otherwise dealt with in these rules may be made by completing Form CD–244, "Application to Inspect Department Records," and submitting this form, in person or by mail, to the Commissioner of Patents, Department of Commerce Building, Washington, D.C., 20231. A non-refundable application fee of $2.00 must accompany each application. Copies of Form CD–244 are available in the Central Reference and Records Inspection Facility, Room 2122, Department of Commerce Building, Washington, D.C., 20230, the search room of the Patent Reference Branch of the Patent Office, the search room of the Trademark Examining Operation and in many public information offices and field offices of the Department of Commerce. If the requested record is identifiable, the request will be reviewed by the appropriate official authorized to make an initial determination of the availability of the record. If it is determined that the material is not to be made available to the requesting person, said person shall be notified in writing of that fact and the reasons why the record will not be disclosed. If the record is to be made available, inspection will be permitted in the appropriate Patent Office search room. Fees for copies of records and for searches and related services are payable in accordance with the schedule of fees and charges established in Section 4.8 of Title 15, Code of Federal Regulations.

(b) Any person whose application to inspect a record has been refused may request a reconsideration of the initial denial by completing and submitting the appropriate section of the Form CD–244. The request for reconsideration should be made within 30 days of the date of the original denial. In submitting such request the party should include any written argument he desires to support his belief that the record requested should be made available. No personal appearance, oral argument, or hearing shall be permitted. The decision upon such request shall be made by the Commissioner of Patents, and shall be based upon the original request, the denial, and any written argument submitted by the person seeking access to the record. The decision upon review shall be promptly made in writing and communicated to the person seeking access. If the decision is wholly or partly in favor of availability, the requested record to such extent shall be made available for inspection as described in subsection (a) of this rule. To the extent that the decision is adverse to the request, the reasons for the denial shall be stated. A decision upon review completed as provided herein shall constitute the final decision and action of the Patent Office as to the availability of a requested record, except as may be required by court proceedings initiated pursuant to 5 U.S.C. 552(a)(3). Reconsiderations resulting in final decisions as prescribed herein shall be indexed and made available in the search room of the Patent Reference Branch.

(c) Procedures applicable in the event of a subpoena, order, or other compulsory process or demand of a court or other authority shall be those set forth in Section 7 of Department Order 64 (32 F.R. 9734, July 4, 1967).

(81 Stat. 54, 5 U.S.C. 552; Sec. I, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: Sept. 22, 1967.

JOHN F. KINCAID,
Acting Assistant Secretary for Science and Technology

Published in 32 F.R. 13812, Oct. 4, 1967

Appendix A

PUBLIC INFORMATION APPENDIX—PATENT OFFICE

A. *Purpose.*

The purpose of this Appendix is to describe, in general, the public information services of the Patent Office, to describe the places at which and the methods whereby the public may obtain information, make submissions or requests or obtain decisions, to inform the public as to the sources or availability of rules, regulations, procedures, forms, instructions, or other requirements of the Patent Office, which affect the public, and otherwise to comply with the requirements of Section 552 of Title 5, U.S.C. as amended by Public Law 90–23, June 5, 1967 (81 Stat. 54).

B. *Public Information Services.*

(1) The Patent Office provides the public with a wide range of information relating to the organization, structure, description, and functions of the Patent Office. This includes material published regularly on a weekly basis, such as the OFFICIAL GAZETTE, and copies of the patents and trademark registrations identified therein. General information concerning the procedures for obtaining patents or registering trademarks, and for utilizing the search rooms and Scientific Library of the Patent Office is readily available.

(2) Publications of the Patent Office are listed in the catalog of publications sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. They are also listed in the Introduction of the "Rules of Practice of the United States Patent Office in Patent Cases," and in the pamphlet "General Information Concerning Patents." The Patent Office also publishes a circular "Patent Office Publications," which lists the available publications, and provides information as to price and source. These publications include:

a. Annual Index of Patents.
b. Decisions of the Commissioner of Patents.
c. Manual of Patent Classification, and Classification bulletins.
d. Patent Laws (pamphlet edition).
e. Directory of Registered Patent Attorneys and Agents Arranged by States and Cities.
f. Guide for Patent Draftsmen.

(3) The Patent Office has an Office of Information Services where the public may obtain a list of current publications and general information concerning the functions and services of the Patent Office. Information relating to patents may be obtained from the Patent Reference Branch of the Office of Patent Services, and information relating to trademarks may be obtained from the search room of the Trademark Examining Operation.

C. *Guide to Published Rules and Regulations.*

(1) Patent Office rules of procedure, descriptions of forms, substantive rules of general applicability, and statements of general policy are published in the Federal Register. Rules are currently codified in Title 37, Chapter I, Code of Federal Regulations, and are also available in pamphlet form entitled "Rules of Practice of the United States Patent Office in Patent Cases" and "Trademark Rules of Practice of the Patent Office with Forms and Statutes," each of which is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

(2) The Patent Office maintains also an administrative staff manual, entitled "Manual of Patent Examining Procedure," and an index thereto, for the general guidance of its staff and the public. The manual, with its index, as amended, changed, and supplemented from time to time, is available in the Patent Office (the Public Search Room and Library) for inspection and copying, and copies are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

D. *Submission of Requests and Applications.*

The established places at which and the methods whereby the public may make requests concerning Patent Office functions, operations, and procedures are listed in Sections B and C of this Appendix.

E. *(Reserved).*

F. *Inspection and Copying of Opinions and Orders.*

(1) Final opinions and orders in the adjudication of patent cases, statements of policy and interpretations, and other material required to be made available for public inspection and copying under 5 U.S.C. 552(a)(2) are made available for such purposes in the search room of the Patent Reference Branch in the Main Commerce Building, 14th Street between Pennsylvania Avenue and Constitution Avenue, N.W., Washington, D.C., 20231, readily accessible from the entrance on E Street near 14th Street. Instructions concerning the use of this facility are contained in the introductory portion to the pamphlet edition of the Rules of Practice in Patent Cases, and the pamphlet "General Information Concerning Patents."

(2) Final opinions and orders in the adjudication of trademark cases, statements of policy and interpretations, and other material required to be made available for public inspection and copying under 5 U.S.C. 552(a)(2) are made available for such purposes in the search room of the Trademark Examining Operation in the Longfellow Building, 1741 Rhode Island Avenue, N.W., Washington, D.C., 20231, from 8:00 a.m. to 6:00 p.m. on workdays only. Instructions concerning trademark operations are contained in the pamphlet "General Information Concerning Trademarks."

G. *Inspection of Bureau Records.*

(1) Applications for patents are required by law to be kept in confidence by the Patent Office and no information concern-

ing such applications may be divulged by the Patent Office without authority of the applicant or owner, unless necessary to carry out the provisions of any Act of Congress or in such special circumstances as may be determined by the Commissioner (35 U.S.C. 122).

(2) Special situations are recognized by the regulations (37 C.F.R. 1.11 and 1.14; Manual of Patent Examining Procedure, section 103), which prescribe the procedures to be followed in the opening of certain patent applications to inspection.

(3) Assignment records, digests, and indexes (37 C.F.R. 1.12) relating to patent applications are not available to the public.

(4) Pending trademark applications are not open to general inspection (37 C.F.R. 2.27).

(5) The procedures for requesting records not disclosed to the public as part of the regular informational activities of the Patent Office, or not included in the material described in Section F, supra, or whose disclosure is not provided for or precluded by the regulations cited in paragraphs (1), (2), (3) and (4) of this section, are prescribed in 37 C.F.R. 1.15.

EDWARD J. BRENNER,
Commissioner of Patents.

Date: Sept. 12, 1967.

Published in 32 F.R. 13836, Oct. 4, 1967

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 28, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-16-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	3-6-64	3-1-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	8-17-64	4-9-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	6-1-64	5-18-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-3-64	4-16-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-12-64	7-5-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	11-29-63	11-29-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1-8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-16-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	1-14-66	9-3-65

Total number of pending applications (excluding Designs)	183, 535
Total number of Design applications pending	4, 353
Total number of applications awaiting action (excluding Designs)	134, 011
Total number of Design applications awaiting action	2, 473
Date of oldest new application awaiting action	Nov. 29, 1963
Date of oldest amended application awaiting action	Nov. 29, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during October 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953*.

Patents ..... Numbers 2,524,026 to 2,528,482, inclusive

Plant Patents ..... Numbers 962 to 965, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-3-66	9-22-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	6-17-65	2-7-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	3-4-65	3-4-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	1-13-66	12-2-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports: Cabinet Structures.	10-5-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	8-23-65	10-18-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE DEWEY I. DOYLE, DEWEY I. DOYLE, JR., AND PATRICK E. DOYLE

No. 7747. Decided February 2, 1967

[54 CCPA —: 371 F.2d 504: 152 USPQ 439]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"VACUUM CLEANER UNITS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Vacuum Cleaner Units" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 198,155.

AFFIRMED.

Marzall, Johnston, Cook & Root, Daniel V. O'Keefe for appellants.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK *

SMITH, *J.*, delivered the opinion of the court.

The Board of Appeals affirmed the Examiner's rejection of claims 9 and 11 of appellants' application Serial No. 198,155, filed May 28, 1962, for Vacuum Cleaner Units. The claims are directed to tank type vacuum cleaner units in which the dirt-laden air passing through the unit strikes a baffle plate before it is drawn through a filter bag. Appellants' position is that such a unit is novel in that solid debris such as rocks, pins, pieces of glass, and the like, may be picked up without having it come in contact with and damage the filter bag, and that a unit so constructed and held in a vertical position can pick up liquids without wetting the filter bag.

The structure of the unit is detailed in appealed claim 9 as follows:

9. A vacuum cleaner unit comprising:
(*a*) a casing having a lower portion, an upper portion, and an intermediate portion disposed between said upper and lower portions, with said lower portion removably mounted on the lower end of said intermediate portion in position to afford a recovery chamber,
(*b*) said casing having an air outlet in said upper portion,
(*c*) an air inlet nozzle projecting upwardly through said lower portion and terminating at its upper end substantially in uniplanar relation to the junction of said lower portion and said intermediate portion,
(*d*) means for drawing air into said casing through said nozzle and discharging said air from said casing through said outlet,
(*e*) a filter bag removably mounted on the bottom edge portion of said intermediate portion and extending upwardly therefrom into said casing in such position that air flowing from said nozzle to said outlet must pass through said bag,
(*f*) said bag being open at the bottom and being removable from said casing through the bottom of said intermediate portion when said lower portion of said casing is removed from said intermediate portion, and
(*g*) a baffle partially filling said casing,
(*h*) said baffle being disposed in the lower portion of said intermediate portion above said nozzle in such position that all foreign material entrained in the air flowing upwardly from said nozzle impinges against said baffle and is deflected downwardly thereby out of contact with said bag.

Claim 11 is dependent from claim 9 and is directed to the removability of the upper portion of the casing. The claims have been considered together.

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

The references relied upon in rejecting the claims are:

Vose, 2,346,339, April 11, 1944.
Wenner-Gren, 1,782,640, November 25, 1930.

In the Examiner's answer, the features of the Vose reference relied upon were set forth in a format corresponding to that of appealed claim 9 as follows:

Vose shows a vacuum cleaner unit comprising:
(*a*) a casing having a lower portion 40, an intermediate portion (above 33) and a top portion 10, the lower portion providing a recovery chamber,
(*b*) said casing having an air outlet in the upper portion (see arrow),
(*c*) an air inlet nozzle 29 projecting upwardly through said lower portion and terminating adjacent the juncture of the bottom and intermediate portions,
(*d*) means (blower unit 10) for drawing air through the casing and discharging it from said outlet,
(*e*) a filter bag 32 mounted at the bottom of the intermediate portion and extending upwardly therefrom in such position that air flowing from said inlet nozzle to the outlet must pass through the bag,
(*f*) said bag being open at the bottom, and
(*g*) a baffle 37, 39 partially filling said casing,
(*h*) said baffle being disposed in the lower portion of said intermediate portion above said inlet nozzle in such position that all foreign material entrained in the air flowing upwardly from the nozzle impinges on the nozzle [sic, baffle].
The operation of the Vose cleaner is substantially the same as the operation of appellants' device as described above and is believed to be clearly indicated in FIGURE 2 of the reference.

The Examiner's answer also states:

Wenner-Gren is cited and applied because of the showing of a vacuum cleaner casing construction which includes (1) a lower portion 24 removably mounted on the intermediate [portion] thereof and (2) a filter bag removably mounted between said lower portion and an intermediate portion of the casing. These are the pertinent teachings of Wenner-Gren.

The rejection of claims 9 and 11 was based on 35 U.S.C. 103. The Examiner conceded the existence of differences between the claimed structure and the structures of the prior art, stating:

* * * It will be readily apparent from the above description that the structure defined by the claims differs from that shown by Vose only in (1) describing the lower portion as being "removably mounted" on the intermediate portion, (2) describing the upper end of the inlet nozzle as terminating "substantially in uniplanar relation" to the junction of said lower portion and said intermediate portion, and (3) describing the filter bag as being "removable" from said casing through the bottom of the intermediate portion.

It was the Examiner's position, with which we agree as did the Board of Appeals, that as to the first difference noted it would be obvious to make the lower portion of Vose's casing separable and removable as shown by Wenner-Gren.

As to (2) above, while the upper end of Vose's inlet nozzle is not shown as in the same plane as the juncture of the lower portion and the intermediate portion, it would appear to be obvious to one of ordinary skill in the art to make the inlet nozzle of any desired length, absent an unexpected result attributable to a particular length of the nozzle in relation to the other parts.

As to (3) above, Wenner-Gren clearly teaches making a lower casing portion removable from an intermediate portion and clamping a filter bag between said portions so that the filter bag is removable through the bottom of the intermediate portion. It would have been obvious to any worker in the art at least as early as the Vose and Wenner-Gren references that the lower portion of the Vose casing could be made removable and the filter bag supported between casing portions as taught by Wenner-Gren.

Appellants point out in their brief what they consider to be the deficiency in the Vose disclosure. After describing the Vose construction they state:

Such construction, of course, does not prevent all damage to the filter bag by reason of the impingement of sharp objects, and the like, thereagainst. Also, obviously, it does not prevent liquid entrained in the air from engaging the filter bag and soaking the same. It is apparent that Vose recognized (and specifically taught) that his device was incapable of preventing all impingement of such entrained materials against the bag. However, he neither discloses nor suggests any solution to the problem.

However, we note the following statement in the Vose patent which suggests that the Vose construction did in fact provide a baffle so placed as to protect the filter bag from damage by solid debris moving at the velocity of the air. Thus, Vose states:

By separating the motor driven blower unit from the cleaner per se, I find that a great deal more flexibility is obtained, and the cleaning-up job can be done in a minimum of time. In both arrangements shown, the chamber * * * within the casing * * * is particularly adapted to hold a large quantity of recovered or picked-up material, and this material is, as pointed out above, prevented from injuring or destroying the filter bag * * * due to the fact that the material first impinges upon the rubber disc * * * mounted on the target * * * and has its force spent, and then falls down into the chamber * * *. None of the recovered material remains on the surface of the strainer bag * * * due to the fact that the latter is inverted.

Vose also describes his target disc as being "of sufficient diameter to be engaged by all of the material passing into said container through said tubular member," which then falls down into the lower chamber. Nowhere does he state that only partial protection of the filter bag is afforded by his target disc, as contended by appellants. A reasonable interpretation of the passage in Vose selected and relied upon by appellants to support their argument as to a deficiency in the Vose teachings is that impingement of particles on the Vose target disc prevents *undue wear* of the fabric in the filter bag, such as would occur in the absence of such a target. Clearly Vose provides a construction in which at least the more dense particles are deflected into the lower chamber. These particles are the ones which pose the greater threat to the bag. The finer particles will contact and be restrained in the filter bag without harm, in appellants' arrangement as well as in that of Vose. Otherwise, there would appear to be no need for a filter bag. The Solicitor argues, and we agree, "it is not apparent that claim 9 requires a greater protective relationship than shown by Vose, and the record is devoid of any comparative proof in that respect."

It appears to us as it did to the Board that persons of ordinary skill in the art would find it obvious to make the Vose container in two parts as taught in the Wenner-Gren reference. While the terminal of the inlet tube might not be in the plane of such separation between these parts, we note that such relationship is also true in appellants' device as claimed.

While appellants have asserted the existence of a problem in the art to bolster their argument as to the nonobviousness of their invention as claimed in claims 9 and 11, we agree with the Examiner in his answer that:

* * * It is not apparent what "problem" appellants consider that they have solved that was not solved by the prior art. The disclosed vacuum cleaner of Vose meets all the objects of invention set forth by appellants and the miner variations in casing design recited in the claims are shown to be old and well-

known in the art. Appellants have not pointed out any structure recited in the claims which is not shown by the prior art of record.

This is a very different factual situation from that before us in *In re Rothermel*, 47 CCPA 866, 276 F.2d 393, 125 USPQ 328, and does not warrant the application here of the rule there stated that:

Viewed after the event, appellants' invention may appear to be simple and as such obvious to those of ordinary skills in this art. This, however, is not a basis upon which to reject the claims. Where the invention for which a patent is sought solves a problem which persisted in the art, we must look to the problem as well as to its solution if we are to properly appraise what was done and to evaluate it against what would be obvious to one having the ordinary skills of the art. *Eibel Process Co.* v. *Minnesota & Ontario Paper Co.*, 261 U.S. 45; *Goodyear Tire & Rubber Co., Inc.* v. *Ray-O-Vac Co.*, 321 U.S. 275.

Considering the record, we think the structure claimed by appellants in claims 9 and 11 would have been obvious to one of ordinary skill in this art prior to any date of invention asserted by appellants.

[1] We therefore affirm the decision of the Board of Appeals.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

APPLIED RESEARCH AND DEVELOPMENT CORPORATION
v.
LILY-TULIP CUP CORPORATION

No. 7753. Decided February 9, 1967

[54 CCPA —; 371 F.2d 895; 152 USPQ 572]

1. TRADEMARK—OPPOSITION—CONFUSING SIMILARITY—DOUBT RESOLVED IN FAVOR OF FIRST USER.

Upon reviewing a decision of the Trademark Trial and Appeal Board sustaining an opposition on the ground that there would be a likelihood of confusion between the competing marks, *Held* that "From our review of the record and briefs we are inclined to agree with the Board, at least we feel this record entitles doubt on that score to be resolved in favor of the first user."

2. SAME—CONFUSING SIMILARITY—"CHINA-COTE FOR PAPER CONTAINERS AND "CHINA-FOAM" FOR PLASTIC CONTAINERS.

"Although the goods [plastic containers and paper containers] are not identical in material or construction, there can be no doubt that they are competitive. Although some of the common purchasers, e.g., vending machine operators, might well be termed discriminating buyers, the competing goods are, as the Board points out, also sold to the general public. We are not dealing here with such diverse products as, for example, broomsticks and lipsticks, but with articles designed to serve the same purposes. While it is true that 'Cote' and 'Foam' are quite distinct, still when they are coupled with 'China' and viewed in their entirety, as they must be, on goods with so many other things in common, we are inclined to agree that the average purchaser of the instant goods would be likely to assume the products emanated from the same source."

APPEAL from the Patent Office. Opposition No. 42,889.

AFFIRMED.

Francis D. Thomas, Jr., for appellant.

Lawrence F. Scinto for appellee.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK *

WORLEY, *Chief Judge*, delivered the opinion of the court.

Applied Research seeks registration of "China-Foam" for use on plastic dishes, bowls, plates and cups. Lily-Tulip opposes on its prior use and registration of "China-Cote" for paper containers and cups.

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

The Trademark Trial and Appeal Board, one member dissenting, concluded there would be a likelihood of confusion between the competing marks and sustained the opposition, 145 USPQ 504.

[1] From our review of the record and briefs we are inclined to agree with the Board, at least we feel this record entitles doubt on that score to be resolved in favor of the first user.

[2] Although the goods are not identical in material or construction, there can be no doubt that they are competitive. Although some of the common purchasers, e.g., vending machine operators, might well be termed discriminating buyers, the competing goods are, as the Board points out, also sold to the general public. We are not dealing here with such diverse products as, for example, broomsticks and lipsticks, but with articles designed to serve the same purposes. While it is true that "Cote" and "Foam" are quite distinct, still when they are coupled with "China" and viewed in their entirety, as they must be, on goods with so many other things in common, we are inclined to agree that the average purchaser of the instant goods would be likely to assume the products emanated from the same source.

We are familiar with the decisions cited and relied on by both parties, but again point out that precedents in trademark cases are of little value when different facts and marks are involved.

The decision is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

The dissenting member of the Board reasoned as follows. 145 USPQ 504, 506:

* * * I cannot agree with the majority opinion that applicant's mark will suggest to purchasers of disposable dishes and cups that applicant's goods originate from the same source as the goods of opposer. In this regard, the term "China," which is the only element that the marks "China-Foam" and "China-Cote" possess in common, is obviously intended to be suggestive of the fact that the respective goods of the parties bear some resemblance to china either as to finish or as to hardness. While the third-party registrations do not, for the most part, read on the specific goods of the parties, I believe that they are sufficient to establish that the word "China," or equivalents thereof, have been frequently adopted by others to indicate some connection or resemblance to porcelain or chinaware.

It is my opinion that the respective marks would merely suggest different qualities or characteristics of the respective products rather than bestow any suggestion that they originate from a common source. * * *

I agree. I would not, by invoking the rule of doubt in favor of the first user, give to appellee-opposer's mark the breadth of protection necessary to sustain the opposition. The record fails, in my opinion, to establish a likelihood of confusion between the respective marks.

U.S. Court of Customs and Patent Appeals

IN RE JAMES H. CASEY

No. 7718. Decided January 12, 1967

[54 CCPA —; 370 F.2d 576; 152 USPQ 235]

1. PATENTABILITY—DEVICE—METHOD OF USING APPARATUS OR MACHINE IMMATERIAL.

"The claims in issue call for an apparatus or machine, viz, a tape dispensing machine. The manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself."

2. SAME—CLAIMS—PREAMBLE—*In re Attwood* CONSTRUED.

Upon deciding that limitations as to use in claims to a machine for dispensing adhesive tape are not germane to the issue of patentability of the

machine itself, and with reference to the effect of *In re Attwood*, *Held* that "In the *Attwood* case, the preamble itself called for a particular structure"; that "The same is not true here"; and that "The references in claim 1 to adhesive tape handling do not expressly or impliedly require any particular structure in addition to that of Kienzle."

3. SAME—PARTICULAR SUBJECT MATTER—"BRUSH FED TAPE DISPENSER."

The refusal of certain claims in an application entitled "Brush Fed Tape Dispenser," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 10,239.

AFFIRMED.

Charles H. Lauder for appellant.

Joseph Schimmel (*S. William Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1 through 6 of appellant's application [2] entitled "Brush Fed Tape Dispenser." Claims 7 and 8 were allowed.

The claimed invention relates to a machine for dispensing adhesive tape.

Claim 1 is illustrative:

1. A taping machine comprising a supporting structure, a brush attached to said supporting structure, said brush being formed with projecting bristles which terminate in free ends to collectively define a surface to which adhesive tape will detachably adhere, and means for providing relative motion between said brush and said supporting structure while adhesive tape is adhered to said surface.

FIGURES 2 and 3 of appellant's drawings are depicted below:

FIG.2

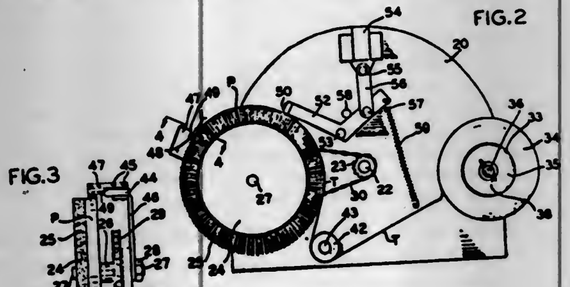
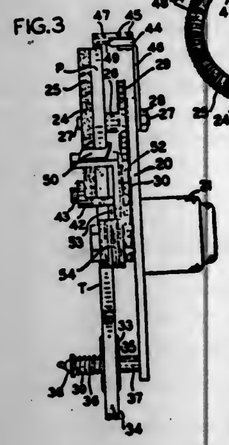


FIG.3



The machine comprises a mounting plate 20, a hub 35 rotatably attached thereto carrying a supply roll 34 of tape T, a roller guide

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 10,239, filed February 23, 1960.

42 rotatably attached to the mounting plate 20, a brush 24 rotatably attached to said mounting plate for rotation counterclockwise in response to propulsion from motor 21, and a knife 50 mounted on a pivoted arm 52 operated by solenoid 54. Tape T is threaded around roller gulde 42 and the adhesive side of the tape is then adhered to the surface formed by the free ends of bristles 25 of brush 24. Operation of motor 21 will cause tape T to be pulled from supply roll 34 and moved through the machine by reason of its adhesion to brush 24. Operation of solenoid 54 brings knife 50 in contact with tape T to sever same while it is adhered to the ends of the bristles of the brush.

The references are:

Kienzle, 2,142,728, January 3, 1939.
Hackett, 2,763,481, September 18, 1956.
Engberg, Re. 22,945, December 2, 1947.

Kienzle shows a device for perforating various types of sheet materials by use of needle-like pins. Kienzle states:

* * * these pins can form a single group or a plurality of groups arranged side by side or behind one another, or also in staggered positions and they can be operated so as to move simultaneously, or they can be timed differently. For supporting the sheet to be perforated I use a carrier which is * * * an open structure * * * to let the pins enter freely when they penetrate the sheet farther than its thickness. * * * [The] carrier * * * may be a drum the surface of which consists of felt, or of a brush * * * which likewise can support the sheet against the action of the pins without offering the said pins any resistance against penetrating.

Kienzle's sheet is supported by a rotary brush with open end bristles.

Hackett shows a tape dispensing device having a dispensing drum rotatably mounted on supporting means. The drum supports fins to which adhesive tape is adhered. Tape is advanced from a supply through rotational movement of the drum by pneumatic means. The tape is severed by means of a blade.

Engberg discloses apparatus for dispensing adhesive tape by adhering the tape to spaced carriers in the form of transverse blades carried in orbit by an endless belt around two rotary toothed drums. A flat spring guides and presses the adhesive side of the tape against the blades. The belt and adhered tape are advanced by operation of a handle. The tape is severed between two tape feeding blades by a cutting blade.

In rejecting claim 1 the Examiner applied 35 U.S.C. 103 and held the claim unpatentable over Kienzle. In analyzing claim 1 the Examiner pointed out the structural limitations therein and found them all met by Kienzle except the support for the brush which he considered obvious. He stated that:

The remainder of the claim is made up of the preamble and functional language which incorporates therein a specific workpiece (adhesive tape) which is considered to be patentably immaterial.

Again applying 35 U.S.C. 103, the Examiner rejected claims 2 to 6 as unpatentable over Kienzle in view of Hackett. He noted that claims 2–4 differ from claim 1 only in the addition of a severing means and that claims 5 and 6 further add a means to support the tape supply and a guiding means to aid delivery to the feed roll. The Examiner pointed to the fact that Kienzle discloses a perforating means which punctures the sheet material supported on the brush bristles, which material passes between the perforating means and the rotatable brush. He also noted that Hackett in his disclosure of a tape dispenser teaches the use of a transverse severing means and held that

it would be obvious to one skilled in the art to substitute the Hackett severing means for the perforator of Kienzle. He further noted that Hackett teaches a material supply roll and presumably includes in his dispenser guiding means as shown in Engberg inasmuch as Hackett mentions the Engberg patent in his disclosure.

In its affirmance of the rejection of claims 1 to 6 the Board, noting appellant's argument that the claims require that the reference used be directed to a "taping machine" and "tape dispensing machine" as recited in the preambles of said claims, stated:

> Such designation in the preamble is not definitive of specific structure or character of mechanism. The claim must stand or fall upon the elements recited therein. While claim 1 continues to note that adhesive tape will adhere to a brush, the structure so indicated differs in no way from that present in Kienzle where a driven brush is shown as supporting a band of material. The structure thus provided has the capabilities recited which is all that is required to satisfy the terms of the claims. * * *

We agree with the Solicitor that the real issue of substance in this case is resolvable on the basis of the merits of the rejection of claim 1, all of the structural limitations of which were held either to be shown in Kienzle or to be obvious in view thereof.

The essence of appellant's contention resides in the argument that:

> Both the Examiner and the Board have entirely disregarded the words "taping machine" and "tape dispensing machine" as they appear in claims 1 through 6 * * * [and] the language in the claims concerning the adherence of the adhesive tape to the surface formed by the free ends of the bristles of the brush * * *.

Appellant asserts that the language relating to the adherence of the tape to the bristles of the brush is a functional expression which must be given weight and that, when taken in conjunction with the preamble words "taping machine" and "tape dispensing machine," the error of the Board in disregarding such language becomes manifest.

As to the obviousness of the structure recited in claim 1, we have no doubt that the Kienzle brush is intended to be mounted on a supporting structure accompanied by means of rotation. That portion of the claim which requires that "projecting bristles * * * terminate in free ends to collectively define a surface" is anticipated by Kienzle.

We are not persuaded that the Board "entirely disregarded" the preamble and functional language as asserted by appellant. The Board found that appellant's structure, even in view of the claim language, differed in no way from the disclosure of Kienzle. The Board considered that the structure provided by the reference possessed the capabilities requisite to meet the terms of the claims. The rationale of the Board clearly deducible from the language employed is that the Kienzle apparatus as it obviously must be constructed would inherently perform all of the functions called for in claim 1, if it were used with adhesive tape as the workpiece.

Kienzle discloses a brush bristle surface identical to that of appellant. It must follow therefore that, in the language of the claim, the Kienzle surface is one "to which adhesive tape will detachably adhere." It also logically follows that in the use of the Kienzle device with adhesive tape, rotation of the brush would ensue "while adhesive tape is adhered to said surface." The difference between the teaching of Kienzle and the claim in issue resides in the *use* of the Kienzle apparatus. If adhesive tape is used as the workpiece, the terms of claim 1 are met.

Appellant states:

> The *fundamental difference* between the machine of appellant's invention and the machine shown and described by Kienzle is that appellant's machine is a tape dispenser while the machine of Kienzle is a perforating device. [Emphasis supplied.]

It seems apparent, therefore, that the position taken by appellant does not involve any unobvious difference between the structure of his apparatus and that of Kienzle, but relates solely to the matter of use of the devices. Appellant augments this position by stating his concept to be "that the adhesive contained on adhesive tape can be adhered to the ends of the bristles of a brush and the brush can then be moved to dispense the tape from the machine * * *."

We agree with the view of the Solicitor that appellant's concept:

> * * * would seem clearly to relate to a method, that is, a method of handling adhesive tape, rather than an apparatus. Presenting adhesive tape to a roll in such a way as to adhere it to the roll and causing movement of the roll "while adhesive tape is adhered to said surface" are method steps and cannot properly confer patentability on an apparatus claim.

[1] The claims in issue call for an apparatus or machine, viz, a tape dispensing machine. The manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself. This view finds clear support in *In re Otto*, 50 CCPA 938, 940, 312 F.2d 937, 136 USPQ 458. This court there stated:

> First of all it should be remembered that the claims are directed to a particular device and a method of making that device, not to a method of curling hair wherein this particular device is used. It seems appellants are endeavoring to predicate patentability upon a certain procedure for curling hair using this device and involving a number of steps in the process. This process is irrelevant as is the recitation involving the hair being wound around the core insofar as the determination of whether these particular claims should be allowed or rejected. *In re Lampert et al.*, 44 CCPA 958, 245 F.2d 253, 114 USPQ 163; *In re Rishoi et al.*, 39 CCPA 1004, 197 F.2d 342, 94 USPQ 71; *In re Mulholland*, 29 CCPA 1222, 129 F.2d 860, 54 USPQ 388; *In re Young*, 22 CCPA 1060, 75 F.2d 996, 25 USPQ 69. It will be seen that the *Lampert* case pertains to the impropriety of relying on a method concept to distinguish a structural claim over the prior art and Rishoi and the others indicate that inclusion of the material or article worked uopn by a structure being claimed does not impart patentability to the claims.

Appellant cites and relies on *In re Neugebauer*, 51 CCPA 1138, 330 F.2d 353, 141 USPQ 205; *In re Attwood*, 53 CCPA 784, 354 F.2d 365, 148 USPQ 203; and *In re Van Lint*, 53 CCPA 844, 354 F.2d 674, 148 USPQ 285. Our analysis of these cases in light of the decision reached by the Board does not persuade us that they support the contention here asserted by appellant. In fact, we think the rationale of *In re Neugebauer*, wherein the preambles of the claims recited "an electrophotographic material," supports the decision of the Board in the instant case. We consider pertinent here the following statement of the court relative to the weight to be accorded preambles as positive structural limitations:

> As to the claim preamble, the court has frequently considered problems related thereto. See, e.g., *Kropa* v. *Robie et al.*, 38 CCPA 858, 187 F.2d 150, 88 USPQ 478, and cases cited therein. We know no general rule for deciding the weight to be given preambles as positive structural limitations. Ellis, for example, states "Preambles are used primarily to give the field within which the invention has utility. They designate *use* rather than *structure*, *form* or *composition*. [Emphasis court's.]
>
> In the instant case, we do not consider it to be controlling that the reference does not *in haec verba* disclose "electrophotographic material." The claims *as a whole* must be analyzed in light of the disclosure to see if the article defined thereby is distinguishable in fact, vis-à-vis *in verbis*, over the prior art.

[2] In the *Attwood* case, the preamble itself called for a particular structure. The same is not true here. The references in claim 1 to adhesive tape handling do not expressly or impliedly require any particular structure in addition to that of Kienzle.

As to claims 2 to 6, we do not find that they involve any substantial issue of patentability over and above that presented by claim 1. In fact, appellant's brief contains no contention that these claims embrace any patentable feature not recited in claim 1.

Upon consideration of the arguments of counsel and analysis of the authorities cited, we find no reversible error in the decision of the Board.

[3] The decision of the Board is therefore affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE STANDARD ELEKTRIK LORENZ AKTIENGESELLSCHAFT

No. 7709. Decided February 9, 1967

[54 CCPA —; 371 F.2d 870; 152 USPQ 563]

1. TRADEMARK—REGISTRABILITY—SURNAME—TRADEMARK ACT OF 1946, SECTIONS 2(e)(3) AND 2(f).

Held, with respect to the provision in section 2(e)(3) of the Trademark Act of 1946 prohibiting the registration of a surname on the Principal Register, "* * * if appellant had shown 'secondary meaning,' section 2(f), then section 2(e)(3) expressly presents no bar to registration on the Principal Register."

2. SAME—SAME—MARK MUST BE CONSIDERED IN ITS ENTIRETY.

"We think the Board's initial error arose from dissecting the marks. A mark must be considered in its entirety. In *Ada Milling Co.*, 40 CCPA 1076, 205 F.2d 315, 98 USPQ 267, this court had occasion to consider the mark 'Startgrolay' for poultry feed. Registration was refused on the ground it was a combination of generically descriptive terms, starting, growing and laying. The court reversed the decision of the Patent Office on the ground that the mark, when viewed in its entirety, was capable of distinguishing the applicant's goods from those of others. The dissecting method employed in *Kimberly-Clark* and in *In re Midy Laboratories, Inc.*, 26 CCPA 1294, 104 F.2d 617, 42 USPQ 17, was properly rejected by the majority."

3. SAME—SAME—SURNAME—BURDEN ON PATENT OFFICE—TRADEMARK ACT OF 1946, SECTION 2.

"Section 2 states no trademark by which the goods of the applicant may be distinguished from the goods of others *shall be refused registration on the Principal Register* on account of its nature *unless it* * * * consists of a mark which is 'primarily merely a surname.' It is clear that the burden is on the Patent Office to prove that the trademark is primarily merely a surname."

4. SAME—SAME—SAME—SAME.

"While there may be no hard and fast rule as to the amount of evidence necessary to demonstrate that a mark is or is not primarily merely a surname, we note here that the Examiner cited only portions of the mark as being listed in telephone directories, relying on dissection of the mark which we find is error. No evidence was submitted that the mark sought to be registered was primarily merely a surname. Accordingly, we do not think the Patent Office has discharged its burden of proof and its decision must be *reversed*."

APPEAL from the Patent Office. Serial No. 133,331.

REVERSED.

C. Cornell Remsen, Jr. (*Donald J. Goodell*, of counsel) for appellant.

Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

Appellant appeals from the decision of the Trademark Trial and Appeal Board affirming the Examiner's refusal to register the mark "SCHAUB-LORENZ" on the Principal Register, 145 USPQ 163.

Appellant, organized under the laws of the Federal Republic of Germany, alleged in its application [2] prior registration of the mark in the Federal Republic of Germany.[3] Registration is sought here under section 44(e), Trademark Act of 1946 (15 U.S.C. 1126(e)), which provides, in part:

> A mark duly registered in the country of origin of the foreign applicant may be registered on the Principal Register if eligible, otherwise on the Supplemental Register herein provided. * * *

The Board in its opinion set forth the position of the Examiner and its reasoning as follows:

> * * * This application is based upon applicant's ownership of a German registration rather than upon use of the mark in this country.
>
> The Examiner of Trademarks has refused registration on the ground that applicant's mark is "merely a combination of two surnames and as such falls under the prohibition of section 2(e)(3) of the Trademark Act of 1946."
>
> Section 2 of the Trademark Act of 1946 [15 U.S.C. 1052] provides that:
>
> > "No trademark by which the goods of the applicant may be distinguished from the goods of others shall be refused registration on the Principal Register on account of its nature unless it * * * (e) Consists of a mark which * * * (3) is primarily merely a surname."
>
> In defense of its right of registration, applicant points out that the surname "SCHAUB" also means in the German language "a bundle of straw, sheaf," and that the surname "LORENZ" is also the name of a city in West Virginia and of a city in Brazil, in consequence of which, applicant strenuously argues that its mark cannot properly be considered as primarily merely a surname.
>
> We are firmly of the opinion that, to the average member of the purchasing public, neither "SCHAUB" nor "LORENZ" would be likely to have any meaning other than as surnames. It is concluded, therefore, that applicant's mark is "primarily merely a surname" within the meaning of the Act, and hence that it is not proper subject matter for registration on the Principal Register in the absence of a showing that it has acquired in this country a secondary meaning of indicating origin in applicant of the goods to which it is applied. See *Kimberly-Clark Corporation* v. *Marzall*, Comr., Pats. [196 F.2d 772], 93 USPQ 191 (C.A. D.C., 1952).

In addition to the evidence submitted by appellant as to the meaning of SCHAUB and LORENZ, appellant argues that various city telephone directories [4] do not disclose any listing of SCHAUB-LORENZ. The Examiner cites the fact that various city telephone directories [5] disclose listings of SCHAUB and LORENZ individually.

Appellant also argues here that the mark has become known and registered in many countries.[6] The Solicitor replies that no evidence to this effect was submitted by appellant.

Appellant also cited Registration No. 386,174 of March 25, 1941, for LORENZ, now expired, as evidence that the mark here is not primarily merely a surname. The Examiner replied that registration under the Trademark Act of 1920 does not support registrability on the Principal Register.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 133,331, filed December 4, 1961, reciting the following goods: Electrotechnical Apparatus, Radio Receivers, Television Receivers, Acoustic Reproduction Sets, With or Without Record Players, etc.
[3] Reg. No. 681,933, September 26, 1955.
[4] Manhattan, Brooklyn, Queens, Bronx, and Staten Island in New York City; and Washington Metropolitan Area.
[5] Washington, D.C., Chicago, Manhattan, Philadelphia and the Bronx.
[6] Germany, France, Norway, Sweden, Argentina, Chile, Peru, Nigeria, and South Africa.

Concerning legal precedents, the Examiner and the Board relied on the decision in *Kimberly-Clark*, supra, wherein the court affirmed the District Court's refusal to order registration on the Principal Register of "Kimberly-Clark." The court in its opinion reasoned that if neither Kimberly or Clark was registrable, as being primarily merely surnames, then a combination of the two could not be registered. Appellant argues this decision is inapplicable here because, unlike *Kimberly-Clark*, evidence has been submitted showing that each term has meaning other than as a surname and appellant itself does not use the combination as its corporate name.

Appellant argues the Board failed to apply the correct test in resolving the issue of whether the mark is primarily merely a surname, citing *Ex parte Rivera Watch Corp.*, 106 USPQ 145 (Com'r, Dec. 1955). This opinion states the proper test as being, "What is the primary significance of the mark to the purchasing public?" The mark Rivera was held not to be primarily merely a surname. The opinion also comments that an opposite conclusion in *Kimberly-Clark* might have been reached if the above test had been applied. Appellant argues in its brief:

> In addition to the *Ex parte Rivera Watch Corp.* case, supra, several subsequent cases held that marks which have different meanings in addition to meaning a surname are registrable. The discussed marks were initially rejected by the Examiner on the ground that the respective marks were primarily merely surnames.
>
> In *Ex parte Omaha Cold Storage Co.*, 111 USPQ 189 (Com'r, 1956), the applicant's mark "Douglas" was held to be registrable and not primarily merely a surname. The Assistant Commissioner noted the various meanings of "Douglas" and how it appeared from the record that "Douglas" was not the surname of any person connected with the applicant.
>
> In *Ex parte Gemex Co.*, 111 USPQ 443 (Com'r, 1956), the applicant's mark "Wellington" was held to be registrable and not primarily merely a surname. The Assistant Commissioner noted the different meanings of the term and followed the rationale set forth in the *Rivera* case, supra, stating:
>
> > "* * * There is no way of knowing what the impact on the purchasing public is likely to be upon seeing 'WELLINGTON' watch bracelets and straps, or with what, if anything, purchasers are likely to associate the mark."
> >
> > "The rationale set forth in *Ex parte Rivera Watch Corporation*, 106 USPQ 145 (Com'r, 1955), and in *Ex parte Omaha Cold Storage Co.*, 111 USPQ 189 (Com'r, 1956), leads to a conclusion here that 'WELLINGTON' is not primarily merely a surname within the meaning of section 2(e) of the statute when that section is read in the light of its legislative history."

The sole issue here is whether the mark sought to be registered, SCHAUB-LORENZ, was properly refused registration under section 2(e)(3) of the Trademark Act of 1946 as being primarily merely a surname. This provision of the act has been productive of diverse and not easily reconcilable decisions by the Trademark Trial and Appeal Board as well as by the courts. As stated by Assistant Commissioner Leeds in the *Rivera* case, 106 USPQ at 146:

> The decisions interpreting the phrase "primarily merely a surname" are not altogether consistent, nor do they establish clear guide lines for future determinations.

The Examiner and the Trademark Trial and Appeal Board rely to a large extent on the *Kimberly-Clark* case, supra, which involved two cases consolidated on appeal. The first case concerned a mark whose dominant portion was "Kimberly Clark." It was refused registration under paragraph 5 of the Trademark Act of 1905 which denied registration of a mark which consisted merely of the name of a corporation. There is no similar issue present here as the mark

sought to be registered is not the name of the appellant corporation. In an action brought by appellant in the U.S. District Court, D.C., under R.S. 4915, the complaint was dismissed and the appeal to the Circuit Court of Appeals, D.C., followed. On this aspect of the decision it would seem that there was no occasion for the Court of Appeals to express its opinion as to the import of section 2(e)(3) of the Trademark Act of 1946.

The second case involved the registrability of the mark "Kimberly-Clark" on the Principal Register under the 1946 Act. The Commissioner had offered registration on the Supplemental Register. The refusal to register the mark was made under section 2(e)(3) as a mark which was primarily merely a surname. The Court of Appeals affirmed "for the reasons given in our discussion" of the first case, 196 F.2d at 775, 93 USPQ at 193.

It is not clear why the Court of Appeals in *Kimberly-Clark* refused registration on the Principal Register when, according to the court's opinion, "secondary significance" had been shown, 196 F.2d at 774, 93 USPQ at 193. See section 2(f) of the Trademark Act of 1946 (15 U.S.C. 1052 (f).) [1] As the Board here commented, if appellant had shown "secondary meaning," section 2(f), then section 2(e)(3) expressly presents no bar to registration on the Principal Register. As to this aspect we agree with the Board.

Nonetheless the Board was of the view that as neither "SCHAUB" or "LORENZ" would be likely to have any meaning other than as surnames, the combination SCHAUB-LORENZ was similarly defective. Apparently the Board did not consider appellant's evidence to be persuasive.

[2] We think the Board's initial error arose from dissecting the marks. A mark must be considered in its entirety. In *Ada Milling Co.*, 40 CCPA 1076, 205 F.2d 315, 98 USPQ 267, this court had occasion to consider the mark "Startgrolay" for poultry feed. Registration was refused on the ground it was a combination of generically descriptive terms, starting, growing and laying. The court reversed the decision of the Patent Office on the ground that the mark, when viewed in its entirety, was capable of distinguishing the applicant's goods from those of others. The dissecting method employed in *Kimberly-Clark* and in *In re Midy Laboratories, Inc.*, 26 CCPA 1294, 104 F.2d 617, 42 USPQ 17, was properly rejected by the majority.

[3] Section 2 states no trademark by which the goods of the applicant may be distinguished from the goods of others *shall be refused registration on the Principal Register* on account of its nature *unless it* * * * consists of a mark which is "primarily merely a surname." It is clear that the burden is on the Patent Office to prove that the trademark is primarily merely a surname. In *Ex parte Gemex Co.*, 111 USPQ 443, relied on by appellant, Assistant Commissioner Leeds stated:

> The Examiner of Trademarks expressed the opinion that the primary significance [see *Ex parte Rivera*, supra] of the mark [Wellington] presented is a surname significance, but he gave no rationale other than to cite its appearance in some telephone directories. * * *

[4] While there may be no hard and fast rule as to the amount of evidence necessary to demonstrate that a mark is or is not primarily merely a surname, we note here that the Examiner cited only portions of the mark as benig listed in telephone directories, relying on dissection of the mark which we find is error. No evidence was submitted

that the *mark sought to be registered* was primarily merely a surname. Accordingly, we do not think the Patent Office has discharged its burden of proof and its decision must be reversed.

REVERSED.

ALMOND, *J.*, concurs in the result.

WORLEY, *Chief Judge*, dissents.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,441,960, P. Eisler, MANUFACTURE OF ELECTRIC CIRCUIT COMPONENTS; **2,706,697**, same, **filed** Feb. 25, 1966, D.C. Del. (Wilmington), Doc. 2519, *Technograph* v. *R.C.A.*

2,626,065, Sanders and Sanders, AUTOMOBILE PARKING ELEVATOR; **2,716,466**, same, MEANS FOR POSITIONING AN ELEVATOR PLATFORM AT PREDETERMINED LEVELS; **2,788,193**, same, VEHICLE DOLLY, **filed** Mar. 20, 1964, D.C. Conn. (New Haven), Doc. 10349, *Pigeon Hole Parking, Inc.* v. *Theresa M. Zazzaro et al.* Stipulation for dismissal, June 7, 1967.

2,715,231, O. F. Marston, FLEXIBLE BUOYANT ARTICLE, **filed** Aug. 21, 1967, D.C., E.D. Va. (Richmond), Doc. 5390, *Oliver F. Marston* v. *Henrico Furniture Co., Inc.*

2,716,466. (See 2,626,065.)

2,729,719, C. G. Kronmiller, CONTROL DEVICE; **2,786,924**, same, THERMOSTATS; **2,746,472**, M. G. Sogge, SAFETY VALVE, **filed** Aug. 18, 1967, D.C., N.D. Calif. (San Francisco), Doc. 47693, *Dura-Bond Bearing Company* v. *Honeywell, Inc.*

2,746,472. (See 2,729,719.)

2,786,480, P. Hofer, MACHINE FOR WASHING TEST TUBES, BOTTLES, RECEPTACLES, PIPETTES AND LIKE ARTICLES, **filed** Aug. 23, 1967, D.C., W.D.N.Y. (Buffalo), Doc. 1967–322, *Howard D. Taylor and Better Built Machinery Corp.* v. *Ritter Pfaudler Corp. et al.*

2,786,924. (See 2,729,719.)

2,788,193. (See 2,626,065.)

3,074,653, J. B. Schorsch, METHOD OF SEPARATING WIRE AND ITS CASING, **filed** Aug. 11, 1967, D.C., E.D. Pa. (Philadelphia), Doc. 42972, *The Metal Bank of America, Inc.* v. *Diversified Metals Corporation.* Dismissal of complaint without prejudice, Aug. 24, 1967.

3,091,448, F. W. Kieffer, SPRING LIFTER, **filed** Aug. 2, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–724, *Fred W. Keifer* v. *Perfect Parts, Inc.* Consent judgment for injunction, Aug. 17, 1967.

3,123,485, Miller, Schapiro and Breenstein, COLORED OPTICAL ELEMENTS, **filed** Mar. 17, 1964, D.C., S.D.N.Y., Doc. 64–C–850, *U.S. Plastic & Chemical Corp. and Ultra Ray Pearl Essence Corp.* v. *Mearl Corp. and Francis Earle Laboratories Inc.* Consent judgment, defendants enjoined, Aug. 18, 1967.

3,256,606, L. C. Horta, DIDACTIC DRAWING APPARATUS, **filed** Feb. 21, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–167, *Luis Congost Horta* v. *Plastic Toy and Novelty Corp.* Consent judgment for injunction, Aug. 16, 1967.

3,265,376, L. S. Spielman, AIR HEATING BURNERS; **Re. 26,244**, same, **filed** Aug. 23, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1457, *Eclipse Fuel Engineering Co.* v. *The North American Mfg. Co.*

3,279,138, I. F. Dittmar, SURFACE FINISHING PANEL, **filed** Aug. 21, 1967, D.C., M.D. Pa. (Scranton), Doc. 10,146, *Wilson Oak Flooring Co., Inc.* v. *The Cromar Company.*

3,298,543, J. J. Laidig, SILO UNLOADER WITH LOAD RESPONSIVE DRIVE CONTROL; **Re. 25,863**, same, FORAGE UNLOADING MECHANISM FOR SILOS, **filed** Aug. 16, 1967, D.C., M.D. Pa. (Scranton), Doc. 10,139, *Laidig Silo Unloaders, Inc.* v. *Nutri-Seal Storage Systems, Inc. et al.*

Re. 25,863. (See 3,298,543.)

Re. 26,244. (See 3,265,376.)

REISSUES

OCTOBER 31, 1967

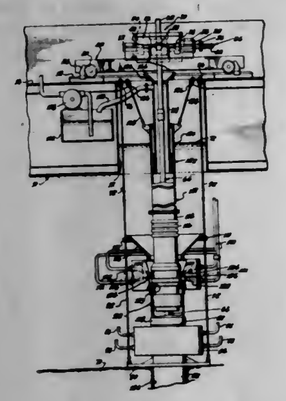
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,290
SUBAQUEOUS DRILLING APPARATUS

William W. Rand, Santa Barbara, Calif., assignor to Pike Corporation of America, Los Angeles, Calif., a corporation of California

Original No. 3,177,954, dated Apr. 13, 1965, Ser. No. 610,062, Sept. 17, 1956. Application for reissue Nov. 18, 1966, Ser. No. 593,220

10 Claims. (Cl. 166—.6)



4. In an apparatus for carrying out operations such as drilling and working in a well bore in a formation underlying a body of water including supporting means adapted to float on a body of water, driving means for a drill string including a rotary table carried by said supporting means and a derrick carried by said supporting means for lowering drilling equipment through the body of water and into operative relationship with the well bore, the combination comprising:

submerged anchoring means including a casing set in the earth below the body of water;

flexible guide lines extending between and connected to said supporting means and to said anchoring means;

tubular wellhead structure engaging and movable vertically along said guide lines between said supporting means and said anchoring means;

means for connecting said tubular wellhead structure to said anchoring means in communication with said casing;

a conductor tube extending between said supporting means and said wellhead structure providing a conduit through which a drill string driven by said rotary table may be lowered into said well bore and raised therefrom by said derrick;

guiding means located adjacent said wellhead structure for bridging the lower end of said conductor tube into position to be connected to said well head structure,

fluid-operated latching means for connecting the lower end portion of said conductor tube to said wellhead structure to form with that structure a continuous conduit between the well bore and said supporting means;

means for actuating said latching means from said supporting means respectively to connect and disconnect said conductor tube from said wellhead structure; and

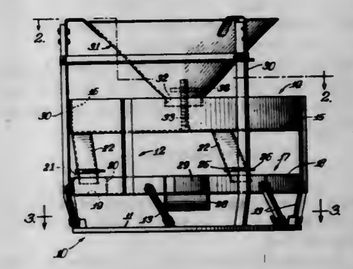
means connected to the upper portion of said conductor tube for supporting the upper end of said conductor tube in the vicinity of said supporting means during the time said lower end of said conductor tube is connected by said latching means to said wellhead structure.

26,291
FEEDING APPARATUS

Robert M. Carrier, Jr., Jeffersonville, Ind., assignor to Carrier Manufacturing Co., a corporation of Kentucky

Original No. 3,187,884, dated June 8, 1965, Ser. No. 169,051, Jan. 26, 1962. Application for reissue May 11, 1966, Ser. No. 552,675

10 Claims. (Cl. 198—220)



1. A feeding device comprising: a first arcuately shaped vibratory feeder, a second arcuately shaped vibratory feeder, a passage providing communication between the first feeder and the second feeder, a gate controlling said passage, means providing a discharge from the second feeder, a frame carrying said feeders and said gate and passage, and means for vibrating said frame to move material in the first feeder through said communication means into the second feeder for movement therein to said discharge.

26,292
MICROWAVE IDENTIFICATION OF RAILROAD CARS

William R. Bradford and Steven Molnar, San Diego, and Bruce H. Siperly, Spring Valley, Calif., assignors, by mesne assignments, to Abex Corporation, a corporation of Delaware

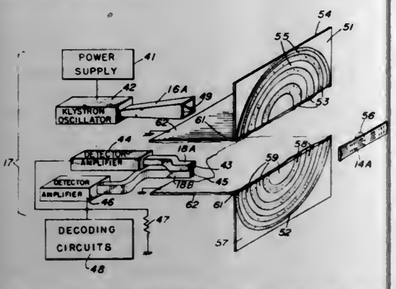
Original No. 3,247,508, dated Apr. 19, 1966, Ser. No. 313,886, Oct. 4, 1963. Application for reissue Aug. 8, 1966, Ser. No. 574,263

20 Claims. (Cl. 343—6.5)

1. In an automatic object identification apparatus of the kind including a source of microwave signals of given frequency, a transmitting antenna for radiating said signal from a given point, an identification member mounted on an object to be identified in position to intercept and reflect the radiated signal as the object passes the transmitting antenna along a given path, and a receiving antenna located immediately adjacent said transmitting antenna, a lens system comprising:

a first microwave zone plate lens, comprising a first series of arcuate bands each having a given microwave transmission characteristic, radiating concentrically outwardly from an axis aligned with said transmitting antenna and interspersed in substantially coplanar relation with a second similar series

of arcuate bands, having a substantially different microwave transmission characteristic, at said given frequency, said lens being interposed between said transmitting antenna and said path, for focussing said radiated microwave signal at a predetermined point on said path;

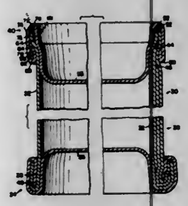


a second microwave zone plate lens, substantially similar in construction to said first lens, and disposed in coaxial relation thereto, for focussing signals reflected from said identification members back to said receiving antenna;

and a planar conductive septum, disposed along the common axis of said lenses, for precluding direct cross-talk between the transmitting antenna and the receiving antenna.

26,293
METHOD OF MAKING A LOW PRESSURE, HERMETICALLY SEALED, SHEET METAL CONTAINER
Leland R. Payton, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Original No. 3,223,063, dated Dec. 14, 1965, Ser. No. 175,999, Feb. 27, 1962. Application for reissue Aug. 5, 1966, Ser. No. 574,270
8 Claims. (Cl. 113—121)

1. A method in the manufacture of a low pressure, hermetically sealed, sheet container which comprises: forming from a rectangular sheet blank a vertical cylindrical body with upper and lower body ends; forming a sheet upper cup with an inner cup portion joined at its upper cup edge to an outward flange having an inward curl at the outer edge of said flange; initially upwardly and outwardly flaring said upper body end with said upper body end extending continuously upward and outward and terminating in an upper single thickness body end edge; introducing sealing compound around the inner surface of said upper body end and on said upper body end edge; initially inserting said upper cup into said upwardly and outwardly flared upper body end and inside said sealing compound; curling said outward flange and inward curl against the outer surface of said upper body end; performing a seam rolling step on said initially curled flange and curl and said upper body end to cause said upper end body to have an upwardly increasingly flared body portion joined by an upwardly uniformly flared merging body portion to an upwardly decreasingly flared body portion which terminates at said upper body end edge, said seam rolling step also causing said upper cup sealingly to engage said upper end body portion and to have an upwardly increasingly flaring inner cup portion tightly engaging the inside of said increasingly flaring body por-



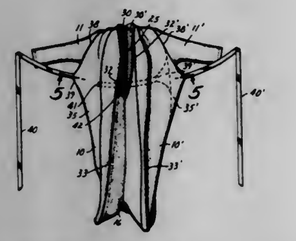
tion, said seam rolling step also causing said inner cup portion to have an upward substantially uniformly increasing flaring inner cup portion adjacent to but spaced from said decreasingly flaring body portion to form a side part of a sealing compound space in which said sealing compound is sealed at the bottom, said seam rolling step also causing said cup to form a reverse turn spaced above and turning above said upper body end edge to form an upper part of said sealing compound space above said upper body edge, said seam rolling step also causing said turn to merge with an outer cup part having a downward outwardly gradually flaring outer cup portion engaging the extreme upper end of said body adjacent said upper body end edge to seal the upper portion of said sealing compound, and causing said outer cup portion to merge with a gradually inwardly contracting outer cup portion, said seam rolling step also causing said last-named portion to be reversely folded with an increasingly flaring fold portion tightly engaging the outer surface of said increasingly flaring body portion.

PATENTS

GRANTED OCTOBER 31, 1967

GENERAL AND MECHANICAL

3,349,409
LADY'S GARMENT
Alice Norman Hall, Minneapolis, Minn., assignor to Munsingwear, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,100
5 Claims. (Cl. 2—74)



1. A lady's garment comprising:

(a) first and second cloth portions having sleeves therein connected together along one edge thereof to form a fitted back of a waist portion;

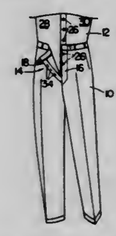
(b) first and second cloth panels connected together along front and back longitudinal edges to form a substantially tubular-shaped skirt portion, the upper edges of said panels being connected to matching edges of said first and second portions to form a front of said waist portion with a relatively large neck opening therein, and a portion of each of said cloth panels being folded in overlying relationship with part of the remainder of the associated panel and connected along a mating upper edge of the associated panel and the folded portion thereof thereby causing said garment to have a longitudinal fold at either side of the neck opening which folds extend substantially the length of the garment;

(c)) left and right wing-shaped members extending generally parallel to said longitudinal folds between said longitudinal folds and the side of the garment, one of said wing-shaped members being formed from parts of said first portions and panels and the other of said wing-shaped members being formed from parts of said second portions and panels, said wing-shaped members extending laterally outwardly to substantially a point at approximately the waist line when said garment is open and crossing in a partially overlying position when said garment is closed; and

(d) closing means attached to said left and right wing-shaped members for maintaining said garment in the closed position, said wing-shaped members urging and holding said longitudinal folds into a position wherein the neck of a wearer is encircled and the neck opening is reduced in size to approximately the size of the neck of the wearer.

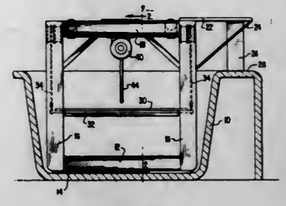
3,349,410
LOCK-DOWN SHIRT BUTTON TAB
Norman O. White, 3424 Cherry Lane, Fort Wayne, Ind. 46804
Filed Dec. 16, 1966, Ser. No. 602,228
4 Claims. (Cl. 2—229)

1. Means for connecting an upper garment to a lower garment, said upper garment being of the type which has a lower portion and a button fastened thereto, said lower garment being of the type having a fly-opening therein, said fly-opening being defined by elongated inner and outer panels, said fly-opening panels being adapted to be connected in an overlapping relationship with said inner fly-opening panel being adjacent to said lower portion of said upper garment thereby to close said fly opening, said inner fly-opening panel having a plurality of spaced-apart button holes directly associated therewith,



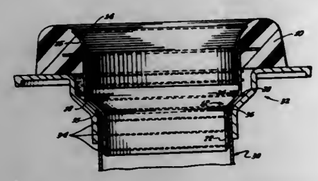
said button holes being aligned in a row extending longitudinally of said inner fly-opening panel, one of said button holes being in substantial registry with said button, said button holes each being adapted to allow the passage of said button therethrough and to prevent said button from unintentionally passing therethrough, said button holes being hidden from view by said outer fly-opening panel when said panels are in said overlapping relationship and said fly-opening is closed.

3,349,411
BATHTUB HOIST
John William Eaton, 1403 N. 8th St., Garden City, Kans. 67846
Filed Sept. 23, 1966, Ser. No. 581,590
4 Claims. (Cl. 4—185)



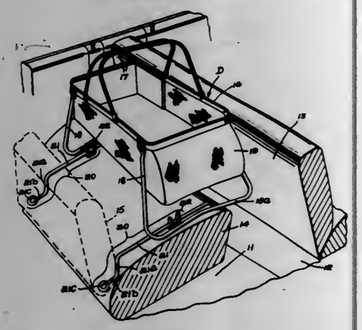
1. A hoist adapted to be placed in a standard size bathtub for raising and lowering a person into and out of the bath water comprising, frame means positioned to rest on and be supported by the bottom of said bathtub, seat means mounted for vertical movement within said frame means, flexible means secured to said seat means and winding means journaled in said frame and connected to said flexible means whereby said flexible means may be wound and unwound upon said winding means to raise and lower said seat means and flange means defining a seat secured to one side of said frame means and arranged to overhang the edge of said tub, support means secured to said flange means and extending downwardly to rest on the edge of said tub.

3,349,412
GASKET FERRULE
Charles H. Schwartz and George F. Smyth, Los Angeles, Calif., assignors to De Best Manufacturing Co., Inc., Gardena, Calif., a corporation of California
Filed Mar. 19, 1964, Ser. No. 353,124
8 Claims. (Cl. 4—252)



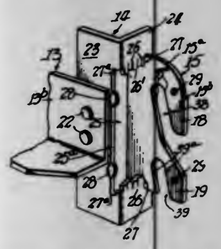
1. In a device for sealing the connection between a toilet bowl outlet and the upper end of a soil pipe that is surrounded by a flanged collar, wherein the device includes a ring of wax-like material to embrace the toilet bowl outlet in abutment with the upper surface of the flanged collar and further includes a ferrule of chemically inert plastic material attached to the ring and extending downward therefrom for sealing engagement with the interior of the soil pipe, the improvement comprising:
the ferrule being of stepped configuration with an upper circumferential portion of relatively large diameter to fit into a cast iron soil pipe of relatively large diameter and a lower circumferential portion of smaller diameter to fit into a smaller copper soil pipe, whereby the sealing device may be used with the two sizes of soil pipe interchangeably,
the upper circumferential portion of the ferrule having at least one integral outer circumferential flange for sealing engagement with the inner surface of the larger soil pipe.
the lower circumferential portion of the ferrule having at least one integral outer circumferential flange for sealing engagement with the inner surface of the smaller soil pipe.

3,349,413
BRACE FOR INFANT'S CAR BED
Morris C. Merelis, Brookline, Mass., assignor to Rose-Derry Company, Newton, Mass., a corporation of Massachusetts
Filed May 20, 1966, Ser. No. 551,687
3 Claims. (Cl. 5—94)



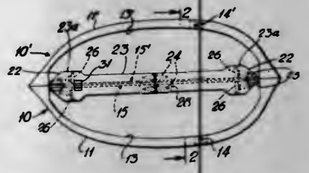
1. A brace, for an infant's car bed of the type having a frame and a supporting leg with a transverse bottom portion, comprising a rod disposed adjacent and substantially parallel to said transverse portion and clamping means connecting said rod to said portion, said clamping means being releasable to permit transverse sliding of said rod, said rod having a downwardly extending portion and a flat loop portion extending rearwardly therefrom, said rod being slidable to an extended position in which said bed is supported on the rear seat of a car with said downwardly extending portion pressing against the front of the back cushion of the rear seat, said loop portion under the back cushion, and said bed braced against the back of the front seat.

3,349,414
BEDRAIL ELEMENT AND METHOD OF MANUFACTURE
Kenneth H. Gutner, 3285 Dato, Highland Park, Ill. 60035
Filed Nov. 27, 1962, Ser. No. 240,325
11 Claims. (Cl. 5—296)



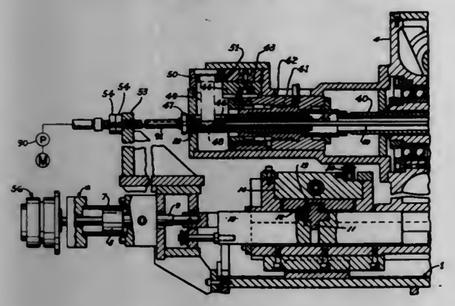
11. A bed support, comprising a bracket adapted to be secured to a bed rail and a hook-equipped elongated plate positionably, undetachably coupled to said bracket and adapted to engage the hook pins of a bed endboard, said plate having a pair of longitudinallly-extending notches and said bracket having cutout means and two spaced-apart rows of teeth for positionably engaging said notches, with said plate extending partway into said cutout means, said bed support being equipped with an integral part constituting lock means to prevent removal of said plate from said cutout means, said integral part being provided by staking after said plate has been inserted into said cutout means.

3,349,415
SECTIONAL BOAT CONSTRUCTION AND HINGED SEAT CONNECTING MEANS THEREFOR
Roger A. Scholle, 8 White Birch Lane, Scarsdale, N.Y. 10583
Filed Jan. 3, 1966, Ser. No. 518,106
10 Claims. (Cl. 9—2)



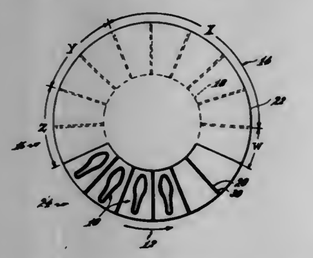
1. A sectional boat adapted to be assembled by the abutting of coextensive inner gunwales of separate sections thereof, said coextensive inner gunwales having end portions extending from the bottom to the deck of said boat sections and lower central portions with upper edges disposed below said deck and above the intended water line for said boat, an elongated seat member adapted to overlie said central upper edges of the gunwales, said seat member being centrally hinged transversely of the longitudinal center line thereof, and interfitting notch means on end portions of said seat member and inner gunwales providing three-way longitudinal, transverse and vertical clamping engagement of said gunwales when said hinged seat is fully extended.

3,349,416
TOOL CARRIAGE POSITIONER AND COMBINATION THEREOF WITH THREADING MACHINE
Earle C. Herbkersman, Parma, Ohio, assignor to The Pipe Machinery Company, Wickliffe, Ohio, a corporation of Ohio
Filed July 23, 1965, Ser. No. 474,308
13 Claims. (Cl. 10—89)



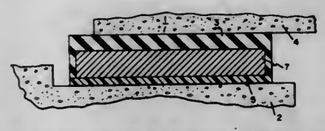
1. In a machine tool,
a bed,
a carriage mounted on the bed for movement along a predetermined path to and from a retracted position,
a tool head on the carriage,
power driven rapid traverse mechanism on the bed movable from a retracted position to advance positions relative to the bed and connected to the carriage for driving the carriage rapidly from a retracted position to advance feed starting positions of the carriage along its path,
power driven feed means drivingly interconnecting the carriage and rapid traverse mechanism for driving the carriage relative to the rapid traverse mechanism along said carriage path on the carriage feed stroke,
selective positioning means for stopping, and holding, the rapid traverse mechanism at selected advanced positions of the rapid traverse mechanism,
and means to render the feed means active and inactive, selectively, while the rapid traverse mechanism is held in its selected advanced positions.

3,349,417
METHOD OF MULLING AND HEAT-SETTING IN SHOE MANUFACTURE
Charles K. Woodman, Beverly, Mass., assignor to Compo Shoe Machinery Corporation, Waltham, Mass., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,278
22 Claims. (Cl. 12—142)



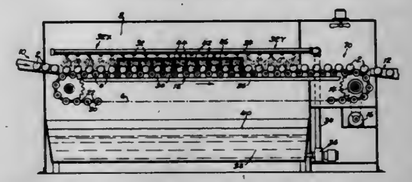
1. The method of treating lasted shoes while still on the lasts and which embody an outer material, a lining and a heel counter adhesively united by a water base adhesive, comprising adding a sufficient amount of wetting agent to the exterior of the outer material to penetrate to the interior of the outer material, forced draft drying the shoe by means of heated air, and then forced draft cooling the shoe to a temperature such that the surface plasticity is eliminated.

3,349,418
LOW FRICTION STRUCTURAL BEARING
Richard D. Hein, Wabash, Ind., assignor to The General Tire & Rubber Company, a corporation of Ohio
Filed July 20, 1965, Ser. No. 473,468
9 Claims. (Cl. 14—16)



1. In a bridge having a structural beam resting upon a support, means for accommodating linear and angular travel of said beam relative to said support, said means comprising a first relatively flat rectangular bearing pad resting upon said support and a second similarly shaped bearing pad stacked upon said first bearing pad and supporting the end of said beam, the contacting faces of each of said bearing pads consisting of a layer of a low friction fluorocarbon polymeric material, the surface of each of said pads in contact with its adjacent structural member composed of a compressible elastomeric material, and each of said bearings having a rigid reinforcing plate interposed between, and secured to, said elastomeric material and said low friction polymeric material.

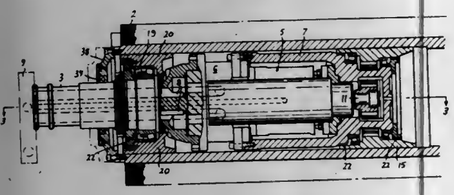
3,349,419
EGG WASHING EQUIPMENT
Henry Y. Kuhl and Paul R. Kuhl, both of Copper Hill-Reaville Road, Flemington, N.J. 08822
Filed Dec. 2, 1965, Ser. No. 511,071
1 Claim. (Cl. 15—3.13)

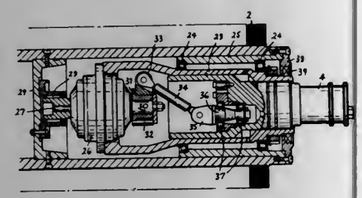


Egg cleaning equipment comprising a washing chamber having an inlet end and an outlet end, an egg receiving conveyor movable through said chamber from said inlet and to the outlet end of said chamber, a plurality of spray nozzles located in said chamber above said conveyor and positioned in rows extending transversely of the conveyor and spaced apart longitudinally of the conveyor said nozzles being operable to direct sprays of washing liquid downward therefrom onto eggs supported on the conveyor, a plurality of brushes extending transversely of the conveyor and mounted on supports located in the space between the spray nozzles and the conveyor, said brushes being of a width less than the longitudinal distance between said rows of nozzles, and means for moving said brushes back and forth in a direction longitudinally of said conveyor, the bristles of said brushes extending downward from the supports therefor into engagement with eggs supported on said conveyor, said bristles being flexible and serving to brush across the eggs first in one direction and then in the opposite direction as the brushes are moved back and forth, the bristles of the brushes also being deflected by the eggs during such back and forth movement thereof so as to subject the opposite sides of the brushes to the cleaning action of said sprays

of washing liquid to cause dirt to be removed from both the eggs and the brushes by the washing liquid as the brushes are moved back and forth in contact with the eggs on said conveyor.

3,349,420
POWER-DRIVEN ROTARY BRUSH FOR CLEANING THE ROLLS OF A ROLLING MILL
Cyril E. Smith, Ringwood, and John Andre Tracy, Bournemouth, England, assignors to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain
Filed Feb. 23, 1966, Ser. No. 529,483
Claims priority, application Great Britain, Feb. 22, 1965, 7,640/65
4 Claims. (Cl. 15—21)

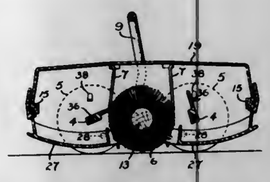




1. A power driven rotary brush for cleaning the surface of a working roll in a rolling mill, comprising a drum, provided with bristles around its external surface, and rotatable about, and axially slidable relative to, a pair of stationary stub shafts extending one into each end of the drum, a hydraulic motor of the impeller type being mounted within the drum and adapted to rotate the drum relative to the stationary stub shafts, said hydraulic motor being rigidly mounted by its casing at the inner end of one stub shaft and being provided with an output shaft coupled to the drum through a reduction gear train including an internally toothed gear ring keyed to the drum to prevent rotation between the drum and gear ring but to permit axial movement therebetween, and means for oscillating the drum axially relative to the stub shafts upon rotation of the drum being connected to the other of said stub shafts, said oscillating means including a sleeve mounted for axial movement, but not rotation, on and relative to the inner end of said other shaft, and rotatable but not axially movable relative to the drum, and drive means for producing axial oscillatory motion between said other shaft and said sleeve upon rotation of the drum.

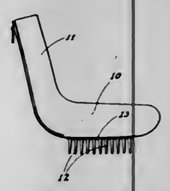
3,349,421
CARPET SWEEPER
Donald Smyth, Forbes, South Australia, and Paul Eastcott Robinson, South Payneham, South Australia, Australia, assignors to S. A. Brush Company Limited, Albert Park, South Australia, Australia
Filed July 27, 1965, Ser. No. 475,066
Claims priority, application Australia, July 30, 1964, 47,580/64
4 Claims. (Cl. 15—48)

2. An improved carpet sweeper of the type comprising a frame, end members supported on the frame, wheels adjacent the end members supported on axles movable in the end members, a brush supported between the said axles, rollers on the brush, spring means urging the axles of the wheels towards the brush whereby to cause the wheels to engage the rollers on the said brush, wherein the movement of the axles is controlled to be substantially parallel to the plane of movement of the sweeper when in use whereby the driving load of the wheels on the brush does not materially alter the height of the brush in relation to the wheels but drive of the brush takes place princi-



pally by the forward wheels in any motion, and including combs engaging the axles of the wheels and disposed one on each side of the brush, the combs frictionally engaging the axles and the axles being locked to the wheels so that so that rotation of the wheels and axles during use moves the combs to cause the correct comb only to be in contact with the brush for cleaning same, and stop means to limit the movement of the combs under influence of the frictional engagement with the axles.

3,349,422
GREEN-SWEEPING BRUSH ATTACHMENT FOR A GOLF PUTTER
Theodore Heil, Lodi, Calif., assignor of one-half to Virgil M. Watts, Lodi, Calif.
Filed Feb. 28, 1966, Ser. No. 530,606
6 Claims. (Cl. 15—160)

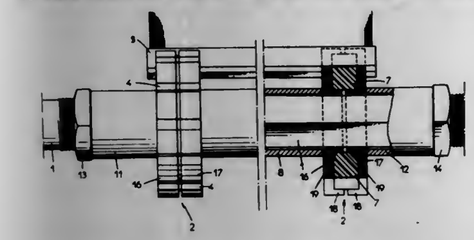


1. A green-sweeping brush attachment for a golf club having a ball-engaging blade of predetermined shape on the lower end of the shank of said club, a hood of flexible material shaped to correspond to the shape of the blade and adapted to removably fit over and enclose said blade, and a depending brush mounted on the hood in position to engage the green below the blade.

3,349,423
ROTARY BRUSHES
Etienne Lousberg, 137 Grand Route, Jemappes, Belgium
Filed Feb. 16, 1966, Ser. No. 527,857
Claims priority, application Belgium, Feb. 22, 1965, 660,072; Apr. 23, 1965, 662,956
21 Claims. (Cl. 15—183)

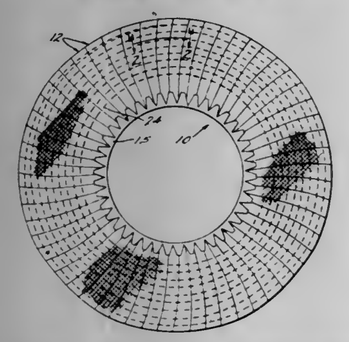
1. Rotary brush of the type comprising at least two disk-shaped parts mounted at some distance from each other on a rotary shaft and carrying, in grooves cut in their rims, a certain number of removable strips fitted with bristles so as to form, each one of them, a brush component, and characterized by the fact that the support disks of the strips are made up of two circular-shaped plates with grooves cut in their rims for the purpose of

receiving the strips, and of one elastic material part inserted between the plates and showing similar peripheral grooves, means being provided to bring the plates nearer to each other so as to cause, after the putting into place



of the strips, the expansion of the elastic material around the base of the strips and a pressure of said material against said strips in order to lock the latter in the disks bearing them.

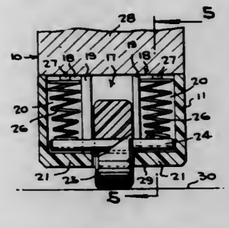
3,349,424
BUFFING WHEEL
Howard J. McAleer, Detroit, Mich., assignor to Formax Manufacturing Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 1, 1965, Ser. No. 435,866
3 Claims. (Cl. 15—230.14)



1. A buffing wheel comprising: annular retainer means for securing a plurality of fingers, at least two rows of said plurality of individual fingers peripherally secured to said retainer means and circumferentially spaced thereabout and etxending radially outwardly therefrom, each of said fingers comprising a longitudinally extending core formed of a plurality of strands and a wrapper longitudinally encasing said core, each said wrapper having a tubular portion enclosing said core and a flap extending circumferentially and located in general overlapping relation with an adjacent finger of the same row, each of said fingers of at least one of said rows having said flap extending circumferentially between adjacent rows, and means comprising stitching for securing adjacent ones of said finger together for substantially their entire lengths with said stitching connecting said flap and said adjacent ones of said fingers.

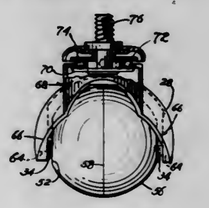
3,349,425
SPRING LOADED RETRACTABLE CASTER
Nicholas A. Rabelos, Atlanta, Ga., assignor to Roll-Lok Corporation, Atlanta, Ga.
Filed July 17, 1962, Ser. No. 210,448
1 Claim. (Cl. 16—44)

A retractable caster of the type stated comprising a body member having a centrally arranged vertically disposed slot therein, said body member having a pair of diametrically opposed recesses formed therein and said recesses communicating with said slot, each of said recesses including a narrow inner portion and an enlarged cylindrical portion, a vertically movable axle having its end portions projecting through the narrow portions of the recesses and extending into the enlarged cylindrical portions thereof, a roller mounted on the intermediate portion of the axle and said roller being mounted for up and down movement in said slot, spring members positioned in the cylindrical portions of the recesses and said spring



members having their lower ends engaging the end portions of the axle, stop means engaging the upper end portions of the spring members, said body member including a plurality of spaced apart openings therein, said openings including lower enlarged portions and said openings having upper portions of reduced size, and securing elements extending through said openings and said securing elements having enlarged heads seated in the lower enlarged portions of the openings.

3,349,426
HOODED CASTER WHEEL ASSEMBLY
Raymond S. Haydock, Niles, Ill., assignor of one-half each to Raymond Haydock, Jr., and Sandra L. Haydock, both of Niles, Ill.
Filed July 26, 1966, Ser. No. 568,063
4 Claims. (Cl. 16—46)



1. A floating caster wheel assembly, comprising an inner housing, having two identical parts of molded plastic, each part comprising a body having a central bore adapted to receive the stem of a caster wheel fork, and each part being hollow and having a plane outer end surface of circular shape surrounding a short cylindrical stem tube, which extends to said surface, said body having an outer frusto-conical surface extending outward to a narrow cylindrical peripheral surface which terminates in a plane edge, adapted to abut against a similar edge on the other of two parts, the interior of said body having an inner plane surface, an inner frusto-conical surface and an inner cylindrical surface, and said body having a multiplicity of integral radially extending, reinforcing vanes, spaced from each other and extending from said inner plane surface, said inner frusto-conical surface, and said inner cylindrical surface, said vanes projecting axially beyond said inner and outer cylindrical surfaces and terminating in plane edges, and projecting by an amount which is slightly less than the axial length of the cylindrical inner surface on the other part of the inner housing, the fit of

the two parts being such that the two parts of the inner housing may be brought together with the vanes of one part located between the vanes of the other part, and when the vanes begin to engage the inner cylindrical surface, the two parts permit their further movement together with slight force, and snap into closed position with the plane edges of the cylindrical parts engaging each other.

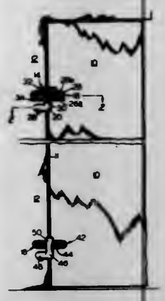
3,349,427
HINGE
John C. Cairns, New Britain, and Charles R. Suska, Roxbury, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Aug. 27, 1965, Ser. No. 483,226
7 Claims. (Cl. 16—128)



1. A hinge comprising a pair of identical hinge members each having a threaded cylindrical shank portion and a knuckle portion, and a molded pintle for securing the hinge members together for relative pivotal movement, the knuckle portions of each of said hinge members having a circular recess in one end thereof comprising an enlarged cylindrical entry portion, a convexly curved annular intermediate portion and a cylindrical bottom portion, and said pintle being formed of a low friction plastic and having an integral enlarged centrally disposed thrust bearing portion of greater axial length than the combined depths of said entry portions of said recesses and having a cylindrical outer surface seated within said annular recesses and disposed between a pair of concave thrust bearing surfaces respectively engaging the convexly curved intermediate portions of said recesses, the circle of discontinuity between the cylindrical outer surface of the thrust bearing portion and the concave intermediate portions thereof being positioned substantially in alignment with the axis of the shank portions of the hinge members.

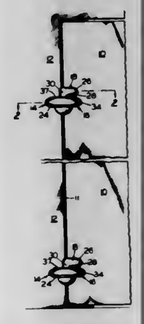
3,349,428
HINGE
Charles R. Suska, Roxbury, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Aug. 27, 1965, Ser. No. 483,228
2 Claims. (Cl. 16—128)

1. A hinge mounting a door member and the like for swinging movement, comprising a screw eye having a threaded shank and an annular eye, a low-friction bearing member fitting in said eye and having a load-bearing flange at one end thereof engaging one side of said eye, said bearing member having a multiple turn threaded aperture therein substantially coaxial with said eye, and an L-shaped hinge member having a threaded shank and a multiple turn externally threaded pintle portion extending substantially perpendicular to the threaded shank of said L-shaped hinge member and threaded into the threaded aperture in said bearing member with said



threaded shank opposing said one end of said bearing member.

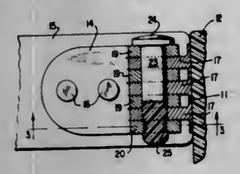
3,349,429
HINGE
Charles R. Suska, Roxbury, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Aug. 27, 1965, Ser. No. 483,229
9 Claims. (Cl. 16—128)



1. In combination, a door member, a door frame member and a pair of hinges mounting the door member on the door frame member for relative swinging movement; at least one of said hinges comprising a pair of wire-formed hinge members, each having a threaded cylindrical shank portion for securing the same to the door and door frame members, respectively, one of said hinge members having a spherical recess the center of which is positioned below the centerline of the shank portion thereof, the other of said hinge members having a pintle member terminating in a mating convex spherical surface positioned within said spherical recess to accommodate misalignment of the hinge members and to prevent the separation of the hinge members by lateral loading on the hinge.

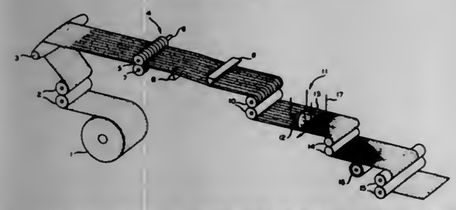
3,349,430
OPHTHALMIC MOUNTING HINGE
Lloyd K. Rosenvold and Robert J. Rosenvold, both of 1101 Main St., Montrose, Colo. 81401
Filed Nov. 23, 1964, Ser. No. 413,048
1 Claim. (Cl. 16—169)

A hinge comprising a first leaf, a plurality of projecting lugs extending from top to bottom on said first leaf having vertically aligned apertures therein, a second leaf, a plurality of projecting lugs on said second leaf having aligned apertures therein, the lugs on said respective leaves being interdigitated providing an aligned bore through the respective lugs, the bottom lug on said first leaf being of a permanently deformable material, said bottom lug being slit outwardly from the aperture to form a bifurcated end thereon enabling permanent deformation



of said bottom lug, and a hinge pin in the aligned bore of said interdigitated lugs, said pin having an annular groove positioned adjacent said bottom lug, said bottom lug being pinched into said annual groove of the pin to clamp and lock the pin in position.

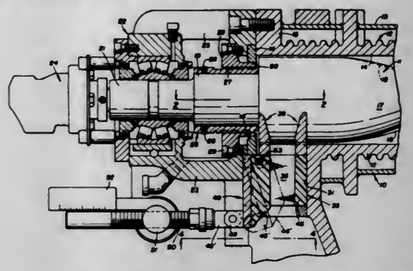
3,349,431
APPARATUS FOR COLD-STRETCHING ORIENTABLE SHEET MATERIAL
Ole-Bendt Rasmussen, Farum, Denmark, assignor to Phillips Petroleum Company, Bartlesville, Okla., a corporation of Delaware
Original application June 8, 1962, Ser. No. 201,205, now Patent No. 3,233,029, dated Feb. 1, 1966. Divided and this application Sept. 2, 1965, Ser. No. 484,558
Claims priority, application Denmark, June 9, 1961, 2,353/61
6 Claims. (Cl. 18—1)



1. Apparatus for cold stretching orientable sheet material comprising, in combination, means for forcing said sheet into multiple lengthwise folds across the width of said sheet, means for smoothing said folds into pleats, and means for subjecting the resulting pleated film to longitudinal stretching, and cooling means positioned between said smoothing means and said stretching means to even out friction on said pleated sheets as the pleats gradually disappear due to the longitudinal stretching.

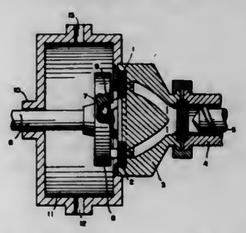
3,349,432
CONTINUOUS MIXING MACHINES
Joseph C. Breneman, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Sept. 3, 1965, Ser. No. 484,961
5 Claims. (Cl. 18—2)

1. In a continuous mixer for rubber particles and the like, a casing, a pair of side-by-side bushings in one end of said casing defining a pair of side-by-side bores therethrough, a pair of rotor screws operatively disposed within said casing in side-by-side relation, a journal neck on one end of each said rotor extending through each said bore and terminating in a journal stub shaft, a discharge orifice entrance border member in said end of said casing generally medially of said bushings, said entrance border member defining a discharge orifice entrance outwardly from the casing and having a pair of spaced-apart opposing plow plates each with an inner apex portion and an outer base portion, said apex portions disposed between said rotor screws, peripheral orifice side members joined to said entrance border member and extending outwardly therefrom to define an extension of said discharge orifice outwardly of said casing, and an outer retaining ring abutting said side members and connected to said



entrance border member, one of said side members being hinged to said entrance border member to vary the size of said discharge orifice extension, and said side members being of thermoplastic material having a low coefficient of friction with respect to the material discharged from the mixer regardless of temperature variations.

3,349,433
DEVICE FOR GRANULATING EXTRUDED POLYMERS
Heinz Schippers, Remscheid-Lennep, and Walter Niemeyer, Remscheid, Germany, assignors to Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal-Oberbarmen, Germany
Filed Nov. 15, 1965, Ser. No. 507,834
Claims priority, application Germany, Nov. 24, 1964, B 59,797
3 Claims. (Cl. 18—12)

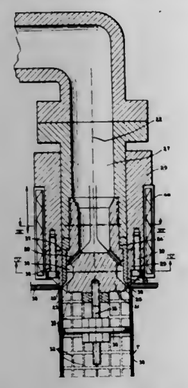


1. In a device for the granulation of an extruded thermoplastic material by means of at least one rotating knife blade moving over the surface of a die face from which a polymer strand is extruded, wherein said die face is in at least partial wearing contact with said knife blade, the improvement of said extruder die having at least the face portion thereof composed of nodular cast iron.

3,349,434
EXTRUSION OF ARTICLES WITH RIBBED FULL WALLS
Jacques Hureau, Paris, France, assignor, by mesne assignments, to Societe Generale Alimentaire G.A.S.A., Neuilly-sur-Seine, Seine, France, a company of France
Original application Dec. 18, 1961, Ser. No. 159,965, now Patent No. 3,252,181, dated May 24, 1966. Divided and this application Apr. 7, 1966, Ser. No. 541,027
Claims priority, application France, Dec. 28, 1960, 848,186, Patent 1,310,478
5 Claims. (Cl. 18—12)

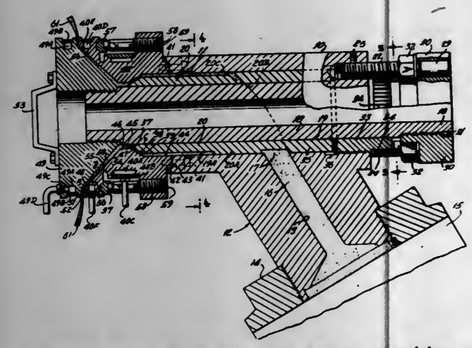
3. A machine for producing articles with ribbed, full walls in a solidifiable material, comprising two extrusion die members having elongated working surfaces, each extending between a first and a second elongated border, said

die members being arranged with their working surfaces facing each other, and being separated by a narrow, elongated extrusion space having narrow, elongated input and output openings between the respective first and second borders of the working surfaces, said die members being further mounted to be displaceable with respect to each other between a first position, in which said narrow extrusion space has a first, predetermined transverse width, and a second position, in which said narrow extrusion



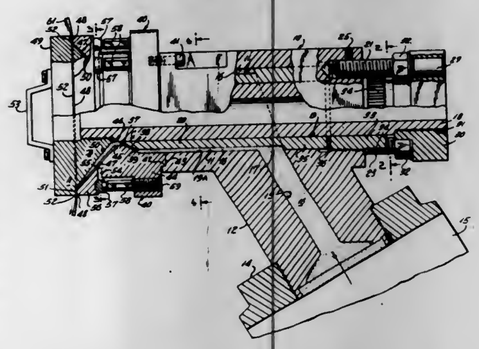
space has a second, larger than the first, predetermined transverse width, a plurality of extrusion channels, each extending through one of said die members from an inlet to an outlet arranged near to the second border of the working surface, means for continuously feeding with the solidifiable material the input opening of the said extrusion space and the inlets of said extrusion channels, and means for alternately displacing said die members between their first and second positions.

3,349,435
PRECISION DIE FOR MANUFACTURE OF FOAMED PLASTICS AND THE LIKE
Peter Vanden Bosch, Waldwick, N.J., assignor to Danadyne, Inc., Linden, N.J., a corporation of New York
Filed Sept. 21, 1965, Ser. No. 488,843
10 Claims. (Cl. 18—14)



1. Apparatus for forming plastic sheets comprising a die having an inlet port to receive molten plastic extrudate under pressure, an exit die mouth, said die having in its interior a mandrel for forming the said extrudate into a tubular mass, an annular block disposed adjacent one end of said mandrel for cooperating with said one end to control the flow of said extrudate between said block and said one end, said block further having an inwardly extending annular ridge, a generally cylindrical member in said die, said member having a surface spaced from the surface of said ridge to form a tubular passageway therewith through which said extrudate flows during its travel to said die mouth, an extrudate guide means disposed substantially coaxially with the mandrel to guide the molten extrudate around the mandrel and also in an axial direction by subjecting it to a force extending toward said die mouth, and said guide means including an extrudate divider for the mandrel adjacent said inlet port to guide the extrudate entering said port around and along the mandrel to uniformly distribute it therearound as it is flowing to said die mouth.

3,349,436
APPARATUS FOR EXTRUDING FOAMED PLASTICS AND THE LIKE
Peter Vanden Bosch, Waldwick, N.J., assignor to Danadyne, Inc., Linden, N.J., a corporation of New York
Filed Sept. 21, 1965, Ser. No. 488,952
10 Claims. (Cl. 18—14)

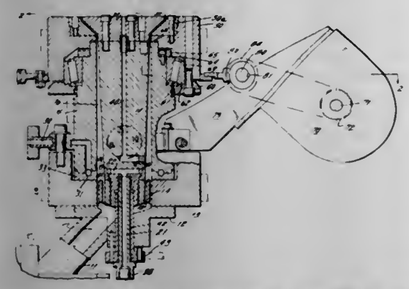


1. A die for forming molten extrudate into a sheet comprising means defining a tubular passage surrounding the longitudinal axis of the die for forming a molten extrudate into a molten tubular mass, an inlet port for conveying molten extrudate to said passage, means defining an exit die mouth from which the extrudate is to emerge, said means defining said exit mouth including a pair of annular spaced members which provide serially arranged tapered passages between said cylindrical passage and said exit mouth, said means defining the said exit mouth further including a pair of die lips, means to adjust the spacing between said lips, and means for adjusting a dimension of one of said tapered passages independently of said means to adjust said spacing between said lips.

3,349,437
ROTATING DIE CAP FOR EXTRUSION DIE
John Joseph Quackenbush, Monroe, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 8, 1965, Ser. No. 512,419
4 Claims. (Cl. 18—14)

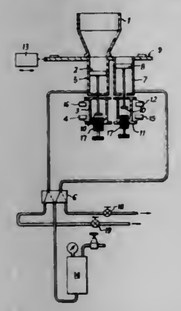
1. An extrusion die for extruding a hollow tube of plastic; said extrusion die comprising a fixed central die core structure; a fixed outer body structure surrounding said central die core structure and spaced therefrom to define an annular channel, the lower end of said annular channel connectible to a source of molten plastic under pressure; a rotatable outer die cap positioned on top of said outer body structure; and mounting means rotatably connecting said rotatable outer die cap structure to said outer body structure; said rotatable outer die cap having

a central opening therethrough and surrounding and spaced from the top of said central die core structure to form a discharge orifice for said channel, and rotation



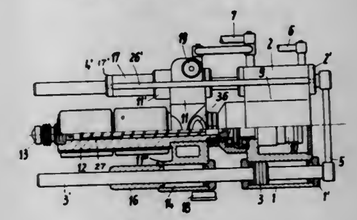
means connected to said rotatable die cap for rotating said rotatable die cap about the axis of said annular channel.

3,349,438
APPARATUS FOR DIVIDING DOUGH AND LIKE MATERIALS
Donald Ernest Baker, Macclesfield, and William George Culpin, Stockport, England, assignors to The E. T. Oakes, Corporation, Islip, N.Y.
Filed Dec. 27, 1965, Ser. No. 516,259
Claims priority, application Great Britain, Dec. 30, 1964, 52,868/64
11 Claims. (Cl. 18—30)



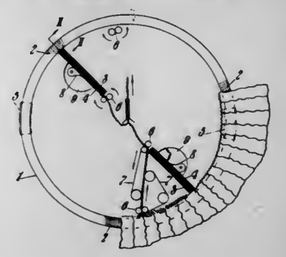
1. Apparatus for dividing a stream of dough-like material into discrete pieces of predetermined volume comprising:
an extrusion nozzle for discharging said material,
at least two cylinders arranged in spaced relationship for receiving the material discharged from said nozzle,
a supporting member for said cylinders movable transversely across said nozzle to bring each cylinder in turn into a position in which it is presented to said nozzle and simultaneously to remove the previously presented cylinder from said nozzle,
a motor drivably connected to said supporting member,
means for severing material in each cylinder from material in the nozzle during the removal of said cylinder from said nozzle,
pistons in said cylinders adapted, when the respective cylinders are presented to the nozzle, to be pressed back by the entry into the same of material from said nozzle,
means for returning said pistons to eject material from the respective cylinders while said cylinders are removed from said nozzle,
means for detecting when the piston in each cylinder presented to the nozzle has been pressed back through a predetermined distance, and
means responsive to such detection by said detecting means to set said motor in operation for changing the cylinder presented to said nozzle.

3,349,439
INJECTION MOLDING UNIT
Karl Hehl, Lossburg, Wurttemberg, Germany, assignor to Arburg Maschinenfabrik Hehl & Sohne, Lossburg, Wurttemberg, Germany
Filed Oct. 5, 1965, Ser. No. 493,207
Claims priority, application Germany, Oct. 22, 1964, A 47,395
10 Claims. (Cl. 18—30)



1. An injection unit for injecting plastic material into a mold, comprising, in combination:
(a) an injection cylinder defining a plastic storage chamber adjacent one end thereof;
(b) plunger means disposed in said cylinder for forcing plastic contained in said storage chamber out of said cylinder;
(c) a pair of parallel support bars on which said cylinder and said plunger means are mounted; and
(d) hydraulic means for moving said cylinder and said plunger means axially with respect to one another, said hydraulic means including at least one hydraulic cylinder and piston assembly composed of a cylinder defining at least one fluid chamber and surrounding a piston, both the cylinder and the piston being disposed concentrically about one of said support bars.

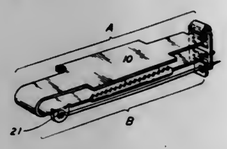
3,349,440
COMBING MACHINERY
Jack Clarkson, Bradford, England, assignor to Sir James Hill & Sons Limited, Yorkshire, England, a British company
Filed Apr. 8, 1964, Ser. No. 358,184
Claims priority, application Great Britain, May 28, 1963, 21,317/63
2 Claims. (Cl. 19—22)



1. A combing machine for textile fibers including two rotatable annular members mounted for relative rotation in planes approximately perpendicular to each another so that portions of each annular member pass adjacent to one another, a set of projecting pins on each annular mem-

ber extending parallel with the axis of rotation of the annular member carrying the pins, means for pressing the fibers into the pins of the set on one of the annular members so that the fibers lie within the pins approximately parallel to the radius of the annular member, so that upon continued relative rotation between the annular members, each set of pins moves adjacently past, with a component downward relatively to, the other set of pins and the fibers are carried against the pins on the other annular member and drawing off rollers located adjacent to at least one set of said pins.

3,349,441
CORSAGE HOLDER
Sally I. Turner, 1130 W. 8th St., Plainfield, N.J. 07063, and Charles D. Richard, Basking Ridge, N.J.; said Richard assignor to said Turner
Filed Feb. 8, 1965, Ser. No. 430,936
10 Claims. (Cl. 24—6)



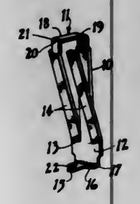
6. A corsage holder comprising a resilient strip bent to form clamping elements at least a portion of which are substantially parallel to each other, one of said clamping elements having a clamping position securing member at one end, another of said clamping elements having a pivoted latch member at its free end, said latch member having means for selectively engaging said position securing member in a plurality of positions depending upon the size of the corsage, a pin engaging member located on said latch and a pin pivotally mounted on said one clamping element, said pin having its free end extending in position for engaging said pin engaging member for securing the holder to a wearer's apparel.

3,349,442
BALE TIE
Alexander Buy, Palos Park, Ill., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York
Filed Sept. 27, 1965, Ser. No. 490,274
2 Claims. (Cl. 24—23)



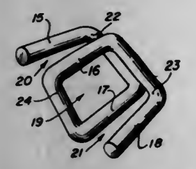
1. A strap joint comprising overlapping strap ends of a single length of strap, one of which has a part provided with a first individually distinct readily identifiable wedging surface, and a seal embracing said strap and having a part engaging said wedging surface to cause said seal and said strap ends to exert a frictional grip upon each other, the other strap end having a second individually distinct readily identifiable wedging surface located at a predetermined distance from the first wedging surface and engageable with the first wedging surface for locating the positions of the strap ends relative to each other, the length of strap being substantially planar except for the presence of said two wedging surfaces which project from the plane of the planar portions of the strap, the seal having an opening extending longitudinally through it through which the strap passes to allow the seal to travel longitudinally along the strap, the opening being of a size large enough to freely pass two overlapped layers of the flat portions of the strap but small enough to prevent passage therethrough of the wedging surfaces when they are engaged with each other, thereby permitting travel of the seal along the overlapping strap ends to be blocked by the engaged wedging surfaces and signify the terminal portion of movement of the seal.

3,349,443
FASTENER CLIP FOR MOUNTING PICTURES AND THE LIKE
Peter Sury, 1910 Holmby Ave., Los Angeles, Calif. 90025
Filed Apr. 18, 1966, Ser. No. 543,126
1 Claim. (Cl. 24—73)



A fastener comprising at one end thereof a body web and a prong joined thereto by an integral right dihedral-angular bend;
a bridge bar extending from said web in the plane thereof to the opposite end of the fastener;
a holding hook at said opposite end, and extending integrally from the end of said bridge bar in the same direction as said prong and terminating in a claw adapted to engage the forward side of a sandwich of panels while said bridge bar is disposed in adjacent, parallel relation to the rear side thereof;
a pair of spring loading fingers struck from respective sides of said bridge bar and inclined forwardly toward said claw, adapted to engage the back side of said sandwich; said prong being adapted to be embedded in the back panel of said sandwich so as to anchor said clip to the sandwich with said holding hook retained in holding engagement with the sandwich at its margin;
said pair of spring loading fingers being arranged at respective sides of said bridge bar in a first common plane, and said body web and bridge bar being disposed in a second plane subtending an acute dihedral angle to said first common plane;
each side edge of said bridge bar and the adjacent inner edge of an adjacent finger being disposed in a common plane, said last mentioned common planes being parallel with each other and normal to the plane of said body web; and
a transversely extending toe projecting forwardly from the end of said body web at right angles thereto, said prong being an integral extension of said toe, projecting forwardly from the center thereof, and said toe terminating in forwardly facing abutment shoulders on respective sides of said prong, for positioning engagement with said back panel.

3,349,444
METAL BUCKLE
John R. Beach, Elmhurst, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,423
4 Claims. (Cl. 24—74)



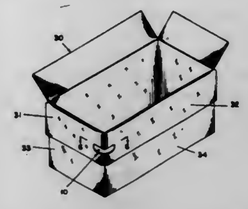
1. A buckle formed of a single metal rod, said buckle being generally rectangular in plan outline and having a set of strap engaging crossbars on opposite ends thereof, said sets of crossbars extending substantially side by side and the crossbars common to each set extending substantially side by side, the first crossbar of one set constituting a terminal portion of the rod and defining one end extremity of the buckle outline and the second crossbar of said one set constituting an intermediate section of the rod, the first crossbar of the other set constituting an intermediate section of the rod and the second crossbar of said other set constituting an opposite terminal portion of the rod and defining an opposite end extremity of the buckle outline, said rod having an endwise run interconnecting the said first crossbars, and another endwise run interconnecting the said second crossbars, said endwise runs being partially overlapping and partially exposed in plan outline relation to each other, and said rod having an endwise run interconnecting the second crossbar of said one set and the first crossbar of said second set.

3,349,445
PUSH BUTTON TYPE SAFETY SEAT BELT BUCKLE
Walter E. Foster and Robert C. Black, Lexington, Ky., assignors to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York
Filed Feb. 21, 1966, Ser. No. 528,725
6 Claims. (Cl. 24—77)



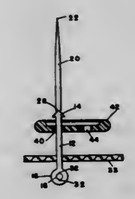
1. In a safety belt buckle construction, a combination of a casing including a base wall, upstanding relatively spaced side walls and a cover defining a chamber therein and a top opening to said chamber, means connected to the casing for adjustably clamping belt webbing thereto, a latching dog comprising a plate pivotally mounted upon said casing side walls within the chamber, spring biasing means normally engaging and urging the latching dog and its plate downwardly towards the base wall into latching position, lifting means pivotally mounted upon said casing and located within the chamber casing having a crank portion, a webbing attaching tongue plate having an opening therein, said latching dog plate having a depending rear extension in close proximity to the base wall adapted to enter the tongue plate opening under influence of the spring biasing means upon full insertion of the tongue plate between the base wall and the plate of the latching dog and to retain the tongue plate within the casing, said latching dog at its rear end beyond the pivot axis of the dog engaging the lifting means crank portion whereby the latter is normally urged by the spring biasing means into an inoperative position, and movable push button means mounted at the opening of the cover of the casing and operatively associated with said lifting means and adapted when depressed into the casing to pivotally move the lifting means crank portion to slidably engage the dog and lift it out of latching position with respect to the tongue plate.

3,349,446
BOX FLAP HOLDER
Robert M. Haygeman, Green Bay, Wis. 54301
Filed Aug. 4, 1965, Ser. No. 477,268
8 Claims. (Cl. 24—87)



1. A box flap holder comprising a substantially rigid member having a pair of arms disposed at substantially right angles to each other, said arms having inwardly directed points thereon adapted to pierce adjacent top flaps of a box for holding same in an open position against the sides of the box, said arms and said points lying in substantially a common plane.

3,349,447
BUTTON RETAINER
Norman G. Raleigh, Jr., El Cajon, Calif., assignor of ten percent to Lorraine E. Whalen, El Cajon, Calif.
Filed Jan. 19, 1966, Ser. No. 521,721
6 Claims. (Cl. 24—90)



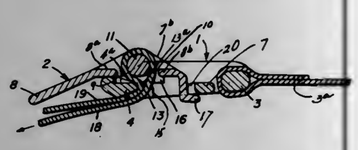
1. A button retainer, comprising:
a narrow elongated band portion and an elongated stem substantially continuous therewith;
the end of said band portion at the junction with said stem having an enlarged head;
the other end of said band portion having an eye with an opening therein slightly smaller than the maximum width of said head, said eye being slightly resilient so that said head may be forced therethrough;
and said stem being a leader only and having a material penetrating point at the end remote from said head, said stem and point, in use, constituting means to guide the head through cloth of a garment, a button and said eye.

3,349,448
TUFTED BACK MOLD FOR FABRIC COVERED BUTTON
Louis Carocci, Johnston, R.I., assignor to C. & C. Button & Trimming Co. Inc., New York, N.Y., a corporation of New York
Filed June 2, 1965, Ser. No. 460,728
2 Claims. (Cl. 24—92)



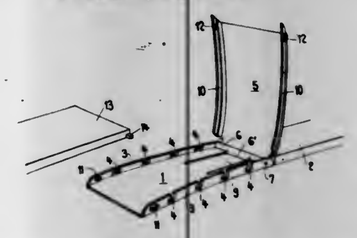
2. A tufted back mold for a button including in combination a shell having a central opening, a lip extending generally radially outwardly around said opening, a fabric piece overlying said lip and having a tuft extending out through said opening, a retainer disc behind said fabric piece, said disc having a lipped central opening therein and having a plurality of struck-out teeth disposed on the locus of a circle outboard of the disc opening, said teeth being directed radially inwardly of said opening and under said lips to clamp the fabric between the lips and the teeth.

3,349,449
SAFETY BELT BUCKLE AND WEBBING
John E. Hatfield, Stotfold, Bedfordshire, England, assignor to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 420,060
3 Claims. (Cl. 24—197)



1. A quickly releasable buckle for the webbing of safety harnesses comprising a first rigid buckle portion having a webbing attaching cross bar, a pair of spaced parallel side bars rigidly connected at the ends of the webbing attaching cross bar in right angle relation therewith, and a second cross bar defining an abutment bar connected to those ends of the side bars remote from the webbing attaching cross bar, said cross bars and side bars defining an inserting opening, and a second buckle portion comprising a pair of relatively spaced parallel cross bars, a side bar secured at its ends to similar ends of one of the cross bars of the second buckle portion, a second side bar secured at its ends to the opposite ends of the cross bars of the second buckle portion, and a webbing attaching cross bar secured to the side bars of the second buckle portion between and in spaced relation with respect to the cross bars of the second buckle portion, the outer side surfaces of the side bars of the second buckle portion being spaced apart less than the width of the inserting opening of the first buckle portion, whereby the second buckle portion may extend into the inserting opening of the first buckle portion, the side bars of the first buckle portion being provided with extensions projecting into and communicating with said inserting opening adjacent to the second of its cross bars, the upper surface of one of said inward extensions and the upper surface of the cross bar remote from the webbing attaching cross bar defining a slideway upon which one of the side bars of the second buckle portion moves, the other of said inward extensions being projected so that its top surface is above the plane of said slideway, the other side bar using said top surface as a slideway, each side bar of the first buckle portion having an inner side recess, said recesses facing each other and communicating with the inserting opening of said first buckle portion, said webbing attaching bar of the second buckle portion at its lower surface directly facing the first buckle portion and being spaced when the buckle portions are assembled a distance above the slideway at least equal to the thickness of webbing adapted to be attached to the second buckle portion.

3,349,450
LOCKING DEVICES FOR STRAPS
Jean Victor Cattin, 19 Ave. des Forges, 2300 La Chaux-de-Fonds, Switzerland
Filed Feb. 3, 1966, Ser. No. 524,936
Claims priority, application Switzerland, Feb. 16, 1965, 2,098/65
4 Claims. (Cl. 24—206)

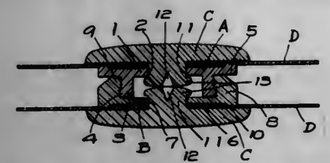


1. In a locking device for connecting together the ends of a strap, a plate-shaped bottom member to be fixed to the one strap end, said bottom member having a leaf spring and, on opposite edges, flanges comprising notch means for receiving projections of the other strap end, a plate-shaped cover member to be approached to or moved away from said bottom member, hinge means connecting said cover member with said bottom member, said hinge means comprising, a tubular member rigidly connected with said cover member, a stop means mounted on said cover member within reach of said hinge means, a pin carried by said flanges and going through said tubular member, said stop means supported on said leaf spring to allow said leaf spring, from a neutral position of said stop means with regard to said leaf spring, to either approach said cover member towards said bottom member or to swing said cover member away from said bottom member into a stable opened position.

3,349,451
PLASTIC GRIPPER BUTTON
Minoru Maeno, Osaka, Japan, assignor, by direct and mesne assignments, to Kanegafuchi Boseki Kabushiki Kaisha, doing business as Kanegafuchi Spinning Co. Ltd., Osaka, Japan
Continuation of application Ser. No. 347,250, Feb. 25, 1964. This application Apr. 1, 1966, Ser. No. 549,082
Claims priority, application Japan, July 10, 1963, 38/52,112
6 Claims. (Cl. 24—208)

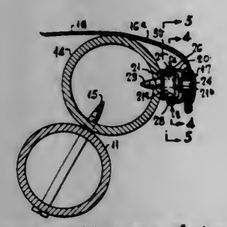
1. A plastic gripper button of the type comprising a pair of interengageable gripper members each adapted to be assembled to one of a pair of button members with a layer of fabric material in between a gripper and button member, wherein prior to such assembly two of said members are each formed with a central aperture and the other two of said members are each provided with a central projecting stem adapted to be engaged in one of said apertures at the time of assembly, each stem being formed with a main portion with a cross-sectional area substantially equal to the cross-sectional area of the central aperture it is to engage, each stem terminating in a

rounded end portion having an enlarged rim thereon, with the inner side of said rim protruding radially from the main portion of the stem at an angle substantially equal to a right angle, thereby forming a sharply stepped flange between the main and end portions of the stem, and a recess formed centrally in the rounded end portion of the stem and extending inwardly of the end portion into the



main portion of the stem to permit resilient deformation of the enlarged rim portion surrounding said recess at the time of assembly, whereby each gripper member can be securely assembled to a button member by a simple pressing operation to produce overlapping engagement between the enlarged rim of the stem of one member and the edge of the central aperture in the other member.

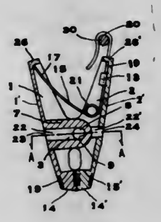
3,349,452
ONE-WAY RELEASABLE SNAP FASTENER CONNECTION FOR WEBBING MATERIAL
Harold Green, 3915 N. 31st Ave., Phoenix, Ariz. 85017
Filed Sept. 21, 1966, Ser. No. 580,972
7 Claims. (Cl. 24—218)



1. In combination with a snap fastener comprising a stud member and a three-sided lock socket member axially insertable to locked position over the stud member, said members being releasable from locked position in response to an axial pull upon the members at the fourth side of the socket member, a flexible webbing attached to one of said members at substantially right angles to said axis, said attached webbing extending from the releasable fourth side of said socket member, an elongated bar, means including said fastener members for securing a portion of the webbing extension at least partially around said bar, means for applying tension to said webbing extension, and means responsive to said tension and including continuous complementary segments of said bar, webbing extension, and at least one of the locked sides of said socket member for shielding said releasable fourth socket side from external access radially about an axis passing through the latter side and parallel to said bar.

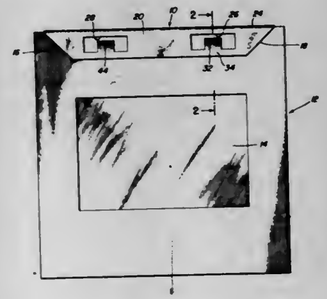
3,349,453
CLIP DEVICE
Chiyoichi Iida, 10 Kitaterakata, and Hiroshi Yano, % Sekiden Kagaku Kogyo Co., Ltd., 2 Jinai-cho 1-chome, both of Moriguchi-shi, Osaka, Japan
Filed Apr. 27, 1966, Ser. No. 545,583
2 Claims. (Cl. 24—252)

1. A clip device comprising a pair of jaws, each jaw including a clip end, a free end opposite to said clip end and a body portion intermediate said both ends; a pair of male and female elements pivotally connecting said body portion of said pair of jaws, said male element being formed integral on one of said pair of jaws and provided with a slot one end of which is longitudinally closed but laterally opened and the other end of which is longitudinally opened, said female element being



formed integral on the other of said pair of jaws and provided with a slot both ends of which are longitudinally opened, a dog means being formed on said female element to pressingly engage with said lateral opening at said end of said male element, whereby said male and female element are put into pivotal engagement.

3,349,454
RETAINING APPARATUS
Henry (Harry) A. Thomson, Denver, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,910
1 Claim. (Cl. 24—259)



A slide retaining clip, comprising a unitary resilient, elongated inverted U-shaped member having two side leg portions and a top portion extending between the two side leg portions, one of the side leg portions being comprised of two spaced-apart walls forming elongated inverted U-shaped slots therein, the other one of the side leg portions comprising two spaced apart walls forming elongated inverted U-shaped slots that are respectively aligned with one of the spaced apart walls in the other side leg portion, a tang forming a central wall portion of each of the four walls extending from a side portion adjacent the base in an upward and inward direction in a cantilever fashion toward the top portion each tang being adapted to have a width as taken along the side leg surfaces of the clip that is substantially the same size but of a greater dimension than each of the vertical legs forming the inverted U-shaped slot to enable the top inner surface of the tangs to be canted into spring biased firm clamping engagement with opposite top surfaces of a slide when the

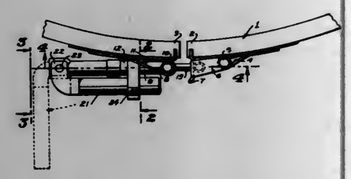
slide clip is moved in a vertical direction and to be slidably disengaged from the slide by moving it longitudinally along the top surface of the slide.

3,349,455
DRILL COLLAR SAFETY SLIP
Jack R. Doherty, 1620 E. 5th St., Odessa, Tex. 79760
Filed Feb. 1, 1966, Ser. No. 524,114
8 Claims. (Cl. 24—263)



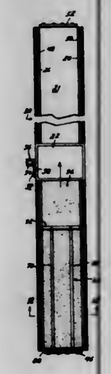
1. A pipe holder or set of slips made up of a series of segments hinged together and adapted to be placed between a pipe and a bowl at the top of a well casing or the like;
each segment having a main body and a liner removably fastened to the pipe engaging side of said main body;
said liner having a friction face thereon that engages the pipe when placed in operative relationship thereto;
a cam including means pivotally mounting said cam to said main body of said segment and having a friction face thereon adapted to be pivoted into a pipe engaging position, whereby;
when said pipe holder is operatively engaging the pipe, slippage of the pipe relative to said liner will cause said cam to rotate thereby increasing the friction exerted by said liner against the pipe.

3,349,456
CLAMP BAND TENSIONING DEVICE
Richard K. McKibben, La Canada, Calif., assignor to Southwestern Engineering Company, Los Angeles, Calif., a corporation of California
Filed Jan. 28, 1966, Ser. No. 536,231
4 Claims. (Cl. 24—279)



1. The combination with a split clamp band having extremities occupying a confronting relation, bearing units adjacent said extremities, a keeper journalled in one bearing unit and a sleeve journalled in the other bearing unit, of a tensioning device comprising:
(a) a bolt slidable in said sleeve and engageable with said keeper;
(b) an elongated nut screwthreaded on said bolt and engageable with said sleeve;
(c) and a handle pivotally connected to said nut and movable between an angular operable position for turning said nut and a storage position alongside said nut;
(d) and means for releasably retaining said handle in its storage position.

3,349,457
APPARATUS FOR FORMING A PREFABRICATED TRUSS DECK
Woodrow Wilson Frantz, Nazareth, Pa., assignor to Conodec, Inc., Easton, Pa., a corporation of Pennsylvania
Original application June 5, 1964, Ser. No. 372,796, now Patent No. 3,305,612, dated Feb. 21, 1967. Divided and this application Sept. 27, 1966, Ser. No. 582,386
5 Claims. (Cl. 25—2)

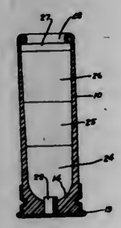


1. Apparatus for shop-fabricating a reinforced truss-deck comprising a casting bed, said casting bed including a flat stationary floor, movable side walls on opposite sides of said floor engaging a side edge of the floor, a movable end wall adjacent one end of said floor between said side walls, a hopper for dispensing a cementitious mixture, means for selectively causing relative movement between said hopper and said bed to spread a cementitious mixture dispensed by said hopper onto said floor, and a plurality of cut-off bars supported at spaced points along said floor to divide the casting bed into a plurality of chambers, each bar having a vertical portion generally perpendicular to the floor and extending between the side walls, each bar having a generally horizontal portion extending from the upper edge of the vertical portion so that it may overlie an end portion of a deck, and means on said horizontal portion adapted to attach same to a horizontal truss.

3,349,458
PROCESS FOR PRODUCING AN ELASTIC FABRIC
Michael Herbert Mainz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 14, 1965, Ser. No. 496,157
5 Claims. (Cl. 28—76)

1. In a process for producing an elastic fabric containing core-spun spandex/wool yarn prepared from a tensioned spandex filament and a roving of dyed wool fibers, the improvement which comprises
(1) using a core-spun yarn having a twist multiplier of at least 3 and containing at most about 20% spandex by weight,
(2) weaving said core-spun yarn to form a fabric which is capable of being stretched from about 10% to about 50% in at least one direction, and
(3) thereafter, in either order, (a) wet-finishing said fabric in the extended state at a temperature of at most 71° C. and at a pH of between 1 and 8, and (b) stretching and heatsetting said fabric at a temperature of at least 160° C.

3,349,459
METHOD OF MAKING PLASTIC TUBES
William N. King and Edward E. Merritt, Anoka, Minn., assignors to Federal Cartridge Corporation, Minneapolis, Minn., a corporation of Minnesota
Original application Oct. 19, 1964, Ser. No. 404,662, now Patent No. 3,284,560. Divided and this application Dec. 30, 1965, Ser. No. 536,931
2 Claims. (Cl. 29—1.3)



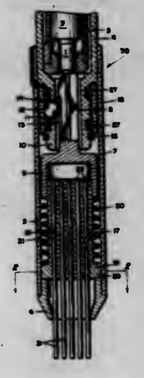
1. A method of making shot shell cases comprising, molding a cup of thermoplastic, stretching the cup radially, stretching the cup longitudinally, trimming the end of the stretched cup and grooving the base thereof, preforming a metal head therefor, fitting the metal head on the end of the stretched cup having the groove therein, finish forming an ejection rim on the metal head and deforming a portion of said metal head into the groove of said stretched cup simultaneously.

3,349,460
FILE HOLDER
Charles B. Kephart, Jr., 1620 18th St., West Des Moines, Iowa 50306
Filed Sept. 1, 1965, Ser. No. 484,358
10 Claims. (Cl. 29—78)



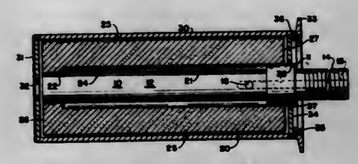
1. In a file device, comprising, an elongated frame, an elongated file element having its ends secured to said frame, a slight gauge mounted on said frame intermediate the ends of said frame, said gauge including an elongated element adapted to extend at an angle to the longitudinal axis of said frame to thereby establish the line of sight, stop means on said frame and said gauge element being pivotally adjustable between said stop means to the desired angular positions relative to the longitudinal axis of said frame, said stop means being further defined as including a pair of spaced V-shaped shoulders facing in opposite directions, and said gauge element being pivotally connected to said frame between said pair of shoulders, said shoulders each taper downwardly towards the other shoulder whereby the ends of said gauge element may frictionally engage the top surfaces of said shoulders when said gauge element extends in parallel relationship to the longitudinal axis of said frame.

3,349,461
DESCALING TOOL
Joseph F. Niedzwiecki, La Crosse, Wis., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 11, 1966, Ser. No. 533,706
7 Claims. (Cl. 29—81)



1. A tool for delivering an axial impact to a workpiece comprising:
a body;
an impact motor mounted in said body having an axially reciprocating member;
a holder disposed in said body forward of said axially reciprocating member; and
a plurality of bits slidably mounted in said holder and extending out of said body and adapted to be struck by said member;
said reciprocating member having a cup-shaped end and being adapted to slide over one end of said holder, the bottom of said cup being adapted to strike said bits.

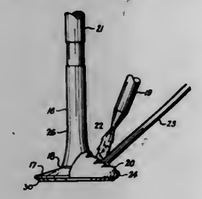
3,349,462
AIR ROLLER
Lambert H. Mott, Farmington, Conn.
(272 Huyshope Ave., Hartford, Conn. 06114)
Filed June 14, 1966, Ser. No. 557,585
2 Claims. (Cl. 29—116)



1. An air roller for textile machines for passing filaments thereover, said air roller comprising, in combination, a stem having a shaft portion, a cylinder with flat ends and a porous metal disposed about said shaft por-

tion of said stem forming a compartment between said shaft portion and said cylinder extending substantially the length of said cylinder, said stem containing an air passage communicating with said compartment, said cylinder being formed from a metal powder with a grain size less than .001" compacted to have a porosity less than 20 percent, and a thin shell having at least one guide flange and extending about said cylinder with a radial clearance less than .001", said shell having a first end plate with a central air escape aperture and a second end plate containing an aperture through which said stem extends with a clearance to allow the escape of air, the sum of the distances between said end plates and the ends of said cylinder being greater than .005".

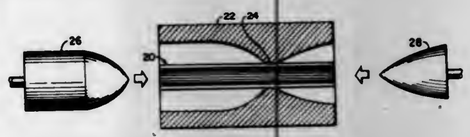
3,349,463
METHOD FOR MAKING VALVES FOR INTERNAL COMBUSTION ENGINES
Le Roy O. Kittelson, Seattle, Wash., assignor to Engineering Development Corporation, Seattle, Wash., a corporation of Washington
Filed Aug. 6, 1964, Ser. No. 387,880
5 Claims. (Cl. 29—156.7)



1. The method of making a metallic body such as a poppet valve for an internal combustion engine or the like, using at least two distinguishable portions of at least two unlike alloys, comprising the steps of:
(a) forming from a body of alloyed metal having a predetermined coefficient of expansion and high strength and ductility an initial valve body blank including:
a stem section, and an integral undersize bell section merging with a substantially full diameter head thinner than the desired finished valve;
(b) rotating the valve blank about its axis with the stem upward and flame-weld depositing a welded metal alloy collar of substantial thickness continuously around the backside of the head from its periphery to the bell section and to and beyond the juncture of the stem and bell sections, said metal alloy collar having a higher coefficient of expansion and greater anti-erosive and shock resistant properties than the alloyed metal of the valve body and containing principally cobalt and chromium;
(c) machining the multiple portioned metallic body to near final specification dimensions; and
(d) polishing the valve sealing surfaces to final dimensions.

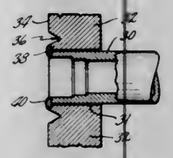
3,349,464
METHOD OF MAKING ROCKET COMBUSTION CHAMBER
John C. Becker, Jr., Pasadena, and Harvey A. Eubank, deceased, late of Sacramento, Calif., by Jeanette S. Eubank, administratrix, Sacramento, Calif.; assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed June 29, 1962, Ser. No. 206,522
19 Claims. (Cl. 29—157)

1. The method of fabricating a fluid-conducting structure comprising the steps of: connecting a plurality of discreate elongated straight hollow tubes in parallel side-by-side touching relationship and in encompassing relation to a common longitudinal axis so as to form an elongated hollow member having a composite circumferential wall whose individual portions respectively



comprise an individual hollow tube, and forcing outwardly longitudinally extending portions of said hollow member on either side of an intermediate point thereon.

3,349,465
TUBE-TO-SHEET JOINT MAKING
Alfred F. La Pan, Baltimore, Md., and Robert L. Neumeister, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,915
11 Claims. (Cl. 29—157.3)



1. The method of joining a thin-walled metal tube to a thicker perforated metal sheet, the hole in the perforated sheet being adapted to receive the tube in close-fitting relation, comprising the steps of:
inserting the tube into the hole until its upper end is substantially flush with the upper surface of the sheet,
interposing between the tube and the surface of the hole a layer of a bond-promoting material,
effecting a fusion seal weld between the end of the tube and the sheet,
expanding the tube into an interference fit with the sheet to a depth between about 50 percent to about 80 percent of the sheet thickness, and
heat treating at a temperature sufficient to effect recrystallization of the weld structure and solid phase bonding in the area of the interference fit.

3,349,466
METHOD OF MANUFACTURING ALUMINUM-CLAD NUCLEAR FUEL ELEMENTS BY HOT-SWAGING IN AIR
Walter Precht, Towson, Raymond J. Geckle, Dundalk, and Louis Frank, Baltimore, Md., assignors to Martin-Marietta Corporation, a corporation of Maryland
No Drawing. Filed May 2, 1960, Ser. No. 25,846
7 Claims. (Cl. 29—420.5)

1. In the method of manufacturing a metallurgically bonded aluminum-clad tubular fuel element derived from an assembly comprising a hollow tubular core encased between inner and outer concentric aluminum tubes, said core being derived from a mixture of aluminum particle and particles of an oxide of a fissionable metal selected from the group consisting of uranium dioxide, uranosic oxide, thorium dioxide and plutonium dioxide, said inner tube being disposed on a mandrel, the improvement comprising hot-swaging said assembly in air at a temperature sufficiently high to cause the aluminum particles of said core to bond metallurgically to said inner and outer aluminum tubes.

3,349,467
PROCESS FOR THE PRODUCTION OF NOBLE METAL THERMOELECTRIC WIRES
Walter Obrowski and Dieter Liebich, Hanau am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Feb. 12, 1965, Ser. No. 432,405
Claims priority, application Germany, Feb. 13, 1964, D 43,610
6 Claims. (Cl. 29—420.5)

1. A process for the production of platinum metal thermoelectric wires having high hot strength and elongation and an almost structureless texture which is maintained even after heating for 400 hours at temperatures between 1300 and 1450° C. which comprises forming the platinum metal as a finely divided powder having a grain size below 10,000 mesh per cm.² directly from a platinum metal compound at a temperature below 500° C., compressing such powder to form a compact, sintering such compact at a temperature between 1300 and 1500° C., cold working the sintered compact without an intermediate anneal to wire and subjecting such wire to a stress relieving anneal at a temperature between 1300 and 1500° C.

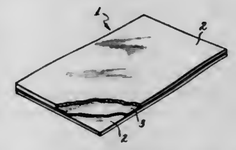
3,349,468
METHOD FOR ARRESTING A MANDREL AND TUBE DISCHARGED FROM A ROLLING MILL
Herbert Farber, Ratingen am Schuttensdick, Germany, assignor to Firma Schloemann Aktiengesellschaft, Dusseldorf, Germany
Original application May 6, 1963, Ser. No. 278,103, now Patent No. 3,237,440, dated Mar. 1, 1966. Divided and this application Sept. 8, 1965, Ser. No. 485,876.
Claims priority, application Germany, May 12, 1962, Sch 31,466
4 Claims. (Cl. 29—427)



1. A method of arresting a mandrel and tube discharged from a rolling mill, said method comprising the steps of depositing said mandrel and tube on a conveyor, driving said conveyor to impart movement to said tube and mandrel, engaging and arresting movement of said mandrel in a manner to reduce shock impact thereto while allowing said tube to continue to move axially, arresting movement of said tube at a predetermined location and removing said mandrel and tube from said conveyor in a direction transverse to the path of axial movement.

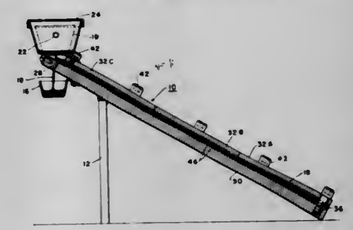
3,349,469
METHOD OF MAKING LAMINATED SHEET
Pieter Mulje, William R. Mohondro, and Maurice C. Fetzer, Spokane, Wash., assignors to Kaiser Aluminum and Chemical Corporation, Oakland, Calif., a corporation of Delaware
Original application May 8, 1957, Ser. No. 657,959, now Patent No. 3,167,405, dated Jan. 26, 1965. Divided and this application May 8, 1964, Ser. No. 365,961
5 Claims. (Cl. 29—487)

1. The method of making laminated sheet which comprises the steps of cleaning the contacting surfaces of the individual layers, interposing a core layer of zinc-aluminum alloy consisting essentially of zinc and from about 0.1% to 30% aluminum between aluminous metal layers to form a sandwich structure, said core layer having a thickness such that the thickness of the core layer in the final laminated sheet is not greater than 2% of the total thickness of the laminated sheet, joining the aluminous metal layers together at their forward end, heating the structure to about 500–720° F., hot rolling the heated structure to form a laminated sheet having an integral



bond between said core layer and said aluminous metal layers, the bonding of said layers by hot rolling involving a reduction of at least 10%.

3,349,470
MOLD FOR CASTING PROCESS
Walter P. Weglarz, Lafayette Hill, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application June 4, 1962, Ser. No. 199,780. Divided and this application Apr. 30, 1965, Ser. No. 509,445
3 Claims. (Cl. 29—527)

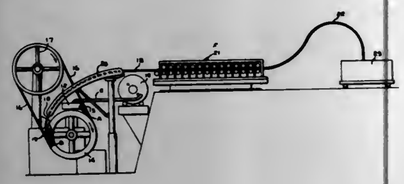


1. A method of making a core structure for vertical sheet sandwich panels comprising, machining a plurality of vertical sheets to a predetermined contour, cleaning said vertical strips, pickling said vertical strips, dipping said vertical strips in a molten solution of matrix metal, cooling and cleaning said vertical strips, placing said vertical strips in a mold having alignment grooves therein, attaching a holding ladle having an outlet port therein at the inlet of said mold, attaching an overflow ladle to an outlet in said mold, placing an amount of matrix metal in said holding ladle in excess of the amount required to fill said mold, placing said molds and said ladles in a furnace, raising the temperature of said mold and said ladles to a temperature above the melting temperature of said matrix metal to cause said matrix metal to flow out of said outlet port of said holding ladle into said mold and spilling the excess into said overflow ladle, cooling said mold and said ladles and removing said vertical strips from said mold with said matrix metal integrally cast between said vertical strips to provide a core structure.

3,349,471
METHOD FOR PRODUCING A CONTINUOUS LENGTH OF COPPER ROD FROM MOLTEN COPPER METAL
John A. Bell, Naperville, Ill., Daniel B. Cofer, Carrollton, Ga., and Gilbert E. Sorber, Chicago, Ill.; said Cofer assignor to Southwire Company, Incorporated, Carrollton, Ga., a corporation of Georgia, and said Bell and said Sorber assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 25, 1964, Ser. No. 399,140
3 Claims. (Cl. 29—528)

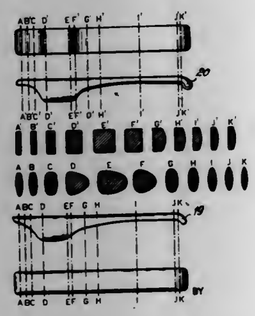
1. In the method of continuously casting molten copper metal into a cast bar and rolling the bar into wire

rod wherein the molten copper metal is refined to the extent necessary to make the molten copper substantially meet the requirements of ASTM designation B–5, wherein the molten copper metal is introduced into a continuous casting mold and solidified therein to form a cast bar, wherein the cast bar is withdrawn from the continuous casting mold in a heated condition, and wherein the withdrawn cast bar is immediately subjected to a rolling operation to produce copper wire rod, the improvement which comprises:



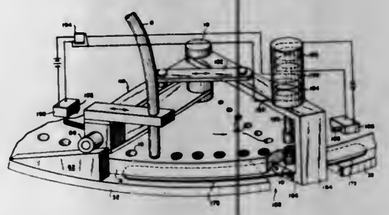
controlling the content of lead as a metallic impurity in the molten copper metal to a level effective to control the total impurity content of the molten copper such that the impurities driven to the grain boundaries during solidification of the molten copper into the cast bar are not sufficient to form a substantially continuous grain boundary network around the copper metal grains in the cast bar.

3,349,472
PROCESS FOR PRESSURE-FORMING METALLIC BODIES
Werner Schlegel, Camphausenstrasse 2, Dusseldorf, Germany
Filed Sept. 15, 1966, Ser. No. 621,718
Claims priority, application Germany, Feb. 27, 1962, Sch 31,051; Oct. 9, 1965, Sch 37,851
7 Claims. (Cl. 29—528)



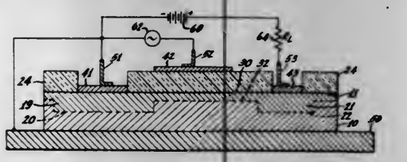
1. A method of producing bodies from a metal having a crystal transformation between a high-temperature form and a low-temperature form, comprising the steps of casting the metal in a liquid state in a mold; solidifying the metallic body thus produced and cooling it to a forging temperature in the temperature range at which said transformation takes place; and forging said body after said cooling thereof, the configuration of said body generally approaching the configuration of the object to be produced, said body having a volume substantially identical with said object but a surface area different therefrom, said body being reshaped upon forging to conform to the contours of said object, said method further comprising the steps of planimetrically determining the minimum circumferential distance associated with each cross-section of said object and forming said mold with a configuration in accordance with the planimetrically determined minimum surface area of the volume of said object.

3,349,473
CONTINUOUS SPRING FORMING, GRINDING AND SETTING OUT MACHINE
Norman A. Cucuel, Bristol, Conn., assignor to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware
Filed Nov. 15, 1966, Ser. No. 602,439
20 Claims. (Cl. 29—564)



1. In combination, a machine for coiling wire into helical form and cutting it to length to make separate helical springs, and opposed grinding wheels for grinding the ends of springs passed between them, a rotatable spring carrier having a part movable in an endless path of which a part lies between the opposed surfaces of the grinding wheels, said part of the carrier having a plurality of annularly spaced means for receiving separate springs each in a position to have its ends ground by the grinding wheels as said part passes between the grinding wheels, and means for separately passing each spring produced by the spring making machine directly from the machine to one of the spring receiving means in the carrier.

3,349,474
SEMICONDUCTOR DEVICE
Daniel H. Rauscher, Williamstown, Mass., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 333,351, Dec. 26, 1963. This application Aug. 5, 1966, Ser. No. 573,773
7 Claims. (Cl. 29—574)

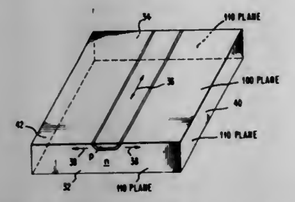


1. The method of forming a conductive channel of desired conductivity in a crystalline silicon body comprising the steps of

forming a coating of silicon oxide on said silicon body by heating it in a dry oxygen ambient for a time and at a temperature insufficient to raise the conductivity of said body near the interface between said body and said coating, said conductivity being initially, and thus being held, at a value less than said desired conductivity; and thereafter

heating said body in a free-hydrogen-containing reducing ambient for a time and at a temperature sufficient to form in said body a thin conductive channel of said desired conductivity underneath said silicon oxide coating.

3,349,475
PLANAR INJECTION LASER STRUCTURE
John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 21, 1963, Ser. No. 260,284
5 Claims. (Cl. 29—578)



5. A process of producing an injection laser device comprising the steps of:

providing a semiconductor wafer of one conductivity type,

cleaving said wafer in a plane of minimum bond strength to establish a reference plane,

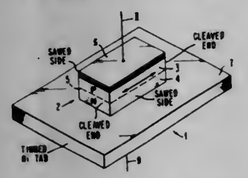
selectively depositing a masking material upon a major surface of said semiconductor wafer to define a plurality of discrete zones of said surface extending perpendicularly from said reference plane where diffusion may take place,

diffusing a quantity of a selected impurity vapor through the discrete zones into the surface of said wafer to create a plurality of opposite conductivity type regions, each in the shape of a parallelepiped,

cutting along planes parallel to the major axes of said parallelepipeds to produce individual sections, and

cleaving said sections at selected distances in planes parallel to said reference planes to produce discrete devices.

3,349,476
FORMATION OF LARGE AREA CONTACTS TO SEMICONDUCTOR DEVICES
Manfred H. Pilkuhn, Mahopac, and Hans S. Rupprecht, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 26, 1963, Ser. No. 326,091
4 Claims. (Cl. 29—590)



3. A method of forming a large area ohmic contact to a device constituted of a semiconductor body wherein a junction is formed capable of emitting light radiation comprising the steps of:

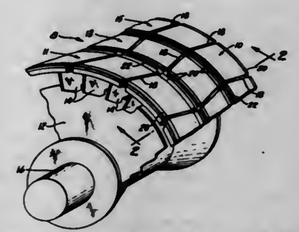
electrolytically depositing a very thin coating, on the order of 5000 A. in thickness, of gold on one surface of p conductivity type of said semiconductor body;

electrodelessly depositing a nickel film over said flash coating of gold,

thereafter depositing a gold film having a thickness approximately ten times said gold flash coating over said nickel film, and

affixing at least one electrical conductor to the one surface of said semiconductor body having said gold flash coating, said nickel film and said relatively thick gold film thereon.

3,349,477
PROCESS FOR MANUFACTURING CIRCUMFERENTIALLY SEGMENTED INDUCTION MEMBERS
Thomas F. Searles, New Berlin, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 20, 1965, Ser. No. 498,455
6 Claims. (Cl. 29—598)



1. A process for manufacturing an induction member formed by a metal cylinder and having low resistance end rings, circumferential grooves, and generally axial slots intersecting said grooves to form circumferential segments, comprising the steps of forming circumferential grooves in said cylinder

filling a portion of said grooves with a metal having the same flame cutting characteristic as said metal cylinder at the locations where the axial slots will intersect said grooves to form said circumferential segments,

filling the remaining portion of said circumferential grooves with a low resistance material; and

forming said axial slots by flame cutting said cylinder to form said circumferential segments,

whereby the metal in said circumferential grooves provides satisfactory flame cutting along the entire length of the cylinder.

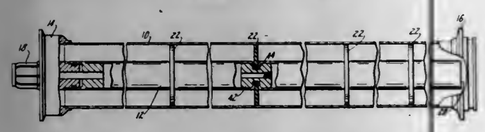
3,349,478
METHOD OF MANUFACTURING A ROTOR ASSEMBLY
Milton V. De Jean, Pitcairn, Pa., assignor to General Electric Company, a corporation of New York
Continuation of abandoned application Ser. No. 154,705, Nov. 24, 1961. This application May 19, 1965, Ser. No. 463,442
3 Claims. (Cl. 29—598)



3. A method of fabricating a rotor assembly comprising the steps: applying a layer of adhesive thermosetting epoxy resin material in an unhardened state onto a shaft at a predetermined position on the shaft; assembling the shaft having said layer thereon with a preheated and expanded laminated rotor core; both being positioned generally vertically and relatively radially movable to one another, and at least one thrust transmitting member disposed adjacent the core, said core comprising a plurality of secured together superposed laminations including a shaft receiving bore extending axially therethrough, said core and thrust member each having

a loose fit relative to the shaft under ambient conditions and being positioned over the unhardened layer, said pre-heated core being heated above the temperature of the shaft and the temperature at which the adhesive material becomes fluid thereby further enlarging the bore of the core to a diameter dimensionally greater than the combined transverse dimension of the unhardened material and shaft; reducing the size of the bore by cooling the core and changing the form of the unhardened adhesive material by the latent heat of the core, with the unhardened adhesive material initially becoming fluid and tending to center the shaft relative to the core, and with a portion of the adhesive material being squeezed radially outward to penetrate slightly between next adjacent laminations next to the bore; and curing the material by using the latent heat of the core whereby the shaft, thrust member, and core are secured together in a predetermined unitary relationship by the cured thermosetting material.

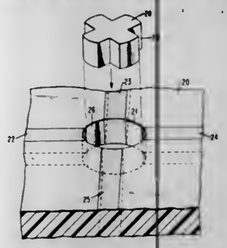
3,349,479
METHOD OF MANUFACTURING A COAXIAL ELECTRICAL TRANSMISSION LINE
Donald N. Sewell, Acton, Mass., assignor to Dielectric Products Engineering Company, Inc., Littleton, Mass., a corporation of Michigan
Original application Feb. 11, 1965, Ser. No. 431,829. Divided and this application Aug. 8, 1966, Ser. No. 571,045
5 Claims. (Cl. 29—600)



1. In the manufacture of a coaxial electrical transmission line, the steps of clamping an elongated tubular conductor component at two axially spaced points, positioning a mandrel having a support surface of configuration substantially the same as the configuration of said elongated tubular conductor component of the transmission line in supporting relation to said conductor component, said support surface having an annular recess therein,
applying pressure in a radial direction to said tubular conductor component at the point at which said mandrel is positioned to force the metal in said conductor component into the recess in said mandrel to form an annular groove in said conductor component while maintaining the smooth continuity of the surface of said conductor component,
and moving one of said clamping points toward the other clamping point to apply force to said conductor component in the direction of its length during the application of said pressure to said conductor component to reduce the length of said conductor component so that said annular groove is formed without any substantial reduction in the thickness of the wall of said conductor component at that point.

3,349,480
METHOD OF FORMING THROUGH HOLE CONDUCTOR LINES
Clayton Rashleigh, Hyde Park, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 9, 1962, Ser. No. 236,633
6 Claims. (Cl. 29—624)

4. A method of depositing a plurality of conductors in a recess in a substrate comprising the steps of inserting a partitioned pin in said recess, coating adhesive on said substrate surfaces and between the adjacent partitions on said pin to deposit a plurality of lines on the walls of said recess, and depositing by additive printed circuit process steps a series of conductor lines on the



surface of said substrate and extending to and on the walls of said recess to form conductor lines leading to and into said recess.

3,349,481
INTEGRATED CIRCUIT SEALING METHOD AND STRUCTURE
Jay C. Karp, Wheaton, Md., assignor to Alpha Microelectronics Company, Inc., a corporation of Maryland
Filed Dec. 29, 1964, Ser. No. 421,769
6 Claims. (Cl. 29—627)



1. The process of manufacturing sealed micro-circuitry modules including networks of integrated deposited circuit elements, comprising the steps of:
(a) providing circuit packaging members including an insulating glass substrate having a raised ridge surrounding a circuit-element-receiving cavity recessed below the ridge to a depth at least equalling the height of the elements to be deposited;
(b) applying to the substrate spaced conductive metallized connector films, each having an external portion extending to a location outside of said packaging members for the purpose of providing external connections for the network elements when deposited within the cavity, and each extending into a location within the circuit-element-receiving cavity;
(c) firing the films onto the surface to which they are applied;
(d) subsequently depositing circuit-element networks in the recessed cavity including depositing portions of elements in overlapping relationship with said connector film portions located within the cavity; and
(e) sealing the circuitry by applying a cover member over the recessed cavity and bonding it to the raised ridge while leaving exposed at least part of said external portion of each connector film.

3,349,482
SAFETY RAZORS HAVING A FLEXIBLE RAZOR BLADE BAND
Bernard S. Hansom, Langley, and Frank F. Simpson, Staines, Middlesex, England, assignors to Wilkinson Sword Limited, London, England, a British company
Filed Mar. 14, 1966, Ser. No. 534,233
Claims priority, application Great Britain, Mar. 19, 1965, 11,651/65
2 Claims. (Cl. 30—40.1)

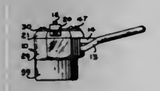
1. A razor comprising
an elongate cylindrical body,

two guide wheels, said guide wheels being of equal diameter and being rotatably mounted within the body at respective ends thereof, the axes of rotation of the two guide wheels being parallel to one another,
an endless flexible razor blade band trained around the wheels, the width of said band being narrow relative to its length,
a guard secured to the body adjacent one end thereof, said guard having at least one elongated aperture



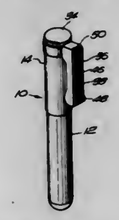
parallel to the longitudinal axis of the body, the blade band passing through said guard and being exposed for use at said aperture, and
a knurled wheel fast for rotation with that guide wheel which is located at the end of the body remote from said guard, rotation of said knurled wheel moving the portion of the blade band initially exposed for use away from the exposed position and moving an unused portion of the blade band into the exposed position.

3,349,483
MANUAL MECHANICAL RAZOR WITH STATIONARY CIRCULAR BLADE
Richard W. MacCarthy, Mountain View, Calif. (1445 Calaveras Ave., San Jose, Calif. 95126)
Filed July 22, 1965, Ser. No. 473,923
7 Claims. (Cl. 30—43.6)



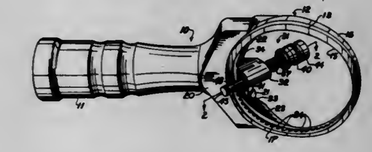
1. A manually actuated circular blade razor comprising:
a body,
a stationary blade having a finely serrated, circular periphery sharpened to a keen cutting edge,
a blade shank fixedly mounted co-axially of the blade and extending from one side thereof,
an annular blade back-up member journaled rotatably in the body and having a hole axially therethrough, the shank of the blade being inserted in said hole,
an annular row of teeth on the back-up member co-axially of its axis of rotation, each tooth having a surface formed on the axially outward side thereof conforming to a marginal portion of said one side of the blade and extending radially beyond the blade edge, the other side of the blade and the portions of the teeth extending radially beyond the blade being exposed for contact with the skin of a person during shaving,
means retaining the blade against rotation and simultaneously lightly biasing the blade and back-up member axially toward each other to bring the conforming surfaces on the teeth of the back-up member into light, contacting, honing relation with the marginal portion of the blade, and
manually actuated means mounted on the body and operatively engaging the blade back-up member for rotating the back-up member relative to the blade.

3,349,484
FOLDING SAFETY RAZOR
Valentinus M. Zeles, 267 Melrose St., Auburndale, Mass. 02166
Filed Sept. 2, 1966, Ser. No. 576,975
1 Claim. (Cl. 30—47)



Shaving tackle, comprising
(a) an elongated hollow handle,
(b) a lather dispenser removably mounted in said handle,
(c) a movable head mounted to one end of said handle and adapted to be moved selectively back and forth from a folded position parallel to said handle to an erected position perpendicular thereto,
(d) said head being mounted to said handle for angular rotation about the axis of said handle when said head is in an erected position,
(e) first means for locking said head in said erected position,
(f) second means for mounting a blade to said head,
(g) a tubular cap adapted to engage said handle and telescopically enclose said head when said head is in a folded position, and,
(h) a blade dispenser in the form of a pocket clip mounted to said cap.

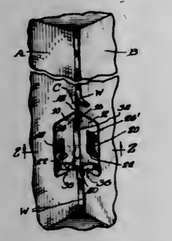
3,349,485
ROTARY KNIFE WITH SHARPENER
Louis A. Bettcher, Amherst, Ohio, assignor to Bettcher Industries, Inc., Vermilion, Ohio, a corporation of Ohio
Filed Jan. 10, 1966, Ser. No. 519,677
12 Claims. (Cl. 30—138)



3. A hand manipulated knife comprising an annular blade supporting structure including a handle; an annular blade movably supported by said structure for rotation about its central axis, said blade having a circular cutting edge and the blade and supporting structure providing a central area through which portions of work cut by the blade can pass; means to rotate the blade relative to the structure to cut work engaged by the blade; and a blade sharpener assembly in said central area carried by the supporting structure, said blade sharpener assembly includ-

ing a member having a sharpening surface located adjacent the cutting edge of the blade, means mounting the member for reciprocable movement along a path inclined to the blade into and out of contact with a surface of the blade at the cutting edge, and a hand grasp adjacent to the end of said member remote from the sharpening surface for engagement by an operator to reciprocate said member.

3,349,486
TRIMMER FOR TRIMMING THE EDGES OF WALLPAPER AND THE LIKE
Jack R. Voight, 202 E. Ash St., Lombard, Ill. 60148
Filed Aug. 18, 1965, Ser. No. 480,648
4 Claims. (Cl. 30—294)



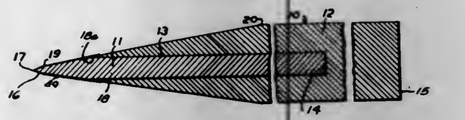
1. A trimming device comprising a pair of guide surfaces positioned substantially at right angles to each other and defining a central edge between said guide surfaces, a slot within said central edge, a cutting member having a cutting edge, means for supporting said cutting member between said guide surfaces, said means including a depressible member manually engageable by a finger which upon depression will cause the cutting edge of said cutting member to extend through said slot to engage the material to be trimmed, and a pair of finger engaging members in a fixed position relative to the guide surfaces for manual engagement by the fingers to hold said device while another finger is manually depressing said depressible member.

3,349,487
BLADE HOLDER WITH SLIDING BLADE ASSEMBLY
Walter A. Robins, 3127 N. Vane Ave., El Monte, Calif. 91733
Filed Jan. 12, 1966, Ser. No. 520,130
3 Claims. (Cl. 30—335)



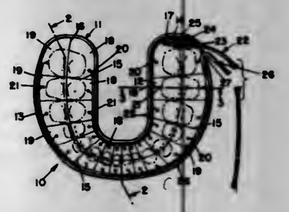
3. A cutting blade instrument, comprising in combination:
a collet sheath,
said sheath composed of a pair of elongated members jointly defining an external cam shoulder and an internal guiding and holding raceway;
said raceway being comprised of a blade-receiving guide trough in one of said members, and means on the other of said members for holding a cutting blade in said guide trough;
a cutting blade proportioned to reside within said raceway, said blade being longitudinally slideable in said raceway between a position fully retracted within said sheath to a fully removed condition;
each said member having an end recessed surface jointly defining a projection of said sheath along only one edge of said trough, whereby one corner of said blade may be exposed for providing a finger grip to grasp said blade, with all of the cutting blade edge retracted into said sheath; and
means to press radially inwardly upon said cam shoulder for clamping said members on said blade in a blade-holding grip.

3,349,488
RAZOR BLADES
Burnie J. Craig, 1042 La Presa Drive, Pasadena, Calif. 91107
Continuation of application Ser. No. 441,691, Mar. 22, 1965. This application Aug. 9, 1966, Ser. No. 572,393
1 Claim. (Cl. 30—346.6)



A razor blade adapted to be clamped in a razor frame, said razor blade including a foil-like core which is formed of material which is hard and capable of being sharpened but is thin and flexible and requires longitudinal and transverse stiffening reinforcement and support during the final sharpening operation and for later engagement with a razor frame and for the shaving operation, said core having a reinforcing and supporting body secured thereto, said body being thicker than the core and extending rearwardly from a location in the rear of the front edge of the core, said body providing the core with reinforcement for working, for sharpening, for support in a razor frame, and for shaving, said core having an exposed front edge, said exposed front edge having ultimate edge forming facets thereon which form the cutting edge, the body on each face thereof, rearwardly of the ultimate edge forming facets, including an area for engagement with a razor frame, there being feather edges at the location where the faceted portions meet the body, and an integument on the body, said integument extending across the facets and over the feather edges and continuing some distance across the body beyond the feather edges, said integument serving to prevent peeling of the feather edges from the body.

3,349,489
MULTIPLE CELLED PRESSURE SENSITIVE DENTAL DEVICE FOR MEASURING RELATIVE OCCLUSAL PRESSURES
John Hinton Shackelford, 706 Latrobe Bldg., 2 E. Read St., Baltimore, Md. 21202; Maryland National Bank, executor of said J. Hinton Shackelford, deceased
Filed Feb. 7, 1963, Ser. No. 256,927
3 Claims. (Cl. 32—19)



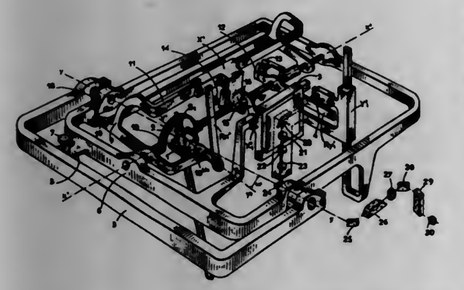
1. A device for measuring relative occlusal pressures between different pairs of upper and lower teeth, comprising: a body of electrically insulating material shaped in the form of a horse shoe to lie flat between the occlusal surfaces of a plurality of pairs of upper and lower teeth, said body having a retaining flange along at least one edge thereof, a plurality of relatively flat pressure sensitive cells carried by said body in positions corresponding to occlusal pressure areas between said pairs of teeth, each of said cells comprising upper and lower electrodes and a wafer-like pressure sensitive element electrically and spatially interposed between said electrodes, and separate conductors extending from at least one electrode of each cell and adapted to extend to the exterior of the mouth of a patient when in use for connection to electrical apparatus for measuring relative pressure induced changes in an electrical characteristic of each cell.

3,349,490
STRAIGHT HANDPIECE
Nathaniel H. Lieb, Philadelphia, and Anthony J. Turchi, Bala Cynwyd, Pa., assignors to Star Dental Manufacturing Co., Inc. (also known as Star Dental Manufacturing Company, Inc., and Star Mfg. Co., Inc.), Philadelphia, Pa., a corporation of Delaware
Filed Feb. 20, 1964, Ser. No. 346,336
18 Claims. (Cl. 32—28)



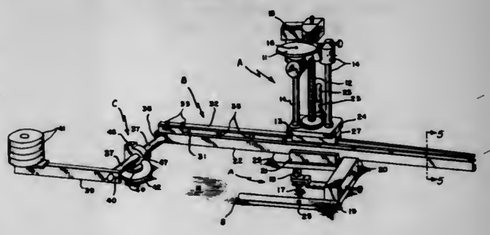
1. A dental handpiece comprising an elongated housing having a longitudinal axis, chuck means within said housing along said axis, said chuck means including a collet having at least two compressible jaws, means adapted to effectuate closing of said jaws, an air motor mounted within said housing, said air motor including a rotor which is adapted to cause rotation of said collet, speed reduction and torque increasing means associated with said rotor, with said collet being rotatably driven by said speed reduction and torque increasing means, and a conduit for supplying air to rotate said air motor.

3,349,491
PHOTOGRAMMETRIC PLOTTER
Jean Baboz, Paris, France, assignor to Societe d'Optique et de Mecanique de Haute Precision, Paris, France, a company of France
Filed June 11, 1964, Ser. No. 374,301
Claims priority, application France, June 19, 1963, 938,645
7 Claims. (Cl. 33—20)



1. A photogrammetric plotter comprising two photographs taken from two different viewpoints, sight marks combined with said photographs, two rods embodying the homologous space image rays, each of said rods being articulated at a fixed point embodying one of said viewpoints, a first cardan and a second cardan whose centers coincide with said fixed point for each of said rods mounting the corresponding one of said rods for articulation, a main cradle, the two primary axes of said cardans for each of said rods being supported by said main cradle, a frame for the plotter, said cradle pivoting on said frame about a horizontal axis passing through the center of said cardans and perpendicular to the primary axis of said first cardan, the primary axis of said second cardan being perpendicular to and intersecting the primary axis of said first cardan, the corresponding one of said photographs being supported by and displaceable with respect to said main cradle and being disposed in a plane perpendicular to the horizontal pivot axis of said cradle, means including the respective one of said rods producing relative displacement of said photograph in its plane with respect to the corresponding one of said sight marks, said means comprising two rectilinear perpendicular guide elements on said main cradle respectively guiding the relative displacement of said photograph and said sight mark, carriages mounted on said main cradle for moving said photograph and said sight mark, and bars perpendicular to the primary axes of said cardans and turning with said axes for moving said carriages.

3,349,492
ADJUSTABLE SPHERICAL CURVATURE CORRECTION DEVICE
George J. Bandemer, University City, Mo., and Clyde E. Draper, Columbia, Ill., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 12, 1966, Ser. No. 572,159
12 Claims. (Cl. 33—20).

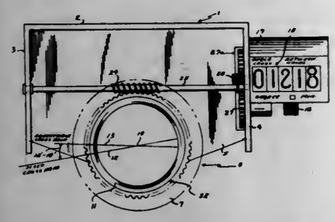


1. An adjustable spherical curvature correction device comprising a base provided with a recording stylus and capable of movement about a mapping surface, a cam bar unit, said cam bar unit having an adjustable profile, and a floating deck, a rod and sliding sleeve connection between said deck and said base to allow vertical movement of said deck with respect to said base, a backlighted orificed platen carried by said deck and movable therewith, said cam bar unit being interposed between said base and said floating deck, means comprising a member attached to said floating deck and a similar member attached to said base for allowing sliding movement of said cam bar unit, and affording point support therefor.

3,349,493
SPACECRAFT STADIMETRIC RANGING DEVICE FOR MANUAL, AUTONOMOUS, ALTITUDE DETERMINATION THROUGH A LIMITED FIELD OF VIEW
Terry R. Jorris, Spring Valley, Minn., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 5, 1966, Ser. No. 571,153
6 Claims. (Cl. 33—64)

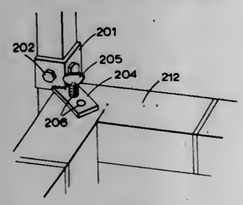
1. The method for obtaining data from which the altitude of an observer above a spherical heavenly body of known diameter comprising positioning a sighting device

having a predetermined viewing angle and two intersecting cross hair lines is in the line of sight with one point of said cross hair lines is in the line of sight with one point on the rim of said spherical heavenly body and the end of one of said cross hair lines is in line with a second point at a predetermined viewing angle from said one point on the rim of said heavenly body, rotating the



second of said cross hair lines without disturbing the relative position of the first cross hair line to the rim of the heavenly body, until the end of the second cross hair line is in alignment with a third point at a predetermined angle equal to said predetermined viewing angle from said one point on the rim of said heavenly body, and providing an indication of the angle between said cross hair lines.

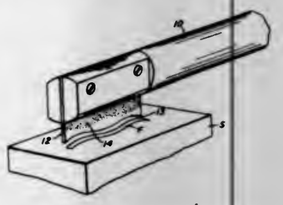
3,349,494
DEVICE FOR ATTACHMENT TO THE CORNER OF A BUILDING TO FACILITATE THE CONSTRUCTION THEREOF
George T. Blake, Orchard Dene, Station Road, Padworth, Reading, England
Filed May 31, 1966, Ser. No. 553,996
14 Claims. (Cl. 33—85)



1. A gauge device for attachment to the corner of a brickwork building whereby to facilitate progressive construction of said corner by providing a vertical corner datum, said device comprising a bar having at least two adjoining faces provided with two flange portions defining between them the desired corner angle, the flange portions carrying means enabling their securement to the brickwork whereby to support the bar in a substantially vertical position, the device also including an attachment comprising an angular member mounted in engagement with two adjoining faces of the bar of said gauge device, the angular member having a portion extending therefrom carrying a screw threaded member which can be screwed into abutting engagement with the top surface of the uppermost brick of a course of brickwork, providing means for suspending the bar when setting-up the gauge device.

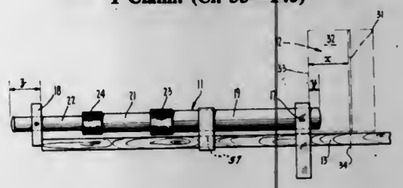
3,349,495
METHOD OF MEASURING SIMULATED FLAWS IN STANDARD SPECIMENS
William L. Zemberry, Swissvale, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed June 3, 1965, Ser. No. 461,119
4 Claims. (Cl. 33—125)

1. In an operation in which a simulated flaw is cut in a specimen to be used as a standard, wherein the flaw is cut with an electrode shim, a portion of which penetrates the specimen as it cuts and becomes visibly etched, the combination therewith of a method of measuring the flaw depth, comprising measuring the distance the shim



travels in penetrating the specimen, measuring the height of the etched area of the shim, and adding to the height measurement a correction factor which is a linear function of the distance of shim travel.

3,349,496
CUTTING GAGE AND GUIDE
Arthur A. Adams, 1764 Bayovista Ave., San Pablo, Calif. 94806
Filed Oct. 27, 1964, Ser. No. 406,760
1 Claim. (Cl. 33—143)

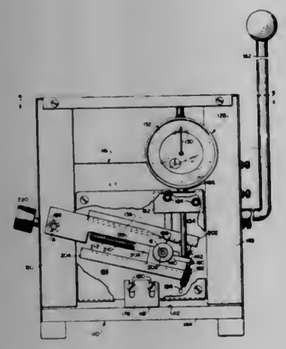


A gage comprising a plurality of telescoping members of successively decreasing cross section, rotary locking means disposed at the joints between adjacent ones of said telescoping members for selectively locking same in different relative telescoping positions, a substantially rectangular guide member fixedly secured to the telescoping member of largest cross section transversely thereof at a position spaced from its free end, said guide member having a rectangular board receiving notch, a collar slidably mounted coaxially upon the telescoping member of smallest cross section, a set screw carried by said collar for selectively locking same upon said telescoping member of smallest cross section, and a support block fixedly secured to said telescoping member of largest cross section in spaced relation to said guide member, said block having a rectangular board receiving notch with edges aligned with said notch of said guide member.

3,349,497
DEVICE FOR COUNTING SHEETLIKE ITEMS
William A. Seabury III, Ulster Park, N.Y., assignor to Burton H. Marshall, Ulster Park, N.Y., doing business as Burton H. Marshall Associates
Filed Jan. 13, 1966, Ser. No. 520,532
3 Claims. (Cl. 33—147)

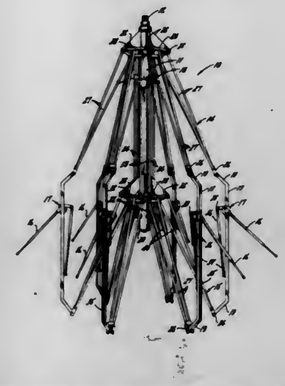
1. A device for counting in bulk the number of substantially uniformly thick sheetlike items in a stack of such items comprising a base, a measuring member having a planar surface adapted to engage a stack of such items disposed against said base on the side thereof opposite the base, means mounting said measuring member for movement in a rectilinear path relative to said base and normal to said planar surface, whereby the displacement of said member is equal to the thickness of said stack, a lever, means pivotally mounting said lever on

said base for swinging movement about an axis extending perpendicular to said path of rectilinear motion, motion transmitting means so connecting said lever to said measuring member that said lever is displaced by and relative to the measuring member a distance proportional to the distance the member is displaced relative to the base by the stack of sheets being counted, an indicator having an input member mounted for rectilinear motion along a path that is parallel to the path of movement of said measuring member, said input member being operatively connected to said lever and operably displaceable thereby through a distance proportional to the displacement of the measuring member and therefore proportional to the thickness of the stack of items being counted and means for converting the displacement of said input member to an indication of the number of items in said stack, said lever having a planar surface lying in a plane containing its pivot axis and engaging said input member to transmit the lever motion to said input member, said motion transmitting means comprising a cylindrical boss member having an annular, outwardly-opening groove and being mounted on said measuring member with the longitudinal axis of said boss member extending parallel to the pivot axis of said lever, and means forming a slot in said lever to provide a



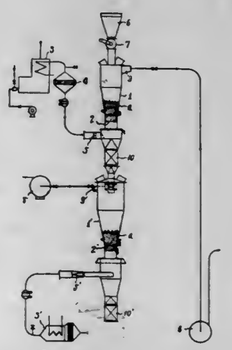
straight, elongated edge extending parallel to said planar surface of said lever and perpendicular to the axis of said boss member, said edge being seated on the bottom surface of said annular groove and cooperating therewith to operatively provide a cam and cam follower connection for transmitting the motion of said measuring member to said lever, and calibrating means for selectively altering the ratio between the displacement of the indicator input member and the displacement of said measuring member to enable said indicator to correctly indicate the number of items in stacks containing items of different thicknesses, said calibrating means comprising at least one guideway on said measuring member, a structure supporting said boss member and being slidable along said guideway toward and away from the pivot axis of said lever member, and an elongated screw member journalled on said measuring member for rotation about an axis lying in a plane containing said planar surface of said lever, said screw member being threadedly engaged with said structure and being selectively rotatable for shifting the assembly of said structure and said boss member along the screw member axis to vary the ratio of the distance between the boss member axis and the lever pivot axis to the distance between boss member axis and the axis along which said indicator input member is rectilinearly movable.

3,349,498
LARGE HOLE CALIPER
Willis J. Oliver, Derrick City, Pa., and Robert L. Tucker, Tulsa, Okla., assignors to Seismograph Service Corporation, Tulsa, Okla.
Filed Sept. 7, 1965, Ser. No. 485,227
11 Claims. (Cl. 33—178)



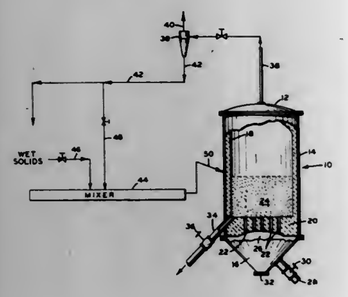
1. A hole caliper comprising, in combination, an elongated central body adapted to be secured to a logging cable, a pair of rails positioned one on either side of said body, a pair of sensing arms one pivoted on one of said rails and the other pivoted on the other of said rails, means for urging said arms outwardly of said body, links interconnecting each of said rails and said body, means including a motor in said body for swinging said links to selectively space said rails from said body, and means for sensing the angle of said arms with respect to said rails.

3,349,499
METHOD FOR DRYING RAW MATERIAL CHIPS OF SYNTHETIC RESIN
Toshio Katano, 80 Samezucho, Ooi, Shinagawa-ku, Tokyo, Japan
Filed Mar. 18, 1965, Ser. No. 440,728
5 Claims. (Cl. 34—10)



1. A method for drying raw chips of synthetic polyester resin material comprising:
(a) pre-treating said chips by exposing them to a moving stream of gas at a temperature between 70° C. and 100° C. and
(b) thereafter exposing said chips to a moving stream of gas at a higher temperature.

3,349,500
AGGLOMERATIVE DRYING
Clarence J. Wall, Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Continuation of application Ser. No. 252,203, Jan. 17, 1963. This application Mar. 23, 1966, Ser. No. 538,179
4 Claims. (Cl. 34—10)



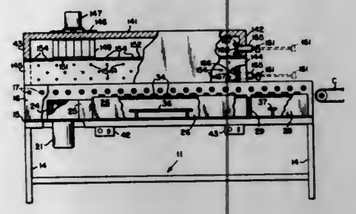
1. The method of treating a wet sticky mass of finely divided inorganic crystalline precipitate having a particle size which is substantially minus 200 mesh which comprises, adding fine dust-like solid particles to said sticky mass to form individual fluidizable size agglomerates, each having a reduced moisture content and each coated with a layer of fine dust, feeding the so-conditioned coated agglomerates to a fluidized bed containing dry agglomerates formed from said material, supplying fluidizing gas to said bed at a temperature sufficient to form said agglomerates by drying, while allowing fines resulting from this drying operation to be carried off with the spent fluidizing gas, and continuously withdrawing the thus formed agglomerates from the bed.

3,349,501
NON-DIMPLING REGENERATED CELLULOSE FILM
James Phillip Janosik, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 8, 1965, Ser. No. 438,082
5 Claims. (Cl. 34—41)

1. In the drying of a continuous web of non-fibrous gel cellulosic film in a multi-roll drier, the process comprising:
- passing a continuous web of non-fibrous gel cellulosic film over and in contact with a series of heated dryer rolls having a finished surface roughness between 300 and 650 RMS microinches, said rolls having a surface roughness before finishing below about 80 RMS microinches and
- applying heat to said film to effect the drying of said film from about 125% moisture to about 5 to 10% moisture by weight, based on the weight of dry cellulose.

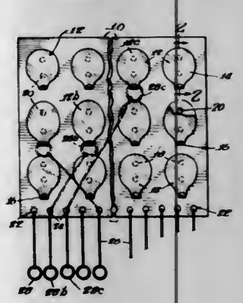
3,349,502
APPARATUS FOR SHRINKING FILM-WRAPPINGS ON ARTICLES
Reginald R. Kiefer, Fairport, N.Y., assignor to The Trescott Company, Inc., Fairport, N.Y.
Filed Aug. 11, 1964, Ser. No. 388,771
7 Claims. (Cl. 34—216)

1. Apparatus for shrinking heat-shrinkable wrapping material about an article, comprising
- (a) a preheat section completely open at its top and at its sides,
- (b) a tunnel juxtaposed to said preheat section and closed at its top and both sides but having both ends thereof open, one of said ends adjoining said preheat section,
- (c) means for conveying a wrapped article along a predetermined path successively over said preheat section and through said tunnel,



- (d) means positioned in said preheat section for directing a stream of heated air against the bottom of the article to cause the wrapping material to shrink locally about the article, and
- (e) means in said tunnel for directing a stream of heated air onto all sides of the article.

3,349,503
CHILD'S EDUCATIONAL TOY
Gertrude Levin, 841 Oak Drive, Glencoe, Ill. 60022
Filed Oct. 20, 1965, Ser. No. 498,627
7 Claims. (Cl. 35—8)

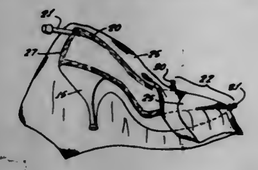


1. An educational toy comprising, a board, a plurality of different color members on said board, attaching means in the vicinity of each said color member, a plurality of elongated, flexible elements each having one end connected to the board and having on the other end means attachable to said attaching means, each of said attachable means being of a different color and matching in color with the colors of said members.

3,349,504
REMOVABLE COVERING FOR WOMEN'S SHOES AND METHOD OF FORMING IT
Bette J. Shearer, 6513 Via Lorenza, San Pedro, Calif. 90732
Filed June 11, 1965, Ser. No. 463,104
18 Claims. (Cl. 36—2.5)

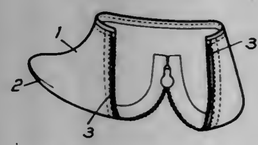
15. A lady's dress shoe of the type having a removable cover attached thereto comprising, in combination,
- (a) a shoe having an upper body defining an ankle opening, a sole attached to the lower part of the shoe body and an extended heel affixed to the lower rear part of the sole;

- (b) a coating of non-bleeding adhesive applied to the exterior surfaces of the shoe body and heel;
- (c) a pre-selected fabric attached to the shoe body and heel with the true bias thereof lying generally in the toe-to-heel plane of the shoe;
- (d) the edges of the fabric adjacent the sole of said shoe being wedged in the margins between the shoe body and sole and the heel and sole, respectively, and in part retained there by said tacky adhesive material;
- (e) the upper edge of the cover on said shoe body being pinked and folded over the upper edge of the shoe



body defining the ankle opening and bonded to the inside surface of the shoe body by said adhesive material;
- (f) a length of bias tape affixed by said adhesive material in overlying relation of the edges of said cover which terminate interior of said shoe body; and
- (g) the forward edges of the fabric covering the heel being pinked and trimmed and affixed to the forward surface of the heel by the adhesive so that the breasting normally covering the forward surface of the heel covers the forward edges.

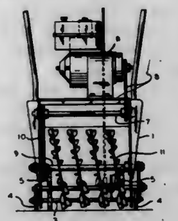
3,349,505
CHILDREN'S FOOTWEAR
Segundo C. Lopez, San Fernando 42—3°, Villena, Alicante, Spain
Filed Oct. 28, 1966, Ser. No. 590,403
Claims priority, application Spain, Dec. 11, 1965, 118,017
6 Claims. (Cl. 36—2.5)



1. A footwear article comprising a toe portion, a heel portion, a portion having a leg receiving opening, at least one of said portions having a substantially transverse aperture extending from a point on one side of said footwear spaced from the edge of said leg receiving opening, downwardly along said side, across the bottom thereof between said toe and heel portions and upwardly along the opposite side thereof to said leg receiving opening, and means for fastening the sections provided by said substantially transverse aperture, together.

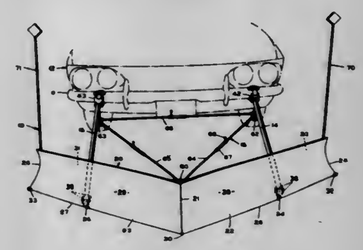
3,349,506
DISC SNOW THROWER
George H. Rubin, 624 Marquette Ave., South Milwaukee, Wis. 53172
Filed Jan. 27, 1965, Ser. No. 428,364
1 Claim. (Cl. 37—43)

In a snow thrower including a casing, a source of power associated therewith, a snow intake opening and a snow discharge opening in said casing, and a rotating assembly comprising a multiplicity of spaced discs arranged at an acute angle on a shaft within said casing and operably connected with said power source, each disc being circular and having a multiplicity of cuts extending



from the circumference each with that portion of the disc adjacent a side of said cut positioned at substantially ninety degrees with the face of said disc.

3,349,507
SNOW PLOW
Clyde E. Payne, 28210 Hawberry Road, Farmington, Mich. 48024
Filed Jan. 27, 1965, Ser. No. 428,419
4 Claims. (Cl. 37—44)



1. An easily attached, detached, and operated snow plow assembly particularly suitable for use with automobiles comprising:
- a self-stabilizing chevron-shaped plow having paired blades lying angularly relative to one another meeting centrally in a forward point;
- each said blade trailing rearwardly and sidewise outwardly from said forward point to trailing outer ends;
- each said blade having a bottom ground surface contacting scraper edge restable on a surface;
- each one of said blades, because of its angular disposition relative to the other said blade, supporting the other said blade in an upright plowing position;
- each said blade having an inwardly upwardly curving front plow face and a rear face,
- paired lugs welded on each said blade rear face intermediate the ends of each said blade adjacent the bottom scraping edge of said plow;
- paired pusher bars having a forward end pivotally connected to said plow lugs on each said blade and a rearward end for attachment to an automobile,
- bumper lugs attachable to an automobile bumper at the rearward end of each said pusher bar;
- said pusher bars rearward ends being pivotally connected to said bumper lugs;
- said pusher bars being pivotally connected at each end between said plow and an automobile permit-

ting up and down relative movement between said plow and an automobile in traveling a ground surface, and

sidewise stabilizing means triangulated between said pusher bar rearward ends and said plow forward point preventing sidewise movement of said plow relative to a pushing automobile including,

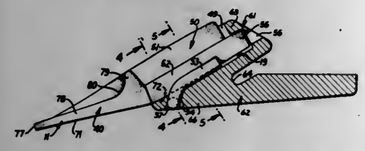
a first strut leading from said plow point to one said pusher bar rearward end,

a second strut leading from said plow point to said other pusher bar rearward end, and

a third strut lying between said rearward ends of said pusher bars;

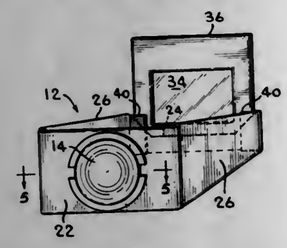
said struts co-acting with one another so as to compose three sides of a triangular brace securing said pusher bars and said plow in a sidewise stable condition relative to each other and a pushing automobile.

3,349,508
TOOTH WITH T-SHAPED SHANK
Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.
Filed Sept. 7, 1965, Ser. No. 485,154
15 Claims. (Cl. 37—142)



1. In combination, a tooth having distal and proximal portions and a tooth holder shaped to receive said proximal portion, said proximal portion being T-shaped in cross-section having an outward projecting rib and laterally extending feet, said distal portion having a broad blade extending to the forward end of said tooth and having a bottom surface merging with the bottoms of said feet and generally extending as a forward projection of said feet, said tooth holder formed with a socket substantially complementary to said proximal portion, the forward end of said tooth being substantially longitudinally forward of said feet, whereby the reaction to digging force imparted to said forward end is transmitted through said tooth in line with said feet to said tooth holder.

3,349,509
COMBINED SLIDE FILE BOX AND VIEWER
William Balch, Milwaukee, Wis., assignor to Realist Inc., Menomonee Falls, Wis., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,857
1 Claim. (Cl. 40—63)



A carton comprising:

telescoping members each having a bottom and four side walls and being sized to serve as a container for mounted transparencies of a given size;

one of the members having an aperture in one of its walls;

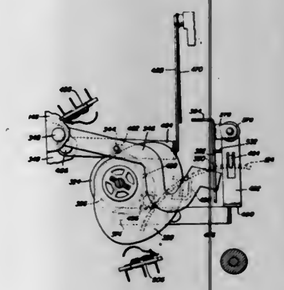
a lens mounted in said aperture;

the wall of said one member opposed to said one wall having an opening therein of such size as to not overlie any portion of a mounted transparency when any edge of the transparency mount is held against the bottom adjacent said opposed wall to thereby allow viewing the transparency by transmitted light by viewing the transparency through the lens;

said one wall and the opposed wall being separated by approximately the focal length of the lens,

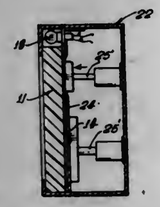
and a tab projecting from each side wall adjacent said opposed wall and being self-biased towards the opposed wall for yieldingly holding a mounted transparency between the tabs and the opposed wall normal to the optical axis of the lens.

3,349,510
SLIDE TRAY POSITIONING APPARATUS FOR A PROJECTING APPARATUS
Robert D. Kluge, Westminster, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 480,032
5 Claims. (Cl. 40—79)



1. A slide advancing apparatus for a projector comprising, a motor, an automatically operated switching means connected to the motor to intermittently drive the motor, a gear reduction unit and a single tooth gear connected for rotation with the motor in a prescribed direction for a preselected period of time, a tray mounted for rotation within the projector containing slides radially positioned therein, gear teeth formed along an outer ring portion of the tray, a rotatably mounted pinion in driving engagement with the teeth on the tray, the tooth on the single tooth gear being positioned to be brought into driving engagement between two of the teeth on the pinion to rotatably move the pinion, tray and the slides radially positioned therein through a preselected angle of rotation so that each slide can be sequentially moved to a twelve o'clock position in the tray, a gate positioned above the tray, a guide casing to provide a passageway for moving a slide between the tray and the gate positioned at a 12 o'clock location between the tray and the gate, a hook positioned for sliding engagement in the guide casing, a biasing means positioned in the guide casing to retain the hook in engagement between two adjacent gear teeth formed on said outer rim portion of the tray, a hook lifting means operably connected for movement with the motor to lift the hook out of engagement with the said adjacent teeth against the biasing means when a slide changing operation is effected and said hook lifting means being further operable to release the biasing means and bring the hook into engagement between adjacent gear teeth on the tray immediately after a slide changing operation between the tray and the gate has been effected.

3,349,511
ILLUMINATED SIGN
Leonard S. Aronoff, 16751 Tupper St., Sepulveda, Calif. 91343
Filed Aug. 12, 1964, Ser. No. 389,142
6 Claims. (Cl. 40—130)



1. An illuminated display comprising:

a light transmitting member having first and second opposed surfaces;

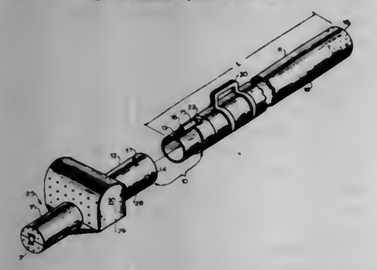
a light source for directing light longitudinally through said light transmitting member between said opposed surfaces thereof;

an opaque display member; and

means for selectively moving said display member into intimate contact with said first opposed surfaces;

whereby said display member reflects light and is visibly illuminated and contrasted with its surroundings when said display member is brought into contact with said one surface.

3,349,512
INTERCHANGEABLE ROD AND REEL CARRIER APPARATUS
Claude J. Walker, Rte. 2, Hillsborough, N.C. 27278
Filed May 14, 1965, Ser. No. 455,713
3 Claims. (Cl. 43—26)



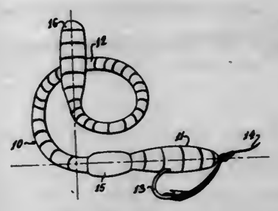
1. A composite rod and reel carrier comprising a rigid elongated hollow tube having one end substantially closed and one end open; a handle mounted for carrying said tube horizontally; and a rigid hollow case having a door opening in the wall thereof and including a hollow tubular portion mating with and detachably secured to said tube open end, said case being shaped to receive through said door opening an interconnected rod-reel set of given configuration for storing the rod portion in said tube and the reel portion in said case thereby providing an integral rigid protective structure for transporting said set of said configuration.

3,349,513
FISHING LURE
William J. Jeff, 1312 19th Place SW., Birmingham, Ala. 35211
Filed May 13, 1965, Ser. No. 455,495
1 Claim. (Cl. 43—42.02)

In a fishing lure having an elongated body formed of a soft, resilient and flexible plastic material that will retain a recoverable set position after being heated above a predetermined temperature and then cooled while in the set position for a predetermined length of time, the improvement which comprises:

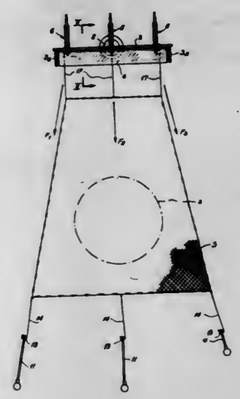
(a) a head portion joined to an elongated forward portion of said body, with said head portion and said forward portion of the body extending in a generally straight line, and

(b) a tail portion for said elongated body curved to



one side of said body and having its end extending over an adjacent portion of said tail portion of said body and set in said recoverable set position in laterally spaced relation to said forward portion of the body so that upon pulling the lure through water substantially all wiggle movement thereof is in said tail portion thus preventing rotation of the lure about its longitudinal axis.

3,349,514
APPARATUS FOR THE CAPTURE OF LIVE ANIMALS
Roger L. A. Trechot, 9 Ave. Sainte Foy, Neuilly-sur-Seine, France
Filed Jan. 25, 1967, Ser. No. 629,040
Claims priority, application France, Oct. 25, 1963, 951,850, Patent 1,380,756
7 Claims. (Cl. 43—60)



1. Apparatus for capturing live animals comprising an elongated net adapted to spread over the animals to be captured and having weighted sides, a container for said net, said net being tethered at one of its ends and being adapted to fold within said container, a plurality of weighted members, connecting means freely attaching the opposite end of said net to said plurality of weighted members, and means for launching the weighted members, said connecting means allowing said weighted members to reach their maximum speed after launching before they pull the net out of the container.

3,349,515
CONTAINER CONVERTIBLE TO A POWERED TOY

Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Dec. 9, 1964, Ser. No. 417,179
3 Claims. (Cl. 46—11)

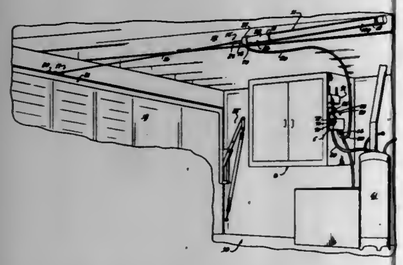


1. A container adaptable for use as a toy, comprising a container shaped to simulate a toy and having an externally threaded neck portion, a cap having a cylindrical wall, an end portion connected to said cylindrical wall and internal threads in said cylindrical wall operatively engaging the external threads on the container neck, said end portion having an outwardly extending essentially conical protrusion, said protrusion being provided with an aperture therein, a drive shaft rotatably mounted in said conical protrusion with a part thereof extending through said aperture, a propeller mounted on the extended part of said drive shaft, said end portion having an annular rim depending therefrom, a substantially tubular member having the outer surface of one end frictionally supported by the inner surface of said annular rim, said tubular member extending beyond the cylindrical wall of said cap and the neck portion of said container whereby it is positioned within the container, a fastener means secured to the other end of said tubular member and an elastic band propulsion means connected between the inner end of said drive shaft and the fastener means of said tubular member.

3,349,516
FLUID ACTUATED DOOR OPERATING MECHANISM

Robert H. Armstrong, 234 S. Marywood Ave., Claremont, Calif. 91711

Filed July 28, 1965, Ser. No. 475,530
5 Claims. (Cl. 49—25)

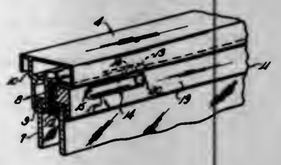


1. In combination with a garage door and coupled thereto by a cable, a single-acting fluid cylinder having a movable rod extending therefrom connected with the cable; a first valve operated by a solenoid and connected between said cylinder and a source of tap water; a second valve operated by a solenoid and connected between said cylinder and a drain outlet; and switching means for selectively energizing said valve solenoids in any position of said garage door and in such manner as to effect opening of either valve and closing of the other valve, and simultaneous closing of both valves; whereby said garage door is lifted when said first valve is opened to permit water from said source to enter said cylinder to draw said rod extending therefrom into said cylinder and pull upon said cable, and whereby said garage door is lowered when said second valve is opened to permit said water from said cylinder to drain into said drain outlet, extending said rod to release said cable, and whereby further said garage door may be arrested and positively retained in any position.

3,349,517
WINDOW ASSEMBLY INCLUDING A STORM SASH AND STORM SASH LATCH

Waldo O. Johnson, Wooster, Ohio, assignor to Weather-Seal, Inc., North Barberton, Ohio, a corporation of Ohio

Filed Oct. 4, 1965, Ser. No. 492,701
4 Claims. (Cl. 49—61)



1. In a storm window assembly of a prime window sash having four sash rails forming a sash enclosure with sash positioning means extending inwardly of such sash on the outer side of such sash rails, at least two opposed sash rails having locking slots formed therein, and a second sash of a size to be received within said sash rails enclosure, the improvement comprising

a plurality of sash latches each comprised of an elongate flat control arm having an integral gripping flange extending from one face thereof, and a short flat locking arm with a cam surface on an inside corner portion thereof, which locking arm is substantially perpendicular to but axially spaced from said control arm,

means pivotally securing each latch at the point of intersection of the control arm and the locking arm to said second sash with the flat surface of the control arm in abutment therewith to allow said control arm to be pivoted in its own plane while remaining abutted against said second sash to effect movement of said locking arm into its respective slot to engage the cam surface on the inside surface of said locking arm with the sash rail, and

resilient seal means compressed between said sash positioning means and said second sash by moving said latches into said slots to engage said rails whereby said second sash is removably carried by said prime window sash.

3,349,518
REMOVABLE WINDOW WITH SASH BALANCE LOCK

Waldo O. Johnson, Wooster, Ohio, assignor to Weather-Seal, Inc., North Barberton, Ohio, a corporation of Ohio

Filed Oct. 4, 1965, Ser. No. 492,700
2 Claims. (Cl. 49—446)

1. In a slidable window assembly,

a vertically extending jamb liner having a vertically extending slot therein and being provided with vertically extending ledges therein,

means resiliently positioning said jamb liner for movement laterally of the window,

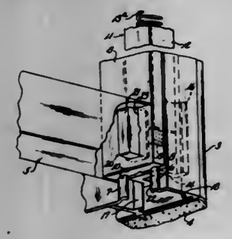
a sash balance with a control member resiliently and adjustably extending therefrom,

a balance guide attached to said control member and slidably engaging said jamb liner for movement

therealong, said balance guide having flanges thereon for engaging said ledges to be restrained thereby against movement laterally inwardly of the window assembly,

a lock screw having a shank portion secured to said balance guide and an elongate head portion extending laterally inwardly of the window assembly through said slot, the base of the head portion being contoured to cam against the laterally inner surface of the jamb liner and force said flanges against said ledges to secure said balance guide in a given position when said head portion is in a horizontal position and to disengage such surface of said jamb liner to release said balance guide when said head is in a vertical position, and

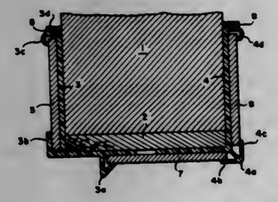
a sash engaging said jamb liner for sliding movement thereon, said sash including a sash rail with an aperture therein adapted to engage the elongate head portion of said lock screw to secure said sash balance operatively thereto, said sash being removable from said jamb liner by forcing said jamb liner laterally outwardly and by pivoting said sash about said lock screw shank to turn said head from a vertical to a horizontal position to lock said balance guide in a given position and a pair of vertically extending ribs on the laterally inner surface of said jamb liner bordering the vertically extending slot thereof, said sash having vertically extending sash rails with vertically extending recesses therein for sliding engagement with said ribs, the base of the head portion riding in said slot free of said ribs as the head of said lock screw is in a vertical position but the base of said head portion camming against said ribs when said head is in a horizontal position.



3,349,519
SHAPED ELEMENT OF PLASTIC MATERIAL FOR COMPOSITE DOOR FRAMES

Albert Nehlig, Auf der Acht 6, Mimbach, Kreis, Homburg, Saar, Germany

Filed Aug. 30, 1965, Ser. No. 483,653
Claims priority, application Germany, Aug. 31, 1964, N 25,439
5 Claims. (Cl. 49—504)



1. A door jamb assembly for installation over the end of a wall defining a door opening comprising in combination:

(a) a pair of elongated substantially L-shaped members each having a side leg overlying a side wall of the opening and an end leg overlying the end wall of the opening,

(b) a first longitudinally extending flange located at the free end of each of said side legs, each said flange terminating in a flexible arcuate tongue portion extending toward its respective side leg,

(c) a second longitudinally extending flange located at the intersection of the said side and end legs each terminating in a second tongue portion extending toward said first tongue portion and defining therewith spaced grooves for receiving side cover plates,

(d) side cover plates inserted under each of the second flange portions and snapped behind the first arcuate flange portions,

(e) a third longitudinally extending flange portion located on one of said end legs and terminating in a third tongue portion,

(f) the other of said end legs having a fourth tongue portion extending toward said third tongue portion said third and fourth tongue portions thereby defining spaced grooves for receiving an end cover plate,

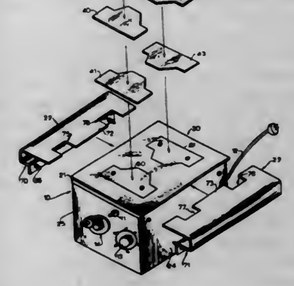
(g) an end cover plate inserted in said fourth tongue portion and located behind said third tongue portion,

(h) said fourth tongue portion and one of said second tongue portions extending from the same longitudinally extending flange located at the intersection of one of said side and end legs.

3,349,520
GLASS HONE PLATE RESURFACING APPARATUS

John E. P. Pickett, 3507 Ridge Road, Durham, N.C. 27705

Filed Feb. 15, 1965, Ser. No. 432,516
6 Claims. (Cl. 51—26)



1. An apparatus for simultaneously resurfacing a worn surface on each of a pair of microtome plates by using the worn surface of each as an abrading tool for the other comprising:

(a) a clinical rotator having a housing, a frictionally surfaced rotatable platform supported above the housing, said platform being adapted to frictionally position and rotate a first one of a pair of worn microtome plates, and means within the housing for rotating said platform;

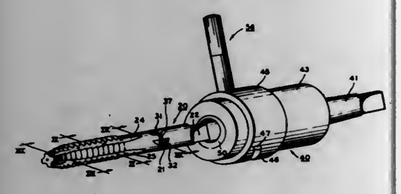
(b) a holder secured to said housing and overlying said platform above and free of contact with said first plate and extending from said housing outside the swing of the edges of said platform, said holder

being adapted to removably engage the edges of the second one of said pair of plates and maintain said second plate superposed upon said first plate so that respective worn surfaces of each are in opposed engagement, said second plate being restrained by said holder from horizontal movement while being free to move vertically;

(c) means for applying a constant uniform pressure to the exposed surface of said second plate to maintain uniform contact between said first and second plates; and

(d) an abrasive mixture coating the worn and contiguous surfaces of said first and second plates whereby upon the movement of said platform, said first plate moves relative said second plate and, in combination with said abrasive mixture, simultaneously causes the contiguous surfaces of said plates to become flat and smooth.

3,349,521
DEVICE FOR HOLDING ROTARY CUTTING TOOLS
Andrew J. Bryant, 900 Arthur Ave., Bristol, Pa. 19007
Original application Apr. 7, 1961, Ser. No. 114,580, now Patent No. 3,190,046, dated June 22, 1965. Divided and this application June 21, 1965, Ser. No. 465,573
33 Claims. (Cl. 51—225)



1. A device for holding a rotary cutting tool comprising in combination:

a single cylindrical member adapted for fixed position, said member defining a bore and being further defined by a peripheral wall,

said wall containing an angular helical slot communicable with said bore and with the exterior of said wall,

eccentric means disposed in said bore, and

means independently of the tool and disposed in said angular slot and projecting through said eccentric means for engaging a surface of registry of a tool within said bore,

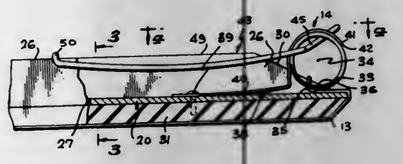
said length of said slot being of greater magnitude than the size of said means disposed therein so as to provide relative angular movement between said means and said member,

whereby actuation of said means along said slot produces eccentric rotation and axial movement of the tool as a result of cooperative action of said eccentric means and said means with the tool.

3,349,522
SPINNERET SURFACE FINISHING
James Stanley Cobb, Jr., Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 27, 1965, Ser. No. 475,238
3 Claims. (Cl. 51—324)

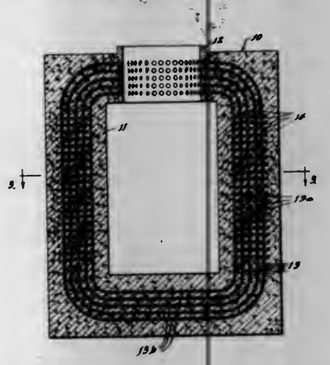
1. In a spinneret fabrication method including the preliminary step of machining a capillary hole in a spinneret blank thereby leaving a protuberance on one face of the spinneret blank, a finishing technique comprising the steps of: abrading said face to remove the protuberance; polishing the abraded face on a long nap cloth to remove burrs from within said hole; lapping said face just sufficiently to sharpen the hole exit; and polishing the face on a no nap cloth.

3,349,523
CLIP FOR SANDING TOOL OR THE LIKE
Alma A. Hutchins, 3190 Primavera St., Pasadena, Calif. 91107
Filed May 17, 1965, Ser. No. 456,383
24 Claims. (Cl. 51—386)



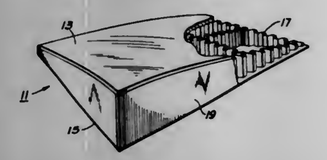
4. An abrading tool comprising a body structure for removably holding a sheet of abrasive material and having a backing portion along which said sheet is to extend and by which the sheet may be held against a work piece, and a clip for releasably retaining said sheet on said body structure, said clip including a holding unit adapted to retain said sheet and mounted to turn about an axis relative to said body structure in a direction tightening the sheet thereon, means for yieldingly urging said holding unit rotatively about said axis in said direction to tighten the sheet, means formng a surface adjacent said holding unit at a location to pass the retaining sheet between said unit and said surface, and means yieldingly urging said holding unit toward said surface to clamp said sheet thereagainst.

3,349,524
REACTOR CONTAINMENT VESSEL
Stanley H. Fistedis, Park Ridge, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 11, 1965, Ser. No. 424,867
1 Claim. (Cl. 52—20)



A containment vessel comprising a mass of concrete having a hollow interior, open top, and closed bottom, a metallic fitting positioned in the open top of the concrete mass, a first plurality of metallic reinforcing cables extending from the metallic fitting through the sides and bottom of the concrete mass and back to the metallic fitting, each cable having one end anchored in the metallic fitting at one side and the other end anchored in the metallic fitting at the other side, a first plurality of jackets for the first plurality of cables, each cable of the first plurality having its own jacket directly engaging the concrete and separating the cable therefrom, each cable of the first plurality being capable of longitudinal movement with respect to its jacket and the concrete, each cable having vertical portions in the sides of the concrete mass and a horizontal portion in the base of the mass, said first plurality of cables being divided into groups of cables, the vertical portions of the cables of each group being disposed in a cylindrical arrangement, each said cylindrical arrangement of vertical portions being concentrically spaced, a second plurality of metallic reinforcing cables extending in the form of closed loops through the sides of the concrete mass about the hollow interior, and a second plurality of jackets for the cables of the second plurality, each cable of the second plurality having a jacket of the second plurality directly engaging the concrete and separating the cable therefrom, each cable of the second pluraltiy being capable of longtiudinal movement with respect to its jacket and the concrete each cable of the second plurality being circumferentially fixed between concentrically spaced cylindrical arrangements of vertical portions of said first plurality of cables and spaced therefrom.

3,349,525
INTERACTING LAMINAR SHELL STRUCTURAL COMPONENT
Charles Payne, North Miami, Fla., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,699
7 Claims. (Cl. 52—80)



1. A structural component comprising:

(a) a primary membrane having the shape of a portion of a surface of revolution;

(b) a secondary membrane spaced apart from said primary membrane and having the shape of a hyperbolic paraboloid; and

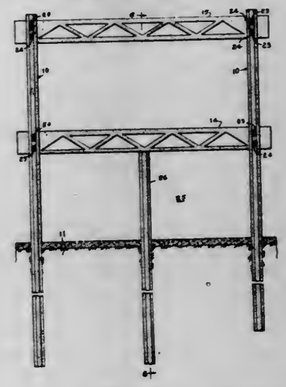
(c) a core system bonded to both said primary and said secondary membranes whereby buckling stresses which develop in said primary membrane when a load is applied to said panel are transmitted to said secondary membrane.

3,349,526
COLLAPSIBLE STRUCTURAL UNIT, REVERSIBLY RESILIENT IN A PREDETERMINED DIRECTION AND RIGID IN A SECOND PREDETERMINED DIRECTION
Wilhelm Schuster, Dauphinestrasse 194, Linz (Danube), Austria
Filed May 20, 1965, Ser. No. 457,363
Claims priority, application Austria, Dec. 4, 1959, A 8,802/59; May 20, 1964, A 4,402/64
15 Claims. (Cl. 52—108)



1. A collapsible structure comprising an elongated body consisting at least in part of a plurality of consecutive body sections disposed in pressure-transmitting relationship and in substantial alignment in a rigid condition of said body along a predetermined line, each of said sections being bounded by a pair of contact surfaces extending substantially transversely to said line in said rigid condition, each of said sections being formed with at least one passage extending generally in the direction of said line and registering with corresponding passages of adjoining sections for defining therewith at least one throughgoing channel; means including an elongated resilient tension element extending through said channel for positively arraying said sections in a first direction along said line in said rigid condition and for elastically deflecting said sections into a predetermined second direction in a relaxed condition; and releasable tightening means connected with said element for selectively stressing and unstressing same with reference to said sections whereby the latter are respectively placed in said rigid and said relaxed condition, said tension element being of resilient character with an inherent bias tending to deflect said element away from said predetermined line in said second direction.

3,349,527
MULTI-LEVEL BUILDING CONSTRUCTION INCLUDING A COMBINATION PILE AND COLUMN
Thomas C. Bruns, New Orleans, La., assignor to Brunspile Corporation, New Orleans, La., a corporation of Louisiana
Filed Aug. 6, 1964, Ser. No. 387,828
7 Claims. (Cl. 52—169)



3. In a building construction, a plurality of spaced piles driven into the ground and extending continuously substantially thereabove to constitute columns, girders extending between spaced pairs of said columns and lying thereagainst at each of at least two vertically spaced levels, said piles being formed of concrete and having molded therein horizontal metallic sleeves, said girders having openings therethrough each aligned with one of said sleeves, and a bar projecting through each sleeve and the associated opening, said columns and said girders constituting the supporting structure for a building and said piles projecting into the ground a sufficient distance to form the sole means for supporting the load of the building.

3,349,528
PORTABLE PARTITION WITH TELESCOPING TUBE SUPPORT
John A. Salt, 15450 SW. 67th Court, Miami, Fla. 33157
Filed June 17, 1966, Ser. No. 558,314
10 Claims. (Cl. 52—239)

1. For inclusion in a wall composed of a plurality of similar portable panels and adapted to register in side-by-side relation with one another, a wall panel for posi-

tioning between the floor and the ceiling of a building structure comprising:

a planiform frame of a vertical height less than the distance between the floor and the ceiling and including spaced parallel upper and lower rails and spaced parallel vertical supports with said supports and rails being connected together and outer covering panels dimensioned to congruently overlay the main outer planes defined by the rails and supports, said frame defining a right parallelepipedal inner cavity;

a telescoping tube system vertically secured centrally in the cavity including an outer tube vertically spanning the distance between the upper and lower rails and an inner tube carried in the outer tube extendible with respect to the outer tube and frame beyond the upper rail, said tube system including means to lock the inner tube in a predetermined extended position with respect to the outer tube;

a foot on the distal extended end of the tube system to engage a ceiling;



means to connect the frame of the panel to a frame of a similar panel in a wall assembly comprising;

a connector finger member at one end of each of said rails and in diametrically opposed relation with respect to said frame, each said finger member being secured in cantilever relation with the respective associated rail of each finger and extending outwardly of the face of its associated adjacent vertical support;

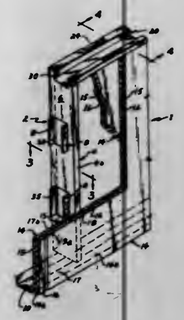
each said finger member including a pin projecting vertically toward the opposing rail of the frame to that on which it is carried, and

each said rail having a recess accessible from the outer surface at the end opposite to that on which the finger is carried, and spaced inwardly of the face of the vertical support of the frame immediately adjacent thereto a distance corresponding to the cantilever distance from the face of the other vertical support to the pin;

so that the panels may be placed in connected side-by-side relation with the pins in one panel in registry and nested in the recesses of the other panel and with the holes of said one panel receiving the pins of an adjacent panel.

3,349,529
HOLLOW WALL PARTITION SYSTEM
George J. Byssing, Los Angeles, Calif., assignor to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington
Filed Mar. 15, 1965, Ser. No. 439,732
7 Claims. (Cl. 52—241)

7. In a hollow wall structure the combination of a floor runner; a first series of wallboard units disposed in side edge to side edge abutment and in overlapping relationship with each other, and each of said units being provided with a rabbet groove; a second series of wallboard units disposed in side edge to side edge abutment and in overlapping relationship with each other, said second series of units being located in opposed and spaced relationship to said first series of wallboard units and each of the individual wallboard units of said second series of wallboard units also being provided with a rabbet groove; stud means mounted on the floor runner and disposed between the first and second series of wallboard units and anchored to the individual wallboard units of each series of units for holding each series of wallboard units in opposed and spaced relationship to each other; said stud means comprising an elongated channel-shaped stud element provided with a web portion and means for anchoring said stud element to said units in said first and second series

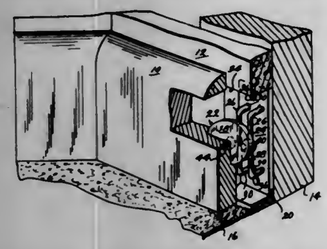


of units, said anchoring means comprising a pair of parallel side flanges on said stud element which project in substantially the same direction and are inserted in the rabbet grooves of certain opposed and spaced wallboard units in said first and second series of wallboard units so as to be interlocked therewith; and said last mentioned means further comprising at least one pair of parallel spaced flange elements projecting outwardly from and of smaller length than said web portion, said flange elements also being formed integrally with and projecting from said web portion in a direction opposite to said side flanges, the outer surfaces of said flange elements being in abutting engagement with the inside surfaces of other opposed wallboard units in said first and second series of wallboard units; and a channel-shaped fitting interposed between said floor runner and said stud element, said fitting being locked both to the floor runner and the flange elements of said stud element.

3,349,530
ADJUSTABLE TRIM CLIP
Herbert L. Zigler, R.D. 5E, Buck Road, Alliance, Ohio 44602
Filed Mar. 29, 1965, Ser. No. 443,469
5 Claims. (Cl. 52—288)

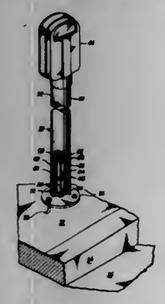
1. In combination with a wall and a molding lying flush against the wall a plurality of two part snap friction fasteners for releasably attaching the molding to the wall and for effecting adjustment of the molding relative to the wall in both longitudinal and transverse directions, said fasteners being longitudinally spaced apart along the length of the molding between one surface of the molding and the opposed surface of the wall, each of said fasteners comprising two separate parts one of which is secured to the wall and one of which is secured to the molding, said parts being frictionally and releasably engaged with each

other, one of said parts defining an elongated slot extending in one of said directions and having stiff but resilient sides, the other of said parts including a stud-like element having an enlarged outer end disposed in said slot for sliding movement therealong and frictionally engaged with said stiff, resilient sides, said other part including mount-



ing means providing for adjustment of said stud-like element in the other of said directions whereby the molding may be adjusted longitudinally and transversely of itself relative to the wall by changing the position of said stud-like element and by sliding said stud-like element along said slot.

3,349,531
FRANGIBLE CONNECTOR ASSEMBLY FOR STANCHIONS, POLES AND STANDARDS
George H. Watson, 11530 Holmes Point Drive NE., Kirkland, Wash. 98033
Filed July 16, 1964, Ser. No. 383,193
4 Claims. (Cl. 52—296)



1. Structure for connecting an upper support member to a lower anchored support member comprising a sacrificial self-contained connector assembly, said connector assembly having an upper section adapted for connection to the lower end of said upper support member and a lower section adapted for connection to the upper end of said lower anchored support member to rigidly connect said support members with the adjacent ends of said support members being spaced apart about the central region of said connector assembly, said central region of said connector assembly being frangible upon impact applied to said upper support member, said connector assembly having axially spaced upper and lower bearing surfaces, and a bendable retainer carried by said connector assembly, said retainer having upper and lower axially spaced bearing surfaces, the spacing between the bearing surfaces on said retainer being greater than the spacing of the bearing surfaces on said connector assembly whereby said retainer loosely connects said upper and lower connector sections and is operable when said connector assembly has been broken to maintain said upper support member connected to said lower anchored support member while permitting limited axial separation of said connector sections sufficient to accommodate controlled tilting movement of said upper support member with respect to said lower anchored support member.

3,349,532
PARTITION-FORMING ASSEMBLIES AND COMPONENTS
Harold S. Dudoff, 552–556 NW. 5th St., Miami, Fla. 33136
Original application Jan. 19, 1961, Ser. No. 83,739, now Patent No. 3,256,659, dated June 21, 1966. Divided and this application Aug. 3, 1965, Ser. No. 485,667
1 Claim. (Cl. 52—301)

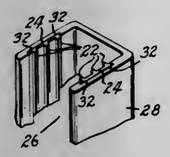


In combination with a post, a cap means attachable for closing the upper end of a hollow partition supporting post, said post having two pairs of opposed upstanding body walls joined together at vertically extending corners, said post body walls having outwardly opening channel means formed therewithin with said channel means being spaced a predetermined distance from said corners, said cap means comprising a crown means and a connecting member depending from said crown means, said connecting member being formed by first, second, third and fourth interconnected side walls of a size and shape disposed interiorly within said post with each of said side walls in frictional engagement with a corresponding adjacent wall of said post; said crown means extending beyond said connecting member with the underside of said crown means forming a flat flange engaged with the top of the post and extending therebeyond lying in a plane at right angles to said side walls when said cap means is attached thereto; each of said side walls gradually tapering downwardly and inwardly from said crown means; said first and second side walls being in opposed disposition to each other and said third and fourth side walls being in similar opposed disposition, said third and fourth side walls extending between and interconnecting said first and second side walls; said first and second side walls having channel recesses formed therein to permit reception of the inwardly extending body wall portions forming said post channel means; said first and second side wall channel recesses each being spaced from said third side wall by substantially said predetermined distance; said fourth side wall having a channel recess formed therein with said channel recess being spaced away from said first side wall substantially by said predetermined distance said channel means of said post being complementary to said cap wall means whereby said combination may be used at a corner or between aligned partitions.

3,349,533
CHANNEL EXTRUSION AND SEAL FOR FRAMING PANEL EDGES
Resta S. Gregoire, Newport, Pa., assignor to Gregoire Engineering and Development Company, Adelphi, Md.
Continuation of application Ser. No. 475,307, July 12, 1965. This application Oct. 14, 1966, Ser. No. 586,899
18 Claims. (Cl. 52—397)

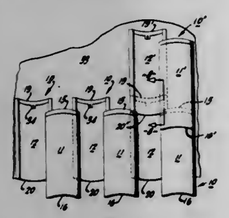
1. A panel having an edge framed in a one piece channel extrusion,

said channel extrusion comprising
a bottom wall and at least one pair of parallel sides extending therefrom,
said sides being spaced to provide a suitable clearance for said panel to be inserted therebetween, and
means on the inside of at least one of said sides, for gripping the edge of said panel in the channel of said extrusion,
each of said side gripping means including a flat strip mounted in the side of said channel and having at



least one elongated rectangular ridge of resiliently flexible material extending sufficiently therefrom and being of a suitable height and width to cause it to substantially bend and rub on the corresponding side of the panel edge when it was inserted into the channel with relatively little resistance and to cause considerably greater frictional resistance against withdrawal of the panel by wedging action of the bent ridges against the corresponding side thereof.

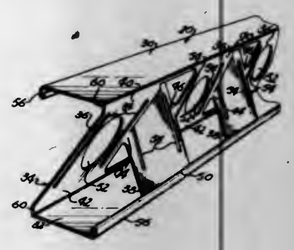
3,349,534
ROOFING TILE
John G. Wotherspoon, Alamo, Calif., assignor to Jaywoth Roof Tile Co., Inc., Alamo, Calif., a corporation of California
Filed June 30, 1964, Ser. No. 379,299
9 Claims. (Cl. 52—520)



1. A roofing tile comprising a one-piece body having a generally uniform thickness and having first and second integrally joined longitudinal sections, said first section having a transversely convex upper surface and said second section having a transversely concave upper surface, said sections each having an upper end, the upper end of one of said sections extending beyond the upper end of the other of said sections, and the upper end of said other section having a portion thereof overlapping the upper surface of said one section to form a locking shoulder extending between and generally perpendicular to the upper surfaces of said sections and facing toward the upper end of said one section.

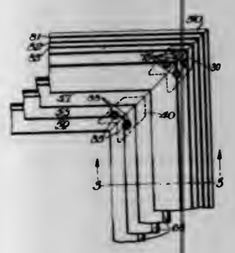
3,349,535
STRUCTURAL MEMBER WITH AN X CONFIGURATION WEB
Henry A. Balinski, Hoffman Estates, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 15, 1964, Ser. No. 359,867
7 Claims. (Cl. 52—634)

1. An elongated structural member comprising a pair of flanges, a web extending longitudinally of said flanges and supporting said flanges in parallel spaced relation, said web being of X configuration in cross section and including a first series and a second series of bracing elements joined in a continuous unit along the center portion of such X, said first series of bracing elements extending longitudinally of said flanges, each element in said first series extending from the center of such X to one of said flanges, successive elements of said first series being joined to opposite edge portions of said one of said flanges whereby said first series defines two legs of such X, said



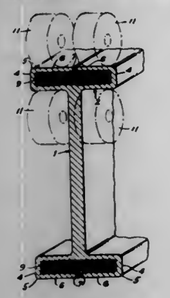
second series of bracing elements extending longitudinally of said flanges, each element in said second series extending from the center of such X to the other of said flanges, successive elements of said second series being joined to opposite edge portions of said other of said flanges whereby said second series defines the other two legs of such X, each of said elements in each of said series being joined to and lying in the same plane as an element in the other of said series.

3,349,536
FRAME JOINT AND FASTENER THEREFOR
John J. Halko, Jr., Llangollen Estates, Del., and Marvin S. Reider, Pottstown, Pa., assignors to Riv-Kap, Inc., Wilmington, Del., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,743
8 Claims. (Cl. 52—656)



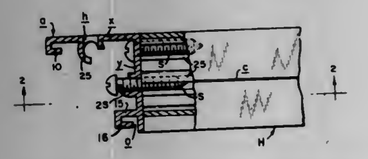
1. An aluminum frame in the form of an assembly of extruded frame members each having the same stepped cross-section, said frame having a mitered corner at which two of said members meet, a pair of molded zinc base rivet caps securing said members together at that corner, one of the rivet caps being fitted against a convex portion of the stepped cross-section and the other of which is fitted against a concave portion of the stepped cross-section, each of the caps being a generally flat plate having integral upstanding rivet posts and an integral edge flange about ⅛ inch high, and the caps being rivetted by their posts to relatively flat portions of the frame members with the flange of each cap engaging and supporting the adjacent stepped frame portions for a distance at least about ¼ inch from where the members meet.

3,349,537
REINFORCED STRUCTURAL MEMBER
Henry Hopfeld, 51 Winship Ave., Ross, Calif. 94957
Filed Aug. 12, 1965, Ser. No. 479,120
5 Claims. (Cl. 52—729)



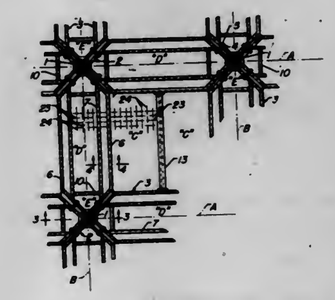
1. A structural member comprising
(a) a metal body,
(b) a longitudinal flange along one edge of said body,
(c) walls of said flange defining a longitudinal recess in said flange,
(d) the wall of said flange adjacent said edge of said body being the bottom wall of said recess,
(e) side walls extended from said bottom wall,
(f) a cover wall folded inwardly from at least one of said side walls to form the top of said recess,
(g) stranded reinforcing filler longitudinally oriented in said recess and compacted by the folding of said cover wall over said recess,
(h) a longitudinal hook flange along the free edge of said cover wall projecting into said recess and into the compacted stranded filler.

3,349,538
TUBULAR STRUCTURE
A. Virginia Crossman, 201 E. Tropical Way, Plantation, Fla. 33314
Filed Sept. 7, 1965, Ser. No. 485,194
5 Claims. (Cl. 52—731)



1. A tubular structure comprising two substantially inflexible, duplicate right angled units of equal length each consisting of only two elongated base walls of uniform thickness joined together longitudinally in right angled relation, a flange inturned along the free longitudinal edge of the first base wall and double bent to provide a lip spaced therefrom and defining therewith a first channel, the channel being faced toward the second base wall, and a U-wall having a leg disposed normally of the second base wall and fixedly secured thereto at a point remote from its free longitudinal edge, said U-wall including a relatively short lip inset from the free longitudinal edge of the second base wall by a distance substantially equal to the thickness thereof, the lip being spaced from the leg and terminating short of the second base wall by a distance substantially equal to the thickness thereof to form therewith and with the leg a second channel having a lateral opening thereinto adjacent the second base wall and facing away from the first base wall, the two angled units and the two channels thus formed being complementary to permit the lip of the first channel to fit slidingly within the second channel, and vice versa, whereby the two angled units are interlocked together to form a rectangular tubular structure having four uniplanar sides with two exposed seams adjacent diagonally opposite corners thereof.

3,349,539
CONSTRUCTION OF TWO-WAY COMPOSITE BUILDING SYSTEM
David B. Cheskin, 407 S. Dearborn St., Chicago, Ill. 60605
Filed Dec. 24, 1964, Ser. No. 420,999
4 Claims. (Cl. 52—741)

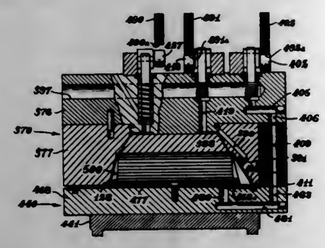


1. A method of constructing and framing a building structure with a two-way composite system of steel framing sections and reinforced concrete, so as to eliminate forming and to employ a minimum of shoring for the concrete, which comprises the steps of placing two-way rows of spaced columns, connecting to each of said columns at each floor level a laterally extending shear-head section having cantilevering steel framing members fabricated and positioned to extend diagonally with respect to said rows of columns from their respective columns, then positioning parallel lines of girder sections in a two-directional manner spaced from and parallel with the two-way rows of columns to form rectangular intermediate floor panel sections at each floor level between the two-way rows of columns as well as central floor panel sections and connecting the ends of said girder sections to the ends of said cantilevering framing members, fabricating and erecting each of said girder sections to have spaced apart steel framing members to provide for the placement of concrete therebetween, placing two-directional reinforcing bars across each shear-head section and the diagonally positioned cantilevering members thereof, placing floor reinforcing bars across said intermediate and said central floor panel sections and said girder section, placing concrete supporting bottom decking under said shear-head sections, said girder sections and said floor panel sections, and then pouring concrete around and over said reinforcing bars and over the steel framing members to provide a resulting two-way composite steel and reinforced concrete structure.

3,349,540
METHOD AND APPARATUS FOR CONTINUOUSLY FORMING PACKAGES
Hans A. Jensen and Augustus H. Eberman, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 4, 1964, Ser. No. 408,842
18 Claims. (Cl. 53—22)

4. A method for forming a package of the type including substantially coextensive upper and lower films secured together at their margins in product enclosing

relation wherein the lower film is formed of thermoplastic material, said method including the steps of: advancing a continuous web of thermoplastic film, successively forming raised package bases in the lower film in spaced relation longitudinally of the latter, forming an opening in the lower film adjacent and outward of the perimeter of each of said bases, depositing products on the raised bases, advancing a continuous web of upper film and vacuum forming pockets therein in spaced relation longitudinally of the upper film, bringing the upper film into overlying



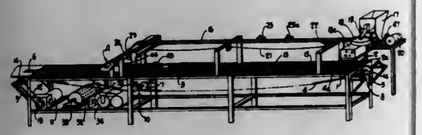
relation with the lower film with the products being received in said pockets, pressing said upper and lower films together around the perimeters of said bases in product enclosing relation, successively vacuum pressing the upper film into conformity with the products by evacuating the spaces between said films through said openings and at substantially the same time sealing the upper film to the perimeters of said bases thereby to close the openings in the lower film, and severing the sealed together films for separating the completed packages from the films.

3,349,541

METHOD AND APPARATUS FOR HANDLING AND PLACING TILE BODIES IN PRECISE LOCATIONS

Richard B. Alexander, Anderson, Ind., assignor to National Tile & Manufacturing Co., Anderson, Ind.

Filed May 13, 1964, Ser. No. 367,104
10 Claims. (Cl. 53—55)



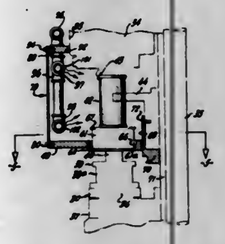
2. In apparatus for placing tile bodies in the recesses of a tile mounting board, in combination, means for moving a tile mounting board toward and past a tile depositing station, tile depositing means at said station and disposed above and aligned with the travel path of particular recesses in such mounting board as the latter is moved by said moving means, means for effecting discharge of tile bodies from said depositing means, and actuating means for actuating said means for effecting discharge, said actuating means being coordinated with and controlled by the travel movement of such board when so moved, wherein the tile depositing means comprises a gravity feed magazine, and the means for effecting discharge comprises release-holding mechanism operable by said actuating means to discharge a tile body from said magazine and deposit such discharged tile body in a particular recess of said mounting board, said release-holding mechanism comprising a pivoted lever having a holding finger normally engageable with the lowermost tile in said magazine to prevent discharge of tiles therefrom, said lever having a second holding finger and being moveable to and from a position engaging the second holding finger with the next upwardly disposed tile in said magazine to prevent discharge of the other tiles therefrom while releasing the first finger from engagement with said lowermost tiles to permit discharge thereof and wherein the actuating means comprises control means operable by said board during travel movement thereof to initiate operation of said actuating means.

3,349,542

CONTAINER SEAMER AND ENCLOSURE THEREFOR

Gerhart A. Guckel, Los Altos, Calif., assignor to James Dole Engineering Co., San Francisco, Calif., a corporation of Nevada

Filed Apr. 19, 1965, Ser. No. 449,097
12 Claims. (Cl. 53—112)



1. In combination with container closure apparatus in which a succession of product-filled containers are respectively positioned upon a plurality of reciprocable spindle units for assembly with covers, such assembly of the containers and covers being effected as the spindle units are angularly displaced about a closed path by a rotatable spindle unit turret to advance each container and its cover from the entrance to the exit of the apparatus; a ring element carried by said turret so as to rotate therewith and being provided with a plurality of openings respectively receiving said spindle units therein and being dimensioned to enable the spindle units to reciprocate with respect thereto, a stationary bottom wall supported by said apparatus and providing a surface oriented in circumjacent facing relation with said ring with sufficient clearance to permit relative rotation therebetween, a plurality of upwardly extending wall elements secured to said bottom wall, a top wall secured to said upwardly extending walls, said bottom wall, upwardly extending wall elements, top wall and said ring element comprising enclosure structure defining an enclosure about said spindle units, and means for admitting a sterilizing gas into said enclosure to provide an aseptic atmosphere therewithin, said enclosure structure having a continuously open exit through which closed containers are discharged and through which the sterilizing gas is permitted to escape continuously.

3,349,543

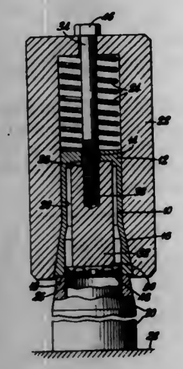
GALVANIC CELL CLOSURE

Robert Carmichael, Lakewood, and James Southworth, Jr., Rocky River, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Original application Dec. 19, 1961, Ser. No. 160,620, now Patent No. 3,223,559, dated Dec. 14, 1965. Divided and this application July 3, 1964, Ser. No. 380,151
3 Claims. (Cl. 53—366)

1. Apparatus for applying a seal to a galvanic cell container comprising collet means having radially flexible segments for applying a sealing force to said container,

cam means surrounding said collet means and axially movable relative thereto to actuate said flexible segments, pad means fixedly attached to said collet means and abutting said seal to prevent axial displacement of said



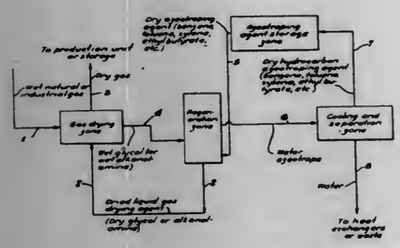
seal, actuating means effecting relative axial displacement between said cam means and said collet means, and support means engaging said collet means precluding axial pressure upon said seal and container.

3,349,544

GAS DRYING PROCESS

John L. Arnold, Roscoe L. Pearce, and Herman G. Scholten, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 28, 1966, Ser. No. 523,704
7 Claims. (Cl. 55—32)



1. In a method of drying a water-wet gas by contacting said gas with a liquid drying agent (A) selected from the group consisting of a glycol of from 2 to 8 carbon atoms and an alkanolamine of no more than 6 carbon atoms, wherein (A) is heated to remove water prior to reuse as a gas-drying agent, the improvement which comprises introducing an organic water azeotroping agent beneath the surface of (A) when the average temperature of (A) is above the vaporization temperature of the azeotroping agent and below the thermal decomposition temperature of (A) in an amount sufficient to form a water azeotrope with the residual water, said water azeotrope having a boiling point no greater than the thermal decomposition temperature of (A), then removing said water azeotrope from (A) separating said azeotroping agent from the water, and reintroducing said azeotroping agent beneath the surface of (A).

3,349,545

PROCESS FOR THE PURIFICATION OF RAW CRACKED GASES CONTAINING ACETYLENE

Virgilio Stocchi and Augusto Magelli, Mestre, Venezia, and Globatta Baisero, Tolmezzo-Udine, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed May 5, 1965, Ser. No. 453,481
Claims priority, application Italy, May 12, 1964, 10,383/64
2 Claims. (Cl. 55—65)

1. In a process for the purification of crude cracking gas obtained from the thermal treatment of hydrocarbons and containing primarily acetylene, naphthalenic compounds and other impurities at least one of which is propylene, allene, propene, 1,3-butadiene, monovinylacetylene, diacetylene and triacetylene, and wherein said other impurities are separated from the acetylene of said gas, the improvement which comprises the steps of:

treating said gas, prior to the separation of said other impurities from the acetylene thereof, with liquid tetrahydronaphthalene or decahydronaphthalene at substantially atmospheric pressure and a temperature of substantially 15° C. to 40° C. to extract said naphthalenic compounds from the gas;

thereafter compressing the gas to a pressure of substantially 5 to 24 atmospheres and an acetylene partial pressure of 0.5 to 1.4 atmospheres; and

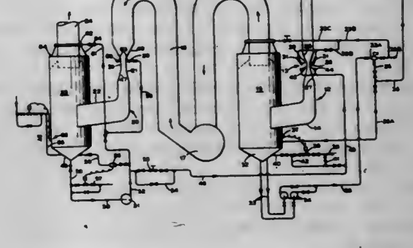
washing the compressed gas with sulphuric acid having a concentration of 40% to 100% by weight, at a temperature of 25° C. to 40° C. to remove said other impurities.

3,349,546

CHEMICAL AND HEAT ABSORBING APPARATUS

Charles E. Rogers, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

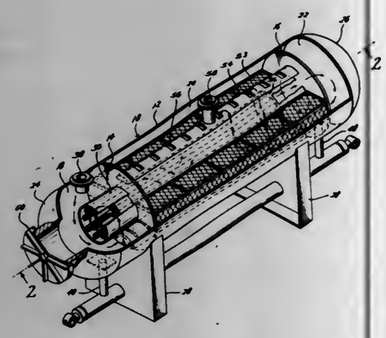
Filed Feb. 7, 1966, Ser. No. 525,459
7 Claims. (Cl. 55—227)



1. Apparatus for concentrating residual pulp liquor and for scrubbing chemical dust and fume from hot flue gases including a furnace wherein concentrated liquor is burned to form said hot flue gases, scrubbing apparatus comprising a first venturi scrubber and a second venturi scrubber arranged in series, said venturi scrubbers each including a venturi duct section followed in a gas flow sense by a liquid and gas separator, means for passing substantially all of the hot gases from said furnace in series through said first and second venturi scrubbers, first nozzle means positioned to discharge concentrated sprayed liquor into said first venturi duct section, means including a piping system and pump for recirculating concentrated liquor from the liquid and gas separator of said first scrubber to said first nozzle means, second nozzle means positioned to discharge sprayed liquid into said second venturi duct section, means including a piping system and pump for recirculating liquid from the liquid and gas separator of said second scrubber to said second

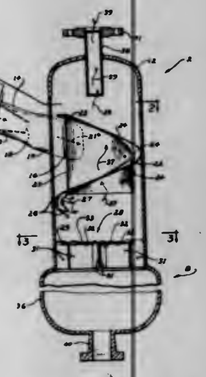
nozzle means in the corresponding venturi duct section, means for adding makeup liquid to said second venturi scrubber, pipe means connecting the piping system of said first venturi scrubber with said furnace for a controlled flow of concentrated liquor to said furnace for burning said liquor therein, and conduit means for passing a controlled flow of liquid from the piping system of said second venturi scrubber to said first venturi scrubber.

3,349,547
GAS SCRUBBER DEVICE
Fredrick L. Hoipkemeier, Oklahoma City, Okla., assignor to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Filed May 31, 1966, Ser. No. 554,104
6 Claims. (Cl. 55—324)



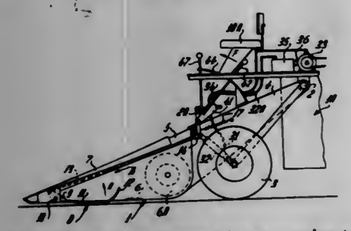
1. A separator for separating foreign solids and entrained liquid particles from a gas stream, comprising,
an elongate horizontal tubular vessel having a sidewall and closed ends,
first and second spaced partitions extending transversely and interiorly of the vessel and dividing the vessel into inlet, separation and terminal chambers,
inlet means extending through the sidewall, communicating with said inlet chamber for introducing the gas stream into said inlet chamber through the sidewall of the vessel for imparting a generally circuitous flow to said gas,
filter compartment conduit means axially spaced within the vessel and extending from the inlet chamber to the terminal chamber through the first and second partitions,
a third partition extending transversely secured within said filter compartment means adjacent the terminal chamber and having apertures therein providing communication between the filter compartment means and the terminal chamber,
a plurality of spaced filter tube means mounted within and axially extending substantially the length of the filter compartment means and sealably projecting through the apertures in the third partition for conducting the gas stream through the filter tube means and into the terminal chamber whereby foreign solids are trapped on said filter tube means and restricted from entering said terminal chamber,
a conduit mounted in the separation chamber providing communication between the bottom of the terminal chamber and the bottom of the separation chamber, said conduit extending substantially the length of the bottom of the separation chamber and having a plurality of flow slots spaced therein whereby the gas stream is distributed in a generally even flow pattern over substantially the length of the separation chamber,
liquid coalescing means secured within and extending across the length and width of the separation chamber for condensing liquid particles from the gas as said stream passes from the bottom to the top of the separation chamber,
a drainage pipe within the bottom of the inlet chamber for drawing off liquid and foreign solids from said chamber,
a drainage pipe within the bottom of the terminal chamber for drawing off condensed liquid from the terminal and separation chambers, and
outlet means for removing the gas stream from the top of the separation chamber.

3,349,548
CYCLONE SEPARATOR FOR SEPARATING STEAM FROM WATER
John L. Boyen, Orinda, Calif., assignor to C-C Industries, a corporation of California
Filed Jan. 22, 1964, Ser. No. 339,512
3 Claims. (Cl. 55—457)



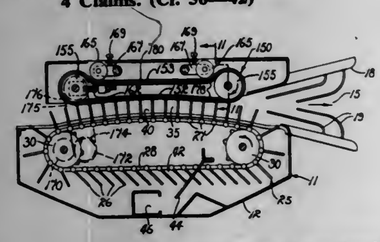
1. Apparatus for separating steam and water from a fluid mixture of such constituents comprising: a fluid-impervious upright cylindrical tubular housing having upper and lower ends; a partial cylinder formed by cutting away the upper portion of a cylinder so as to define an upper helical boundary, said partial cylinder being coaxially mounted within said housing and spaced from the inner surface of the side wall of said tubular housing so as to define an annular space therebetween, said partial cylinder being spaced from the upper and lower ends of said housing; a downwardly extending helical deflector strip spanning said annular space and extending laterally from said cylinder helical upper boundary into contact with said surface of said tubular housing along its length and defining the upper limit of a descending helical path, said helical deflector strip extending through substantially a single convolution about said cylinder along the helical upper boundary from the top to the bottom of said cylinder to allow free gravitational movement of said mixture below said strip; a downwardly directed tangential inlet means connected to said tubular housing side wall adjacent and below the upper end of said strip for introducing a steam-water mixture into said annular space below the upper end of the strip and above the lower end of said strip so that said strip will act as an upper fluid guide; means spaced beneath said cylinder and above said lower end for further separation of said mixture, said means comprising a disc having a plurality of peripheral angularly disposed deflector vanes, liquid outlet means disposed through said lower end of said tubular housing, outlet means spaced from and of smaller cross-section than said cylinder disposed through said upper end of said tubular housing for receiving steam.

3,349,549
HARVESTERS
Cornelis Van Der Lely, Zug, Switzerland, assignor to Texas Industries Inc., Willemstad, Curacao, Netherlands Antilles, a limited liability company of the Netherlands
Filed Jan. 19, 1965, Ser. No. 426,636
Claims priority, application Netherlands, Feb. 12, 1964, 64—1,163, 64—1,164, 64—1,165, 64—1,166
8 Claims. (Cl. 56—21)



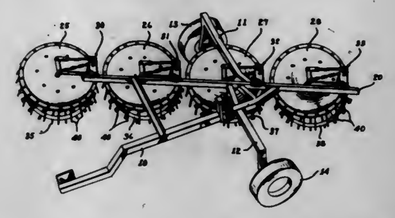
1. A harvester thresher comprising a mowing table with a cutting mechanism, the said mowing table having crop dividers, at least one ground contacting feeler member being located under the lower side of at least one of said crop dividers and forwardly of the said cutting mechanism, a hydraulically actuated adjusting device connected to the said cutting mechanism for regulating the height of the mowing table with respect to the ground, said feeler member being pivotally mounted with respect to the corresponding crop divider and being in communication with said adjusting device, whereby the height of the mowing table is adjusted with respect to the ground during travel of said cutting mechanism.

3,349,550
PLANT COMPRESSING APPARATUS FOR MECHANICAL PICKERS
Orval R. Starkey, Fresno, Calif., assignor of fifty percent to Anthony L. Lourenco, Fresno Calif.
Filed Nov. 8, 1966, Ser. No. 600,333
4 Claims. (Cl. 56—42)



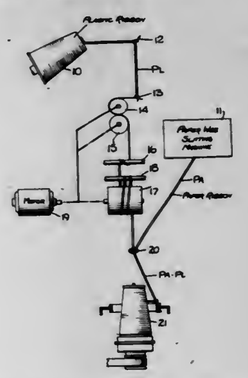
1. A plant compressing apparatus, for a mechanical picker adapted for earth traversing movement along rows of plants having a housing providing an elongated passage therethrough defining a picking zone to receive such rows of plants and including a plurality of power driven picking spindles having extended ends traveled through the picking zone in a direction opposite to the direction of picker movement, comprising a plant compressing apparatus mounted within the housing and providing a movable surface adjacent to said picking zone in opposed relation to the spindles for travel with the spindles through the picking zone with said surface including a plurality of channels to receive the extended ends of the spindles during their travel through the picking zone.

3,349,551
HAY RAKE
John W. Pickrell, 6237 E. Monterey Way, Scottsdale, Ariz. 85251
Filed June 4, 1964, Ser. No. 372,635
4 Claims. (Cl. 56—377)



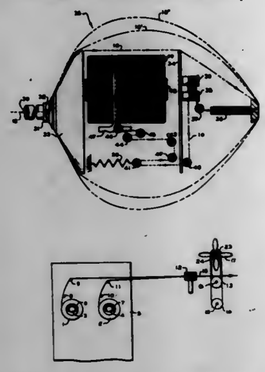
2. In a side delivery rake of the type having inclined raking wheels, the improvement comprising:
(a) a plurality of earth-contacting drive wheels each corresponding to one of said raking wheels,
(b) each of said drive wheels inclined at an angle to vertical,
(c) means for transmitting rotation from each of said drive wheels to each corresponding one of said raking wheels, and
(d) said raking wheels comprising:
(1) a circular rim,
(2) a plurality of tines extending from said rim at an angle to the plane of said rim,
(3) a cylindrical shield encircling said rim and adjustably attached thereto to permit said shield to be moved axially of said rim in accordance with raking conditions.

3,349,552
COMPOSITE PAPER AND PLASTIC YARN
Morton I. Port, West End, N.J., and William J. Hogg, Hazlehurst, Ga., assignors to Patchogue-Plymouth Company, Scarsdale, N.Y., a joint venture
Filed Mar. 11, 1965, Ser. No. 438,969
8 Claims. (Cl. 57—31)



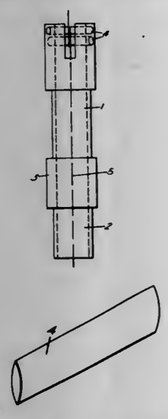
1. A machine for manufacturing composite yarn of high tensile strength and low elongation, comprising:
(a) a cutter to slit a web of paper into ribbons,
(b) a twister to twist each ribbon from said cutter into a yarn,
(c) means to draw a thermoplastic yarn to produce an oriented yarn whose elongation substantially matches that of said paper ribbon, and
(d) means feeding said oriented yarn into said twister with said paper ribbon to intertwist therewith and thereby form said composite yarn.

3,349,553
YARN TWISTING APPARATUS
Henry A. Hood, Moorestown, N.J., assignor to Wall Industries, Inc., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,449
4 Claims. (Cl. 57—58.7)



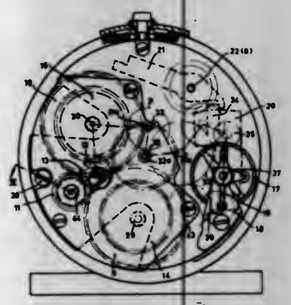
1. In combination, a means for supplying yarn, apparatus for twisting said yarn including means for whirling said yarn to form a balloon-shaped portion thereof and to apply a tension load thereto, freely rotatable capstan means associated with said yarn, said yarn passing from said supply means to said capstan means and to said twisting apparatus, said yarn passing around said capstan means for frictional contact therewith which contact tends to increase upon the application of a tension load to said yarn by at least the ballooning thereof, and freely rotatable fan means driven by said capstan means carrying at least one air deflection blade and so that retardation of the rotation of said capstan means by said fan means increases and decreases proportionally with increases and decreases in the speed of rotation of said capstan means thereby applying a variable restraining force to the rotation of said capstan means and to said yarn.

3,349,554
FALSE TWIST SPINDLE
Alexandre Boutonnet, Tassin, Rhone, France, assignor to Societe Rhodiaceta, Paris, France, a French corporation
Filed Aug. 2, 1965, Ser. No. 476,561
Claims priority, application France, Aug. 14, 1964, 985,247
9 Claims. (Cl. 57—77.3)



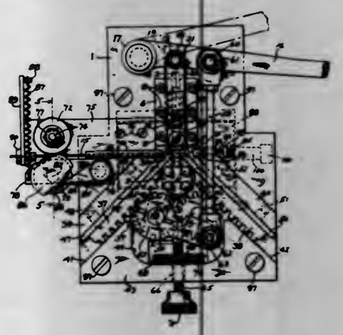
1. A false twist spindle for imparting a false twist to a filament, such spindle comprising a hollow tube defining a central passage therethrough for the filament; at least one transverse bar extending across said passage; a peripheral surface to said bar about which a filament passes effective to reverse its twist; the cross-sectional shape of said bar at least at the center thereof being non-circular and such that the peripheral surface has at least one region having a pronounced curvature.

3,349,555
ALARM TIME-PIECE
Georges Olivier Bridevaux, 36 Rue Pierre Pertuis, Tavannes, Switzerland
Filed Dec. 6, 1966, Ser. No. 599,476
1 Claim. (Cl. 58—16)



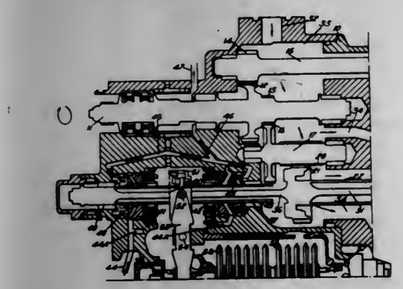
In an alarm time-piece, the combination of a casing, an alarm barrel and a clockwork barrel mounted together in one diametrical half of the casing, a common winding part for both barrels positioned near the periphery of the casing, a clockwork movement controlled by the clockwork barrel, an alarm mechanism controlled by the alarm barrel, said movement and said mechanism being superimposed with respect to one another in the other half of the casing, a time setting part cooperating with the movement and lying at the center of the casing and a part adjusting the time of release of the alarm mechanism and positioned near the periphery of the casing in substantial opposed diametrical relationship with reference to the common winding part.

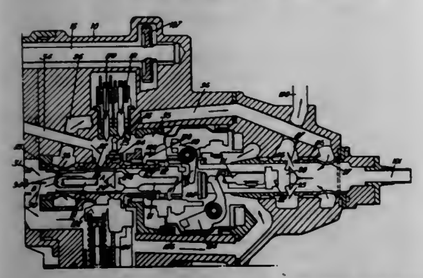
3,349,556
STAPLE MAKING MACHINE
Henry W. Walter, 509 Old Toll Road, Asheville, N.C. 28804
Filed Oct. 15, 1964, Ser. No. 404,135
11 Claims. (Cl. 59—71)



1. A machine for making staples comprising:
(a) a die having a cavity therein to define the overall width of the finished staple;
(b) a punch mounted for reciprocating motion into and out of the cavity in said die, said punch having a width which is less than that of the cavity in said die by slightly more than twice the thickness of the material of said staples;
(c) means for feeding a length of staple material in front of the cavity in said die;
(d) means for moving said punch into said die cavity, thereby forcing said staple material into said cavity to shape it;
(e) a pair of cutting members mounted for longitudinal reciprocating motion on opposite sides of said punch so as to make an acute angle with the side of the punch, as viewed from said die, and arranged so that their cutting edges may be simultaneously pressed against said punch in front of the cavity in said die; and
(f) means for simultaneously moving said cutting members towards said punch so as simultaneously to cut the staple material against said punch on both sides thereof and point the ends of the staple after the material has assumed the desired shape and size in said die.

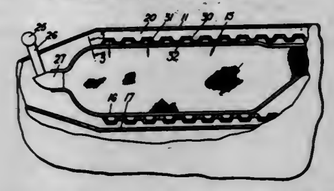
3,349,557
GAS TURBINE ENGINE FUEL SYSTEM
Christopher Linley Johnson, Derbyshire, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed May 31, 1966, Ser. No. 553,834
Claims priority, application Great Britain, June 23, 1965, 26,667/65
17 Claims. (Cl. 60—39.28)





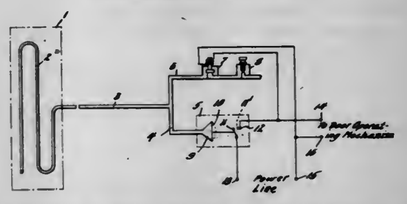
1. A gas turbine engine fuel system comprising a metering orifice, means for varying the size of the metering orifice in accordance with at least one engine variable, means for passing through the metering orifice a portion only of the full flow of fuel which flows through the fuel system, a throttle valve which is arranged downstream of the metering orifice and which controls the flow of fuel therethrough in accordance with the pressure drop across the metering orifice, and means for passing through the throttle valve at least a part of both the said portion of the full flow of fuel and the remaining portion thereof.

3,349,558
COMBUSTION APPARATUS, e.g. FOR A GAS TURBINE ENGINE
Ian Smith, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Mar. 28, 1966, Ser. No. 537,812
Claims priority, application Great Britain, Apr. 8, 1965, 15,034/65
5 Claims. (Cl. 60—39.65)



1. Combustion apparatus comprising casing structure and a fluid duct disposed within and spaced from the casing structure, at least part of the wall of said duct being formed with a multiplicity of pores whose maximum diameter is in the range 5 to 300 microns, combustion equipment mounted within said duct, a corrugated member which forms with the outer wall of the fluid duct a series of axially spaced annular compartments which communicate with the space between the casing structure and the fluid duct to different extents through port means of different sizes, the pores providing means to permit passage therethrough of cooling air for cooling the interior surface of at least part of the wall.

3,349,559
DOOR-OPERATING APPARATUS
Byron Thomas Gloor, Suhr, Aargau, Switzerland, assignor to Atlas Kassenfabrik A.G., Rupperswil, Switzerland
Filed Aug. 21, 1964, Ser. No. 391,233
Claims priority, application Switzerland, Sept. 10, 1963, 11,157/63
2 Claims. (Cl. 60—62.5)

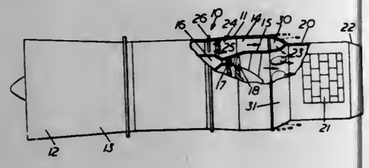


1. Switching system controlled by a pneumatic carpet, especially for automatic door openers, comprising a chamber having a pressure responsive diaphragm, piping leading from the carpet to the chamber, a switch connected to the diaphragm and responsive to the pressure in the chamber and piping, a regulating valve in pipe connection with the carpet and the chamber permitting slow pressure equalization between said chamber and atmosphere, and solenoid valve means normally open and connected in the piping between the regulating valve and the pressure chamber and closing by said switch in response to sudden increased pressure in said chamber and piping.

3,349,560
GAS TURBINE BY-PASS JET ENGINE
Kenneth Brooks, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Oct. 8, 1965, Ser. No. 494,200
Claims priority, application Great Britain, Nov. 11, 1964, 46,052/64
2 Claims. (Cl. 60—224)

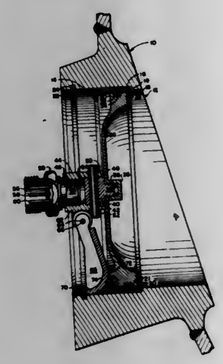
1. A gas turbine by-pass jet engine comprising compressor means, main combustion equipment, turbine

means, a jet pipe, and a main propulsion jet nozzle, all arranged in flow series; a by-pass passage having an upstream end for receiving air compressed by said compressor means, said by-pass passage by-passing the main combustion equipment and the turbine means and communicating at its downstream end with said jet pipe in a permanently fixed opening; by-pass combustion equipment arranged in said py-pass passage upstream of the downstream permanently fixed opening in which the by-pass passage communicates with the jet pipe; a by-pass nozzle mounted at the downstream end of said by-pass passage



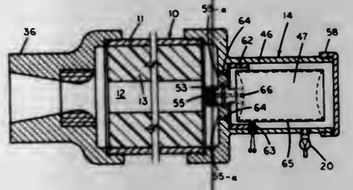
for discharging heated by-pass air direct to atmosphere in a downstream direction, means for supplying fuel to said by-pass combustion equipment at predetermined periods of operation of the engine, and valve means provided at the downstream end of said by-pass nozzle controlling flow of by-pass air through said nozzle, said valve means being opened when said by-pass combustion equipment is operative to permit flow of heat by-pass air partly directly to atmosphere through said by-pass nozzle and partly to said jet pipe and said valve means being closed when said combustion equipment is inoperative to permit flow of all by-pass air to said jet pipe.

3,349,561
QUICK-RELEASE CLOSURE FOR AUXILIARY PORT IN ROCKET MOTOR
Richard F. Cottrell, Carmichael, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed June 11, 1962, Ser. No. 202,356
3 Claims. (Cl. 60—229)



1. In a rocket motor, a housing, said housing having at least one auxiliary port formed therein, a closure plate mounted in said auxiliary port in a port closed position, a mounting stud mounted on said closure plate, retaining means connected between said rocket motor housing and said stud for holding the closure plate in a port closed position against the pressure inside the housing, said retaining means including an initiator housing connected to said mounting stud through a shear pin. gas generating means associated with said initiator housing and causing an increased gas pressure inside the initiator housing in response to the ignition thereof, the increased gas pressure fracturing the shear pin and forcing the retaining means holding said closure plate in a port closed position, away from said closure plate, whereby the closure plate is freed to move out of the auxiliary port whenever the pressure inside the rocket motor housing is greater than the pressure outside the rocket motor housing.

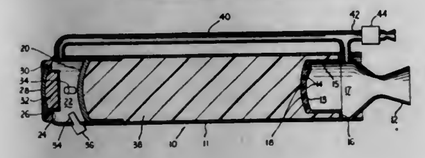
3,349,562
HIGH ENERGY ADDITIVE ADDITION MEANS FOR A ROCKET MOTOR
Allan E. Williams and Leslie M. Dyson, Elkton, Md., and Lowell F. Matthies, Washington's Crossing, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Original applications Oct. 23, 1964, Ser. No. 406,039, now Patent No. 3,296,801, and June 1, 1966, Ser. No. 554,398, the latter application which in turn is a division of the first-mentioned application. Divided and this application Jan. 5, 1967, Ser. No. 607,464
9 Claims. (Cl. 60—251)



1. A high performance rocket motor having aft and head ends and a main casing containing a main solid propellant charge and a combustion chamber, an exit nozzle attached to the aft end of said motor on said casing, an ignition device mounted on said motor for igniting said charge, and a separable, high energy particulated material containing assembly mounted on the head end of said motor on said casing said assembly comprising:
- a substantially cylindrical, fluid pressurizable, auxiliary casing defining an auxiliary chamber, said auxiliary chamber containing said particulated material in a fluidizable state;
- an end cap sealingly atttached to said auxiliary casing forming the head end of said motor and a closure for said auxiliary chamber;
- means for fluid pressurizing said auxiliary casing chamber;
- means in said auxiliary casing including at least one fluid passageway terminating in said motor combustion chamber for conveying said fluidized particulated material from said auxiliary casing interior to said motor combustion chamber; and
- destructable hermetic seal means in said conveying means whereby said fluidized material is prevented from entry into said combustion chamber until a predetermined fluid pressure is reached in said auxiliary casing chamber.

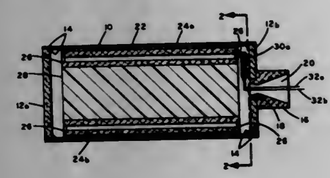
5. The motor of claim 1 wherein said assembly auxiliary casing has a volatilizable liquid container in its interior, said liquid having said high energy particulated material suspended therein, means for generating high temperature gas for volatilizing said liquid, and said conveying means fluid passageway connects said container interior with said combustion chamber for combustion therein of said container contents, with said main propellant charge.

3,349,563
THRUST CONTROL APPARATUS FOR PLASTIC PROPELLANT ROCKET MOTOR
Elliot L. Taylor, Whippany, N.J., and Harry W. Burdett, Bethesda, Md., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,760
4 Claims. (Cl. 60—252)



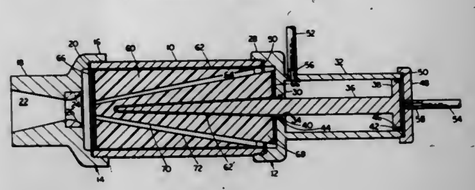
1. A rocket motor comprising a tubular casing with at least one thrust nozzle mounted on the aft end thereof, a transverse plate fixedly disposed within said casing adjacent the aft end thereof and having a plurality of apertures formed therein, the portion of said casing aft of said plate defining a combustion chamber, a piston disposed within said casing, the peripheral surface of said piston being slidably engaged with the inner surface of said casing, the portion of said casing forward of said piston defining a forward chamber, a combustible charge disposed within said forward chamber, a plastic propellant disposed within said casing between said plate and said piston, at least one conduit mounted on said casing and communicatively connecting said forward chamber and said combustion chamber, means for igniting said charge whereupon the combustion products thereof pressurize said forward chamber and said conduit, said piston is urged toward said plate, and said propellant is forced through said apertures into said combustion chamber, and valve means connected to said conduit and adapted to selectively vary the flow of said combustion products of said charge into said combustion chamber.

3,349,564
SOLID PROPELLANT ROCKET MOTOR
Jules J. Schwartz, Wilmington, Del., and Herbert W. D. Cassidy, Elkton, Md., assignors to Thiokol Chemical Corp., Bristol, Pa., a corporation of Delaware
Filed Sept. 29, 1965, Ser. No. 491,085
2 Claims. (Cl. 60—253)



1. A rocket motor comprising:
- a tubular casing having an end closure fixedly secured to each end thereof;
- a thrust nozzle fixedly secured to one of said end closures;
- at least one gas duct fixedly secured to the inner surface of said casing and extending longitudinally thereof, the ends of said gas duct being respectively spaced from said end closures;
- a combustible charge disposed between the ends of said gas duct, the peripheral surface of said charge being bonded to the inner surface of said casing and to the peripheral surface of said gas duct exposed to the interior of said casing; and
- means for igniting at least one end surface of said charge.

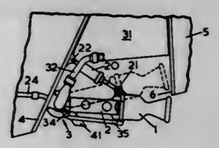
3,349,565
VARIABLE THRUST SOLID PROPELLANT ROCKET MOTOR
Allan E. Williams, Elkton, Md., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,991
2 Claims. (Cl. 60—254)



1. A rocket motor comprising:
- a casing having the aft end thereof connected to a thrust nozzle;
- a first combustible grain disposed within said casing and extending longitudinally thereof, the peripheral surface of said grain being bonded to the inner surface of said casing, said first grain having a rearwardly convergent aperture which extends between the ends thereof and having an inhibitor material bonded to its aft end surface;
- a second combustible grain concentrically disposed within said aperture and in said first grain, the peripheral surface of said second grain being rearwardly convergent and an inhibitor material being bonded to the forward end surface of said grain; and
- drive means carried by said casing for moving said second grain longitudinally of said aperture in said first grain to thereby control the distance between the wall of said aperture and the peripheral surface of said second grain.

2. A rocket motor as defined in claim 1 wherein said drive means comprises a drive shaft which is substantially coaxial with the longitudinal axis of said thrust nozzle and which extends through said second grain to a point adjacent the aft end thereof, the aft end of said drive shaft entering the orifice of said thrust nozzle as said drive shaft is moved in an aft direction.

3,349,566
ROCKET ENGINES
Albert Ralph Tyrrell and Michael S. Hunt, Coventry, England, assignors to Bristol Siddeley Engines Limited, Bristol, England
Filed Aug. 14, 1964, Ser. No. 389,744
Claims priority, application Great Britain, Aug. 16, 1963, 32,477/63
5 Claims. (Cl. 60—259)

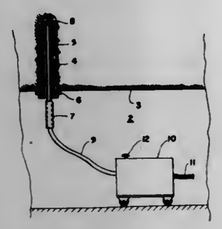


1. A rocket engine having co-axial rotary fuel and oxidant pumps, and a combustion chamber supplied by said pumps, the latter arranged at the upstream end of the combustion chamber with their common axis transverse to the longitudinal axis of the engine, and having trunnion mountings co-axial with the pumps, whereby the engine is pivotable about the said common axis between an operative position and an inoperative position.

3,349,567
MINE ROOF SUPPORT AND METHOD OF PROVIDING SAME

John E. Munn, 704 Cascade Road, Forest Hills Borough, Pa. 15521

Filed June 3, 1964, Ser. No. 372,245
4 Claims. (Cl. 61—45)

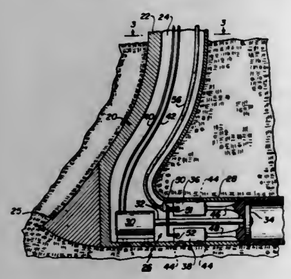


1. The method of providing a roof support in a mine which comprises drilling a hole into the mine roof, inserting a metal tube open at its lower end into the hole with its end extending below the roof into which the tube is entered and with a roof-supporting element secured to the exterior of its lower end, inserting a probe-like structure with a magnetic pulsation deforming coil thereon into the tube, said probe having lead wires for conducting current to the coil at its lower end, bulging a portion of the length of the tube into the earth formation in which the hole is made by magnetic pulsation through the application of electrical current to said coil, and thereafter withdrawing the probe and its coil from the interior of the tube.

3,349,568
METHOD OF AND APPARATUS FOR FOAMING IN PLACE UNDERGROUND CONDUIT

Hubert S. Smith, Essexville, and Eugene Ulmanis, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Oct. 8, 1964, Ser. No. 402,573
9 Claims. (Cl. 61—72.2)

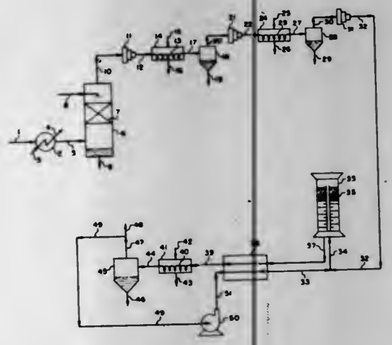


1. Apparatus for laying plastic pipe underground comprising, in combination: a power driven vehicle with a plow assemblage thereon for forming a passageway underground at a desired distance from the ground surface and having a substantially circular cross-section, said plow assemblage having at a lower extremity a pointed forward end and a horizontally extending tubular end portion; chemical reactant feed means on said vehicle, activator means included in said lower extremity in communication with said feed means for activating a chemical reactant to form a plastic material which foams; emitting means communicating with said activator means, distributor means outwardly of said tubular end portion and transverse thereof to uniformly distribute said plastic material laterally outwardly against the walls of said circular passageway which is formed as said plow assemblage is driven through the ground, and means for conveying said foamed plastic material from said activator means to said distributor means.

3,349,569
ANHYDROUS AMMONIA SCRUBBING OF AMMONIA SYNTHESIS GAS

William H. Nebgen, Woodside, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,276
10 Claims. (Cl. 62—17)



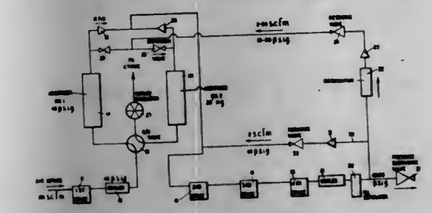
1. A method for the purification and compression of ammonia synthesis gas which comprises scrubbing synthesis gas with substantially anhydrous liquid ammonia at a pressure in the range of 2 kg./sq. cm. to 100 kg./sq. cm., said synthesis gas initially consisting principally of a nitrogen-hydrogen mixture and containing minor residual amounts of impurities including carbon dioxide and water vapor, whereby said synthesis gas is cooled to a temperature in the range of −10° C. to −50° C. and substantially saturated with ammonia vapor, and a major portion of said impurities including substantially all of said water vapor is dissolved in said anhydrous liquid ammonia, compressing the cooled synthesis gas, cooling the resulting compressed synthesis gas to a temperature below 0° C., whereby a portion of said ammonia vapor is condensed to anhydrous liquid ammonia containing dissolved impurities derived from said synthesis gas, separating said condensed anhydrous liquid ammonia from the resulting substantially impurity-free synthesis gas, and passing said substantially impurity-free synthesis gas to ammonia synthesis.

3,349,570
ADSORPTIVE REMOVAL OF CONTAMINANTS FROM COMPRESSED GAS MIXTURE

Charles Henry Potts, West Ewell, England, assignor to Dryvent Limited, London, England, a British company

Filed Feb. 1, 1965, Ser. No. 429,592
Claims priority, application Great Britain, Feb. 4, 1964, 4,683/64
9 Claims. (Cl. 62—18)

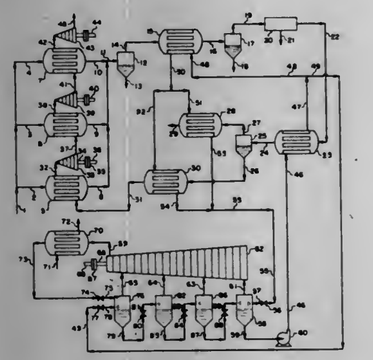
1. A method of fractionating a gaseous mixture comprising the steps of applying gaseous mixture under pressure from a supply to a first adsorbent element which is selective for a component of said mixture to produce therefrom a primary product, subjecting a portion of said primary product to compression to produce a compressed feedback portion, feeding said compressed feedback portion through an auxiliary adsorbent element, which is selective for said component to produce a modified feedback portion, subsequently expanding the modified feedback portion and applying it to said first adsorbent element at a time when the supply of gaseous mixture thereto is cut-off to produce a secondary product, and discharging from said first adsorbent element the said secondary product.



3,349,571
REMOVAL OF CARBON DIOXIDE FROM SYNTHESIS GAS USING SEPARATED PRODUCTS TO COOL EXTERNAL REFRIGERATION CYCLE

William H. Nebgen, Woodside, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 14, 1966, Ser. No. 520,795
13 Claims. (Cl. 62—23)

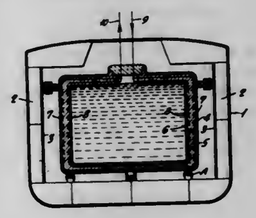


1. A method for the removal of a condensable gaseous component from a mixed gas stream by selective condensation at reduced temperature which comprises cooling said mixed gas stream to a reduced temperature by heat exchange with a sub-cooled pressurized liquid refrigerant stream, whereby said condensable gaseous component is at least partially condensed to liquid condensate, separating said liquid condensate from the cold residual gas stream, dividing the warmed liquid refrigerant stream derived from said heat exchange into a first refrigerant portion and a second refrigerant portion, cooling said first refrigerant portion by heat exchange with said liquid condensate, whereby said liquid condensate is warmed, cooling said second refrigerant portion by heat exchange with said cold residual gas stream, whereby said residual gas stream is warmed to form a product residual gas stream having a reduced content of said gaseous component, combining the cooled first and second refrigerant portions to form a cooled refrigerant stream, adiabatically expanding said cooled refrigerant stream to reduced pressure to form a vaporized refrigerant phase and a residual liquid refrigerant phase at a further reduced temperature, pressurizing said residual liquid refrigerant phase, whereby said liquid phase is sub-cooled, recycling the sub-cooled residual liquid refrigerant phase as said sub-cooled pressurized liquid refrigerant stream, compressing said vaporized refrigerant phase in mechanical compression means, cooling said compressed refrigerant vapor phase to form condensed liquid refrigerant, adiabatically expanding said condensed liquid refrigerant to reduced pressure to form additional vaporized refrigerant phase and additional residual liquid refrigerant phase and compressing and cooling said additional vaporized refrigerant phase to form further condensed liquid refrigerant.

3,349,572
INSULATION OF CONTAINERS FOR THE STORAGE OF LIQUIDS WHICH BOIL AT ATMOSPHERIC OR SLIGHTLY SUPERATMOSPHERIC PRESSURE

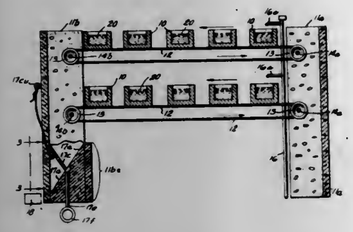
Hans Heinrich Richard Niemann, Hamburg, Germany, assignor to Minikay A.G., Zurich, Switzerland, a corporation of Switzerland

Filed May 10, 1966, Ser. No. 548,998
1 Claim. (Cl. 62—55)



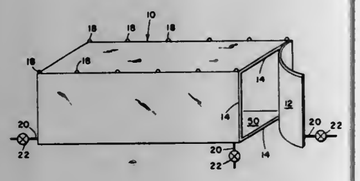
An insulation system for single wall containers for storing or shipping of liquids that boil at approximately atmospheric pressure comprising rigid single wall means defining a container, a layer of permeable insulating material placed against the interior of said rigid wall means, a layer of elastic material on the side of said insulating material remote from said rigid wall means and adapted to be contacted by the liquid to be stored in such container, said layer of permeable insulating material having a plurality of channels on the interior and exterior sides thereof respectively between the insulating material and the layer of elastic material and between the insulating material and the rigid wall means, said channels defining inner and outer separate sets of intercommunicating passages, a source of inert gas, a gas drying means in communication with said source, said sets of passages having an inlet and outlet for each set, a pair of feed conduits, one feed conduit communicating with the inlet of the inner passages and the other feed conduit of the pair communicating with the inlet of the outer passages, a pair of outlet conduits, one outlet conduit communicating with the outlet of the inner set of passages and the other outlet conduit communicating with the outlet of the outer set of passages, a control valve in each of the inlet and the outlet conduits, conduit means between the control valves of the outlet conduits and the drying means and conduit means between the drying means and the control valves of the inlet conduit, a blower in said last-mentioned conduit means whereby inert gas can be supplied to the drier and forced by the blower to flow in parallel through both sets of passageways and be recirculated through the dried or selectively circulated through the outer set of passages during filling of the container and through the inner set of passages during emptying of the container.

3,349,573
SOLAR FREEZING METHOD FOR DESALTING SEA WATER
Richard J. Rowekamp, 440 Hilltop Lane, Cincinnati, Ohio 45215
Filed Oct. 23, 1965, Ser. No. 503,723
6 Claims. (Cl. 62—123)



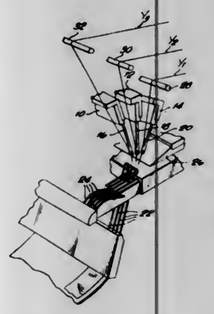
1. A method for converting ocean water into fresh-water ice crystals, through freezing, requiring no fuels, no refrigerants, nor any mechanical freezing techniques, and comprising, in combination, suspending a series of shallow containers high in the air one above the other, filling said containers with saline water, exposing said containers to the extreme cold air of the atmosphere until the contents are approximately half frozen, periodically moving said containers in an endless path to a discharge zone and thence to a filling zone so said containers can be successively emptied and refilled, allowing the brine solution to drain away from the ice crystals in said discharge zone, gathering said ice crystals and transporting them to a washing station, and dunking said ice crystals into a pool of fresh water which washes away the brine solution adhering to them.

3,349,574
INFLATABLE FLEXIBLE DOUBLE-WALL INSULATING SEALED CONTAINERS FOR TRANSPORTING PERISHABLES IN A CONTROLLED ATMOSPHERE
Peter E. Glaser, Lexington, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 31, 1964, Ser. No. 386,567
12 Claims. (Cl. 62—239)



1. Methods of transporting perishable goods in the body of a vehicle, and comprising the steps of;
forming a double-walled, sealable container from sheets of substantially gas-impermeable, flexible material;
positioning said container within said body;
inflating the interspace between the walls of said container with a gas having a lower thermal conductivity than air, and to a pressure sufficient to render said container self-supporting;
loading said goods into the interior of said container;
filling the space within said container around said goods with a gas cooled to predetermined refrigerating temperature, said gas having a lower thermal conductivity than air and being relatively chemically non-reactive with said goods; and
sealing said space from external communication with ambient air.

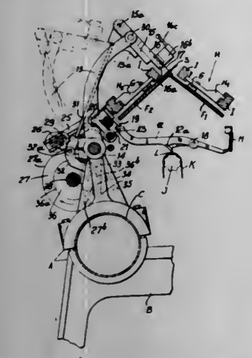
3,349,575
WARP KNIT FABRIC WITH LOOPED YARN SURFACE
Alvin Schwartz, 505 E. 79th St., New York, N.Y. 10022
Original application Feb. 27, 1963, Ser. No. 261,353, now Patent No. 3,255,615, dated June 14, 1966. Divided and this application Sept. 15, 1965, Ser. No. 487,536
3 Claims. (Cl. 66—86)



1. A method of knitting a pile fabric on a warp knitting machine provided with three yarn guide bars, comprising the steps: supplying a ground yarn under normal tension to the guides of a back guide bar, knitting said ground yarn on every needle in each course to form a ground fabric, supplying a pile yarn under relatively low tension to the guide bar, knitting said pile yarn on every needle in spaced courses only to form the pile, supplying a different yarn under normal tension to the guides of a front bar, knitting said different yarn on the same needles in the same courses only as said pile forming yarn and according to a pattern of movement of the front yarn guide bar which causes said different yarn to position itself on the front of said ground fabric at the base of the pile for opposing receding movement of the pile loop.

3,349,576
MEANS FOR CASTING OFF KNITTED FABRIC STITCHES
Jean Borne, 3 Rue Pierre Bretonneau, Champigny-sur-Marne, France
Filed Aug. 12, 1966, Ser. No. 572,049
11 Claims. (Cl. 66—148)

1. In a knitting machine having upwardly converging first and second needle beds, a first and a second set of coacting needles respectively slidable on said beds, and actuating means for co-ordinatedly displacing said needles to produce a knitted welt hanging down from the needles between said beds, the combination therewith of:
a transfer bar having a set of pins interleavable with said first set of needles, the latter being provided with side clips positioned to receive said pins;
drive means operable upon the completion of a welt for moving said transfer bar from a withdrawn position into an interleaved position in which said pins enter in loops of said welt suspended from said first set of needles;
and control means for operating said actuating means to shift all the loops of the uppermost course of said welt to said first set of needles and to extend said first set of needles into the path of said pins prior to



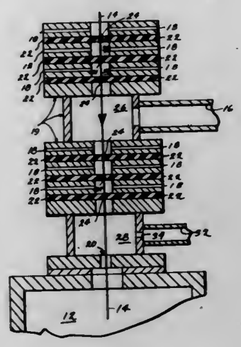
operation of said drive means with subsequent withdrawal of said first set of needles from juxtaposition with said pins upon transfer of said loops to said pins.

3,349,577
SAFETY GAS-FUELED CANDLE
Ray L. Burchett, North Bergen, and John P. Sain, Union City, N.J., assignors to Jacques Kreisler Manufacturing Corporation, North Bergen, N.J., a corporation of New Jersey
Filed Dec. 4, 1964, Ser. No. 415,915
7 Claims. (Cl. 67—87)



1. A gas-fueled device normally occupying a generally vertical position including in combination, an elongated tube holding a supply of liquefied normally gaseous fuel, a candle-shaped sleeve, means removably mounting said sleeve on said tube, a burner having an opening through which fuel from said reservoir may pass, an actuatable control valve, a normally open gravity-responsive valve adapted to close in response to displacement of said device from said normally vertical position, an adjustable pressure regulating valve, said regulating valve being operable independently of said control valve to set the maximum height to which the flame at said burner can be set in response to operation of said control valve, said sleeve housing said regulating valve normally to render it inaccessible, means mounting said control valve and said regulating valve and said gravity-responsive valve in series between said reservoir and the atmosphere, and means accessible from outside said sleeve for operating said control valve.

3,349,578
SEALING DEVICE
James E. Greer and William L. Acree, Greensboro, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Aug. 24, 1965, Ser. No. 482,216
7 Claims. (Cl. 68—5)

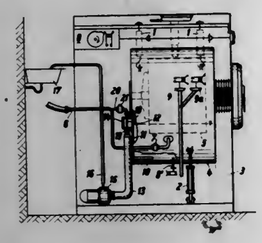


1. A sealing device for pressure sealing a vessel from an external atmosphere and for passing a continuous length of material into and out of said vessel through said sealing device, comprising:
a hollow casing having an opening at each end, said casing being mounted over an opening into said vessel,
a plurality of flexible diaphragm means included in said casing and spaced from one another along the length of said sealing device so as to define a plurality of chambers in said sealing device, said plurality of flexible diaphragm means each having a central opening therethrough for allowing the passage of continuous length material through the plurality of diaphragm means and
means for introducing a fluid into at least one of said plurality of chambers for increasing the pressure within said sealing device to prevent the escape of pressure from said vessel, and wherein said chambers formed between the plurality of diaphragm means include venting means for exhausting fluid to the atmosphere, whereby a fluid stream is created in said sealing device and condensation of steam onto incoming continuous length material is prevented.

3,349,579
AUTOMATIC WASHING MACHINES
Hugo Werner Geschka, Dusseldorf, and Josef Leonard Gillessen, Unterbach, near Dusseldorf, Germany, assignors to Constructa-Werke G.m.b.H., Dusseldorf-Oberkassel, Germany, a company of Germany
Filed Oct. 4, 1963, Ser. No. 313,924
Claims priority, application Germany, Oct. 24, 1962, C 28,258; Jan. 14, 1963, C 28,903
15 Claims. (Cl. 68—12)

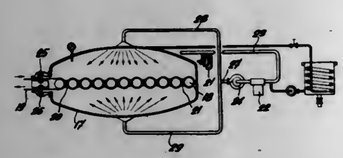
1. An automatic washing machine comprising a housing, an outer drum resiliently mounted in said housing, an inner drum rotatably mounted within said outer drum, wall parts of said outer drum defining an extraction aperture in said outer drum, a condensation trap within said housing, a conduit for supplying cold water to said condensation trap to condense said steam, a stop valve in said conduit and a thermostat responsive to said liquid temperature and adapted to control said stop valve, and pressure gradient producing means operatively connected to said extraction aperture and to said condensation trap

whereby steam forming above the liquid in said drums when said washing liquid is boiled is extracted out



through said extraction aperture and is condensed in said condensation trap.

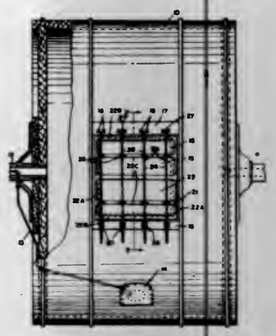
3,349,580
DEVICE FOR THE CONTINUOUS TREATMENT OF TEXTILE MATERIALS
Conrado Valls, Consejo de Ciento 401, 3°, 2a, Barcelona, Spain
Filed June 30, 1965, Ser. No. 468,501
Claims priority, application Germany, July 1, 1964, V 26,267
22 Claims. (Cl. 68—22)



1. A device for treating a textile material in a liquid bath, said device comprising a vessel for containing said bath, guiding means for engaging and guiding the textile material through said vessel and which, together with said fabric material, divides said vessel into two chambers, said guiding means including a plurality of adjacent supporting elements having upper and lower surfaces in respective horizontal planes and means for guiding the textile material firstly over one of the surfaces and then in continuation over the other of the surfaces and pressure means including a fluid circuit coupled to said chambers and through which the liquid bath circulates, said pressure means causing a pressure differential to exist between said chambers whereby the bath passes through the textile material.

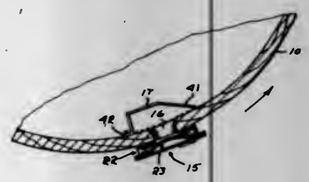
3,349,581
ROTATABLE DRUMS AND LOADING AND UNLOADING DOORS THEREFOR
Richard E. Quinn, Middleton, Mass. (19 Howley St., Peabody, Mass. 01960), and Elvin H. Cox, High St., Camden, Maine 04843
Filed July 23, 1965, Ser. No. 474,320
10 Claims. (Cl. 69—30)

1. In apparatus for treating hides with liquids, a drum to be rotated in a predetermined direction and having a loading and unloading port in its periphery, a gasket surrounding said port, hanger means transversely of the drum adjacent the leading edge of said port, latch means transversely of the drum adjacent the trailing edge of said port, and a door for said port, said door comprising a molded body of plastic stock dimensioned to overlie said gasket and said port and arcuate lengthwise with respect to the drum axis, a series of spaced parallel transverse reinforcements incorporated within said body, hanging elements detachably engaged with said hanger means, and toggle means secured to and detachably engaged with said latch



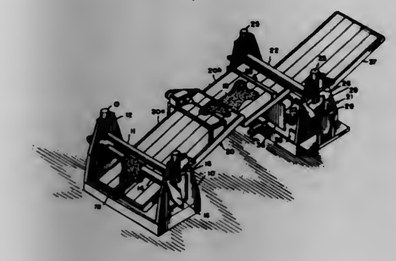
means and operable between door-closing and door-releasing positions, and means anchoring said hanging elements and said latch means to said reinforcements between the ends of the door.

3,349,582
ROTATABLE DRUM AND DRAIN VALVE THEREFOR
Richard E. Quinn, Middleton, Mass. (19 Howley St., Peabody, Mass. 01960), and Elvin H. Cox, High St., Camden, Maine 04843
Filed July 23, 1965, Ser. No. 474,321
6 Claims. (Cl. 69—30)



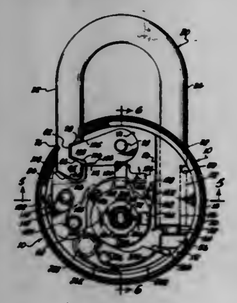
1. In apparatus for use in treating hides with liquids, a rotatable drum to be rotated in a predetermined direction and including axial shaft portions outwardly disposed for rotatably supporting said drum, said drum having a drain port in its periphery and between its ends and including an outwardly opening seat, a screen box attached to the interior of the drum and overlying the drain port and opening in a leading direction, a housing overlying said seat and opening in a trailing direction, said housing including a backing portion spaced outwardly therefrom, a port closing, elastomeric valve member within said housing and marginally sealed to said backing portion and normally spaced from said seat, and an air delivery system in communication with the space between said valve member and said backing portion, said system including a source of air under pressure and a control valve therefor, both remote from said drum, and a rotatable connection carried by one of said shaft portions, said system, when said valve is open relative to said source, delivering air under pressure to said space to seat said valve member yieldably against said seat, said control valve venting said system relative to said space when closing said system relative to said source.

3,349,583
HIDE-WRINGING APPARATUS
Lando Schwaller, Sheboygan, Wis., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,324
8 Claims. (Cl. 69—43)



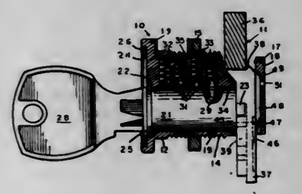
1. In apparatus for wringing hides, a first wringer and a second wringer arranged in tandem, each of said wringers being provided with a pair of vertically arranged wringing rolls movable relatively toward each other to open and closed positions with a lateral displacement of movement, a conveyor for carrying a hide from the first wringer to the second wringer, a timer control switch-actuating finger means supported for engagement with the hide on said conveyor for actuating said timer control, means actuated by said timer control for closing said rolls of said second wringer to wring the hide, and means actuated by said timer control for opening said rolls of said second wringer after a predetermined time to receive another hide.

3,349,584
DIAL AND KEY OPERATED PADLOCK
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Filed May 17, 1965, Ser. No. 456,338
18 Claims. (Cl. 70—21)



6. In a lock, apparatus including:
a lock case;
a lock member;
means in said case for supporting said lock member for movement thereof between a retracted position relative to said case and an extended position relative to said case;
a bolt lever pivotably mounted on lever pivot means in said case and having engagement means thereon movable by pivotal movement of said bolt lever about said lever pivot means between first and second angular positions, into positions respectively engageable with and disengageable from said lock member when said lock member is in said retracted position, whereby said lock member may be respectively fastened in said retracted position and released for movement between said retracted position and said extended position;
a vane member pivotally attached to said bolt lever by pivot means eccentric to said lever pivot means, said vane member being swingable about its said pivot means between a first angular position and a second angular position;
means mounted in said case and positioned for abutment thereof by said vane member, when said vane member is in its said first angular position, such as to block pivotal movement of said bolt lever from its said first angular position to its said second angular position and for non-abutment thereof by said vane member when said vane member is in its said second angular position, such as to unblock pivotal movement of said bolt lever from its said first angular position to its said second angular position;
and means for swinging said vane member about its said pivot means, from its said first angular position to its said second angular position, thereby unblocking said bolt lever for pivotal movement between its said first and second angular positions as aforesaid, thereby rendering said engagement means movable between its said second positions respectively engageable with and disengageable from said lock member.

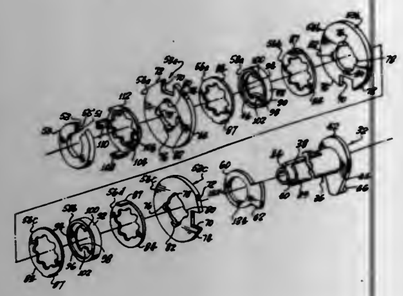
3,349,585
LOCK ASSEMBLY WITH A REMOVABLE BOLT
Russell W. Walters, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,626
5 Claims. (Cl. 70—86)



1. A lock assembly comprising a lock cylinder having a recess in the forward end and a transverse passage adjacent the rear end, a tumbler means in the lock cylinder, a cylindrical plug rotatably mounted in the cylinder and hvaing a keyway for a required key to actuate the tumbler means and rotate said plug, a pair of spaced axially offset pins extending rearwardly from the plug, a generally T-shaped removable bolt received in said passage and having an actuating camming recess on the front side receiving said spaced pins and an elongated longitudinally extending recess on the opposite side of the bolt, a flat spring received in said last mentioned recess with the lower end of the spring anchored in the recess and the upper end free and biased outwardly of the bolt, said passage having an open longitudinal channel facing said plug receiving the upper end of the spring and terminating in a shoulder at the upper end of the channel to engage the upper end of the spring and limit movement of the bolt, said cylinder hav-

ing an opening in the rear end thereof adjacent and below said shoulder and in alignment with the upper end of the channel to receive the end of a small instrument for depressing the spring and releasing the bolt.

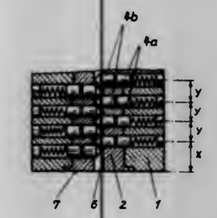
3,349,586
COMBINATION LOCK MECHANISM
Fred J. Russell, 8635 Otis St., South Gate, Calif., 90280, and George B. Solovieff, San Clemente, Calif., said Solovieff assignor to said Russell
Filed Mar. 1, 1965, Ser. No. 436,157
14 Claims. (Cl. 70—316)



3. In a combination lock mechanism, apparatus comprising:
a hub member;
a combination disk having a central opening by which it is mounted coaxially of said hub member and having a gate notch formed therein;
a disk driver member having a central opening by which it is mounted coaxially of said hub member in side by side relation to said combination disk and having a disk driver tab extending therefrom;
coupling means adjacent said central openings detachably interconnecting said combination disk and said disk driver member for simultaneous rotation together coaxially of said hub member, said coupling means including detachable means for selectively coupling said combination disk and said disk driver together at any one of a plurality of predetermined, different, coaxial, rotational angular positions relative to one another through substantially 360°;
whereby said gate notch and said disk driver tab may be fixed at any one of a plurality of predetermined, different, coaxial rotational angular positions relative to one another through substantially 360°.

3,349,587
METHOD OF INCREASING THE NUMBER OF DIFFERENT LOCKING COMBINATIONS
Ernst Keller, 6 Querstrasse, 8805 Richterswil, Zurich, Switzerland
Filed June 28, 1965, Ser. No. 467,423
Claims priority, application Switzerland, Mar. 31, 1965, 4,412/65
8 Claims. (Cl. 70—358)

1. In a locking installation, in combination:
(A) a plurality of locks, each lock having
(a) outer stationary cylinder means;
(b) inner cylinder means conformingly received in said outer cylinder means for rotation about an axis,
(1) said outer and inner cylinder means being each formed with a plurality of radial bores extending in a common plane substantially parallel to said axis, the bores of said inner cylinder means being simultaneously radially alignable with the bores of the outer cylinder means by said rotation,
(2) said inner cylinder means being formed with an axial channel communicating with each of said bores therein; and
(c) locking pin means including an outer pin and an inner pin conformingly movable in each bore between an unlocking position in which a portion of the inner pin extends into said channel, the remainder of the inner pin is contained in said inner cylinder means, and the outer pin is contained in said outer cylinder means, and a locking position in which respective integral portions of said outer pin extend in corresponding bore portions in each cylinder means,
(1) the inner cylinder means, pins, and channels in the several locks being substantially identical, and the position of each channel relative to the associated axis along another

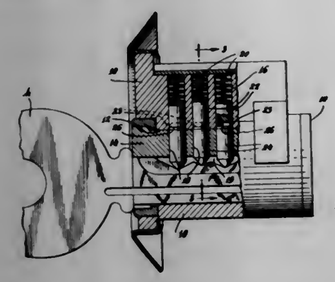


plane defining a fixed angle with said common plane being different from the corresponding position of the channel in each other lock, said other plane being substantially parallel to said axis; and
(B) a plurality of keys conformingly axially insertable in each of said channels,
(a) each key having a face portion transversely intersecting said common plane in each of said locks in the inserted position of said key,
(1) said face portion being formed with a row of recesses therein, said recesses being simultaneously radially alignable with the bores of one of said locks in the associated channel while being out of radial alignment at least one of the pin means of at least one other lock, when the key is inserted in the channel of said other lock, whereby said one pin means is held in the locking position thereof when said key is inserted in the channel of said other lock.

3,349,588
CYLINDER LOCKS
John Hines, South Norwalk, Conn., assignor to The New England Lock and Hardware Co., South Norwalk, Conn., a corporation of Connecticut
Filed June 28, 1966, Ser. No. 561,219
3 Claims. (Cl. 70—364)

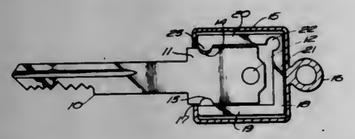
1. A cylinder lock comprising an annular cylinder, a plug mounted for rotation in the cylinder, a key slot extending axially of the plug, a bore in the plug extending from the periphery of the plug to the top of the key slot, a bore extending into the cylinder from its inner surface and disposed to be in axial alignment with the bore in the plug in locked position, a tumbler pin and a disk-like wafer adapted to be contained within the plug bore, with the tumbler pin below the wafer, the tumbler pin being of sufficient length to raise the wafer

above the line of parting with the lower surface of the wafer in position to slide over the surface of the plug when the proper key is inserted in the key slot, a driver pin and a spring in the cylinder bore, the spring urging the driver pin to move part way across the interface between the plug and cylinder into contact with the wafer in the plug bore, a ring-like recess in the surface of the plug surrounding a portion of the plug surface and circumferentially offset from, and aligned with, the plug



bore, said recess having walls generally perpendicular to said plug surface, and adapted to be bridged by the wafer when the plug is turned and the wafer slides over the surface of the plug, the lower end of the driver pin being recessed providing a ring-like flange having the outside diameter of the driver pin and adapted to fit into, and engage in, the ring-shaped recess in the plug surface when the driver pin is placed in direct contact with the plug surface due to picking of the lock.

3,349,589
KEY CONSTRUCTION
Alex Fricke, Cranston, R.I., assignor to Union Tool Company, Providence, R.I., a corporation of Rhode Island
Filed Aug. 2, 1965, Ser. No. 476,278
6 Claims. (Cl. 70—395)



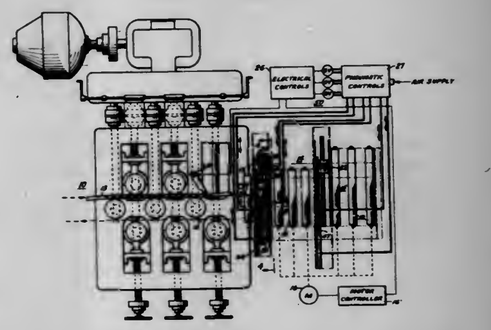
1. A separable key construction comprising a key bit having a rear portion for applying a turning force thereto, a manually engageable flat housing having inner wall portions and a slot in the edge for receiving said rear portion, and spring means in said housing for releasably retaining said rear portion in said housing, whereby turning of said housing will cause turning of said key bit, portions of said spring means abut the inner wall portions of said housing on each side of said slot and opposite portions of said spring means abut the inner wall portions opposite said slot wherein said spring means are held between said inner wall portions to lock said spring means in said housing, said spring means comprising a flat U-shaped spring member having spaced parallel arms, said rear portion of said key bit sliding into said housing between said arms, one of said spring arms having a detent on the inner edge thereof adjacent its free end, said rear portion of said key bit having receiving means on at least one side edge thereof, said receiving means engaging with said detent of said spring means to releasably retain said rear portion in said housing.

3,349,590
KEY HOLDER
Charles W. Elsenheimer, Meriden, Conn., and Douglas J. Broughton, Springfield, Mass., assignors to Prentice Corporation, Kensington, Conn., a corporation of Connecticut
Filed Jan. 5, 1967, Ser. No. 607,520
17 Claims. (Cl. 70—456)



17. A key holder for a key case comprising a plurality of key retainers having front and rear surfaces, said retainers being pivotally mounted within said case, each of said retainers comprising a synthetic plastic body having a socket formed therein for removably receiving a head of a key loop, and a spring metal reinforcing clip embracing at least in part said synthetic plastic body, and imparting enhanced resilience and fatigue resistance to the synthetic plastic metal forming said body, said spring metal clip having two legs connected by a bight, said legs being positioned on said front and rear surfaces, and means securing said clip to said body.

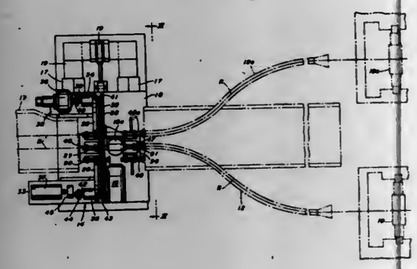
3,349,591
BAR POSITIONER
Hulme W. Thomas, Allentown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,926
3 Claims. (Cl. 72—24)



1. Appatatus for receiving a workpiece discharged from a machine, having a discharge and re-entry pass, to reposition said workpiece and to re-enter it into said machine, comprising:
(a) a reversible roller table, having a proximal and a distal end, for receiving and conveying said workpiece including motor means for driving said roller table,
(b) a pair of opposed vertical idler rolls, mounted adjacent said proximal end of said roller table movable substantially in unison transverse of said roller table including means for positioning said rolls with respect to the passes of said machine,
(c) a third movable vertical idler roll positioned intermediate said ends of said roller table in approximate alignment with the discharge pass of said machine including means for positioning said roll independent of said pair of rolls,

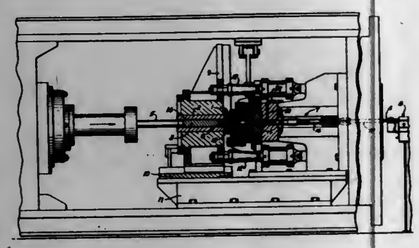
(d) control means for controlling the reversible roller table and the movable vertical rolls in a predetermined timed sequence, whereby the workpiece delivered from the discharge pass of said machine is automatically fed to the re-entry pass.

3,349,592
APPARATUS FOR SUPPORTING OPTICAL SCANNING HEADS
Eugene E. Smith, East Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 28, 1965, Ser. No. 451,554
11 Claims. (Cl. 72—37)



1. An apparatus for supporting optical scanning heads comprising a base, an upstanding yoke fixed to said base, an annular plate, means on said yoke supporting said plate for rotation about the central axis of said plate, a pair of angularly spaced brackets fixed to said plate for mounting scanning heads directed radially toward the central axis of said plate, guide means supported on said base to guide a member for gauging along the central axis of said plate, and drive means operatively connected with said plate.

3,349,593
HOT METAL EXTRUSION METHOD
Merrill A. Scheil, Milwaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Original application May 11, 1962, Ser. No. 193,974, now Patent No. 3,210,978, dated Oct. 12, 1965. Divided and this application Apr. 30, 1965, Ser. No. 452,245
6 Claims. (Cl. 72—38)



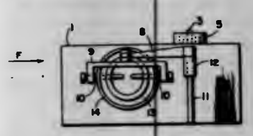
1. In a process of extruding material from a die opening in a heated condition, the improvement comprising the steps of extruding the heated material through a lubricated die and saturating the zone adjacent the die opening with an oxidizing agent to prevent carburization of the extruded material.

3,349,594
METAL WORKING
Claus L. Sporck, Traverse City, Mich., assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Original application May 2, 1963, Ser. No. 277,623, now Patent No. 3,191,415, dated June 29, 1965. Divided and this application June 23, 1965, Ser. No. 466,330
6 Claims. (Cl. 72—78)



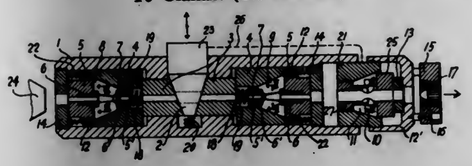
1. In a tube forming machine:
means for supporting an elongated blank;
a roller head having an open-center configuration to accommodate the blank and a tube made therefrom;
means mounting said roller head for rotation about an axis co-axial with the axis of the blank;
means connected with the blank for moving the blank relative to the head in a direction along the blank axis;
roller means formed in the shape of an annulus disdisposed on said head, the roller means comprising a ring having a pair of annular working sections surrounding said blank and making simultaneous engagement with the outside of the blank respectively on opposite sides of the blank axis, the engagement areas of the working sections being different radial distances from the blank axis and spaced from one another in a direction along the blank axis; and
mounting mechanism including means rotatably connecting said ring and its working sections with the head for rotation relative to the head about an axis making an acute angle with said blank axis and lying in a plane containing the blank axis, said blank axial motion, said head rotation and said working section rotation causing each said working section to progressively engage the blank along a helical path around the blank axis.

3,349,595
BENDING MACHINES
Pierre Joseph Robert Senard, Mont-Saint-Aignan, France, assignor to R. Senard et Fils, Maromme, France, a French company
Filed Oct. 14, 1964, Ser. No. 403,768
Claims priority, application France, Oct. 14, 1963, 7,021
6 Claims. (Cl. 72—156)



1. A bending machine comprising a set of ring-shaped forms, at least one movable spindle, the selection of said forms for being placed in a working position being effected by said spindle, said spindle being adapted to engage all of the forms of the set, means for positioning the non-working forms apart from the working portion of the machine, a movable bracket fixed to the machine, and a fork pivoted substantially at the end of said bracket for holding the non-working forms.

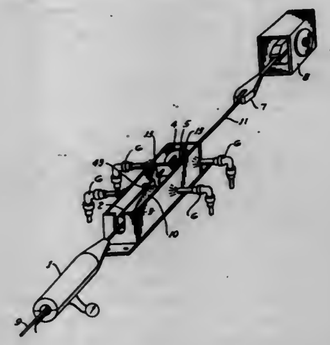
3,349,596
METHOD AND APPARATUS FOR MAKING PINION WIRE AND THE LIKE
Oldrich Pavlovec, Brno, Czechoslovakia, assignor to Smeralory Zarody, narodni podnik, Brno, Czechoslovakia
Filed Jan. 13, 1965, Ser. No. 425,299
Claims priority, application Czechoslovakia, Jan 16, 1964, PV 259/64
10 Claims. (Cl. 72—279)



1. A method of shaping a continuous elongated plastically deformable member having a longitudinal axis which comprises:
(a) sequentially passing said member in stepwise longitudinal movement through a plurality of working zones;
(b) simultaneously compressing a plurality of circumferentially spaced portions of a first longitudinal section of said member in a first one of said working zones while said member stands still until depressions are formed in said first section, and projections are raised between said depressions;
(c) further compressing said spaced portions of said first section in a second working zone spaced from said first working zone while said member stands still until said depressions are deepened;
(d) simultaneously compressing a plurality of circumferentially spaced portions of a second longitudinal section of said member in said first working zone while said first section is being compressed in said second working zone until depressions are formed in said second section;
(e) simultaneously sizing said deepened depressions of said first section in a third one of said working zones spaced from said first and second zones while said member stands still;
(f) simultaneously further compressing said circumferentially spaced portions of said second section in said second working zones;
(g) simultaneously compressing a plurality of circumferentially spaced portions of a third longitudinal section of said member in said first working zone,
(1) said second section being further compressed in said second zone and said third section being compressed in said first zone while the depressions of said first section are being sized in said third zone; and
(h) trimming respective portions of said projections from said first section between said sized depressions in a fourth working zone spaced from said first, second, and third zones, while said first section moves through said fourth working zone.

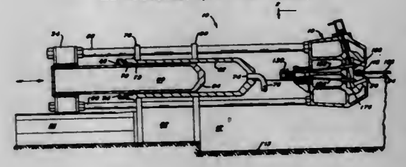
3,349,597
METHOD OF PRODUCING BERYLLIUM WIRE
Alfred G. Gross, Jr., Avon Lake, Ohio, assignor to The Brush Beryllium Company, Cleveland, Ohio, a corporation of Ohio
Original application Aug. 23, 1961, Ser. No. 133,345. Divided and this application May 26, 1965, Ser. No. 481,993
15 Claims. (Cl. 72—286)

1. The method of manufacturing beryllium wire comprising heating beryllium stock to an elevated temperature in the range of from about 600° F. to 900° F., and while maintaining its temperature within said range, subjecting each increment of length of the stock to successive drawing operations, until a first predetermined reduction in the cross sectional area of the stock is obtained, supplying lubricant on the stock in a manner such that each increment is drawn in lubricated condition, thermally treating said drawn beryllium stock to relieve stresses imparted by the preceding drawing operations,



and to render it more readily drawable for subsequent drawing operations, and then, while maintaining its temperature within said range, subjecting each increment of length of the stock to successive drawing operations, until a second predetermined reduction in the cross sectional area of the stock is obtained, and supplying lubricant on the stock in a manner such that each increment is drawn in lubricated condition.

3,349,598
PLATE STRETCHER
Kurt Pollak, Havertown, Pa., assignor to Baldwin-Lima-Hamilton Corp., Philadelphia, Pa.
Filed May 24, 1965, Ser. No. 458,234
13 Claims. (Cl. 72—295)

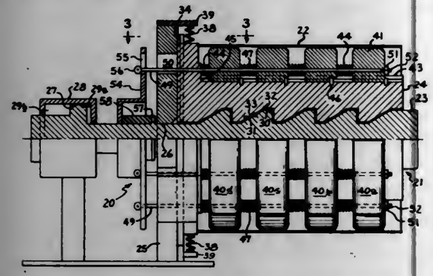


1. In a plate stretcher including a stationary gripper head assembly and a movable gripper head assembly, each gripper head assembly having a pair of angularly disposed spaced apart faces, a plurality of paired gripper jaws slidingly supported in opposed relation on said faces, said faces being at an angle such that the forward edges thereof are closer than the rear edges, whereby said jaws move closer together as they slide toward forward edge of said faces, a wedge behind selected sets of jaws, and means to move said wedges to a position blocking rearward movement of the gripper jaws.

3,349,599
METHOD AND APPARATUS FOR FORMING A BEADED SHELL
Frederick E. Ullman, Winnetka, and James J. Deegan, La Grange, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 16, 1964, Ser. No. 396,831
13 Claims. (Cl. 72—393)

1. Apparatus for expanding a plurality of axially spaced peripheral beads separated by a plurality of periph-

eral furrows in a cylindrical shell wherein the average net axial strain produced in the shell during bead formation is minimized comprising, in combination, frame means adapted to slidably receive said shell, at least three annular, axially spaced die units disposed about the periphery of said frame, each of said die units comprising a



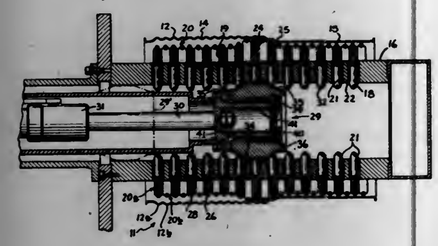
plurality of arcuate segments, said segments being radially expansible and axially shiftable relative to said frame, means for radially expanding said die segments into engagement with said shell to form beads thereon, and means associated with each of said die units for effecting positive controlled axial collapse of said die units so that said alternating beads and furrows are formed in said shell.

3,349,600

APPARATUS FOR FORMING A PLURALITY OF AXIALLY SPACED BEADS IN A HOLLOW, SUBSTANTIALLY CYLINDRICAL SHEET METAL BLANK

Leonardus A. N. Bijvoet, Overveen, North Holland, Netherlands, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 17, 1964, Ser. No. 397,205
Claims priority, application Great Britain, Sept. 18, 1963, 36,834/63
6 Claims. (Cl. 72—393)



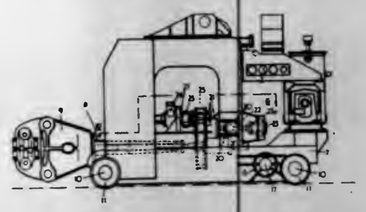
1. In an apparatus for expanding a plurality of axially spaced radially outwardly extending peripheral beads separated by radially inwardly extending peripheral furrows in a hollow, substantially cylindrical sheet metal blank wherein the average net axial strain produced in the blank during bead formation is minimized, the combination comprising a plurality of juxtaposed co-axially arranged radially expansible and contractible die units corresponding in number to the beads to be formed, each of said die units comprising a set of radially movable die segments, a single longitudinally shiftable actuator completely movable through each of said die units during a power stroke, said actuator including means for forcibly expanding said die units in succession and holding at least one already expanded die unit in expanding position while expanding the next adjacent die unit, and means for contracting each of asid die units after it has been released by said actuator.

3,349,601

MANIPULATORS

Stanley Burrows, London, England, assignor to The Adamson-Alliance Company Limited, London, England, a British company

Filed June 15, 1964, Ser. No. 375,084
Claims priority, application Great Britain, June 19, 1963, 24,359/63
7 Claims. (Cl. 72—420)



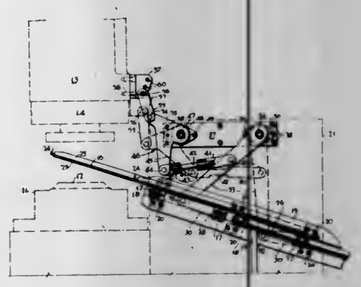
1. A manipulator comprising a wheeled carriage, a peel mounted on the carriage for longitudinal movement relative thereto, jaws associated with the peel for gripping a workpiece, hydraulic means for positively effecting a high acceleration of the peel relative to the carriage on release of the workpiece from the press tool of a forging press, and hydraulic means for effecting intermittent movement of said carriage separate from and consecutive to the movement of the peel in such a manner that the compound motion of the peel and carriage causes a fresh portion of the workpiece to be presented to the press and the longitudinal movement of said peel is limited in motion to the preceding motion of the carriage.

3,349,602

PRESS UNLOADER

Harvey J. Nelson, Warren, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 31, 1965, Ser. No. 483,926
6 Claims. (Cl. 72—426)



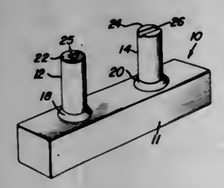
1. Press unloading apparatus comprising in combination, a lower press part and die, an upper press part with a vertically movable head having a die and ejector means for holding a formed workpiece on its upstroke and ejecting it near the end of the upstroke, an unloader tray mounted for movement into and out of workpiece-receiving position between the dies, and operating linkage mechanism arranged between said head and said tray for moving the tray under the upper die when the head is in its upper position and withdrawing the tray when the head moves downward, said linkage mechanim comprising a first connecting link pivotally connected to said head at its upper end, a first swinging arm mounted to turn about a first fixed pivot axis and pivotally connected at its outer end to said first link, a second swinging arm mounted to turn about said first fixed pivot axis with said first swinging arm, a second connecting link pivotally connected to said second swinging arm at one end, a third swinging arm mounted to turn about a second fixed pivot axis spaced horizontally from said first fixed pivot axis and pivotally connected at its outer end to said second connecting link, a fourth swinging arm mounted to turn about said second pivot axis with said third swinging arm, and a fifth swinging arm pivotally mounted on a axis on said tray and pivotally connected at its outer end of the outer end of said fourth swinging arm.

3,349,603

SICKLE BAR ANVIL

Olin D. Lovig, R.F.D. 3, Villisca, Iowa 50864

Filed Feb. 19, 1965, Ser. No. 434,028
5 Claims. (Cl. 72—477)



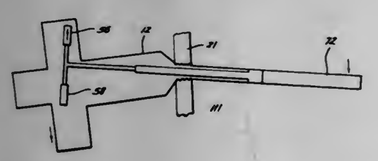
1. A tool comprising a block, a plurality of anvils projecting from said block and normal thereto, said anvils being connected at their lower ends to said block, one of said anvils having a socket recessed therein providing a portion for receiving the head of a rivet for solid striking of a rivet against said socket, a second of said anvils including a semi-cylindrical rivet receiving groove therein at the top thereof extending laterally across said second anvil, said second anvil being flat on the top thereof to permit a plate to bear thereagainst on opposite sides of said groove.

3,349,604

APPARATUS FOR DETERMINING PHYSICAL PROPERTIES OF MATERIALS

William B. Banks, Houston, Tex., assignor to Automation Products, Inc., Houston, Tex., a corporation of Texas

Filed July 22, 1966, Ser. No. 567,219
7 Claims. (Cl. 73—32)



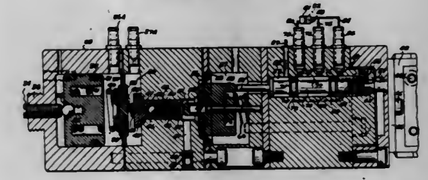
1. An apparatus for determining physical properties of a material comprising,
flexible vibratory means,
a sealing support means supporting the vibratory means at a point intermediate its ends,
material contacting sensing means secured to the vibratory means on one side of the support point,
a housing on the second side of the support point,
means in the housing adapted to transversely vibrate said vibratory means thereby transmitting transverse vibration to said material sensing means and to said housing,
means in the housing for detecting a change in the vibration of the vibratory means,
said housing being supported at said support point, said support point being adjacent the node point of both the vibratory means and the housing, said housing and said vibratory means having substantially the same natural resonant frequency.

3,349,605

PRECISION PNEUMATIC RELAY

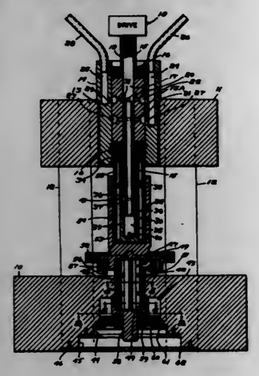
William A. Minix, Detroit, Mich., assignor to Freeland Gauge Company, Detroit, Mich.

Filed Dec. 16, 1965, Ser. No. 514,322
The portion of the term of the patent subsequent to Dec. 21, 1982, has been disclaimed
1 Claim. (Cl. 73—37.9)



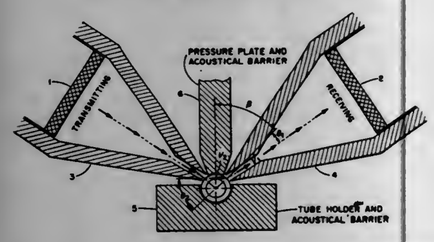
In an air gaging system providing a variable reactive intermittent control air pressure responsive in magnitude to the size of a gaged part, the improved part sorting system which comprises:
a housing;
a limit switch mounted on said housing for momentarily activating a control element upon actuation of a limit switch plunger;
a distribution valve assembly in said housing including a first valve element adapted to control the flow of pressurized fluid to a reciprocating sorter for gaged parts, and further adapted to selectively actuate said limit switch plunger;
said housing having a first chamber within which a first sealed diaphgram is mounted for axial movement, one end of said first valve element being biased away from said plunger and toward and extending into said first chamber and adapted to abut a first side of said first diaphragm for axial movement therewith;
said housing further having a constant control chamber adapted to be supplied with a constant pressure from a pressure source, and a variable control chamber connected to the variable reactive intermittent control air pressure source;
said housing further having a bore communicating between said constant control chamber and the second side of said first diaphragm;
a second valve element movably mounted within said bore and normally biased to a seated bore-closing position;
a second sealed diaphragm mounted within said housing and separating said constant control chamber from said variable control chamber;
adjustably biasing means for normally biasing said second diaphragm in balanced opposition to the effect of the pressure in said constant control chamber;
a control rod guidably mounted within said bore between said second valve element and said second diaphragm;
whereby an air pressure signal above a predetermined magnitude applied to said variable control chamber causes said second diaphragm to displace said control rod to unseat said second valve element, thereby causing constant control pressure to be applied via said bore to said second side of said first diaphragm to axially move said first diaphragm to actuate said first valve element and said limit switch plunger.

3,349,606
VISCOMETERS
Edward W. Merrill, 56 Stone Road, Belmont, Mass. 02178; Edward Eugene Shaw, 342 W. Caley Ave., Littleton, Colo. 80120; Neil R. Chambers, 1 Birchwood Ave., West Peabody, Mass. 01960; and Charles R. Dauwalter, 56 Hinckley Road, Waban, Mass. 02168
Filed Mar. 10, 1965, Ser. No. 438,597
2 Claims. (Cl. 73—60)



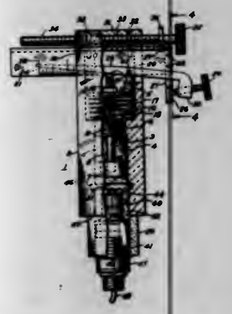
1. In a viscometer, two relatively rotatable, coaxial elements, one within the other and dimensioned relative thereto to provide an annular space for the liquid the viscosity of which is to be measured, means to rotate one element, a base, pivot means axially of said elements, said pivot means including a series of flexible resilient reeds of substantial length joined together along their inner edges to provide the pivot axis, a mount secured to said base between the ends of the reeds and secured to the outer edges of some of the reeds, and a pivot secured to the outer edges of the other reeds, the other of said elements being secured to the upper end of said pivot and supported by said pivot means against axial movement, and a circuit including fixed and movable parts operable on small angular displacements of said movable part to generate signals proportional to such displacements, the movable part being fixed on the lower end of the pivot to turn therewith.

3,349,607
ULTRASONIC FLAW DETECTION IN SMALL DIAMETER METAL TUBING
Kenneth K. Klindt, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 23, 1965, Ser. No. 450,564
1 Claim. (Cl. 73—67.5)



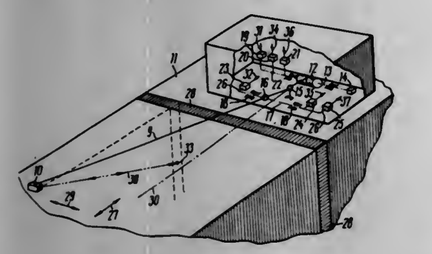
An ultrasonic detector for detecting flaws in small tubing comprising an acoustical barrier member having a tube receiving recess for supporting the body of a tube in a submerged position in a liquid, a second acoustical barrier member for yieldably urging the tube into seating relation in said recess, a first transducer having a narrow collimating slit positioned adjacent the tube and coupled thereto by the liquid for applying acoustical energy to the surface of the tube, and a second transducer spaced angularly from the first transducer and having a narrow collimating slit adjacent to another portion of the tube for receiving energy from the tube and responding to changes in energy flow for detecting flaws in the tube, said second acoustical barrier member being positioned between said transducers so that scattered ultrasonic energy is prevented from entering said tube and said second transducer.

3,349,608
ULTRASONIC THICKNESS COMPARATOR DEVICE
Dexter A. Olsson, Quakertown, Pa., and Carl W. Eriksson, Weymouth, Mass., assignors, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,563
15 Claims. (Cl. 73—67.8)



1. A comparator for use with ultrasonic pulse-echo distance measuring apparatus, said comparator comprising:
(a) chamber means having first and second opposed ends,
(b) transducer means extending into the first end of said chamber means,
(c) rod means having first and second ends, said rod means slidably extending for reciprocating movement through the second end of said chamber means,
(d) reflector means in said chamber means opposed to said transducer means and secured to the first end of said rod means, said reflector means being adjustable towards or selectively away from said transducer means upon reciprocation of said rod means, thereby to provide a path of adjustable length between said reflector means and said transducer means,
(e) guide means mounted to said chamber means adjacent the second end thereof,
(f) ramp means slidably extending through said guide means and reciprocable in a direction perpendicular to the direction of movement of said rod means, said ramp means having a surface inclined at an angle other than perpendicular to the direction of movement of said rod means, said surface slidably engaging the second end of said rod means,
(g) adjustment means mounted to said comparator to reciprocate said ramp means in said guide means, thereby to adjust the length of the path between said reflector means and said transducer means,
(h) said ramp means having a distance calibrated scale.

3,349,609
ULTRASONIC PULSE ECHO FLAW-DETECTOR
Vladimir Ivanovich Ryzhov-Nikonov, Valery Semenovich Grebennik, and Igor Nikolaevich Ermolov, Moscow, U.S.S.R., assignors to Tsentralny Nauchno-Issledovatelsky Institute Tekhnologii i Mashinostroenia
Filed May 1, 1964, Ser. No. 364,243
5 Claims. (Cl. 73—67.9)



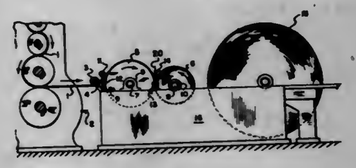
4. An ultrasonic pulse echo flaw-detector, comprising a high-frequency generator for exciting short probing electric pulses; a movable probe with an ultrasonic transducer connected to said generator and disposed on the surface of the object to irradiate the same with an angled ultrasonic beam, which traverses a controlled area inside the object and is reflected from a flaw back to the transducer; a signal amplifier at the output of said transducer; an oscilloscope with a cathode-ray tube connected to the output of said amplifier for visually displaying the output signals of said amplifier; means for delaying the start of the sweep of said oscilloscope with respect to the appearance of the probing pulse of said generator; a rotary cylinder with a flexible element wound thereon, one end of said flexible element being attached to the cylinder and the other fixed to said probe, said cylinder being disposed in fixed position relative to the object; displacement pickups connected with said cylinder and said flexible element to measure the probe displacement with respect to the controlled area of the object and generate signals corresponding to said displacement, said pickups being connected to said signal amplifier and said sweep delay means to enable its signals to control the gain factor of the amplifier and the magnitude of sweep delay of the oscilloscope depending on the distance between the probe and the controlled area of the object for maintaining an identical relation between the magnitude of the signal measured at the oscilloscope output and the size of the flaw across the entire controlled area.

3,349,610
SOIL DEFORMATION MEASURING CELL WITH POSITIONING LINER
Georges Noël, Vincennes, Seine, France, assignor to Centre Experimental de Recherches et d'Etudes du Batiment et des T.P., Paris, France, a corporation of France
Filed Oct. 6, 1966, Ser. No. 584,771
Claims priority, application France, Dec. 28, 1962, 920,064
2 Claims. (Cl. 73—84)

1. In a deformation measuring assembly comprising a radially expansible measuring cell, driving means for driving said assembly in position for measurement and expansion means for expanding said measuring cell from a retracted position to an expanded position for the measurement of deformation characteristics of a material, the improvement in which said assembly comprises means for releasably pre-expanding to facilitate positioning and recovery of said measuring assembly including an outer radially expansible hollow lining member having a substantially cylindrical external surface and a downwardly tapered axial bore, said measuring cell having an external surface of frusto-conical shape with the same taper as said axial bore of said lining member, said measuring cell being adapted to slide axially, in said retracted position, into and out from said axial bore of said lining member, whereby the introduction and the removal of said frusto-conical measuring cell, in said retracted position, by axial sliding respectively into and out from said lining member permit respectively positioning and recovery of said measuring assembly before and after actuation of said expansion means for said deformation measurements of said material.



3,349,611
APPARATUS FOR MARKING SELECTED SECTIONS OF A WEB MATERIAL
Harley O. Benjamin and Albion James Thompson, Millinocket, Maine, assignors to Great Northern Paper Company, a corporation of Maine
Filed Feb. 23, 1965, Ser. No. 434,560
8 Claims. (Cl. 73—159)

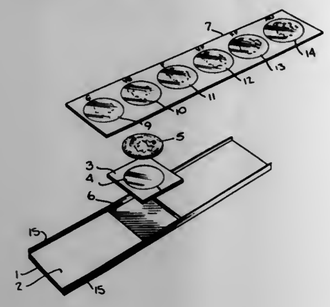


1. An apparatus for marking with a void marker a section of the web material having a detected irregularity while the section is entering into an area where the web is wound onto the roll comprising,
(a) an arm member pivotably mounted for movement around an axis which is substantially perpendicular to the axis of rotation of the roll, said arm being adapted to carry a marker at a free end with said free end being mounted near and movable into and out of said area;
(b) power means for pivoting said arm member, and
(c) actuating means for actuating the power means whereby the arm member is pivoted by said power means to move the marker into said area between the moving web and winding roll whereby the marker will be delivered to said area.

3,349,612
SILHOUETTE COIN GRADER

Charles I. Sherman, Miami, Fla., assignor to Perrine-Cutler Ridge Bank, Perrine, Fla., a state banking corporation

Filed Aug. 13, 1964, Ser. No. 389,258
6 Claims. (Cl. 73—163)

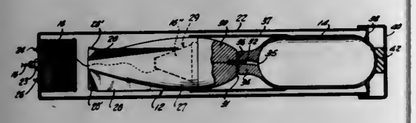


6. A standardized numismatic coin grader comprising a holder having a plurality of apertures therein, each provided with a transparent sheet thereacross, each sheet having markings thereon reproducing some of the design features of the coin to be graded and adapted to be positioned to register with such design features on the coin for grading the same, the markings on each sheet representing the portions of the design features which would be present on a coin of a grade corresponding to said sheet and being free from such markings in the area corresponding to the areas of wear for such grade, each of said sheets differing from the other sheets and representing a different grade whereby a sheet may be superimposed on a coin with the marks on the sheet in register with the corresponding design features on the coin to thereby focus on and permit inspection of the areas of wear.

3,349,613
AQUATIC PROBE

Samuel A. Francis, Marion, Mass., assignor, by mesne assignments, to The Buzzards Corporation, Marion, Mass., a corporation of Massachusetts

Filed Aug. 13, 1964, Ser. No. 389,434
15 Claims. (Cl. 73—170)

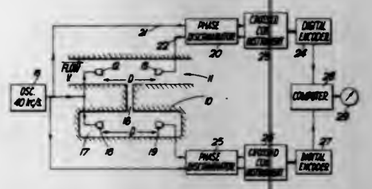


1. In apparatus for being deployed from an object submerged in a liquid, a probe assembly having wound therein a length of wire, said probe assembly having a negative buoyancy, means for sensing information secured to said probe assembly, a float assembly releasably secured to said probe assembly by a suction force prior to deployment, said float assembly initially having a positive buoyancy and including a housing defining an internal chamber, said housing having an opening formed therein and communicating with said chamber, said probe assembly and float assembly being in contact over a predetermined area therebetween such that upon ascending after deployment said probe and float assemblies will separate at a predetermined hydrostatic pressure, the weight of the probe assembly overcoming the suction force holding the probe assembly to the float assembly such that the probe and float assemblies separate.

3,349,614
SPEED MEASURING DEVICES

Bernhard Dollman Parker, London, England, assignor to Decca Limited, London, England, a British company

Filed Nov. 22, 1965, Ser. No. 509,106
Claims priority, application Great Britain, Nov. 24, 1964, 47,806/64
8 Claims. (Cl. 73—181)

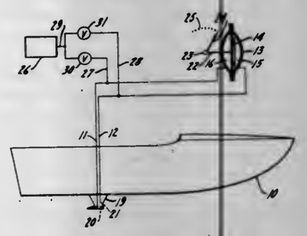


1. A speed measuring device for a body movable in a fluid comprising means on the body for propagating a sonic signal along a path through the fluid moving relatively to the body, a first phase determining means on the body for measuring the phase relation between the sonic signal at points spaced in the direction of motion, a chamber in said body to which is admitted fluid to be substantially at rest relative to said body, means for propagating a sonic signal through said fluid in said chamber and a second phase determining means for measuring the phase relation between the sonic signal at points spaced apart in the direction of propagation of the signal through the chamber.

3,349,615
MARINE SPEED INDICATORS

Charles W. Finkl, 2011 Southport Ave., Evanston, Ill. 60614

Filed Oct. 30, 1964, Ser. No. 407,670
5 Claims. (Cl. 73—182)

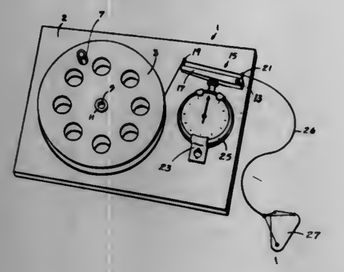


1. A speed indicator for a vessel including a Pitot tube and a static tube, each tube having an inlet at one end adapted to be inserted in the water supporting the vessel, a housing connected to the opposite ends of the tubes and having a flexible wall located therein separating said ends of said tubes, a pointer operatively connected to said flexible wall to move upon movement of the wall, a scale indicating speed associated with said pointer, a source of gas under pressure connected to the tubes intermediate said inlets and said housing, the pressure of said source of gas being greater than the maximum water pressure in said tubes, and means to individually control the rate of flow of gas from said source into each tube to maintain said tubes substantially free of water.

3,349,616
SPEED MEASURING APPARATUS

Bryce C. Kaspar, 68 Huntley Circle, Dover, Del. 19901

Filed Oct. 21, 1965, Ser. No. 499,657
7 Claims. (Cl. 73—184)

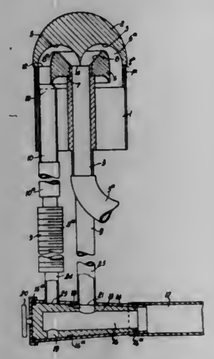


1. A device for indicating the average speed of a moving body relative to the surface upon which said body is moving comprising, means for releasably storing a line, a line of predetermined length having one end fixed to said line storing means, anchoring means attached to the free end of said line, and time measuring means operatively associated with said line, said time measuring means being adapted to be started and stopped by actuating means responsive to forces transmitted by said line for measuring the time required for a known length of said line to be pulled from the line storing means after the line is initially achored as said moving body moves away from the anchored end thereof, whereby the average rate rate of speed of the moving body may be determined by comparing the distance traveled to time used.

3,349,617
METERING AND FLOW INDICATING DEVICE FOR USE DURING MILKING

John Lewis Hartstone, R.D. 5, Otorohanga, Hamilton, New Zealand

Filed Jan. 12, 1965, Ser. No. 424,963
11 Claims. (Cl. 73—202)

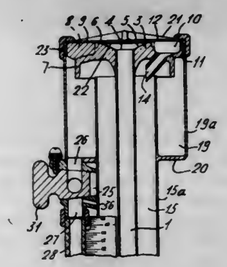


1. An improved metering and flow indicating device for use during milking operations comprising wall means defining a chamber having an open top, a closure for the open top, an inlet pipe leading into the chamber and adapted to be connected to a supply of milk from a milking machine system, an outlet leading from the chamber a collar mounted about the inlet pipe cooperable with the inner surface of the wall means to provide an annular space therebetween, milk distributing means situated within the chamber and capable of spreading the milk discharging from the inlet pipe in an evenly, downwardly directed flow through said annular space, said distributing means including a concave surface on the under surface of the closure, said concave surface having a central and downwardly extending protuberance positioned directly over the inlet pipe, said protuberance being of inverted conical formation and concave in shape thus forming a continuation of the concave undersurface of the closure, a measuring glass, a discharge pipe leading from the chamber to the measuring glass, an entrance to the discharge pipe, and a metering cup set about the entrance, the area of the entrance to the metering cup being of pre-determined ratio relative to the area of the annular space so that a selected quantity of mik is passed through the metering cup and discharge pipe to the measuring glass for the purpose of measuring the weight of the milk within the measuring glass against a graduated scale.

3,349,618
APPARATUS FOR USE WITH MILKING MACHINES FOR MEASURING AND INDICATING THE MILK YIELD

Charles W. Maxwell, Leith Road, Okato, North Plymouth, New Zealand

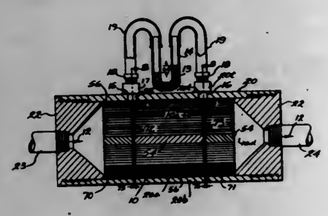
Filed June 1, 1965, Ser. No. 460,421
Claims priority, application New Zealand, June 8, 1964, 138,126
3 Claims. (Cl. 73—202)



1. Apparatus for use with milking machines for measuring and indicating the milk yield of a cow, comprising a delivery conduit connectable to the milk supply from a set of teat cups arranged to be substantially vertically supported in use and having an outlet at the upper end thereof, a head member supported extending radially outwardly from said delivery conduit adjacent the outlet therefrom, support pillars projecting from said head member with the upper surface of said support pillars positioned in a plane slightly beyond the plane in which the uppermost surface of said head member is positioned, a top member supportable on said support pillars with part of the under surface thereof and part of the upper surface of said head member extending outwardly from the outlet of the delivery conduit defining a space through which said milk is jetted to form a fluctuating but at any instant a substantially uniform flow of milk passing from said space to form an annular disc, a collecting passageway supported by said head member and having an inlet thereto positioned to collect the milk passing from a fractional part of the flow so that the milk collected by said collecting passageway provides a volume of milk substantially proportional to the total volume of milk flowing during the metering process, a sample chamber calibrated to indicate the total volume of milk passing through said measuring apparatus using said sample flow collected by said collecting passageway with only the outlet from

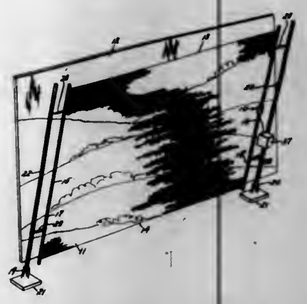
said collecting passageway arranged to deliver milk into said metering chamber, a collecting chamber encompassing said head member with the top thereof provided by the walls sealably engaging said top member, said collecting chamber arranged to collect the remaining flow of milk, a discharge conduit connectable to the milk line of the milking plant and adjustable valve means operable to allow the milk to be removed from said collecting chamber or to be removed from said sample chamber prior to the next operation of the apparatus.

3,349,619
LAMINAR FLOW ELEMENT AND FLOW METER
Gordon H. Millar, Moline, Ill., assignor to The Meriam Instrument Company, Cleveland, Ohio, a corporation of Ohio
Original application July 29, 1959, Ser. No. 830,241, now Patent No. 3,123,900, dated Mar. 10, 1964. Divided and this application Oct. 25, 1963, Ser. No. 318,855
15 Claims. (Cl. 73—205)



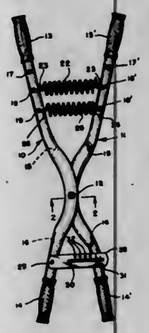
5. A flow element adapted to be used in an instrument for measuring a characteristic of a fluid flowing through a bore in a flow direction by a differential pressure measuring instrument having upstream and downstream pressure sensing means communicating with said bore, said flow element adapted to extend across said bore and to be located along the flow direction with its opposite ends in communication with said respective pressure sensing means, said element having many fluid flow passageways extending through the flow element in the flow direction with each passageway having a hydraulic diameter sufficiently small for assuring laminar flow of said fluid, said flow element having a plurality of wall portions defining said passageways, and means connecting said wall portions together with each passageway having a predetermined hydraulic diameter and each passageway having dimensional rigidity so that metering calibration of said element is maintained, said wall portions including a plurality of substantially coextensive superimposed sheets of material, one of said sheets being corrugated with the generating elements of the corrugations extending parallel to each other and to the flow direction with a flow passageway located between each corrugation and other of said sheets, said connecting means including said sheets joined together at sheet contacts of the corrugation peaks and valleys without blocking any of said passageways to give said flow element its shape and the flow passageways thereof dimensional rigidity with each flow passageway being generally unobstructed and with adjacent flow passageways in correspondingly oriented corrugation shapes along the length of said corrugated sheet having substantially equal hydraulic diameter, said sheets being metallic, and the joinder of said sheets being by metal fusion along the length of the contacts of the peak and valley of each corrugation along the length of the flow element to form a mechanically rigid flow element with its wall portions locked against relative movement during handling.

3,349,620
CIRCUIT ACTUATING MEANS FOR COMPUTER TYPE GOLF GAMES
Maximilian Richard Speiser, 17 W. 60th St., New York, N.Y. 10023
Filed May 27, 1965, Ser. No. 459,160
1 Claim. (Cl. 73—379)



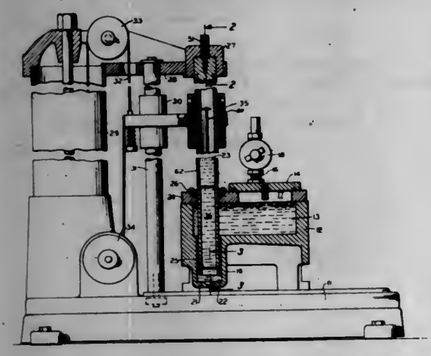
In a computer type golf game including a net for arresting the flight of a ball and computer means for determining elapsed time of flight of said ball, improved means for indicating the instant at which said ball contacts said net comprising: said net being of a flexible material and having oppositely disposed side edges, a pair of elongated relatively rigid rods interconnected to said net along said side edges, a pair of fixed elongated supporting members having principal axes paralleling that of said rods, and a plurality of springs interconnecting said rods and said supporting members along the lengths thereof, a housing secured to one of said rods, an inductive coil disposed within said housing and connected to said computer means, and a magnet resiliently supported within said housing in the area of said coil.

3,349,621
COMBINATION EXERCISER AND STRENGTH TESTING DEVICE
Charles F. Mullen, 243 W. Mount Royal Road, Milwaukee, Wis. 53217
Filed Dec. 7, 1964, Ser. No. 416,319
2 Claims. (Cl. 73—380)



1. An exercising device comprising: a pair of pivotally-connected lever arms having upper and lower ends, the lower ends of said arms normally being close enough to each other to permit the same to be grasped in one hand by a user; hand grips on the upper and lower ends of each of said lever arms; a plurality of pairs of aligned apertures formed in and through the upper portions of said lever arms; an elongated expansion spring removably mountable in and between the upper portions of said lever arms, said spring having hooks formed on its outer ends removably insertable in a selected pair of said aligned apertures to provide tension means adapted to progressively increasingly resist movement of the upper arm portions away from each other and the simultaneous movement of the arm lower portions toward each other, the mounting of said spring in selected pairs of said apertures varying the spring tension and also the proximity of the hand grips; a gauge on one of said arms having a calibrated scale thereon; and an indicator on the other of said lever arms and movable therewith relative to said calibrated scale when a user grasps the lower grip elements and pushes the same toward each other, or he grasps the upper grip elements on said pivotal lever arms and pulls the same away from each other against the tension of said spring, thereby providing a visual indication on said scale of the relative strength exerted by said user.

3,349,622
BAROMETER CONSTRUCTION
Eugene A. Glassey, Los Altos, Calif., assignor to Exactel Instrument Company, Mountain View, Calif.
Filed Dec. 7, 1964, Ser. No. 416,562
10 Claims. (Cl. 73—385)



1. In a barometer, a cistern, a pressure inlet for said cistern, a tube extending up from said cistern, a pressure responsive medium in said cistern and tube, means for reading out the elevation of said medium in said tube, a support for said tube, and sealing means interposed between the lower end of said tube and said cistern to seal off communication between said tube and said cistern, said tube slidable in said support toward and away from said cistern, said sealing means comprising a resilient member adapted to seal between said lower end of said tube and said cistern when said tube is moved against said cistern.

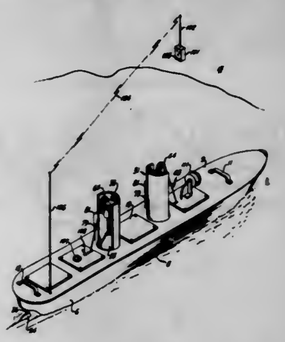
3,349,623
FLUID FILLED PRESSURE TRANSDUCER
Harvey L. Pastan, Brookline, Mass., assignor to Abex Corporation, a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,542
10 Claims. (Cl. 73—398)

1. A pressure transducer comprising
an elongated frame,
a capillary tube extending through the frame and terminating at one end adjacent one end of the frame, said tube having an inner diameter in the order of .010 inch,
a coupler closing that end of the frame and defining with the frame a chamber in communication with the capillary tube,
a liquid filled deformable sensor secured to the frame at its other end remote from the coupler,
and a liquid filling the capillary tube and the chamber



and in communication with the liquid in the sensor for applying the pressure exerted against the coupler to the sensor.

3,349,624
REMOTELY CONTROLLED WATER SAMPLING DEVICE
Gilbert W. Fraga, Sacramento, Calif., assignor to The Regents of the University of California, Berkeley, Calif.
Filed June 7, 1965, Ser. No. 461,963
6 Claims. (Cl. 73—421)

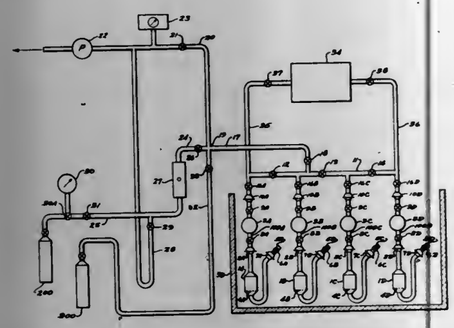


6. A remotely controlled water sampling device comprising a hull adapted to float in the water and to be manually carried, means on said hull for furnishing driving power, means on said hull powered by said furnishing means for propelling and steering said hull, means on said hull powered by said furnishing means for descending from said hull to take a water sample, and means separate from said hull and operable at a point remote from said hull for controlling said propelling and steering means and said descending means.

3,349,625
ADSORPTION MEASURING APPARATUS AND METHOD
William F. Benusa and Norman D. Coggeshall, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 10, 1964, Ser. No. 336,974
7 Claims. (Cl. 73—432)

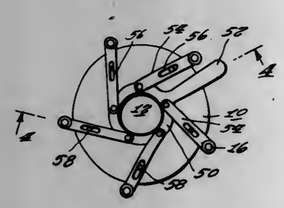
1. A method for determining directly the chemisorptive ability of a solid material comprising chemisorbing and physically adsorbing components, the method comprising

(1) contacting a measured first sample of solid material in a closed system of known, substantially constant volume with a measured amount of chemisorbable gas so as to effect both chemisorption and pysical adsorption of said by the sample, contacting in like manner in a second closed system of known, substantially constant volume with a second measured amount of the same chemisorbable gas a second measured sample of a second solid material consisting essentially of non-chemisorbing components of the



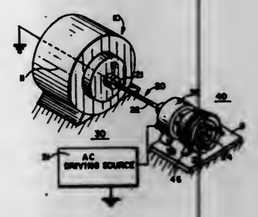
same kind and in the same relative proportions as in the first sample so as to effect physical adsorption of said gas by the sample, and (2) measuring the difference in gas pressure between the first closed system and the second closed system, the difference in gas pressure so measured being indicative of the amount of gas chemisorbed by the first sample, the amount of gas chemisorbed being, in turn, indicative of the chemisorptive ability of the first solid material.

3,349,626
BUBBLE BALANCING MACHINE TO BALANCE TIRES—TIRE BALANCING PLATE
Amando Palacios, 4167 Stafford St., Corpus Christi, Tex. 78416
Filed Jan. 25, 1965, Ser. No. 427,862
1 Claim. (Cl. 73—487)



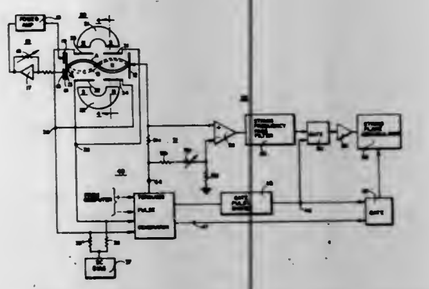
A plate for supporting a wheel having a tire and a plurality of lug holes for use on a balancing machine having a support bracket mounted at the top of said machine, said plate comprising a thin flat circular disc including an integrally formed and upwardly extending bushing, a large central hole in said plate adapted to accommodate said bracket, a ring rotatably mounted on said bushing, a handle secured to said ring, a plurality of levers pivotally secured at one end to said ring at spaced apart positions, the other end of each lever carrying an upstanding prong, each lever having a slot intermediate its ends and extending in the same direction as the lever, said plate having a like plurality of upstanding pins, each pin extending upward through a corresponding slot, said prongs extending upward through selected lug holes whereby said tire is supported for balancing.

3,349,627
ROTATED VIBRATING WHISKER GYRO
Frederick W. Hauf, Santa Ana, and William H. Quick, La Mirada, Calif., assignors to North American Aviation, Inc.
Filed Oct. 2, 1964, Ser. No. 401,177
10 Claims. (Cl. 73—505)



1. A vibratory stable reference apparatus comprising a casing, a vibratory rod having a longitudinal axis rotatably supported at one end and free at its other end to vibrate in a vibratory path, means for vibrating said rod in said vibratory path, means rotating said rod at a constant speed about said longitudinal axis with respect to said casing, and means sensing the relationship of said path with respect to said casing.

3,349,628
STABLE REFERENCE APPARATUS
William H. Quick, La Mirada, Calif., assignor to North American Aviation, Inc.
Filed Jan. 4, 1965, Ser. No. 422,995
8 Claims. (Cl. 73—505)

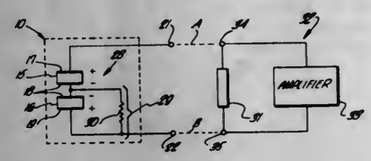


1. A spatial direction indicator comprising a support means, a vibratory string mounted between two points of said support means, means for effecting vibration of said string at a predetermined frequency in a vibratory plane, torquing means for rotating the vibratory plane comprising sensing means providing a signal current which varies as a function of the vibration of said string, magnetic means providing a magnetic field adjacent said string, and means applying said signal current through said string to effect rotation of said vibratory plane.

3,349,629
FREQUENCY DAMPED TRANSDUCER
Shmuel Elazar, El Monte, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Sept. 8, 1964, Ser. No. 394,879
13 Claims. (Cl. 73—517)

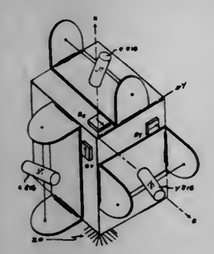
1. A frequency damped transducer comprising a member mounted for movement in response to variations in a selected physical phenomenon to be measured by the

transducer, signal generating means coupled to the movable member for generating first and second signals having values proportional to the movement of the member, transducer output terminal means, means for connecting the signal generating means to provide an output signal across the output terminal means which is rep-



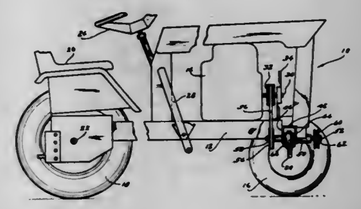
resentative of the difference in the amplitude of the first and second signals, and means tuned to a selected frequency and to which the second signal is applied for passing the second signal to the terminal means substantially only when the second signal varies in amplitude at a frequency which is greater than the selected frequency.

3,349,630
DRIFT COMPENSATION COMPUTER
Victor H. Seliger, North Caldwell, N.J., and Arthur F. Wermund, New York, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 30, 1965, Ser. No. 491,851
2 Claims. (Cl. 74—5.34)



1. In a rate integral gyro having an input axis with a resolver coupled thereto, a spin axis, and an output axis with a torquer for applying torque to the gyro wheel about the said output axis; the said gyro having undetermined mass unbalances along the said input axis and the said spin axis and undetermined factors of elasticity of the gyro wheel suspension, the said gyro being located in space represented by the three conventional x, y, and z coordinate axes with the said input axis parallel to one of the said three coordinate axes, said coordinate axis parallel to said input axis being designated the first coordinate axis, the system for compensating drifts in the said gyro caused by acceleration forces acting on the said mass unbalances of the said gyro; said system comprising: means for sensing the acceleration in each of the said x, y and z coordinate axes; means cooperating with the said acceleration sensing means in the said first coordinate axis providing a first output signal proportional to the product of the acceleration along the said input axis and the said mass unbalance along the said spin axis; means cooperating with the means sensing the acceleration parallel to the second and third coordinate axes and the said resolver providing a second output signal proportional to the product of the said mass unbalance along the input axis and the acceleration along the spin axis; means cooperating with the said resolver and the said acceleration sensing means in the said first coordinate axis providing a third output signal proportional to the product of the acceleration along the input axis, the acceleration along the spin axis, the square of the mass of the gyro wheel, and the said elasticity factors of the gyro wheel suspension; and means cooperating with the said first, second, and third output signals and the said gyro torquer for applying torque about said output axis to compensate for the effects of said acceleration forces acting on the said mass unbalance.

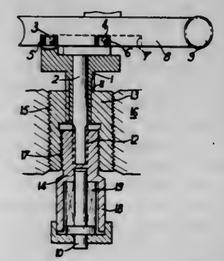
3,349,631
FRONT AXLE AND PTO SHAFT
William J. Schlapman and Elmer E. Croisant, Winneconne, Wis., assignors to Colt Manufacturing Company, Inc., Winneconne, Wis., a corporation of Wisconsin
Filed Feb. 21, 1966, Ser. No. 528,924
9 Claims. (Cl. 74—15.63)



1. An attachment drive for a tractor having a frame, an engine carried on the frame, steering and traction wheels, and front and rear axles, said attachment drive including a driving sheave connected to said engine on the front thereof, driving means rotatably supported from said front axle, a driven sheave on said driving means aligned with said driving sheave, and

means drivingly connected to said driving and driven sheaves, said driving means being positioned such that said driving means remains substantially in a predetermined position when either one of the wheels is raised or lowered.

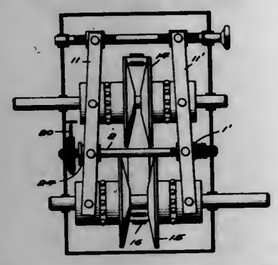
3,349,632
DEVICE FOR THE TRANSMISSION OF MOVEMENTS
Paul Vulliez, Pont-Audemer, France, assignor of one-half to Commissariat à l'Energie Atomique, Paris, France
Filed Feb. 3, 1966, Ser. No. 524,695
Claims priority, application France, Feb. 19, 1965, 6,185
2 Claims. (Cl. 74—89.15)



1. Device for the transmission of movements comprising two coaxial shafts made fast for rotation respectively with two threaded bushings which are screwable one within the other, a first bushing being screwable in a stationary

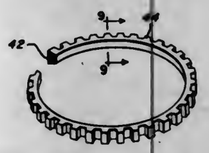
frame and the second bushing being made fast for translational motion with a controlled member, a positive drive-cam for driving and guiding two rollers which are respectively integral with said two shafts and means for driving said cam in rotation.

3,349,633
AUTOMATIC BELT OR CHAIN TIGHTENING MECHANISM FOR AN INFINITELY VARIABLE CONE PULLEY TRANSMISSION
Erich H. Petersen and Herbert K. Steuer, Bad Homburg vor der Hohe, Germany, assignors to Reimers-Getriebe K.G., Ascona, Switzerland, a firm of Switzerland
Filed May 3, 1965, Ser. No. 452,677
Claims priority, application Germany, May 6, 1964, R 37,840
4 Claims. (Cl. 74—230.17)



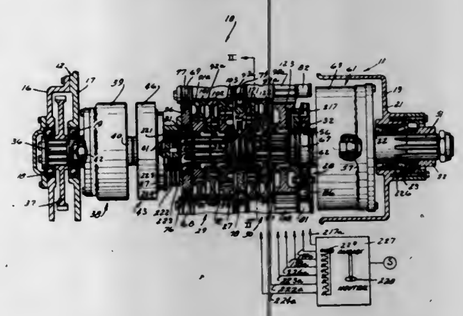
1. In an infinitely variable cone pulley transmission having a drive shaft and a driven shaft, pairs of conical pulley disks, the disks of one pair being mounted on each shaft so as to be axially slidable thereon, nonrotatable pressure members axially slidable on each shaft and adapted to press the disks of each pair toward each other, an endless driving element connecting both pairs of disks and adapted to run between them, means for automatically tightening the driving element comprising a tightening spindle mounted centrally between said shafts and having a screw thread near at least one end thereof, a pair of tension blocks disposed coaxially to each other, at least the first of said tension blocks being slidable axially on said spindle relative to the second tension block, control levers pivotably connected to said tension blocks and also to the pressure members associated with the disks of both pairs, means for equally pivoting said levers at the opposite sides of both pairs of disks in opposite directions to each other on said tension blocks, whereby, when said driving element runs between both pairs of disks, the disks of one pair are moved for a certain distance toward each other and the disks of the other pair are moved for the same distance away from each other so that the speed ratio of the transmission is changed, spring means acting upon at least said first tension block in the axial direction of said spindle and tending to move said first tension block toward said second tension block and thus also said lever on said first tension block toward the lever on the second tension block so as to tighten said driving element, a nutlike member screwed on said screw thread of said spindle and adapted to engage with the outer side of said first tension block, means for continuously producing a torque for turning said nutlike member and said spindle relative to each other so as to move said nutlike member for carrying out the tightening movement of said first tension block caused by said outer side of said first tension block, said nutlike member forming one part and said spindle forming a second part, and locking means adapted to prevent said torque from being transmitted to one of said parts so as to prevent said part from being moved in the direction in which it is adapted to effect a tightening of said driving element until a definite amount of need for said driving element to be tightened is exceeded at which time said locking means are released to effect said tightening of said driving element.

3,349,634
TRANSMISSION BELT AND METHOD OF MANUFACTURE
Hugh D. Terhune and Dale L. Waugh, Springfield, Mo., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed Apr. 13, 1965, Ser. No. 447,720
5 Claims. (Cl. 74—231)



1. A power transmission belt comprising a body of urethane elastomer and a plurality of longitudinally extending strength cords embedded within said body, said cords impregnated with an adhesive dip material, said urethane elastomer only partially penetrating said cords to form a bond therewith.

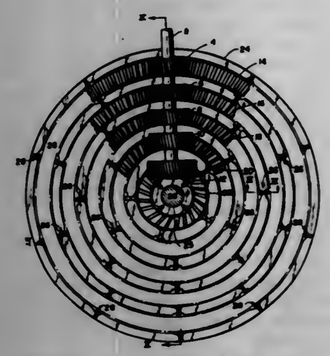
3,349,635
AUTOMOTIVE DEVICE
Elmer A. Richards, Peoria, Ill., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed June 8, 1965, Ser. No. 462,377
13 Claims. (Cl. 74—331)



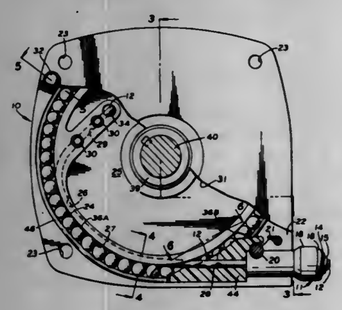
1. In a ratio-changing transmission, the combination comprising:
a rotatable shaft;
an axially extending opening in said shaft;
piston means slideable axially of said shaft in said opening, said piston means connected to said shaft for rotation therewith;
means for applying fluid under pressure to said piston means for moving same axially within said opening;
ratio means encircling said shaft;
means movable in response to said piston means for engaging said ratio means to said shaft for rotation therewith.

3,349,636
AUTOMATIC TRANSMISSION
Battista A. Colpo, Harmar Drive, Cheswick, Pa. 15024
Filed Oct. 22, 1965, Ser. No. 502,040
4 Claims. (Cl. 74—368)

1. An automatic transmission for vehicles comprising a drive shaft having a plurality of pinions rigidly secured thereto in longitudinally spaced relationship, a housing having well portions supporting a plurality of ring gears of different diameters, said pinions being of progressively increasing diameters in a direction radially inwardly of said housing, each of said ring gears being in meshing engagement with one of said pinions, a driven shaft rigidly connected to said housing and adapted to drive a differential gear, and a plurality of one-way clutches including roller bearings mounted on said housing and interposed between and in contact with said ring gears and in circumferentially spaced relationship, whereby said drive shaft may drive said housing selectively through one of said pinions and one of said meshing ring gears to drive said housing at different speeds.

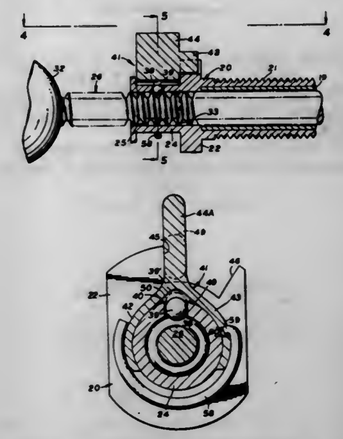


3,349,637
ROTARY ACTUATOR FOR PUSH-PULL CABLES
Bruce H. Moore, Hudson, Ohio, assignor to Morse Controls Inc., a corporation of Ohio
Filed Oct. 1, 1965, Ser. No. 491,994
12 Claims. (Cl. 74—501)



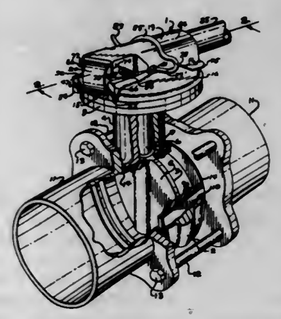
1. A rotary actuator for a push-pull cable having a reciprocable core, said actuator comprising, a housing, an annular drive member rotatably received within said housing, a peripheral groove in said drive member, means for attaching said cable core to said drive member so that said core is received in said groove, at least one peripheral channel in said housing substantially opposing said groove, a plurality of contiguously interengaged balls received in said channel and engaging the core received in said groove, means to rotate said drive members selectively to wind said core into said groove and to unwind said core therefrom, said balls freely movable peripherally in said channel upon rotation of said drive member to engage and maintain said core in said groove.

3,349,638
SELECTIVE VERNIER CONTROL
Richard D. Houk, Stow, Ohio, assignor to Morse Controls Inc., a corporation of Ohio
Filed Aug. 31, 1965, Ser. No. 483,970
10 Claims. (Cl. 74—503)



1. A vernier control device for the core of a push-pull control cable comprising, a mounting hub, a control shaft slidably received through said hub, thread means on the exterior of said control shaft, a collar carried on said hub and movable thereon between a first and second position a thread meshing means carried on said hub, said collar maintaining said thread meshing means in mating engagement with the threads on said control shaft when said collar is in said first position, and said collar released from said thread meshing means when said collar is in said second position to permit said control shaft to slide axially of said hub.

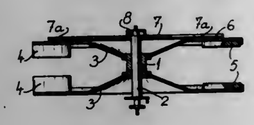
3,349,639
VALVE CONTROL MECHANISM
Fred L. Magoon, Oklahoma City, Okla., assignor to Demco, Incorporated, a corporation of Oklahoma
Filed Aug. 23, 1965, Ser. No. 481,710
15 Claims. (Cl. 74—527)



1. In a valve having a rotatable control shaft secured to a valve member, a valve control mechanism for rotating and locking said valve member in a desired position comprising:
(a) a valve casing,
(b) an axially rotatable control shaft located in said casing and connected to said valve member,

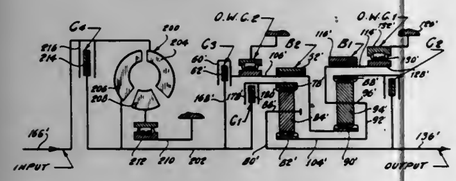
(c) a rotatable hub to receive the control shaft,
(d) means to rigidly secure the control shaft to the hub such that rotation of the hub causes rotation of the control shaft, and
(e) cooperative means on the hub and valve casing to lock the hub in a desired position.

3,349,640
MEANS FOR BALANCING A ROTARY OR OSCILLATORY FLY-WHEEL
Ali Schneiter, Neuchatel, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland, a firm of Switzerland
Filed May 25, 1966, Ser. No. 552,837
Claims priority, application Switzerland, June 21, 1965, 8,649/65
3 Claims. (Cl. 74—573)



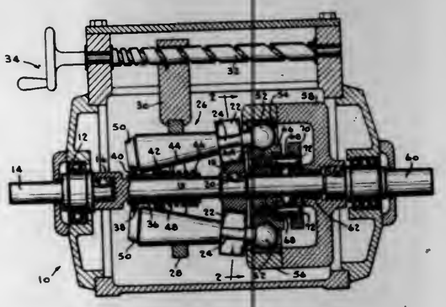
1. In means for balancing a rotary or oscillatory fly-wheel, an annular balancing member, the axis of which is parallel with the axis of said fly-wheel, and means enabling the said balancing member to be secured to the said rotary wheel in an eccentric position along any radial direction with respect to the centre of rotation of said wheel, whereby, by moving said balancing member along a radius opposite the radius passing through the centre of gravity of the wheel, the unbalance of the latter is corrected.

3,349,641
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM WITH CLOSE RATIOS
Howard L. Croswhite, Livonia, Lawrence D. Burcz, Detroit, and Richard L. Leonard, Farmington, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,452
4 Claims. (Cl. 74—763)



1. In a driveline for an engine powered vehicle, a pair of simple planetary gear units adapted to establish a plurality of torque delivery paths between a driving member and a driven member, each gear unit comprising a ring gear, a sun gear, a carrier, and planet pinions mounted upon said carrier in meshing engagement with the associated sun and ring gears, means for establishing a torque transmitting connection between the engine and the ring gear of a first planetary gear unit, means for establishing a torque transmitting connection between the carrier of said first gear unit and said driven member, the sun gear of said first gear unit being connected to the carrier of the other gear unit, reaction brake means for anchoring the carrier of said second gear unit, means for transferring driving torque from the ring gear of said other gear unit to said driven member, means for anchoring the sun gear of said second gear unit to provide a torque reaction point during intermediate speed ratio operation, and means for clutching two elements of said gear units together to establish a high speed ratio driving condition, said reaction brake means comprising an overrunning coupling adapted to inhibit rotation of the carrier for said second gear unit in one direction while accommodating freewheeling motion thereof in the opposite direction thereby permitting a nonsynchronous pickup shift from the low speed ratio to the intermediate speed ratio when said sun gear anchoring means is applied, said sun gear anchoring means comprising an overrunning coupling capable of accommodating torque reaction in one direction but permitting freewheeling motion of the sun gear of said second gear unit in the opposite direction thereby permitting a nonsynchronous upshift from the intermediate speed ratio to the high speed ratio as both clutches are applied.

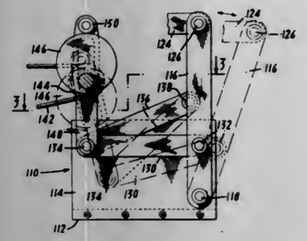
3,349,642
VARIABLE SPEED TRANSMISSION
Richard E. Alsch, Lannon, Wis., assignor to Graham Transmissions, Inc., Menomonee Falls, Wis., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,886
7 Claims. (Cl. 74—796)



1. A variable speed transmission comprising:
an input shaft;
a drive spider mounted on the shaft;
a plurality of inclined planetary tapered rollers rotatably mounted in the spider for rotation about the shaft axis and their own axes;
a non-rotatable control ring encircling and contacting the rollers;
means for moving the ring axially of the rollers and shaft;
a drive member fixed with respect to each roller and presenting spherical surfaces;
a race engaged by the drive members and driven thereby as the drive member rolls with respect to the race; and
a driven shaft connected to the race.

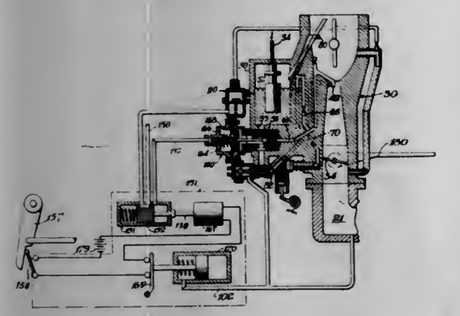
3,349,643
ADJUSTABLE MECHANICAL MOVEMENT
Calvin Rountree, 6 Spalding Court, Saugerties, N.Y. 12477
Filed Nov. 5, 1965, Ser. No. 506,507
13 Claims. (Cl. 74—838)

1. A mechanism for producing periodic reciprocating movement comprising, an elongated output member having a first point thereon rotatably coupled to a fixed pivot, means at a second point on said output member longitudinally spaced from said first point for coupling to an element to be reciprocated, a connecting link having one end pivotally connected to said output member at a point longitudinally spaced from both said first and second points, a radius arm having one end pivotally connected to the other end of said connecting link, the other end of



said radius arm being pivoted at a predetermined position, and means to couple the commonly pivoted ends of said connecting link and said radius arm to a source of motive power for oscillation of said commonly pivoted ends along an arcuate path whose center is at the said other end of said radius arm.

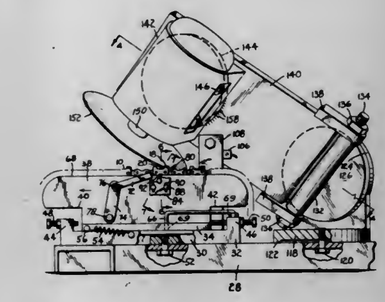
3,349,644
VEHICLE ENGINE CONTROL
Rollin Gish, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Apr. 1, 1965, Ser. No. 444,720
2 Claims. (Cl. 74—860)



1. In an internal combustion vehicle propulsion system having a selectable ratio transmission and a carburetor fuel cut-off control that cuts off the supply of fuel to the engine in response to engine deceleration from predetermined speeds in order to reduce the exhausting of smog-contributing emission, the improvement according to which the vehicle has a supplementary automatic control connected between the transmission and the cut-off control to disable the cutting off when the deceleration is effected with the transmission not in a cruise ratio.

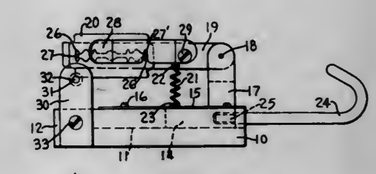
3,349,645
SAW CHAIN GRINDING MACHINE
Elmer R. Silvey, Medford, Oreg., assignor to Katherine A. Silvey, Medford, Oreg.
Filed Aug. 23, 1965, Ser. No. 481,735
14 Claims. (Cl. 76—40)

1. A grinding machine for sharpening saw chains having cutter links with cutter elements having beveled surfaces providing cutting edges on the forward portions of said cutter elements and with depth gauges positioned forwardly of said cutter elements with a space between the cutter element and depth gauge of each cutter link; comprising:
a machine base;
a rotatable grinding wheel having a peripheral edge shaped to grind said beveled surfaces to thereby sharpen said cutting edges;
means for supporting a saw chain on said base and for holding one of said cutter links in position for grinding said beveled portions of said cutter element of said one cutter link with said peripheral edge;
means for supporting said grinding wheel on said base and for rotatively driving said grinding wheel;
means for moving said grinding wheel and saw chain relative to each other to move said peripheral edge



of said grinding wheel into said space of said one cutter link while maintaining said peripheral edge out of contact with said beveled surfaces of the cutter element of said one cutter link during such movement;
and means for thereafter moving said saw chain and grinding wheel relatively to each other generally longitudinally of said chain to move said beveled surfaces of the cutter element of said one cutter link into contact with said peripheral edge.

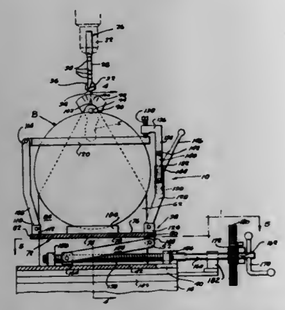
3,349,646
RAZOR BLADE SHARPENING DEVICE
Otto Siess, 503 Franklin St., Elizabeth, N.J. 07206, and Walter E. Brach, 1008 Sheridan Ave., Roselle, N.J. 07203
Filed May 20, 1966, Ser. No. 551,634
5 Claims. (Cl. 76—89.2)



1. A razor blade sharpening device, comprising, in combination:
a base,
a pair of upright oppositely-disposed plates attached at their bottoms to said base and each having ball mounting means,
a pair of spherical bodies mounted in said mounting means opposite each other and in tightly pressing and laterally offset relation,

a mounting arm having razor blade mounting means disposed at one end in sharpening position above said spherical bodies,
reciprocating means attached to the other end of said mounting arm to reciprocate said blade-carrying arm over said spherical bodies, and
spring tension means attached to said mounting arm in order to impress pressure upon a razor blade edge being sharpened between said spherical bodies.

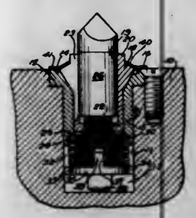
3,349,647
BOWLING BALL DRILLING METHOD AND APPARATUS
Louis J. Stan, 24813 Ursuline, St. Clair Shores, Mich. 48080
Filed Aug. 31, 1965, Ser. No. 483,993
3 Claims. (Cl. 77—5)



1. A method of drilling a multi-stage finger lift opening in a bowling ball in a continuous operation, the bowling ball being mounted in a cradle secured to a drilling device with a rotating drill bit therein, the drill bit having an enlarged head with upper and lower cutting edges, the method comprising the steps of:
pivoting the cradle and ball to a position wherein the drill is aligned with the ball at a non-radial first location;
simultaneously advancing the rotating drill into the ball to a first desired depth;
locking the drill against vertical movement while continuing the pivoting of the cradle and ball whereby the upper cutting edges form a first angle portion in the lift opening of the ball;
pivoting the cradle to a second non-radial angle obtusely related to the first non-radial angle while continuing the rotation of the drill thus to provide a second non-radial section of the lift opening;
advancing the rotating drill to a second depth;
pivoting the cradle to a position wherein the drill is substantially aligned with the radius of the ball while continuing rotation of the drill whereby the upper cutting edge forms a second angle portion;
inserting the rotating drill in the ball to a third selected depth; and
withdrawing the drill by reversal of the cradle positions while continuing the rotation of the drill.

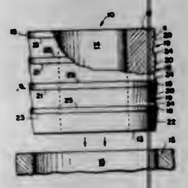
3,349,648
ADJUSTABLE BORING TOOL
William S. Holloway, Cumberland Hill, R.I., assignor to Madison Industries, Inc., a corporation of Rhode Island
Filed June 7, 1966, Ser. No. 555,825
12 Claims. (Cl. 77—58)

1. An adjustable tool assembly comprising holder means containing a collet, a tool body received by said collet, said tool body being threaded at the end opposite the cutting tip end, said collet at its inner end engaging the threads of the tool body and at its outer end embracing the tool body, spring means acting between the holder means and the tool body, said collet and holder means



having opposed abutment surfaces which are urged together by said spring means to contract the collet to frictionally grip the tool body.

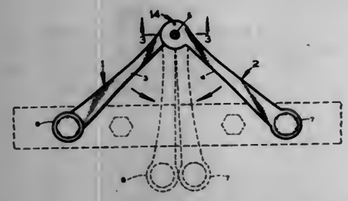
3,349,649
PRESS-FIT BUSHING
Joseph J. Mele, 188 Warner Road, Huntington, N.Y. 11743
Filed July 26, 1965, Ser. No. 474,710
4 Claims. (Cl. 77—62)



1. In a press-fit bushing receivable in an aperture in a plate member, the combination comprising:
(a) a body having a passage therethrough and provided with a forward and a rearward end, said forward end being of a lesser diameter than said rearward end;
(b) the external circumferential periphery of said body including a plurality of grooves disposed transversely of the axis of the body;
(c) said grooves accommodating radial flow of the internal periphery of the aperture when said press-fit bushing is engaged therewith, thereby providing stress-relief for said passage;
(d) said grooves tapering outwardly rearwardly and communicating with the outermost portion of the external circumferential periphery of said body;
(e) said grooves being wider than the adjacent outermost portions of the external circumferential periphery of said body.

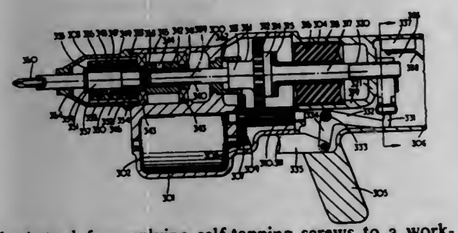
3,349,650
DUAL PIVOTAL WRENCH
Howard Wright, 4249 SW. 62nd Ave., South Miami, Fla. 33143
Filed Aug. 16, 1966, Ser. No. 572,777
4 Claims. (Cl. 81—13)

1. A dual pivotal wrench for locking a pair of parallel co-planar spaced fastener heads or nuts comprising a pair of arms of predetermined length with each one thereof terminating in a like wrench means,
a cylindrical stud means secured through each of said arms at the end opposite each said wrench means for retaining each of said arms in adjacent relation and permitting relative oscillation of one of said arms with respect to the other about the axis of said stud means within a predetermined angle,
each of said arms formed to terminate in an open cylindrical cavity coaxial with said axis and each said cavity in an opposite side of each said arm in facing relation with each other,
each said wrench means positioned on each of said arms for substantially co-planar movement normal said axis



when said arms are oscillated whereby the engagement of each said wrench means with each of said pair of fastener heads or nuts respectively will prevent the rotation thereof, a torsion spring positioned around said stud and extending into each said cavity with said spring biased between said arms for urging one of said arms in opposite direction with respect to the other said arm.

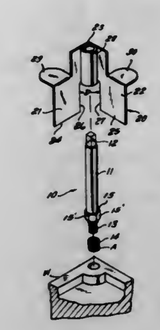
3,349,651
TOOL FOR PIERCING AND THREADING A WORKPIECE
John H. Turnbull, Kings Heath, Birmingham, and Alexander B. Watt, Handsworth, Birmingham, England, assignors to G.K.N. Screws & Fasteners Limited, Birmingham, England, a British company
Filed Sept. 20, 1965, Ser. No. 488,325
Claims priority, application Great Britain, Sept. 10, 1965, 38,712/65
11 Claims. (Cl. 81—52.3)



1. A tool for applying self-tapping screws to a workpiece, comprising a body, a screw-driver bit rotatably and slidably mounted in said body, an electric motor within the body for rotating said bit, an impact member slidably mounted within said body, and means operated by said electric motor for driving said impact member into engagement with said screw-driver bit to deliver an impact causing the screw-driver bit to slide in the body.

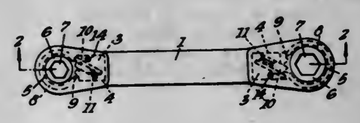
3,349,652
ALIGNMENT MEMBER FOR INSERT DRIVER TOOL
Richard K. Cromwell, Dover, N.J., assignor to Groov-Pin Corporation, Ridgefield, N.J., a corporation of New York
Filed May 24, 1966, Ser. No. 552,547
4 Claims. (Cl. 81—53)

1. A jig for an insert driver device of the type having a cylindrical shank with a threaded insert receiver at one end, said driver including an insert abutment member rotatably mounted on said shank adjacent said threaded portion and a torque transmitting member at the other end, said jig comprising a sheet metal body including a pair of leg members disposed at an angle with respect to each other, said leg members being joined at upper portions by a common fold line coincident with the plane of intersection of said members, the lower terminal edges of said member defining co-planar foot portions, the plane of said foot portions being normal to the planes of said leg members, the inner side walls of said leg members,



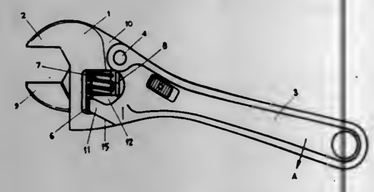
adjacent the lower portions thereof, terminating a spaced distance outwardly of said fold line, thereby to define between said side walls a central clearance area in said body, cylindrical guide means fixed to said leg members inwardly of said fold line, the axis of said guide means being parallel with said fold line, the lower terminal end of said guide means being disposed a distance above said foot portions, said guide means forming a bearing for said shank of said insert driver.

3,349,653
RATCHET SPANNER
Arnold Kaufman, London, Alfred Garrett Dunn, Enfield, and Sidney George Wright, Hollingbury, near Brighton, England, assignors to Leytool Limited, Leyton, England, a British company
Filed July 12, 1966, Ser. No. 564,560
Claims priority, application Great Britain, July 13, 1965, 29,609/65
1 Claim. (Cl. 81—60)



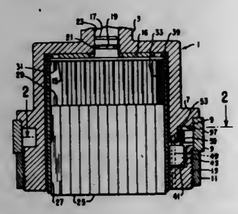
A double ended ratchet spanner comprising a handle formed in two like halves split about a plane at right angles to the axis of rotation of the nut or bolt engaging member of the spanner, at least one protuberance upon one half of the handle, a recess which houses a pawl and spring means, one end of the pawl engages the teeth upon the periphery of the nut or bolt engaging member, wherein the improvement consists in that the recess which houses the pawl and spring means is in the protuberance, registering holes are provided in the halves for receiving fastening means, and the handle is made of synthetic resin each half of which is provided with a pair of snap-on joints which hold the halves together.

3,349,654
COMBINED SPANNER AND RATCHET WRENCH
Simon Nils Nordgren, 14 Centralvagen, Rimbo, Sweden
Filed Sept. 29, 1965, Ser. No. 491,264
Claims priority, application Sweden, Feb. 3, 1965, 1,400/65
7 Claims. (Cl. 81—126)



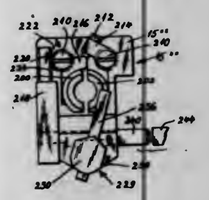
1. A combined spanner and ratchet wrench comprising a spanner head having a stationary jaw and a movable jaw, a handle pivotally mounted to said spanner head for movement about a pivotal axis, means for adjusting the movable jaw relative to said stationary jaw to set the spanner opening including a rack on the movable jaw, and a screw means engaging said rack, the axis of said screw means being located to one side of said pivotal axis of said handle, means mounting said screw means for axial displacement, means for locking said screw means in a working position thereof including a member connected to said handle for movement therewith and a spacer positioned in contacting relation between said member and said screw means when said handle is in a position to lock said spacer and said screw means and means fixing said spacer against rotation about the axis of the screw means, said spacer and said member having cooperating contact surfaces so shaped that in said locking position the effective line of the force resultant which is active between said cooperating contact surfaces passes sufficiently close to the said pivotal axis of said handle so that, at most, only an insignificant amount of torque may act on said handle to pivot the same about its pivotal axis when the spanner opening is being set by turning the screw means, said cooperating contact surface of said spacer forming a ridge extending transversely substantially in parallel with the pivotal axis of said handle, and said member having a recess corresponding in shape to said ridge.

3,349,655
WRENCH HAVING A BUNDLE OF RODS INDIVIDUALLY RETRACTABLE TO CONFORM TO A VARIETY OF FASTENER CONFIGURATIONS
William N. Locke, 25 Berkshire Road, Newtonville, Mass. 02160
Filed June 24, 1966, Ser. No. 560,330
5 Claims. (Cl. 81—185)



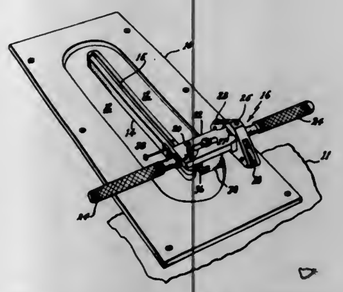
1. An adjustable tool, comprising a bundle of rods, a girdle circumferentially spaced about said bundle, a chuck recessed to receive said girdle and said bundle, resilient means disposed between said girdle and one end of each of said rods to urge said rods outwardly from said chuck, and means connected to said chuck for applying torque to said girdle, whereby when the end of said bundle opposite said resilient means is pressed into engagement with the head of a fastener shaped to receive a torque applying tool the protruding rods assume a complementary shape and torque applied to said chuck will be applied to the fastener.

3,349,656
LATHE CUT-OFF DEVICE
Joseph B. Plevyak, 19 Jefferson St., Newton, N.J. 07860
Filed Feb. 17, 1964, Ser. No. 345,200
4 Claims. (Cl. 82—101)



1. A shave tool assembly for cutting off burrs from the back end of a work piece, said tool comprising a plate-like body, means radiating from one side thereof for detachable connection to a turret lathe, a pair of opposed spaced chuck jaws pivotally mounted on the body adjacent the top thereof, a pinion associated with one of said jaws, a shaft rotatably mounted in the body, a knife member carried by said shaft, a slidable rack bar meshing at one end with said pinion, and means for simultaneously moving said rack bar and said knife member, said moving means being adapted to be actuated by a moving part of the turret lathe.

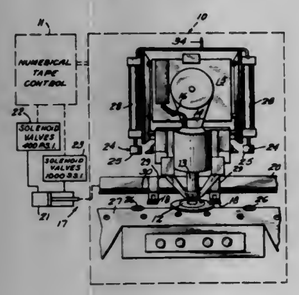
3,349,657
THIN FILM STRIP LINE FABRICATION
Raymond J. Goetz, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 4, 1964, Ser. No. 342,578
2 Claims. (Cl. 83—5)



1. An apparatus for use in the manufacture of thin film strip lines on a metallic coated substrate comprising, means for clamping said substrate, said means for clamping having a guide slot therein oriented in a predetermined pattern, and a cutting tool, said cutting tool comprising a body portion, a cutting head adjustably secured to said body portion for horizontal positioning therealong, said cutting head being formed of a 90° edge with slots therein, the slots corresponding to the width of the strip lines, a

pin mounted for vertical adjustment in said body adjacent one end of said body, said pin being adapted to engage said guide slot, and vertically adjustable means for engagement with said guide plate, said last-mentioned means being mounted on said body adjacent its other end.

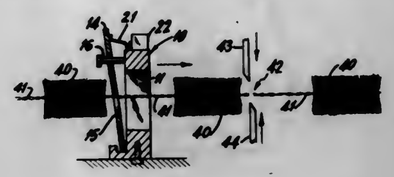
3,349,658
WORKPIECE POSITIONING SYSTEM
John A. Johns, Kenmore, and Arthur K. Schott, Clarence, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 502,143
14 Claims. (Cl. 83—71)



10. A device for positioning a workpiece in, and controlling operation of, a punching machine, comprising in combination:
(a) a support bar adapted to be moved with respect to the machine tool;
(b) pressurized-fluid actuator means connected to said support bar for moving it in at least one axis;
(c) clamp means carried by said support bar for grasping the workpiece to effect movement thereof with said support bar;
(d) power-driven means connected to said clamp means for opening and closing it;
(e) power-driven lock means adapted to be carried by a fixed portion of the machine tool for temporarily locking the workpiece in whatever position it may be disposed;
(f) a punch control circuit;
(g) fluid-pressure responsive control means responsive to substantially the maximum normal fluid pressure which can build up in said pressurized-fluid actuator means in any stationary position, and operative to tentatively and jointly control locking by said power-driven lock means, unlocking by said power-driven lock means, clamping by said power-driven means, and punching by said punch control circuit; and
(h) control means for disabling any predetermined three of said locking, said unlocking, said clamping, and said punching when tentatively operated by said fluid-pressure responsive control means.

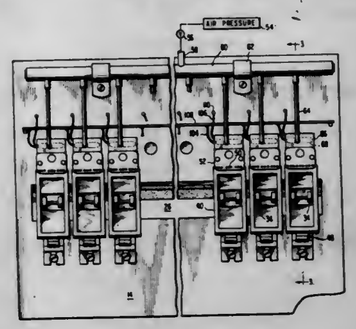
3,349,659
BRUSH SENSING MECHANISM
Joseph T. Gelardi, Yonkers, N.Y., assignor to American Technical Machinery Corporation, Mount Vernon, N.Y., a corporation of New York
Filed Oct. 28, 1965, Ser. No. 505,508
4 Claims. (Cl. 83—371)

3. In a brush making machine in which bristles are deposited between a pair of wires and locked in place by imparting a twist to the wires to form a twisted wire product and the twisted wire product then severed at a chopping station, a brush sensing mechanism comprising a supporting frame, a plate pivotally mounted to said frame along one edge thereof and having an aperture therein to allow the passage therethrough of a twisted wire brush, the size of the aperture being smaller than the diameter of the twisted wire brush but sufficient to allow the brush bristles to flex their way through the aperture and pivotally move the plate, stop means associated with said frame for limiting the pivotal travel of said plate, and a switching element associated



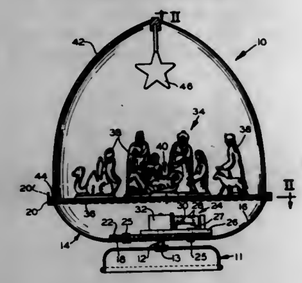
with said frame which projects into the pivotal path of said plate and biases the plate in the open position, said switching element being coupled to an actuating circuit controlling the operation of the chopping station, such that when a twisted wire brush passes through the aperture of the pivotally mounted plate, said plate is caused to move against said switching element and actuate the chopping station.

3,349,660
PNEUMATICALLY OPERATED CONTROL MEANS
Paul A. Klann, P.O. Box 2398, Waynesboro, Va. 22981
Filed Jan. 19, 1967, Ser. No. 617,750
12 Claims. (Cl. 84—90)



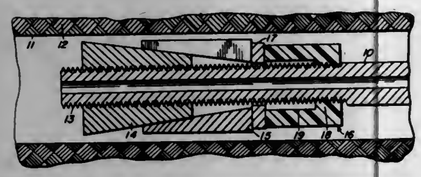
1. A pneumatically operated control means comprising; support means, a control element movably mounted on said support means, means for holding said control element in either of two positions, a pair of air bag motors carried by the support means adjacent the control element so that expansion of one air bag motor will cause movement of the control element in one direction and expansion of the other air bag motor will cause movement of the control element in the other direction, a controlled source of air pressure for producing a pulse of air pressure only if it is desired to operate said control element, means providing closed paths of fluid communication between the controlled air pressure pulse source and the air bag motors, and electromagnetically operated valve means in the closed paths of fluid communication for applying the pulse of pressure to one or the other of the air bag motors.

3,349,661
REVOLVING SCENIC MUSIC BOX
Fred H. Searls, Bryan, Ohio, assignor to The Ohio Art Company, Bryan, Ohio, a corporation of Ohio
Filed June 30, 1966, Ser. No. 561,789
3 Claims. (Cl. 84—94)



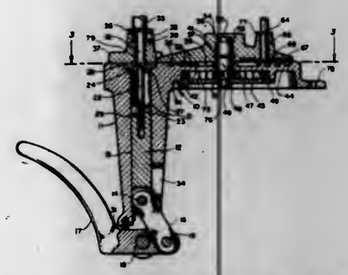
1. A revolving music box comprising:
(a) a pedestal means,
(b) a thin walled dish-shaped sound emitting member rotatably attached to said pedestal means,
(c) a relatively thick sounding board attached to a central section and in said dish-shaped sound emitting member,
(d) a sound generator mounted on said sounding board,
(e) a motor means in said dish-shaped sound emitting member geared to said sound generator and to said pedestal for driving said sound generator and rotating sound emitting member,
(f) a mounting board covering said dish-shaped sound emitting member and said generator for supporting a display, and
(g) a transparent cupola housing said display and mounted over the topside of said mounting board.

3,349,662
ROTATIVELY-SET ANCHOR ASSEMBLY FOR A MINE BOLT
Chester L. Williams, 347 Greenbriar SE., Grand Rapids, Mich. 49506
Filed June 23, 1965, Ser. No. 466,368
2 Claims. (Cl. 85—74)



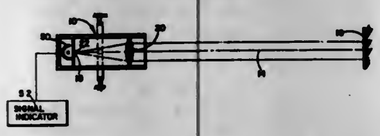
1. In combination with a rock bolt having a threaded inner end portion and an anchor device including a cone-shaped expander in threaded engagement with said end portion, and also including an expansible shell surrounding at least a portion of said expander whereby axial movement of said expander toward the outer end of said rock bolt in response to relative rotation between said rock bolt and said expander will induce expansion of said shell, a setting device for said anchor comprising:
an abutment member in threaded engagement with said inner end over a minor portion of the length of said abutment member, and normally bearing against a surface axially fixed with respect to the axially outer transverse face of said shell, the major portion of the length of said abutment member lying proximate to said shell and having an internal diameter exceeding that of said bolt, said abutment member having limited axial resistance to movement with respect to said threaded end portion during rotation of said rod with respect to said expander, said limited resistance being substantially less than the tensile strength of said rod.

3,349,663
PRIMER RELOADER
Max E. Slee, Denver, Colo. (3957 W. Grand Ave., Littleton, Colo. 80120)
Filed June 25, 1965, Ser. No. 466,923
2 Claims. (Cl. 86—38)



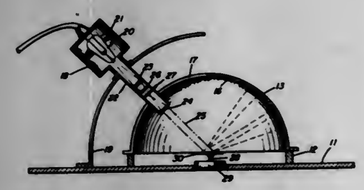
1. A primer feed and reloading mechanism for use in placing new primers in expended shell cases comprising a body providing an upper receptacle having a supporting floor and adapted to receive a quantity of loose primers, a work station on said body disposed outwardly from said upper receptacle, a guide ridge raised above said supporting floor and wound about itself in spaced apart relation to provide an outwardly expending spiral passageway communicating with said receptacle and work station, a cap member rotatably mounted on said body in position above said receptacle for holding said primers within said receptacle and in said passageway, a follower element rotatably mounted on said cap in eccentric position with respect to the center of rotation for said cap, a follower pin on said follower element for extension downwardly into said receptacle and passageway for engagement behind primers in said passageway, and means for rotating said cap member to move said follower pin progressively along said passageway and toward said work station whereby said primers are delivered from said receptacle to the outwardly positioned work station.

3,349,664
OPTICAL COLLIMATION DEVICE
Charles W. Kohlenberger, Fullerton, Calif., assignor to North American Aviation, Inc.
Filed May 22, 1962, Ser. No. 196,743
4 Claims. (Cl. 88—14)



1. In combination:
an alignment instrument including an optical system having an optical axis, a focal plane and a focal point;
a device comprising a disc of transparent material, a pair of intersecting grooves positioned in one surface of said disc, a light passing aperture at the intersection of said grooves, and an opaque layer on the ungrooved smooth portions of said one surface, said disc being positioned with said one surface in said focal plane, with the intersection of said grooves at said focal point;
means for side-lighting said disc whereby said grooves act as the object of said optical system;
means for collimating the beam of light from said grooves and for projecting said collimated beam of light from said alignment instrument;
a mirror fixedly mounted substantially perpendicular to said optical axis and substantially perpendicular to said collimated beam of light whereby said mirror reflects said collimated beam of light, said means for collimating being operative to image said reflected collimated beam of light onto the focal plane of said alignment instrument; and
means for moving said alignment instrument so that the image of said reflected collimated beam of light may be aligned with said grooves in said disc.

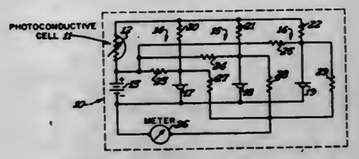
3,349,665
CHARACTERIZING LIGHT REFLECTING PROPERTIES OF A SURFACE
Gene Edward Grosheim, Cincinnati, Ohio, and Clark Thomas Hicks, Highland Heights, Ky., assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed May 19, 1964, Ser. No. 368,577
2 Claims. (Cl. 88—14)



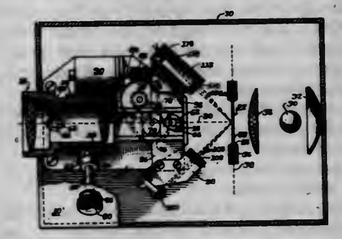
2. An apparatus for characterizing the light reflecting characteristics of a surface comprising a sample support, means to direct a beam of essentially parallel light onto the surface of a sample, and a diffusion dome, consisting of a transparent support having diffusion characteristics, over the sample support in such a position that the light impinges on the sample surface at the center of the dome, and the reflected light is diffused by the dome, so the intensity and quality of the reflected light in any direction is at once apparent.

3,349,666
FLASH EXPOSURE METER
John A. Baring, Golden, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,139
5 Claims. (Cl. 88—23)

1. In combination: a plurality of tunnel diodes, bias means connected to each of said tunnel diodes to establish a first stable operating point therefor on the low voltage portion of the characteristic curves thereof; a photoconductive cell adapted to be subjected to a flash of light, a plurality of impedance elements of increasing impedance magnitude; circuit means connecting said photoconductive cell to a plurality of parallel circuits, each of which includes in series connection one of said impedance elements and one of said tunnel diodes, said circuit means being effective upon said photoconductive cell experiencing a flash of light to apply a main current pulse to said parallel circuits of a peak magnitude proportional to the integrated quantity of light energy present in the pulse, and to apply individual current pulses through each individual one of said parallel circuits, which individual current pulses are of relative magnitudes as determined by the relative impedance magnitudes of said impedance elements, to thus trigger a number of said tunnel diodes to a second stable operating point on the high voltage portion of the characteristic curve, said number of tunnel diodes being proportional to the peak magnitude of said main current pulse; and voltage responsive means connected to each individual tunnel diode and providing a sustained output voltage of a magnitude proportional to the number of tunnel diodes which are triggered to said second stable operating point.

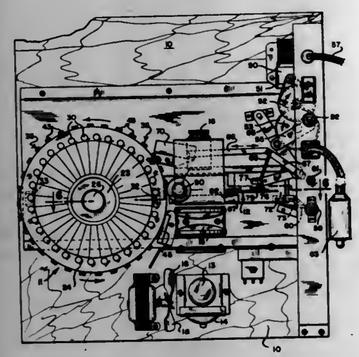


3,349,667
AUTO-FOCUS SLIDE PROJECTOR
Herman Levin, Glenview, and Eric K. Maxon, Palatine, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 12, 1965, Ser. No. 495,072
5 Claims. (Cl. 88—26)



1. Apparatus for the automatic focusing of a slide projector to compensate for "popping" of the film during projection wherein the film is illuminated from a light source and is projected along a projection axis by a projection lens with its focal plane located at the film plane comprising:
light means adapted for movement with the projection lens for directing a constant light beam onto the film along an axis at an angle to the normal film plane to be constantly reflected from the film along an axis whose position changes with the changes of film position;
light detecting means including one light activated silicon controlled rectifier also adapted for movement with the projection lens for intersecting said reflected light and for generating an output which is representative of the light intersected;
unidirectional DC motor means connected in parallel with said light activated silicon controlled rectifier, operably connected to the projection lens, and adapted to move said projection lens in a longitudinal direction parallel to the projection axis of the projector thereby shifting the focal plane of the projection lens to bring it into coincidence with the film plane; and
control means electrically connected to the output of said light detecting means for controlling said unidirectional DC motor means.

3,349,668
FILM SLIDE PROJECTOR
Carl E. Zweidinger, Richmond Hill, N.Y., assignor to Camera Optics Manufacturing Corp., Long Island City, N.Y., a corporation of New York
Filed Mar. 16, 1965, Ser. No. 440,224
13 Claims. (Cl. 88—27)



1. In a film slide projector wherein slide holders are stored in respective slots in a rotatable magazine, a slide changing mechanism for displacing successive holders between the magazine and optical projecting means including a frame, and a carriage on the frame biased toward the magazine and reciprocable in a path extending past the projecting means toward the magazine, the improvement in combination therewith comprising:

(a) a reciprocable indexing arm on the frame for rotating the magazine to index successive slots into alignment with the carriage path,

(b) carriage reciprocating means pivotally secured to the indexing arm,

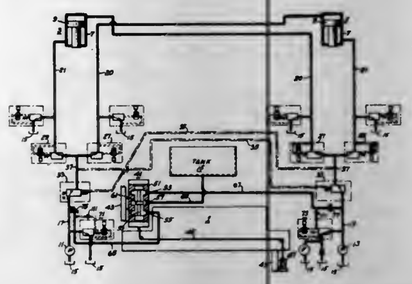
(c) lost motion connection means joining the carriage reciprocating means to the carriage to permit the indexing arm to rotate the magazine after the carriage is stopped at a point nearest the magazine,

(d) coupling means on the carriage to be engaged and disengaged by successive holders when the magazine is indexed and which is disposed to locate an engaged holder operatively within the projecting means when the carriage is remote from the magazine, and

(e) drive means for reciprocating the indexing arm and carriage reciprocating means.

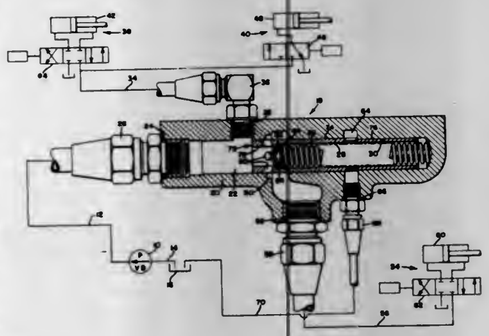
3,349,669
RAM ATTITUDE CONTROL SYSTEM
Rolland A. Richardson, 1034 Taylor Ave., Alameda, Calif. 94501
Filed Apr. 20, 1966, Ser. No. 543,864
10 Claims. (Cl. 91—171)

1. A ram attitude control system for a hydraulically powered machine such as a press brake, shear, or the like, having a ram of substantial length, a hydraulic motor at each end of the ram, including a cylinder and a drive piston therein, a pump for each of said hydraulic motors and tank means for supplying liquid to said pumps, a discharge line from each of said pumps in flow connection to one of said hydraulic motors, and means responsive to deviation of said ram from a desired prevailing attitude, for continuously and non-proportionally unbalancing the hydraulic flow to said hydraulic motors, in the direction of restoring said ram to said desired prevailing attitude, to effect a larger corrective unbalance



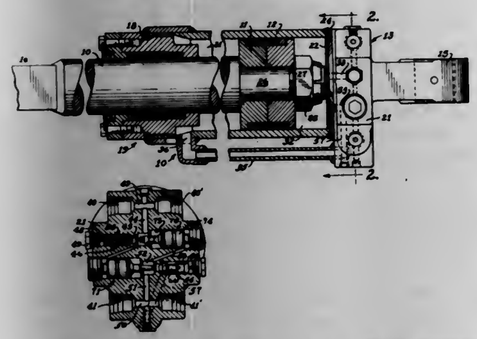
than obtainable with conventional proportional unbalancing under comparable conditions.

3,349,670
HYDRAULIC CONTROL VALVE
James M. Bahl and Robert E. Haight, Waterloo, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,882
3 Claims. (Cl. 91—412)



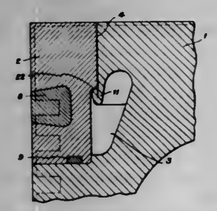
1. In a hydraulic system having a source of fluid pressure including a discharge line and having a plurality of hydraulic motors, a priority-type control valve for providing priority to the fluid pressure for at least one of said motors and comprising: a valve body having a cylindrical bore with two different diameters forming two bore portions, the discharge line being connected to the larger diameter bore portion; a first conduit means connecting the larger bore portion to the priority motors; a second conduit means connecting the larger bore portion to the secondary motors; a piston, including two piston portions of different diameters respectively conforming to the different bore diameters and axially slidable therein between a first position wherein it closes the secondary conduit means and a second position wherein it establishes fluid communication between the discharge line and the secondary conduit means; a spring means operably engaging said piston and biasing it toward its first position; and a pressure sensing conduit means interconnecting the two bore portions on opposite sides of said piston, substantially equalizing the fluid pressure on opposite sides of said piston, whereby the difference between the axial forces exerted by the fluid pressure on the larger piston portion in one direction, and the combined axial forces in the opposite direction exerted by the fluid pressure acting on the smaller piston portion and the spring, move the piston between its alternate positions.

3,349,671
HOLDING VALVE WITH THERMAL RELIEF
Robert L. Hoffman, St. Joseph, Mich., assignor to Benton Harbor Engineering Works, Incorporated, a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,463
9 Claims. (Cl. 91—420)



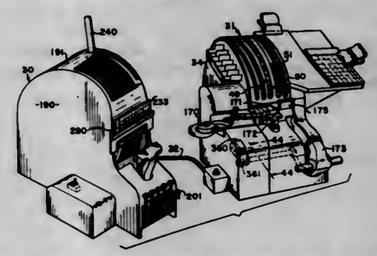
1. In a holding valve assembly for a fluid actuator, the combination comprising: a valve member having first passage means adapted to be connected to a fluid return line, second passage means in said valve member adapted to be connected to one side of the actuator, a movable valve member responsive to pressure in said first passage means for providing communication between said first and second passage means, said movable valve member normally blocking communication between said first and second passage means in response to a relatively lower pressure in said first passage means, means for selectively opening said valve member to permit fluid flow from said second passage means to said first passage means, and relief valve means in said movable valve member responsive to excessive pressure in said second passage means for providing communication between said second and first passage means.

3,349,672
PISTON FOR INTERNAL COMBUSTION ENGINES
Alfred Meier, Nellingen uber Esslingen, Eberhard Kohl, Stuttgart, and Eberhard Rossmann, Schmiden, Germany, assignors to Mahle Komm.-Ges., Stuttgart-Bad Cannstatt, Germany
Filed Oct. 4, 1965, Ser. No. 492,427
Claims priority, application Germany Nov. 25, 1964, M 63,243
3 Claims. (Cl. 92—231)



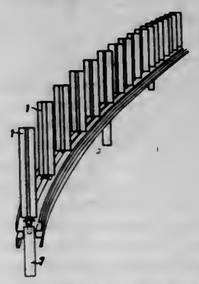
1. In an internal combustion engine piston having a piston head of reduced area in the piston ring zone, a collar in said zone, a hollow chamber between said piston head and said collar, a seam formed between a portion of said head and said collar and a charged particle beam weld in the seam between said piston head and said collar, the improvement comprising a projection of the seam portion of said piston head in the direction of said seam extending beyond said weld and into the interior of said chamber, said projection having such a weak wall as to exclude stresses therein.

3,349,673
LAUNDRY LISTING AND MARKING
Vincent P. Braun, Thomas Patell, and Philip N. Braun, Syracuse, N.Y., assignors to Tag-O-Matic Machine Co., Inc., Syracuse, N.Y., a corporation of New York
Filed Mar. 9, 1965, Ser. No. 438,342
15 Claims. (Cl. 93—88)



1. In a system for listing and marking articles in a bundle of laundry, including a listing machine having type positioning means operable to position print type to printing position to print indicia relative to the kinds of articles in the bundle, and including means for printing on an invoice or the like such indicia, and a marking machine having a plurality of print type wheels, each movable from a normal position to a selected printing position for printing an identification indicia on an identification tag, one of said print wheels having type for printing the bundle number, said marking machine having tag affixing means operable to affix a printed tag to an article, the combination of an interlock for rendering said marking machine inoperable following the affixing of a tag to an article, and rendering said listing machine operable for listing another article and upon listing of said other article to render said listing machine inoperable, and said marking machine operable, and means operable upon printing the list to advance said bundle number type wheels to a different position.

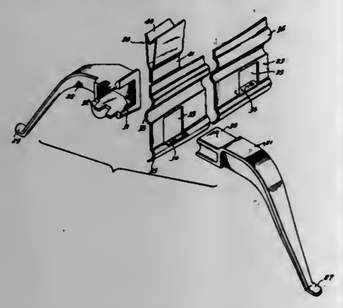
3,349,674
HEADLIGHT SHIELDING DEVICES
Walter Hutwelker, Waltrop, Germany, assignor to Eisen und Metall Aktiengesellschaft, Gelsenkirchen, Germany
Filed Sept. 27, 1965, Ser. No. 490,217
3 Claims. (Cl. 94—1)



1. In a headlight shielding device, for use in connection with a road carrying automotive traffic moving in opposite directions, a series of aligned shielding elements, the align-

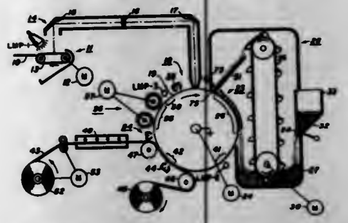
ment being parallel to a road reference line along the longitudinal dimension of the road, support means extending at a level above the road surface and including a series of upright shafts, one for each shielding element, each shielding element comprising a thin elongated curved lamella formed of a hollow extruded shape of aluminum, comprising a central section defining a hollow circular recess about said longitudinal axis, said central section being mounted telescopically on a shaft rotatably about its longitudinal upright axis, whereby each lamella may be turned substantially perpendicularly to the direction of impact of the rays of the automotive headlights, and each lamella further comprising two opposite arcuate sections integrally connected to said central section.

3,349,675
TRANSVERSE JOINT ASSEMBLY FOR CONCRETE PAVEMENTS
Elmer J. Webb, Syracuse, N.Y., assignor to The Brewer-Fitchener Corporation, Cortland, N.Y., a corporation of New York
Filed July 30, 1965, Ser. No. 475,945
6 Claims. (Cl. 94—8)



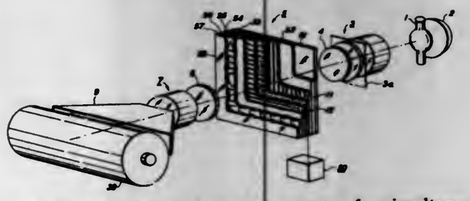
1. A load supporting assembly for use in a transverse concrete joint assembly for transferring the load between the ends of two adjacent concrete pavement sections separated by a crack or recess comprising a pair of load supporting arms each having a first load transferring end of relatively greater cross section and tapering in cross section to a second end of relatively smaller cross section and cooperable to be embedded in the ends of two adjacent concrete pavement sections in alignment with each other and parallel to the longitudinal axes of the pavement sections with the first ends in engagement with each other and the second ends curved downwardly for supporting engagement with the ground, said first ends having complementary fastenings in the form of a sleeve on one support which is split and having a portion which can be shifted inwardly and outwardly to adjust the tightness of the fit and a lug on the other support having telescopic engagement with each other to provide for relative longitudinal adjustment and shifting while limiting relative transverse movement, an elongated center plate cooperable to be arranged in a vertical plane between the ends of the respective ends of adjacent concrete pavement sections and having a plurality of apertures extending therethrough of relatively greater size than the size of said other support arm yet of a size smaller than the size of said one support arm so that said plate is supportingly receivable on the telescopically joined arms to a position at the connection whereat the center plate abuts the sleeve end surface, tab means on said center plate at said apertures capable of pivotal movement thereby to reduce the size of aperture openings and releasably secure substantially without vertical movement the center plate to said load supporting arms.

3,349,676
XEROGRAPHIC DEVELOPMENT ELECTRODE APPARATUS
Frederick W. Hudson, West Henrietta, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 2, 1965, Ser. No. 445,133
5 Claims. (Cl. 95—1.7)



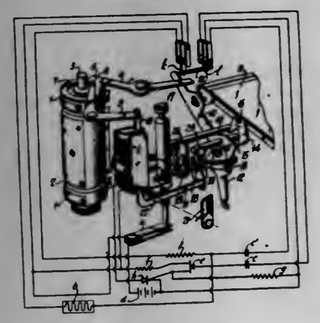
1. In a xerographic reproduction unit including a xerographic plate, means to form an electrostatic latent image of copy on the surface of said plate and developing apparatus for delivering two-component cascade developer to the plate surface for cascade development of the latent image thereon, a development electrode apparatus comprising in combination:
(a) a plurality of flexible, elongated electrodes;
(b) means to support said electrodes uniformly spaced apart and freely suspended substantially parallel in overlying contact with the developer stream cascading on the surface of said plate; and,
(c) means to connect said electrodes to a reference potential.

3,349,677
ALPHA NUMERIC CHARACTER PRINTER
James E. Young, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 14, 1964, Ser. No. 418,024
3 Claims. (Cl. 95—4.5)



1. An alpha-numeric character generator for simultaneously exposing a plurality of characters to a light sensitive medium comprising:
a source of plane polarized light
a light sensitive recording medium
an array of alpha-numeric characters on a sheet of material positioned between the light source and the light sensitive medium
the sheet of material containing alpha-numeric characters having light transmitting characteristics whereby light transmitted from the light source to the light sensitive medium is formed into the alpha-numeric configurations
said array of alpha-numeric characters comprising rows of characters of identical shape and columns of characters of a plurality of shapes
a light valve positioned adjacent to the array of alpha-numeric characters and including
an electro-optic crystal capable of operation in a longitudinal mode
a transparent member on each side of the crystal and having parallel conductive transparent bands on the surface thereof and in contact with the crystal
the transparent members being oriented with respect to each other so that the parallel bands on one member are substantially normal to the bands on the other member
a polarization analyzer element positioned adjacent to the transparent member on the side of the crystal opposite to the light source
the plane of transmission of the analyzing element being different from the plane of polarization of the light source
and means to apply electrical signals to the conductive bands
input logic means connected to said means to apply electrical signals to said conductive bands to thereby simultaneously activate areas of the crystal corresponding to the location of specific characters in the array
and optical means to image the characters of the alpha-numeric array on the light sensitive medium in line.

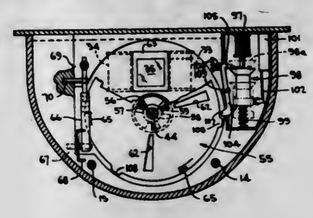
3,349,678
AUTOMATIC LIGHT RESPONSIVE SHUTTER TIMING MECHANISM
Minoru Suzuki, Suginami-ku, Tokyo-to, and Naoyuki Uno, Urawa-shi, Japan, assignors to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan
Filed Nov. 23, 1964, Ser. No. 413,121
Claims priority, application Japan, Nov. 28, 1963, 38/63,459
6 Claims. (Cl. 95—10)



1. In combination with a camera shutter including control means for successively opening and closing said shutter comprising a voltage source, a capacitor charging timing network including at least one capacitor, and a first resistor and a photoconductor selectively connected in said timing network, means for connecting said timing network across said voltage source, means including a solenoid controlled by said timing network, means responsive to a first actuation of said solenoid when said first resistor is connected in said timing network for opening said shutter and connecting said photoconductor into said timing network, and means responsive to a second actuation of said solenoid when said photoconductor is connected in said timing circuit for closing said shutter.

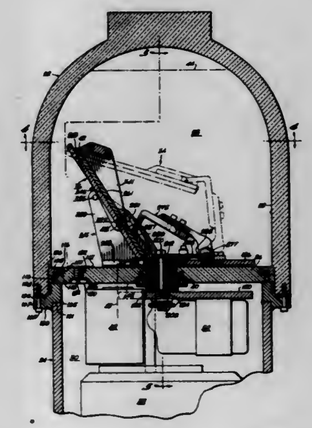
3,349,679
PHOTO IDENTIFICATION APPARATUS
Joseph A. Lohman III, 1200 Powhatan St., Alexandria, Va. 22314
Filed Apr. 7, 1965, Ser. No. 446,250
11 Claims. (Cl. 95—11)

1. A photo identification apparatus for photographing a person and his surroundings in a confined space that is entered through a door comprising, in combination, a camera having a wide-angle lens directed toward said space, said camera being located on one wall of said confined space, and means for tripping the shutter of said camera for taking a picture, said means including a circuit and a switch actuated by said door for activating



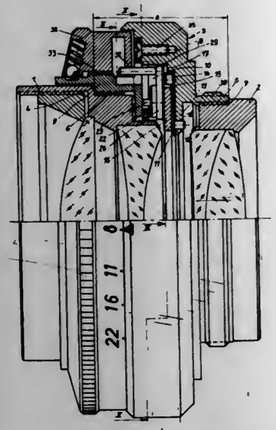
said circuit in response to the sequence of first opening and then closing said door to insure that said person is in position completely within said confined space when the picture is taken.

3,349,680
UNDERWATER SCANNING DEVICE
Johann F. Hellenkamp, 7401 SW. 57th Terrace, Miami, Fla. 33143
Filed June 28, 1966, Ser. No. 561,164
10 Claims. (Cl. 95—11)



1. An underwater scanning device comprising: a housing including, a transparent portion for viewing an object therethrough and a transparent septum means connected in the body in fluid-tight relation dividing the body interior into a fluid-tight mirror chamber including said transparent portion and a camera chamber, said septum defining a horizon plane between said mirror and camera chambers; a camera in the camera chamber including, a lens system, means mounting the camera with the lens system directed toward the mirror chamber and having a lens view line extending through the septum into the mirror chamber; a mirror assembly in the mirror chamber including a reflector means directed toward said housing portion and means supporting the reflector means such that the reflector means is at all times visible along the lens view line so that the camera lens views an image reflected from the reflector means through the transparent septum at an angle of reflection, such that the image seen is outside of the body; said mirror chamber being filled with a liquid of substantially the same density as that of the liquid in which photographs are to be taken and submerging the reflector to minimize distortion.

3,349,681
PHOTOGRAPHIC RECORDING LENS SYSTEM WITH FULLY AUTOMATIC DIAPHRAGM OPERATION
Ferdinand Kellner, 8941 Hart 14¼, near Memmingen, Bavaria, Germany
Filed Aug. 10, 1964, Ser. No. 388,496
Claims priority, application Germany, Sept. 14, 1963, N 23,750
3 Claims. (Cl. 95—64)



1. In a photographic camera, threaded coaxial front and rear lens sets having central openings; and an automatic diaphragm including an annular body disposed between and comprising front and rear threads respectively meshing with and being separable from said front and rear lens sets, said body having an annular recess extending radialy inwardly of said front threads close to said openings and radially outwardly beyond said front threads, stop means provided on said body and abutting against said lens sets to fix the axial spacing between said lens sets, the distance between said stop means being 20 mm., a diaphragm ring rotatably mounted in said recess, freely oscillating blades articulately connected with said body and movable by said diaphragm ring between open and closed positions, and actuating members provided in said recess for rotating said diaphragm ring, said actuating members including resilient means for biasing said diaphragm ring in a direction to move said blades to closed position and spring-biased lever means engageable with said diaphragm ring to hold said blades in open position, and wire release means for moving said lever means.

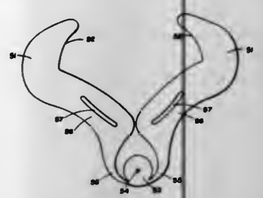
3,349,682
ONE-PIECE EXPOSURE-CONTROLLING STRUCTURE
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 19, 1964, Ser. No. 404,887
1 Claim. (Cl. 95—64)

In a camera having a picture-taking axis along which film-exposing light is received, and having at least one movable element positionable in accordance with the intensity of scene luminance, the improvement comprising:

a one-piece exposure controlling structure of semi-rigid material, said structure comprising a mounting portion being attached to said camera to support said unitary structure therein,

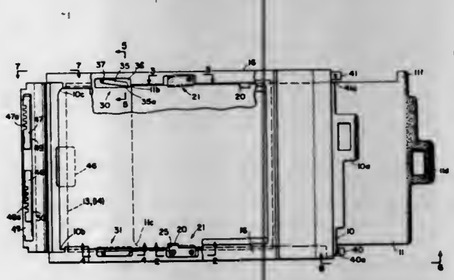
a pair of aperture-forming vanes positioned to regulate light passing along said axis,

a pair of resiliently flexible portions for biasing each said vane toward a predetermined limiting position, and at least one drive portion coupled to said movable element for movement therewith, said vanes being driven against said bias to any one of a plurality of positions in response to the movement of said drive portion, whereby the aperture formed by said vane varies as a function of scene lumi-



nance, said structure being formed in a general U-shape and said aperture-forming vanes being oppositely disposed on the legs of said U-shaped structure, and wherein said drive portion is comprised of two oppositely disposed members contiguous to each said vane, each said drive member being formed with a slot therein for receiving said movable element when said drive members are placed in overlapping relationship.

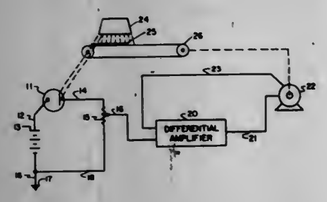
3,349,683
PHOTOGRAPHIC CUT-FILM OR PLATE HOLDER
William Castedello, Plainville, Conn., assignor to The Kalart Company Inc., Plainville, Conn., a corporation of New York
Filed June 3, 1965, Ser. No. 461,048
3 Claims. (Cl. 95—66)



1. A photographic cut film or plate holder, said holder comprising a substantially rectangular casing for a cut film or a plate to be photographically exposed, said casing being closed at one end and open at the other end for receiving a slide, a slide insertable into said open end of the casing, said slide being differently marked on opposite sides for visual indication by the marking on the side facing outwardly whether a film or plate in the holder has been exposed, first self-locking means on the casing for locking a slide inserted into the casing with the side thereof indicating an unexposed slide or plate facing outwardly, said locking means including release means actuatable by engagement with a wall portion of a camera in which the holder is inserted, actuation of the release means releasing said first locking means, releasable stop means on the casing biased to move into a slide-locking position upon withdrawal of the slide from the casing, said stop means

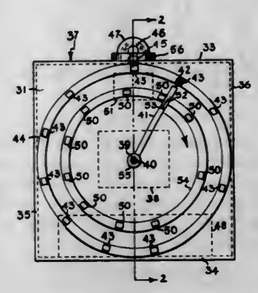
blocking reinsertion of the slide without reversal thereof in one position of the holder but releasing themselves against said bias for reinsertion of the slide without reversal when the holder is placed in another position, the stop means including a blocking arm mounted freely pivotal in a recess of the holder casing along the insertion path of the slide and balanced in said one position of the holder to protrude into the path of the slide within the casing to block insertion thereof with the side of the slide indicating an unexposed film or plate facing outwardly and in said other position of the holder to pivot out of the insertion path of the slide, said slide having at its leading edge a rounded corner and a sharp corner, the rounded corner pivoting said blocking arm out of the slide path upon insertion of a slide and the sharp corner holding the arm in its protruding position, thereby blocking further insertion of the slide, said corners being so disposed that the rounded corner engages the arm and pivots the same out of its protruding position when the slide is reinserted in the reversed position in which the side of the slide indicating an exposed film or plate faces outwardly, and the sharp corner retains the arm in its protruding position, thereby stopping the slide when reinsertion is attempted without reversal of the slide; actuating means on the slide coacting with said stop means to release the same in any position of the holder for insertion of the slide when the same is reversed from the aforesaid position into the position in which the side indicating an exposed film or plate in the holder faces outwardly, manually releasable second self-locking means for locking the slide when reinserted in said reversed position, and marking means in the form of slots in a portion of the casing covering a film or plate inserted in the same, said marking means producing code markings on the film or plate upon exposure of the film or plate areas underlying the slots of the marking means.

3,349,684
COPYING MACHINE EXPOSURE CONTROL
Tenny D. Lode, Madison, Wis., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 26, 1964, Ser. No. 406,359
2 Claims. (Cl. 95—75)



1. An exposure control for copying machines of the type in which light sensitive material is passed by a light source including a variable speed drive motor operable to move a sheet of the material past the light source, said motor including electrical feed back means delivering a signal proportional to its speed, photoelectric cell means to sense light from the light source and to deliver an electrical signal proportional to light output of the source, and circuit means for controlling the speed of said variable speed motor, said circuit means including differential amplifier means receiving an electrical signal from said photoelectric cell and from said feed back means of said motor, said differential amplifier controlling the speed of said motor so that the feed back signal and the signal received from said photoelectric cell means reach a desired ratio.

3,349,685
PHOTOGRAPHIC TIMER AND METHOD OF TIMING PHOTOGRAPHIC TREATING PROCESSES
Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640
Filed Aug. 19, 1963, Ser. No. 302,902
32 Claims. (Cl. 95—89)

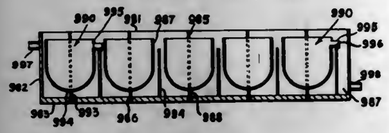


1. A process timer which is preprogrammed to the time schedule of a multistep photographic color developing process, which process comprises a series of treating steps A of differing lengths and alternating with said treating steps A a series of drainage steps B of relatively short duration, said timer comprising at least one track in which contact areas alternate with insulating areas, at least one countercontact adapted to travel over said contact areas in slideable contact, whereby the contact-giving surfaces of the contact areas are located in a plane which is approximately parallel to the plane in which said track is located, said contact areas and said countercontacts being part of at least one primary electrical circuit powered by an electrical power source, such that the engagement of a contact area and of a countercontact complete the primary circuit of which they are a part, and driving means adapted to bring about relative displacement of said tracks and countercontacts at an essentially constant rate, said treating steps A and drainage steps B being programmed on said track in alternation and in the sequence as they occur in said photographic process by giving said contact areas and said insulating areas differing lengths in the direction of relative travel of said countercontacts over the tracks, the lengths of said contact areas and of said insulating areas, respectively, corresponding in succession, to the duration of the individual treating steps A and of the individual drainage steps B in a sequence as they occur in the programmed process, such that either the contact areas or the insulating areas represent the treating steps A and the other kind of areas represent the drainage steps B, whereby the relative travel of said countercontact over said track brings about enagement and disengagement of the countercontact with said contact areas with the change of energization of the primary circuit at the begin and end of each treating step A and of each drainage step B.

3,349,686
PHOTOGRAPHIC TREATING APPARATUS
Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640
Filed Feb. 4, 1964, Ser. No. 342,459
13 Claims. (Cl. 95—93)

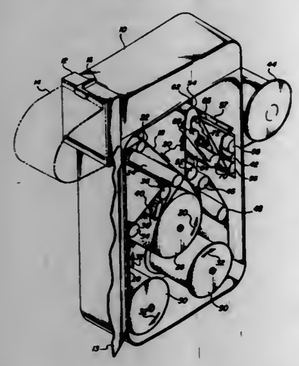
1. An apparatus for the treatment of photographic materials in a multiplicity of treating media, which apparatus comprises principally a compartmented bath, removably contained in compartments of said bath a multiplicity of photographic cylindrical treating vessels and washing vessels, said washing vessels having openings therein and

said treating vessels having no openings, said compartments having means forming openings therein, so that a unidirectional stream of a liquid medium passing through the compartments of the bath will follow an essentially vertical flow pattern, passing around the treating and



through the wash vessels, each of said cylindrical treating and wash vessels having sealing means cooperating with counter sealing means contained in the compartments of the bath so as to establish essentially liquid tight seals between the vessel and the compartments to help define liquid medium passageways.

3,349,687
DEVELOPER-PROCESSOR FOR PHOTOGRAPHIC WEB MATERIAL
Jerome S. Goldhammer, Barrington, Ill., assignor to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed May 8, 1964, Ser. No. 366,053
9 Claims. (Cl. 95—94)



1. Web processing apparatus for effecting the development of photographic materials comprising

housing means,

cassette mounting means affixed to said housing means,

developer drum means mounted interior of said housing means,

means interior of said housing for storing processing web material,

first guide means for conducting photographic material and processing web material to said drum means and for effecting sandwiching engagement of said materials thereon,

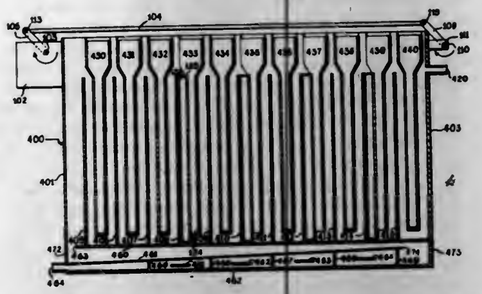
second guide means for stripping spent processing web material from said photographic material,

drive means for advancing along predetermined paths from said drum means said photographic material and spent processing web material,

plenum means interposed in said predetermined path of said photographic material from said drum means, said plenum means having one or more sides open and adapted to be closed by said photographic material to effect the impingement of drying air on said photographic material, and

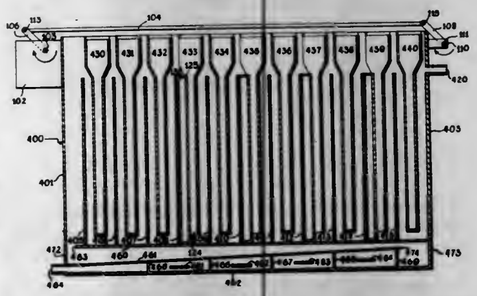
blower means for effecting the supply of air to said plenum means.

3,349,688
TEMPERATURE CONTROLLING PHOTOGRAPHIC BATH
Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640
Filed Feb. 3, 1964, Ser. No. 342,029
14 Claims. (Cl. 95—96)



1. A photographic bath, comprising a receptacle which is subdivided into a multiplicity of water tight compartments by at least one separatory wall and which comprises wide overflow passages between neighboring compartments at the top end of said separatory walls, at least some of said compartments being working compartments, each working compartment being adapted to removably receive a photographic treating vessel in sealing relationship by the provision of generally vertical counter sealing means along the generally vertical side walls of said working compartments, such that essentially liquid tight seal is established between the end walls of a treating vessel and the side walls of a compartment, when a treating vessel is inserted therein.

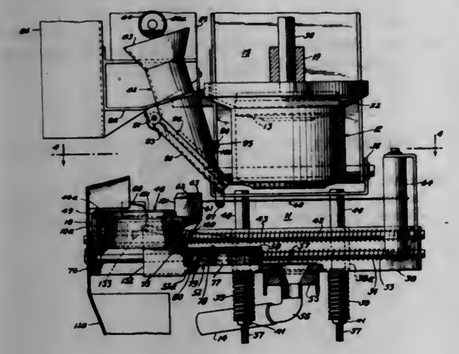
3,349,689
PHOTOGRAPHIC TREATING APPARATUS
Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640
Filed Mar. 9, 1964, Ser. No. 350,612
23 Claims. (Cl. 95—96)



1. An apparatus for carrying out multistep photographic treatments in a multiplicity of different treating solutions which apparatus comprises a bath which is subdivided by transversal separatory walls into a multiplicity of essentially water-tight working compartments side by side and removably contained in working compartments of said bath in sealing relationship, upright treating vessels having an essentially rectangular horizontal cross section, an overflow passage at the separatory walls and a horizontal passageway beneath said vessels, at least one

of the members, selected from the treating vessels and working compartments, having on their sides vertical sealing means for establishing a seal between these members upon the insertion of the treating vessel in a working compartment of said bath, such that temperature conditioning water, passing through the bath in the form of a wide unidirectional stream, successively circumflows, in a generally vertical direction, the treating vessels, flowing down on the upstream side, underflowing the vessel and flowing up on the downstream side of the vessel.

3,349,690
BEVERAGE BREWING APPARATUS
William Heier, Warminster, Pa., assignor to Rudd-Melikian, Inc., Warminster, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1964, Ser. No. 404,113
20 Claims. (Cl. 99—283)



1. A coffee brewing and dispensing machine comprising:

a hot water cylinder having an open bottom;

a piston reciprocable in said cylinder;

a container for holding ground coffee, said container having a filter floor-forming portion and a separate wall-forming portion, said portions being mounted for movement into and out of registry with said open bottom of the cylinder; said filter portion and said wall portion being constructed and arranged to form with the cylinder a coffee brewing chamber, when the parts are aligned; means biasing both portions of said container to a position out of alignment with said cylinder bottom; the wall portion of the container being capable of outward movement beyond that of the floor portion to a position where the spent coffee grounds may be discharged downwardly subsequent to a brewing operation; and

means movable with the wall portion for wiping the filter portion in its travel into and out of alignment with the cylinder bottom.

3,349,691
COFFEE-BREWING APPARATUS
Forrest L. Austin, Brooklyn Center, and Richard T. Cornelius, Minneapolis, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed June 22, 1965, Ser. No. 465,896
11 Claims. (Cl. 99—289)

1. Apparatus for making a coffee infusion from roasted ground coffee beans and water, comprising in combination:

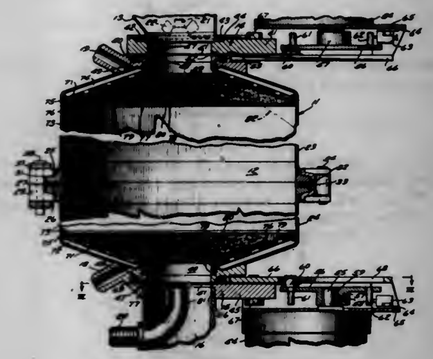
(a) a housing having a pressurizable brewing chamber of predetermined size receptive of a predetermined volume of ground coffee;

(b) a ground coffee inlet port disposed centrally at the top of said brewing chamber;

(c) a first valve communicating with said ground coffee inlet port and operative to control flow of ground coffee into said brewing chamber and to seal said ground coffee inlet port;

(d) a ground coffee outlet port leading from said brewing chamber remotely from said ground coffee inlet port;

(e) a second valve communicating with said ground coffee outlet port and operative to control flow of spent coffee grounds out of said brewing chamber and to seal said ground coffee outlet port;



(f) a water inlet port in said housing;

(g) an infusion outlet port in said housing;

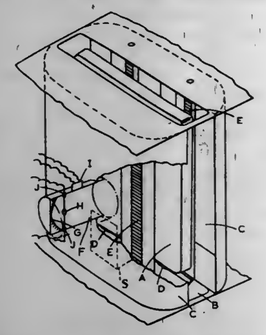
(h) a first member removably disposed entirely within said chamber and defining a separate water distribution chamber at one end thereof for communicating said water inlet port with one side of ground coffee in said brewing chamber; and

(i) a second member removably disposed entirely within said brewing chamber and defining a separate infusion collection chamber communicating the other side of ground coffee in said brewing chamber with said infusion outlet port.

3,349,692
TEMPERATURE-SENSING ARRANGEMENTS FOR HEATING OR COOKING APPLIANCES
John Robert Jones, Sidcup, Kent, England, assignor to Morphy-Richards (Cray) Limited, St. Mary Cray, Kent, England, a company of Great Britain
Filed Aug. 17, 1964, Ser. No. 390,140
Claims priority, application Great Britain, Aug. 22, 1963, 33,254/63
8 Claims. (Cl. 99—331)

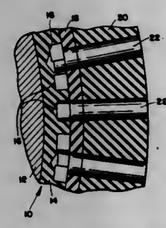
1. A cooking appliance for foodstuffs having electrically energised radiant heating means, a support for said foodstuff which can be placed thereon to receive radiation from the heating means to be cooked thereby, an element of low thermal capacity from which is derived an electrical signal which is dependent on its temperature, shielding means preventing heat radiation from said heating means impinging directly on said element, an elongated heat radiation transmissive guide member having radiation reflective walls thereby to tend to retain heat radiation within said guide member, said member being placed with one end facing a portion of the surface of said foodstuff and having at its other end said element at least during cooking of a foodstuff on said support, whereby said

element receives heat radiation emitted from said portion of said surface of said foodstuff on said support, and



means responsive to said electrical signal for terminating the cooking of said foodstuff.

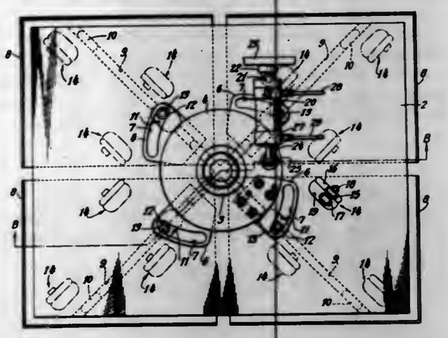
3,349,693
ROLL COVER CONSTRUCTION
Paul Jones Mitchell, Jr., Griffin, Ga., assignor to Stowe-Woodward, Inc., Newton Upper Falls, Mass., a corporation of Massachusetts
Filed Feb. 18, 1965, Ser. No. 433,721
6 Claims. (Cl. 100—90)



1. A roll assembly for removing fluids from sheet material, said roll assembly comprising:
a cylindrical metal base;
an inner elastomeric sleeve surrounding said base, the inner periphery of said inner elastomeric sleeve being secured to the outer cylindrical periphery of said cylindrical base; said inner elastomeric sleeve having a plurality of grooves at said exterior periphery thereof and spaced from said exterior periphery of said metal base;
at least one outer elastomeric sleeve surrounding said inner sleeve, said outer elastomeric sleeve having an inner cylindrical periphery bonded to said outer cylindrical periphery of said inner sleeve;
said outer sleeve having therein a plurality of holes extending from said outer cylindrical periphery thereof substantially radially inwardly into communication with said grooves.

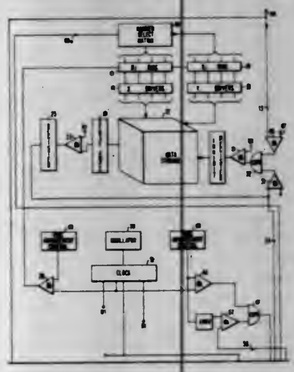
3,349,694
COMPRESSION OF MATERIALS
Olaf George Dixon, Leamington Spa, and Arthur Ronald Knibbs, Bedworth, England, assignors to Courtaulds Limited, London, England, a British company
Filed Nov. 30, 1965, Ser. No. 510,609
Claims priority, application Great Britain, Dec. 8, 1964, 49,847/64
4 Claims. (Cl. 100—295)

1. A press head comprising a pressing surface, plate-like members which define at least a part of the pressing surface and which are movable relatively to each other whereby the effective pressing surface of the head can be varied, a rotary device and cams, the rotary device being



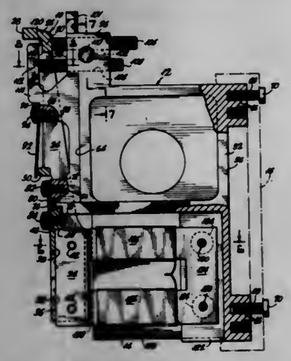
adapted to move the plate-like members relatively to each other to cause said variation in the effective pressing surface of the head by means of the cams.

3,349,695
UNIVERSAL CHARACTER SET ADDRESSING IN HIGH SPEED PRINTERS
Earl M. Bloom, Jr., Endicott, and Victor J. Faidley, Apalachin, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 12, 1965, Ser. No. 470,964
5 Claims. (Cl. 101—93)



1. Printer control apparatus comprising in combination.
type carrier means having a plurality of graphic symbols thereon movable past a print line having a plurality of print positions,
a plurality of print impression devices for obtaining impressions of said symbols at said print positions,
data storage means having a plurality of addressable positions for storing coded representations of symbols to be printed at said print line,
character storage means having a plurality of addressable positions for storing coded representations of the graphic symbols of the type carrier means,
a set each of X and Y drive lines selectively energizable to address different ones of said positions,
means for selectively activating different ones of the X and Y drive lines including switch means individual to different ones of the X and Y sets of drive lines, the switch means for at least one set of drive lines being arranged in groups with the odd numbered address positions associated with one group and the even numbered address positions with the other group,
and means for cyclically comparing the coded representations in the data and character storage means to effect operation of an impression means associated with a print position upon equal comparison of coded representations in the data and character storage means,
said means for comparing including bistable means connected to apply a set signal to at least one of said groups of switch means to select one of the plurality of groups of addressable storage positions and addressing means biasing said switch means to select one each of said X and Y drive lines for selecting from said one group a particular position.

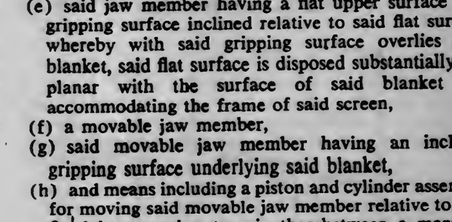
3,349,696
HAMMER MODULE ASSEMBLY IN HIGH SPEED PRINTERS
John T. Potter, Plainview, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Aug. 16, 1965, Ser. No. 479,828
19 Claims. (Cl. 101—93)



1. In a hammer module for a high speed printer of the type having a continuously movable type-supporting element, the combination comprising:
a frame having opposed surfaces defining the lateral dimension of the module;
a pivotal hammer having a pair of spaced blade-like side members, the outer surfaces of which fall within the lateral dimension defined by said frame surfaces;
a hammer head fixed between adjacent terminal ends of said side members;
fulcrum means fixed between said side members and spaced from said hammer head;
said frame having a pivot ledge formed therein to be engaged by said fulcrum means; and
flexible means connected between said frame means and said hammer to support said hammer on said frame with said fulcrum means engaging said pivot ledge.

3,349,697
ROTARY SPRAY STENCIL APPARATUS AND METHOD
Raymond G. Didinger, Folsom, Pa., assignor to Welded Tube Company of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1964, Ser. No. 409,181
6 Claims. (Cl. 101—118)

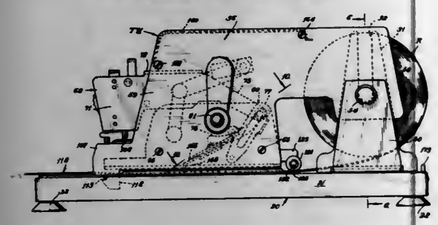
5. A method comprising the steps of moving a workpiece past a marking station, causing the workpiece to engage and pivot a trigger as it moves past the marking station, moving a marking wheel into engagement with the moving workpiece in response to movement of the trigger, causing the workpiece to rotate the wheel, mounting a stencil on the wheel so that it covers only a portion of the wheel, periodically marking information on a workpiece by spraying material from inside the wheel through openings of the stencil onto the workpiece, and initiating such spraying as a function of the position of the wheel.



3,349,698
CLAMP ASSEMBLY FOR USE ON SCREEN PRINTING MACHINES
Matthew L. Jaffa, 92 Clark St., Rutherford, N.J. 07070, and David Jaffa, 38—26 Aliwood Place, Fair Lawn, N.J. 07410
Filed Mar. 3, 1965, Ser. No. 436,847
5 Claims. (Cl. 101—126)

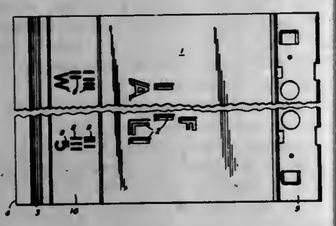
5. In combinaton, a screen printing machine having a movable printing blanket with predetermined area to define the printing surface of said machine, and a printing head including a printing screen movable into printing and non-printing relationship with said blanket, and said printing screen including a frame, the improvement of:
(a) a clamping assembly for securing the printing head to said printing blanket during a screen printing operating of the machine,
(b) said clamping assembly including a mounting means by which said clamping assembly is fixedly secured to the printing head for movement therewith,
(c) a standard fixed to said mounting means,
(d) a fixed jaw member,
(e) said jaw member having a flat upper surface and gripping surface inclined relative to said flat surface whereby with said gripping surface overlies said blanket, said flat surface is disposed substantially coplanar with the surface of said blanket for accommodating the frame of said screen,
(f) a movable jaw member,
(g) said movable jaw member having an inclined gripping surface underlying said blanket,
(h) and means including a piston and cylinder assembly for moving said movable jaw member relative to said fixed jaw member to grip therebetween a marginal portion of said blanket, said marginal portion being inclined relative to the horizontal printing surface of said blanket,
(i) the cylinder of said assembly being fixedly secured to said printing head, and
(j) said movable jaw being carried on the piston of said piston and cylinder assembly.

3,349,699
LABEL PRINTING MACHINE
David B. Sterrett, Sr., Chicago, Ill., assignor to Louis Melind Company, Chicago, Ill., a corporation of Illinois
Filed June 30, 1965, Ser. No. 468,519
5 Claims. (Cl. 101—310)



1. In a machine for printing on labels of a strip of labels secured on a roll of tape, a base member, an assembly head pivotally mounted at one end on said base member for movement about an axis extending transversely thereof, means for releasably securing the other end of said head to said base member with said head in normal position overlying said base member substantially parallel therewith, said head being otherwise free of said base member, means for mounting a roll of labels on said base member for rotation about an axis substantially parallel with said pivot axis of said head, strip guide means on said base member, platen means on said base member beyond and adjacent said other end of said head in the normal position thereof, means carried by said head for exerting downward pressure upon said label strip between said roll mounting means and said guide means, a printing assembly carried by said head and comprising printing means and inking means therefor, and operating means carried by said head and effective for intermittently advancing the label strip to position with a label disposed on said platen means and for alternately moving said printing means to inking position in contact with said inking means and to printing position in pressure contact with a label positioned on said platen means, said assembly head and the parts carried thereby being movable as a unit about said pivot axis to position exposing the upper face of said base member and rendering accessible the parts carried by said head, when the latter is released from said securing means.

3,349,700
PRINTING PLATE
Helmut Schottle, Berlin-Charlottenburg, Germany, assignor to Adrema-Werke G.m.b.H., Berlin, Germany
Filed Sept. 20, 1965, Ser. No. 488,663
5 Claims. (Cl. 101—369)



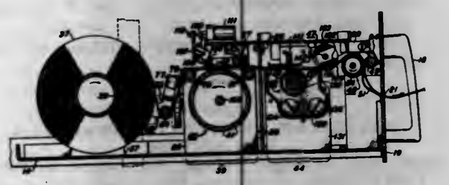
1. A printing plate of sheet material particularly for use in addressing machines of the type in which printing plates are fed lengthwise through the machine said printing plate comprising a body, means defining a first planar surface on said body providing a first printing field adapted to receive embossed printing characters to print optically legible information means defining second planar surface on said body raised with respect to said first planar surface and extending longitudinally for the full length of said body from one end to the opposite ends for providing a second printing field adapted to receive embossed printing characters to print information legible to a "computer" and embossed printing characters on each of said printing fields the height of the embossed printing characters on each field being such that the printing surfaces of all said characters lie in a common plane, said second planar surface being adapted to receive therebelow a support means of said machine during printing by the plate.

3,349,701
ADDRESS PRINTING PLATE
Heinz-Dieter Janzen, Berlin, Germany, assignor to Adrema-Werke G.m.b.H., Berlin, Germany
Filed Apr. 12, 1966, Ser. No. 542,060
Claims priority, application Germany, Sept. 24, 1965, A 50,341
7 Claims. (Cl. 101—369)



1. Address printing plate having a printing side and comprising in combination: a thin metal foil having coined therein by typewriter a writing image raised above one surface of the foil; a foil carrier formed as a stiff plate with reinforced longitudinal margins constituting guiding rails and with a middle field between said guide rails; said metal foil being securely attached on said printing side to said middle field of said carrier with its surface having the raised writing image facing away from said carrier, said foil carrier being provided with retaining tongues for the foil, which extend at the outmost over half of the longitudinal sides of the foil and over at least nearly the entire small side of the foil.

3,349,702
FUSER HAVING HEATED AND UNHEATED PORTIONS FOR PRINT FIXING PURPOSES
Daniel J. Nesin, Arcadia, Leland D. Green, Sierra Madre, and Witold Krynicki, Pasadena, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 17, 1966, Ser. No. 535,075
6 Claims. (Cl. 101—416)

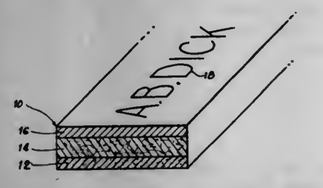


1. An electrographic imaging apparatus comprising imaging means to form an image pattern of finely divided, heat fusible, colored marking particles on a recording web, a fusing member, means to continuously heat only a portion of said fusing member, the remainder of said fusing member being insulated from said heated portion, feeding means to advance a continuous recording web along a feed path past said imaging means and said fusing member in their named order, a feed control to actuate said feeding means to advance said recording web a distance equal to the length of the image formed on said web each time an image is formed and means to move said fusing member so that said heated and unheated portions may be brought into contact with said recording web as required.

3,349,703
ELECTROSTATIC PRINTING WITH TWO GROUPS OF PARTICLES OF SAME COMPOSITION AND DIFFERENT SIZE
Frederick A. Varron, Wayne, and Frank W. Dunne, Emerson, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Apr. 24, 1967, Ser. No. 632,924
7 Claims. (Cl. 101—426)

1. A method of electrostatic printing wherein a preformed image of charged powder particles are applied to a substrate bearing an opposite charge, the improvement which comprises applying to said substrate a mixture of two batches of particles having the same composition and the same charge but different average diameters, said mixture containing from 1 to 4 parts by weight of the batch having the smaller average diameter being used for each part of the batch having the larger average diameter, the smaller average diameter being from 2 to 12 microns and the larger average diameter being at least 1.5 times the size of the smaller diameter.

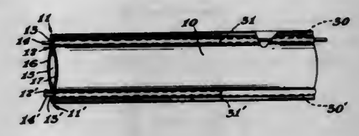
3,349,704
COATED PAPER DUPLICATING MASTER
George M. Ort, Chicago, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Jan. 28, 1965, Ser. No. 428,815
5 Claims. (Cl. 101—461)



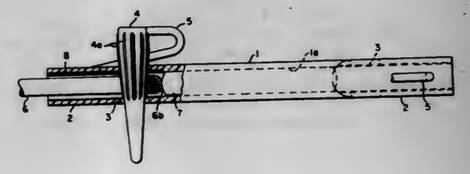
1. A coated paper duplicating master comprising a paper base sheet having a face side and a back side, an image receiving coating on the face side onto which the image is to be formed and which is directly on the paper base sheet and only on the face side of the sheet and a separate single coating of the dried residue of colloidal silica and binder on the back side in which the single coating on the back side is characterized by microporous openings through which vapors can pass and by stiffness sufficient to hold the master relatively flat and in which the materials are present in the back side coating in the ratio of 0.1 to 10 parts by weight of colloidal silica to one part by weight of binder.

3,349,705
PRESPLITTING DEVICE
John S. Wilson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 21, 1966, Ser. No. 522,077
8 Claims. (Cl. 102—24)

1. An explosive article which comprises:
(a) a hollow flexible tubular sheath, and
(b) a plurality of explosive strands spaced apart at a predetermined angular distance from each other around the periphery of the sheath; the strands being confined in the sheath against substantial peripheral movement and separated by the hollow space of the sheath.



3,349,706
TAILLESS CONNECTOR
Erik J. Schaumann, Oakland, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,502
5 Claims. (Cl. 102—27)

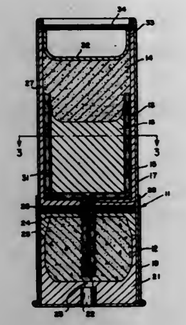


1. A tailless connector for holding detonating fuse in propagating relationship to each end of a delay unit, comprising a central tubular portion whose bore is adapted to receive the tubular shell of a delay unit; a fuse-receiving section at each end of the tubular portion and communicating with its bore, each such section
being adapted to internally receive a substantially U-shaped segment of detonating fuse with the two arms of the U lying in substantially the same plane as the longtiudinal axis of the bore and the apex of the U positioned adjacent the end of the bore, and having a pair of oppositely disposed apertures whose axis is substantially perpendicular to said plane; and
two tapered pins, one mateable with each pair of apertures and adapted to extend through the apertures and between the arms of the U-shaped segment of fuse, and to hold the apex of the U adjacent the end of the delay unit.

3,349,707
CARTRIDGE
Austin M. Wortley, Jr., Devon, Peter N. Lensi, Chester Springs, and Joseph A. Rinehart, Exton, Pa., assignors to Penguin Associates, Inc., Malvern, Pa., a corporation of Pennsylvania
Filed Sept. 16, 1965, Ser. No. 487,859
2 Claims. (Cl. 102—37.6)

1. A cartridge with a delayed exploding projectile, comprising a cartridge case, a propellant charge positioned in the cartridge case, and a projectile positioned forwardly of the propellant charge, a detonation mix located in the forward portion of the projectile, a fuse extending from the propellant charge into the detonation mix, and sealing means for sealing the detonation mix and preventing it from seeping along the fuse, thereby

preventing premature detonating of the detonation mix, said sealing means being made of a readily disintegrat-



ing material which disintegrates by compression into fine particles rather than being mashed into a solid piece.

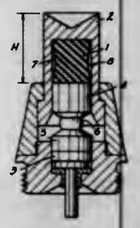
3,349,708
ROCKET PROJECTILE
Win Withers Paget, 2935 Balmoral Road, Mountain Brook, Ala. 35223
Filed Dec. 13, 1965, Ser. No. 513,461
Claims priority, application Belgium, Dec. 16, 1964, 40,346
15 Claims. (Cl. 102—49.3)



1. A rocket projectile launched by a firearm and having an additional propulsion device constituted by a solid fuel rocket motor housed in the projectile, a calibrated nozzle in the rear of the projectile for the escape of combustion gases of the solid fuel of the rocket, a centering sleeve disposed in the projectile, a solid body carried in centered relationship by said centering sleeve, said calibrated nozzle being disposed in said solid body, a transverse plate disposed in the rear of the projectile, said plate having holes therethrough, said centering sleeve having a shoulder thereon, means defining an additional conduit from the rear of the projectile into the vicinity of said transverse plate, said additional conduit being closed when said transverse plate abuts against said shoulder, and means defining a channel issuing at the rear of said solid fuel and communicating with said additional conduit.

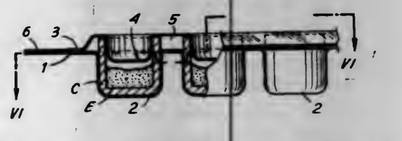
3,349,709
PIEZOELECTRIC GENERATORS FOR AMMUNITION
Jean Vilbajo, Brussels, Belgium, assignor to Contigea Societe Anonyme, Brussels, Belgium
Filed Sept. 22, 1964, Ser. No. 398,303
Claims priority, application Belgium, Sept. 30, 1963, 637,974; Aug. 31, 1964, 652,466
3 Claims. (Cl. 102—70.2)

1. A projectile comprising a head, a hollow nose displaceably mounted in said head, said nose having rigid walls partly extending beyond said head and partly extending into said head, a piston slidably mounted in said hollow nose between said walls, said walls and said piston enclosing a chamber, an elastic shield-pad mounted on said piston and located within said chamber, a piezo-



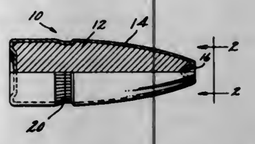
electric element mounted in said head, and means operatively connecting said piezoelectric element with said piston.

3,349,710
STRIP CARRIER FOR EXPLOSIVE SOCKET CAPS FOR TOY GUNS
Dino Sposimo, Via Fra' Diamante 8, Florence, Italy
Filed July 15, 1966, Ser. No. 565,592
Claims priority, application Italy, July 19, 1965, 4,450/65
6 Claims. (Cl. 102—86.5)



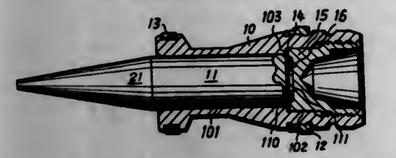
1. A strip carrier for explosive socket caps for toy guns comprising in combination a first thermoplastic strip-like element, a plurality of seats formed in said first element for holding caps, a second thermoplastic strip-like element, a plurality of impressions formed in said second element corresponding to the seats in the first element, the aforesaid combination being such that removal of said second strip element from the first strip element allows exit of single caps contained in said seats by external pressure and consequent deformation of the single seats of the first strip element.

3,349,711
PROCESS OF FORMING JACKETED PROJECTILES
Julius Darigo, Bridgeport, Rex E. Dickey, Huntington, and David S. Reed, Shelton, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,466
3 Claims. (Cl. 102—91)



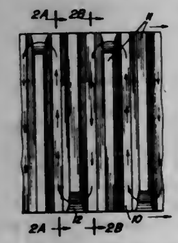
1. A jacketed projectile comprising a profiled, deformable, metal core, groove means in desired locations on the peripheral surface of said projectile core, an electrodeposited layer of a second deformable metal which covers the entire periphery of the core including increased metal thickness at said groove means, said increased metal thickness formed at said recess means providing a positive lock between the deformable projectile core and the electrodeposited jacket, said electrodeposited layer being attached to the core by a mechanical bond which has a higher tensile strength than said core.

3,349,712
SABOT PROJECTILE
Oskar Schwager, Zurich, and Walter Engel, Dietikon, Switzerland, assignors to Oerlikon-Buhrle Holding A.G., Zurich, Switzerland
Filed July 21, 1966, Ser. No. 566,850
Claims priority, application Switzerland, July 22, 1965, 10,261/65
26 Claims. (Cl. 102—93)



1. A sabot projectile comprising a projectile body having a base surface at one end, a disc-shaped connecting piece secured to said base surface having a rim extending circumferentially beyond said base surface, a sleeve shaped sabot for receiving said projectile body formed at one end by a wall portion, a ring surface on said wall portion defining a circular recess in said wall portion, said ring surface coaxially seating against said rim and defining a circular shearing edge around the periphery of said recess to shear through said connecting piece when the sabot projectile is discharged by the inertia of said projectile body causing said base surface to enter said recess.

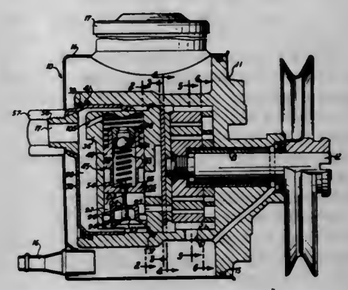
3,349,713
PROCESS AND DEVICE FOR MIXING LIQUIDS OF DIFFERING VISCOSITIES
Herbert Fassbender, Bensberg-Refrath, Germany, assignor to Glanzstoff Koln G.m.b.H., Wuppertal, Germany
Filed Sept. 10, 1965, Ser. No. 486,388
Claims priority, application Germany, Sept. 12, 1964, G 41,496
3 Claims. (Cl. 103—6)



1. A process for the continuous mixing and homogenizing of liquids of different viscosity which comprises: passing the liquid components in the required quantitative ratio from the inlet side to the exit side of a mixing pump in a common stream; controlling the amount of fluid ejected from the principal flow of liquid per unit time by means of counter-pressure such that the ejected liquid is smaller than the normal volume per unit time ejected by said pump, and continuously passing a portion of said liquid transversely through the principal flow of said liquid in a sinus winding.

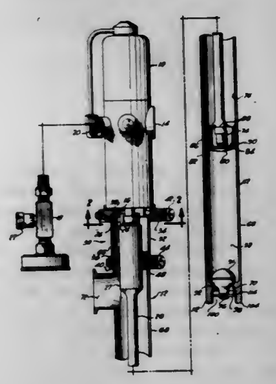
3,349,714
POWER STEERING PUMP
Emile P. Grenier, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,437
6 Claims. (Cl. 103—41)

1. A power steering pump of the constant displacement type comprising a pump chamber having inlet and discharge ports, a rotor operable in said pumping chamber for pumping fluid between said inlet and discharge ports, a valve chamber positioned between said inlet and discharge ports and having an opening connecting said inlet and discharge ports, a valve member positioned in said valve member positioned in said valve chamber, spring means positioned in said valve chamber and engaging one end of said valve member for urging said valve member into a position to close said opening, an outlet orifice



positioned adjacent the other end of said valve and having one side in communication with said one end of said valve member and adapted to be coupled to a power steering mechanism, said outlet orifice having the other side positioned in communication with said discharge port of said pump, and means operable by the movement of said valve member for reducing the effective area of said orifice when the speed of the rotor exceeds a predetermined level.

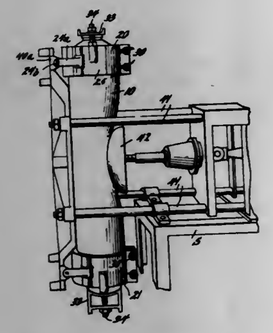
3,349,715
PUMP
John W. Dickerson, Chicago, Henry T. Dinkelkamp, Mount Prospect, and Jose L. Luna, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Apr. 13, 1965, Ser. No. 447,659
5 Claims. (Cl. 103—50)



1. A food pump and a coupling assembly through which a piston rod of said pump is connected at one end to the end of a piston rod of an air motor having a cross-sectional area different than said pump rod for driving said pump rod, the improvement comprising a pump cylinder having an inlet and outlet port, an intake valve in said cylinder having a spherical surface for engagement

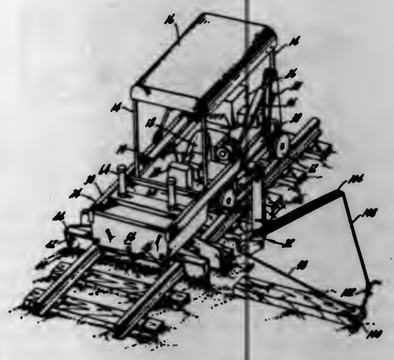
with a bevelled surface at said inlet port to close said port, a spring clip engaging said valve external to the pump cylinder and acting as a stop on movement of said valve in one direction for retaining said valve in said pump cylinder, a piston on said pump piston rod, said piston having a circumferential recess adjacent one end of said piston connected to a plurality of axially extending recesses on the periphery of said piston for enabling the passage of fluid received through said inlet port past said piston, a ring valve engaged over said piston for sealing the space between said piston and the wall of said cylinder against the passage of fluid and blocking said circumferential recess when moved in one direction relative said piston, stops at opposite ends of said piston for preventing disengagement of said ring valve from said piston, a packing member seated in said pump cylinder and receiving said rod for preventing passage of any fluid either from or into said cylinder, a shell for enclosing the connected ends of said rods and having an opening therein for relieving pressures created as a result of said differences in area of said rods while also permitting visual inspection of the interior of said shell, and a backing plate bonded to said packing member and received in a predetermined position in said shell for aligning said shell and cylinder.

3,349,716
PUMPS
George Hunt Weber, Laurel Lane, Greenwich, Conn. 06832
Filed Mar. 28, 1966, Ser. No. 537,827
8 Claims. (Cl. 103—148)



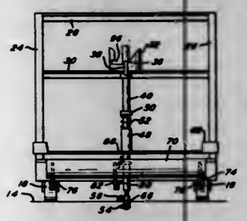
1. A fluid pump comprising, in combination, a tube the wall of which may be inwardly deflected upon the application of pressure in a direction generally transverse to its longitudinal axis and which resumes its original shape when the pressure is removed, a closure for each end of the tube, one such closure having a passage through which fluid may be introduced into the tube and the other having a passage through which fluid may escape from the tube, a non-return valve operatively associated with each passage for assuring fluid flow therethrough in one direction only, means for applying pressure to an external surface of said tube intermediate the ends thereof to inwardly deflect the same and to thereafter relieve such pressure to permit the tube to assume its normal shape, and means supporting the tube in position to be acted upon by said pressure applying means, said supporting means permitting self adjustment of an end of the tube and the associated tube end closure as the intermediate portion of the tube is manipulated by said pressure-applying means.

3,349,717
TIE BED SCARIFIER
Weltzin B. Blix, Jr., 507 Hawthorne Ave., South Milwaukee, Wis. 53226, and Edward H. Krause, Jr., 5315 S. Maryknoll Drive, New Berlin, Wis. 53151
Original application Nov. 29, 1963, Ser. No. 326,774. Divided and this application June 24, 1966, Ser. No. 590,108
4 Claims. (Cl. 104—9)



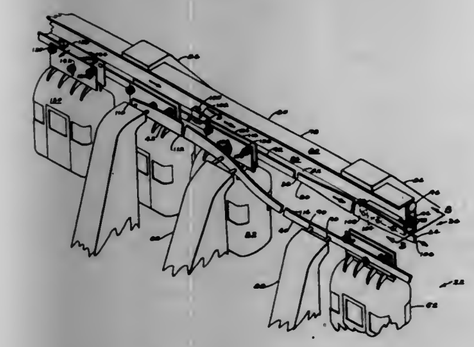
3. A method of inserting ties beneath a pair of railroad rails which includes the steps of driving downwardly into the ballast, generally at the point of tie insertion, two generally upright, generally parallel blades, while the blades abut throughout substantially their entire area, moving said members laterally apart, while maintaining them substantially parallel, to form an open-ended trench in the ballast of a size and shape generally conforming to the tie to be inserted, aligning a tie with the open end of the trench, while holding the blades in open position, and while maintaining the trench cavity open, then inserting the tie into the trench between the blades until its is properly positioned relative to the rails, and thereafter removing the blades.

3,349,718
MATERIAL HANDLING APPARATUS
Lynn Bradt, Easton, and Charles E. Jacoby, Bethlehem, Pa., assignors to SI Handling Systems, Incorporated, Easton, Pa., a corporation of Pennsylvania
Filed Mar. 10, 1965, Ser. No. 438,484
12 Claims. (Cl. 104—88)



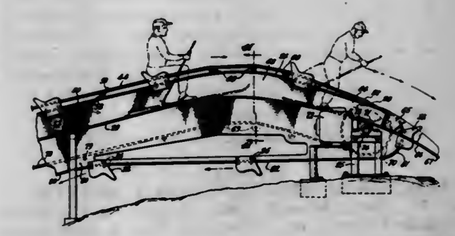
1. An electrical driverless material handling system comprising a reference surface having a guide slot, a pair of spaced electrical rails adjacent to and extending along said slot, driverless vehicle having a guide member centrally supported by said vehicle, said guide member having a lower end portion partially extending into said slot, said member having at one end a pair of electrically isolated contact structures each adapted to be electrically coupled to one of said rails, said member cooperating with said slot to guide the vehicle for movement along the slot, one of said contact structures being below and projecting to one side of the slot, said one contact structure being mounted for movement to a position so that it is movable vertically through the slot while supported by said member, said vehicle having wheels, a motor on said vehicle, said motor being coupled to at least one of said wheels for driving the same to propel the vehicle along the slot, and conductors on said vehicle coupling said motor in series with said contact structures.

3,349,719
TRANSIT SYSTEM
Raymond A. Young, 5105 Via El Sereno, Torrance, Calif. 90505
Filed Aug. 30, 1965, Ser. No. 483,616
15 Claims. (Cl. 104—91)



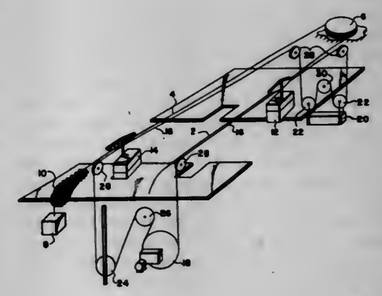
1. Transit system comprising:
a length of stationary, elevated monorail interconnecting a plurality of station locations;
an elongate transporter rail unit supported on said monorail and being disposed generally parallel thereto and having propulsion means carried by said transporter rail unit in motive engagement with said monorail for effecting powered longitudinal motion of said transporter rail unit wtih respect to said monorail;
said transporter rail unit further comprising an elongate forward, accelerating portion and an elongated, car holding portion coupled smoothly to said accelerating portion;
a station rail means disposed at each of said station locations having a car pickoff rail portion; and
a plurality of individual cars adapted to be carried by said transporter rail unit and having a first set of supporting wheels selectively engageable with said transporter rail unit when said car is disposed at one of said station locations on said station rail means thereof and having a second set of supporting wheels selectively engageable with said car pickoff portion of said station rail means when said car is disposed on said car holding portion of said transporter rail unit;
said car pickoff portion having an elongated decelerating portion;
said accelerating portion of said transporter rail unit and said decelerating portion of said car pickoff portion of said station rail means having braking means for engaging predetermined ones of said cars and for bringing them smoothly and substantially to rest with respect to said accelerating and decelerating portions respectively.

3,349,720
SKI LIFT
David R. Pender, 1018 Marion St., Columbia, S.C. 29201
Filed Jan. 11, 1966, Ser. No. 520,012
14 Claims. (Cl. 104—173)



1. A ski lift comprising a continuous guide track, means to support the guide track above ground level, the guide track having a central seat guiding section and lower lateral ski supporting flanges, straddle type seats movably engaging said seat guiding section, whereby skiers may mount the seats and straddle the seat guiding track section while their skis rest upon said flanges, said supported guide track including an inclined hill ascending section, an entrance ramp downwardly inclined coasting section and an upper skier discharge downwardly inclined section which is substantially tangent to a ski slope, a continuously upwardly moving conveyor element on said inclined hill ascending section, automatic coupling means on each seat engageable with said conveyor element when each skier and seat coasts onto the hill ascending section, and a return coasting track for the seats at the skier discharge section leading downwardly therefrom, whereby each skier may ski off of said discharge section and onto the ski slope in a natural skiing posture as the seat moves downwardly beneath him.

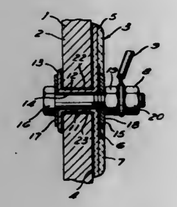
3,349,721
AERIAL TRAMWAYS
Leon Carlier, Chelles, France, assignor to Societe Fives Lille-Cail, Paris, France
Filed Apr. 19, 1965, Ser. No. 449,163
Claims priority, application France, Apr. 21, 1964, 971,621
6 Claims. (Cl. 104—196)



1. In an aerial tramway, the combination of a closed loop transport cable, a suspended counterweight operatively connected to said cable for automatically tensioning the same to the extent of elongation compensated for by movement of the counterweight from its raised to its

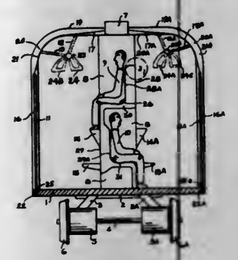
lowered position, and incrementally adjustable take-up means compensating for elongation of the cable beyond the extent compensated for by the counterweight, said take-up means comprising a fixedly mounted elongated guideway, a slide movable along said guideway, a pulley carried by said slide, a loop of said cable engaging said pulley, the slide with the pulley being incrementally movable along the guideway in a direction to raise said counterweight from its lowered to its raised position, removable fastener means securing said slide in an adjusted position on the guideway, and a power actuator for incrementally moving the slide from one adjusted position to the next when said fastener means are removed.

3,349,722
ELECTRICAL RESISTANCE RAIL HEATER
Gary W. Davis, Mentor, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,206
4 Claims. (Cl. 104—279)



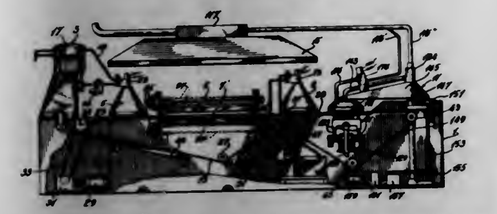
1. In combination, a railway rail that is to be heated, and a heater on said rail comprising a first layer of solidified metal formed in place on the web of said rail by application of heat-softened metal that becomes fuse bonded to said rail on solidification, a layer of solidified ceramic material formed in place on said first layer of metal by application of heat-softened ceramic material that becomes fuse bonded to said first layer of metal on solidification to form a dense highly adherent layer of solidified ceramic material that is essentially free of cavities or voids capable of containing moisture or other contaminants that could cause electrical current to leak or short circuit to the rail, said first layer of metal having a coefficient of thermal expansion between the coefficients of thermal expansion of the metal of said rail and of said ceramic material of said layer such that the bonds between said web of said rail and said first metal layer and between said first metal layer and said layer of ceramic insulating material are unimpaired by thermal expansions throughout the range of temperatures of the heater; a second layer of solidified metal of electrical resistance properties formed in place on said layer of ceramic material by application of heat-softened metal that becomes fuse bonded to said layer of ceramic material upon solidification to form a dense highly adherent layer of solidified resistance metal that is essentially free of cavities or voids and that has electrical resistance characteristics that will provide the desired heating effects, and connector means in electrical contact with said second metal layer but electrically insulated from said first metal layer and said rail, said connector means including an opening through the web of said rail, in which connector means said first layer of metal extends over the inner wall of said opening and on the surface of the web of the rail opposite the surface on which said heater is applied, and in which connector means said layer of solidified ceramic material extends over said first layer of metal in said opening and on said opposite surface of said web, to define an insulated opening through said web of said rail and an insulated portion on the rear side of said web of said rail, and which connector means includes conductive means passing through said insulated opening and electrically contacting said second layer of solidified electrical resistance metal and having a portion extending from said heater and rail to which electrical connections can be made.

3,349,723
COMPACT MASS RAPID TRANSIT CAR
Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017
Filed Aug. 13, 1965, Ser. No. 479,585
3 Claims. (Cl. 105—344)



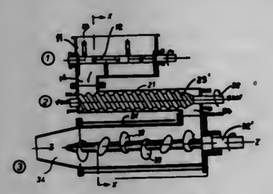
1. An improved mass rapid transit car capable of holding more people than present cars having the same floor space, and of loading and unloading them in much less time, the invention comprising:
a floor mounted upon and supported by a sub-floor structure;
floor beams attached to and mounted upon the ends of the floor;
a roof section attached to and supported by said floor beams;
a row of rigid divider-support seat sections running the full length of said car substantially in the middle thereof, said divider-support seat sections running continuously the full car length except for the end areas and a plurality of gaps in between to permit passengers to go from one side of the car to the other, each of said divider-support seat sections being attached fixedly to and supported by said floor and being fixedly attached to and supporting said roof section which is rigidly stabilized thereby; said divider-support seat sections constituting the principal supports for the roof intermediate the end walls of said car;
said roof mounted above said rigid divider-support seat sections and to said roof sections which are attached to said floor beams;
a plurality of rounded hollow spaces at intervals along and beneath said roof, into each of which spaces a flexible door panel section can be retracted;
motor compartments mounted at the top of said roof at intervals with separate motors designed to retract said door sections;
multiple cable means, at least one of which is attached to one of said motors within said motor compartments, the opposite end being attached to one of said flexible door panel sections;
a plurality of flexible door panel sections extending longitudinally on each side of said car and constituting the side-walls thereof, and being supported by the roof section, each said door section being attached to and retractable by at least one of said cable means and consisting of a large number of horizontal segments each of which has a cylindrical part that fits rotatably within a hollow cylindrical groove in another segment so they may rotate movably through a limited arc to permit retraction around the curved top edge of the ceiling under said roof; and
junction means at the side of each of said door panel sections.

3,349,724
PANCAKES OR THE LIKE PASTRY AUTOMATIC MAKING MACHINE
Louis Tavan, 289 Bloomfield Ave., Outremont, Quebec, Canada
Filed June 24, 1965, Ser. No. 466,691
8 Claims. (Cl. 107—4)



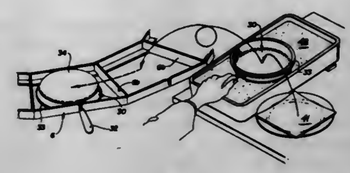
1. In an automatic machine for making pancakes or the like pastries, the combination comprising:
(a) a travelling conveyor displaceable in a predetermined direction;
(b) a pastry forming device over said conveyor at the upstream end thereof;
(c) a combined pastry marking and removing device across the path of said conveyor at the downstream end thereof and including a marking part and a removing part;
(d) control means to cause operation of said conveyor through a series of identical time cycles each consisting of a travelling time period of the conveyor and of an idling time period thereof;
(e) said control means including actuating means to cause operation of said forming device and of the marking part of said combined device during said idling time periods and operation of the removing part of said combined device during said travelling time periods;
(f) said devices so spaced along said conveyor that, during operation of the machine, said conveyor stops during said idling periods with pastries located at said devices.

3,349,725
CONTINUOUS BREAD-MAKING MACHINE
Riccardo Bini, Via Lungo Leno Sinistro 19, Rovereto, Italy
Filed Nov. 22, 1965, Ser. No. 508,996
Claims priority, application Italy, Nov. 21, 1964, 739,773/64; Mar. 30, 1965, 7,220/65
8 Claims. (Cl. 107—36)



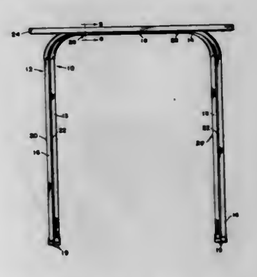
1. A continuous bread-making machine which comprises a blender for uniformly admixing the ingredients required in the product, a first mixer suitably provided with at least one screw feeder, and a pressure mixer suitably provided with vanes, said blender, first mixer and pressure mixer being in cascade-type communication among themselves, wherein said pressure mixer is composed of: a tubular container within which rotate two shafts, said shafts having axes parallel and symmetrical with respect to the longitudinal axis of said container; and helicoidally developed vanes fixedly positioned on said shafts and having lenticular shape and having an oblique opening with respect to their surfaces.

3,349,726
METHOD FOR PANCAKE PRODUCTION
Laszlo Fono, 3221 Fillmore St., San Francisco, Calif. 94123
Filed Aug. 16, 1965, Ser. No. 479,744
4 Claims. (Cl. 107—54)



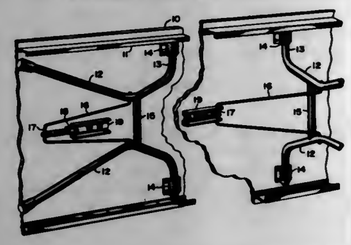
4. A process of making very thin crepe type pancakes and the like comprising the steps of: forming a thin film of batter on a frying surface by drawing the batter over an upwardly facing circular convex guide to obtain uniform gravity urged tension along the periphery of the batter to reduce the thickness thereof and thence heating the pan surface from the underside of the frying surface only to cause cooking of the batter.

3,349,727
TRAY TABLE
John J. Hamilton and Charles E. Schroer, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed June 30, 1966, Ser. No. 561,988
6 Claims. (Cl. 108—119)



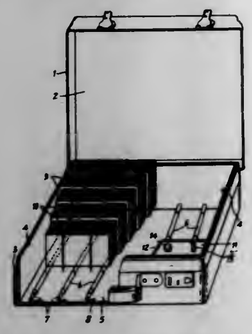
1. A tray table comprising a first frame having a pair of legs interconnected at their upper ends by a transverse bight, a second frame having a pair of legs disposed laterally outwardly of the legs on said first frame and interconnected at their upper ends by a transverse bight, a tray removably mounted on the bights on said frames, means pivotally interconnecting the legs on said frames on a transverse axis, the distance between said means and the upper face of the bight on said first frame being less than the distance between said means and the lower face of the bight on said second frame, and the legs on said frames being curved in the same direction below said means.

3,349,728
FOLDING TABLE
Chester J. Barecki, and Walter E. Nordmark, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,052
8 Claims. (Cl. 108—131)



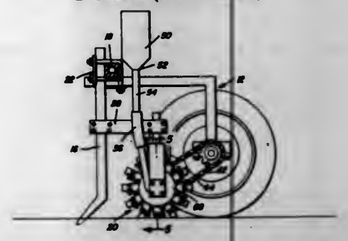
1. In a folding table having a top panel and legs supporting the ends of the table top and foldable inwardly to closed position, the improvement which comprises a brace member pivotally secured to the legs at an end of the table and extending inwardly to provide a latch loop, a retainer plate secured to the bottom of the table top and equipped with a downwardly-extending flange having a transverse notch adapted to receive said loop, and a toggle lever pivotally mounted on said retainer inwardly of and at a spaced distance from said notch, said lever having its free end apertured to receive the inner end of said loop, said toggle lever being of such a length as to bring said loop into engagement with said notch when said legs and loop member are swung outwardly to a table-supporting position.

3,349,729
METHOD AND APPARATUS FOR MAINTAINING THE SECURITY OF PAPER CURRENCY
Georges Olivier, Rue Pierre-Semard, Montlucon, France
Filed Dec. 29, 1965, Ser. No. 517,416
Claims priority, application France, June 17, 1965, 21,237
9 Claims. (Cl. 109—25)



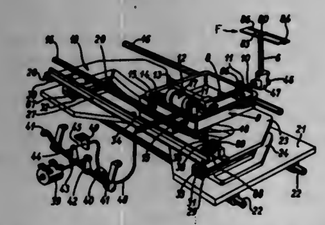
4. Apparatus for maintaining the security of valuable paper, comprising a receptacle, at least one pyrogenic element in the bottom of the receptacle adapted when burning to heat paper above its charring temperature, an electric igniting element in close contact with said pyrogenic element and adapted to ignite said pyrogenic element, means for pressing bundles of valuable paper in edgewise abutting relation against the pyrogenic element, a source of electric current, and means responsive to a change in position of at least a portion of the receptacle to feed said igniting means with current from said source of current to ignite said pyrogenic element.

3,349,730
PLANTER
Murl Cowell, Durant, Okla., assignor, by direct and mesne assignments, of twenty-five percent to A. H. Lindell and ten percent to Harry Brown, both of Oklahoma City, Okla.
Filed Mar. 24, 1965, Ser. No. 442,353
1 Claim. (Cl. 111—91)



A planter assembly comprising a generally horizontal shaft adapted to be journaled from a tool bar and driven at a given rate relative to the speed of movement of said tool bar over ground to be planted, a seed receiving and dispensing housing, said housing including a first end wall journaled on said shaft and an outer generally cylindrical wall portion rotatable with said shaft and including a plurality of generally radially outwardly projecting tubular seed receiving and planting assemblies communicated with the interior of said housing at their inner ends, an upstanding gravity feed seed conduit, the lower end of said seed conduit opening through said end wall and adapted at its upper end to be communicated with the outlet opening of a seed hopper, said housing including means operative to meter seed therein into the radial innermost ends of said tubular seed receiving and planting assemblies at predetermined angularly rotated positions of said assemblies about the axis of rotation of said shaft, the outer end portions of said seed receiving and planting assemblies each including a pair of opposing opposite side soil penetrating and separating seed dropping jaws, said jaws being elongated and extending generally along radii of said shaft outwardly of the outer ends of said tubular assemblies, each pair of jaws including confronting elongated recesses, the inner ends of the jaws of each assembly being pivotally supported from opposite sides of the corresponding tubular assembly for swinging about axes spaced outwardly of the remote sides of said jaws disposed generally normal to said shaft and for movement of the outer ends of said jaws toward and away from each other between closed positions with the recesses thereof defining an elongated cavity communicated at one end with the outer end of the corresponding tubular assembly and closed at its other outer end and open positions with the outer ends of said jaws spaced apart and the outer end of said cavity open, each pair of said jaws, when in the closed positions, defining an outwardly tapering wedge shaped ground penetrating implement and the outer ends of said jaws being shiftable toward and away from each other in directions generally paralleling the transverse direction in which said implement tapers, said jaws and a portion of said housing relative to which said shaft is rotatable including coacting means operative to force each pair of said jaws toward said open positions thereof as each pair of jaws is rotated about the axis of rotation of said shaft to preselected positions at least closely adjacent their lowermost positions relative to said axis, said coacting means including a radially outwardly projecting cam member carried by said portion of said housing relative to which said shaft is rotatable and a cam follower mounted on each of said tubular assemblies for limited reciprocation therealong, said cam followers being successively engageable with said cam member for outward displacement along said tubular assemblies toward said jaws, the inner ends of each pair of jaws including laterally projecting abutments closely adjacent a plane disposed generally normal to said shaft and containing the centerline of the corresponding cavity, each of said followers, upon being outwardly displaced by said cam member, being engageable with the corresponding abutments to outwardly displace the latter so as to cause the outer ends of the corresponding jaws to move apart.

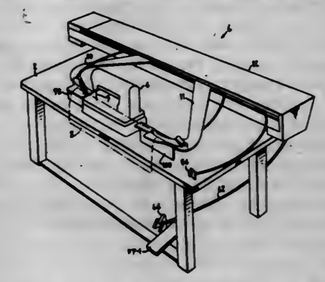
3,349,731
SEWING APPARATUS FOR SEWING IN ACCORDANCE WITH A PRE-FORMED PATTERN
Luigi Bono, Pavia, Italy, assignor to Necchi Società per Azioni, Pavia, Italy
Filed July 2, 1965, Ser. No. 469,096
Claims priority, application Italy, July 3, 1964, 90/64, Patent 741,601
15 Claims. (Cl. 112—2)



1. A sewing machine for automatically sewing in accordance with a pre-formed pattern, comprising: a sewing needle and a clamp holding frame which is movable relative to the needle, a stationarily mounted pattern member having an open pattern profile, said profile being defined by starting and terminal portions which are spaced apart from each other, a follower device which is movable between said portions along said profile, said frame being carried by said follower device, a guide means extending between said profile portions across the space therebetween, and guide engaging means on said follower device, said follower device being movable between said profile portions and along said guide means, and wherein said guide means comprises a substantially rectilinear rail lying in a different plane than the plane in which lies said profile, said guide engaging means being a rotary wheel which engages said rail, and wherein said follower device includes a rotary shaft which is adapted to roll along said profile and thereby move said follower device along said profile, said wheel being rigidly mounted on said shaft, and wherein the diameter of said wheel exceeds that of said shaft whereby the linear velocity of said follower device along said rail exceeds its linear velocity along said profile for the same rotational speed of said shaft, and means to rotatively drive said shaft.

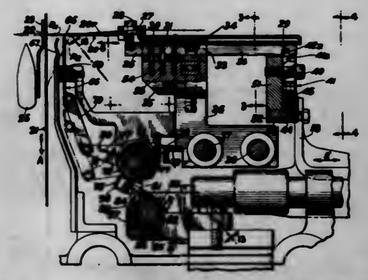
3,349,732
INDEXING APPARATUS FOR SEWING MACHINES
Guido Perrella, Montreal, Quebec, and Frank Picker, St. Bruno, Quebec, Canada, assignors to Dynacast Ltd., Montreal, Quebec, Canada
Filed July 13, 1964, Ser. No. 382,048
Claims priority, application Canada, Mar. 31, 1964, 899,130
19 Claims. (Cl. 112—65)

1. In combination with the sewing mechanism of a buttonholing machine, an indexing apparatus to provide said mechanism with means automatically to effect a plurality of spaced, sequential buttonhole sewing operations to a workpiece; said apparatus comprising a frame having a carriage slidably mounted therein, said carriage including first and second elements, rollers on said elements for reciprocal movement of said carriage in said frame; connecting members securing together said first and second elements, drive means to impart said reciprocal movement to said carriage; indexing means to control said drive means and sequentially stop said carriage during said movement at a plurality of selected locations in said frame and then disconnect said carriage from said drive means; and a pair of guide arms having means for clamping a workpiece under tension therebetween at opposite ends of the workpiece to more positively grip and control



the workpiece at a sewing position and during a sewing operation, said arms being secured to said carriage and extending outwardly from said frame and being actuated by said carriage elements upon rotative movement therebetween, said arms terminating adjacent opposite sides of said sewing mechanism and transmitting said carriage movement to said workpiece relative to said sewing mechanism during indexing of said workpiece and transmitting movement of said sewing mechanism and said workpiece to said carriage during the sewing operation of said buttonholes.

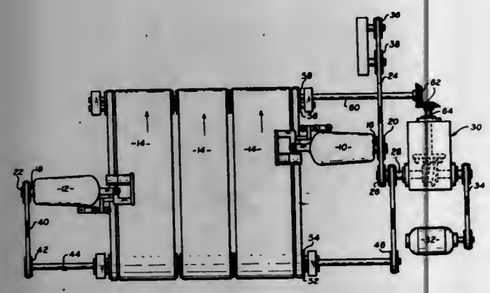
3,349,733
THREAD HOLDING AND RELEASING SYSTEM IN CHANGE-COLOR EMBROIDERY MACHINES
Roelof Ree, East Paterson, N.J., assignor to I.A.S. Bicor Corporation, West New York, N.J., a corporation of New Jersey
Filed June 30, 1965, Ser. No. 468,298
2 Claims. (Cl. 112—83)



1. In an embroidering apparatus, of the class in which there are a plurality of sets of thread-carrying needles reciprocatingly movable between retracted and projected positions, a sheet of fabric positioned in operative embroidering relation to said needles, and thread sections extending between said fabric and the needles when the latter are in their respective retracted positions, the combination of shifting means for moving said needles laterally to and from predetermined selected operative embroidering positions, means for reciprocatingly actuating operatively positioned needles to perform stitching operations, separate thread holding means in coactive relation with said respective sets of needles, the thread-holding means for each of said sets comprising a plurality of

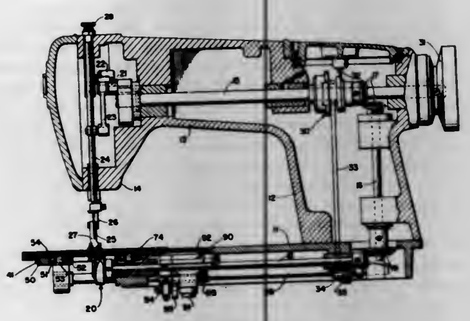
thread-engaging members corresponding in number to the number of needles in the set and in adjacent relation to the respective thread sections thereof, said members being movable between operative and inoperative limiting positions, said members when in their said operative positions having portions thereof in engagement with the corresponding thread sections and when in their said inoperative limiting positions having said portions out of engagement therewith, anvil means in coactive relation with said respective members and positioned for supporting engagement with the thread sections operatively engaged by said members when disposed in their respective operative limiting positions, means for shifting said holding means laterally coactively with said needle shifting means, and simultaneous actuating means for simultaneously moving all the thread-engaging members of a selected set between their said limiting positions, said anvil means being positioned below said respective thread-engaging members, said simultaneous actuating means comprising a set of movable elements for each of said sets of thread-holding means, said elements being operatively connected to all the thread-engaging members of the corresponding set of thread-holding means, and selective means for simultaneously actuating the said movable elements of a selected set of said elements between predetermined limiting positions thereby to simultaneously move said coactive thread-engaging members between their respective limiting positions, said movable elements comprising a plurality of bellcranks corresponding in number to said thread-engaging members, a shaft supporting said bellcranks, each of said bellcranks having two arms, one arm being connected to the corresponding thread-engaging member and the other arm having a cam follower thereon, and cam means for simultaneously engaging the cam followers of the bellcranks operatively connected to the thread-engaging members of a selected set.

3,349,734
SEWING MACHINE FEEDER DRIVE MEANS
Ronald J. Boser, Huntington, N.Y., assignor to B&W Mfg. Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 4, 1965, Ser. No. 423,024
1 Claim. (Cl. 112—203)



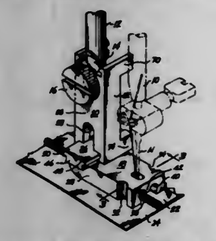
Apparatus for simultaneously performing a plurality of sewing operations on a given work piece comprising a frame, a plurality of sewing machines fixedly secured to said frame, each of said sewing machines having a sewing needle, a conveyor means common to and cooperatively associated with each of said machines for carrying a work piece past each of said sewing machines, said conveying means including a drive roller and a plurality of spaced idler rollers, an endless conveyor belt threaded over said idler rollers and said drive roller, a drive mechanism for synchronizing the sewing operation with the drive of said conveyor belt, said drive mechanism including a power input shaft connected at one end to a source of power and at the other end to means for driving the needles of said respective sewing machines, a power output shaft, means connecting said output shaft in driving relationship to said drive roller of said conveyor means, a worm gear connected to and driven by said input shaft, an output gear connected to and driving said output shaft, said worm gear having a spiral tooth formed thereon whereby the groove formed between adjacent portions of said tooth is of substantially constant width, said groove having a portion of increasing pitch, a portion of decreasing pitch, and a portion having no pitch, said output gear comprising a disc member connected to the other end of said output shaft, said disc member having a plurality of tooth means extending outwardly from one face thereof, said tooth means being substantially frusto-conically shaped with the axes thereof arranged substantially parallel to and disposed around the face of said disc member substantially equidistant from the axis of said output shaft, said tooth means being arranged to rotate about their individual axes, said spiral tooth of said worm gear having a tapered cross section forming a groove which is complementary to said frusto-conical tooth means, said worm gear engaging said output gear and arranged to positively advance said conveyor means and for positively maintaining said conveyor means stationary in synchronization with the sewing operations of said sewing machines.

3,349,735
WORK FEEDING MECHANISM FOR SEWING MACHINES
Stanley J. Ketterer, Morris Plains, N.J., and George F. Keller, deceased, late of Lake Mohawk, Sparta, N.J., by Marion A. Keller, executrix, Lake Mohawk, Sparta, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 14, 1965, Ser. No. 463,969
12 Claims. (Cl. 112—214)



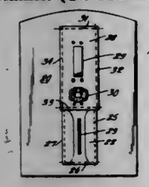
1. A work feeding mechanism for a sewing machine having a stationary frame formed with a flat work supporting surface and stitch forming instrumentalities defining a stitching point on said work supporting surface, said work feeding mechanism comprising a shiftable work engaging means, means for constraining said work engaging means in an endless annular path substantially flush with said sewing machine work supporting surface, means for imparting movement to said work engaging means along said endless annular path in timed relation with the operation of said sewing machine stitch forming instrumentalities, and a presser device carried by said sewing machine frame and opposing only a portion of said work engaging means laterally opposite to said stitching point.

3,349,736
ZIPPER FOOT ATTACHMENTS
Robert B. Howell, 2115 Madrona Point Drive, Bremerton, Wash. 98310
Filed Oct. 22, 1965, Ser. No. 501,066
16 Claims. (Cl. 112—235)



1. A zipper foot attachment for a sewing machine, comprising: a foot component with four, laterally spaced, parallel, separately and selectively useable, zipper teeth guides, said foot component having a pair of parallel side surfaces constituting two of said guides, a bottom groove, a downwardly projecting divider dividing only the leading part of the bottom groove into separate channels constituting the other two guides, a substantially flat bottom surface on each side of said central groove, a substantially vertical needle receiving recess formed in each of said side surfaces, and a substantially vertical needle receiving aperture extending through said foot component substantially midway between said recesses, and said recesses and said aperture being generally aligned across the foot component perpendicularly to said guides.

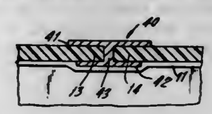
3,349,737
METHOD OF SEWING A GOLF BAG
Michael Kish, Jr., Hightstown, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed May 5, 1965, Ser. No. 453,295
3 Claims. (Cl. 112—262)



1. The method of manufacture for a golf bag which includes the steps of bunching a flat springy, self-supporting generally rectangular sheet of material under a sewing machine, sewing a bag pocket over a first generally centrally located area of said sheet of material which extends across a line centrally disposed of and parallel to side edges of said sheet, rebunching said sheet of material and sewing a handle panel over a second generally centrally located area of said sheet of material which is displaced along said line and partly overlaps said first area, rolling said sheet into a self-supporting tube having opposing side edges of said sheet adjacent one another, and sewing said opposing edges to one another.

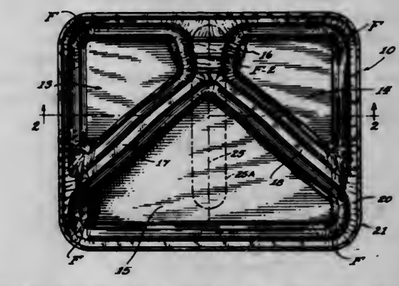
3,349,738
BUTT JOINT CONNECTION
Michael Kish, Jr., Hightstown, N.J., assignor to Atlantic Products Corporation, Trenton, N.J., a corporation of New Jersey
Filed May 14, 1965, Ser. No. 455,918
6 Claims. (Cl. 112—441)

1. In combination, first and second elongated end portions of materials to be butt joined, a clamp means and securement means; said clamp means having first and second elongated sides joined by a central web; said first elongated end portion positioned between said first and second sides and abutting one side of said web; said second elongated end portion positioned between said first



and second sides and abutting the opposite side of said web; said securement means comprising stitch line means extending through said first and second sides and said first and second end portions and perpendicular to said central web.

3,349,739
PRODUCTION OF FORMED METAL FOIL CONTAINERS
Elmer W. Griese, Jr., Skokie, Ill., assignor to Ekco Products, Inc., a corporation of Illinois
Filed Sept. 25, 1963, Ser. No. 311,467
1 Claim. (Cl. 113—120)

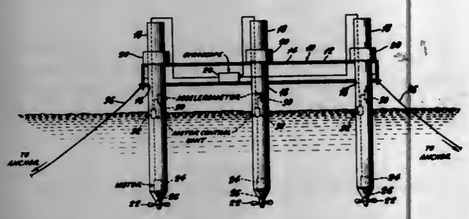


In the production of metal foil containers having a bottom wall with upstanding sloping side walls bordering the bottom wall and meeting in and joined by rounded corner portions in which the metal foil is formed into folds, the method of enabling increased strength and rigidity to be attained in the container for any selected foil thickness which comprises providing a flat metal foil blank of the selected thickness and having a hardness such that the forming operation will tend to stretch and split where substantial stretching forces are effective in the forming operation, subjecting such a blank to a forming operation wherein a container will be formed with one or more split lines where excessive stretching forces have been exerted, annealing limited areas of a second blank on both sides of the location defined by any such split line, and then subjecting the second blank to the desired forming operation.

3,349,740
FLOATING PLATFORM
Sheldon B. Field, Floral Park, N.Y., assignor to John J. McMullen Associates Incorporated, New York, N.Y., a corporation of New York
Original application Feb. 1, 1965, Ser. No. 429,473, now Patent No. 3,318,275, dated May 9, 1967. Divided and this application Oct. 31, 1966, Ser. No. 607,090
1 Claim. (Cl. 114—.5)

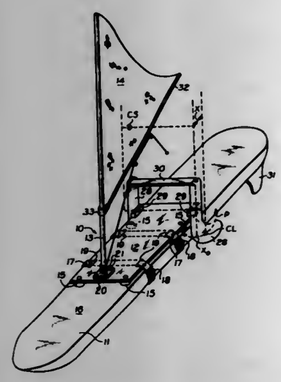
A marine platform assembly for use in a body of water comprising a horizontally disposed platform, a plurality of vertically disposed hollow columns mounted to said platform and extending downward therefrom into the body of water, said columns being adapted to displace sufficient amounts of water as to displace said platform above the free surface of the water, each of said columns comprising inner walls defining a tank within the outer

dimensions of said column, said tank being partially filled with water, a port disposed between said tank and the ambient to enable movement of water therebetween, blades rotatably mounted in each said port so that rotation of said blades drives water into and out of said tank to add to and decrease from the overall buoyancy of that respective column, means connected to said blades to rotate same, and sensing means comprising a gyroscope,



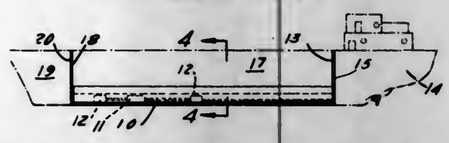
and wherein said sensing means further comprises an accelerometer mounted in each column, and a control unit mounted in each column connected to the outputs of said accelerometer and gyroscope and being responsive to all motions of the platform assembly in space for controlling the time of actuation of and the direction of force imparted to said blades so that the platform is stabilized for roll, pitch and heave.

3,349,741
SAIL PROPULSION APPARATUS
Richard August Herbst, Farmingdale, N.Y. (33 Hark Lane, Westbury, N.Y. 11590)
Filed May 2, 1966, Ser. No. 546,930
7 Claims. (Cl. 114—39)



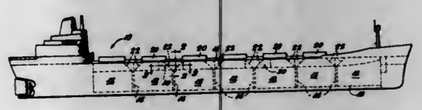
1. A sail propulsion apparatus which comprises a base means releasably connectable to the upper hull portion of a monohulled watercraft, a mast connected to said base means for support thereby in an elevated position above said hull and centrally located with respect to the sides thereof, a sail connected to said mast for support thereby and to receive aerodynamic forces for propelling said watercraft, and a pair of leeboards pivotally connected to said base means on opposite sides of said hull, bar means connecting the upper ends of said leeboards for movement relative to said base means and hull in unison about their pivot points to control the movement of the watercraft.

3,349,742
CARGO SHIP
John J. Bylo, 7272 Willoughby Ave., Los Angeles, Calif. 90046
Filed Oct. 23, 1965, Ser. No. 503,113
2 Claims. (Cl. 114—77)



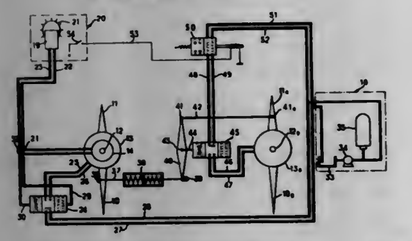
1. A ship formed of two freely interchangeable halves, one half of said ship comprising an elongated cargo base and a stern, said cargo base being substantially U-shaped in cross-section, with an upwardly facing open top, a vertically directed plate fixedly attached to the stern end of said cargo base, a second vertically directed plate fixedly attached to the forward end of said stern, said plates being attached to each other to connect said stern permanently to said cargo base, said plates extending transversely across a substantial portion of the hull of said ship adjacent to the stern end of said ship, said combined stern and cargo base forming one half of said ship, the other half of said ship comprising an elongated cargo top and a bow, said cargo top having a bottom contour formed complementarily to the upwardly facing open top of said cargo base, a third vertically directed plate fixedly attached to the forward end of said cargo top, a fourth vertically directed plate fixedly attached to the stern end of said bow, said third and fourth plates being attached to each other to connect said bow permanently to said cargo top, said plates extending transversely across a substantial portion of the hull of said ship adjacent to the forward end of said ship, said combined bow and cargo top forming the other half of said ship, said bow and stern being of variable configuration and all of said plates being of standard fixed configuration, so that a stern of any configuration can be attached to any cargo base and a bow of any configuration can be attached to any cargo top, the upper part of said cargo top being of variable configuration and at least the lower part of said cargo top and the upper part of said cargo base being of standard fixed configuration, so that any two ship halves can be used together by bringing said cargo top into engagement with said cargo base to form a complete ship, without regard to the configuration of the variable parts of both halves of said ship.

3,349,743
SHIP STABILIZER
Sheldon B. Field, Floral Park, and Thomas F. Bridges, Port Washington, N.Y., assignors to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York
Filed Aug. 24, 1965, Ser. No. 482,059
2 Claims. (Cl. 114—125)



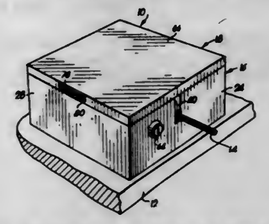
1. A bulk carrier vessel having a main deck and a hull and a passive stabilizer tank extending across said hull, comprising a pair of wing tanks each located beneath said main deck at an upper outboard side of the hull and having its inboard bottom wall formed by a downward and outward sloping plate having its top secured to the main deck under surface and its outboard edge secured to the respective hull side, said tank further including an interconnecting channel formed by a bottom plate extending the length of the tank, a pair of girder plates projecting upward and fore and aft respectively from said bottom plate and having their top edges secured to the under surface of said main deck so as to transmit supporting forces thereto, said girder plates extending athwartship and intersecting the inboard walls of the wing tank so that the interconnecting channel has a truncated profile in cross section, the fore and aft dimension of the interconnecting channel being less than the fore and aft dimensions of said wing tanks so as to form a C-shaped tank, each said plate forming inboard side of each wing tank defining a plurality of openings aligned with the profile of the interconnecting channel to permit substantial liquid passage into and out of the wing tanks during the roll cycle and to provide a suitable amount of damping thereto, said openings extending in zones from generally the bottom to the top of the tank for hydrodynamically damping the liquid passage but permitting a free transfer of air therethrough, and a swash bulkhead arranged transversely in each wing tank and provided with a plurality of openings so as to decrease the fore and aft swash movement of liquid therein during operation, and a body of liquid partially filling the tank so as to form an air space over all parts thereof in the interconnecting channel and the wing tank, the liquid level being such that the tank liquid oscillation is generally tuned to the ship's roll, said vessel further comprising a corrugated transverse bulkhead secured therein contributing to the primary support for the main deck and having its top supporting said bottom plate of said tank so as to counteract the loading forces through the girder plates.

3,349,744
HYDRAULIC CONTROL SYSTEM FOR RUDDERS AND/OR DEFLECTORS OF A SHIP
Jean Mercier, 1185 Park Ave., New York, N.Y. 10028, and Bernard Mercier, New York, N.Y.; said Bernard Mercier assignor to said Jean Mercier
Filed May 17, 1966, Ser. No. 550,734
Claims priority, application France, May 31, 1965, 18,910
8 Claims. (Cl. 114—150)



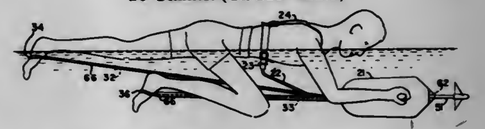
1. A hydraulic control system for a ship comprising a pilot station having a manually operated source of fluid under pressure, a hydraulic power source, a first rudder controlled by the manually operated power source at the pilot station and having two hydraulic motors, one of said motors comprising a pilot motor operatively connected to said manual power source at said pilot station and the other of said motors comprising a main power motor operatively connected to said hydraulic power source, a hydraulically controlled valve between said hydraulic power source and said main motor, said hydraulically controlled valve being operatively connected to said manual power source at said pilot station and controlled thereby, a second rudder having at least one main motor operatively connected to said hydraulic power source, a distributor valve between said hydraulic power source and said second motor and means controlled by the movement of said first rudder to actuate said distributor valve to effect corresponding movement of said second rudder.

3,349,745
DEVICE FOR FASTENING LINES
Louis A. Berg, 9804 Plymouth Lane, Raytown, Mo. 64133
Filed June 24, 1966, Ser. No. 560,202
5 Claims. (Cl. 114—230)



1. A device for fastening an end of a line having a relatively enlarged anchor element secured at said end, said device comprising:
a block having adjacent first and second surfaces and provided with a cavity and channel,
said cavity communicating with said first surface and adapted to receive said element,
said channel communicating with said cavity and said first and second surfaces, and adapted to receive said line and dimensioned to restrict passage of said element,
a cover for said first surface;
means mounting said cover on the block for movement between a first position exposing said cavity and channel, and a second position overlying said first surface; and
locking means for securing the cover to the block when the cover is in said second position whereby when the element is placed in said cavity and the line drawn through said channel, said cover may be moved from said first position to said second position and locked to fasten the line to the block said block having a recess communicating with said first surface, said locking means including a shiftable tumbler in said recess and structure on said cover adapted for locking interengagement with said tumbler when the cover is in said second position, there being key means coupled to said tumbler through said block for shifting the tumbler from an unlocked position in said recess to said locking interengagement position with said structure to preclude movement of said cover from said second position.

3,349,746
CRAFT FOR SWIMMERS
Alexander Sydoriak, 113 Fair St., Kingston, N.Y. 12402
Filed Oct. 22, 1965, Ser. No. 502,172
10 Claims. (Cl. 115—22.3)

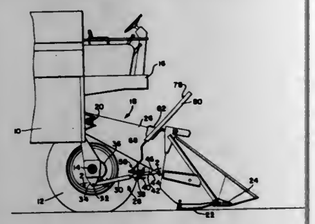


1. A craft for a swimmer and comprising
an element connected to at least one member of the swimmer so that by moving that member he can exert a force on the element,
drive means connected to the element for adapting the force into rotational motion,
a propeller operatively associated with the hull and immersed in the water for moving the craft,
transmission means connecting the drive means to the propeller whereby the propeller is turned,
a band arrangeable to encircle the torso of the swimmer,

a rod connectable between the band and the drive means for positioning the drive means fixed in spaced relationship from the swimmer's breast.

3,349,747
INDICATOR FOR COMBINE HEADER OR THE LIKE

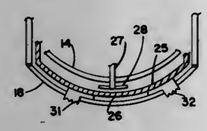
Robert Jean Vande Wiele, Silvis, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 6, 1965, Ser. No. 453,624
2 Claims. (Cl. 116—124)



1. In a harvesting machine having a mobile body adapted to advance over the ground, a forwardly disposed header carried by and mounted for vertical adjustment on the body, and a float and adjusting mechanism operative between the body and the header to vertically adjust the header on the body between an operating position wherein it is partially supported by the ground and an elevated position and to proportion the weight of the header between the body and the ground when the header is in its operating position, said float and adjusting mechanism including a pair of opposite members movable toward and away from each other, and whose distance apart varies according to the proportion of the header weight supported by the ground, the improvement comprising: a stationary indicator element mounted on the harvesting machine, a movable indicator element mounted for movement adjacent and relative to the stationary element, and means operatively connecting the movable indicator element to the float and adjusting mechanism to shift the movable indicator element relative to the stationary element in response to movement of said opposite float and adjusting mechanism members toward and away from one another.

3,349,748
INDICATOR

William I. Strauss, Norwood, and Richard Bruce Newell, Attleboro, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Oct. 7, 1964, Ser. No. 402,206
1 Claim. (Cl. 116—129)



Industrial instrument indicator means comprising an open top indicator housing, an indicator background strip forming the front wall of said housing, said background strip being curved as defined by a horizontal radius about a center point within said housing, an indicator arm within said housing and operable as said radius about said center, an indicator element depending from said arm and lying in front of said background strip for movement horizontally therealong as said indicator arm is pivoted about said center,

a cover for said housing, a transparent depending front wall as part of said cover, with said cover front wall lying in front of said background strip and in front of said indicator element,

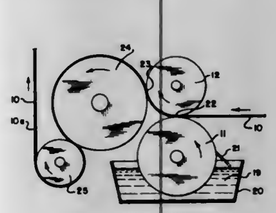
a fixed, opaque shield portion provided in said cover front wall behind which at least the greater part of said indicator element may be hidden as a norm location,

a pair of adjustable, opaque shield members mounted in front of said depending front wall of said cover, for horizontal adjustment resulting in hiding different portions of said background strip, said adjustable opaque shield members, together with said fixed opaque shield, providing shield variants from the size of said fixed shield alone, to a shield made up of all three shields in series, side by side,

and supporting means for said adjustable shields, mounted on said cover for holding said adjustable shields in front of said front wall of said cover, and by means of which said horizontal adjustment of said adjustable shields is accomplished.

3,349,749
PRODUCTION OF GLOSSY COATED PAPER

Walter C. Utschig, White Plains, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Continuation of application Ser. No. 804,020, Apr. 3, 1959. This application Oct. 5, 1964, Ser. No. 406,213
1 Claim. (Cl. 118—60)



Apparatus for forming a continuous web severable into individual carton blank parts each having a portion of one surface thereof coated with glossy thermoplastic agent and another portion uncoated, comprising

(a) an applicator surface having provided therein a plurality of closely spaced recesses which together form a pattern and which has at least one area outside the general outline of the pattern free of said recesses,

(b) means for disposing molten thermoplastic agent only in said recesses and for leaving the area of said applicator surface between said recesses and outside the general outline of said pattern free of agent,

(c) heated means for moving a portion of said web into contact with said applicator surface to transfer agent in said recesses to the surface of said web portion in a pattern corresponding to the pattern of said recesses and thereby selectively coat said web portion,

(d) said heated means heating said pattern of agent on said web portion to maintain said agent in a plastic condition near its melting point and to cause said pattern to become substantially continuous while maintaining said area outside the general outline of said pattern substantially free of agent,

(e) an endless carrier having a smooth, mirror-finished, cooled surface,

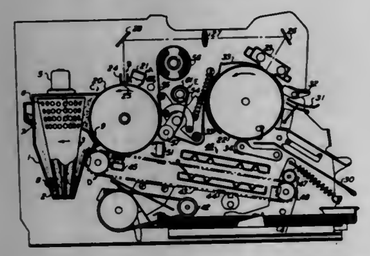
(f) said heated means moving said coated web portion while being heated by said heated means into contact with said cooled surface and pressing said heated pattern on said web portion against said cooled surface to cause said pattern to adhere to said cooled surface, make said pattern more uniformly continuous at the initial point of contact with said cooled surface and rapidly harden it,

(g) said heated means comprising an impression roll disposed to form a nip bo h with said applicator surface and said cooled surface, said web being trained over the segmental surface of said impression roll extending between said nips, and

(h) means for peeling said web portion from said cooled surface.

3,349,750
XEROGRAPHIC DEVELOPMENT APPARATUS

Daniel J. Donalies, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,646
9 Claims. (Cl. 118—637)



1. A developer apparatus for use in developing electrostatic images on an image member comprising

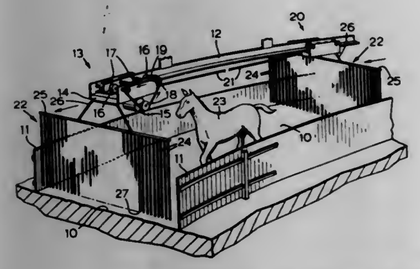
a perforated housing adapted to contain developer material, said perforation approximately opposite to an image member to be developed,

a means to cause a developer material to enter said housing and be maintained in mechanical contact therewith, and

a means for rotating the housing at a sufficient speed to cause developer material therein to be thrust to the housing walls by centrifugal force and dispersed through the perforations therein to impinge the image member.

3,349,751
APPARATUS FOR EXERCISING AND TRAINING ANIMALS, PARTICULARLY HORSES

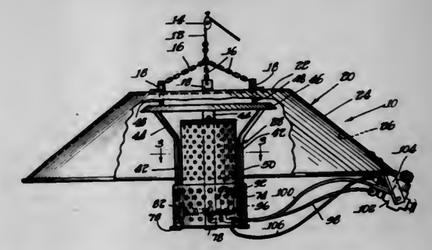
George Carmon Frostad, 3072 St. Clair Ave., Burlington, Ontario, Canada
Filed Feb. 14, 1966, Ser. No. 527,174
9 Claims. (Cl. 119—29)



1. Apparatus for exercising and training animals, particularly horses, comprising; a movable member supported above a track for the animals and constrained to move in an endless path; a first flexible curtain carried by said movable member and hanging downwardly therefrom towards said track; a second flexible curtain carried by said movable member and also hanging downwardly therefrom towards said track, said first and second flexible curtains being spaced apart from each other in the direction of movement of said movable member and defining therebetween a space sufficiently large that at least one animal to be exercised or trained may be disposed therebetween facing in the direction of movement of said movable member without touching either of said flexible curtains, said flexible curtains being of a width greater than the width of the animal to be exercised or trained and of a length such that a substantial portion of the animal to be exercised or trained is overlapped thereby, at least the one of the flexible curtains which moves ahead of the other flexible curtain constituting a means to permit the animal to see a portion of said track ahead of said one flexible curtain.

3,349,752
POULTRY BROODER

Raymond E. Murphy, Salisbury, Md. 21801
Filed Mar. 31, 1966, Ser. No. 540,474
7 Claims. (Cl. 119—32)



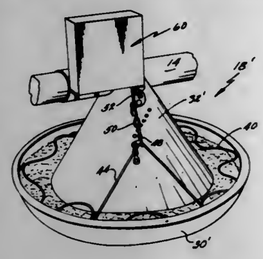
1. A poultry brooder comprising a hood, heat source means disposed beneath and secured with said hood, said heat source means including a generally upstanding shell having a substantially closed upper end and a lower end, fuel orifice means disposed for directing a non-burning and unconfined jet of fuel generally axially in said shell, a deflector member mounted in said shell substantially below said upper end and in alignment with and spaced from said orifice means for deflecting said non-burning jet of fuel into a relatively broad substantially uninterrupted sheet of non-burning fuel moving generally radially outwardly toward said shell, said shell being radially spaced from said orifice means for enabling the deflected fuel to mix with air and to be ignited adjacent a lower portion of said shell, and a plurality of orifice means in said shell for enabling hot and burning gases to flow therethrough, a bottom member traversing said lower end of said shell and having a central opening therethrough, said orifice means being disposed below said bottom member for directing said fuel jet upwardly through said opening, and said deflector member means disposed above and adjacent to said bottom member for directing the fuel generally radially outwardly in an annular sheet.

3,349,753
AUTOMATIC WEIGHT OPERATED POULTRY FEEDING DEVICE

Robert L. Van Huis, Zeeland, Mich., assignor to Big Dutchman, Inc., Zeeland, Mich., a corporation of Michigan
Filed Feb. 14, 1966, Ser. No. 527,180
3 Claims. (Cl. 119—52)

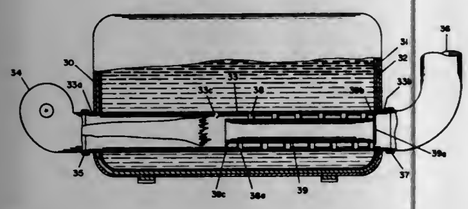
1. Automated fowl feeding apparatus including (1) an orificed feed supply conduit, (2) feed advancing means in the conduit, (3) a plurality of feed receiving pan as-

semblies beneath the conduit, and (4) electrical power means for said feed advancing means, the improvement comprising: one of said pan assemblies comprising feed supply control means, and including a hollow support element mounted to said tube, and a feed pan beneath said element and having hangers thereon; one of said hangers being attached to said element; a control switch subassembly mounted adjacent said tube and one pan assembly, operably associated with said electrical power



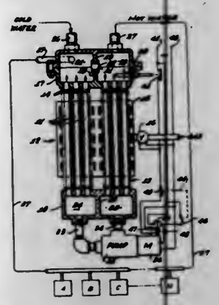
means to control it, and including a control switch lever means and means biasing said lever means to an actuating position; another of said hangers operably linked to said lever means and arranged to cause feed in said pan to apply a gravity biasing force to said lever means in opposed relation to that of said biasing means, to shift said lever means to an inactive position upon said pan receiving a predetermined amount of feed therein.

3,349,754
HEAT EXCHANGE DEVICE
John C. Bock, Madison, Wis., assignor to Bock Corporation, Madison, Wis., a corporation of Wisconsin
Filed June 29, 1966, Ser. No. 561,554
4 Claims. (Cl. 122—17)



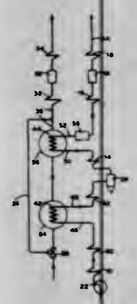
1. A heat exchange device comprising:
(a) a tank,
(b) a heat conductive tubular flue mounted in said tank and having a closed inner end disposed within said tank and an exhaust end,
(c) a plurality of baffles secured in heat conductive contact to the inner surface of said tubular flue and projecting inwardly to define a central column in said tubular flue,
(d) an elongated core disposed within said central column,
(e) a burner firing into said flue,
(f) said baffles being disposed in said flue in a spiral pattern to define a fluid flow path through said flue between the inner surface of said flue and said core,
(g) said baffles being tilted at an angle in a direction counter to the direction of their spiral pattern to guide said combustion gases through said flue in a spiral path counter to the direction of the spiral pattern of said baffles, and
(h) an exhaust outlet at the exhaust end of said flue for discharging the combustion gases from said flue.

3,349,755
RECIRCULATING FLOW WATER HEATER
Avy L. Miller, 13246 Saticoy St., North Hollywood, Calif. 90028
Filed Mar. 9, 1966, Ser. No. 532,955
20 Claims. (Cl. 122—406)



1. In a water heater: forward and rear manifolds; heat exchange means interconnecting said manifolds and providing for the flow of water to be heated therethrough; a water inlet to said heat exchange means supplying cold water to a manifold; a hot water consumption outlet from said heat exchange means withdrawing heated water from a manifold; means for selectively supplying heat to said heat exchange means to heat the water flowing therethrough; and means for forcibly circulating water through said manifolds and heat exchange means at a rate of flow substantially higher than the rate of flow through said hot water consumption outlet to provide for rapid sampling of the temperature of the water in the heater.

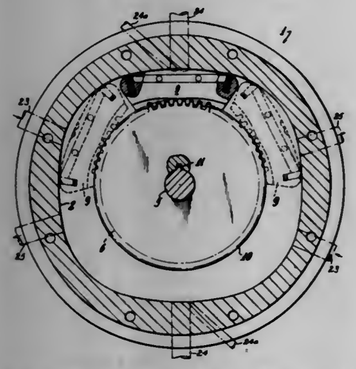
3,349,756
STEAM GENERATING, SUPERHEATING AND REHEATING APPARATUS
Wolfgang Skubatz, Oberhausen, Rhineland, Germany, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain
Continuation of application Ser. No. 391,990, Aug. 25, 1964. This application Sept. 16, 1966, Ser. No. 580,129
Claims priority, application Germany, Sept. 5, 1963, D 42,411
7 Claims. (Cl. 122—476)



1. In a vapor generator, a vapor generating and superheating circuit subject to high temperature heating gases and comprising a first fluid heating unit, a first heat exchanger unit, a second fluid heating unit, and a second heat exchanger unit; means supplying vaporizable fluid to the inlet of said circuit and directing all of the fluid so supplied through said units in the order named; a single reheat circuit connected for flow of expanded fluid from the vapor generating and superheating circuit and

arranged in indirect heat absorbing relation with said first and second heat exchanger unit; and means for directing expanded fluid through the reheat circuit to progressively increase the temperature of the expanded fluid.

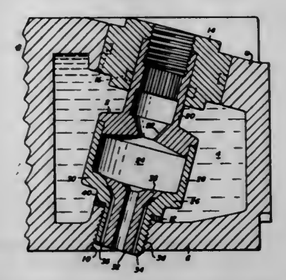
3,349,757
ROTARY POSITIVE DISPLACEMENT MACHINE
José Ignacio Martin Artajo, Madrid, Spain, assignor to Research Corporation, New York, N.Y., a corporation of New York
Filed Sept. 26, 1960, Ser. No. 58,564
Claims priority, application Spain, Feb. 27, 1960, 256,112; May 20, 1960, 258,266
9 Claims. (Cl. 123—17)



1. In a rotating machine, the combination of a block member, a rotor member and end wall members; said block member having a hollow interior the inner surface of which is divided into an integral number of pairs of concave sectors, one sector of each pair defining an outer boundary of a compression chamber, the other sector of the pair defining an outer boundary of an expansion chamber; said end walls closing the ends of the block and defining side boundaries for each of said compression and expansion chambers; said rotor being journaled in said end walls for rotation within said block; at least one articulated piston interconnected to the rotor, said piston having an arcuate dimension substantially equal to 360° divided by the number of concave sectors, said piston further having a convex outer surface shaped to substantially conform to the curvature of said sectors which define compression chambers, said outer convex surface of said rotating piston substantially defining the inner boundary of said compression and expansion chambers, and means for maintaining said piston outwardly against the inner surface of said block, said block and end wall members forming a housing having intake and exhaust ports therein communicating to the interior of the block, said rotor having gear teeth projecting from its outer edge, the under surface of said pistons having a gear segment adapted to engage the teeth of the rotor and the means for maintaining the pistons outwardly against the inner surface of the block are guide rings journaled on the shaft of the rotor and disposed between the rotor and the end wall members.

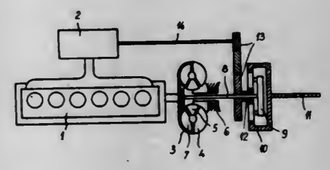
3,349,758
PRECOMBUSTION CHAMBER DEVICE
Robert Anthony Gragson, 200 Jeanne Drive, Las Vegas, Nev. 89108
Filed Aug. 19, 1965, Ser. No. 481,132
11 Claims. (Cl. 123—32)

1. A precombustion chamber device capable of use with an internal combustion engine comprising, walls defining an enclosed precombustion chamber, one of said walls having an inlet to said precombustion chamber for connection to a fuel injecting device, a pair of concentric tubular members attached to one of said walls and extending outwardly from said precombustion chamber, said tubular members being spaced apart radially to de-



fine an annular space therebetween, the innermost said tubular member having a central bore in fluid communication with said precombustion chamber, and barrier means proximate to said precombustion chamber closing off direct fluid communication between said precombustion chamber and said annular space.

3,349,759
DIFFERENTIAL SUPERCHARGING OF ENGINES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Oct. 7, 1965, Ser. No. 493,636
Claims priority, application France, Dec. 24, 1964, 2, Patent 1,427,207
3 Claims. (Cl. 123—119)



1. In an internal combustion engine provided with a volumetric compressor to supercharge said engine, the improvement comprising a torque converter having an impeller connected to the output shaft of the engine, a disengageable reaction member, and a turbine member, and a differential gear having a planet wheel carrier mounted on the output shaft of said turbine member of the torque converter, an annulus fixed to the output shaft of the gear, and a central pinion driving the compressor shaft by way of a gear train.

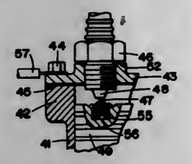
3,349,760
ENGINE-IGNITION SYSTEMS AND COMPONENTS
John J. Horan, 420 Quigley Ave., Willow Grove, Pa. 19090
Filed Oct. 20, 1965, Ser. No. 498,359
9 Claims. (Cl. 123—162)

1. A distributorless ignition system for an internal-combustion engine, said system comprising:
at least one combustion chamber,
a piston reciprocating in said chamber,
an apparatus containing a polarized ferroelectric body having two opposite poles,

said apparatus including means for cyclically squeezing said body sufficiently to generate a high-tension, ignition-spark voltage between said poles, and

an insulated conductor carrying said voltage from one of said poles and leading sealably into said chamber via the upper portion of the wall thereof,

said apparatus being mechanically phased with said piston to provide said voltage when said piston is compressing a combustible mixture,



said piston having an electrically conductive upper portion so configured and aligned as to pass close to said conductor leaving a small gap at a timely instant before said piston has completed compression of said mixture,

said conductive portion being at said instant in circuit also with the other pole of said ferroelectric body,

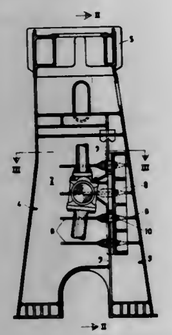
whereby said voltage is discharged via said conductive portion.

3,349,761

ENTABLATURES FOR PISTON ENGINES

Axel Gunnar Hellström, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden

Filed May 20, 1966, Ser. No. 551,760
Claims priority, application Sweden, June 9, 1965, 7,542/65
3 Claims. (Cl. 123—195)



1. In an entablature for a crosshead piston engine

a box-like structure adapted to enclose and to carry each engine cylinder

two transverse and two longitudinal walls as well as upper and lower horizontal wall portions in each box-like structure

a number of cross ties arranged one above the other essentially at right angles to each of said transverse walls and extending over a considerable part of the breadth thereof

a rib at each of said transverse walls at right angles to and intersecting said ties

a bracket fitted on the ridge of each tie at the intersection of tie and rib

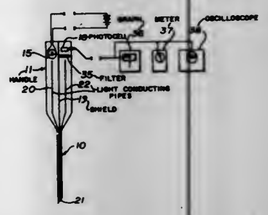
a crosshead guide and means to detachably connect the crosshead guide to each bracket.

3,349,762

BLOOD FLOW INDICATOR AND PROCESS

Narinder S. Kapany, Woodside, Calif., assignor to Optics Technology, Inc., Belmont, Calif., a corporation of California

Filed Oct. 21, 1964, Ser. No. 405,409
4 Claims. (Cl. 128—2.05)



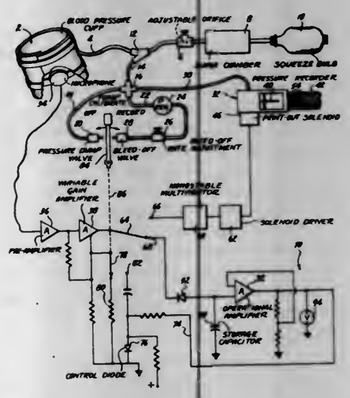
1. A method for obtaining the velocity of blood flowing within a blood vessel comprising the steps of: determining the wave length of light that exhibits minimum variation in transmission or reflection from changes in oxygen content of the flowing blood; inserting first and second fiber optical paths into said blood vessel, said paths terminating in optical communication with said flowing blood; directing light of a wave length in substantial conformance with said determined wave length along said first optical path into optical communication with said flowing blood; measuring the intensity of said light that passes from said flowing blood into optical communication with said second optical path; converting the measured intensity of said communicated light to an electrical signal; and determining the velocity of the flowing blood from the amplitude of the electrical signal.

3,349,763

BLOOD PRESSURE MEASURING AND RECORDING DEVICE

Clarence J. Clements, Jr., and William B. Leaf, Silver Spring, Md., assignors to Prototypes, Incorporated, Kensington, Md., a corporation of Maryland

Filed Jan. 22, 1965, Ser. No. 427,344
12 Claims. (Cl. 128—2.05)



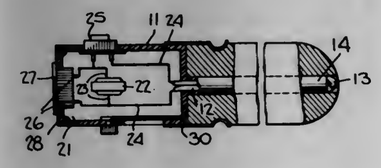
12. A blood pressure measuring device comprising: an inflatable cuff for occluding and restoring blood flow in response to pressure variations therein; a microphone for detecting body sounds adjacent said cuff and producing signal pulses corresponding thereto; a variable gain amplifier for amplifying said pulses; recording means responsive to said amplified pulses and to the pressure in said cuff for making a record of said pulses and pressure; calibrating means for varying the gain of said amplifier in accordance with predetermined characteristics of sounds picked up by said microphone; and switching means for selectively connecting the output of said amplifier to either said calibrating means or said recording means.

3,349,764

SELF-ILLUMINATING TONGUE DEPRESSOR WITH DETACHABLE TONGUE BLADE

Ladislav Leslie Edinger, 1084 Allerton Ave., Bronx, N.Y. 10469, and Istvan Halasz, Wolfgang Strasse 121, Frankfurt am Main, Germany

Filed Oct. 7, 1964, Ser. No. 402,094
5 Claims (Cl. 128—16)



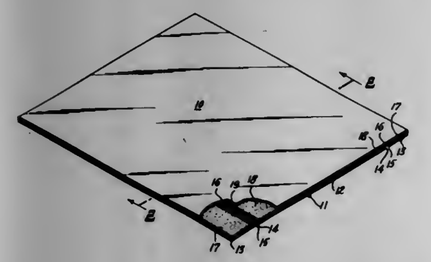
1. A disposable self-illuminating tongue depressor comprising a handle, a rod extending laterally from said handle, means for illuminating said rod, a blade, a recess in said blade extending axially the length thereof, said rod being removably received in said recess and extending substantially the length thereof, spring means on opposite sides of said handle, said spring means bearing against opposite sides of said blade to detachably secure said blade to said handle, and plunger means in said handle for selectively ejecting said blade whereby said blade may be ejected from said handle after use and discarded.

3,349,765

SURGICAL DRAPE

William F. Blanford, Dayton, Ohio, assignor, by mesne assignments, to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

Filed Oct. 7, 1965, Ser. No. 493,847
13 Claims. (Cl. 128—132)



1. A marginally reinforced surgical drape adapted for improved aseptic handling comprising in rolled form:

(1) a sheet of thin transparent flexible plastic material having a central pressure sensitive adhesive layer thereon covering the major central portion of one surface of said sheet for adhering the drape to a patient;

(2) reinforcing strips adhered to said sheet along the marginal edges thereof at the outer and inner ends of the rolled sheet, said strips being out of contact with said adhesive layer; and

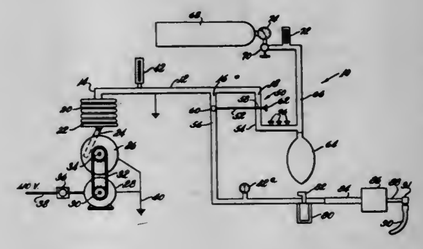
(3) a protective backing removably adhered to said adhesive layer, said backing being substantially coextensive with said adhesive layer and substantially coterminous with at least the end of the central adhesive layer at the inner end of the drape in its rolled form so that, in removing the backing from the drape in its rolled form, the inner end of said backing may be noted before said backing has been completely removed from said adhesive layer.

3,349,766

ANESTHETIZING, RESUSCITATING, AND RESPIRATORY APPARATUS

David J. Donofrio, 1407 Herberich Ave., Akron, Ohio 44301

Filed June 2, 1964, Ser. No. 372,057
9 Claims. (Cl. 128—145.6)



1. In a gas respirator the combination of

a conduit piping system having one access opening thereto and two discharge openings therefrom,

closed bellows means having a single output connected to the access opening of said piping system,

motor means to mechanically actuate said bellows with a reciprocating motion to introduce a fluid under a pulsating pressure into said piping system,

rheostat means to control the speed of said motor means,

a closed expandable rebreathing bag having a single access opening operatively connective to one of the discharge openings of said piping system,

an open system flexible conduit means connected to the other discharge opening of said piping system,

interconnected double-compensating valve means associated with said discharge openings from said piping system,

means to actuate said valve means so that as one discharge opening is regulated from fully opened to fully closed, the other discharge opening is simultaneously regulated from fully closed to fully opened, and

means to controllably introduce oxygen under controlled pressure into the piping system.

3,349,767

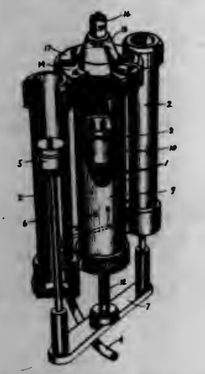
INJECTION SYRINGE

Ake Samuel Gidlund, Lokevagen 13, Djursholm, Sweden

Filed June 4, 1964, Ser. No. 372,502
Claims priority, application Sweden, June 5, 1963, 6,236/63
1 Claim. (Cl. 128—218)

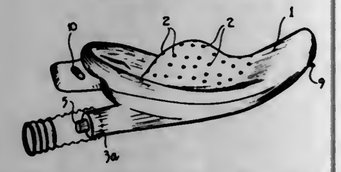
An injection apparatus for a rapid injection of a liquid through a catheter which is introduced into a vein, comprising an injection syringe having a fastening member for said catheter, a syringe body consisting of a fluid

pressure cylinder made of metal and a front portion made of a transparent material removably secured to said fluid pressure cylinder which supports said fastening member, a piston located in said fluid pressure cylinder, a piston rod connected to said piston, two parallel pressure cylinders, said injection syringe being removably



fastened between said cylinders, means for supplying pressurized fluid to said cylinders, a plunger located in each of said cylinders for pressure responsive movement within said cylinders, and a member connecting said plungers and contacting the end of said piston rod for operating said piston when said pressurized fluid is supplied to said cylinders.

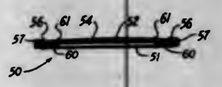
3,349,768
PORTABLE URINAL PROVIDED WITH SUCTION MEANS FOR USE IN MICTURITION
Francis Xavier Keane, 216 N. Circular Road, Dublin, Ireland
Filed Feb. 7, 1966, Ser. No. 534,598
Claims priority, application Ireland, Feb. 16, 1965, 165/65
13 Claims. (Cl. 128—276)



7. In a portable apparatus for collecting and conveying urine and other discharges from the region of the external genitalia, comprising a suction means for releasable positioning adjacent the external genitalia, inlet means in the suction means for receiving any discharge from the genitalia, an outlet in the suction means in communication with the inlet means, and a length of non-collapsible, flexible tubing connected to the outlet for connecting the same to a source of partial vacuum, the improvement of a suction head enclosing the suction means and having a wall shaped to provide full genitalia tissue support when in contact position with the genitalia.

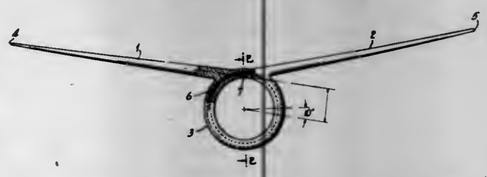
3,349,769
INCONTINENT PAD WITH BARRIER AROUND THE EDGE
Clara L. Piekarski, Milwaukee, Wis., assignor to South Side Nursing Home, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 20, 1964, Ser. No. 338,815
5 Claims. (Cl. 128—284)

1. In an incontinent pad comprising a plurality of layers of material, said layers being secured at their edges to constitute an integral pad to be worn by a patient, said layers also being contoured at their respective edges to provide a pad having a medial portion of lesser extent than at the end portions of said layers, a resilient moisture



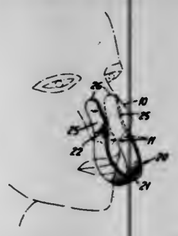
barrier means interposed between one of said layers and another of said layers adjacent the contoured edges thereof to prevent moisture from at least one of said layers from leaving said layers at the contoured edges thereof.

3,349,770
PLASTIC PROSTHESIS USEFUL IN GYNAECOLOGICAL SURGERY
John P. Sheehan, Somerville, N.J., assignor to Ethicon, Inc., a corporation of New Jersey
Filed June 3, 1964, Ser. No. 372,158
2 Claims. (Cl. 128—303)



1. An internal splint useful in preventing post-operative occlusion of the tubal lumen following a tuboplasty operation comprising a circular coil spring embedded in a molded plastic material to form a flexible ring, and two rods molded of a form retaining plastic material integral with said ring and tangent to its circumference, the ends of said rod being positioned in the plane of the ring and diverging slightly from the ring to their extremities.

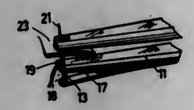
3,349,771
NASAL CLAMP
Samuel Baer, 8 Georgian Court, Troy, N.Y. 12180
Filed Dec. 29, 1964, Ser. No. 421,892
1 Claim. (Cl. 128—325)



A nasal clamp, for engaging exterior surfaces of the nose at substantially the anterior septal area to apply sufficient pressure on soft cotton pack means, placed within the nostrils, to arrest nasal bleeding, said nasal clamp comprising a unitary one-piece substantially flat and elongated relatively wide strip or resilient plastic composition material having the characteristics of strength and toughness and having a relatively high modulous of elasticity, said strip bent to form a substantially circular bight, having an angular extent substantially in excess of 180°, and to form straight, rectilinear and planar legs, of substantial surface area, extending from the ends of the bight

and, in the unstressed condition of the clamp, in closely adjacent relation and converging toward each other, outwardly from the bight, at a relatively small angle; said legs being spreadable by stressing of the clamp to engage and to apply pressure over substantial areas of opposite exterior surfaces of the nose at substantially the anterior septal area of the nose; the relatively broad nose-engaging surfaces of said legs being characterized by gripping formations including relatively shallow substantially V-shaped grooves, arranged as relatively short, longitudinally aligned and longitudinally spaced grooves along the coordinates of a substantially rectangular grid; grooves on one coordinate crossing over an intersecting coordinate and between the ends of longitudinally adjacent grooves on the intersecting coordinate; the angular extent of said bight in cooperation with said substantially rectilinear legs, providing for such pressure to be exerted by the clamp with the latter oriented at different respective angles relative to the nose; said clamp being retained in operative position solely by the pressure of said engagement with the nose.

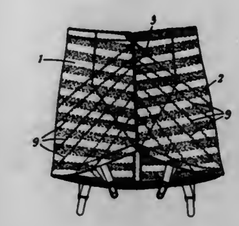
3,349,772
NEEDLE HOLDING INSTRUMENT FOR APPLYING CONTINUOUS SUTURES
Inge H. Rygg, Charlottenlund, Denmark, assignor to Aktiebolaget C V Heljestrand, Eskilstuna, Sweden
Filed July 22, 1964, Ser. No. 384,482
Claims priority, application Sweden, July 24, 1963, 8,218/63
1 Claim. (Cl. 128—340)



An instrument for applying a continuous suture having an atraumatic needle affixed thereto comprising in combination, two jaws which are movable toward and away from each other, a tubular needle holder provided on the first of said jaws adjacent to one of its ends and arranged to hold said needle with the tip thereof directed toward one end of the second one of the jaws, a resilient tongue provided on the outer side of the first jaw and acting on that end of said tubular needle holder that is remote from the second jaw, the needle holder being axially displaceable against the bias of said resilient tongue and being provided with a longitudinal slot, a fixed abutment on the said first jaw projecting through said slot into the bore of said tubular needle holder to locate said needle axially, and a resilient pad provided on said second jaw in alignment with the needle holder and arranged to receive and frictionally grip the tip of the needle when said tip has pierced the material to be sutured, so that said needle will be reinserted into the needle holder when the jaws are moved toward one another.

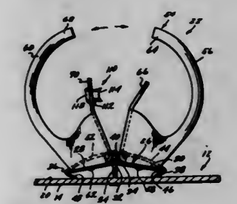
3,349,773
FOUNDATION GARMENT WITH ANCILLARY REINFORCING WEBS
Anne M. Lobbenberg, Shrewsbury, England, assignor to Corsets Silhouette Limited, London, England
Filed June 30, 1965, Ser. No. 468,445
Claims priority, application Great Britain, Feb. 4, 1965, 4,977/65
4 Claims. (Cl. 128—539)

1. In a foundation garment including a body encircling girdle of stretch material and having a front central vertical seam, an abdomen-covering reinforcing panel, and reinforcing means extending from said panel, the improvement in said reinforcing means comprising reinforcing webs sloped downwardly and outwardly from



said panel to the lower hem of the garment to coextend therewith from points adjacent the front vertical seam to points adjacent the center of the rear of the garment.

3,349,774
LOOSE-LEAF BINDER AND PAPER-PUNCH COMBINATION
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Sept. 9, 1966, Ser. No. 578,274
1 Claim. (Cl. 129—7)



A unitary loose-leaf binder and paper-punch means, comprising:

a pair of hinge plate means pivotal about adjacent edges for swinging paper-binding means from an open position to a closed position;

first paper-binding means fixed to one of said hinge plate means, said first paper-binder means including a first generally C-shaped paper-binding portion and a first base portion, integral therewith at one end thereof said first base portion being affixed to said one of said hinge plate means and including a first plate portion having a female punching-die opening therein;

second paper-binding means fixed to the other of said plate hinge means in alignment with said first paper-binding means, said second paper-binding means including a second generally C-shaped paper-binding portion adapted to close upon said first paper-binding portion when said hinge means swings said paper-binding means to said closed position, said second paper-binding means also including a second base portion integral therewith at one end thereof and affixed to said other hinge plate means, said second base portion including a second plate portion opposed to said first plate portion and having a male punching-die means fixed thereon in position to penetrate said female punching-die opening when said hinge means swings said paper-binding means toward said closed position, said first and second paper-binding means each being made from a single sheet of stamped

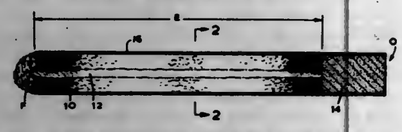
metal which is bent and rolled to form said first and second paper-binding portions, said first and second base portions and said plate poritons respectively, said second plate portion being bent slightly toward said first paper-binding portion and wherein said first plate portion is also bent slightly toward said first paper-binding portion.

3,349,775
VERTICAL FILE
George A. Rubissow, 420 Riverside Drive, New York, N.Y. 10025
Filed Mar. 13, 1963, Ser. No. 264,901
4 Claims. (Cl. 129—8)



1. A vertical file for suspension of a first type of sheets and a second type of sheets to be filed in combination, said file having a movable front opening section and has a stationary back section, upper portions of said sections being provided with a row of telescopic support arms, alternate ones of said support arms receiving said second type of sheets and the other of said support arms receiving said first type of sheets, each of said telescopic support arms composed of male and female support arms elements attached, respectively to one of said upper portions of said sections, each second type of sheets provided along its upper portion with a second type of supporting strips and a second type of supporting holes corresponding to the alternate ones of said support arms and accordingly being suspended thereby, the area of said second type of sheets adjacent to said second type of supporting strips being provided with a row of clearance holes corresponding to said other support arms, which thus accordingly pass freely through said clearance holes, each of said first type of sheets being provided on its upper portion with a first type of supporting strips provided with one row of supporting holes corresponding to said other ones of said support arms upon which they are suspended, the lower edge of each said second type of support strips following the contour of a wavy line, the upper edge of each of said first type of supporting strips following said contour of said wavy line, said first mentioned and said second mentioned contours of wavy lines being in register with each other and having a narrow clearance space therebetween so that overlapping of the two types of supporting strips is avoided.

3,349,776
LOW-TEMPERATURE CIGARETTE
James A. E. Bell, Cooksville, Ontario, and David H. Laing, Hornby, Ontario, Canada, assignors of one-third each to said Bell, said Laing and James Dennis Jones, Willowdale, Ontario, Canada as tenants in common
Filed Dec. 4, 1964, Ser. No. 416,022
17 Claims. (Cl. 131—8)

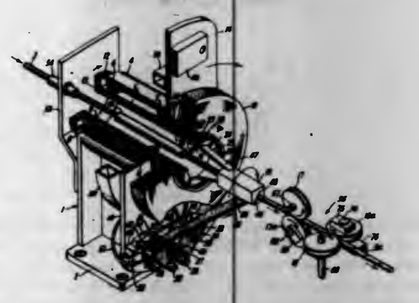


9. A cigarette extending longitudinally between an oral and a free end, comprising: an outer extent of said cigarette extending inwardly from said free end, being a combustible casing packed with cut tobacco to an extent to have a resistance to the flow of dry nitrogen at 80° F. (at the flow created at 0.3 centimeter of water per centimeter along the flow path) of from 80 to 2000 units where such units are measured in:

$$\frac{\text{pressure drop (measured in centimeters of } H_2O\text{) per centimeter along the flow path}}{\text{volume flow in litres per second (per square centimeter of flow cross-section)}}$$

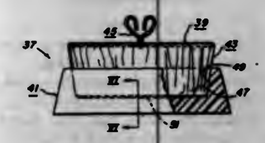
at least one passage extending along said outer extent surrounded, when viewed longitudinally along said cigarette, by said packed tobacco; said at least one passage having an area, in a plane transverse to the longitudinal direction being not more than ¼ the corresponding area of the cigarette; and an extent of said cigarette between said oral end and said outer extent having a resistance to flow, designed to provide in the cigarette an overall resistance to flow, of 15.2 to 30.4 of the same units.

3,349,777
HIGH SPEED SPIRAL WRAPPER MACHINE AND METHOD
Bert H. Wallace, Uniondale, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation of application Ser. No. 388,168, Aug. 7, 1964. This application Mar. 14, 1967, Ser. No. 623,140
24 Claims. (Cl. 131—59)



16. A method of wrapping a tobacco rod, comprising continuously moving the rod longitudinally, withdrawing wrapper material from a supply source and wrapping it around said rod during the longitudinal movement of said rod, and applying a retarding force to said withdrawing of the wrapper material to provide tension therein during its movement from said supply source to said rod.

3,349,778
CIGARETTE ASHTRAY MEANS
Raymond C. Jablonski, 1879 Coventry Drive, Memphis, Tenn. 38127
Filed Nov. 17, 1965, Ser. No. 508,334
6 Claims. (Cl. 131—241)



1. A disposable cigarette ashtray comprising a wire-like frame including a ring-like major portion and cigarette grip means, a cup-like body formed of a thin sheet of foldable material attached adjacent the upper end thereof to said major portion of said frame, said cigarette grip means including opposingly arranged paired primary end portions between which a cigarette may be gripped.

3,349,779
CIGARETTE FILTER ELEMENT CONTAINING CERTAIN HEXAHYDROTRIAZINES FOR THE SELECTIVE REMOVAL OF ACROLEIN
Ray E. Leonard and John E. Kiefer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 26, 1965, Ser. No. 482,925
14 Claims. (Cl. 131—266)

1. As a new article of manufacture, a tobacco smoke filter element containing a finely-divided hexahydrotriazine which will react with and neutralize substantially all acrolein in the tobacco smoke passing through said filter element.

3,349,780
ACETATE FILTER ELEMENTS CONTAINING CARBON
Bobby J. Sublett and George P. Touey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 4, 1964, Ser. No. 408,747
3 Claims. (Cl. 131—266)

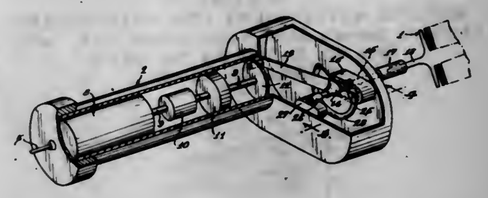
1. A tobacco smoke filter element consisting of a bundle of continuous, longitudinally aligned crimped cellulose ester filaments carrying on their surfaces activated carbon particles preponderantly of a mesh size between 8 mesh and 100 mesh, the said activated carbon particles being bonded to the surfaces of the filaments by a fused thermoplastic polymer, said polymer being a poly(oxy-ethylene glycol) having a molecular weight from about 50,000 to about 6,000,000 and softening above about 50° C.

3,349,781
HAIR COLORING METHOD
Renée Jean Poole, 29 Winchester St., Kenmore, N.Y. 14217, and Lisa Maslekoff, 293 Sterling Ave., Buffalo, N.Y. 14216
Filed Apr. 16, 1965, Ser. No. 448,628
6 Claims. (Cl. 132—7)



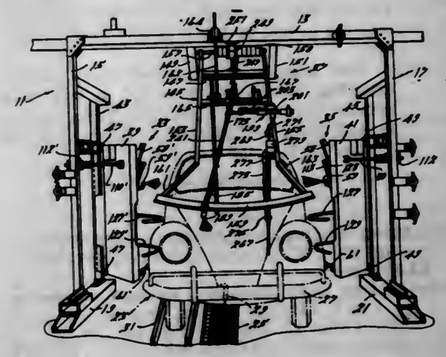
6. A hair coloring method which comprises raising the hair of a sector of the subject's head and laying the same up over the head, positioning a protective sheet of flexible material so that it extends downwardly from a lower portion of said sector, separating a layer of hair from the hair so raised and laying the same on said sheet, stroking the hair thus laid in a longitudinal direction with a brush dipped in a hair colorant so as to produce a spaced series of parallel streaks of hair having such colorant applied thereto, placing a second protective sheet on the first sheet with the treated layer of hair therebetween, separating a second layer from the raised hair and laying the same on said second sheet, brushing the same with colorant as in the aforesaid step, placing a further protective sheet on said second layer, and continuing this procedure until all of the raised hair of said sector has been treated, and repeating the foregoing procedure with further sectors until the subject's head is fully treated.

3,349,782
HAIR STYLING COMB WITH DRIVING MEANS
Robert Lee Sawin, 10535 Indiana, Chicago, Ill. 60628
Filed Aug. 23, 1965, Ser. No. 481,845
5 Claims. (Cl. 132—11)



1. A hand-portable hair styling device for teasing hair comprising a casing of convenient small size and light weight to be entirely supported by the operator's hand during use of the device, drive means mounted in said casing, comb means having a shaft and a plurality of laterally projecting teeth, means securing said comb means on said drive means against substantial rotational and axial movement of said comb means along the axis of its shaft relative to the casing, guide means mounted on said casing against movement relative thereto for guiding said comb means laterally through a stroking path in the absence of substantial rotational and axial movement of the comb means on the comb shaft axis relative to the casing, and motor means for driving said drive means.

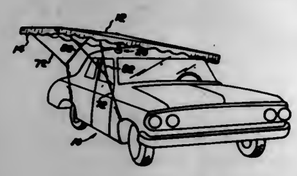
3,349,783
AUTOMATIC CAR WASH
John H. Ellis, 11676 E. Nine Mile Road, Warren, Mich. 48091
Filed Sept. 13, 1965, Ser. No. 487,020
19 Claims. (Cl. 134—45)



5. In a vehicle cleaning apparatus, means defining a path along which a vehicle may travel as it is being cleaned, at least one nozzle adapted to discharge a cleaning fluid toward a vehicle moving along the path, means operatively supporting said nozzle for movement in a first direction about an axis extending generally parallel to the path and in a second direction about an axis extend-

ing generally transversely to the path, means engageable with the vehicle traveling along the path for controlling the movement of said support means in at least one of said directions, and means for moving said nozzle along an arcuate path related generally to the conformation of the vehicle, said means operatively supporting said nozzle comprising frame means pivotal about an axis and including means for supporting said nozzle for swinging movement along a path generally transverse to the path which the vehicle travels as it is being cleaned.

3,349,784
SHELTER ATTACHMENT FOR AUTOMOBILES
Charles G. Roberts, 23861 Verne, Detroit, Mich. 48219
Filed Oct. 22, 1965, Ser. No. 502,076
1 Claim. (Cl. 135—5)



A shelter attachment adapted to be mounted on a supporting surface, said shelter attachment comprising,

(a) a support post having means for attachment to said supporting surface,

(b) a plurality of arm members extending radially from said support post,

(c) a flexible top member overlying said support post and said arm members and means for detachably securing said top member to said support post and said arm members,

(d) said last mentioned means comprising openings provided in said top member to axially receive the ends of said post and said arm members and means for adjusting the length of said arm members whereby said arm members may be initially adjusted to a shortened length, aligned with said holes and then lengthened to move the ends of said arm members axially into said holes, and

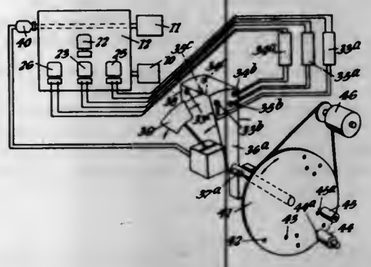
(e) said top member being rectangular and including,

(1) a collar member slidably carried on said support post and means for locking said collar member to said post at a desired axial position, and

(2) four equally spaced substantially radially extending holes being provided in said collar member and said arm members being received by said holes and extending diagonally to the corners of said top member.

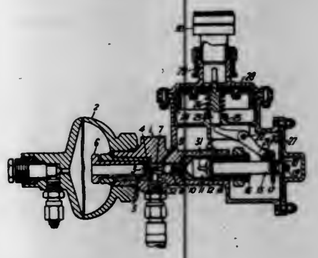
3,349,785
DRIVING MEANS CONTROL RESPONSIVE TO SPEED INCLUDING LIGHT SENSITIVE ELEMENTS
Kenneth Alfred Duffy, Rochester, England, assignor to C.A.V. Limited, London, England
Filed Mar. 15, 1965, Ser. No. 439,708
Claims priority, application Great Britain, Mar. 19, 1964, 11,616/64
8 Claims. (Cl. 137—30)

1. Speed control apparatus comprising in combination, a driving means, a first solenoid for effecting a control to increase the speed of said driving means, a second solenoid for effecting a control to reduce the speed of said driving means, a third solenoid for effecting a control to increase the rate of change of speed in either direction, an adjustable carrier, three light sensitive devices mounted in spaced relationship on the carrier, a light source for illuminating the light sensitive devices, and a mask movable between the light source and the light sensitive devices in accordance with the speed of said driving means, said light sensitive devices being arranged respectively in electric circuits for controlling the three solenoids, the arrangement being such that, when said means is running at a speed corresponding to that for



which the carrier has been preset the mask will assume an angular position so that all the solenoids are inoperative to vary the speed of said means, but departure from this speed will cause the mask to move so as to cause either the first or second solenoids to become operative to change the speed of said means in the appropriate direction, whilst further departure in the same direction will cause the third solenoid to become operative to increase the rate of change of speed of said means.

3,349,786
PRESSURE-SENSITIVE MECHANISM
James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, Middlesex, England
Filed Feb. 15, 1963, Ser. No. 258,833
Claims priority, application Great Britain, Feb. 16, 1962, 5,992/62
2 Claims. (Cl. 137—68)



1. A pressure-sensitive valve mechanism comprising, in combination:

(a) a tubular body;

(b) a frangible valve member in a portion of said tubular body and sealing the same;

(c) a cylinder aligned with said portion of said tubular body;

(d) a piston member movable in said cylinder toward and away from said valve member;

(e) pin means on said piston member for rupturing said valve member when said piston member moves toward the same;

(f) an explosive charge in said cylinder and offset from said piston member in a direction away from said valve member;

(g) firing means for firing said explosive charge which includes

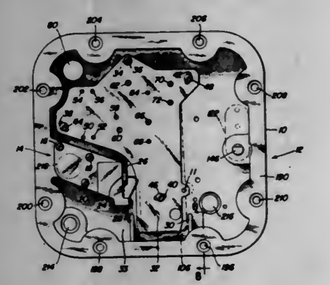
(1) a firing pin movable toward and away from a position of engagement with said charge, and

(2) yieldably resilient means biasing said firing pin toward said position of engagement;

(h) diaphragm means exposed to the pressure to which the mechanism is sensitive, and arranged to move in a predetermined direction in response to an increase in said pressure; and

(i) motion transmitting means interposed between said diaphragm means and said firing pin for normally holding the same in a position remote from said position of engagement against the bias of said resilient means, for moving said firing pin from said remote position in a direction away from said charge when said diaphragm means moves a predetermined distance in said predetermined direction, and for releasing said firing pin for movement thereof by said resilient means when said diaphragm moves beyond said distance in said predetermined direction.

3,349,787
CONTROLLING APPARATUS
Horst R. Thieme, Horsham, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,529
1 Claim. (Cl. 137—85)



An explosive proof inclosure comprising a first member forming a first portion of the inclosure, a flapper-nozzle pressure regulator fixedly connected to an inner wall portion of the first member, a chassis plate, means pivotally mounting the chassis plate on the first member, said chassis plate having a plurality of slots therethrough, a screw through each slot for fixedly connecting the chassis plate to the first member, said slots being arranged in a manner such that loosening of the screws frees the chassis plate for limited pivotal movement about said means, said chassis plate having an elongated leg portion extending between a pair of spaced apart ribs fixed to said first member for limiting pivotal movement of the chassis plate, a plurality of tapped holes in the chassis plate, input signal means mounted on the chassis plate via some of said tapped holes, said input means having a portion abutting the flapper portion of said flapper-nozzle regulator for variably positioning said flapper portion relative to said nozzle portion in response to a signal applied to said input means.

3,349,788
FLUID MIXER WITH VALVING
Henry Chester, Los Angeles, Calif., assignor to Henco Manufacturing Co., Inc., Santa Monica, Calif., a corporation of California
Filed Nov. 23, 1964, Ser. No. 412,960
4 Claims. (Cl. 137—205.5)

1. A device of the class described including the combination of:

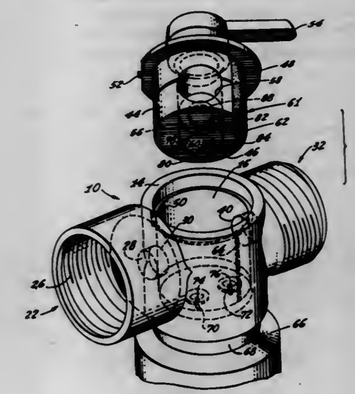
a housing having a cylindrical chamber therein,

an inlet on one side of said housing forming a port communicating with said chamber for supplying a primary fluid to the chamber,

an outlet on one side of said housing forming a port communicating with said chamber,

a plug-type valve rotor disposed in said chamber for rotating between three different positions,

a passage extending radially through said rotor and forming openings on the opposite sides of the rotor, said openings being positioned to register with said ports only when the rotor is in either the first or second position to allow the primary fluid to flow through the rotor,



a restriction in said passage to produce a pressure differential that is a function of the flow of the primary fluid through the passage,

a pair of passages in said rotor and extending substantially parallel to the rotor axis and offset to one side of the axis of the first passage and communicating with the first passage on the opposite sides of said restriction and terminating at the lower face of the rotor,

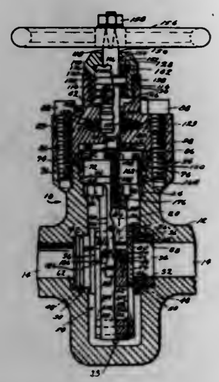
a pair of passages in said housing and communicating with the chamber and arranged to communicate with the pair of passages in the rotor only in the first position of the rotor.

3,349,789
LUBRICATED WEDGE GATE VALVE
Robert L. Crain and Elwood K. Pierce, Jr., Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed May 24, 1965, Ser. No. 458,190
18 Claims. (Cl. 137—246.22)

1. A gate valve comprising: a body, said body having means defining a flow passageway therethrough, means defining a gate receiving chamber in said body intersecting said passageway intermediate the ends thereof and transverse to the longitudinal axis of said passageway; means defining two annular recesses in said body, each circumferentially surrounding a juncture of said passageway and said body; an annular valve seat received in each of said recesses; means defining an opening through said body into said chamber at one end of the chamber; a gate including a pair of opposed gate plates received in said chamber through said opening and spaced from one another in the direction of the longitudinal axis of said passageway; gate expander means including a pair of elongated legs depending into said chamber, one adjacent and between each of the opposed gate plates adja-

cent the lateral edges of each gate plate; means defining a downwardly widening wedge on each of said elongated legs adjacent the lower extent thereof; means defining a flow passageway through said gate; means for moving said gate transversely of the body flow passageway to selectively align the body and gate flow passageway in a first position of the gate and to close off the body flow passageway in a second position of the gate; means on said gate slidably engaging each of said legs, said last-mentioned means engaging said wedges as said gate is moved from said first position to said second position thereby forcing said gate plates away from one another and into sealing engagement with said seats.

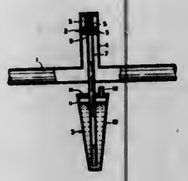
14. A gate valve as set forth in claim 1 wherein each annular valve seat includes means defining an annular radially directed axially inner end surface, means defining an axially extending outer peripheral surface and means defining an axially directed central passageway through



the valve seat communicating at one end thereof through said valve seat axially inner end surface; means defining a first annular groove in each seat in said axially inner end surface thereof coaxial with said central passageway; means defining a second annular groove in each seat in said outer peripheral surface thereof coaxial with said central passageway; means defining at least one communicating duct in each seat extending between said first and second annular grooves; conduit means in said valve body communicating with the second annular groove of each valve seat and with the exterior of the valve, an annular sealing ring received in each of said first annular grooves; a pressurized plastic sealant received through said conduit means into the second annular groove of each valve seat, into said communicating ducts and into said first annular grooves behind said annular sealing rings, said sealant forming a seal at said second annular grooves between said valve seats and said valve body and urging said annular sealing rings toward said gate for greater sealing pressure thereagainst.

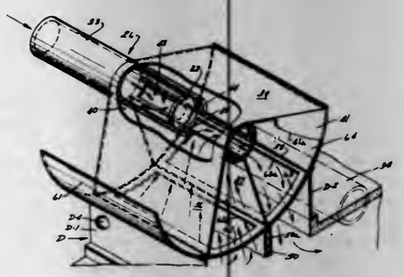
3,349,790
VALVE DEVICE IN GAS SYSTEMS
Carl-Gunnar Daniel Engström, Aluddsvagen 3, Stockholm, Sweden
Filed Apr. 20, 1964, Ser. No. 361,074
Claims priority, application Sweden, Apr. 30, 1963, 4,758/63; June 20, 1963, 6,905/63
2 Claims. (Cl. 137—247.17)

1. A gas pressure safety and relief valve device comprising: a conduit having a first open end and a second closed end, said conduit being connected at said first end to a gas system; a safety valve unit in said conduit comprising a membrane sealingly engaging the wall of said conduit intermediate its ends, a tube extending coaxially into said conduit through said first end into engagement with said membrane at one end and into a liquid trap at its other end; a spring between the membrane and said closed end, an aperture in said membrane establishing



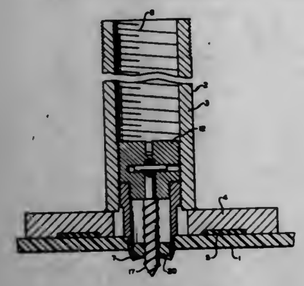
communication between the tube and the chamber formed between the membrane and closed end of the conduit; said membrane being adapted to flex away from the adjacent end of said tube upon occurrence of gas pressure in said gas system greater than the combined force on said membrane of said spring and pressure in said chamber corresponding to the head of the liquid in said trap to relieve the gas pressure in said system.

3,349,791
DIRECTIONAL FLOW CONTROL APPARATUS
Hector E. Guzman and George E. Keefer, Toledo, Ohio, assignors to Owens-Illinois, Incorporated, a corporation of Ohio
Filed July 12, 1965, Ser. No. 471,195
16 Claims. (Cl. 137—309)



1. An improved manifold valving apparatus for effecting alternate flow in a central zone connecting with an inlet port and an outlet port, said manifold apparatus comprising:
- a hollow tubular member having opposed ends, one of which is adapted for connection to an air supply and the other of which is adapted for connection to an exhaust, said tubular member having a generally cylindrical wall viewed in section,
- an inner partition separating said air-supply end from said exhaust end,
- slots extending through said cylindrical wall, one of which lies in said air-supply end and at least one of which resides with said exhaust end,
- means for mounting said tubular member in proximity to said ports,
- means for shifting said tubular member rotatably on its axis and
- means for connecting said slots with said ports alternately.

3,349,792
TAPPING T AND VALVE
Mark E. Larkin, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,946
5 Claims. (Cl. 137—318)

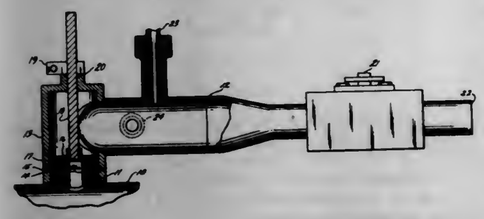


1. A service T for tapping plastic pipe comprising
(a) a body having
- (1) an elongated hollow conduit, a portion of the inner surface of which is threaded, said elongated hollow conduit having an outlet opening in a lateral surface thereof,
- (2) a collar portion being arc-shaped in cross section and adapted to fit over a portion of said plastic pipe, said collar portion having an opening in communication with the axial opening of said elongated hollow conduit,

(b) an annular cylinder in said elongated hollow conduit having at the lower end thereof a means for cutting a circular coupon from said plastic pipe to leave a circular hole in said plastic pipe,
- (1) a means on said annular cylinder for fastening said annular cylinder to the cut wall portion of said hole in said plastic pipe,
- (2) means on said annular cylinder for fastening said body of (a) to said annular cylinder to hold said collar portion of (a)(2) in sealable contact with said plastic pipe,

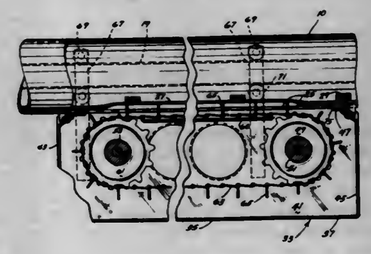
(c) a valve being threadably engageable with said inner threaded surface of said elongated hollow conduit and having
- (1) means for engaging said coupon cut from said plastic pipe by said cutting means.

3,349,793
EVACUATOR ASSEMBLY
William Balch, Bolton, Conn., assignor to The Quint Machine Corporation, Manchester, Conn., a corporation of Connecticut
Filed Oct. 15, 1964, Ser. No. 403,983
6 Claims. (Cl. 137—322)



1. An evacuator assembly for sealing the exhaust port of a chamber comprising an exhaust conduit having one end adapted to be removably seated around the exhaust port and an exhaust outlet connection at the other end thereof; first deformable sealing means adjacent said one end of said exhaust conduit for sealing between the exhaust conduit and the exhaust port received therein; a disc movable within said exhaust conduit adjacent said one end thereof and dimensioned to seat on the exhaust port within said exhaust conduit; disc operating means detachably connected to said disc and adjustably supported in said exhaust conduit, said operating means being extensible in alignment with the exhaust port to seat said disc thereon; second deformable sealing means on the face of said disc opposite said operating means to seal against the face of the exhaust port cooperating therewith; valve means to selectively shut off said exhaust outlet connection from said exhaust conduit; and a valved connection between said valve means and said disc for admitting a gas under pressure into said exhaust conduit to apply pressure to the face of said disc adjacent said operating means whereby, upon evacuation of the chamber through the exhaust port, the disc may be moved into sealing engagement with the exhaust port by said operating means and pressure applied thereto through said valved conduit to maintain said disc in engagement therewith and thereafter said operating means may be disengaged from said disc and the evacuator assembly removed from the exhaust port.

3,349,794
HYDRAULICALLY POWERED SELF-PROPELLED CONTINUOUSLY FED IRRIGATION DEVICE
Walter D. Behlen, Columbus, Nebr., assignor to Behlen Manufacturing Company, Inc., Columbus, Nebr., a corporation of Nebraska
Filed Dec. 23, 1965, Ser. No. 515,814
10 Claims. (Cl. 137—344)

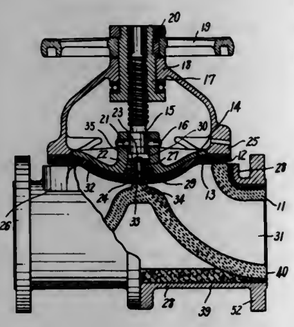


1. In an irrigation means,
a stationary pipe spaced above the surface to be irrigated and having a bottom portion and opposite sides,
said stationary pipe being in communication with a source of water under pressure,
said stationary pipe having a plurality of spaced apart openings formed in its bottom portion along the length thereof,
an elongated valve means in said stationary pipe normally positioned over said openings in said stationary pipe,
a valve means movably mounted on said stationary pipe adapted to move along the length thereof,
a first means in said valve means adapted to disengage a portion of said elongated valve means from said openings in said stationary pipe to permit communication between the interior of said stationary pipe and said valve means,
at least one lateral pipe extending from said valve means and being in communication therewith,
said first means adapted to successively engage said openings in said stationary pipe to cause said valve means to be moved along the length of said stationary pipe,

and a hydraulic power means on said valve means in operative communication therewith and being operatively connected to said first means to cause said first means to successively engage said openings in said stationary pipe to cause said valve means to be moved along the length of said stationary pipe,

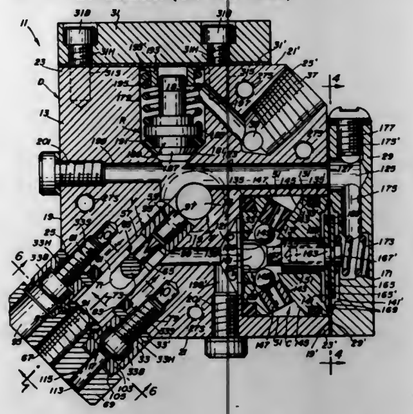
said lateral pipe being adapted to discharge water on the surface to be irrigated.

3,349,795
DIAPHRAGM VALVE INCLUDING A SNAP RING CONNECTION
Kunio Matsutani, Nagoya, Japan, assignor to NGK Insulators, Ltd., Nagoya, Japan
Filed Apr. 19, 1965, Ser. No. 449,239
Claims priority, application Japan, Apr. 22, 1964, 39/31,151
2 Claims. (Cl. 137—375)



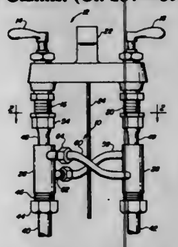
1. A diaphragm valve which comprises a valve body provided with a weir at the center top portion thereof normal to the direction of the fluid passage through said valve, a diaphragm made of resilient material to tightly contact with the upper surface of said weir covering said fluid passage, a compressor secured to a valve spindle to be operated thereby to close and open the valve by depressing said diaphragm against said weir and releasing the diaphragm therefrom respectively, a stud having a lower flanged end embedded in a boss formed at the central portion of said diaphragm in order to secure said diaphragm to said compressor rigidly, said stud being provided with an annular groove near the top end thereof, a snap ring having a pair of wings and formed to engage said annular groove provided on said stud, the bottom wall of the recess having an opening for receiving said valve spindle and formed to allow said snap ring secured to said stud to pass therethrough, the connection between said diaphragm and said compressor being established by turning said snap ring secured to said stud when projected through said opening in said bottom wall of said recess to have both wings of the snap ring rest on the upper surface of said bottom of the recess, thereby said diaphragm is operated in conjunction with said compressor, a valve casing made of ceramic material, a flanged metallic cover divided into two symmetrical sections secured together by means of the flanges and surrounding said casing so as to leave a gap there between, a central portion of said gap being filled with a relatively rigid packing and adhering material to rigidly connect said ceramic casing to the metallic cover, and a relatively flexible packing materail filled into end portions of said gap between the casing and the cover in the proximity of inlet and outlet openings of the valve to limit the effects of external bending forces acting on the valve to said metallic cover only for protecting said ceramic casing against damage liable to be caused by heavy external force.

3,349,796
FLUID FLOW CONTROL UNIT
Harold W. Scholin, 1225 N. Northwest Highway, Park Ridge, Ill. 60068, and Holger E. Pedersen, Chicago, Ill.; said Pedersen assignor to said Scholin
Filed Mar. 17, 1965, Ser. No. 440,384
17 Claims. (Cl. 137—501)



1. A flow control device comprising a frame having formed therein a fluid inlet chamber, a fluid delivery chamber, and a duct system interconnecting said chambers and including a check valve connected between and permitting fluid flow in one direction from the delivery chamber to the inlet chamber, an adjustable flow metering valve in said duct system for regulating the flow of fluid to said delivery chamber, and pressure regulating valve means connected in said system between said inlet chamber and said metering valve and operable in response to fluid pressures prevailing in the system, in advance of and behind the metering valve, to adjust the pressure of fluid delivered to the metering valve as a function of fluid pressure at the discharge side of the metering valve, to thereby maintain a uniform fluid pressure differential across the metering valve.

3,349,797
HOT AND COLD WATER CROSS-OVER FITTING
Albert W. Parr, 4700 Meldrum Ave., Milwaukie, Oreg. 97222
Filed Dec. 21, 1964, Ser. No. 419,735
6 Claims. (Cl. 137—594)



1. A hot and cold water cross-over fitting comprising:

a pair of laterally spaced distribution body members,

each of said body members including a single intake opening at one end thereof and a single outlet opening at the other end thereof,

wall means within each member separating said intake opening from said outlet opening,

each of said body members being provided with a first lateral opening in communication with said intake opening,

and a second lateral opening in communication with said outlet opening,

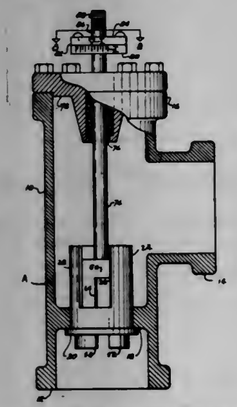
a pair of cross-over pipes extending between said body members and connecting together the same,

one of said cross-over pipes extending from the first lateral opening of one of said body members to the second lateral opening of the other of said body members,

the other said cross-over pipe extending from the second lateral opening of said one body member to the first lateral opening of said other body member,

said body members and said pipes being otherwise imperforate so that fluid flowing into the intake opening of one of said body members will be discharged through the outlet opening of the other said body member.

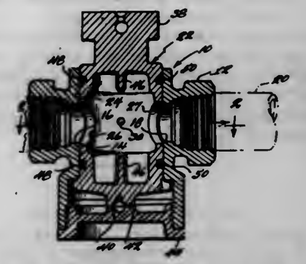
3,349,798
VARIABLE VALVES
Jesse O. Allen, 940 Ellis Ave., Orangeburg, S.C. 29115
Filed July 6, 1964, Ser. No. 380,314
3 Claims. (Cl. 137—625.17)



3. A valve comprising a housing having a first chamber and a second chamber, a cylindrical sleeve secured to the housing between the first and second chambers, a cylindrical valve member disposed within the sleeve about a common axis and being axially and rotationally movable with respect thereto, said sleeve and valve member each being integrally provided with cooperating orifice defining means for defining a rectangular passageway between the first and second chambers, releasably securable means for setting the width of the rectangular passageway at a preselected value, and externally responsive means for varying the height of the rectangular passageway in linear relation to externally directed movement of the valve member and in which the height of the rectangular passageway varies directly with the axial position of the valve member with respect to the sleeve.

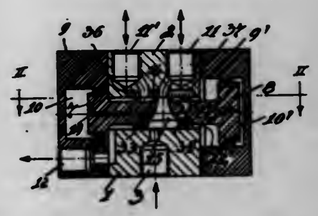
3,349,799
ROTARY PLUG VALVE
Frank H. Mueller and William L. Hauffe, Decatur,, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Apr. 20, 1965, Ser. No. 449,498
36 Claims. (Cl. 137—625.22)

1. A rotary plug valve comprising: a housing member having a cylindrical valve seat provided with an inlet port and a diametrically opposed outlet port; a cylindrical plug member rotatable in said valve seat and having a flow passage therethrough with port openings at each end thereof; means to limit rotation of said plug member between two positions, a first position where said valve is open and said flow passage is in registration with the ports in said housing member, a second position where said valve is closed and said flow passage is out of registration with the ports, said plug member having a drain passage therein communicating with the flow passage intermediate its port opening and arranged to align with the outlet port of said housing member when said plug member is moved to said second position; said housing member having a drain port therein extending from the exterior thereof to said valve seat, said valve seat further being provided with a shallow recess surrounding the inner end of the drain port in said housing member, said recess merging



smoothly with said seat, said drain port in said housing member being aligned with the flow passage in said plug member when the plug member is moved to said second position; means defining an endless groove on the exterior surface of said plug member between the port openings of the same; a resilient sealing ring in said groove of said plug member, said sealing ring and groove being arranged on the surface of said plug member opposite the side of the plug member having the drain port therein so that said sealing ring surrounds said inlet port of the housing member when said plug member is moved to said second position to close the valve and surrounds the drain port in said housing member when said plug member is moved to said first position to open said valve.

3,349,800
MULTI-WAY CHANGEOVER VALVE IN THE FORM OF A FLAT SLIDE VALVE WITH SERVO DRIVE
Erich Herion, Distlerstrasse 22, Stuttgart-Frauenkopf, Germany, and Erich Ruchser, Rommelshausen, Germany; said Ruchser assignor to said Herion
Filed Jan. 13, 1965, Ser. No. 425,288
Claims priority, application Germany, Jan. 15, 1964, H 51,384
9 Claims. (Cl. 137—625.66)



1. A slide valve comprising, in combination:

(a) a valve housing defining a passage extending in a predetermined direction and having two spacedly opposite faces in said passage,

(1) said housing being formed with an inlet opening in one of said faces and with two outlet openings in the other face, said outlet openings being spaced in said direction;

(b) slide means received in said passage for movement in said direction,

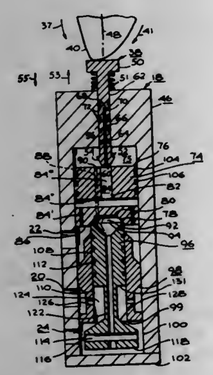
(1) said slide means being formed with a bore therethrough transverse of said direction;

(c) annular resilient sealing means interposed between said slide means and said one face for resiliently urging said slide means toward said other face,

(1) said sealing means and said bore being elements of a conduit having respective first and second terminal orifices contiguously adjacent said faces and continuously flaring from said second to said first orifice, the first orifice being adjacent said one face and having a substantially greater cross section than the second orifice adjacent said other face; and

(d) actuating means for reciprocating said slide means in said direction between two terminal positions, said first orifice communicating with said inlet opening in said two terminal positions, and said second orifice communicating with only one of said outlet openings respectively in said two positions.

3,349,801
VALVE ARRANGEMENT
John F. Grundmann, Los Angeles, Calif. (651 S. Irena Ave., Redondo Beach, Calif. 90277)
Filed Sept. 13, 1965, Ser. No. 486,667
19 Claims. (Cl. 137—627.5)



1. In a servo-control valve the improvement comprising, in combination:

a valve body;

a stem means mounted for reciprocal motion in said valve body and having a seal portion and an actuator end portion, and said stem means adapted to move reciprocally along a longitudinal axis thereof;

a spool means mounted for reciprocal motion in said valve body adjacent said seal portion of said stem means and having an upper surface and a lower surface, and having first walls defining an aperture therein, and said seal portion of said stem means adapted to be separated from predetermined portions of said first walls in said upper surface of said spool means by a first preselected distance, said spool means adapted to move reciprocatingly in paths colinear with said stem means for maintaining said preselected distance, and said spool means having second walls on said lower surface thereof defining a chamber;

a poppet means mounted for reciprocal motion in paths colinear with said spool means and having an upper surface and a lower surface, and said upper surface adapted to sealingly engage said second walls of said lower surface of said spool means in a neutral and a second position to seal said chamber, and to be separated therefrom in a first position, and said poppet means having first walls defining a passageway therein for fluid communication between said upper surface and said lower surface and said poppet having walls defining a peripheral volume thereon sealed from said passageway in said neutral position and said first position;

and said spool means having walls defining a bleed orifice therein providing communication between said chamber and said upper surface of said spool means;

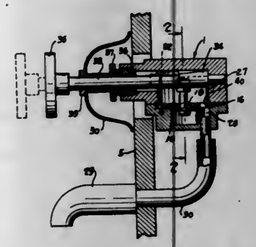
a first port in said valve body communicating with said aperture in said spool means;

a second port in said valve body communicating with said passageway in said poppet means and with said chamber;

a third port in said valve body communicating with said peripheral volume of said poppet means;

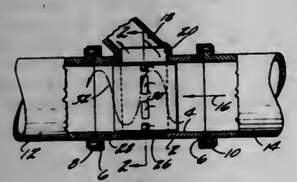
and said first port in communication with said second port in said first position through said passageway and said chamber, said third port in communication with said second port in said second position, and said first port in communication with said third port through said aperture and said bleed orifice in said spool means and said passageway in said poppet means.

3,349,802
CAM CONTROLLED ANTI-SIPHON MIXING VALVE
Gerald E. Christiansen, Flora, and William E. Politz, Delphi, Ind., assignors to Stephen A. Young, Monticello, Ind.
Filed Apr. 5, 1965, Ser. No. 445,456
3 Claims. (Cl. 137—636.1)



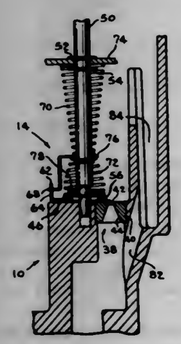
1. In valve construction of the class described, in combination, a body, a pair of horizontally spaced inlet chambers therein, a fluid supply line leading to each, a mixing chamber above said inlet chambers, an outlet therefrom, a passageway leading upwardly from each inlet chamber to the mixing chamber, a seat at the lower end of each passageway, a shut-off and actuating member for each said passageway, said member including a seat portion co-operable with said seat by fluid pressure to prevent the flow therethrough, a seat at the upper end of each said passageway, an actuating part for each member including means extending through each passageway, each shut-off and actuating member including a shut-off section at the upper end adapted to co-act with the seat at the upper end of the passageway to shut-off back flow therethrough when siphon action is initiated, and an operating device having means co-operable with said parts for separate and simultaneous actuation thereof to unseat the same to facilitate fluid flow to the mixing chamber against normal fluid pressure exerted on the fluid supply line leading to said inlet chambers.

3,349,803
BYPASS CONNECTION FOR SPLITTING A FUEL FLOW
Hector S. Bourgeois, Cincinnati, Ohio, assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 22, 1965, Ser. No. 450,045
3 Claims. (Cl. 138—37)



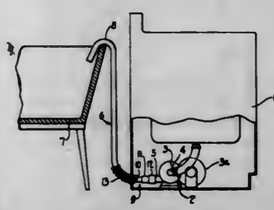
1. A T for a fluid conduit, said T including a base having a cylindrical longitudinal passage therethrough and attachment means at each end of the passage for connection to pipes forming, with the passage, the fluid conduit, said base having a cylindrical internal groove in the wall of the passage, said groove being eccentric to the passage and communicating with the passage throughout its periphery, a lateral passage in the base communicating with the groove in the area of maximum eccentricity of the groove, and a sleeve positioned in said base to overlie the groove and in contact with the longitudinal passage throughout its periphery, said sleeve having a row of similar openings uniformly spaced about the periphery of the sleeve and providing communication from the longitudinal passage to the groove.

3,349,804
VISCOSITY COMPENSATING FUEL CONTROL
Robert J. Duncan, Delafield, and William A. Biermann, Brookfield, Wis., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Sept. 16, 1965, Ser. No. 487,665
3 Claims. (Cl. 138—45)



1. Means for diminishing the effect of fuel viscosity variations upon the rate of flow through a fuel flow control device comprising, a compensating orifice adapted to pass fuel therethrough, said compensating orifice having a neck and a divergent contour in the direction of fuel flow, said compensating orifice being operable to have the fuel passed therethrough form a meniscus in said divergent contour, the distance between said neck and the meniscus increasing with an increase in fuel viscosity, and restricting means movable solely outside of said orifice and being operable to vary the fuel flow to said orifice in accordance with such movement, said restricting means being comprised of a cam overlying said compensating orifice, said cam having a pilot flow orifice adapted to be positioned over said compensating orifice, said cam also having a contoured portion adapted to be moved over said compensating orifice to increase the flow therethrough, said pilot flow orifice and said contour and pilot flow orifice being so positioned in respect to each other that said contour moves over said compensating orifice before said pilot flow orifice is fully removed from a position overlying said compensating orifice to thereby avoid an interruption in flow during such movement.

3,349,805
WASHING MACHINE DRAIN HOSE
Louis F. Fried, Westlake, Ohio., assignor to Joseph Dyson & Sons, Inc., Eastlake, Ohio, a corporation of Ohio
Filed Sept. 23, 1964, Ser. No. 398,727
1 Claim. (Cl. 138—109)



In a universal pump connected discharge conduit for conducting discharged fluid from a washing machine pump to a drain facility, the combination comprising: a substantially tubular conduit including a relatively rigid hooked end portion, a tubular body portion terminating in a plurality of selectively engageable female connector portions, each of different diameter, and each provided with a substantially cylindrical barrel portion terminating in an interiorly disposed abutment member defining a step to differentiate the next successive connector barrel and further defining a stop means engageable with the extremity of the male portion of a pump discharge outlet, said female connector portions being selectively employed to accommodate male pump discharge outlets of complementary diameter, said plurality of female connector portions each increasing in diameter over its predecessor progressively toward the extremity of said discharge conduit opposite said hooked end portion, and a flexible portion intermediate said hooked portion and said discharge connector portions including a molded spirally configured section adapted to pass through the cabinet of said washing machine and to be angularly deformed at that point to direct the flow of discharged fluid in a sharply divergent direction without impeding the flow of said fluid by constriction of said conduit.

3,349,806
REINFORCED HOSE CONSTRUCTION AND METHOD OF MAKING THE SAME
Robert E. Roberts, Wilton, Conn., assignor to Fred T. Roberts & Company, Wilton, Conn.
Filed Dec. 7, 1964, Ser. No. 416,556
11 Claims. (Cl. 138—122)

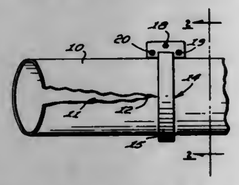
1. A reinforced flexible hose of elastomeric material comprising a corrugated tubular body of elastomeric material having embedded therein a reinforcing element comprising spaced turns of resilient strand material

capable of restraining radial deformation of the hose with the turns connected at spaced points therearound by longitudinally extending flexible strands interlocked with the



turns to resist longitudinal stretching of the hose and hold said turns in predetermined position with respect to the corrugations of said tubular body.

3,349,807
PROCESS OF LIMITING RIPPING OF HIGH PRESSURE COMPRESSIBLE FLUID CONDUIT AND MEANS THEREFOR
Dexter D. Penman, 9091 Orangewood, Garden Grove, Calif. 92641
Filed May 28, 1965, Ser. No. 465,820
4 Claims. (Cl. 138—172)



1. A process of limiting rips in high pressure compressible fluid conduit which carries such fluid at a predetermined pressure, said conduit having a predetermined circumferential tensile strength for each inch of length of conduit, said process including the steps of:

encircling the conduit with a series of bands of material prior to a rip forming in the conduit, said bands being spaced along the conduit at predetermined intervals, each inch of width of each of said bands having a tensile strength greater than said predetermined circumferential tensile strength;

and tightening each band of material onto the conduit sufficiently that when the fluid is within the conduit at said predetermined pressure, each band causes the stresses in the conduit wall in the area engaged by the band to be greatly different from the tensile stresses induced by the fluid in the conduit wall at areas not engaged by the bands.

3,349,808
LOCKING DEVICE
Ralph P. Gustafson, Hubbardston, and Edwin C. Smiley, Worcester, Mass., assignors to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 5, 1966, Ser. No. 540,232
11 Claims. (Cl. 139—66)



1. Means for releasably locking a power transmitting member to a shaft, said shaft having external splines thereon and said member having an aperture therethrough provided with internal splines axially fitted on said splined shaft, said means comprising:

(a) a projecting portion on at least one side of power transmitting member,

(b) a unitary locking member having an aperture therethrough provided with internal splines axially slidably fitted on said splined shaft, said locking member having a projecting portion on at least one side thereof,

(c) adjustable means acting on said projecting portions for forcing said power transmitting member and said locking member in opposite circumferential directions about the shaft, whereby the internal splines in said members are releasably locked in opposite directions into close frictional engagement with the splines on said shaft.

3,349,809
LOOM HARNESS
Albert J. Kieny and Charles F. Kramer, Philadelphia, and Frank H. Kaufmann, Huntingdon Valley, Pa., assignors to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1965, Ser. No. 509,386
2 Claims. (Cl. 139—91)



1. In a loom harness for supporting small groups of heddles,

heddle supporting bars upon which said heddles are mounted,

said bars having vertical shoulders inwardly of their ends,

a frame of one piece of synthetic plastic material of low frictional characteristics,

said frame having continuous and integral side frame portions and upper and lower end frame portions,

said side frame portions having openings in which the ends of the heddle supporting bars are engaged and inner face portions with which said shoulders are in engagement,

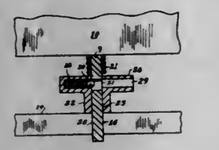
said side frame portions being resiliently bendable and being separable at the locations of said openings for insertion and removal of said heddle supporting bars,

said end frame portions having integral side portions carried thereby and extending longitudinally beyond said side frame portion, and

transversely extending strip portions between said longitudinally extending side portions and coplanar with said frame for direct harness strap engagement, and

said strip portions have a slot intermediate their ends for harness strap insertion.

3,349,810
HEDDLE BAR LOCKING DEVICE
Robert M. Goodman, Jr., Marietta, Ga., assignor to Pioneer Heddle and Reed Company, Inc., Atlanta, Ga., a corporation of Georgia
Continuation of application Ser. No. 393,934, Sept. 2, 1964. This application June 20, 1966, Ser. No. 559,004
11 Claims. (Cl. 139—92)



1. A heddle bar support and lock including a heddle bar support bolt and a body, said body defining a bore for slidably mounting said body on said bolt and having means to engage at least one heddle bar, and securing means for limiting the relative longitudinal movement of said body with respect to said bolt, said securing means being carried in a bore within said body and being independently movable with respect to said body.

3,349,811
HEDDLES
Frank H. Kaufmann, Huntingdon Valley, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 7, 1966, Ser. No. 579,454
6 Claims. (Cl. 139—96)



1. In loom harness in which a plurality of heddles are arranged side by side on supporting rods,

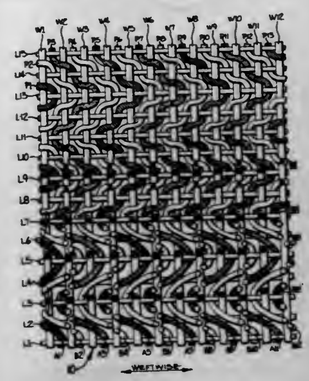
each of the heddles for the harness comprising a strip of material having mortised end portions with rod eyes for mounting on the supporting rods and a central portion,

a first warp eye having side margins oppositely offset from the main plane of the central portion thereby facing said first warp eye in a predetermined direction,

said central portion having a second warp eye in vertically spaced relation to said first warp eye and having side margins oppositely offset from the main plane of the central portion and oppositely with respect to the margins of the first warp eye thereby facing said second warp eye in an opposite predetermined direction to said first warp eye,

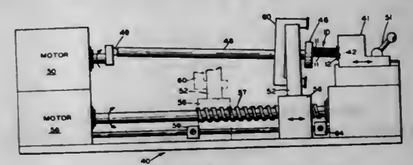
all said first warp eyes facing in the same predetermined direction and all said second warp eyes facing in the opposite direction.

3,349,812
SHAGGY CUT PILE FABRIC
James E. Troy, Spray, N.C., assignor to Fieldcrest Mills, Inc., Spray, N.C., a corporation of Delaware
Filed Jan. 12, 1966, Ser. No. 520,256
9 Claims. (Cl. 139—402)



1. A woven cut pile fabric having interwoven warp and weft yarns forming a ground fabric and cut pile tufts of short and abnormally long lengths, said pile tufts being U-shaped and looped beneath corresponding weft yarns, with the legs of each short tuft being of substantially equal length and the legs of each long tuft being of substantially equal length, and said short and long U-shaped tufts being positioned in warpwise and weftwise rows with the short and long tufts being arranged in alternation in the warpwise rows.

3,349,813
METHODS AND APPARATUS FOR ALIGNING RESILIENT LEADS
Ronald F. Pastuszak, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 504,022
7 Claims. (Cl. 140—147)



1. A method of aligning a plurality of resilient leads fixed at one end to an article so that the leads are perpendicular to the article and in parallelism with one another, which method comprises:

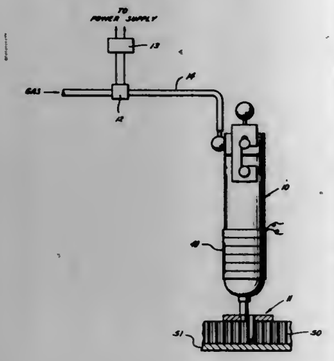
holding the article in a fixed position;

moving the ends of the leads in a generally outwardly expanding involute to stress the leads beyond their elastic limit and deform all the leads in the same direction and magnitude until the leads are in a state of equilibrium; and then

moving the ends of the leads in an inwardly contracting involute to return the leads to a position perpendicular to the article and in parallelism with one another so that the inherent spring back of the resilient leads does not misalign the leads.

3,349,814
METHOD AND APPARATUS FOR MAKING A HEAT INSULATING AND ABLATIVE STRUCTURE

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Robert W. King and Roy W. West, Jr.
Filed May 12, 1965, Ser. No. 455,352
5 Claims. (Cl. 141—5)

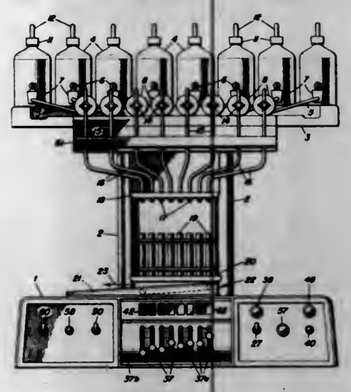


1. The method of filling a cell of honeycomb matrix to a uniform density with a highly flow-resistant, fibrous filler material comprising:
placing a positioning plate over the cell to be filled, said plate having pins thereon which fit into and support the cells adjacent to the cell to be filled;
positioning the outlet nozzle of a filler gun containing said fibrous filler material therein in communication with the cell to be filled by placing said nozzle in an opening on and through said positioning plate;
applying gas under pressure to the interior of the gun and onto said filler material whereby said gas passes downward through the passages which are inherently present in the fibrous material and into the cell, carrying said material with it into the cell;
exhausting said gas from the cell from near the lower end thereof after it has carried the material into the cell;
ceasing the supply of gas to said gun upon complete filling of said cell; and
venting said gun to the atmosphere.

3,349,815
PROPORTIONING INSTALLATION

Jozef Maurits De Baets, 56 Jan Van Rijswijcklaan, Antwerp, Belgium
Filed May 7, 1964, Ser. No. 365,673
Claims priority, application Belgium, May 9, 1963, 632,120
9 Claims. (Cl. 141—104)

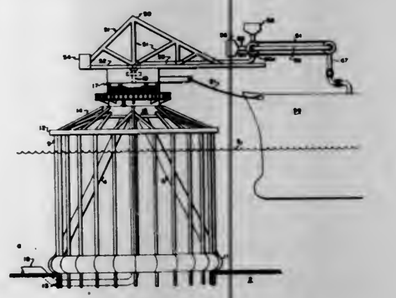
1. An apparatus for dispensing a predetermined amount of liquid from a plurality of vessels to a plurality of containers on a carriage, said apparatus comprising a constant level tank connected to each vessel, at least one dispensing mouth extending from each tank, valve means disposed between each tank and its corresponding mouth, said valve means normally being inoperable, an adjustable slide movable to a plurality of positions with respect to said mouths and adapted to support said carriage, control means responsive to the position of said slide and adapted to render a particular valve means operable, means to permit intermittent movement of said carriage to a plurality of predetermined positions with respect to said slide and underneath said mouths to align at least one container with the dispensing mouth associated with the operable valve means, an electro-mechanical interlock for maintaining the position of said carriage with respect to said mouths, actuating means responsive to said interlock for actuating the valve means



of said aligned mouth to permit liquid flow between said aligned mouth and container, and regulating means associated with said carriage for dispensing predetermined amounts of liquid into each of the containers from said aligned mouth.

3,349,816
BOW MOORING

Roger W. Mowell, West Caldwell, and John Mascenik, Mount Tabor, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 18, 1965, Ser. No. 483,014
3 Claims. (Cl. 141—387)

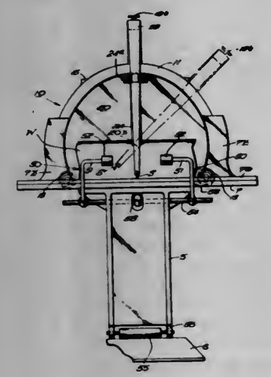


1. In combination, a ship and mooring structure for transferring a liquid cargo at cryogenic temperature to and from said ship; said ship having a rigid manifold connection attached to its foredeck and being free to rotate about said mooring structure without the passage of the liquid through flexible hoses; and a mooring structure, said mooring structure including a lower base donut ring adapted to be positioned on the ocean floor, supporting legs affixed to said donut ring and extending upwardly and inwardly from said donut ring to a point above the surface of the water, a top rigid platform supported above the water by said supporting legs, fendering tubes extending upwardly from said donut ring and positioned about the periphery of said donut ring to a point above the surface of the water, a fendering ring rigidly attached at the upper ends of said fendering tubes, a top ring positioned within and above said fendering ring and rigidly attached

to said fendering ring by means of structural members, said top ring being positioned about said rigid top platform, a turntable mechanism positioned on said rigid top platform and adapted to rotate with respect thereto, a first arm extending horizontally outwardly from said turntable mechanism, a second arm extending outwardly from said turntable mechanism and diametrically mounted with respect to said first arm, a loading mechanism positioned on the outboard end of said second arm and pivotally supported for horizontal rotation with respect thereto, a first counterweight positioned on the outboard end of said first arm, the weight of which is to produce substantially equivalent moments of said first arm and of said second arm and loading mechanism; said loading mechanisms including an inner rigid conduit pivotally connected through a swivel coupling to a support base, an outer rigid conduit pivotally connected through a swived coupling at one end to the inner conduit and at its opposite end arranged to be directly fastened to the rigid manifold on said ship, insulating means about said inner rigid conduit, and said outer rigid conduit, a second counterbalancing means to substantially counterbalance the inner conduit and, a third counterbalancing means being mounted for rotation relative to the outer conduit and rotatable in response to the movement of the outer conduit from a vertical position to change its movement arm in a direction and an amount to substantially counterbalance the outer conduit as it moves from said vertical position whereby said cryogenic liquid cargo may be transferred to and from said ship exclusively through insulated rigid conduits.

3,349,817
ELECTRIC MITERING MACHINE

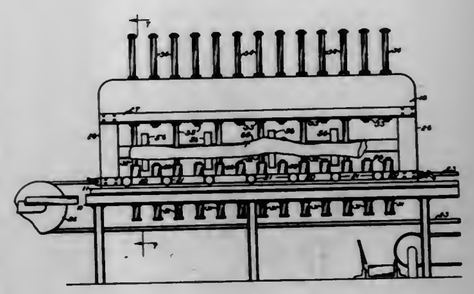
Janis V. Spalvins, 35 Burroughs St., Jamaica Plain, Mass. 02130
Filed Sept. 29, 1965, Ser. No. 491,228
8 Claims. (Cl. 143—7)



1. A mitering machine comprising a portable upright supporting frame having a horizontal work-receiving rest at convenient operating height above the machine supporting floor, mounting means on the frame for operatively presenting an electric-powered straight-bladed saw unit with capacity for bodily movement in self-parallelism toward and from work on said rest for saw-cutting the same, said means including provision for angularly variably positioning the saw blade about mutually perpendicular axes in the plane of the blade, and means for releasably locking the saw in the selected angular position about said axes.

3,349,818
LOG CARRIAGE APPARATUS

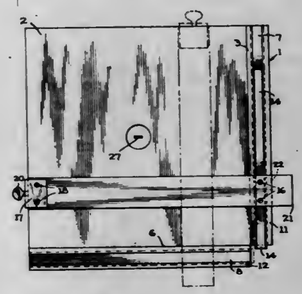
George Martin Standal, Chemainus, British Columbia, Canada
Filed Aug. 27, 1965, Ser. No. 483,174
5 Claims. (Cl. 143—105)



1. In a carriage for holding logs for longitudinal motion;
a supporting framework;
a movable frame carried by said framework for longitudinal motion relative thereto;
a plurality of independent lower dogs movably mounted on said frame adapted to engage the lower surface of a log supported longitudinally thereon;
and a plurality of independent upper dogs movably mounted on said frame, the upper dogs being mounted in opposition to the lower dogs and being adapted to engage the upper surface of a log engaged on said lower dogs.

3,349,819
SAW TABLE AND GUIDE

Gene L. Koons, 9424 Overlea Drive, Rockville, Md. 20850
Filed Sept. 7, 1965, Ser. No. 485,169
3 Claims. (Cl. 143—174)

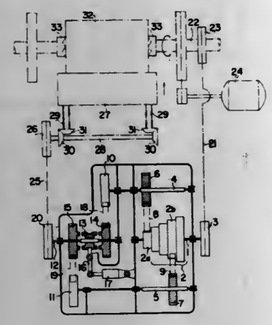


1. A saw table and work guide combination for cross-cutting and ripping operations comprising a saw table having channels disposed on two adjacent sides thereof, each of said channels being parallel to the table edge, a slidable T-bar member consisting of a first arm adapted to engage either of said channels, and a second arm secured perpendicularly to said first arm intermediate the end portion thereof, said second arm extending across said table and engaging the opposite side thereof.

3,349,820
FEED CONTROL MECHANISM IN A ROTARY VENEER LATHE

Noriyuki Nagaoka, Nagoya-shi, Japan, assignor to Kabushiki Kaisha Taihei Seisakusho, Minami-ku, Nagoya-shi, Aichi-ken, Japan, a joint-stock company

Filed June 11, 1965, Ser. No. 463,145
2 Claims. (Cl. 144—209)



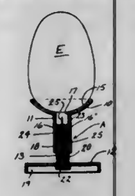
1. In a rotary veneer lathe having a lathe drive spindle, a cutting tool feed mechanism and a feed control means therefor, said feed control means including an input shaft, a drive connection between the input shaft and the lathe drive spindle for driving the input shaft at a rotational speed proportional to the lathe drive spindle speed, a multiple-gear cone on the input shaft, a clutch shaft spaced from and in axial alignment with the input shaft, a drive connection between the clutch shaft and the cutting tool feed mechanism, and at least two gear trains operably associated with the input shaft and the clutch shaft, each gear train comprising a shaft parallel to the input and clutch shafts, a driven gear rotatable with but axially slidable along the shaft, an intermediate gear in mesh with the driven gear and movable into and out of engagement with any of the gears of the multiple-gear cone, a change gear on the output end of the shaft, a member rotatable with but axially shiftable along the clutch shaft, clutch gears freely rotatable but nonaxially displaceable on the clutch shaft on opposite sides of the member, said member and clutch gears having complementary clutching surfaces, an intermediate gear in mesh with each clutch gear and movable into and out of engagement with a change gear, and a hydraulically operated piston and cylinder actuator connected to said member to shift the member along the clutch shaft to engage its clutching surface with the clutching surface of one of the clutch gears to transmit the drive of the selected gear train to the cutting tool feed mechanism.

3,349,821
EGG VENTING DEVICE

Axel Moeller, St. Petersburg Beach, Fla., assignor to Moeller Mfg. Co., Inc., Greenville, Miss., a corporation

Filed May 2, 1966, Ser. No. 546,637
3 Claims. (Cl. 146—2)

1. A device for forming a vent opening in the shell of an egg including, a rigid base, an upstanding lug integral with said base, said lug being provided with a central opening, an elongated stud having one end received in said lug opening and firmly secured to said lug, an egg puncturing pin secured at the axial center of said stud at its other end, a cup shaped egg engaging and seating part having a depending hollow sleeve at its axial center, said sleeve having an inwardly directed circular lip intermediate its ends providing an opening of a size and configuration to slidably and snugly engage said stud and to divide said sleeve into an upper and lower cylindrical portion of like inner dimensions, the lower cylindrical portion having an inner dimension adapted to slidably and snugly engage the outer surface of said lug, a peripheral ring on said lug adjacent said pin of a size and configuration to snugly and slidably engage the inner surface of said upper cylindrical portion and a spring having one end engaging said lug and its other end en-

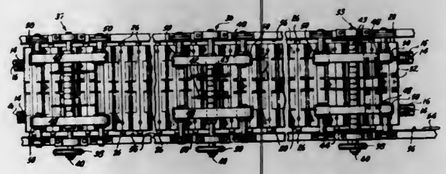


gaging said circular lip biased to constantly urge said egg engaging part and said base away from one another with said lip and circular ring engaging to provide a limit stop, said stud and pin being of a size and configuration to confine said pin end within said upper cylindrical portion just below the egg engaging and seating portion in its extended position but to allow said pin to enter above said egg engaging surface upon the movement of said egg engaging part downwardly against the bias of said spring.

3,349,822
FRESH CORN TRIMMING AND GRADING MACHINE

Robert G. Rauth, R.F.D. 1, Box 726, Del Ray Beach, Fla. 33444

Filed Nov. 10, 1965, Ser. No. 507,197
8 Claims. (Cl. 146—78)



1. A fresh corn trimming and grading machine comprising: an elongated conveyor; corn holding means on said conveyor for holding ears of corn of random lengths transversely of said conveyor; gauge means for positioning said ears on said conveyors with their butt ends in alignment adjacent one edge of said conveyor; corn cutting means adjacent said conveyor at successive stations spaced therealong, the cutting means at successive stations being arranged to cut said ears at positions progressively closer to said edge whereby the tips of short ears may pass through some of said stations without being cut and all ears cut at any one station are cut to the same length.

3,349,823
CORN GRINDER FOR FIELD OPERATION

Ted Stott, Celina, Herman Harvey Schulze, Coldwater, and Lyman J. Gunyou, Celina, Ohio, assignors to Avco Corporation, Coldwater, Ohio, a corporation of Delaware

Filed July 15, 1964, Ser. No. 382,739
6 Claims. (Cl. 146—79)

2. In a grinder for whole ear corn and other feed materials:

a rotatable knife assembly;

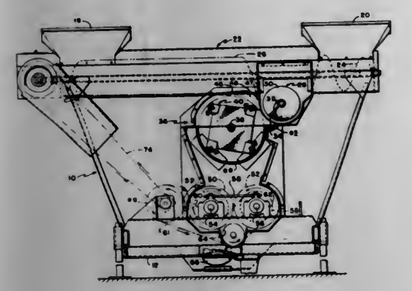
a generally cylindrical cage surrounding said knife assembly;

an opening in said cage to receive said material;

a shear bar adjacent said opening positioned in shearing relationship with said rotatable knife assembly to chop material entering said opening;

a lower substantially arcuate screen portion of said cage having perforated openings therein;

an upper portion of said cage having an upper pocket portion wall positioned at greater radial distance



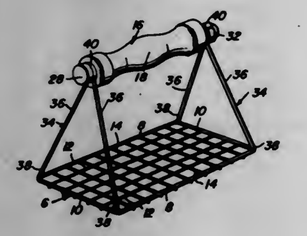
from the axis of rotation of said knife assembly than said lower screen portion;

said pocket wall curved toward said knife assembly and terminating in a region offset toward said knife assembly from a vertical plane through the edge of said shear bar, whereby said pocket wall and said curved end portion thereof directs flow of material into said knife assembly for further chopping.

3,349,824
FOOD DICER

Irene Trenor, 210 W. 12th St., Streator, Ill. 61364

Filed Oct. 18, 1965, Ser. No. 497,139
4 Claims. (Cl. 146—203)

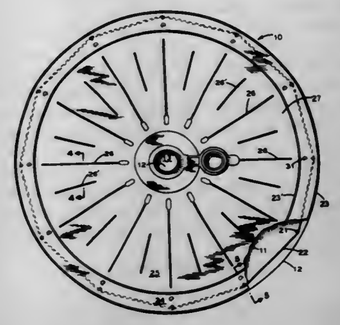


1. A manually usable food dicer comprising a rigid rectangular frame embodying interconnected end and side frame members, a screen-like dicing grid embodying a plurality of crossed interconnected spaced cutting wires spanning and affixed to prescribed frame members, said frame being provided at opposite end portions with upstanding struts having upper end portions terminating in a common plane, and handle means bridging the space between and having end portions detachably but rigidly joined to the respectively oriented and coordinating upper ends of said struts, said handle means embodying a hand-grip of a length less than said frame and disposed in a plane parallel to and directly above said frame and grid, said grid being flat and coplanar with the plane of the overall frame, said struts being inverted V-shaped in end elevation, each strut embodying outwardly downwardly diverging legs having lower ends joined to the respectively coacting corner portions of said frame.

3,349,825
HEAT TREATMENT CAP

John T. Andreadis, 150 E. 69th St., New York, N.Y. 10021

Filed Jan. 11, 1967, Ser. No. 608,567
7 Claims. (Cl. 150—2.3)

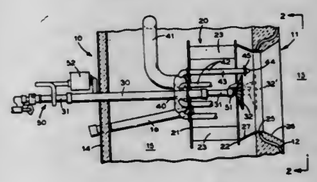


1. In combination with a heat treatment cap for the scalp and hair comprising two pieces of nonporous circular cut plastic material connected together to form a pocket therebetween and an elastic binding for seating said cap upon the head of the user, wherein the improvement comprises two pieces of material that are heat sealed together at their outer edges and circumferentially a short distance from said edges to provide first and second pockets between said two pieces of material, said elastic binding being positioned in said first pocket and being movable relative to the walls thereof, and a closure assembly in one of the pieces of material for inserting liquid into said second pocket.

3,349,826
COMBINATION OIL AND GAS BURNER

Arthur J. Poole, Barberton, and John M. Rackley, Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed June 9, 1965, Ser. No. 462,690
6 Claims. (Cl. 158—11)



1. In combination with a furnace wall having a circular burner port including a smooth-walled, converging frusto-conical section formed therein and a burner wall spaced from said furnace wall to form a windbox therebetween to which superatmospheric air is supplied, a gaseous fuel burner comprising an air register of circular cross-section disposed within said windbox and having a discharge end adjacent and opening to the frusto-conical section of said burner port, said air register being arranged to discharge a whirling stream of high velocity air through said burner port, an impeller plate disposed axially within said frusto-conical section to define an annular space therebetween positioned adjacent the discharge end of said register for producing a centrally disposed first shielded turbulent zone downstream airflow-wise of said impeller plate, a plurality

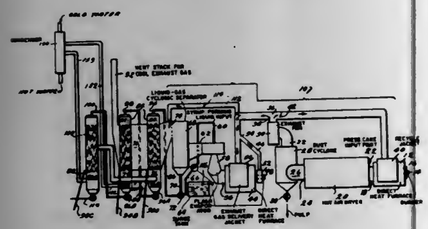
of collar plates disposed in a circular pattern within said annular space for producing second shielded turbulent zones downstream airflow-wise of said collar plates, each of said collar plates being contiguous to the inner periphery of said annular space and radially adjacent to said impeller plate, said collar plates lying in a plane normal to the axis of and spaced downstream airflow-wise of said impeller plate, a gaseous fuel manifold, means for supplying pressurized gaseous fuel to said manifold, a plurality of fuel conduits connected to said manifold, each of said conduits extending into a corresponding one of said second zones and having a discharge opening formed therein, said discharge opening being positioned downstream airflow-wise of said collar plates to direct a jet of gaseous fuel laterally through its corresponding second zone toward said first zone, whereby at low gaseous fuel pressure ignition stability is maintained primarily in said second zones and at high gaseous fuel pressure ignition stability is transferred so as to be maintained primarily in said first zone.

3,349,827

WASTE HEAT RECOVERY SYSTEMS FOR DEHYDRATING PULPY SOLIDS AND SYRUP FORMING LIQUID

Daniel B. Vincent, 3015 3rd Ave., Tampa, Fla. 33605

Filed Jan. 24, 1966, Ser. No. 522,734
10 Claims. (Cl. 159—4)



1. Apparatus for dehydrating pulpy solids and syrup-forming liquid to a preselected moisture content by weight comprising:

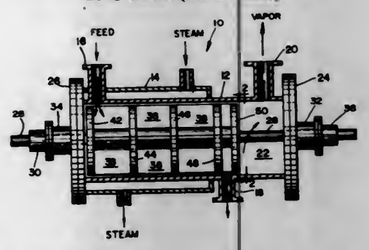
a dryer; means for inducting a stream of gas into the dryer; means for heating said gas; means for inducting wet pulpy solids into the dryer for transport therethrough in the heated gas stream to thereby evaporate moisture from the wet pulpy solids into the heated gas stream; means for separating the dried pulpy solids from the heated gas stream; a flash evaporator; conduit means for directing at least part of the heated gas stream from the separating means to the flash evaporator; means for further heating the heated gas stream entering the flash evpaorator whereby moisture is flash evaporated from the syrup forming liquid into the heated gas stream; conduit means for receiving a supply of syrup-forming liquid and for directing the received syrup-forming liquid to said flash evaporator for direct contact in the flash evaporator with the heated gas stream; means for separating the partly dehydrated syrup-forming liquid from the heated gas stream; evaporator means, means for forwarding the partly dehydrated syrup-forming liquid and heated gas stream to the evaporator means for further evaporation of moisture from the partly dehydrated syrup-forming liquid as heat is given up by the heated gas stream; means for venting the gas stream from the evaporator means and means for withdrawing the syrup from the evaporator means.

3,349,828

ROTARY WIPED FILM EVAPORATOR WITH ANNULAR RING FOR PROCESS MATERIAL FLOW CONTROL

Leo J. Monty, Reading, Mass., assignor to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts

Filed Aug. 5, 1966, Ser. No. 570,516
10 Claims. (Cl. 159—6)



1. An apparatus of the rotary wiped thin film type which apparatus comprises in combination:

(a) a closed chamber characterized by an interior wall defining a surface of revolution;

(b) a rotor shaft within the chamber;

(c) means to rotate the rotor shaft;

(d) rotor blades directly secured to and extending from the rotor shaft for rotation therewith, the blades generally radially and coaxially arranged from the rotor shaft along its length and extending into a close non-contacting relationship with the interior wall of the chamber to form a small space between the peripheral edges of the blades and the interior wall;

(e) an inlet in the chamber for the introduction of material to be processed;

(f) an outlet spaced axially apart from the inlet in the chamber for the removal of processed material; and

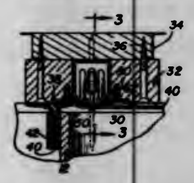
(g) means to control the axial flow of the material being processed, said means comprising at least one continuous narrow ring lying in a continuous plane about the rotor blade peripheries and secured thereto, the ring substantially flush with the rotor blade edges, the ring located in the region from just prior to the processed material outlet to the ends of the blades, which extend beyond the said outlet, to provide a continuous, small, generally uniform space between the internal wall of the chamber and the ring in a noncontacting relationship.

3,349,829

TRACK SEAL FOR FOLDING DOORS

Guy E. Dixon, Miami Shores, Fla. (% Panelfold Doors, Inc., 1090 E. 17th St., Hialeah, Fla. 33010)

Filed Jan. 25, 1966, Ser. No. 522,854
7 Claims. (Cl. 160—40)



1. A track seal for the supporting track of a folding panel door having hanger assemblies movably disposed in the track and a rod extending from each hanger assembly to a panel, the folding panel door including a continuous sealing means along the end edge thereof for engagement with a sealing surface on both sides of the track, and a sealing strip mounted flush with the sealing surface and closing the entranceway into the track but permitting passage of the hanger rods therethrough and movement of the hanger rods therealong while retaining the track in substantially sealed condition to prevent entry of air, noise and light into the track on one side of the folding panel door and egress from the track on the other side of the folding panel door.

3,349,830

METHOD OF MAKING A CASTING MOLD

Hans Schneider, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,861
Claims priority, application Switzerland, Nov. 21, 1963, 14,305/63
8 Claims. (Cl. 164—43)

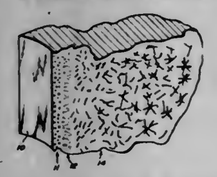
1. The process of producing a casting mold which comprises forming an admixture of a finely-divided refractory material and a preliminary low temperature binder capable of being carbonized in response to heat, contacting said admixture with a pattern material to form a molded admixture, heating the resulting molded admixture to a temperature sufficiently high to at least partially carbonize said preliminary binder, impregnating the molded admixture with a high temperature secondary binder, and heating the impregnated molded admixture to a temperature sufficiently high to bind the secondary binder with the finely-divided refractory material to form a casting mold.

3,349,831

PROCESS OF PRODUCING A CAST MEMBER HAVING A VARYING GRAPHITE STRUCTURE

William H. Moore, Meadow Lane, Purchase, N.Y. 10577, and Charles A. Green, R.R. 3, Godfrey, Ill. 62035

Filed Jan. 22, 1965, Ser. No. 427,377
2 Claims. (Cl. 164—58)



2. The process of producing a metal member for receiving molten glass and producing a shape from the same, comprising the steps of providing a foundry mold having a chiller at a working surface of the metal member, providing a molten bath of cast iron having a given chill value as measured by a standard chill test, adding to said bath of cast iron a nodularizing agent in amount sufficient to increase said chill value from 10 to 75%, and thereafter casting said bath of cast iron to form an iron casting having a first layer comprising graphite in the nodular form, a second layer adjacent said first layer comprising undercooled graphite, and a third layer adjacent said second layer comprising flake graphite.

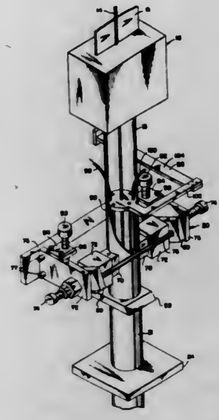
3,349,832

METHOD OF FORMING SHEATHED CONDUCTOR

George J. Crowdes, West Dennis, and George H. Hunt, West Newton, Mass., assignors to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 16, 1964, Ser. No. 422,060
8 Claims. (Cl. 164—86)

1. The method of forming a conductor having a core of a conductor material selected from the group consisting of alkali metals, alkaline earth metals and their alloys and a metallic sheath about said core, which process includes drawing an indefinite length of metallic sheathing material initially in the form of a tape along a given path and acting upon said tape to form said tape into a tube by successively bending the longitudinal edges of said tape until they are in abutting relationship to each other; sealing the seam formed thereby; passing a steel rope parallel to said tape and sufficiently close to said tape to be included within said tube; filling the closed tube with said conductor material introduced in molten condition through conduit means extending along a path aligned with the axis of the tube forming path to a point along said axis beyond the point of sealing said seam and locating said steel rope centrally within said tube by means associated with said conduit means.

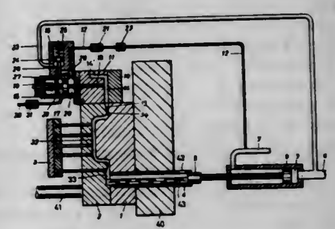


3,349,833

PRESSURE MOLDING VENTING METHOD

Fritz Hodler, 28 Ave. de Collonge, Territet, Switzerland

Filed Nov. 13, 1964, Ser. No. 410,932
Claims priority, application Germany, Nov. 14, 1963, H 50,849
3 Claims. (Cl. 164—113)

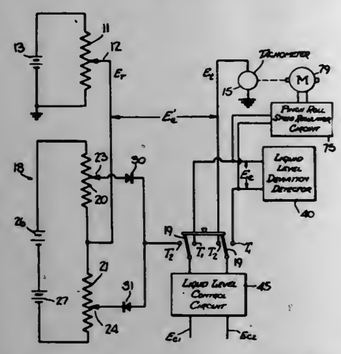


1. In a method of operating a pressure molding machine having a die formed with a cavity and a vent conduit of substantially smaller flow section than the flow section of the cavity and communicating with the same, the machine including fluid operated injecting means for forcing a liquid molding material into the cavity, there being an increase in the pressure of the operating fluid in said injecting means when said liquid molding material enters said vent conduit from said cavity, the step of blocking said vent conduit in response to said increase.

3,349,834
DUAL-CONTROL FOR CONTROLLING THE LIQUID LEVEL IN A CONTINUOUS CASTING MOLD

James H. Wilson, Franklin Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Sept. 21, 1965, Ser. No. 489,018
3 Claims. (Cl. 164—155)



1. In a system for controlling the liquid level in a continuous casting mold, said system including means to provide a first error signal having the characteristic that its polarity indicates the direction of liquid level deviation from a predetermined level and its magnitude indicates the extent of deviation of liquid level from said predetermined level, said system also including a pour rate regulating means for varying the rate of pour of molten metal into said mold, said pour rate regulating means being responsive to an input control signal such that an input control signal having a first polarity will cause the pour rate to decrease and an input signal having a second polarity will cause the pour rate to decrease, said system also including a pinch-roll drive for withdrawing a casting from said mold, said pinch-roll drive being responsive to said first error signal so that a first error signal having a first polarity and a magnitude greater than a first predetermined value will cause the withdrawal rate of said casting to increase and an error signal having a second polarity and a magnitude greater than a second predetermined value will cause the withdrawal rate of said casting to decrease, the improvement comprising:

(A) a tachometer generator coupled to said pinch-roll drive motor to provide a tachometer signal having a magnitude representing the speed of said motor,

(B) a potentiometer having a sliding arm to provide a pre-selected reference signal representing the value of said tachometer signal when the pinch-roll drive motor is running at a speed that provides a desired casting withdrawal rate,

(C) means to compare said tachometer signal to said reference signal to provide a second error signal having a polarity and magnitude representing respectively the direction and magnitude of deviation of said casting withdrawal rate from a predetermined desired rate,

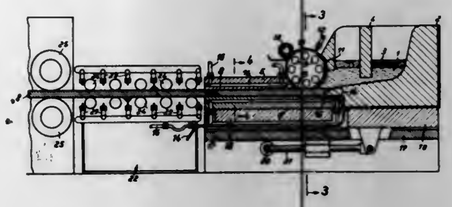
(D) means for coupling said second error signal to said pour rate regulating means as the input control signal for said pour rate regulating means, and

(E) a pair of biased diodes coupled to said second error signal to provide a dead band in the response of said pour rate regulating means to said second error signal by creating biases in both polarities in opposition to said second error signal so that said second error signal is rendered ineffective when the absolute magnitude of said second error signal is less than the corresponding bias magnitude.

3,349,835
CONTINUOUS HORIZONTAL STRIP-CASTING APPARATUS

Erich Müller, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit Beschrankter Haftung, Essen, Germany, a corporation of Germany

Filed May 13, 1965, Ser. No. 455,481
Claims priority, application Germany, May 15, 1964, B 76,787
12 Claims. (Cl. 164—158)



1. A strip-casting apparatus for casting of metals, comprising

a stationary frame,

a substantially horizontal reciprocable continuous mold having an upper part and a lower part, said upper part being shorter than said lower part,

said lower part and said upper part of said mold having a form complementary to the profile of the metal-strip to be cast,

an inlet funnel disposed adjacent said mold and adapted to feed liquid metal into said mold,

said lower part of said mold extending to a lower part of said inlet funnel,

said mold having cooling conduits extending therethrough, a rotatable metal feeding roll disposed between said upper mold part and said inlet formed above said lower part of said mold,

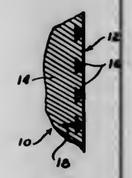
said metal feeding roll having a plurality of cooling conduits,

the surface of said metal feeding roll being formed complementary to the profile of said metal strip to be cast, and means for performing a reciprocating movement of said mold, funnel and feeding roll.

3,349,836
CONTINUOUS CASTING MOLD WITH ARMOR STRIPS

Irving Rossi, Morristown, N.Y., assignor to Concast, Inc., New York, N.Y.

Filed Sept. 3, 1965, Ser. No. 484,916
4 Claims. (Cl. 164—273)

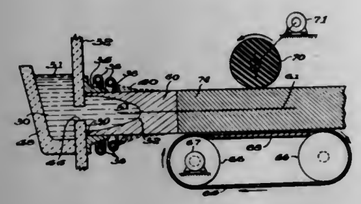


1. A continuous casting mold plate for a continuous casting mold comprising a plate cast from soft copper having a high thermal conductivity and having a plurality of extending, hard, erosion protective armor strips embedded in the face thereof.

3,349,837
CONTINUOUS CASTING APPARATUS WITH MEANS SUPPORTING ONLY OUTER PORTIONS OF NON-UNIFORM INGOT

Kenneth J. Brondyke, Oakmont, and Richard T. Craig, New Kensington, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 19, 1965, Ser. No. 472,820
8 Claims. (Cl. 164—274)

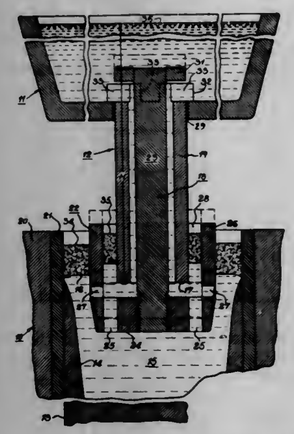


1. An apparatus for the continuous casting of a metal ingot comprising a horizontally disposed open ended mold, the inside surface of the bottom mold wall exhibiting a concavity of at least ⅛" to compensate for non-uniform ingot contraction in the vertical dimension, a starting plug having a cross-section to substantially match that of the mold opening such that it may be positioned within the mold opening to substantially close the same, means for withdrawing said starting plug and the ingot connected thereto from the mold and for supporting only the outer portions of the widths of the starting plug and the connected ingot corresponding to those outer portions of the mold width having a maximum concavity run-out of 50% of the total concavity run-out.

3,349,838
FLOAT CONTROL VALVE FOR CONTINUOUS CASTING

Richard Baier, New Brunswick, N.J., assignor to American Smelting and Refining Company, New York, N.Y., a corporation of New Jersey

Filed June 4, 1965, Ser. No. 461,296
3 Claims. (Cl. 164—281)

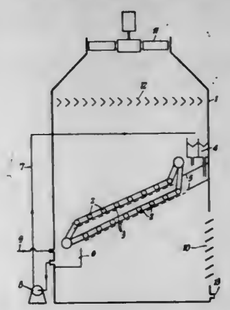


1. In a system for controlling metal flow for continuous casting, a container for holding the molten metal to be cast, continuous casting means spaced from said container and positioned below the latter to receive molten metal therefrom, said continuous casting means being adapted to contain a body of molten metal, a molten metal feed tube in communication with said container and extending down into said continuous casting means, movable valve means cooperating with said tube to control the flow of molten metal through the tube, said movable means comprising a valve member, a shaft disposed within said tube, said shaft being connected to said valve member and extending into said container, said movable means having interlocking means for interlocking said movable means with respect to said container, said movable valve means having a portion adapted to be immersed below the level of said body of molten metal in said continuous casting means with a vernier portion above said level, the specific gravity of the movable means as a whole being less than that of the metal being cast, whereby said shaft displaces molten metal to be cast and thereby contributes the the buoyancy of said movable means.

3,349,839
HEAT EXCHANGE APPARATUS

Ronald Priestley, 14 Salisbury Ave., West Kirby, England

Filed Apr. 19, 1966, Ser. No. 543,720
Claims priority, application Great Britain, Apr. 23, 1965, 17,281/65
6 Claims. (Cl. 165—3)



1. A heat exchange process which comprises passing a fluid at one temperature through a plurality of substantially horizontal tubes arranged side by side in a plane inclined to the horizontal, supplying a liquid at another temperature, to a rigid mesh sheet located immediately below and adjacent thereto and substantially in a plane parallel thereto, transferring said liquid from the mesh sheet to the outside of said tubes by passing a stream of gas or vapour, from below, through the assembly of mesh sheets and tubes, and collecting fluid issuing from the exterior of said tubes.

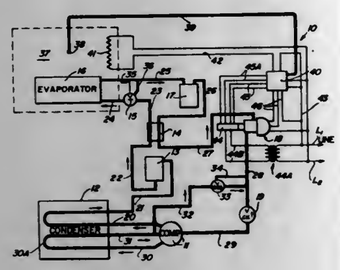
3,349,840
FLUID FLOW CONTROL APPARATUS

Paul H. Tope and Alexander L. Reiter, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware

Filed Apr. 5, 1965, Ser. No. 445,568
9 Claims. (Cl. 165—26)

1. Apparatus for maintaining a chamber at a preselected temperature, comprising: an evaporator in heat transfer association with said chamber; means for circulating refrigerant fluid to said evaporator for effecting refrigeration thereof; valve means for varying the rate of flow of refrigerant fluid through said circulating means for controlling said refrigeration; means for providing heat to said chamber; and means for selectively controlling said valve means and said heat means for maintaining a preselected temperature of said chamber, said

controlling means concurrently inversely proportionately varying the rate of flow of refrigerant and the rate of heat provided by said heat means when the temperature in said chamber is in a relatively high range, and causing



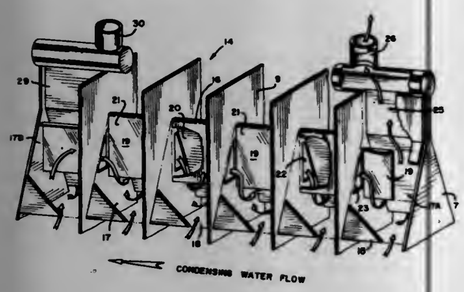
said rate of flow of refrigerant to remain at a constant low value while varying the heat provided by said heat means when said temperature is in a range below said high range.

3,349,841

AIR COOLER FOR SURFACE CONDENSERS

Robert J. Stoker, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 4, 1966, Ser. No. 570,293
6 Claims. (Cl. 165—113)



1. A housing for air cooling tubes of a surface condenser comprising:

an elongate hollow body partially enclosing an elongate passage and adapted to be mounted in a condenser to extend parallel with and house a plurality of the air cooling tubes of the condenser;

a plurality of spaced partitions extending transversely across said passage to divide said passage into sections;

said body including an inlet for each of said sections for receiving fluid from said condenser;

each of said sections including a wall extending longitudinally between adjacent partitions and dividing said section into a pair of compartments; means providing an opening in said wall intercommunicating said pair of compartments; and

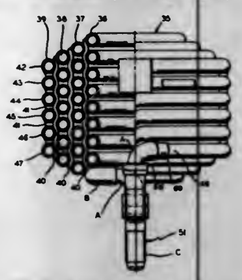
each of said partitions including a port for interconnecting compartments on the opposite sides of said partition and with the ports in adjacent partitions being connected to different compartments in the section between the adjacent partitions whereby fluid flowing from one section into an adjacent section is forced to flow around said wall in said adjacent section before exiting from said adjacent section.

3,349,842

HEAT EXCHANGER COIL ASSEMBLY

John T. Prybil, Chicago, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,772
1 Claim. (Cl. 165—163)



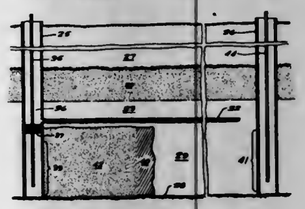
A heat exchanger for a steam generator for cooling the return water from the steam separator and for preheating the feed water delivered to the steam generator coils comprising, a casing having a feed water inlet and a feed water outlet, a coil in said casing including a plurality of turns arranged in concentric layers and staggered rows defining an annularly shaped coil having inner and outer concentric faces and opposed end faces, a return water inlet and a return water outlet defined at the terminal ends of said turns, said inlet and outlet being at one of said end faces and lying within said end face, inlet and outlet return water connectors extending substantially parallel to the axis of the coil and substantially perpendicular to said turns thereof, and rigid connecting L's extending between said connectors and the inlet and outlet of the coil, said connectors extending through said casing, said inlets and outlets arranged so that the flow of return water in the coil is counter to the flow of feed water in said casing, and means in the casing to snugly receive the coil including a plurality of coil pads and a retaining ring, said retaining ring being secured at the inner side of the casing and received slightly within one open end of the coil at the end face remote from the end face in which lies the coil inlet and outlet.

3,349,843

THERMAL RECOVERY OF PETROLEUM HYDROCARBONS

Jimmie L. Huitt, Glenshaw, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Mar. 26, 1965, Ser. No. 442,862
8 Claims. (Cl. 166—2)



7. An in situ combustion process for the recovery of oil from an underground oil bearing formation penetrated by at least one input well and one production well and contacting an overlying zone of higher permeability than said oil bearing formation in which air is injected into the oil bearing formation to support in situ combustion of the oil which comprises,

forming a radial fracture in the oil bearing zone at the input well above the point of air injection and stopping short of the production well,

propping said fracture and injecting a liquid containing a low-fluid-loss agent into said fracture at a pressure greater than the formation pressure and less than fracturing pressure to form a barrier against vertical movement of fluids across said fracture,

injecting air into the oil formation at the input well below said barrier to cause a flame front to move in the direction of said production well,

producing oil from the oil bearing formation lying below said fracture at said production well,

depressuring said fracture and withdrawing said liquid from said fracture, and

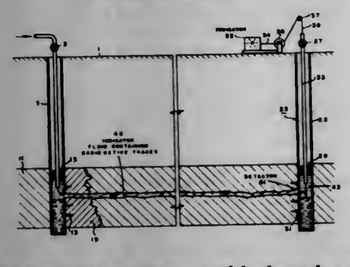
producing oil from the oil bearing formation lying above said fracture through said fracture into said input well.

3,349,844

REPAIR OF CHANNELS BETWEEN WELL BORES

John W. Rhea and Joe V. Morse, Monahans, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed July 8, 1964, Ser. No. 381,102
5 Claims. (Cl. 166—4)



2. In the secondary recovery of hydrocarbons from a subsurface earth formation wherein a fluid is injected into the formation through a first well bore and connate earth fluids are withdrawn through a second well bore spaced apart therefrom, a method of repairing the formation when a channel therein permits direct fluid communication between the well bores, comprising:

forming a fluid having an apparent viscosity of at least 30 centipoises and a water loss of not more than 20 cc. API;

pumping a quantity of said fluid into said channel through said first well bore ahead of a cementitious mixture having a water loss no greater than 20 cc. API;

measuring the quantity of said fluid and of said cementitious mixture pumped into said channel;

detecting the arrival of said fluid at a predetermined location in said second well bore to determine the volume of the channel;

after detection of said fluid, pumping said cementitious mixtures into said channel until said fluid is displaced from said channel and the cementitious mixture substantially fills the channel; and

delaying subsequent injection of secondary recovery fluid into said formation through said first well bore until the cementitious mixture has hardened.

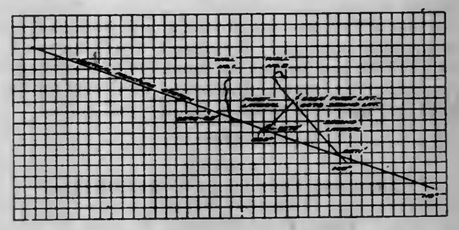
3,349,845

METHOD OF ESTABLISHING COMMUNICATION BETWEEN WELLS

Don R. Holbert, Huntington Beach, Calif., and Bruce F. Grant, Tulsa, Okla., assignors to Sinclair Oil & Gas Company

Filed Oct. 22, 1965, Ser. No. 501,894
5 Claims. (Cl. 166—4)

1. A method for establishing communication between two wells in an oil shale formation comprising fracturing in said formation at a first well to produce a vertical fracture system generating outwardly from the well, determining the orientation of said fracture system, and



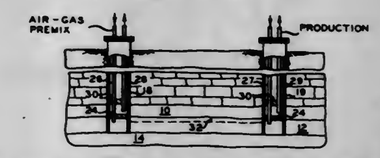
drilling a lateral bore from the main bore of the second well to intersect said fracture and establish communication between said first and second wells.

3,349,846

PRODUCTION OF HEAVY CRUDE OIL BY HEATING

Joseph C. Trantham, Henry W. Hennigan, and Michael J. Fetkovich, Bartlesville, Okla., Mehmet R. Tek, Ann Arbor, Mich., and John R. Bruns, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 30, 1964, Ser. No. 386,246
10 Claims. (Cl. 166—11)



1. A process for producing oil from a viscous oil-bearing stratum wherein the mobility of the oil is low and said stratum overlies an adjacent aquifer, which comprises the steps of:

(1) drilling a well thru said stratum into said aquifer;

(2) forming a combustible mixture of air and fuel only in said aquifer around said well;

(3) burning said mixture only in said aquifer so as to heat the oil in the adjacent oil-bearing stratum and reduce the viscosity thereof thereby effecting flow of the heated oil into said well; and

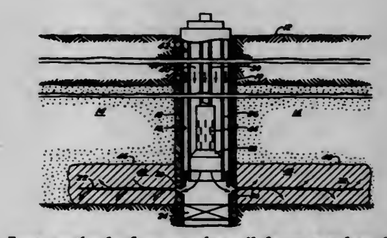
(4) recovering the oil from said well.

3,349,847

PROCESS FOR RECOVERING OIL BY IN SITU COMBUSTION

Francis M. Smith, Butler, and Paul L. Terwilliger, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed July 28, 1964, Ser. No. 385,691
13 Claims. (Cl. 166—39)



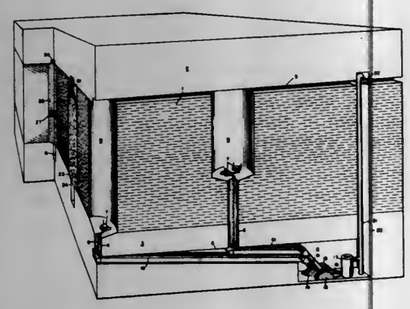
3. In a method of recovering oil from a subsurface oil-bearing formation in which the formation is heated by igniting oil in the formation adjacent the well, and an

oxygen-containing gas is displaced down the well and into the formation to move the combustion front outwardly from the well into the formation, the improvement comprising, stopping the injection of oxygen-containing gas, injecting oxygen-free gas down the well bore to displace substantially completely the oxygen-containing gas from the well bore and through the formation to a point beyond the combustion front, and thereafter producing formation fluids through the formation into the well bore.

3,349,848
PROCESS FOR IN SITU RETORTING OF OIL SHALE

Ernest E. Burgh, 10035 W. 29th, Denver, Colo. 80215

Filed Oct. 24, 1965, Ser. No. 504,793
16 Claims. (Cl. 166—39)



10. In a process for the in situ retorting of oil shale by partial combustion wherein pilot holes are drilled into an oil shale bed, the pilot holes are enlarged by fracturing the shale aurrounding the pilot hole to form retorts and the fractured shale retorted, the steps comprising:

(a) incrementally fracturing from top to bottom the shale surrounding the pilot hole to form a retort,
(b) displacing the fractured shale downwardly through said pilot hole, and
(c) introducing fractured shale into the formed retort prior to conducting in situ combustion in the introduced shale.

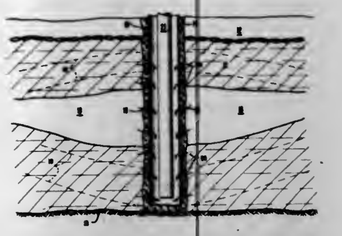
3,349,849
THERMOAUGMENTATION OF OIL PRODUCTION FROM SUBTERRANEAN RESERVOIRS

Philip J. Closmann, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Feb. 5, 1965, Ser. No. 430,613
10 Claims. (Cl. 166—40)

1. A method of optimizing oil recovery from a permeable subterranean, oil-bearing reservoir traversed by a borehole using an injected heated fluid and backflow comprising:

(a) sealing a casing string in said borehole at least to the extent of said borehole traverse of said reservoir;
(b) establishing fluid communication between the inside of said casing string and layers of said reservoir contiguous to said casing string at substantially the central layers of said reservoir;
(c) injecting a presurized heated fluid at a temperature above that of the reservoir and only into said central layers of said reservoir at a pressure sufficient to cause said heated fluid to ingress into said central layers of said reservoir;
(d) terminating said injecting of said heated fluid into said central layers of said reservoir and allowing the heated fluid to heat soak the reservoir for a time sufficient to transfer at least a portion of its thermal energy to the reservoir;

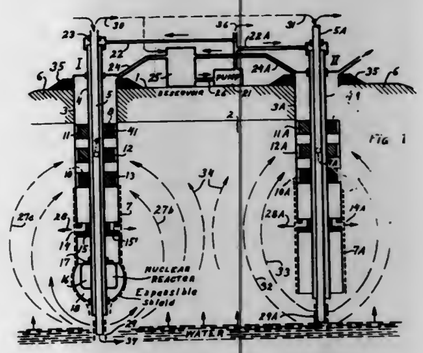


(e) subsequently exposing substantially all layers of said reservoir to pressure less than the pore pressure of said reservoir along the entire traverse of said reservoir by said borehole; and
(f) recovering by backflowing from the same well in which the heated fluid was previously injected effluents entering said casing string from said reservoir.

3,349,850
METHOD FOR THE EXTRACTION OF UNDERGROUND BITUMINOUS DEPOSITS

Günther Schlicht, deceased, late of Hamburg-Othmarschen, Germany, by Erika Marie Schlicht, legal representative, Hamburg-Othmarschen, Germany, and Hans Lange, Wietze, Kreis Celle, Germany, assignors to Deutsche Erdol-Aktiengesellschaft, Hamburg, Germany

Original application Aug. 6, 1962, Ser. No. 215,494, now Patent No. 3,242,989, dated Mar. 29, 1966. Divided and this application Aug. 9, 1965, Ser. No. 489,776
4 Claims. (Cl. 166—40)



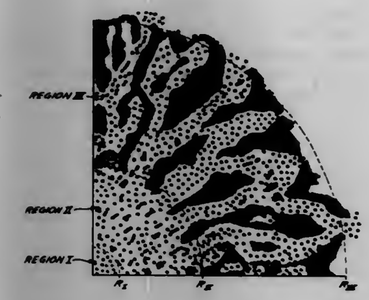
1. In a process for extracting viscous bitumens from underground deposits thereof the steps comprising:

(a) sinking a bore into an underground deposit of viscous bitumens; and
(b) flowing liquid bitumens heated to a temperature higher than said viscous bitumens from the bottom of said bore upwardly through said deposit thereby warming said viscous bitumens surrounding said bore to a flowable state;
(c) the improvement comprising circulating said liquid bitumens from said bottom to progressively higher points of the bore thereby increasing the flow path of said liquid bitumens through said deposit as portions of the deposit at increasing distances from said bore are heated to a flowable state.

3,349,851
FRACTURING PROCESS

Jimmie L. Huitt, Glenshaw, and Donald K. Lowe, Parker Township, Butler County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 2, 1965, Ser. No. 506,088
7 Claims. (Cl. 166—42)

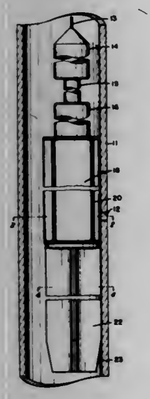


1. A method of treating a well to increase the flow capacity thereof comprising creating a fracture extending from the well into the surrounding formation, displacing a carrying liquid having a propping agent suspended therein at a rate to deposit a partial monolayer of propping agent and in a volume to cause deposition of dunes of propping agent in the outer portion of the fracture, thereafter displacing into the fracture a wash liquid devoid of propping agent to enlarge channels through the dunes, and following the wash liquid with additional carrying liquid and propping agent to deposit a monolayer of propping agent in the channels.

3,349,852
APPARATUS FOR REPAIRING PIPE STRINGS

Beldon A. Peters, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware

Filed Nov. 16, 1965, Ser. No. 508,104
10 Claims. (Cl. 166—113)



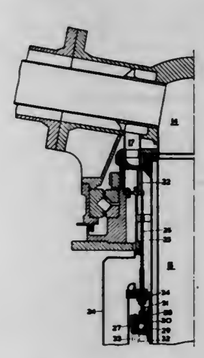
1. A tool for repairing a conduit containing a hole in the conduit wall through which fluid escapes comprising:

(a) an elongated body member;
(b) a plurality of patches detachably mounted on said body member about the periphery thereof, each of said patches having an outer radius of curvature substantially corresponding to the inner radius of curvature of said conduit and each patch including means for effecting a seal on contact of said patch with the wall of said conduit;
(c) means for moving said tool axially within said conduit; and,
(d) means for orienting said tool with respect to said hole in said conduit in response to fluid flow through said hole and thereby aligning one of said patches on said tool with said hole.

3,349,853
HELICOPTER LIFT CONTROL MECHANISM

John Avery Flint and James Eric George, Farnborough, England, assignors to Power Jets (Research and Development) Limited, London, England

Filed May 24, 1965, Ser. No. 458,047
Claims priority, application Great Britain, May 29, 1964, 22,347/64
16 Claims. (Cl. 170—135.4)



1. A control mechanism for a helicopter rotor having blades on which aerodynamic lift is induced by the discharge of fluid streams as thin layers over the blade surfaces, said mechanism comprising means for leading fluid to the rotor; first control means operable to regulate the flow of said fluid, said first control means comprising a valve assembly having a plurality of channels for fluid flow and a valve disposed in each of said channels, the valves being capable of adjustment differentially of each other, a swash plate operatively connected to the valves by means of push rods, and a control connected to tilt the swash plate; and second control means operable to regulate the flow of said fluid and comprising means for varying the effective lengths of the push rods.

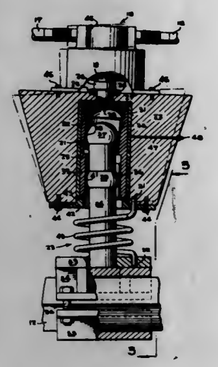
3,349,854
ECCENTRIC VIBRATOR

Leonard L. Cain and Merle M. Rose, Lubbock, Tex., assignors to Big Eight Implement Company, Lubbock, Tex., a corporation of Texas

Filed Oct. 13, 1964, Ser. No. 403,515
7 Claims. (Cl. 172—40)

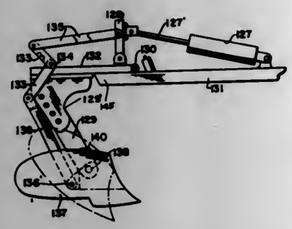
1. A vibrator assembly for use with soil moving implements to improve efficiency with which soil is moved comprising a drive shaft being connected at one end to a power means, a variable eccentric drive means, the other end of the drive shaft adapted for connection to the variable eccentric drive, a vibratory mass journaled in surrounding relationship about the eccentric drive so that relative motion may take place therebeween, fulcrum means mounted in conjunction with the variable eccen-

tric and a supporting assembly in intimate contact with the fulcrum means and the soil engaging implement to



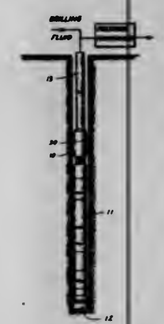
transmit motion from the vibratory mass to the soil engaging implement when the drive shaft revolves the eccentric thereby producing vibratory motion in the mass.

3,349,855
HYDRAULIC PLOW BOTTOM TRIP DEVICE
Glenn C. Knudson, R.R. 1, Box 37, Larimore, N. Dak. 58251
Filed May 18, 1965, Ser. No. 456,631
6 Claims. (Cl. 172—261)



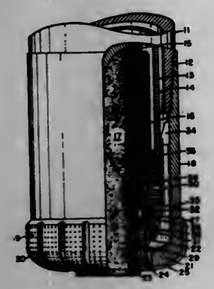
1. In a moldboard plow adapted to move forwardly over the ground and including a frame, a plow bottom assembly, and interconnecting structure pivotally secured to said plow bottom assembly and extending upwardly and forwardly to a point of pivotal connection with said frame whereby said plow bottom may swing upwardly and rearwardly from a normal ground-working position to a raised tripped position, the combination therewith of first abutment means on said frame and engageable with said interconnecting structure to limit rotational movement of said interconnecting structure relative to said frame in one direction, second abutment means on said interconnecting structure and engageable with said plow bottom assembly to limit rotational movement of said plow bottom assembly relative to said interconnecting structure in one direction, a fluid device having one end secured to said frame, means linking the other end of said fluid device with said plow bottom assembly and cooperable with said fluid device to normally hold said plow bottom asesmbly in a normal ground-working position with the plow bottom assembly and said interconnecting structure engaging said second and first abutments, respectively, but permitting upward and rearward movement of said plow bottom assembly opposed by said fluid device, said fluid device and said linking means being disposed above and behind the interconnecting structure, means operable to resist displacement of fluid from said device in normal conditions but permitting fluid to be displaced when an object is encountered by the plow bottom assembly which cannot readily be plowed out of the way, and means to return the plow bottom assembly to its normal position at a regulated rate after the object has been passed.

3,349,856
BUMPER SUB POSITION INDICATOR
Vernon C. H. Richardson, Houston, Tex., assignor, by mesne assignments, to the United States of America as represented by the National Science Foundation
Filed Jan. 21, 1966, Ser. No. 522,247
4 Claims. (Cl. 175—40)



1. Apparatus for indicating at the surface when the two telescoping sections of a bumper sub, located in a string of drill pipe through which drilling fluid is pumped, are in a preselected position relative to each other, said apparatus comprising a tubular body adapted to be connected in a drill string for movement with one of the telescoping sections of such bumper sub, said body having first and second internal, axially spaced, annular seal surfaces through which the drilling fluid flows, said seal surfaces encircling the longitudinal axis of the body with the second surface located downstream of the first, a sleeve of flexible, elastomeric material located in the body in axial alignment therewith, said sleeve being spaced from the body to form an annular space therebetween, means for holding the ends of the sleeve open to receive and discharge drilling fluid flowing through the body, means for holding the ends of the sleeve from moving toward each other, first and second seal rings attached to opposite ends of the sleeve for moving into and out of sealing engagement with the first and second seal surfaces respectively as the sleeve moves axially relative to the body, means for spacing the seal rings axially apart sufficiently for only one seal ring to be in sealing engagement with a seal surface at a time whereby one end of the annular space between the sleeve and the body is always open to the pressure of the drilling fluid either upstream or downstream of the sleeve, means for moving the sleeve axially to move the first seal ring out of engagement with the first seal surface and the second seal ring into engagement with the second seal surface to open the annular space between the sleeve and the body to the pressure of the drilling fluid upstream of the first seal surface when the telescoping sections of the bumper sub are in the preselected position, whereby the differential in pressure between the drilling fluid in the annular space and the drilling fluid inside the sleeve will collapse the sleeve and restrict the flow of drilling fluid to produce a pressure pulse that will travel through the drilling fluid to the surface to indicate that the two telescoping sections of the bumper sub are in the preselected position.

3,349,857
CORING APPARATUS
Alexander B. Hildebrandt, Tulsa, Okla., assignor to Esso Production Research Company, a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,623
8 Claims. (Cl. 175—250)



5. In coring apparatus including an annular drill bit containing ports through which drilling fluid is discharged and a core barrel provided with an outer housing connected to said bit, a concentric inner member extending downwardly in said housing near said bit, and a passageway between said inner member and said housing through which fluid is circulated downwardly to said ports in said bit, the improvement which comprises:

(a) a sleeve extending between said bit and said inner member in said core barrel, said sleeve being axially slidable with respect to said bit and inner member in response to an increase in pressure within said passageway in said bit and core barrel;

(b) means for maintaining a seal between said sleeve and bit;

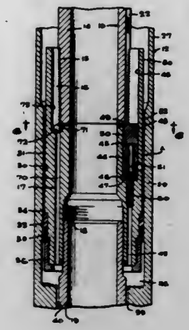
(c) means for maintaining a seal between said sleeve and inner member;

(d) means for normally biasing said sleeve in a first axial position with respect to said bit and inner member and permitting movement of said sleeve into a second axial position with respect to said bit and inner member in response to an increase in pressure within said passageway; and,

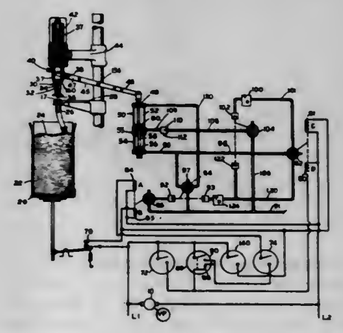
(e) retaining means connected to said sleeve and movable therewith, said retaining means contacting the surface of a core extending through said bit into said core barrel when said sleeve is in said first axial position and extending away from the surface of said core when said sleeve is in said second axial position.

3,349,858
HYDRAULIC JARRING APPARATUS HAVING A RESTRICTED FLOW PATH FROM ITS CHAMBER WITH CONSTANT FLOW REGULATOR MEANS
David V. Chenoweth, Houston, Tex., assignor to Baker Oil Tools, Inc., Commerce, Calif., a corporation of California
Filed Oct. 14, 1965, Ser. No. 495,937
15 Claims. (Cl. 175—297)

1. In hydraulic jarring apparatus to be disposed in a well bore: an outer member having a hammer portion; an inner member disposed within and movable relative to said outer member, said inner member having a hammer portion; piston means on one of said members shiftable by relative movement between said members between a first position closely adjacent to the other of said members and a second position substantially spaced from said other of said members; said piston means when in said first position and with said hammer portions spaced from each other providing with said members a chamber on one side of said piston means adapted to contain a liquid; means providing a restricted flow path from said chamber for the liquid therein during movement of said piston means from said first position to said second position; flow regulator means in said restricted flow path for maintaining the rate of flow of liquid from said chamber substantially constant; liquid in said chamber being movable freely therefrom upon shifting of said piston means to said second position, whereby said hammer portions can impact upon each other.

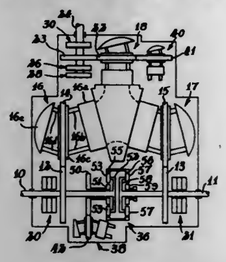


3,349,859
LIQUID FILL APPARATUS
Herbert F. Cox, Jr., Syracuse, N.Y. and Clyde E. Strahl, Greenfield, Ind., assignors to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Feb. 24, 1965, Ser. No. 434,756
11 Claims. (Cl. 177—118)



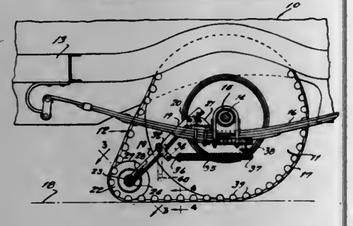
1. In liquid filling apparatus for filling flexible thin walled collapsible container liners disposed within a semi-rigid supporting container, the liner having a fill tube, valvular means having a nozzle adapted for connecting with said fill tube and including relatively movable valve means having a first off position, a second vacuumizing position for connecting said nozzle to a source of vacuum, and a third pressure fill position for connecting said nozzle to a source of liquid product under pressure, and power actuating means for said valve means for moving the valve means between said first and third positions in two increments of movement separated by a fixed increment of delay at the second position.

3,349,860
HYDROSTATIC TRANSMISSION
William A. Ross, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed July 2, 1964, Ser. No. 379,796
42 Claims. (Cl. 180—6.44)



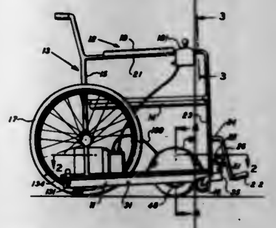
11. A variable speed vehicle transmission, comprising: an input shaft, a variable displacement pump driven by said input shaft, two output shafts adapted to propel the vehicle, a variable displacement motor connected to each output shaft, passage means connecting said pump and said motors for delivering fluid therebetween; and control means for reducing the displacement of said motors as the vehicle speed increases including a differential for producing an output equal to the sum of the speeds of each of said output shafts, a speed sensing device driven by said output, a governor valve driven by said speed sensing device, a servo motor connected to each of said variable displacement motors for varying the displacement thereof, and passage means connecting said governor valve to said servo motors whereby the displacement of the motors is reduced as vehicle speed increases.

3,349,861
TRACTION DEVICE FOR MOTOR VEHICLES
Jaroslav Alex Oral, 5307 Gaston Ave., Dallas, Tex. 75214
Filed Oct. 23, 1965, Ser. No. 503,360
2 Claims. (Cl. 180—9.54)



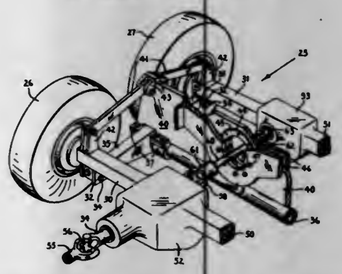
1. In combination with an automotive vehicle having a driven wheel, and having a frame, an axle whereby said wheel is driven, an axle housing surrounding said axle, and a spring on said axle housing adjacent said wheel whereby said frame is supported on said axle housing, the combination of a flexible belt encircling said wheel and extending rearwardly thereof, an idler roller of smaller diameter than said wheel positioned rearwardly of said wheel and having the rearwardly extending portion of said belt passed around it, a horizontally extending shaft on which said roller is journaled, a bracket on said spring adjacent said axle housing, rearwardly thereof, and a spring tensioned, extensible link having one of its ends pivotally connected to said bracket for pivotal adjustment about a horizontal axis and extending downwardly and rearwardly relative thereto, between said spring and said wheel, and having its opposite end connected to said shaft, whereby said idler roller is biased downwardly and rearwardly, in opposing relation to said belt, whereby said belt is secured in yieldable, spring tensioned frictional engagement with the peripheral surface of said wheel and with a supporting surface.

3,349,862
POWER DRIVE FOR WHEELED VEHICLE
Theodore R. Shirey, Jr., Ontario, Calif. (226 S. Campus Ave., Upland, Calif. 91786)
Filed Nov. 15, 1965, Ser. No. 507,783
4 Claims. (Cl. 180—15)



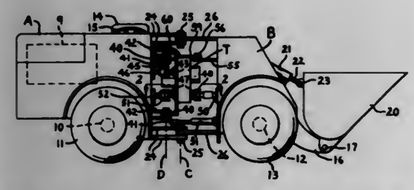
1. A power drive carriage for attachment to a wheeled vehicle comprising a shallow bed, an electrical power source on the bed, an electrical motor and motor case on the bed, a drive wheel journalled on the motor case to revolve thereabout, turning means on the bed to which the motor and drive wheel are fixed, said turning means being such that the motor and drive wheel are turnable with respect to the carriage bed about a vertical axis passing through the center of the drive wheel; power transmission means connecting the motor and the drive wheel, motor speed and direction control means adapted to be attached to the wheeled vehicle and connected in series between the power source and the motor, and attachment means on the bed adapted to connect the drive carriage to the wheeled vehicle such that the front pair of vehicle wheels is out of touch with the ground, said attachment means comprising a first horizontally slidable shaft at each rear corner of the bed, a clamp loop at the outer end of each first shaft, means on each loop for restricting the loop; a second horizontally slidable shaft at the front corners of the bed, a perpendicular adjustable arm at the outer end of each second shaft, a clamp loop at the free end of each arm, and adjustable restricting means on each loop.

3,349,863
OSCILLATING AXLE SUSPENSION
Eddie B. Wagner, Portland, Oreg., assignor to Wagner Mining Scoop, Inc., Portland, Oreg., a corporation of Oregon
Filed June 27, 1966, Ser. No. 560,738
8 Claims. (Cl. 180—22)



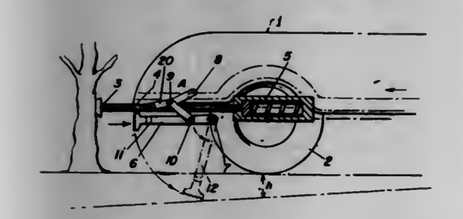
6. A bogie for a vehicle comprising a transverse beam, bearing means in the center of said beam for mounting the beam for oscillation about an axis extending longitudinally of the vehicle, a pair of longitudinal walking beams mounted for rocking movements on opposite ends of said transverse beam, a pair of axle housings flexibly mounted at their ends on the ends of said walking beams, said bearing means having an open center, driving axles in said axle housings, and a longitudinal drive shaft for one of said axles extending through said open center of said bearing means.

3,349,864
TRANSMISSION MOUNTING IN AN ARTICULATED VEHICLE
Eddie B. Wagner, Portland, Oreg., assignor to Wagner Mining Scoop, Inc., Portland, Oreg., a corporation of Oregon
Filed May 20, 1966, Ser. No. 551,643
7 Claims. (Cl. 180—51)



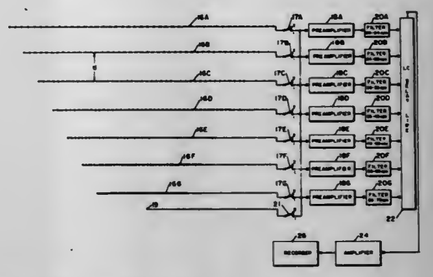
4. A vehicle having two body sections connected together for relative pivotal movement about a vertical axis between the sections for steering, an engine in one of said sections having an engine shaft, drive shafts in both of said sections, a transmission disposed between said sections and pivotally mounted on said one section on a vertical axis located between said one section and said steering axis, input and output shafts in said transmission, a universal joint located on said transmission mounting axis connecting said engine shaft and said transmission input shaft, a universal joint located on said transmission mounting axis connecting one end of said transmission output shaft and said drive shaft in said one section, and a universal joint connecting the opposite end of said transmission output shaft with said drive shaft in said other section.

3,349,865
VEHICLE IMPACT DEFLECTOR ARRANGEMENT
Alexander T. Deutsch, 1735 Riggs Place, Washington, D.C. 20009
Filed Sept. 24, 1965, Ser. No. 490,016
1 Claim. (Cl. 180—93)



A swingable fender for a vehicle to reduce the shock of impact, comprising ground-engaging means, pivotally connected to one end of the vehicle in such a manner as to lift the vehicle about the vehicle wheels on the other end of the vehicle, means for releasing said ground-engaging means upon impact of the vehicle with a resistant object, said ground-engaging means including independent yielding means within the said fender yielding longitudinally of the fender when the fender is substantially in an upright position to permit relative movements between the vehicle and the parts of the ground-engaging means in engagement with the ground.

3,349,866
DIRECTIVE TRANSDUCER ARRAY FOR SEISMIC EXPLORATION
Joseph F. Mifsud, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Apr. 19, 1963, Ser. No. 274,086
14 Claims. (Cl. 181—.5)



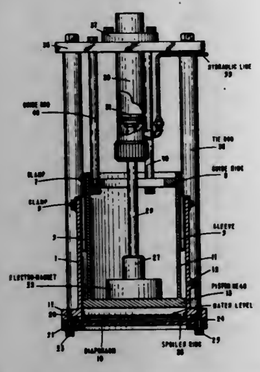
1. An array of seismic transducers for use in seismic prospecting operations in which it is desired to detect a seismic signal having a band of frequency of interest of f_1 to f_n which comprises:
(a) a first sub-array containing a plurality of seismic transducers spaced at intervals selected to give a predetermined directivity pattern for a first frequency band within the frequency range f_1 to f_n;
(b) a second sub-array containing a plurality of seismic transducers spaced at intervals selected to give a predetermined directivity pattern for a second frequency band within the frequency range f_1 to f_n, the directivity pattern for said second sub-array being the same as that for said first sub-array;
(c) a first filter connected to the output of said first sub-array for selectively passing said first frequency band;
(d) a second filter means connected to the output of said second sub-array for selectively passing said second frequency band; and
(e) means to add the output of said first filter and said second filter.

3,349,867
VACUUM ENERGIZED SEISMIC PULSE GENERATOR
Whitman D. Mounce, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,446
1 Claim. (Cl. 181—.5)

A seismic source, comprising:
a first cylinder;
a flexible diaphragm sealing one end of said first cylinder;
a first piston in said first cylinder for bidirectional movement therein;
a power piston cylinder;
a power piston in said power piston cylinder;
a rod connected to said power piston and extending toward the side of said first piston opposite the side of said first piston facing said diaphragm;
electromagnet means affixed to said rod for releasably connecting said rod to said first piston;
means for hydraulically moving said power piston through said power piston cylinder to move said first piston away from said diaphragm whereby a partial vacuum is produced in the portion of said first cylinder between said first piston and said diaphragm;
said first piston including a piston head and a cylindrical piston wall member affixed at one end to said piston head and extending toward said power piston and

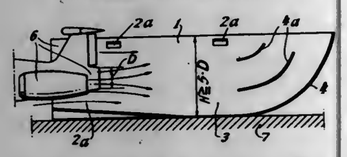
substantially coaxial with the longitudinal axis of said first cylinder;

an annular, flexible sleeve connected between said piston wall member and said first cylinder, and folded and extending into the space therebetween toward said piston head to provide a substantially frictionless seal, the thickness of said sleeve being less than half the diameter of the gap between said first cylinder and said piston wall member,



an end plate connected to said power piston cylinder and to said first cylinder, guide rod means connected to said end plate and extending toward said first piston, and a guide ring affixed to the end of said guide rod means and slidably engaging said piston wall.

3,349,868
SOUND SUPPRESSORS PARTICULARLY FOR JET ENGINES
Günter Kurtze, Mannheim-Kafertal, Germany, assignor to Grunzweig & Hartmann AG., Ludwigshafen (Rhine), Germany
Filed Nov. 9, 1964, Ser. No. 409,645
Claims priority, application Germany, Nov. 8, 1963, G 39,123
13 Claims. (Cl. 181—51)



1. In a sound suppressing arrangement wherein a jet engine has an outlet of a given diameter situated in close proximity to an inlet end of an elongated substantially horizontal channel adapted to receive gases discharged from the outlet and having an upper portion which is open to the outer atmosphere along at least a major part of said channel, the improvement comprising guide means arranged in said channel and including at least one guide member which curves from the interior to the exterior of said channel for directing the gases out of the channel.

3,349,869
SAWHORSE BRACKET
Jack Evans, Box 55, Rte. 1, Grant Park, Ill. 60940
Filed May 27, 1966, Ser. No. 553,522
14 Claims. (Cl. 182—226)

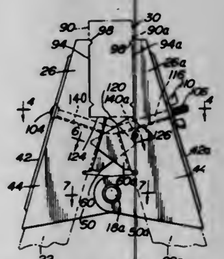
1. A sawhorse bracket for use in holding a beam and a pair of supporting legs in assembled relationship, comprising a pair of facing hingedly connected complementary body members each provided with a downwardly opening socket disposed slidably to receive therein upper ends of bracket-supporting legs,

upper portions of said facing body members defining therebetween a laterally and upwardly opening channel dimensioned to receive a beam therein for support thereof,

each said body members comprising a sidewall and spaced parallel front and rear walls integrally formed with said side walls and extending transversely thereof,

hinge means pivotally coupling corresponding said front and rear walls to each other at lower inwardly extending wing portions thereof,

tongues integral with and offset inwardly of said front and rear walls and extending generally parallel thereto, each said tongues being pivotal with its corresponding body member toward a side wall of an opposed body member to engage a facing surface of a leg received in said socket of said opposed body member,

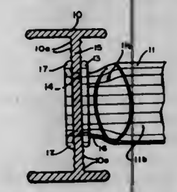


web means integral with said tongues and said side walls and extending between and joining said tongues with said side walls,

a web means of one said complementary body members having formed therein an elongated slot aligned slidably to receive therethrough a free end of a cooperating tongue of the other of said complementary members, and

adjustable means extending between and interconnecting opposed side walls of said bracket at corresponding positions intermediate upper and lower extremes of said side walls and operable to draw upper portions of said body members toward each other to bring corresponding upper portions of said front and rear walls of said body members into clamping engagement with a beam supported in said channel therebetween.

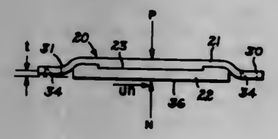
3,349,870
FLATSTEP LADDER
George Lieblein, P.O. Box 776, Amityville, N.Y. 11701
Filed Aug. 25, 1966, Ser. No. 575,163
7 Claims. (Cl. 182—228)



1. In a ladder, a ladder rung comprising an elongated hollow metal extrusion having a flat upper surface portion, a limited portion of said extrusion adjacent each of the opposing ends of said hollow extrusion being smoothly flared into a circular cross section, an upstanding circular bead integrally formed on each of said circular

cross section portions at a location spaced from the adjacent free end of said extrusion to provide short substantially cylindrical portions between said beads and the opposing free ends of said extrusion respectively adapted for insertion into circular bearing holes in a pair of ladder side rails, and elongated integral ribs formed on said flat upper surface portion and extending substantially uninterrupted across said beads and along said short substantially cylindrical portions for providing a tread surface on said flat surface portion and for simultaneously providing locking means on said beads and on said cylindrical portions adapted to lock said rung against rotation when the opposing ends of said rungs are mounted in said ladder side rail bearing holes.

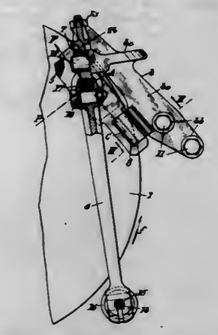
3,349,871
BRAKE PAD STRUCTURE
William D. Walther, Dayton, and Carlos P. Afanador, Centerville, Ohio, assignors to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio
Filed July 8, 1965, Ser. No. 470,448
4 Claims. (Cl. 188—73)



1. In a disk brake, an improved brake pad supporting arrangement comprising a torque member, a backing plate, means on said backing plate supporting a pad of friction material, said pad having a face surface engageable with the disk and a back supported on said plate spaced from said face surface, means on said backing plate forming a pair of supports which are offset forwardly in a direction toward the face of said pad and which form spaced apart sliding torque transmitting connections with said torque member which connections lie along a line which is substantially midway between the face and the back of said pad providing a moment arm between the brake force applied to said pad at said braking surface and the reaction force applied to said plate at said spaced torque transmitting connections which progressively decreases toward zero and then increases as said pad wears.

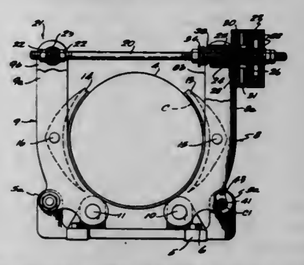
3,349,872
LEVER ACTUATED, SPOT TYPE DISC BRAKE
Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a society of France
Continuation of application Ser. No. 352,582, Mar. 17, 1964. This application Apr. 18, 1966, Ser. No. 543,230
Claims priority, application France, Mar. 19, 1963, 928,524
2 Claims. (Cl. 188—73)

1. In a system including a fixed frame and a driven shaft journalled with respect to said frame, a braking device which comprises, in combination, a disc fixed coaxially to the driven shaft, two flat friction elements mounted parallel to said disc on opposite sides thereof and located respectively adjacent limited peripheral portions thereof, with the centers of said friction elements lying in a common radial plane of said disc, an extension rigid with each said friction element defining a surface in the form of a cylinder having a non-circular cross section and characterized by a long axis, with the generatrices of said cylinder lying normal to the plane of said disc, said frame defining a pair of surfaces in the form of cylinders each of which interfits, engages, and matches with a surface defined by an extension, each set of said interfitted, engaged, and matched surfaces mutually cooperating to guide its associated friction element in a direction normal to said disc, said non-circular in section cylindrical surfaces forming the only means for holding said friction elements, all said surfaces being oriented angularly with respect to said disc so that each of said friction elements has the long axis of its cross section extending in a direc-



tion perpendicular to said radial plane and disposed so that the resultant of the forces applied thereto in the plane thereof during braking passes substantially along the line of the long axis of its associated cylindrical surfaces, and control means carried by said frame and operatively engaging said friction elements for urging them against said limited peripheral portions of the corresponding faces of said disc.

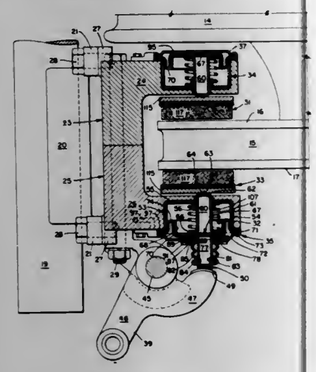
3,349,873
SELF-ADJUSTING POWER OPERATED BRAKE
David C. Wycoff, Brookfield, and Milenko Elez, Milwaukee, Wis., assignors to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 13, 1966, Ser. No. 557,135
3 Claims. (Cl. 188—75)



1. A self-adjusting, power operated brake for a rotary member to be braked, comprising, a brake base, a pair of opposed brake arms pivotally mounted to the base, a brake shoe pivotally mounted on each of said arms and swingable between brake engaging and disengaging positions when said arms are swung about their pivot points on said base, power means connecting said arms together for forceably urging them towards one another and into a brake engaging position, a lost motion connection between each of said arms and said base, said connection including a yieldable and self-adjusting pin and slot connection between each of the arms and said base, said connection including a slot in each arm and a pin extending through said slots, adjustable spring means between said arms and said pin for providing relative movement therebetween, said base having a hole through which said pin freely extends with predetermined clearance, whereby said arms normally swing through said pre-determined clearance in

respect to the base, and whereby said power means between said arms is effective to cause adjustment of said yieldable connection between said arms and pin upon wear of said brake shoes.

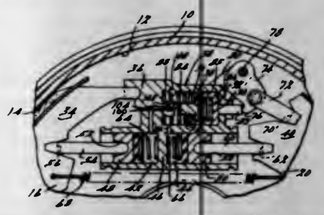
3,349,874
RAILWAY DISC BRAKE
Robert G. Stacy, Meadowbrook, Norman E. Almond, Levittown, and Omar E. Freholm, Jenkintown, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 30, 1965, Ser. No. 517,654
5 Claims. (Cl. 188—107)



1. A railway brake assembly for a rotatable wheel disk comprising in combination: stationary support means, mounting means secured to said support means and including an arm portion extending adjacent a surface of said disc, said arm portion carrying a brake shoe and actuator means therefor, means for providing a source of fluid pressure for automatically activating the actuator, said actuator including a housing with side walls and a cover, piston means received within said housing and including a rigid member having first and second sides and movable axially of said side walls, registering means extending from said first side of said piston means for engagement with said brake shoe, pressure button means disposed in operative engagement with said second side of said piston means, said cover including an aperture to permit movement of said pressure button means, a flexible resilient diaphragm secured at its marginal edges between said side walls and said cover and having one of its surfaces normally in engagement with said rigid member and manual means including a bellcrank mounted on said arm portion for movement from an inoperative position out of pressure engagement with said pressure button means, to an operative position in pressure engagement with said pressure button means, to thereby exert a force through said piston means to urge said brake shoe into braking engagement with said disk.

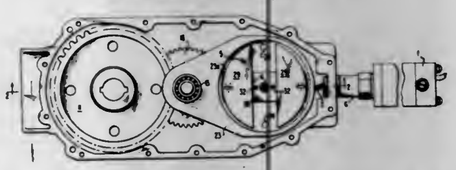
3,349,875
CONTROLLED TORQUE DRUM BRAKE
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company
Filed June 25, 1965, Ser. No. 466,979
5 Claims. (Cl. 188—152)

1. A drum brake having a pair of arcuate brake shoes, means connecting said brake shoes at adjacent ends thereof, a wheel cylinder adjacent the other ends of said brake shoes, said wheel cylinder being connected to a source of fluid pressure, first and second opposed service pistons of equal size operable to move said brake shoes in a radially outward direction in response to pressure from a fluid motor, a valve operable to interrupt the delivery of fluid pressure to one of said service pistons from said fluid motor and prevent the further pressurization of said one service piston while keeping the other of said service pistons open to said source of



fluid pressure, and a third valve controlling piston biased by fluid from said fluid motor in a direction tending to maintain said valve open and operable to receive at least a portion of the anchoring torque from said shoes in a direction tending to close said valve.

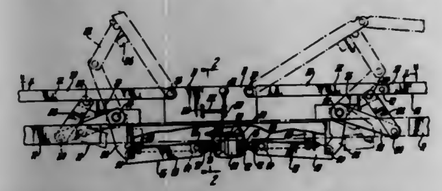
3,349,876
REVOLVING DOOR OPERATING MECHANISM AND SPEED CONTROLLER
Amuel E. Sheckells, Evansville, Ind., assignor to International Steel Company, Evansville, Ind., a corporation of Indiana
Filed Mar. 6, 1967, Ser. No. 620,998
8 Claims. (Cl. 188—185)



1. A revolving door operating mechanism and speed control device of the character described comprising, a housing, a main gear rotatably mounted within said housing, said main gear being adapted to be secured to the revolving door shaft, centrifugal brake means positioned within the housing, a shaft having one end connected to said centrifugal brake means, gear train means rotatably mounted within the housing, said gear train means being operatively connected between the main gear and the opposite end of said shaft, a roller clutch bearing assembly mounted on said shaft concentrically therewith and intermediate the ends thereof, and motor means operatively connected to said clutch assembly, whereby upon energization of said motor means, the clutch assembly is rotated together with said shaft to cause rotation of said centrifugal brake means while simultaneously rotating the rovolving door shaft through the gear train; said main gear, gear train means, centrifugal brake means and clutch assembly, all being positioned within said housing in spaced, parallel, closely adjacent horizontal planes to thereby form a low-profile operating mechanism and speed control device adapted for selective installation in either an overhead or floor-type revolving door installation.

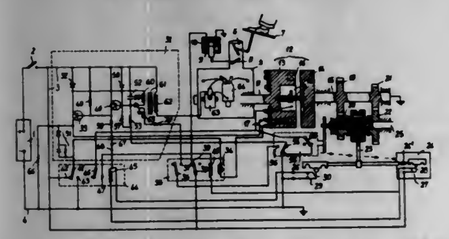
3,349,877
POWER TRANSMISSION MECHANISM
William T. Downs, Detroit, Mich., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,433
13 Claims. (Cl. 192—.02)

2. A power transmission mechanism comprising power actuated drive means, driven means, shiftable clutch means movable between engaged and disengaged positions to respectively connect and disconnect said drive and driven means in drive-transmitting relationship, control means comprising a pivotal control lever having one portion thereof operatively connected to said clutch means to control shifting movement of the latter between said positions thereof, and fixed detent means, another portion of said control lever being selectively engageable



with said detent means to shift said clutch means to said engaged position thereof, said control lever being yieldable throughout at least a portion of its length whereby, if said clutch means is not engaged upon shifting thereof toward said engaged portion thereof, said lever is stressed between said detent means and said clutch means to bias the latter into the engaged position thereof.

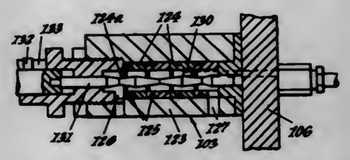
3,349,878
CONTROL OF THE POWER OF THE ENGINE OF A VEHICLE WITH AN AUTOMATIC GEAR-BOX AND AN ELECTRICALLY-OPERATED CLUTCH
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 29, 1965, Ser. No. 443,194
Claims priority, application France, Apr. 2, 1964, 969,520, Patent 1,398,895
10 Claims. (Cl. 192—.092)



1. A device for controlling the power of the engine of a vehicle having an automatic gear-box with stepped gear ratios and an electrically operated clutch which interrupts torque during gear changes comprising means for controlling the power output of the engine in dependence upon the value of the operating current of said clutch, and for rendering said control current dependent on the engine speed during re-engagement of said clutch, means for actuating said control means during gear changes.

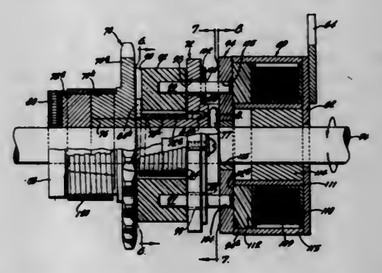
3,349,879
CLUTCH AND BRAKE WITH CONTROL VALVE
Duncan James Keith Stuart, Solihull, Peter Edward Fraser, Droitwichworcester, John Michael Payne, Kings Norton, Birmingham, and Douglas Ralph Shotter, Marton, Rugby, England, assignors to Edward Williams Holdings Limited, Birmingham, England
Filed June 21, 1965, Ser. No. 465,268
Claims priority, application Great Britain, June 24, 1964, 26,075/64
3 Claims. (Cl. 192—18)

1. A control valve for use in a power transmission mechanism incorporating a clutch and a brake, including a valve body and an operating member therefor movable from a first position in which the clutch is engaged and the brake disengaged to a second position in which the clutch is disengaged and the brake engaged, with said operating member being positionable in an intermediate position in which neither clutch nor brake is fully engaged and in which slight movement of the operating member in opposite directions increases the engagement of the clutch or brake, said valve body having a longitudinal bore therein, a pair of ports communicating with the bore and adapted for connection to the clutch and brake respectively, further ports communicating with the bore adapted for connection to a pressure fluid supply and drain respectively, first, second, third and fourth orifice defining means located within and extending axially of



said bore providing chambers for separating a drain port from the clutch port, the clutch port from the supply port, the supply port from the brake port and the brake port from a drain port respectively, said operating member being defined by a needle body extending longitudinally of said bore through all of said orifices, said needle body being provided with a plurality of frusto-conical portions with the smaller ends of adjacent portions being joined to provide grooves between the joined larger ends of adjacent portions whereby in one extreme position of said needle said first and third orifices are closed and in the opposite extreme position said second and fourth orifices are closed while in a mid-position all of said orifices are open.

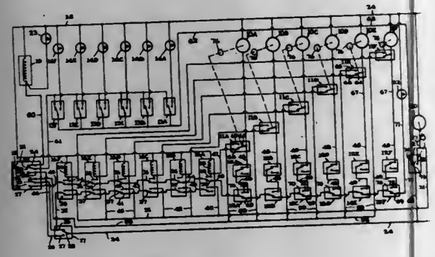
3,349,880
MAGNETIC SPRING CLUTCH ASSEMBLY
John Baer, Medford Lakes, N.J., assignor to Precision Specialties, Inc., Pitman, N.J., a corporation of Missouri
Continuation of application Ser. No. 389,741, Aug. 14, 1964. This application June 15, 1966, Ser. No. 557,842
12 Claims. (Cl. 192—84)



11. A clutch assembly comprising: a frame; a driving member rotatably supported along an axis through said frame; a driven member rotatably supported along essentially the same axis of rotation as the driving member; a helical clutch spring fixed at one end to said driven member and tightly encircling said driving member; collar means engaging the free end of said clutch spring and rotatable therewith when said spring is driven by said driving member; brake means associated with said frame for stopping rotation of said collar means to loosen said spring from said driving member; means for actuating said brake means between a condition to stop said collar

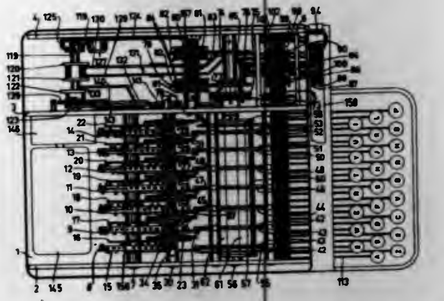
means and a condition free of engagement with said collar means; and clutch means for providing a coupling between said driving member and said driven member for preventing over-running of said driven member relative to said driving member but permitting rotation of said driving member relative to said driven member.

3,349,881
VENDING CYCLE LOCKOUT CIRCUIT
Vernon D. Camp, Chattanooga, Tenn., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,436
9 Claims. (Cl. 194—10)



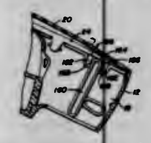
1. In a coin operated vending machine having a plurality of stacks of articles adapted to be selectively dispensed and a plurality of vend motors, each of which corresponds to a separate stack and is arranged to be selectively energized to dispense articles from the corresponding stack, one at a time, according to the choice of a customer, the improvement comprising a vending cycle lockout circuit having a pair of line conductors adapted to be connected to a power source, circuit means including a vend relay arranged to be energized from the line conductors, and a coin operated vend switch, said coin operated vend switch being electrically connected in series with one of said line conductors and adapted to be momentarily actuated from a first to a second position upon insertion of a coin for energization of said vend relay, a lockout switch adapted to be actuated between a first and a second position, a lockout motor disposed for actuating said lockout switch between said first and said second position, said lockout switch in its first position adapted to be electrically connected in series with said vend relay for establishing a holding circuit therefor upon return of said coin switch to its first position, said lockout switch in its second position being electrically connected in series with said lockout motor and to establish a second energizing circuit for said lockout motor across said line conductors, said lockout motor having a first energizing circuit across said line conductors including said vend switch in its first position and a plurality of individual energizing circuits connected across said line conductors for selectively energizing said vend motors, each of said energizing circuits including a manually operable selector switch having a first and a second position, a timer switch adapted to be actuated by a corresponding vend motor between a first and a second position, and a selector relay adapted to be initially energized through a corresponding timer switch in its first position and upon actuation of a corresponding selector switch to its second position, said timer switch in its second position being electrically connected in series with its corresponding vend motor to establish a by-pass energizing circuit for said vend motor when said selector switch is returned to its first position to allow said motor to complete its vending cycle and return said timer switch to its first position.

3,349,882
CIPHERING MACHINE
Bengt Florin, Hagersten, and Kalevi Loimaranta, Mattby, Sweden, assignors to AB Transvertex, Varby, Sweden, a joint-stock company of Sweden
Filed May 17, 1966, Ser. No. 550,680
8 Claims. (Cl. 197—4)



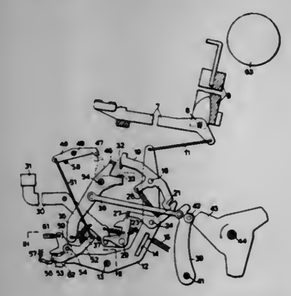
1. In a ciphering machine of the type having a series of pin-wheels each having a number of pins displaceable into active or passive position, the number of pins of the respective wheels of the series having no common denominator, said wheels being mounted for simultaneous rotation through the angle between successive pin positions of each wheel, said machine having a clear text alphabet and a cipher text alphabet, and means operable during each machine cycle and controlled by said pin-wheels for displacing said cipher text alphabet relative to said clear text alphabet by an amount dependent upon the setting of said pin-wheels, the improvement comprising, means rendering the displacement of said cipher alphabet dependent upon at least two settings of the pin-wheels, said means comprising, means settable in accordance with said pin-wheel settings, first and second means for sensing the settings of said settable means, said sensing means being respectively operable in opposite directions, means under control of said first sensing means for determining the starting point for displacement of said cipher text alphabet relative to said clear text alphabet, means under control of said second sensing means for determining the amount of movement of said cipher text alphabet from said starting position, and means for stepping said pin-wheels and altering the setting of said settable means between operations of said sensing means.

3,349,883
EMBOSSING TOOLS AND MAGAZINE SUPPLIES FOR USE IN COMBINATION THEREWITH
Dane H. Pedersen, Moraga, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California
Filed May 9, 1966, Ser. No. 548,512
11 Claims. (Cl. 197—6.7)



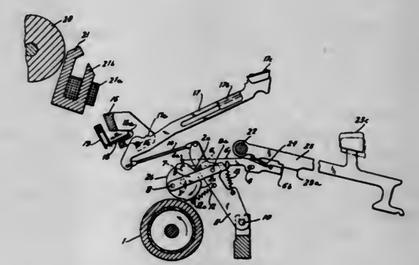
1. In combination,
a tool for embossing strip material wherein a strip of embossable material is advanced along a fixed path through the body of the tool from a strip supply located in the body toward embossing means in the body and is selectively retracted back into the supply;
a magazine containing said supply, said magazine having a spool-like construction including
a first unitary member having a radially extending first flange portion and an integral axially extending generally tubular arbor portion for supporting a coil of said strip material;
a second unitary member having an axially extending spindle portion retained within said arbor portion such that the arbor portion is rotatable relative to the spindle portion and an integral radially extending second flange portion axially spaced from said first flange portion for retaining the coil upon the first unitary member, said second flange portion including first locating and securing means;
the tool having a socket in the body thereof within which socket the magazine is received;
second locating and securing means in the body of the tool juxtaposed with said socket and cooperatively engaging said first locating and securing means in the second flange portion to accurately locate and secure the magazine within the socket and preclude rotation of the second unitary member relative to the tool body while permitting rotation of the first unitary member and the coil of strip material thereon during advancement and retraction of the strip material from and to the magazine.

3,349,884
FAULT SENSING DEVICE FOR A SPRING-ACTUATED TYPEWRITER
Bernardino Francisco, Florano, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Mar. 1, 1966, Ser. No. 530,875
Claims priority, application Italy, Mar. 5, 1965, 5,415/65
4 Claims. (Cl. 197—17)



1. In a power operated typewriter having a set of depressible keys associated with a set of type actions, each one of said actions comprising an intermediate member displaceable during the action operation, a cyclically operating mechanism conditionable for operation at the depression of each one of said keys, and an interponent connected to each one of said intermediate members and adapted to be coupled to a common oscillatable actuator at the depression of the associated key, said actuator being spring moved through its forward stroke for operating the action connected to the coupled interponent and being then restored by said mechanism, a fault-sensing device comprising in combination:
(a) a set of yieldable elements each one normally locked by one of said intermediate members and adapted to be released thereby at the beginning of its displacement effected by said actuator,
(b) a displaceable universal bar adapted to be engaged by each one of said yieldable elements when so released,
(c) restraining means connected to said universal bar to prevent it from being displaced, a single yieldable element being insufficient to overcome said restraining means, at least two of said yieldable elements being sufficient to overcome said restraining means to displace said universal bar,
(d) and a normally ineffective intercepting member for said actuator, said intercepting member being connected to said universal bar as to be concomitantly moved therewith and being rendered effective when said universal bar is engaged simultaneously by at least two yieldable elements of said set to prevent the simultaneous operation of more than one action.

3,349,885
TYPE BAR DRIVE COMPOSED OF TWO DIFFERENT COMPONENTS
Walter Stuiber, Stein, near Nurnberg, and Georg Mueller, Schwabach, Germany, assignors to Max Grundig, Furth, Bavaria, Germany
Filed Mar. 21, 1966, Ser. No. 535,989
Claims priority, application Germany, Mar. 20, 1965, G 43,130
11 Claims. (Cl. 197—17)

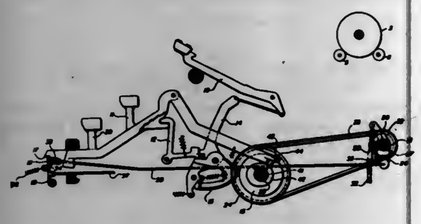


1. An apparatus for making impressions, comprising, in combination, counterpressure means having an impression area; a plurality of type bars having type faces, each type bar being movable in an arc intersecting said impression area from a position of rest to a position of readiness in which its type face is located near and opposite said impression area and further to an impression making position on said impression area; a power roll; a plurality of coupling means for respectively connecting said type bars with said power roll, each coupling means including a turnable coupling member cooperating with said power roll, and a lever having a fulcrum point and being pivotally connected with said coupling member at a pivot point, said lever having at least one dead center position in which said fulcrum point, said pivot point, and the axis of said turnable couping member are located in the same straight line, said lever being operatively connected with a type bar in such a manner that said type bar is in said position of readiness shortly before said lever is in said dead center position; a plurality of keys connected with said coupling means for selectively placing the same in a position in which said coupling member is driven by said power roll for moving the respective type bar through said lever from said position of rest toward said position of readiness; electromagnetic means located in the region of said impression area for attracting a type bar in said position of readiness to move the same to said impression-making position in which said lever is in said dead center position while the respective type bar engages said impression area with a pressure independent of the speed of movement of said type bars to said position of readiness and dependent only on said electromagnetic means; circuit means including switch means connected with said electromagnetic means; and actuating means operated by said type bars in said position of readiness to close said switch means whereby said electromagnetic means is energized.

3,349,886
MECHANISM FOR LOCKING THE KEYBOARD OF ELECTRIC TYPEWRITERS OR LIKE MACHINES

Theodore N. Madison, Thompsonville, and Robert E. McGrath, Wethersfield, Conn., assignors to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 2, 1965, Ser. No. 511,166
6 Claims. (Cl. 197—107)

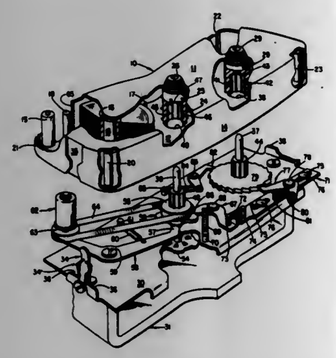


1. An electric typewriter having a keyboard including a plurality of service function key levers,
a shaft adapted to be continuously rotated,
wrap spring clutches associated with said key levers connected to service function actuators; said key levers in normal state holding said clutches disengaged and effecting clutch engagement when depressed,
and means for reversely rotating said shaft when its motive source is shut off thereby to disable the key lever clutch connections.

3,349,887
RIBBON MECHANISM

Willie Goff, Jr., Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1964, Ser. No. 421,454
18 Claims. (Cl. 197—151)

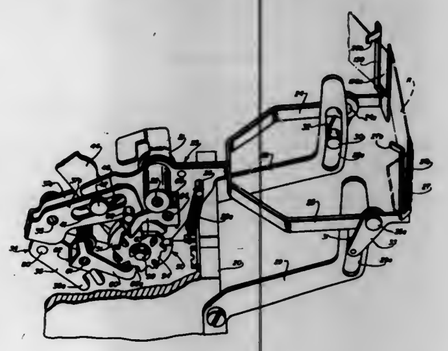


1. A inked ribbon cartridge adapted to be removably mounted on a typewriter including:
a housing having upper and lower walls;
said housing having a side wall connecting said upper and lower walls;
said housing having means to releasably mount said housing on a typewriter;
a supply spool rotatably mounted in said housing;
a drive roller mounted in said housing;
a take-up spool rotatably mounted in said housing;
said side wall having a pair of ribbon slots therein;
an inked ribbon having one end attached to said supply spool and the other end attached to said take-up spool;
and said inked ribbon being wound around said supply spool and extending from said supply spool through one of said slots in said side wall to the exterior of said housing, said inked ribbon returning to the interior of said housing through the other of said slots and passing around said drive roller to said take-up spool.

3,349,888
VIBRATOR TYPE RIBBON HANDLING MECHANISM

Paul F. Page, Newington, Conn., assignor, by mesne assignments, to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 223,159, Sept. 12, 1962. This application Mar. 13, 1967, Ser. No. 622,811
8 Claims. (Cl. 197—158)

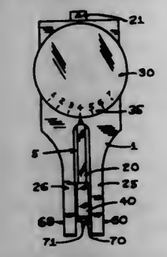


1. In a ribbon handling mechanism, the combination of:
a frame,
a vibrator arm rockably mounted on said frame and having a ribbon support secured thereto, said vibrator arm having an engagement surface formed thereon,
a crank rockably mounted on said frame,
means to rock said crank,
a drive arm pivotally mounted on said frame and drivably connected to said crank,
a first and a second drive pin coupled to and driven by said drive arm,
a rotatable cam mounted on said vibrator arm having alternately spaced engagement surfaces and valleys, said first drive pin positioned to initially engage said vibrator arm engagement surface and partially rock said vibrator arm upon operation of said drive arm, said second drive pin positioned to engage one of said cam engagement surfaces when said one cam engagement surface lies in the path of driving movement of said second pin to fully rock said vibrator arm,
and means associated with said frame and said rotatable cam for incrementally rotating said cam to alternately place cam engagement surfaces and cam valleys in the path of movement of said second pin so that said vibrator arm is alternately rocked a full stroke and a partial stroke on successive strokes of said drive arm.

3,349,889
DEVICE FOR TYPING AN AUXILIARY CHARACTER ON A TYPEWRITER

Larry N. Barger, % The Artizan, P.O. Box 1084 Glendale, Calif. 91209

Filed Oct. 23, 1965, Ser. No. 502,937
8 Claims. (Cl. 197—180)

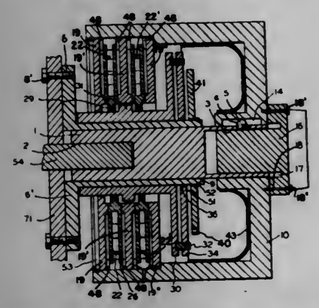


1. In a device having a support member and a movable key for typing an auxiliary character on a typewriter which has a platen, a series of conventional keys and a type guiding member, the improvement in the device of: a flexible springy key having one end rigidly fixed to the support member and having an auxiliary character at an opposite end, said auxiliary key bending between its rigidly fixed end and its auxiliary character end to advance the auxiliary character toward the typewriter platen when struck by a conventional key, said flexible springy key unbending to retract its auxiliary character from the platen after being struck by the conventional key; and attaching clips on said support member for temporarily attaching said support member to the type guiding member, said device being separable from the typewriter by a simple manual pull after use to leave the type guiding member completely free of any contact with the attaching clips, the support member or the flexible key; said attaching clips, support member and flexible key permanently connected together and forming a single manipulable unit that can be quickly and manually attached to and detached from a typewriter without the use of tools.

3,349,890
END-OF-PAGE LIMITING DEVICE

Carl D. Russell, 1209 Walnut St., Muskogee, Okla. 74401

Filed Nov. 2, 1964, Ser. No. 408,127
8 Claims. (Cl. 197—189)

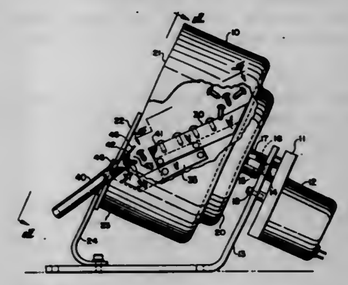


1. A limiting device for attachment to a typewriter having a platen with pintle and a frame, comprising in combination, a case for housing said limiting device; said case comprising a shaft adapted to receive the pintle of the platen for rotating the case and permitting longitudinal movement of the case relative to the shaft; a tubular member adapted to be affixed to said frame and contain said shaft for rotation of the shaft therein; hub means seated on the tubular member for rotation relative thereto; guide means affixed to said case; a pair of reels in spaced-apart relation carried by said guide means and movable with the case longitudinally of the hub means; said hub means comprising means for selectively engaging one of said reels depending upon their longitudinal positions relative to the hub means; spring means affixed respectively to the reels and to said case for winding through rotation of said case; locking means carried by said tubular member; resilient means connecting said locking means to said hub means whereby further rotation of said shaft after a predetermined winding of the selected spring means imparts rotation to said hub means via the resilient means; bell means; means associated with the hub means to ring said bell means by movement of the hub means; and means for selecting one of the reel means to predetermine the amount of revolution of said shaft and pintle to operate the bell means.

3,349,891
APPARATUS FOR ORIENTING ARTICLES

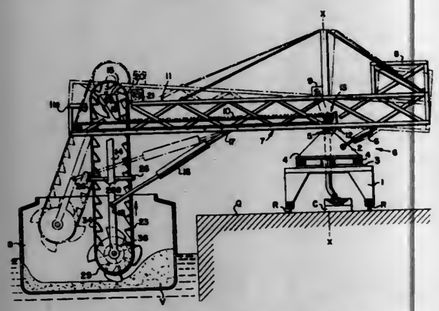
Warren C. Burgess, Jr., 27018 Kennedy Ridge Road, North Olmsted, Ohio 44070

Filed Mar. 16, 1966, Ser. No. 534,769
4 Claims. (Cl. 198—33)



1. An apparatus for disposing a plurality of similarly shaped articles in oriented relation comprising in combination:
(a) a rotatable supply drum disposed for rotation about an axis inclined to the horizontal;
(b) inclined rail means coacting inside said supply drum to intercept and convey parts from a random supply thereof carried in said drum when said drum is rotated about said inclined axis, said parts having at least one laterally extending means which suspends the article on said rail means;
(c) means disposed in spaced relation from said inclined rail means and defining an unconfined gap having launching and recapturing extremities, said means serving to recapture properly oriented articles at the recapturing extremity of said gap, said recapturing means including means to further orient the recaptured articles;
(d) said inclined rail means also serving to launch articles in free trajectory across said unconfined gap;
(e) said rail means also serving to orient at least some of the articles intercepted by said inclined rail means prior to reaching the launching extremity of said gap;
(f) means located intermediate and in spaced relation to the extremities of said gap for testing the position of articles in said free trajectory relative to a predetermined article position along the free trajectory through which properly oriented articles move and including means for deflecting articles not in said predetermined article position;
(g) said drum coacting with the article deflecting means to collect articles not accepted for recapture.

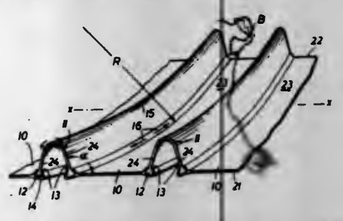
3,349,892
CONVEYOR FOR HANDLING BULK MATERIALS
Marcel Jean Charles Barre, Rue d'Haubourdin, Les Peupliers 6, Faches-Thumesnil, Nord, France
Filed July 14, 1966, Ser. No. 565,141
Claims priority, application France, July 15, 1965, 24,669
6 Claims. (Cl. 198—91)



1. An elevator arrangement comprising, in combination:
(a) a support;
(b) two pairs of coaxially rotatable pulley members mounted on said support in vertically spaced relationship;
(c) elongated carrier means trained over said pulley members in a closed loop having two vertically spaced portions respectively adjacent said pairs of pulley members;
(d) drive means for moving said carrier means in said loop;
(e) a plurality of approximately cup-shaped buckets mounted on said carrier means and having respective openings directed toward the inside of said loop;
(f) means defining a downwardly closed receptacle at the lower one of said loop portions, said openings communicating with said receptacle during movement of said carrier means in said loop;
(g) rotary shovel means adjacent said receptacle for shoveling a bulk material into said receptacle; and
(h) discharge means for withdrawing said bulk material from said buckets at the higher one of said loop portions,
(1) said discharge means including a deflector member having an axis, said deflector member being mounted between the pulley members adjacent said higher loop portion and tapering in an axial direction from one toward the other of the last-mentioned pulley members,
(2) a plurality of vanes angularly spaced on said deflector member about the axis thereof, said vanes defining axially extending channels therebetween,
(3) said other pulley member being formed with openings respectively communicating with said channels.

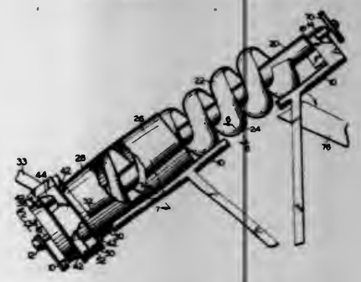
3,349,893
CONVEYOR BELT
Friedrich Jordan, Wethmar, near Lunen, and Ewald Heuser, Werne an der Lippe, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Filed Feb. 2, 1965, Ser. No. 429,847
Claims priority, application Germany, Feb. 20, 1964, G 39,895
7 Claims. (Cl. 198—195)

1. A conveyor belt which comprises a plurality of rigid plates disposed in endwise spaced-apart relation to each other with adjacent plates being connected by flexible arched joining members extending substantially above said plates and having marginal beads which are inserted



into transverse retainer grooves provided in said plates to form a continuous conveyor belt having a transport surface formed of alternating rigid plate and flexible arched member sections.

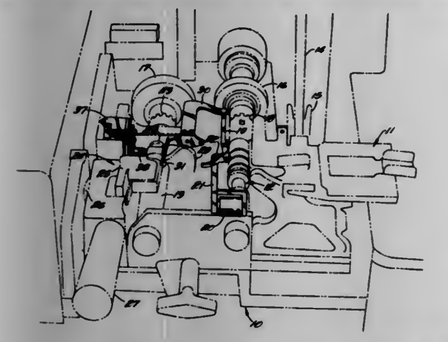
3,349,894
INCLINED SCREW CONVEYOR
Kenneth M. Allen and Chester H. Harper, both of P.O. Box 352, Newberg, Oreg. 97132
Filed Dec. 13, 1965, Ser. No. 513,256
6 Claims. (Cl. 198—215)



1. An inclined screw conveyor comprising
central helical screw means adapted for rotation about an inclined axis and provided with a peripheral cylindrical portion extending said screw means in a direction along the inclined axis thereof for holding material being conveyed,
means for rotating said screw means about said inclined axis, and
outer rotating means located toward the lower end of said screw means substantially enclosing the outer periphery of said screw means except in a radially upward direction from said inclined axis providing an inlet opening for said inclined screw conveyor,
said outer rotating means including a belt wrapped around the periphery of said screw means except in said radially upward direction from said inclined axis,
said belt turning with said screw means, and
providing an input opening for conveyed material in said radially upward direction.

3,349,895
TIME-RESPONSIVE CONTROL MEANS FOR TYPOGRAPHICAL COMPOSING MACHINES
Edward L. Hawkins, 2982 E. Military Road, and Richard A. Taylor, 2103 E. Pike, both of Zanesville, Ohio 43701
Filed Jan. 7, 1966, Ser. No. 519,216
9 Claims. (Cl. 199—14)

1. In a typographical composing machine equipped with an automatic control unit for automatically releasing matrices from a storage magazine, the combination of an assembling elevator wherein the released matrices are delivered one after another to form a composed line, actuating means including a selector shaft coupled with said control unit for operation thereof in releasing matrices and an elevator actuating mechanism for operating said assembling elevator, said selector shaft being provided with selectively disengageable clutch means for arresting movement of said selector shaft and operation of said control unit upon disengagement of said clutch means, first



control means for effecting disengagement of said clutch means during operation of said elevator actuating mechanism and including an electromagnetic solenoid operable on energization thereof to disengage said clutch means, and time-responsive control means connected with said solenoid and selectively operable for energization of said solenoid to maintain said clutch means in disengagement for a predetermined time interval after conclusion of the operation of said elevator actuating mechanism.

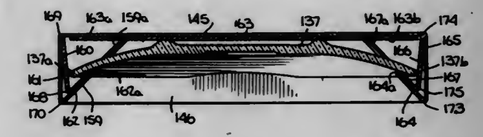
3,349,896
DISPOSABLE SHEATH AND SHEATH RETAINER FOR TEMPERATURE SENSING PROBES
John D. Ensign, Brigham City, and Hideo Hashimoto, Deweyville, Utah, assignors to Measurement Science Corporation, Perry, Utah, a corporation of Utah
Filed Sept. 22, 1965, Ser. No. 489,122
13 Claims. (Cl. 206—16.5)



1. A disposable sheath for use on a temperature sensing probe, comprising an elongate, non stretchable tube sufficiently rigid to be inserted on a probe without buckling or folding; and a heat conductive diaphragm of stretchable material sealing one end of said tube.

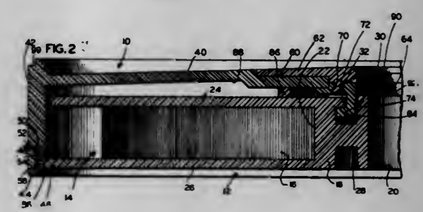
3,349,897
ARTICLE-SUPPORTING AND DISPLAYING DEVICES
Orison W. Stone, Valley Cottage, N.Y., assignor to Developak, Inc., New York, N.Y., a corporation of New York
Filed Apr. 13, 1964, Ser. No. 359,297
11 Claims. (Cl. 206—45.14)

1. In an article-supporting and displaying device: a wall the front surface of which is directed toward an article when the same is supported by the device, and a flange extending rearwardly from said wall at an acute angle not greater than 60 degrees, said flange comprising a first panel hinged to said wall and extending rearwardly therefrom, a second panel connected to said first panel at a location spaced from the hinge connection between the latter and said wall and extending along said first panel toward the rear surface of said wall, and a third panel hinged to said second panel at a location spaced from the connection between the latter and said first panel,



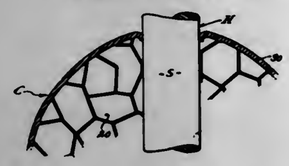
said third panel extending along said rear surface of said wall in a direction away from the hinge connection between said wall and said first panel and being fixedly secured to said wall, the distance from any given part of said connection between said first and second panels to said hinge connection between said first panel and said wall being greater than the distance from said part of said connection to the hinge connection between said second and third panels.

3,349,898
REEL CASE WITH ROTATABLE LOCK
Richard C. J. Palson, Medfield, Mass., Anthony L. Gelardi, Cranston, R.I., and Gregory Mathus, West Hartford, Conn., assignors to Data Packaging Corp., Cambridge, Mass., a corporation of Massachusetts
Filed May 18, 1966, Ser. No. 551,085
10 Claims. (Cl. 206—52)



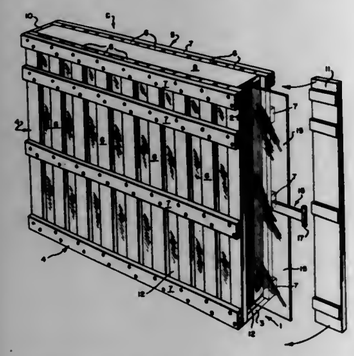
1. A reel and closure for magnetic tape comprising
a reel having a hub and a pair of generally parallel front and rear flanges, said hub having a central cylindrical hub wall for receiving the spindle of a machine on which the reel is to be used,
a recess provided in the front side of the reel radially outwardly of the cylindrical hub wall,
a closure for the reel having a cylindrical wall of a width at least substantially equal to the width of the reel measured at the periphery of the flanges,
sealing means engaging one edge of the cylindrical wall and the periphery of the rear flange of the reel to seal the two together when the closure is on the reel,
an annular wall as part of the closure secured at its periphery to the other edge of the cylindrical wall,
sealing means engaging the annular wall of the closure and the front flange of the reel to seal the two together when the closure is on the reel,
and locking means carried by and movable with respect to the annular wall and cooperating with the recess for releasably locking the closure on the reel with the sealing means operative so that the closure forms a seal about the reel.

3,349,899
BELTED FASTENERS
Richard E. Powers, San Marino, Calif., assignor to Powers Wire Products Co., Inc., El Monte, Calif., a corporation of California
Filed Feb. 7, 1966, Ser. No. 525,597
10 Claims. (Cl. 206—56)



1. A belt supply of fasteners for dispensing from a power tool and comprising, a multiplicity of like fasteners and wherein each fastener comprises an axially disposed shank with a piercing end and with an enlarged head at the end opposite said piercing end, and an expendable carrier receiving and holding the fasteners and formed of an elongated low density body of frangible material for subsequent destruction in the power tool, said fastener shanks piercing said body of material at successively spaced intervals and frictionally engaged therein and positioned in regimented order.

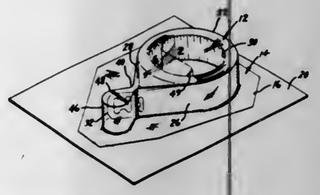
3,349,900
PACKAGED PLATE GLASS
John C. Jones and Albert J. Bundy, Kingsport, Tenn., assignors to American Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,665
10 Claims. (Cl. 206—62)



1. In a glass shipping case including a plurality of tightly packed glass plates and interleaving paper sheets placed therebetween, the improvement comprising a coating of dry lubricant positioned between at least one of said glass sheets and interleaving sheets.

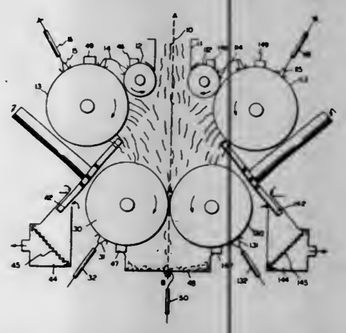
3,349,901
PACKAGE FOR ENCLOSING AND DISPENSING A COILED MEMBER
Lawrence C. Brautigam, 42 Glenbrook Road, Kensington, Conn. 06037
Filed May 27, 1966, Ser. No. 553,430
9 Claims. (Cl. 206—78)

1. A dispenser display package enclosing a coiled member comprising: a support having a generally planar front face; a coiled member on said front face of said support, said coiled member having an outer end portion extending tangentially from the coiled body thereof; and a preformed enclosing member having a peripheral flange portion extending along and sealingly engaged with said front face of said support and an upwardly extending chamber portion bounded by said flange portion and cooperating with said support to form an enclosure therebetween for said coiled member, said chamber portion having a relatively wide pocket portion snugly receiving said body of said coiled member and providing a housing for rotation therein of said coiled body and also having an outlet guide portion communicating with said pocket portion receiving said outer end portion of said coiled member, said outlet guide portion being of considerably lesser width than said pocket portion at its point of communication therewith, both said pocket portion and said



outlet guide portion being dimensioned to permit free movement of said coiled member therein, said outlet guide portion being frangible at a point spaced from its point of communication with said pocket portion to provide an opening in a guide channel leading from said pocket portion for removal of said coiled member from said package by withdrawing said outer end portion through the opening and unwinding of said coiled body within said pocket portion, said coiled member being completely enclosed by said support and enclosing member prior to breaking of said outlet guide portion to provide for withdrawal of said coiled member.

3,349,902
FIBER FRACTIONATING APPARATUS AND PROCESS
Joseph J. Lafranca, Jr., Metairie, Mayer Mayer, Jr., New Orleans, and Heber W. Weller, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Oct. 22, 1965, Ser. No. 502,727
9 Claims. (Cl. 209—2)



1. Apparatus for separating short fibers from loose masses of relatively untangled mixtures of individualized long and short textile fibers which comprises:
(a) input means for admitting a loose mass of a relatively untangled mixture of individualized long and short textile fibers into the apparatus;
(b) six parallel, rotatable cylindrical electrode elements symmetrically arranged in two groups of three elements on opposite sides of a center line to form a mirror image of each other,
(1) said six electrode elements being positioned to form the boundaries of an electrostatic field having both uniform and nonuniform potential gradients,
(2) a pair of electrode elements in each of said groups being in relatively closer proximity to each other than to the third electrode element of each of said groups,
(3) each of said pair of electrode elements being adjacent said input means,
(4) one electrode in each pair being closer to said input means than the second electrode of each pair,
(5) the third electrode of each of the aforesaid groups being closer to said second electrode of each pair than to the first and separated from said second electrode by a distance sufficient to prevent arcing,
(6) said third electrode being mounted for rotation in a direction similar to that of said second electrode,
(7) said third electrodes of each group being further mounted for rotation in close proximity in a direction opposite to each other,
(8) the electrodes in each pair being mounted for rotation in opposite directions;
(c) means connected to each of said pairs of electrode elements to apply a like electrostatic charge thereto, the electrodes of a pair being also electrically connected to each other;
(d) means connected to the third electrode of each group to apply an electrostatic charge opposite to that applied to said pairs of electrodes, said second and third electrodes being so disposed that, upon application of the electrostatic charges thereto, there is produced an electrostatic field of high intensity;
(e) first doffing means for removing long fibers from between said second and third electrode elements, said first doffing means being mounted therebetween at a distance no closer to said electrode elements than the midpoint of the length of the short fibers to be separated;
(f) means for rotating said electrode elements;
(g) means adjacent said first doffing means for collecting separated long fibers;
(h) second doffing means for removing short fibers; and
(i) a chamber for collecting short fibers in proximity to said third electrode elements, said chamber having means connected thereto to place an electrostatic charge thereon similar to that of said third electrode elements.

3,349,903
PROCESS FOR BENEFICIATING UNGROUND PEBBLE PHOSPHATE ORE
Clarence G. Olsen, Lakeland, Fla., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 28, 1966, Ser. No. 605,180
10 Claims. (Cl. 209—3)

1. A method for beneficiating unground pebble phosphate ore comprising:

(a) mining a pebble phosphate ore matrix;
(b) preparing an aqueous unground pulp of said matrix;
(c) flowing said aqueous pulp to a washing plant;
(d) disintegrating mud balls present in said aqueous pulp without grinding said pulp;
(e) desliming the washed aqueous pulp;
(f) wet screening the deslimed unground aqueous pulp and collecting a first sized fraction of the unground aqueous pulp, the solid particles of said first sized fraction having a particle size distribution of about:

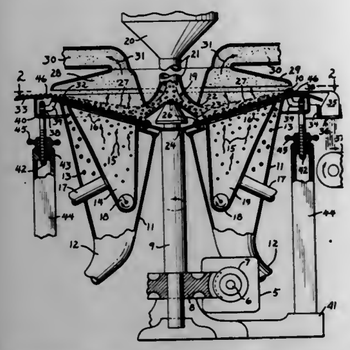
U.S. Standard mesh:	Weight percent
−5	100
+6	0–2
+14	5–40
+20	4–26
+28	5–20
+35	7–18
+65	1–50
+150	0.5–30
−150	0–5

(g) preparing a first feed pulp from the first sized fraction of unground aqueous pulp by adjusting the solid content of said first sized fraction to about 20–30%;
(h) preparing a rougher feed from said first feed pulp by adjusting the pH of said first feed pulp to about 8.5–11;
(i) subjecting said rougher feed to froth flotation in at least one first rougher flotation cell in the presence of an anionic flotation reagent to produce a phosphate-rich rougher overflow concentrate and a phosphate-poor rougher underflow tailing;
(j) recovering the phosphate-rich rougher overflow concentrate for further concentration in later recited steps;
(k) separately recovering the phosphate-poor rougher underflow tailing for further concentrating in later recited steps;
(l) desliming the phosphate-poor rougher underflow tailing by washing said tailing with water;
(m) preparing a first thick pulp by dewatering the washed and deslimed phosphate-poor rougher underflow to a solid content of about 65–75%;
(n) preparing a second feed pulp by adding fresh water to adjust the solid content of the first thick pulp to about 20–30%;
(o) preparing a scavenger feed pulp by adjusting the pH of the second feed pulp to about 6.8–7.3;
(p) subjecting the scavenger feed pulp to froth flotation in at least one scavenger flotation cell in the presence of a cationic flotation reagent to produce a phosphate-rich scavenger underflow concentrate and a phosphate-poor scavenger overflow tailing;
(q) recovering the phosphate-rich scavenger underflow concentrate for further concentration in later recited steps;
(r) discarding the phosphate-poor scavenger overflow tailing.

3,349,904
METHOD OF SEPARATING ORE PARTICLES
George W. Walker, deceased, late of Platteville, Wis., by Jean Marion Theiler, executrix, Globe, Ariz., and Harriet Elizabeth McGill, executrix, Karnes City, Tex., assignors to Andrew F. Wintercorn, Rockford, Ill.
Filed Feb. 6, 1964, Ser. No. 343,156
The portion of the term of the patent subsequent to Mar. 3, 1981, has been disclaimed
1 Claim. (Cl. 209—29)

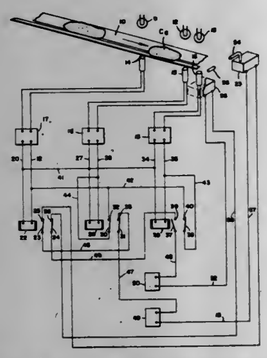
The method of ore separation which consists in continuously delivering in a vertical substantially cylindrical stream finely crushed ore containing free metal particles centrally on top of an inverted generally conical screen that is of large diameter in relation to the cylindrical stream, turning the screen on a vertical axis at a speed bearing such relation to the rate of delivery of the crushed ore that this material flowing outwardly and upwardly by centrifugal force and opposed by gravitational force is spread out in a fairly uniform thin layer of gradually diminishing depth toward the rim of said screen, the holes in the screen being large enough to allow dropping there-

through of metal particles in the ore, continuously delivering air under pressure upwardly through the holes in the screen to blow upwardly the smaller ore particles as dust while floating the larger ore particles relative to the screen on the air streams to prevent their dropping through the holes while allowing the metal particles by virtue of their



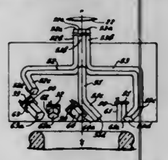
greater weight to drop through said holes, collecting the metal particles that drop through the screen, conducting away the smaller ore particles that are blown upwardly as dust from the screen, and separately collecting the larger ore particles which after being floated outwardly over the screen drop by gravity from the rim thereof.

3,349,905
LENGTH SORTER
Lynn D. Crawford, San Jose, Calif., assignor of one-half to Genevieve I. Hanscom, Saratoga, Calif., and one-half to Genevieve I. Hanscom, Robert Magnuson, and Lois J. Duggan as trustees of the estate of Roy M. Magnuson
Filed Sept. 7, 1965, Ser. No. 485,451
1 Claim. (Cl. 209—82)



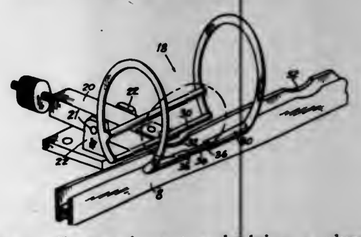
In apparatus for separating articles such as cucumbers or the like according to median lengths and abnormal lengths, the combination comprising an article conveyor for conveying a single file of spaced articles, an article scanning zone associated with said conveyor, said scanning zone having signal producing means comprising a plurality of spaced light sources including an initial light source and a light-sensitive cell aligned therewith, a first relay and means connecting said first relay to said cell, a second light sensitive cell aligned with a second one of said sources, a second relay and means conecting said second relay to said second cell, and a third light sensitive cell aligned with a third one of said sources, a third relay and means connecting said third relay to said third cell, said sources being spaced such that a shorter than median article does not interrupt any of the light passing from said sources to said cells when the length of this article is being classified, and an article of median length interrupts light passing from said second one of said sources to said second aligned cell, and a longer than median length article interrupts light from all except said first light source to said first cell when the lengths thereof are being classified, means connected to said relays for routing said articles in response to predetermined signals derived from said cells whereby the shorter and longer than median length articles are separated from the median length articles.

3,349,906
OPTICAL INSPECTION SYSTEM
Frederick L. Calhoun, Torrance, and Ronald A. Dawson, Redondo Beach, Calif., assignors to Industrial Dynamics Company, Ltd., Torrance, Calif., a corporation of California
Filed Aug. 4, 1964, Ser. No. 387,287
24 Claims. (Cl. 209—111.7)



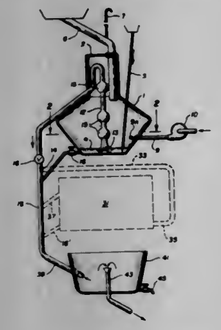
1. A system for inspecting for defects in the rims of containers, including:
conveyor means for providing a movement of the containers;
energy means positioned relative to the rims of the containers to energize the rims of the containers;
energy-sensitive means positioned to receive energy returned from said container rims;
means for moving at least one of said energy means and energy-sensitive means relative to said containers whereby the container rims are scanned by said energy-sensitive means;
means to process the energy received by said energy-sensitive means for providing an indication of defects in the container rims;
and means for activating the processing means only when the containers have been moved to a particular position relative to the energy means and the energy-sensitive means.

3,349,907
EGG GRADER
Otto C. Niederer, Bear Tavern Road, and Herbert O. Niederer, Church Road, both of Titusville, N.J. 08560
Continuation of application Ser. No. 253,098, Jan. 22, 1963. This application Oct. 11, 1965, Ser. No. 494,415
3 Claims. (Cl. 209—121)



1. Egg-grading equipment embodying a plurality of weighing devices spaced apart longitudinally of the equipment, each of said weighing devices being provided with a balance beam having a pivot about which it is movable and having two spaced egg-receiving members secured to the balance beam adjacent one end thereof, egg-moving means movable in an elliptical path and in a vertical plane between the spaced members secured to the balance beam and above and below said members for advancing eggs from one of said weighing devices to another, said egg-moving means presenting an upwardly facing surface with elements thereon for opposing longitudinal movement of eggs relative to said means during longitudinal movement of the egg-moving means, said elements being positioned to register with the spaced members on the balance beams upon movement of the egg-moving means vertically between said members, the spaced egg-receiving members secured to the balance beams being in the form of parallel rails, the rail which is farther from the pivot of the balance beam being of substantially uniform diameter near the central portion thereof and the other rail having a central portion with a cavity therein presenting spaced points engageable by eggs deposited on said rails whereby said rails cooperate to present three points of contact with an egg, two of which points of contact are spaced a lesser distance from the pivot about which the balance beam is movable than is the other point of contact.

3,349,908
DEVICE FOR AMALGAMATION OF GOLD AND SILVER
Tadaichi Hashimoto, Denver, Colo., assignor to Charles F. Shepherd, Denver, Colo.
Filed Mar. 1, 1965, Ser. No. 436,214
10 Claims. (Cl. 209—185)

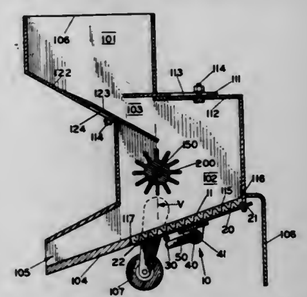


1. Amalgamation apparatus comprising a closed cylindrical container, means for introducing mercury into said container to provide a bed of mercury in the bottom of said container, means for introducing a continuous charge of metallic ore in finely divided condition into the interior of said container, means for continuously directing water under pressure in tangential flow toward an inner upright wall portion of said container at a level intermediate the surface of said bed and the outlet of said ore feed means to thereby maintain centrifugal circulation of the contained ore, a tubular siphon member disposed centrally of the container with its intake portion spaced from and in close proximity to the bottom of the container, and having a discharge portion extending out of an upper portion of the container, said siphon member having a plurality of vertically spaced enlarged portions intermediate the intake and discharge portions, the siphon member inducing circulation of ore into and through the mercury bed in a discharge flow, the combined effect of the centrifugal circulation and the discharge flow circulation agitating the mercury bed, thereby exposing new mercury surfaces into contact with the circulating ore to provide an amalgam, and the enlarged portions retaining a portion of the free mercury and amalgam elevated with the ore discharge which is returned by gravitational flow to the mercury bed.

3,349,909
PROCESS OF SEPARATING PARTICLES OF DIFFERENT WATER WETTABILITY
Heinz P. Studer, Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,349
11 Claims. (Cl. 209—207)

1. A process for separating a mixture of more water wettable material from less water wettable materials comprising:
(1) comminuting said mixture into particles from about 1 to about 20 microns;
(2) introducing said mixture of particles into a two-phase three-liquid system containing an aqueous liquid, a water-immiscible liquid and a third liquid miscible with both the aqueous and water-immiscible liquids, said third liquid being present in an amount less than that which will cause a complete mixture of the three liquids thereby forming an aqueous phase and a non-aqueous phase;
(3) agitating said mixture in said liquid system to bring the mixture into contact with both phases thereby causing the less water-wettable materials to separate into the non-aqueous phase and the more water-wettable materials to separate into the aqueous phase; and
(4) recovering the separated particles from each of said phases.

3,349,910
SIFTER DEVICE FOR CLEANING GRAIN
Oliver T. Loken, Rte. 3, Albion, Nebr. 68620
Filed Nov. 14, 1966, Ser. No. 594,108
9 Claims. (Cl. 209—245)



1. A sifter device including a non-vertical multi-perforate substantially planar sieve component, said sieve component being adapted to vibrate in a direction substantially normal to the plane thereof, the vibrating sieve having a greater vibrational speed in one direction than in the other alternate direction, said sifter device comprising:
(A) a substantially planar non-vertical multi-perforate sieve having an upper surface, a lower surface, a forward edge, a rearward edge, a first sideward edge, a second sideward edge, and a transverse axis located between the first and second sideward edges, said axis also extending between the sieve forward and rearward edges,
(B) a frame member, a portion of which extends along the rearward edge of the multi-perforate sieve,
(C) a plurality of substantially parallel support rods positioned below the lower surface of said multi-perforate sieve parallel to the lower surface and to the transverse axis of said sieve, each of said support rods having a confined end and a free end, the

confined ends of the several support rods being attached to that portion of the frame member that extends along the rearward edge of the multi-perforate sieve, the free ends of said support rods being free to move in the upward direction, means to limit the upward direction of travel for said support rods free ends, said multi-perforate sieve being attached to said support rods,

(D) an elongate axle that is revolvably attached to the said frame member, said elongate axle being positioned below and substantially parallel to the multi-perforate sieve, said elongate axle being substantially normal to the support rods and to the sieve transverse axis,

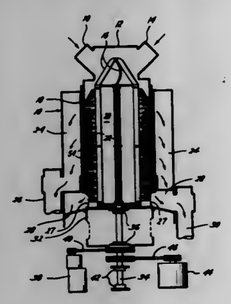
(E) at least one lifter bar attached along the length of the elongate axle and extending in height toward the said support rods so that said at least one lifter bar will impart upward motion to the support rods and sieve when the elongate axle revolves about its elongate axis,

(F) means for imparting oscillatory angular movement to said elongate axle about its elongate axis such that the extent of angular oscillation is less than 270 degrees and the angular velocity in one of the two alternate directions is at least twice as great as in the other direction so that said sieve will travel at a greater speed in one direction than in the other alernate direction.

3,349,911
FRACTIONATING APPARATUS

John A. Reddick, Houston, Tex., assignor to Clayton Anderson & Co., Houston, Tex., a corporation of Delaware

Filed Dec. 17, 1965, Ser. No. 514,461
2 Claims. (Cl. 209—304)



1. An apparatus for separating sticks, immature seeds and other heavy trash particles from cottonseed comprising:

a shaft,

support means for supporting the shaft within the vertical plane for rotation axially,

means for imparting rotary movement to the shaft,

brushes secured to and transversely of the shaft,

a perforated cylinder coaxially and rotatably secured to the shaft and surrounding but spaced outwardly of the brushes whereby clearance is provided for cottonseed between the cylinder and the outer ends of the brushes,

means for imparting rotary movement to the cylinder simultaneously with and in the same direction as movement of the brushes on the shaft,

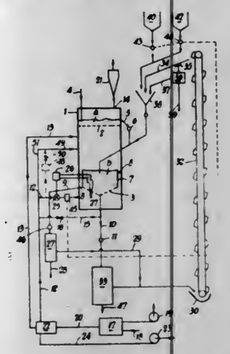
an inlet duct mounted on the support means through which the trash and cottonseed is passed for gravitational contact with the brushes, and

a separation chamber secured to the support means for separation of cottonseed passing through the perforated cylinder from trash retained within said cylinder.

3,349,912
FLUIDIZED BED SEPARATOR

Geoffrey Frank Eveson, Sheffield, and George Thomas Richards, Sudbury, Wembley, Middlesex, England, assignors to Head, Wrightson & Company, Limited, Thornaby-on-Tees, England, a corporation of Great Britain

Filed Oct. 12, 1964, Ser. No. 399,294
8 Claims. (Cl. 209—474)



1. Process for treating particulate material to separate components of different specific gravities, comprising delivering the particulate material into a fluidised bed consisting of an exogenous medium composed of discrete solid particles of at least two materials of markedly different specific gravities, maintaining said fluidised bed in a fluidised condition by a gaseous medium applied to the underside of said bed, the mass flow rate of said gaseous medium being varied to control the effective specific gravity of said fluid sed bed whereby said particulate material is separated into two fractions of different specific gravities, one said fraction of said particulate material having a specific gravity greater than the effective specific gravity of said fluidised bed and sinking through said bed and the other said fraction of said particulate material having a specific gravity less than the effective specific gravity of said bed and floating on said bed, and varying the proportions of the different materials forming said exogenous medium when the mass flow rate of said gaseous medium reaches a value outside predetermined limits to render said fluidised bed again controllable by said gaseous fluidising medium having a mass flow rate within said predetermined limits.

3,349,913
AUTOMATIC DEVICE FOR CONTROLLING FEED OF AIDS TO FILTRATION

John R. Schneider, P.O. Box 426, Belvedere, Calif. 94920

Filed Feb. 21, 1966, Ser. No. 528,720
4 Claims. (Cl. 210—85)

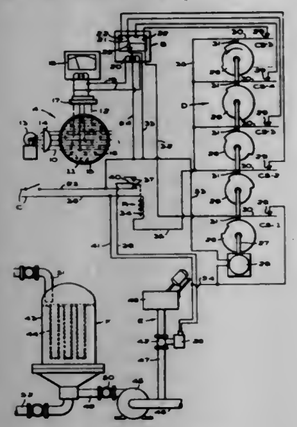
1. In an automatic device for controlling feed of aids to filtration:

(a) a turbidimeter that is a continuous flow nephelometer in which a light beam illuminates a liquid sample, and light is reflected by turbidity of the liquid and falls on a photocell;

(b) the turbidimeter further having a readout meter on which the photocell output is indicated, the meter reading being proportional to the amount of turbidity present in the liquid;

(c) a supply feed for said aids to filtration connected to a filter, and including a feed valve for controlling injection of the aids to filtration to the filter;

(d) and operating means connected to the readout meter and the feed valve, and actuated by an electrical signal from the readout meter, to automatically open the feed valve and deliver said aids to filtration to the filter in direct proportion to the amount of turbidity in the liquid being filtered;



(e) said operating means including:

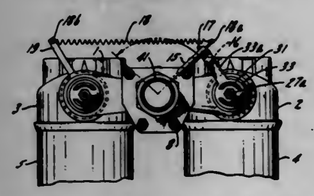
(1) a multi-contact meter-relay having a number of contacts, and a meter-relay arm movable over these contacts in succession, the arm being actuated by the electrical signal from the readout meter and movable to a position corresponding to the turbidity being read by the readout meter;

(2) the meter-relay arm being connected to a source of current, and the meter-relay having a read-out coil for holding the arm down tight closing the electrical circuit from the source of current to a contact of the meter-relay corresponding to the position of the arm.

3,349,914
AUTOMATIC FILTER ASSEMBLY

Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 4, 1965, Ser. No. 437,092
6 Claims. (Cl. 210—90)

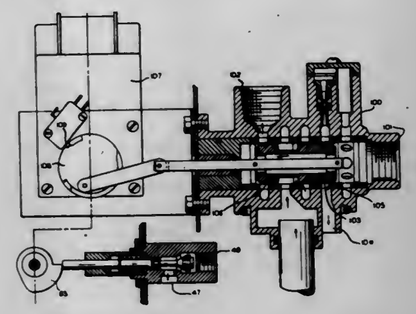


1. A filter assembly including an inlet manifold, an outlet manifold, a plurality of filter structures between said manifolds, tie rods extending between said manifolds to clamp said structures therebetween and a director valve positioned in each of said manifolds to direct fluid through one of said structures, a by-pass valve in one of said structures and a releasable retaining connection between said by-pass valve and said director valve, said director valve being held by said by-pass valve in a first position to communicate said inlet and outlet manifolds with said one of said structures, and yielding means connected to said director valve and urging said director valve towards a second position to communicate said inlet and outlet manifolds with another of said structures.

3,349,915
CONTROL VALVE FOR WATER SOFTENERS

Lambert W. Fleckenstein, 4445 N. 135th, and Andrew J. Fleckenstein, 13650 Squirrel Drive, both of Brookfield, Wis. 53005

Original application Aug. 16, 1963, Ser. No. 302,669, now Patent No. 3,249,122, dated May 3, 1966. Divided and this application Oct. 24, 1965, Ser. No. 505,067
6 Claims. (Cl. 210—134)



3. A control system for water softening apparatus having a softening tank and a regenerating material tank including a control valve providing a hard water inlet port, a soft water outlet port, a drain port, ports connectable to a softening tank for circulating fluid therethrough, said valve having an operating member therein and movable to plural positions for selectively connecting selected ones of said ports for service, backwashing, and regeneration operations, a motor and drive means connected between said motor and said operating member for moving said operating member to said positions, said valve having an aspirating passage therein, a conduit connected to said aspirating passage and adapted to be connected to a regenerating material tank, said operating member having a position connecting said hard water inlet port to said aspirating passage to induce flow through said aspirating passage in the regeneration position of said operating member while at the same time connecting said hard water inlet port to said soft water outlet port and connecting said drain port to one of the ports connectable to a softening tank, a shut-off valve in said conduit, drive means between said motor and an operating member for said shut-off valve, and timing means for controlling said motor thereby to shift said control valve operating member to said positions, said drive means between said motor and said shut-off valve operating member being controlled by said timing means and being effective to maintain said shut-off valve in closed position while opening the same for a preselected interval of time when said control valve operating member connects said hard water inlet port to said aspirating passage.

3,349,916
SELF-CLEANING ROTARY STRAINER

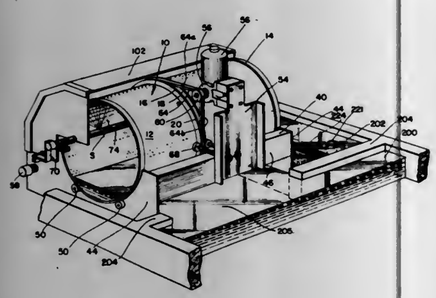
Arthur Magson, Cumberland, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware

Filed Oct. 7, 1964, Ser. No. 402,147
8 Claims. (Cl. 210—143)

1. In a rotating strainer the combination comprising:

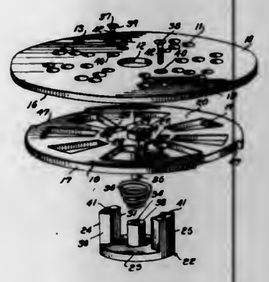
(A) a foraminous element which:

(I) has a first axis of rotation through itself
(II) has an exterior surface concentric with said first axis
(III) has bearing surfaces which:
(a) are on said exterior surface,
(b) are longitudinally spaced with respect to each other,
(c) are concentric with said first axis,
(IV) has a driving surface which:
(a) is on said exterior surface,
(b) is concentric with said first axis,
(B) support means:
(I) which operatively engage said bearing surfaces to permit rotation and vertical movement,
(II) at least one of which comprises:
(a) a weir,
(b) a spillway which:
(i) is in the top of said weir,
(ii) has an arcuate portion which: (a) comprises the bottom of said spillway, (b) is concentric with the bottom facing portion of said bearing surface, (c) is in substantially sealing relationship with the bottom facing portion of said bearing surface, (d) has a termini which: (1) are on either of said arcuate portion, (2) are no more than 180° apart when measured by the angle including said arcurate portion,



(C) drive means comprising:
(I) a power source,
(II) a pulley which:
(a) is operatively associated with said power source,
(b) is substantially smaller than said driving surface,
(c) is adjacent said driving surface,
(d) has a second axis of rotation which:
(i) is parallel to said first axis,
(ii) is above said termini,
(iii) is no more than approximately 150° from the termini most distant from said second axis,
(III) a belt which:
(a) operatively engages said drive pulley,
(b) operatively engages said driving surface, whereby an obstruction lodging between said bearing surface and said spillway will cause said foraminous element to rise up and pivot thereby shortening the distance between the first axis of rotation and the second axis of rotation which in turn will permit the belt to slip at the drive pulley thus stopping further rotation of the foraminous element.

3,349,917
STRAINER ASSEMBLY FOR FLOOR DRAINS
Frank H. Strickland, Lake Quivira, Kansas City, Kans. 66106
Filed May 6, 1965, Ser. No. 453,795
3 Claims. (Cl. 210—164)

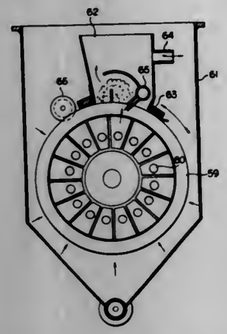


3. A strainer assembly for a floor drain which includes a bowl having an open top and having an outlet in the bottom thereof, said strainer assembly including
a disk member covering the open top of the bowl and having apertures therethrough for drainage into the bowl,
a valving disk having openings therein corresponding to the location of the apertures in said disk member and having valving portions intermediate the openings and having diametrically disposed arcuate slots near the center thereof,
a bracket having spaced apart lugs extending through the arcuate slots,
a bushing carried by the bracket,
fastening devices extending through the disk member and connected with said lugs,
spring means carried by the bracket and bearing against the valving disk to maintain resilient contact of the valving disk with the disk member,
a pin depending from the center of the valving disk and turnable in the bushing to provide an axis on which the valving disk is moved, and
means fixed to the valving disk and extending through the disk member to turn the valving disk upon said axis from one position in which the openings register with the apertures and into another position in which said valving portions cover said apertures to prevent backflow from the outlet of the bowl through said apertures of the disk member.

3,349,918
MAGNETIZABLE-PARTICLE TYPE FILTRATION APPARATUS CAPABLE OF PERFORMING CONTINUOUS FILTERING OPERATION
Yasuhiko Iki, Tokyo-to, Japan, assignor to Kiyohiko Iki, Tokyo-to, Japan
Filed Dec. 7, 1964, Ser. No. 416,295
Claims priority, application Japan, Dec. 13, 1963, 38/66,500; Jan. 30, 1964, 39/4,236; Feb. 3, 1964, 39/5,247
4 Claims. (Cl. 210—223)

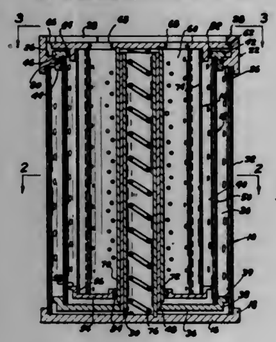
4. In a filter construction, a tank, means to supply liquid to be filtered to said tank, a rotary filter unit within the tank including parallel pairs of annular magnetic pole surfaces, the surfaces of each pair being spaced relative to one another and having portions in converging relation at least at the inner ends thereof, screen means underlying all said pole elements, means supporting said elements for rotation, a body of filter material particles selected from the group consisting of magnetizable particles and a mixture of magnetizable particles and non-magnetizable particles confined between the surfaces of the respective pairs

of pole surfaces, wall means defining at least one chamber on the interior of said pole elements, means for withdrawing filtered liquid from said chamber, a housing element supported in juxtaposition with the outer periphery of at least a portion of said pole surfaces, a magnet surrounding said housing element and also in juxtaposition with



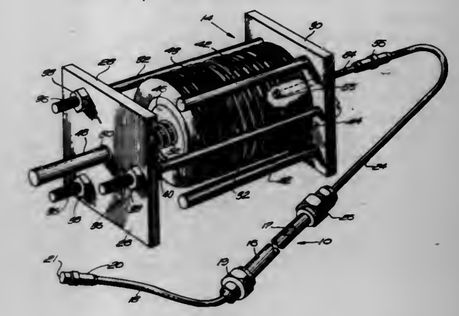
the outer periphery of the underlying portions of the pole surfaces, means within said housing element for applying agitating action to the particles underlying said housing element, means to effect a backwash current from said chamber into said housing element, and further means to replenish any particles withdrawn during such backwashing.

3,349,919
TELESCOPING FILTER ASSEMBLY
David R. Royer, Detroit, and John W. Bozek, Waterford, Mich., assignors to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Sept. 28, 1964, Ser. No. 399,723
10 Claims. (Cl. 210—232)



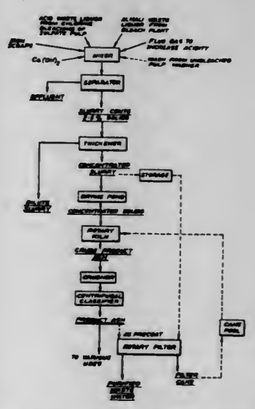
1. A filter assembly comprising;
(a) a plurality of filter elements arranged to be positioned one within the other,
(b) each of said filter elements being provided with a centrally disposed axially extending tubular member, each of said tubular members being of substanitally the same axial length as the axial length of the filter element to which it is fixed,
(c) said tubular members being dimensioned to telescope one within the other to permit said filter elements to be positioned one within the other,
(d) means limiting axial separation of said filter elements, and
(e) a spring member carried within said tubular members and urging said filter elements toward an axially separated position.

3,349,920
SYSTEM FOR PROTECTING LIQUID CHROMATOGRAPHY COLUMNS
James L. Waters, Framingham, Mass., assignor to Waters Associates, Framingham, Mass.
Filed Aug. 18, 1965, Ser. No. 480,723
8 Claims. (Cl. 210—251)



1. A system for protecting a liquid chromatography column against certain environmental conditions, said system comprising:
(A) a liquid chromatography column;
(B) means defining an expansible fluid tight chamber;
(C) a fluid tight connection between the interior of said column and said chamber,
(D) a liquid completely filling the available space in said column, chamber and connection, and
(E) means for maintaining said liquid under sufficient pressure to prevent undissolved air and vapor from forming in said column under the atmospheric pressure to which the column is subjected.

3,349,921
PROCESS FOR CONVERTING SULFATE PUMP WASTE RESIDUES INTO HIGH UTILITY MATERIAL AND MEANS OF APPLYING SAME
Takenao Niwa and Shuniti Ozaki, both of 1 Oji-machi, Aichi, Kasugai-shi, Japan
Continuation of application Ser. No. 441,816, Mar. 22, 1965. This application May 31, 1966, Ser. No. 554,206
Claims priority, application Japan, Apr. 1, 1961, 36/11,682
7 Claims. (Cl. 210—509)



1. In the bleaching of sulfate pulp wherein the raw pulp is treated in a first stage with chlorine, thereafter water washed, such treatment resulting in a first waste

liquor which is acid, said pulp being then treated in a second, alkaline stage including water washing which results in a second waste liquor which is alkaline from the alkali present therein, the process of treating both said waste liquors to purify same and to produce therefrom a new product in the form of an ash serving as a filter aid with decolorizing properties, consisting in the following steps:

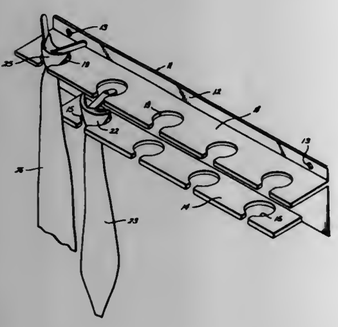
(1) treating said acid liquor by incorporating therein iron in the form of an ionizable ferrous salt,

(2) then adding thereto said alkaline waste liquor together with lime,

(3) filtering off the precipitate formed from the reaction of the ingredients of the above mixture, including the floc produced by the ferric hydroxide formed by the reaction of the dissolved iron salt present by operation of step (1) above and the alkali and air present,

(4) burning said precipitate at a temperature of from 600–900° C., thereby forming said ash.

3,349,922
NECKTIE RACK
James Paul Morrison, 2311 W. Azalea St., Tyler, Tex. 75701
Filed Jan. 12, 1966, Ser. No. 520,207
1 Claim. (Cl. 211—113)



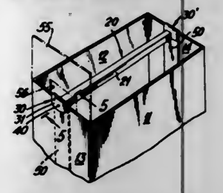
In a rack for storing clip-on four-in-hand neckties and the like, comprising in combination:

a generally flat vertically extending support member having means for attachment to a generally flat vertical support;

a generally horizontally extending lower shelf attached to the support member and having a generally straight first row of spaced apart generally circular openings opening into and along the leading edge thereof for supporting the knots of a back row of neckties placed therein;

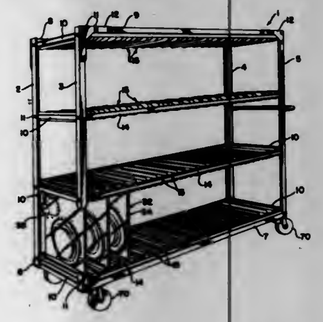
a generally horizontally extending upper shelf attached to the support member and spaced above the lower shelf a distance which is sufficient to clear the top ends of neckties being supported by the lower shelf, with the leading edge of said upper shelf extending forwardly of the leading edge of said lower shelf, said upper shelf having a generally straight second row of spaced apart generally circular openings opening into and along the leading edge thereof, said second row of openings being spaced forwardly of said first row of openings and in staggered relation therewith, for supporting the knots of a front row of neckties placed therein, whereby ties in said back row are visible through and below said front row when viewed from the front.

3,349,923
SHIPPING CONTAINER
Aaron I. Feder, Brooklyn, N.Y. (66—10 Thornton Place, Forest Hills, N.Y. 11374)
Filed Oct. 23, 1965, Ser. No. 503,557
4 Claims. (Cl. 211—123)



1. In a shipping container having front, side and rear walls and a bottom for confining therein a plurality of articles of merchandise and a slot medially along the top edges of said walls at the sides of said container; a hanger rack comprising a transverse bar extending between the side walls of said container; a substantially inverted U-shaped member seated upon the top edges of the side walls of said container; means for securing said inverted U-shaped member to said transverse bar; a reinforcing member extending between the arms of said inverted U-shaped member for insertion within said slot and for retaining said transverse bar against lateral movement along the top edges of said container.

3,349,924
STORAGE DEVICE FOR ARTICLES AND METHOD
Charles J. Maurer, Bay Village, and Robert S. Montgomery, Parma, Ohio, assignors to American Handling Equipment Company, Cleveland, Ohio, a corporation of Michigan
Filed Dec. 6, 1965, Ser. No. 511,618
4 Claims. (Cl. 211—177)



1. A storage device for articles comprising in combination:

a metal frame of rigidly interconnected elongated members which includes pairs of spaced upright support members to which are attached pairs of spaced horizontal parallel elongated support members,

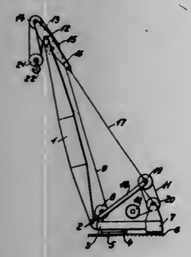
sets of parallel flared end channel shaped metal tracks interconnecting each support member of a pair with the other support member of its pair,

each set of tracks being oriented to present the channel openings of at least a portion of said set in opposing spaced relation to corresponding channel openings of a set interconnecting a pair of support members adjacent said one pair such that individual channels of each set of tracks are secured in opposing spaced parallel relation to the corresponding individual channels of an adjacent set of tracks by means of integral tabs projecting outwardly away from the surface from which they were cut and deformed,

a plurality of rigid panels each having opposite flat sides and a thickness less than the width of said channels and substantially parallel opposite edges spaced from each other by a distance greater than the distance from one track to its opposing corresponding track but less than the distance from the bottom of one track channel to the bottom of the opposing corresponding track channel,

said panels each having a means secured thereto to define with one of said flat sides an article storage pocket which projects outwardly from said one side, whereby an article stored in said pocket may be retrieved by sliding said panel's opposite edges along the tracks and out of the track channels in which they are disposed, removing said article from said pocket and discarding said panel.

3,349,925
JIB CRANE
Julius N. M. Waerum, Hellerup, and Helge E. Krex, Charlottenlund, Denmark, assignors to Byggeriets Maskinstationer Aktieselskab, Copenhagen, Denmark
Filed Mar. 24, 1966, Ser. No. 537,168
Claims priority, application Denmark, Mar. 26, 1965, 1,579/65
9 Claims. (Cl. 212—48)



1. A crane comprising:

a supporting structure,

jib means having a lower end and an upper end and pivotally mounted at said lower end about a horizontal pivot axis on said supporting structure,

yoke means having a yoke pivot axis intermediate a first end portion and a second end portion, said yoke means being pivotally supported at said yoke pivot axis at said upper end,

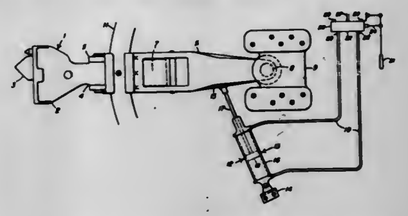
said yoke means including pulley means for receiving a hoisting rope, said pulley means being located at said first end portion,

said yoke means further including guide roller means for receiving said hoisting rope, said guide roller means being located at a point intermediate said pivot axis and said second end portion,

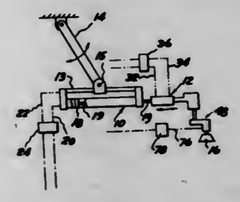
jib holding and balancing means connected to said yoke means at said second end portion outwardly of said guide roller location and to a point horizontally spaced from the horizontal pivot axis of said jib, and said jib holding and balancing means forming the only means for stabilizing said jib means.

3,349,926
MANUALLY CONTROLLED COUPLER POSITIONING DEVICE
Geoffrey W. Cope, Williamsville, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed Feb. 4, 1966, Ser. No. 525,087
9 Claims. (Cl. 213—16)

1. A fluid-operated device for positioning a railway coupler connected to a car body for horizontal swinging about a vertical pivot, comprising fluid cylinder unit means mounted on said car body and adapted to act therebetween and said coupler forwardly of said pivot for swinging said coupler horizontally in either direction, and manually actuated control valve means fluid-connected to sides of said unit means, said control valve means being selectively actuatable for alternately applying fluid pressure to said sides and enabling said unit means to act on and swing said coupler horizontally to a desired position.



3,349,927
MATERIAL HANDLING EQUIPMENT
Leland F. Blatt, Grosse Pointe, Mich. (24121 Mound Road, Warren, Mich. 48091)
Filed Feb. 21, 1966, Ser. No. 528,844
3 Claims. (Cl. 214—1)



1. In a material handling device utilizing inverted pliable cups for gripping a workpiece when a source of sub-atmospheric pressure is connected to the interior space within said cup, the improved cup traversing and supporting structure, which comprises:

a source of fluid pressure;

a first power cylinder;

fluid conduit means connecting said source of fluid pressure to said first power cylinder;

a first piston and piston rod reciprocable in said first power cylinder in response to the application of differential fluid pressure to the opposed faces of said first piston;

a second power cylinder fixed to said first piston rod and reciprocable therewith;

fluid conduit means connecting said source of fluid pressure to said second power cylinder;

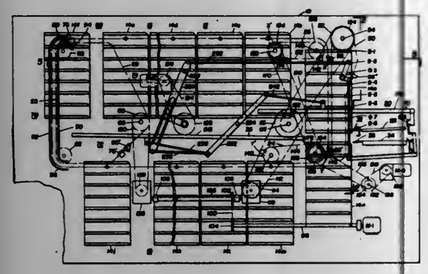
a second piston and piston rod reciprocable in said second power cylinder in response to the application of differential fluid pressure to the opposed faces of said second piston;

said second piston rod being provided with gear teeth in the form of a rack gear;

means including a pinion gear in engagement with said piston rod rack gear and a second rack gear for converting the reciprocation of said second piston rod to a reciprocation of said second rack gear in a direction perpendicular to the axis of reciprocation of said first piston rod;

the vacuum cup being mounted on said second rack, whereby actuation of said first and second power cylinders traverses said vacuum cup along two mutually perpendicular axes.

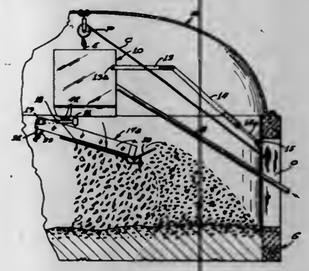
3,349,928
RACK TYPE DOUGH PROOFER
David F. Howard, York, Pa., assignor to Read Corporation, York, Pa., a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,580
13 Claims. (Cl. 214—16.4)



12. In an article handling apparatus,
a plurality of article carriers,
means for conducting a succession of carriers in a closed loop including carrier elevating means,
means for continuously operating said carrier elevating means,
an article receiving support disposed in front of said carrier elevating means,
an unloading pusher including a frame having a transversely extending front pusher bar normally disposed rearwardly adjacent the path of a carrier on said elevating means,
longitudinally spaced rear and front guide supports supporting said frame for reciprocatory travel,
operating means imparting reciprocatory movement to said unloading pusher in an extending stroke across the path of said carrier elevating means for pushing articles from a carrier onto said article receiving support and in a retracting stroke out of the path of said carrier elevating means,
said rear guide support being fixed against vertical movement,
means mounting said front guide support for vertical movement including means limiting downward movement thereof to normally support said pusher frame in forwardly and downwardly sloping position in its retracted position, and
control means operated in timed relation with said elevating means for activating said operating means to initiate reciprocatory movement of said unloading pusher when a carrier is subjacent said front pusher bar in said normally forwardly and downwardly sloping position of said pusher frame, said pusher frame pivoting upwardly about said rear guide support as a fulcrum as said front pusher bar is raised by said continuously upwardly moving carrier during reciprocatory travel of said front pusher bar across said upwardly moving carrier.

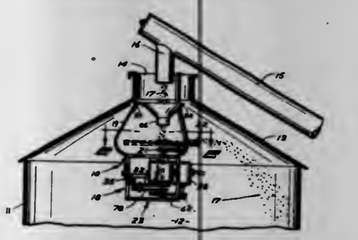
3,349,929
SILAGE DISTRIBUTOR
George C. Berger, Erskine, Minn. 56535
Filed Oct. 22, 1965, Ser. No. 501,336
4 Claims. (Cl. 214—17)

1. An assembly for uniformly distributing silage and the like into vertical bins such as silos, having in combination
an elongate distributor unit of pan formation having a declined bottom and mounted for revolution on a vertical axis,
means for mounting said distributor unit at the top of a vertical bin such as a silo with the axis of revolution thereof substantially coincident with the vertical center line of said bin,
said means including a depending vertical driven shaft terminating well above said declined bottom and a supporting arm medium affixed to the lower portion of said shaft and connected to the exterior portion of said distributor unit,
said distributor unit having an upward and inward receiving portion of substantial width for receiving all silage or other material from a supply source external of said bin, and having a lower and outward portion decreasing in width from said receiving portion,



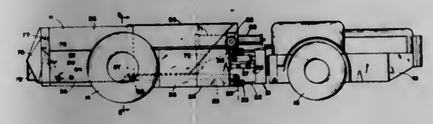
means for deflecting and guiding entering supply source material to assure flow and reception of substantially all thereof during the revolution of said distributor unit upon said widened receiving end,
said distributor unit at one longitudinal side thereof having an upstanding flange and at at least a substantial portion of its opposite longitudinal edge having an inclined, substantially planar margin from which material will disperse and drop during revolution of said distributor unit in a direction where said flanged edge constitutes the trailing edge.

3,349,930
DISTRIBUTOR
Robert E. Welborn, 1424 Canal Road, Lafayette, Ind. 47904
Filed Jan. 24, 1966, Ser. No. 522,567
10 Claims. (Cl. 214—17)



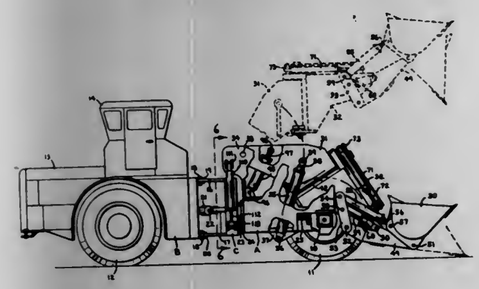
1. An apparatus for distributing particulate material discharged into a storage area comprising a frame, a first upright tubular shaft rotatably mounted on said frame, said shaft having an upper end projected above said frame, an elongated crank arm projected generally radially of said first shaft, means securing the inner end of the crank arm to the upper end of said first shaft, a distributor disc located over the crank arm, means rotatably mounting the distributor disc on the outer end of the crank arm for rotation about an axis generally parallel to the axis of the first upright shaft, a second upright shaft located within said first tubular upright shaft having opposite ends projected through said first tubular shaft, power transmitting means connecting the upper end of the second shaft to the means for rotatably mounting the disc on the outer end of the crank arm, a motor mounted on said frame, and second power transmitting means connecting the motor to the first shaft and the second shaft whereby on operation of the motor the first shaft and the second shaft rotate together to concurrently angularly move the crank arm and rotate the distribuor disc.

3,349,931
TELESCOPING UNLOADING TRUCK
Eddie B. Wagner, Portland, Oreg., assignor to Wagner Mining Scoop, Inc., Portland, Oreg., a corporation of Oregon
Filed Aug. 21, 1961, Ser. No. 132,724
14 Claims. (Cl. 214—82)



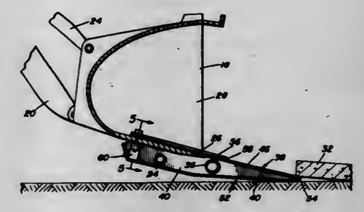
1. In a telescoping unloading truck, a frame having hollow longitudinal side members, a U-shaped axle beam having upstanding arms connected to said side members, wheel spindles mounted on said arms, ground wheels on said spindles having sprocket wheels in said side members, drive chains for said sprocket wheels in said side members, a rear body section having a bottom wall connected to said axle beam below the axis of said wheel spindles and having side walls connected to said axle beam arms and frame side members, a front body section having bottom and side walls telescoping within said rear section walls, and wheels on upper front portions of said front body section running on said frame side members.

3,349,932
SIDE DUMP LOADER
Eddie B. Wagner, Portland, Oreg., assignor to Wagner Manufacturing, Inc., Portland, Oreg., a corporation of Oregon
Filed Aug. 2, 1963, Ser. No. 299,652
30 Claims. (Cl. 214—138)



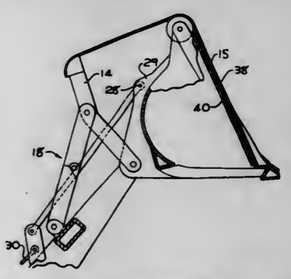
1. In a vehicle having a flexible suspension frame on its running gear and a boom on said frame having lateral swinging movements, means to rigidify said flexible suspension frame means responsive to lateral swinging movement of the boom to actuate said rigidifying means, and means utilizing the weight of the boom to provide an operative force for said rigidifying means proportional to the weight of the boom.

3,349,933
PAVEMENT LIFTER
Edward F. Simpson, 524 Sandra Ave., Daytona Beach, Fla. 32014, and Frank W. Simpson, Jr., 2320 S. Peninsula Drive, Daytona Beach, Fla. 32018
Filed Dec. 27, 1965, Ser. No. 516,406
5 Claims. (Cl. 214—145)



1. In combination with a front-end loader having a power operated bucket mounted thereon, a lifting unit detachably mounted on the bucket comprising, a plurality of lifting tines, means for interconnecting said lifting tines, means for mounting said tines on the digging lip of said bucket whereby said tines will be movable with said bucket as it is moved to various operative positions, said mounting means comprising slot means in each said lifting tine, said bucket lip movable into said slot means, and means for releasably connecting said lifting tines to said lip after it has been moved into said slot means, said first named connecting means comprising a pair of parallel spaced apart tine mounting bars, said lifting tines mounted on said bars and spaced equidistantly and in parallel relation therealong.

3,349,934
BELT EJECTOR BUCKET AND CONTROL LINKAGE THEREFOR
Edward J. Moyer, Morton, and Robert J. Sullivan, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 26, 1966, Ser. No. 545,334
7 Claims. (Cl. 214—767)



1. In a loader bucket assembly which is pivotally mounted to the ends of a pair of elevatable lift arms and which has ejector mechanism for automatic load dumping including a belt and a pair of ejector legs; the improvement comprising: means attached to the belt for urging it towards the interior of the bucket.

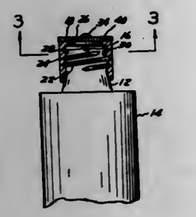
3,349,935
BOTTLE CAP
Solomon Cochin, 2124 Michigan Ave., Detroit, Mich. 48216
Filed June 16, 1966, Ser. No. 558,118
8 Claims. (Cl. 215—9)

1. A container closure means, comprising:
(a) a container having a substantially cylindrical por-

tion open at one extremity thereof, said cylindrical portion having a notch formed adjacent its open end;

(b) a cap adapted to be mounted for closing engagement over said open end of said cylindrical porton of said container;

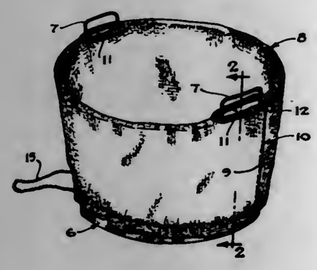
(c) a resilient tongue member rotatably carried within said cap and adapted to engage said notch and thereby prevent rotation of said cap a distance sufficient in a first direction for removal of the cap, and permit rotation of said cap in the second opposite direction;



(d) a finger member mounted within said cap and movable between a first position wherein said finger member is remote from said tongue member and a second position wherein said finger member depresses said tongue member to prevent engagement of said tongue member with said notch to permit rotation of said cap in said first direction for removal; and

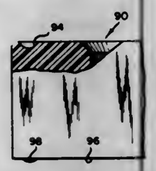
(e) a member externally connected to said cap for transmitting an operative force for moving said finger member to said first position.

3,349,936
CLOTHES HAMPER
James R. Morton, 5 W. 24th St., and Wayne L. Morton, 920 E. 10th St., both of Spencer, Iowa 51301
Filed Oct. 12, 1965, Ser. No. 495,053
1 Claim. (Cl. 217—3)



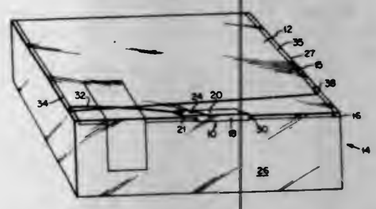
A combination clothes hamper, basket liner and laundry bag which comprises a basketlike container, handles on the container, a removable fabric liner for the container, said liner having an enlarged top portion for folding over and covering substantially entirely the inner and outer sides of the basket, a drawstring operating in a hem in the top edge of the liner to draw the top substantially entirely over and around the outer side of the container near the bottom and tape reinforced openings in the liner permitting the grasping of said handles, the arrangement being such that when the liner is used as a laundry bag said top portion is larger in capacity than the bottom portion of the bag.

3,349,937
TITRATION APPARATUS
Alan A. Duff, North Springfield, and Norman G. Hayward, Alexandria, Va., assignors to Cooke Engineering Company, Alexandria, Va., a corporation of Delaware
Filed Aug. 31, 1961, Ser. No. 135,364
9 Claims. (Cl. 217—25.5)



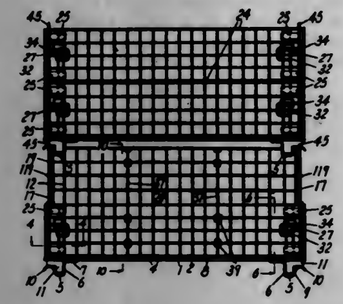
1. A microtitration plate consisting essentially of an as-molded body of transparent synthetic plastic having a flat external surface and at least one row of uniformly spaced, equal depth, circularly-sectioned cups opening through said surface and extending normal thereto, each of said cups having a frusto-conical upper portion with an apex angle in the order of 90°, a cylindrical intermediate portion and a frusto-conical lower portion with an apex angle in the order of 118°, the finish of said intermediate portion being in the order of 1 to 4 microinches and the finish of said frusto-conical lower portion being in the order of 10 microinches.

3,349,938
BOX OPENER
Josef F. Schafers, 2667 15th Ave., San Francisco, Calif. 94127
Filed July 26, 1965, Ser. No. 474,624
6 Claims. (Cl. 217—57)



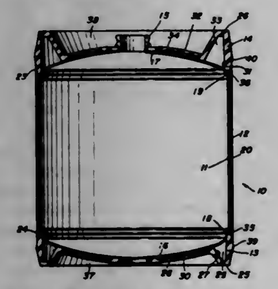
5. A box comprising walls and a lid, an envelope encasing said walls and said lid, an angle bar underneath said envelope having a first flange overlying the top surface of said lid and a second flange disposed adjacent an edge of said lid, said first flange being arranged to project beyond said second flange at one end of said bar, and a nail driven through said projecting flange end and said lid into a wall of the box to hold the lid in closed position in a manner enabling withdrawal of said nail by use of said angle bar as a prying lever, said second flange having an end edge thereof turned outwardly away from the edge of the lid to form a tearing edge over which said envelope may be broken, a string having one end thereof tied to said bar, said string being trained around an edge of said lid and arranged to pass through the interior of the box to an opposite edge of said lid and having its opposite end secured to a wall of the box adjacent said opposite edge of the lid, whereby the envelope may be torn along the front edge of the lid.

3,349,939
PORTABLE AND COLLAPSIBLE STACKING BINS OR CRATES
Charles C. Averill, Albion, Mich., assignor to Union Steel Products Company, Albion, Mich.
Filed May 18, 1964, Ser. No. 368,034
13 Claims. (Cl. 220—6)



1. A crate or container adapted to be disposed in stacked relation to a like crate or container and comprising a rectangular bottom unit, a rear wall hingedly connected to the rear edge of said bottom unit, end walls hingedly connected to the ends of said rear wall, said end walls being provided with downwardly projecting portions engageable with said bottom unit when the end walls are in erected position preventing outward swinging thereof, a front wall assembly comprising a plurality of sections, each section having vertically spaced supporting members fixedly secured thereto and having inwardly projecting portions at their outer ends supportedly and releasably engageable with said end walls, bolts adjustably mounted on said front wall sections, said end walls being provided with keepers with which said bolts may be engaged when said front wall sections are in erected engagement with said end walls, said front wall sections being removable when crates are disposed in stacked relation, and laterally spaced legs mounted on said bottom unit and having downwardly facing recessed portions supportedly engageable with the end walls of an erected crate when disposed in stacking relation thereto.

3,349,940
THERMALLY INSULATED TANK
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Dec. 28, 1964, Ser. No. 421,423
8 Claims. (Cl. 220—9)



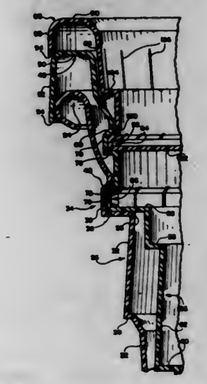
1. A tank assembly comprising:

(a) a cylindrical tank;

(b) a pair of bases of heat-insulative material respectively fixedly secured to opposite ends of said tank for supporting said tank, each of said bases having a pair of concentric internal annular grooves opening toward the end of said tank and defining a pair of annular air-spaces therewith at each end of said tank in which air is permanently trapped; and

(c) a tubular member of heat-insulative material exposed to the atmosphere and encircling said tank in spaced relation thereto, and supported at its opposite ends by said bases.

3,349,941
COMPARTMENTED CONTAINER PACKAGE
Herbert Jourdan Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 545,031
8 Claims. (Cl. 220—17)



1. A self-venting compartmented container package comprising an outer container, an inner container, and a lid therefor, each of said outer and inner containers having a bottom wall and a side wall which diverges upwardly and outwardly therefrom and terminates in an open upper end, the side wall of each container including a circumferentially extending internal groove radially outwardly offset from other portions of the side wall, said outer container having adjacent its open upper end a circumferential rim of an axial height and lateral extent greater than the thickness of its side wall, said inner container having a predetermined smaller transverse dimension than said outer container to be telescopically received therein and having a substantial shorter side wall to assure spacing the bottom walls of said containers a predetermined distance from each other, the inner container adjacent its open upper end terminating in a reversely extending lip portion for overlying the circumferential rim of said outer container, said lid member being positioned in covering relationship to the open upper end of said inner container and also having a reversely extending lip portion which is positioned adjacent the inner container lip portion in embracing encircling relationship relative thereto, said inner container and lid member each having a circumferentially arranged radially outwardly directed bead of predetermined size and configuration to be received and releasably retained within the circumferentially extending groove of said outer and inner containers respectively, each of said outer and inner containers and said lid member in the vicinity of and axially spaced below each cooperating bead and groove having complementary surfaces normally engaging one another to hermetically seal and protect the contents of the inner and outer containers, and one of each of said outer and inner containers and said lid member and inner container having venting means in the vicinity of each cooperating bead and groove and axially spaced upwardly from the normally engaged sealing surfaces to permit egress of gaseous pressure emanating from the

outer and inner containers while the cooperating bead and groove of said inner and outer containers and said lid and inner container maintain the parts in assembled relationship.

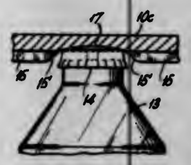
3,349,942
NESTING BASKET AND CARRIER COMBINATION
Carson K. Hitz, 435 W. Maple St., Granville, Ohio 43023
Filed June 1, 1965, Ser. No. 460,296
4 Claims. (Cl. 220—19)



1. In combination:
(a) a wire basket having a bottom and two pairs of opposing side walls, one of said pairs of side walls being shorter than the other of said pair of side walls, each of said side walls including:
(i) at least two converging members defining a plane perpendicular to said bottom, and
(ii) a horizontal member parallel to said bottom and spaced upwardly therefrom, said horizontal member being secured to the outside of said converging members, the ends of said horizontal member being joined to the ends of the horizontal members of the adjacent side walls, and
(b) a carrier nestable within said basket, said carrier including;
(i) a bottom of a size to fit within said side walls of said basket in a plane parallel to said bottom of said basket, and
(ii) a pair of handle members secured to opposite sides of said bottom of said carrier, each said handle member comprising two vertical arms, said vertical arms defining a plane perpendicular to said bottom of said carrier, and being generally parallel respectively to said converging members of said basket, the shortest distance between said vertical arms being greater than the longest distance between said vertical members of said side walls, whereby a second basket, identical with said above mentioned basket, may nest within said basket and carrier combination.

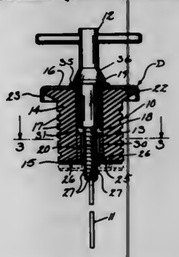
3,349,943
BOTTLE CARRYING AND STACKING CASE
Theodor Box, Manhasset, N.Y.
(57—102 251st St., Little Neck, N.Y. 11362)
Filed Mar. 22, 1965, Ser. No. 441,436
7 Claims. (Cl. 220—21)

1. In a stackable bottle carrying case comprising in combination:
(1) a pair of side walls, a pair of end walls, and a bottom wall, said case adapted for the storing therein in predetermined relative position of a multiplicity of equal-sized bottles with the tops of said bottles projecting above the open top of the case to enable the stacking of one case upon the tops of the bottles stored in the case below of a stack of cases,
(2) said bottom wall having a substantially smooth outer surface provided with a multiplicity of relatively shallow dish-shaped recesses spaced from each other and distributed over said surface such as to register with and engage the tops of the bottles stored in the case below of a stack, whereby said recesses act as aligning means of the cases stacked upon each other, and



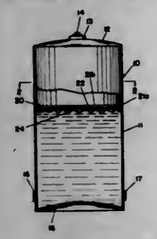
(3) a plurality of retaining ribs integral with said bottom wall and extending radially outwardly from the peripheries of each of said recesses,
(4) said ribs having inner end portions adjoining said peripheries of a height gradually decreasing to zero in the direction of the recesses,
(5) whereby to form radially extending ramps encircling the tops of the bottles in the case below of said stack, to thereby cause a case to be slightly lifted upon being pulled horizontally off a lower case of a stack by camming action of said ramps with the edges of said bottle tops.

3,349,944
STOP LIMIT MEANS FOR DIP STICK CLOSURES
Axel Moeller, St. Petersburg Beach, Fla., assignor to Moeller Mfg. Co., Inc., Greenville, Miss., a corporation of Wisconsin
Filed May 2, 1966, Ser. No. 546,638
3 Claims. (Cl. 220—24.5)



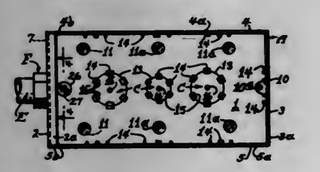
1. An oil level testing dip stick having a closure body for sealing the oil filler pipe of an internal combustion engine including a resilient compressible stopper body having an axial bore therethrough, inner and outer compression plates engaging the opposite ends of said stopper body, the outer compression plate having an axial opening in alignment with said axial bore, said inner compression plate being provided at its axial center with an internally threaded nut, a rod rotatably mounted in the opening of the outer compression plate and having a reduced threaded inner end of a size and configuration to be received in the nut of said inner compression plate, the outer end of said rod including an enlarged shank portion received in said axial bore and said reduced threaded portion of said rod being continued beyond the inner compression plate, a dip stick body secured to the inner end termination of said rotatable rod, a stop limit sleeve of a generally cylindrical shape positioned in said axial bore adjacent said inner compression plate and about a respective portion of said reduced threaded rod end, and an operating handle on the outer end of the rod for turning the same in the inner compression plate, whereby upon turning of the handle in one direction the inner compression plate will be drawn toward the outer compression plate to expand said resilient compressible body against the walls of the oil filler pipe and whereby the outer end of said stop limit sleeve will engage the enlarged shank portion of said rod to limit the movement of said inner compression plate.

3,349,945
FLOAT FOR HYDROPNEUMATIC TANK
John Gordon Baker, Evansville, Wis., assignor to Baker Manufacturing Co., Evansville, Wis., a corporation of Wisconsin
Filed Feb. 7, 1966, Ser. No. 525,503
4 Claims. (Cl. 220—26)



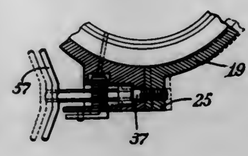
1. A float for separating gas from liquid in an accumulator vessel having a substantially vertical cylindrical wall, comprising:
(a) a substantially flat circular disk of buoyant material for floating on the liquid in said accumulator vessel,
(b) said disk having a plurality of radially extending grooves with tangentially sloping surfaces in its top surface and in its bottom surface,
(c) said grooves extending deeper into said disk at their outer ends than at their inner ends to facilitate the run-off of liquid from said top surface and escape of gas from under said bottom surface.

3,349,946
ELECTRIC OUTLET BOX
Hop Lee, 779 Commercial St., San Francisco, Calif. 94108
Original application Aug. 9, 1965, Ser. No. 478,040. Divided and this application Oct. 4, 1965, Ser. No. 492,419
1 Claim. (Cl. 220—3.2)



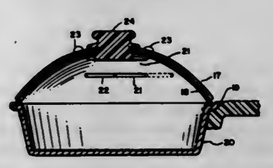
In combination:
(a) an electric outlet box having a wall with at least one circular score line for defining the boundary of a knock-out disc;
(b) the portion of the wall lying adjacent to the circular score line having spaced apart tongues that extend inwardly into said box;
(c) an anchor sleeve having a cylindrical portion with an outer diameter that is the same as that of said circular score line, and having a head with spaced apart recesses in its periphery adapted to receive said tongues when said knock-out disc is removed from said box wall and said cylindrical portion is received in the wall opening thus provided, said cylindrical portion having longitudinally extending grooves in its outer surface that register with the recesses in said head;
(d) whereby said cylindrical portion can be inserted through the box wall opening, the longitudinal grooves receiving said fingers and guiding them into registration with the recesses in said head for preventing any rotation of said anchor sleeve in the wall opening.

3,349,947
CLOSURE
Arlie I. Zumwalt, 3709 E. 44th St., Tulsa, Okla. 74135
Filed Sept. 8, 1964, Ser. No. 394,716
3 Claims. (Cl. 220—33)



1. A closure for a space at a pressure different from ambient, comprising a screw-threaded fastener for the closure, the fastener having a head at one end for rotating the fastener, a valve having a valve member movable between an open position to equalize the pressure between said space and the ambient and a closed position to maintain said space at a pressure different from ambient, the valve member being screw-threaded to rotate about its axis and to move helically between said open and closed position, the axis of the valve member and the axis of the screw-threaded fastener being disposed substantially at right angles to each other, the valve member being disposed closely adjacent said fastener head, the valve member having an opening therethrough disposed transverse to the axis of the valve member, said opening being aligned with the axis of the fastener in the open position of the valve member to give access to the fastener head and misaligned with the axis of the fastener to prevent access to the fastener head in the closed position of the valve member, so that the fastener can be released only when the valve has first been opened and the pressure equalized between said space and the ambient.

3,349,948
PROTECTIVE SKILLET LID
George W. Hughes, 3405 Ennis, Houston, Tex. 77004
Filed Apr. 12, 1965, Ser. No. 447,187
1 Claim. (Cl. 220—44)

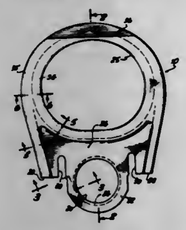


In a protective lid for skillets, a pair of superimposed dome-shaped body members having elongated slots formed therein, said body members being mountable on a skillet, means for gaining access through said body members without removing the lid from the skillet, means for rotating one of said members to move said slots into and out of aligned position.

3,349,949
RING-SHAPED TAB FOR TEAR STRIPS OF CONTAINERS

Omar L. Brown and Don B. Peters, Dayton, Ohio, assignors, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio

Filed July 6, 1965, Ser. No. 469,584
14 Claims. (Cl. 220—54)



1. A tab for attachment to a tear strip in a wall of a container for manual removal of the tear strip, comprising:

a one-piece member of sheet material having a relatively large aperture forming a portion of the member into a ring-like configuration to serve as a handle for manipulating the member,

said member having an extending portion for attachment to the tear strip,

inner and outer edges of said member being turned to form stiffening inner and outer beads extending around at least half of the circumference of the ring-like portion of the member,

said inner bead being continuous around the inner circumference of the ring-like portion of the member,

the outer bead having two ends extending from opposite sides of the ring-like portion of the member along opposite sides of said extending portion to stiffen the member longitudinally.

3,349,950
CONTAINER WITH SEGMENTED LID SEAT

Herbert J. Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,336
5 Claims. (Cl. 220—60)

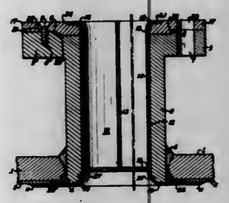


1. A thin wall plastic container of integral one-piece construction having a bottom wall and a side wall diverging upwardly and outwardly therefrom to a rim portion adjacent the open upper end thereof, and a segmented lid seat formed in said cup side wall immediately below said rim portion including a circumferentially extending lid abutment surface radially outwardly directed from said side wall, and an annular series of circumferentially spaced, inwardly extending protuberances integrally joined to said lid abutment surface and extending upwardly therefrom, each inwardly extending protuberance having a lid engaging surface disposed at an acute angle to said lid abutment surface, adjacent internally extending protuberances being separated from each other by a substantially axially extending connecting wall section which is uninterrupted throughout the axial height of said protuberances and which is provided with generally radially inwardly curving extremities merging with adjacent internally extending protuberances whereby to present a relatively strong, yet flexible lid seat.

3,349,951
CONNECTIONS FOR ALLOY LINED VESSELS

Oscar A. Peterson, Westwood, N.J., assignor, by mesne assignments, to Mid-Century Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 3, 1965, Ser. No. 511,481
6 Claims. (Cl. 220—63)



1. A connection for a vessel having an alloy lining comprising the elements of:

(1) a tubular connection, having a top side and a bottom side, attached at said bottom side to the vessel about an aperture in said vessel, and attached at said top side to a flange; and having an inner surface and an outer surface, said inner surface being curved outwardly at its bottom-most extension;

(2) an alloy liner sleeve formed so as to lie contiguous with the inner surface of said tubular connection above the outwardly curved surface of said connection and having an outwardly flued top side extending above said connection;

(3) an alloy flued inner ring formed so as to lie contiguous with the curved surface of said connection, welded at its bottom-most extension to the lining of said vessel and welded at its top-most extension to the liner sleeve; and

(4) a facing piece, adapted to cover the flange part of the connection and having an outwardly curved surface adapted to lie contiguously with the flued portion of the liner sleeve and be attached thereto.

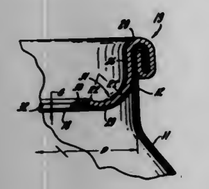
3,349,952
REINFORCEMENT STRUCTURE FOR SHIPPING CONTAINERS MADE OF LIGHT GAUGE STEEL OR THE LIKE

Leonardus Arnoldus Nicolaas Bijvoet, Bloemendaal, North-Holland, Netherlands, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed May 3, 1966, Ser. No. 547,259
Claims priority, application Great Britain, Jan. 8, 1963, 845/63, Patent 961,802
11 Claims. (Cl. 220—67)

1. A shipping container comprising, in combination, a generally cylindrical side wall having a diameter D, closure means for said container including an end member secured to at least one extremity of said side wall, said end member being formed of sheet metal having a gauge G, said end member including a generally flat central portion and an integral, circumferentially disposed upstanding flange surrounding said central portion and in engagement with the inner surface of said side wall, the junction between said central portion and said flange comprising a smooth fluent bend having an inside radius of curvature R1, and a metallic reinforcing

ring at least partially enveloping said flange and the adjacent extremity of said side wall, said ring having a first portion engaging the inner surface of said flange and a second annular portion integral with said first portion and extending inwardly therefrom, said second portion of said ring being entirely arcuate in cross section and having an outside radius of curvature R2 with said first

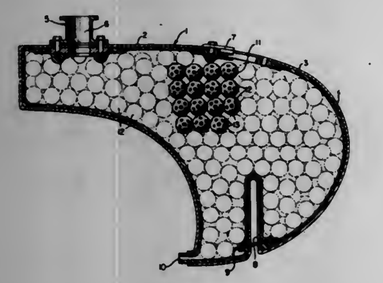


portion being generally tangent to said second portion and with the inner free peripheral extremity of said second portion curved away from and spaced from said flat central portion of said end member and extending radially inwardly from said cylindrical side wall, said radius R2 being within the range of 10 to 20 times greater than the thickness G of said end member.

3,349,953
ANTI-SLOSH MEDIA FOR FUEL TANKS

Robert W. Conaway and James S. Spindler, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Sept. 17, 1965, Ser. No. 488,222
3 Claims. (Cl. 220—85)



1. A tank structure for storing liquid substances comprising

(A) A casing having a liquid inlet opening,

(B) A baffle system within the casing, said baffle system comprising

(1) a plurality of hollow thin walled objects each with a plurality of holes in its walls loosely placed within the interior of the casing in sufficient quantity to substantially fill the casing,

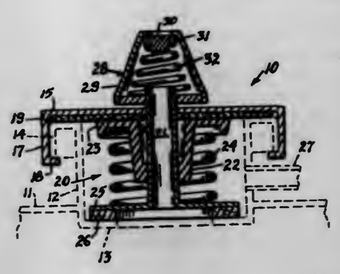
(2) said baffle system having a plurality of voids between the hollow objects, each of said voids being in communication with adjacent voids and with voids inside adjacent hollow objects thereby permitting the flow of liquid through the entire baffle system but preventing undesirable sudden surges of liquid to one part of the tank due to acceleration and deceleration forces,

(3) said hollow objects being smaller in cross section than the cross section of the liquid inlet opening to permit them to be placed in the casing through the inlet opening after the tank is completely assembled.

3,349,954
RADIATOR CAP FOR PRESSURIZED COOLING SYSTEMS

Fredrick May, P.O. Box 783, Seadrift, Tex. 77983

Filed Sept. 7, 1965, Ser. No. 485,470
3 Claims. (Cl. 220—86)



1. A radiator cap for pressurized cooling systems, said cap comprising in combination a cap body adapted for positioning on a radiator filler neck, a neck sealing unit provided at the underside of said cap body for preventing escape of coolant from the radiator until a predetermined coolant pressure has been reached, said neck sealing unit including a central open-ended tubular member extending slidably through said cap body and projecting above the same, and a normally closed filler valve provided at the upper end of said tubular member above the cap body, whereby coolant under pressure greater than radiator pressure may be injected through said filler valve and tubular member into the radiator without removal of said cap from the filler neck, said filler valve comprising a housing secured to the upper end portion of said tubular member in communication therewith and provided with a filler port, a spring in said housing, and a valve element in the housing biased by said spring to normally close said filler port, the filler valve being openable by external pressure applied to said valve element against the resiliency of said spring, said neck sealing unit including a guide of resilient material provided at the underside of said cap body and having said tubular member slidable therein, a centrally apertured disc member provided at the lower end of said tubular member, an annular neck sealing element secured to the underside of said disc member, and a compression spring interposed between said disc member and said cap body.

3,349,955
BEVERAGE CONTAINER

Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

Filed Sept. 16, 1965, Ser. No. 487,715
9 Claims. (Cl. 220—90.2)

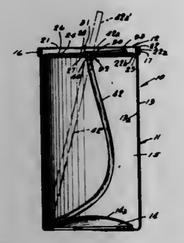
1. A beverage container comprising:

(a) a hollow container body having a bottom wall and a substantially cylindrical side wall providing a substantially cylindrical interior beverage-containing chamber and having an annular upper end;

(b) an end closure closing said upper end of said container body for sealing said beverage-containing chamber and having straw-retaining means, said end closure comprising a fixed closure part of sheet configuration fixedly secured to said upper end of said container body and overlying a major portion of the cross section of said chamber, and a removable closure part detachably secured to said fixed closure part and having manually engageable means for direct manual engagement and operable in response

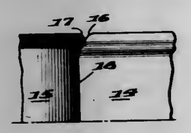
to a manual force directly applied thereto to detach said removable closure part from said fixed closure part; and

(c) a drinking straw of permanently resilient material disposed in said chamber in a constrained condition while being urged by virtue of its resilience toward a predetermined unconstrained condition, an upper end of said straw being retained by said means, and as retained being urged by virtue of its resilience toward said removable closure part, said upper end of said straw being automatically movable to a position above and clear of said fixed closure part as said removable closure part is removed from said fixed closure part,



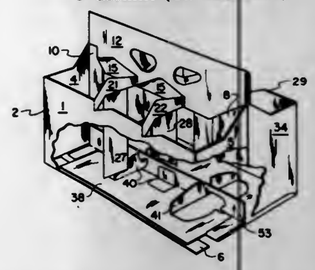
(d) said straw-retaining means comprising a retaining element connected with said removable closure part and removable from the fixed closure part jointly with said removable closure part, said retaining element being disposed in telescopically interfitting relationship with the tip of the upper end of said straw, and the drinking straw being of length in the unconstrained condition thereof substantially greater than the distance from the retaining element to the most remote part of the chamber, the straw by virtue of its length being held in said telescopically interfitting relationship with said retaining element and being free to assume said predetermined unconstrained condition automatically in response to manipulation of said manually engageable means in removing said closure part and retaining element from said fixed closure part.

3,349,956
ARTICLE OF MANUFACTURE
Paul Glenn Stephan, Landenberg, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,677
7 Claims. (Cl. 220—97)



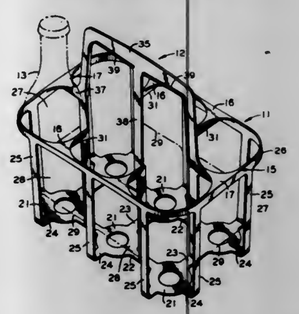
1. A can having a substantially cylindrical surface and a radially outwardly projecting chime at one end and an inwardly recessed portion at the other end, the inwardly recessed portion being of such a shape that when two similar cans are positioned side-by-side, with one inverted relative to the other, the inwardly recessed portion of one can accommodates the chime of the other can such that a portion of the cylindrical surface of one can is in contact with a portion of the cylindrical surface of the other can.

3,349,957
ARTICLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed July 25, 1966, Ser. No. 567,446
8 Claims. (Cl. 220—113)



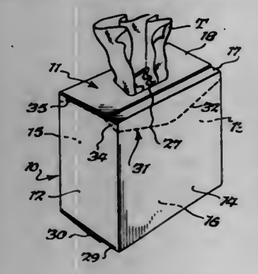
1. An article carrier comprising a bottom panels, side walls foldably joined to the side edges of said bottom panel, end walls foldably joined to the end edges of said side walls, riser panels foldably joined to said end walls medially thereof and extending medially inward of the carrier, a pair of outer handle panels secured at their ends to said riser panels and disposed in parallel close proximity to each other, and at least one reinforcing panel foldably joined to at least one of said outer handle panels along at least one fold line which is spaced inwardly somewhat from one end edge of said one handle panel, said reinforcing panel being folded into flat face contacting relation to the inner surface of said one handle panel and said fold line being so disposed that said reinforcing panel is centrally disposed with respect to the ends of said outer handle panel and the length of said reinforcing panel being such that said reinforcing panel bridges the gap between said riser panels.

3,349,958
BEVERAGE CONTAINER CARRYING CASE
Joseph C. Breneman, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Apr. 22, 1965, Ser. No. 450,021
1 Claim. (Cl. 220—117)



An integral carrying case for beverage containers comprising, longitudinal and transverse spacers forming an upper web and defining openings adapted to receive a plurality of beverage containers, a lower web having a plurality of hollow-centered hubs, spoke-like strips joining and positioning said hubs substantially vertically below the openings formed by said spacers of said upper web, edge strips attached to said hubs and defining the extremity of said lower web, a collar attached to the outer perimeter of said upper web, columns connecting said edge strips and said collar to space and join said upper and lower webs and exteriorly tangentially insulate said beverage containers, divider strips extending between said longitudinal spacers of said upper web and the strips of said lower web and providing insulation substantially tangentially between longitudinally adjacent beverage containers, and a handle having a gripping bar supported by end posts attached to said upper and lower webs and a center post extending from said gripping bar to said lower web, said end and center posts providing lateral separation between laterally adjacent beverage containers.

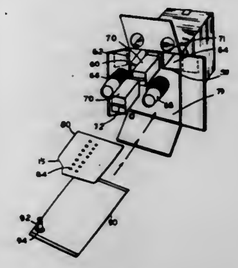
3,349,959
BOX FOR DISPENSING STACKED SHEETS
Cecil H. Watkins, Toronto, Ontario, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
Filed Sept. 14, 1966, Ser. No. 579,258
4 Claims. (Cl. 221—48)



1. A dispenser box for stacked interfolded sheets of facial tissues and the like, comprising a rectangular box having top, bottom, end, front and rear walls, a first endless line of perforations centrally located in said top wall and defining a manually removable flap, the opening left in said top wall upon removal of said flap being a constructing passage for removal of successive sheets one by one and pop-up of succeeding sheets, and a second endless line of perforations extending completely around the periphery of said box and defining thereabove a removable cover section, said cover section including said entire top wall of said box, upper portions of said front and rear walls of said box extending completely across said front and rear walls and upper portions of said box end walls adjacent respective sides of said end walls, said cover section, upon removal thereof, being insertable in the resulting open end of said box and being retainable at any selected height in said box by frictional engagement with said end, front and rear walls of said box, said upper portions of said box end walls forming stiffening gussets at the ends of said cover section and being integral with the respective adjacent upper portions of said front and rear walls.

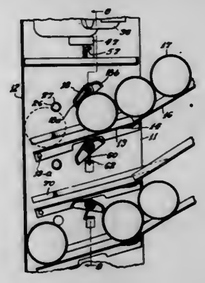
3,349,960
REFRIGERATED DISPENSER CONTAINER
Lester K. Ketler, Indianapolis, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Oct. 21, 1965, Ser. No. 499,737
6 Claims. (Cl. 221—96)

3. A dispenser container comprising an outer box of corrugated fiber board having inner and outer end flaps, and rectangular side panels, a one piece stiff corrugated fiber board liner insert of corrugated fiber board for said box lining one panel and adjacent portions of the adjacent panels, said liner insert having inward corner offsets extending the full length of the insert box to provide recesses in the corners opposite from said one panel extending the full depth of the box, and an inwardly facing recess therebetween extending the full depth of the box, the inner flap overlying said corners having openings aligned with the recesses, and each of the outer flaps having a tear out section of greater area and adapted to overlie one of said recesses, one of said inner flaps



having a further aperture adjacent a corner thereof remote from said recesses, and a tear out section in an outer flap overlying said last named further aperture, and of greater area than said further aperture.

3,349,961
VENDING MACHINE HAVING A LOCK-OUT MEANS
Jerome Nathan, Manchester, and Thomas H. Croteau, Hartford, Conn., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,868
24 Claims. (Cl. 221—125)

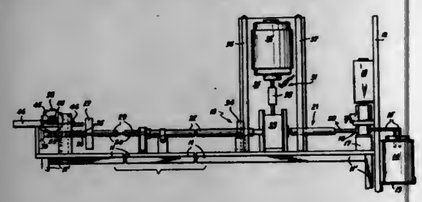


1. In a machine for vending containers, a frame having a plurality of shelves for supporting containers, a separate gate for each of said shelves slideably and swingably mounted in said frame and adapted to engage a container on its respective shelf, a gate operator common to all of said gates for operating selected gates individually, a series of abutments, one for each gate, each operative upon sliding movement of the respective gate to control said operator, and an interlock operable by each of said abutments to stop simultaneous sliding movement of said gates and to actuate said operator.

3,349,962
AUTOMATIC PAINT COLORANT DISPENSERS
Herbert C. Levin, Chicago, Ill., assignor to De Soto, Inc., a corporation of Delaware
Filed Jan. 27, 1966, Ser. No. 523,319
6 Claims. (Cl. 222—2)

3. In a paint colorant dispenser, the improvement comprising a reservoir, a reciprocating pump including a piston and a cylinder and adapted to transfer colorant from the reservoir to the pump and back to the reservoir, a conduit communicating between said pump and said reservoir,

said conduit including a three-way valve for diverting the flow of colorant, and control means to actuate said three-way valve to divert the flow of colorant as desired to a common mixing container, said control means including a



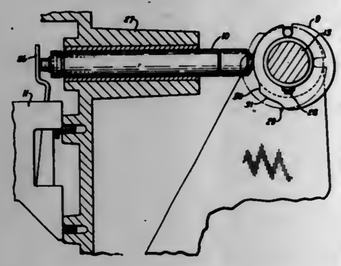
microswitch for detecting linear elements on a coded card, which linear elements correspond with particular amounts of colorant to be dispensed and means to move said coded card with the piston of said pump.

3,349,963

DISPENSING CONTROL APPARATUS

Stephen Stasenko, Erie, Pa., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed May 24, 1965, Ser. No. 458,151
1 Claim. (Cl. 222—35)



In a dispensing unit having a computer mechanism means responsive to flow through a flow line and an electrically actuated control means to control flow through the flow line,

means coupled to the computer mechanism and having a first member (19) movable between a first position and a second position and resetting the computer mechanism to a standby position during movement from said first position to said second position, spring means (20) urging the first member to the second position, an interlocking mechanism having a latch pawl (24) secured to the first member and releasably engaging a rotatable latch member (14) to hold the first member in the first position against the force of the spring means and having means (22) releasing the latch pawl (24) from said latch member (14) and permitting the spring means to move the first member (19) to the second position,

a switch means (11) connected in a circuit for actuating the electrically actuated control means and having a switch arm (26) with an on-off differential movement between a switch open position and a switch closed position,

a rotating switch cam (9) having a peripheral cam edge including a switch on-portion (29) on one radius and a circumferentially spaced switch off-portion (30) of different radius jointed by a hold portion (31) of an intermediate radius, a generally rod-like cam follower (10) slidably mounted between the switch arm and the cam edge and being urged into engagement with the cam edge said switch on-portion holding the switch means in the switch closed position and the switch off-portion holding the switch means in the switch open position, said switch means (11) being held in the previous open or closed position during movement of the switch operator (9) through said hold portion, and

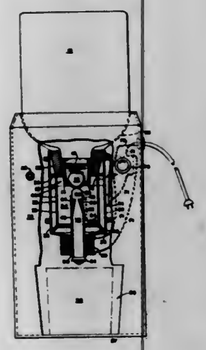
a manually actuated member (7) connected to rotate said switch cam (9) and said latch member (14) and movable from a first position to a second position for simultaneously moving the switch cam (9) and the latch member (14) to turn on the switch means and with the first member (19) in the second position to re-engage the latch pawl (24) and the latch member (14), said manually actuated member (7) being moved from the second position to the first position to turn off the switch means and re-establishing the first position of the first member (19) and the latch member (14) as the hold portion of the cam moves past said follower.

3,349,964

ELECTRICALLY HEATING AND DISPENSING A METERED QUANTITY OF FLUENT MATERIAL

Joseph Ladoniczki, P.O. Box 533, Orange City, Fla. 32763, and Lyle H. Meyer, 2531 Norfolk Road, Orlando, Fla. 32803

Filed Aug. 19, 1965, Ser. No. 480,908
14 Claims. (Cl. 222—54)



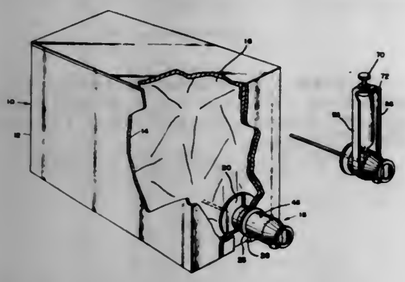
1. Means heating and dispensing, on demand, metered quantities of fluid comprising fluid reservoir means, fluid receiving means, fluid heating and metering means intermediate said reservoir and receiving means, first valve means intermediate said reservoir and said heating and metering means, second valve means intermediate said heating and metering and said receiving means, first control means for said valve means simultaneously opening said first valve means and closing said second valve means at the initiation of a heating and dispensing cycle and second control means for said valve means, responsive to a preselected fluid temperature in said heating and metering means, simultaneously closing said first valve means and opening said second valve means upon the occurrence of said preselected temperature; wherein said heating and metering means comprises an outer electrode shell defining a metering chamber of predetermined volume, an inner electrode shell symmetrically spaced from and internally coextensive with said outer electrode shell, and means providing an alternating current electrical potential between said electrode shells; and wherein said second control means includes a bimetallic actuating means mounted in said heating and metering means.

3,349,965

CHARGEABLE PACKAGE FOR LIQUIDS

Richard E. Krugger, West Bridgewater, Mass., assignor to Thermoplastic Industries, Inc., Brockton, Mass., a corporation of Massachusetts

Filed Oct. 12, 1965, Ser. No. 495,151
1 Claim. (Cl. 222—80)



A package for carbonated liquids, comprising

(a) a disposable rigid box of corrugated paperboard material,

(b) a flexible liquid impervious bag disposed within said box and adapted to contain a quantity of liquid,

(c) a rigid valve bonded to said bag and adapted to extend through a wall of said box for draining said liquid from said bag,

(d) a tube mounted to said valve having one end extending lengthwise through the center of the valve passage into said bag and the other end projecting perpendicularly out through said valve,

(e) a spider member mounted in said valve across the valve passage and supporting said tube, and

(f) a holder for a pressurized bottle detachably mounted on said valve exterior to said box whereby a pressurized bottle of carbonated gas may be connected to said tube to carbonate said liquid, said holder including a hoop portion for engaging said valve and a screw threaded to said holder for forcing said bottle against the projecting end of said tube.

3,349,966

TWO-PART MIXTURE PACKAGE AND APPLICATOR

Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583

Filed Apr. 25, 1966, Ser. No. 545,038
2 Claims. (Cl. 222—80)



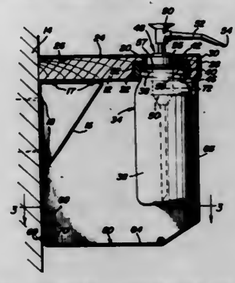
1. A dispensing package comprising a container having an open neck, a first substance disposed in said container, a retainer ring having a projecting portion, said projecting portion being received in said neck, a cover secured to said ring, said ring having a tapered opening therein forming a valve seat, a valve assembly including a valve head having a portion engageable with said valve seat to close said opening and being movable with respect to said valve seat to control fluid flow through said opening, said valve assembly further including a mounting ring, said projecting portion having a swaged end holding said mounting ring in place, an imperforate membrane extending across said swaged end sealing the lower end of said retainer ring, said valve assembly also including helical coil spring means integrally connected to said mounting ring and said valve head, a plunger secured to said valve head and extending within said helical coils towards a position immediately adjacent said membrane, said spring means normally urging said valve head against said valve seat and said plunger away from said membrane, and a second substance disposed in said projecting portion, said cover being depressable to move said valve head away from said valve seat and to force said plunger through said membrane to rupture said membrane and permit said second substance to fall into said container and to mix with said first substance, and means holding said membrane tautly stretched under tension so that upon rupture thereof an opening considerably larger than said plunger will be formed to allow said second substance to freely fall into said container to facilitate mixing thereof with said first substance and the resultant mixture thereof to pass freely therethrough.

3,349,967

TOILETRY DISPENSER

John W. Schneller, Box 839, 714 1st St., Superior, Wis. 54401

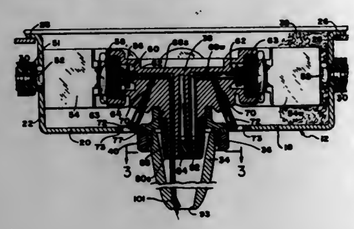
Filed Apr. 4, 1966, Ser. No. 539,888
6 Claims. (Cl. 222—130)



1. A toiletry dispenser comprising an elongated shelf member adapted to be supported from a wall surface in a generally horizontally disposed position with one rear longitudinal edge portion of said shelf member opposing said wall surface, a plurality of upstanding openings formed through said shelf member at points spaced longitudinally therealong and including diametrically enlarged lower end portions defining a downwardly facing annular shoulder in each of said openings intermediate their upper and lower ends, a plurality of upstanding containers each including a top wall and a discharge tube supported from and passing through the central portion of said top wall with its upper end portion projecting above said top wall and provided with a laterally projecting outlet neck spaced above said top wall and its lower end projecting down into the area of said container below said top wall, said containers being secured in said enlarged lower end portions of said openings and against said shoulders with said upper end portions projecting above said shelf member, said dispenser including a housing defining portion dependingly supported from said shelf member and enclosing the opposite ends and front portions of the area beneath said shelf member in which said containers are disposed, said housing defining portion including a pair of depending opposite end walls, a bottom wall, and a front wall, said front wall having its lower marginal portion hingedly supported from the remainder of said housing defining portion for swinging movement relative to said bottom and end walls about a horizontal axis extending

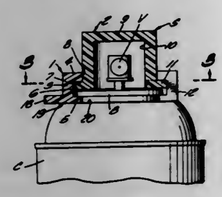
between the front edge portions of said end walls and between an upstanding position closing the front of said housing defining portion and an open position with the upper edge portion of said front wall swung forwardly and downwardly so as to provide for access to the interior of said housing defining portion, the vertical extent of the interior of said housing defining portion being sufficient to receive said containers therein with said containers disposed in upright position and resting upon and supported solely from the upper surface of said bottom wall.

3,349,968
MULTI-FLAVOR CARBONATED DRINK DISPENSER
Rudolph A. Yuza, Westchester, Ill., assignor to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 9, 1965, Ser. No. 512,725
10 Claims. (Cl. 222—132)



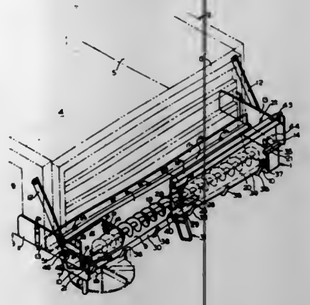
1. A drink dispensing device comprising a body having a depending boss and a plurality of vertically disposed conduits including syrup conduits terminating at the lower end thereof, a carbonated water conduit extending into said boss and terminating in an opening upon a lateral face of the boss, a flow control sleeve means surrounding the boss overlying the carbonated water conduit opening and directing the flow of carbonated water upwardly to the upper edge of the sleeve along said lateral face, a nozzle having a downwardly converging inner wall around said sleeve receiving carbonated water over said upper edge to flow freely as a thin film along said inner wall, each syrup conduit being constructed and arranged to discharge syrup against a circumferentially limited portion of said inner wall of the nozzle.

3,349,969
SAFETY CLOSURE FOR SPRAY CANS
Evert D. Velt, 6182 Roy St., Los Angeles, Calif. 90042
Filed July 25, 1966, Ser. No. 567,741
10 Claims. (Cl. 222—153)



1. A safety closure for spray cans having a circumferentially extended bead adjacent the top of the can and a manually operable spray valve projecting from the top of the can, said closure comprising: an outer circumferentially extended member of resilient material having a bottom provided with retainer means engageable beneath said can bead; an inner member; said inner and outer members having means interconnecting the same for relative rotation; said inner member including a part having a cavity for reception of said spray valve; said outer member having a lateral opening; and said inner and outer members having cam means for spreading said outer member to allow disengagement of said retainer means from said can bead responsive to relative rotation of said inner and outer members.

3,349,970
HOPPER FOR SPREADER APPARATUS
Ben Daneman, Milwaukee, Wis., assignor to Central Engineering Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 22, 1965, Ser. No. 515,544
9 Claims. (Cl. 222—166)



1. In spreader apparatus for mounting below the material discharge opening of a vehicle-mounted dump box,
a hopper body comprising an inner wall, end walls and a bottom wall, with the bottom wall having a discharge opening for the discharge of material from the hopper body for spreading,
a cover plate movable between a covering position, in which the cover plate extends across the top of the hopper body to cover the same and permit material in the dump box to be discharged from the material discharge opening of the dump box over the top of the hopper body without passing through the hopper body, and a backing position, in which the cover plate extends upwardly from and is in substantially material-tight communication with the bottom wall of the hopper body to provide an outer wall for the hopper body and to guide material from the material discharge opening of the dump box through the open top of the hopper body and into the hopper body for spreading, and
means for supporting the cover plate in the covering and backing positions and for effecting substantially material-tight communication between the bottom wall of the hopper body and the cover plate in the backing position.

3,349,971
EDGE SEALER FOR PILE FABRIC
Gury Poletajev, Lafayette Hills, Pa., assignor to Burlington Industries, Inc., Greenboro, N.C., a corporation of Delaware
Filed Dec. 5, 1966, Ser. No. 599,209
4 Claims. (Cl. 222—191)

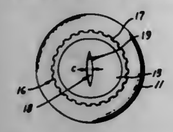
1. A liquid adhesive applicator for pile fabrics and the like comprising a flat base member, a keel on the bottom of said base member extending backwardly from a position in front of the base member, a liquid adhesive reservoir mounted on the top of the base member, a delivery nozzle from the reservoir extending through the base

member in line with the keel and positioned at the rear terminus of the keel, an extension at the forward end



of the keel said extension protruding upwardly to a point above the base member visible to the operator, and a handle for guiding the base member.

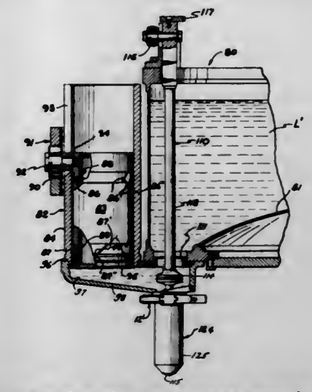
3,349,972
DISPENSER CLOSURE
Carlton L. Whiteford, New Canaan, Conn.
(5 Halliwell Drive, Stamford, Conn. 06902)
Filed Oct. 24, 1966, Ser. No. 588,853
8 Claims. (Cl. 222—212)



1. A container closure comprising a resiliently deformable cup-shaped member having a top wall and a side wall, and a relatively rigid collar rotatably mounted on the exterior of said cup-shaped member with a side wall portion slidably bearing against the outer surfaces of said side wall of said cup-shaped member, said collar side wall portion defining a generally elliptical aperture having a peripheral length substantially equal to the peripheral length of the cooperating outer surface of said cup-shaped member, said top wall having therein a symmetrically positioned dispensing aperture of generally double convex cross section in the open position and providing substantially symmetrical, arcuate sides defined by a common chord so as to intersect in sharp corners at the ends of the long dimension of said aperture, the wide dimension of said aperture in the open position being no greater than the difference between the dimension of said cup-shaped member cooperating outer surface to which said wide dimension is parallel and the minor axis of said elliptical aperture, said collar being rotatable from a position wherein the major axis of said aperture is substantially aligned with said wide dimension to provide the open position of said aperture to a position wherein said minor axis of said elliptical aperture is substantially aligned with said wide dimension to deform the material of said top wall and close said dispensing aperture, said collar and cup-shaped member having interengaging means substantially preventing inadvertent relative axial movement thereof.

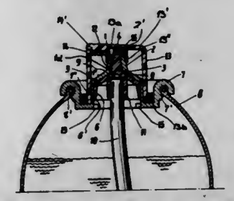
3,349,973
RECEPTACLE FILLING MACHINES
Robert L. Smith, Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Original application Feb. 4, 1964, Ser. No. 342,427, now Patent No. 3,289,712. Divided and this application June 27, 1966, Ser. No. 560,583
2 Claims. (Cl. 222—380)

1. In a receptacle filling machine: an inlet port and an outlet port disposed below said inlet port, a passageway connecting said inlet and outlet ports, movable valve means for selectively opening and closing said inlet and outlet ports, means for metering liquid from said passageway when said inlet port is open and for discharging the metered liquid into said passageway and through said outlet port when said outlet port is open, and means provided in said valve means for preventing flow out of said passageway when said outlet port is open and said metering means ceases discharging liquid, said flow preventing means including at least one passage arranged for direct communication with said passageway at least one second



passage connected to the one passage opposite the communication with the passageway, a third passage in liquid communication with the second passage, said third passage extending toward said passageway, a fourth passage connected to said third passage and extending from said third passage and a discharge passage in liquid communication with said fourth passage and extending in a direction away from said passageway.

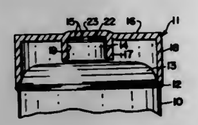
3,349,974
VALVE ASSEMBLY FOR AEROSOL CONTAINERS
Wilhelm Josef Raehs, Mausbach (Rhineland), Burgholz, Germany, assignor to Firma Uniplast Dr. Raehs KG., Mausbach (Rhineland), Burgholz, Germany, a corporation of Germany
Filed June 22, 1965, Ser. No. 465,938
Claims priority, application Germany, Nov. 7, 1964, U 11,189
8 Claims. (Cl. 222—394)



1. A self-sealing valve assembly for aerosol containers fillable through said assembly, comprising a generally tubular seat-forming member received within an opening of said container and defining an annular valve seat provided with an axially extending sleeve portion extending beyond said seat; and a valve member movably mounted in said seat-forming member and engageable with said seat, said valve member having a first extremity exposed to fluid pressure in the interior of said housing and forming a membrane urged by that fluid pressure in an outward direction normally to hold said valve member against said seat, and a pinlike portion at its other extremity extending inwardly through said sleeve and projecting therefrom for depression to withdraw said valve member inwardly from said seat and define between said

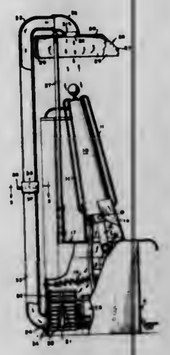
valve member and said seat member a clearance for introduction of fluid into and discharge of fluid from said container, at least one of said members being provided with at least one lateral stop projection extending over only a limited peripheral region of said one of said members and the other of said members being provided with an abutment surface engageable by said projection upon inward displacement of said valve member to limit such inward displacement and prevent said membrane from being withdrawn from said seat-forming member, said valve member being provided with an inwardly open resiliently deformable collar at said first extremity surrounding said membrane and said seat-forming member being generally cup-shaped and provided with a tubular portion coaxially surrounding said collar and closely juxtaposed therewith whereby fluid pressure within said container urges said membrane into contact with said seat and said collar outwardly against said tubular portion in a closed condition of the valve assembly and fluid pressure applied from without to said clearance deflects said collar inwardly to permit rapid filling of the container, said valve member having a tubular boss extending inwardly from said membrane at said first extremity for receiving a siphon to be adapted to extend into said container, said membrane being provided within said boss with at least one aperture for communication between said boss and said clearance for discharge of fluid from said container upon depression of said valve member, said sleeve and said pinlike portion forming a passage between them at least upon depression of said valve member to constitute the sole communication between said clearance and the exterior of the assembly externally of said pinlike portion, said tubular portion of said seat-forming member being provided with said stop projection in the region of its inner end and said collar defines said abutment surface, said collar being yieldable upon insertion of said valve member into said seat-forming member to clear said projection.

3,349,975
CONTAINER COVER
William M. Damron, Kendall Park, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,873
4 Claims. (Cl. 222—542)



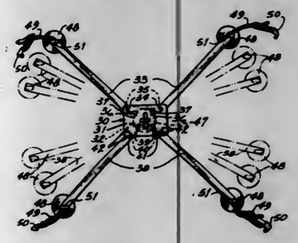
4. A removable cover for a dispensing container of the type having a body formed with side walls of regular contour and a non-removable top portion having a first reduced action arising from an annular shoulder on the body and a second reduced cylindrical section arising from said first section and formed with a perforated end wall for dispensing, said cover comprising an integral unit of inherently resilient plastic material formed with concentric annular outer and inner skirts, said outer skirt having end abutment with said shoulder and being externally formed as a substantial continuation of the body side wall contour, and said inner skirt being cylindrical and shorter than the outer skirt and having a smooth uniform diameter cylindrical surface adapted to tightly resiliently grip said second top section with the cover interior at the bottom of said inner skirt in snug flexible conformity with the outer surface of said end wall so that said perforations are sealed against dispensing when the cover is on the body.

3,349,976
PRESSING MACHINES
Heung Lew, 2 Dogwood Drive, Scarsdale, N.Y. 10583
Filed July 26, 1966, Ser. No. 567,899
8 Claims. (Cl. 223—73)



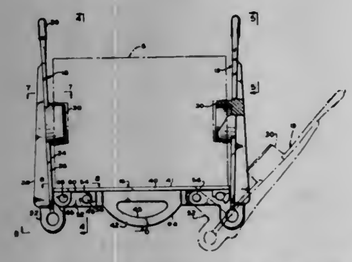
1. A presser for a bifurcated garment comprising a pair of hollow frusto-conical forms disposed in an upright position, said forms being adapted to be disposed on the inside of the bifurcated members of the garment to be pressed, the upper ends of the forms being open and smaller than the opposite ends, said upper ends comprising the exhausts of an air flow system, electrical heating elements for heating air passing through said forms, means pivotally supporting the forms for adjustable movement relative to each other, a plenum chamber having openings, one for each form, flexible means connecting the openings of said plenum chamber with the said larger ends of the forms respectively, an air blower connected to the plenum chamber for moving air in the chamber out through its said openings, said chamber having an air inlet through which air is drawn by said blower, a stationary hood overlying in fixed spaced relation the locus of pivotal positions of said smaller ends of said forms, and a tubular duct connecting the interior of said hood with said inlet.

3,349,977
SPARE TIRE CARRIERS AND/OR LUGGAGE RACKS
Anthony D. Caminiti, 3814 Santiago St., Tampa, Fla. 33609
Filed Aug. 18, 1966, Ser. No. 573,368
9 Claims. (Cl. 224—42.1)



1. An auxiliary spare tire and luggage rack designed for positioning exteriorly on a vehicle comprising a pair of hub plates, at least three legs each having a suction cup affixed to one end thereof for affixing said ends to said vehicle, the opposite end of each of said legs being sandwiched between and pivotally affixed to said pair of hub plates so as to be positionably adjustable and foldable substantially parallel to one another for storage, one of said hub plates having an eyebolt extending into the space between said hub plates, and the other of said hub plates having a slot to permit entry of a J hook to engage said eyebolt, said eyebolt having a suction cup on its end removed from the eye of said eyebolt and outside said hub plate for securing said hub plate to said vehicle.

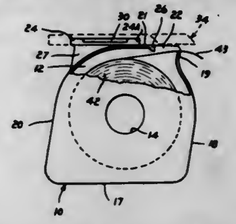
3,349,978
LOAD HANGER
Clifford R. Little, 3365 SW. 174th, Aloha, Oreg. 97005, and Robert J. Overy, Sr., Rte. 1, Box 1048, Beaverton, Oreg. 97005
Filed Mar. 16, 1966, Ser. No. 534,805
8 Claims. (Cl. 224—43)



1. A load hanger for suspending a load from a supporting body comprising:
a base member for extension horizontally beneath a load,
one pair only of opposite side members, each having an upper end and a lower end,
means for pivotally attaching said side members to said base member so that said side members extend generally upwardly from opposite ends of said base member on opposite sides of said load and so as to permit swinging movement of each side member from an upright position for engaging said load outwardly to a second position for releasing said load,
a load engaging projection on each side member intermediate the opposite ends thereof and extending inwardly toward the opposite side member for interengaging a corresponding recess in a load to be carried,
and hook means at the upper end of each side member for suspending said side members and their supported base member and load from said supporting body, so that the weight of said side members, base member and load maintains said side members in a substantially normal relationship to said base member to prevent release of a load between said side members with said side members thus suspended.

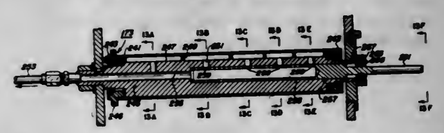
3,349,979
TAPE DISPENSER
Alfred P. Costello, North Vancouver, British Columbia, Canada, assignor to Universal Patent and Development Ltd., Vancouver, British Columbia, Canada, a corporation of Canada
Filed Feb. 14, 1966, Ser. No. 527,333
5 Claims. (Cl. 225—44)

1. A dispenser including a case having a top wall and a bearing on which a roll of tape is adapted to be journalled the dispenser being further characterized by:
(a) the top wall having a discharge opening through which an end of the tape can be withdrawn,
(b) an upstanding rib, formed on the top wall adjacent the opening,
(c) the rib being recessed to define a longitudinal slot,
(d) a flat generally rectangular cutter having a cutting edge, the cutter being slidably mounted on the rib for longitudinal motion, and being adapted to close the discharge opening with the cutting edge being disposed to overhang the top wall,



(e) means to restrain the cutter against vertical and lateral movement relative to the rib,
(f) a pin carried by the cutter and resilient means normally retaining an end of the pin within the slot, so that the longitudinal motion aforesaid is limited by the length of the slot.

3,349,980
VACUUM TRANSPORT DEVICE
Robert W. Moorhusen, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,023
10 Claims. (Cl. 226—95)

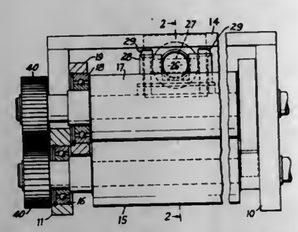


6. A capstan apparatus for transporting web materials comprising in combination,
a foraminous cylindrical member mounted for rotation and adapted when rotated to advance the web material,
means axially mounted within said cylindrical member for receiving and distributing an applied vacuum to a peripheral portion of said cylindrical member whereby to hold web material in contact therewith, and
control means operatively connected with said receiving and distributing means and angularly displaceable about the axis of said cylindrical member for varying the effective axial portion of the cylindrical member through which the vacuum is applied whereby to accommodate different widths of web material.

3,349,981
STRIP FEED DEVICE
Harold Frederick Hawkins and Reginald Joseph Lloyd, Dorset, England, assignors to Humphris & Sons Limited, Dorset, England
Filed June 21, 1965, Ser. No. 465,568
Claims priority, application Great Britain, June 24, 1964, 26,121/64, 26,123/64
14 Claims. (Cl. 226—155)

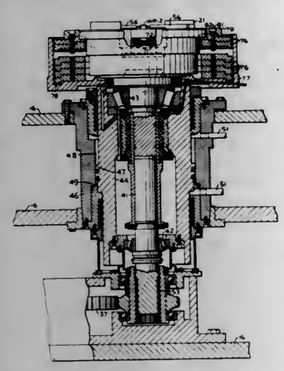
1. A pinch roller unit for feeding strip material, comprising in combination a pair of side plates connected rigidly to at least one transverse member so as to be disposed at a fixed distance apart, two pinch rollers formed with spindle ends disposed between said side plates one above the other and arranged in parallel relationship to each other and having adjacent spindle ends extending through one side plate, a pair of arms rigid with each

other and being pivotally mounted on said side plates, the upper pinch roller being mounted by its spindle ends in bearings in said pair of arms, the lower pinch roller being mounted by its spindle ends in bearings carried in the side plates and being rotatable about a fixed axis, a pair of constant mesh gear wheels mounted on said one side plate, and a pair of gear wheels, meshing respectively



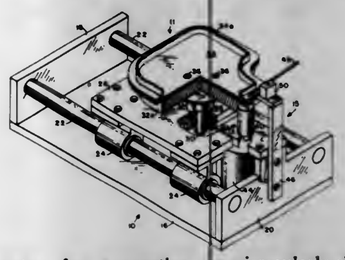
with the constant mesh gear wheels, mounted at the spindle ends of the rollers which extend through said one side plate and force applying means connected to said arms capable of urging the upper pinch roller towards the lower roller wherein drive connection through the gears is maintained even when the arms are pivoted to move the upper roller towards or away from the lower roller.

3,349,982
FRICTION WELDING MACHINE WITH STORAGE MEANS FOR INERTIAL MASSES
Charles E. Lipp, Peoria, Eugene R. Martin, East Peoria, and Ira H. Sage and George W. Vicary, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 22, 1965, Ser. No. 450,075
3 Claims. (Cl. 228—2)



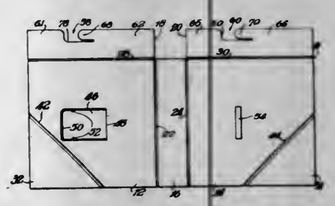
1. An inertial bonding machine of the kind wherein two parts are engaged in rubbing contact at a common interface while kinetic energy stored in rotating inertial weights is discharged into the interface through frictional heating and plastic working developed at the interface as the rubbing contact slows the rotating inertial weights to a stop at the conclusion of a bonding cycle, said machine comprising, a rotary spindle for rotating one part, said spindle including a radially extending flange having a series of openings which extend therethrough and which are shaped to hold the heads of capscrews therein, capscrews extending through the opening in the flange for attaching a selected number of inertial weights to the rotary spindle depending on the length of the capscrew used, and storage means encircling the rotary spindle for storing inertial weights not needed for making a particular bond, and wherein the storage means hold a plurality of separate inertial weights in stacked-together relation therein, each of said inertial weights having screw threads tapped therein in alignment with the openings in the radially extending flange whereby different length capscrews can be inserted through the radially extending flange to pick up and to attach a selected number of inertial weights to the rotary spindle.

3,349,983
CONTOUR POSITIONING DEVICE
Joseph F. Huff, 72 Washington St., Hyde Park, Mass. 02136
Filed June 22, 1964, Ser. No. 376,958
3 Claims. (Cl. 228—7)



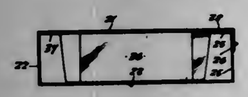
1. Apparatus for supporting an irregularly-shaped work-piece of sheet material and for moving the periphery thereof at a constant speed past a tool, comprising:
(a) a template having an outline similar to, but smaller than, the outline of the work-piece, such template having a magnetizable periphery;
(b) means for mounting, in an overlying relationship, the work-piece on the template so that the work-piece overlaps the template by a fixed distance;
(c) means, including a magnetic drive shaft contacting the magnetic periphery of the template, for rotating the template and the work-piece, the radius of such shaft being equal to the fixed distance;
(d) a carriage, said template and said work-piece being rotatably mounted on said carriage;
(e) a pair of guide rods fixedly disposed relative to said magnetic drive shaft;
(f) a plurality of bushings fixed to said carriage and mounted on said guide rods; and
(g) a tool disposed to operate on the periphery of the work-piece at successive points thereon as such points pass the center of rotation of the drive shaft.

3,349,984
CORNER PROTECTORS
John J. Halko, Jr., Llangollen Estates, Del., assignor to Riv-Kap, Inc., Wilmington, Del., a corporation of Delaware
Filed May 21, 1965, Ser. No. 457,593
10 Claims. (Cl. 229—14)



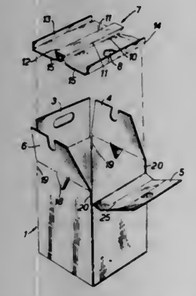
9. A self-locking and self-anchoring shipping protector for the corners of framed articles, said protector being in the form of a cushion sheet having a pair of face panels connected together at one edge of each by an edge panel about as wide as the frame thickness, each face panel having an elongated flap at corresponding edges adjacent the edge panel, the longitudinal free edge of each flap having a cutout extending inwardly therefrom providing a tab lying in the middle third of the flap and extending parallel to the edge of the face panel that carries the flap, the tabs being oriented for interlockingly engaging the flaps when the sheet is folded to bring the face panels in generally parallel relation, and at least one face panel has an integral bendable portion formed as anchoring means to hold the interlockingly secured folded sheet on a corner of the frame and keep it from being dislodged from that corner.

3,349,985
PACKAGE
Brian Salway, Redland, Bristol, England, assignor to E S & A Robinson (Holdings) Limited, Bristol, England, a company of Great Britain and Northern Ireland
Filed Feb. 3, 1966, Ser. No. 524,713
Claims priority, application Great Britain, Feb. 4, 1965, 4,906/65
4 Claims. (Cl. 229—14)



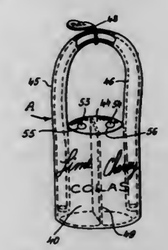
1. A package comprising a tray of plastics material and an enclosing shell, the said tray having an out-turned peripheral flange with an upper face and an under face; said shell comprising a row of panels of carton forming material hinged one to the next, the upper face of said flange being sealed to the inside surface of said shell, the outer surface of one end panel of said shell being secured to the under face of said flange whereby part of said flange is sandwiched between two portions of said shell.

3,349,986
PROTECTIVE CASE
Michael C. Chapman, William D. Weatherup, and Leslie F. Humphrey, Maidstone, Kent, England, assignors to Reed Paper Group Limited, London, England, a British company
Filed Feb. 28, 1966, Ser. No. 530,657
Claims priority, application Great Britain, Mar. 26, 1965, 12,994/65
5 Claims. (Cl. 229—14)



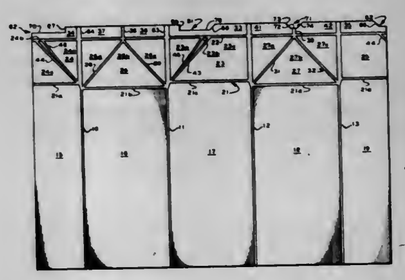
1. A protective case supporting therein a collapsible bottle having a pouring neck at its upper end; said case comprising a box formed of stiff foldable lightweight material and having foldable flaps for closing at least the upper end thereof; one of said flaps having an aperture therethrough with said neck extending through said aperture and being supported by said one flap; said one flap having a stiffening reinforcement means extending thereacross; holes in the sides of said box, the ends of said reinforcement means engaging in said holes, thus holding said reinforcement against upward and downward movement in said box.

3,349,987
SUCTION TUBE DISPENSING MEANS FOR BEVERAGE CONTAINERS
Dorothea M. Weltzner, 8 E. 62nd St., New York, N.Y. 10021
Filed May 6, 1966, Ser. No. 548,299
2 Claims. (Cl. 229—15)



1. A beverage container assembly comprising a hollow container body for containing a beverage and suction tube means attached at least in part to the container body for drawing the beverage out of the container body, said body being generally cylindrical in form, a partition in said body dividing the same into two compartments, said suction tube means comprising two tubes integrally formed with said container body at opposite sides thereof, said tubes having lower ends extending into the respective compartments and upper ends detachably joined together over said body, whereby beverage in the respective compartments can be drawn out of the compartments through the respective tubes, said container body having weakened circular lines in the top thereof above the compartments defining plugs adapted to be manually pushed in forming openings in the respective compartments to admit air.

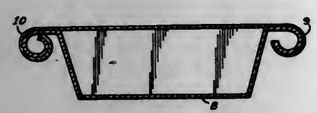
3,349,988
GABLE TOP CONTAINER WITH NOTCHED RIDGE
Raymond H. Horning, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,927
10 Claims. (Cl. 229—17)



1. A gable top container formed of paperboard or the like, comprising a tubular body rectangular in cross section and having a front wall panel, a rear wall panel, first and second opposing end wall panels connecting said front wall panel and said rear wall panel, a bottom closure affixed to the lower portion of each said front, rear and end wall panels, a front roof panel affixed to the

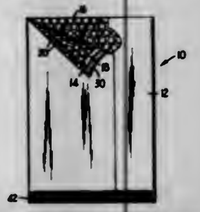
upper portion of said front wall panel, a rear roof panel affixed to the upper portion of said rear wall panel, said front and rear roof panels being inclined toward each other and overlying said body, first and second end closure panels being infolded between said front and rear roof panels from the opposite gable ends formed by the latter, each of said end closure panels including a triangular end panel portion having its lower portion integral with the upper portion of the respective end wall and a pair of triangular fold-back panels integral with the respective triangular end panel portion and the respective adjacent roof panel, said fold-back panels being folded against the underside of said roof panels, first and second outer ridge panels surmounting said front and back roof panels, respectively, first and second inner ridge panels surmounting the two fold-back panels of said first end closure panel, third and fourth inner ridge panels surmounting the two fold-back panels of said second end closure panel, the inner ends of said first and second inner ridge panels being integral with each other along a first common fold line, the inner ends of said third and fourth inner ridge panels being integral with each other along a second common fold line, the outer ends of said first, second, third and fourth inner ridge panels being integral with the outer end of the respective adjacent roof panel, said inner and outer ridge panels being disposed vertically and being joined together with a permanent adhesive bond to define a central laminar top ridge, said container being openable by the consumer by first breaking the bond between said first and second inner ridge panels by folding said first and second inner ridge panels, and the respective adjacent outer ridge panel, outwardly from each other and then separating each of said first and second inner ridge panels from the respective adjacent outer ridge panel, each of said outer ridge panels having a notch in the upper edge thereof extending inwardly from a first point adjacent the outer ends of said first and second inner ridge panels to at least the vertical centerline of the respective outer ridge panel, the height of the portion of the outer ridge panel beneath the notch being sufficient to provide a leak proof seal to the adjacent portion of the respective inner ridge panel, the portion of each outer ridge panel which is sealed to the adjacent portion of the respective one of said first and second inner ridge panels being sufficient to provide a bond sufficiently strong to protect the container against inadvertent opening of the sealed container during handling and sufficiently weak to permit the consumer to separate with ease said first and second inner ridge panels from the respective adjacent outer ridge panel.

3,349,989
MANUFACTURE OF THERMOPLASTIC CONTAINERS
Viktor Indrike, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
Filed Oct. 9, 1964, Ser. No. 402,869
Claims priority, application Germany, Apr. 1, 1964, K 52,548
1 Claim. (Cl. 229—44)



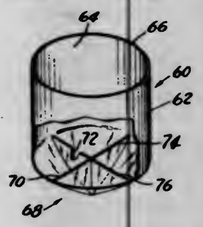
A container made of a thermoplastic material having separable edges on one side thereof rolled together more than 180° and less than 360° and edges on an opposite side rolled together by at least 360°, whereby the container may be opened using the latter edges as a roll hinge.

3,349,990
MULTI-WALL MAILING CONTAINER
Reinold T. Woodford, Hudson Falls, N.Y., assignor to Arkell and Smiths, a corporation of New York
Filed Mar. 1, 1967, Ser. No. 619,639
6 Claims. (Cl. 229—55)



1. A mailing container comprising an outer wrapper and an inner liner, said inner liner including a first sheet having protuberances in spaced relationship to each other and a second sheet permanently fastened to said first sheet and sealing said protuberances to form sealed air sacs, said inner liner being attached to said outer wrapper with said air sacs immediately adjacent said wrapper and with said second sheet spaced from said wrapper, said outer wrapper being folded and united to form a sleeve constituting the sides of said container, and a bottom portion of the sleeve being united transversely to said first mentioned fold to form the bottom of said container.

3,349,991
FLEXIBLE CONTAINER
Leonard Kessler, Bay City, Mich., assignor to Quality Transparent Bag Co., Bay City, Mich., a corporation of Michigan
Filed Sept. 23, 1965, Ser. No. 489,704
4 Claims. (Cl. 229—56)

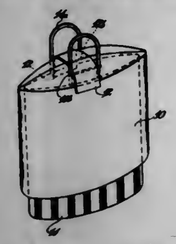


1. A container of flexible material open at one end and comprising a first outer ply and a second outer ply, said plies being connected at the side edges thereof, a first inner ply and a second inner ply, said first and second inner plies being connected at the side edges thereof, the opposite side edges of said first outer ply and said first inner ply being connected to one another by a folded vertical gusset disposed therebetween, the opposite side edges of said second outer ply and said second inner ply being connected by another vertical folded gusset disposed therebetween, all of said plies being connected together at one end edge thereof to form a plurality of individual pockets, closed at the bottom and open at the top.

3,349,992
COVER FOR SHOPPING BAGS
Robert C. Skinner, P.O. Box 14, 21 Banshee Ave., Shearwater, Nova Scotia, Canada
Filed Oct. 20, 1966, Ser. No. 588,095
Claims priority, application Canada, Oct. 22, 1965, 943,531, Patent 741,176
1 Claim. (Cl. 229—62)

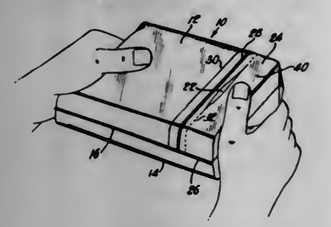
A cover for use with shopping bags of the type having a pair of looped handles extending upwardly therefrom, to provide a protective covering thereto, comprising: a

flexible tubular container being made of heat adhesive material having a pair of opposed side wall portions, each with a transverse slot extending parially thereacross and a seam to separate said side wall portions; flap portions including single length of heat-adhesive material secured to



said seam at a mid portion by heat welding thereto, intermediate the slots whereby in use on applying the cover over a bag and inserting the bag handles through the slots the flaps may then be inserted through the bag handles to overlie a central portion of each slot not occupied by a portion of the respective handle.

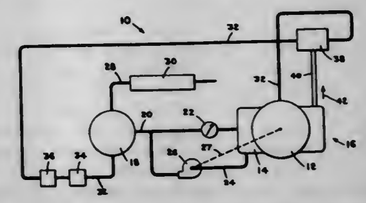
3,349,993
PACKAGE
Myron B. Ells, Somerville, and Frederic W. Bollenbach, Westfield, N.J., assignors, by mesne assignments, to Package Products Company, Inc., Charlotte, N.C., a corporation of North Carolina
Filed June 12, 1963, Ser. No. 287,371
7 Claims. (Cl. 229—66)



7. A container for confining merchandise, said container being formed of flexible material and comprising first and second juxtaposed walls secured together along their side edges, and a protective flap connected to one of said walls at one end of said container and disposed in overlying relation to the outer surface of said other wall, said protective flap being of a width substantially the same as the width of said walls and having a tear line in a medial portion thereof and overlying said other wall, said protective flap being secured to said other wall on the remote side of said tear line from said one end of the container, the side edges of at least the portion of said protective flap between said tear line and said one end of the container being secured to said walls, said protective flap upon being fractured along said tear line providing a shielded access opening into the interior of the container.

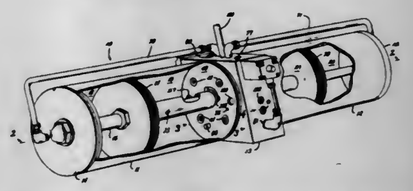
3,349,994
UNLOADING SYSTEM FOR ROTARY COMPRESSOR
Carl Bloom, Springfield, Mass., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,895
11 Claims. (Cl. 230—45)

1. In a compressor system, a compressor having intake and discharge means, unloading means cooperatively associated with said compressor and operable to unload said compressor, discharge conduit means and bypass means associated with said compressor discharge means, and pump means having separate intake and discharge means, said pump intake means connected with said bypass conduit means, said pump means operable to rapidly evacuate the said compressor discharge means



whereby, the power consumption of said compressor may be rapidly and materially reduced by operation of said pump means to rapidly evacuate said compressor discharge means concurrently with the operation of said compressor unloading means to unload said compressor.

3,349,995
RECIPROCATING BOOSTER PUMP
John M. Sheesley, P.O. Box 14604, Houston, Tex. 77021
Filed Sept. 2, 1965, Ser. No. 484,647
3 Claims. (Cl. 230—52)



1. In a pump for increasing the pressure of gas in a supply line, the combination of:
means for providing said supply line gas to a partitioned cylinder;
unitarily linked piston means for forming more than three chambers within said cylinder, the size of said chambers each being a function of the position of said piston means relative to one end of said cylinder, said piston means being slidably engaged with tie rod means, said tie rod means being fixed to opposite ends of said cylinder and extending therebetween and passing through a central block; and
valve means in said central block for reversing the directional motion of said piston means.

3,349,996
COMPRESSOR AND METHOD
Forbes Wilson, 3820 Meadowlake, Houston, Tex. 77027
Filed Feb. 24, 1966, Ser. No. 529,741
10 Claims. (Cl. 230—52)

5. A gas compressor comprising
a first stage compression chamber,
a first piston head in the compression chamber,
a heater,
an expansion chamber,
a second piston head in the expansion chamber,
passage means connecting the first stage compression chamber to the expansion chamber through at least a portion of the heater,
the heater, the passage means and the communicating portions of the first stage compression chamber and the expansion chamber comprising a second stage

compressor which further compresses by heating compresed gas from the first stage compression chamber,

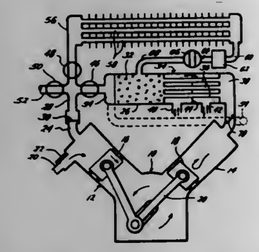
means interconnecting the first piston head and the second piston head for movement thereof as a unit, movement of the first and second piston heads maintaining a substantially restricted volume in the heater, the passage means and communicating portions of the first stage compression chamber and the expansion chamber during the further compression of the gas by the heating in the second stage compressor,

an outlet in the compressor in fluid communication with the first stage compression chamber introducing gas to be compressed into the compression chamber,

an outlet in the compresser in fluid communication with the second stage compressor discharging compressed gas from the second stage compressor,

valve means permitting inflow and preventing outflow of the gas through the inlet and controlling the flow of gas out of the outlet, said valve means operable to close the gas outlet during compression of the gas in the first stage compression chamber and in the second stage compressor and operable to open the gas outlet upon substantial completion of partial expansion of the gas in the expansion chamber,

means for introducing relatively cool liquified gas into the second stage compressor,



whereby, the gas entering the first stage compression chamber is compressed above its initial pressure, at least part of the compressed gas from the first stage compression chamber is then further compressed by heating in the substantially restricted volume in the second stage compressor, the heated compressed gas is further compressed and cooled by the introduction of the relatively cool liquified gas thereby gasifying the liquified gas, after which the partial expansion of the compressed, mixed gas provides energy for the compressor and moves the second piston head in the expansion chamber and thereby drives the first piston head in the first stage compression chamber, then the displacement portion of the movement of the second piston head in the expansion chamber discharges at least a part of the compressed gas out of the outlet.

3,349,997
ADJUSTABLE DIFFUSER BLADES
Jaromír Beran, Chabry u Prahy, and Dušan Misárek, and Miroslav Futera, Prague, Czechoslovakia, assignors to Čkd Praha, oborový podnik, Prague, Czechoslovakia
Filed May 4, 1966, Ser. No. 547,579
Claims priority, application Czechoslovakia, May 5, 1965, 2,936/65
2 Claims. (Cl. 230—114)

1. In a device for adjusting diffuser blades of a turbocompressor in combination:

(a) a stationary ring and a rotatable ring coaxially mounted thereon;

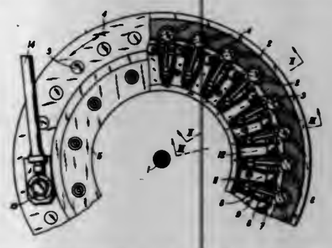
(1) between said stationary ring and said rotatable ring are provided antifriction means, running in circular grooves in both of said rings,

(2) said antifriction means being kept in spaced relationship by flat spring means,

(3) said flat spring means being U-shaped;

(b) a plurality of pin means circumferentially equally spaced and mounted on said rotatable ring to rotate thereon,

(c) a plurality of blade means each of them mounted on one of said pin means to rotate therewith,



(d) bolt-like members one radially extending from each of said pin means and with its other end connected with said stationary ring,

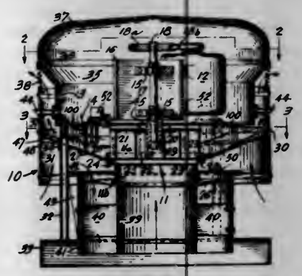
(1) said radially extending members each being in sliding engagement with a guide pin which is disposed in said stationary ring and is adapted to rotate therein,

(2) said guide pin having a transverse bore and said other end of said radial member slidingly extends therethrough,

(3) said guide pin together with said other end of radial member surrounded by a bent of said U-shaped spring means;

(e) control means operatively associated with said rotatable ring and adapted to rotate said rotatable ring together with said blades to adjust flow passage area therebetween.

3,349,998
VENTILATING APPARATUS
Leo M. Stirling, 7431 Kingsley Road, Apt. 405, Cote St. Luc, Montreal, Quebec, Canada
Filed May 9, 1966, Ser. No. 548,708
23 Claims. (Cl. 230—114)



1. Housing means for a ventilator of the type having a single rotor rotatable by means of a motor and consisting of a centrifugal component adapted to draw air upwardly and expel it radially outwardly and an axial flow component mounted below the centrifugal component and radially outwardly of the centrifugal component inlet, for blowing air downwardly around the centrifugal component inlet, the said housing means comprising:

a generally cylindrical outer wall,

a generally annular peripheral outlet for stale air adjacent an upper end of said outer wall,

a generally annular peripheral inlet for fresh air adjacent a lower end of said outer wall,

said inlet and outlet being spaced by a substantial part of the total height of the housing,

a sloping annular deflector abutting said outer wall intermediate said inlet and said outlet and extending radially inwardly and downwardly to the junction of said impeller components so as to divide the incoming air from the outgoing air and to define the outer boundary of an upward sloping path for said outgoing air,

means for supporting the impeller motor and shaft,

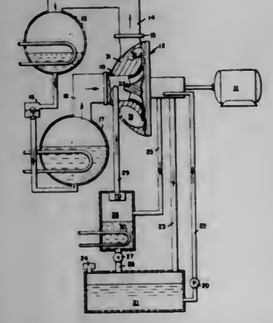
enclosure means surrounding said impeller motor and shaft with said impeller below the lower part of such enclosure,

said enclosure extending inwardly from the upper end of said stale air outlet and being upwardly spaced from said deflector so as to define the inner boundary of said outgoing air path,

a pair of concentric cylindrical ducts arranged to guide stale air centrally upwardly to said centrifugal component inlet and to guide fresh air from beneath said deflector annularly downwardly between the ducts from said axial flow component, and

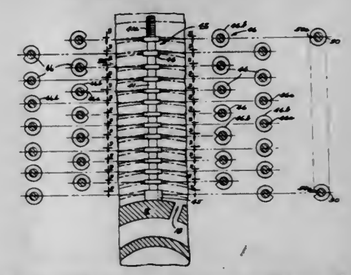
means for retaining the parts of said housing together in an integral unit.

3,349,999
CENTRIFUGAL COMPRESSOR
Howard W. Kirtland, East Syracuse, and James W. Endress, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,399
5 Claims. (Cl. 230—132)



1. A centrifugal compressor comprising a housing having inlet and outlet portions for the passage of refrigerant vapor through the compressor, an impeller in said housing for compressing refrigerant vapor from a relatively low suction pressure at said inlet portion to a relatively higher pressure at said discharge portion during operation of the compressor, bearing means mounting said impeller for rotation during operation of said compressor and mounting said impeller spaced from a portion of said housing to define a gap in direct communication with said discharge portion, whereby refrigerant vapor at said higher pressure passes into said gap, means for retarding flow of said refrigerant to at least a portion of said gap, means for providing lubricant to said bearing means at a pressure normally above said suction pressure, means providing a collection chamber in said housing between and in fluid communication with said gap and said bearing means, conduit means between said chamber and a separate chamber for maintaining said chamber at a pressure below said lubricant pressure during operation of the compressor, and means communicating with said inlet for maintaining a pressure in said gap below said higher pressure to reduce the thrust force on said impeller, and above the pressure in said collection chamber for assuring flow of refrigerant from said gap into said chamber and substantially preventing leakage of said lubricant into said gap, whereby refrigerant may flow from said gap into said chamber and lubricant may flow from said bearing means into said chamber.

3,350,000
INTEGRAL GRADIENT REMOVABLE DISC COLUMNS
Wladzia G. P. Doyle and Collin M. Doyle, both of 21 W. Elm St., Chicago, Ill. 60610
Filed May 7, 1965, Ser. No. 453,940
13 Claims. (Cl. 233—15)



1. In a centrifugal countercurrent exchange device including a rotor, a plurality of spaced bands positioned in said rotor, said bands being formed with holes arranged to afford a plurality of radially extending cavities, integrally formed disc columns removably positioned in said cavities, each of said disc columns comprising a rod with a plurality of integrally formed radially spaced protuberant discs arranged so that each disc is in radial alignment with a respective band, means for removably retaining said columns in said holes, each of said discs being sized to approximate the size of a respective hole of said respective band, at least some of said discs being formed with peripheral indentations in order that the peripheries of said discs form orifices with the defining edges of the holes in said bands, said disc columns being interchangeable with other disc columns whereby different conditions of dispersion may be obtained within said rotor by interchanging said disc columns with other disc columns which have integrally formed discs with different dispersal characteristics.

3,350,001
METHOD FOR FLUID EXTRACTION AND APPARATUS THEREFOR
Wladzia G. Podbielniak Doyle and Collin M. Doyle, both of 21 W. Elm St., Chicago, Ill. 60610
Continuation of application Ser. No. 405,055, Oct. 20, 1964. This application Mar. 4, 1966, Ser. No. 540,785
14 Claims. (Cl. 233—15)

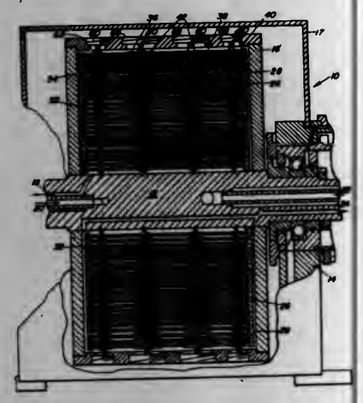
1. In a centrifugal countercurrent exchange device including a rotor, a shaft, a plurality of spaced concentric bands having holes formed therein to afford a radially extending cavity, a disc column positioned in said cavity, said disc column comprising:

an elongated tie rod;

a plurality of disc assemblies removably mounted in spaced relationship on said tie rod, each of said disc assemblies including a movable perforated disc and a stationary perforated disc, said discs being contiguously superposed on each other;

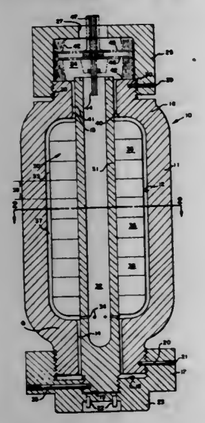
indexing means to enable the movable discs of said disc assemblies to be rotated in place about said

tie rod and thereby vary the indexing of the perforations of said movable disc in relation with the perforations of said stationary disc for the corresponding disc assembly; and



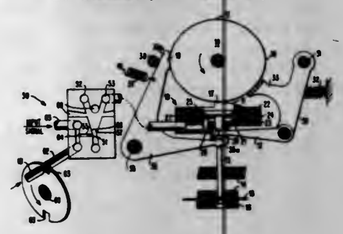
locking means to prevent said stationary disc from rotating while the movable disc of the corresponding disc assembly is being rotated about the tie rod.

3,350,002
CENTRIFUGE APPARATUS
Edward G. Pickels, Atherton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 14, 1963, Ser. No. 265,089
17 Claims. (Cl. 233—28)



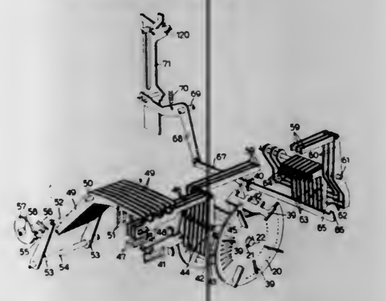
1. A centrifuge rotor assembly for centrifugation of liquid sample and resuspension of sediment recovered therefrom comprising a hollow bowl formed with an upwardly extending inner wall, a core body carried within said bowl and disposed about a vertical axis for centrifugation operations, said core body having a substantially cylindrical outer surface and being free to rotate independent of said hollow bowl, said core body comprising discrete segments contractable during centrifugation to provide a separation chamber for accumulating sediment, said separation chamber being defined by said inner wall of said bowl and said outer surface of said core body, and said core body being free upon termination of centrifugation to move toward said inner wall of said bowl and ride along said inner wall to remove said sediment therefrom for resuspending said sedment.

3,350,003
FLUID CONTROLLED ACTUATING MECHANISM
Charles S. Jackowski, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,900
17 Claims. (Cl. 234—107)



1. Apparatus comprising, in combination:
an element movable from a retracted to an extended position;
an operating member for said element;
movable interposer means in a first position biased for movement to a second position to render said member operable, said interposer means being biased toward said second position; and
fluid-actuated selector means for holding said interposer means in said first position and responsive to a fluid pressure signal for releasing said interposer means to said second position whereby said element is moved from said retracted to said extended position.

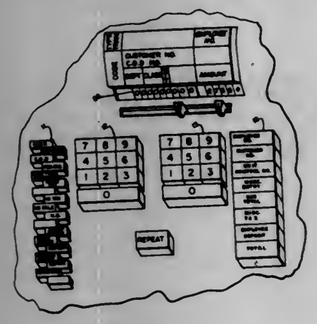
3,350,004
PROGRAM CONTROL DEVICE FOR AN OFFICE MACHINE
Luciano Rattin and Giuseppe Ricciardi, Ivrea, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, an Italian corporation
Filed Apr. 6, 1965, Ser. No. 446,029
Claims priority, application Italy, Apr. 11, 1964, 8,358/64
7 Claims. (Cl. 235—60)



1. In an office machine embodying a series of operable machine function control members, in combination;
(a) portions on said control members disposed in a row,
(b) a series of permutation members less in number than said control members extending parallel to the row of control members portions and adapted to be operated selectively and in different combinations for causing selective operations of said control members,
(c) and a program device movable to different control positions to cause selective and combinational operations of said permutation members and in turn selective operations of said control members,

(d) said program device including program elements discretely provided thereon for effecting in the different control positions thereof appropriately selective operations of said permutation members.

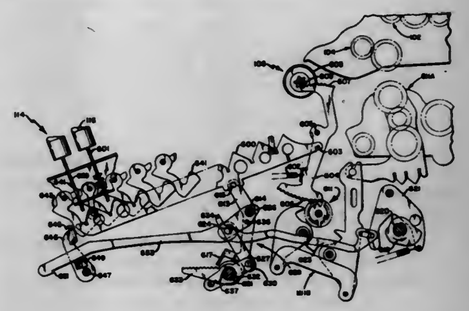
3,350,005
TEN KEY PRINTING CALCULATING MACHINE
Hugh L. Clary, San Marino, and Fred N. Schwend, Arcadia, Calif., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Dec. 16, 1966, Ser. No. 608,716
11 Claims. (Cl. 235—60)



1. In a calculating machine,
the combination comprising a plurality of denominationally arranged elements differentially movable to different character representing positions,
means for yieldably advancing said elements,
a pair of aligned pin carriages cooperable with said elements,
each of said carriages having a plurality of denominationally arranged columns of settable pins effective to arrest aligned ones of said elements in different character representing positions,
yieldable means for advancing a first one of said carriages,
first escapement means normally restraining said first carriage and operable as an incident to setting of a said pin in said first carriage for causing advancement of said first carriage one denomination,
yieldable means for causing a second one of said carriages to follow said first carriage, and
second escapement means adapted to restrain said second carriage upon movement of said second carriage to a predetermined position,
said second escapement means being operable as an incident to setting of a said pin in said second carriage for causing advancement of said second carriage one denomination.

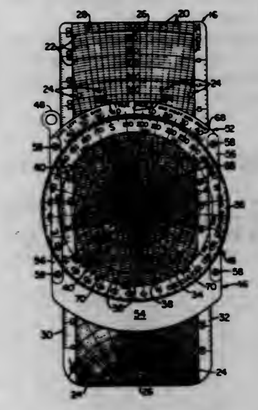
3,350,006
CALCULATING MACHINE
Eugene E. Reynolds, Orangeburg, S.C., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Feb. 14, 1966, Ser. No. 527,023
17 Claims. (Cl. 235—63)

1. A calculating machine having
(1) a result register comprising a plurality of numeral wheels,
(2) a plural order keyboard,
(3) means for locking the keys in depressed position,
(4) value entry means settable in value representative positions in accordance with the value of the keys depressed,
(5) and numeral wheel actuators selectively operable for a single or a plurality of cycles of actuation under the control of said value entry means,
the combination of means responsive to the initiation of a plural cycle actuation comprising:



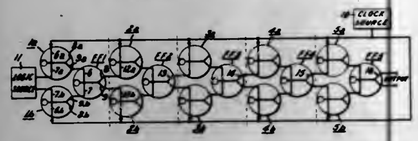
(a) a mechanism for locking the value entry means in said value representative position,
(b) a device to unlock the depressed keys
(c) and means to establish a connection between the unlocked mechanism for the value entry means whereby the subsequent depression of key releases the value entry means from said locking mechanism.

3,350,007
NAVIGATION SLIDE RULE
Frederick E. Urben, Englewood, Colo., assignor to Jeppesen & Co., Denver, Colo., a corporation of Colorado
Filed May 26, 1966, Ser. No. 553,073
5 Claims. (Cl. 235—88)



1. A plotting and computing device for solving wind vector problems comprising a pair of superposed members, the lower one of said members having polar coordinate-lines thereon, the upper one of said members having a transparent central portion and a 360° compass rose circumscribing said central portion, said transparent central portion having a series of radial lines and a series of concentric circular lines thereon, said circular lines being spaced at fixed intervals from each other and calibrated in wind velocities, said superposed members being mounted for rotary and translatory movement with respect to each other.

3,350,008
FLUID AMPLIFIER SHIFT REGISTER CIRCUIT
Howard W. Avery, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 28, 1966, Ser. No. 537,888
7 Claims. (Cl. 235—201)

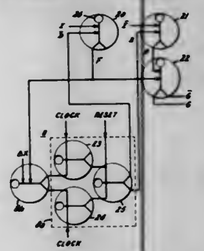


1. In a fluid-operated shift register circuit for shifting and storing information in pressurized fluid form and comprising a plurality of serially connected stages,
each stage comprising
fluid amplifier gating means having vented and nonvented power fluid receivers,
means for supplying periodic pressurized fluid timing pulses to said gating means for initiating each periodic shift operation thereof, said timing pulse means further provided with subambient pressure means for biasing said gating means between timing pulses to cause power fluid flows therein to be directed to the vented receivers regardless of any information signal applied to said gating means,
said gating means each provided with a pair of control fluid inlets positioned intermediate a power fluid inlet and said receivers, a first of said pair of control fluid inlets in fluid communication with said timing pulse and biasing means, a second of said pair of control fluid inlets supplied with pressurized fluid pulses representing digital information in binary bit from which is shifted through the shift register one bit at a time in response to each successive timing pulse, said gating means being unstable in the absence of any timing pulses, bias and information pulses applied to said pair of control fluid inlets, and
fluid amplifier flip-flop means in fluid communication with said gating means for storing the information pulses between successive timing pulses.

3,350,009
FLUID AMPLIFIER SERIAL DIGITAL ADDER LOGIC CIRCUIT
Robert K. Rose, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 28, 1966, Ser. No. 537,907
10 Claims. (Cl. 235—201)

1. In a fluid-operated logic circuit for providing a serial digital adder function and having no mechanical moving parts,
a first fluid amplifier half-adder circuit provided with four control fluid inlets supplied from four separate binary logic inputs,
a second fluid amplifier half-adder circuit connected to outputs of said first circuit,
said first and second half-adder circuits each comprising three interconnected digital-type fluid amplifier devices of the same logic type and having the same interconnections within each half-adder circuit whereby a minimum number of different logic type fluid amplifier devices may be employed in fluid-operated logic circuits such as serial digital adders and the like which include said first and second circuits, and
means for further connecting said first and second half-adder circuits and for supplying a carry signal resulting from an immediately preceding serial bit addition to said second half-adder circuit.

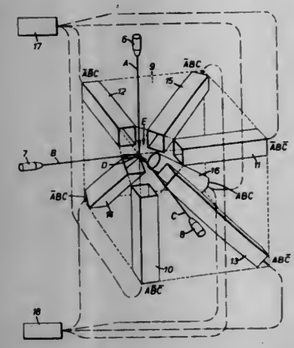
3,350,010
FLUID AMPLIFIER SERIAL DIGITAL COMPLEMENTER LOGIC CIRCUIT
Robert K. Rose, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 26, 1966, Ser. No. 545,471
12 Claims. (Cl. 235—201)



1. In a fluid-operated OR-NOR logic circuit for providing a serial digital two's complementer function and having no mechanical moving parts,
first fluid amplifier means responsive to pressurized fluid signals representing a digital number E in binary bit form to be complemented in arithmetic two's complement,
second fluid amplifier means responsive to pressurized fluid signals representing a corresponding "not" logic digital number $\overline{E}$ in binary bit form, said first and second fluid amplifier means further responsive to pressurized fluid signals representing individual bit inversion signals D, $\overline{D}$ for modifying particular bits of the digital number E,
means in communication with said first fluid amplifier means for generating the bit inversion signals D, $\overline{D}$, and
third fluid amplifier means interconnected with an output of each of said first and second fluid amplifier means for providing at the output of said third fluid amplifier means pressurized fluid signals representing the two's complement of the digital number E in binary bit form.

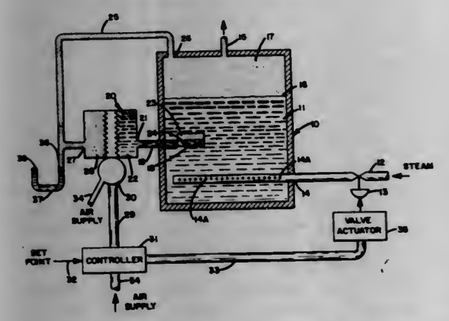
3,350,011
DATA PROCESSING APPARATUS
Michael John Tooze, London, England, assignor to Elliot Brothers (London) Limited, Lewisham, London, England, a British company
Filed May 16, 1966, Ser. No. 550,352
Claims priority, application Great Britain, May 18, 1965, 20,895/65
4 Claims. (Cl. 235—201)

1. A fluid logic element including
means defining three mutually perpendicular fluid jet paths directed towards a single point in space,
means for passing an input fluid jet along each said path whereby to produce an output fluid jet directed away from the said point in an outward direction which depends on the particular combination of said input fluid jets existing at the time, and
means defining a plurality of output channels each positioned to receive a said output fluid jet having a respective one of all possible said outward directions,



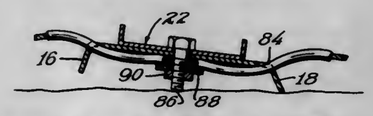
the said means defining the said output channels being a substantially cubical piece of material with one corner cut away, the cubical piece of material being positioned so that the said single point is substantially co-incident with the position previously occupied by the said one corner, three of the said output channels being defined in the cubical piece of material so as substantially to lie respectively along the three edges of the cubical piece of material whose projections meet at the said single point, three further said output channels being defined in the cubical piece of material so as substantially to lie respectively along diagonals of three faces of the cubical piece of material which diagonals have projections meeting at the said single point, and another said output channel being defined in the cubical piece of material so as substantially to lie along the diagonal through the cubical piece of material whose projection intersects the said single point.

3,350,012
BOIL CONTROL SYSTEM
J Walter Choquette, Jr., South Attleboro, and Walter H. Ridley, Foxboro, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Sept. 27, 1965, Ser. No. 490,252
5 Claims. (Cl. 236—17)



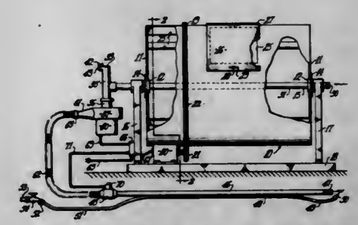
1. In an industrial process employing a boiling liquid medium in a container having a regulatable heating means therefor and having restricted means for venting vapors from said boiling liquid medium to atmosphere, control apparatus comprising:
a differential pressure measuring device having a first input responsive to a pressure related to the pressure of the vapor above the surface of said boiling liquid medium and having a second input responsive to a pressure corresponding to a temperature within said boiling liquid medium and having an output representing the difference in pressure between said first input and said second input, and
control means responsive to said output for controlling said regulatable heating means.

3,350,013
EMERGENCY TRACK
Arthur E. Bergquist, Lindstrom, Minn. 55045
Filed Nov. 22, 1965, Ser. No. 508,965
10 Claims. (Cl. 238—14)



1. A portable traction device comprising:
(a) a plurality of generally rectangular inverted U-shaped channels in spaced apart substantially parallel relation, and having the channel sides extending downwardly,
(b) each said channel having opposed slots adjacent opposite ends of said channel sides,
(c) abutment means offset inwardly from said opposed slots extending generally normal to said channel intermediate the channel sides,
(d) flexible cable means extending through said opposed slots and fixedly secured to said abutment means to connect said channels.

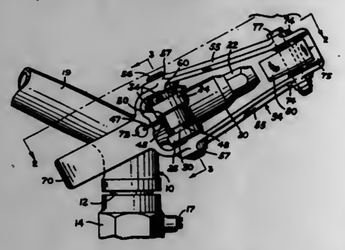
3,350,014
FLOCK-APPLYING APPARATUS
William T. Pfister, 6740 Springpark Ave., Los Angeles, Calif. 90046
Filed Oct. 21, 1965, Ser. No. 499,225
8 Claims. (Cl. 239—144)



1. In a flock-applying apparatus: a flock container drum having respective end walls, a peripheral wall and internal bucket blades thereon; an axle pipe extending through said end walls and through said drum, said pipe having externally projecting intake and discharge portions and having, within said drum, an air discharge port communicating with said intake portion and an inlet port for the reception of air-borne flock, communicating with said discharge portion, and said pipe having means disposed between said discharge and inlet ports and preventing direct communication between said ports through said pipe; means supporting the respective ends of said pipe with the pipe extending horizontally and providing an axle on which said drum is rotatably mounted; means for rotating said drum so as to cause a body of flock therein to be carried

upwardly by said bucket blades and dropped for free fall through the central area thereof; a blower having an inlet coupled to the discharge end of said axle tube for applying suction thereto so as to draw a stream of air-borne flock therethrough and having a discharge outlet for discharging said air-borne flock; a flexible hose coupled to said blower having one end coupled to said blower outlet; and a flock tube coupled to the other end of said flexible hose for delivering said air-borne flock in a stream.

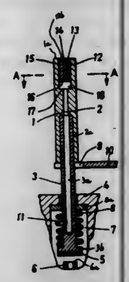
3,350,015
ROTARY IMPULSE SPRINKLER
Anton R. J. Friedmann and Ralph H. Eby, Troy, Ohio, assignors to Ashley F. Ward, Inc., doing business as The Skinner Irrigation Company, a corporation of Ohio
Filed Dec. 16, 1965, Ser. No. 514,316
6 Claims. (Cl. 239—230)



1. In an impulse sprinkler including a rotatably supported body carrying at least one nozzle for distributing a stream of water over a predetermined area, the improvement for reducing wear and increasing the durability of the sprinkler comprising lug means projecting laterally from said body, an impact arm including a pair of vertically spaced support members, means for pivotally mounting said arm on said lug means, a deflector member, means pivotally mounting said deflector member on said arm between said support members in a position where said deflector member intercepts the stream from said nozzle to produce a reaction force for pivoting said arm and for distributing said force uniformly through said support members to said lug means, and spring means conecting said arm to said body for opposing said reaction force and for pivoting said arm back to a position where said deflector member intercepts said stream to produce successive impacts for rotating said body.

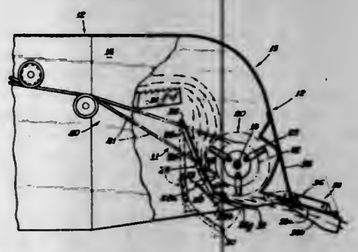
3,350,016
FRICTIONALLY HELD BURNER PLUG INSERT FOR GAS LIGHTERS
Peter Rabe, Muhlheim am Main, and Rolf Emecke, Offenbach-Burgel, Germany, assignors to Heinrich Maltner G.m.b.H., Offenbach am Main, Germany
Filed June 16, 1965, Ser. No. 472,619
Claims priority, application Germany, July 25, 1964, M 61,877
10 Claims. (Cl. 239—552)

1. A burner for gas lighters, comprising a conduit provided with a gas-conveying bore having a first portion of smaller cross-sectional area and an outlet portion of larger cross-sectional area; and a plug received in said outlet portion and having a gas-discharging passage registering with the first portion of said bore, said plug defining with the surrounding portion of said conduit at least one gas-discharging channel and being spaced from the first portion of said bore so that the innermost zone of said outlet portion forms a chamber through which fuel entering from said first portion flows into said passage and into said channel, the inner end of said gas-discharging channel communicating with said chamber being laterally offset from said first portion of said bore so that the gas which flows from said first portion of said bore into said channel is compelled to change its direc-



tion of flow, whereby the speed of the gas issuing from said channel is reduced and is substantially below the speed of gas issuing from said passage.

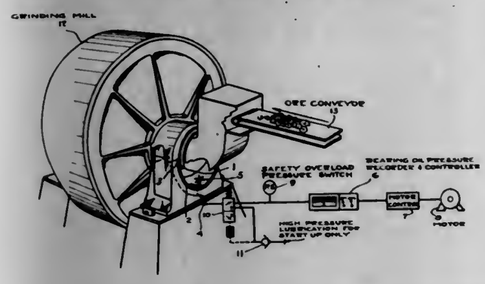
3,350,017
STRAW CHOPPER AND SPREADER
Elvin L. Howell, Bettendorf, and Charles M. Hyman, Davenport, Iowa, assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,653
4 Claims. (Cl. 239—660)



1. A straw chopper and spreader attachment for a combine, comprising
(a) a supporting structure including a housing having opposed sidewalls interconnected by a generally arcuate top and rear end wall, and a bottom terminating in a discharge outlet adjacent said end wall,
(b) a chopper rotor having a generally horizontal central shaft extending transversely of said housing and supported adjacent its opposed end portions on said sidewalls for rotation about said axis,
(c) said rotor comprising a plurality of chopper blades mounted thereon for rotation therewith, said blades extending radially of said shaft and being disposed thereon in longitudinally and circumferentially spaced relation with one another,
(d) a knife assembly comprising
a second shaft having a generally horizontal longitudinal axis transversely of said housing in parallel spaced relation with the shaft of said rotor, and having its opposed end portions supported on said sidewalls for relative rotation,
a generally arcuate knife supporting member mounted adjacent one end thereof on said second shaft for pivotal movement in a generally vertical plane,
said knife supporting members terminating in a straw deflector having a trailing edge having ends adjacent said side walls, said trailing edge being spaced further from said second shaft at its mid-point than at its ends,

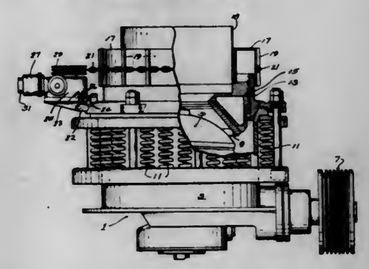
said knife supporting member being adjustable to selected operative and inoperative positions in relation to said blades,
a plurality of knives mounted on said member for pivotal movement about a generally horizontal axis disposed in predetermined spaced relation with said second shaft, said knives being spring biased in cutting position with their cutting edges generally at right angles to said knife supporting member,
said second shaft, said knife supporting member and said knives being so conformed and arranged to operate that upon rotation of said second shaft about its said axis in one direction to a predetermined position of adjustment said knives are supported in close interfitting cutting relation with said blades, and upon rotation of said second shaft in an opposite direction said knives are removed correspondingly in relation to said blades,
means on said rotor shaft in operative communication with the power system of the combine for rotating said rotor shaft at predetermined speed under operator control,
said rotor and said knife assembly being operatively positioned in the discharge path of straw issuing from the combine whereby upon said rotor shaft being rotated at appropriate speed and said knives being supported in operative cutting relation with said blades, the straw will be subjected to cooperative cutting action by the cutting edges of said blades and said knives and passed therebetween and discharged through said outlet.

3,350,018
GRINDING MILL CONTROL OR THE LIKE
Thomas E. Harris, Valois, Point Claire, and Samuel J. Hughes, Beaconsfield, Quebec, Canada, assignors to Dominion Engineering Works Limited
Filed Dec. 16, 1963, Ser. No. 330,789
3 Claims. (Cl. 241—34)



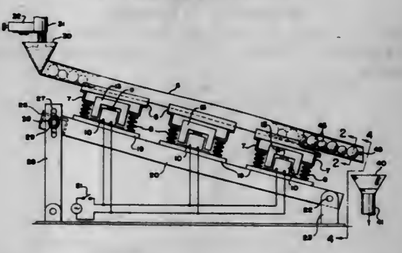
1. In a grinding mill having a grinding drum rotatably supported by at least one journal bearing, including a lower half plain bearing in supporting relation with said journal, means to provide lubrciant to said bearing at the pressure zone thereof to provide a residual high-pressure lubricant support film in said pressure zone in supporting relation with said grinding drum journal, drum loading means including a conveyor for transferring material to said drum for grinding reduction therein, and control means for controlling the operation of said mill, the improvement comprising; pressure sensing means connected with said bearing pressure zone adjacent a position of maximum film pressure, to sense the static pressure generated by rotation of said journal on said film, and output means connecting said pressure sensing means with said mill control means in controlling relation therewith, whereby operation of said mill is controlled in accordance with variation in the pressure of said high pressure support film.

3,350,019
ADJUSTING MEANS FOR GYRATORY CRUSHER BOWL
Fred Curtis Archer, Whitefish Bay, and Ronald Bruce De Diemar and Le Roy Schuman, Milwaukee, Wis., assignors to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Filed Dec. 7, 1964, Ser. No. 416,318
11 Claims. (Cl. 241—37)



8. In a crusher having a frame, a gyratory crushing head mounted on the frame and adjustable by rotation to form an adjustable crushing gap with the crushing head; means to rotate the crushing bowl to adjust the gap comprising:
a motor mounted on the frame;
means coupling said motor with the crushing bowl to rotate the same; and
means responsive to the load imposed upon the motor and reacting through said coupling means for automatically interrupting motor operation while maintaining the coupling means under tension upon occurrence of a predetermined overload.

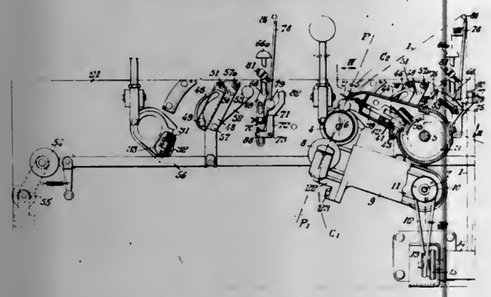
3,350,020
VIBRATORY MILL
James M. W. Chamberlain, Akron, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts
Filed May 29, 1964, Ser. No. 371,241
6 Claims. (Cl. 241—137)



1. A vibratory mill comprising at least one sloping, substantially straight section of tubular conduit of substantial length; a plurality of grinding media serially aligned within said conduit, each media being in contact with its adjacent media, said media extending substantially the entire length of said conduit, and each having a circular cross-section at least in the plane perpendicular to the major axis of said conduit, the diameters of said circular cross-sections being smaller than the internal diameter of said conduit yet large enough to maintain the serial alignment of grinding media; and means for vibrating said

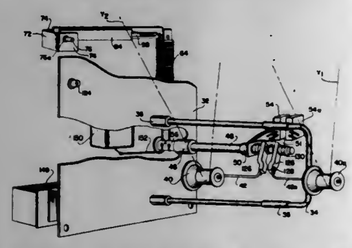
conduit, thereby to bring said grinding media and the interior wall of said conduit into quickly repeated contacts with each other.

3,350,021
THREAD WINDING MACHINE
Edmund Marciniak, Vals-les-Bains, France, assignor to Societe d'Etudes et de Recherches de Materiel Textiles (Sermatex), Lyon, Rhone, France
Filed Jan. 13, 1965, Ser. No. 425,223
Claims priority, application France, Jan. 16, 1964, 960,578
7 Claims. (Cl. 242—18)



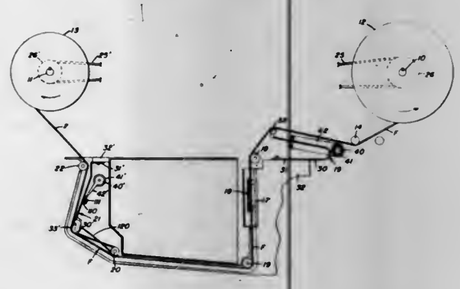
1. In a machine for winding textile threads onto a bobbin, which machine comprises a thread guide, a rotating element driving said thread guide in an alternating movement in the direction of the longitudinal axis of a bobbin, a first spindle upon which said rotating element is mounted, a second spindle for receiving a bobbin, said spindles being coupled in such a way that the rotation of one of said spindles assures the rotation of the other, and driving means for actuating said bobbin, the improvement which consists in that said driving means comprise a first mechanism for driving said bobbin at a constant angular velocity, a second mechanism for driving the body formed by said bobbin and the thread wound thereon at a constant peripheral velocity, said second mechanism including a friction drive roller, and coupling means for alternately connecting said first mechanism to one of said spindles or applying said roller against the periphery of said body.

3,350,022
WINDING MACHINE
William M. Bense, Barrington, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Jan. 17, 1966, Ser. No. 521,092
10 Claims. (Cl. 242—45)



1. A winding machine for winding a plurality of advancing strands of yarn comprising, a rotatable take-up unit, means for rotating said unit to wind the strands thereon, traverse means operable to move the strands to and fro of said unit during winding thereon, tension means for imparting a predetermined value of tension to each of the strands during winding, said tension value being correlated to the number of strands being wound, and control means, operable in response to interruption of any of said strands for adjusting the tension output of said tension means correlative to the remaining winding strands of yarn to maintain the tension in said remaining strands at said predetermined value.

3,350,023
SPROCKETLESS MOTION PICTURE PROJECTOR
John J. Bundschuh, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 6, 1965, Ser. No. 469,500
8 Claims. (Cl. 242—55.11)



1. In a sprocketless motion picture projector having a supply spindle on which a supply reel of film is adapted to be mounted; means normally acting on said spindle to resist delivery of film from a supply reel mounted on the spindle; a projection gate spaced ahead of said supply spindle; intermittently operated film feeding member adjacent said gate for drawing film directly from said reel and intermittently advancing it through said gate at a predetermined frequency; the combination comprising:

(a) a movable snubber member adapted to engage one surface of the reach of film extending between said supply reel and said intermittent film feeding member;

(b) means for mounting said snubber for movement transversely of the reach of film it engages from,

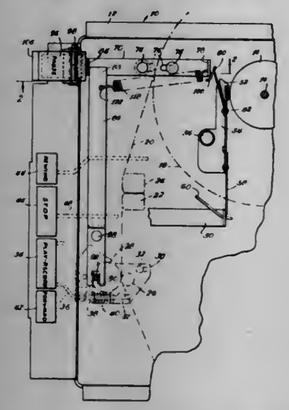
(1) a first position, wherein said snubber forms a loop of film between said supply reel and said intermittent film feeding member equal at least to one frame length of the film when said film feeding member is not advancing film to

(2) a second position, to which it is moved by the reach of film it engages in response to operation of said intermittent film feeding member to advance film through said gate by one frame and to correspondingly foreshorten said film loop,

(c) a spring normally urging said snubber to said first position and into engagement with said one surface of the film, said spring having a predetermined stiffness whereby said snubber normally oscillates freely at a normal given frequency, corresponding to the frequency of the intermittent film feeding member, over a path of given length corresponding to the advancement of one frame length of said film, so long as the variations in tension in that portion of said supply reel remain normal and within a given range; and

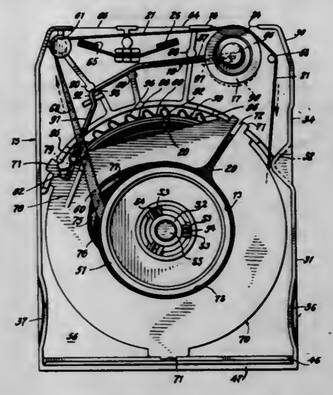
(d) means for increasing the resistance to movement of said snubber in response to an abnormal transient change in tension in that portion of said reach of film extending between said snubber and said reel causing an abnormal frequency of oscillation of said snubber to be superimposed upon said normal frequency of oscillation, to rapidly return said snubber to said normal frequency of oscillation.

3,350,024
TAPE RECORDER
Marion R. Karecki, St. Joseph, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,872
5 Claims. (Cl. 242—55.12)



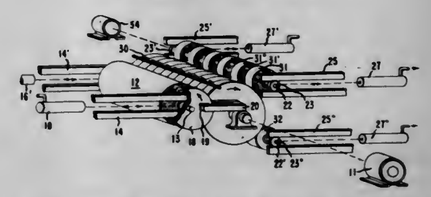
1. In a tape machine having a releasable tape drive effecting mechanism for moving tape off a rotatable reel across an information translating head, a reel brake for inhibiting rotation of the reel, a stop member actuatable to set the reel brake, and an operating member actuatable for setting the tape drive effecting mechanism and releasing the reel brake, the combination therewith of pause control means for temporarily halting the tape independently of the stop operating members, said pause control means including a first member mounted for longitudinal movement into and out of a position where it sets the reel brake independently of the setting thereof by said stop and operating members, a second member operatively associated with said first member to release the tape drive effecting mechanism when the first member is moved into said position, a further member mounted to turn about an axis disposed transversely to the direction of said longitudinal movements of the first member, said further member including an axially offset part having a first portion which normally engages the first member, and a second portion of longer radius which is moved into engagement with said first member by rotation of said further member on its axis through a limited arc in one direction so as to move the first member into its reel brake setting position, said engagement of the portion of longer radius being obtained to one side of a center line including said axis about which said rotatable member turns, said further member having an abutment angularly displaced from said part, and a stop engaged by said abutment of the further member when it is turned so as to locate the portion of longer radius in engagement with the first member, and spring means tensioned by said movement of the first member into its brake setting position for urging said first member against said part of the further member and thereby to hold said further member against the stop and releasably lock the reel brake and hold the tape drive effecting mechanism in released condition, said spring means serving to return the first and second members to their normal position on turning of the further member in the opposite direction to return its part to the other side of said center line.

3,350,025
MAGNETIC TAPE CARTRIDGE
William P. Lear, Wichita, Kans., assignor to Lear Jet Industries, Inc., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,083
1 Claim. (Cl. 242—55.19)



In a cartridge containing a rotatable spool having a serrated periphery for a reel of magnetic tape in endless array: a pinch roller about which the loop portion of the tape is passed for being transported when held pressed against a rotating capstan, a member with one end section rotatably mounting said pinch roller for operative presentation to the capstan when the cartridge is positioned for play, means pivotally mounting said member in the cartridge with its other end portion engageable with said serrations on the rim of said spool, said other member end portion being normally biased into engagement with the spool to hold it against rotation when the cartridge is not in play position and displaced to release said spool engagement when the pinch roller is in the play mode.

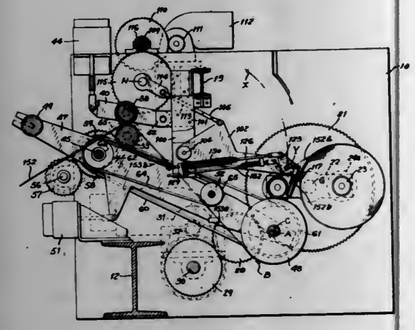
3,350,026
WEB SLITTING AND REWIND MACHINE
Stephen Earl Amos, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 15, 1966, Ser. No. 534,389
2 Claims. (Cl. 242—56.9)



1. In a continuous web slitting and rewind machine, the combination of a transport roller mounted for rotation on a fixed horizontal axis, means for driving said roller, and unwind mandrel adapted to support a web supply roll the axis of said mandrel being parallel to the axis of said roller and mounted for straight line movement toward and away from said roller, means for constantly urging said mandrel toward said roller whereby the web supply roll is maintained in contact with said roller, means for retarding the rotation of said mandrel, at least one driven rewind mandrel adapted to support a plurality of rolls of slit web on cylindrical cores, the axis of said rewind mandrel being parallel to the axis of said roller and mounted for straight line movement toward and away from said roller, means for constantly urging

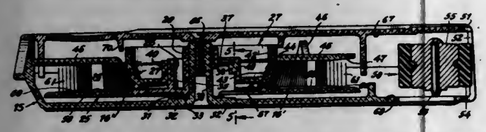
said rewind mandrel toward said roller, means for driving said rewind mandrel at constant torque, a plurality of cylindrical slit roll cores mounted in spaced relationship on said rewind mandrel, and a resilient bushing between each core and the rewind mandrel in frictional driving contact with the core and the rewind mandrel.

3,350,027
FLYING TRANSFER WINDER
Edward F. Egan, Martinsville, N.J., assignor to Frank W. Egan & Company, Somerville, N.J., a corporation of New Jersey
Filed May 20, 1966, Ser. No. 554,634
18 Claims. (Cl. 242—58.4)



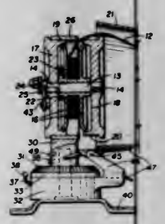
18. For use in a web winding machine wherein a web is wound partially around a core supported in a frame, a tucking knife for tucking and severing a portion of the web between said core and a wound roll, comprising a knife holder adapted to be pivotally mounted on said frame and having two opposite sides one of which is approximately flat and meets the other in a sharply rounded narrow nose portion, a knife blade mounted on and movable along said one side of said knife holder adjacent said nose portion and normally disposed inwardly of said nose portion, means for actuating said knife holder alternately in opposite directions to move said nose first to contact said portion of the web and press it under tension partially around the core to tuck the web and then to move said knife holder away from said portion of the web, respectively, and means for moving the blade with a snap action beyond said nose portion and into contact with said portion of the web to sever said portion of the web while it is so pressed under tension and while it is being tucked.

3,350,028
SPOOL CONSTRUCTION FOR MAGNETIC TAPE
William P. Lear, Wichita, Kans., assignor to Lear Jet Industries, Inc., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,326
2 Claims. (Cl. 242—71.8)



1. A spool for operatively supporting a reel of magnetic tape of endless array in a cartridge comprising a base of substantially disc form with a central core projecting at one side thereof, said core being of cylindrical shape and containing a plurality of grip means spaced along its outer face, and a hub adapted to be fitted about said core and about which the reel is positioned, said hub having a plurality of pins projecting from its interior region individually engageable and disengageable with said grip means, each of said grip means being integrally formed in said core with respective pairs of elements constituting fingers that are spaced apart to form a gap which is normally less than the width of said pins and normally biased toward each other, whereby insertion of said hub about said core seats said pins between respective biased fingers of said pairs, to firmly grip said hub in operative relation on the spool.

3,350,029
PIVOTED SPINNING REEL
Aubrey D. Isbell, 1613 Garfield, Loveland, Colo. 80537
Filed Dec. 22, 1965, Ser. No. 515,673
7 Claims. (Cl. 242—84.2)



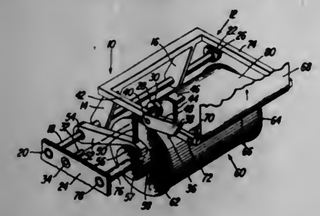
1. A spinning reel comprising:
(a) a line spool positioned between two circular side elements;
(b) a ring band concentrically encircling and frictionally engaging said side elements;
(c) a stationary vertical pivot element; and
(d) a pedestal element carrying said ring band, said pedestal element with said ring band being pivotally mounted upon said pivot element to enable either of said side elements to be positioned forwardly so that a line may be spun forwardly from said spool about either of said circular side elements as desired.

3,350,030
FIBERGLASS REINFORCED TEXTILE BOBBIN
Alfred J. Green, Yorklyn, Del., assignor to NVF Company, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,375
2 Claims. (Cl. 242—118.32)



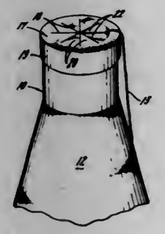
1. A textile bobbin comprising a generally tubular core of compressed, resin-impregnated fibrous material including a strengthening layer of fiberglass strands, a portion of the fiberglass strands being helically arranged to impart lateral strength and another portion of the fiberglass strands being helically arranged to impart longitudinal strength to the bobbin, said fiberglass strands arranged to impart lateral strength being positioned at a relatively low helix angle of about 1° to 20°, said fiberglass strands arranged to impart longitudinal strength being positioned at a relatively high helix angle of about 50° to 70°, said layer of fiberglass strands being concentrically sandwiched between inner and outer layers of fibrous material, a major portion of said fiberglass strands being positioned at said low helix angle, said high helix angle strands being sandwiched between low helix angle strands, and textile thread under tension being wound on said core.

3,350,031
TRANSMITTING APPARATUS
Paul E. Ireland, Denver, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,162
6 Claims. (Cl. 242—156.2)



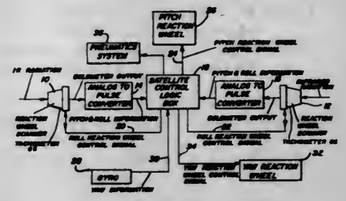
1. An apparatus to maintain a constant tension in a moving flexible medium being unspooled from a rotatable spool, comprising a roller in contact with a portion of the flexible medium that has been unspooled, a link operably connected to support the roller for arcuate movement about a stationary pivot means as the unspooling of the flexible medium takes place, an arm pivotedly connected to the link, a stationary stub shaft, a rotatable fulcrum mounted for rotation on the stub shaft, a first spring extending between a stationary member and the arm to retain the arm in slidable contact with the rotatable fulcrum as the arcuate movement of the link takes place, a brake arm to apply friction to the spool, and a second spring extending between the link and the brake arm to alter the amount of the friction that the brake arm applies to the end of the spool as the arcuate movement of the link takes place.

3,350,032
BOBBIN WITH TUCKED-IN THREAD RETAINER
Richard A. Schewe, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Jan. 24, 1966, Ser. No. 522,679
6 Claims. (Cl. 242—164)



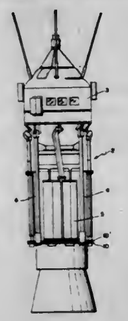
1. The comination of, a tubular bobbin having a mass of thread wound thereon with an unwound length of the thread extending upwardly and laterally across one side of the bobbin nose and then downwardly into the hole in the bobbin, and an axially flexible and resilient member secured to said nose over said hole and having opposed edges gripping said thread but relatively movable to release the thread in response to an axial pressure differential directed outwardly from the bobbin.

3,350,033
REACTION WHEEL SCANNER
Gerald I. Goldberg, Silver Spring, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 21, 1965, Ser. No. 500,435
26 Claims. (Cl. 244—1)



1. Apparatus for orienting a free body about pitch, roll and yaw axes which includes means for deriving pitch and roll error signals, means for deriving a yaw error signal, control means for receiving said error signals to provide pitch, roll and yaw correction signals, and individual means each for receiving a correction signal to reorient said body about its respective axis, said means for deriving pitch and roll error signals and for reorienting said body about its roll axis comprising the improvement of a reaction wheel scanner means wherein said scanner means is concentric with said reaction wheel.

3,350,034
SATELLITE APPENDAGE TIE-DOWN CORD
Jesse M. Madey, Hyattsville, and Elmer W. Travis, Clarksville, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 23, 1965, Ser. No. 504,266
8 Claims. (Cl. 244—1)

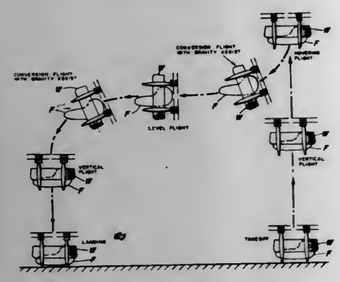


1. A tie-down system for restraining various appendages of a space vehicle against the surface of a rocket booster attached thereto, comprising: an elastic cord of sufficient length to fit around the circumference of said booster, a woven, braided, Teflon-treated fiberglass covering adapted to overlie said elastic cord and being slightly longer in length than said elastic cord when said cord is in its unloaded condition, and a retaining means for joining the ends of said elastic cord and the ends of said fiberglass covering into a composite joint such that said outer fiberglass covering is under conditions of no load, while said elastic cord is pre-loaded.

7. A tie-down means comprising a cable having an elastic inner member and an outer temperature-resistant, essentially non-elastic covering member surrounding said inner member and extending slightly beyond the length of said inner member when said inner member is in its

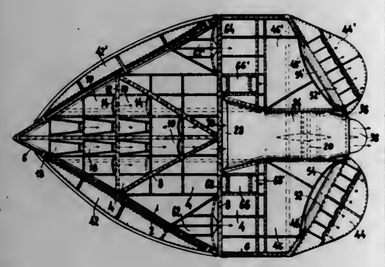
unloaded condition; and a retaining means for tightly gripping the ends of said cable and forming a joint such that said inner member is pre-loaded and said covering is under a no-load condition.

3,350,035
VTOL WITH CYLINDRICAL WING
Ernest W. Schlieben, 3 Arborlea Ave., Morrisville, Pa. 19067
Filed Aug. 19, 1964, Ser. No. 390,762
24 Claims. (Cl. 244—7)



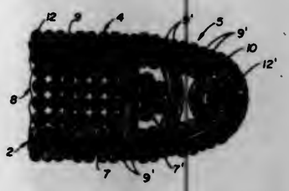
7. A VTOL aircraft comprising a lift wing member having a hollow, substantially cylindraceous lift body including a trailing edge, rotary means for propelling said member, and means for supporting said propelling means at a distance behind said member trailing edge to enable said propelling means to effect a desired degree of automatic attitude stabilization of said lift wing member, and at least one fuselage secured to said lift wing member.

3,350,036
HIGH-LIFT AIRCRAFT
Pierre Marcel Lemoigne, 103 Ave. Verdier, Montrouge, Seine, France
Filed Apr. 23, 1965, Ser. No. 450,403
Claims priority, application France, May 4, 1964, 973,195
8 Claims. (Cl. 244—35)



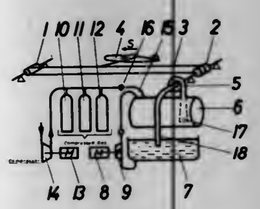
1. An aircraft having at least one fixed bearing surface having a topside and an underside, a front facing duct having an entrance and a rearwrdly directed exit, at least one engine which draws in air at the entrance of the front-facing duct and which delivers air at high speed through the rearwardly directed exit of the duct, at least part of the bearing surface being formed with high-lift vents having inlets and outlets, the inlet of the vent opening on to the underside of the bearing surface and the outlet opening on to the topside of the bearing surface and being directed substantially rearwardly of the aircraft, and the entrance of the duct being disposed above the topside of the bearing surface and substantially at the level of such topside behind the vent outlets, so that when the engine is in operation its intake of air produces a forced air flow through the vents.

3,350,037
AIRCRAFT LAUNCHING AND ARRESTING GEAR
Charles S. Thompson, Burlington, N.J., and Russell J. Neff, Park Ridge, Ill., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed June 3, 1965, Ser. No. 461,123
7 Claims. (Cl. 244—63)



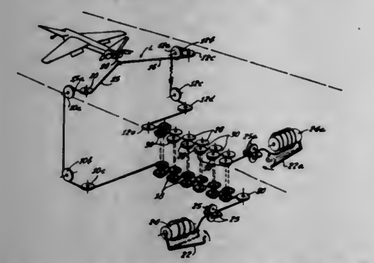
1. A fabric purchase tape considerably wider than it is thick including a linear body portion having a majority of longitudinally to transversely extending strands comprising
load bearing strands extending longitudinally throughout the tape for transmitting forces therethrough and
transverse strands extending across the body portion laterally beyond the load bearing strands to define parallel marginal edges on opposite sides of the body portion and
a woven bead formed in each marginal edge composed of
a plurality of edge warp strands interwoven longitudinally with the marginal edge portions of said transverse strands in a ratio of longitudinal to transverse strands sufficiently high to form a hardened bead for protecting said load bearing strands.

3,350,038
AIRCRAFT CATAPULT SYSTEM
Georg Oberlander, 22 Parkstrasse, 506 Bensberg, Germany
Filed Aug. 6, 1965, Ser. No. 477,911
Claims priority, application Germany, Aug. 8, 1964, K 53,703
9 Claims. (Cl. 244—63)



1. An aircraft catapult system, which includes: a launch cable adapted to be connected to an aircraft to be catapulted, means supporting and guiding said launch cable, a liquid operable turbine having inlet means and outlet means and being drivingly connectable to said cable supporting and guiding means for accelerating said cable, liquid storage and supply means connectable to said inlet means, and means for creating a desired gas pressure in said liquid storage and supply means.

3,350,039
CLUTCHING MEANS FOR LAUNCHING AND ARRESTING AIRCRAFT AND THE LIKE
Wilbur D. Crater, 1867 Mandeville Canyon Road, Los Angeles, Calif. 90049
Filed Oct. 18, 1965, Ser. No. 497,239
21 Claims. (Cl. 244—110)



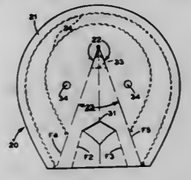
1. In a system of the general character described in which a flexible elongated member in the form of a cable or the like is engaged by a mass for transfer of energy by the cable between the mass and an energy-controlling mechanism, the improvement for clutch action between the cable and the mechanism, comprising:
said mechanism having a series of rotary members with energy-controlling means operatively connected to individual rotary members of the series thereto;
said cable being wrapped around the rotary members in sequence for engaging the rotary members solely by friction for friction clutch action in sequence among the rotary members with initial slippage of the cable at the rotary members in sequence, with stretching of the cable and with changes in tension of the cable progressively by stages through the sequence for smooth rapid transition from a state of disparity between the velocity of the mass and the speed of operation of the mechanism to a state of correspondence between the two; and
the inclusion of cable storage means to feed cable to the series of rotary members without involving the inertial resistance by the mass of stored cable.

3,350,040
HIGH SPEED DECELERATION DEVICE
Leland W. Sims, Glenview, Ill., and Raymond O. Fredette, Birmingham, Ala., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 10, 1965, Ser. No. 486,574
10 Claims. (Cl. 244—145)



1. A supersonic deceleration device comprising a self-inflating flexible textile canopy having a flat porous roof portion, and a downwardly converging conical frustum shaped, substantially nonporous skirt portion converging downwardly therefrom at an angle not less than .5 degree and not more than 20 degrees to the descent axis of the canopy, and formed with a ratio of air outlet area through the roof portion to air inlet area into the nonporous skirt portion between 0.20 and 0.40, and load suspension lines converging downwardly from the skirt portion to the descent axis having a length substantially twice the diameter of the roof portion.

3,350,041
KITE CONSTRUCTION
William W. English, 1023 Hulls Highway, Southport, Conn. 06490
Filed Oct. 21, 1965, Ser. No. 499,394
16 Claims. (Cl. 244—153)

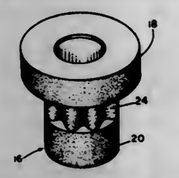


1. A kite construction comprising:
a sheet of light-weight material folded to define a substantially oblique conical airfoil,
stiffening means applied to said airfoil for resiliently maintaining the conical contours of said conical airfoil,
said stiffening means circumscribing the circumference of said conical airfoil in parallel planes to the base of said conical airfoil,
said stiffening means including normally straight pieces of flexible wires having angular bent end portions, said wires being applied to said blank,
and said wires being disposed so that in the folded position of said blank each of said wires lies in a plane and each of the respective planes lies parallel to the base of said oblique cone,
means for detachably securing the bent end portions of said wires in the folded position of said blank whereby the inherent resiliency of said wires maintains the self-stabilizing effect of the airfoil defined in all directions about its apex,
said latter means including a tubular link through which the respective end portions of the wires are threaded so that the respective ends of said wires are maintained secured in criss-cross relationship,
and means formed adjacent the vertex of said airfoil defining a single point of attachment for securing thereto a flying string.

3,350,042
CORRUGATED RESILIENT MOUNT
Ross E. Stewart, Norwalk, Ohio, and Robert T. Drake, Orchard Lake, Mich., assignors to Clevite Corporation, a corporation of Ohio
Filed Oct. 11, 1965, Ser. No. 494,412
10 Claims. (Cl. 248—22)

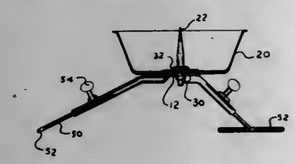
1. A corrugated resilient mounting securing together spaced support and supported structures having aligned apertures, comprising: a tubular body of resilient material extending through the aperture of said supported structure and having at one end thereof a radially projecting flange disposed in bearing relation to the adjacent surface of the support structure and at the other end a tubular extension, said body having a substantially uniform inside diameter and providing between its ends a circumferentially corrugated portion having a plurality

of peripherally located axially extending grooves, said portion having a maximum diameter substantially not greater than the diameter of said apertures and a minimum diameter sufficient for at least maintaining structural



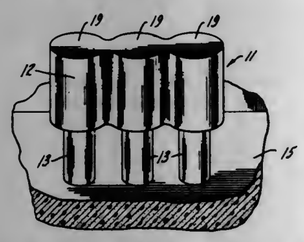
continuity, a bolt extending through said apertures, and securing means associated with said bolt for axially squeezing the ends of the resilient body to radially expand said extension to provide a rebound snubber element.

3,350,043
TREE STAND
Garold E. Apple, R.R. 4, Plymouth, Ind. 46563
Filed July 21, 1965, Ser. No. 473,732
5 Claims. (Cl. 248—48)



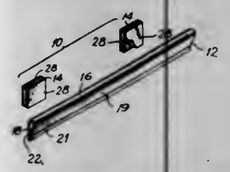
1. A stand for Christmas trees and the like, comprising a disc-shaped base with a center hole, a stud extending through said hole and having an upper pointed and threaded end and a lower threaded end, a collar between said ends on the upper side of said base, a water container having a bottom disposed between said collar and base, a seal between said container bottom and collar, three generally radially positioned legs extending angularly downwardly therefrom, each leg having a tubular section connected to said base and a lower section telescopically arranged with respect to said upper section, a cross member on the lower end of said lower section, and a set screw in said tubular section for releasably holding said sections in adjusted positions with respect to one another against both axial and rotative motion.

3,350,044
CONDUIT POSITIONING DEVICE
Richard F. Zulauf, Sycamore, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,891
2 Claims. (Cl. 248—49)



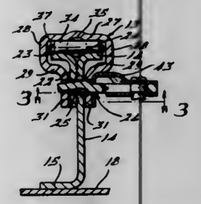
1. A unit for positioning a plurality of conduits in spaced relationship to one another including a body having a plurality of passageways formed therein, each passageway adapted to receive a conduit, said passageways extending generally parallel to and in spaced relationship to one another, each passageway being of circular cross-section formed by a continuously curved wall, a plurality of ribs connected to each curved wall with each rib forming an angle with a radius through the line of contact of the rib and the curved wall with all the ribs turned to substantially the same degree in the same direction relative to the curved wall, said ribs being flexible and resilient in order to yield in a direction away from the axis of their passageway to accommodate conduits of various outside diameters.

3,350,045
ARTICLE HOLDER
Lawrence S. Mayers, 281 Garth Road, Scarsdale, N.Y. 10583
Filed Aug. 17, 1966, Ser. No. 572,933
8 Claims. (Cl. 248—205)



1. An article holder to be attached to a surface, comprising an elongated base and a pair of flexible arms extending downwardly from opposite longitudinal edges of said base for the length of said base and defining a bight therebetween, at least one of said arms directed inwardly towards the other arm, so that said arms yieldingly abut along a line remote from said bight, and surface attaching means carried by the rear surface for attachment to said surface, said arms being separable in response to insertion of said article into said bight for applying a pressure to opposite sides of said article so as to hold said article between said arms hanging downwardly, said applied pressure increasing in proportion to the thickness of said article.

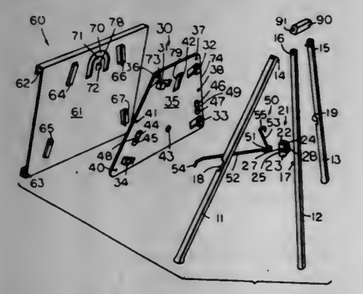
3,350,046
SEAT SLIDE ASSEMBLY FOR AUTOMOTIVE VEHICLES
Joseph R. Kirk, Jackson, Mich., assignor to Hancock Industries, Inc., Jackson, Mich., a corporation of Michigan
Filed Dec. 28, 1965, Ser. No. 517,049
11 Claims. (Cl. 248—430)



1. In an automotive seat slide assembly, an elongated track having a lower portion secured to the vehicle floor, a central portion extending upwardly from said lower portion, and a track portion extending laterally from the upper end of said central portion, an elongated slide having a central web portion above the track portion of said track, a pair of sides extending downwardly from said central portion past the track portion of said track, and

lower portions extending downwardly from said sides alongside the central portion of said track, a plurality of apertured portions in the central portion of said track, toward the rear end thereof, each of said apertured portions being entirely surrounded by the material constituting said central track portion, a latch mounted on said slide for lateral movement with respect thereto between latching and unlatching positions, and a pair of apertured portions in and entirely surrounded by the material constituting the lower portions of said slide, said last-mentioned apertured portions being aligned with each other and with the movement of said latch between its two positions, and further being at the same level as said track apertured portions with the lower ends of said slide apertured portions being closely adjacent the underside of said latch and the upper ends of said track apertured portions being closely adjacent the top of said latch, whereby said latch may be received by said slide apertured portions and any track apertured portion with which said slide apertured portions are aligned, and when so received will present two shear areas between said lower slide portions and said central track portion to resist upward movement of said slide with respect to said track.

3,350,047
PICTURE FRAME EASEL
Lars Helge Valdemar Anderson, Cranston, R.I., assignor to Anson, Incorporated, Providence, R.I., a corporation of Rhode Island
Filed Oct. 20, 1965, Ser. No. 498,827
4 Claims. (Cl. 248—464)



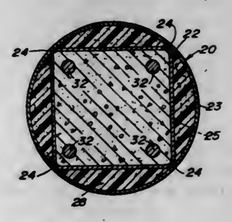
1. An easel comprising a plurality of legs, means uniting said plurality of legs in pivotal relationship, a sliding member slidingly mounted upon one of said legs, a brace plate, means fastening said brace plate to two of said plurality of legs, a bracing arm, having two ends, pivotally mounted to said sliding member, and means pivotally fastening said two ends to said brace plate, a display shelf consisting of a body member, means removably securing said display shelf to said brace plate, detent means between said display shelf and said brace plate locking said display shelf to said brace plate, and one of said plurality of legs pivotally engaging said detent means to unlock said detent means.

3,350,048
EXTERNAL REAR-VIEW MIRROR FOR VEHICLES
Yorck Joachim Talbot, 80 Ebersstrasse, Berlin 2, Germany
Filed May 14, 1964, Ser. No. 367,471
Claims priority, application Germany, May 15, 1963, T 23,994
15 Claims. (Cl. 248—481)

1. An external rear vision mirror for a motor vehicle having a bodywork, comprising a foot adapted for connection to the vehicle bodywork, a housing member resembling a flattened body of rotation; carried by said foot and including an opening of non-circular outline and a mirror head carrying a mirror and having a head portion displaceably positioned in said opening of said member, said mirror head having a given height and constituting a portion of a three dimensional body having a radius of curvature in the vertical direction which is approximately equal to one half of said height and a radius of curvature in the horizontal direction which is greater than the radius of curvature in the vertical direction.



3,350,049
CONCRETE FORMS
Frank D. Reiland, Chicago, Ill., assignor to Gateway Erectors, Inc., Chicago, Ill., a corporation of Delaware
Original application Apr. 8, 1964, Ser. No. 358,181, now Patent No. 3,301,926, dated Jan. 31, 1967. Divided and this application Oct. 5, 1966, Ser. No. 590,174
4 Claims. (Cl. 249—48)



1. A self-braced single-use form assembly for molding a polygonal concrete column having a limited number of approximately flat sides angularly adjoining each other, and requiring destruction of the form following use comprising:

an elongated unfilled hollow form member, formed from a thin, inexpensive, readily destructible laminated material and having an internal cross-sectional configuration conforming to the required polygonal column configuration and into the interior of which concrete is to be poured;

a tubular support shell having a configuration substantially different from said form member and formed from a thin, inexpensive, readily destructible laminated material, mounted about said form member in encompassing relation thereto, with an asymmetrical space between the exterior of the form member and the interior of the shell;

and bracing material filling the space between the form member and the shell to afford a continuous and complete density between the form member and the shell to maintain the desired cross-sectional configuration for the molded column during the time concrete is being poured, tending to bulge said form member from all sides, said bracing material consisting entirely of foamed plastic fully complemental to the space which it occupies.

3,350,050

EXPENDABLE MOLD WITH MEANS TO RELEASE TRAPPED AIR AND PREVENT ESCAPE OF SEALANT

George S. Buczala, 306 Church Road, Abington Township, Montgomery County, Pa. 19001; Walter E. Rosengarten, Jr., 2895 Gradyville Road, Broomall, Pa. 19008; and Lynn L. Copeland, Philadelphia, Pa.; said Copeland assignor to said Buczala and said Rosengarten, jointly

Original application Mar. 27, 1963, Ser. No. 268,388, now Patent No. 3,260,280, dated July 12, 1966. Divided and this application Mar. 24, 1966, Ser. No. 554,224

6 Claims. (Cl. 249—89)



1. In an expendable mold for sealing bell and spigot joints in fluid mains, a first flexible portion adapted to circumferentially surround a bell, a second flexible portion adapted to circumferentially surround a spigot, and a third flexible intermediate portion connecting said first and second portion and forming an annular cavity to receive a liquid sealant, said first, second and third portions being overlapped circumferentially, the overlap of said third portion being adapted to release trapped air from the cavity and to prevent escape of sealant therefrom, inlet means in said third portion for introducing sealant into the cavity, and metal band means for securing the first and second portions to the bell and spigot respectively of a bell and spigot joint.

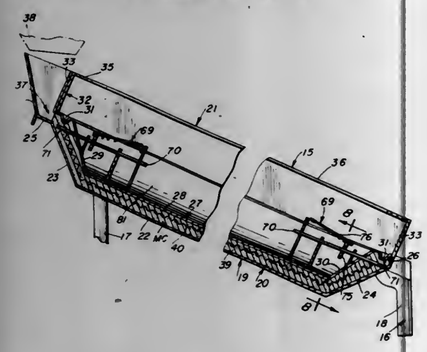
3,350,051

BURIAL VAULT COVER FORMING APPARATUS

Wilbert W. Haase, Jr., Fond du Lac, Wis., and Richard G. Reichle, Riverside, and John E. Wennerberg, Jr., Forest Park, Ill., assignors to American Wilbert Vault Corp., Forest Park, Ill., a corporation of Illinois

Filed Nov. 10, 1964, Ser. No. 410,202

18 Claims. (Cl. 249—91)



16. A concrete burial vault cover forming apparatus for forming a concrete burial vault cover having a sheet of wire mesh reinforcing material and having generally U-shaped wire handle members embedded therein, comprising:

(1) a bottom form unit including a bottom wall portion and marginal wall portions extending therearound;

(2) a top form unit including a bottom wall portion and marginal wall portions extending therearound and adapted to rest upon the marginal walls of said bottom form unit;

(3) means for detachably latching the said top form unit to the said bottom form unit in spaced relationship relative to each other to provide a mold cavity therebetween; and

(4) means carried by the said top form unit and including members adapted to be projected into the said mold cavity and through the said sheet of wire reinforcing material arranged therein for detachably anchoring the said top form unit to the said sheet of wire reinforcing material and to the body of the said concrete burial vault cover and during the molding operation.

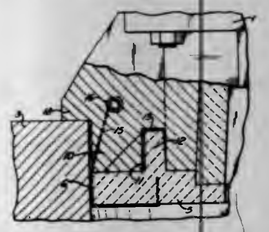
3,350,052

HOT TOP WITH CENTERING LUGS

Robert E. Daley, Pittsburgh, Pa., assignor to Ingot Aid Company, Inc., New Castle, Pa.

Filed Apr. 13, 1965, Ser. No. 447,713

8 Claims. (Cl. 249—198)



1. A hot top comprising a metal casing open at top and bottom, a refractory bottom ring beneath the casing projecting laterally outward therefrom, centering lugs near the lower end of the casing but above said ring and projecting outwardly from the sides of the casing from spaced positions on the outer periphery of the lower end of the casing for insertion in an ingot mold with the casing and the ring, and means projecting laterally outward from the casing farther than said centering lugs for supporting it on an ingot mold with said ring and lugs down in the mold, said lugs having contacting surfaces below said supporting means for engagement with the inside of a mold below its upper edge to substantially avoid lateral shifting of the casing, and the bottom ring projecting laterally slightly beyond said contacting surfaces of the lugs and having a peripheral mold-engaging surface.

3,350,053

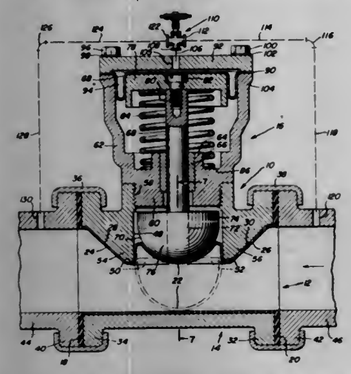
CONTROLLING APPARATUS

Robert Schmitz, Hatboro, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed Feb. 5, 1963, Ser. No. 256,331

6 Claims. (Cl. 251—5)

1. A pinch valve adapted to be inserted as part of a flow pipe, comprising a valve body, a unitary resilient sleeve and a valve plug actuating unit, an inlet and outlet port in the valve body, an inner wall of the body forming a first passageway between the ports, two spaced-apart protuberances forming inner wall portions of the first passageway, a flexible sleeve of the same uniform wall thickness between its end portions extending through the passageway between the inlet and outlet ports and having outer surfaces thereof in physical surface to surface engagement with said protuberances, a second passageway opening into the first passageway and formed by two opposing side wall surfaces of the body and a surface of each of the protuberances, the actuating unit having a mechanically operable compressing means positioned within the second passageway, an actuated end of the compressing means being provided with a semispherical-shaped surface, the largest circumferential ring portion of said semispherical-shaped surface being operably positioned for movement from a non-engaged first position with the largest circumferential ring portion of a preformed flexible concave-shaped central portion of the sleeve that is positioned in the second passageway into



rolling substantially frictionless physical contact with the last-mentioned circumferential preformed ring portion of the sleeve when moving the central sleeve portion toward an opposite portion of the sleeve that is in contact with the inner wall of the first passageway to thereby regulate the flow of fluid passing between the inlet and outlet ports, the sleeve having a transitional unstressed portion extending between the compressing means and protuberances in the fully closed position of the valve.

3,350,054

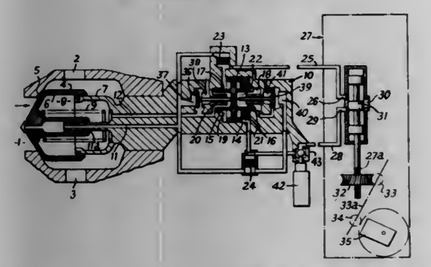
PNEUMATICALLY OPERATED SERVO-CONTROL DEVICES FOR VALVES

Ronald J. Wray, Southampton, and Leonard T. Tribe, Waltham Chase, near Southampton, England, assignors to The Plessey Company Limited, Ilford, England, a British company

Filed Oct. 19, 1965, Ser. No. 497,678

Claims priority, application Great Britain, Nov. 4, 1964, 44,969/64

4 Claims. (Cl. 251—29)



1. A system for the remote control, in a V.T.O.L. aircraft, of a pneumatically operated puffer-duct shut-off valve, which comprises a valve-operating shuttle movable between a first position in which it is operative to produce pneumatic opening, and a second position in which it is operative to produce pneumatic closing, of the shut-off valve, the shuttle including a first and a second main piston means, respectively forming part of first and second main cylinder means operative, when pneumatic pressure is applied thereto, to move the shuttle to said first and second positions respectively, and a first and a second auxiliary piston means, respectively forming part of first and second auxiliary cylinder means operative, when pneumatic pressure is applied thereto, to bias the shuttle to said first and second positions respectively, the areas of said first and said second auxiliary piston means being smaller than the areas of said second and said first main piston means respectively, a pilot control unit, two remote-control lines extending from the pilot control unit to one each of said main cylinder means, and a first and second switch valve respectively associated with the first and second auxiliary cylinder means and each having a first position for applying pneumatic pressure to the associated auxiliary cylinder means and a second position for removing such pressure, means biasing each said switch valve to its first position, and abutment means operatively connecting each switch valve with said shuttle to move the second switch valve to its second position against its bias means as the shuttle approaches its first position for opening the shut-off valve, and to move the first switch valve to its second position against its bias means as the shuttle approaches its second position for closing the shut-off valve.

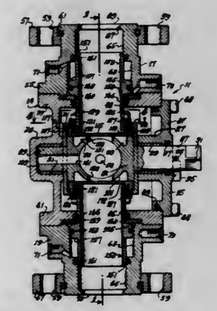
3,350,055

DUAL SEAL SHUTOFF VALVE

Rodney B. Campbell, 1633 Ridgeview Drive, Glendale, Calif. 91207, and Edward W. Strull, 441 N. Citrus Ave., Los Angeles, Calif. 90036

Filed Mar. 26, 1965, Ser. No. 442,871

6 Claims. (Cl. 251—89.5)



3. In a valve, the combination of:

a housing having a fluid passageway therethrough;

a movable valve element in the line of said passageway and having a passage therethrough, said valve element being movable between an open position in which said passage forms a first portion of said passageway and a closed position in which said valve element blocks said passageway, said valve element having a recess in its exterior surface in the line of said passageway when said valve element is in its closed position;

a reciprocable sleeve member having an opening therethrough forming a second portion of said passageway, said sleeve member being reciprocable between a first position in which it is received within said recess to lock said valve element in said closed position, and a second position in which it is free of said recess to permit said valve element to be moved to said open position;

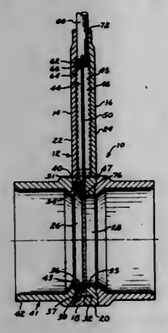
actuating means for moving said valve element between its said open and closed positions;

control means for reciprocating said sleeve member between its said first and second positions; and

sealing means for forming a fluid seal between said sleeve member and said valve element when said valve element is in its closed position and said sleeve

member is in its first position, said sealing means including a cup loosely carried within said recess of said valve element and having an annular seal on its interior side face and into which the inner end of said sleeve member is adapted to enter in sealing relationship.

3,350,056
SEALING MEANS FOR A GATE VALVE
James J. Blumenkranz, Hollywood, Calif., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
Filed Nov. 10, 1964, Ser. No. 410,157
7 Claims. (Cl. 251—100)



3. A gate valve comprising:

(a) a housing including first and second body members each having an upper and lower portion,

(i) said lower portion of each of said members having a bore extending transversely therethrough, the bore of said first member being coaxial with the bore of said second member when said members are in an assembled position forming said housing, said first member having an annular recess circumscribing its respective bore, one of said members having a channel circumscribing its respective bore,

(ii) each of said upper portions of said members having a cavity in the inner surface thereof to form, cooperatively, a chamber when said members are in said assembled position, said upper portions, when in said assembled position, having a journal bearing centrally disposed along the length of the inner surface thereof,

(iii) said housing having a passageway aligned and communicating with said channel and interconnecting at least one of said bores and said chamber,

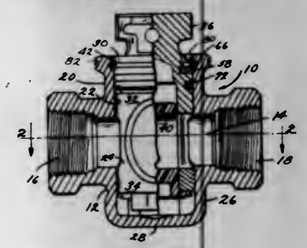
(b) a gate slideably mounted within said housing and adapted to be moved through said passageway from a closed position wherein said gate obturates said bores to an open position wherein said gate is in non-interfering relationship with said bores, the end of said gate adjacent said bores having a rounded edge, said gate having a slot adjacent to the other end of said gate, the portion of said gate between said slot and said other end being depressed,

(c) an annular seal mounted in said annular recess in said first member, said seal having a resilient lip portion extending radially inwardly and being resiliently biased to abut said second member on the other side of said channel to seal said passageway and said channel from said bores when said gate is in said open position, said seal abutting said gate to seal said passageway and said channel from said bores when said gate is in said closed position, sealing of said passageway and said channel being effected by the resilience of said seal,

(d) a stem having a circular cross section, said stem having an annular groove provided near one end thereof, the portion of said stem between said groove and said one end being received by said slot, said groove receiving said depressed portion of said gate to permit relative rotational motion and prevent relative translational motion between said stem and said gate, the end of said stem remote from said one end of said stem extending through the end of the upper portions of said members remote from said lower portions and being adapted for actuation thereof, said stem being received and supported by said journal bearings, and

(e) locking means for retaining said gate in said closed position until said gate is intentionally moved into said open position.

3,350,057
RETAINER RING AND THRUST WASHER ARRANGEMENT FOR VALVES OR THE LIKE
Lawrence F. Luckenbill, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed June 17, 1965, Ser. No. 464,636
15 Claims. (Cl. 251—312)

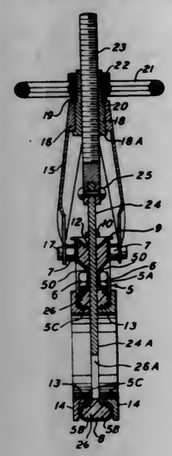


1. In a valve assembly or the like including a valve housing having a flow passage therethrough with ends defining an inlet and an outlet, said valve housing further having a generally cylindrical key seat with an opening at one end to the exterior of the housing and an opening at the other end to the interior of the housing, valve seat means in said housing, a key member carried in said key seat of said housing and including a trunnion portion, a valve body means operable by said key member for coacting with said valve seat means, the improvement in means to retain said key member against axial movement relative said housing and to provide a seal against ingress of fluid and/or abrasive material from without said housing comprising: an outwardly diverging conical surface in said key seat intermediate the key seat's opening to the exterior and interior of the housing; a reduced portion on the outer end of the trunnion portion of said key member defining an outwardly facing shoulder substantially lying in a plane through the inner end of said conical surface; an annular anti-friction thrust washer having a peripheral conical edge corresponding to and seating against said conical surface of said key seat; and means engaging said washer on its outer radial surface at spaced points adjacent the outer periphery of the same and the inner periphery of the same.

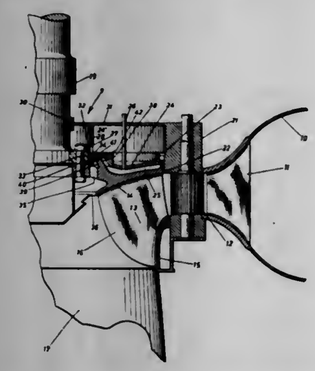
3,350,058
GATE VALVES
John B. Alden, 163 State St., Gorham, Maine 04038
Filed Aug. 9, 1965, Ser. No. 478,269
11 Claims. (Cl. 251—329)

1. In a gate valve of the wafer type, a hollow housing having alined, spaced apart ports in its end walls, a rigid sleeve for each port, each sleeve including a flange at one end with its other end extending into the housing through an appropriate one of said ports, the flanges of

the sleeves being seated against the outer surface of said walls and the proximate ends of said sleeves being spaced apart a predetermined distance, a gate blade within said housing and dimensioned to enter the space between said ports and to fit between said sleeves to block fluid flow from one to the other thereof, means connected to said blade and attached to said housing and operable to reciprocate said blade into and out of a position blocking fluid flow through said sleeves, said housing including portions extending inwardly from said walls between which said blade extends and by which it is slidably supported and guided, and a unitary resilient plastic body in said housing sealing said housing against leakage lengthwise of said blade and axially between said housing and said sleeves.

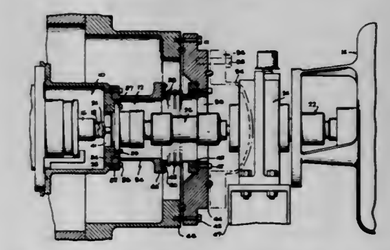


3,350,059
ANTI-CIRCULATION SEAL
Robert Stanley Sproule, Montreal, Quebec, Canada, assignor to Dominion Engineering Works, Limited, Lachine, Quebec, Canada, a corporation of Canada
Filed Oct. 20, 1966, Ser. No. 588,077
2 Claims. (Cl. 253—26)



1. A hydraulic turbo machine having a runner rotatably mounted within a stationary housing, said runner having a hub, an annular crown shroud attached thereto positioned in facing relation with a portion of the housing head cover to define a crown aeration space therewith, runner blades extending oppositely of said aeration space from said shroud to form main flow paths for working liquid between adjacent blades, a manifold within said head cover adjacent said aeration space and remote from said shroud to receive working liquid leaking axially past the radially outer edge portion of the shroud, a manifold leakage orifice connecting a radially inner portion of said manifold with the draft tube by way of a hub outlet located outwardly of said orifice, and a stationary leakage flow-guiding member extending from adjacent said orifice towards said hub outlet in axial overlapping relation with an annular flange portion of said shroud located outwardly of the member relative to the runner main axis, a portion of said shroud flange overlapped by said member extending inwardly to a reduced radius of rotation to provide an inwardly extending centrifugal flow barrier bounding said aeration space, and forming a leakage path extending axially from said member at an increasing radius of rotation towards said hub outlet whereby said leakage liquid is centrifugally propelled to said outlet.

3,350,060
TURBINE STARTING SYSTEM
James K. La Fleur, Hermosa Beach, and Angel R. Florez, Downey, Calif., assignors to The La Fleur Corporation, Century City, Calif., a corporation of California
Filed July 12, 1965, Ser. No. 471,341
9 Claims. (Cl. 253—39)

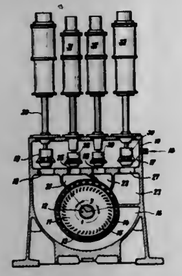


1. A turbine starting system comprising a turbine including a turbine housing and a turbine shaft, clutch means connected to said turbine and including a clutch member mounted for engagement and disengagement with said turbine shaft, a housing for said clutch means and connected to said turbine housing, a motor, means for removably coupling said motor in driving engagement with said clutch means, and removable cap means for enclosing the end of said clutch housing when said motor is disengaged from said clutch means and is removed from the end of said clutch housing, to prevent gas leakage from the turbine to the atmosphere.

3,350,061
EXPANSION-TURBINE NOZZLE RING AND APPARATUS INCORPORATING SAME
Wilfried Strass, Sürth, near Cologne, Germany, assignor to Linde Aktiengesellschaft, a corporation of Germany
Filed Apr. 13, 1965, Ser. No. 447,666
Claims priority, application Germany, Apr. 15, 1964, G 40,356
15 Claims. (Cl. 253—40)

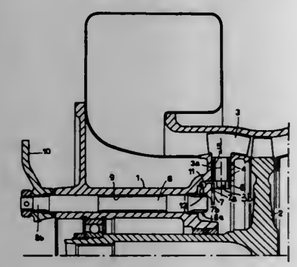
1. An expansion turbine, comprising a housing forming at least one expansion chamber; at least one nozzle ring in said chamber forming an annular array of nozzles for directing respective jets of a fluid medium into said chamber, said ring having a multiplicity of nozzle-forming blades circumferentially spaced around a circle and having inner edges lying therealong, said blades defining between them said nozzles, said nozzles having different fluid throughputs per unit of circumferential extent of said array; a plurality of duct means communicating with

said nozzles for supplying a fluid medium to said nozzles; means associated with some of said duct means for selectively blocking and unblocking selected nozzles; and a



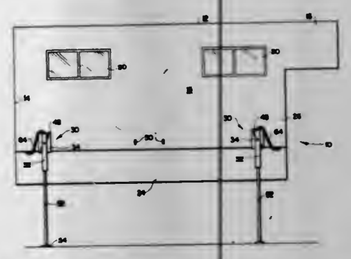
rotor in said housing having a multiplicity of rotor blades exposed to said jets in said chamber for displacement of said rotor.

3,350,062
GAS TURBINE
Mario Calovolo, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy
Filed Oct. 11, 1966, Ser. No. 585,894
Claims priority, application Italy, Oct. 14, 1965, 23,337/65
1 Claim. (Cl. 253—78)



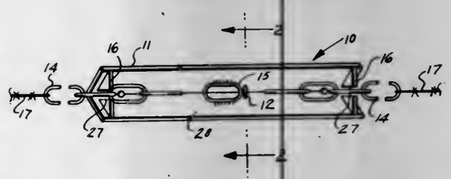
In a gas turbine having a stator body and impeller rotatably mounted therein and a row of radially arranged blades controlling the flow of pressure towards said impeller, means for varying the incidence of said blades comprising a cylindrical base extending from each blade towards the turbine axis through a seat formed in the stator body and having one end of reduced diameter, rollers within each of said seats for rotatably supporting therein the cylindrical bases of the blades, toothed wheels keyed to the ends of said reduced diameter of said bases, a ring gear coaxial with said impeller rotatably mounted in said stator body and radially arranged inside of said seats of said cylindrical bases of said blades and axially displaced with respect to said seats in a direction opposite said impeller, a set of radial teeth in said ring gear meshing with said toothed wheels keyed to the ends of said reduced diameter end of said bases, a set of inner teeth in said ring gear disposed at right angles to said set of radial teeth, a roller bearing arranged between the stator body and said ring gear, said bearing comprising a ball race and annular seats formed in said stator body and ring gear and inclined with respect to the ring axis in such a manner as to prevent axial displacements of the said ring away from said set of toothed wheels, a control shaft arranged parallel to the impeller axis and rotatably mounted in an axially extending seat formed in the stator body and having a toothed end meshing with the inner teeth of the said ring gear, and an actuating lever keyed to the other end of said control shaft projecting outwardly from said axially extending seat being further provided in order to turn said control shaft and thereby to vary the incidence of the blades of said stator.

3,350,063
HYDRAULIC JACK FOR CAMPER BODIES
Reginald J. Thurlow, Sr., 685 26 Road, and Reginald J. Thurlow III, 685½ 26 Road, both of Grand Junction, Colo. 81501
Filed Sept. 19, 1966, Ser. No. 580,407
7 Claims. (Cl. 254—45)



1. Lifting apparatus for loading and unloading a substantially rectangular coach body onto and off the bed of a pickup truck, said apparatus comprising: four vertically positioned mounting plates adapted to be releasably attached one at each corner of any type coach body, a horizontal load supporting flange extending from the lower edge of said plate and positioned to support the weight of the coach, fastening means for releasably attaching the mounting plates to the coach body; a series of four hydraulic cylinders having pistons with elongate portions extending therefrom, ground supporting foot means located at the end of the elongate portions for transmitting the weight of the coach to the ground; mounting means pivotally attaching each of said cylinders to a respective mounting plate for maintaining the cylinders in vertical ground engaging position and upon retraction permitting the cylinders to be pivoted to a horizontal position; bracket means attached to the coach body for maintaining the cylinders in a horizontal position when lifting apparatus is not in use; and, a single hydraulic power means attached to one of said mounting plates, hydraulic lines connecting each of said cylinders with said power means whereby all of said cylinders may be activated in unison.

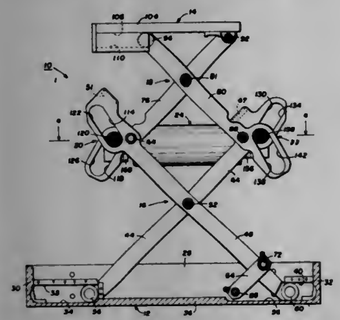
3,350,064
FENCE STRETCHER
Maurice Blume, St. Francis, Kans. 67756
Filed Apr. 4, 1966, Ser. No. 539,679
4 Claims. (Cl. 254—83)



1. A fence stretcher comprising an elongated, angular member, a pair of locking supports having slots therein secured within said member, a metallic loop secured to the exterior of said member for attaching said member to a post of a fence, a chain link welded into the internal portion of said angular member, a chain arrangement on each end of said angular member, a tightening device removably attached to said chain link and the end links of said chain

arrangement for pulling said arrangement into the inside portion of said angular member, wire attached to said chain arrangement, chain links of said chain arrangement adapted to pass through said slots of said locking supports and tightening said wire around the fence in accordance with movements of said chain links into said angular member, and said chain links being adapted to be locked with ing said angular member.

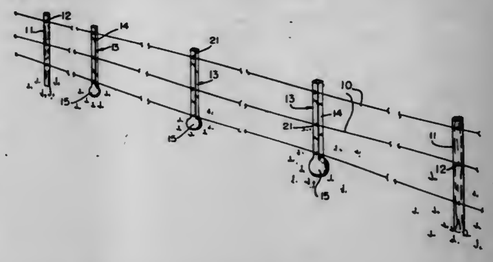
3,350,065
SCISSOR-TYPE LINEAR ACTUATOR WITH HIGH EXTENSION RATIO AND SELECTABLE EXTENSION RATE AND POWER REQUIREMENT
Harry S. Mankey, Dallas, Tex., assignor to Standard Manufacturing Company Inc., Dallas, Tex., a corporation of Texas
Filed Oct. 24, 1966, Ser. No. 589,075
24 Claims. (Cl. 254—122)



1. In a scissor-type linear actuator, the combination of:
a pair of pivotally interconnected arms which are extensible by moving the ends of the arms together and retractable by moving the ends of the arms apart,
support means for the ends of the arms permitting movement of the ends of the arms together and apart,
pivot means connecting the end of one of the arms to the support means such that a torque can be exerted on said one arm to cause extension or retraction of the arm,
scissor cam surface means formed on the end of said one arm and said support means,
cam follower means for cooperatively engaging the scissor cam surface means and exerting a torque between said one arm and the support means acting about said pivot means, said torque tending to extend or retract the arms, and
linear actuator means for moving the cam follower means and the end of the other arm either together or apart to either extend or retract the arms as a result of the combined effect of the torque exerted on the arm by the scissor cam surface means and the movement of the ends of the arms one relative to the other.

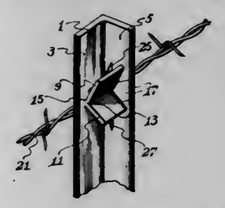
3,350,066
FENCE STRUCTURE AND PROP ELEMENT FOR FENCE WIRES
Glenn W. Cope, Box 44, Cope, S.C. 29038
Filed Aug. 9, 1965, Ser. No. 478,037
3 Claims. (Cl. 256—32)

1. A fence structure enabling a mower to cut weeds directly under the fence comprising widely spaced main supporting posts anchored in the ground, horizontal fence wires secured to the main supporting posts and extending therebetween, and a plurality of relatively closely spaced fence wire props between each pair of main posts and secured to the fence wires to prevent sagging thereof, said props provided at their lower ends with integral generally ball-like enlarged stabilizing heads, said heads resting freely upon the ground and being unattached to the ground



so that said mower may readily engage and lift the props while passing beneath the fence between the main supporting posts.

3,350,067
POST FOR WIRE FENCES
Albert B. Coda, Rte. 3, Independence, Kans. 67301
Filed Oct. 23, 1965, Ser. No. 502,839
1 Claim. (Cl. 256—48)

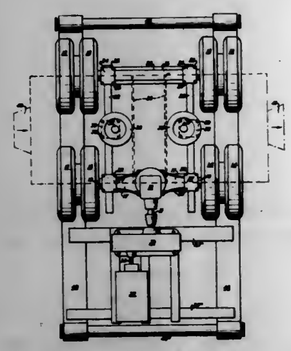


A post for a wire fence, comprising a length of angle iron having a pair of legs, and an angle iron segment having its apex welded to one of said legs along a line of weld that is perpendicular to the other of said legs, said segment having one end welded to said other leg along lines of weld disposed substantially perpendicular to each other and to said first-mentioned line of weld, said one leg having an opening therethrough on each side of and closely adjacent said apex, said segment being of uniform cross section in a direction perpendicular to said other leg and of a length no greater than the width of said one leg, said segment having a pair of legs disposed at equal acute angles to said one leg.

3,350,068
MATERIAL PROCESSING APPARATUS
Jean Vincendon, Isere, France, assignor to Etablissements Neyrpic, Grenoble, France, a corporation of France
Filed Aug. 11, 1966, Ser. No. 571,770
8 Claims. (Cl. 259—3)

1. Material processing apparatus comprising a rotary cylinder having an axial feed inlet for the material to be processed in at least one end thereof, a discharge outlet for the material processed in said cylinder, a pair of axles disposed in parallelism with the axis of rotation of said cylinder and located one on each side of said axis, rubber tired wheels on the ends of said axles and rotatably carrying said cylinder, said rubber tired wheels defining an area having a dimension in the direction of said axis of rotation less than the length of said cylinder, at least one of said axles being a driving axle and constituted of

two half axles drivenly connected to a differential unit, a motor drivingly connected to said differential unit, a pair of outwardly projecting parallelly arranged annular guide rings provided in adjacently spaced relation on the central portion of said cylinder so as to be located centrally of said area between said rubber tired wheels in the direction of said axis of rotation, a pair of horizontally



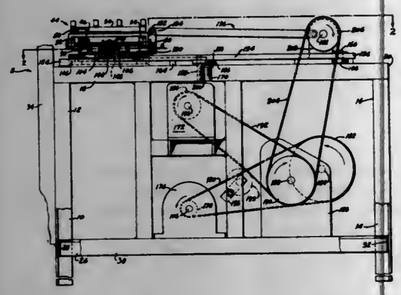
disposed rubber tired guide wheels located one on each side of said pair of guide rings and engaging the outer side faces of said guide rings, and means supporting said guide wheels for rotational movement about vertical axes within the area defined by said cylinder supporting wheels and between said cylinder supporting wheels both in the direction of said axis of rotation and in the direction at right angles to said axis of rotation.

3,350,069

METHOD AND APPARATUS FOR MIXING DISSIMILAR TYPES OF FIBERS

Gilbert Shaw, Middlebury, Vt. 05753, and Charles H. Anderson, Jr., Shorham, Vt.; said Anderson assignor to said Shaw

Filed Dec. 29, 1964, Ser. No. 421,938
15 Claims. (Cl. 259—54)



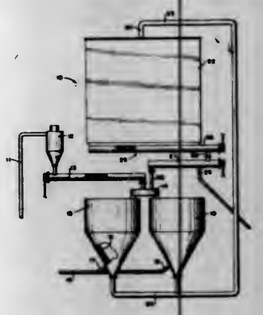
1. A method for obtaining a more uniform distribution of dissimilar types of fibers over the cross-sectional area of a bundle of fibers containing the same, comprising: supporting the bundle of fibers at one end with the fibers thereof loosely confined in a generally upright condition; and, imparting to the fibers, along the length thereof, tangential forces in planes transverse to the longitudinal axes of the fibers while maintaining the fibers so confined, to thereby obtain a more uniform distribution of the dissimilar types of fibers.

3,350,070

SILO PLANT

Max Dostrup, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed Mar. 4, 1966, Ser. No. 532,003
Claims priority, application Denmark, Mar. 12, 1965, 1,267/65
3 Claims. (Cl. 259—60)



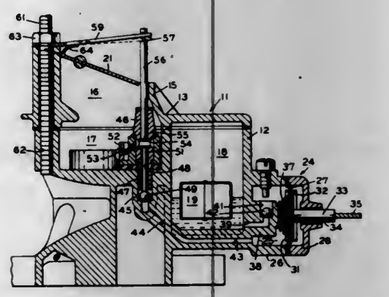
1. In a silo plant for pulverulent material comprising at least one storage silo, at least one homogenizing silo, said storage silo positioned above said homogenizing silo, conveying means for transferring homogenized material from the homogenizing silo to the storage silo, means for feeding non-homogeneous material to the top of the homogenizing silo and means for extracting homogenized material from the bottom of the storage silo.

3,350,071

TEMPERATURE COMPENSATED ACCELERATING PUMP

Eugene L. Scala, Jr., Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Nov. 18, 1964, Ser. No. 412,177
7 Claims. (Cl. 261—34)



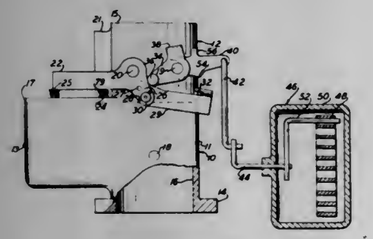
1. A charge forming device for an internal combustion engine comprising an induction passage, a throttle valve controlling the flow of mixture through said induction passage, fuel discharge means for discharging fuel into said induction passage anterior to said throttle valve, a choke valve in said induction passage anterior to said fuel discharge means for controlling the flow of air through said induction passage, accelerating pump means having a pump member operatively connected to said throttle valve for delivering a metered charge of fuel to said induction passage upon a predetermined degree of opening of said throttle valve, and means including linkage means operatively contacted by cam means on said choke valve for regulating the amount of fuel discharged by said accelerating pump means in a given degree of opening of said throttle valve in response to the position of said choke valve.

3,350,072

AIR VALVE CARBURETOR

Michael J. Thomas, Sun City, Calif., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed May 27, 1966, Ser. No. 553,478
9 Claims. (Cl. 261—39)



1. A carburetor for an internal combustion engine comprising
a carburetor body having an induction passage,
a throttle valve rotatably mounted in said induction passage,
an air valve attached to a shaft rotatably mounted in the carburetor body, said air valve being rotatably mounted in said induction passage anterior to said throttle valve, an air valve arm fastened to said shaft,
means positioning said air valve to maintain a substantstantially constant vacuum between said air valve and said throttle valve during road load operation of the engine,
conduit means for flowing fuel to the induction passage between the throttle valve and the air valve,
a fuel valve controlling the flow of fuel through said conduit means and operably connected to a fuel valve arm, said fuel valve arm being operably engaged by said air valve arm to position the fuel valve responsive to the position of the air valve, and
thermostatic means responsive to engine temperature comprising a lever pivotally mounted on said shaft adjacent a portion of the fuel valve arm, said lever operably contacting the fuel valve arm at low engine temperatures to open the fuel valve and contacting the air valve arm at higher engine temperatures to open the air valve.

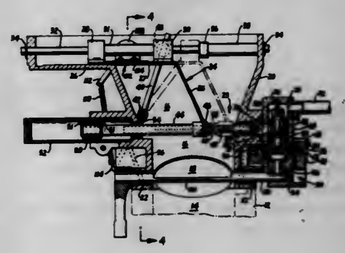
9. In an air valve carburetor for an internal combustion engine having a fuel source, a throttle valve and an air valve mounted in an air induction conduit, and a fuel metering valve mounted in a main fuel conduit connecting said fuel source with said induction conduit between said air valve and said fuel valve, means supplying fuel and air for engine idling that comprises
a fuel emulsion passage opening into the induction passage below the throttle valve,
an air passage connecting the atmosphere with said fuel emulsion passage,
a fuel passage connecting said fuel source with said fuel emulsion passage,
a transfer passage connecting said main fuel conduit downstream of said metering valve with said fuel passage,
metering means establishing a fuel-air mixture passing through said fuel emulsion passage, said fuel-air mixture having a fuel-air ratio suitable for engine idling at a transition temperature, and
thermostatic means opening said fuel metering valve at temperatures below the transition temperature to increase the fuel-air ratio of said mixture, and opening said air valve at temperatures above the transition temperature to decrease the fuel-air ratio of said mixture.

3,350,073

CARBURETOR

Raymond R. Hill, 11 White Cottage Road, Angwin, Calif. 94508

Filed Nov. 15, 1965, Ser. No. 507,752
3 Claims. (Cl. 261—44)



1. In a carburetor comprising a carburetor body defining at least in part a vacuum chamber adapted to communicate with the intake manifold of an internal combustion engine and a fuel mixing chamber, and adjustable valve means for providing variable communication between the vacuum chamber and the mixing chamber, improved means for introducing fuel and air into the mixing chamber comprising:
(A) a valve door having a flat top portion and an inclined side portion, said door having an edge on said inclined portion adjacent to said body defining with said body an opening into said mixing chamber, means including bearings mounting said door for sliding movement on said body along flat portion responsive to air pressure on said inclined portion whereby said opening increases responsive to increasing vacuum in said mixing chamber,
(B) a metering tube located within the mixing chamber having,
(1) an axial bore adapted to be connected to a source of fuel, and
(2) discharge means communicating with the bore and having a fluid discharge area distributed along the length of the tube for introducing fuel into the mixing chamber,
(C) sleeve means slidable receiving the metering tube, with the sleeeve mounted on said valve door for movement with the valve door to an open position responsive to increasing vacuum in the mixing chamber thereby exposing an increasing amount of

the fuel discharge area of the metering tube as the door opens, and

(D) resilient means biasing the door to a closed position.

3,350,074

LIMITED TRAVEL CARBURETOR METERING ROD

Ralph E. Kalert, Jr., Granite City, Ill., and Donald A. Reise, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Nov. 8, 1965, Ser. No. 506,670
4 Claims. (Cl. 261—51)



1. In a carburetor for an internal combustion engine including a body, a mixture conduit formed in the body, a throttle valve having a shaft journalled in the mixture conduit and being operable to regulate passage of air fuel mixture therethrough, an actuating mechanism connected to said throttle, a fuel bowl formed in said body holding a supply of fuel, a venturi in said body including a nozzle, a fuel duct carrying a fuel stream from said fuel bowl to said nozzle for injection into said mixture conduit, a metering orifice in said fuel duct adapted to regulate said fuel stream, an air motor associated with said carburetor and connected to a source of varying vacuum in said engine, said air motor having a displaceable diaphragm at one wall thereof, and being moveable between inner and outer positions in response to variations in said vacuum source, a metering rod having opposed ends including a tapered end disposed in said metering orifice and having the other end engaging said diaphragm to be reciprocably moved between said inner and outer positions in said orifice in response to a pressure change in said air motor, a lost motion connection operably engaging said throttle actuating mechanism with said metering rod and including;

(1) an elongated coupling member (71) extending coaxially of said metering rod and engaging said throttle actuating mechanism,

(a) a cavity formed in the end of said elongated coupling member and extending coaxially thereof,

(b) said metering rod including a projection at the end thereof opposite to said metering end, said cavity includes an opening defined by an inwardly projecting lip (92) supporting said metering rod, the wall of said cavity being slotted to provide segments and permit lateral displacement thereof whereby said opening will be sufficiently enlarged to receive said projection thereby loosely retaining the latter in said cavity when said segments are returned to an undisplaced position, said projection being loosely received in said cavity to permit limited movement of said rod with respect to said coupling member,

whereby said metering rod is adjustable for regulating the position thereof with respect to said orifice in immediate response to variations in the degree of vacuum in said engine, independent of the throttle position.

3,350,075

METHOD FOR CONTACTING FLUIDS IN COUNTERCURRENT

Harold Roy Douglas, Hudson Heights, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a company of Canada

Filed Sept. 13, 1962, Ser. No. 223,367
Claims priority, application Great Britain, Dec. 14, 1961, 44,773/61
10 Claims. (Cl. 261—95)



1. A process for mutually contacting a liquid and a gas in a contact zone having a bottom retaining grid which comprises

(1) introducing into said contact zone a preselected plurality of light weight spheres of predetermined specific gravity intermediate the specific gravity of said liquid and said gas and having a total packed volume of at most about 50% of the volume of said contact zone, said contact zone having a minimum freeboard height of at least six inches,

(2) maintaining a gas flow upwardly through said contact zone, while

(3) maintaining a flow of said liquid through said contact zone countercurrent to said gas flow, and

(4) balancing the pressure exerted by said gas flow and the impact created by said descending liquid with the force of gravity exerted on said spheres so that (a) said spheres are maintained in a free random motion with a linear free path greater than the diameter of the said spheres throughout the said contact zone and in at least twice the volume occupied by said spheres when in static condition, and (b) the free downward flow of said liquid is maintained without flooding.

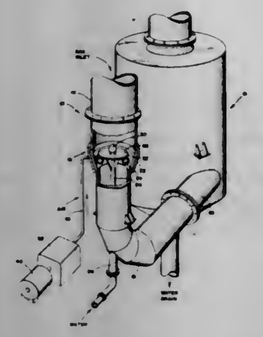
3,350,076

GAS AND LIQUID CONTACT APPARATUS

Philip B. Crommelin, Jr., West Orange, N.J., assignor to Research-Cottrell, Inc., Bridgewater Township, N.J., a corporation of New Jersey

Filed May 15, 1964, Ser. No. 367,624
4 Claims. (Cl. 261—118)

1. A gas and liquid contact apparatus comprising gas flow conducting conduit means, a transverse plate member positioned in the gas flow conducting conduit means, an expansible member positioned to define with said transverse plate a zone of gas flow constriction therewith, means to vary the pressure within the expansible member to thereby vary the effective area of said member, and



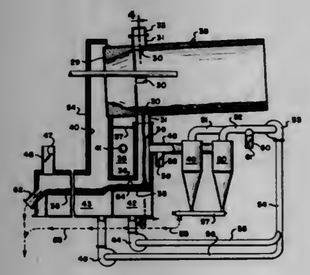
means for introducing a liquid into the gas stream adjacent the zone of gas flow constriction by said transverse plate member.

3,350,077

ROTARY KILN INSTALLATIONS

Erik Christian Parmo Christensen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed Aug. 5, 1965, Ser. No. 477,555
11 Claims. (Cl. 263—32)



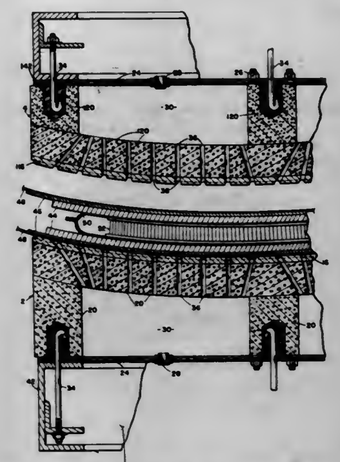
1. A kiln installation which comprises a rotary kiln, a casing at the discharge end of the kiln in communication with the interior of the kiln, a transversely horizontal grate defining a substantially horizontal plane inside the casing in position to receive material discharged from the kiln, means for depositing burned material from the kiln upon the grate to form a bed of approximately uniform thickness across the grate, including a plurality of passageways through the kiln shell in a circumferential series with outer end openings through which material is discharged into the casing above the grate and directly onto the grate in several flows transversely across the grate as the openings successively travel across the bottom of the kiln as the kiln rotates through the lower half of a cycle and thereby depositing material from one side of the grate to the other, means for advancing the bed, and means for passing air through the grate from beneath to cool the material and heat the air.

3,350,078

FABRICATION AND HEAT-TREATING DIE MEANS

Alvy P. Shultz, Hawthorne, and Michael S. O'Neill, Los Angeles, Calif., and Wilson D. Kerns, Atlanta, Ga., assignors to North American Aviation, Inc.

Continuation of application Ser. No. 354,496, Mar. 6, 1964, which is a division of application Ser. No. 61,204, Oct. 7, 1960. This application Sept. 14, 1966, Ser. No. 579,412
5 Claims. (Cl. 266—4)



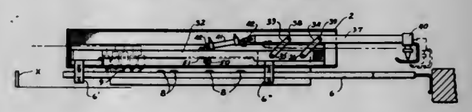
1. Die means for supporting a specimen of thin-walled, thermal and pressure-sensitive construction during the transfer of heat to or from said specimen, including at least one work face adapted to apply substantially continuous area pressure to a surface of said specimen, heating means removably supported on said work face for applying heat directly and uniformly to said specimen, and cooling means comprising a plurality of grooves on said work face for flowing a cooling medium directly and uniformly over a substantial portion of said surface.

3,350,079

CUTTING CYCLE FOR FLAME CUTTING OF BILLETS

Horst K. Lotz, Frankfurt am Main, and Alfred Pfeuffer, Neu-Isenburg, Germany, assignors, by mesne assignments, to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

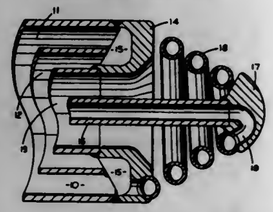
Filed July 13, 1964, Ser. No. 382,264
3 Claims. (Cl. 266—23)



1. Flame cutting apparatus for transverse cutting of rolled billets employing a driven torch, the torch speed being automatically altered to individual rates of speed fixed in accordance with a pre-selected program, said apparatus comprising a longitudinally movable slide, means to move said slide, a feeler rod carried by one end of said slide and movable in longitudinal relation thereto, a vertically and longitudinally movable arm carried by said slide, means to move said arm, a torch carried by said arm at the end of said slide in fixed relation to said vertically movable arm, said feeler rod

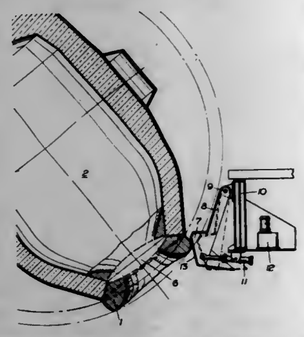
being a cam carrier connecting said apparatus to a horizontally arranged programmed mechanism controlling a pre-set program, comprising a plurality of program switches carried by said slide, a series of cams carried by the feeler rod, and means to cause these cams to contact the programming switches causing; (a) the torch to be lowered in an arcuate path; (b) the torch speed to be lowered from a rapid approach speed to a slower starting cut speed; (c) the torch speed to be changed to the cutting speed; (d) lifting of the torch upon completion of the cut and; (e) the torch to be returned at a rapid speed.

3,350,080
OXYGEN LANCE WITH HELICAL COOLING COIL
Douglas Norman Manton, 235 Ulverley Green Road, Olton, Solihull, England
Filed June 1, 1964, Ser. No. 371,555
Claims priority, application Great Britain, June 22, 1963, 24,929/63
1 Claim. (Cl. 266—34)



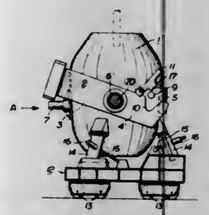
An oxygen lance which includes an oxygen supply passageway terminating in an outlet, a water supply tube disposed centrally of the oxygen supply passageway, an outer casing containing a water return passageway, a helical coil connecting said supply tube and said return passageway and wherein the outlet is defined by the helical gap between the spirals of the helical coil and the area of the outlet being variable by adjustment of the axial position of the water supply tube.

3,350,081
APPARATUS FOR FORCING OFF MOUTH SKULLS
Othmar Puhringer, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Oct. 27, 1964, Ser. No. 406,809
Claims priority, application Austria, Oct. 28, 1963, 8,607/63
2 Claims. (Cl. 266—36)



1. An apparatus for forcing off skulls from the mouths of tiltable steelmaking converters, comprising a tiltable converter, a support, a flap hingedly connected to said support, a forcing-off nose on said flap movable into a path described by a skull on said converter mouth during the tilting of said converter, a hydraulic pressure cylinder connected to said flap and said support for forcing said nose against said skull, means for supplying hydraulic pressure to said cylinder and means for limiting the pressure supplied to said cylinder to a predetermined skull-severing pressure.

3,350,082
TILTABLE SUPPORT MECHANISM FOR CRUCIBLE OR CONVERTER
Josef Lambrecht, Ansfelden-Haid, and Georg Stadlmann, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed June 21, 1965, Ser. No. 465,460
Claims priority, application Austria, June 29, 1964, A 5,565/64
5 Claims. (Cl. 266—36)

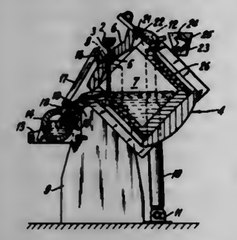


1. A tiltable crucible for refining crude iron comprising a crucible shell of substantially circular cross-section, a U-shaped supporting structure for said shell having a closed base and spaced-apart shanks, axially aligned spaced trunnions extending outwardly from said supporting structure substantially diametrically of said shell, and three supporting elements arranged to support said shell on said supporting structure, one supporting element being arranged in the plane of tilting of the crucible passing through the longitudinal axis thereof and extending across said base on one side of said supporting member, and two further supporting elements being arranged in a plane perpendicular to the plane of tilting eccentrically of the crucible axis extending across said shanks on the opposite side of said supporting member from said one supporting element and means detachably connecting said supporting elements to said supporting structure, said supporting structure being detachable from the crucible by tilting, without any vertical movement of the latter.

3,350,083
TILTING MECHANISM FOR INDUCTION FURNACE
Erwin Bührer, Breitenaustrasse 164, Schaffhausen, Switzerland, and Theodor Bächtold, Schaffhausen, Switzerland, and Karl-Heinz Hellmund, Dortmund, Germany, assignors to said Erwin Bührer, Schaffhausen, Switzerland
Filed Aug. 31, 1964, Ser. No. 393,122
Claims priority, application Switzerland, Sept. 2, 1963, 10,836/63; June 3, 1964, 7,225/64
9 Claims. (Cl. 266—38)

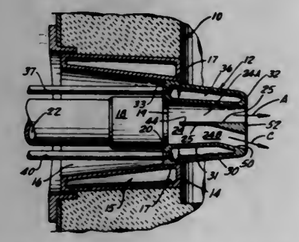
4. An induction furnace for use with a cupola furnace for supplying molten metal over a pouring trough comprising a furnace body including a top cover with an opening therein, supporting axis means for pivotally supporting said furnace body for tilting movement about a substantially horizontal axis which is arranged in the vicinity of the central portion of the opening in the top cover, said furnace body having a pouring spout on one side,

the opening in said top cover being such that it may be aligned below the pouring trough for supplying liquid



metal to the interior of the furnace continuously during all tilting movement of said furnace body.

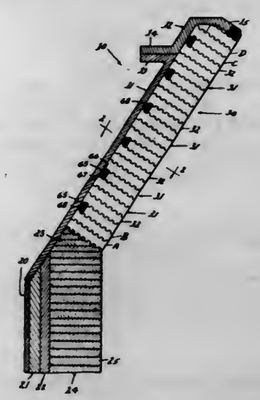
3,350,084
TUYERE WITH DIVIDED PASSAGEWAY
James V. Lucarell, Meadville, Pa., assignor to Abex Corporation, a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,093
3 Claims. (Cl. 266—41)



1. In a tuyere or like furnace part having an outer wall, an inner wall, a nose wall joining said outer and inner at the end of the tuyere to be inserted farthest into the furnace, a butt wall joining said outer and inner wall at the other end of the tuyere, said inner wall defining a bore for the flow of gases therethrough from the butt and to the nose end of the tuyere, and baffle means in said passageway for directing a first portion of said gas to exit from said bore at an angle to a second portion of said blast exiting from said bore, said baffle means extending rearwardly from said nose wall towards said butt wall and is of tapered decreasing thickness; said inner wall being tapered opposite said baffle means to maintain equal cross-sectional areas opposite one another between said baffle means and said inner wall.

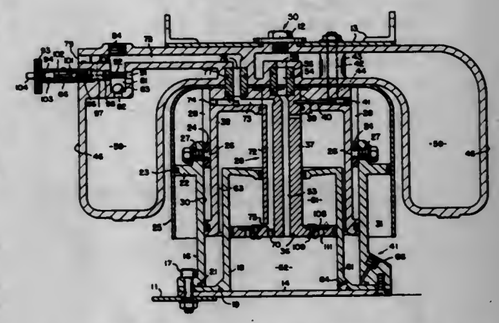
3,350,085
REFRACTORY LINING FOR CONICAL PORTION OF A FURNACE AND BRICK THEREFOR
Raymond E. Over, Mokena, Ill., assignor to M. H. Detrick Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,252
2 Claims. (Cl. 266—43)

1. A refractory lining of uniform thickness for the conical portion of a furnace comprising:
superimposed annular layers of refractory brick, the longitudinal axis of each brick perpendicular to the plane tangent to the conical portion at the intersection point of the axis with said conical portion;
the top and bottom faces of each brick, referring to the installed position of the brick in a conical portion of substantially vertical axis, having alternate ribs and recesses interlocking with the ribs and recesses of adjacent bricks above and below, the side faces of each brick substantially planar;
the top face at the outer end of each brick narrower in width than the bottom face at the outer end, the top and bottom faces tapering substantially uniformly in width toward the inner brick end, whereby the substantially planar side faces of each brick are parallel to the adjacent side faces of laterally adjacent brick;



the top and bottom faces of all brick in one annular layer having ribs at the inner end portions thereof and the top and bottom faces of all brick in the adjacent annular layers having recesses at the inner end portions thereof, whereby the inner brick ends define a substantially conical surface;
the top and bottom faces of some of said brick respectively tapering in width to a greater extent than the taper of the top and bottom faces of the remaining brick, whereby brick shapes employing said two tapers may be used alone and in combination to produce annular layers of brick having all required diameters.

3,350,086
PNEUMATIC SEAT
Frederick J. Decker, Pittsford, N.Y., assignor to Flexible Air Seat Corporation, Los Angeles, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,496
10 Claims. (Cl. 267—1)

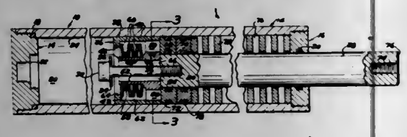


1. A seat structure for vehicles wherein a seat frame is connected to a base by a fluid system to minimize the transmittal of road shocks to the seat frame, said fluid system comprising, in combination:
(a) a cylinder having a piston operable therein, said piston being connected to said seat frame and dividing said cylinder into upper and lower chambers;

(b) check valve means between said chambers permitting flow of fluid from said lower chamber to said upper chamber, the fluid in said lower chamber cushioning the downward movement of said piston due to road shock and the fluid in said upper chamber resisting the upward movement of said piston on the rebound from said road shock; and

(c) an adjustable bleed opening between said upper and lower chambers.

3,350,087
SELF-CONTAINED RECIPROCATORY HYDRAULIC SPRING
Arnt U. Haanes, 522 S. Laurel Ave., Royal Oak, Mich. 48067
Filed Oct. 21, 1965, Ser. No. 499,442
9 Claims. (Cl. 267—1)



1. A self-contained reciprocatory hydraulic spring, comprising

a cylinder having a hydraulic fluid chamber in one end thereof adapted to contain hydraulic fluid,

a plunger including a hollow piston head and a piston rod reciprocably mounted in said cylinder and projecting from one end thereof,

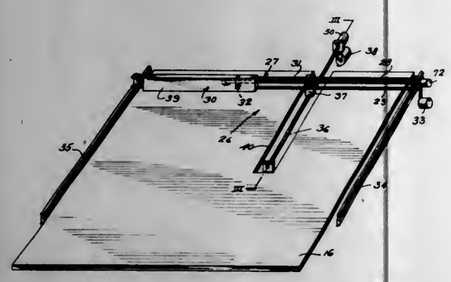
a free piston mounted on said piston rod for reciprocation relatively thereto,

resilient means within said cylinder yieldingly urging said free piston toward said hollow piston head,

said hollow piston head having a fluid passageway therethrough leading from said hydraulic fluid chamber to said free piston,

and spring-pressed valve means normally closing said passageway and responsive to the attainment of a predetermined pressure in said chamber for opening communication therethrough in response to motion of said piston head into said chamber.

3,350,088
WORKPIECE POSITIONING MECHANISM FOR A MACHINE TOOL
Arthur K. Schott, Clarence, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed June 25, 1965, Ser. No. 467,030
7 Claims. (Cl. 269—60)



1. A workpiece positioning mechanism for a machine tool, comprising in combination:

(a) an elongated horizontal-extending rail assembly supported for horizontal movement in a direction perpendicular to its length, said rail assembly including

(1) a pair of parallel vertically spaced rails,

(2) a workpiece holder supported by said rails for movement therealong,

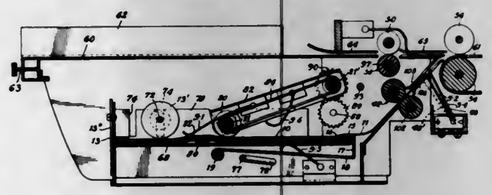
(3) a first rotatably supported screw extending parallel to said rails, having a driving connection with said workpiece holder, and being disposed on said rail assembly at a height vertically intermediate said rails, and

(4) a first reversible motor drivingly connected to said first screw to rotate it;

(b) a second rotatably supported horizontal screw extending perpendicularly to said rail assembly, and having a driving connection therewith to move it horizontally in a direction perpendicular to said rail assembly; and

(c) a second reversible motor drivingly connected to said second screw to rotate it.

3,350,089
SHEET-FEEDING METHOD AND APPARATUS
George J. Niccoli, Chicago, Ill., assignor to The Frederick Post Co., Chicago, Ill., a corporation of Illinois
Filed June 15, 1965, Ser. No. 464,023
11 Claims. (Cl. 270—58)



1. The method of feeding sheets from a stack thereof comprising obstructing rearward movement of the stack and its top sheet, holding down the front end of the top sheet with a thin blade resting thereon, moving the top sheet rearwardly out from under said blade and forming a hump in the sheet, moving the top sheet forwardly over said blade, said movings of the sheet being effected by applying power to friction roll means on the sheet capable of freely turning when disconnected from a source of power, said forward movement of the sheet feeding it to pulling rolls to advance the forward movement, disengaging said friction roll means from its source of sheet-forwarding power when said pulling rolls advance the sheet, whereby said friction roll means is turned by the sheet being pulled from thereunder, and after said friction roll means is idled by departure of the sheet and while said sheet is being moved forwardly by said feed rolls, applying power to said friction roll means to move the next sheet from under said blade and repeating the cycle.

3,350,090
SHEET ADVANCER
Charles L. Larson, Grants Pass, Oreg., assignor to Jeddeloh Bros. Sweed Mills, Inc., Gold Hill, Oreg., a corporation of Oregon
Filed Sept. 14, 1965, Ser. No. 487,246
4 Claims. (Cl. 271—43)

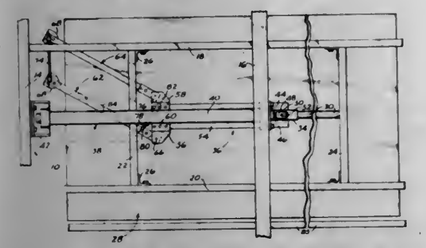
1. Apparatus for advancing sheets comprising

a carriage,

substantially horizontally disposed track means mounting the carriage for movement to and fro in a defined path,

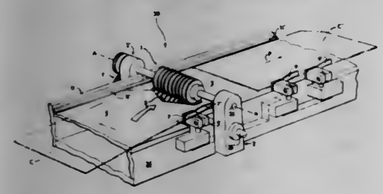
power-operated means connected to said carriage for moving the carriage in its said path,

a pair of elongated, substantially parallel arms, journaled adjacent one set of the ends to said carriage, for pivotal movement about upright axes, the pivot axes for said arm being substantially aligned in a direction extending normal to said path of movement for the carriage, and



means on the arms for engaging the edge of a sheet, said means for the two arms being spaced at equal distances from the pivot axes for the arms.

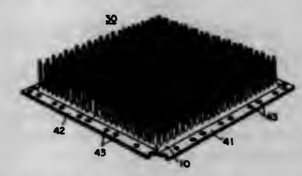
3,350,091
RECORD TRANSPORT DEVICE
Earl E. Masterson, Newtonville, and Richard W. Carman, Foxboro, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,756
9 Claims. (Cl. 271—52)



5. An improved mechanism for advancing unit records in prescribed ailgnment along a path, said mechanism comprising: a uni-directional drive arrangement including opposed pairs of resilient disc means arranged to be rotated so as to positively and continuously drive said records along said path, said disc means being formed to be relatively resilient along two normals to said path, one normal being in the record plane, the other normal thereto, each disc means being arranged to exhibit sufficient lateral resilience to accommodate thrustings of said records, driven thereby, in a lateral direction, transverse to said path, and each said disc means also being arranged to function independently.

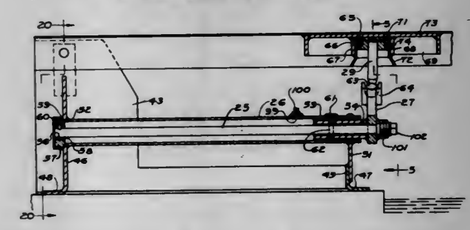
3,350,092
STRUCTURAL ELEMENTS FOR AN ARTIFICIAL SKI SLIDE
Isao Maki, 85 2-chome, Nihonbashihama-cho, Chuo-ku, Tokyo, Japan
Filed Dec. 14, 1964, Ser. No. 418,060
5 Claims. (Cl. 272—56.5)

1. A structural element for use in constructing an artificial slide for skiing, comprising a base sheet having projecting from one face thereof a plurality of flexible needle-like projections and having peripheral margins therearound which are free of needle-like projections, said margins being for connecting the element with an adjacent element, said base sheet and said plurality of needle-like projections being thermoplastic resinous material, and said plurality of needle-like projections being in at least two groups, the needle-like projections of one group having a greater height than the projections in the other group, and individual needle-like projections of each group being positioned alternately with the individual



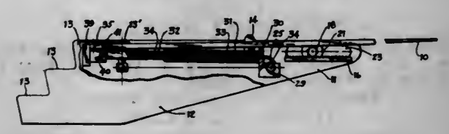
needles of the other group, the needle-like projections being in rows extending in longitudinal, transverse and oblique directions on the said one face of said base sheet.

3,350,093
TORSIONALLY ADJUSTABLE SPRING DIVING BOARD
William J. Nightingale, Chicago, Ill., assignor of twenty-five percent to Charles F. Voytech, Chicago, Ill.
Filed Oct. 31, 1963, Ser. No. 326,344
16 Claims. (Cl. 272—66)



1. A diving board comprising a relatively fixed platform, an elongated deck, hinge means connecting one end of the deck to the platform for oscillation of the deck relative to said platform in a vertical plane, a tube disposed below said deck and fixed to said platform, a torsion bar disposed within said tube, fixed means on said platform engaging one section of said torsion bar for preventing rotation of said one section relative to said platform, a bushing in said tube, a shaft rotatably mounted in said bushing, a crank fixed to said shaft and connected to said torsion bar for rotation therewith, means responsive to the axial disposition of said torsion bar relative to the crank determining its torsional characteristics, said bar being slidable in its axial direction relative to said crank to thereby change its torsional characteristics, an actuator for said crank connected to said crank, and means connecting the deck to the actuator at a location on the deck removed from said hinge means, whereby oscillation of said deck produces a torsional strain in said bar.

3,350,094
RETRACTABLE DIVING BOARD
Donald H. Moss, 130 NW. 18th St., Pompano Beach, Fla. 33060
Filed Nov. 5, 1964, Ser. No. 409,068
3 Claims. (Cl. 272—66)

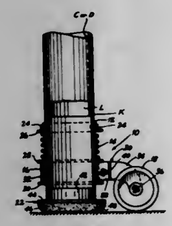


1. A diving apparatus comprising

(a) a frame support,

(b) a diving board on said frame,
(c) means mounting said board being for movement in a longitudinal direction relative to said frame,
(d) spring means holding said board in its rearwardmost position,
(e) means for moving said board forwardly against the force of said spring means,
(f) locking means for holding said board in a forward position,
(g) control means for releasing said locking means so as to permit said spring means to return the board to its rearwardmost position.

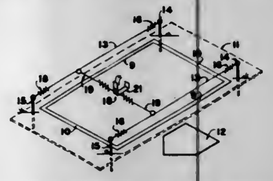
3,350,095
MOBILE WALKING AID WITH BRAKE MEANS
Edward W. Clasen, 6500 Chippewa St., St. Louis, Mo. 63109
Filed Aug. 16, 1965, Ser. No. 479,813
6 Claims. (Cl. 272—70.3)



1. In combination with the lower end portion of a tubular leg member included in a walking aid of the character described, an organization or assemblage of elements adapted to provide normal mobility and safe temporary immobility for the aid, said assemblage comprising:
a ring element rigidly secured thereto on a determined plane above the extremity of the lower end portion of said leg member;
a spool element slidably surrounding said lower end portion of the leg member;
a relatively heavy compression spring interposed about the lower end portion of the leg member between the ring element and the spool element;
a roller;
supporting means for the roller including a circular band rotatably mounted about the body of the spool element; and
a brake element secured to the bottom extremity of said lower portion of the leg member and extending therebelow, said brake element being normally maintained in a position above the walking surface by the upwardly biasing force of the compression spring exerted against the ring element, and being adapted to be brought downwardly into engagement with said walking surface in consequence of pressure applied from above to counteract the upwardly biasing force of said compression spring.

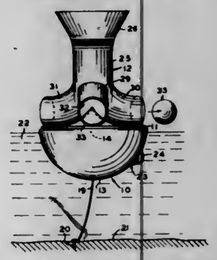
3,350,096
BATTER'S FRONT FOOT GUIDE
Samuel E. Kile, 1331 Joseph Ave., Box 53, Warner Robins, Ga. 31093, and Howard F. McClain, 1452 E. Broad St., Athens, Ga. 30601
Filed July 9, 1965, Ser. No. 470,741
11 Claims. (Cl. 273—26)

1. A guide for restricting movement of a batter's foot relative to a batter's box during batting practice comprising track means extending longitudinally of the batter's box, a movable foot piece, means for attaching one of the batter's feet to the foot piece, and resilient connecting



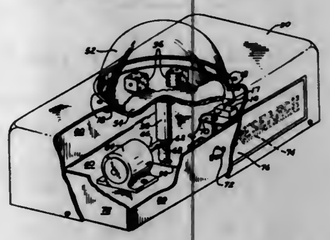
means interposed between the foot piece and the track means.

3,350,097
BALL TARGET WITH MULTI-DIRECTIONAL DISCHARGE OPENINGS
Wilfred J. Chevrette, 9092 N. Irish Road, Mount Morris, Mich. 48458, and Daniel M. Chevrette, 7081 E. Carpenter Road, Davison, Mich. 48423
Filed Apr. 28, 1965, Ser. No. 451,470
1 Claim. (Cl. 273—105)



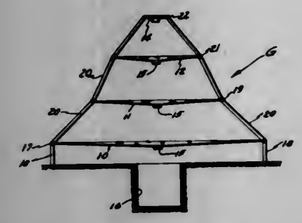
In a ball game apparatus, the combination comprising:
(a) a vertical tube having an open upper end for the reception of a ball thrown therein;
(b) a plurality of curved discharge tubes;
(c) each of said discharge tubes having a horizontally disposed ball outlet portion and an inlet portion communicating with a lower end of said vertical tube; and
(d) means attached to said discharge tubes for floatably supporting said discharge tubes and vertical tube.

3,350,098
PROXIMITY-CONTROLLED ARTICLE TUMBLING DEVICE
Theodore Q. Cromp, Prince Georges County, and John W. Savage, Montgomery County, Md., assignors to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
Filed Oct. 22, 1965, Ser. No. 502,112
10 Claims. (Cl. 273—145)



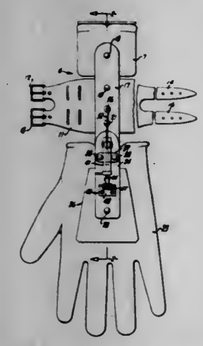
1. A game device for tumbling articles of a game of chance, said device being adapted to be actuated in response to the approach of an object, comprising a tumbling platform, game of chance articles to be tumbled thereon, means for vibrating said platform, means including a proximity circuit and sensing means for causing the actuation of said vibrating means in response to the approach of said object toward said sensing means and for maintaining the continued actuation of said vibrating means during the presence of said object.

3,350,099
GOLF COURSE
Louis L. Smart, 3297 Glenbrook Drive, Bay City, Mich. 48706
Filed June 5, 1964, Ser. No. 372,766
1 Claim. (Cl. 273—176)



A golf course comprising: a fairway; putting greens adajcent thereto; a tee near said greens for driving to said fairway, and a plurality of simulated greens in said fairway at different distances from said tee; each of said simulated greens comprising a tier of vertically spaced superimposed horizontal surfaces of increasing diameter from top to bottom of said tier, said surfaces having golf ball outlet openings in vertical alignment, and a ball collection receptacle arranged under said openings.

3,350,100
GOLFER'S TRAINING AID INCLUDING WRIST MOVEMENT INDICATOR MEANS
Alfred B. Carmines, 412 Texas St., San Francisco, Calif. 94107
Filed June 28, 1965, Ser. No. 467,193
6 Claims. (Cl. 273—183)



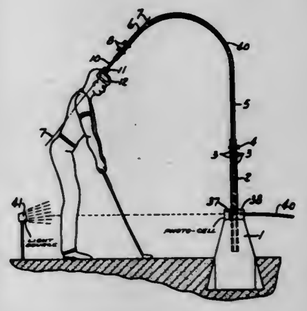
1. A golfer's aid comprising a glove adapted to be worn on the golfer's hand, a wrist band adapted to be worn on the golfer's forearm just above the wrist, a first strap secured to said wrist band, a second strap secured to said glove, means for pivotably connecting said first strap and said second strap together, a spring finger, means for mounting said spring finger on one of said straps to extend over the other one of said straps, and abutment means on said other one of said straps in the path of said spring finger and adapted to flex and release said spring finger with an audible sound when said first strap and said second strap pivot with respect to each other through a predetermined range.

3,350,101
GOLF SWING AID
Forest M. Bishop and Roy I. Bishop, Jr., Olympia, Wash. (both of 160 Van Geisen, Apt. 103, Richland, Wash. 99352), and William L. Howard, 2609 W. Albany, Kennewick, Wash. 99336
Filed Oct. 16, 1964, Ser. No. 404,274
5 Claims. (Cl. 273—186)



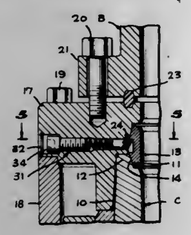
1. A golf swing practice device comprising a pad having a ball tee area, a curved line representing the ground trace of the swing of a club to said area, and an upright member located along said line and representing a point on the swing of the path of said club, said upright member being wound on a reel, for adjustment vertically.

3,350,102
GOLFER'S HEAD MOVEMENT CONTROL DEVICE
Frank M. Tiernan, Jr., 103 Oakwood Ave., Pittsburgh, Pa. 15229
Filed Mar. 23, 1965, Ser. No. 442,056
7 Claims. (Cl. 273—190)



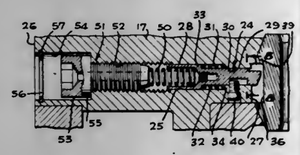
1. A golf training apparatus comprising a stationary support having an outwardly extending arm member, a swivel member rotatably secured to the end of said arm member to permit rotary planar movement of said member relative to said arm member, and carrying a head grip element to receive and hold the head of a golf trainee, limit means provided in said arm member and said swivel member to limit the movement of said head grip member within the confines of a planar arc and pressure resistance means for providing substantial initial resistance to movement of said head grip member along said arc.

3,350,103
SEAL RING HOLDING DEVICE
Arthur G. Ahlstone, Ventura, Calif., assignor to Ventura Tool Company, Ventura, Calif., a corporation of California
Original application Aug. 2, 1965, Ser. No. 476,417. Divided and this application Sept. 20, 1965, Ser. No. 488,347
9 Claims. (Cl. 277—9)



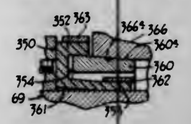
1. In a coupling device: a coupling member having a sealing surface; a seal ring having a surface adapted to seal against said sealing surface; means for supporting said seal ring on said coupling member comprising retaining means engageable with said seal ring and tending inherently to shift laterally from engagement with said seal ring to release said seal ring from said coupling member, spring means engageable with said retaining means, and means on said coupling member for energizing said spring means to cause said spring means to yieldably force said retaining means into engagement with said seal ring to support said seal ring on said coupling member, said energizing means being movable on said coupling member to a position deenergizing said spring means and allowing said retaining means to shift from engagement with said seal ring and permit removal of said seal ring from said coupling member.

3,350,104
SEAL RING RETAINING APPARATUS
Joseph H. Hynes, Ventura, Calif., assignor to Ventura Tool Company, Ventura, Calif., a corporation of California
Filed Sept. 21, 1965, Ser. No. 488,878
12 Claims. (Cl. 277—9)



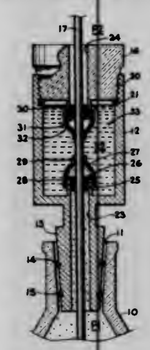
1. In a coupling device: a coupling member having a sealing surface; a seal ring having a surface adapted to seal against said sealing surface; means for supporting said seal ring on said coupling member comprising a plurality of circumferentially spaced plungers on said coupling member shiftable laterally to and from engagement with said seal ring, spring means engageable with said plungers, and means on said coupling member for energizing said spring means to cause said spring means to yieldably hold said plunger in engagement with said seal ring to support said seal ring on said coupling member, said energizing means being movable on said coupling member to a position deenergizing said spring means to allow said plungers to shift from engagement with said seal ring and permit removal of said seal ring from said coupling member.

3,350,105
APPARATUS FOR HOLDING LIQUEFIED GASES
Lester C. Browning, deceased, late of Norristown, Pa., by Ruth C. Browning, executrix, Norristown, Pa., and David A. Williams, Livermore, Calif., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Application May 1, 1963, Ser. No. 283,130, now Patent No. 3,251,602, dated May 17, 1966, which is a division of application Ser. No. 823,400, June 29, 1959, now Patent No. 3,109,293, dated Nov. 5, 1963. Divided and this application Oct. 18, 1965, Ser. No. 497,492
1 Claim. (Cl. 277—26)



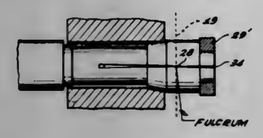
In a pump for liquefied gases at cryogenic temperatures: a first annular member and a second annular member spaced outwardly from said first annular member, means providing a seal for liquefied gas between said first and second annular members including first ring means having a lesser coefficient of contraction then said second annular member, said first ring means being in sealing contact with said second annular member, said first ring means extending beyond said second annular member, a sealing ring having a portion overlying in contacting relationship said first ring means, said sealing ring having another portion overlying in contacting relationship said first annular member, and second ring means encircling said other portion of said sealing ring and having a higher coefficient of contraction than said first annular member.

3,350,106
PACKING GLAND
Edgar L. Wheeler, 5636 Blanco Ave., Woodland Hills, Calif. 91364
Filed Dec. 21, 1964, Ser. No. 419,859
6 Claims. (Cl. 277—59)



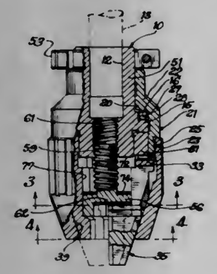
1. A packing gland for passing a rotatable member into an enclosure having a pressure different from the exterior pressure comprising: a housing defining an inner chamber and having inlet and outlet bores communicating at first ends with said chamber and at second ends with said enclosure and the exterior thereof respectively, said rotatable member passing from the exterior through said bores into said enclosure; and first and second resilient seals in said chamber surrounding said first ends of said bores and portions of said rotatable member in opposing relationship, said inner chamber incorporating an incompressible fluid and confining the same to a substantially fixed volume and provided with a pressure corresponding to the greater of the two pressures defined by the pressure in said enclosure and the exterior pressure, whereby that resilient seal subject to a greater external pressure than internal pressure is held by said fluid in hermetically sealing relationship to said rotatable member.

3,350,107
EXPANDING ARBOR
Charles R. Hughes, 1650 Superior Ave., Costa Mesa, Calif. 92627
Filed June 1, 1965, Ser. No. 460,076
7 Claims. (Cl. 279—2)



1. An expanding arbor comprising: a rear supporting tube having its forward portion longitudinally slotted to provide a plurality of individual, substantially resilient fingers projecting forwardly from an annular back portion of the tube; a forward element individual to each of said fingers and individually integrally bonded thereto, said forward elements having cross sections which are substantially sectors of the same circle and mating planar surfaces without substantial gaps therebetween, the inner ends of said mating surfaces forming fulcrum lines in a substantially common fulcrum plane; and integral forward end portions on said elements which combine to conform to the internal surface of the workpiece to be mounted thereon whereby compression of said resilient fingers rearwardly of the fulcrum plane is accompanied by tilting the elements in the fulcrum plane to expand their forward ends into internal gripping engagement with a workpiece mounted thereon.

3,350,108
KEYLESS CHUCKS
Albin G. Troka, Des Plaines, Ill., assignor to Supreme Products Corporation, Chicago, Ill.
Filed June 1, 1965, Ser. No. 460,161
7 Claims. (Cl. 279—58)



1. In a machine chuck having a body, a plurality of jaws mounted for sliding movement with respect to the body between two positions to grip or to release the tool held thereby, a common member movable in said body to actuate the jaws as a set between said two positions, means to operate said common member, said common member and jaws having respective male and female connecting means; the improvement which comprises: an elastic element interposed between each of said male and female means exerting resilient bias between the common member and jaws.

6. In a machine chuck having a body, a plurality of jaws mounted for sliding movement with respect to the body between two positions to grip or to release the tool held thereby, a common member movable in said body to actuate the jaws as a set between said two positions, means interconnecting said jaws and common member, means to operate said common member, said common member having a head including a face confronting a face of the body; the improvement which comprises: a resilient element interposed between said head and said confronting face to preclude metal-to-metal contact between the head and face when said common jaw-operating member is actuated toward said face.

3,350,109
ROCK AND ROLL HORSE
Charles T. Stanford, Atlanta, Ga., and Clarence Stanford, Oklahoma City, Okla.; said Clarence Stanford assignor of ten percent to Robert Ingram, Atlanta, Ga.
Filed Oct. 29, 1965, Ser. No. 505,700
4 Claims. (Cl. 280—1.184)

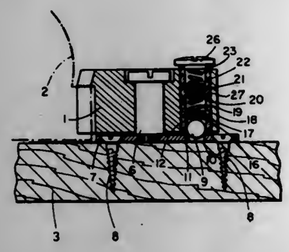


1. A rocking horse, including: a supporting wheel having a horizontal axle; a body adapted to support the weight of a rider; a vertical support member connected at its upper end to said body adjacent its center of gravity, said support member having a bifurcated depending end portion receiving said supporting wheel and connected with said horizontal axle for rocking movement of said horse about the axis of said horizontal axle; front and rear wheel means for respectively supporting the front and rear legs of said horse; front and rear axles respectively connected with said front and rear legs of said horse and eccentrically connected, respectively, with said front and rear wheel means, said front and rear wheel means including a drum secured to the respective said axle for rotation therewith, said drum having a toothed peripheral portion forming a ratchet wheel, a wheel rim mounted on the periphery of said drum for rotation therearound, and a spring urged pawl mounted on said wheel rim in engagement with the teeth of said ratchet wheel; and spring means connecting said front and rear axles to the respective leg of said horse, said spring means normally resisting downward movement of the front and rear legs of said horse.

3,350,110
SAFETY SKI BINDING
Georges P. J. Salomon, 34 Avenue de Loverchy, Annecy, France
Filed Aug. 24, 1966, Ser. No. 574,759
Claims priority, application France, Aug. 25, 1965, 29,465; Jan. 29, 1966, 47,738
15 Claims. (Cl. 280—11.35)

1. In a ski binding having a first element fixed to a runner, boot-engaging means including a second element secured to said first element with at least limited relative mobility, and retaining means normally preventing relative motion of said elements, the improvement wherein said retaining means includes a dash-pot assem-

bly forming a fluid chamber and comprising piston means on one of said elements bearing upon the other of said elements, said fluid chamber having a restricted passage



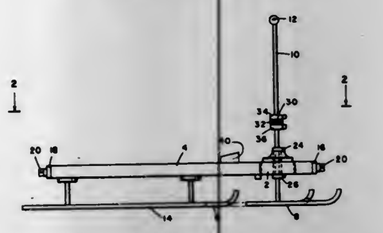
for a hydraulic liquid displaceable by said piston means upon movement thereof from a normal position in response to severe abnormal stresses.

3,350,111
SKI POLE
William J. Sahlein, 890 Park Ave., and Stephen Sahlein, 71 St. Marks Place, both of New York, N.Y. 10021
Filed Aug. 12, 1965, Ser. No. 479,125
7 Claims. (Cl. 280—11.37)



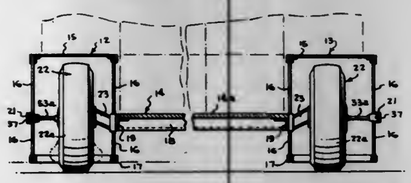
6. A ski pole comprising:
(a) a shaft;
(b) an elongated scraping member having at least one scraping surface and including a resilient extension in the form of a channel;
(c) means for pivotally attaching the extension of the scraping member to the shaft;
(d) the channel of the scraping member is provided with a pair of inwardly facing oppositely disposed lips, i.e., the scraping member extension is so mounted with respect to the shaft that as the scraping member pivotally moves toward the scraping position the lips of the channel frictionally engage the shaft and are forced apart by it thereby increasing the friction between the shaft and extension of said shaft and the lips thereby cooperating to resist pivotal movement when the scraping member is at or near the scraping position; and
(e) means for limiting the pivotal movement of the scraping member at a scraping position where the scraping member is disposed at a preselected and substantial angel to the shaft.

3,350,112
TOY VEHICLE
Ernest J. Flack, 905 De Soto Road, Baltimore, Md. 21223
Filed Oct. 23, 1965, Ser. No. 502,979
3 Claims. (Cl. 280—16)



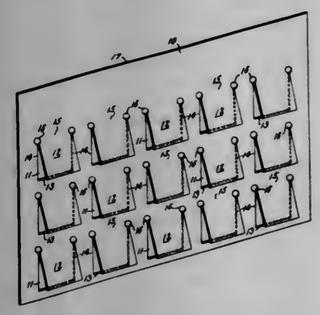
1. A stand-up type scooter which comprises in combination;
(a) a pair of spaced longitudinal platforms, each being of such width as to support the foot of an operator,
(b) means beneath one of said platforms and in a fixed substantially vertical plane therewith for supporting the said platform,
(c) a pair of supporting means under the other platform, one of said supporting means being fixed in a substantially vertical plane to the underside of said other platform and parallel with the supporting means on said one platform, and the other supporting means being rotatably mounted on said other platform on the lower end of a steering post in front of and in the plane of the fixed supporting member,
(d) means for rotatably supporting the steering post substantially perpendicular to said other platform and means whereby the steering post and the supporting means at the lower end thereof may be rotated relative to the other platform,
(e) means extending between the ends of the two platforms for maintaining said platforms in parallel longitudinal alignment, said means connected to the platforms on pivots which define longitudinal axes through the platforms and
(f) additional means connected between the platforms for causing the platforms to pivot in unison on said longitudinal axes and for maintaining the supporting means of the two platforms in parallel planes when said platforms are pivoted.

3,350,113
MODULAR TRANSPORTATION EQUIPMENT
Walter E. Graham, 1140 Karen Road, Montgomery, Ala. 36109
Filed May 10, 1966, Ser. No. 549,049
2 Claims. (Cl. 280—43.23)



1. A modular vehicle for transporting bulk materials comprising a pair of spaced parallel elongated longitudinally disposed wheel well covers having a closed top portion and an open bottom portion and truss side portions, a flat bed support area connecting the wheel well covers and being flanked thereby, a plurality of rotatable wheels mounted within each wheel well cover, each wheel having a pneumatic inflatable tire mounted thereon, each of said tires when fully inflated extending through the open bottom portion of the wheel well cover a predetermined amount for contact with a planar supporting surface so that said vehicle is supported on said planar surface entirely by said pneumatic tires when said pneumatic tires are inflated, means to simultaneously control the pressure of fluid in all of said tires at predetermined times to either inflate said tires to cause said vehicle to be supported solely by said tires or to deflate said tires to cause a downward movement of the vehicle so that the bottom portions of the wheel well covers are in contact with the planar surface to support the vehicle in fixed position thereon, said means for inflating and deflating said tires comprising fluid pressure supply means connected to a centrally located valve means, pressure lines extending from said valve means within an air conduit housing located on the exterior side of each elongated wheel well cover, a rotary coupling aligned with the center of each wheel and connected to said pressure line, and an air supply hose connection means extending between said rotary coupling and a valve stem on each wheel to enable ingress and egress of pneumatic fluid within each tire to enable inflation and deflation thereof.

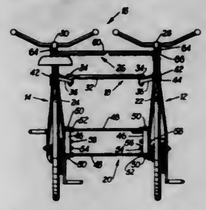
3,350,114
RUBBER ARTICLE
Wilfred Salisbury, Edinburgh, Scotland, assignor to The North British Rubber Company Limited, Edinburgh, Scotland
Filed Sept. 10, 1965, Ser. No. 486,489
1 Claim. (Cl. 280—154.5)



In combination with wheeled vehicle a mud flap mounted rearwardly of at least the rear wheels of said vehicle, said mud flap comprising: a sheet of elastomeric material, said sheet having a plurality of apertures therethrough and hinged flaps covering said apertures, said flaps being integral with said sheet along one edge and the ends of said one edge being formed with circular apertures, so that, said flaps will be sufficiently flexible to be opened by a stream of aqueous matter and capable of deflecting said matter downwardly.

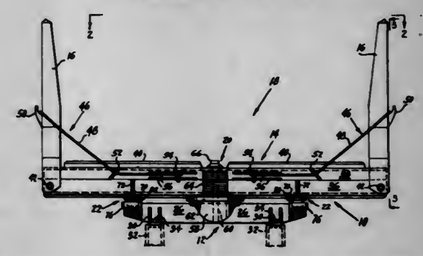
3,350,115
BICYCLE COUPLING DEVICE
Ferdinand Francis Ferrary, Springdale, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 4, 1966, Ser. No. 525,079
13 Claims. (Cl. 280—209)

1. Apparatus for coupling two bicycles for simultaneous operation in spaced side-by-side relation comprising: a rigid spacer adapted to extend transversely between opposed frame members of said bicycles adjacent one end thereof, ends on said rigid spacer adapted to be hingedly connected to said frame members, a flexible spacer adapted to extend transversely between and be fixedly connected to opposed frame members of said bicycles adjacent the other end thereof, said rigid and flexible spacers having predetermined lengths adapted to cooperatively maintain said bicycles in spaced substantially parallel side-by-side relation, and steering linkage means adapted to interconnect the front wheels of said bicycles for simultaneous angular displacement thereof whereby said coupled bicycles are constrained to turn in unison, said flexible spacer comprising at least two



spring members disposed in a vertically spaced relation, said spring members each having a high degree of bending rigidity in the direction of the longitudinal axes of said bicycles whereby the coupled bicycles are restrained from advancing or receding relative to each other and a high degree of bending flexibility in the direction substantially normal to the supporting surface of said bicycles whereby the coupled bicycles have freedom to move upwardly or downwardly relative to one another and to simultaneously incline transversely relative to the supporting surface, said flexible spacer being adapted to spring bias said coupled bicycles to the upright position.

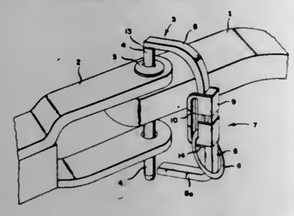
3,350,116
ROTATABLE LOG BUNK
Enoch Skirvin, Walter Skirvin, and Paul G. Skirvin, all of Rte. 2, Box 1 M, Philomath, Oreg. 97401
Filed Oct. 15, 1965, Ser. No. 496,261
3 Claims. (Cl. 280—404)



1. In combination with a trailer vehicle including elongated supporting members extending longitudinally thereof and in the general direction of travel, a log bunk, said log bunk comprising an upwardly opening elongated U-shaped connector fixedly secured, respectively, on each of said supporting members and extending in the direction of their elongation, an elongated stationary support member extending transversely of said supporting members, said support member including a central platform disposed between said supporting members and having opposed sides from which project, respectively, a pair of laterally spaced beams, each of said pair of beams diverging away from one another and being fixedly connected on said U-shaped connectors, an elongated movable support extending generally transversely of said connectors, pivot means connecting said movable support centrally of its ends on said stationary support, roller means supported on and between each of said pair of beams at the remotely disposed ends thereof, said roller means being rotatable about

normally horizontal axes disposed on radii of said pivotal connecting means, an elongated substantially rectangular planar shoe fixedly connected on and depending from, respectively, each end of said movable support to frictionally engage and support said movable support on said rollers, and an upstanding elongated stake fixedly connected, respectively, to each end of said movable support.

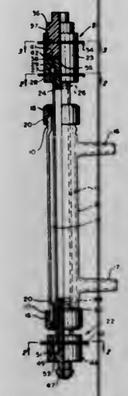
3,350,117
DRAWBAR PIN
William H. Kassmeier, West Point, Nebr., assignor to Overland Products Company, Inc., Fremont, Nebr., a corporation of Nebraska
Filed Feb. 25, 1966, Ser. No. 530,227
9 Claims. (Cl. 280—515)



1. A drawbar pin assembly comprising a drawbar pin, a curved arm fixed to the upper part of the pin and extending outwardly and downwardly therefrom to form with said pin an open-bottom perimeter, and locking arm means slidably connected to said curved arm for automatically extending inwardly toward said pin to substantially close said perimeter when said locking arm means moves slidingly along said curved arm to the lower end thereof, and for retracting away from said pin to open the perimeter when the locking arm means moves slidingly along said curved arm toward the upper fixed end thereof, said locking arm means comprises a locking arm assembly having a first portion slidably mounted on said curved arm and having a second portion which extends inwardly toward the lower part of said pin when said slidably mounted portion is located along the lower portion of said curved arm, said slidably mounted portion extending from the outer surface of said curved arm inwardly past the inner surface of the curved arm and having elongate slot means formed in the part thereof which extends past the inner curved surface, said slot means extending generally in the direction of the pin axis when the locking arm assembly is located toward the lower end of said curved arm, a member mounted in said slot means for movement along the length of said slot means and disposed closely adjacent the inner surface of said curved arm, the dimensions of said slot means relative to the configuration of said curved arm being such that the locking arm assembly can slide along said curved arm toward the upper end thereof and retract outwardly from the pin to open said perimeter only when said movably mounted member is moved from the lower end of the slot means toward the upper end thereof, whereby the locking arm assembly can be locked in the perimeter closing position by moving said movable member to the bottom of said slot.

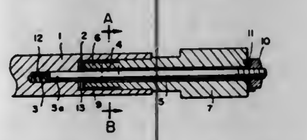
3,350,118
FITTING FOR TUBING
Louis Neubauer, Redwood City, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Sept. 29, 1964, Ser. No. 400,087
2 Claims. (Cl. 285—305)

1. A fitting for attaching a tube, such as a glass column for a chromatograph or similar apparatus having an enlarged end comprising an external annular shoulder to an associated apparatus comprising a body including a central tubular protuberance adapted to project into the tube, an annular cylindrical wall radially spaced from said tubular protuberance to form an annular groove for receiving the enlarged end of said tube, means for providing a seal between said tube and said body including at least an O-ring seal carried by the outer surface of said protuberance for sealing to the adjacent inside surface of said tube, narrow slots perpendicular to the axis of the protuberance formed in opposite sides of said cylin-



drical wall and opening into said groove, and a clip having a bifurcated end adapted to slide into said slots with the bifurcated end serving to accommodate the tube and engage the annular shoulder at the enlarged end to limit relative axial movement between the tube and body, said shoulder having an external diameter sufficiently large compared to the internal diameter of said groove to provide a rigid coupling between said tube and said body.

3,350,119
DETACHABLE CONNECTION OF A PISTON WITH A PISTON ROD, ESPECIALLY FOR A PISTON COMPRESSOR
Heinrich Friedenreich, Limburgerhof, Pfalz, and Kurt Erdmann, Wesseling, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Aug. 27, 1964, Ser. No. 392,530
Claims priority, application Germany, Aug. 29, 1963, B 73,304
4 Claims. (Cl. 287—53)



1. A piston and piston rod assembly providing a detachable rigid connection therebetween, especially in a high pressure compressor, said assembly comprising in combination:

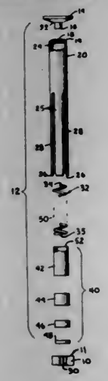
a piston rod having an axially concentric bore at one end thereof, said bore being longitudinally divided into two portions of different diameters, and at least one radially inwardly projecting lug on an annular portion of the inner wall of the bore of greater diameter at a point intermediate the ends thereof;

a cylindrical shank having one end inserted for both axial and rotational movement within the concentric bore of smaller diameter of said piston rod, said shank bearing at least one radially outwardly projecting boss corresponding in annular cross section to said lug of said piston rod and located in engagement behind said lug within said bore of greater diameter in the locked position of said assembly;

a piston having an axial and concentric bore corresponding to the diameter of said shank and also having a rearward extension inserted axially into said bore of greater diameter of said piston rod, said rearward extension including at least one tenon fitted axially into at least a portion of the free annular space which remains around said shank and which is unoccupied by the engaged lug and boss members in their locked position so as to prevent rotational movement of said piston carried on said shank; and

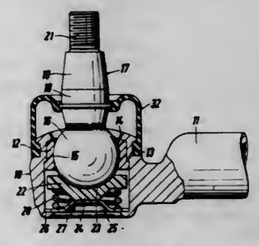
locking means connecting said piston at its forward end to said shank to firmly hold the piston axially against said piston rod.

3,350,120
STRUCTURAL POLE ASSEMBLIES
Carl B. Hinrichs, Charlotte, Mich., assignor, by mesne assignments, to Aluminum Extrusions, Inc., Charlotte, Mich., a corporation of Michigan
Filed Apr. 23, 1965, Ser. No. 450,387
2 Claims. (Cl. 287—58)



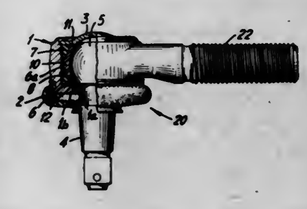
1. A conector assembly for an elongated pole and the like for securing the pole between spaced-apart fixed areas, said connector assembly including a friction surface for engaging one of said spaced-apart areas, an elongate tubular sleeve carrying said surface and having a body portion extending away from said surface generally at an angle normal thereto, guide surfaces on said body portion extending generally parallel with the longitudinal axis of said body portion, said guide surfaces being slideably engageable with complementary surfaces of the pole for confining the relative movement between said body portion and pole to linear movement, the pole having an abutment shoulder, said body having an abutment shoulder, at least one helical compression spring disposed in said body adjacent said guide surfaces and having one end abutting said shoulder of said body portion, said spring being restrained to axial movement by said body portion, and a plurality of separate, removable tubular spacers at least some of which are of a different predetermined length disposed in said body portion adjacent said guide surfaces, said spring abutting one of said spacers with its other end and another of said spacers abutting the other of said abutment shoulders, said spacers being restrained to linear movement by an internal surface of said body portion, and said spacers being interchangeable both as to total length and number to provide for a variation in compression of said spring when said connector assembly and pole are mounted between said spaced apart fixed areas, and the mean diameter of the helix of said spring being slightly less than the inside diameter of the edge of each of the spacers so that regardless of how the spacers are arranged in the assembly the mean diameter of the spring will always be less than the inside diameter of each of the spacers.

3,350,121
BALL AND SOCKET JOINTS
Albert W. Townsend, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Jan. 22, 1965, Ser. No. 427,364
Claims priority, application Great Britain, Feb. 6, 1964, 5,096/64; Mar. 17, 1964, 11,259/64
5 Claims. (Cl. 287—90)



1. A ball and socket joint comprising a socket with openings in the opposite ends thereof, a ball stud extending through one opening; a ball on the end of said stud disposed in said socket adjacent said one stud opening, a first bearing member in said socket surrounding said one stud opening and in engagement with said ball, a second bearing member in said socket secured in said socket opposite said one opening and in engagement with said ball, a resilient metal disk secured in said socket in contact with said second bearing member and adjacent the other opening in said socket, said disk being in contact with said second bearing member at its central area, said disk having a circumferential rim in contact with an inturned annular lip adjacent said other opening of said socket and the axial dimensions of said ball and bearing means and socket being such that said disk is deformed in said secured position beyond its elastic limit and exerts a load on said second bearing member resulting from residual resilience of the disk.

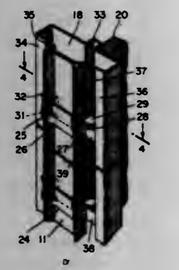
3,350,122
BALL JOINT DEVICE
Jürgen Ulderup, Bergstrasse, Lemforde, Hannover, Germany
Filed Mar. 24, 1965, Ser. No. 442,428
Claims priority, application Germany, Apr. 13, 1964, U 10,653
2 Claims. (Cl. 287—90)



1. A universal joint, particularly for steering and control linkages of motor vehicles, comprising a tubular housing closed at one end and having an opening at the

opposite end with an interior ledge adjacent said opening, a one piece integral plastic bearing box in said housing, a hinge pin extending through the opening of said housing and having a spherical end elastically supported for movement in all directions in said bearing box, and means for supporting said bearing box within said housing with elastically variable play both in directions of the hinge pin axis and in transverse directions, said means for supporting said bearing box within said housing including two elastic rings spaced in an axial direction in respect to the axis of said hinge pin, said rings bearing along their entire outer peripheries and ends against the interior and each end of said housing respectively, said bearing box having a collar extending radially outwardly between said rings but being spaced from the interior of said housing, the inner periphery of said elastic rings and the outer periphery of said bearing box having complementary frusto-conical surfaces in engagement with each other and converging toward said collar, and said elastic rings also having slots at each end permitting additional yielding of the bearing box in axial directions.

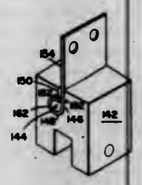
3,350,123
FRAMING CLIP
Robert C. Loving, 3925 Alla Road, and Robert M. Poland, 3741 Mount View Ave., both of Los Angeles, Calif. 90066
Filed Sept. 3, 1965, Ser. No. 484,955
2 Claims. (Cl. 287—189.35)



1. A framing clip securing a door frame to a wall stud, comprising, in combination: a plate positioned adjacent to said stud, said plate having a pair of legs extending therefrom so as to receive said stud therebetween, each of said legs having an open-ended slot extending upwardly from the bottom thereof; a cross brace mounted on said door frame, said slots in said legs being fitted over said cross brace to thereby position said wall stud adjacent to said cross brace; and an upturned tab integrally attached to each of said legs and extending outwardly therefrom into wedge-fit engagement with edge portions of said door frame, said clip being deformed into engagement with the stud.

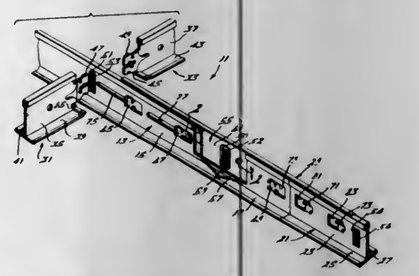
3,350,124
METHOD OF CONNECTING PARTS AND PARTS CONNECTED BY THE METHOD
Lawrence E. Husted, Fairhill, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed May 5, 1965, Ser. No. 453,421
8 Claims. (Cl. 287—189.36)

5. A metal sheet and a second part,
wall means defining an opening in said second part having a neck portion leading to an enlarged portion having a wall which is at least partially arcuate, the neck portion being narrower than the maximum width of the said enlarged portion, and the end of the sheet being curled within said enlarged portion of the opening and in contact with the wall



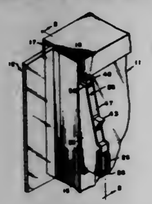
of the enlarged portion, said curled end forming a closed loop with said end being in contact with the sheet.

3,350,125
EXPANSION CONNECTION FOR FIRE RATED CEILING GRID SYSTEM
George C. Adams, Ann Arbor, Mich., assignor to Rollform, Incorporated, Ann Arbor, Mich., a corporation of Michigan
Filed Mar. 24, 1966, Ser. No. 537,100
1 Claim. (Cl. 287—189.36)



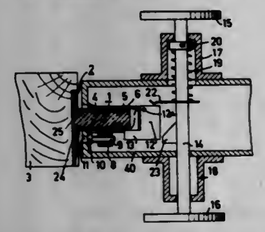
A control expansion grid member assembly comprising a pair of main T-members butted end-to-end and each having a vertical flange and horizontal bottom flanges, one of said T-members being provided in its vertical flange and adjacent the butted end thereof with a cut-out area which extends downwardly from the upper edge of the flange to a point adjacent to said horizontal flanges, the bottom of said cut-out area being spaced above said horizontal flanges to define a relatively narrow portion of said vertical flange between the bottom of the cut-out portion and said horizontal flanges which serves a strengthening and stiffening function, said relatively narrow vertical flange portion having a generally V-shaped notch therein intermediate the sides of said cut-out area, whereby thermal expansion of said T-member causes the portion thereof below said cut-out area to fold downwardly in a V-shape with the apex of the fold at said notch, a splicer bridging the joint between said main T-members and extending across said cut-out area, and clip and slot means fastening said splicer to the vertical flanges of said T-members, certain of said clip and slot means being at the side of said cut-out area remote from the butted end of said one T-member and the slot portions of said certain clip and slot means extending from the clip portions thereof in a direction away from said cut-out area to permit said one T-member to move relative to said splicer and into said cut-out area under thermal expansion conditions, the portion of said splicer extending across said cut-out area being provided with means for attachment of a cross T-member the remote side of said cut-out area extending transversely of the T-member in substantially a straight line from the bottom of said area and said cross T-member attachment means being located generally in-line with said V-notch and disposed a substantial distance from said remote side of said cut-out area.

3,350,126
LOCK FOR SLIDING DOORS
Nathan C. Walberg and Renato E. Mazzarantani, both % M-W Fabricating Corp., 6600 NW. 32nd Ave., Miami, Fla. 33147
Filed Dec. 8, 1965, Ser. No. 512,492
2 Claims. (Cl. 292—179)



1. A locking device for a pair of adjacent overlapping slide track panels comprising a vertically elongated housing, means for securing the housing to one of the panels, said housing having an opening through its outer wall, a block member mounted in the bottom of the housing and projecting through said opening for horizontal movement between open and closed positions of the locking device, a rigid pin secured to the block and projecting through an aperture of the inner side of the housing, a spring within the housing urging the block and pin to a retracted position, a vertical slide within the housing having an undercut slant edge in contact with a corresponding parallel slant edge of the block in the retracted position of the block, spring means urging the slide downwardly to a position of engagement with the block, rack teeth carried by the block, a pawl secured to said vertical slide for engaging the rack in an elevated position of the vertical slide, a finger integral with and projecting outwardly from said vertical slide, said housing having a vertically enlarged opening through which the finger projects and in which it is movable to permit manual engagement and vertical actuation thereof, said vertical slide having an extension at its upper end passing through an opening in the top of the housing, said extension being sufficiently long to be juxtaposed in relation to a downwardly facing stationary member when the vertical slide is in its uppermost position.

3,350,127
MAGNETIC LATCH FOR A DOOR
Maarten Hekelaar, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,456
Claims priority, application Netherlands, Mar. 24, 1964, 64—3,113
6 Claims. (Cl. 292—251.5)



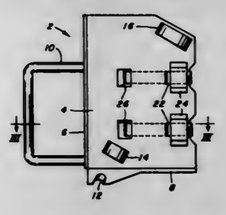
1. A magnetic latch for a door comprising the combination of a locking plate of ferromagnetic material having a ramp portion and a recess for receiving a bolt, and a latch means; said latch means including a permanent magnet bolt, a bolt guide, said bolt being tiltable in the direction of opening movement of said door and slideable within said guide, means operatively associated with said bolt for preventing tilting of said bolt and inadvertent opening of said door, knob means for moving said tilting prevention means to an inoperative position, and means for slidably positioning said bolt within said guide.

3,350,128
DOOR LOCK STRIKER
Jack E. Martens, Bloomfield Hills, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed May 3, 1966, Ser. No. 547,257
4 Claims. (Cl. 292—341.12)



1. A striker adapted for engagement by the latch of a vehicle door lock comprising:
(a) a member comprising a rigid shaft peripheral and longitudinally extending surface having means at one end for attachment to a support;
(b) shoulder means spaced longitudinally of said shaft;
(c) a sleeve of resilient material extending between said shoulders and encompassing said surface of said member;
(d) a spring having a plurality of coils encompassing said sleeve, coils of said plurality being adapted upon engagement by the latch therewith of being compressed into said resilient sleeve.

3,350,129
PLATE HANDLING DEVICE
Joseph B. Novak, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,254
1 Claim. (Cl. 294—67)

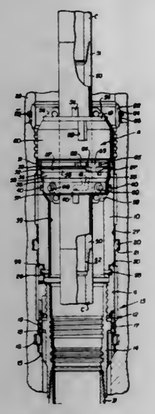


A device for lifting plate comprising a pocket adapted to receive a corner of a plate, said pocket including spaced side walls, a bottom, and a wall at one end, said pocket being open at the top and at the end opposite said one end, a leaf spring in said pocket adapted to be deflected by the corner of a plate when the pocket is applied thereto, and at least a pair of sling-guide eyes spaced across the width of said side walls externally thereof.

3,350,130
WELL BORE RUNNING-IN AND RETRIEVING TOOL

Arthur G. Ahlstone, Ventura, Calif., assignor to Ventura Tool Company, a corporation of California

Filed Oct. 23, 1965, Ser. No. 503,563
15 Claims. (Cl. 294—86.25)

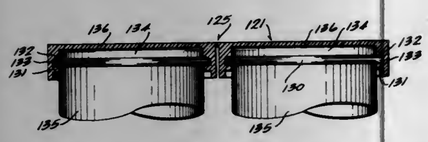


1. In apparatus for retrieving or running-in a well bore device: a supporting structure having connecting means thereon for connecting said structure to a running string; expansible and contractable latch means on said supporting structure adapted for coupling to the well bore device upon lowering of said supporting structure on the running string to the well bore device; and means disposed on said supporting structure during lowering of said supporting structure on the running string and engageable with said latch means to retract and release said latch means from the well bore device, said retracting and releasing means being rotatably mounted on said supporting structure and rotated thereon to retract said latch means from the well bore device.

3,350,131
COMBINED CARRYING UNIT AND COASTER

John J. Tanzer, 2605 Kevenauer Drive, Brookfield, Wis. 53005

Filed Oct. 24, 1965, Ser. No. 504,851
9 Claims. (Cl. 294—87.2)

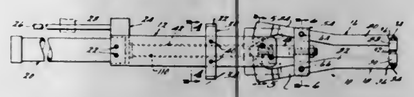


1. A carrying pack for cans and the like comprising an array of cup-shaped members, each said cup-shaped member having side walls and an end wall, a web interconnecting said cups into a carrier unit, an internal annular shoulder at the intersection between said side wall and said end wall, an annular flange extending radially inwardly from said side wall and axially spaced from said shoulder, said shoulder and said flange being adapted to receive a container having a bead so that the bead is gripped between said flange and said shoulder, said carrier being characterized in that the web interconnecting said cups is partially severed along a continuous line immediately adjacent to the wall of each said cup and extending the entire distance of the intersection between said cup and said web, said flange and said shoulder making a watertight seal with said bead of said container, a single passage of very limited angular extent extending from the top to the bottom of said flange, and said shoulder being provided with a pair of passages angularly spaced from the passage of said flange and in fluid communication therewith.

3,350,132
EXTRACTOR JAW

Harry M. Ashton, Birmingham, Mich., assignor to Ashton Automation International, Inc., Detroit, Mich., a corporation of Michigan

Filed Aug. 4, 1965, Ser. No. 477,238
10 Claims. (Cl. 294—88)

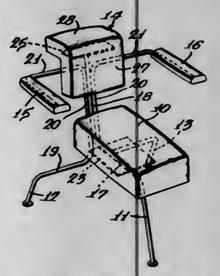


1. In an extractor jaw assembly,
a pair of elongated spaced parallel guide members,
means on each of said members defining an elongated channel section terminating at one end in upper and lower channel portions,
a pair of jaw members each having a forward gripping section and a rearward guide section,
a carriage member longitudinally movable relative to said guide members and pivotably supporting said jaw members,
piston means adjacent said guide members for selectively biasing said carriage member and said jaw members longitudinally thereof,
guide means on each of said jaw members disposed in said channel sections whereby longitudinal movement of said jaw members in one direction will pivot said jaw members such that said gripping sections thereof move toward each other and longitudinal movement of said jaw members in the opposite direction will pivot said jaw members such that said gripping sections thereof will move away from each other, and
camming means disposed in said channel sections for limiting pivotal movement of said gripping sections of said jaw members toward each other to prevent said jaw members from becoming locked in a closed position.

3,350,133
CHAIR

George E. Schaefer, Muskegon, Mich., assignor to Brunswick Corporation

Filed Sept. 9, 1966, Ser. No. 578,233
10 Claims. (Cl. 297—232)

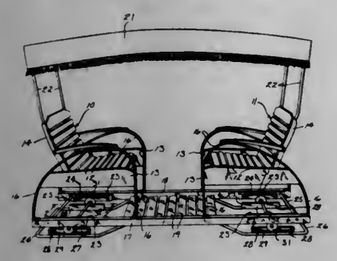


1. A chair having, in combination, a frame comprising leg means, a seat supporting portion, and an upwardly extending back supporting portion, a chair seat on the seat supporting portion, an upright cushion secured to the upwardly extending back supporting portion and formed to provide a chair back, and an integral horizontal cushion at the upper end of the back supporting portion of the frame forming a stool seat.

3,350,134
GLIDER OSCILLATING ON ROLLERS

Aaron L. Kotler, Glencoe, Ill., assignor to The Goshen Manufacturing Co., Inc., Goshen, Ind., a corporation of Indiana

Filed July 25, 1966, Ser. No. 567,635
1 Claim. (Cl. 297—246)



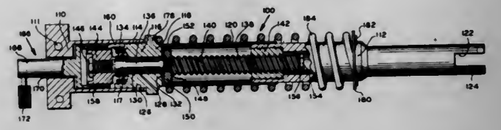
A glide settee having a pair of longitudinally-movable elongated parallel horizontal frame elements carrying oppositely-facing seats, a stationary base member below said frame elements, roller assembly between said base and frame elements, said assembly comprising: first bracket plates mounted on the inner faces of said horizontal frame elements, each of said bracket plates having a downwardly-facing concave rim projecting transversely inwardly therefrom; second bracket plates mounted on said base member below said first bracket plates and spaced laterally-inwardly therefrom, each of said second bracket plates having an upwardly-facing concave rim projecting transversely outwardly therefrom, the oppositely-curved rims on said first and second bracket plates being formed on arcs of curves of substantially the same radii and being vertically aligned so that said spaced plates and said aligned rims form roller sockets; and a roller movably carried in each of said sockets with said roller riding on the lower rim and the upper rim bearing on the top of said roller to permit back and forth gliding movement of the settee, said rollers having smooth peripheral surfaces, and said rollers being connected in pairs by axles and being movably sandwiched in spaced relationship between said laterally-spaced bracket plates to prevent their inadvertent dislodgement.

3,350,135
POSITION RETAINING DEVICE

Jack E. Martens, Bloomfield Hills, Mich., assignor to The Anderson Company, a corporation of Indiana

Continuation of applications Ser. No. 297,586, July 25, 1963, and Ser. No. 402,359, Oct. 7, 1964. This application Mar. 15, 1966, Ser. No. 536,211
3 Claims. (Cl. 297—355)

1. A mechanical position-retaining device for a chair having a positionable back comprising in combination;
a first member having means for attachment to a chair base,
a second member rectilinearly movable relative to the first member and having means for attachment to a back positionable with respect to said chair base,
one of said members having a fixed threaded part and the other of said members rotatably carrying a part having threading for cooperation with said fixed threaded part,
said threading being relatively steep so that an axial force applied by said back rectilinearly between said first member and said second member tends to rotate said rotatable part,
brake means cooperable with a portion of said rotatable part and selectively engageable therewith to prevent rotation thereof and to prevent relative rectilinear movement of said first and second members responsive to an axial load applied by said positionable back,



a member disposed in load carrying relationship between said rotatable part and said other member,
said member having frictional characteristics such that rotation remains substantially constant in response to varying axial loads when said brake means is disengaged.

3,350,136
SAFETY RETAINING BELT FOR SHOPPING CARTS

David L. Allen, Livonia, Mich., assignor of twenty-five percent to Patricia Daniels and twenty-five percent to Gail Stoll, both of Livonia, Mich.

Filed Mar. 2, 1966, Ser. No. 533,131
3 Claims. (Cl. 297—388)



1. A retractable seat belt assembly for the seat of a shopping cart having a seat member and a back rest comprising:
a substantially cylindrical housing affixed with its axis substantially vertical to one side of the back rest;
a bracket dependent from said housing and provided with clamping means for attaching to a structural member of said shopping cart;
a drum member in said housing adapted to journal in said housing, said drum member being disposed in a compartment in said housing;
a flat flexible belt member having one end attached to the periphery of said drum member;
a slot-like channel in said housing affording passage for the belt member to the outside of said housing;
a snap buckle fixedly attached to the other end of said belt member and adapted for engagement with a structural member of said shopping cart; and
a spiral spring in another compartment in said housing and having one end attached to said housing and another end attached tangentially to said drum member

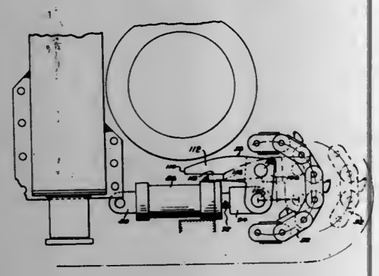
so as to rotationally urge said drum member in the direction that retracts said belt member by winding around the periphery of said drum member.

3,350,137

MINING MACHINE WITH LATERALLY EXTENSIBLE TRIM CHAIN SPROCKETS AND LOCKING MEANS THEREFOR

Jerry Karlovsky, Jr., Nashville, Ill., assignor to National Mine Service Company, Pittsburgh, Pa., a corporation of West Virginia

Filed July 12, 1965, Ser. No. 471,270
4 Claims. (Cl. 299—61)



1. In a continuous mining machine having,
a trim chain sprocket,
a journal housing to rotatably support said trim chain sprocket, said journal housing having a laterally extending support member,
a receiver on said mining machine for said support member,
said support member positioned in said receiver in a manner that said journal housing is movable laterally relative to said mining machine,
a cylinder having a piston rod extending therefrom secured to said mining machine and extending laterally therefrom,
said piston rod connected to said journal housing, and
fluid pressure means connected to said cylinder for extending and retracting said journal housing relative to said mining machine,
the improvement comprising,
a link member connecting said piston rod to said journal housing to permit limited relative movement between said piston rod and said journal housing,
said link member having a latch arm extending therefrom,
said latch arm arranged to lock said trim chain sprocket in an extended position and in a retracted position, and
said piston rod arranged upon movement toward said cylinder to rotate said latch arm and thereafter retract said trim chain sprocket to a retracted position where said latch arm engages abutment means to limit further retraction of said trim chain sprocket.

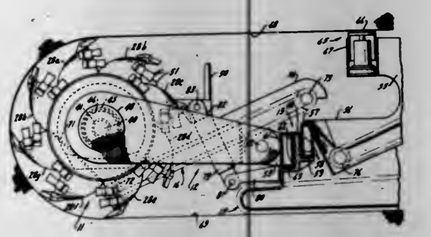
3,350,138

BUCKET HEAD MINING MACHINE HAVING ROOF ENGAGING ANCHOR AND CONVEYOR

Carl A. Wilms, Los Angeles, Calif., assignor to Smith Industries International, Inc., a corporation of California

Filed July 21, 1965, Ser. No. 473,617
4 Claims. (Cl. 299—67)

1. A self-propelled excavating machine especially adapted for underground operation, said machine including, in combination:
a supporting structure;
means carried by said supporting structure to enable self-propelled movement of said structure;
a first frame carried by said supporting structure and adapted for rotary motion about a generally vertical axis, said first frame including a wheel boom pivotally mounted on one end thereof to said first frame for movement in a generally vertical arc, an oppositely extending counterweight adapted to stabilize said machine, and means for raising and lowering said wheel boom;
said wheel boom carrying a bucket wheel rotatably mounted thereto, motor means in driving engagement with said bucket wheel to impart rotary motion to said bucket wheel, and first conveying means for receiving, transporting, and discharging the material excavated by said bucket wheel; with



said bucket wheel having a plurality of buckets peripherally attached thereto; and
a second rotatable frame carried by said supporting structure about a rotational axis generally colinear with said first frame rotational axis and formed with second conveying means adapted to receive the excavated material upon discharge from the first conveying means and anchor means adapted to engage an overlying surface and exert a force thereagainst sufficient to anchor said machine during excavating operation.

3,350,139

MATERIALS TRANSPORTING APPARATUS

Roland E. Shaddock, Streator, Ill., assignor to The Meyers-Sherman Corporation, Streator, Ill., a corporation of Illinois

Filed July 22, 1966, Ser. No. 567,214
12 Claims. (Cl. 302—27)



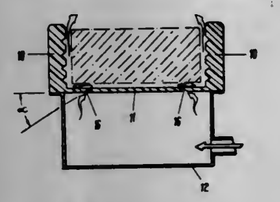
1. Granular materials transporting apparatus adapted for being submerged in the material to be transported which comprises, in combination, a tubular flow conduit, means providing a plurality of intake ports in spaced relation along said conduit, a closure movable for opening and closing each of said ports, driven means associated with each said closure for moving the closure thereby, a drive shaft extending along said conduit, means mounting said shaft for axial reciprocal movement between selected positions and for rotational movement about its axis, and plural drive means on said shaft engageable respectively with said driven means for moving said closures upon rotation of said shaft, said drive means being disposed for selective engagement with respective driven means in selected different positions of said shaft.

3,350,140

CONVEYING SLAB-SHAPED ARTICLES

Mauritz L. Strydom, 4 Krigeville Court, Stellenbosch, Cape Province, Republic of South Africa

Filed May 11, 1966, Ser. No. 549,370
10 Claims. (Cl. 302—31)



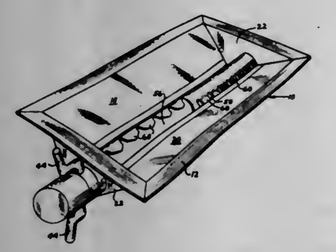
1. A pneumatic system for conveying slab-shaped articles consisting in an elongated trough having a base and parallel side walls flanking the base, jets piercing the base and means to cause gas to flow through the jets, so that each article floats on a cushion of gas created by gas flow between the bottom of the article and the surface of the base, having the improvement that the jets are provided in two rows parallel to the side walls and the jets in each row are inclined towards the other row at an angle causing amplification of cushion pressure.

3,350,141

PNEUMATIC OUTLET FOR UNLOADING PARTICULATE MATERIALS

Earle McGrath, St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Aug. 22, 1966, Ser. No. 574,066
3 Claims. (Cl. 302—52)



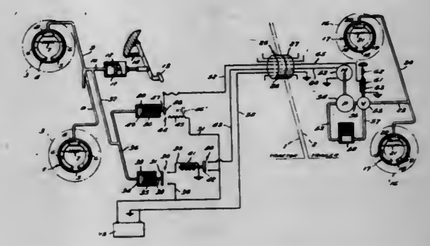
1. An outlet structure for pneumatically unloading particulate material comprising, a pair of generally opposed side walls sloping downwardly toward each other in a generally smooth relation and having spaced lower portions, an open generally bowl-shaped housing extending downwardly between the spaced lower portions of said side walls, a metering tube disposed within said housing and having a slot extending longitudinally thereof to receive the particulate material flowing downwardly along the side walls for pneumatic unloading, means to rotate said tube about its longitudinal axis to position the slot in the area between the lower portions of said side walls thereby to permit the particulate material to flow into the tube for pneumatic unloading, a separate lip member generally at the juncture of each lower portion with the housing and extending toward the pneumatic tube with the free edge thereof adjacent the tube, said lip members being formed of a resilient material having a sufficient stiffness to support the adjacent particulate material without collapsing and having a bulbous end portion opposite said free edge with an opening therein extending longitudinally of the metering tube, a slot at each juncture facing the adjacent metering tube and receiving the bulbous end portion of the adjacent lip member, and lip securing means extending within the opening of each lip member to secure the lip members adjacent said junctures for flexing movement relative to said side walls whereby the lip members flex to permit the particulate material to pass between the lip members and the adjacent tube when the particulate material tends to bind between the lip members and tube.

3,350,142

ACTUATOR SYSTEM

Leslie N. Schuman, Loudonville, Ohio, assignor, by mesne assignments, to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 8, 1965, Ser. No. 431,001
16 Claims. (Cl. 303—7)



1. An actuator system comprising actuatable means adapted to be actuated by pressure of fluid; conduit means connected to said actuatable means and adapted to contain fluid for actuating said actuatable means; means for developing fluid pressure; power means for driving said fluid pressure-developing means; fluid pressure-regulating means for controlling variably the fluid pressure developed by said fluid pressure-developing means and transmitted to the fluid in said conduit means; means, including a first fluid pressure-controlled electric switch, for initiating starting and causing stopping of said power means; means, including a second fluid pressure-controlled electric switch, for controlling operation of said pressure-regulating means so that substantial pressure developed by said pressure-developing means is transmitted to the fluid in said conduit means only after sufficient time has elapsed to permit said power means to develop sufficient power to cause said pressure-developing means to develop sufficient fluid pressure to actuate said actuatable means; and fluid pressure means for controlling both of said pressure-controlled switches.

3,350,143

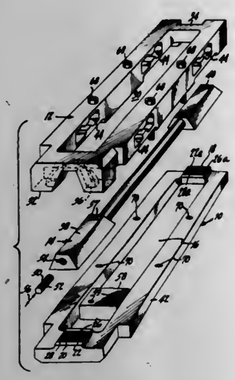
SLIDE BEARING EMPLOYING A FLUOROCARBON LUBRICANT

Abraham Lichowsky, Los Angeles, Calif., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 17, 1965, Ser. No. 440,582
9 Claims. (Cl. 308—3)

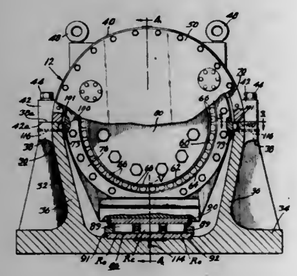
3. A slide bearing comprising, in combination,
two stationary bearing elements formed with porous metal bearing surfaces, said bearing surfaces having slots opening thereon, and said two elements being joined to form an opening, surrounded by said bearing surfaces, adapted to receive a movable bearing element;
a lubricant, comprising a lubricating fluorocarbon, located in the slots opening on the bearing surfaces and flush with said surfaces;

a movable element having relatively hard, relatively smooth bearing surfaces which conform to and mate with the bearing surfaces defining the opening in the joined stationary bearing elements, located in said opening; and



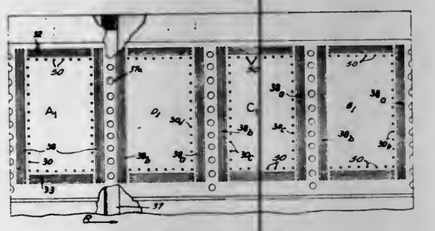
one of said stationary elements serving as a fixed reference and the other of said stationary elements continuously resiliently urging the movable element into engagement with said one stationary element.

3,350,144
EXPANSION MOUNTING
Edward V. Beckman, Philadelphia, and Walter Ralph Good, Paoli, Pa., Joseph Harry Schickling, Hornell, N.Y., and Archie Young, Philadelphia, Pa., assignors to SKF Industries, Inc., King of Prussia, Pa., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,565
2 Claims. (Cl. 308—6)



1. In an expansion mounting assembly for supporting a rotatable member, a substantially enclosed main housing consisting of a lower section having an elongated flat base and a pair of spaced apart upwardly diverging wings, a top section of generally semi-cylindrical shape secured to the lower section, a cover plate detachbly secured to one side of the open end of the main housing, and an annular wall secured to the opposite open end of the main housing defining an opening for receiving the rotatable member, a sealing element carried by said annular wall adapted to engage the rotatable member thereby providing an assembly wherein all of the internal parts including the bearing members are sealed from the surrounding atmosphere by a single seal, a housing cartridge mounted in the main housing, bearing means supporting the rotatable member in the housing cartridge, a ladder bearing assembly comprising a plurality of rollers disposed between the housing cartridge and the base of the main housing to permit axial movement of the housing cartridge relative to the main housing, the rolling axes of the rollers of the ladder bearing assembly disposed in a plane transverse to the vertical axis of the expansion mounting assembly and mounted for rolling movement in a truly axial direction, means defining slotted openings in the upper edge of each of the wings of the lower section of the main housing defining diametrically opposed pockets at the juncture of the top section and lower section of the main housing, diametrically opposed lateral projections having axially extending bearing surfaces on the housing cartridge, a plurality of roller elements in said pockets at diametrically opopsed points between the main housing and the housing cartridge at opposite sides of the main housing adapted to engage said lateral projections to absorb lateral shock loadings, the axes of said roller elements in said pockets extending parallel to a plane through the vertical axis of the expansion mounting assembly.

3,350,145
FLUID-BEARING
Marcel Pierre Le Nabour, Maisons Laffitte, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Sept. 28, 1965, Ser. No. 490,808
Claims priority, application France, Oct. 6, 1964, 990,417
11 Claims. (Cl. 308—122)



1. Hydrostatic fluid bearing comprising a housing having a generally cylindrical shape in which a shaft substantially coaxial with said housing is rotatable with play, said bearing comprising fluid injectors which open into said housing so as to supply fluid cushions under pressure around said shaft, said fluid injectors being so arranged that said fluid has a tendency to circulate between said housing and said shaft in the direction opposite to the movement of the rotation of said shaft in order to reduce the entrainment of said fluid and to reduce the movement of precession of said shaft and of the effects of said movement, said fluid cushions being delimited by seals which are respectively parallel and perpendicular to the bearing axis so as to divide said housing into segments and, in each segment, said injectors being disposed asymmetrically with respect to the central diametral plane of said segment.

3,350,146
RAILROAD CAR TRUCK SIDE BEARING AND BOLSTER RETAINER
Ray C. Williams, Chicago, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of New Jersey
Filed Dec. 11, 1964, Ser. No. 417,622
2 Claims. (Cl. 308—138)

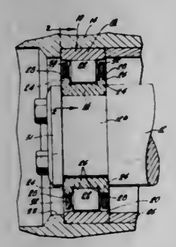
1. A truck and car bolster combination for railroad cars, including a side bearing, loosely socketed between the bolsters including a pad having a truncated cylindrical face on the one side thereof and a plane anti-friction face

on the other side thereof, a truncated cylindrical socket on one of the bolsters adapted to receive and be penetrated by the cylindrical face on the pad, a side bearing bracket on the other bolster, adapted to engage the plane anti-



friction face of the pad, means interposed between the two bolsters to positively limit vertical separation thereof to an amount less than the depth of penetration of the cylindrical face in the cylindrical socket.

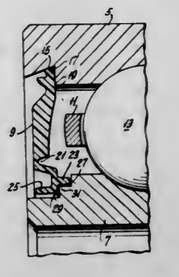
3,350,147
ROLLING BEARING ASSEMBLY
Colin G. Hingley, Strafford, Wayne, Pa., assignor to SKF Industries, Inc., King of Prussia, Pa., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,289
2 Claims. (Cl. 308—187)



1. In a rolling bearing assembly comprising a pair of spaced apart rings having confronting raceways, at least one of said rings having a pair of circumferentially extending land surfaces on opposite sides of said raceway, a plurality of rolling elements in the annular space between the rings, a cage for guiding the rolling elements including a pair of annular members, each of said annular members having at least one circumferentially extending surface closely adjacent and confronting the circumferentially extending land surface of one of said rings, means defining a plurality of circumferentially spaced V-shaped lubricant channels in the circumferentially extending land surface of said one ring whereby upon rotation of said one ring in a direction opposite the direction in which said V-grooves point, lubricant pressure of a lubricant in the channels builds up toward the apex of said V-shaped grooves and forms a hydrodynamic film between the confronting land surfaces of said one ring and said surface of said annular members of the cage.

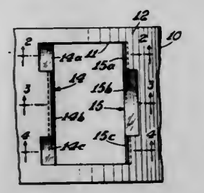
3,350,148
BALL BEARING SEAL ASSEMBLY
Bradley E. Sanguinetti and Edward F. Hayden, Northvale, N.J., assignors to General Bearing Co., West Nyack, N.Y., a joint venture
Filed Feb. 11, 1966, Ser. No. 526,855
3 Claims. (Cl. 308—187.2)

3. A bearing assembly comprising an inner race having inner and outer surfaces; an outer race having inner and outer surfaces; a plurality of balls disposed between the inner surface of said outer race and the outer surface of said inner race; at least one end of the inner surface of said outer race containing an annular ridge; at least one end if the outer surface of said inner race containing at least two annular ridges of different diameters; and at least one seal ring having a snap-fit outer edge and an inner edge conforming to said annular ridges of different



diameters, said seal ring being attached to the ends of said inner and outer races and being dimensioned such that a lubricant passageway is provided between said inner race annular ridges of different diameters and said seal inner conforming edge.

3,350,149
CAGE FOR ROLLER BEARINGS
Albert Oechsler, Ansbach, Germany, assignor to SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung, Schweinfurt, Germany, a company of Germany
Filed May 28, 1965, Ser. No. 459,561
Claims priority, application Germany, May 30, 1964, 48,988/64
6 Claims. (Cl. 308—217)

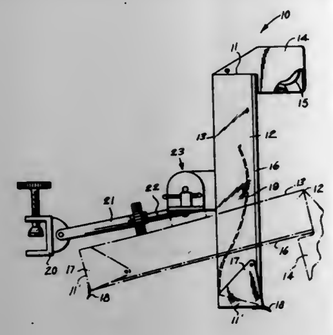


1. Cage for roller bearings, comprising an annular body having an axis, an inner and outer boundary, and circumferentially spaced openings radially extending from one of said boundaries to the other, said openings forming pockets for resiliently receiving rollers, each of said pockets being defined by opposing walls, each of said walls being formed by plane and curved wall portions following each other alternatingly in axial direction, the opposing walls of each of said pockets being constituted by pairs of opposing wall portions, each of said pairs including a plane and curved wall portion the opposing wall portions of each of said pairs forming both inner and outer roller-holding members, and opening toward one and the same boundary of said inner and outer boundaries.

3,350,150
BOOK HOLDER
George R. Schwarm, Rte. 2, Dover, Ohio 44622
Filed Aug. 16, 1965, Ser. No. 479,777
1 Claim. (Cl. 312—117)

A book holder comprising, a hollow rectangular frame, a pivotable bottom wall, a transparent front and spring means for holding reading matter to said transparent front, a back panel securing said spring means within

said frame, said spring means urging against the rear of said reading matter received within said frame and pressing it against said transparent front, and said bottom wall



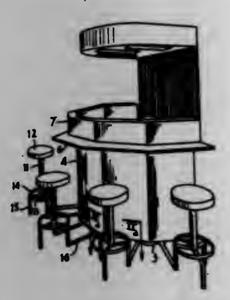
being forwardly, angularly inclined throughout its length and width to urge said reading matter toward said transparent front.

3,350,151

COUNTER STRUCTURES FOR MACHINES—TOOLS OR THE LIKE USED FOR DIRECT WHILE-YOU-WAIT SERVICES

Donald William Phillips, Villa Les Poupies Boulevard Princesse Grace, Monte-Carlo, Principality of Monaco

Filed May 28, 1965, Ser. No. 459,772
Claims priority, application Belgium, June 1, 1964, 648,672
4 Claims. (Cl. 312—140.4)



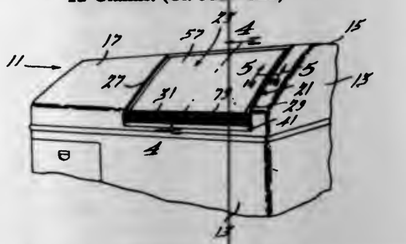
1. A service counter comprising a plurality of base plates, a plurality of posts supported on said base plates, work machines mounted atop said posts, a counter front comprising a plurality of upwardly extending partition elements, said partition elements being secured to the posts, a plurality of counter shelf elements, each of said counter shelf elements being perpendicularly disposed with respect to the partition elements, a protective panel atop each of said shelves, said protective panels being substantially parallel to the partition elements and offset therefrom in a direction away from the posts, a plurality of seating arrangements placed adjacent the counter front and separated thereby from the posts, each of said seating arrangements comprising a seat post upon which the seat is mounted, a plurality of struts extending radially from the seat post, a ring connected to the struts, a leg extending downwardly from the ring and each of said struts and connecting struts securing each of two legs of each of the seating arrangements to successive base plates.

3,350,152

DOOR AND TRACK ASSEMBLY

Milton A. Bang, Albert Lea, Minn., assignor to King-Seeley Thermos Company, Ann Arbor, Mich, a corporation of Michigan

Filed Jan. 7, 1966, Ser. No. 519,390
12 Claims. (Cl. 312—323)



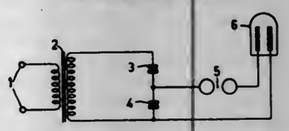
1. A door and track assembly for a cabinet comprising a track having a first portion adjacent an opening in said cabinet and a second portion spaced from said opening, a door movable from a first position overlying and closing said opening to a second position allowing free access to said opening, said track including a pair of side rails having means thereon for preventing liquid or other foreign material from passing into said opening, and said door including means along the opposite sides thereof of substantially complementary shape with respect to said side rails and slidably engaged therewith, whereby to permit said door to be slidably moved along said side rails between said first and second positions.

3,350,153

METHOD OF AND APPARATUS FOR TREATING THE ELECTRODES OF A COLD DISCHARGE TUBE

Franz Einramhof and Pierre Theodoor Johan Piree, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 19, 1965, Ser. No. 449,049
Claims priority, application Netherlands, Apr. 22, 1964, 64—4,374
8 Claims. (Cl. 316—1)



2. A method of treating the conductive electrodes of a cold discharge tube to remove gas occlusions therefrom which comprises alternatley charging a first capacitor from a high voltage high impedance source of AC voltage by means of a second capacitor serially connected with said voltage source and said first capacitor and discharging said first capacitor via a circuit comprising, in series, a pair of electrodes which define a spark gap and said tube electrodes.

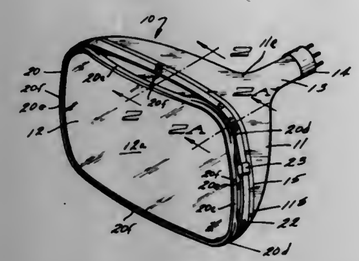
3,350,154

REINFORCED CATHODE-RAY TUBE AND FACE PLATE THEREFOR

Lester C. Minneman and Daryl E. Powell, Maumee, and Burton W. Spear, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Original application Dec. 18, 1964, Ser. No. 422,063, now Patent No. 3,314,566, dated Apr. 18, 1967. Divided and this application Nov. 14, 1966, Ser. No. 606,484
14 Claims. (Cl. 316—19)

1. The method of fabricating an implosion-resistant cathode-ray tube envelope having a substantially funnel-shaped hollow body portion and a light-transmitting viewing portion enclosing its larger end, said method comprising the steps of forming an endless reinforcing band of thin-walled high-tensile strength material having a complemental contour and circumferential extent slightly less than a forwardmost non-viewing region of substantially



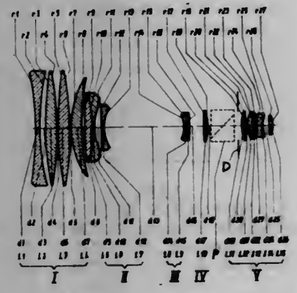
maximum cross-sectional dimensions of said envelope, expanding said band into an enlarged condition, mounting said band in close proximity circumferentially around said forwardmost non-viewing region, contracting said band therearound, and forming an open annulus intermediate said band and the envelope sidewalls therebeneath having at least one exteriorly-opening aperture.

3,350,155

VARIFOCAL OBJECTIVE SYSTEM

Karl Heinrich Macher, Bad Kreuznach, Rhineland, Germany, assignor to Jos. Schneider & Co., Optische Werke, Bad Kreuznach, Rhineland, Germany

Filed Oct. 2, 1964, Ser. No. 401,128
Claims priority, application Germany, Oct. 16, 1963, Sch 34,003
2 Claims. (Cl. 350—176)

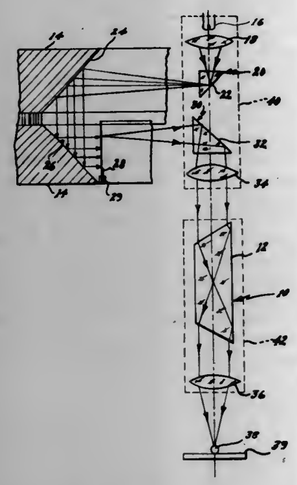


1. An optical objective system constituted by a fixed-focus rear lens group and a forward lens group consisting of a substantially fixed positive first component, an axially movable negative second component, an axially movable negative third component and a fixed positive fourth component, said first component consisting of three air-spaced positive lenses and a dispersive front lens preceding said lenses, said second component consisting of two air-spaced dispersive lens members, said third component consisting of a single dispersive lens member, said fourth component consisting of a single collective lens member, said second and third components being movable relatively to each other and to said first and fourth components into a first position wherein said system has a relatively short focal length, an intermediate position with an intermediate focal length and a third position with a relatively large focal length, the first dispersive lens member of said second component and the dispersive lens member constituting said third component are doublets with positively refractive cemented surfaces, said rear lens group consisting of a first positive singlet, a positive doublet with a negatively refractive cemented surface, a negative singlet and a second positive singlet following one another in the order named, the cemented surfaces of said first dispersive lens member, said third component and said positive doublet being respectively concave, convex and concave as seen from the object side of the system, the numerical values of the radii of curvature r_1 to r_{27} of said dispersive front lens L_1, said three air-spaced positive lenses L_2, L_3, L_4, the first dispersive lens member L_5, L_6 and the second dispersive lens member L_7 of said second component, said third component L_8, L_9, said fourth component L_{10}, said first positive singlet L_{11}, said positive doublet L_{12}, L_{13}, said negative singlet L_{14} and said second positive singlet L_{15}, and of the axial thicknesses and separations d_1 to d_{26} thereof, based upon a numerical value of 150 for an intermediate overall focal length of the system at said intermediate position, the refractive indices n_d of the lenses L_1 to L_{15} and their Abbé numbers ν being substantially as given in the following table, wherein d_8, d_{13} and d_{18} are given for said intermediate position:

TABLE

Lens	Radii	Thicknesses and Separations	n_d	ν
L_1	$r_1=-584.90$	$d_1=9.00$	1.74080	28.05
	$r_2=+494.90$	$d_2=9.00$	Air space	
L_2	$r_3=+663.50$	$d_3=24.75$	1.62041	60.29
	$r_4=-663.50$	$d_4=0.50$	Air space	
L_3	$r_5=+663.50$	$d_5=24.75$	1.62041	60.29
	$r_6=-663.50$	$d_6=0.50$	Air space	
L_4	$r_7=+181.45$	$d_7=23.50$	1.62299	58.12
	$r_8=+454.50$	$d_8=145.10$	Variable air space	
L_5	$r_9=+750.40$	$d_9=16.50$	1.80518	25.46
L_6	$r_{10}=-276.10$	$d_{10}=4.75$	1.58913	61.42
	$r_{11}=+107.80$	$d_{11}=14.00$	Air space	
L_7	$r_{12}=-1,266.50$	$d_{12}=5.00$	1.62041	60.29
	$r_{13}=+77.10$	$d_{13}=18.95$	Variable air space	
L_8	$r_{14}=-53.45$	$d_{14}=4.00$	1.62041	60.29
L_9	$r_{15}=+235.60$	$d_{15}=7.25$	1.80518	25.46
	$r_{16}=-340.40$	$d_{16}=28.00$	Variable air space	
L_{10}	$r_{17}=+371.65$	$d_{17}=10.00$	1.62041	60.29
	$r_{18}=-97.65$	$d_{18}=50.00$	Diaphragm space	
L_{11}	$r_{19}=+85.55$	$d_{19}=10.00$	1.58784	68.19
	$r_{20}=+3,937.50$	$d_{20}=0.50$	Air space	
L_{12}	$r_{21}=+51.30$	$d_{21}=13.50$	1.71300	53.89
L_{13}	$r_{22}=-191.05$	$d_{22}=3.50$	1.80518	25.46
	$r_{23}=+223.20$	$d_{23}=2.50$	Air space	
L_{14}	$r_{24}=-253.20$	$d_{24}=12.50$	1.80518	25.46
	$r_{25}=+42.03$	$d_{25}=11.25$	Air space	
L_{15}	$r_{26}=+229.85$	$d_{26}=9.25$	1.71736	29.51
	$r_{27}=-71.00$			

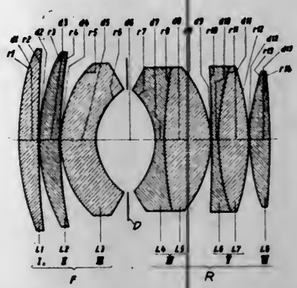
3,350,156
NOMOGRAPHIC COMPUTER SCANNING MEANS
Douglas P. Adams, Cambridge, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 4, 1964, Ser. No. 349,512
4 Claims. (Cl. 350—202)



1. A nomographic computer scanning means for presentation of a light picture of a film containing countable bits thereon comprising a source of light, a double conical reflector having first and second annular reflecting surfaces, means for directing light from said source to said first surface, said double conical reflector arranged to receive said light on said first surface and reflect it to said second surface for transmission in a direction parallel to the original direction of reception of said light, a cylindrically arranged fixed film memory in the path of said light from said second reflecting surface, and a central optical system concentric with said fixed film memory; said central optical system comprising a rotatable scanning prism for directing light from a portion of said film memory along the axis of said cylindrically arranged fixed film memory, a rotatable dove prism on said axis in the path of the light from said scanning prism, means for rotating said dove prism at a speed half that of said scanning prism and means cooperating with said prisms for producing an image of said portion of said film memory; said means for directing light from said source and said scanning prism being so arranged that the portion of the film memory being scanned is always illuminated.

3,350,157
HIGH-SPEED CAMERA OBJECTIVE
Rudolf Solisch and Walter Woltche, Bad Kreuznach, Germany, assignors to Jos. Schneider & Co. Optische Werke, Bad Kreuznach, Germany, a corporation of Germany
Filed Mar. 30, 1964, Ser. No. 355,829
Claims priority, application Germany, Apr. 20, 1963, Sch 33,148
1 Claim. (Cl. 350—210)

A high-speed camera objective composed of six lens members following one another and comprising, in order from the object side to the image side of the objective, a positive first member consisting of a first lens L_1, a positive second member consisting of a second lens L_2, a negative third member consisting of a third lens L_3, a negative fourth member composed of a fourth and a fifth lens L_4, L_5, a positive fifth member composed of a sixth and a seventh lens L_6, L_7, and a positive sixth member consisting of an eighth lens L_8, said lenses having radii of curvature r_1 to r_{14} and thicknesses and separations d_1 to d_{13} whose numerical values, based upon a numerical value of 100 for said overall focal length, together with



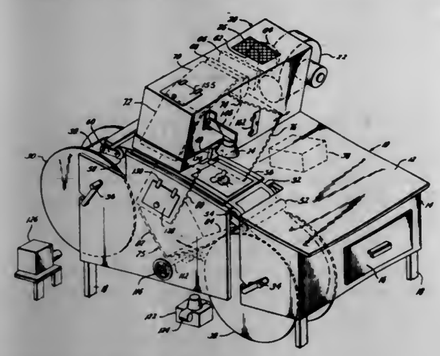
their refractive indices n_d and Abbé numbers are substantially as given in the following table:

	Lens	Radii	Thicknesses and Separations	n_d	ν
I	L_1	$r_1=+146.36$ $r_2=+600.13$	$d_1=12.18$ $d_2=0.41$	1.6200 Air space	60.3
II	L_2	$r_3=+106.73$ $r_4=+263.48$	$d_3=12.18$ $d_4=0.41$	1.6200 Air space	60.3
III	L_3	$r_5=+62.10$ $r_6=+36.36$	$d_5=21.11$ $d_6=35.53$	1.7410 Air space (Diaphr.)	28.1
IV	L_4 L_5	$r_7=-41.54$ $r_8=+203.10$ $r_9=-61.98$	$d_7=5.08$ $d_8=28.42$	1.7410 1.7200	28.1 50.3
			$d_9=0.41$	Air space	
V	L_6 L_7	$r_{10}=-915.62$ $r_{11}=+132.13$ $r_{12}=-132.13$	$d_{10}=4.11$ $d_{11}=18.27$	1.5960 1.6910	39.2 54.8
			$d_{12}=0.41$	Air space	
VI	L_8	$r_{13}=+116.00$ $r_{14}=-406.86$	$d_{13}=12.18$	1.6910	54.8
			$d_{total}=150.70$		

3,350,158
ANIMATION TECHNIQUE
Frederick R. Blattner, 227 Bellefontaine, Houston, Tex. 77025
Filed Jan. 9, 1964, Ser. No. 336,827
7 Claims. (Cl. 352—50)

1. The method of producing a strip of sequential animation scenes comprising:
drawing a first scene on an elongate sheet at a first location,
providing an image transmitting system adapted to transmit an upright erect image of the first scene from a second location to the first location, said second location spaced from the first location,
transporting the first scene drawn on the elongate sheet to the second location,
transmitting an upright erect image of the first scene from the second location to a subsequent portion of the elongate sheet at the first location,
tracing that part of the transmitted image which is to remain static onto the subsequent portion of the sheet at the first location, and

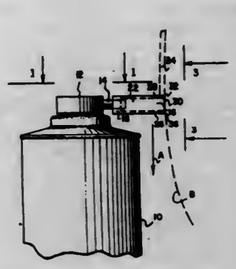
drawing that part of the scene which is to be sequentially animated onto the subsequent portion of the sheet at the first location,



thereby producing a second scene.

3,350,159
AEROSOL SHAVING CREAM DISPENSER AND APPLICATOR
Robert C. Rice, Jr., 5741 N. 25th Drive, Phoenix, Ariz. 85017
Filed July 12, 1965, Ser. No. 471,185
3 Claims. (Cl. 401—190)

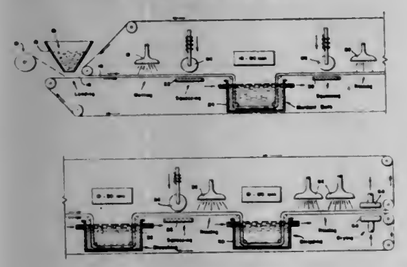
1. In an aerosol shaving cream dispenser and applicator; a hollow housing having an inlet opening disposed to receive shaving cream under pressure; a face engaging open end of said housing communicating with said inlet opening, said face engaging open end having a leading face engaging wall edge adapted to attain intimately engaged relation with a person's face; said face engaging open end having a trailing wall edge; said trailing wall edge having a relief portion normally held in spaced relation



to a person's face by engagement of said leading edge therewith and thereby providing for egress of a layer of shaving cream from a trailing portion of said open end when said open end is moved along the surface of a person's face with said leading edge foremost; said relief portion comprising a plurality of notches in said trailing wall edge.

CHEMICAL

3,350,160
CONTINUOUS PROCESS FOR BLEACHING PIGMENTED KERATINOUS FIBERS
Agnes Eleanor Davis, Vienna, Va., and Arnold M. Sookne, Silver Spring Md., assignors to Gillette Research Institute, Inc., Washington, D.C., a corporation of Delaware
Filed Aug. 25, 1964, Ser. No. 391,946
3 Claims. (Cl. 8—102)



1. A continuous process for bleaching pigmented keratinous fibers which comprises forming the fibrous material to be bleached into a web-like belt, passing the fibrous belt through a mordant solution consisting essentially of a 1–20% by weight aqueous ferrous salt solution maintained at a temperature of from about 100 to 200° F. and at a pH of from about 1 to about 3 for a period of 10 to 150 minutes, passing the mordant solution treated fibrous belt through a bleaching solution consisting essentially of a 0.5–5.0% by weight aqueous alkaline hydrogen peroxide solution maintained at a temperature of from about 100 to about 125° F. and at a pH in the range of about 7 to about 9 for a period of from about 10 to 90 minutes, and thereafter passing said fibrous belt through an iron removal solution consisting essentially of a 0.2–4.0% by weight aqueous iron removal reagent solution, said reagent being selected from the group consisting of sodium formaldehyde sulfoxylate and oxalic acid, maintained at a temperature of from about 130 to about 170° F., and rinsing and drying the fibrous belt.

3,350,161
BLEACHING COTTONS BY AQUEOUS SOLUTIONS OF UREA PEROXIDE
Henry Papini, 1210 Poinsett Highway, Greenville, S.C. 29609
No Drawing. Filed Jan. 30, 1961, Ser. No. 85,458
1 Claim. (Cl. 8—111)

A process of bleaching cotton duck which comprises treating it in an aqueous bath containing by volume 1% of urea peroxide, and 1% of 33% aqueous caustic soda at a pH of 13 and a temperature of 190° F.

3,350,162
METHOD OF CREASEPROOFING AND STIFFENING CELLULOSE TEXTILE WITH DIMETHYLOL ETHYLENE UREA AND AMYLOPECTIN SIZE
Edward A. Beck, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed Jan. 28, 1963, Ser. No. 254,419
1 Claim. (Cl. 8—115.6)

A method for finishing textiles to provide a water-insoluble stiffening finish for textiles which is resistant to wrinkling, acid hydrolysis, and losses in tear strength and breaking strength, the method comprising impregnating a textile material comprising cellulose fibers with an aqueous dispersion of about 43 parts of a cold water-soluble material consisting essentially of amylopectin,

about 13 parts of dimethylol ethylene urea, about 3 parts zinc nitrate, about 8.5 parts of a nonionic oxidized polyethylene softener, and a nonionic surface active wetting agent, all parts being on a weight basis, adjusting said dispersion to a pH of about 5 and then drying and curing said impregnated textile at a temperature of about 320° F. for about 30 minutes.

3,350,163

AFTERTREATING ISOCYANATE-MODIFIED CELLULOSIC FIBERS WITH DIMETHYL SULFOXIDE, PYRIDINE OR DIMETHYL FORMAMIDE

Charles H. Mack and Samuel E. Ellzey, Jr., New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 17, 1965, Ser. No. 464,877
5 Claims. (Cl. 8—116)

1. A process for treating cellulosic yarn which has been chemically modified with an aryl isocyanate comprising:

(a) wetting the chemically modified cellulosic yarn with a swelling agent selected from the group consisting of N,N-dimethylformamide, pyridine, and dimethyl sulfoxide,

(b) applying tension less than that required to break the yarn, to the wetted and swollen chemically modified cellulosic yarn, and

(c) washing the said swelling agent from the said swollen chemically modified cellulosic yarn with a solvent, while the swollen chemically modified cellulosic yarn is maintained under tension.

3,350,164

ACID CATALYZED MODIFICATION OF CELLULOSIC MATERIALS WITH METHYLOLATED, HALO-CYANOACETAMIDES

Leon H. Chance and Ethel K. Leonard, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 9, 1965, Ser. No. 438,430
2 Claims. (Cl. 8—116.3)

1. A process for treating cellulosic textile material comprising:

(a) wetting the cellulosic textile material with an aqueous solution of the composition prepared by reacting in a basic aqueous solution dibromocyanoacetamide with formaldehyde in a mole ratio of about from 1:1 to 1:3 and about from 1.0% to 3.0% by weight of an acid-type catalyst, and

(b) curing the fabric at about from 100° to 140° C., for about from one to ten minutes, the higher temperatures used with the shorted periods of time.

3,350,165

METHOD OF REMOVING SULPHUR DIOXIDE FROM GASES

Henri G. L. Marcheguet, Amfreville-la-Mi-Voie, and Louis Gandon, Petit Quevilly, France, assignors to Nobel-Bozel, Paris, France, a company of France

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,964
Claims priority, application France, Jan. 18, 1963, 921,927
7 Claims. (Cl. 23—2)

1. A process for the extraction of sulphur dioxide from gas which contains it, which comprises contacting the gas with an aqueous solution of glyoxylic acid to absorb sulphur dioxide in said aqueous solution.

3,350,166

SYNTHESIS OF ALUMINUM BORATE WHISKERS

John K. Alley, Andersonville, and Robert C. Johnson, Norris, Tenn., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Jan. 19, 1965, Ser. No. 426,696
5 Claims. (Cl. 23—59)

1. A process for preparation of aluminum borate whiskers comprising reacting together water vapor, boron oxide vapor and an aluminum halide vapor selected from the group consisting of aluminum fluoride vapor, aluminum bromide vapor and aluminum chloride vapor; and recovering said aluminum borate whiskers as product from said reaction.

3,350,167

METHOD OF PREPARING HYDRATED NICKEL CARBONATE AND THE PRODUCT THEREOF

Warren H. McMullen, East Brunswick, Thomas J. Mooney, Fords, and William B. Stoddard, Jr., Matawan, N.J., assignors to Hanson-Van Winkle-Munning Company

Filed Sept. 26, 1963, Ser. No. 311,681
11 Claims. (Cl. 23—61)

1. A process for producing nickel carbonate in fine crystalline form having fast filtering and washing characteristics, which comprises reacting a water soluble nickel salt with an alkali hydrogen carbonate in an agitated aqueous medium at a temperature ranging from about 27° C. to about 49° C. and recovering said nickel carbonate from the aqueous medium.

2. Nickel carbonate produced in a process according to claim 1.

3,350,168

METHODS OF PREVENTING DECOMPOSITION OF ANHYDROUS AMMONIUM THIOSULFATE

Henry B. Ziegler, Stroudsburg, Pa., assignor to Helco, Inc., a corporation of Delaware

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,373
8 Claims. (Cl. 23—115)

1. The process of preventing the decomposition of anhydrous ammonium thiosulfate in a closed container, which comprises admixing with the anhydrous ammonium thiosulfate prior to the inception of decomposition a small amount of an ammonium salt of an acid whose dissociation constant is sufficiently small that it will provide an atmosphere of ammonia before any decomposition of ammonium thiosulfate occurs.

3,350,169

PRODUCTION OF SULFURIC ACID

John B. Rinckhoff, Westfield, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,522
9 Claims. (Cl. 23—168)

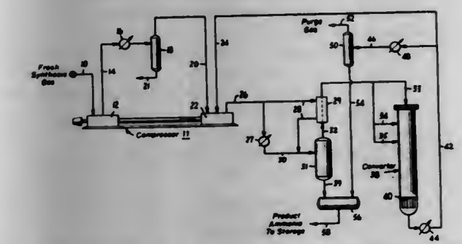
1. A process for the production of sulfuric acid which comprises burning a sulfur-containing feed stream with an oxygen-containing gas, whereby a hot gas stream containing less than about 14% by volume of sulfur dioxide, and excess free oxygen, is produced at a temperature below 1200° C., cooling said hot gas stream to a temperature in the range of 400° to 550° C., dividing said gas stream into a first portion and a second portion, passing said first gas stream portion through first catalytic conversion means for the oxidation of sulfur dioxide to sulfur trioxide, whereby a major part of the sulfur dioxide content of said first gas stream portion is converted to sulfur trioxide, scrubbing said first gas stream portion with concentrated liquid sulfuric acid in first absorption means, whereby sulfur trioxide is absorbed into the liquid phase to form further sulfuric acid, combining the residual first gas stream portion with said second gas stream portion, passing the combined gas stream through second catalytic conversion means for the oxidation of sulfur dioxide to sulfur trioxide, whereby substantially all of the sulfur dioxide content of said combined gas stream is converted to sulfur trioxide, and scrubbing said combined gas stream with concentrated liquid sulfuric acid in second absorption means, whereby sulfur trioxide is absorbed into the liquid phase to form further sulfuric acid.

3,350,170

PROCESS FOR CARRYING OUT CYCLIC SYNTHESIS REACTIONS AT ELEVATED PRESSURES

James A. Finneran, Garden City, and Hayes C. Mayo, Huntington, N.Y., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Oct. 29, 1965, Ser. No. 505,653
10 Claims. (Cl. 23—199)



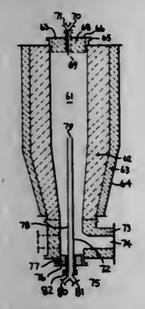
3. A process for the synthesis at elevated pressures of ammonia from hydrogen and nitrogen contained in a synthesis gas wherein less than the entire amount of hydrogen and nitrogen present in said synthesis gas react to form ammonia and the unreacted portion of said reactants is recycled to a converter which comprises introducing fresh synthesis gas containing hydrogen and nitrogen into a compressor through the compressor intake and compressing said fresh synthesis gas to an intermediate pressure, introducing recycle synthesis gas at substantially said intermediate pressure and containing ammonia, obtained as hereinafter defined, into said compressor downstream of said compressor intake, admixing and compressing said fresh and recycle synthesis gases in said compressor to a final elevated pressure, withdrawing thus admixed and compressed gases and separating ammonia therefrom, passing remaining admixed and compressed gases to said converter containing ammonia synthesis catalyst wherein a portion of the hydrogen and nitrogen react to form ammonia, and passing the effluent from said reaction zone as said recycle gas to said compressor, said recycle gas being passed to said compressor at substantially the same pressure at which it emerges from said converter.

3,350,171

VAPOUR PHASE OXIDATION

Alan Edward Callow, Normanby, Middlesbrough, and William Hughes and James Dennis Groves, Fairfield, Stockton-on-Tees, England, assignors to British Titan Products Company Limited, Durham, England, a company of England

Continuation of application Ser. No. 774,736, Nov. 18, 1958. This application Jan 20, 1964, Ser. No. 338,982
16 Claims. (Cl. 23—202)



1. In a process for preparing a metallic oxide by the reaction of oxygen with at least one oxidizable, volatile, metallic halide selected from the group consisting of chlorides, bromides, and iodides, the improvement which comprises introducing the oxygen and metallic halide reactants into a reaction zone which is at a temperature at which said reactants will react, at least one of said reactants being introduced into the zone at a Reynolds number of at least 50,000 and recovering the resulting oxide, said Reynolds number being calculable as the ratio, in consistent units, of four times the rate of fluid flow at the reaction zone inlet to the product of the length of the inside perimeter of said inlet and the fluid viscosity under the conditions upstream of said inlet.

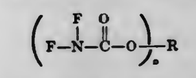
3,350,172

PREPARATION OF TETRAFLUOROHYDRAZINE FROM THE OXIDATION OF CARBAMATES

Vytautas Grakauskas, Arcadia, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed May 3, 1965, Ser. No. 452,883
10 Claims. (Cl. 23—205)

1. The process for preparing tetrafluorohydrazine comprising reacting a liquid carbamate compound having the formula



in which R is an organic radical, and *n* is an integer from 1 to about 2 with an oxidizing agent selected from the group consisting of compounds having the formula P_yX_z in which P is a cation which includes a metal in an oxidation state ranging between +3 to +8 and selected from the group consisting of Fe^{+3}, Cr^{+6}, Mn^{+7}, V^{+5}, As^{+5}, Sb^{+5}, W^{+6}, Mo^{+6}, Os^{+8}, Co^{+3}, Pt^{+4}, Ru^{+8}, Ir^{+6}, and Re^{+7}, X is an anion, and *y* and *z* are small whole numbers with the product of *y* times the positive oxidation state of P being equal to the product of *z* times the negative oxidation state of X, and compounds in which an alkali metal cation is associated with a complex anion which contains from 3 to 4 atoms of oxygen in combination with an element in highly charged form said anion being selected from the group consisting of permanganate, iodate, bromate, perchlorate, chromate, molybdate, vanadate, arsenate, and dichromate to yield tetrafluorohydrazine.

3,350,173

CARBON BLACK PRODUCTION

Theodore W. Colby, Jr., Sweeney, Tex., and Carl M. Kron, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 2, 1963, Ser. No. 313,293
4 Claims. (Cl. 23—209.4)

1. In a process for the preparation of carbon black in a thermal cracking zone wherein a hydrocarbon feedstock is decomposed in hot combustion gases formed from burning a fuel gas with air, wherein air is supplied to said cracking zone through an air conduit, a method of controlling the water content and mass flow rate of process air to values at which the quality of carbon black produced is maintained at the desired level, responsive to derived control signals calculated by a computer having a fixed program, comprising the steps of:

(a) measuring the temperature, relative humidity, and barometric pressure of the ambient air to an air intake conduit of the thermal cracking zone;

(b) measuring the volumetric flow rate and temperature of the air passing through said air conduit, compensated for temperature and pressure variations, to determine standard volume per unit time;

(c) measuring the pressure of air in said supply conduit;

(d) measuring the mass flow rate of water being injected into said air conduit, at a point in said conduit downstream from where measurments (a), (b), and (c) are made;

(e) determining the desired weight ratio of water to dry air flowing in said air conduit;

(f) computing from the aforementioned measurements the total weight of water per unit time entering said reactor, and obtaining a first derived signal representative thereof, said total weight of water (W_T) being computed according to the equation:

$$W_T = K_5\sqrt{\Delta P_W} + \left[\frac{f(T_A)\cdot H_A}{P_A}\cdot K_1\sqrt{\frac{\Delta P_C(P_C+P_A)}{T_C+K_2}}\right]K_4$$

wherein

T_A=Ambient air temperature

$f(T_A)$=Vapor pressure of water at temperature T_A

H_A=Relative humidity of the ambient air

P_A=Barometric pressure

ΔP_W=Differential pressure across the added water flow conduit orifice

P_C=Pressure in the air supply conduit

ΔP_C=Differential pressure across orifice in the air supply conduit

T_C=Air temperature in the air supply conduit

K_1=Constant including flow coefficient and correction factors for the air supply conduit

K_2=Absolute temperature equivalent to 0° F.

K_4=Density of water vapor at standard conditions in #/standard cubic foot

K_5=Constant including flow coefficient and correction factors for the added water supply conduit;

(g) computing from the aforementioned measurements, the weight per unit time of dry air passing through said air conduit to give a second derived signal representative thereof, said weight per unit time of dry air (A_D) being computed according to the formula:

$$A_D = K_3\left[\left(K_1\sqrt{\frac{\Delta P_C(P_C+P_A)}{T_C+K_2}}\right) - \left(\frac{f(T_A)\cdot H_A}{P_A}\cdot K_1\sqrt{\frac{\Delta P_C(P_C+P_A)}{T_C+K_2}}\right)\right]$$

wherein:

K_3=Density of air at standard conditions in #/standard cubic foot

(h) computing from said aforementioned measurements, the absolute pressure of air passing through said air conduit to give a third derived signal, said absolute pressure (P_T) being computed according to the formula:

$$P_T = P_A + P_C$$

(i) computing from a manually preset desired weight ratio of water to dry air, a setpoint of total weight per unit time of water to give a derived setpoint signal representative thereof, said total weight per unit time of water to give said derived setpoint (W_{SP}) being computed according to the formula:

$$W_{SP} = K_{SP}\cdot A_D$$

wherein K_{SP}=Desired pounds of water per pound of air;

(j) comparing said first derived signal with said derived setpoint signal, and obtaining a first control signal related to the difference between the required total water flow rate and the actual total water flow rate;

(k) adjusting the mass flow rate of injected water responsive to said first control signal;

(l) comparing said second derived signal with a setpoint representative of a desired mass flow rate of air, and obtaining a second control signal related to the difference between the desired air mass flow rate and the actual air mass flow rate;

(m) adjusting the mass flow rate of air flowing in said conduit responsive to said second control signal;

(n) comparing said third derived signal with a setpoint representative of the desired absolute pressure for air flowing in said supply conduit, and obtaining a third control signal related to the difference between the desired air absolute pressure and the actual air absolute pressure; and

(o) maintaining the pressure of air in said air conduit constant responsive to said third control signal.

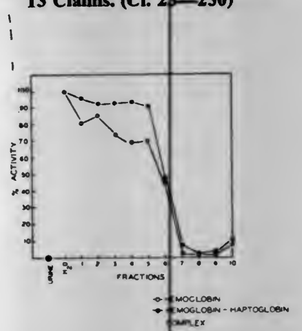
3,350,174

PROCESS OF DETERMINING HEMOGLOBIN SEPARATED FROM PEROXIDASE INHIBITORS IN URINE

Hermann Mattenheimer, Deerfield, Ill., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

Filed Jan. 8, 1964, Ser. No. 336,570

13 Claims. (Cl. 23—230)



5. A method of separating hemoglobin from peroxidase inhibitors in urine containing the same, comprising adding to a specimen of said urine a quantity of serum haptoglobin at least equivalent stoichiometrically to the maximum amount of hemoglobin to be separated, whereby a complex is formed between said hemoglobin and said haptoglobin, introducing the resulting urine specimen onto a bed of finely divided particles of gel consisting essentially of insoluble, hydrophilic, dextran cross-linked with epichlorohydrin and having a water-regain value of about from 2.5 to 7.5, the gel particles of said bed being entirely swollen with an aqueous eluant and the spaces between said particles being filled with said eluant, said bed having a height:diameter ratio of at least about 10:1, the volume of said urine specimen being not more than about the imbibed volume of said gel particles, after said urine specimen has entered said bed and while the level of said urine specimen is substantially coincident with the top of said bed commencing elution of the latter by passing an aqueous eluting liquid therethrough, continuing said elution until the quantity of said eluting liquid used for elution exceeds the void volume of said bed, collecting as separate quantities a plurality of fractions of effluent from the bottom of said bed, the volume of each of said fractions being smaller than the volume of said urine specimen, and testing said fractions for the presence therein of said hemoglobin-haptoglobin complex.

3,350,175

COLORIMETRIC INDICATOR DEVICE FOR THE DETERMINATION OF GASES

Paul Willis McConnaughey and Shirley Gross Clay, Pittsburgh, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed July 2, 1963, Ser. No. 292,461

13 Claims. (Cl. 23—254)

1. A free-flowing colorimetric indicator consisting essentially of a finely divided non-porous inorganic carrier coated with a self-adherent film of a powdered inorganic absorbent impregnated with a colorimetric reagent.

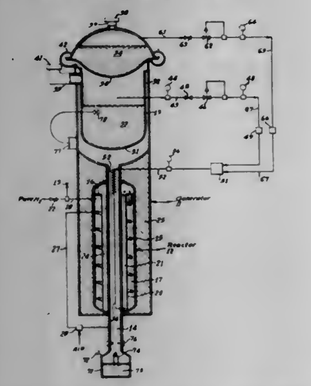
3,350,176

HYDROGEN GENERATOR

Robert B. Green, Chatham, Hugo H. Geissler, Edison, and Stanley S. Kurpit, Newark, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Mar. 24, 1964, Ser. No. 354,476

3 Claims. (Cl. 23—281)



1. Apparatus for the generation of hydrogen comprising in combination

(a) a fuel source and steam generator contained in a compartmented unitary vessel, the fuel compartment being separated from the steam compartment by a flexible diaphragm impervious to steam,

(b) a combustion chamber disposed in indirect heat relationship with,

(c) a compartmented reactor consisting of a reaction chamber containing reforming catalyst and a hydrogen diffusion chamber, wherein a diffusion element permeable only to hydrogen is positioned,

(d) means for introducing fuel and steam to the reaction chamber for conversion to a gaseous mixture containing hydrogen,

(e) means for removing hydrogen from the diffusion chamber,

(f) means for removing residual gaseous products from the reactor,

(g) means for introducing said residual gaseous products into said combustion chamber, and

(h) means for supplying heat from the combustion chamber to the steam generator whereby steam pressure generated in said steam compartment exerts pressure on said flexible diaphragm.

3,350,177

PREPARATION OF SODIUM BOROAZIDE

John J. Finn, Chicago, and James N. Keith, Villa Park, Ill., assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Jan. 3, 1964, Ser. No. 336,100

7 Claims. (Cl. 23—358)

3. The process of making sodium boroazide by adding together in a refluxing reactor predetermined molal proportions of boron trifluoride and sodium azide, adding to the reactor a refluxing quantity of tetrahydrofuran as solvent, flushing the reactor with argon, refluxing the solution under argon in accomplishing the formation of sodium boroazide, and recovering the sodium boroazide.

3,350,178

SEALING DEVICE

Forbes M. Miller, Detroit, Mich., assignor to Wall Colmonoy Corporation, Detroit, Mich., a corporation of Delaware

Original application May 14, 1963, Ser. No. 280,360, now Patent No. 3,268,997. Divided and this application Mar. 17, 1966, Ser. No. 558,524

6 Claims. (Cl. 29—182.3)

1. A sealing device comprising a network including a compressible porous metallic matrix of sintered metallic particles of random-shape ranging in size from about 20 microns to about 177 microns, said network arranged to define a plurality of pores of substantially uniform size ranging from about 100 microns to about 450 microns distributed substantially uniformly through said network and comprising from about 30% to about 75% by volume of said matrix.

3,350,179

BRAZING PREFORM

Randolph N. Stenerson, Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Aug. 30, 1966, Ser. No. 575,999

6 Claims. (Cl. 29—182.5)

1. A brazing preform comprising a shaped aggregate having a finely divided brazing metal powder suspended in an inorganic, fused, glass matrix; said brazing metal having a liquidus temperature above the softening point of the glass matrix; and said preform having a configuration to enable the preform to be positioned adjacent to the members of a joint to be formed by heating of said preform.

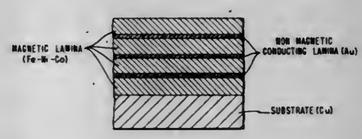
3,350,180

MAGNETIC DEVICE WITH ALTERNATING LAMINA OF MAGNETIC MATERIAL AND NON-MAGNETIC METAL ON A SUBSTRATE

Ian M. Croll, Pleasantville, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

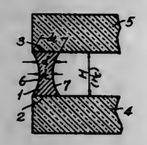
Filed Sept. 30, 1963, Ser. No. 312,609

5 Claims. (Cl. 29—183.5)



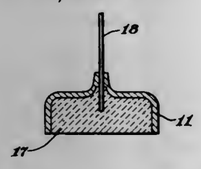
1. A laminated magnetic film device having a total magnetic film thickness of from 10,000 A. to 40,000 A., said device having a coercivity greater than the coercivity of an unlaminated magnetic film device of equal thickness comprising a plurality of discrete laminae of a magnetic material having uniform thicknesses, said magnetic material being selected from the group consisting of Fe-Ni alloy, Fe-Ni-Co alloy, and Fe-Ni-P alloy; and a series of discrete nonmagnetic conducting metal laminae selected from the group consisting of Au, Ag, Cu, Sn, Rh, Pd and Pt, alternately disposed between said magnetic laminae, each of said nonmagnetic conducting laminae having uniform thickness of from 50 A. to 200 A.

3,350,181
SPACERS FOR MULTIPLE GLASS SHEET GLAZING UNIT
Shunji Miyoshi, Yokohama, Takehiro Miura, Yamato, and Tatsuo Arai, Yokohama, Japan, assignors to Asahi Glass Co., Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan
Filed Mar. 3, 1965, Ser. No. 436,797
Claims priority, application Japan, Mar. 3, 1964, 39/12,625
11 Claims. (Cl. 29—183.5)



1. A spacer for multiple glass sheet glazing unit having a pair of parallel glass-bonding surfaces, wherein a sectional area of the spacer per unit length in section cut by a plane parallel to the bonding surface is the smallest in case when the cutting has been performed in the middle of the spacer, and at least in this neighborhood, the sectional area increases continuously and smoothly as the section gets away from the middle, and the area in this section does not exceed substantially the area of the bonding surface per unit length of the spacer, and moreover, the whole of the spacer is constituted with homogeneous material.

3,350,182
SILICON CARBIDE GLASS FIBER BUSHING AND METHOD OF MAKING SAID BUSHING
Melvin J. Hunter, Edward L. Kern, and Dennis W. Hamill, all of Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed July 29, 1965, Ser. No. 475,674
5 Claims. (Cl. 65—1)



1. A bushing for use in drawing glass filaments, the internal surface of said bushing consisting of silicon carbide.

5. A method of making a bushing for use in drawing glass fibers comprising the steps of.
- forming a substrate block to the desired configuration of the surface of the bushing,
- coating said block with a homogeneous layer of pyrolytically deposited silicon carbide, and
- providing at least one hole through said coating.

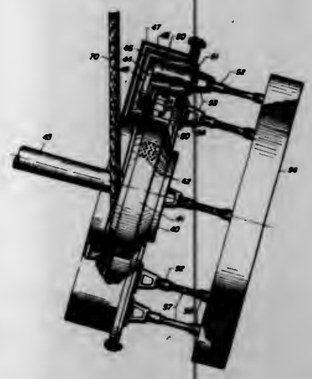
3,350,183
METHOD OF MAKING ENERGY-CONDUCTING COMPONENTS FORMED OF FIBER ELEMENTS
Walter P. Siegmund, Woodstock, Conn., and Gregory B. Gilmore, Southbridge, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Original application Oct. 19, 1961, Ser. No. 146,273. Divided and this application Aug. 16, 1965, Ser. No. 487,648
6 Claims. (Cl. 65—4)

1. The method of making a multiple fiber energy-conducting device for receiving and conducting in an annular pattern a multiplicity of image elements and which is capable of enclosing additional energy-conducting means comprising the steps of positioning a multiplicity of resilient substantially straight individually glass clad energy-conducting fibers in adjacent substantially parallel side-by-side relationship with each other in the form of



a hollow array having corresponding opposite ends of the fibers respectively disposed in an annular pattern, forcing said fibers tightly against one another and heating the same to a temperature of sufficient intensity to induce fusion of one to the other to form a unitary tubular structure which constitutes said device.

3,350,184
FIBER ATTENUATING APPARATUS
William F. Porter, Roselle, Ill., assignor to United States Gypsum Company, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,733
9 Claims. (Cl. 65—14)



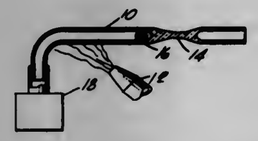
1. In a fiber forming apparatus including a centrifugal rotor with a side wall having a plurality of fiber forming orifices in a working area on said wall, an annular burner coaxial with and encircling said rotor, said burner comprising refractory walls defining an annular combustion chamber having a substantially rectangular cross section with a radial dimension larger than its axial dimension, refractory inlet means including a plurality of truncated conical ports with their axes approximately normal to the radial walls of said chamber and having their larger ends opening into said chamber near its outer radial edge, burner nozzle mounting means including air induction means adjacent the smaller end of each port and discharge means communicating with the inner edge of said chamber and adapted to direct combustion products across the rotor working area, said inlet means and discharge means lying on the downstream side of the combustion chamber.

3,350,185
METHOD OF ELIMINATING A FOAM BLANKET ON THE SURFACE OF MOLTEN GLASS
Robert R. Rough, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Jan. 18, 1965, Ser. No. 426,438
15 Claims. (Cl. 65—32)

1. In a method of producing glass in the melting portion of a direct-fired glass melting furnace, including

producing such glass, at least in part, from glass batch materials by transforming said glass batch materials into molten glass under the influence of combustion heat generated in said melting portion by a constant combustion of fuel in an oxygen containing combustion atmosphere overlying said glass batch and molten glass, which method tends to produce an accumulation of foam on the surface on said molten glass, the improvement in said method comprising intermittently varying the oxygen content of said combustion atmosphere, whereby said foam is caused to be dissipated from the surface of said molten glass.

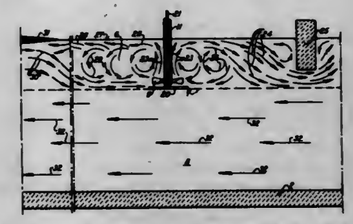
3,350,186
PROCESS FOR ENCAPSULATING MATERIALS WITH A THERMOPLASTIC COVER
James E. Meinhard, Santa Ana, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Dec. 21, 1964, Ser. No. 420,003
12 Claims. (Cl. 65—36)



1. A process for encapsulating a core material with a cover material, which comprises the steps of:
- selecting a cover material having physical and chemical properties compatible with those of said core material;
- forming a generally tubular structure from said cover material with a seal at a selected point in said tubular structure and;
- placing a predetermined amount of said core material in said tubular structure on one side of said seal adjacent thereto;
- applying vacuum to the side of said tubular structure containing said core material to remove any air therefrom;
- applying heat to said tubular structure at a region including said core material and adjacent seal to soften said tubular structure to collapse the same around said core material and melt the latter; and
- pulling said tubular structure apart to stretch the heat-softened region and forming an elongate rod of said core material which is encapsulated by said cover material.

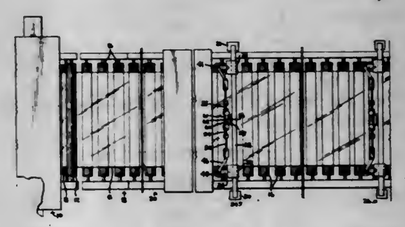
3,350,187
PROCESS AND APPARATUS FOR THE HOMOGENISATION OF MOLTEN GLASS IN THE CHAMBER CONNECTING THE REFINING FURNACE TO THE WORKING COMPARTMENT
Edgard Brichard, Jumet, Emile Plumat, Gilly, and Marcel Duperroy, Jumet, Belgium, assignors to Glaverbel, Watermael-Boitsfort, Belgium, a Belgian company
Filed Dec. 30, 1963, Ser. No. 334,437
Claims priority, application Belgium, Jan. 8, 1963, 501,423, Patent 626,920
5 Claims. (Cl. 65—134)

1. In the process of homogenising molten glass in the channel connecting the glass elaboration and refining furnace to the glass withdrawal or working compartment, the molten glass contained in such channel being constituted of an upper layer of hot glass flowing from the furnace to the working compartment and a lower, deeper layer of cooler molten glass returning from the working compartment to the furnace, the step of propelling only the molten glass in the upper layer at a plurality of localized places above the level of contact between the two layers and across the width of the channel to create in the molten glass of said upper layer a plurality of ascending spiralling currents capable of directing the molten glass from the lower part of said upper layer towards the surface of said upper layer, and in the upper portions of said upper layer causing currents of homogenised glass from such upper layer to flow upstream toward the furnace and to flow downstream toward the working compartment.



4. Apparatus for homogenising molten glass in the channel connecting the glass elaboration and refining furnace to the glass withdrawal or working compartment, the molten glass contained in such channel being constituted of an upper layer of hot glass flowing from the furnace to the working compartment and a lower, deeper layer of cooler molten glass returning from the working compartment to the furnace, including a plurality of impeller propulsion members disposed across the width of said channel and wholly immersed in the molten glass of said upper layer, said impellers being located above the level of contact between said upper and lower layers and being so constructed that at given speed of rotation thereof each creates only in the molten glass of said upper layer an ascending spiralling current capable of directing the molten glass from the lower part of said upper layer towards the surface of said upper layer, and means for rotating said impellers to create such ascending currents.

3,350,188
APPARATUS FOR FORMING RIBBON WITH LATERAL FORCE MEANS
Marlin W. Barrett, Fresno, Calif., Dean G. Cramer, Festus, Mo., and Roger B. Oltman, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application June 2, 1964, Ser. No. 372,068. Divided and this application Nov. 14, 1966, Ser. No. 593,758
4 Claims. (Cl. 65—165)

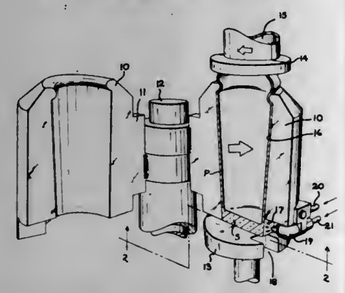


1. An apparatus for continuously forming a ribbon of glass comprising,

means for supporting and conveying a continuously formed ribbon of glass in a substantially horizontal plane, said ribbon of glass having side edge surfaces,
means for continuously conveying said ribbon of glass along said supporting means,
means for cooling said continuously formed ribbon of glass through the annealing range of said glass as the ribbon is conveyed along said supporting means,
means for applying pressure simultaneously to said ribbon of glass at aligned, oppositely disposed locations in the edge surfaces thereof along a line lying in a plane of said ribbon of glass,
means for movably supporting said pressure applying means for simultaneous movement toward and away from said edge surfaces,
said pressure applying means being adapted to exert sufficient force to said edge surfaces to prevent outward lateral movement thereof,
whereby a split formed and extending longitudinally in said ribbon of glass is not permitted to advance.

3,350,189
PASTE MOLD MACHINES FOR MAKING GLASS ARTICLES

Edward A. Nowak, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 5, 1964, Ser. No. 409,066
5 Claims. (Cl. 65—302)

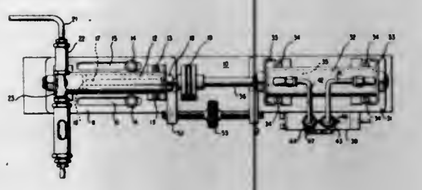


1. In an apparatus for making glass articles comprising a paste mold, a neck ring for rotatably supporting a hollow glass parison within the paste mold and through which blowing air is adapted to be introduced to blow the parison outwardly adjacent the walls of the paste mold, the improvement comprising
said paste mold having a wall with an opening therethrough adjacent a portion at which the glass article retains a high heat concentration when molded therein,
means extending through said opening in said wall of the paste mold at a circumferentially isolated portion of the paste mold for introducing a coolant against the surface of the shaped glass article while the article is rotating,
and exhaust means adjacent said last-mentioned means for removing said coolant.

3,350,190
SPRAY MIST PROPORTIONING SYSTEM FOR GLASS MACHINE

Theodore F. Piel, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 18, 1963, Ser. No. 331,427
9 Claims. (Cl. 65—355)

1. Glass mold cooling apparatus, comprising
an air-actuated liquid mist forming nozzle,
means for supplying actuating air to said nozzle at a predetermined pressure and supply rate,
conduit means for conveying sprayable liquid to said nozzle,
biased check valve means in said conduit means for limiting flow of said liquid to intervals when said liquid is at a pressure exceeding said predetermined pressure,

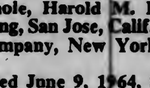


stroking means for delivering said liquid in discrete batches through said valve means,
means for varying the stroke length of said delivery means to vary the size of said batches, and
means for adjusting the stroking rate during each delivery interval to vary the proportions of air and liquid in said nozzle.

3,350,191
METHOD OF DESUCKERING TOBACCO PLANTS WITH DI- AND TRI-THIOCARBONATES AND THIODICHLOROMETHYLSULFIDES

Don R. Baker, Pinole, Harold M. Pitt, Lafayette, and Stassen Y. C. Soong, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 9, 1964, Ser. No. 373,852
6 Claims. (Cl. 71—78)

1. A method of controlling the growth of lateral buds of a mature tobacco plant comprising applying thereto a growth controlling amount of compound corresponding to the formula

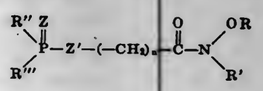


wherein R_1 is selected from the group consisting of lower alkyl, cycloalkyl having from 3 to 8 carbon atoms, and substituted derivatives thereof, wherein the substituents are selected from the group consisting of halogen, hydroxyl and lower alkyl; R_2 is selected from the group consisting of substiuted lower alkyl and substituted cycloalkyl having up to 7 carbon atoms wherein the substituetnts are selected from the group consisting of halogen and hydroxyl; and X is selected from the group consisting of chlorine, oxygen and sulfur.

3,350,192
METHOD FOR PRE-EMERGENCE CONTROL OF UNDESIRABLE PLANT LIFE

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Dec. 11, 1963, Ser. No. 329,893
10 Claims. (Cl. 71—87)

1. A method for the pre-emergence control of undesirable plant life which comprises applying to soil a herbicidal composition comprising an inert carrier and as the essential active ingredient, in a quantity which is herbicidally injurious to said undesirable plant life, a compound of the formula

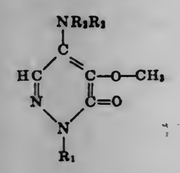


wherein R and R' are independently selected from the group consisting of alkyl and acyl groups containing from one to ten carbon atoms; *n* is an integer from 1 to 3; Z and Z' are independently selected from the group consisting of oxygen and sulfur; and R'' and R''' are independently selected from the group consisting of alkyl, cycloalkyl, alkoxy, cycloalkoxy, alkylthio, aryl, aryloxy, arylthio, aralkyl, aralkoxy and aralkylthio groups containing from one to eighteen carbon atoms.

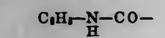
3,350,193
DERIVATIVES OF PYRIDAZONE COMPOUNDS

Franz Reicheneder, Ludwigshafen (Rhine), and Adolf Fischer, Mutterstadt, Pfalz, Germany, and Karl Dury, deceased, late of Kirchheimbolanden, Germany, by Johanna Maria Dury, heiress-at-law, Kirchheimbolanden, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Jan. 7, 1965, Ser. No. 424,139
Claims priority, application Germany, Jan. 16, 1964, B 75,014
6 Claims. (Cl. 71—92)

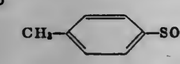
1. Compounds having the formula



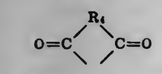
wherein R_1 denotes phenyl or cyclohexyl and wherein
(1) R_2 denotes hydrogen and R_3 denotes a member selected from the group consisting of hydrogen, lower alkyl, lower chlorinated alkyl, α-hydroxy-β,β,β-trichloroethyl, the group



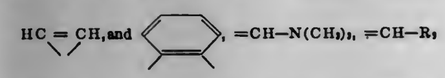
and the group



(2) R_1 and R_2 together denote a member selected from the group consisting of an imine ring system having the formula



wherein R_4 is selected from the group consisting of alkyl of from 0 to 2 carbon atoms,



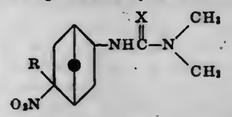
wherein R_5 is selected from the group consisting of lower alkyl, phenyl and o-hydroxyphenyl and salts of these compounds with an acid selected from the group consisting of inorganic acid, lower aliphatic carboxylic acid, chlorinated lower aliphatic carboxylic acid, benzene sulfonic acid having lower alkyl substituent groups, phenoxyacetic or phenoxypropionic acid, phenol having chlorine or nitro substituents, oxalic acid, mucochloric acid, maleic acid, monochloromaleic acid and dichloromaleic acid, and heavy metal complex salts.

2. A process for the control of unwanted vegetation wherein a compound as claimed in claim 1 is allowed to act on the plants.

3,350,194
NORBORNYL-1,1-DIMETHYL UREAS AND THIOUREAS AND USE AS HERBICIDES

George A. Buntin, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Dec. 2, 1964, Ser. No. 415,476
11 Claims. (Cl. 71—119)

1. A compound represented by the formula

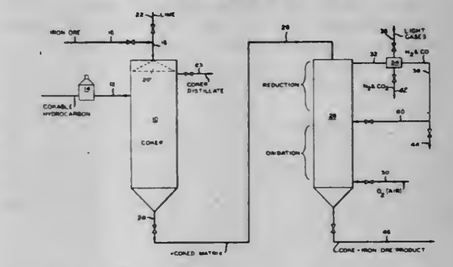


in which the R substituent on the norbornyl ring represents a substituent selected from the group consisting of hydrogen and lower alkyl and X is selected from the group consisting of oxygen and sulfur.

8. The method of controlling undesired plants which comprise contacting the soil in which said plants grow, prior to emergence of said plants, with a herbicidal amount of a compound of claim 1.

3,350,195
PRODUCTION OF BENEFICIATED IRON ORE-COKED PRODUCT

King L. Mills, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,310
6 Claims. (Cl. 75—1)



1. A process for beneficiating iron ore which comprises the steps of:
(1) admixing iron ore and heavy cokable hydrocarbon material under coking conditions to form a coked matrix containing from 6 to 50 pounds of iron ore per pound of coke, said coke containing less than 20 percent volatile matter;
(2) gravitating the resulting coke-iron ore matrix of step (1) thru an upright treating tower;
(3) contacting said matrix in admixture with H_2O in the lower section of said tower with an ascending stream of O_2-containing gas at a temperature in the range of 1000° to 2000° F. to partially oxidize the coke in said matrix and form CO and H_2;
(4) passing the resulting gas from step (3) containing CO and H_2 upwardly thru said matrix in the upper section of said tower to partially reduce the iron ore therein; and
(5) recovering, and cooling the resulting beneficiated iron ore from the foregoing steps.

3,350,196
BASIC STEELMAKING

Roy Wardle Bashford, Newcastle, New South Wales, Australia, assignor to BOT Brassert Oxygen Technik A.G., Zurich, Switzerland, a company of Switzerland
No Drawing. Filed July 20, 1965, Ser. No. 473,518
Claims priority, application Australia, July 20, 1964, 47,107/64
2 Claims. (Cl. 75—52)

1. A process of producing steel comprising preparing

a charge of liquid pig iron and solid scrap, said pig iron containing oxidizable impurities and said scrap being added in an amount larger than that amount which is liquifiable by the heat liberated during the combustion of said impurities, adding calcium carbide to said charge as a combined basic slag-forming and heat-generating agent, and blowing said charge with oxygen at a rate sufficient to maintain oxidizing refining conditions, whereby calcium carbide is decomposed to produce exothermic heat and provide calcium in the form of CaO dissolved in the slag and carbon partly dissolved in the melting charge, and continuing blowing until the carbon contained in the charge is substantially removed and the tapping temperature is attained.

3,350,197

FERROSILICON ALLOYS

Thomas B. Beeton, Daniel J. N. Hoffman, and David J. Du Plessis, Pretoria, Transvaal, Republic of South Africa, assignors to South African Iron and Steel Industrial Corporation Limited

No Drawing. Filed June 17, 1964, Ser. No. 375,961
Claims priority, application Republic of South Africa, June 25, 1963, 63/2,823; Dec. 6, 1963, 63/5,541
9 Claims. (Cl. 75—122.5)

1. A ferrosilicon alloy containing from 10 to 13% by weight silicon, from 1 to 5% by weight chromium, from 0 to 5% by weight uranium, and at least one of the elements nickel in the range 0.5 to 2% by weight and copper in the range 0.2 to 10% by weight, the remainder being substantially all iron, and the sum of the nickel and copper contents not exceeding 10% by weight.

3,350,198

CADMIUM METAL SPONGE

Robert E. Stark, Avon Lake, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Original application Jan. 6, 1964, Ser. No. 335,798, now Patent No. 3,297,433, dated Jan. 10, 1967. Divided and this application Dec. 19, 1966, Ser. No. 620,199
1 Claim. (Cl. 75—151)



A cadmium metal sponge characterized by high surface area and having both plate-like and acicular shaped crystals, substantially as shown in the accompanying drawing.

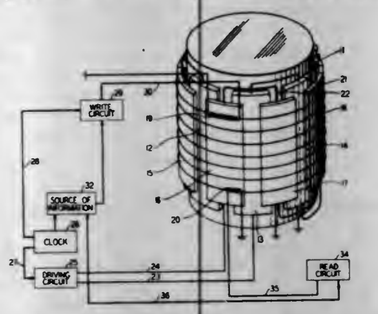
3,350,199

COMPOSITION COMPRISING Ni-Fe-Nb WITH OR WITHOUT SILVER AND MAGNETIC MEMORY ELEMENT UTILIZING SAME

David H. Smith, Summit, N.J., and Edward M. Tolman, New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 22, 1964, Ser. No. 405,692
12 Claims. (Cl. 75—170)

1. A composition of matter consisting essentially of 1.0–5.0 percent, by weight, niobium, up to 2.0 percent, by weight, silver, 72.0–80.0 percent, by weight, nickel,



remainder iron, wherein the ratio of nickel to iron is within the approximate range of 3:1 to 7:1.

3,350,200

METHOD OF MAKING A SINTERED FUEL CELL ELECTRODE STRUCTURE

Gerd Sandstede, Horst Binder, Alfons Kohling, and Kurt Richter, Frankfurt am Main, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed June 22, 1965, Ser. No. 465,987
Claims priority, application Germany, June 27, 1964, B 77,437
13 Claims. (Cl. 75—208)

1. A method of producing a sintered body capable of forming a gas-impermeable cathode structure for a fuel cell, comprising the steps of forming, superposed upon each other, a first pulverulent layer consisting essentially of a first mixture of nickel powder and of a pulverulent nickel salt which upon heating in a reducing atmosphere to the sintering temperature if nickel will be decomposed under formation of metallic nickel and gaseous decomposition products, and a second pulverulent layer consisting essentially of a mixture of said first mixture and of a pulverulent pore-forming material which can be removed under conditions which will not cause removal of nickel; jointly compressing said superposed layers, thereby forming thereof a compressed composite layer; heating said compressed composite layer in a reducing atmosphere at a temperature between about 650° C. and 750° C. thereby reducing said pulverulent nickel salt of said layers to metallic nickel and also forming gaseous decomposition products, thereby forming a porous, coherent sintered nickel body of the originally present pulverulent nickel and the nickel formed by reduction of said reducible nickel salt of said two layers; and removing said pulverulent pore-forming material from the portion of said coherent sintered nickel body formed of said second layer without causing removal of nickel thereby increasing the porosity of the latter, whereby a coherent sintered nickel body is formed consisting of two layers of different porosity integral with each other.

3,350,201

METHOD OF PRODUCING SINTERED ALLOYS OF BERYLLIUM

Choh-Yi Ang, Santa Ana, and Earl R. Helderman, Garden Grove, Calif., assignors to North American Aviation, Inc.

Original application Sept. 11, 1964, Ser. No. 395,860, now Patent No. 3,325,257, dated June 13, 1967. Divided and this application Jan. 10, 1967, Ser. No. 623,161
8 Claims. (Cl. 75—214)

1. The method of forming a substantially isotropic sintered alloy mass consisting essentially of the following ingredients:

from 50 to 90 weight percent beryllium,
from 0.5 to 40 weight percent copper,
from 0.5 to 30 weight percent aluminum,
from 0 to 5 weight percent silicon,
from 0 to 12 weight percent nickel,
from 0 to 1 weight percent manganese, and,
from 0 to 1 weight percent magnesium;

the method comprising the steps of compacting a mixture of said ingredients in powder form and of a size passing through a 100 mesh screen, heating the compacted mixture in an inert environment at a temperature above the melting point of aluminum and below the melting point of beryllium for a time sufficient to densify the mixture to at least 95 percent of its theoretical density, with the ingredients other than beryllium forming a molten matrix between the beryllium particles, and thereafter cooling the densified mixture to atmospheric temperature, whereby said copper and beryllium form primary grains which assume random orientation in said mass.

3,350,202

METHOD OF XEROGRAPHICALLY PHOTOSENSITIZING PLANOGRAPHIC PRINTING PLATES

Julius L. Silver, Somerset, Franklin Township, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 27, 1964, Ser. No. 406,925
20 Claims. (Cl. 96—1.4)

1. The process of image photosensitizing a planographic printing plate base of an association product of an ethylene oxide polymer and a phenolic resin which comprises the steps of electrostatically charging a xerographic surface in the absence of light, exposing said charged xerographic surface to a light energy image causing said surface to lose electrostatic charge locally in an amount proportional to the light striking its surface thereby forming a latent electrostatic image, dusting the exposed xerographic surface with a friable normally solid, finely divided photosensitizing agent in an amount sufficient to cover all electrostatically charged areas of the said xerographic surface, contacting said dusted xerographic surface with the planographic printing plate base thereby transferring said photosensitizing agent to said base, and exposing said photosensitized base to light energy.

3,350,203

XEROGRAPHIC PLATE

James G. Balmer, Jr., Birmingham, and Robert G. Plantholt, Rochester, Mich., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Jan. 24, 1964, Ser. No. 340,013
3 Claims. (Cl. 96—1.5)



1. A xerographic plate structure comprising:
first and second plate members;
a photoconductive insulating layer supported on one surface of a first of said members;
a strip of material secured to and between the side of the first plate member opposed to that having said layer and said second plate member along the edges thereof;
said strip having an edge extending at least contiguous to the edges of said plate members for protecting the latter edges against impacts directed toward said edges; and
a spacing member positioned between said plate members and within the confines of said strip material and being adapted to space said plate members a predetermined distance;
said strip having a thickness equal to said predetermined distance and being cooperable with said spacing element to maintain the thickness and the flatness of the xerographic plate uniform throughout its entire surface.

3,350,204

COLLOID TRANSFER PROCESS UTILIZING AN OIL-SOLUBLE U.V. ABSORBER

James G. Smith and Thomas I. Abbott, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,846
20 Claims. (Cl. 96—28)

1. A photographic element having thereon an unhardened colloidal silver halide emulsion containing a dihydroxybenzene developing agent and an oil soluble ultraviolet absorber dissolved in a substantially water insoluble, low molecular weight, organic crystalloidal material having a boiling point above about 175° C.

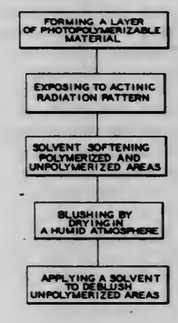
11. The method of photographic reproduction which comprises exposing to a subject a photographic element having thereon an unhardened colloidal silver halide emulsion containing a dihydroxybenzene developing agent and an oil soluble ultraviolet absorber dissolved in a substantially water insoluble, low molecular weight, organic crystalloidal material having a boiling point above about 175° C., developing said exposed emulsion layer with an alkaline activator solution and transferring the unhardened areas of said colloid layer to an absorbent support.

3,350,205

METHOD OF IMAGE REPRODUCTION BY PHOTOPOLYMERIZATION AND BLUSHING

William L. Goffe, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 27, 1964, Ser. No. 362,982
6 Claims. (Cl. 96—35.1)



1. The method of image configuration comprising:
(a) forming a layer of photopolymerizable material on a supporting substrate;
(b) exposing said layer to a pattern of actinic electromagnetic radiation whereby exposed areas photopolymerize;
(c) softening both said polymerized and unpolymerized areas by prolonged exposure to a solvent vapor;
(d) allowing said layer to dry in a humid atmosphere so that the entire layer surface blushes;

(e) applying to said layer a solvent which more rapidly dissolves said unpolymerized areas than said polymerized areas;
(f) drying said layer, whereby background areas return to an unblushed condition.

3,350,206

LITHOGRAPHIC PLATES, GLUCONATE SOLUTIONS THEREFOR AND PROCESS FOR PRODUCING THE SAME

Robert F. Leonard, East Rockaway, N.Y., assignor to Litho Chemical and Supply Co., Inc., Long Island, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 213,876, Aug. 1, 1962. This application Aug. 31, 1966, Ser. No. 576,487

10 Claims. (Cl. 96—75)

1. A method of preparing a lithographic plate having a permanent, durable, hydrophilic surface which consists essentially in treating an aluminum, chromium or steel plate with an aqueous solution having a pH of 1 to 3 and containing gluconate ions in a 2 to 4% concentration based on the weight of the solution.

3,350,207

CONTINUOUS BREAD MAKING PROCESS WITH PUMPABLE SHORTENING CONTAINING A HIGH LEVEL OF FATTY TRIGLYCERIDE SOLIDS

Paul M. Koren, Cincinnati, and James H. Menzies, Springfield Township, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,217

7 Claims. (Cl. 99—90)

1. In a process for the continuous production of bread comprising the steps of mixing a fermented yeast brew, continuously mixing the brew in a first mixing stage with other dough ingredients including a shortening ingredient as hereinafter defined, passing the resulting mixture through the first mixing stage to produce a pre-mixed dough having substantially uniform properties and thereafter subjecting the pre-mixed dough to high speed mixing to develop a complete dough suitable for extruding and cutting into dough sections, panning, proofing, and baking, the improvement which comprises continuously introducing to the first mixing stage a pumpable shortening ingredient at a temperature of at least about 140° F., said shortening being in pumpable condition at normally encountered temperatures and comprising a suspension in a liquid glyceride vehicle of from about 10 percent to about 60 percent by weight of shortening of substantially fully saturated fatty triglyceride solids of fatty acids having from 16 to 22 carbon atoms, the amount of said shortening added at the first mixing stage being an amount of about 2.0 to not more than 2.8 percent based on the weight of the flour content in the dough.

3,350,208

METHOD OF MAKING A CANNED, BAKED PIE

Edward E. Colby and Richard E. Hager, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 22, 1964, Ser. No. 420,429

13 Claims. (Cl. 99—92)

1. The method of making a canned, baked pie which can be stored for substantial periods of time at normal room temperatures without refrigeration comprising:
(1) preparing an acidulated pastry dough having a pH of from about 4 to about 4.7 and comprising by weight of the dough from about 40% to about 60% flour, from about 20% to about 45% shortening, and from about 13% to about 20% water;
(2) placing the dough in the form of a shell in the bottom part of a sanitary open-top can and partially baking the shell while in the can for about 8 to 12 minutes at a temperature of from about 400° F. to about 500° F.;
(3) placing in the partially baked pastry shell a pre-heated pastry filling having a temperature of from about 150° F. to about 250° F.;
(4) baking the complete pie while in an unsealed open-type can with sufficient heat to provide a temperature of the pie of from about 190° F. to about 250° F. for a period of from about 20 to about 60 minutes; and
(5) hermetically sealing the top of the can with a sterile lid while the can and contents are at a temperature of at least about 190° F.

3,350,209

STABILIZED TOPPING

Edgar B. Rodgers, Philadelphia, Pa., assignor to Germantown Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 7, 1965, Ser. No. 446,407

7 Claims. (Cl. 99—139)

1. A stabilized whipped composition comprising, on a weight basis:
(a) 10 to 35% of a vegetable fat
(b) 5 to 16% of sugar
(c) 2 to 5% of a stabilizer and to make 100%, of water,
in which said stabilizer comprises:
(d) 48 to 62% of caseinate
(e) 16 to 22% of sugar
(f) 7 to 10% of a sorbitan partial ester of a fatty acid in which the fatty acid contains 12 to 20 carbon atoms
(g) 1.5 to 3.0% of a polyoxyethylene adduct of a sorbitan partial ester of a fatty acid in which the fatty acid contains 12 to 20 carbon atoms and the ethylene oxide units average in the range of 12 to 25 and
(h) 6 to 14% of a lactylate having the formula

$$RCO(OCHCH_3CO)_nO\frac{Ca}{2}$$

in which
n is an integer of 1 to 5,
RCO is the acyl radical of a fatty acid containing from 12 to 24 carbon atoms.

3,350,210

ELECTROLESS PLATING OF MAGNETIC MATERIAL

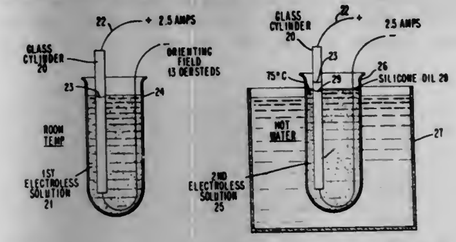
Arnold F. Schmeckenbecher, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Division of application Ser. No. 428,162, Jan. 26, 1965, now Patent No. 3,305,327, dated Feb. 21, 1967, which is a continuation of application Ser. No. 162,897, Dec. 28, 1961, and is also a division of application Ser. No. 162,894, Dec. 28, 1961, now Patent No. 3,255,033, dated June 7, 1966. Divided and this application Jan. 14, 1966, Ser. No. 520,733

7 Claims. (Cl. 106—1)

4. An electroless plating bath for forming magnetic thin films having bistable characteristics and having

adaptation as computer memory and logic element, said solution consisting essentially of the following:



$H_2PO_2^-$	From about 11 g./l. to 13 g./l.
$C_4H_4O_6^{--}$	From about 27 g./l. to 33 g./l.
Fe^{++}	From about 6 g./l. to 39 g./l.
Ni^{++}	From about 0.8 g./l. to 7 g./l.
Pd^{++}	From about 12 mg./l. to 21 mg./l.

and sufficient NH_4OH to bring the pH to at least 9.

3,350,211

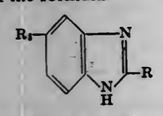
COMPOSITIONS USEFUL IN CONTROLLING MARINE FOULING AND METHODS FOR THEIR USE

Bernard W. Greenwald, Bronx, N.Y., assignor to Merck & Co. Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,509

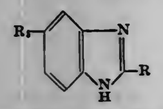
6 Claims. (Cl. 106—15)

1. A composition useful in combatting marine fouling which comprises vehicle and an anti-fouling effective amount of a complex of an organic base cation selected from the group consisting of plumbic, zinc and mercuric with a compound of the formula



where R is thiazolyl and R_5 is selected from the group consisting of hydrogen, loweralkyl, halo, phenyl, halophenyl, thienyl, loweralkoxy, loweralkylthio, phenoxy and phenylthio.

4. A method for combatting the growth of marine organisms on underwater surfaces that comprises treating said surface with a composition comprising an anti-fouling effective amount of an organic base vehicle and complex of a cation selected from the group consisting of plumbic, zinc and mercuric with a compound of the formula



where R is thiazolyl and R_5 is selected from the group consisting of hydrogen, loweralkyl, halo, phenyl, halophenyl, thienyl, loweralkoxy, loweralkylthio, phenoxy and phenylthio.

3,350,212

CERAMIC DIELECTRICS

Shinobu Fujiwara, Minamiakita-gun, Akita-ken, Japan, assignor to TDK Electronics Co., Ltd., Tokyo, Japan

Filed May 12, 1964, Ser. No. 366,847

Claims priority, application Japan, May 18, 1963, 38/26,018

5 Claims. (Cl. 106—39)

1. A ceramic dielectric consisting essentially of a sintered mixture of $SrTiO_3$ from 40 to 75% by weight, $Bi_2O_3 \cdot 2TiO_2$ from 10 to 50% by weight and La_2O_3 from 5 to 20% by weight.

3,350,213

METHOD OF AND APPARATUS FOR GLASS MAKING

Pierre Ivan Peyches, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed Dec. 3, 1962, Ser. No. 241,885

Claims priority, application France, Dec. 7, 1961, 881,265

9 Claims. (Cl. 106—52)

7. That method of making glass, comprising, creating a confined rising current of hot gaseous medium in and through a reaction zone, heating the batch ingredients other than silica, to the melting point thereof, spraying the melted batch ingredients into said zone to disperse the same throughout said gaseous medium, simultaneously preheating sand grains to the temperature at which they will react with said batch ingredients to form glass, distributing the grains uniformly into said gaseous medium above said zone, to cause the grains to descend slowly through said zone until each has a coating of melted batch ingredients, reacts therewith to form a droplet of molten glass, and moves downwardly out of said zone.

9. A method of making glass which comprises heating siliceous grains to a temperature in the glass-forming range, electrically charging said grains and dropping the charged grains into a gaseous vitrification zone, charging finely divided molten particles of glass-forming ingredients other than said siliceous grains with an opposed electrostatic potential and introducing them into the gaseous vitrification zone and into contact with said falling grains, thereby forming drops of molten glass.

3,350,214

HIGH TEMPERATURE COMPOSITIONS

Roger A. Long, San Diego, Calif.

No Drawing. Application Apr. 12, 1957, Ser. No. 652,358, now Patent No. 2,982,619, dated May 2, 1961, which is a continuation of application Ser. No. 177,548, Aug. 3, 1950. Divided and this application Nov. 23, 1960, Ser. No. 71,366

2 Claims. (Cl. 106—55)

1. As an article of manufacture, a body characterized by relatively high refractoriness, resistance to corrosion and abrasion consisting essentially of particles of material from the class consisting of beryllia and alumina, and including, as a binder, a material from the class consisting of sintered powdered particles selected from the group consisting of particles of disilicides of uranium, molybdenum, chromium, tungsten, zirconium and titanium powdered substantially 100 percent to particle sizes less than 25 microns, said metallic binder being present from an amount sufficient to bind the particles of alumina and beryllia together up to about 25 percent of the weight of the body.

3,350,215

METHOD OF MAKING COHESIVE FABRIC

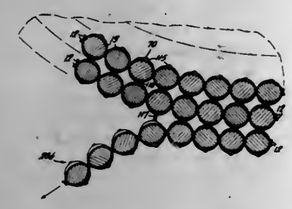
Leonard J. Jenard, Lincoln, and Francis W. Jenard, Saylesville, R.I., assignors to Paulis Silk Company, Central Falls, and Pawtucket, R.I., a corporation of Rhode Island

Original application Apr. 17, 1963, Ser. No. 273,786. Divided and this application May 5, 1966, Ser. No. 547,822

6 Claims. (Cl. 117—37)

1. A process for producing a self-adhering elastic fabric comprising the steps of conducting the fabric without any substantial stretching through the nip between a pair of coacting coating rolls, applying a film of cohesive substance to each of the coacting rolls in an amount sufficient to transfer to the fabric cohesive substance coatings on both sides thereof in an amount of between about 5% and about 15% cohesive substance by weight of the

total weight per unit area of the coated fabric, the cohesive substance being coated primarily onto only the raised parts of the fabric yarns without substantially impregnating or filling the interstices between the yarns, and exposing the coated fabric to heat to dry the cohesive substance.

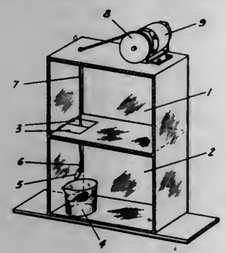


3,350,216

HYDROPHILIC CONTACT LENS AND METHOD OF MAKING SAME

Donald E. McVannel, Merrill, James L. Mishler, Chesaning, and Keith E. Polmanteer, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed May 11, 1964, Ser. No. 366,536
3 Claims. (Cl. 117—47)



1. A process for treating a silicone rubber lens to render it hydrophilic comprising the steps of
(a) subjecting the lens to a solvent extraction,
(b) allowing the lens to dry,
(c) cleaning the lens with a detergent,
(d) rinsing the lens,
(e) allowing the lens to dry,
(f) dipping the lens at least once into a solution of a titanate having the formula $Ti(OR)_4$, wherein R is an alkyl group containing from 2 to 4 carbon atoms,
(g) allowing the lens to dry,
(h) subjecting the lens to an extraction in hot water,
(i) rubbing the surfaces of the lens while wet with water and
(j) immersing the lens in cold water.

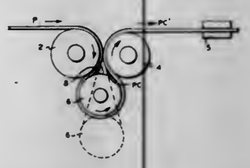
3,350,217

PROCESS FOR COATING PAPER USING THE PAPER TO BE COATED FOR WORKING THE COATING

Lindsay O. Goff, Westbrook, Maine, assignor to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts

Filed May 11, 1965, Ser. No. 461,576
4 Claims. (Cl. 117—64)

1. The method of distributing and smoothing a layer of viscous liquid coating material which has been deposited on a wide running paper web comprising the steps of: running an equal width uncoated fresh web surface in a direction opposite to that of said running web with said uncoated fresh web surface opposed to the coated surface of said running web; running the opposed coated and uncoated webs between spaced lateral supports extending across the width of the webs with the spacing between said supports controlling the transverse force which the opposed surfaces of said webs can apply to said viscous



liquid coating material, and urging said opposed web surface into contact between said supports across the transverse dimension of said web with sufficient pressure to distribute and smooth said viscous liquid on said running web.

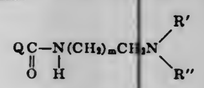
3,350,218

SOILPROOFING WITH QUATERNARY AMMONIUM DERIVATIVES OF HIGHLY FLUORINATED CARBOXYLIC ACIDS

Domenick Donald Gagliardi, East Greenwich, R.I., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,631
10 Claims. (Cl. 117—76)

1. Aminoalkylamido derivatives of highly fluorinated aliphatic carboxylic acids having compositions corresponding to the formula:



where Q is a hydrocarbon radical having three to twenty-one carbon atoms and seven to forty-three hydrogen atoms of which hydrogen atoms at least 70 percent to 100 percent has been replaced with fluorine atoms and at least two fluorine atoms are attached to the terminal carbon atom; R′ and R″ are alkyl groups having one to six carbon atoms; *m* is an integer from 1 to 6.

10. A method of imparting capability to shed oily particulate soil to textile material which comprises padding textile material with at least one cationic resin, padding the so-treated textile to at least 80 percent wet pick-up with at least one amidoalkyltrialkyl ammonium derivative of highly fluorinated aliphatic carboxylic acid having four to twenty-two carbon atoms in which at least 70 percent to 100 percent of the alkyl hydrogens has been replaced by fluorine atoms and at least two fluorine atoms are attached to the terminal carbon atom, and curing the so-treated textile at a temperature in the range of room to 350° F. for a period of time inversely proportioned to the temperature and about five minutes at 300° F.

3,350,219

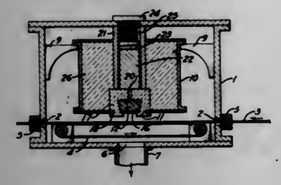
EVAPORATING METAL EMPLOYING POROUS MEMBER

Amos J. Shaler, State College, Pa., assignor to Stackpole Carbon Company, St. Mary's, Pa., a corporation of Pennsylvania

Filed July 7, 1966, Ser. No. 565,347
5 Claims. (Cl. 117—107)

1. A method of coating an object with metal comprising supporting the object to be coated and a porous element in a chamber in a non-oxidizing gas at a pressure from a few microns to less than one atmosphere, supplying molten coating metal to the pores of said element, and

heating the element and its contained metal to a temperature at which the vapor pressure of the metal is substantially in excess of the pressure of said gas, and thereby



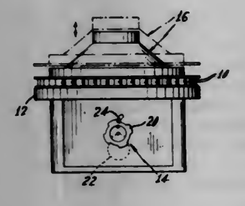
rapidly evaporating said metal without bubble formation from the pores of said element to form a coating on said object.

3,350,220

TISSUE PROCESSING FOR ELECTRON MICROSCOPE EXAMINATION THEREOF

Jack Isreell, Tuckahoe, N.Y., assignor to The Technicon Company, Inc., Chauncey, N.Y., a corporation of New York

Filed July 12, 1963, Ser. No. 294,707
2 Claims. (Cl. 117—113)



1. In a method of preparing tissue for microscopic examination wherein a tissue specimen is sequentially immersed by automatic immersion apparatus in each of several different liquids for respective predetermined lengths of time, the improvement comprising sequentially immersing said tissue specimen in such liquid as is contained in a plurality of containers with each immersion in each container being for an invariable identical interval of time; and for a plurality of said several different liquids, respectively disposing the same liquid in a number of containers arranged in a respective group one after the other in immediate succession, whereby the number of containers in such group of containers multiplied by said invariable identical interval of time will equal the respective predetermined length of time required for the immersion of the tissue specimen in the particular one of said several different liquids which is respectively disposed in such group of containers.

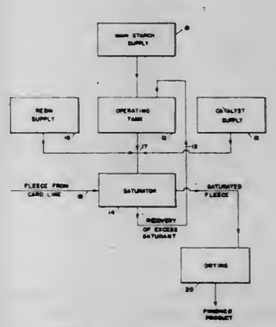
3,350,221

PROCESS FOR MAKING FILTER-SHEET MATERIAL

Philip S. Taylor, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Feb. 6, 1964, Ser. No. 343,015
2 Claims. (Cl. 117—140)

1. The method of producing a bonded fibrous filter-sheet material which comprises:
preparing a web-like fleece of intermingled, unspun textile-length fibers,
preparing an aqueous dispersion of a starch having an amylose-content of from 50% to 70% in a first container, this dispersion having from 5% to 15% of starch,
continuously feeding said dispersion into a second container,
continuously feeding said dispersion from said second container to a web-saturating device,
simultaneously feeding to said saturating device a solution of a cross-linking agent capable of reacting with the hydroxyl groups of the amylose,



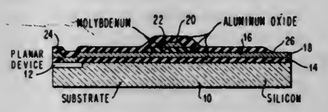
also simultaneously feeding to said saturating device a solution of a catalyst capable of promoting the reaction between the cross-linking agent and the amylose,
continuously saturating said fibrous fleece with the mixture of said starch dispersion, said resin solution, and said catalyst solution,
continuously removing excess saturant from said fleece and returning said excess to said second container,
and continuously removing said saturated fleece from said web-saturating device and drying said fleece.

3,350,222

HERMETIC SEAL FOR PLANAR TRANSISTORS AND METHOD

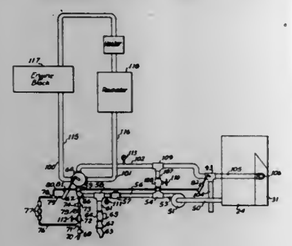
Irving Ames, Peekskill, and Hollis L. Caswell, Mount Kisco, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 26, 1963, Ser. No. 333,475
11 Claims. (Cl. 117—212)



1. A method of providing conducting leads for thin film devices and insulating same, which comprises:
depositing a first aluminum oxide coating over a substrate and that portion of a device located on the substrate to which it is not desired to make electrical contact,
depositing a layer of material chosen from the group consisting of tungsten and molybdenum in a desired pattern on said first aluminum oxide layer, and
depositing a second layer of aluminum oxide over the layer of conductor material wherein the substrate, the tungsten, molybdenum and aluminum oxide have substantially the same coefficients of thermal expansion.

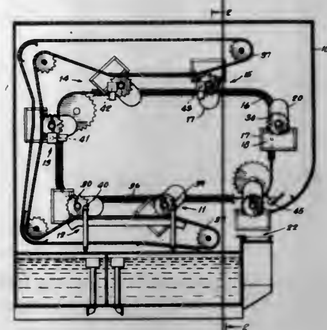
3,350,223
PLURAL STEP METHOD FOR CLEANING THE LIQUID COOLING SYSTEM OF AN INTERNAL COMBUSTION ENGINE
Robert G. Monteath, Jr., 226 Hilliard Ave., Asheville, N.C. 28801
Continuation of application Ser. No. 313,626, Oct. 3, 1963, which is a division of application Ser. No. 64,120, Oct. 21, 1960, now Patent No. 3,115,145. This application May 18, 1966, Ser. No. 551,167
3 Claims. (Cl. 134—22)



1. A process for cleaning the liquid cooling system of an internal combustion engine comprising the steps of:
(1) passing a mixture of water under pressure and air under pressure alternately through the radiator and engine and out of said engine, and through said engine and said radiator and out of said radiator,
(2) passing air under pressure alternately through said radiator and said engine and out of said engine, and through said engine and said radiator and out of said radiator, to remove any liquid present from said cooling system,
(3) passing a cleaning solution at an elevated temperature and pressure from a storage tank alternately through said radiator and said engine back to said storage tank, and through said engine and said radiator back to said tank,
(4) passing air under pressure alternately through said radiator and said engine to said storage tank, and through said engine and said radiator to said storage tank, to transfer the cleaning solution from said cooling system to said storage tank,
(5) passing a mixture of water under pressure and air under pressure alternately through said radiator and said engine and out of said engine, and through said engine and said radiator and out of said radiator, and
(6) passing air under pressure alternately through said radiator and said engine and out of said engine, and through said engine and said radiator and out of said radiator to remove any liquid present from said cooling system.

3,350,224
WASHING SMALL PARTS
Howard M. Sadwith, Plainfield, N.J., assignor to Industrial Washing Machine Corporation, Matawan, N.J., a corporation of New Jersey
Original application Jan. 10, 1963, Ser. No. 250,558, now Patent No. 3,229,701, dated Jan. 18, 1966. Divided and this application Apr. 16, 1965, Ser. No. 448,703
5 Claims. (Cl. 134—33)

1. The method of cleaning parts comprising, in sequence, placing the parts in a partially foraminated container having on at least one side an opening about the axis of the container rotation, bringing said container to a work station and aligning said side opening with a nozzle at said station adapted to eject fluid toward said opening; supplying fluid under pressure to the nozzle and thereby into said container while rotating said container about said axis so that the fluid is dispersed through the tumbling parts and drained through the foraminations; removing said container from said work station and removing said parts from the container.



3,350,225
RECHARGEABLE SEALED SECONDARY BATTERY
Harvey N. Seiger, East Brunswick, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed Jan. 12, 1965, Ser. No. 424,913
9 Claims. (Cl. 136—6)

1. In a rechargeable, sealed dry cell secondary battery including a casing having positive and negative terminals, positive and negative plates within said casing electrically connected respectively to said positive and negative terminals, said plates respectively having oxidizable and reducible materials which undergo reversible chemical reactions during the charge and discharge of the battery, and an aqueous electrolyte impregnated separator means between said plates, the improvement in combination therewith comprising: a porous oxygen consuming electrode in the casing, the electrolyte in said separator means being substantially in excess of the quantity normally used in such batteries wherein the pressure resulting from the unabsorbed oxygen during charge would normally build-up to abnormally high levels which said casing could not withstand in the absence of the oxygen consuming electrode, and additional water is generated in the chemical reactions taking place in the battery as a result of such excess electrolyte, the water and electrolyte in said separator means spreading as a lasting liquid film over a substantial surface area of said oxygen consuming electrode, and means electrically connecting said oxygen consuming electrode to the negative terminal of the battery through a low resistance path, the oxygen generated at each positive plate migrating to the area of oxygen consuming electrode where it is consumed at the surface thereof at a rate which prevents said excessive pressure.

3,350,226
METHOD OF SUPPRESSING CORROSION IN FUEL CELL CONTAINING ALKALINE HYDROXIDE ELECTROLYTE
Harry C. Lieb, Rockville Centre, and Anthony M. Moos, Ossining, N.Y., assignors to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
Filed Nov. 22, 1961, Ser. No. 154,276
6 Claims. (Cl. 136—86)

1. In a method for the production of electrical energy by the reaction of an oxidizing gas, which is a source of free oxygen and a fuel in an electro-chemical cell having a metallic fuel electrode and an oxidizing electrode in contact with a substantially water-free alkaline hydroxide electrolyte, at least said oxidizing electrode being of the gaseous diffusion type, the step of suppressing the corrosive tendencies of said hydroxide with respect to said metallic electrode by maintaining said oxidizing electrode in contact with water vapor.

3,350,227
METHOD OF REGENERATING NITRIC ACID OXIDANT OF FUEL CELL
Andreas W. Moerikofer, Fanwood, Joseph A. Shropshire, Westfield, and Barry L. Tarmy, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 14, 1962, Ser. No. 223,728
3 Claims. (Cl. 136—86)

1. In a method of regenerating nitric acid from its gaseous reduction products, said nitric acid being the primary oxidant of a fuel cell, said cell containing a catholyte compartment, said compartment containing an aqueous acidic catholyte, the improvement comprising providing a stable collapsible foam regeneration zone consisting of catholyte and a water soluble foaming agent and contacting said zone with free oxygen gas and said gaseous reduction products.

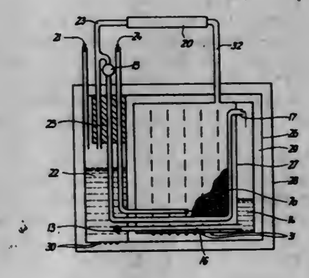
3,350,228
ELECTROLYTE SOLUTION CONTAINING SOLUBLE RHENIUM COMPOUND
Joseph A. Shropshire, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Jan. 10, 1963, Ser. No. 250,495
6 Claims. (Cl. 136—86)

1. In a fuel cell comprising inert electrodes immersed in an aqueous electrolyte, the improvement in combination therewith wherein said aqueous electrolyte contains an additive consisting of about 0.0001 to about 5 weight percent, based upon the weight of said electrolyte, of a soluble rhenium compound.

3,350,229
METHOD AND APPARATUS FOR STORING GASEOUS FUEL FOR THE OPERATION OF FUEL CELLS
Eduard Justi, Braunschweig, Germany, assignor to Siemens-Schuckertwerke, Berlin and Erlangen, Germany, and Varta Aktiengesellschaft, Frankfurt am Main, Germany, both corporations of Germany
Filed Jan. 25, 1963, Ser. No. 253,844
Claims priority, application Germany, Jan. 27, 1962, S 77,753
7 Claims. (Cl. 136—86)

1. In the operation of a fuel cell by delivering a normally gaseous hydrogen fuel and oxygen to respective fuel cell electrodes, a method of synergetically storing the hydrogen and the oxygen, said method comprising the steps of storing the oxygen in liquefied condition at its boiling temperature at no more than atmospheric pressure, separating a minor portion of the liquefied oxygen, maintaining the separated minor portion of the liquefied oxygen under vacuum, removing evaporated oxygen from the separated minor portion of the liquefied oxygen, delivering the gaseous hydrogen, passing the delivered hydrogen in indirect heat exchange relation with the removed evaporated oxygen and with the liquefied oxygen to an adsorbent carrier, the hydrogen thereby being cooled below said boiling temperature, maintaining the adsorbent carrier in indirect heat exchange relation with the liquefied oxygen and with the removed evaporated oxygen, storing the adsorbed hydrogen on said carrier, raising the temperature of the liquefied oxygen to evaporate the same and of the adsorbed hydrogen to desorb the same, and delivering the evaporated oxygen and the desorbed hydrogen to the fuel cell electrodes of a fuel cell.

4. A fuel storage installation for operating a fuel cell by delivering a normally gaseous fuel and an oxidizing gas to respective fuel cell electrodes, said installation comprising, in combination with a fuel cell having electrodes for generating electrical energy, a tank for storing a gas in liquefied condition at its boiling temperature, an inlet means for delivering the liquefied gas to said tank, an outlet means for removing evaporating liquefied gas from the tank, a storage container for storing the fuel, a fuel adsorbent carrier arranged in said storage container, another inlet means for delivering the gaseous fuel into said storage container for adsorption on said adsorbent carrier, said other inlet means being arranged in heat exchange relation with the evaporating liquefied gas and with said liquefied gas whereby said fuel is cooled on its way to the storage container, insulating means separating the tank and the storage container from the ambient temperature, an auxiliary tank for the liquefied gas arranged in indirect heat exchange relationship with the fuel storage container, an auxiliary conduit connecting the first-mentioned liquefied gas tank with the auxiliary tank, an adjustable valve means in the auxiliary conduit for controlling the liquefied gas flow through the auxiliary conduit into the auxiliary tank, an auxiliary outlet conduit for evaporated liquefied gas in said auxiliary tank, said auxiliary outlet conduit leading into said outlet means, and an adjustable vacuum pump in said auxiliary conduit for reducing the pressure in the auxiliary tank.



3,350,230
FUEL CELL HAVING SOLID STABILIZED ZIRCONIUM OXIDE ELECTROLYTE
Helmut Tannenberger and Herbert Schachner, Geneva, and Wolfgang Simm, Lausanne, Switzerland, assignors to Compagnie Francaise de Raffinage, Paris, France
No Drawing. Filed May 6, 1963, Ser. No. 278,416
Claims priority, application Switzerland, May 7, 1962 5,474/62
5 Claims. (Cl. 136—86)

1. In a fuel-cell battery of the character described for producing electric energy directly from the oxidation of a fuel in said battery and having a pair of electrodes and a self-sustaining solid electrolyte member separating said electrodes, the improvement in which said solid electrolyte member comprises a sintered ternary mixture of stabilized zirconium oxide as a major component with minor portions of calcium and magnesium oxides admixed therewith, said sintered electrolyte member having a resistivity of no more than about 130 ohm cm. at about 800° C.

3,350,231

FUEL CELL ELECTRODE AND METHOD OF USING SAME

Robert R. Hentz, Pennington, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 14, 1963, Ser. No. 280,467

5 Claims. (Cl. 136—86)

1. In a method of operating a fuel cell having an anode electrode and a cathode electrode with an electrolyte compartment therebetween, the improvement which comprises forming said anode electrode comprising an electron-conductive support, a catalyst, and a stable inactive nuclide distributed therein and therethrough in discrete subdivided form, said nuclide being characterized by yielding, upon activation in a thermal neutron flux, a radionuclide, subjecting said anode to said neutron flux to activate the nuclide to produce said radionuclide, then removing the activated anode from said flux and using the same in a fuel cell, introducing fuel to the anode, said radionuclide acting to irradiate said anode to deposit energy therein, and said anode transferring said energy to fuel anode-electrolyte interfaces therein to activate fuel reactions, and electrochemically oxidizing the fuel at said anode by the aid of said radiation to generate a current.

3. In a fuel cell having an anode electrode and a cathode electrode with an electrolyte compartment therebetween, the improvement wherein said anode electrode comprises as an intermediate fuel reaction activating agent a stable nuclide distributed through said anode electrode, said nuclide being selected from the class consisting of thulium-169, lutetium-176, rhenium-185 and natural thallium.

3,350,232

HOMEOPOROUS ELECTRODE FOR ELECTROCHEMICAL DEVICES, METHOD OF ITS MANUFACTURE, AND FUEL CELL INCORPORATING SUCH ELECTRODES

Gunther Ryhiner, Bad Soden, Taunus, Hans H. von Döhren, Frankfurt am Main, and Margarete Jung, Nieder-Eschbach, Taunus, Germany, assignors to Varta Aktiengesellschaft, Hagen, Westphalia, Germany, a corporation of Germany

Filed June 21, 1963, Ser. No. 289,686

Claims priority, application Germany, June 22, 1962, A 40,506; Aug. 24, 1962, V 22,956

22 Claims. (Cl. 136—86)

1. A solidified polyelectrolyte gel consisting of a gel of a polyelectrolyte selected from the group consisting of alginates, pectins and carboxymethyl cellulose, said gel being reenforced and stabilized with a synthetic resin, said gel having two opposite surfaces, at least one of said surfaces being constituted by a homeoporous layer defining a multiplicity of evenly distributed and parallel capillaries of substantially the same size and shape, and all surfaces of the homeoporous layer being covered by an electrically conductive metal.

14. A method of manufacturing a homeoporous gas diffusion electrode, comprising the steps of producing an ionotropic aqueous gel of a polyelectrolyte selected from the group consisting of alginates, pectins and carboxymethyl cellulose, said gel consisting of a non-porous layer and a layer defining a multiplicity of evenly distributed and parallel capillaries of substantially the same size and shape, removing the non-porous layer by cutting perpendicularly to the capillaries, stabilizing the resultant homeoporous gel by replacing the water therein with a synthetic resin, and coating all surfaces of the stablized homeoporous gel with an electrically conductive metal.

3,350,233

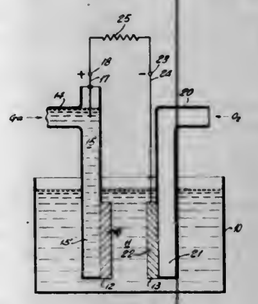
ELECTROCHEMICAL LOW-TEMPERATURE FUEL CELL

Heinz-Günther Plust, Spreitenbach, Aargau, and Carl Georg Telschow, Zurich, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland

Filed Aug. 20, 1963, Ser. No. 303,267

Claims priority, application Switzerland, Aug. 27, 1962, 10,163/62

8 Claims. (Cl. 136—86)



1. A method of operating a fuel cell including a first porous member, a second porous member spaced from said first member, and an electrolyte selected from the group comprised of liquid solutions of potassium hydroxide, sulphuric acid and hydrochloric acid and being in contact with both said members, said method consisting in feeding molten gallium to said first member, feeding a gaseous oxygen reactant to said second member, and operating said second member and the gallium metal as electrodes of said cell.

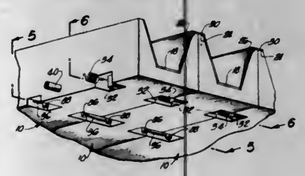
3,350,234

FLEXIBLE SOLAR-CELL CONCENTRATOR ARRAY

Louis A. Ule, Rolling Hills, Calif., assignor to Hoffman Electronics Corporation, a corporation of California

Filed June 3, 1963, Ser. No. 285,447

7 Claims. (Cl. 136—89)



1. A reflective-radiator solar-cell panel assembly including:

(a) a plurality of elongated trough-like modular members mounted in side-by-side relationship, each of said trough-like members having reflective surfaces;

(b) solar cell means mounted on said modular members in position to receive reflected energy from said reflective surfaces;

(c) hinge means intercoupling adjacent ones of said modular members; and

(d) spring means for resiliently biasing the hinged modular members into a planar configuration.

3,350,235

DRY CELL BATTERY HAVING CARBONACEOUS MATERIAL DISPOSED BETWEEN THE LAYERS OF THE BATTERY MIX

Rodolfo Rodriguez Balaguer, Harbor Beach, Fort Lauderdale, Fla., assignor, by mesne assignments, to Patent Holdings Corporation, Fort Lauderdale, Fla., a corporation of Florida

Filed Mar. 11, 1965, Ser. No. 438,944

11 Claims. (Cl. 136—107)

1. A dry cell battery, comprising a carbon cup forming a cathode element and having a hollow body, a closed end and an open end; a metallic anode disposed within said body of said cup; a bibulous covering on said anode; a quantity of battery mix in said cup disposed in a plurality of discrete axially spaced layers each arranged to contact said body and said bibulous covering; a quantity of electrically conductive, water-repellent, carbonaceous material in comminuted form disposed between said layers and contacting said layers, said body and said bibulous covering to provide electrical contact between said layers and said cathode and to provide an effective moisture sealing barrier between said layers; and closure means for said open end of said cup.

3,350,236

METHOD OF PRODUCING STORAGE BATTERIES

Gert Niemann, Hildesheim, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Mar. 19, 1965, Ser. No. 441,213

Claims priority, application Germany, Apr. 3, 1964 B 76,174

16 Claims. (Cl. 136—176)

1. A method of insulating the cell connector of a multi-cell storage battery whose cover consists of weldable thermoplastic material and is provided with openings for the terminals of two adjoining cells, comprising forming the upper side of the cover with two locating surfaces one of which surrounds the other thereof and the other of which surrounds said openings; placing an apertured cell connector onto the upper side of the cover so that its apertures receive the terminals and that the cell connector is located within said other surface; placing a first mold against said other surface and pouring into said mold a molten metal at such temperature that the metal is fused with the cell connector and with said terminals; allowing the resulting bridge to harden and removing the first mold; placing a second mold against said one surface and introducing into said second mold a molten thermoplastic material at such temperature and in such quantities that the material is fused with the cover and forms an insulating cap around said bridge; and removing the second mold when the material of said cap hardens.

3,350,237

METHOD OF MAKING ELECTRIC STORAGE BATTERIES

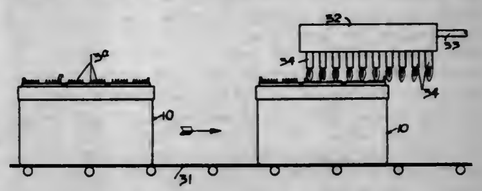
Frank Sealey, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Dec. 3, 1965, Ser. No. 511,540

Claims priority, application Great Britain, June 12, 1962, 22,477/62

5 Claims. (Cl. 136—176)

1. A method of manufacturing an electric storage battery of the kind comprising a plurality of secondary cells connected in series, each secondary cell including a plurality of plates spaced apart by separators, comprising placing in each compartment of a battery box an assembly of plates spaced apart by separators, each plate having a lug projecting above the level of the box, placing protectors over the separators, placing the battery box on a conveyor belt which moves past a flame which is spaced from the battery box so as not to damage the battery box, said flame melting the lugs to form strips connecting the plates in each secondary cell in parallel, and also connecting the secondary cells in series, the strips extending above the level of the box, and closing



the box with a dished lid having partitions mating with the partition walls of the battery box, but recessed to accommodate the strips, a seal between the lid and the box being made with material which is resistant to attack by the acid used in the battery.

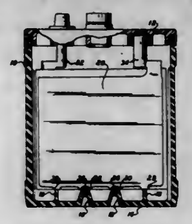
3,350,238

METHOD OF BINDING BATTERY ELEMENTS TO CONTAINER

Harland D. Wilson, Toledo, Ohio, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 26, 1964, Ser. No. 378,107

3 Claims. (Cl. 136—176)



1. The method of affixing an assembly of battery cell elements including positive and negative plates and separators to closely juxtaposed wall portions of a container comprising assembling the battery cell elements and the container with the container in the inverted position and forcing a liquid, viscous, acid resistant and hardenable bonding material through openings in the container to seal such openings and affix such positive and negative plates and separators to the container.

3,350,239

PROCESS FOR MANUFACTURING PRIMARY AND SECONDARY CELLS

Douchan Stanimirovitch, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France

Filed Jan. 15, 1965, Ser. No. 425,868

Claims priority, application France, Jan. 18, 1964, 960,805

11 Claims. (Cl. 136—176)

1. That improvement in the process of manufacturing primary and secondary cells comprising providing a first electrode band, providing a band of separator material of greater length and more than twice as wide as said electrode band, folding said separator band along a median line to provide two faces of substantially like width both of greater width than said electrode band, positioning said electrode band between said faces of said separator band with one longitudinal edge lying against said median line and having its end edges overlapped by the end edges of said separator band, providing a second electrode band, positioning the latter to lie substantially at right angles to assemble first electrode and separator

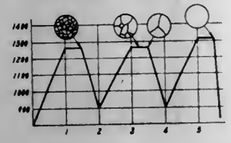
bands, folding the overlapping end of said separator band laterally upon itself, placing the perpendicularly disposed second electrode band over the assembled first electrode and separator bands parallel with this fold and so that its leading edge lies substantially in registry with the longitudinal edge of said first electrode band remote from said median line but on an opposite face of the separator band, folding said assembled first electrode and separator bands transversely over said second electrode band, then folding said second electrode band transversely over the median fold line of said separator band onto a face of the latter, then reversely folding said second separator band transversely upon itself, then folding the assembled first electrode and separator bands transversely over the opposite face of said second electrode band, thereby effecting accordion-like folding of all said bands with the accordion-like folds of the assembled first electrode and separator band perpendicular to the accordion-like folds of the second electrode band and repeating the accordion-like folding of the respective bands to form an electrode-separator assembly block.

3,350,240

METHOD OF PRODUCING MAGNETICALLY ANISOTROPIC SINGLE-CRYSTAL MAGNETS

Akira Higuchi, Touonaka, and Toshinobu Miyamoto, Nishinomiya, Japan, assignors to Sumitomo Special Metals Company Limited, Osaka, Japan, a corporation of Japan

Filed May 28, 1964, Ser. No. 370,874
Claims priority, application Japan, July 5, 1963, 38/35,710
2 Claims. (Cl. 148—1.6)



1. A method of producing a magnetically anisotropic single-crystal ferroalloy magnet having a composition consisting of 6–10% Al, 12–20% Ni, 20–42% Co, .0–7% Cu, less than 6% Ti and the balance Fe, comprising subjecting a polycrystal oriented magnet of said composition to a series of more than two heat-treatment cycles, each said cycle comprising heating said magnet to 1250–1280° C. at a heating rate of 5–20° C. per minute and then slowly cooling to about 900° C., and then heat-treating the resultant single-crystal magnet in a magnetic field and aging said magnet.

3,350,241

PROCESS FOR IMPROVING THE MECHANICAL CHARACTERISTICS OF OBJECTS CONSISTING OF BERYLLIUM OR BERYLLIUM ALLOY

José Mallen, Paris, and Michel Weisz, Orsay, France, assignors to Commissariat à l'Energie Atomique, Paris, France

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,902
Claims priority, application France, Oct. 10, 1963, 950,126
1 Claim. (Cl. 148—11.5)

A process for improving the mechanical characteristics of sheets, bars and tubes of beryllium and beryllium alloys comprising the steps of heating them to a temperature approaching the recrystallization temperature of about 600° C., then applying a low permanent deformation of approximately 0.2% thereto below that of critical cold working for this temperature for a period of approximately 15 minutes whereby a considerable relief of the initial internal stress resulting from the imparted deformation is obtained and then cooling them.

3,350,242

METHOD OF PRODUCING A SUITABLE PRODUCT FOR NITRIDING AND ALLOYING STEEL

Alfons Fuchs, Buderich, near Dusseldorf, Germany, assignor to Gesellschaft für Elektrometallurgie m.b.H., Dusseldorf, Germany

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,481
Claims priority, application Germany, Aug. 20, 1964, G 41,360
9 Claims. (Cl. 148—16.6)

1. A method of producing a product for nitriding and alloying steel, which comprises nitriding and sintering in a nitrogen atmosphere a mixture comprising calcium carbide and at least one steel-fining alloy.

3,350,243

METHOD OF AND COMPOSITION FOR CONTROLLING SCALE FORMATION ON FERRIFEROUS SURFACES

Louis Schiffman, Wyncote, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,864
8 Claims. (Cl. 148—18)

1. The method of treating ferriferous surfaces which comprises controlling scale formation on the ferriferous surface by applying to the surface an aqueous slurry composition consisting essentially of: (1) at least 5% and ranging up to not more than about 10% by weight of bentonite clay, (2) from 0.01 to 0.2 part by weight for each part of bentonite of an additive selected from the group consisting of metallic copper, aluminum and iron and the hydroxides, oxides, carbonates and phosphates thereof, and (3) water in an amount sufficient to render the composition a slurry; heat treating the surface at a temperature from 800° F. to 2200° F.; and removing scale from the heat treated surface.

3,350,244

FLUX LIFE EXTENDER

Dunbar L. Shanklin, 12 Everett Ave., Winchester, Mass. 01890

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,325
7 Claims. (Cl. 148—26)

1. A solder flux of the type adapted to be used on high temperature solder baths, said flux consisting essentially of a fusible fluxing composition consisting essentially of a zinc-ammonium chloride composition and an effective amount in the order of at least about 6 cubic centimeters bulk volume per 100 cubic centimeters of fused fluxing composition of a flux life extender, said flux life extender comprising granules of a porous particulate absorbent selected from the group consisting of activated alumina, silica gel and activated aluminosilicate having a surface area of at least 100 square meters per gram and a volume of available pores of at least 0.15 cubic centimeter per gram.

3,350,245

COMPOSITE POLYETHER PROPELLANTS

Lionel Arthur Dickinson, Quebec, Quebec, Canada, assignor to Her Majesty the Queen in the Right of Canada as represented by the Minister of National Defence, Ottawa, Ontario, Canada

No Drawing. Filed Mar. 3, 1960, Ser. No. 12,647
Claims priority, application Canada, Sept. 9, 1959, 782,107
13 Claims. (Cl. 149—19)

1. A composite propellant composition consisting essentially of an inorganic oxidant, and, as a fuel and binder therefor, an elastomeric polyurethane, said polyurethane being the reaction product of a polyalkylene ether diol having a molecular weight of from about 1500 to about 3000, and a stoichiometrical excess of a diisocyanate which is fluid at ambient temperatures selected from the class consisting of aliphatic diisocyanates and aromatic diisocyanates, cross linked with a triol having a molecular weight of about 500 to about 3000 which is miscible with said polyalkylene ether diol under ambient conditions, the triol being an alkylene oxide adduct of a material selected from the group consisting of aliphatic triols and aliphatic amino alcohols, said aliphatic triols and said aliphatic amino alcohols each having molecular weight up to about 200.

3,350,246

AQUEOUS INORGANIC OXIDIZER SALT BLASTING COMPOSITIONS CONTAINING TAMARIND SEED POWDER

Harry R. Fee, Hopatcong, N.J., John David Ferguson, Troy, N.Y., and Robert W. Lawrence, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed May 5, 1966, Ser. No. 547,734
9 Claims. (Cl. 149—60)

1. In an inorganic oxidizer salt explosive of the aqueous slurry type, the improvement comprising a thickening amount of tamarind seed power as a thickener component.

2. A composition of claim 1 containing up to 10 weight percent of said tamarind seed powder.

3. A composition of claim 2 containing from 1 to 7 percent of said tamarind seed powder.

4. A composition of claim 3 containing from 8 to 25 percent water, from 30 to 75 percent of said inorganic oxidizer salt, and from 3 to 50 percent of a sensitizer.

7. A composition of claim 4 containing ammonium nitrate as the only oxidizer salt.

3,350,247

METHOD OF PROTECTING FINISHED SURFACES

David J. Steinberg, West Englewood, N.J. (215 Little Falls Road, Fairfield, N.J. 07007)

No Drawing. Filed Feb. 4, 1966, Ser. No. 525,132
6 Claims. (Cl. 156—1)

1. In a method of temporarily protecting finished surfaces, including providing an electro-statically charged flexible sheet of planar synthetic resinous thermoplastic material capable of retaining said electro-static charge such that it will be attracted to the surface to be protected, and applying the same under pressure to said finished surfaces, the steps of heating said sheet to a point between 100 and 165 degrees F., and above the minimum at which said sheet may be molecularly reoriented to conform to the surface irregularities in said finished surfaces, and below the melting point of said sheet, and applying said sheet directly to said finished surface under pressure, whereby the contacting surface of said sheet may be softened and hot-worked into said surface irregularities.

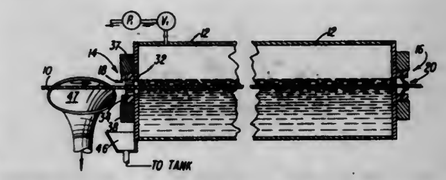
3,350,248

GLASS PREPOLISHING METHOD AND APPARATUS

Henry M. Demarest, Jr., Natrona Heights, and John S. Sieger, Allison Park, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 224,972, Sept. 20, 1962. This application Aug. 27, 1964, Ser. No. 394,377
14 Claims. (Cl. 156—24)

1. A process for chemically treating both surfaces of a glass ribbon simultaneously with a body of chemical solution within a tank having entrance and exit apertures located below the surface level of the body of chemical solution, said process comprising the steps of leading the glass ribbon up to the tank and through said entrance aperture while continuously maintaining the ribbon spaced apart from the edges of the entrance aperture throughout its width so as to define horizontal, vertically restricted upper and lower slots adjacent the upper and lower ribbon surfaces respectively whereby the surfaces of said ribbon are maintained free from mechanical contact, evacuating said tank above said solution by an amount reducing the hydrostatic pressure of the solution in the tank at the level of said upper slot to substantially atmospheric pressure so as to provide a pressure balance between the inside and outside of said tank and said restricted slots tending to seal said entrance aperture against solution outleak and air intake, continuously moving the glass ribbon through the tank while maintaining the ribbon immersed in the solution below the surface thereof, and withdrawing the glass ribbon from the tank through said exit aperture.

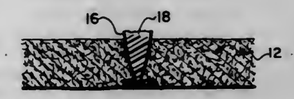


3,350,249

METHOD OF MAKING IMPREGNATED PLASTIC RIVET REENFORCED LAMINATED FIBER SHEETS

Resta S. Gregoire, Newport, Pa., assignor to Gregoire Engineering and Development Company, Adelphi, Md.

Filed Dec. 7, 1964, Ser. No. 416,248
10 Claims. (Cl. 156—92)



1. A process for preparing fiber board which comprises compressing and coating a fibrous matting with an effective amount of a resinous material sufficiently to form reenforcing layers on the outer surfaces of said matting firmly bound thereto by partial impregnation thereinto and subsequently piercing said matting at spaced intervals with an injector nozzle; withdrawing said nozzle while injecting an effective amount of a resinous material therethrough into the voids formed thereby, so that said resinous material forms transversal rivets which bond the outer layers together and more rigidly reinforce said matting by impregnation of said rivet material thereinto in the area around said voids.

3,350,250

METHOD OF MAKING PRINTED WIRE CIRCUITRY

Manuel C. Sanz, Los Angeles, Richard W. Wymer, Orange, and James J. Licari, Whittier, Calif., assignors to North American Aviation, Inc.

Original application Mar. 21, 1962, Ser. No. 181,386. Divided and this application Feb. 12, 1964, Ser. No. 351,578
1 Claim. (Cl. 156—150)

The process of forming on an insulating substrate a printed wire circuit having electrically conducting interconnections extending through and beyond said substrate, the process comprising the steps of

providing a stainless steel plate having at least one protuberance extending from the surface thereof to a height greater than the thickness of said insulating substrate,

selectively disposing a conductive material on portions of said plate to form an electrical circuit, said portions including said protuberances,

disposing a curable, electrically insulating material on at least a portion of said plate and said circuit, the thickness of said insulative material being greater than the thickness of said disposed conductive material but less than the height of said protuberances, so that at least a portion of said conducting material disposed on said protuberances extends above said disposed insulating material,

curing said insulating material to form a substrate, and separating said integrated substrate and circuit from said plate.



3,350,251
METHOD AND APPARATUS FOR PRODUCING PLASTIC TUBING

Harry E. Davis, 510 E. Cuyahoga Falls Ave., Akron, Ohio 44310

Filed July 30, 1962, Ser. No. 213,515
6 Claims. (Cl. 156—218)

1. A continuous method of making a tubular and substantially rigid article of manufacture from a plurality of superposed strips of heat sealable material, which comprises continuously drawing the strips under tension along a path of travel, overlapping the edges of the moving strips to form a tube, drawing said tube along and in contact with an internally positioned elongated, heated arbor, and along and in contact with an exteriorly positioned heater element to simultaneously heat the exterior of said moving tube while the latter is being heated internally by said arbor to adhere said edges and the strips together, and continuously cooling the resultant material to set and stiffen the material.

3,350,252
STRUCTURE AND MANUFACTURE OF BOWLING BALLS

George Herman Twickler, Needham, Mass., assignor to Stowe-Woodward, Inc., Newton Upper Falls, Mass., a corporation of Massachusetts

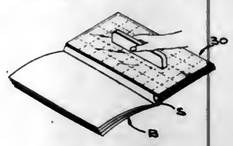
Filed May 11, 1964, Ser. No. 366,364
6 Claims. (Cl. 156—228)

1. A process of manufacturing a bowling ball, said process comprising the steps of pressing polymerizable masses of putty-like consistency between the concave spherical surfaces of a pair of first outer die means and the convex spherical surfaces of a first inner die means to produce a pair of portions of a first shell, the concave spherical surface of one of said pair of first outer die means being closer to its adjacent convex spherical surface of said first inner die means than is the concave spherical surface of the other of said pair of first outer die means to its adjacent convex spherical surface of said first inner die means so that a pair of seats are formed in said pair of portions of said first shell, the thickness of one of said portions of said first shell between its seat and its outer periphery being greater than the thickness of the other of said portions of said first shell between its seat and its outer pheripery, withdrawing said pair of first outer die means from said first inner die means in order to release said portions of said first shell from said convex spherical surfaces of said first inner die means and with said portions of said first shell in adherence with said concave spherical surfaces of said pair of first outer die means, relatively withdrawing said first inner die means from said first pair of outer die means, intimately seating a spherical insert in said seats between said portions of said first shell, pressing said portions of said first shell into contiguity about said insert in order to enclose said insert within said shell by operation of said first pair of outer die means thereby providing a bowling ball core, pressing polymerizable masses of putty-like consistency between the concave spherical surfaces of a pair of second outer die means and the convex spherical surfaces of a second inner die means to produce a pair of portions of a second shell, the concave spherical surface of one of said pair of second outer die means being substantially the same distance from its adjacent convex spherical surface of said second inner die means as is the concave spherical surface of the other of said pair of second outer die means from its adjacent convex spherical surface of said second inner die means so that a pair of seats are formed in said pair of portions of said second shell, the thickness of one of said portions of said second shell being substantially the same as the thickness of the other of said portions of said second shell, withdrawing said pair of second outer die means from said second inner die means in order to release said portions of said second shell from said convex spherical surfaces of said second inner die means and with said portions of said second shell in adherence with said concave spherical surfaces of said pair of second outer die means, relatively withdrawing said second inner die means from said second pair of outer die means, seating said core between said portions of said second shell in said seats thereof, pressing said portions of said second shell into contiguity about said core in order to enclose said core within said second shell by operation of said second pair of outer die means thereby providing a bowling ball veneer, and heating the assemblage of said core and said veneer at a sufficiently high temperature for a sufficiently long period to polymerize said outer shell and said inner shell, said spherical insert being of a composition that is lighter than the composition of said first shell, whereby the center of said insert is displaced on one side of the center of the outer periphery of said second shell to provide the bowling ball with top weight on the other side of said center of said outer periphery.

3,350,253
PASTING DEVICE FOR TRADING STAMPS AND METHOD OF USING SAME

Peter L. Goodhart, Reading, Pa., assignor of one-third to George F. Bennethum, Wyomissing, Pa.

Filed Mar. 8, 1963, Ser. No. 263,784
8 Claims. (Cl. 156—230)



6. The method of transferring stamps and pasting the stamps into a book comprising providing transfer means having a flat under surface, wetting the under surface of the transfer means, providing stamps having a first printed side and a second opposite side with adhesive substance thereon, contacting the wet under surface of the transfer means with said first side of the stamps to cause the stamps to adhere to said under surface of the transfer means, transferring the stamps adhered to the under surface of the transfer means and placing the second side of the stamps in contact with a source of moisture, then transferring the stamps on the under surface of the transfer means to place the wet second side of the stamps into contact with a portion of a book to permanently adhere the stamps in position within the book.

3,350,254
PICTURE LIFTING METHOD

Burton D. Morgan, Hudson, and John M. Questel, Cuyahoga Falls, Ohio, assignors to Morgan Adhesives Company, Stow, Ohio

Filed Oct. 2, 1964, Ser. No. 401,051
5 Claims. (Cl. 156—235)



1. A method of lifting a picture from a clay coated sheet of paper comprising the steps of

applying a mixture of oil, a rubber elastomer, and resin to a transparent vinyl film,

applying the layer formed by the mixture to a printed surface of a clay coated paper sheet,

maintaining the layer formed by the mixture against the printed surface to allow the oil present in the mixture to wet out of the layer and into contact with the printed data of the paper sheet,

wetting the exposed surface of the paper sheet with water to release the clay coating thereon, the printed data remaining adhered to the layer formed by the mixture,

removing the paper sheet,

washing the printed data adhered to the layer formed by the mixture with water to remove any clay thereon,

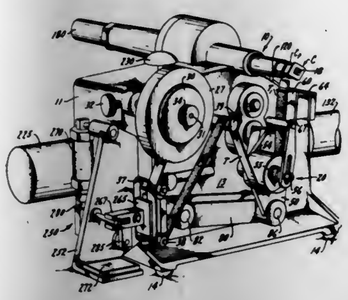
drying the resultant laminate, and

apply an adhesive coated surface of a transparent vinyl film to the printed data carrying surface of the layer formed by the mixture to form a protective layer thereover.

3,350,255
TAPE-WRAPPING MACHINE

Robert W. Twigg, Rockford, Ill., assignor to Midland Engineering and Machine Co., Rosemont, Ill., a corporation of Illinois

Filed Jan. 10, 1964, Ser. No. 339,838
6 Claims. (Cl. 156—475)

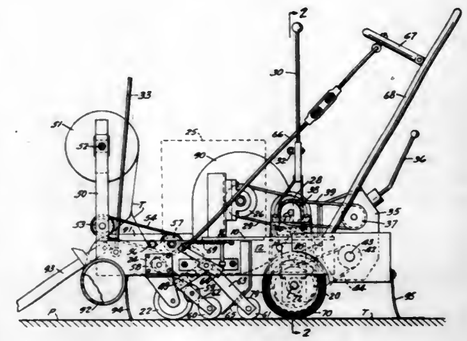


1. A mechanism for applying tape about an article comprising, in combination, a frame, a support for said article rotatably mounted on said frame, a spindle on said frame for rotatably holding a roll of tape, a tape feeder mounted on said frame for oscillating movement between first and second limit positions, an applicator pad mounted on said feeder so that the pad is pressed against an article on said support when the feeder is in said first limit position, a feed roller mounted on said feeder for one-way rotation, means on said frame for guiding tape from a roll on said spindle to said roller so that tape extending from said means to said pad may be looped about the roller, said roller not being rotatable to feed said looped tape from said pad so that movement of said feeder from said first to said second limit position pulls on tape looped about the roller to draw up more tape from the storage roll, a blade on said feeder adjacent said pad at the opposite end from said feed roller, said blade being positioned to sever tape extending between an article on said support and said feed roller as the feeder moves toward said second limit position, and drive means for oscillating said feeder and rotating said support as the feeder moves from said first to said second limit position.

3,350,256
METHOD AND APPARATUS FOR ATTACHING ADHESIVE TAPE TO A ROUGH SURFACE

Charles B. Eckman and Paul H. Wilson, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,236
3 Claims. (Cl. 156—497)



1. A machine for attaching adhesive tape to a rough surface, said machine comprising a supporting structure, means attached to said supporting structure for holding a supply of said tape, means attached to said supporting srtucture for applying said tape to said surface, an annular brush attached eccentrically to said supporting structure, and means for rotating said brush to cause said brush to be moved repeatedly and briskly against the tape after the adhesive side of the tape has been applied to the rough surface to tamp the tape to said surface and to cause the tape to become adhered to said surface.

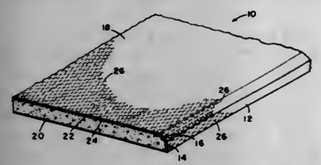
3,350,257
PLASTIC-COVERED GYPSUM WALLBOARD

Daniel P. Hourigan and John D. Shull, Jr., Tonawanda, N.Y., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware

Filed Apr. 5, 1960, Ser. No. 20,109
5 Claims. (Cl. 161—43)

1. A plastic-sheet-covered gypsum wallboard consisting essentially of a set gypsum core enclosed in paper cover sheets and having adhesively laminated to at least one face and two side edges thereof a thin, highly durable, semi-rigid, embossed plastic sheet, said embossed

plastic sheet having an average thickness of sheet material of from .004 to .008 inch and a total thickness measured from peaks of embossments of from .007 to .012 inch greater than the average thickness of said sheet material, said plastic sheet material having a stiffness, as determined by a Taber V5 stiffness tester when tested in a



zero to 10 units range, of 0.30 to 0.90 stiffness units when flexed by a folding extending in the machine direction of the said sheet, and of at least 0.30 stiffness unit when flexed by a folding extending perpendicular to the machine direction of said sheet, said plastic sheet conforming to the contour of the wallboard.

3,350,258

TWO STAGE PULPING PROCESS INCLUDING IMPREGNATING CHIPS WITH AMMONIA, THEN LIBERATING THE AMMONIA AND PULPING WITH MAGNESIUM COMPOUND

Theodore E. Kloss, Waterville, Maine, assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,944

6 Claims. (Cl. 162—15)

1. A plural-stage pulping process which comprises penetrating a cellulosic material with an aqueous solution of a fiber-liberating ammonium compound, adding a magnesium hydrate to said solution prior to any substantial formation of ammonium ligno-sulfonates, recovering ammonia from the solution, and continuing the pulping process with said magnesium hydrate-containing solution.

3,350,259

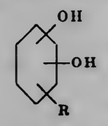
PURIFICATION OF AQUEOUS REFUSE LIQUIDS CONTAINING THE ORTHO-HYDROXYPHENOL MOIETY

Ivan Herrick, Whitman County, Mark F. Adams, Pullman, and Ethan Max Huffaker, Whitman County, Wash., assignors to Northwest Magnesite Company, a corporation of Washington

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,117

12 Claims. (Cl. 162—16)

12. That process of removing water-soluble compounds from aqueous streams in which they are dissolved, which compounds are selected from the group consisting essentially of:



wherein R is selected from the group consisting essentially of hydrogen, hydroxyl, carboxyl, amino, aldehyde, alkyl, aromatic, ketone, ester, and ether, to form a water-soluble compound, and in which the OH radicals are attached to adjacent carbon atoms;

consisting essentially of passing said aqueous stream in intimate physical association with a magnesia material, there being sufficient magnesia-process-ingredient to substantially quantitatively remove said compounds from said stream, the stream and magnesia-process-ingredient combination being at a temperature of at least 35° C. and having a basic pH.

3,350,260

METHOD OF FORMING A CONFIGURED FIBROUS WEB CONTAINING PAPER-MAKING FIBERS AND FIBERS OF A HEAT-SEALABLE MATERIAL

Reginald Johnson, Bolton, England, assignor to James R. Crompton and Brothers Limited, Bury, England, a British Company

Filed July 28, 1964, Ser. No. 385,602

Claims priority, application Great Britain, July 29, 1963, 29,920/63

3 Claims. (Cl. 162—116)

1. In the method of manufacturing a fibrous web comprising applying a suspension of paper-making fibres and fibres of a heat sealable material of a shorter length than the length of said paper-making fibres on to a supporting screen, restricting fluid drainage through the screen at spaced locations by blanking off selected areas of said screen, and laying down a web on the screen from the suspension so that the paper-making fibres form a continuous paper web while the heat sealing fibres being shorter in length than the paper-making fibres are located predominantly along the continuous unrestricted areas of the screen.

3,350,261

PAPER STIFFENED WITH BARK EXTRACTIVES AND METHOD OF MAKING THE SAME

James R. Roberts, Palatine, Ill., and Arthur S. Gregory, Tacoma, and Richard M. Morris, Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

No Drawing. Continuation of application Ser. No. 236,142, Nov. 7, 1962. This application May 12, 1966, Ser. No. 550,880

11 Claims. (Cl. 162—117)

1. The method of making stiffened paper, comprising forming the paper from an aqueous slurry of fibers, removing a substantial proportion of the water from the formed paper, applying to at least one surface of the paper an aqueous solution containing alkali soluble constituents of tree bark substantially free of alkali insoluble bark solids, and thereafter drying the paper.

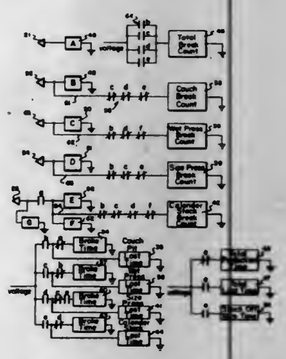
3,350,262

WEB BREAK SENSING MONITOR FOR PAPER MACHINES

Orval J. Cummins, Chautauqua, Ohio, assignor to Oxford Paper Company, New York, N.Y., a corporation of Maine

Filed Oct. 9, 1964, Ser. No. 402,782

13 Claims. (Cl. 162—255)



1. Apparatus for monitoring the operation of a paper making machine wherein a paper web passes through successive processing stages which comprises

(a) a plurality of sensors located at respective stations spaced along the path of travel of the paper web for detecting breaks in the web thereat,

(b) a plurality of timers associated with said sensors, repectively, for accumulating the total time of breaks at the respective stations,

(c) and circuit means responsive to said sensors for actuating respective timers upon the detection of breaks thereby,

(d) said circuit means including means responsive to the actuation of a preceding sensor for inhibiting the actuation of the timer corresponding to a succeeding sensor along said path of travel, while said succeeding sensor remains in break detection condition.

3,350,263

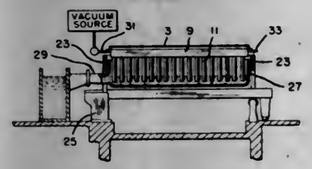
APPARATUS FOR REMOVING LIQUID FROM FOURDRINIER WIRE IN PAPER-MAKING

Lars Bengt Jordansson and Per Börje Wahlström, Karlstad, Sweden, assignors to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a company of Sweden

Filed Oct. 19, 1964, Ser. No. 404,851

Claims priority, application Sweden, Oct. 23, 1963, 11,612/63

2 Claims. (Cl. 162—351)



1. In paper making apparatus and the like including an endless porous belt loop having an upper outer surface of predetermined width transverse to the direction of motion to carry liquid bearing material and an exposed inner surface, liquid removal means, comprising a plurality of suction chambers each extending transversely across the full width of the belt, each suction chamber having upper openings contiguous with the exposed inner surface of the belt loop and a bottom provided with a plurality of essentially straight downwardly-directed suction pipes uniformly spaced along the entire length of the said bottom transversely to the direction of motion of the belt, means for producing reduced pressure conditions in said suction chambers to facilitate the withdrawal of liquid from the liquid bearing material through the belt, trough means common to all of said suction chambers and positioned beneath said suction chambers and within said belt loop for containing a volume of liquid at a predetermined level, said suction pipes extending from the bottoms of said suction chambers into the liquid in the said trough means below said predetermined level for effecting the removal of liquid from said suction chambers while maintaining said reduced pressure conditions within said suction chambers, the liquid in said trough means constituting a single liquid seal in common for all said suction pipes, and said pipes constituting a plurality of parallel flow paths, each of minimum length, from the suction chambers to the liquid seal for removal of liquid from the suction chambers.

3,350,264

METHOD OF CONTROLLING INSECTS IN COW BARNS AND THE LIKE AREAS

Auguste Louis de Lisle, Scottsdale, Ariz., assignor to Phoenix Gems, Inc., a corporation of Arizona

No Drawing. Filed Nov. 1, 1962, Ser. No. 234,838

9 Claims. (Cl. 167—14)

1. The method of controlling flies in and around cow barns and the like, comprising feeding to cattle as a food supplement, powdered diatomite containing at least about 70% silica as SiO_2 so that said diatomite is dispersed in the cattle excreta to prevent the proliferation of fly larvae therein.

3,350,265

AQUEOUS POLYMERIC LATEX WITH SILVER AND SODIUM HYPOCHLORITE, HYDROGEN PEROXIDE, OR FORMALDEHYDE GERMICIDES

David Rubinstein, Brookline, and James Healy, Bedford, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,543

4 Claims. (Cl. 167—38.6)

1. A novel composition comprising an aqueous polymeric latex and an antimicrobial composition, said antimicrobial composition consisting essentially of 2 to 10 parts-per-million of silver and a second germicide selected from the group consisting of 40 to 240 parts-per-million of sodium hypochlorite, 100 to 450 parts-per-million of hydrogen peroxide, and 50 to 450 parts-per-million of formaldehyde, said antimicrobial composition being based on the weight of the aqueous phase of said latex.

3,350,266

ANTACID COMPOSITION COMPRISING ALUMINUM HYDROXIDE, MAGNESIUM HYDROXIDE AND MAGNESIUM GLUCONATE

Edmund Stanley Granatek and Alphonse P. Granatek, Baldwinsville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

Filed June 4, 1964, Ser. No. 372,559

1 Claim. (Cl. 167—55)

An aqueous antacid suspension which comprises water, about 4 percent by weight of aluminum hydroxide, about 4 percent by weight of magnesium hydroxide, and about 1.0 percent by weight of magnesium gluconate.

3,350,267

CONTROLLING ANTIBIOTIC RESISTANT STRAINS OF *MICROCOCCUS PYOGENES* AND OTHER PATHOGENIC BACTERIA WITH NOVOBIOCIN AND OTHER ANTIBIOTICS

Hyman Wallick, Springfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 9, 1963, Ser. No. 300,961

1 Claim. (Cl. 167—65)

A method for controlling antibiotic resistant strains of *Micrococcus pyogenes* and other pathogenic bacteria which comprises simultaneously contacting said bacteria with novobiocin and at least one other antibiotic selected from the group consisting of penicillin, tetracycline, oxytetracycline, chlortetracycline, streptomycin, chloramphenicol, bacitracin, neomycin, spiramycin, streptothricin and grisein.

3,350,268

COMPOSITIONS AND METHOD OF EMPLOYING PHENOTHIAZINE SALTS

Harry L. Yale, New Brunswick, and Reynold C. Merrill, Short Hills, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

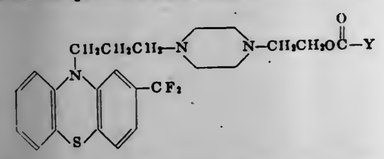
No Drawing. Filed July 1, 1965, Ser. No. 468,975

The portion of the term of the patent subsequent to July 13, 1982, has been disclaimed and dedicated to the Public

9 Claims. (Cl. 167—65)

1. A pharmaceutical composition for parenteral administration having prolonged duration of activity in the treatment of mental disorders which comprises a suspen-

sion of a physiologically active, non-toxic acid-addition salt of the compound of the formula



wherein Y is a higher alkyl, higher alkenyl or higher alkynyl radical of from six to seventeen carbon atoms, in a stable, non-toxic pharmaceutically acceptable, substantially anhydrous liquid carrier.

3,350,269

CREMEOMYCIN AND PROCESS FOR MAKING

Malcolm E. Bergy, Kalamazoo, and Thomas R. Pyke, Prairie Ronde Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Sept. 19, 1966, Ser. No. 580,295
10 Claims. (Cl. 167—65)

1. A composition of matter assaying at least 2.6 bio-units of cremeomycin per ml., a compound which

(a) is effective in inhibiting the growth of various Gram-negative and Gram-positive bacteria, and fungi; and in its essentially pure crystalline form,

(b) is soluble in ethyl acetate, amyl acetate, water, methanol, acetone, butanol, methyl ethyl ketone, and methylene chloride;

(c) has the following elemental analyses: C, 49.66; H, 3.42; N, 15.19; O, 32.77;

(d) has a molecular weight of 194 as determined by mass spectrometer;

(e) has a characteristic infrared absorption spectrum as shown in FIGURE 1 of the accompanying drawing; and

(f) has a characteristic papergram pattern as shown in FIGURE 2 of the accompanying drawing.

3,350,270

ALUMINUM ASPIRIN FILM-ENVELOPED THERAPEUTIC AGENTS IN SUSTAINED RELEASE DOSAGE FORM

William E. Gaunt, Hackensack, N.J., assignor to Leeds-Dixon Laboratories, Inc., Moonachie, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 18, 1964, Ser. No. 397,607
21 Claims. (Cl. 167—82)

1. A therapeutic composition in sustained release dosage form comprising a therapeutic agent enveloped in a film of the aluminum salt of aspirin and containing a total of at least 60 percent of therapeutic agent.

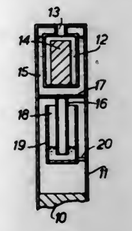
3,350,271

NUCLEAR REACTOR TRANSDUCER

Leslie Maldment and Thomas Joseph Ledwidge, Thurso, Caithness, Scotland, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Sept. 20, 1965, Ser. No. 488,587
Claims priority, application Great Britain, Sept. 21, 1964, 38,484/64
8 Claims. (Cl. 176—19)

1. In combination with a nuclear fuel element, a transducer for translating a physical effect into an acoustic signal, said transducer including a capsule having an outer wall, said capsule including a chamber therein in contact with the said fuel element and enclosing gases adjacent the fuel element, a compartment in said capsule and spaced from the capsule wall, a liquid in said compartment, a heat source means for heating the said liquid in the compartment, means for defining a heat conduction path of variable conductivity between said compartment and said capsule outer wall, and means responsive to variation of pressure within said chamber for altering the conductivity of said heat conduction path, the conductivity of said path



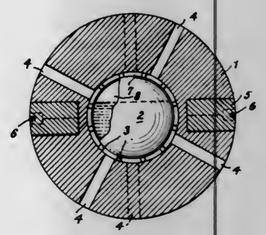
being alterable by said means at least between a first condition wherein boiling of the liquid in the compartment is suppressed and a second condition wherein boiling of the liquid in the compartment takes place to generate the acoustic signal.

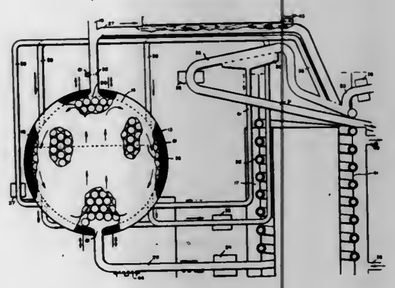
3,350,272

HETEROGENEOUS NUCLEAR REACTOR AND FUEL ELEMENT THEREFOR

Leonard J. Seltorp, Sharmarbinksvagen 6, Enskede, Sweden

Continuation of application Ser. No. 145,530, Oct. 9, 1961. This application Apr. 12, 1965, Ser. No. 452,439
Claims priority, application Sweden, Oct. 28, 1960, 10,361/60
7 Claims. (Cl. 176—32)





2. In a heterogeneous atomic reactor, a fuel element having a spherical outer housing and an inner container also of spherical form, the inner container being supported within the outer container by means of separated spacing

elements to thereby maintain spherical spacing between the inner container and the outer housing, coolant medium channels extending radially through the outer housing and communicating with said spherical spacing, molten fuel contained in the inner container and partially filling the same, and a gas-pervious portion in the inner container maintained in a position above the molten fuel in the inner container.

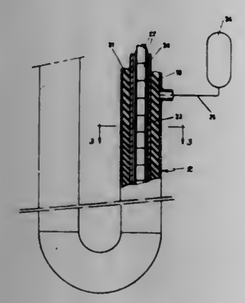
5. In a heterogeneous reactor, a substantially spherical reactor tank having parts wherein the neutron flux is strong and parts wherein the neutron flux is of less strength and in which tank fuel elements in the shape of at least partly hollow bodies each containing fuel in a molten state, are carried by a flowing medium of substantially the same specific gravity as that of the fuel elements, means by which a whirling flow of said flowing medium and said elements carried thereby is created within the tank to cause all fuel to reach a smooth and high burn up.

3,350,273

PRESSURE PIPE NUCLEAR REACTOR WITH INSULATING AND PRESTRESSING ARRANGEMENT OF COAXIAL PIPE ASSEMBLY

Robert A. van der Laken, The Hague, Netherlands, assignor to Reactor Centrum Nederland (Stichting), The Hague, Netherlands

Filed Mar. 2, 1965, Ser. No. 436,446
Claims priority, application Netherlands, Mar. 2, 1964, 64—2,508
4 Claims. (Cl. 176—43)



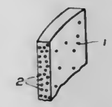
1. A nuclear reactor of the pressure pipe type comprising: a reactor vessel; a mass of relatively cool liquid neutron moderator material disposed in said vessel; a plurality of pipe assemblies extending through said moderator, each of said assemblies including a pressure pipe containing fissile material fixed in spaced relationship to the inner surface thereof, a coaxial shell pipe surrounding said pressure pipe and defining therewith a fluid tight space having closed ends; and means for circulating a high pressure, high temperature fluid coolant through the inside of said pressure pipes; and means for propagating an appreciable portion of the internal pressure in each of said pressure pipes to the respective shell pipe so as to relieve stresses in said pressure pipe and increase stresses in said shell pipe whereby said latter stresses are resisted by relatively cool pipe walls and whereby the relatively hot walls of said pressure pipe resist reduced stresses, said means including a mass of solid thermally insulating material in contact with the outer wall of said pressure pipe and with the inner wall of said shell pipe, said means further including pressurizing means associated with said thermally insulating material and for urging the same against the walls of said pressure pipe and said shell pipe under high pressure.

3,350,274

MATRIX-TYPE NUCLEAR FUEL ELEMENT INCLUDING FISSION PRODUCT RETENTIVE MATERIALS

Michael J. Higatsberger, Vienna, Austria, assignor to Osterreichische Studiengesellschaft fur Atomenergie Ges.m.b.H., Vienna, Austria

Filed Oct. 26, 1965, Ser. No. 517,495
Claims priority, application Austria, Apr. 26, 1963, 3,402/63
3 Claims. (Cl. 176—69)



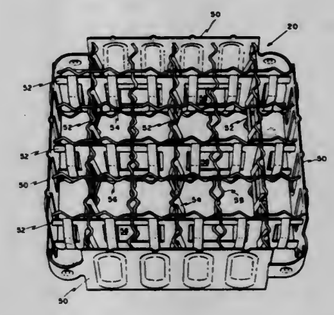
1. In a nuclear fuel element construction, wherein the nuclear fuel is embedded in a moderator matrix, the improvement which comprises that said moderator matrix contains the combination of at least two substances capable of binding fission products and forming therewith non-volatile material, said substances being selected from the group consisting of silver, beryllium, tantalum, molybdenum, silicon, selenium, zirconium and their compounds having affinity to fission products for binding same, said substances being substantially uniformly distributed through the moderator matrix in an amount which is at least about the same as that of the nuclear fuel.

3,350,275

REACTOR FUEL ASSEMBLY DEVICE

Dominic A. Venier and James L. Lass, San Jose, Calif., assignors to General Electric Company, a corporation of New York

Filed Aug. 26, 1965, Ser. No. 482,792
8 Claims. (Cl. 176—78)

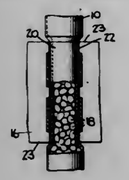


4. A fuel assembly including at least one fuel element spacer device supporting a plurality of fuel elements in spaced relation, said fuel element spacer device comprising a peripheral support band, means connected to said support band for supporting a plurality of springs, a plurality of retainer wires connected to said support band, some of said fuel elements being supported at first and second positions by retainer wires and at third and fourth positions by springs, said first and second positions being respectively about opposite said third positions and fourth positions, each of said springs having a curved section having a small radius of curvature, said curved section of said spring being in contact with the exterior surface of a fuel element.

3,350,276
SECTIONAL SUPPORT GRID FOR INTERMITTENTLY NECKED-DOWN FUEL PINS

Henrik S. Warberg, Dearborn, and Vernon V. McClure, St. Clair Shores, Mich., assignors to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York

Filed Oct. 7, 1965, Ser. No. 493,625
4 Claims. (Cl. 176—78)

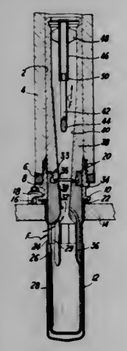


1. A nuclear reactor fuel assembly comprising a wrapper tube, a plurality of elongated fuel rods disposed in said wrapper tube, a grid assembly comprising a plurality of interconnected supporting rings which surround said fuel rods respectively for supporting said fuel rods in parallel substantially equally spaced relationship one with respect to the others, each of said fuel rods having a portion necked-down to a smaller diameter and a substantial portion of said supporting rings being disposed within the necked-down portions respectively, a plurality of inwardly directed indentations disposed on the inside surface of each of said supporting rings for resiliently engaging said fuel rods, and slot means disposed adjacent said indentations.

3,350,277
FLOW-LIMITING DEVICE, ESPECIALLY FOR NUCLEAR REACTORS

Didier Costes, Paris, France, assignor to Commissariat a l'Energie Atomique, Paris, France

Filed Mar. 24, 1966, Ser. No. 537,131
Claims priority, application France, Apr. 2, 1965, 11,799
4 Claims. (Cl. 176—87)



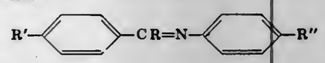
1. In a device for limiting to a predetermined value the rate of admission of a fluid into a channel section: a channel extension located upstream of said channel section and closed at its end remote from said channel section; admission openings formed in the lateral wall of said channel extension for admitting said fluid into said channel; a Venturi within said channel extension in abutting connection with an annular shoulder of the channel extension whereby displacement of said Venturi in the direction of the closed end of said extension is prevented, said Venturi connecting said openings to said channel section and having a cross-sectional area at the throat such that the flow of fluid through said throat attains the velocity of sound at said predetermined admission rate; and a duct connecting the Venturi throat, in which the pressure is below that which prevails within said channel, with a space formed between said closed end and a wall which is fast with said Venturi.

3,350,278
ENZYMATIC GLUCOSE TEST COMPOSITION AND DEVICE

Neil B. C. Gretton and James T. Rees, Bridgend, Glamorgan, South Wales, and William Bradley, Paignton, England, assignors to Miles Laboratories Incorporated, Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,539
Claims priority, application Great Britain, Dec. 3, 1962, 45,652/62
10 Claims. (Cl. 195—127)

1. A composition for detecting glucose in urine which comprises glucose oxidase, a substance having peroxidase activity and an indicator which is oxidized by hydrogen peroxide and peroxidase and undergoes colour reaction during such oxidation, said indicator being a compound of the formula:

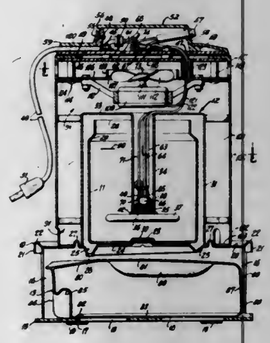


in which formula R' and R'', which may be different, are substituents selected from the group consisting of hydroxyl radicals, amino radicals, NHR radicals and NR_2 radicals, in which radicals NHR and NR_2, R is a substituent selected from the group consisting of alkyl and aryl radicals, and wherein the benzene rings may contain other substituents, and salts thereof.

3,350,279
DISTILLATION APPARATUS

Hyman Tolchin, Monsey, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Mar. 3, 1966, Ser. No. 531,527
Claims priority, application Great Britain, Mar. 9, 1965, 9,920/65
7 Claims. (Cl. 202—83)

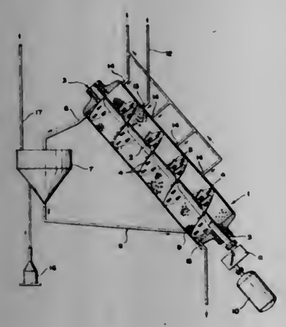


1. A distillation apparatus comprising a base member including an upper platform having positioning means in its upper face and an outlet opening formed therein, an open topped boiler resting on said platform as located by said positioning means, a condensate collecting bottle positioned in said base member below said platform, and having an opening registering with said outlet opening, and a heater and condensing assembly resting on said platform as located by said positioning means and including a peripheral condenser wall surrounding and spaced from said boiler delineating a condensation zone, a top plate extending across the top of said condenser wall above said boiler and having an opening formed therein, a shroud surrounding and spaced from said condenser wall to delineate an air passageway having a lower inlet and an upper outlet, said shroud extending above said condenser top plate, an upper wall carried by the upper part of said shroud above said condenser wall top plate and delineating a housing therewith communicating with said air passageway and having an outlet with the exterior, a motor driven blower disposed in said housing for drawing air upwardly through said air passageway and said housing and through said housing outlet part, a tubular support depending from said condenser top plate and engaging said opening herein, electrically energized heating means located at the bottom of said tubular support and means for connecting said heating means to a source of current including leads extending from said heating means through said tubular support.

3,350,280
RETORT FOR OIL-BEARING SHALES

Howard F. West, Shaker Heights, Ohio, assignor, by mesne assignments, to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 31, 1963, Ser. No. 320,450
3 Claims. (Cl. 202—99)



1. A device for the treatment of oil-bearing shales by means of the grinding action of attrition resistant solid bodies which are brought into direct contact with the shale during its operation; said device comprising a stationary cylindrical drum fixed in an inclined position; said drum containing near its top an inlet for the introduction of said shale, an outlet for the removal of gaseous products and an inlet near the bottom for the introduction of said attrition resistant solid bodies; said drum containing a centrally located rotatable shaft equipped with a screw, said shaft being secured by suitable bearing and seal means at the top and bottom of said drum; driving means for rotating said shaft; said screw being equipped with openings large enough to allow the shale to pass through and small enough to retain the solid bodies and said screw also being equipped with cross baffles adapted to carry the solid bodies in an upward direction in the drum as the screw rotates; said drum having an outlet at the top for continuous removal of said attrition resistant solid bodies and an outlet at the bottom for continuous removal of the treated shale.

3,350,281
PROCESS FOR SEPARATING ADIPONITRILE FROM REACTION MIXTURE BY STRIPPING WITH AMMONIA

Roberto Romani and Mario Ferri, Novara, Italy, assignors to Società Rhodiatoce S.p.A., Milan, Italy

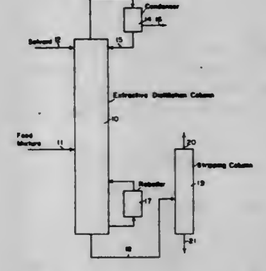
No Drawing. Filed Feb. 10, 1964, Ser. No. 343,451
Claims priority, application Italy, Feb. 20, 1963, 3,532/63
3 Claims. (Cl. 203—29)

1. A process for the separation of adiponitrile and byproducts convertible to adiponitrile, said byproducts comprising omega-cyanovaleramide and adipamide, from the non-volatile tarry byproducts and from catalyst contained in the liquid mixture produced by the high temperature reaction between adipic and ammonia in the presence of a dehydration catalyst, which comprises stripping said mixture by passing therethrough gaseous ammonia at normal pressure and a temperature between 220° and 350° C.

3,350,282
EXTRACTION DISTILLATION OF HYDROCARBON MIXTURES OF VARYING UNSATURATION

George D. Davis, Creve Coeur, and Earle C. Makin, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Nov. 19, 1964, Ser. No. 412,565
19 Claims. (Cl. 203—54)

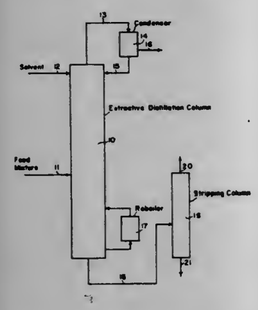


1. A process for the separation of mixtures of hydrocarbons of varying degrees of unsaturation having no greater than 7 carbon atoms per molecule which comprises extractively distilling said mixtures in the presence of a solvent comprising 50 to 90 percent by weight of furfural, 0.1 to 10 percent by weight of dimer oil, said dimer oil consisting essentially of di-ethylenically unsaturated hydrocarbons having a number of carbon atoms approximately twice that of the more unsaturated hydrocarbons contained in said mixtures, 5 to 20 percent by weight of water, and 5 to 20 percent by weight of a partially water-soluble alcohol selected from the group consisting of aromatic alcohols, heterocyclic alcohols and aliphatic alcohols, recovering an overhead distillate fraction from said distillation substantially richer in hydrocarbons of a lesser degree of unsaturation than said original mixture, removing the solvent fraction rich in the more unsaturated hydrocarbons of said mixture from said distillation and recovering from said rich solvent a fraction substantially richer in said more unsaturated hydrocarbons.

3,350,283
EXTRACTIVE DISTILLATION OF HYDROCARBON MIXTURES OF VARYING UNSATURATION

Earle C. Makin, Jr., St. Louis, Mo., and Frederick E. Rosenberger, Dickinson, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Jan. 11, 1965, Ser. No. 424,517
14 Claims. (Cl. 203—54)

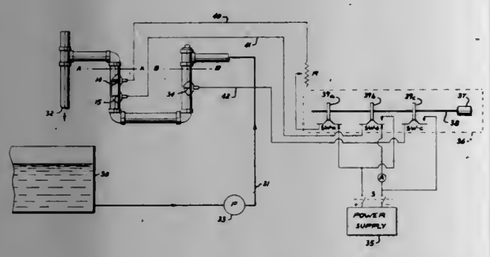


1. A process for the separation of mixtures of hydrocarbons of varying degrees of unsaturation having no greater than 7 carbon atoms per molecule which comprises extractively distilling said mixtures in the presence of a solvent comprising 75 to 95 percent by weight of furfural, 1 to 15 percent by weight of dimer oil, said dimer oil consisting essentially of diethylenically unsaturated hydrocarbons having a number of carbon atoms approximately twice that of the more unsaturated hydrocarbons contained in said mixtures, 3 to 18 percent of water, and 0.05 to 5 percent by weight of an alkyl amine, recovering an overhead distillate fraction from said distillation substantially richer in hydrocarbons of a lesser degree of unsaturation than said original mixture, removing the solvent fraction rich in the more unsaturated hydrocarbons of said mixture from said distillation and recovering from said rich solvent a fraction substantially richer in said more unsaturated hydrocarbons.

3,350,284
METHOD AND APPARATUS FOR MEASURING FLUORIDE ACTIVITY

Lester Steinbrecher, Philadelphia, David Y. Dollman, Lansdale, Dwight E. Buczkowski, Philadelphia County, and James W. Harrison, Wyndmoor, Pa., assignors to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

Filed Apr. 5, 1965, Ser. No. 445,681
3 Claims. (Cl. 204—1)



3. A method for measuring the level of fluoride activity in acidic aqueous solution in the range of from about 0.0 gram-ions/liter to about 1.5 gram-ions/liter of active fluoride, expressed as fluoride ion comprising establishing a first series D.C. circuit having a voltage of from about 0.3 volt to about 3.5 volts from an external source, and a current path which includes said voltage source, a p-type silicon anode of constant pre-selected area, said solution, and a first inert electrode operating cathodically, maintaining said voltage across the electrodes at a constant value within the specified range, thereby passing a current through the solution between said electrodes, passing said current between said electrodes until it assumes a steady-state magnitude which is a function of the level of fluoride activity, measuring the current developed in said circuit, periodically establishing a second series D.C. circuit having a voltage source and a current path which includes said voltage source, said first inert electrode operating anodically, said solution, and a second inert electrode operating cathodically, and applying a voltage to said second circuit sufficient in magnitude to effect evolution of gas at said first inert electrode.

3,350,285
METHOD OF FORMING RUST-PROOFING AND CORROSION-RESISTING COATING ON METAL SURFACES

Susumu Nishigaki, Nagoya, Takeshi Kusaka, Nishi-Kasugai-gun, and Masanori Sato, Nagoya, Japan, assignors to NGK Insulators, Ltd., Nagoya, Japan, a corporation of Japan

No Drawing. Filed June 8, 1964, Ser. No. 373,573
Claims priority, application Japan, July 20, 1963, 38/38,985; Oct. 28, 1963, 38/57,818, 38/57,819
5 Claims. (Cl. 204—56)

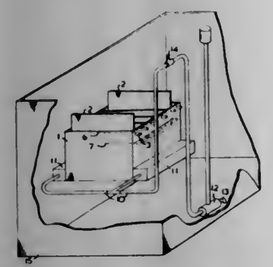
1. A method of forming rust-proof and corrosion-resistant coatings on a metal film secured to a base, which comprises dipping said metal film in an aqueous solution consisting essentially of water, a beryllium salt selected from the group consisting of beryllium hydroxide, beryllium sulfate, beryllium nitrate, beryllium halide, basic beryllium acetate, beryllium citrate, sodium fluoro beryllate and potassium fluoro beryllate in the range from 0.005 to 1.0 weight percent as beryllium ion concentration, at least one compound selected from the group consisting of chromic anhydride, chromate, and bichromate in the range from 0.01 to 30 weight percent as chromium (VI) ion concentration, and a water soluble organic high molecular compound selected from the group consisting of polyvinyl alcohol, furfural alcohol, polyethylene oxide, and polyacrylic acid in the range from 0.01 to 5.0 weight percent, regulating the pH of said solution in the range of 3.0 to 6.0, and passing an electric current having a density of 0.01 to 5.0 amp/dm.^{2} through said solution employing said metal film as a cathode.

3,350,286
PROCESS FOR PRODUCING ALKALI CHLORATE OR ALKALI PERCHLORATE

George J. Crane, Islington, Ontario, Canada, assignor to Huron Nassau Limited, Nassau, Bahama Islands, a corporation of The Bahama Islands

Continuation of application Ser. No. 362,719, Apr. 27, 1964. This application Jan. 23, 1967, Ser. No. 611,173
Claims priority, application Canada, Nov. 5, 1963, 888,375
3 Claims. (Cl. 204—95)

1. A process for the production of compounds selected from the group consisting of an alkali chlorate and alkali perchlorate by the electrolysis of an alkali chloride brine comprising electrolyzing said brine in a multipolar electrolytic cell consisting of a plurality of spaced multipolar electrodes dividing said cell into a plurality of compartments having insulating means separating adjacent compartments, each of said compartments being provided with inlet conduit means adjacent the bottom thereof, each of said inlet conduit means opening intermediate spaced opposed electrode faces, and with outlet conduit means adjacent the top thereof, each said outlet conduit means discharging intermediate said spaced electrode faces, introducing electrolyte through said inlet conduit means through manifold means into the space between said electrode faces thereby evenly distributing

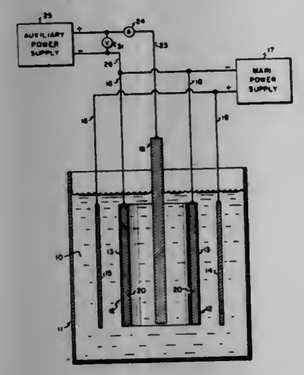


said electrolyte throughout the lower portion of each compartment, withdrawing electrolyzed material and maintaining a positive pressure on the electrolyte introduced through said inlet conduit means by a pump connected to said manifold means.

3,350,287
METHOD OF PREVENTING ETCH ON CAST IRON IN PLATING BATHS

Ram Dev Bedi, Oak Park, Mich., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,986
7 Claims. (Cl. 204—147)

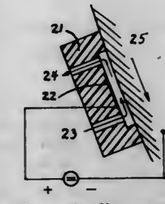


1. The process for electroplating a plate onto a cast iron cathode having areas of low cathode current density whereon plating does not occur and selected areas of high cathode current density which comprises placing an auxiliary electrode adjacent to the cathode areas of low cathode current density whereon plating does not occur, electrically connecting said auxiliary electrode to said cathode, maintaining said low current density areas of said cathode uniformly cathodic with respect to said auxiliary electrode, and plating the plate onto said selected areas of the surface of said cathode, the said cathode areas of low current density remaining substantially free of etching during said plating.

3,350,288
METHOD FOR CORROSION PROTECTION

Almar Almar-Naess, Frydenbergveien 12, Trondheim, Norway

Filed Apr. 15, 1964, Ser. No. 360,000
Claims priority, application Norway, Apr. 27, 1963, 148,454
3 Claims. (Cl. 204—147)



2. A method for the cathodic corrosion protection and cleaning of a metallic drying roller of a paper-making machine, wherein a wet paper web is brought into contact with the surface of the drying roller at one point and leaves the roller surface at another point remote from the one point, leaving an uncovered roller surface between the one and the other point, the steps of

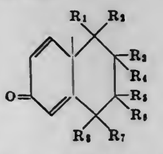
(1) arranging an electrode in a fixed position with respect to the axis of the drying roller and adjacent a portion of the uncovered roller surface,
  (a) a gap being defined between the electrode and the uncovered roller surface portion,
(2) passing an electrolyte through said gap,
(3) passing a direct current between said electrode as the anode and said uncovered roller surface portion as the cathode.

3,350,289
IRRADIATION OF CROSS-CONJUGATED CYCLOHEXADIENONES

Paul J. Kropp, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Aug. 20, 1962, Ser. No. 218,115. Divided and this application Oct. 22, 1965, Ser. No. 502,455
12 Claims. (Cl. 204—158)

1. The process which comprises subjecting a compound having the general formula



wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, and R_8 are each selected from the group consisting of hydrogen, halogen, hydroxy, alkyl, alkoxy, acyl, acyloxy, alkenyl, aralkyl, aralkenyl, aryl and alkaryl groups to irradiation with ultraviolet light.

3,350,290
PHOTOCHEMICAL PRODUCTION OF CYCLOPROPANE

Donald P. Gush, Hyattsville, and Nelson S. Marans, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,809
1 Claim. (Cl. 204—162)

A method for preparaing cyclopropane said method comprising;

(a) preparing a mixture of a methane and ethylene, the mole ratio of methane to ethylene in said first mixture being about 0.2–10:1;

(b) subjecting said mixture to ultraviolet radiation, said radiation having a wave length of about 1000–1850 A. while maintaining said mixture at a pressure of less than 100 atmospheres and at a temperature of −80 to +250° C. for about 3–300 minutes in an apparatus having a source of ultraviolet radiation and a reaction chamber, the power absorption per mole of methane being 0.2–20 kilowatt hours; and

(c) recovering the thus formed cyclopropane.

3,350,291

METHOD OF PREPARING STRAINED POLYCYCLIC HYDROCARBONS

Rangaswamy Srinivasan, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,358
15 Claims. (Cl. 204—162)

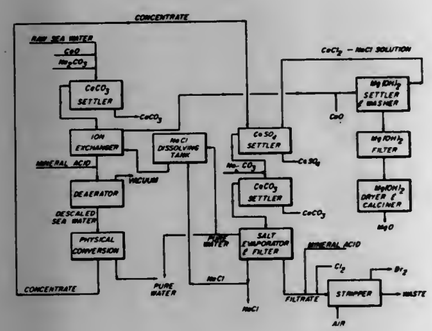
1. A method of preparing tricyclo-[3.3.0.0^{2,6}]octane which comprises exposing 1,5-cyclooctadiene, saturated with cuprous chloride as the photoisomerizing catalyst, to actinic light.

3,350,292

UTILIZATION OF SALINE WATER

Arthur Joseph Weinberger, Stamford, and Darwin Fiske De Lapp, New Canaan, Conn., assignors, by direct and mesne assignments, of one-half to American Cyanamid Company, Stamford, Conn., a corporation of Maine, and one-half to the United States of America as represented by the Secretary of the Interior

Filed May 14, 1964, Ser. No. 367,428
11 Claims. (Cl. 204—180)



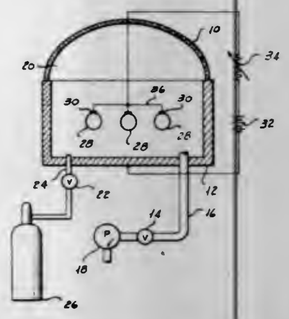
6. The method of recovering potable water from sea water which comprises adding in any order to sea water (1) a soluble alkaline material from the group consisting of sodium hydroxide, calcium oxide and calcium hydroxide to convert substantially all of the bicarbonate to carbonate, and (2) sodium carbonate to react with substantially all of the calcium, and separating out the resultant precipitated calcium carbonate, together with coprecipitated iron and aluminum as hydroxides, and subsequently separately adding additional sodium hydroxide and separating magnesium from the decalcified sea water, as the hydroxide, thus forming a descaled sea water, adding a low cost mineral acid to the thus descaled sea water, physically converting the descaled sea water containing said mineral acid to a potable water product and a saline concentrate by electrodialysis, and recovering and recycling at least part of the sodium values in the saline concentrate as sodium hydroxide for pH adjustment.

3,350,293

PASSIVATING SILICON SEMICONDUCTOR DEVICES WITH SPUTTERED TUNGSTEN OXIDE AT LOW TEMPERATURES

Carl R. Betz, Phoenix, Ariz., assignor, by mesne assignments, to Components, Inc., a corporation of Delaware

Continuation of application Ser. No. 328,742, Dec. 6, 1963. This application Nov. 14, 1966, Ser. No. 594,262
3 Claims. (Cl. 204—192)



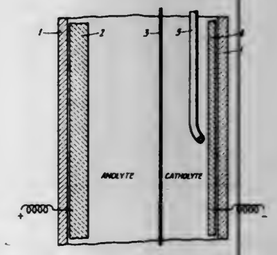
1. A method of passivating the surface of a silicon semiconductor device to which a metallic contact has been applied including the steps of placing said device in a chamber in spaced relationship to a tungsten cathode, introducing into said chamber a gas selected from the group consisting of oxygen and nitrogen, forming a plasma of ions of said gas within said chamber and bombarding said cathode with said ions to sputter a passivating coating of a tungsten compound of said gas on the surface of said device.

3,350,294

ELECTRODES

John Robert Hall, Blackburn, Victoria, and Johannes Theodorus van Gemert, Lalor, Victoria, Australia, assignors to Imperial Chemical Industries of Australia and New Zealand Limited, Victoria, Australia, a company of Australia

Filed Nov. 21, 1963, Ser. No. 325,279
Claims priority, application Australia, Nov. 21, 1962, 24,574/62
10 Claims. (Cl. 204—290)



1. An electrode comprising a support formed from a metal suitable for the construction of solid electrodes, at least a portion of the surface of which is conductively covered by a coating of an alloy or co-deposit consisting of the metals molybdenum and tungsten and of at least one further metal selected from the group consisting of cobalt, nickel and iron, said coating containing 2 to 60% of molybdenum, 2 to 70% of tungsten and the balance to 100% of the said further metal, wherein the sum of molybdenum and tungsten is between 10 and 72%, said

percentages being by weight of the metallic constituents in the coating.

3,350,295

OXIDIZED BINDER PITCH FROM DEALKYLATED CONDENSED AROMATIC PETROLEUM FRACTIONS

Glen Porter Hamner, Baton Rouge, and Ralph Burgess Mason, Denham Springs, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 28, 1965, Ser. No. 516,970
10 Claims. (Cl. 208—4)

1. A process for preparing a binder pitch from an aromatic petroleum fraction feed stock selected from the group consisting of cracked petroleum gas oils and residual fractions boiling above about 450° F. which comprises dealkylating the feed stock in a fluidized coke bed to remove at least 90% of the alkyl side chains from the aromatic components of the feed stock; recovering a dealkylated vaporous product mixture from the fluidized coke bed; converting a portion of the product mixture to a condensed aromatic petroleum fraction; fractionating the product mixture to obtain a dealkylated condensed aromatic petroleum fraction boiling in the range of about 400–800° F.; oxidizing the dealkylated condensed aromatic petroleum fraction in an oxidizing zone at 200–650° F. with an oxygen containing gas having an oxygen content of 1–21% for a period of 1–24 hours and sufficient to make the oxygen content of the dealkylated aromatic petroleum fraction 0.1–1.5 wt. percent thereby converting the dealkylated aromatic petroleum fraction to pitch and more volatile products; withdrawing from the oxidizing zone the pitch and the more volatile products; stripping the pitch of substantially all the more volatile products; and, recovering a binder pitch product boiling above 800° F.

3,350,296

WAX SEPARATION BY COUNTERCURRENT CONTACT WITH AN IMMISCIBLE COOLANT

Leonard Barry Torobin, Newark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Original application Aug. 1, 1961, Ser. No. 135,092, now Patent No. 3,243,357, dated Mar. 29, 1966. Divided and this application Nov. 12, 1963, Ser. No. 322,733
9 Claims. (Cl. 208—37)

1. A method for dewaxing a petroleum fraction within a tower comprising countercurrently contacting said fraction with a denser immiscible coolant, said coolant being introduced at one end of said tower at a temperature below the cloud point of the said fraction, said fraction being introduced at a temperature above its cloud point into said tower by spraying said fraction into the other end of said tower in the form of a dense dispersion of uniform diameter droplets which move through the tower as a moving bed of spheres providing maximum contact and efficient heat transfer with said continuous coolant phase, wherein wax crystals are grown at a controlled rate within each of the sprayed droplets, and removing said continuous coolant phase and said sprayed droplets at the opposite ends of said tower from which they were introduced.

3,350,297

STAGED CENTRIFUGATION OF WAX FROM A COUNTERCURRENT EXTRACTION PROCESS

Leonard B. Torobin, Essex County, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 11, 1964, Ser. No. 350,958
7 Claims. (Cl. 208—37)

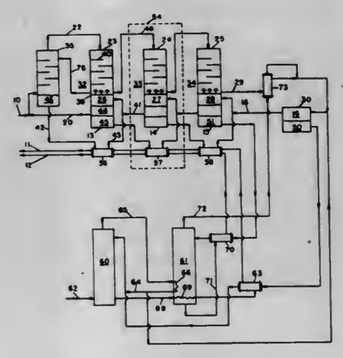
1. A process for dewaxing a waxy oil hydrocarbon fraction requiring minimum added solvent comprising countercurrently contacting said fraction with an immisible coolant, said coolant being introduced at a temperature below the crystallization temperature of the feed to one end of a chilling tower to which is introduced at the other end the waxy hydrocarbon feed and 0 to about 1.0 volume of solvent at a temperature above the crystallization temperature of the feed, said feed being introduced as a relatively dense dispersion of essentially uniform diameter droplets, which droplets rise in the tower and gradually cool to the crystallization temperature of the wax in the dispersed droplets, said tower being operated under positive pressure, said dispersed phase containing said crystallized wax and dewaxed oil is collapsed and gradually compressed to form a continuous zone of wax-oil slurry consisting essentially of crystallized wax and oil forming a pressure seal against which the positive pressure in the tower acts to push said compressed material out of said tower, separating said wax-oil slurry from said immiscible coolant, said wax-oil slurry being fed to a first-stage centrifuge wherein substantially all of the wax in the wax-oil slurry is removed in the underflow stream and the overflow stream consisting essentially of solvent and dewaxed oil is recovered, said underflow stream comprising wax and oil being mixed at a ratio of solvent to wax-oil slurry of about 1.5 to 2.5 and being fed to a second stage centrifuge, said centrifuge being operated to substantially remove all the oil and solvent from said wax, recovering from said second stage an underflow wax stream containing wax and solvent and substantially free of oil and recovering an overflow stream containing solvent and a minor amount of oil, recycling said overflow stream to said first stage centrifuge and mixing it with said wax-oil slurry from said crystallization step.

3,350,298

PROCESS FOR THE RECOVERY OF WATER FROM SALINE SOLUTIONS

Bruce B. Carr, Pittsburgh, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 29, 1963, Ser. No. 319,882
13 Claims. (Cl. 210—21)

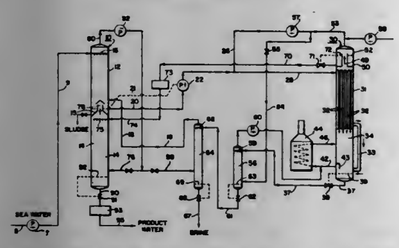


4. In the purification of saline water, the process which comprises contacting saline water with a separate liquid phase water solvent in a first zone and condensing solvent vapors therein whereby water is extracted from said saline water to form a water-rich solution, and vaporizing solvent from said water-rich solution in a separate zone, whereby water separates from said solvent as a separate phase.

3,350,299
RECOVERY OF DESALTED WATER FROM BRINE

Howard V. Hess, Glenham, and Frank E. Guptill, Jr., Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 21, 1963, Ser. No. 317,756
15 Claims. (Cl. 210—22)

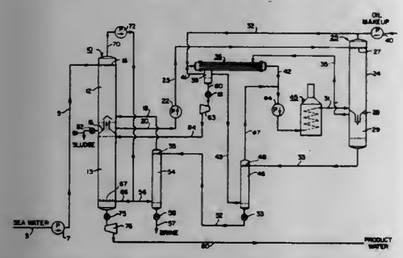


1. A process for extracting water from brine comprising passing relatively cool brine into direct countercurrent contact with relatively hot hydrocarbon liquid in a first contacting zone whereby said brine is heated to an elevated temperature and said hydrocarbon is cooled under sufficient pressure to maintain said brine and said hydrocarbon in liquid phase; passing preheated brine from said first contacting zone into admixture with hot hydrocarbon liquid, passing the resulting mixture in indirect heat exchange with extract from a source hereinafter defined thereby heating said mixture to a temperature effective for extracting water from said brine and forming an extract consisting essentially of relatively salt-free water in hydrocarbon, discharging residual brine containing an increased salt concentration and resulting extract or water in hydrocarbon into a separation zone and separating residual brine from said extract, passing said extract in countercurrent indirect heat exchange with said mixture of hydrocarbon and brine thereby cooling said extract to a temperature effective for liberation of water from said extract to form a water phase and a hydrocarbon liquid phase, and separating relatively salt-free water liberated from said extract from said hydrocarbon liquid phase.

3,350,300
RECOVERY OF SALT-FREE WATER FROM BRINE

Howard V. Hess, Glenham, and Frank E. Guptill, Jr., Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 16, 1963, Ser. No. 330,727
12 Claims. (Cl. 210—22)

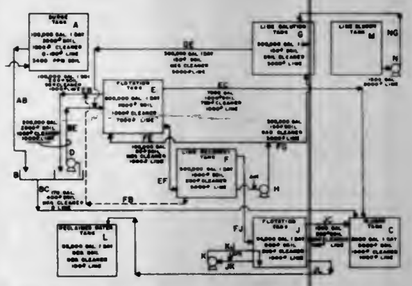


1. A process for extracting water from brine comprising passing relatively cool brine into direct countercurrent contact with relatively hot hydrocarbon liquid in a first contacting zone whereby said hydrocarbon is cooled and said brine is heated to an elevated temperature at a pressure sufficient to maintain said brine and said hydrocarbon in liquid phase, passing resulting preheated brine at an increased pressure into direct countercurrent contact with hot hydrocarbon liquid in a second contacting zone whereby said brine is further heated to a temperature sufficient to form an extract consisting essentially of salt-free water in hydrocarbon under sufficient pressure to maintain said brine in liquid phase, separating residual brine containing an increased salt concentration from said extract, withdrawing said extract from said second contacting zone and passing said extract at said increased pressure through an indirect heat exchange zone in indirect countercurrent heat exchange with cooled hydrocarbon liquid from said second contacting zone whereby said hydrocarbon liquid is heated and said extract is cooled by an amount sufficient to liberate relatively salt-free water from said extract and form separate water and hydrocarbon liquid phases, further heating said hydrocarbon liquid and returning it to said second contacting zone, withdrawing said hydrocarbon liquid phase separated from said extract and returning at least a part thereof to said indirect heat exchange zone in admixture with said cooled hydrocarbon liquid supplied thereto, and withdrawing water separated from said extract.

3,350,301
PROCESS FOR THE PURIFICATION OF WASTE WATER BY EMULSION-BREAKING AND FLOTATION

Wade H. Hoffman, 633 Cleveland Ave., Marion, Ohio 43302

Filed July 6, 1964, Ser. No. 380,292
11 Claims. (Cl. 210—44)

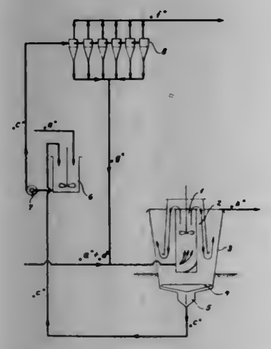


1. The continuous process for the purification of waste water containing fat, oil, grease, or the like in emulsion which comprises the steps of:
collecting a sufficient quantity of said waste water in a storage tank in order to provide for the continuous delivery of a substantially uniform waste water to a purification system;
passing said waste water to a trap;
then passing said waste water to a first flotation vessel and simultaneously diluting it with re-cycled water containing lime and air bubbles, each volume of waste water being diluted with at least an additional volume of re-cycled water for each 1000 parts per million impurities in said waste water;
re-cycling about one volume of water from said flotation vessel to said trap for each volume of waste water entering said trap;
floating off impurities from said flotation water in the form of a sludge;
passing the water fraction in said flotation tank to a settling tank;
permitting said water fraction to settle;
separating said water fraction into a first stream, a second stream, and a third stream;
passing said first stream from the top of said settling tank to a second flotation tank for further purification;
re-cycling said second stream from the bottom of said settling tank to the waste water entering the first flotation vessel;
taking said third stream from the bottom of said settling tank;
adding lime to said third stream;
and recycling said third stream to the waste water entering the first flotation vessel.

3,350,302
CLARIFICATION OF SURFACE WATERS

László Demeter, Béla Galgóczi, Emma Bozzay, and István Zagyval, Budapest, Hungary, assignors to Nikex Nehézipari Külkereskedelmi Vallalat, Budapest, Hungary

Filed Sept. 16, 1964, Ser. No. 396,895
7 Claims. (Cl. 210—45)



1. A process for clarification of surface waters, which comprises admixing to the water in a clarification system a polyelectrolyte and a hard, non-porous sand having a particle size of 10–200 microns and a specific surface of 100–500 cm.²/g., settling and then separating the settled solids from the water, and regenerating the sand for recirculation without significant loss thereof to the clarification system.

3,350,303
PROCESS FOR PREPARING A COAGULANT FROM PYROPHYLLITE AND CLARIFYING WATER WITH IT

Oliver M. Bacon, Arvada, Colo., assignor to The Hunnewell Soap Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,113
5 Claims. (Cl. 210—47)

3. A process of clarifying water comprising the steps of first acidifying pyrophyllite to form a silica gel, reacting the acidified pyrophyllite with a minor proportion of a soda ash to gradually increase the pH level of the solution, adding the solution to sodium aluminate and stirring until a dry powdery material is formed, and thereafter adding small amounts of the material to the water to be treated as a coagulant aid.

3,350,304
WATER TREATMENT COMPOSITIONS AND PROCESSES

Oliver M. Bacon, Arvada, Colo., assignor to The Hunnewell Soap Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 18, 1965, Ser. No. 433,790
8 Claims. (Cl. 210—52)

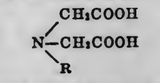
5. A method of treating a water of low hardness to clarify it and render it stable and potable, which comprises treating said water with from 5 to 20 p.p.m. alum, 20 to 100 p.p.m. lime and 2 to 10 p.p.m. of a composition comprising 10 to 50 parts pyrophyllite acidulated and neutralized, 50 to 125 parts alkali metal aluminate, 15 to 48 parts non-expanding clay, 1.5 to 15 parts polyvalent metal sulfate and 0.5 to 1.5 parts of organic gum.

3,350,305
CORROSION-INHIBITED PHOSPHATE FIRE-FIGHTING SOLUTIONS AND COMPOSITIONS USEFUL FOR MANUFACTURING THEM

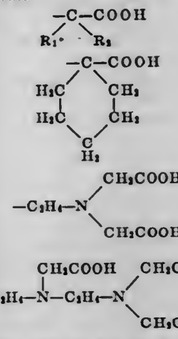
Robert P. Langguth and William W. Morgenthaler, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 19, 1964, Ser. No. 368,712
13 Claims. (Cl. 252—2)

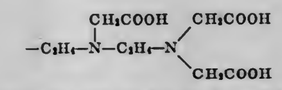
1. An aqueous ammonium orthophosphate fire-fighting solution consisting essentially of, in addition to the ammonium orthophosphate dissolved therein in an amount of at least about 0.5 weight percent, a thickening agent in an amount of at least about 0.5 weight percent selected from the group consisting of carboxy, methyl cellulose, carboxy ethyl cellulose, carboxy propyl cellulose, algin, guar gum, bentonite clays and attapulgite clays and to decrease the normal corrosivity of said solution towards copper and copper containing alloys a corrosion inhibitor in an amount of at least about 0.04 weight percent selected from the group consisting of amino polycarboxylic acids having the formula



wherein R is a member selected from the group consisting of the radicals



and



wherein R_1 is a member selected from the group consisting of hydrogen, lower alkyl containing from 1 to 4 carbon atoms and phenyl and R_2 is a member selected from the group consisting of hydrogen and lower alkyl containing from 1 to 4 carbon atoms and their water-soluble salts selected from the group consisting of alkali metal salts, ammonium salts and amine salts of amines having a molecular weight below about 200 and containing not more than 2 amine groups.

3,350,306
FIRE EXTINGUISHING POWDERS

Jean C. Alleton, Paris, France, assignor to Societe d'Etudes Chimiques Pour l'Industrie et l'Agriculture, Paris, France

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,549
Claims priority, application France, Dec. 21, 1962, 919,442
16 Claims. (Cl. 252—7)

1. A free flowing alkali metal bicarbonate fire extinguishing powder consisting essentially of 100 parts by weight of an alkali metal bicarbonate and 0.5–10 parts

by weight of an anti-caking inorganic water-soluble iron salt, substantially all the alkali metal bicarbonate powder being at least partially coated with said iron salt.

3,350,307
LUBRICATING GREASES

Alexander Brown, Goff's Oak, and Harold John Wellard, Sawbridgeworth, England, assignors to Murex Welding Processes Limited, Waltham Cross, Hertfordshire, England, a British company

Filed May 3, 1965, Ser. No. 452,884
Claims priority, application Great Britain, May 15, 1964, 20,400/64
8 Claims. (Cl. 252—30)

1. A lubricating grease, consisting essentially of an aqueous solution of a member selected from the group consisting of sodium silicate and potassium silicate thickened with a water-thickening agent.

7. A grease as claimed in claim 1, which contains as an anti-friction additive 0.25–30% by weight of graphite.

3,350,308
METHOD FOR PREPARING CALCIUM SULFONATE COMPLEXES

Richard L. McMillen, Painesville, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed June 17, 1966, Ser. No. 558,287
10 Claims. (Cl. 252—33)

1. A process for preparing a substantially neutral, carbonated calcium sulfonate complex having a metal ratio of at least about 10 which comprises preparing and mixing a mass in which, at 50° C., at least 50 percent of the components are in the liquid state, and in which mass the active components consist of:

(A) a carbonated calcium sulfonate complex having a metal ratio of from about 1.1 to about 8.0;

(B) an oil-soluble calcium phenate;

the ratio of equivalents of A:B being in the range from about 20:1 to about 2:1;

(C) an aliphatic monohydric alcohol having from 1 to about 20 carbon atoms, in an amount of at least 5 percent by weight of A;

(D) a calcium base, in an amount such that there is present in the mass a total of at least about 10 equivalents of calcium per equivalent of A;

and then treating the mass with carbon dioxide until the base number thereof is less than about 50 and heating it to drive off substantially all the alcohol and any water present.

3,350,309
STABILIZATION OF SILICONE FLUIDS WITH AN IRON COMPOUND AND A POLYCARBOXYLIC ACID

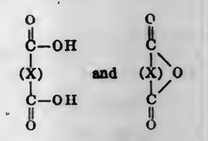
Fritz A. Buehler, Erlton, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed July 14, 1965, Ser. No. 472,040
5 Claims. (Cl. 252—37.2)

1. A high temperature stabilized fluid composition comprising a major proportion of a polysiloxane fluid having the unit formula:

$$R_nSiO_{4-n/2}$$

wherein n has a value from about 1.1 to about 2.9 and R represents an organyl radical selected from the group consisting of alkyl, cycloalkyl, aralkyl, aryl, and alkaryl, and a minor proportion sufficient to stabilize said fluid of (1) an iron compound selected from the group consisting of iron oxide and iron salts of carboxylic acids and (2) a polycarboxylic acid compound having a formula selected from the group consisting of

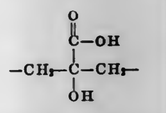


and

and the group (X) is selected from the group consisting of $-(CH_2)_m-$ wherein m is from 0 to 8;

$$-CH(OH)-CH_2-;\ -CH=CH-$$

and



3,350,310
PREPARATION OF OVERBASED CALCIUM ALKYLPHENATE SULFIDES

Richard S. Herd, Woodbury, Emil Kott, Jr., Woodbury Heights, and Ferdinand P. Otto, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,258
21 Claims. (Cl. 252—42.7)

1. A method of producing an overbased sulfurized calcium alkylphenate comprising (1) reacting an anhydrous mixture of calcium oxide, methanol and carbon dioxide together at a temperature in the range of 10° to 30° C. wherein the ratio of moles of carbon dioxide per mole of calcium is in the range of 0.4 to 0.8, (2) reacting the product of step (1) with an alkylphenol sulfide produced from a phenol and a sulfur reagent at a mole ratio in the range of 1:1 to 2:1 of phenol to sulfur reagent, wherein the alkyl group contains from 4 to 30 carbon atoms, and (3) heating the said reaction mixture at 125° to 175° C. to remove the said methanol by distillation.

ERRATUM

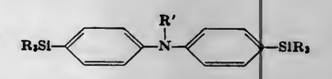
For Class 252—46.6 see Patent No. 3,350,348

3,350,311
LUBRICATING FLUIDS CONTAINING 4,4'-BIS(TRIORGANOSILYL)DIPHENYLALKYLAMINES

Matthew J. Napoli, Chicago, Ill., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Original application June 17, 1963, Ser. No. 288,526, now Patent No. 3,308,144, dated Mar. 7, 1967. Divided and this application Nov. 9, 1966, Ser. No. 592,980
4 Claims. (Cl. 252—49.6)

1. A lubricating fluid containing 0.2 to 5 percent by weight of a compound of the formula



wherein R is a monovalent hydrocarbon group free of aliphatic unsaturation containing from 1 to 18 inclusive carbon atoms and R' is an alkyl group containing from 1 to 18 inclusive carbon atoms.

3,350,312
DIELECTRIC COMPOSITIONS CONTAINING HALOGENATED VOLTAGE STABILIZING ADDITIVES

Richard E. Gross, Framingham, and George H. Hunt, West Newton, Mass., assignors to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,065
8 Claims. (Cl. 252—63.2)

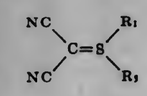
1. A solid dielectric composition consisting essentially of a polyethylene base having disposed therein a soluble amount between .2 and 2.5% by weight based on the polyethylene of a voltage stabilizer selected from the group consisting of 9,10-dibromoanthracene, 4-bromobiphenyl, 4,4'-dibromobiphenyl and 4-iodobiphenyl.

3,350,313
SULFONIUM METHYLIDE COMPOUNDS AND POLYMERIC COMPOSITIONS CONTAINING THEM

Peter J. Graham, Gladwyne, Pa., and William J. Linn and William J. Middleton, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Apr. 11, 1963, Ser. No. 272,200, now Patent No. 3,282,961, dated Nov. 1, 1966. Divided and this application Nov. 12, 1965, Ser. No. 516,188
5 Claims. (Cl. 252—63.7)

1. A composition comprising a blend of a polymer and a compound having the formula



wherein R_1 and R_2 are selected from the group consisting of

(A) separate groups selected individually from
  (1) C_1 to C_{20} alkyl and C_2 to C_{20} substituted alkyl in the case of R_1, and
  (2) aryl, substituted aryl and the groups listed for R_1 in the case of R_2, and

(B) a single C_3 to C_8 group which together with the sulfur atom to which the single group is attached forms a non-aromatic cyclic group.

3,350,314
FOAMABLE DE-ICING/DEFROSTING COMPOSITION AND METHOD OF DE-ICING AND DEFROSTING

Sydney Dawtrey, Epsom, Surrey, and Harold C. King, Englefield Green, Surrey, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 15, 1964, Ser. No. 396,702
Claims priority, application Great Britain, Sept. 24, 1963, 37,518/63; July 22, 1964, 29,583/64
5 Claims. (Cl. 252—70)

1. A process of deicing/defrosting a surface by foaming a composition consisting essentially of (a) a major proportion of alkylene polyol selected from ethylene glycol, propylene glycol, glycerol and mixtures thereof, (b) water, and (c) from about 0.5% by weight to 5% by weight based on total composition of a soluble tertiary amine wherein one group attached to the nitrogen is a C_{12-18} aliphatic hydrocarbyl group and the other groups attached to the nitrogen atom are polyoxyalkylene groups wherein the oxyalkylene units are oxyethylene oxypropylene or mixtures thereof; and applying the resulting foam to said surface.

3,350,315
ROAD SALT COMPOSITION

Frank L. Schneider, 8 Round Hill Lane, Port Washington, N.Y. 11050

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,665
1 Claim. (Cl. 252—70)

A road salt composition consisting essentially of at least 90% by weight of sodium chloride together with at least 0.5% by weight of magnesium oxide, said composition prepared by concentration of sea water which has been subjected to electrolysis to adjust pH to a value at which the magnesium values precipitate as the oxide, with removal of the chlorine as formed in the electrolysis.

3,350,316
ANTIFREEZE COMPOSITION

Bernard H. Berger and Paul M. Kerschner, Trenton, N.J., assignors to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,101
11 Claims. (Cl. 252—75)

9. A non-volatile antifreeze composition consisting essentially of:

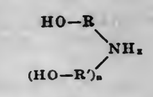
(a) ethylene glycol in the amount of from about 90% to about 99% by weight;

(b) water in the amount of from about 1% to about 10% by weight of the composition;

(c) an alkali metal mercaptobenzothiazole in the amount of from about 0.1% to about 1.0% by weight of the composition; and

(d) between about 1% and about 5% of a reaction product of the process comprising the steps of:

(1) providing phosphoric acid, boric acid, and alkanol amines having the formula:



wherein n equals 0 or 1, x equals 1 when n equals 1 and each of R and R' represent a radical selected from the group consisting of alkyl hydrocarbon radicals and alkyl ether radicals and has from 2 to about 12 carbon atoms in the longest chain;

(2) reacting the phosphoric acid, the boric acid, and the alkanolamine in the ratio of from one to two moles boric acid, one mole phosphoric acid to three moles of the alkanolamine at a temperature of at least about 100° C. for a period of at least about 1 hour to obtain the reaction product.

3,350,317
STERILIZING, DISINFECTING, OXIDIZING AND BLEACHING COMPOSITION

William F. Symes, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,134
7 Claims. (Cl. 252—99)

1. A sterilizing, disinfecting, oxidizing, and bleaching composition consisting essentially of a mixture of (a) an organic compound selected from the group consisting of essential oils, organic optical brighteners, organic tarnish inhibitors, and organic sequestering agents and (b) a potassium-containing chloroisocyanurate complex compound selected from the group consisting of [(monotrichloro) tetra - (monopotassium dichloro)] penta - isocyanurate, (mono-trichloro)(monopotassium dichloro) di-isocyanurate and mixtures thereof, the said potassium-containing chloroisocyanurate complex compound being present in an amount in the range of about 0.1% to about 98% by

weight of the mixture, said organic compound being further characterized as incapable of undergoing an oxidation-reduction reaction with respect to such potassium-containing chloroisocyanurate complex compound.

3,350,318

METHOD OF PRODUCING DETERGENT COMPOSITION

Robert L. Green, Morrisville, Pa., assignor, by mesne assignments, to FMC Corporation, Princeton, N.J., a corporation of Delaware

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,594

4 Claims. (Cl. 252—135)

1. A method of producing a low foaming dishwashing detergent composition which comprises forming an aqueous solution of an inhibitor which is an amphoteric metal compound from the group consisting of sodium aluminate, sodium zincate and the reduction compounds of $ZnO.NaOH.H_2O$ and $BeO.NaOH.H_2O$, spraying said aqueous solution of inhibitor onto granules of a sodium polyphosphate and mixing the sprayed granules with sodium silicate having an $Na_2O:SiO_2$ ratio of about 1 to 1 to 1 to 3 to produce a compound containing essentially from about 20 to 50% by weight of sodium polyphosphate, from about 10 to 30% by weight of sodium silicate, and from about 0.02 to 1.5% by weight of said inhibitor.

3,350,319

AQUEOUS DETERGENT-INORGANIC BUILDER CONCENTRATES

Nikolaus Augustin Schonfeldt, Molndal, Sweden, assignor to Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a limited company of Sweden

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,437

16 Claims. (Cl. 252—138)

1. A clear aqueous detergent-inorganic builder concentrate consisting essentially of from about 3.5% to about 55% by weight total detergent-inorganic builder consisting essentially of an inorganic builder selected from the group consisting of neutral builders and builders of low alkalinity, in an amount within the range from about 0.015 to about 50% by weight of the concentrate, and builders of high alkalinity in an amount within the range from about 0.015 to about 2% by weight of the concentrate from about 1 to about 40% by weight of a polyoxyalkylene glycol ether precipitatable from the concentrate in the presence of the inorganic builder, and having the formula:

$$R—A—(Y—O)_x—Y—OH$$

wherein R is a hydrocarbon group having from about eight to about twenty-four carbon atoms, selected from the group consisting of alkyl and aralkyl hydrocarbon groups, A is selected from the group consisting of ethereal oxygen and sulfur; amino; carboxylic ester; and thiocarboxylic ester groups, Y is an alkylene group having from about two to about four carbon atoms, and x is a number within the range from about 8 to about 20; an alkylphenol having an SO_3 group, the alkyl group having from about six to about twelve carbon atoms, and the SO_3 group being present as a member selected from the group consisting of sulfonate groups attached to a carbon atom of the phenol ring, and sulfate ester groups attached to an alkyl group attached to the phenol ring and having from about six to about twelve carbon atoms, in an amount within the range from about 0.5 to about 20% by weight sufficient to prevent precipitation of the polyoxyalkylene glycol ether and water.

3,350,320

DETERGENT BAR CONTAINING FATTY KETONE

Gordon Trent Hewitt, Upper Montclair, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 42,499, July 13, 1960. This application Dec. 9, 1965, Ser. No. 512,787

8 Claims. (Cl. 252—161)

1. A detergent bar consisting essentially of about 50 to 99% of a sodium salt of a sulfated organic detergent containing a saturated straight chain higher alkyl radical having from about 12 to 18 carbon atoms and about 0.5 to 10% by weight of a fatty ketone selected from the group consisting of stearone and palmitone.

3,350,321

STABLE FLUID EMULSIONS OF ASPHALT AND OTHER OLEORESINOUS MATERIALS AND PREPARATION THEREOF

Mervin E. Conn, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 29, 1963, Ser. No. 254,593

11 Claims. (Cl. 252—311.5)

1. A stable, fluid emulsion comprising 40–70 wt. percent of asphalt in 30–60 wt. percent water and 0.2 to 0.8 wt. percent on asphalt of an emulsifier, said emulsifier comprising the potassium salt of phosphorus pentoxide treated C_8 Oxo bottoms.

3. A method of preparing stable, fluid emulsions of asphalt and other oleoresinous materials in water which comprises forming an oleoresinous layer by adding to said oleoresinous material 0.2 to 0.8 wt. percent on oleoresinous material of an emulsifier component comprising C_8 Oxo bottoms treated with a phosphating agent in an amount sufficient to convert said bottoms to a phosphoric acid, wherein said phosphating agent is selected from the group consisting of phosphorus pentoxide, phosphoric acid, phosphorus trichloride and phosphorus oxychloride; and vigorously mixing said oleoresinous layer with a water layer containing an alkaline material in an amount sufficient to form a dispersible, water-soluble salt with said emulsifier component; said emulsion being characterized by containing from about 40% to about 70% by weight of said oleoresinous material and from about 30% to about 60% by weight of water.

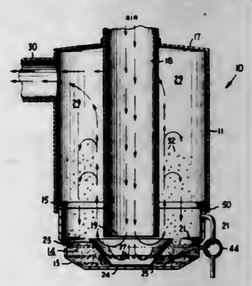
3,350,322

AIR CLEANER WATER EXTRACTION DEVICE

Clarence Waterhouse, Macungie, Pa., assignor to Mack Trucks, Inc., Montvale, N.J., a corporation of New York

Filed Aug. 27, 1965, Ser. No. 483,217

4 Claims. (Cl. 252—362)



3. An oil bath air cleaner comprising an outer casing and a bottom section detachably secured to said casing and defining an oil reservoir, an air intake conduit extending downwardly through said casing and having a free end disposed above the bottom of said bottom section, an air outlet in said casing, a cup shaped member in said bottom section in alignment with said conduit, a heating element in said bottom section adjacent to said cup member, a first tube having a free end disposed within said reservoir between said cup member and a side of said bottom section, said first tube extending upwardly and outwardly through said bottom section and having an outer end, a header communicating with said outer end of said tube and a second tube extending from said header upwardly and inwardly into said bottom section above said reservoir.

3,350,323

CATALYST PRODUCTION

John M. Willatt and Gregor H. Riesser, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,315

9 Claims. (Cl. 252—456)

1. The method of producing a bismuth-containing catalyst useful in the oxidative conversion of hydrocarbons which comprises preparing an aqueous solution consisting essentially of dissolved soluble compounds of (a) a water-soluble base, (b) bismuth, (c) a water-soluble, aliphatic hydroxypolycarboxylic acid of 3 to 6 carbons containing only carbon, hydrogen, and oxygen atoms and only hydroxylic and carboxylic functional groups, and (d) an inorganic acid selected from the group consisting of molybdic acid, tungstic acid, and chromic acid, producing a solid bismuth product therefrom by removing water, and calcining the resulting solid.

6. The method of producing bismuth molybdate catalyst which comprises contacting bismuth citrate and molybdic acid in a dilute aqueous ammoniacal medium, removing water, and calcining at a temperature of from about 300 to about 600° C.

7. The method in accordance with claim 6 wherein said bismuth molybdate catalyst is supported in uniform distribution on an inert carrier chosen from the group consisting of silica and zirconia.

3,350,324

POLYMERS DERIVED FROM DODECABORIC ACIDS AND THEIR PREPARATION

Boynton Graham, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 14, 1964, Ser. No. 382,636

13 Claims. (Cl. 260—2)

1. An ionic boron-containing polymer consisting essentially of recurring structural units of the formula

$$\frac{M_\nu H_{2-\nu}}{(—)_a B_{12}H_{12-n-2a}Z_n(O—)_a}$$

wherein

(1) the moiety above the solid line represents the cationic portion in which
- H is hydrogen,
- M is one equivalent of a cation of valence 1 to 3, inclusive, and
- ν is a number of from 0 to 1.8, inclusive;

(2) the moiety below the solid line represents the anionic portion in which
- $B_{12}H_{12-n-2a}$ represents a boron skeleton of a polyhedral dodecaborate cage with $(12-n2a)$ hydrogens attached;
- Z represents a substituent bonded to boron by replacement of hydrogen and is selected from the class consisting of hydroxyl, halogen, carboxyl, alkyl of up to 12 carbon atoms, alkoxy of up to 12 carbon atoms, and alkylthio of up to 12 carbon atoms;
- n represents the number of Z groups bonded to boron and is a cardinal number of 0 to 10 inclusive;
- (—) represents a linking bond of the polymer chain emanating from boron;
- (O—) represents oxygen bonded to boron and the linking bond of the polymer chain emanating therefrom;
- a represents the number of (—) and (O—) entities present and is a cardinal number of 1 to 3 inclusive; and
- $2a+n$ is at most 12.

13. A process for preparing an ionic polydodecaborate polymer which comprises heating in an open system at a temperature of from about 50° to 250° C., a polyhedral dodecaboric acid of the formula $H_2B_{12}H_{12-n'}Z'_{n'}\cdot yH_2O$ wherein Z' is selected from the class consisting of hydroxyl, carboxyl, halogen, alkyl of up to 12 carbon atoms, alkoxy of up to 12 carbon atoms, and alkylthio of up to 12 carbon atoms; n' is a cardinal number of from 0 through 5; and y is a cardinal number of from 2 through 12, until gaseous evolution is completed; and treating the resulting polymer at a temperature of from about 50° to 130° C. with a solubilizing agent selected from the group consisting of water; aqueous solutions of inorganic hydroxides; lower alkylamines; amides, alkylamides and dialkylamides of formic acid and lower alkanoic acids; dialkyl sulfoxides; and aqueous mineral acids.

3,350,325

WATER SOLUBLE POLYMER OF DIGLYCIDYL ETHER AND AN ALKANOLAMINE

Theodore L. Ashby and Clarence R. Dick, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 31, 1964, Ser. No. 386,732

10 Claims. (Cl. 260—2)

1. A method of producing a water soluble thermoplastic polymer comprising the reaction product of approximately equal molecular quantities of diglycidyl ether and an alkanolamine containing from 2 to 4 carbon atoms, said method comprising:

adding said diglycidyl ether to said alkanolamine while mixing and maintaining the reaction temperature of said amine and ether mixture between about 25° and 175° C., the rate of addition being approximately equal to the rate of reaction between said amine and ether; thereafter

completing the reaction of said mixture by maintaining said reaction temperature until all of the epoxide groups in said mixture have been reacted.

3,350,326

PROCESS FOR THE PRODUCTION OF POLYMERIC BORON NITROGEN COMPOUNDS

Elmar-Manfred Horn, Aachen, Klaus Kleine-Weischede, Leverkusen, Konrad Lang, Cologne-Stammheim, and Hans Niederprum, Monnheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Oct. 7, 1964, Ser. No. 402,351

Claims priority, application Germany, Oct. 16, 1963, F 41,000

7 Claims. (Cl. 260—2)

1. A process for the production of polymeric organic boron nitrogen compounds, which comprises reacting an amine borane of the formula

$$R{\rightarrow}BH_3$$

wherein R represents a member selected from the group consisting of tertiary alkylamine and pyridine amine at a temperature of between 20 to 250° C. with a nitrile of the formula selected from the group

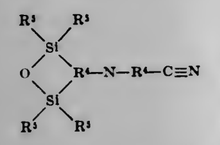
(1) phosphorus containing nitriles of the formula

$$R^5{}_{3-q}—P(Z—C\equiv N)_q$$

(2) silicon containing nitriles of the formula

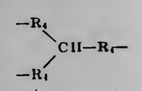
$$R^5{}_{4-q}—Si(Z—C\equiv N)_q$$

(3) disiloxane compounds of the formula

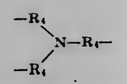


and

(4) polysiloxanes containing $q(Z—C\equiv N)$ - groups, wherein Z represents a member selected from the group consisting of alkylene having 1 to 6 carbon atoms, aza-alkylene having 1 to 6 carbon atoms, phenylene, oxa-alkylene,



and



R^5 represents a member selected from the group consisting of hydrogen, alkyl, phenyl and alkyl-substituted phenyl, R^4 represents alkylene having from 1 to 6 carbon atoms, q is an integer of 1 to 3 in phosphorus containing nitriles and an integer of 1 to 4 in silicon containing nitriles of Formula 2 and in polysiloxanes q is an integer of at least 1.

2. Process according to claim 1, wherein said nitrile is a member selected from the group consisting of tris-cyanomethyl-phosphine, tris-(2 - cyanoethyl) - phosphine, and mono- and di-organo-(2-cyanoethyl)-phosphines.

3,350,327

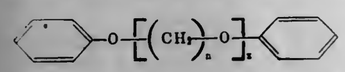
CATION EXCHANGE RESINS

Siegfried Aftergut, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 26, 1964, Ser. No. 355,107

3 Claims. (Cl. 260—2.2)

1. A cation exchange resin formed by the process comprising reacting a first compound having the formula:



where n is an integral number chosen from the group consisting of 2 and 3 and x is an integral number greater than zero chosen to yield a molecular weight of the oxyalkylene group as high as 1000, with a second compound chosen from the group consisting of concentrated sulfuric acid, oleum, and chlorosulfonic acid, to produce a sulfonated form of said first compound, and reacting said sulfonated form with an aldehyde-releasing compound chosen from the group consisting of formaldehyde, paraformaldehyde, hexamethylenetetramine and formalin to polymerize and cross-link said polymers, said aldehyde releasing compound being introduced in a proportion to introduce from 1.1 to 3.0 moles of formaldehyde per mole of said sulfonated first compound, and curing for a period of from 1 to 2 hours at a temperature in the range of from 85 to 95° C. to produce said cation exchange resin.

3,350,328

PROCESS FOR THE REGENERATION OF POLYETHYLENE TEREPHTHALATE

Vittorio Cappuccio, Terni, and Luigi Cononica, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,260

Claims priority, application Italy, Nov. 12, 1963, 23,101/63

3 Claims. (Cl. 260—2.3)

1. A process for recovering polyethylene terephthalate from waste polyethylene terephthalate, which process comprises melting said polyester waste, contacting said molten waste with from about 0.1–20% by weight of said polyester waste of ethylene oxide and subsequently removing the unreacted ethylene oxide and volatile materials to recover said polyethylene terephthalate product.

3,350,329

COATING COMPOSITIONS, OF SHELLAC, MELAMINE FORMALDEHYDE, AND STYRENE-ACRYLATE EMULSIONS

Edward C. Scholl, Ramsey, N.J., assignor to Gillespie-Rogers-Pyatt Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 1, 1967, Ser. No. 613,124

10 Claims. (Cl. 260—8)

1. A composition comprising

(A) an aqueous, alkaline solution of shellac combined with an aqueous solution of a melamine-formaldehyde resin reduced with water to below 60% solids content, the weight proportion of shellac to the melamine-formaldehyde resin on a solids basis being within the range of 2:1 and 1:1, wherein each ingredient and mixture of ingredients is adjusted to a pH above 10, admixed with

(B) an aqueous emulsion of an interpolymer resulting from the copolymerization of:

(1) a monomer which is a lower alkyl ester, or a 2-ethylhexyl ester of acrylic acid or methacrylic acid, and

(2) styrene or carboxylated styrene adjusted to a pH above 10, the weight proportion of (A) on a solids basis being from about 16% to 45% of the total weight of (A) and (B), the final composition being adjusted to a pH above 10.

3,350,330

SILOXANE-BASED, NON-SKID COATING COMPOSITION

Carl G. Cash, Elnora, James R. Brower, Latham, and Stanley J. Bessmer, Cohoes, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,663

6 Claims. (Cl. 260—18)

4. A skid-resistant solid, cured, elastic composition prepared by curing of a mixture of ingredients comprising, by weight (1) 100 parts of a silanol chain-stopped dimethylpolysiloxane, (2) from 100 to 600 parts of a ground quartz filler having a surface area of from about 1.0 to 2.5 square meters per gram, (3) from 30 to 90 parts of a solvent selected from the class consisting of benzene, toluene and xylene, (4) from about 200 to 1,200 parts of a treated sand having a sieve size greater than U.S. Standard No. 200 and less than sieve No. 20 and having a hardness of from 5 to 8 mhos, said sand having been treated prior to incorporation into said composition with methyltriethoxysilane, (5) from 0.1 to 10 parts of a polyethyl silicate and (6) from 0.1 to 5 parts dibutyl tin dilaurate.

3,350,331

UNSATURATED POLYESTER RESIN FORMED FROM AN AROMATIC GLYCOL AND ARTICLES COATED THEREWITH

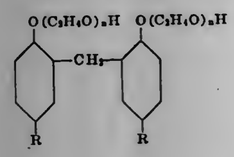
Raymond Liebling, Springfield, N.J., and Robert Steckler, Russel Township, Geaugan County, Ohio, assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Original application Aug. 7, 1958, Ser. No. 753,606, now Patent No. 3,064,057, dated Nov. 13, 1962. Divided and this application Nov. 3, 1961, Ser. No. 152,117

The portion of the term of the patent subsequent to July 7, 1981, has been disclaimed

20 Claims. (Cl. 260—22)

9. An alkyd resin consisting essentially of the reaction product of approximately stoichiometric quantities of (1) a hydroxyl substituent comprising (a) a glycol component comprising an aromatic glycol having the formula



wherein R is an alkyl substituent having from about 5 to 12 carbon atoms and n varies from 1 to 2, and from 0% to about 40% by weight of the total glycol component of at least one non-aromatic glycol and (b) at least one polyhydric alcohol having at least three hydroxyl groups, from about 5% to about 75% of the hydroxyl groups being supplied by said glycol component while the remainder being supplied by said polyfunctional alcohol and (2) an acid substituent comprising (a) at least one member of the group consisting of saturated and aromatic dicarboxylic acids and anhydrides thereof and (b) from 0 to about 50% by weight of the total reactants of at least one member of the group consisting of fatty acids having from about 10 to 22 carbon atoms, mixtures of said fatty acids and glycerides containing said fatty acids.

3,350,332

RIGID POLYVINYL CHLORIDE BLENDS HAVING IMPROVED IMPACT STRENGTH

Edgar E. Hardy, Longmeadow, and Ludwig A. Beer, Agawam, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 5, 1962, Ser. No. 228,735

7 Claims. (Cl. 260—22)

1. A fused blend prepared by intimately mixing 60 to 93 parts by weight of vinyl chloride polymer containing at least 85 percent by weight of vinyl chloride at temperatures above the fusion point of said polymer with 40–7 parts by weight total of other components comprising (1) an isocyanate-terminated polyester prepolymer which is prepared by reacting substantially linear polyesters with an excess of diisocyanate compound having the general formula:

$$O=C=N—R—N=C=O$$

wherein R is independently selected from the group consisting of alkyl, aralkyl, aryl and alkaryl radicals having from 2 to 14 carbon atoms, said isocyanate-terminated polyester prepolymer having a weight average molecular weight below 5,000, (2) a difunctional organic compound selected from the group consisting of diols, diamines, amino-alcohols and mixtures of the same and (3) tall oil in an amount up to 50 parts by weight per 100 parts of the total weight of the isocyanate-terminated polyester prepolymer and the difunctional organic compound.

3,350,333

FREE-FLOWING PARTICULATE POLYVINYL CHLORIDE BLENDS

Ludwig A. Beer, Agawam, and Edgar E. Hardy, Longmeadow, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 5, 1962, Ser. No. 228,737

7 Claims. (Cl. 260—22)

1. A free-flowing particulate blend prepared by intimately mixing 60 to 93 parts by weight of a vinyl chloride polymer having a porosity greater than about 0.1 cc. per gram and containing at least 85 percent by weight of vinyl chloride at temperatures below the fusion point of said polymer with 40–7 parts by weight total of other components comprising (1) an isocyanate-terminated polyester prepolymer which is prepared by reacting substantially linear polyesters with an excess of diisocyanate compound having the general formula:

$$O=C=N—R—N=C=O$$

wherein R is independently selected from the group consisting of alkyl, aralkyl, aryl and alkaryl radicals having from 2 to 14 carbon atoms, said isocyanate-terminated polyester prepolymer having a weight average molecular weight below 5,000, (2) a difunctional organic compound selected from the group consisting of diols, diamines, amino-alcohols and mixtures of the same and (3) tall oil in an amount up to 50 parts by weight per 100 parts of the total weight of the isocyanate-terminated polyester prepolymer and the difunctional organic compound, said other components being liquid at the temperature of mixing.

3,350,334

CASTOR OIL-HEXACHLOROENDOMETHYLENE-TETRAHYDROPHTHALIC ANHYDRIDE REACTION PRODUCT

Russell A. Skiff, La Mirada, Calif., assignor to North American Aviation, Inc.

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,206

5 Claims. (Cl. 260—22)

1. A process for achieving a polymer having rubber-like consistency, a low dielectric constant and a low dissipation factor, comprising the steps of;

heating, to an elevated temperature below the decomposition temperature of the reactants, a polyfunctional hydroxyl compound selected from the class consisting of a polyoxy-1,2-propylene ether triol initiated with glycerine and having an average molecular weight in the range from 2500 to 3950, and castor oil,

reacting with said heated polyfunctional hydroxyl compound a stoichiometric amount of halogenated organic acid anhydride,

determining completion of the reaction between said polyfunctional hydroxyl compound and said halogenated organic acid anhydride,

mixing said reaction products with an uncured bisphenol epichlorohydrin epoxy resin, and

curing said mixture.

3,350,335
NONDRYING ALKYD RESINS AND PROCESS OF MAKING SAME

Raymond P. Silver, Kennett Square, Pa., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,384
9 Claims. (Cl. 260—22)

1. A process for preparing an improved nondrying alkyd resin which comprises:

(1) heating, at a temperature between about 190° C. and about 250° C., a polyhydric alcohol component in an amount corresponding to from about 120 to about 150% of the hydroxyl equivalents theoretically required in the reaction of said component with both the mono- and dicarboxylic acids used in preparation of the alkyd resin, said polyhydric alcohol component being selected from the group consisting of pentaerythritol and mixtures of pentaerythritol with at least one compound selected from the group consisting of glycerol and ethylene glycol, the pentaerythritol in said mixtures contributing at least 50% of the total hydroxyl equivalents furnished to the reaction, with at least one fatty acid component selected from the group consisting of saturated fatty acids having 8 to 18 carbon atoms and triglycerides of fatty acids wherein at least 80% of the fatty acids are saturated fatty acids having 8 to 18 carbon atoms, the amount of said fatty acid component being sufficient to provide from about 20 to about 50% of the total carboxyl equivalents needed for reaction with the 100% level of the hydroxyl equivalents furnished by the polyhydric alcohol component;

(2) subsequently cooling the reaction mixture from (1) to a temperature less than about 170° C. and then effecting reaction of said mixture at a temperature in the range from about 140° to about 170° C. with the combination of at least one carbocyclic dicarboxylic acid anhydride selected from the group consisting of phthalic anhydride, tetrahydrophthalic anhydride, hexahydrophthalic anhydride, tetrachlorophthalic anhydride and the Diels-Alder adduct of hexachlorocyclopentadiene and maleic anhydride, and at least one acyclic dicarboxylic acid anhydride selected from the group consisting of maleic anhydride, citraconic anhydride and itaconic anhydride, the mole ratio of said carbocyclic anhydride to said acyclic anhydride being in the range of about 6:1 to about 2:1, and the amount of said combination of anhydrides being sufficient to provide from about 50% to about 80% of the total carboxyl equivalents needed for reaction with the 100% level of the hydroxyl equivalents furnished by the polyhydric alcohol component;

(3) adding to the reaction mixture from (2), at a temperature between about 125° and about 160° C., a solution of an organic peroxide in at least one vinyl monomer selected from the group consisting of alkyl acrylates and alkyl methacrylates wherein the alkyl group contains 1 to 4 carbon atoms, the peroxide being characterized by a half-life of between about 7.0 hours and about 0.06 hour at temperatures in the range of about 125° to about 160° C. and by being nonvolatile at temperatures in said range, the amount of vinyl monomer being from about 10 to about 50% by weight based on the solids content of reaction mixture (2), and the amount of peroxide being from about 1 to about 10% by weight, based on the amount of vinyl monomer, said solution of organic peroxide in the vinyl monomer being added in two parts, the first part containing from about 45 to 60% of the total monomer and from about 20 to about 30% of the total peroxide, and the second part containing the remaining amounts of monomer and peroxide; and

(4) heating the reaction mixture from (3) at a temperature between about 200° and about 300° C. until the acid number of the alkyd resin product has been reduced to less than 15.

3,350,336
SUBSTITUTED ACRYLAMIDES, POLYMERS THEREOF, AND METHODS OF MAKING SAME

Everett J. Kelley, Moorestown, N.J., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 29, 1964, Ser. No. 422,050
9 Claims. (Cl. 260—22)

9. As a composition of matter, a blend of (a) 1 to 99% by weight of an oil-modified alkyd resin and (b) 99 to 1% respectively of a copolymer of at least 3% by weight of a compound of the formula

$$H_2C{=}\underset{\displaystyle (CH_3)_{n-1}-H}{\underset{|}{C}}-C(O)NH-CH_2-N(ACOR)_2$$

wherein

n is an integer having a value of 1 to 2,
R is a (C_1–C_4)-alkyl group, and
A is a (C_1–C_3)-alkylene group,

with at least one other copolymerizable ethylenically unsaturated compound having a group of the formula

$$H_2C{=}C<$$

3,350,337
FINISH FOR GLASS CLOTH

James K. Campbell, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Mar. 14, 1962, Ser. No. 179,780
7 Claims. (Cl. 260—29.6)

4. A cationic emulsion for coating glass fibers consisting essentially of

(1) from 0.6 to 2.4 percent by weight of an emulsifiable polyethylene,

(2) from 0.6 to 2.4 percent by weight of

(A) from 3 to 100 mol percent of a siloxane of the unit formula $R_aH_bSiO_{4-a-b/2}$, wherein R is an alkyl radical of from 1 to 5 inclusive carbon atoms, *a* has a value of from 1.0 to 1.5 inclusive, *b* has a value of from 0.75 to 1.25 inclusive and the sum of *a* and *b* is from 2.0 to 2.25 inclusive,

(B) from 0 to 97 mol percent of a siloxane of the unit formula $R'_nSiO_{4-n/2}$, wherein R' is selected from the group consisting of monovalent hydrocarbon radicals of from 1 to 18 inclusive carbon atoms, dichlorophenyl and perfluoroalkylethyl radicals of the general formula $C_yF_{2y+1}CH_2CH_2$— wherein *y* has a value of from 1 to 10 inclusive and *n* has a value of from 1.75 to 2.2 inclusive, and

(3) from 95.2 to 98.8 percent by weight water.

3,350,338
ACRYLIC AMIDE POLYMERS HAVING IMPROVED WATER DISPERSIBILITY

Albert B. Savage, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,062
8 Claims. (Cl. 260—29.6)

1. A composition of matter comprising a finely divided, solid acrylic amide polymer characterized by water solubility and a high molecular weight, having a uniform

coating of a surface treating reagent selected from the group consisting of monoalkyl ethers of diethylene glycol wherein the alkyl group contains from 1 to 4 carbons, diethylene glycol monomethyl ether acetate, and 2-ethylhexane-diol-1,3.

3,350,339
PIGMENTED DISPERSION CONTAINING BINDER OF UNSATURATED OXIRANE, ETHYL ACRYLATE, METHYL METHACRYLATE EMULSION COPOLYMER

Kazys Sekmakas, Chicago, Ill., assignor to De Soto Inc., a corporation of Delaware

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,620
4 Claims. (Cl. 260—29.6)

1. A water based air drying paint comprising a pigmented copolymer emulsion of fine particle size exhibiting good adhesion to glossy and oil painted surfaces which comprises dispersed particles of an emulsion copolymer of:

(1) from 0.2–3% by weight, based on the total weight of copolymerizable material, of an oxirane containing copolymerizable monoethylenically unsaturated material including in the oxirane ring an alkaline reacting nitrogen-containing radical which comprises the residue of a member selected from the group consisting of ammoniating agent, aminating agent, and mixtures thereof; and

(2) the remainder of the copolymer consisting essentially of ethyl acrylate and methyl methacrylate in weight proportions of about 2:1 to provide copolymer particles which will coalesce at room temperature as the water phase of said emulsion evaporates.

3,350,340
CHEMICALLY MODIFIED POLYMERS OF 1,2-ALKYLENIMINES AND A PROCESS FOR THEIR PRODUCTION

Uwe Soenksen, Ernst Bauer, and Walter Sanne, Ludwigshafen (Rhine), and Johannes Arnold, Einhausen, Hesse, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,192
Claims priority, application Germany, Aug. 21, 1964, B 78,206
9 Claims. (Cl. 260—29.6)

1. A process for the production of water-soluble polymerization products from (a) a 1,2-alkylenimine which is free from substituents on the nitrogen atom and (b) a component selected from the group consisting of α,β-unsaturated carboxylic acids, acid chlorides, esters and anhydrides, wherein 1 mole of component (a) in a solvent which consists at least partly of water is reacted with 0.001 to 0.5 mole of component (b) until the viscosity of a 1% by weight aqueous solution of the product at 20° C. is at least 1.2 centipoises.

3,350,341
SILVER COMPOSITIONS CONTAINING NOVEL VITREOUS BINDERS AND A VEHICLE

Oliver A. Short, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 16, 1964, Ser. No. 383,052
6 Claims. (Cl. 260—29.8)

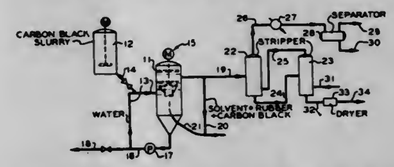
1. A glass frit consisting essentially of, by weight, 50 to 73% PbO, 5 to 30% PbF_2, 13 to 27% B_2O_3.

5. A silver composition consisting essentially of, by weight, 35 to 70% finely divided silver flake powder, 10 to 25% of a vitreous binder, 15 to 45% of an organic vehicle and not to exceed 5% other materials, including impurities; said vitreous binder consisting essentially of, by weight, 70 to 95% bismuth oxide and 5 to 30% of a glass frit consisting essentially of, by weight, 50 to 73% PbO, 5 to 30% PbF_2, 13 to 27% B_2O_3; and said vehicle consisting essentially of, by weight, 15 to 30% of a polymethacrylate of a 1 to 4 carbon aliphatic alcohol, 70 to 85% of pine oil and not to exceed 5% other materials, including impurities.

3,350,342
MASTERBATCHING RUBBER CEMENT AND RUBBER REINFORCING AGENTS

John W. Begley, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 6, 1962, Ser. No. 215,215
5 Claims. (Cl. 260—33.6)



1. A method for transferring carbon black from an aqueous carbon black slurry to a solution of rubber in a solvent for rubber, said solvent for rubber being a nonsolvent for carbon black, comprising contacting said aqueous slurry with said solution of rubber at a high shear rate by passing said aqueous carbon black slurry into one end of a hollow zone of circular cross section, passing said solution of rubber into the other end of said zone, passing said slurry and said solution outwardly through a perforation in the side wall of said zone by centrifugal force upon rotating said zone at a high rate of speed on its axis, expending in said zone at least 0.015 horsepower hour per pound of resulting rubber solution, thereby exposing said slurry and solution to a high rate of shear as said slurry and said solution exit from said perforation thereby producing a rubber solution rich in carbon black and an aqueous phase lean in carbon black, separating the resulting rubber solution rich in carbon black from the aqueous phase, lean in carbon black, and separately recovering said rubber solution.

3,350,343
PRINTING INK COMPOSITION

Michele Manica and Mauro Bassi, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,955
5 Claims. (Cl. 260—33.8)

1. An ink composition for use on polyolefin surfaces which composition consists essentially of a solution of from about 0.1% by weight to the saturation amount of a chlorosulfonated ethylene-propylene copolymer in a solvent selected from the group consisting of unsubstituted and halogen substituted saturated and unsaturated aliphatic hydrocarbons and aromatic hydrocarbons, said solution containing from 0.1–10% by weight of a condensation product of bisphenol and epichlorohydrin and a small amount of a coloring agent, said chlorosulfonated ethylene-propylene copolymer being a linear amorphous copolymer containing from about 60–50 mole percent of propylene, 0.5–2% by weight of sulfur and 5–20% by weight of chlorine.

3,350,344
ORGANOSILICON COMPOSITIONS

Melvin D. Beers, Latham, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 18, 1963, Ser. No. 309,888
5 Claims. (Cl. 260—37)

1. A method which comprises (1) heating to a temperature between 40° C. to 250° C. in the presence of an

effective amount of a Lewis acid catalyst, a mixture comprising by weight (A) 100 parts of an organosiloxane of the formula,

$$(R)_aSiO_{(4-a)/2}$$

and (B) 0.01 to 5 parts of boron in the form of a boron-oxygen compound, (2) uniformly mixing with the product of (1) at temperatures up to 250° C., an amount of an ammonium salt of carbonic acid which is at least sufficient to neutralize any acid residues of said Lewis acid catalyst, while providing for the removal of any volatile reaction products from the resulting organosilicon polymer, and (3) mixing together the organosilicon polymer with a filler, said filler being present in amounts of 0.03 to 1 part by weight per part of the polymer, where R is a member selected from the class consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, and a is equal to from 1.85 to 2.2, inclusive.

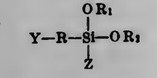
3,350,345
BONDED RUBBER-SILICEOUS MATERIALS AND PROCESS OF PRODUCING SAME

Byron M. Vanderbilt and Robert E. Clayton, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1962, Ser. No. 246,337
26 Claims. (Cl. 260—41.5)

7. Siliceous materials whose surfaces are coated with a partially hydrolyzed silane, said coated siliceous materials being obtained by the steps consisting essentially of:

(a) adding sufficient water to a hydrolyzable silane to hydrolyze at least one, but not all, of the alkoxy groups in said hydrolyzable silane having the formula:



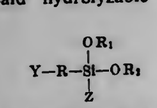
wherein R is selected from the group consisting of C_1–C_5 alkylene, aralkylene and arylene, Y, is a reactive radical selected from the group consisting of amino, mercapto, carboxyl, cyano, hydroxy, epoxy, quinonyl, sulfonic acid and oxime, R_1 and R_2 are the same or different alkyl radicals containing from 1 to 2 carbon atoms, and Z is selected from the group consisting of C_1–C_5 alkyl groups, OR_1 or OR_2;

(b) applying to the surfaces of siliceous materials a 0.1 to 10% anhydrous organic solvent solution of the partially hydrolyzed silane resulting from step (a); and

(c) drying and removing the solvent from the resultant siliceous materials by heating at temperatures between 50° F. and 1000° F.

20. Cured rubbery polymers containing siliceous materials prepared by the steps consisting essentially of:

(a) adding sufficient water to a hydrolyzable silane to hydrolyze at least one, but not all, of the alkoxy groups in said hydrolyzable silane having the formula:



wherein R is selected from the group consisting of C_1–C_5 alkylene, aralkylene and arylene, Y is a reactive radical selected from the group consisting of amino, mercapto, carboxyl, cyano, hydroxy, epoxy, quinonyl, sulfonic acid and oxime, R_1 and R_2 are the same or different alkyl radicals containing from 1 to 2 carbon atoms, and Z is selected from the group consisting of C_1–C_5 alkyl groups, OR_1 or OR_2;

(b) applying to the surfaces of siliceous materials a 0.1 to 10% anhydrous organic solvent solution of the partially hydrolyzed silane resulting from step (a);

(c) drying and removing the solvent from the resultant siliceous materials by heating at temperatures between 50° F. and 1000° F.;

(d) contacting the dried, treated siliceous materials with a curable rubbery polymer; and

(e) curing the rubbery polymer while in contact with the dried, treated siliceous materials.

3,350,346
STRESS CRACKING INHIBITOR

Orwin G. Maxson, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed May 25, 1965, Ser. No. 458,781
12 Claims. (Cl. 260—45.7)

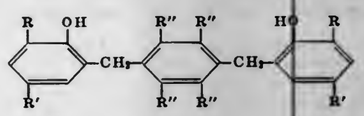
1. A composition comprising a thermoplastic polymer derived from monomers of which the major proportion by weight is ethylene and, homogeneously blended therein, a stress cracking inhibiting amount of an alkaryl sulfonate metal salt wherein the metal is selected from the group consisting of lithium, sodium, potassium, calcium, magnesium, zinc, and aluminum.

3,350,347
STABILIZED POLYPROPYLENE

John A. Casey, Chagrin Falls, Ohio, assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 29, 1960, Ser. No. 46,046
8 Claims. (Cl. 260—45.95)

1. A polymer composition having improved oxidation and thermal stability comprising isotactic, substantially crystalline polypropylene and a stabilizing quantity of an arylene-bis-phenyl having the general formula:



wherein R is a tertiary alkyl group having 4 to 8 carbon atoms; R′ is an alkyl group selected from the group consisting of normal alkyl groups and secondary alkyl groups having 1 to 4 carbon atoms; and R″ is an alkyl group selected from the group consisting of methyl, ethyl and isopropyl.

3,350,348
LUBRICATING OIL ADDITIVES

Milton Braid, Barrington, and Herbert Myers, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,697
18 Claims. (Cl. 252—46.6)

1. A lubricating oil composition comprising a major amount of a lubricating oil selected from the group consisting of a mineral lubricating oil and a synthetic lubricating oil, said oil being of lubricating viscosity suitable for lubricating high frictional surfaces of engines, and a minor amount of a 1-(O,O-diorganophosphorodithiato)alkyl carboxylate the said alkyl group having at least two carbon atoms.

3,350,349
ROOM TEMPERATURE CURING ORGANOPOLYSILOXANE RESINS

James Franklin Hyde, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Mar. 13, 1961, Ser. No. 95,026
9 Claims. (Cl. 260—46.5)

1. A method comprising mixing together (1) an organosilicon composition having an average of at least two silicon-bonded hydroxyl groups per molecule and from 1.0 to 1.9 silicon-bonded monovalent hydrocarbon radicals per silicon atom and (2) at least 0.01 part by weight per 100 parts of (1) of a silane of the formula $(R''O)_3SiR'''Y_n$ in which each R″ is an alkyl radical of less than four carbon atoms, each R‴ is an aliphatic hydrocarbon radical containing from three to five carbon atoms and having a valence of $n+1$ where n is an integer from 1 to 3 and Y is a monovalent radical attached to R‴ by a carbon-nitrogen bond and composed of hydrogen atoms, nitrogen atoms and up to eight carbon atoms and containing at least one amine group, the ratio of carbon atoms to nitrogen atoms in Y being less than about 6:1 and thereafter allowing the mixture to cure.

3. A resinous composition consisting essentially of the reaction product of claim 1.

3,350,350
METHOD FOR PREPARING POLYSILARYLENE-POLYSILOXANE COPOLYMERS

Siegfried Nitzsche and Paul Buchheit, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,077
Claims priority, application Germany, Mar. 8, 1965, W 38,707
16 Claims. (Cl. 260—46.5)

1. A method for preparing silarylenesiloxane polymers comprising reacting (I) at least one organasiloxane containing at least two silicon bonded chlorine atoms pre molecule and characterized by units selected from the group consisting of R'_2SiO, $ClR'_2SiO_{1/2}$, $R'SiO_{3/2}$, $ClSiO_{3/2}$, $R'ClSiO$, SiO_2, Cl_2SiO, $Cl_2R'SiO_{1/2}$, $Cl_3SiO_{1/2}$, and $R'_3SiO_{1/2}$ and a R′/Si ratio from 1.9/1 to 2.0/1 wherein each R′ is selected from the groups consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent substituted hydrocarbon radicals wherein the substituents are inert to magnesium, at least 70% of the R′ radicals are monovalent hydrocarbon radicals, (II) at least one arylenehalide of the formula XRX where R is an arylene radical, both X's are halogen atoms bonded to R in para-position, (III) at least one chlorosilane of the formula R''_2SiCl_2 wherein each R″ is a hydrogen atom, a monovalent hydrocarbon radical or a substituted monovalent hydrocarbon radical wherein the substituents are inert to magnesium, at least one R″ in each silane molecule being a monovalent hydrocarbon radical, and (IV) magnesium.

11. A polysilarylenesiloxane of a general formula selected from the group consisting of

$$[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z$$

$Cl—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—X$

$XR—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—SiR''_2Cl$

$ClSiR''_2R—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—X$

$XRSiR''_2R—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—SiR''_2Cl$

$ClSiR''_2R(SiR''_2R)_x[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—X$

$XR—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—(SiR'_2O)_nSiR'_2Cl$

$XR(SiR''_2R)_x[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—(SiR'_2O)_nSiR'_2Cl$

$Cl[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—SiR''_2Cl$

$ClSiR''_2R—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—SiR''_2Cl$

$ClSiR''_2R—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—(SiR'_2O)_nSiR'_2Cl$

$ClSiR''_2R(SiR''_2)_x—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—(SiR'_2O)_nSiR'_2Cl$

$Cl—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—(SiR'_2O)_nSiR'_2Cl$

$XRSiR''_2R—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—X$

$XR—[(SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—X$, and

$XR(SiR''_2R)_x—[SiR'_2O)_nSiR''_2(RSiR''_2)_xR]_z—X$

wherein each R is an arylene radical, each R′ is selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent substituted hydrocarbon radicals, wherein the substituents are inert to magnesium, each R″ is selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent substituted hydrocarbon radicals, wherein the substituents are inert to magnesium, X is a halogen atom bonded to R in the para position, at least 70% of the R′ radicals are monovalent hydrocarbon radicals, at least one R″ per silicon atom is a monovalent hydrocarbon radical, z' is at least 1, x is at least 1 and n is at least 1.

3,350,351
ORGANOSILICON COMPOSITIONS AND METHODS OF PREPARATION AND VULCANIZATION THEREOF

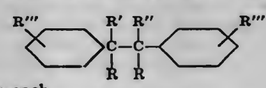
Darryl T. Hansen and Thomas D. Talcott, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed June 27, 1966, Ser. No. 560,792
14 Claims. (Cl. 260—46.5)

1. A curable composition consisting essentially of

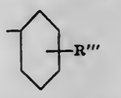
(A) a silicon-containing polymer having per silicon atom an average of at least 1 monovalent organic radical wherein each of said monovalent organic radicals is selected from the group consisting of hydrocarbon radicals, halogenated hydrocarbon radicals and cyanoalkyl radicals, the silicon atoms being linked by divalent radicals selected from the group consisting of oxygen atoms, hydrocarbon radicals and halogenated hydrocarbon radicals and at least 0.01 percent of the total monovalent organic radicals being ethylenically unsaturated, and

(B) a catalyst in an amount of at least 0.01 weight percent based on the weight of (A) of the formula



wherein each

R is a monovalent radical individually selected from the group consisting of a hydrogen atom, a



radical, a methyl radical and an ethyl radical,

R′ is a monovalent radical selected from the group consisting of a methoxy radical, an ethoxy radical and an acetoxy radical,

R″ is a monovalent radical selected from the group consisting of a hydrogen atom, a methyl radical, a methoxy radical, an ethoxy radical and an acetoxy radical, and each

R‴ is a monovalent radical individually selected from the group consisting of a hydrogen atom, a phenyl radical, a halogen atom, a methoxy radical, an ethoxy radical and an alkyl radical of from 1 to 6 carbon atoms.

11. A method of vulcanizing an organosilicon composition consisting essentially of

(I) mixing (A) and (B) of the curable composition of claim 1 at a temperature at which the curable composition is fluidized and at which the half life of the catalyst is greater than 3 minutes, and thereafter,

(II) heating the mixture above the temperature of (I) thereby vulcanizing the composition.

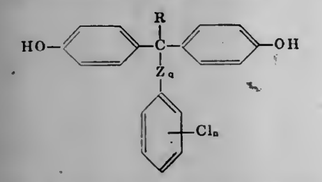
3,350,352

HALOGENATED BISPHENOLS AND GLYCIDYL POLYETHERS THEREOF

Carl M. Smith, White Bear Lake, and Robert L. Wear, West St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 6, 1962, Ser. No. 221,904
9 Claims. (Cl. 260—47)

1. A glycidyl polyether of a bisphenol, the said bisphenol being represented by the formula:



wherein Z is a divalent linking radical selected from the group consisting of

$$—CH_2—O— \text{ and } —CH_2—S—$$

wherein the chalcogen-attached valence bond is linked to the polychlorophenyl group, n is 3 to 5, q is 0 to 1, and R is a member of the group consisting of hydrogen and alkyl radicals having from 1 to 3 carbon atoms.

3,350,353

EPOXIDE RESIN PROCESS

Francis B. Alvey, Louisville, Ky., assignor to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed Mar. 25, 1965, Ser. No. 442,820
9 Claims. (Cl. 260—47)

1. A process for preparing heat stable epoxide containing compositions which comprises reacting at a temperature of about 50° C. to about 150° C. a first 1,2 epoxide resin with a dihydric phenol in the ratio of one equivalent of epoxide group of the first epoxide resin to less than one equivalent of phenolic hydroxyl of the dihydric phenol in admixture with an amine catalyst having the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen, hydrocarbon groups containing 1 to 22 carbon atoms having a methylene group adjacent to the nitrogen atom and being free from groups reactive with epoxide groups, and hydrocarbon groups containing 2 to 10 carbon atoms having an ethylene group adjacent to the nitrogen atom and containing a hydroxyl group on the carbon atom beta to the nitrogen atom and being free from other groups reactive with epoxide groups and wherein R_3 is selected from the group consisting of hydrocarbon groups containing 1 to 22 carbon atoms having a methylene group adjacent to the nitrogen atom and being free from groups reactive with epoxide groups, and hydrocarbon groups containing 2 to 10 carbon atoms having an ethylene group adjacent to the nitrogen atom and containing a hydroxyl group on the carbon atom beta to the nitrogen atom and being free from other groups reactive with epoxide groups, the ratio of amine catalyst to each epoxide equivalent of the first epoxide resin being about 0.001 to about 0.05 mol of amine having at least two nitrogen atom constituents selected from at least one member of the group consisting of hydrogen and a hydrocarbon substituent having a hydroxyl group on the carbon atom beta to the nitrogen atom and about 0.0001 to about 0.005 mol. of amine having no more than one nitrogen atom substituent selected from the group consisting of hydrogen and a hydrocarbon substituent having a hydroxyl group on the carbon atom beta to the nitrogen atom to form a second 1,2 epoxide resin wherein the molecular weight of said second epoxide resin is increased by a factor of about 0.4 to about 15 over the molecular weight of said first epoxide resin.

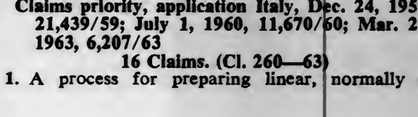
3,350,354

POLYMERIC POLYESTERS OF m-TERPHENYL-4,4-DICARBOXYLIC ACID

William H. Watson, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,074
9 Claims. (Cl. 260—47)

1. A linear fiber-forming condensation polyester comprising recurring units having the structural formula



wherein R is a divalent organic radical composed primarily of carbon and hydrogen.

3,350,355

RESINOUS CONDENSATION PRODUCT OF 2,2-DI(4-HYDROXYPHENYL)PROPANE DIALKYLCARBAMATE AND FORMALDEHYDE

Charles H. Schramm and Morris Zief, Easton, Pa., assignors to J. T. Baker Chemical Company, Phillipsburg, N.J., a corporation of New Jersey

No Drawing. Filed June 26, 1964, Ser. No. 378,435
7 Claims. (Cl. 260—51)

1. A thermoplastic polyurethane resin which is a condensation product of 2,2-di(4-hydroxyphenyl)propane dialkylcarbamate and formaldehyde in a molar ratio of about 0.5 to 5 moles of formaldehyde for each mole of said carbamate.

3,350,356

1-CHLORO-2-CHLOROCARBONATOBUTANONE-3 AND PROCESS FOR POLYMERIZATION

Charles H. Schramm and Morris Zief, Easton, Pa., assignors to J. T. Baker Chemical Company, Phillipsburg, N.J., a corporation of New Jersey

No Drawing. Filed June 26, 1964, Ser. No. 378,448
4 Claims. (Cl. 260—63)

1. 1-chloro-2-chlorocarbonatobutanone-3.

2. A process for producing a solid resin which comprises contacting in an inert organic solvent butanedione with phosgene, in a molar ratio of about 1 mole of phosgene per mole of butanedione, and in the presence of a dehydrochlorination acid acceptor.

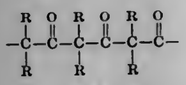
3,350,357

PROCESS FOR PREPARING KETOKETENE POLYMERS

Giulio Natta, Giorgio Mazzanti, and Gianfranco Pregaglia, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Mar. 25, 1964, Ser. No. 354,788
Claims priority, application Italy, Dec. 24, 1959, 21,439/59; July 1, 1960, 11,670/60; Mar. 26, 1963, 6,207/63
16 Claims. (Cl. 260—63)

1. A process for preparing linear, normally solid, crystallizable ketoketene polymers having at least 85% by weight of a polyketonic structure of the formula



in which R is an alkyl radical containing from 1 to 6 carbon atoms, which process comprises polymerizing a ketene of the formula



in which R is an alkyl radical containing from 1 to 6 carbon atoms, in an inert atmosphere, at a temperature of from —100° C. to +25° C., in a solvent medium comprising at least one solvent having a high dielectric constant selected from the group consisting of nitrobenzene, dichloromethane, 1,1,1,2-tetrachloroethane, and 1,1-dichloroethylene in an amount from 10 to 90% by weight of the mixture of ketene and solvent medium, and in contact with a catalyst having the formula AlR'_nX_m, in which R' is selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl and alkoxy groups, X is halogen, m is selected from the group consisting of 1, 2 and 3 and n is $3-m$.

3,350,358

PROCESS FOR PREPARING ESSENTIALLY ASH-FREE POLYMERS OF ALDEHYDES

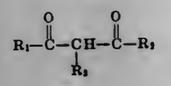
Hugh J. Hagemeyer, Jr., Longview, and William T. Brady, Denton, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 248,200, Dec. 31, 1962. This application July 22, 1966, Ser. No. 568,098
11 Claims. (Cl. 260—67)

1. A process for preparing an ash-free aldehyde polymer which comprises (1) polymerizing an aldehyde having the formula:

$$R—CHO$$

wherein R represents hydrogen or an alkyl group containing from 1 to 4 carbon atoms, in the presence of a catalyst selected from the group consisting of an aluminum trialkyl, an aluminum dialkyl chloride, an alkali metal alkyl and a zinc alkyl wherein in each instance the alkyl groups contain from 1 to 4 carbon atoms at a temperature of from —1 to —100° C., (2) quenching polymerization reaction mixture containing an aldehyde polymer with a 1,3-dicarbonyl compound having the general formula:



wherein R_1, R_2 and R_3 each represents a member selected from the group consisting of a hydrogen atom, a hydroxyl group, an alkoxy group containing from 1 to 4 carbon atoms and an alkyl group containing from 1 to 4 carbon atoms, and (3) separating substantially ash-free polymer from resulting mixture.

3,350,359

POLYMERIZATION OF ALDEHYDES

Sadao Yoshioka, Toyonaka-shi, Osaka-fu, Ken Noro, Amagasaki-shi, Hiroshi Kawazura, Toyonaka-shi, Osaka-fu, and Hiroshi Takita, Osaka-shi, Japan, assignors to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Continuation of application Ser. No. 283,683, May 28, 1963. This application Aug. 4, 1966, Ser. No. 570,375
Claims priority, application Japan, June 4, 1962, 37/22,334, 37/22,335
6 Claims. (Cl. 260—67)

1. A polymerization process for polymerizing an aliphatic aldehyde having less than 9 carbon atoms which comprises essentially the steps of:

(a) reacting a metal selected from the group consisting of an alkali metal and an alkaline earth metal with an organic compound selected from the group consisting of pyridine, collidine, aldehyde collidine, picoline, lutidine, vinyl pyridine, methyl vinyl pyridine, styrene, methyl styrene, benzophenone, butadiene and isoprene, in an inert organic solvent to form a metal complex; and then

(b) contacting said metal complex with said aliphatic aldehyde for causing polymerization thereof.

3,350,360

SEPARATION OF OLEFINS FROM ALUMINUM TRIALKOXIDES

Gifford G. McClaflin, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,830
8 Claims. (Cl. 260—677)

6. The process which comprises extracting from aluminum trialkoxide having an average number of carbon atoms per substituent in the order of about 30 and contaminated with not more than about 30 percent of olefin having the same average number of carbon atoms by liquid-liquid extraction with n-hexane to remove a substantial amount of olefin from the aluminum trialkoxide.

3,350,361

URETHANE POLYMERS AND METHODS OF APPLYING COMPOSITIONS CONTAINING THE POLYMERS

Edwin Fenton Chandley, Ernest Levy, and Arnold John Lowe, Eccles, Manchester, England, assignors to Lankro Chemicals Limited, Eccles, England, a British company

No Drawing. Filed July 26, 1963, Ser. No. 297,937
Claims priority, application Great Britain, July 31, 1962, 29,490/62
11 Claims. (Cl. 260—77.5)

1. A polyurethane polymer having a free isocyanate content of between 1% and 10% by weight, said polymer being prepared by the reaction of (1) an organic isocyanate having at least two isocyanate groups with (2) a mixture of alcohols comprising (i) a monohydric alcohol having a molecular weight of at least 74 and having the formula $R(OC_nH_{2n})_yOH$ wherein R is a hydrocarbon radical having at most 18 carbon atoms, n is an integer of from 2 to 4, and y is an integer of from 0 to 50, and (ii) a polyoxyalkylene polyol having more than two hydroxyl groups and having a molecular weight of from 250 to 4000, the amount of organic isocyanate present initially being such that there are between 1.3 and 2.5 isocyanate groups for each hydroxyl group initially present.

4. A polyurethane treated crusted leather prepared by treating the grain side of the leather with a polyurethane polymer having a free isocyanate content of between 1% and 10%, by weight, said polymer being prepared by the reaction of (1) an organic isocyanate having at least two

isocyanate groups with (2) a mixture comprising (i) a monohydric alcohol having a molecular weight of at least 74 and having the formula $R(OC_nH_{2n})_yOH$ wherein R is a hydrocarbon radical having at most 18 carbon atoms, n is an integer of from 2 to 4, and y is an integer of from 0 to 50, and (ii) a polyoxyalkylene polyol having more than two hydroxyl groups and having a molecular weight of from 250 to 4000, the amount of organic isocyanate present initially being such that there are between 1.3 and 2.5 isocyanate groups for each hydroxyl group initially present.

3,350,362

OXIDIZED OLEFIN POLYMERS MODIFIED WITH ORGANIC POLYISOCYANATES

James E. Potts, Millington, and Chester L. Purcell, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 27, 1962, Ser. No. 182,941
6 Claims. (Cl. 260—77.5)

1. An adhesive consisting of the reaction product of an oxidized olefin polymer having a peroxide content of from 0.15 to 3.5 milligrams per gram resin and containing at least 10 percent by weight of a combined alpha monoethylenically unsaturated hydrocarbon containing from 2 to 4 carbon atoms inclusive and from 0.25 to 40 percent by weight based on the weight of the olefin polymer of an organic isocyanate having at least two —N=C=O groups.

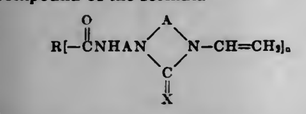
3,350,363

N-(ACYLAMIDOALKYL)-N'-VINYL-N,N'-ALKYLENEUREAS, POLYMERS THEREOF AND METHODS OF MAKING THEM

Melvin D. Hurwitz, Southampton, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 15, 1967, Ser. No. 623,198
16 Claims. (Cl. 260—77.5)

1. A compound of the formula



(I)

wherein:

n is an integer having a value of 1 to 2,

X is a chalcogen having an atomic weight from 16 to 32,

A is an alkylene group having 2 to 3 carbon atoms,

R is selected from the group consisting of a mere connecting bond and alkylene groups having 1 to 8 carbon atoms when n is 2, and H, (C_1–C_{18})-aliphatic hydrocarbons, (C_6–C_{18}) alicyclic hydrocarbons, and (C_6–C_{24}) hydrocarbons having a monocyclic aromatic nucleus when n is 1.

2. As a composition of matter, an addition polymer of a compound of claim 1.

3. As a composition of matter, an addition copolymer of ethylenically unsaturated monomers comprising a compound of claim 1.

3,350,364

POLYMERIZATION OF LACTAMS USING AN N-ACYL UNSATURATED HETEROCYCLIC COMPOUND AS A PROMOTER

Herbert K. Reimschuessel and Franklin Boardman, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,461
8 Claims. (Cl. 260—78)

1. In a process for polymerizing a lactam having at least 7 atoms in the lactam ring under anhydrous, non-acidic anionic polymerization conditions, the improvement of adding to the reaction mixture as a polymerization promoter an N-acyl unsaturated heterocyclic compound having a double bond in the 2,3-position of the heterocyclic ring wherein an acylated nitrogen atom is in the 1-position, selected from the group consisting of acetimidazolide, para-toluenesulfonimidazolide, 1-aceto-3,5-dimethyl-pyrazolide, acetobenzotriazolide, 1-aceto-1,2,4-triazolide, acetobenzimidazolide, N,N' carbonyl-diimidazole, trifluoroacetimidazolide, and 9-acetocarbazolide.

3,350,365

PROCESS FOR POLYMERIZING N-CARBOXY-α-AMINO ACID ANHYDRIDES

Ryoichi Wakasa, Shinichi Ishida, and Junichi Takeda, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,454
Claims priority, application Japan, Mar. 30, 1963, 38/14,251
26 Claims. (Cl. 260—78)

1. A process for producing poly-DL-amino acids capable of forming fiber, film and fabricated articles, which process comprises polymerizing N-carboxy-DL-α-amino acid anhydride in an inert organic solvent, in the presence of a catalyst selected from the group consisting of: combinations of a compound selected from the group consisting of organometallic compounds having the following general formulas: $MR_{n-m}H_m$ and $LiAlR_{4-p}H_p$ wherein M represents a metal selected from the group consisting of Li, Na, K, Be, Ca, Sr, Ba, Zn, Cd, B, Al and Ga; R represents a radical selected from the group consisting of alkyl, alkenyl, cycloalkyl, cycloalkenyl, aralkyl, alkoxy, cycloalkoxy, arylalkoxy, aryloxy, dialkylamino, alkylarylamino, alkylthio, cycloalkylthio and acyloxy groups; n represents the valency of the metal, which is between 1 and 3, m represents an integer from 0 to 2, and p represents an integer from 0 to 3, and an organic compound having at least one asymmetric carbon atom; and organometallic compounds which have the general formulas: $MR_{n-m}H_m$ and $LiAlR_{4-p}H_p$ as defined above and which has at least one asymmetric carbon atom.

3,350,366

CROSS-LINKING OF POLYMERIC N-VINYL LACTAMS, POLYMERIC VINYL ESTERS AND POLYMERIC ACRYLATE ESTERS WITH ALPHA-OMEGA ALIPHATIC DIOLEFINS

Ashot Merijan, Rahway, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 17, 1964, Ser. No. 411,697
17 Claims. (Cl. 260—78)

1. The process of cross-linking polymers selected from the class consisting of polymeric N-vinyl lactams, polymeric vinyl esters, and polymeric acrylate esters which comprises heating one mole of said polymer with 0.02 to 0.3 mole of at least one alpha, omega-diolefin having a molecular weight of from 68 to about 280 in solution of an organic solvent common to said polymeric N-vinyl lactam, polymeric acrylate ester and alpha, omega-diolefin in the presence of 0.05 to 1.0 mole of an organic peroxide per mole of said diolefin at a temperature of about 100° to 200° C.

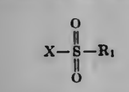
3,350,367

PROCESS FOR PRODUCTION OF THIOACETAL POLYMERS

Ryoichi Wakasa, Shinichi Ishida, and Hiroshi Ohama, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 8, 1964, Ser. No. 381,209
Claims priority, application Japan, July 8, 1963, 38/35,145; Sept. 13, 1963, 38/48,156
12 Claims. (Cl. 260—79)

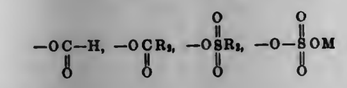
1. A process for producing a polythioacetal, said process comprising polymerizing trithiane up to 250° C. in the presence of 0.0001–10% by weight of at least one polymerization catalyst of the formula:



wherein

X is selected from the group consisting of

—OH, —SH, —OR_2, —SR_2,



and halogens;

R_1 is selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, alkenyl and —OM groups;

R_2 is selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl, and alkenyl groups; and

M is selected from the group consisting of ammonium ion and metal ions of Groups Ia, IIa, IIb, IIIa, IVa and Va of the Periodic Table.

3,350,368

REACTION PRODUCT OF POLYVINYLPHOSPHONIC ACID AND 1-4-BUTANEDIOL

Hans Bernhard Adolf Krämer, Port Chester, N.Y., and Günter Messwarb, Kelkheim, Taunus, and Walter Denk, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a firm

No Drawing. Filed Oct. 3, 1962, Ser. No. 228,011
Claims priority, application Germany, Sept. 25, 1956, F 21,304; Sept. 26, 1956, F 21,318
The portion of the term of the patent subsequent to Sept. 24, 1980, has been disclaimed
1 Claim. (Cl. 260—80)

The reaction product of polyvinylphosphonic acid dichloride with 1,4-butanediol at a temperature between —50° C. and 200° C. with substantially complete replacement of all halide groups.

3,350,369

FERROCENE-CONTAINING MONOMERS AND POLYMERS AND PROCESS FOR PREPARING SAME

Harold Rosenberg, Dayton, Ohio, and Steve Gust Cottis, Buffalo, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed June 2, 1964, Ser. No. 372,128
6 Claims. (Cl. 260—80)

3. The process for making poly(1,2- or 1,3-cyclopentylene-1,2- or 1,3-ferrocenylene) by dissolving 0.2 mole of ferrocene in 700 milliliters of anhydrous methylene chloride at a temperature between 0° C. and 5° C.; adding to the solution 0.15 mole of anhydrous granular aluminum chloride with stirring for 5 hours; stirring the solution at room temperature for 16 hours; pouring the solution slowly with stirring into 1000 milliliters of water; adding to the solution 45 grams of sodium sulfite with continuous stirring; filtering the solution; separating the methylene chloride layer; removing the solvent by evaporation to isolate the residue; adding 100 milliliters of hot cyclohexane to the residue; cooling the mixture; filtering the mixture; evaporating the filtrate to dryness as a dark-brown residue; adding 200 milliliters of boiling diethyl ether to the residue; filtering the ether and residue mixture with stirring into 1000 milliliters of methanol; separating by filtration from the methanol-ether solution a yellow solid that precipitates on standing; concentrating the methanol-ether filtrate to a total volume of 300 milliliters; causing the solution to stand at 0° C. for 16 hours to permit a resinous material to precipitate from the solution; decanting off the supernatent liquid from the resinous material; dissolving the resinous material in 150 milliliters of petroleum ether; chromatographing the solution on a column containing activated neutral alumina to form several bands on the column from the petroleum ether solution; eluting the lowest band with petroleum ether; thereafter eluting the second band with cyclohexane; then eluting the main band with diethyl ether; and evaporating the solvent from the main band to isolate the product having composition $(C_{15}H_{16}Fe)_n$ as determined by elemental chemical analysis.

3,350,370

PROCESS FOR TERPOLYMERIC SOLVENT-FREE HYDROCARBON CRUMBS

William John Keller and Albert Lloyd Moore, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,188
2 Claims. (Cl. 260—80.78)

1. A process for producing solvent-free, finely divided crumbs of about 0.5 to 5 mm. in diameter of a water-insoluble hydrocarbon copolymer of ethylene, an α-olefin and a non-conjugated hydrocarbon diene, said copolymer having a Mooney viscosity (ML–4/100° C.) of at least about 40, which process comprises: (I) forming an unstable oil-in-water dispersion in a continuous aqueous phase by mixing with high-shear agitation (a) a 3 to 15 weight percent solution of said copolymer in an inert organic solvent with (b) water containing from about 0.01 to 0.1 weight percent of a surface-active dispersing agent, at a temperature of from 50° to 100° C., the ratio of (a) to (b) being within the range of from 1:2 to 1:1; (II) continuously mixing said dispersion with steam at a first stage while applying vigorous agitation to the mixture thereby removing solvent from the mixture with said copolymer forming into crumbs, the residence time of said copolymer in the first stage being from about 1 to 5 minutes; (III) passing the steam treated mixture into a second stage where it is again mixed with steam thereby reducing the solvent content of the crumbs below about 2 weight percent, the residence time of the copolymer in the second stage being from about 2 to 20 minutes; and (IV) continuously removing and separating the crumbs of copolymer so formed.

3.350,371

PROCESS FOR THE PRODUCTION OF STYRENE-BUTADIENE RUBBER IN PRESENCE OF COAGULATING SYSTEM

Donald Santmyers, Houston, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 28, 1963, Ser. No. 283,715
4 Claims. (Cl. 260—85.1)

1. In a process for producing styrene-butadiene rubber, the improvement comprising introducing into the reactants for forming styrene-butadiene rubber a coagulant and an aqueous solution of aliphatic polyamine sulfamate at a rate equivalent to the introduction of from about 3 to about 40 pounds of polyamine sulfamate solids per ton of styrene-butadiene rubber produced, said aqueous solution being a .1% to fully saturated solution of the reaction product of an aliphatic polyamine of the general formula

$$H_2N—[(CH_2)_n—NH]_x—H$$

wherein

n is a positive whole number from 2 through 12; and

x is a positive whole number from 1 through 20, with an amount of sulfamic acid sufficient to reach a potentiometric end point pH ranging from about 8 through 11.

3,350,372

ETHYLENE/ACRYLATE ESTER COPOLYMERS

Harry D. Anspon, Kansas City, Mo., and William H. Byler, Overland Park, and George E. Ham, Leawood, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 6, 1964, Ser. No. 335,732.
7 Claims. (Cl. 260—86.7)

1. A highly uniform copolymer having polymerized therein about 67–99 mol percent ethylene and, correspondingly, about 33–1 mol percent of an acrylate ester, said polymerized ethylene groups and polymerized acrylate ester groups being randomly distributed throughout the copolymer chains, said copolymer, when separated into ten percent weight fractions by a column elution technique employing a variable p-xylene-2-ethoxyethanol eluant, having no ten percent weight fraction which differs in polymerized acrylate ester content by more than about 40% from the polymerized acrylate ester content of the whole copolymer, said copolymer having a 50% survival rate for at least 24 hours in the bent-strip environmental stress-crack test (ASTM–D–1693–60T), said acrylate ester conforming to the formula:



wherein X is selected from the group consisting of hydrogen and a methyl group and R is an alkyl group containing 1–22 carbon atoms; said copolymer having been made by a free-radical initiated polymerization of a mixture of ethylene and an acrylate ester of a formula set forth above.

3,350,373

COPOLYMERS FROM 1,2,3,3,3-PENTAFLUOROPROPYLENE AND TETRAFLUOROETHYLENE AND PROCESS FOR PREPARING SAME

Dario Sianesi, Gian Carlo Bernardi, and Gianfranco Dictallevi, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Jan. 23, 1964, Ser. No. 339,585
Claims priority, application Italy, Jan. 25, 1963, 1,587/63
18 Claims. (Cl. 260—87.5)

1. A highly-fluorinated thermoplastic copolymer consisting of polymerized monomeric units derived from tetrafluoroethylene and 1,2,3,3,3-pentafluoropropylene.

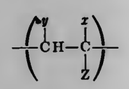
3,350,374

METHODS FOR PREPARING POLYMERS OF HYDROXYTETRAZOLE COMPOUNDS AND POLYMERS OF HYDRAZIDE OXIME COMPOUNDS, AND PRODUCTS

Charles Fetscher, Short Hills, and Stanley Lipowski, Livingston, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

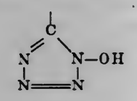
No Drawing. Filed Apr. 30, 1963, Ser. No. 276,979
18 Claims. (Cl. 260—88.7)

1. A polymer having a plurality of

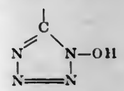


groups wherein:

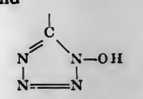
x is selected from the group consisting of H, CN, hydrocarbon substituents having from 1 to 4 carbon atoms and



y is selected from the group consisting of H, CN and

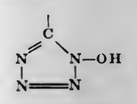


and Z is selected from the group consisting of CN, OCH_2CH_2CN and



with the proviso that (a) no more than two of x, y and Z are CN and (b) when x is a hydrocarbon substituent having from 1 to 4 carbon atoms, y is H,

there being present from about 11% to about 88% by weight of said polymer of



7. Salts of the polymer of claim 1.

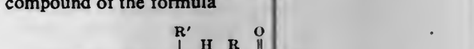
3,350,375

AMIDO-AMINE-SUBSTITUTED VINYL ETHERS AND POLYMERS THEREOF

Everett J. Kelley, Moorestown, N.J., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 30, 1964, Ser. No. 386,419
10 Claims. (Cl. 260—89.7)

1. A compound of the formula



(I)

wherein Y is selected from the group consisting of O and S,

R is selected from the group consisting of H and (C_1–C_4) alkyl groups,

A is an alkylene group having 2 to 10 carbon atoms, and

R′ is selected from the group consisting of H and (C_1 to C_4) alkyl groups.

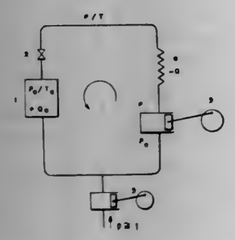
3,350,376

METHOD OF CARRYING OUT POLYMERIZATION PROCESSES

Karl Wisseroth, Ludwigshafen (Rhine), Walter Pietsch, Lampertheim, and Ernst-Guenther Kastning, Assenheim, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhein, Germany

Filed Mar. 25, 1963, Ser. No. 271,545
Claims priority, application Germany, Feb. 8, 1956, B 39,038
16 Claims. (Cl. 260—93.7)

1. In a continuous process for polymerizing a monomeric gaseous reactant at a pressure up to 100 atmospheres, the improvement which comprises controlling the temperature within the reaction zone by introducing into said reaction zone an amount of gaseous reactant 5 to 15 times in excess of that required for the polymerization with a Joule-Thompson throttled expansion from a pressure substantially higher than the pressure within said reaction zone such that the Joule-Thompson cooling effect of the throttled gaseous reactant is sufficient to neutralize the excess exothermic heat of polymerization, withdrawing the excess unpolymerized gaseous reactant from the reaction zone, recompressing said withdrawn and unpolymerized gaseous reactant to a pressure substantially higher than the pressure within the reaction zone, cooling the recompressed gaseous reactant and recycling



said reactant for said throttled expansion into said reaction zone, a sufficient quantity of fresh gaseous reactant being added to the excess unpolymerized gaseous reactant to maintain a continuous process.

3,350,377

BULK POLYMERIZATION OF CONJUGATED DIOLEFINS

Donald D. Norwood, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 3, 1963, Ser. No. 285,004
7 Claims. (Cl. 260—94.2)

1. A method for bulk polymerization of monomeric liquid material comprising:

(a) maintaining said monomeric liquid material at a first temperature at which polymerization will not occur;

(b) admixing a suitable polymerization catalyst with said monomeric material at said first temperature;

(c) spraying the resulting admixture downwardly in the upper portion of a polymerization zone;

(d) passing the vapor from a volatile hydrocarbon quench liquid heated to a second temperature at least above the polymerization initiation temperature of said admixture upwardly in said polymerization zone, thereby heating the downwardly flowing spray of said admixture, and thus initiating polymerization;

(e) permitting the polymer to quench and settle in the lower portion of said polymerization zone containing the relatively cooler quench liquid thereby vaporizing at least a portion of said quench liquid to produce said vapors that pass upwardly in said polymerization zone; and

(f) withdrawing polymer solids from said lower portion.

3,350,378

1,3 BUTADIENE POLYMERS

Mieczyslaw Marcinkowski, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a corporation

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,575
Claims priority, application Canada, Nov. 25, 1961, 836,862
6 Claims. (Cl. 260—94.3)

1. The process of producing a polymer of butadiene-1,3 in which at least 80% of the units are in the cis-1,4 configuration which comprises polymerizing butadiene-1,3 in the presence of a catalyst system formed by admixing (1) titanium trichloromonoiodide, (2) an organoaluminum compound corresponding to the general formula $AlR'R''R'''$ in which R′ and R″ represent hydrocarbon radicals and R‴ represents a radical selected from the group consisting of halogen atoms and hydrocarbon radicals, and (3) a polar hydrocarbon soluble compound selected from the group consisting of aldehydes having from 1–8 carbon atoms and ketones having from 3–12 carbon atoms, the molar ratio of (2) to (1) being between about 1:1 and 3:1 and the molar ratio of (3) to (1) being between 0.1:1 and 0.6:1.

3,350,379

BIS-TRIPHENYLPHOSPHINE CADMIUM HALIDE, ALUMINUM POWDER, MERCURIC DIHALIDE REACTION PRODUCT AND TRIALKYL ALUMINUM CATALYST FOR THE POLYMERIZATION OF BUTADIENE-1,3

Frank C. Cesare, Oakland, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,393
12 Claims. (Cl. 260—94.3)

1. A polymerization catalyst comprising the reaction product of $(\phi_3P)_2CdCl_2$, aluminum powder, HgX_2 wherein X is selected from the group consisting of chlorine and bromine, and R_3Al wherein R represents alkyl having 1 to 8 carbon atoms.

9. A process for producing a rubbery polymer of butadiene-1,3 which comprises contacting butadiene-1,3 with an aromatic solvent and the catalyst of claim 1.

3,350,380

PROCESS FOR THE PREVENTION OF COLD FLOW IN POLYBUTADIENE

Charles W. Strobel, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Original application Aug. 23, 1962, Ser. No. 218,853, now Patent No. 3,236,821, dated Feb. 22, 1966. Divided and this application Feb. 15, 1965, Ser. No. 432,808
9 Claims. (Cl. 260—94.7)

1. In a process wherein a polymerization reaction mixture is formed by polymerizing 1,3-butadiene with an organolithium catalyst, the improvement which comprises adding to said reaction mixture (1) oxygen and (2) an organometal having the formula R_nM, wherein R is selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals, M is a metal selected from the group consisting of sodium, potassium, beryllium, magnesium, zinc, cadmium, mercury, aluminum, gallium, indium, thallium and lead, and n is an integer equal to the valence of the metal M; and recovering a polybutadiene product having a reduced tendency to cold flow in the unvulcanized state.

3,350,381

PRODUCTION OF MODIFIED POLYOLEFIN WAXES

Hans Moeller, Wilhelmsfeld, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhein, Germany

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,379
Claims priority, application Germany, Sept. 4, 1963, B 73,385
13 Claims. (Cl. 260—94.9)

1. A process for the production of a modified polyolefin wax which comprises: reacting a polyolefin wax containing a total of from 1 to 10% by weight of oxygen in combined form, 0.001 to 0.3% by weight of oxygen being in the form of peroxy groups, and having an acid number of between 1 and 120, with an organic compound having at least one alkaline-reacting nitrogen atom selected from the class consisting of amides and imides of aliphatic and aromatic carboxylic acids; aliphatic, cycloaliphatic and heterocyclic amines and imines; and the reaction products of triacrylformal with a 2-molar amount of an N,N-dialkyl-alkylenediamine in which the alkylene radical contains 2 to 3 carbon atoms and each alkyl substituent contains 1 to 4 carbon atoms.

3,350,382
ARYLSULPHONYLTRIAZENE COMPOUNDS

Brian Ronald David Whitear and Douglas James Fry, Ilford, England, assignors to Ilford Limited, Ilford, England, a British company

No Drawing. Filed Jan. 11, 1965, Ser. No. 424,813
Claims priority, application Great Britain, Jan. 24, 1964, 3,243/64
6 Claims. (Cl. 260—140)

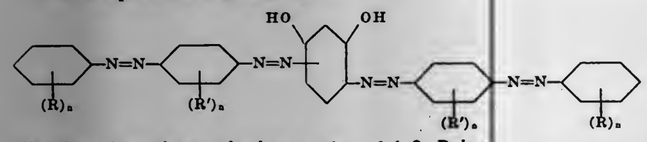
1. 1,4',4''-tolylthio-2',5'-dimethoxyphenyl - 3 - methyl-3,4'-toluenesulphonyl-triazene.

3,350,383
TETRAKISAZO DYES

Charles L. Conway, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,666
5 Claims. (Cl. 260—166)

1. A compound of the formula:



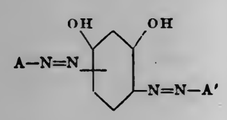
wherein n is an integer having a value of 1–2; R is a member selected from the group consisting of hydrogen and alkyl radicals having from 1–4 carbon atoms, at least one R on each benzene ring being an alkyl radical having from 1–4 carbon atoms; and R' is a member selected from the group consisting of hydrogen, methoxy and alkyl radicals having from 1–4 carbon atoms, at least one R' being a substituent other than hydrogen.

3,350,384
DISAZORESORCINOL DYES

Charles L. Conway, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,657
3 Claims. (Cl. 260—184)

1. A composition of the formula:



wherein A and A' are members selected from the group consisting of mixed xylyl isomers, o-alkylphenyl, m-alkylphenyl and p-alkylphenyl, wherein the alkyl groups have from 1–4 carbon atoms, at least 40 and not more than 70 percent of said A and A' members being mixed xylyl isomers and not more than 33 percent of said alkylphenyl groups being p-alkylphenyl.

3,350,385
SYNTHESIS OF AZO COMPOUNDS BY REARRANGEMENT OF HYDRAZONES

Leonard Spialter, 2536 England Ave., Dayton, Ohio 45406, and Gerald L. Untereiner, 199 Westhaven Drive, Ottawa 3, Ontario, Canada

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,376
2 Claims. (Cl. 260—192)

1. The synthesis of an azo compound by the rearrangement of a hydrazone of the formula

$$CH_3—NHN=CR_aR_b$$

wherein R_a and R_b are hydrogen or an alkyl group containing 1 to 4 carbon atoms consisting of the steps of refluxing the hydrazone under a dry nitrogen atmosphere over dry potassium hydroxide and thereafter collecting the final product by distillation.

3,350,386
PROCESS FOR THE PURIFICATION OF HYDROXYALKYL ETHERS OF GALACTOMANNANS

Konrad Engelskirchen, Lank, and Joachim Galinke, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,613
Claims priority, application Germany, May 2, 1964, H 52,575
7 Claims. (Cl. 260—209)

1. A process for the purification of a hydroxy-lower-alkyl ether of galactomannan which comprises the steps of contacting an impure hydroxy-lower-alkyl ether of galactomannan having a sulfate ash content in excess of 3%, at an acid pH value with glyoxal, separating the reaction product, washing the reaction product with water having a pH of from 2 to 6 at a temperature of from 0° C. to 30° C. and recovering a purified hydroxy-lower-alkyl ether of galactomannan having a low sulfate ash content.

3,350,387
POLY-N-ALKYLATED NEOMYCINS, KANAMYCINS AND PAROMOMYCINS

Hubert Vanderhaeghe, Winksele, Belgium, assignor to Recherche et Industrie Therapeutiques, R.I.T., Genval, Belgium, a corporation of Belgium

No Drawing. Filed July 12, 1966, Ser. No. 564,537
Claims priority, application Great Britain, Apr. 3, 1962, 12,790/62; Oct. 15, 1962, 38,953/62
7 Claims. (Cl. 260—210)

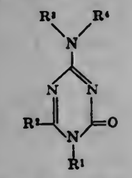
1. Poly-N-lower alkyl derivatives of the antibiotics, neomycin, kanamycin or paromomycin, having hypocholesterolemic activity, the nontoxic salts of said derivatives with pharmaceutically acceptable acids or the pharmaceutically acceptable quaternary salts of said derivatives with lower alkyl chloride, bromide or iodides, the said poly-N-lower alkyl groups of said derivatives: (1) being (a) lower alkyl of 1–5 carbon atoms; (b) (hydroxyphenyl)-lower alkyl, (alkoxyphenyl)-lower alkyl, (trifluoromethylphenyl)-lower alkyl, (aminophenyl)-lower alkyl, (alkylaminophenyl)-lower alkyl, (dialkylaminophenyl)-lower alkyl or phenyllower alkyl said alkoxy and alkyl groups having 1–5 carbon atoms and said lower alkyl groups having from 1 to 5 carbon atoms; or (c) hydroxylower alkyl, alkoxylower alkyl, phenoxylower alkyl, aminolower alkyl, (alkylamino)-lower alkyl or (dialkylamino)-lower alkyl, said alkoxy or alkyl groups having 1–5 carbon atoms and said lower alkyl groups having 2–5 carbon atoms; (2) being substituted on at least two of the amine functions of the amino sugar nucleus of the parent antibiotic; and (3) being sufficient in number to destroy any useful antibiotic activity of the parent antibiotic compound.

3,350,388
PROCESS FOR THE MANUFACTURE OF 1-GLYCOSYL-5-AZACYTOSINES

František Šorm and Alois Piskala, Prague, Czechoslovakia, assignors to Ceskoslovenska akademie ved, Prague, Czechoslovakia

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,273
Claims priority, application Czechoslovakia, Dec. 22, 1963, 7,093/63
10 Claims. (Cl. 260—211.5)

1. A process of preparing 1-glycosyl-5-azacytosines of the general formula

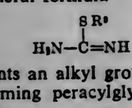


I

wherein R^1 represents glycosyl or peracylglycosyl, R^2 represents an atom of hydrogen or an alkyl having 1–4 carbon atoms, R^3 and R^4 may be the same or different and represent hydrogen or alkyl having 1–4 carbon atoms, or aralkyl, which process comprises reacting peracylglycosyl isocyanates of the general formula

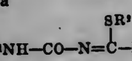
$$R^1—N=C=O \qquad II$$

wherein R^1 represents peracylglycosyl, with S-alkylisothioureas of the general formula



III

wherein R^5 represents an alkyl group having 1–4 carbon atoms, thereby forming peracylglycosylisothiobiurets of the general formula

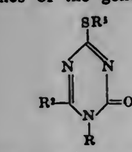


IV

wherein R^1 represents peracylglycosyl and R^5 represents the same as in the Formula III; condensing the latter with orthoesters of aliphatic acids of the general formula

$$R^2—C(OR^6)_3 \qquad V$$

wherein R^2 represents the same as in the Formula I and R^6 represents a methyl or an ethyl group, thereby forming 1 - peracylglycosyl - 4 - alkylmercapto - 2 - oxo - 1,2-dihydro-1,3,5-triazines of the general formula



VI

wherein R^1 represents the same as in the Formula IV, R^2 represents the same as in the Formula I, R^5 represents the same as in the Formula III; and reacting the latter with a compound of the general formula

$$R^3—NH—R^4 \qquad VII$$

wherein R^3 and R^4 represents the same as in the Formula I, to produce the compounds of the general Formula I.

3,350,389
PROCESS FOR THE PREPARATION OF PHOSPHORUS-CONTAINING SUCROSE POLYOLS

John T. Patton, Jr., Wyandotte, and Robert J. Hartman and Arthur L. Austin, Southgate, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,396
12 Claims. (Cl. 260—234)

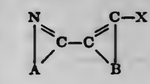
1. A process for the preparation of phosphorus-containing sucrose polyols which comprises adding an acid of phosphorus to sucrose in the presence of a diluent while maintaining a temperature between about 0° C. and about 50° C. and thereafter contacting the sucrose-acid reaction mixture with an alkylene oxide at a temperature between about 20° C. and about 100° C.

3,350,390
2(1'CYCLOALKEN-1'-YL)-1-AZACYCLOALK-1-ENE COMPOUNDS AND PRODUCTION THEREOF

Siegfried Huenig, Hochberg, near Wurzburg, and Eberhard Luecke, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

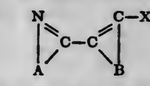
No Drawing. Filed Oct. 10, 1963, Ser. No. 315,366
Claims priority, application Germany, Oct. 13, 1962, B 69,220
11 Claims. (Cl. 260—239)

1. Heterocyclic cycloaliphatic compounds having the formula

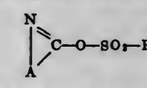


in which A and B are alkylene bridges having 5 to 11 methylene groups and X is a hydroxyl, morpholino, piperidino or pyrrolidino group.

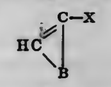
8. A process for the production of heterocyclic cycloaliphatic compounds



in which A and B are alkylene bridges having 5 to 11 methylene groups and X is a morpholino, piperidino or pyrrolidino group which comprises reacting a lactim sulfonic acid ester having the formula

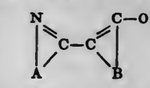


in which R^1 is an aliphatic, aromatic or araliphatic radical, with an enamine having the formula

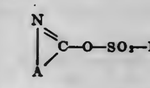


in which X is a morpholino, piperidino or pyrrolidino group.

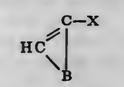
11. A process for production of heterocyclic cycloaliphatic compounds of the formula



which comprises reacting a lactim sulfonic acid ester having the formula



in which R^1 is an aliphatic, aromatic or araliphatic radical, with an enamine having the formula



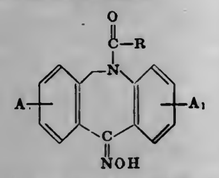
in which X is a morpholino, piperidino or pyrrolidino group, and hydrolyzing the resultant compound or a salt thereof by acidification thereof.

3,350,391
NOVEL MORPHANTHRIDONE OXIMES

Alexander E. Drukker, Milwaukee, and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,212
4 Claims. (Cl. 260—239)

1. A compound of the formula



in which A and A_1 are members selected from the group consisting of hydrogen, halogen, lower alkoxy, lower alkyl, thio-lower alkyl and trifluoromethyl, and R is a member selected from the group consisting of lower alkyl, benzyl and phenyl, O-lower alkyl and S-lower alkyl.

3,350,392
PROCESS FOR THE SEPARATION OF ω-DODECALACTAM AND CYCLODODECANECARBOXYLIC ACID FROM MIXTURES THEREOF IN SULFURIC ACID

Hans-Joachim Schultze and Clau Berther, Chur, Graubunden, Switzerland, assignors to Inventa A.G., für Forschung und Patentverwertung, Zurich, Switzerland

No Drawing. Filed June 8, 1964, Ser. No. 373,579
Claims priority, application Switzerland, June 6, 1963, 7,121/63
1 Claim. (Cl. 260—239.3)

A process for the separation of omegadodecalactam and cyclododecanecarboxylic acid from each other and practically complete recovering of each of them in substantially pure form, present in mixture with each other and with a substance selected from the group consisting of concentrated sulfuric acid and oleum, said mixture being obtained in the nitrosation of cyclododecane carboxylic acid, which comprises diluting said mixture with water to a sulfuric acid concentration of less than 30 percent by weight; filtering the blend of dodecalactam and cyclododecane-carboxylic acid thus precipitated; washing the same neutral with water; making a suspension of said washed blend in 5–10 percent aqueous ammonia at 30°–50° C., thereby forming soluble ammonium cyclododecanate and insoluble dodecalactam; separating the latter, recovering the cyclo-dodecane-carboxylic acid from the solution of its ammonium salt by briefly heating the solution to boiling under a pressure of 50 to 100 mm. Hg, and precipitating the acid by means of cooling; the splitoff ammonia being collected in water and reused.

3,350,393
PRODUCTION OF PURE CAPROLACTAM

Norbert Petri and Hugo Strehler, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland, Pfalz, Germany

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,136
Claims priority, application Germany, Oct. 31, 1964, B 79,160
11 Claims. (Cl. 260—239.3)

1. In a process for the conversion of cyclohexanone oxime into caprolactam by contacting said oxime with a solid catalyst in a reaction zone at a temperature of 210° C. to 450° C. and condensing caprolactam from the gas mixture leaving the reaction zone, the improvement which comprises:

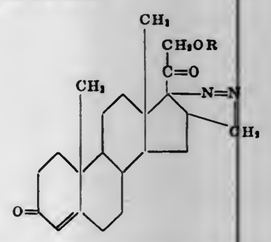
quenching said gas mixture leaving the reaction zone with liquid caprolactam having a temperature of about 70° C. to 260° C. but at least 10° C. lower than the temperature of said gas mixture leaving the reaction zone; and condensing the caprolactam from said gas mixture in a condensation zone by direct cooling with a low boiling solvent introduced at the top of said condensation zone in an amount sufficient to maintain a temperature gradient over said condensation zone.

3,350,394
METHOD FOR PRODUCING 16 METHYLENE REICHSTEIN S AND INTERMEDIATES THEREOF

Eugene J. Agnello and Gerald D. Laubach, Lyme, and Walter T. Moreland, Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 26, 1961, Ser. No. 105,575
5 Claims. (Cl. 260—239.5)

5. A compound selected from the group consisting of those having the formula



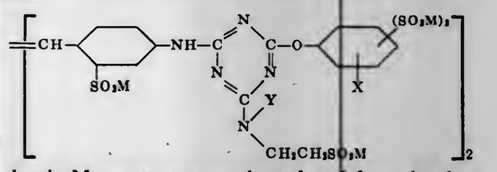
wherein R is an acyl hydrocarbon group containing only carbon, hydrogen and oxygen up to a total of ten carbon atoms.

3,350,395
4,4' - BIS[(4-N-2-SULFOETHYLAMINO) - 6 - SULFOPHENOXY - S - TRIAZIN-2-YLAMINO]-2,2' - STILBENEDISULFONIC ACID BRIGHTENERS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1966, Ser. No. 588,325
3 Claims. (Cl. 260—240)

1. A brightener compound having the following formula:



wherein M represents a member selected from the class consisting of hydrogen and an alkali metal, and X and Y represent a member selected from the class consisting of hydrogen, methyl and ethyl groups.

3,350,396
QUATERNARY AMMONIUM SALTS OF MORPHOLINOETHYL 3,4,5 - TRIMETHOXYBENZOATE

John D. McColl, Quebec, Quebec, Canada, and Gerassimos Frangatos, Princeton, N.J., assignors to Frank W. Horner Limited, Mount Royal, Quebec, Canada, a Canadian company

No Drawing. Filed June 9, 1964, Ser. No. 375,417
1 Claim. (Cl. 260—247.1)

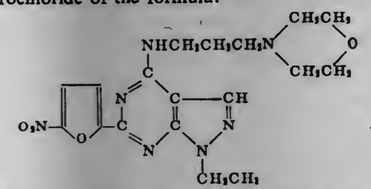
A quaternized salt of morpholinoethyl 3,4,5-trimethoxybenzoate, said salt being selected from the group consisting of the ethiodide, the ethyl bromide salt and the ethyl p-toluenesulfonate salt.

3,350,397
4-AMINO-1-ALKYL-6-(5-NITRO-2-FURYL)-1H-PYRAZOLO[3,4-d]PYRIMIDINES

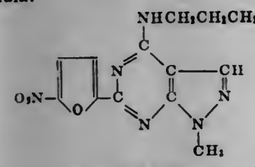
Homer Albert Burch, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed July 20, 1965, Ser. No. 473,914
10 Claims. (Cl. 260—247.5)

7. The compound 1-ethyl-4-[3 - (morpholino)propyl] amino-6-(5-nitro-2-furyl)-1H-pyrazolo[3,4 - d]pyrimidine hydrochloride of the formula:



10. The compound 4-(3 - hydroxypropylamino) - 1-methyl-6-(5-nitro-2-furyl)-1H-pyrazolo[3,4-d]pyrimidine of the formula:

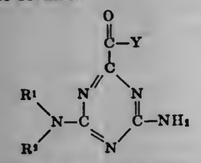


3,350,398
2,4-DIAMINO-6-AMIDO-s-TRIAZINES

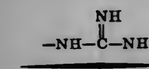
Takeo Ueda, 1066 Izumi, Komae-cho, Kitatama-gun; Shigeshi Toyoshima, 355 Funabashi-cho, Setagaya-ku; and Mitsuru Furukawa, 897 Yukigaya-cho, Ota-ku; all of Tokyo, Japan

No Drawing. Original application Mar. 28, 1963, Ser. No. 268,551, now Patent No. 3,271,393, dated Sept. 6, 1966. Divided and this application Mar. 3, 1966, Ser. No. 531,342
Claims priority, application Japan, July 3, 1962, 37/27,619
5 Claims. (Cl. 260—249.9)

1. A compound selected from the group consisting of compounds of the formula



wherein R^1 and R^2 are members selected from the group consisting of hydrogen, (lower)alkyl, phenyl, (lower) alkyl-substituted phenyl, (lower)alkoxy-substituted phenyl and cyclohexyl, and Y is a member selected from the group consisting of morpholino, piperidino, pyrrolidino, (lower)alkylamino, phenylamino, and a radical of the formula



3,350,399
METHOD OF PREPARING PYRAZINOIC ACID

Menasche Litmanowitsch, Schaffhausen, and Hans Suter, Dorflingen, Switzerland, assignors to Eprova Limited, Schaffhausen, Switzerland

No Drawing. Filed Dec. 8, 1966, Ser. No. 600,026
Claims priority, application Switzerland Dec. 24, 1963, 15,950/63
7 Claims. (Cl. 260—250)

1. A method of preparing pyrazinoic acid which comprises:

(a) condensing α,β-diaminopropionic acid with glyoxal in an alkaline liquid medium until dihydropyrazinoic acid is formed, said medium mainly consisting of an alcohol selected from the group consisting of methanol and alkoxyalkanol, the continuous carbon chains of said alkoxyalkanol having not more than two members, and containing an excess of available stray alkalinizing agent over that required for neutralizing said diaminopropionic acid; and

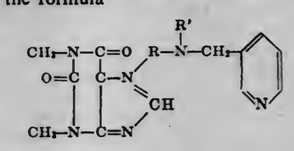
(b) oxidizing the dihydropyrazinoic acid to pyrazinoic acid.

3,350,400
7-(PICOLYLAMINOALKYL)-THEOPHYLLINE AND ITS SALTS

Hans Suter, Dorflingen, and Hans Zutter, Schaffhausen, Switzerland, assignors to Eprova Limited, Schaffhausen, Switzerland, a corporation of Switzerland

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,047
Claims priority, application Switzerland, Jan. 12, 1965, 414/65
7 Claims. (Cl. 260—253)

1. A compound which is a 7-picolylaminoalkyl-theophylline of the formula



wherein R is lower alkylene or hydroxyalkylene having two to four carbon atoms, and R' is hydrogen or methyl, or an addition compound of said 7-picolylaminoalkyl-theophylline with a physiologically tolerated acid.

3,350,401
POLYMETHYLENE BIS-QUATERNIZED DERIVATIVES OF TRIETHYLENEDIAMINE

Paul F. Strohm, Philadelphia, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,182
1 Claim. (Cl. 260—268)

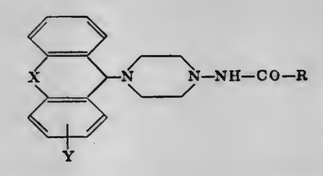
Pentamethylene-bis-[2,5-dimethyl-4 - aza - 1 - azoniabicyclo(2.2.2)octane] diiodide.

3,350,402
ACYL DERIVATIVES OF 1-AMINO-4-XANTHENYLPIPERAZINE

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 18, 1966, Ser. No. 550,943
6 Claims. (Cl. 260—268)

1. A compound of the formula



wherein X selected from the group consisting of O and S; Y is selected from the group consisting of hydrogen, chlorine, and methyl; and R is selected from the group consisting of lower alkyl, cyclohexyl, phenyl, tolyl, halophenyl, methoxyphenyl, trifluoromethylphenyl, and aminophenyl.

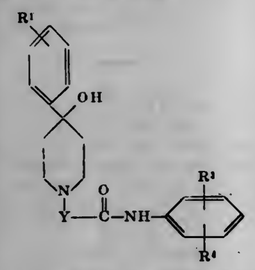
3,350,403

N-PHENYL AMIDES OF 4-PHENYL-4-HYDROXY-PIPERIDINO ALKYL ACIDS

John H. Biel and Harvey B. Hopps, Milwaukee, Wis., assignors to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

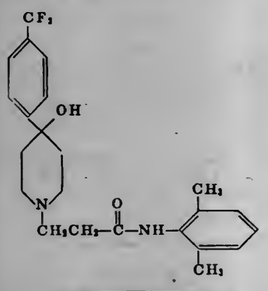
No Drawing. Filed Apr. 7, 1964, Ser. No. 358,055
3 Claims. (Cl. 260—294)

1. A compound of the formula



wherein R^1 is a member selected from the group consisting of chloro, bromo, iodo, fluoro, trifluoromethyl, amino, nitro, (lower)alkyl, (lower)alkoxy, hydroxy, phenyl, phenoxy, benzyl, (lower)alkylamino, di(lower)alkylamino, (lower)alkanoylamino, (lower)alkylthio, sulfamyl, (lower)alkanoyl, (lower)alkylsulfonyl, methylenedioxy, cycloalkyl radicals having from 5 to 7 carbon atoms inclusive, and cycloalkoxy radicals having from 5 to 7 carbon atoms inclusive,
R^3 and R^4 are each (lower)alkyl,
Y is a (lower)alkylene radical;
and the pharmaceutically acceptable nontoxic salts thereof.

3. A compound of the formula



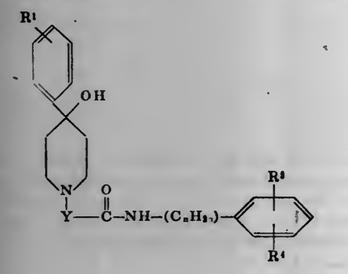
3,350,404

N-ARALKYL AMIDES OF 4-PHENYL-PIPERIDINO-4-ALKANOIC ACIDS

Harvey B. Hopps, Milwaukee, Wis., assignor to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,067
8 Claims. (Cl. 260—294)

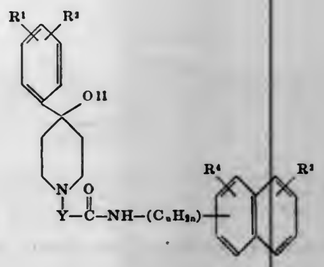
1. A compound selected from the group consisting of compounds of the formula



wherein

R^1 is a member selected from the group consisting of chloro, bromo, iodo, fluoro, trifluoromethyl, amino, nitro, (lower)alkyl, (lower)alkoxy, hydroxy, phenyl, phenoxy, benzyl, (lower)alkylamino, di(lower)alkylamino, (lower)alkanoylamino, (lower)alkylthio, sulfamyl, (lower)alkanoyl, (lower)alkylsulfonyl, methylenedioxy, cycloalkyl radicals having from 5 to 7 carbon atoms inclusive, cycloalkoxy radicals having 5 to 7 carbon atoms inclusive,
R^3 and R^4 are each a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, amino, nitro, (lower)alkyl, (lower)alkoxy, hydroxy, phenyl, phenoxy, benzyl, (lower)alkylamino, di(lower)alkylamino, (lower)alkaknoylamino, (lower)alkylthio, sulfamyl, (lower)alkanoyl, (lower)alkylsulfonyl, methylenedioxy, cycloalkyl radicals having from 5 to 7 carbon atoms inclusive, cycloalkoxy radicals having from 5 to 7 carbon atoms inclusive,
Y is a (lower)alkylene radical, and
n is a whole integer from 1 to 6 inclusive;
and the pharmaceutically acceptable nontoxic salts thereof.

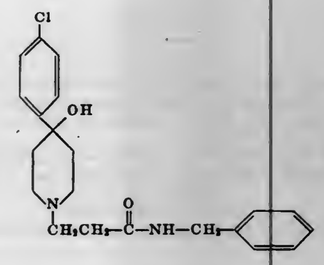
5. A compound selected from the group consisting of compounds of the formula



wherein

R^1, R^2, R^3 and R^4 are each a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, trifluoromethyl, amino, nitro, (lower)alkyl, (lower)alkoxy, hydroxy, phenyl, phenoxy, benzyl, (lower)alkylamino, di(lower)alkylamino, (lower)alkylthio, sulfamyl, (lower)alkanoyl, (lower)alkylsulfonyl, methylenedioxy, cycloalkyl radicals having from 5 to 7 carbon atoms inclusive, cycloalkoxy radicals having from 5 to 7 carbon atoms inclusive,
Y is a (lower)alkylene radical, and
n is a whole integer from 1 to 6 inclusive;
and the pharmaceutically acceptable nontoxic salts thereof.

8. A compound of the formula



and the pharmaceutically acceptable nontoxic salts thereof.

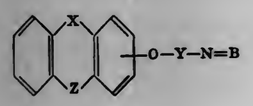
3,350,405

AMINO - LOWER - ALKOXY - DIBENZO[a,d]CYCLOHEPTEN-5-ONES AND 10,11-DIHYDRO DERIVATIVES THEREOF

John W. Schulenberg and Sydney Archer, Bethlehem, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,506
12 Claims. (Cl. 260—294.7)

1. A compound of the formula



wherein:

—N=B is a member of the group consisting of amino, lower-alkylamino, cycloalkylamino, (phenyl - lower-alkyl)amino, di-lower-alkylamino, dicycloalkylamino, N-(cycloalkyl) - lower-alkylamino, polymethylenimino of 5–7 ring members, 4-morpholinyl, 1-piperazinyl, 4-lower-alkyl-1-piperazinyl, 4-phenyl-1-piperazinyl, di-(phenyl - lower - alkyl)amino, and N - (phenyl-lower-alkyl)-lower-alkylamino;
X is a member of the group consisting of $—CH_2CH_2—$ and $—CH=CH—$;
Y is a lower-alkylene bridge having its connecting valences on different carbon atoms; and
Z is C=O.

8. 2-[2-(1-piperidyl)ethoxy] - 5H - dibenzo[a,d]cycloheptene-5-one.

3,350,406

ELASTOMERS AND PLASTICIZER FROM MIXTURES OF THIOETHER COMPOUNDS AND EPOXY RESINS WITH ACIDS

Glen E. Meyer, Kent, and Felix J. Naples, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 11, 1961, Ser. No. 130,767
20 Claims. (Cl. 260—30.8)

7. A method of fixing a mobile plasticizer within a plasticized composition, said mobile plasticizer being selected from the class consisting of a compound containing at least one thioether group and a compound containing at least one epoxy group comprising the steps (1) of forming in situ within the plasticized composition a reaction mixture comprising (*a*) an organic compound containing at least one active thioether group and having a molecular weight in excess of 150, and (*b*) another organic compound containing at least one active epoxy group and (*c*) an organic acidic compound, said organic acidic compound being present in an amount sufficient to have one reactive functional group for each epoxy group and said organic compound containing the epoxy group being present in 0.02 to 3 chemical equivalents per 100 parts of the organic compound containing the thioether group and (2) then reacting said mixture to increase the molecular weight of the compound containing the thioether group.

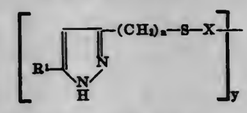
3,350,407

SULFUR CONTAINING PYRAZOLE DERIVATIVES

Horace Fletcher 3rd, Pottstown, and Harvey E. Alburn, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

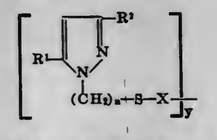
No Drawing. Filed July 2, 1964, Ser. No. 380,024
6 Claims. (Cl. 260—310)

1. A compound selected from the group consisting of (1) a compound having the formula:



I

(2) a compound having the formula:



II

wherein R^1 and R^2 are selected from the group consisting of hydrogen and lower alkyl; X is hydrogen, n is an integer of from 1 to 3 inclusive and y is an integer of from 1 to 2 inclusive with the proviso that X is present only when y is 1 and (3) a nontoxic, pharmaceutically acceptable acid addition salt thereof.

3,350,408

PRODUCTION OF SULFUR-CONTAINING HETEROCYCLIC COMPOUNDS

Russell L. Hodgson, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 14, 1965, Ser. No. 513,831
6 Claims. (Cl. 260—327)

1. The process of intimately contacting straight-chain C_5-hydrocarbon of at least one terminal methyl group and of from 0 to 2 ethylenic linkages with from about 2 moles to about 20 moles of sulfur per mole of said hydrocarbon, in the vapor phase at a temperature from about 400° C. to about 600° C.

3,350,409

VAPOR PHASE RING CLOSURE

Harold A. Kaufman, Piscataway Township, New Brunswick, Ross A. Kremer, Edison, and Patrick Robert Driscoll, Highland Park, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 2, 1965, Ser. No. 445,242
6 Claims. (Cl. 260—332.3)

1. A process for producing 4-keto-4,5,6,7-tetrahydrobenzothiophene that comprises contacting 4-(2-thienyl) butyric acid, in the vapor phase, with a dehydration catalyst selected from the group consisting of phosphoric acid, sulfuric acid, phosphoric acid on alumina, sulfuric acid on alumina, alumina, phosphorus pentoxide, tungsten oxide, oxides of Th, Ti, Zr and Mo, acid activated montmorillonite, $AlPO_4$, and $Ca_3(PO_4)_2$.

3,350,410

METHOD OF PREPARING TETRACHLOROTHIOPHENE

Roland Henry Goshorn, Fort Washington, and Thomas Edward Deger, Ambler, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 7, 1965, Ser. No. 470,243
11 Claims. (Cl. 260—332.5)

1. A method of preparing tetrachlorothiophene which

comprises reacting sulfur with a chloroethylene of the formula



where R is hydrogen or chlorine.

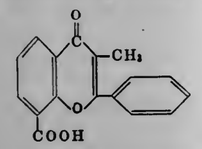
3,350,411

PROCESS FOR PREPARING 3-METHYLFLAVONE-8-CARBOXYLIC ACID

Paolo Da Re, Perugia, Italy, assignor, by mesne assignments, to Societe d'Exploitation Chimiques et Pharmaceutiques Seceph S.A., Grison, Switzerland

No Drawing. Filed Aug. 3, 1964, Ser. No. 395,346
Claims priority, application Italy, Oct. 10, 1963, 20,688/63
4 Claims. (Cl. 260—345.2)

1. A process for preparing 3-methylflavone-8-carboxylic acid having the following formula:



comprising oxidizing an 8-alkenyl-3-methylflavone with an oxidizing agent capable of oxidizing a double bond in the side chain in the presence of magnesium nitrate in a pyridine/water medium at a temperature of 15°–18° C., filtering the reaction products, acidifying the filtrate with mineral acid and recovering the separated solid 3-methylflavone-8-carboxylic acid product.

3,350,412

PROCESS FOR THE PREPARATION OF A PENTAFLUOROPHENYLMAGNESIUM CHLORIDE-TETRAHYDROFURAN COMPLEX

Earl Mark Potrafke, Arden, and Warren Howard Powell, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,624
4 Claims. (Cl. 260—346.1)

1. A process for the preparation of a pentafluorophenylmagnesium chloride-tetrahydrofuran complex which comprises contacting and reacting magnesium with chloropentafluorobenzene and tetrahydrofuran in the presence of a Grignard initiator and maintaining the temperature of the reaction mixture after initiation in the range of from about −5° to about 35° C.

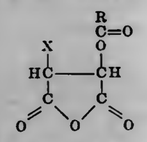
3,350,413

ACIDIC LIPID ANHYDRIDES

James Bruce Martin, Hamilton, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,292
7 Claims. (Cl. 260—346.8)

1 A compound of the formula:



wherein X is selected from the group consisting of —H and



and R is selected from the group consisting of alkyl and alkenyl radicals having from 11 to 21 carbon atoms.

3,350,414

DERIVATIVES OF TETRAHYDROFURAN

Perry A. Argabright, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 19, 1962, Ser. No. 203,655
17 Claims. (Cl. 260—347.7)

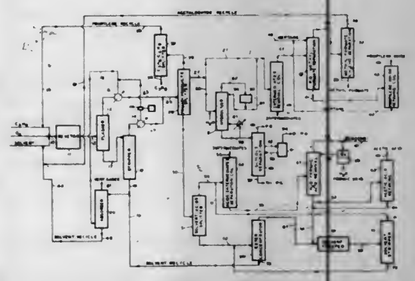
1. Difluoramino adduct of furan having an NF_2 group attached to each of 2 to 4 carbon atoms in a furan nucleus.

3,350,415

PRODUCTION AND RECOVERY OF OXYGENATED HYDROCARBONS BY PLURAL DISTILLATION

Robert C. Binning, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,366
13 Claims. (Cl. 260—348.5)



1. Process for the production of oxygenated organic compounds which comprises oxidizing propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxyalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, wherein said esters contain from 1 to 18 carbon atoms in each acyl moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, under temperatures and pressures sufficient to cause the reaction to proceed in the liquid phase and recovering said oxygenated products by:

(a) directing an effluent stream of the reaction mixture from a reaction zone through a combination let-down distillation zone comprising a flashing zone followed by a stripping zone, said flashing zone and stripping zone being maintained at pressures substantially lower than in each preceding zone and at temperatures necessary to separate substantially all of the low and intermediate boiling products overhead as gas phase and higher boiling components including the bulk of the solvent and polymeric residue having a boiling point above that of said solvent which are removed as bottoms from said stripping zone,

(b) passing said overhead gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which the bottoms stream from said stripping zone is also passed to absorb uncondensed propylene, propane and minor amounts of oxygenated components; removing vent gases overhead from said absorber, while feeding the bottoms stream from said absorbing zone back to said reaction zone,

(c) adjusting reaction conditions in such manner that at steady state the polymeric residue content in the bottoms stream from said absorbing zone going into said reaction zone is approximately equivalent to the polymeric residue content in said effluent stream for a predetermined product distribution,

(d) feeding a combined stream of condensed liquids from said condensing zones into a primary products distillation splitting zone from which an overhead stream containing propylene and propane are removed to a distillation splitter for these components, the propane being removed as bottoms while propylene is removed overhead and recycled to said reaction zone,

(e) directing a sidestream from said primary products distillation splitting zone to an intermediates removal distillation zone from which a bottoms stream containing methyl acetate, acetone, methanol and other intermediate boilers are removed,

(f) feeding the overhead from said intermediates removal distillation zone to an atmospheric extractive distillation zone using a hydrocarbon solvent boiling above 67° C. as extracture solvent and from which propylene oxide dissolved in said hydrocarbon solvent is removed as bottoms and fed to a distillation refining column wherein purified propylene oxide is recovered overhead and said hydrocarbon is removed as bottoms and recycled to said extractive distillation zone,

(g) feeding the overhead from said extractive distillation zone to a methyl formate-acetaldehyde distillation separation zone wherein methyl formate is removed as bottoms and acetaldehyde is taken overhead and recycled to said reaction zone,

(h) feeding the bottoms from said primary products distillation splitting zone in step (d) to an acid solvent distillation splitting zone wherein substantially all higher boiling components are removed as bottoms, and all acid values, water and intermediate boilers are removed overhead and fed to an acid-intermediates distillation zone from which the intermediates are recovered overhead, while directing the bottoms containing acid valves and water to an azeotropic distillation column using benzene as an azeotrope-former for water and formic acid.

(i) removing from said azeotropic distillation zone an overhead stream containing a mixture of benzene-water and benzene-formic acid azeotropes to a condensing zone wherein benzene is separated from water and formic acid and feeding these three components to a collecting zone in which benzene forms an upper phase from which benzene is returned to said azeotropic distillation zone, while water and formic acid are removed as a lower phase, while removing from said azeotropic distillation zone a bottoms stream containing acetic acid to a distillation refining zone wherein purified acetic acid is recovered overhead,

(j) feeding the bottoms from said acid-solvent distillation splitter in step (h) containing major amounts of solvent from said reaction zone, minor amounts of propylene glycol and monoesters thereof to an ester concentration zone from which some of said solvent substantially depleted of said propylene glycol and its monoesters is removed as bottoms and recycled to said reaction zone, while removing an overhead stream comprised of the rest of said solvent now enriched with said propylene glycol and its monoesters,

(k) feeding the overhead from said ester concentration zone together with monocarboxylic acid values to an esterification zone wherein propylene glycol and its monoesters are esterified to propylene glycol diesters,

(l) feeding an effluent stream from said esterification zone comprising increased amounts of said diesters, decreased amounts of said acid values and unreacted propylene glycol and its monoesters to a solvent distillation stripping zone wherein said acid values are removed overhead and recycled to said acid-intermediates distillation separation zone in step (h) and said diesters and any unreacted propylene glycol and its monoesters are removed as bottoms and recycled to said ester concentration zone,

(m) feeding a fraction of said side stream in step (e) containing propylene oxide and other oxygenated organic components having boiling points between that of propylene oxide and water to a hydrolysis zone wherein propylene oxide is hydrolyzed to propylene glycol (s) which is removed as bottoms free of water, while unreacted propylene oxide and said other oxygenated components are withdrawn as overhead product free of water and refluxed to a region of said hydrolysis zone below which said other oxygenated components form a barrier between water of hydrolysis and propylene oxide, and

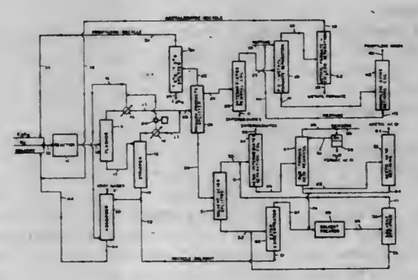
(n) feeding a portion of said overhead product in step (m) to said side stream going to said intermediates removal zone.

3,350,416

PRODUCTION AND RECOVERY OF OXYGENATED HYDROCARBONS BY PLURAL DISTILLATION

Robert C. Binning, St. Louis, Harold R. Null, Florissant, and Stanley L. Reid, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,389
10 Claims. (Cl. 260—348.5)



1. Process for the production of oxygenated organic compounds which comprises oxidizing propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxylalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, wherein said esters contain from 1 to 18 carbon atoms in each acyl moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, under temperatures and pressures sufficient to cause the reaction to proceed in the liquid phase and recovering said oxygenated products by:

(a) directing an effluent stream of the reaction mixture from a reaction zone through a combination let-down distillation zone comprising a flashing zone followed by a stripping zone, said flashing zone and stripping zone being maintained at pressures substantially lower than in each preceding zone and at temperatures necessary to separate substantially all of the low and intermediate boiling products overhead as gas phase and higher boiling components including the bulk of the solvent and polymeric residue having a boiling point above that of said solvent which are removed as bottoms from said stripping zone,

(b) passing said overhead gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which the bottoms stream from said stripping zone is also passed to absorb uncondensed propylene, propane and minor amounts of oxygenated components; removing vent gases overhead from said absorbed, while feeding the bottoms stream from said absorbing zone back to said reaction zone,

(c) adjusting reaction conditions in such manner that is steady state the polymeric residue content in the bottoms stream from said absorbing zone going into said reaction zone is approximately equivalent to the polymeric residue content in said effluent stream for a predetermined product distribution,

(d) feeding a combined stream of condensed liquids from said condensing zones into a primary products distillation splitting zone from which an overhead stream containing propylene and propane are removed to a distillation splitter for these components, the propane being removed as bottoms while propylene is removed overhead and recycled to said reaction zone,

(e) directing a sidestream from said primary products distillation splitting zone to an intermediates removal distillation zone from which a bottoms stream containing methyl acetate, acetone, methanol and other intermediate boilers are removed,

(f) feeding the overhead from said intermediates removal distillation zone to an atmospheric extractive distillation zone using a hydrocarbon solvent boiling above 67° C. as extractive solvent and from which propylene oxide dissolved in said hydrocarbon solvent is removed as bottoms and fed to a distillation refining column wherein purified propylene oxide is recovered overhead and said hydrocarbon is removed as bottoms and recycled to said extractive distillation zone,

(g) feeding the overhead from said extractive distillation zone to a methyl formate-acetaldehyde distillation separation zone wherein methyl formate is removed as bottoms and acetaldehyde is taken overhead and recycled to said reaction zone,

(h) feeding the bottoms from said primary products distillation splitting zone in step (d) to an acid-solvent distillation splitting zone wherein substantially all higher boiling components are removed as bottoms and all acid values, water and intermediate boilers are removed overhead and fed to an acids-intermediates distillation zone from which the intermediates are recovered overhead, while directing the bottoms containing acid values and water to an azeotropic distillation column using benzene as an azeotrope-former for water and formic acid,

(i) removing from said azeotropic distillation zone an overhead stream containing a mixture of benzene-water and benzene-formic acid azeotropes to a condensing zone wherein benzene is separated from water and formic acid and feeding these three components to a collecting zone in which benzene forms an upper phase from which benzene is returned to said azeotropic distillation zone, while water and formic acid are removed as a lower phase, while removing from said azeotropic distillation zone a bottoms stream containing acetic acid to a distillation refining zone wherein purified acetic acid is recovered overhead,

(j) feeding the bottoms from said acid-solvent distillation splitter in step (h) containing major amounts of solvent from said reaction zone, minor amounts of propylene glycol and monoesters thereof to an ester concentration zone from which some of said solvent substantially depleted of said propylene glycol and its monoesters is removed as bottoms and recycled to said reaction zone, while removing an overhead stream comprised of the rest of said solvent now enriched with said propylene glycol and its monoesters,

(k) feeding the overhead from said ester concentration zone together with monocarboxylic acid values to an esterification zone wherein propylene glycol and its monoesters are esterified to propylene glycol diesters,

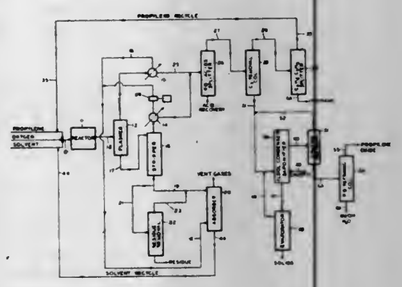
(l) feeding an effluent stream from said esterification zone comprising increased amounts of said diesters and decreased amounts of said acid values to a solvent stripping distillation zone wherein said acid values are removed overhead and recycled to said acids-intermediates distillation separation zone in step (h) and said diesters are removed as bottoms and recycled to said ester concentration zone.

3,350,417

PRODUCTION AND RECOVERY OF PROPYLENE OXIDE BY PLURAL STAGE DISTILLATION AND CAUSTIC ADDITION

Robert C. Binning, St. Louis, and Harold R. Null, Florissant, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,390
14 Claims. (Cl. 260—348.5)



1. Process for the continuous production and recovery of propylene oxide which comprises the direct oxidation of propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxyalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, wherein said esters contain from 1 to 18 carbon atoms in each acyl moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, and recovering formed propylene oxide by:

(a) directing an effluent stream of the reaction mixture from a reaction zone through a combination let-down distillation zone comprising a flashing zone followed by a stripping zone, said flashing zone and stripping zone being maintained at essentially the same temperature as the oxidation reaction, but each successive zone being maintained at pressures substantially lower than in the preceding zone and in said reaction zone in order to separate substantially all of the low and intermediate boiling products as gas phase from the bulk of the solvent,

(b) passing said gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which effluent solvent from said stripping zone is also passed to absorb uncondensed propylene and propylene oxide,

(c) directing a side-stream of said effluent solvent in (b) through a polymeric residue having a boiling point above that of said solvent removal zone where residue is removed as bottoms and solvent is distilled overhead and recombined with the solvent bottoms from said stripping zone and fed to said absorbing zone.

(d) passing a combined stream of condensed liquids from said condensing zones into an acids-separation distillation zone where organic acids are removed as bottoms and propylene oxide, propylene, propane, acetaldehyde and methyl formate are distilled overhead,

(e) directing the overhead from (d) to a C_3 removal zone where propylene and propane are distilled overhead and propylene oxide, acetaldehyde and methyl formate are removed as bottoms,

(f) passing said bottoms from said C_3 removal zone to a reaction zone containing a caustic reaction medium wherein acetaldehyde is adolized and methyl formate saponified simultaneously,

(g) passing bottoms from said reaction zone in (f) to an evaporation zone where solids are removed as bottoms and an overhead stream containing crotonaldehyde, methanol, water and propylene oxide are recycled to said reaction zone in step (f),

(h) directing the overhead stream from said reaction zone in (f) to a distillation zone where any acetaldehyde not completely adolized in (f) is taken overhead and recycled with small amounts of propylene oxide to said reaction zone in step (f),

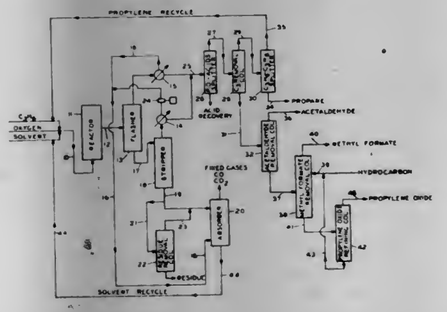
(i) passing the bottoms from said distillation zone in step (h) to a propylene oxide refining zone from which purified propylene oxide is recovered overhead.

3,350,418

PRODUCTION AND RECOVERY OF PROPYLENE OXIDE BY PLURAL DISTILLATION

Leon E. Bowe, Glendale, Robert C. Binning, St. Louis, and Harold R. Null, Florissant, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,403
17 Claims. (Cl. 260—348.5)



1. Process for the continuous production and recovery of propylene oxide which comprises the direct oxidation of propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxyalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, wherein said esters contain from 1 to 18 carbon atoms in each acyl moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, and recovering formed propylene oxide by:

(a) directing an effluent stream of the reaction mixture from a reaction zone through a combination let-down distillation zone comprising a flashing zone followed by a stripping zone into which the bottoms from said flashing zone is passed, said flashing zone and stripping zone being maintained at essentially the same temperature as the oxidation reaction, but each successive zone being maintained at pressures substantially lower than in the preceding zone and in said reaction zone in order to separate substantially all of the low and intermediate boiling products as gas phase from the bulk of the solvent,

(b) passing said gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which effluent solvent from said stripping zone is also passed to absorb uncondensed propylene and propylene oxide,

(c) directing a side-stream of said effluent solvent in (b) through a polymeric residue having a boiling point above that of said solvent removal distillation zone where residue is removed as bottoms and solvent is distilled overhead and recombined with the solvent bottoms from said stripping zone and fed to said absorbing zone,

(d) passing a combined stream of condensed liquids from said condensing zones into an acids-separation distillation zone where organic acids are removed as bottoms and propylene oxide, propylene, propane, acetaldehyde and methyl formate are distilled overhead,

(e) directing the overhead from (d) to a C_3 removal zone distillation where propylene and propane are distilled overhead and propylene oxide, acetaldehyde and methyl formate are removed as bottoms,

(f) passing said bottoms from said C_3 removal zone to a distillation zone where acetaldehyde is distilled overhead and propylene oxide and methyl formate are removed as bottoms,

(g) passing the bottoms from (f) to an atmospheric extractive distillation zone using as extractive solvent a hydrocarbon solvent boiling above 67° C. and wherein methyl formate is removed overhead and said extractive solvent containing propylene oxide is removed as bottoms, and

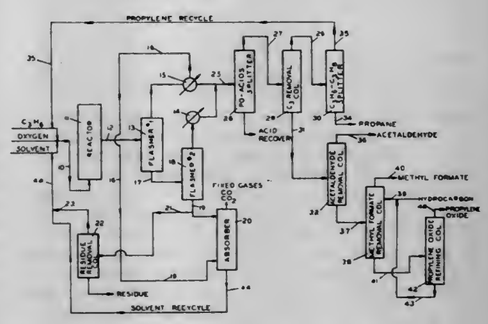
(h) feeding the bottoms from (g) to a propylene oxide distillation refining zone from which purified propylene oxide is distilled overhead and recovered.

3,350,419

PRODUCTION AND RECOVERY OF PROPYLENE OXIDE BY PLURAL DISTILLATION

Harold R. Null, Florissant, Leon E. Bowe, Glendale, and Robert C. Binning, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,404
17 Claims. (Cl. 260—348.5)



1. Process for the continuous production and recovery of propylene oxide which comprises the direct oxidation of propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxyalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, wherein said esters contain from 1 to 18 carbon atoms in each acyl

moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, and recovering formed propylene oxide by:

(a) directing an effluent stream of the reaction mixture from a reaction zone through a plurality of successive flashing distillation zones maintained at essentially the same temperature as the oxidation reaction, but each successive flashing zone being maintained at pressures substantially lower than in preceding ones and in said reaction zone in order to separate most of the low and intermediate boiling products as gas phase from the bulk of the solvent which is removed as bottoms from each flashing zone and directed to the succeeding one,

(b) passing said gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which effluent solvent from said flashing zones is also passed to absorb uncondensed propylene and propylene oxide,

(c) directing a side-stream of said effluent solvent in (b) through a polymeric residue having a boiling point above that of said solvent removal distillation zone where residue is removed as bottoms and solvent is distilled overhead and combined with the solvent bottoms from said absorbing zone and recycled to said reaction zone,

(d) passing a combined stream of condensed liquids from said condensing zones into an acids-separation distillation zone where organic acids are removed as bottoms and propylene oxide, propylene, propane, acetaldehyde and methyl formate are distilled overhead,

(e) directing the overhead from (d) to a C_3 removal distillation zone where propylene and propane are distilled overhead and propylene oxide, acetaldehyde and methyl formate are removed as bottoms,

(f) passing said bottoms from said C_3 removal zone to a distillation zone where acetaldehyde is distilled overhead and propylene oxide and methyl formate are removed at bottoms,

(g) passing the bottoms from (f) to an atmospheric extractive distillation zone using as extractive solvent a hydrocarbon solvent boiling above 67° C. and wherein methyl formate is removed overhead and said extractive solvent containing propylene oxide is removed as bottoms, and

(h) feeding the bottoms from (g) to a propylene oxide distillation refining zone from which purified propylene oxide is distilled overhead and recovered.

3,350,420

PRODUCTION AND RECOVERY OF OXYGENATED HYDROCARBONS BY PLURAL DISTILLATION

Robert H. Fariss, Creve Coeur, Mo., assignor to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,442

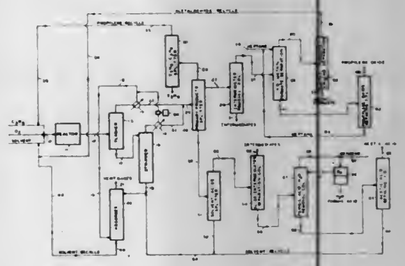
10 Claims. (Cl. 260—348.5)

1. Process for the production of oxygenated organic compounds which comprises oxidizing propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxyalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, wherein said esters contain from 1 to 18 carbon atoms in each acyl moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, under temperatures and pressures sufficient to cause the reaction to proceed in the liquid phase and recovering said oxygenated products by:

(a) directing an effluent stream of the reaction mixture from a reaction zone through a combination letdown distillation zone comprising a flashing zone followed by a stripping zone into which the bottoms from said flashing zone is directed, said flashing zone and stripping zone being maintained at pressures substantially lower than in each preceding zone and in said reaction zone and at temperatures necessary to separate substantially all of the low and intermediate boiling products overhead as gas phase and higher boiling components including the bulk of the solvent and polymeric residue having a boiling point above that of said solvent which are removed as bottoms from said stripping zone,

(b) passing said overhead gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which the bottoms stream from said stripping zone is also passed to absorb uncondensed propylene, propane and minor amounts of oxygenated components; removing vent gases overhead from said absorber, while feeding the bottoms stream from said absorbing zone back to said reaction zone,

(c) adjusting reaction conditions in such manner that at steady state the polymeric residue content in the bottoms stream from said absorbing zone going into said reaction zone is approximately equivalent to the polymeric residue content in said effluent stream for a predetermined product distribution,



(d) feeding a combined stream of condensed liquids from said condensing zones into a primary products distillation splitting zone from which an overhead stream containing propylene and propane are removed to a distillation splitter for these components, the propane is removed as bottoms while propylene is removed overhead and recycled to said reaction zone,

(e) directing a sidestream from said primary products distillation splitting zone to an intermediates removal distillation zone from which a bottoms stream containing methyl acetate, acetone, methanol and other intermediate boilers are removed,

(f) feeding the overhead from said intermediates removal distillation zone to an atmospheric extractive distillation zone using a hydrocarbon solvent boiling above 67° C. as extractive solvent and from which propylene oxide dissolved in said hydrocarbon solvent is removed as bottoms and fed to a distillation refining column wherein purified propylene oxide is recovered overhead and said hydrocarbon is removed as bottoms and recycled to said extractive distillation zone,

(g) feeding the overhead from said extractive distillation zone to a methyl formate-acetaldehyde distillation separation zone wherein methyl formate is removed as bottoms and acetaldehyde is taken overhead and recycled to said reaction zone,

(h) feeding the bottoms from said primary products distillation splitting zone in step (d) to an acid-solvent distillation splitting zone where most of the residual solvent from said reaction zone not removed in said flashing and stripping zones is removed as bottoms and recycled to said absorber,

(i) feeding the overhead from said acid-solvent distillation splitting zone to an acid-intermediates distillation zone where isopropanol, allyl alcohol, methanol and other intermediate boilers and some water are recovered overhead, while directing the bottoms from said acid-intermediates distillation zone to an azeotropic distillation column using benzene as an azeotrope-former for water and formic acid,

(j) removing from said azeotropic distillation zone an overhead stream containing a mixture of benzene-water and benzene-formic acid azeotropes to a condensing zone wherein benzene is separated from water and formic acid and feeding these three components to a collecting zone in which benzene forms an upper phase from which benzene is returned to said azeotropic distillation zone, while water and formic acid are removed as a lower phase,

(k) removing from said azeotropic distillation zone a bottoms stream containing acetic acid and a small amount of residual solvent to a distillation refining zone wherein purified acetic acid is recovered overhead and said residual solvent is recycled to said absorber.

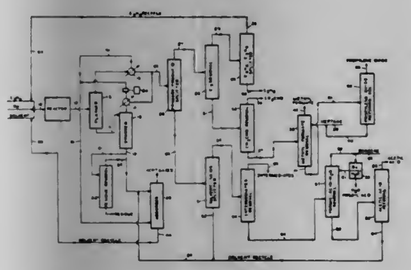
3,350,421

PRODUCTION AND RECOVERY OF OXYGENATED HYDROCARBONS BY PLURAL DISTILLATION

Robert C. Binning, St. Louis, Leon E. Bowe, Glendale, and Harold R. Null, Florissant, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,494

4 Claims. (Cl. 260—348.5)



1. Process for the production of oxygenated organic compounds which comprises oxidizing propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxyalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, wherein said esters contain from 1 to 18 carbon atoms in each acyl moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, under temperatures and pressures sufficient to cause the reaction to proceed in the liquid phase, and recovering said oxygenated products by:

(a) directing an effluent stream of the reaction mixture from a reaction zone through a combination letdown distillation zone comprising a flashing zone followed by a stripping zone into which the bottoms from said flashing zone is directed, said flashing zone and stripping zone being maintained at pressures substantially lower than in each preceding zone and in said reaction zone and at temperatures necessary to separate substantially all of the low and intermediate boiling products overhead as gas phase and higher boiling components including the bulk of the solvent and polymeric residue having a boiling point above that of said solvent which are removed as bottoms from said stripping zone,

(b) passing said gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which effluent solvent from said stripping zone is also passed to absorb uncondensed propylene and propylene oxide,

(c) directing a side-stream of said effluent solvent in (b) through a residue removal distillation zone wherein the polymeric residue content in said solvent is purge regulated to admit sufficient polymeric residue into said reaction zone as to achieve a polymeric residue concentration corresponding to that required for a desired product distribution, and wherein excess polymeric residue is removed as bottoms and solvent is distilled overhead and recombined with the solvent bottoms from said stripping zone and fed to said absorbing zone,

(d) passing a combined stream of condensed liquids from said condensing zones into a primary products distillation zone where organic acids, water, intermediates and residual solvent are removed as bottoms and propylene oxide, propylene, propane, acetaldehyde and methyl formate are distilled overhead,

(e) directing the overhead from (d) to a C_3 removal distillation zone where propylene and propane are distilled overhead and propylene oxide, acetaldehyde and methyl formate are removed as bottoms,

(f) passing said bottoms from said C_3 removal zone to a distillation zone where acetaldehyde is distilled overhead and propylene oxide and methyl formate are removed as bottoms,

(g) passing the bottoms from (f) to an atmospheric extractive distillation zone using as extractive solvent a hydrocarbon solvent boiling above 67° C. and wherein methyl formate is removed overhead and said extractive solvent containing propylene oxide is removed as bottoms,

(h) feeding the bottoms from (g) to a propylene oxide refining distillation zone from which purified propylene oxide is distilled overhead and recovered, while said hydrocarbon solvent is removed as bottoms and recycled to said extractive distillation zone,

(i) feeding the bottoms from said acids separation distillation zone in step (d) to an acid-solvent distillation splitting zone where most of the residual solvent from said reaction zone not removed in said flashing and stripping zones is removed as bottoms and recycled to said absorber,

(j) feeding the overhead from said acid-solvent distillation splitting zone to an acid-intermediates distillation zone where isopropanol, allyl alcohol, methanol and other intermediate boilers and some water are recovered overhead, while directing the bottoms from said acid-intermediates distillation zone to an azeotropic distillation column using benzene as an azeotrope-former for water and formic acid,

(k) removing from said azeotropic distillation zone an overhead stream containing a mixture of benzene-water and benzene-formic acid azeotropes to a condensing zone wherein benzene is separated from water and formic acid and feeding these three components to a collecting zone in which benzene forms an upper phase from which benzene is returned to said azeotropic distillation zone, while water and formic acid are removed as a lower phase, and

(l) removing from said azeotropic distillation zone a bottoms stream containing acetic acid and a small amount of residual solvent to a distillation refining zone wherein purified acetic acid is recovered over-

head and said residual solvent is removed as bottoms and recycled to said absorber.

3,350,422

CATALYTIC EPOXIDATION OF AN OLEFINICALLY UNSATURATED COMPOUND USING AN ORGANIC HYDROPEROXIDE AS AN EPOXIDIZING AGENT

John Kollar, Wallington, N.J., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,895

6 Claims. (Cl. 260—348.5)

1. The method of preparing an oxirane compound which comprises reacting an olefinically unsaturated compound having 3 to 4 carbon atoms with an organic hydroperoxide in the presence of a soluble vanadium compound catalyst.

3,350,423

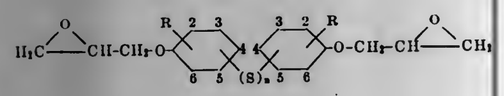
METHOD OF PREPARING ETHERS OF THIOBISPHENOL COMPOUNDS

Robert L. Carlyle, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 29, 1966, Ser. No. 561,413

4 Claims. (Cl. 260—348.6)

1. The method of preparing diglycidyl ethers of thiobisphenol which are represented by the formula:



wherein n is an integer having a value of from 1 to 3, wherein the point of attachment of the sulfur atom to each benzene nucleus is a carbon atom located in positions selected from the group numbered 2, 4 and 6, wherein R is a substituent selected from the group consisting of hydrogen, alkyl, phenyl, and halogen, and wherein an R substituent is attached to each carbon atom located in positions 3 and 5 and in positions 2, 4 and 6, which are not attached to a S atom, said method consisting essentially of slowly adding, while maintaining the temperature at between about −15° C. and 50° C., a sulfur chloride selected from the class consisting of SCl_2, S_2Cl_2 and mixtures thereof to a mixture comprising an epihalohydrin and an aryl hydroxy compound selected from the class consisting of phenol, alkyl-substituted phenols, halo-substituted phenols, phenyl-substituted phenols, and mixtures thereof, the amount of epihalohydrin being at least 2 moles per mole of aryl hydroxy compound and the amount of the sulfur chloride being from about 0.4 to about 0.6 mole per mole of aryl hydroxy compound and adding slowly thereto an aqueous solution of an alkali metal hydroxide until at least two moles thereof per mole of aryl hydroxy compound originally present has been added, while maintaining the temperature of the resulting mixture at between about 100° C. and about 140° C., accompanied by stirring until the reaction, yielding said diglycidyl ethers of thiobisphenol, is substantially complete, admixing therewith an inert solvent, removing the by-product salt formed in the reaction, volatilizing off the inert solvent, and recovering the resulting diglycidyl ethers of thiobisphenol.

3,350,424

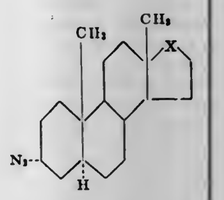
3α-AZIDO-5α-ANDROSTAN-17-ONE AND DERIVATIVES THEREOF

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,322

10 Claims. (Cl. 260—349)

1. A compound of the formula



wherein X is selected from the group of radicals consisting of carbonyl and those of the formula



Y being a member of the class consisting of hydrogen and lower alkanoyl and Z being a radical selected from the group represented by the formulas

$$C_nH_{2n+1}$$
$$C_nH_{2n-1}$$
$$C_nH_{2n-3}$$

wherein n is a positive integer less than 8.

3,350,425

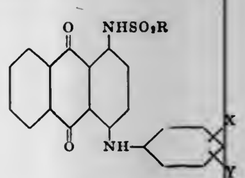
1-ALKYLSULFONAMIDO-4-ANILINO-ANTHRAQUINONES

Guido R. Genta, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware

No Drawing. Filed June 18, 1965, Ser. No. 465,141

6 Claims. (Cl. 260—374)

1. A compound of the formula:



wherein R is an alkyl radical having from 1–4 carbon atoms and X and Y are members selected from the group consisting of hydrogen, halo, lower alkyl, lower alkoxy, cyano, and hydroxy lower alkyl.

3,350,426

6α,16α-DIMETHYL-1,4-PREGNADIEN-17α-OL-3,20 DIONE AND ESTERS THEREOF

Howard J. Ringold, Shrewsbury, Mass., and Carl Djerassi, Palo Alto, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 14, 1962, Ser. No. 208,170

The portion of the term of the patent subsequent to Dec. 8, 1981, has been disclaimed

5 Claims. (Cl. 260—397.4)

1. The acetate of 6α,16α-dimethyl-$\Delta^{1,4}$-pregnadien-17α-ol-3,20-dione.

3,350,427

PROCESS FOR THE DEHYDROHALOGENATION OF STEROIDS

William H. Gebert, Morris Plains, and Nathaniel Murrill, Orange, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 28, 1966, Ser. No. 523,573

10 Claims. (Cl. 260—397.4)

1. In the process wherein an α-bromo-keto-steroid having a hydrogen on the beta carbon is treated with a dehydrohalogenating agent and there is formed an α(β)-unsaturated-keto-steroid, the improvement which comprises treating said α-bromo-keto-steroid with a dehydrohalogenating agent selected from the group consisting of an alkaline earth oxide, an alkaline earth hydroxide, and mixtures thereof, in a solvent selected from the group consisting of an N-lower alkyl 2-pyrrolidone and an N,N-dilower alkyl amide of a hydrocarbon carboxylic acid having up to 18 carbon atoms.

3,350,428

CONTINUOUS SULFONATION PROCESS

Richard J. Brooks and Burton Brooks, Seattle, Wash., assignors to The Chemithon Corporation, Seattle, Wash., a corporation of Washington

Filed Oct. 31, 1963, Ser. No. 320,301

16 Claims. (Cl. 260—400)

1. A continuous process for sulfating an organic reactant having an alcoholic hydroxyl group wherein said organic reactant is reacted with sulfur trioxide to provide a corresponding organic sulfuric acid compound which comprises simultaneously and continuously introducing into an externally cooled reaction zone (1) a stream of said organic reactant and (2) a stream of a gaseous mixture of sulfur trioxide and an inert diluent, from which any mist present previously has been removed, without premixing said streams, at a temperature which reduces the viscosity of said organic reactant sufficiently to effect optimum mixing, thoroughly mixing said organic reactant-containing and said sulfur trioxide-containing streams in said reaction zone for a time period of at most about 10 seconds to provide a reaction mixture in the form of a thin film, removing said reaction mixture from said reaction zone at the end of said time period, immediately introducing said reaction mixture withdrawn from said reaction zone into a quench cooling zone to effect a rapid cooling of said reaction mixture to a temperature below about 130° F. and provide a substantially non-degraded organic sulfuric acid-rich product, withdrawing said sulfuric acid-rich product from said quench cooling zone, separating said gaseous inert diluent containing any unreacted sulfur trioxide therefrom, and thereafter neutralizing at least part of the resultant sulfur trioxide-free, sulfuric acid-rich product.

8. A continuous process for sulfonating a sulfonatable organic reactant selected from the group consisting of olefins, aromatic hydrocarbons and unsaturated fatty acids, wherein said organic reactant is reacted with sulfur trioxide to provide a corresponding sulfonic acid, which comprises introducing into an externally cooled reaction zone (1) a stream of said organic reactant and (2) a stream of a mixture of sulfur trioxide and a gaseous inert diluent, from which any mist present previously has been removed, thoroughly mixing said organic reactant-containing and said sulfur trioxide-containing streams in said reaction zone for a time period of at most about 10 seconds to provide a reaction mixture in the form of a thin film, removing said reaction mixture from said reaction zone at the end of said time period, and immediately introducing said reaction mixture withdrawn from said reaction zone into a quench cooling zone to effect a rapid cooling of said reaction mixture to a temperature below about 130° F. and provide a substantially non-degraded sulfonic-acid rich mixture, withdrawing said sulfonic-acid rich mixture from said quench cooling zone, passing the same through a separation zone and separating said gaseous inert diluent containing any un-reacted sulfur trioxide therefrom, and digesting at least a part of the resulting mixture in an agitated digestion zone without substantial back-mixing to provide a product richer in sulfonic acid than that introduced into the digestion zone.

3,350,429

PROCESS FOR THE MANUFACTURE OF MODIFIED CLAYS

Hiroshi Hasegawa, Hyogo-ken, Eiji Suito, Sakyoku, Kyoto, and Mitsuji Kondo, Usuigun, Gumma-ken, Japan, assignors to Shiraishi Kogyo Kaisha, Ltd., Hyogo-ken, Japan

No Drawing. Filed Apr. 30, 1962, Ser. No. 191,325

Claims priority, application Japan, June 1, 1961, 36/19,555

4 Claims. (Cl. 260—404)

1. The method for producing a modified montmorillonite clay in which a chain hydrocarbon radical of organic complex molecules extends perpendicularly to the basal plane (001) between the clay structural sheets, said method comprising the steps of adding to montmorillonite clay a complex which is produced by melting and mixing 1 mol. of higher fatty amine together with 1 mol. of a member of the group consisting of higher fatty amide and higher fatty nitrile; adding to the mixture with 1 mol. of the group consisting of acetic acid and a complex which is produced by melting and mixing 1 mol. of higher fatty amine acetate together with 1 mol. of higher fatty amide or higher fatty nitrile, said chain having from 12 to 22 carbon atoms.

3,350,430

[(p-TOLYLSULFAMOYL) CYCLOPENTADIENYL] MANGANESE TRICARBONYL

John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Aug. 12, 1960, Ser. No. 49,135. Divided and this application May 29, 1963. Ser. No. 299,441

1 Claim. (Cl. 260—429)

[(p - Tolylsulfamoyl)cyclopentadienyl]manganese tricarbonyl.

3,350,431

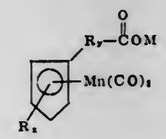
ALKALI METAL SALTS OF CYCLOPENTADIENYL CARBOXYLIC ACID MANGANESE TRICARBONYLS AND THEIR FREE ACIDS

John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Aug. 12, 1960, Ser. No. 49,135. Divided and this application May 13, 1963, Ser. No. 283,144

3 Claims. (Cl. 260—429)

1. Compounds having the formula:



wherein R is a hydrocarbon group containing from one to about 8 carbon atoms, x is an integer ranging from 0 to 3, y is an integer ranging from 0 to 1 and M is an alkali metal.

3,350,432
GLYCERATOZIRCONIUM HALIDES AND THEIR PREPARATION

James Albert Stynes, Lewiston, N.Y., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,928
7 Claims. (Cl. 260—429.3)

1. A glyceratozirconium halide which has a formula essentially represented by

$$[Zr(OH)_x(C_3H_6O_3)_yA_z]_n$$

in which A is a halogen selected from the group consisting of chlorine, bromine, and iodine; y is a number in the range 0.8–1.0; z is a number in the range 0.9–1.15; x is a number equivalent to $4-(2y+z)$; and n is a variable number greater than 1.

5. A process for forming glyceratozirconium halides which comprises mixing an aqueous zirconyl halide solution having a molarity greater than 1, said zirconyl halide being selected from the group consisting of zirconyl chloride, zirconyl bromide, and zirconyl iodide, with at least 1 mole of glycerol per gram atom of zirconium and heating said mixture until a water soluble precipitate is produced.

3,350,433
METHOD OF PREPARING VINYLETHINYL STANNANES

Nickolai Vasilievich Komarov and Iraida Sergeevna Guseva, Irkutsk, U.S.S.R., assignors to Irkutsky Institute organicheskoi Khimii, Irkutsk, U.S.S.R.

No Drawing. Filed Dec. 22, 1964, Ser. No. 420,435
2 Claims. (Cl. 260—429.7)

1. A method of synthesizing vinylethinyl stannanes which comprises reacting vinylacetylene with organic derivatives of bis-tin oxides of the general formula

$$R_3SnOSnR_3$$

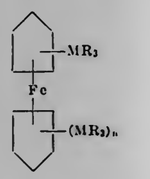
where R is a radical selected from a group containing alkyl and aryl groups.

3,350,434
TRIORGANOTIN AND LEAD DERIVATIVES OF FERROCENE

John P. Pellegrini, Jr., O'Hara Township, Allegheny County, and Ilgvars J. Spilners, Monroeville, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,648
12 Claims. (Cl. 260—429.7)

1. An organometallic derivative of ferrocene represented by the general formula



where M is a metal selected from the group consisting of tin and lead; R is a hydrocarbon radical selected from the group consisting of alkyl, aryl, aralkyl, alkaryl and cycloalkyl radicals; and n is an integer of 0 to 1.

3,350,435
ORGANO-ARSENIC-NITROGEN COMPOUNDS AND THE PREPARATION THEREOF

John R. Van Wazer, Ladue, and Kurt Moedritzer, Webster Groves, Mo., and Marvin D. Rausch, Amherst, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,429
12 Claims. (Cl. 260—440)

1. Arsenic compounds having the formula

$$[As[(NQ)_{1/2}]_xX_y]_m$$

where x and y are positive numbers, m is an integer from 2 to 1000, and $x+y=3$, Q is a hydrocarbyl radical of from 1 to 20 carbon atoms, X is selected from the group consisting of fluorine, chlorine, bromine and iodine; alkoxy radicals, OR; dialkyl amine radicals, NR_2; and mercapto radicals, SR; where R is an alkyl radical having from 1 to 20 carbon atoms.

3,350,436
ORGANOBISMUTH ETHYLENIC CARBOXYLATES AND POLYMERS THEREOF

John R. Leebrick, Roselle Park, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 15, 1963, Ser. No. 280,720
12 Claims. (Cl. 260—447)

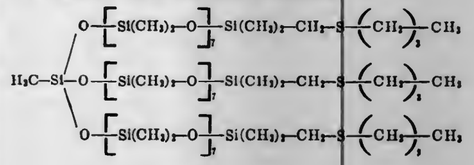
1. A novel organobismuth compound selected from the group consisting of $R_aBi(OOCR')_{3-a}$ and $Ar_3Bi(OOCR')_2$ wherein R is selected from the group consisting of alkyl radicals of less than 20 carbon atoms, alkenyl radicals of less than 20 carbon atoms, cycloalkyl radicals, and monocyclic aryl radicals; Ar is a monocyclic aryl radical; R' is a polymerizable radical selected from the group consisting of the vinyl, α-alkylvinyl and vinylphenyl radicals; and a is an integer less than 3.

3,350,437
ORGANOMERCAPTOMETHYL SILICON COMPOUNDS AND PRODUCTION THEREOF

Walter Simmler, Cologne-Muhlheim, Hans Niederprum, Monheim, and Heinz Jonas, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,875
Claims priority, application Germany, Dec. 31, 1962, F 38,688
6 Claims. (Cl. 260—448.2)

1. Organopolysiloxane of the formula



3,350,438
PROCESS FOR PREPARING BIURET POLYISOCYANATES

Hans Joachim Hennig, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,796
Claims priority, application Germany, Feb. 18, 1963, F 39,044
6 Claims. (Cl. 260—453)

1. A process for the preparation of a biuret polyisocyanate which comprises reacting an organic polyisocyanate with anhydrous formic acid at a temperature of from about 80 to about 200° C. in the molecular ratio of at least 3 mols of organic polyisocyanate per mol of formic acid.

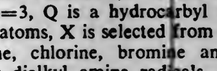
3,350,439
PROCESS FOR PREPARING AMINOALKANENITRILES

Julian Feldman and Martin Thomas, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 1, 1965, Ser. No. 460,560
10 Claims. (Cl. 260—465.5)

1. A process for preparing alpha-alkyl-omega aminoalkanenitriles which comprises the following sequential steps:

(a) contacting a dinitrile compound having the formula



wherein n is an integer from 1 to 12, R_1 and R_2 are hydrogen, with hydrogen at a temperature within the range of about 10° to 100° C., a pressure of from about 100 to 2,000 p.s.i., in the presence of a palladium or platinum metal hydrogenation catalyst to obtain a reaction product containing 2-alkyl-alkanedinitrile; and separating the catalyst therefrom

(b) contacting the thus treated reaction product mixture with hydrogen, said hydrogen being less than about 60% of the amount stoichiometrically required to reduce both nitrile groups, in the presence of ammonia, tertiary alkyl amine, or mixtures thereof, as a suppressant at a temperature within the range of about 50° to 150° C., and at a pressure of at least 1000 p.s.i., in the presence of a nickel, cobalt or ruthenium hydrogenation catalyst, and recovering said alpha-alkyl-omega-aminoalkanenitrile.

3,350,440
HIGH-ENERGY PROPELLANT OXIDIZER AND METHOD FOR SYNTHESIS

Perry A. Argabright, Cranford, and Lawrence J. Engel, Dunellen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 11, 1961, Ser. No. 159,478
3 Claims. (Cl. 260—490)

1. Tetrakis-(difluoramino)-butylacetate having the composition $C_6H_8O_2(NF_2)_4$.

2. Process for the synthesis of tetrakis-(NF_2)-butylacetate which comprises reacting 1-acetoxy-1,3-butadiene in vapor phase with sufficient N_2F_4 under subatmospheric pressure at a temperature in the range of 20° to 100° C. to form a bis-(NF_2) adduct of the acetoxy-1,3-butadiene, reacting the resulting bis-(NF_2) adduct of the acetoxybutadiene with a fresh charge of N_2F_4 at a temperature in the range of 50° to 250° C. under superatmospheric pressure in the presence of an inert halocarbon diluent to convert the bis-(NF_2) adduct to tetrakis-(NF_2)-butylacetate product, and recovering said product.

3,350,441
PROCESS OF PREPARING CLEVE'S ACID

George B. Leightle, Roselle Park, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,710
5 Claims. (Cl. 260—508)

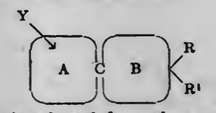
1. The process of preparing Cleve's acids which comprises reducing an aqueous slurry of isomeric mononitrated naphthalene-β-sulfonic acids with 3.55 to about 4.35 moles of iron and with 0.0258 to about 0.314 mole of 78% sulfuric acid at a temperature between 95°–100° C., filtering the reduced mass and evaporating the filtrate to a concentration ranging from 8 to 20% by volume of the isomeric aminonaphthalene sulfonic acids, treating the concentrated filtrate with about 0.0139 to 0.017 mole of zinc dust at a temperature between 60°–70° C., followed by acidification with a mineral acid selected from the class consisting of sulfuric acid and hydrochloric acid at a temperature of from 20 to 70° C. and isolating the Cleve's acids by filtration.

3,350,442
SPIRO ACIDS

Leonard M. Rice, Minneapolis, Minn., and Charles H. Grogan, Falls Church, Va., assignors to Tri-Kem Corporation, Washington, D.C., a corporation of the District of Columbia

No Drawing. Filed May 6, 1964, Ser. No. 365,484
9 Claims. (Cl. 260—514)

1. A compound of the formula:



wherein ring A is selected from the group consisting of saturated carbocyclic rings containing from 5 to 15 carbon atoms, perhydroindenyl, decahydronaphthyl and tetrahydronaphthyl; ring B is a saturated carbocyclic ring of 5–6 carbon atoms; Y is 1–3 members independently selected from the group consisting of hydrogen, alkyl of 1–12 carbon atoms, alkenyl of 2–12 carbon atoms, alkoxy of 1–12 carbon atoms, cycloalkyl of 3–15 carbon atoms, phenyl, naphthyl, phenylakyl of 7–14 carbon atoms and halophenyl; R and R^1 are selected from the group consisting of hydrogen, nitrilo, phenyl and carboxyl, at least one of R and R^1 being carboxyl; and R and R^1 being at least one ring atom removed from the spiro carbon atom C.

3,350,443
PROCESS FOR PRODUCING PYROMELLITIC ACID AND MELLOPHANIC ACID

Jürgen Schlegel, 14 Main St., Hagen, Germany, and Georg Kolling, Kieferhalde 26, Essen, Germany

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,689
Claims priority, application Germany, Aug. 9, 1962, B 68,359
11 Claims. (Cl. 260—523)

1. A process comprising oxidizing a hydrogenated fused ring aromatic compound selected from the group consisting of octahydro anthracene and octahydro phenanthrene with nitric acid in a liquid state at a specific gravity of between 1.2 and 1.4 at a temperature of from 130–170° C. to form an acid selected from the group consisting of pyromellitic and mellophanic acids, the octahydro anthracene and octahydro phenanthrene being produced by hydrogenating anthracene and phenanthrene respectively at a temperature of from 200–450° C.

3,350,444
PROCESS FOR SEPARATING CYCLOHEXANE OXIDATION PRODUCTS

John H. Bonfield, East Aurora, and Allen W. Sogn, Williamsville, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 9, 1965, Ser. No. 486,202
15 Claims. (Cl. 260—531)

1. A process for separating oxygen-containing organic products, resulting from the oxidation of cyclohexane, from a mixture of said oxygen-containing organic products and cyclohexane which comprises intimately contacting said mixture with from about 0.1 to 4.0 parts per part by weight of said mixture of an acid extractant selected from the group consisting of molten succinic, glutaric and adipic acids and mixtures thereof and aqueous solutions of said acids containing at least about 60 weight percent of acid under conditions of temperature and

pressure sufficient to avoid boiling cyclohexane and water and to maintain said extractant as a single homogeneous phase, to form an acid extract containing said oxygen-containing organic products, separating said acid extract from the cyclohexane raffinate and thereafter recovering the oxygen-containing organic products from said extract.

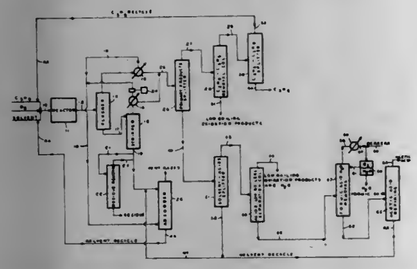
10. The process of claim 1 wherein said oxygen-containing organic products are converted to adipic acid and are recovered from said acid extract by heating the acid extract in the presence of nitric acid and a metal compound-based oxidation catalyst, thereafter cooling the reaction mass to effect precipitation of adipic acid and recovering said adipic acid precipitate therefrom.

3,350,445

PRODUCTION AND RECOVERY OF ACETIC ACID BY PLURAL DISTILLATION

Robert C. Binning, St. Louis, Leon E. Bowe, Glendale, and Harold R. Null, Florissant, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,228
5 Claims. (Cl. 260—533)



1. Process for the production of acetic acid which comprises oxidizing propylene feedstocks with molecular oxygen in a solvent selected from the group consisting of fully esterified polyacyl esters of polyhydroxyalkanes, polyhydroxycycloalkanes, polyglycols and mixtures thereof, where said esters contain from 1 to 18 carbon atoms in each acyl moiety and from 2 to 18 carbon atoms in each alkylene and cycloalkylene moiety, under temperatures and pressures sufficient to cause the reaction to proceed in the liquid phase and recovering said acetic acid by:

(a) directing effluent stream of the reaction mixture from a reaction zone through a combination let-down distillation zone comprising a flashing zone followed by a stripping zone, said flashing zone and stripping zone being maintained at pressures substantially lower than in each preceding zone and at temperatures necessary to separate substantially all of the acetic acid and lower boiling products overhead as gas phase and higher boiling components including the bulk of the solvent and residue which are removed as bottoms from said stripping zone,

(b) passing said overhead gas phase to condensing zones, from whence uncondensed gases are directed to an absorbing zone into which the bottoms stream from said stripping zone is also passed to absorb uncondensed propylene, propane and minor amounts of oxygenated components; removing vent gases overhead from said absorber, while feeding the bottoms stream from said absorbing zone back to said reaction zone as recycle solvent,

(c) directing a side-stream of said bottoms from said stripping zone through a residue removal distillation zone wherein the concentration of residues of polymeric reaction products having boiling points above that of said solvent in said recycle solvent is purge regulated to admit sufficient residue into said reaction zone as to maintain a residue concentration therein not exceeding that level above which additional residue is incompletely oxidized, and wherein excess residue is removed as bottoms and solvent is distilled overhead and recombined with the solvent bottoms from said stripping zone and fed to said absorbing zone,

(d) feeding a combined stream of condensed liquids from said condensing zones into a primary products distillation splitting zone from which an overhead stream containing unreacted propylene, propane and some low boilers is removed to a propylene-propane removal zone from which said low boilers are removed as bottoms while propylene and propane are removed overhead and fed to a distillation splitter for these components and wherein propane is removed as bottoms and propylene is removed overhead and recycled to said reaction zone,

(e) feeding the bottoms from said primary products distillation splitting zone in step (d) to an acid-solvent distillation splitting zone where most of the residual solvent from said reaction zone not removed in said flashing and stripping zones and higher boiling components are removed as bottoms and recycled to said absorber,

(f) feeding the overhead from said acid-solvent distillation splitting zone containing residual solvent, acid values, water and low boilers to an acids-low boilers distillation separation zone wherein the low boilers and some water are recovered overhead, while directing the bottoms from said acids-low boilers separation zone to an azeotropic distillation column using benzene as an azeotrope-former for water and formic acid,

(g) removing from said azeotropic distillation zone an overhead stream containing a mixture of benzene-water and benzene-formic acid azeotropes to a condensing zone wherein benzene is separated from water and formic acid and feeding these three components to a collecting zone in which benzene forms an upper phase from which benzene is returned to said azeotropic distillation zone, while water and formic acid are removed as a lower phase, and

(h) removing from said azeotropic distillation zone a bottoms stream containing primarily acetic acid and a small amount of residual solvent to a refining zone wherein purified acetic acid is recovered overhead and said residual solvent is removed as bottoms and recycled to said absorber.

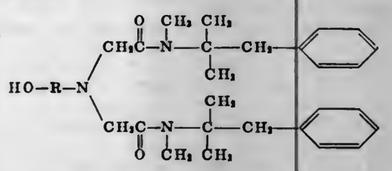
3,350,446

PROCESS FOR PREPARING BISACETAMIDES

William F. Bruce, Havertown, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1964, Ser. No. 379,389
3 Claims. (Cl. 260—559)

1. In a method for the preparation of a compound of the structure:



wherein R represents divalent lower alkylene of 2 to 4 carbon atoms which comprises heating a lower alkanolamine of 2 to 4 carbon atoms with a halo fatty acid amide

in which the amido radical has N-methyl and N-(α,α-dimethylphenethyl) substituents, to a temperature of about 70–80° C., the improvement which comprises (1) employing as the selective reaction solvent the compound dimethylformamide (2) and concurrently conducting the reaction in the presence of triethylamine.

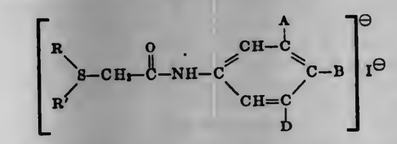
3,350,447

N-PHENYLCARBAMOYLMETHYL SULFONIUM IODIDES

Kenneth Wayne Ratts, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 28, 1965, Ser. No. 467,675
5 Claims. (Cl. 260—562)

1. A sulfonium iodide of the formula



wherein R and R' are lower alkyl, wherein A and D are selected from the group consisting of hydrogen, chlorine and bromine, wherein B is selected from the group consisting of hydrogen, chlorine, bromine and nitro, and wherein at least one of A, B and D is hydrogen.

3,350,448

PROCESS FOR FLUORINATING BIGUANIDE

Clare Kucera, Tulsa, Okla., and William J. Leahy and Claude E. Merrill, Lancaster, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 25, 1964, Ser. No. 379,437
6 Claims. (Cl. 260—564)

1. A process for fluorinating biguanide which comprises:

(a) providing a mixture of a metal complex of biguanide and a member selected from the group consisting essentially of alkali metal fluorides, alkaline earth metal fluorides and mixtures thereof,

(b) agitating said mixture,

(c) contacting the agitated mixture with fluorine while maintaining the reaction temperature at from about minus 80° C. to about 5° C., and

(d) recovering fluorinated products produced by reaction of said metal biguanide complex with said fluorine.

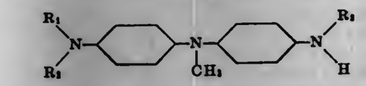
3,350,449

4,4'-DIAMINO-N-METHYL-DIPHENYL-AMINES

Edward L. Wheeler, Woodbury, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,315
The portion of the term of the patent subsequent to Aug. 9, 1983, has been disclaimed and dedicated to the Public
3 Claims. (Cl. 260—576)

1. A compound having the general formula



in which R_1 is a methyl group, a secondary alkyl group having from 3 to 8 carbon atoms, or a cycloalkyl group having from 5 to 8 carbon atoms; R_2 is a methyl group; and R_3 is a secondary alkyl group having from 3 to 8 carbon atoms or a cycloalkyl group having from 5 to 8 carbon atoms.

3,350,450

PROCESS OF PREPARING AROMATIC AMINES BY THE CATALYTIC HYDROGENATION OF AROMATIC NITRO COMPOUNDS

Frederick S. Dovell, Naugatuck, and Harold Greenfield, Watertown, Conn., assignors to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed May 1, 1964, Ser. No. 364,280
20 Claims. (Cl. 260—577)

1. The hydrogenation process comprising the steps of (1) effecting the reductive hydrogenation of a bromo-substituted aromatic nitro compound with hydrogen to produce the corresponding bromo-substituted primary aromatic amine; and (2) effecting the reductive alkylation of said bromo-substituted primary aromatic amine with hydrogen and a lower alkyl aldehyde, aryl aldehyde, lower aliphatic ketone or alkylaryl ketone to produce the corresponding bromo-substituted amine; said steps (1) and (2) being conducted in the presence of a catalyst comprising the sulfide of platinum, rhodium, ruthenium or cobalt.

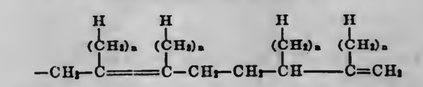
3,350,451

PRODUCTION OF N-(2,7-ALKADIENYL)AMINES

Edgar J. Smutny, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 14, 1965, Ser. No. 455,995
19 Claims. (Cl. 260—577)

1. The N-(alkadienyl)amine wherein the amine moiety is that of an organic amine of up to 20 carbon atoms and from 1 to 4 amino moieties, at least one of which amino moieties of said organic amine being amino of from 1 to 2 hydrogen substituents, and at least one of the amino moieties of said N-(alkadienyl)amine is substituted with the moiety represented by the formula



wherein n independently is a whole number from 0 to 1 inclusive.

10. The process of producing N-(alkadienyl)amine by contacting an organic amine having at least one N-hydrogen substituent with a conjugated diene comprising butadiene with from 0 to 2 internal-carbon methyl substituents, in the presence of metal compound catalyst, said metal being selected from the group consisting of palladium, platinum and ruthenium, and a phenoxide anion catalyst promoter.

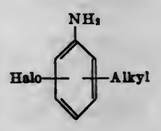
3,350,452

PROCESS FOR PREPARING AROMATIC PRIMARY HALOAMINES

Paul N. Rylander, Newark, and Nathan G. Himelstein, Hillside, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed July 21, 1964, Ser. No. 384,255
10 Claims. (Cl. 260—580)

1. A method for producing a compound of the formula



which comprises hydrogenating the corresponding nitro compound at a temperature of about 20° C. to about 150° C. and a pressure between atmospheric and about 500 p.s.i. with a catalyst consisting essentially of platinum supported upon a carrier selected from the group consisting of barium carbonate and strontium carbonate.

3,350,453
ALKYL COMPOUNDS CONTAINING NITROGEN AND FLUORINE

Robert C. Petry and Samuel F. Reed, Jr., Huntsville, Ala., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 14, 1964, Ser. No. 360,175
9 Claims. (Cl. 260—583)

1. A bis(difluoramino)alkane wherein the alkane contains from 4 to 8 carbon atoms and the difluoramino groups are on non-vicinal carbon atoms.

3. A process for the preparation of alkyl(difluoramines) wherein the alkyl portion contains from 1 to 8 carbon atoms comprising reacting tetrafluorohydrazine with an alkane of 1 to 8 carbon atoms in the temperature range of about 180° to 500° C.

3,350,454
PROCESS OF PRODUCING AMINES

Herbert C. Brown, 1840 Garden St., West Lafayette, Ind. 47906

No Drawing. Filed Sept. 27, 1963, Ser. No. 312,014
12 Claims. (Cl. 260—583)

1. A process for producing amines which process comprises reacting (I) an organoborane having an organo group directly linked to boron by a carbon-to-boron bond, (II) with hydroxylamine monosulfonic acid or with a haloamine having the formula $R_nNH_{2-n}X$ where R is a hydrocarbyl group, X is a halogen, and n is 0, 1 or 2, to remove said organo group from the boron and aminate the organo group to form the corresponding amine.

3,350,455
METHOD FOR THE PREPARATION OF ALIPHATIC DIAMINES

Robert W. White, Willingboro, N.J., and Joseph L. O'Brien, Southampton, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 8, 1965, Ser. No. 446,704
5 Claims. (Cl. 260—585)

1. A method for the preparation of amino compounds comprising reacting with ozone a compound having the formula

$$RCH{=}CH(CH_2)_nCN$$

wherein n is an integer of 7 to 11 and

R is selected from the class consisting of hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 8 carbon atoms and alkdienyl of 4 to 8 carbon atoms, in the presence of an alkanol containing from 1 to 8 carbon atoms, at a temperature of about −40° C. to about +40° C., followed by reacting the formed ozonide with hydrogen at a temperature of about −40° C. to about +50° C., at a pressure of about 50 to 500 p.s.i.g., and then ammonia in the presence of hydrogen at a temperature of about 50° to 250° C., at a pressure of 300 to 3000 p.s.i.g., the reaction with hydrogen and with ammonia taking place in the presence of a hydrogenation catalyst.

3,350,456
PROCESS FOR PREPARING CYCLOHEXANONE FROM CYCLOHEXANOL

Heinz Füeg, Chur, Grisons, Switzerland, assignor to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

Filed Feb. 11, 1964, Ser. No. 344,143
Claims priority, application Switzerland, July 28, 1960, 8,596/60
1 Claim. (Cl. 260—586)

In the process of preparing cyclohexanone from cyclohexanol containing impurities which consist of formic acid, valeric acid, butyric acid, and acetic acid, and of their cyclohexyl esters in a total amount of up to 5% by weight, which impurities are formed in the preparation of cyclohexanol from cyclohexane by oxidation with oxygen-containing gas, the step which comprises converting said cyclohexanol by dehydrogenation into cyclohexanone at temperatures ranging from 400–450° C. in the presence of a catalyst consisting of zinc oxide plus zinc carbonate plus calcium oxide plus calcium carbonate.

3,350,457
PRODUCTION OF PERHALOCYCLOHEXANONES

Alson K. Price, Mine Hill, and Richard F. Sweeney, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 13, 1965, Ser. No. 455,580
6 Claims. (Cl. 260—586)

1. A process for preparing a perhalocyclohexanone which comprises reacting 1,2-dichlorooctafluorocyclohexene epoxide with an inorganic metal fluoride selected from a group consisting of KF, CsF, LiF and AgF in liquid phase and recovering the perhalocyclohexanone from the reaction mixture.

3,350,458
PROCESS FOR PREPARING HYDRINDANTIN

Thomas R. Steadman, Kensington, Md., and Louis L. Wood, Washington, D.C., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 17, 1964, Ser. No. 352,678
5 Claims. (Cl. 260—590)

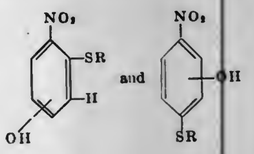
1. A method for preparing hydrindantin which comprises reacting ninhydrin with sodium formaldehyde sulfoxylate in the presence of an aqueous acid medium, and recovering the hydrindantin formed thereby.

3,350,459
MERCAPTO-NITROPHENOLS AND A PROCESS FOR PREPARING THEM

Heinrich Pelster, Leverkusen, and Rudolf Heiss, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Oct. 8, 1963, Ser. No. 314,637
Claims priority, application Germany, Nov. 16, 1962, F 38,325; Mar. 14, 1963, F 39,245
9 Claims. (Cl. 260—609)

1. A monomercapto-mononitrophenol selected from the group of



wherein R is a member selected from the group consisting of alkyl, hydroxy alkyl, carboxyalkyl, tolyl, chlorophenyl and methoxyphenyl.

3,350,460
METHOD FOR THE PREPARATION OF GLYCEROL ALPHA ETHERS AND THIO ETHERS

Vincent Lamberti, Teaneck, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Original application Mar. 13, 1963, Ser. No. 264,772. Divided and this application June 6, 1966, Ser. No. 568,085
9 Claims. (Cl. 260—609)

1. A method for the preparation of alpha-substituted glycerol ethers and thioethers which comprises: (1) reacting an ether of a glycerol alpha-chlorohydrin with an alkali metal or alkaline earth metal salt of a long chain fatty acid and (2) thereafter heating the product with an alkaline agent to effect hydrolysis.

3,350,461
PROCESS FOR THE PRODUCTION OF POLY-OXYPROPYLENE DIOLS

Harry H. Fall, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,407
2 Claims. (Cl. 260—615)

1. A process for the production of allyl glycidyl ether-propylene oxide copolymeric diols having a molecular weight from about 2000 to about 7000 which comprises forming an admixture of propylene oxide and allyl glycidyl ether said admixture containing from about 0.035 mole to about 1.0 mole of allyl glycidyl ether for each mole of propylene oxide adding from about 1.5% to about 7.3% by weight of said admixture of finely divided potassium hydroxide having a purity of at least 85 percent by weight and maintaining said mixture at a temperature at which said propylene oxide and said allyl glycidyl ether react under the influence of said potassium hydroxide to produce said copolymeric diols.

3,350,462
PREPARATION OF NONIONIC SURFACE ACTIVE AGENTS OF HIGH WETTING POWER

Robert E. Leary, Finderne, Louis J. Nehmsmann III, Metuchen, and Leslie M. Schenck, Mountainside, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,616
8 Claims. (Cl. 260—615)

1. The process which comprises in a first stage passing propylene oxide into at least one secondary alkanol of from 6 to 20 carbon atoms at a temperature of from 0° to 125° C. in the presence of an acidic catalyst selected from the class consisting of Friedel-Crafts type catalyst, sulfuric acid and phosphoric acid until between one mole to four moles of propylene oxide have reacted per mole of said alkanol, neutralizing the resultant propoxylated reaction mixture, and in a second stage reacting the neutralized mixture of propoxylated alkyl ethers of mono- and poly-propylene glycols with ethylene oxide in the presence of an alkaline catalyst selected from the class consisting of sodium hydroxide and an alkali metal alcoholate of a mono-alkyl ether of at least 1 poly-propylene glycol at a temperature of from about 50° C. to 200° C. until between 1 and 150 moles of ethylene oxide have reacted per mole of said propoxylated reaction mixture from the first stage.

3,350,463
PROCESS FOR THE MANUFACTURE OF ESTERS OF ORTHOFORMIC ACID WITH ALKANOLS WITH 2 TO 6 CARBON ATOMS

Karl Hass, Ranzel-Kolonie, Arnold Lenz, Cologne-Stammheim, and Otto Bleh, Mondorf (Rhine), Germany, assignors to Dynamit Nobel Aktiengesellschaft, a corporation of Germany

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,445
Claims priority, application Germany, Jan. 18, 1964, D 43,383
5 Claims. (Cl. 260—615)

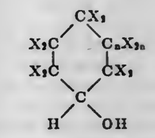
1. Process for the manufacture of a triester of orthoformic acid and an alkanol having 2–6 carbon atoms by liquid phase reaction which comprises contacting orthoformic acid trimethyl ester with an alkanol having 2–6 carbon atoms in the presence of 0.01–1 wt. percent of formic acid based on the total amount of the reactants, at a temperature and for a time sufficient for formation in said liquid phase of said triester of orthoformic acid and alkanol containing 2–6 carbon atoms, methyl alcohol, and esters of said formic acid, and separating methyl alcohol and said esters of formic acid from said liquid phase by distillation.

3,350,464
1-HYDRO-PERHALOGENATED CYCLOPENTANOLS AND CYCLOHEXANOLS

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 11, 1965, Ser. No. 424,827
15 Claims. (Cl. 260—617)

1. 1-hydro-perhalogenated cycloalkanols of the formula:



wherein X may be F or Cl and n may be 0 or 1, there being present at least two fluorine atoms in the molecule.

3,350,465
PROCESS FOR PREPARING A CYCLIC ALCOHOL

Johannes W. M. Steeman and Johan P. H. von den Hoff, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,922
Claims priority, application Netherlands, Jan. 15, 1962, 273,572
3 Claims. (Cl. 260—631)

1. In a process for preparing a cyclic alcohol by the oxidation of a saturated cyclic hydrocarbon which comprises contacting said hydrocarbon in the liquid phase with molecular oxygen at a temperature of 100 to 300° C. in the presence of an added boric acid ester, followed by hydrolysis of the resulting oxidation product, the improvement which comprises utilizing a boric acid ester composed of boric acid and an alcohol identical to the cyclic alcohol which is prepared, the alcohol to acid mole ratio in said boric acid ester being lower than 3:1.

3,350,466
EMULSION SEPARATION OF AROMATIC NITRO COMPOUNDS

William K. Menke, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 6, 1966, Ser. No. 555,282
5 Claims. (Cl. 260—645)

1. A method of separating an emulsion of an aromatic nitro compound and the acid used in the preparation of said nitro compound which comprises mixing with said emulsion an effective amount of the nitro compound present therein, said compound being substantially free of acid to thereby bring about separation of the emulsion.

3,350,467

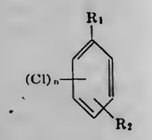
METHOD FOR SIDE-CHAIN CHLORINATION OF XYLENE

Ralph H. Lasco, Painesville, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Apr. 20, 1966, Ser. No. 543,819

11 Claims. (Cl. 260—651)

1. The method of chlorinating side-chain substituents of a compound corresponding to the formula:



where n is 0, 1, 2, 3, or 4; and,
when n is 1, 2, or 3, R_1 and R_2 are chloromethyl; and
when n is 0 or 4, R_1 and R_2 are the same or different and are methyl or chloromethyl;
wherein said compound contains metal ion contaminants capable of promoting ring activity of said compound, which method comprises reacting under free radical catalytic influence gaseous chlorine and said compound in the presence of a sequestering amount of metal ion sequestering agent selected from the group consisting of the chlorides and bromides of phosphorous and their mixtures.

3,350,468

QUADRICYCLONON-8-ENE AND ITS PRODUCTION

Lawrence G. Cannell, Albany, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 25, 1966, Ser. No. 537,286

3 Claims. (Cl. 260—666)

1. The process of producing quadricyclo(2.2.1.$2^{3,5}$.$0^{2,6}$)-non-8-ene by pyrolyzing

hexacyclo(7.2.1.1^{3,7}.1^{5,13}.0^{2,8}.0^{4,6})tetradec-10-ene

at a temperature of from about 300° C. to about 600° C. and recovering from the resulting product mixture said quadricyclononene.

3. The compound quadricyclo(2.2.1.$2^{3,5}$.$0^{2,6}$)non-8-ene.

3,350,469

METHOD FOR THE PRODUCTION OF PARAXYLENE

Patrick W. Ryan, Chicago Heights, Ill., assignor to Sinclair Research Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,722

4 Claims. (Cl. 260—672)

1. A process for the production of xylene containing more than the thermodynamic equilibrium amount of p-xylene consisting essentially of contacting in the vapor phase a feed consisting essentially of toluene and polymethylbenzene containing from 4 to 6 methyl groups with a solid silica-based hydrocarbon cracking catalyst at a temperature of about 500 to 700° F. wherein the mole ratio of toluene to the polymethylbenzene is from about 1 to 10.

3,350,470

SOLVENT EXTRACTION

Art C. McKinnis, North Long Beach, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Dec. 1, 1961, Ser. No. 156,372

8 Claims. (Cl. 260—674)

1. A method for separating monomethylnaphthalene from a like-boiling hydrocarbon mixture comprising:
(1) continuously contacting said hydrocarbon mixture comprising monomethylnaphthalene and substantially similar boiling monoaromatic and nonaromatic hydrocarbons, at reduced temperature, in countercurrent relationship with liquid sulfur dioxide and in concurrent relationship with saturated aliphatic hydrocarbon liquid boiling within the temperature range from about 95° F. to about 350° F., thereby forming an extract phase rich in liquid sulfur dioxide and containing a portion of said hydrocarbon mixture enriched in monomethylnaphthalene, and a raffinate phase containing substantially all of the remaining portion of said hydrocarbon mixture, said saturated aliphatic hydrocarbon liquid and a minor amount of said sulfur dioxide;
(2) evaporating said sulfur dioxide from said extract phase to form a sulfur dioxide overhead product and a hydrocarbon bottoms product enriched in monomethylnaphthalene;
(3) liquefying said sulfur dioxide overhead product to form liquid sulfur dioxide; and
(4) recycling said liquid sulfur dioxide to step (1).

3,350,471

HEAVY AROMATIC ADDED TO THE FEED IN A NORMAL PARAFFIN MOLECULAR SIEVE SEPARATION PROCESS

Willard N. Mitchell, Baytown, Tex., assignor to Esso Research and Engineering Company

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,110

9 Claims. (Cl. 260—676)

1. In the process of recovering normal paraffins from a hydrocarbon stream containing normal paraffins in admixture with aromatic hydrocarbons boiling in the same range as said normal paraffins and at least one hydrocarbon chosen from the group consisting of cycloparaffins and isoparaffins
comprising the steps of contacting said hydrocarbon stream in the vapor phase with a molecular sieve having pores of substantially uniform size and about 5 Angstroms in diameter, and desorbing a normal paraffin-rich desorbate from said sieve,
the improvement of
adding to said hydrocarbon stream before contact with said sieve
at least one aromatic hydrocarbon having a boiling point outside the boiling range of a desired high-purity normal paraffin product and higher than that of the aromatic hydrocarbons in said hydrocarbon stream,
in amounts of from 0.1% to 40% by weight based on the weight of said hydrocarbon stream,
whereby at least a portion of said added aromatic hydrocarbon will be retained on said sieve in preference to at least a portion of said aromatic hydrocarbons boiling in the same range as said normal paraffins
and fractionating said desorbate to separate said added aromatic hydrocarbons from said desired high-purity normal paraffins product.

3,350,472

SORBING CONJUGATED DIOLEFINS ON AMMONIA-TREATED FAUJASITE

Richard Joseph DeFeo, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,161

11 Claims. (Cl. 260—677)

1. A process for separating alpha monoolefins from conjugated diolefins while inhibiting double bond isomerization of said alpha monoolefins which comprises contacting a faujasite sorbent having a silica-to-alumina mole ratio of at least 3:1 with anhydrous ammonia at temperatures ranging from about 100 to about 800° F. for a sufficient time period to saturate said faujasite sorbent therewith, calcining said ammonia-treated sorbent at a higher temperature than used for ammonia treatment and ranging from about 700 to 1100° F., contacting a hydrocarbon feedstock containing a mixture of alpha monoolefins and conjugated diolefins with said ammonia-treated calcined faujasite sorbent at temperatures ranging from about 50 to about 800° F. thereby sorbing said conjugated diolefins on said sorbent, and recovering essentially unisomerized alpha monoolefins, said contact and said recovery steps being conducted in the absence of extraneous ammonia.

3,350,473

PROCESS FOR THE DEPURATION OF ACETYLENE CONTAINED IN THE GASES OBTAINED BY CRACKING OF HYDROCARBONS

Virgilio Stocchi, Mestre, Aldo Ferin, Veneto, and Augusto Magelli, Mestre, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,886
Claims priority, application Italy, Dec. 19, 1963, 26,012/63

5 Claims. (Cl. 260—679)

1. A process for the separation and depuration of acetylene contained in crude gases obtained from the cracking of hydrocarbons, which consists of subjecting the crude gases containing from 5 to 15% by volume of acetylene to a prewashing at a substantially atmospheric pressure, at 25 to 40° C., with aqueous H_2SO_4 having a concentration at the input of 70 to 90% and coming from a subsequent washing of the gases under pressure; subjecting the pre-washed gases, after a preliminary neutralization, to a washing at a temperature comprised between 25 and 40° C. with aqueous H_2SO_4 having at the input a concentration comprised between 90 and 98% at such pressure that the partial pressure of the acetylene is comprised between 0.5 and 1.4 atm. and corresponding to a total pressure from 2 to 24 atm., and treating the so depurated gases to an alkaline washing with a dilute solution of inorganic or organic bases before subjecting the gases to absorption on selective solvent.

3,350,474

PRODUCTION OF CONJUGATED DIOLEFINES

Max Marin Wirth, Dollar, Scotland, assignor, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England

No Drawing. Filed July 12, 1965, Ser. No. 471,455
Claims priority, application Great Britain, Feb. 20, 1959, 5,985/59; June 18, 1959, 20,883/59; Feb. 27, 1961, 7,184/61

9 Claims. (Cl. 260—681)

1. A process for the production of isoprene which comprises contacting in the vapor phase 4,4 - dimethyl-1,3 - dioxane in the presence of steam at a temperature of from 200° C. to 450° C. with non-acid acting stable to hydrolysis boron phosphate mixed with particles of a member selected from the group consisting of silica gel and diatomaceous earth, said boron phosphate being a combination of the oxides of boron and phosphorus.

3,350,475

UTILIZING BORAX TRIFLUORIDE AS A B-STAGE GELLING AGENT

Hiroshi Watanabe, Nobuo Tonami, Takeshi Watanabe, and Masayuki Nanba, Kamakura, Japan, assignors to Toyo Koatsu Industries, Incorporated, Chuo-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Original application Feb. 3, 1960, Ser. No. 6,372, now Patent No. 3,288,735, dated Nov. 29, 1966. Divided and this application June 23, 1966, Ser. No. 569,783

8 Claims. (Cl. 260—865)

1. The process of manufacturing articles from curable olefinically unsaturated polyester resins which comprises the steps of (A) mixing said resin with (a) a monomeric organic compound having an olefinic double bond which reacts with the olefinic unsaturated bond of said polyester resin in copolymerization by a free radical polymerization catalyst, (b) at least one free radical polymerization catalyst which is active only at temperatures above 60° C. selected from the group consisting of benzoyl peroxide, parachlorobenzoyl peroxide, di-tertiarybutyl peroxide, tertiary butyl perphthalic acid, 2,2-bis(tertiary butyl) peroxybutane, tertiary-butyl peracetate, di-cumyl peroxide, lauroyl peroxide, azo-bis-isobutylonitrile, and azo-bis-phenyl ethane, the amount of said free radical polymerization catalyst being 0.01 to 5 parts by weight for every 100 parts comprising said resin and said monomer, and (c) a boron trifluoride compound selected from the class consisting of boron trifluoride and its adducts, the amount of said boron trifluoride compound being 0.001 to 5 parts by weight for each 100 parts by weight comprising said resin and said monomer; (B) allowing the resulting resinous mixture to react at a temperature below about 60° C. to form a deformable gel which is stable to prolonged storage; and (C) thereafter subjecting said gel to a temperature above about 60° C. to cure said gel to a hard product.

3,350,476

PROCESS FOR THE POLYMERIZATION OF ETHYLENICALLY UNSATURATED COMPOUNDS BY AN ALKALI METAL-BORON-TRIARYL CATALYST

Theodore J. Weismann, Ross Township, Allegheny County, and William M. Zarrella, Monroeville Borough, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed May 18, 1965, Ser. No. 456,809

18 Claims. (Cl. 260—878)

1. A process which comprises polymerizing a 1,2 ethylenically unsaturated compound, having on the 1 carbon atom a first hydrogen atom substituent and a second substituent selected from the group consisting of hydrogen and phenyl, under polymerization conditions in the presence of an alkali metal organo boron compound having the general formula:

$$Me_xBR_1R_2R_3$$

where:
Me is an alkali metal;
x is an integer from 1 to 3;
B is boron;
R_1 is an aromatic organic radical; and
R_2 and R_3 are selected from the group consisting of an aromatic organic radiacal; and

$$-CR_4R_5R_6$$

where:
R_4 and R_5 are selected from the group consisting of hydrogen and organic radicals; and R_6 is selected from the group consisting of an aromatic organic radical and an alkyl aromatic organic radical where the alkyl portion of the alkyl aromatic organic radical contains less than 6 carbon atoms;

said alkali metal organo boron compound being at least partially dissolved in a liquid inert solvent medium which has an electron affinity less than the electron affinity of said substituted ethylene compound and less than the electron affinity of the organo boron portion of the alkali metal organo boron compound, said aromatic organic radical being selected from the group consisting of aryl, alkaryl, alkoxyaryl, amino aryl, and aromatic heterocyclic radicals, where the hetero atom is selected from the group consisting of oxygen, nitrogen, and sulfur; and said organic radical being selected from the group consisting of aryl, alkaryl, and aromatic heterocyclic radicals, where the hetero atom is selected from the group consisting of oxygen, nitrogen, and sulfur.

17. A process for the production of block co-polymers of ethylenically unsaturated compounds which comprises:

(1) polymerizing a first 1,2 ethylenically unsaturated compound under polymerization conditions including a temperature between −60° and +100° C. in the presence of an alkali metal organo boron compound having the general formula:

$$Me_xBR_1R_2R_3$$

where:

Me is an alkali metal;

x is an integer from 1 to 3;

B is boron;

R_1 is an aromatic organic radical; and

R_2 and R_3 are selected from the group consisting of an aromatic organic radical; and

$$-CR_4R_5R_6$$

where:

R_4 and R_5 are selected from the group consisting of hydrogen and organic radicals; and R_6 is selected from the group consisting of an aromatic organic radical and an alkyl aromatic organic radical where the alkyl portion of the alkyl aromatic organic radical contains less than 6 carbon atoms;

said alkali metal organo boron compound being at least partially dissolved in a liquid inert solvent medium which as an electron affinity less than the electron affinity of said substituted ethylene compound and less than the electron affinity of the organo boron portion of the alkali metal organo boron compound;

(2) maintaining the reaction conditions while adding a second 1,2 ethylenically unsaturated compound:

(3) said first and second 1,2 ethylenically unsaturated compounds having on the 1 carbon atom a first hydrogen atom substituent and a second substituent selected from the group consisting of hydrogen and phenyl;

(4) said aromatic organic radical being selected from the group consisting of aryl, alkaryl, alkoxyaryl, amino aryl, and aromatic heterocyclic radicals, where the hetero atom is selected from the group consisting of oxygen, nitrogen, and sulfur; and said organic radical being selected from the group consisting of aryl, alkaryl, and aromatic heterocyclic radicals, where the hetero atom is selected from the group consisting of oxygen, nitrogen, and sulfur.

3,350,477

COPOLYMERS OF VINYL DIPHENYL-PHOSPHINE OXIDE

Robert S. Cooper, Park Forest, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 7, 1960, Ser. No. 41,230
3 Claims. (Cl. 260—870)

1. A copolymer consisting essentially of vinyl diphenylphosphine oxide and a monomer polymerizable therewith selected from the group consisting of divinyl benzene, diethyl maleate, diallyl beta-cyanoethanephosphonate and a partially polymerized unsaturated polyester containing an alkenyl aryl cross-linking agent and the reaction product of an alpha, beta ethylenically unsaturated polycarboxylic acid, a saturated polycarboxylic acid free of non-benzoid unsaturation and at least one glycol.

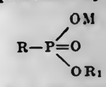
3,350,478

MONOESTERS OF PHOSPHONIC ACIDS

Emile Cherbuliez and Joseph Rabinowitz, Geneva, Switzerland, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,642
5 Claims. (Cl. 260—953)

1. A compound represented by the formula



wherein R is selected from the group consisting of phenyl, halogeno-phenyl and nitro-phenyl, R_1 is alkyl of 1 to 8 carbon atoms carrying one hydroxyl substituent, and M is selected from the group consisting of alkali metals and alkaline earth metals.

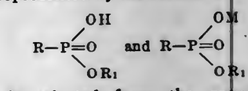
3,350,479

MONOESTERS OF PHOSPHONIC ACIDS

Emile Cherbuliez and Joseph Rabinowitz, Geneva, Switzerland, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,648
8 Claims (Cl. 260—956)

1. A compound selected from the group consisting of compounds represented by the formulas



wherein R is selected from the group consisting of phenyl, halogeno-phenyl and nitro-phenyl, R_1 is selected from the group consisting of alkadienes and alkatrienes of up to 18 carbon atoms, and M is selected from the group consisting of alkali metals and alkaline earth metals.

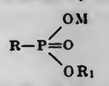
3,350,480

MONOESTERS OF PHOSPHONIC ACIDS

Emile Cherbuliez and Joseph Rabinowitz, Geneva, Switzerland, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,641
6 Claims. (Cl. 260—961)

1. A compound represented by the formula



wherein R is selected from the group consisting of phenyl, halogenophenyl and nitrophenyl, R_1 is alkyl of 1 to 18 carbon atoms carrying one or more halogen substituents, and M is selected from the group consisting of alkali metals and alkaline earth metals.

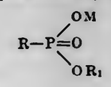
3,350,481

MONOESTERS OF PHOSPHONIC ACIDS

Emile Cherbuliez and Joseph Rabinowitz, Geneva, Switzerland, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,645
3 Claims. (Cl. 260—961)

1. A compound represented by the formula



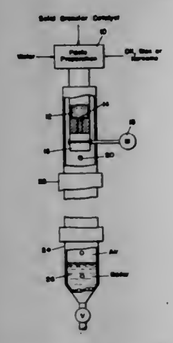
wherein R is selected from the group consisting of halogeno-phenyl and nitro-phenyl, R_1 is alkyl or 1 to 18 carbon atoms, and M is selected from the group consisting of alkali metals and alkaline earth metals.

3,350,482

METHOD OF PRODUCING SPHERICAL SOLIDS

Rolland G. Bowers, Toledo, Ohio, assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Apr. 18, 1962, Ser. No. 186,863
15 Claims. (Cl. 264—13)



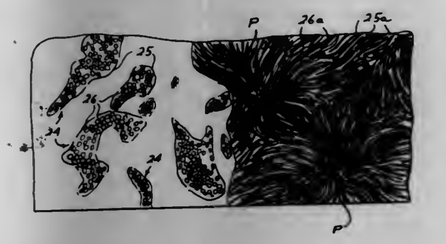
1. Process for preparing solid catalyst particles which comprises: extruding plastic material comprising a mixture of solid granules of siliceous adsorbent material and a liquid material in amount of 40 to 90 weight percent based on total solid-liquid composite; cutting the extruded material into particles having substantially uniform length; passing the particles through a fluid medium thereby to convert them to more nearly spherical shape; and removing excess liquid from the particles to obtain discrete, self-sustaining particles with a minimum of shrinkage.

3,350,483

FLOOR COVERING METHOD

Edward R. Erb, Geryville, and Richard L. Maass, Salisbury Township, Lehigh County, Pa., assignors, by mesne assignments, to The Ruberoid Co., South Bound Brook, N.J., a corporation of New Jersey

Filed Apr. 3, 1964, Ser. No. 357,183
2 Claims. (Cl. 264—74)



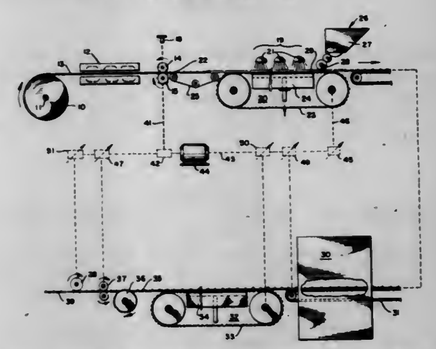
1. A method for applying surface covering decoration to a substrate web comprising applying to the web splotches of a dispersion comprising a transparent liquid heat hardenable polyvinyl chloride resin dispersion medium incorporating dispersed particles of pigmented polyvinyl chloride resin material, the splotches being applied in spaced relation, heating to at least gel the dispersion medium, flattening the dispersion splotches on the substrate web by intermittently and sequentially applying pressure to successive areas of the web, and applying heat to the dispersion splotches while pressure is applied, the quantity of the dispersion in the splotches and the pressure and heat applied being sufficient to effect flowing of the spaced splotches together, thereby forming a continuous layer covering the substrate web.

3,350,484

METHOD AND APPARATUS FOR MAKING BATTERY SEPARATORS AND THE LIKE

Donald G. Magill, Jr., Milford, N.J., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 436,257
12 Claims. (Cl. 264—90)



1. The method of making corrugated web material, which comprises

(a) supplying an uncured web material including a curable hardening component,

(b) imparting rib corrugations to said web at spaced intervals,

(c) conveying the corrugated web through a heating zone, thereby effecting at least partial curing of the curable hardening component,

(d) releasably holding the corrugated web during partial curing by vacuum means applied to the flat surface of the web opposite the raised ribs.

8. Apparatus for making battery separators or the like, comprising

(a) means for supplying uncured battery separator web material,

(b) a pair of corrugating rolls arranged to act on opposite sides of the web and form spaced ribs interconnected by flat web sections,

(c) a vacuum conveyor positioned to receive and releasably hold the flat web sections of the ribbed web,

(d) means for heating the web while it is conveyed by said vacuum conveyor, and

(e) means adapted to engage the web on the exit side of the corrugating rolls for elongating the ribbed web to increase the distance between ribs and reduce the height thereof.

3,350,485

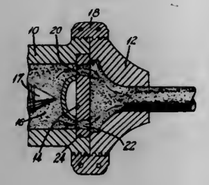
APPARATUS FOR AND METHOD OF CONTROLLING THE T/L RATIO OF THE CTE IN EXTRUDED CARBONACEOUS STOCK

Elmer G. Shesler, Fostoria, Ohio, Elmer A. Bowen, Westport, Conn., and Ronald F. Burden, Lewiston, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed June 5, 1964, Ser. No. 372,888
3 Claims. (Cl. 264—105)

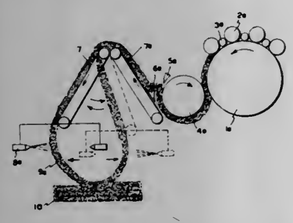
1. A method for controlling the orientation of the thermal expansion in the structure of carbonaceous stock comprising the step of forcing a stream of carbonaceous

matter containing needle-like coke particles and a binder around a baffle plate, said baffle plate being placed perpendicularly to the axis of the direction of extrusion and just prior to the entrance of a forming die, whereby said stream abruptly changes direction after passing said



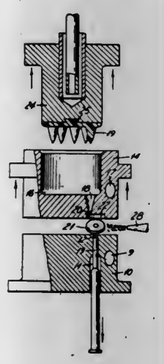
baffle plate thus precluding the axial alignment of said particles and whereby after baking and graphitizing, said stock is characterized in that the ratio of the transverse to the longitudinal average coefficient of thermal expansion is lowered to less than about 2.5.

3,350,486
METHOD OF PRODUCING CONTOUR MOLDED COTTON BATTING
Nestor B. Knoepfler, New Orleans, and Homer K. Gardner, Jr., and Henry L. E. Vix, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Apr. 29, 1965, Ser. No. 452,032
11 Claims. (Cl. 264—112)



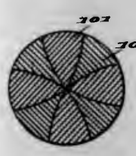
1. A method of producing a contoured fibrous cellulosic batt having dimensional stability, coherence, and resiliency, comprising
(a) forming a continuous web of opened textile fibers selected from the group consisting of cotton fibers, chemically modified cellulosic fibers, and blends thereof;
(b) spraying the web to a wet add-on of about from 50% to 150% by weight, based on the weight of the unsprayed web, with a composition containing a thermosetting cellulose reactive crosslinking resin to a resin add-on of about from 3.76% to 24.2% by weight, based on the weight of the unsprayed web, of said thermosetting cellulose reactive crosslinking resin;
(c) lapping the thus-sprayed web to obtain a multiplicity of layers and compressing said layers to produce a spray damp batt having a degree of dampness amounting to at least about 50% by weight, based on the weight of the unsprayed web;
(d) placing the thus-produced spray damp batt within a confining mold designed to impart to the finished batt a configuration of a selected contour;
(e) drying the batt in the mold for about from 5 to 30 minutes at about from 180° to 220° F.; and
(f) curing the dried batt in the mold for about from 2 to 30 minutes at about from 300° to 320° F.

3,350,487
METHOD FOR MOLDING PLASTIC ARTICLES
Peter H. Hofer, Berkeley Heights, and Herbert A. Swallow, North Branch, N.J., assignors to Union Carbide Corporation, a corporation of New York
Original application Aug. 13, 1964, Ser. No. 389,254. Divided and this application Nov. 29, 1966, Ser. No. 597,587
1 Claim. (Cl. 264—161)



Method for molding a sprue-free plastic article which comprises supplying a metered charge of molten plastic material to a transfer cylinder in an amount in excess of that required to mold said plastic article, applying a primary force to said molten plastic material sufficient to cause it to flow through and fill a sprue forming channel and to completely fill a mold cavity, cooling the plastic material in said mold cavity while simultaneously applying a secondary force such that molten plastic material continues to flow through said sprue forming channel to compensate for shrinkage of the cooling plastic material in the mold cavity, cooling the molten plastic material in the sprue forming channel in the absence of positive pressure, thereafter separating the sprue to formed from the plastic material in said mold cavity before the plastic material immediately underlying said sprue is cooled and removing the sprue-free molded article so formed from said mold cavity.

3,350,488
PROCESS FOR THE PRODUCTION OF SHARP-EDGE FIBERS
Alvin Leonard Breen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original applications May 27, 1958, Ser. No. 738,166, and June 7, 1962, Ser. No. 200,758, now Patent No. 3,188,689, dated June 15, 1965. Divided and this application Mar. 3, 1965, Ser. No. 436,888
4 Claims. (Cl. 264—171)



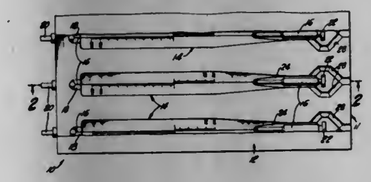
1. A method of making sharp-edged filaments which comprises spinning a composite filament of substantially uniform cross-section composed of segments of at least two dissimilar synthetic polymeric compositions, said

cross-section having at least two segments of at least one of said polymers, any contact between such segments of the same polymer being substantially point contact and separating a sharp-edged filament therefrom.

3,350,489
POLYVINYLIDENE CYANIDE COMPOSITION AND METHOD OF PRODUCING FIBERS AND FILMS
Saunders Elliot Jamison, Summit, N.J., assignor to Celanese Corporation, a corporation of Delaware
No Drawing. Filed May 3, 1963, Ser. No. 277,698
15 Claims. (Cl. 264—203)

1. A method of preparing fibers comprising dissolving 5 to 35 percent by weight of a vinylidene cyanide copolymer containing in excess of about 45% vinylidene cyanide units copolymerized with at least one ethylenically unsaturated monomers in a solvent mixture of 10 to 60% of trioxane and 85 to 10% of another solvent selected from the group consisting of ketones, nitriles, and hydrocarbons, extruding the solution through a shaped orifice, and coagulating the extrudate to form a continuous filamentary material consisting of said vinylidene cyanide copolymer.

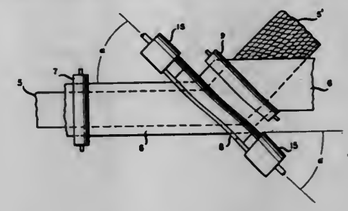
3,350,490
INEXPENSIVE CLINICAL THERMOMETER
Lee Le Beau, 3120 Stanford Ave., Venice, Calif. 90291
Filed Jan. 21, 1965, Ser. No. 426,721
12 Claims. (Cl. 264—275)

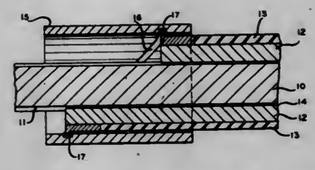


1. That method of making an inexpensive throw-away clinical thermometer which comprises supporting the opposite ends of a tensioned small diameter flexible core forming wire assembly of uniform diameter throughout the major portion thereof and having an enlargement near one end generally centrally of a mold cavity, closing the mold parts, charging said mold cavity with transparent thermoplastic material, opening the mold and separating said core assembly endwise from the molded part from the larger diameter end of said core assembly, charging said bore from end-to-end with colored liquid having a high coefficient of expansion, and sealing said bore.

3,350,491
METHOD AND APPARATUS FOR STRETCHING PLASTIC FILM
Ole-Bendt Rasmussen, Copenhagen, Denmark, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,867
Claims priority, application Denmark, Aug. 8, 1963, 3,797
7 Claims. (Cl. 264—288)

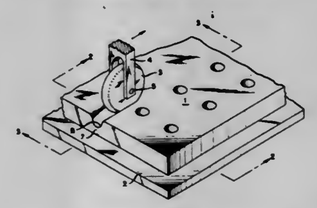
1. A method of transversely stretching a film of orientable plastic material which comprises sandwiching said film between two belts of elastic material, passing said belts and film into the nip between two rollers pressed together, said belts and film entering between said rollers at an angle α less than 90° to the longitudinal axes of said rollers, removing said belts and film from between said rollers at an angle to said axes greater than α by pulling over the whole width of said belts, said pulling producing a resulting pulling component in the longitudinal direction of said rollers, and neutralizing said component by





imparting in the opposite direction an axial movement to the parts of the roller surfaces touching said belts during the period of contact.

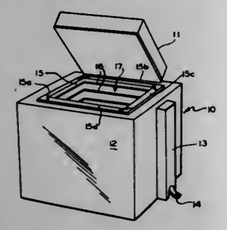
3,350,492
METHOD FOR FORMING UNITARY POLYOLEFIN HINGES
Dirk Grootenboer, Delft, Netherlands, assignor to Shell Oil Company, a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,499
Claims priority, application Netherlands, Jan. 27, 1964, 64—0,607
3 Claims. (Cl. 264—320)



1. An improved method of forming unitary hinges from polyolefin sheet material having a molecular orientation predominantly transverse to the hinge axis which comprises the steps of:
(1) supporting polyolefin sheet material at ambient temperature on a substantially rigid backing support;
(2) compressing said sheet material between said backing support and the periphery of a roller having a rounded periphery and having its rolling axis parallel to the plane of said sheet material; and,
(3) rolling said roller about its rolling axis while at approximately the temperature of the sheet material and at the same time maintaining said sheet material compressed between said disk and said support from approximately 90% to 98% of its original thickness along a desired hinge line for a time sufficient to form a hinge web having a thickness of approximately 25% or less of the original thickness of said sheet material, whereby the molecular orientation of the hinge is predominantly transverse to the hinge axis.

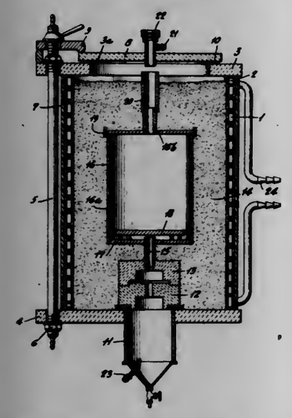
ELECTRICAL

3,350,493
ELECTRIC KILN
George B. Randall, Linder and La Grasse Sts., Waddington, N.Y. 13694
Filed Sept. 12, 1966, Ser. No. 578,559
7 Claims. (Cl. 13—22)



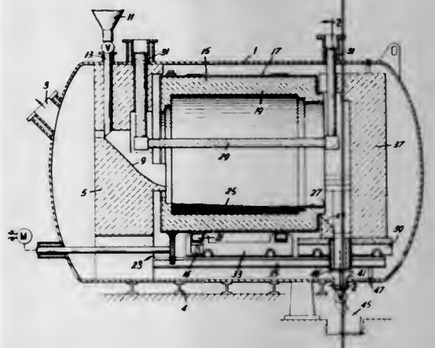
1. In an electric kiln of the type having sidewalls of flat heat resisting fire brick units of friable material in end abutting relation about an article receiving chamber, the sidewalls having a series of horizontally disposed parallel inwardly exposed grooves around the chamber, the grooves of each unit intersecting the grooves of the adjacent unit at the chamber corners and having electric resistance elements therein passing around the chamber; a corner construction comprising: the abutting units being disposed so as to have abutting vertical inner surface edges between the grooves, at least one end abutting unit at the corner having a vertically disposed slot therein spaced outwardly of the abutting inner edges and extending down from the top of the unit through the groove intersections, and a rod of refractory material in the slot between the elements and the abutting inner edges for securing the elements in the grooves at the corner.

3,350,494
INDUCTION FURNACE
Valery Nickolaevich Kunitsky, Boris Pavlovich Lobashev, Mikhail Naumovich Stetsovsky, and Alexei Agapovich Fomin, Moscow, U.S.S.R., assignors to Tsentralny Nauchno-Issledovatelsky Institute Chernol Metallurgii imeni I. P. Bardina, Moscow, U.S.S.R.
Filed Jan. 12, 1965, Ser. No. 424,993
2 Claims. (Cl. 13—27)



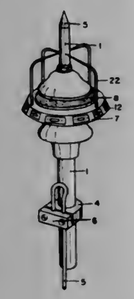
1. An induction furnace for heating a workpiece in a controlled atmosphere, comprising an upper wall, a lower wall and a side wall, said side wall being defined by an induction coil, the turns of said coil being embedded in a layer of glass plastic thereby providing a strong, sealed jacket, means constituting a working chamber for receiving the workpiece to be heated, means for supporting said working chamber within the furnace, a heat insulating material filling the space between said upper, lower and side walls and said working chamber, a drip pan supported by the lower wall adapted to communicate with the working chamber, means for introducing a controlled gas into said working chamber for discharge through said drip pan, and means for cooling the induction coil.

3,350,495
HIGH TEMPERATURE VACUUM FURNACE
Alfred H. Barnes, deceased, late of New York, N.Y., by Martin C. Seham, executor, New York, N.Y., and Cecil G. Chadwick, Lewiston, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 2, 1966, Ser. No. 599,354
3 Claims. (Cl. 13—31)



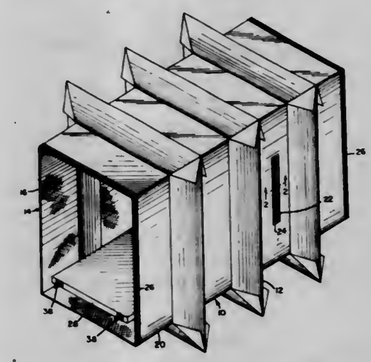
1. An apparatus for the furnacing of solid material which comprises:
(1) a horizontally disposed generally cylindrical steel enclosing member adapted to be sealed to the atmosphere and having
(i) a gas exhaust outlet and
(ii) a solid charge material inlet at the upper portion thereof;
(2) gas-tight charge material feeding means communicating with said charge material inlet;
(3) a stationary vertical wall of refractory brick arranged within the steel enclosing member and transverse to the longitudinal axis thereof, said stationary wall having a downwardly sloping passage therein communicating with the charge material inlet;
(4) track means located in the steel enclosure in the bottom portion thereof running parallel to the longitudinal axis of the steel shell enclosure;
(5) a first movable platform adapted to be transported on the track means;
(6) a cylindrical shell, having an interior lining of refractory brick, rotatably mounted on said first movable platform being arranged with its longitudinal axis parallel to the longitudinal axis of said steel shell enclosure, said cylindrical shell being inclineable to provide a downward slope towards the open end of the enclosing steel shell and being adapted to be positioned closely adjacent said stationary wall by movement of said movable platform whereby charge material which is introduced through said charge inlet and passes through the passage in said wall enters said rotatable shell;
(7) a second movable platform adapted to be transported on said track means;
(8) a second vertical wall of refractory brick arranged transverse to the longitudinal axis of said enclosing steel shell, said second wall of refractory brick being mounted on said second movable platform and adapted to be positioned closely adjacent said rotatable shell by movement of said movable platform; said second vertical wall having a downwardly sloping passage therein arranged to receive solid material which passes through said rotatable shell;
(9) a gas-tight collecting vessel communicating with said steel enclosing member at the bottom portion thereof being located to receive material passing through the sloping passage in said second vertical wall when said second vertical wall is located closely adjacent said rotatable shell;
(10) electrical heating means arranged within said rotatable shell, said heating means being fixedly mounted with respect to said rotatable shell and spaced away from the inner walls thereof;
(11) drive means for rotating said rotatable shell;
(12) a closure member adapted to engage with said enclosing steel shell to provide a gas-tight seal therewith and
(13) means adapted to be connected to the exhaust outlet of said enclosing steel shell to provide a low pressure environment therein.

3,350,496
LIGHTNING ROD WITH GREAT IONIZING POWER
Karlheinz Ritter, Vaduz, Liechtenstein, assignor to General Protection Establishment, Vaduz, Liechtenstein
Filed Mar. 14, 1966, Ser. No. 533,948
Claims priority, application Switzerland, Mar. 12, 1965, 3,592/65
1 Claim. (Cl. 174—4)



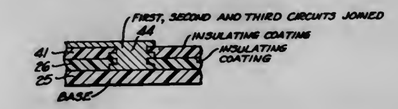
A radioactive lightning rod assembly consisting of:
(A) a rod at ground potential having a pointed end;
(B) an annular, electrically conductive electrode completely surrounding said rod and having point means at the potential of the ambient atmosphere; said point means consisting of at least one vertical pointed member having its extremity directed toward said rod and carried by said annular electrode, said extremity of said pointed member being positioned at a distance from said rod, such that sparking may occur therebetween;
(C) an insulator electrically separating said rod from said electrode;
(D) at least one radioactive ionizing source mounted upon said electrode for anticipating the triggering of said sparking and then amplifying the shock ionization phenomena at the approach of storms, thereby forming an ionized cloud around said assembly for capturing lightning bolts striking in the perimeter of said cloud and channelling them to said pointed end of said rod.

3,350,497
SHIELDED PASSAGEWAY INTERCONNECTION FOR RADIO-FREQUENCY SHELTERS
John R. Weaver, Jr., Rowley, and Charles J. Carson, Danvers, Mass., assignors to Craig Systems Corporation, Lawrence, Mass., a corporation of Massachusetts
Filed Aug. 23, 1965, Ser. No. 481,681
13 Claims. (Cl. 174—35)



12. A passageway for interconnecting entrance openings in enclosures encased with radio-frequency shielding material and for providing a radio-frequency-and weather-shielded communication between said enclosures, comprising a radio-frequency shielded collapsible bellows, said bellows terminating in end openings for mating with said entrance openings; said bellows being transversely flexible to accept misalignment of said entrance openings in horizontal and vertical planes, extensible for connection to said enclosures within a range of spacings therebetween, and collapsible for transportation; said bellows provided with an encasing layer of radio-frequency shielding material extending between said end openings; means for sealing said bellows against said enclosures about said end openings; and means for establishing continuous electrical contact between said encasing layer of radio-frequency shielding material and the shielding material of said enclosures.

3,350,498
MULTILAYER CIRCUIT AND METHOD OF MAKING THE SAME
Michael T. Leeds, Santa Barbara, Calif., assignor, by mesne assignments, to Intellux Inc., Santa Barbara, Calif., a corporation of California
Continuation of application Ser. No. 132,156, Aug. 17, 1961. This application Jan. 4, 1965, Ser. No. 434,729
9 Claims. (Cl. 174—68.5)

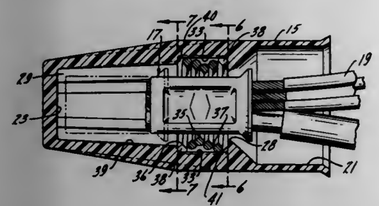


5. In a multilayer circuit assembly, the combination of:
first and second electrical circuits disposed in substantially parallel planes;

an insulating layer positioned between said circuits, said layer comprising a first film of plastic, a porous sheet, and a second film of plastic, with each of said films having openings at zones where said circuits are to be electrically connected together;

and a metal plug filling an opening in said insulating layer and integrally connected with the adjoining portions of said first and second circuits.

3,350,499
INSULATED CONNECTOR
Arthur F. Swanson, De Kalb, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Filed Sept. 27, 1966, Ser. No. 582,287
15 Claims. (Cl. 174—87)



1. A connector for receiving and covering the ends of a plurality of electrical wires held together by a sleeve having laterally projecting means, said connector including:

a shell of flexible insulating material having a generally central bore open at one end and enclosed at the other end by a wall,

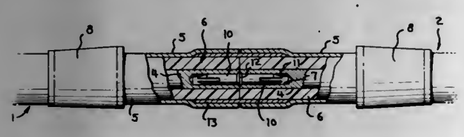
a wire coil positioned in said bore and spaced from the ends of the bore with said wire coil secured against longitudinal movement in the bore,

said wire coil having a minimum inner diameter larger than said sleeve but smaller than said laterally projecting means to permit said sleeve and wires to be threaded through said wire coil by engagement of said laterally projecting means and said wire and to prevent said sleeve and wires from being moved through said wire coil without threading, and

means formed as part of said shell to limit rotation of said wire coil in at least one direction to permit said sleeve and wires to be threaded through said wire coil into said shell,

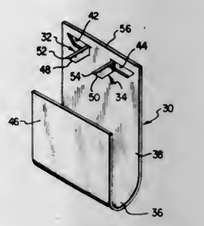
said spacing between the wire coil and the end wall of the shell being sufficient to permit said sleeve to be positioned in said bore inwardly of said wire coil.

3,350,500
CONNECTIONS FOR COAXIAL CABLE MEANS
George William Ziegler, Jr., Carlisle, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 29, 1964, Ser. No. 421,903
13 Claims. (Cl. 174—89)



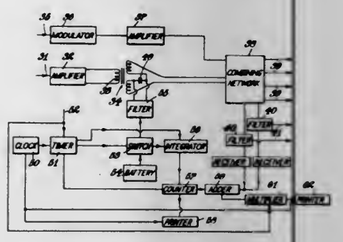
7. A connection assembly for splicing coaxial cable means having center conductor means, rigid outer conductor means provided with flared ends and dielectric means therebetween comprising center connector means for interconnecting said center conductor means, sleeve means for disposition in the flared ends of said outer conductor means to interconnect said outer conductor means, and loading-ring means movable along said cable means to snugly engage and overlie the flared ends of said cable means in interfacial engagement therewith to apply radial pressure to the flared ends and sleeve means against said dielectric means.

3,350,501
CABLE PROTECTOR
John Calvin Jurelt, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed Jan. 19, 1966, Ser. No. 521,631
The portion of the term of the patent subsequent to Mar. 15, 1983, has been disclaimed
5 Claims. (Cl. 174—135)



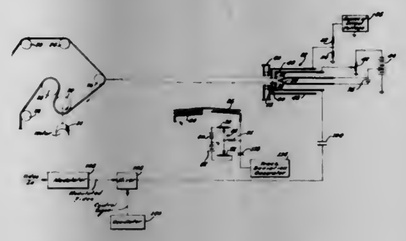
1. A cable protector comprising a flat rectangular plate curved to form a J-shaped cross section having substantially parallel long and short sides joined by an integral bight portion, a pair of teeth struck from said plate adjacent to but spaced from the edge of said long side remote from said bight portion, said teeth extending normal to one surface of said long side of said plate.

3,350,502
ELECTRICAL SIGNAL DISTRIBUTING SYSTEMS
Kenneth Alexander Russell, London, England, assignor to British Relay Limited, London, England, a British company
Filed Oct. 25, 1963, Ser. No. 318,964
15 Claims. (Cl. 178—6)



1. A system for distributing electrical signals over wires from a central station to a plurality of users, any or all of which users may utilise the signals as desired, wherein means are provided for producing pulses which are fed over said wires to the users, the pulses having a duration and waveform such that the required bandwidth for their transmission is below the lowest frequency for the other signals to be distributed and wherein each user has metering means which are connected to the signal distribution circuit when said signals are being utilised, which metering means include a capacitor arranged to be charged by said pulses and means operatively responsive to the pulses received.

3,350,503
ELECTRON BEAM RECORDING AND REPRODUCING SYSTEM
David Paul Gregg, Los Angeles, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 21, 1962, Ser. No. 181,393
9 Claims. (Cl. 178—6.6)



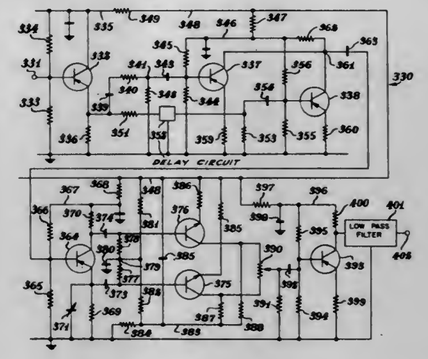
2. In combination for reproducing signals from a medium movable in a first direction where the medium has characteristics for responding to energy directed at the medium in accordance with variations in the physical characteristics of the medium at successive positions, means for providing a movement of the medium in a first direction, means disposed relative to the medium for directing energy in a beam at the medium to obtain a response by the medium in accordance with variations in the physical characteristics of the medium at successive positions, means disposed relative to the beam of energy for focussing the beam during the passage of the beam toward the medium, means for producing output signals having characteristics representing the response of the medium to the beam directed at the medium, and means responsive to the rate of production of the output signals by the last mentioned means for varying the direction of passage of the beam of energy to the medium in a direction transverse to the direction of the medium without affecting the focussing action by the focussing means on the beam of energy.

5. A recording medium for use with record and reproduce modes, including, a backing member, a first material disposed on the backing member and having properties of secondarily emitting charged particles when subjected to a beam of energy during the reproduce mode, and a second material disposed on the first material and having properties of inhibiting the secondary emission of charged particles when subjected to the beam of energy during the reproduce mode and further having properties of becoming removed to expose the first material when subjected to a beam of energy during the record mode.

3,350,504
FREQUENCY MODULATED MAGNETIC RECORDING AND REPRODUCING SYSTEM
Kenjiro Takayanagi, Kanagawa-ku, Yokohama, Japan, assignor to Victor Company of Japan, Limited, a corporation of Japan
Filed Aug. 10, 1964, Ser. No. 388,611
12 Claims. (Cl. 178—6.6)

1. In a signal translating system, means for supplying a frequency modulated carrier signal varying in frequency between lower and upper frequency limits, means for converting said frequency modulated carrier signal to an amplitude modulated signal, and detector means responsive to said amplitude modulated signal for producing an output signal having amplitude limits respectively corresponding to said frequency limits and having a maximum frequency higher than said lower frequency limit of said frequency modulated carrier signal.

9. In a magnetic recording system for recording television video signals or any other wide-band signals on a magnetic medium, oscillator means producing a first signal at a first frequency and including a transistor, modulator means for modulating the frequency of said oscillator means and including diode means in circuit with said transistor, amplifier means for applying an amplified input signal to said diode means to vary the effective reactance thereof and to control the frequency of operation of said oscillator means to produce a first frequency modulated carrier signal, said input signal having a frequency range extending from a relatively low frequency to a certain maximum frequency with said first frequency being substantially higher than said certain maximum frequency, means for generating a second signal at a second frequency less than the sum of said certain maximum frequency and the maximum deviation of the frequency of said first frequency modulated carrier away from said first frequency, mixer means responsive to said first frequency modulated carrier signal and said second signal to produce by heterodyne action a second frequency modulated carrier signal having a center frequency substantially equal to or lower than said certain maximum frequency, and magnetic recording means operative to record said second frequency modulated signal on a magnetic medium, said magnetic recording means having a frequency response characteristic with a maximum frequency at least as high as the upper frequency limit of said second frequency modulated carrier signal.



3,350,505
SCANNING APPARATUS EMPLOYING MEANS COMPENSATING FOR VARIATIONS IN CHARACTER HEIGHT AND WIDTH AND FOR VARIATIONS IN THE POSITION OR LINEARITY OF LINES OF PRINT
Raimo Bakis, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 345,746
8 Claims. (Cl. 178—6.8)

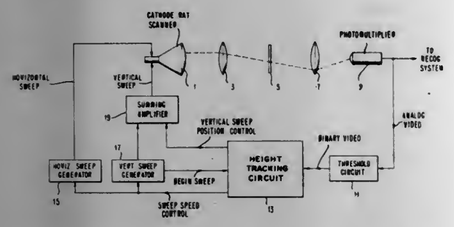
1. An apparatus for scanning a line of patterns having a first energy-affecting characteristic on a document having a second and different energy-affecting characteristic comprising, in combination:

a document scanner for controllably directing a beam of energy at the document.

a controllable raster generator for controlling the scanner to cause the beam of energy to impinge on the document with a sequential raster pattern of adjacent scan lines, each of which is approximately perpendicular to the direction of the line of patterns and longer then the height of the patterns;

an energy-sensitive transducer responsive to the energy emanating from the document for providing indications of the energy-affecting characteristics of the document at the areas at which the beam of energy is directed;

comparison means responsive to the raster generator and to the transducer indications for providing comparison indications of the relative time of occurrence of the transducer indications with respect to a scan line, for each scan line;



integrator means responsive to the comparison indications for accumulating these indications during the occurrence of a plurality of scan lines;

means responsive to the accumulated comparison indication for producing a control signal;

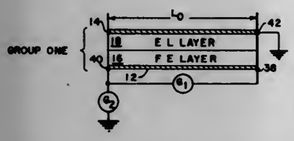
and means for connecting said control signal to said raster generator to control the position of the raster scan lines in accordance with the position of the line of patterns on the document.

3,350,506

IMAGE FORMING SCREEN UTILIZING ELECTROLUMINESCENT, FERROELECTRIC AND PHOTOCONDUCTIVE MATERIALS

Fred Chernow, Burlington, Mass., assignor to Electro-Tec Corp., West Caldwell, N.J., a corporation of New Jersey

Filed Oct. 28, 1963, Ser. No. 319,458
12 Claims. (Cl. 178—7.3)



1. An image forming screen of the type comprising:

(a) an electroluminescent material of the type which produces a light when a threshold voltage is applied thereto,

(b) a bistable dielectric material of the type which decreases in impedance when switching from one stable state to the other stable state,

(c) said bistable dielectric material being connected to said electroluminescent material,

(d) means for providing a first voltage across the combination of said electroluminescent and bistable dielectric material which increases in absolute value in a first direction along said bistable dielectric material and varies periodically in polarity, and

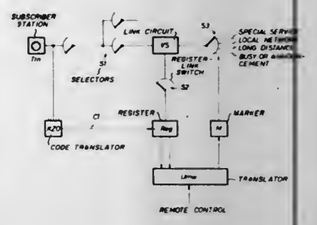
(e) means for varying the level of said first voltage in synchronism with said first voltage periodicity whereby a voltage sufficient to cause switching of said bistable dielectric material is moved along said bistable dielectric material in a direction parallel to said first direction and said electroluminescent layer gives off light in response to a redistribution of voltage which occurs when said bistable dielectric material switches.

3,350,507

CLASS OF SERVICE TELEPHONE SYSTEM

Helmut Willrett, Ditzingen, Sommerhalde, Hilmar Schönemeyer, Ditzingen, and Herbert Siegel, Munchingen, near Stuttgart, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 16, 1964, Ser. No. 376,304
Claims priority, application Germany, June 25, 1963, St 20,773
3 Claims. (Cl. 179—18)



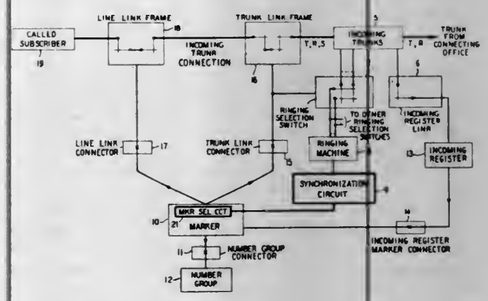
1. In a telephone system for serving a plurality of different classes of subscriber lines, the combination comprising means for receiving and storing the digits which identify a called subscriber line, means for detecting the class of the calling subscriber line and giving an identification of said class, a diode matrix translator, the diodes of said matrix being coupled across the crosspoints of said matrix according to called number information, means for selectively marking a matrix inlet according to at least one of said stored digits for selectively forwarding a direction of call signal, means responsive to said class of line identification for selectively modifying the effect of said matrix marking to enable or block a connection according to said direction of call signal, and means responsive to said matrix marking for either enabling or blocking the extension of a call.

3,350,508

IMMEDIATE RINGING CIRCUIT FOR TELEPHONE SYSTEMS

Richard M. Swanson, Holmdel Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 10, 1964, Ser. No. 417,342
8 Claims. (Cl. 179—18)



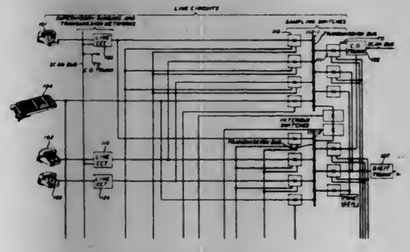
5. In a telephone system, a plurality of telephone lines, a plurality of trunk means seizable for connecting incoming calls to said lines, ringing means for generating a plurality of phase-displaced ringing signals, a plurality of ringing selection means each comprising crossbar switching means including a plurality of levels, particular levels of said crossbar switching means each corresponding to one of said signals, said ringing selection means coupling said ringing means and said trunk means, marker means for energizing said ringing selection means, and synchronizing means responsive to said ringing means for controlling said marker means to energize the one of said ringing selection means levels coupled to the instantaneously active one of said signals.

3,350,509

TIME DIVISION TONE SIGNALING SYSTEM

Robert C. Lee and Robert O. Soffel, Middletown, and Frank S. Vigilante, Piscataway Township, Middlesex County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 10, 1964, Ser. No. 417,390
10 Claims. (Cl. 179—18)



1. In a time division telephone switching system having remote switching units each including a bus for establishing time division connections among lines and trunks and a control unit including a time division bus for connecting digit receivers with digit trunks incoming from said remote switch units, the improvement comprising a plurality of multifrequency digit tone sources connected to said control unit time division bus and means for controlling said time division bus at said remote switch unit and at said control unit serially to connect said multifrequency tone sources with one of said digit trunks at said control unit and with one of said first-mentioned trunks at said remote switch.

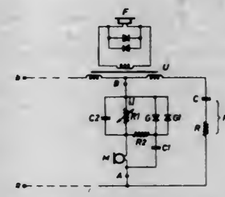
3,350,510

BALANCING NETWORK FOR TELEPHONE SUBSCRIBER STATIONS

Hans Ulrich Knauer, Kornwestheim, and Gerhard Schmidt, Stuttgart Stammheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 2, 1964, Ser. No. 379,937
Claims priority, application Germany, July 11, 1963, St 20,842
6 Claims. (Cl. 179—81)

1. A balancing network for transmitter sections of telephone subscriber stations comprising first non-linear resistance means in series with the transmitter, said first non-linear resistance means having characteristics whereby its resistance increases proportionately with the current flow therethrough, non-linear A.C. circuit means bridging said transmitter and said first non-linear resistance, said A.C. circuit means consisting of a series connected semiconductor diode and a first capacitor, and control means for controlling said non-linear A.C. circuit means responsive to the current flow through said first non-linear resistance means, said control means comprising a coupling resistor for coupling the junction point of said first non-linear resistance and said transmitter to the coupling point of said semi-conductor diode means and said first capacitor.

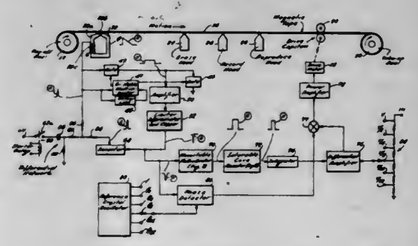


3,350,511

SPEED INDICATOR AND CONTROL SYSTEM

Wayne R. Johnson, Los Angeles, Calif., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 1, 1962, Ser. No. 227,306
9 Claims. (Cl. 179—100.2)



1. A control system for use with a recording member constructed to receive and store a plurality of pulses at progressive positions on the member, said system including:

transducer means disposed in contiguous relationship to said recording member and including an energizing element, said transducer means being responsive to each of the pulses for recording such pulses on said recording member, said transducer means being responsive to each of the pulses recorded on said recording member for developing across said energizing element a signal having a greater time duration than the pulse;

first circuit means coupled to said energizing element and responsive to the signal developed in the energizing element for producing a pulse at a particular time in the generation of the signal;

second circuit means coupled to said first circuit means and to said energizing element for applying to said energizing element each of the pulses produced by the first circuit means;

further circuit means coupled to said first circuit means and responsive to the pulses produced by the first circuit means for producing a control signal having characteristics indicative of the relative movement of said recording member past said transducer means;

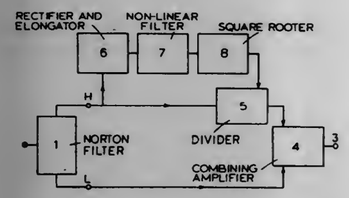
driving means for imparting relative movement between said recording member and said transducer means; and

means coupled to said further circuit means and to said driving means for controlling the operation of said driving means in obtaining relative movement between said recording member and said transducer means in accordance with the characteristics of the control signal.

3,350,512
SOUND RECORDING AND TRANSMISSION SYSTEMS UTILIZING COMPANSION FOR NOISE ELIMINATION

William Spencer Percival, London, and Edward George Trendell, Beaconsfield, England, assignors to Electric & Musical Industries Limited, Middlesex, England, a company of Great Britain

Filed June 4, 1963, Ser. No. 285,334
Claims priority, application Great Britain, June 7, 1962, 22,179/62
29 Claims. (Cl. 179—100.2)

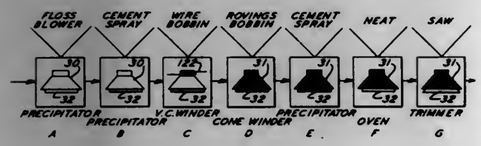


1. In a sound recording or signal transmission system, apparatus comprising first filter means for separating the components of an initial signal into first low and high frequency bands, means for compressing the components in one of said bands to a greater degree than the components in the other band, means for combining the components in said one band after compression with the components in said other band to produce an intermediate signal, means for receiving said intermediate signal after transfer liable to contribute noise to said intermediate signals, second filter means for separating the components of the intermediate signal received by said receiving means into second high and low frequency bands, means for expanding components in said second frequency bands to a degree related to the compression of corresponding components in said first frequency bands, and means for combining the components in said second bands after expansion to produce an output signal substantially corresponding to said input signal, the cross-over frequency of said second low and high frequency bands differing from the cross-over frequency of said first low and high frequency bands produce a substantially flat overall amplitude response throughout the cross-over region of said filter means for at least one substantial value of relative compression and corresponding subsequent expansion of said one band relative to said other band.

3,350,513
CONE LOUDSPEAKERS

Alfred H. Roberts, 1615 Monk Road, Gladwyne, Pa. 19035

Filed June 22, 1964, Ser. No. 376,621
15 Claims. (Cl. 179—115.5)

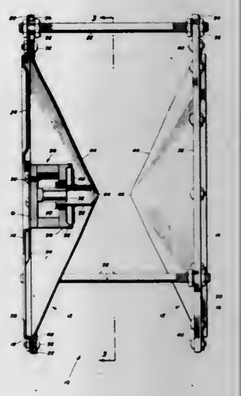


1. An acoustical radiator comprising an outer radiator member and a central dome member and a voice coil integral with at least one of said members, said outer radiator comprising a winding of strands upon a facing.

3,350,514
RADIALLY BROADCASTING SPEAKER SYSTEM

William A. Cooke, Baltimore, Md., assignor of fifty percent to Walter G. Finch, Baltimore, Md.

Filed June 22, 1964, Ser. No. 376,667
5 Claims. (Cl. 179—115.5)

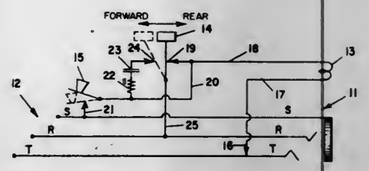


1. A speaker system comprising a pair of speakers, each of said speakers having a cone, with said speakers being secured together in such a manner that the apices of each said cone are pointed towards one another, each said speakers having voice coil means positioned within their respective cone, with each said voice coil means directing the sound broadcast by their respective speaker toward the other speaker of said pair, whereby the resultant sound is broadcast radially from said pair of speakers.

3,350,515
TELEPHONE LINE TESTING UNIT

Lawrence J. Semon, 918 Ocean Front, Santa Monica, Calif. 90403

Filed July 6, 1964, Ser. No. 380,206
2 Claims. (Cl. 179—175.1)

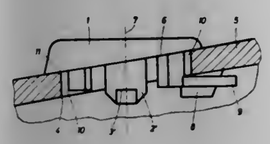


2. A telephone line testing unit comprising, in combination: a casing including an inlet jack and an outlet plug; tip, ring, and sleeve conductors connecting said inlet jack to said outlet plug; a slide switch connected to said ring conductor and having rear and forward contacts; a light bulb; contact means normally connecting one side of said light bulb to said tip conductor and adapted to break its connection thereto in response to insertion of a plug into said jack, the other side of said light bulb connecting to said rear contact; a push button switch connected between said sleeve conductor and said rear contact; and a series circuit including a resistance and condenser connected between said push button switch and said forward contact.

3,350,516
PUSHBUTTON COVER RING

Ludwig Bauer, Stuttgart-Stammheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 27, 1964, Ser. No. 362,738
Claims priority, application Germany, May 2, 1963, St 15,913
2 Claims. (Cl. 179—179)

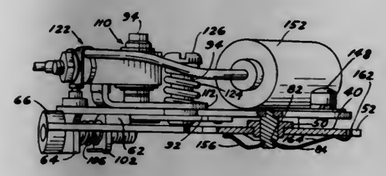


1. A movable self-aligning pushbutton cover ring for peripherally guarding pushbuttons protruding from telephone sets, said ring comprising a top side which protrudes from the top of the telephone set when operatively mounted on the telephone and a bottom side which remains within the telephone set when said ring is mounted, said top side having a radius greater than the radius of said bottom side and having a bearing surface which bears against a telephone set when said ring is mounted, means for providing space between the sides of said ring and said case, a plurality of elastic flaps extending substantially normal to the axis of said ring beyond the outer periphery of said bottom side of said ring to keep said ring mounted in the telephone set, and a stud extending normal to the axis of said ring beyond the outer periphery of said bottom side to control the turning freedom of said ring.

3,350,517
IGNITION DISTRIBUTOR WITH IMPROVED MEANS FOR ADJUSTING THE BREAKER POINTS

Raymond A. Soeters, Royal Oak, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Dec. 30, 1965, Ser. No. 517,714
13 Claims. (Cl. 200—31)

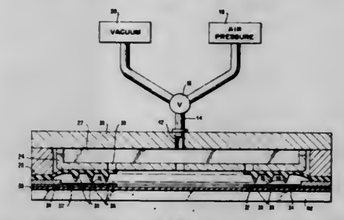


1. An internal combustion engine ignition distributor, comprising a housing, a shaft in said housing to be driven by the engine, a cam on said shaft, fixed support means in said housing, movable support means pivotally mounted on said fixed support means, adjustment means, means movably mounting said adjustment means on said movable support means, a set of breaker contacts including a mounting bracket positioned adjacent said cam so as to be intermittently opened thereby, said bracket being fixedly mounted to said adjustment and means movably mounting said bracket on said movable support means, and means for moving said adjustment means with respect to said movable support means so as to adjust the position of said mounting bracket with respect to said cam.

3,350,518
READER FOR PUNCHED RECORD

Morris Krakinowski, Ossining, and Silvio U. Blaskovic, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Feb. 11, 1966, Ser. No. 526,902
11 Claims. (Cl. 200—46)

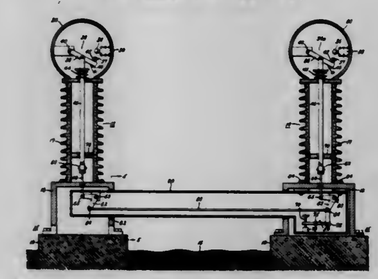


1. A reader for a record having a pattern of index positions each of which may or may not be punched comprising:
- a punched record having a pattern of punch index positions;
- an elastic diaphragm having a pattern of projections on one side which pattern is the same as that of said index positions;
- means for supporting said record with each of its index positions adjacent to the corresponding projection;
- means for holding said diaphragm adjacent said record with said projections poised over corresponding record index positions;
- means for applying pressure to said diaphragm to displace it and to force said projections against said record;
- and means responsive to a projection passing through a punched index position in said record for detecting the punched index position.

3,350,519
HIGH VOLTAGE ELECTRIC CIRCUIT BREAKER WITH MEANS FOR PRECISELY COORDINATING THE OPERATION OF WIDELY SPACED COMPONENTS

Paul E. Badey, Upper Providence, and John A. Oppel, Aldan, Pa., assignors to General Electric Company, a corporation of New York

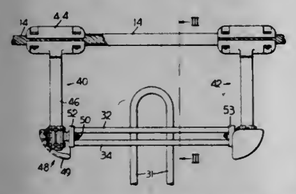
Filed Dec. 30, 1965, Ser. No. 517,765
6 Claims. (Cl. 200—48)



1. An electric breaker comprising:
- (a) a pair of widely-spaced supporting pads,
- (b) a pair of substantially simultaneously operable circuit-controlling assemblies respectively mounted on said pads,
- (c) each circuit-controlling assembly comprising a movable contact and a linkage for controlling motion of said movable contact,
- (d) each of said linkages comprising a pivotally-mounted control member,

(e) a pair of pivots respectively mounting said control member for pivotal motion,
(f) a common base extending between said pads on which said pivots are supported,
(g) means for fixing said base to one of said pads,
(h) means for mounting said base on the other of said pads in a manner that permits relative movement of said base relative to said other pad,
(i) a link mechanically interconnecting said control members to cause said control members to move in unison during circuit breaker operation,
(j) said base and said link being of such materials that in response to a given temperature change, the length of said base between said pivots changes by an amount substantially equal to the change in length of said link and in substantially the same direction.

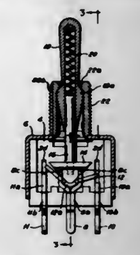
3,350,520
CONTACTS FOR PANTOGRAPH SWITCH
Elijah R. Perry, Jerry L. Mundon, and Albert M. Frey, Portland, Oreg., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 6, 1967, Ser. No. 628,946
8 Claims. (Cl. 200—48)



1. In a stationary contact adapted to be mounted on a power line for cooperation with the movable jaws of a pantograph switch,
a pair of electrically conductive spaced apart brackets electrically and mechanically connected to said line,
at least one pair of electrically conductive spaced apart bars supported between said brackets,
each of said bars being adapted to be engaged by one jaw of said switch,
first insulating means for electrically insulating one end of one of said bars from its associated bracket, and
second insulating means for electrically insulating the other end of the other of said bars from its associated bracket.

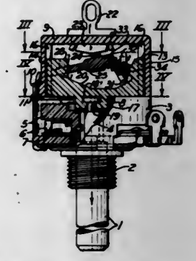
3,350,521
MINIATURE SWITCHES OF THE ROCKING CONTACT TYPE
Harry W. Brown, Big Bend, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,676
7 Claims. (Cl. 200—67)

1. In an electric switch especially adapted for miniaturization:
a housing provided with a contact cavity;
a pair of spaced stationary contacts in said cavity and having terminal portions extending through a wall of the housing;
a movable contact arranged to be rocked in opposite directions to engage at either end portion thereof one or the other of said stationary contacts;
actuator means for rocking said movable contact;
and means for performing the combined functions of supporting said movable contact for rocking movement and forming a common connector arranged to be electrically connected to either one of said stationary contacts when said movable contact is rocked without use of connecting means such as rivets or the like;
said means comprising current conducting strips lying flat against one another for a portion of their length and extending through a wall of the housing to provide an external terminal;



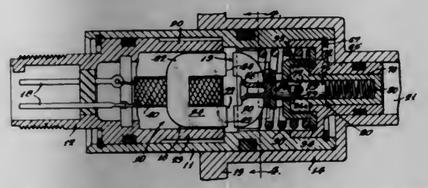
the portions of said strips within the housing cavity being bent away from one another and then bent parallel to one another and to the first portions thereof and being formed to provide a cradle for said movable contact.

3,350,522
PUSH-PULL ELECTRIC SWITCH
David A. Olson, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Sept. 2, 1966, Ser. No. 577,028
9 Claims. (Cl. 200—76)



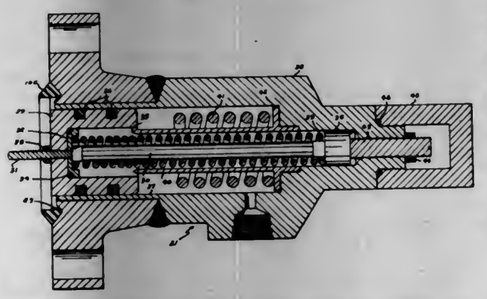
1. A push-pull electric switch comprising a housing having front and back walls connected by a side wall, a fixed electric contact in the housing mounted on the back wall, the front wall having a central opening through it, a bushing rigidly mounted in front of the front wall in line with said opening, a control shaft slidably mounted in the bushing and extending back to said housing, a carrier extending across the inside of the housing, means connecting the rear end of said shaft to the carrier for moving it back and forth when the shaft is pushed and pulled, a switch arm extending across the rear end of the shaft between the carrier and the back wall of the housing and normally inclined to the shaft, one end of the arm being pivotally connected to one end of the carrier on an axis substantially parallel to said back wall to permit the opposite free end of the arm to be swung forward and backward, a coil spring compressed between the free end portion of the arm and a portion of the carrier spaced lengthwise of the carrier from its said one end, the spring normally being inclined to the arm to hold said free end in either its front or back position, the free end of the arm extending forward past the carrier into engagement with said front wall when the carrier is in its rear position, and an electric contact carried by the arm and engaging said fixed contact when the carrier is in its front position, the carrier being movable by the shaft from either of said carrier positions to the other far enough to move the carrier-engaging ends of said arm and spring past the point where the longitudinal axes of the arm and spring are in alignment, whereby the spring can thereupon snap the free end of the arm in the direction opposite to the direction of movement of the carrier.

3,350,523
PRESSURE SWITCH
Evans W. Erikson, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Nov. 26, 1965, Ser. No. 509,710
16 Claims. (Cl. 200—82)



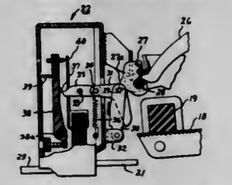
1. In a pressure switch, the combination comprising: electric switch means including first and second members relatively movable between a switch open position and a switch closed position; pressure responsive means for relatively moving said members between the switch open and the switch closed positions including a pressure responsive member movable to a first position in response to pressure below a predetermined value and movable to a second position in response to pressure above a predetermined value, means biasing said pressure responsive member to said first position, link means connecting said pressure responsive member to one of said switch members, means providing a yieldable lost motion connection in said link means, and resilient means biasing said one switch member away from said pressure responsive member whereby over-travel of said pressure responsive member will not significantly vary the closing force on the switch members.

3,350,524
DIFFERENTIAL PRESSURE CONTROL SWITCH
Francis D. Atkinson, Redlands, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 3, 1966, Ser. No. 584,019
7 Claims. (Cl. 200—82)



1. A differential pressure control switch comprising: a sealed housing having a cylindrical chamber therein; a piston within said chamber; switch means within said chamber on one side of said piston; said switch means having a stationary contact and a movable contact; means for urging said movable contact to its open position; means attached to said piston for holding said movable contact against said stationary contact; means for admitting a gas under pressure to the switch side of said piston; means for admitting a gas under pressure to the other side of said piston; spring means, on the side of said piston remote from said switch means, for urging said piston toward said switch to maintain said switch in its closed position until the differential pressure across said piston reaches a predetermined value; an annular stop means adjacent said spring means for stopping the movement of said piston for high differential pressures across said piston; means adjacent said stop means for easing said piston into contact with said stop; a pair of output leads for said switch sealed into the wall of said housing and means for connecting said switch contacts to said output leads.

3,350,525
CIRCUIT BREAKER RESETTING MECHANISM
George E. Gauthier, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed Jan. 25, 1965, Ser. No. 427,717
7 Claims. (Cl. 200—116)

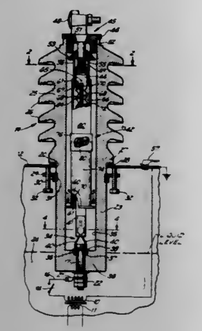


1. A multipole electric circuit breaker comprising: a main insulating casing; at least two pairs of contacts supported in said casing, each pair comprising a stationary contact and a movable contact carried on a pivotable contact arm; an operating mechanism in said main casing for actuating said pivotable contact arms in biased movement between closed and open circuit positions of said pairs of contacts and including a member releasable to cause automatic opening of said pairs of contacts; a separately enclosed trip unit removably mounted in said main insulating casing; means disposed to releasably engage said trip unit with said releasable member of said operating mechanisms; collapsible toggle linkage carried by said trip unit, said toggle linkage being disposed in its straightened position to cause said last-named means to releasably engage said releasable member of said operating mechanism; bias means operatively disposed to cause the collapse of said toggle linkage and the release of said releasable member; a common trip bar supported by said trip unit to releasably latch said bias means against collapse of said toggle linkage; at least one current responsive means carried by said trip unit for each of said poles and disposed to cause the release of said toggle linkage bias means upon the occurrence of predetermined overload current conditions. a common contact cross arm rigidly affixed to said pivotable contact arms for pivotable movement upon the biased actuation of said pivotable contact arms to open said contacts; and means positioned and configured to be engaged by said contact cross arm in its biased pivotal movement, said means being operatively responsive to such engagement to reset said toggle linkage bias means in its latched position.

3,350,526
ELECTRICAL APPARATUS PROTECTED BY INTERNALLY MOUNTED FUSE
David W. Anderson, Zanesville, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,390
9 Claims. (Cl. 200—120)

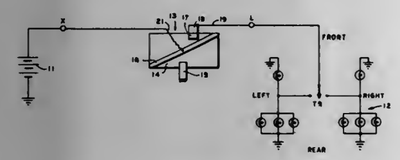
1. In combination, a metallic casing, electrical apparatus within said casing, a tubular ceramic bushing mounted on said casing and etxending through an aperture in said

casing and being closed at its lower end, a metallic contact adjacent the lower end of the axial opening in said bushing, conductive means extending through a wall of said bushing for electrically connecting said contact to said electrical apparatus, a current limiting fuse positioned within the axial opening in said bushing and having a terminal at its lower end releasably engaged with said contact and a threaded terminal at its upper end, means for preventing rotation of said fuse within said bushing, a conductive terminal cap seated on the open upper end of said bushing and being rotatable relative to said bushing and having a threaded portion in engage-



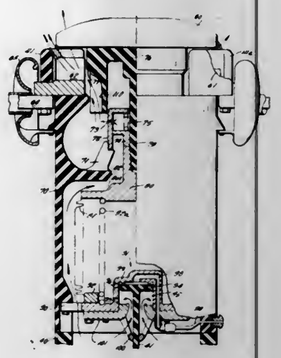
ment with said upper fuse terminal, whereby rotation of said terminal cap moves said fuse relative to said terminal cap, and means positioned between said terminal cap and said fuse including a resilient annular gasket and an annular member having a conical surface opposite said gasket for sealing said open end of said bushing and for holding said fuse within said axial opening, said resilient gasket being compressed between said terminal cap and said conical surface upon movement of said fuse toward said terminal cap, incident to rotation of said terminal cap, and being forced radially outward against the internal surface of said tubular bushing.

3,350,527
FIXED LOAD THERMOMOTIVE FLASHER WITH NORMALLY ENGAGED CONTACTS
Arthur F. Bleiweiss, New York, and George Colombo, East Rockaway, N.Y., and John B. Dickson, Clewiston Fla., assignors to Lehigh Valley Industries, Inc., a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 535,933
13 Claims. (Cl. 200—122)



2. A fixed load thermomotive flasher comprising a fixed mounting, a vane supported from said fixed mounting, a pull ribbon secured to said vane, a moveable contact carried by said vane, a fixed contact fixedly supported with respect to said fixed mounting, said contact being normally in engagement and adapted for separation in response to heating of said pull ribbon, a first terminal, a flexible circuit connector electrically connected to said pull ribbon and connected to said first terminal and a second terminal electrically connected to said fixed contact.

3,350,528
DUAL PRESSURE GAS CIRCUIT BREAKER HAVING MOVABLE BRIDGING CONTACT CONNECTED TO BLAST VALVE AND CUT-OFF VALVE WHICH ARE UPSTREAM OF THE MOVABLE CONTACT
Daniel H. McKeough, Ludvika, Sweden, assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 4, 1964, Ser. No. 394,864
14 Claims. (Cl. 200—148)

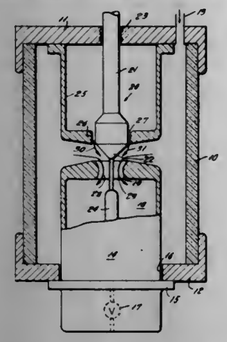


1. A high voltage circuit breaker comprising a main support tank, an interrupter structure having a generally tubular shape, a hollow insulator support column, a pair of cooperable contacts fixed to one end of said interrupter structure, blast valve means within said interrupter structure and mechanically connected to said pair of cooperable contacts, and operating means connected to said pair of cooperable contacts for operating said pair of cooperable contacts to a disengaged position and opening said blast valve; the opposite end of said interrupter structure being fixed at one end of said hollow insulator support; the interior of said interrupter structure communicating with the interior of said hollow insulator column; the opposite end of said insulator support being secured to said tank; said hollow insulator support being filled with high pressure gas; the interior of said tank being filled with low pressure gas; said blast valve being movable from a sealing position for sealing said high pressure gas within said hollow insulator column to said position permitting the flow of said high pressure gas through said cooperable contacts in said interrupter structure and into the interior of said tank; said cooperable contacts including a pair of stationary contacts and a bridging movable contact; said bridging movable contact being secured to said blast valve and being movable therewith.

3,350,529
AIR BLAST CIRCUIT BREAKER WITH AUXILIARY ENCLOSED HOUSING
Haakon Forwald, Grottvagen 31, Ludvika, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Mar. 2, 1965, Ser. No. 436,531
Claims priority, application Sweden, Mar. 12, 1964, 3,065/64
1 Claim. (Cl. 200—148)

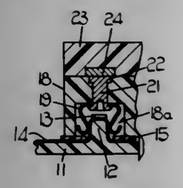
An air blast circuit breaker comprising a housing filled with compressed air, a stationary contact, a movable contact movable into and out of engagement with said stationary contact, an opening in said stationary contact, a blast valve connected between said opening in said stationary contact and the atmosphere external of said housing,

and an auxiliary enclosed housing within said housing; said auxiliary enclosed housing and said movable contact defining between them an annular opening; said annular opening being in close proximity to said opening in said stationary contact; said annular opening having a rela-



tively small area in comparison to the area of said opening in said stationary contact whereby initial air flow through said opening in said stationary contact is mainly comprised of the air in said housing exterior of said auxiliary housing followed by a flow of cool air from said auxiliary housing.

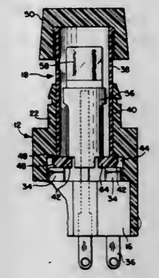
3,350,530
SWITCHES FOR USE WITH FLEXIBLE PRINTED CIRCUITS
William Lawrence Fry, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Oct. 25, 1966, Ser. No. 589,372
Claims priority, application Great Britain, Dec. 16, 1965, 53,391/65
4 Claims. (Cl. 200—166)



1. A switch for use with flexible printed circuits comprising in combination a base having thereon projections over which exposed portions of the flexible printed circuits are placed, fixed contacts engaging the projections, and movable contacts cooperating with the fixed contacts.

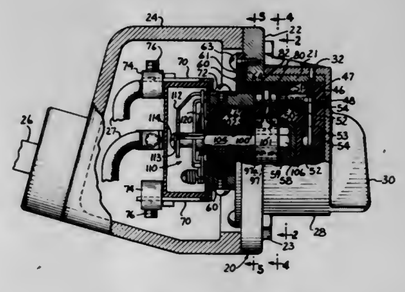
3,350,531
SWITCH ASSEMBLY INCLUDING INDICATING MEANS
John A. Koepke, Mount Prospect, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed July 13, 1966, Ser. No. 564,822
9 Claims. (Cl. 200—167)

1. A lighted push button switch assembly comprising, in combination, a housing element having at least one switch device mounted thereto, said switch device including actuator means for opening and closing contact elements contained within said switch device, lamp means including a removable bulb mounted to said housing element, and a hollow push button element mounted for relative movement on said housing element with a portion thereof disposed in engagement with said actuator means for operating the switch device, the hollow portion of said push button being aligned with said lamp means whereby said push button may be actuated without movement of



said lamp means, said push button including means for engaging and removing said bulb from said lamp means as the push button element is disassociated relative to the other elements of the switch assembly.

3,350,532
EXPLOSION-PROOF SWITCH
Arthur I. Appleton, Northbrook, Ill. (1701 Wellington Ave., Chicago, Ill. 60657)
Filed Nov. 25, 1966, Ser. No. 597,008
9 Claims. (Cl. 200—168)

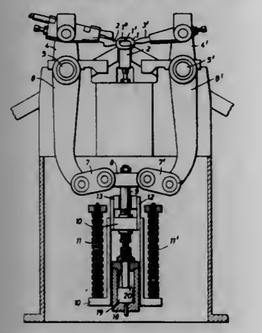


1. An explosion-proof switch including a casing adapted to be secured to a conduit box housing or the like, comprising, in combination, a sleeve-like extension at one end of said casing, a generally cup-shaped switch operator housing telescoped over said sleeve-like extension and adapted to be rotated relative to said extension, a first insulator block mounted in said sleeve-like extension and secured to said operator housing for rotation therewith, said first insulator block having first and second contacts presenting contacting surfaces, bridging means for interconnecting said first and second contacts, a second insulator block spaced from said first block and mounted within said casing, said second block having first and second conductor bars adapted to be connected to an electrical circuit, disc means rotatably mounted between said first and second blocks, said disc means carrying first and second spaced contacts having contacting surfaces, said disc-carried contacting surfaces being slidably engageable with respective ones of said first block contacts and said conductor bars, actuating means connected to said disc for rotationally snapping said disc-carried contacts into sliding engagement with said conductor bars, and means cooperable between said first insulator block and said actuating means for operating the latter upon rotation of the switch operator housing.

3,350,533
CHAIN WELDING MACHINE

Karl Kleine-Welschede, Hauptstr. 40, Gersweiler, near Saarbrucken, Germany

Filed Jan. 25, 1965, Ser. No. 427,682
Claims priority, application Germany, Jan. 25, 1964, M 59,666
1 Claim. (Cl. 219—51)

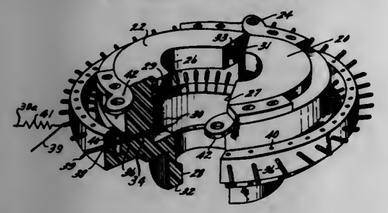


An apparatus for welding a chain element, comprising, in combination, opposed upsetting dies adapted to press against opposite sides of a chain element located therebetween first with a smaller pressure and then with a greater upsetting pressure, a pair of two-armed levers having arms carrying said dies, toggle joints connected with the other arms of said two-armed levers, springs, means connecting said springs with said toggle joints, means adjusting the tension of said springs, whereby said springs transmit to said dies said upsetting pressure, a hydraulic cylinder adapted to exert pressure, means connecting said hydraulic cylinder with the first-mentioned means for transmitting to the first-mentioned means the hydraulic cylinder pressure in a direction opposite to that of the upsetting pressure transmitted by the first-mentioned means, a swingable two-armed welding lever, means connecting one arm of said welding lever with the first-mentioned means, and a cam engaging the other end of said welding lever for varying the position of said welding lever.

3,350,534
ELECTRODE HOLDER

Henry Thomas Libby, Reading, Mass., assignor to General Electric Company, a corporation of New York

Filed Apr. 6, 1964, Ser. No. 357,403
4 Claims. (Cl. 219—60)

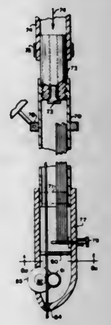


1. An electrode holder for a plurality of non-consumable arc welding electrodes comprising:
a plurality of arc welding electrode holder segments of a high frequency electrical non-tracking dielectric material, each segment including
(a) a plurality of spaced-apart electrode receiving ports each port including a heat resistant barrier to receive an electrode, to hold an electrode tip generally radially inward from the holder and to separate the electrode from the non-tracking material;
(b) a locating surface of the segment shaped to cooperate with a locating surface of an adjacent segment to position the plurality of segments circumferentially about the workpiece;
(c) a radial locating surface of the segment directed to register with respect to a workpiece to locate the electrode tip in spaced relation with a workpiece juncture to be welded;
(d) an axial locating surface of the segment to locate the segment along the axis of the workpiece with respect to the workpiece juncture to be welded;
means to hold adjacent segments in registry one with the other at adjacent locating surfaces; and
electrical conducting means for each electrode to connect each electrode to a source of welding current.

3,350,535
HERMETICALLY SEALED CONTAINER FOR WELDING ROD

Warner H. Simon 6511 Comanche Ave., Canoga Park, Calif. 91306

Original application Dec. 2, 1960, Ser. No. 73,257, now Patent No. 3,108,176, dated Oct. 22, 1963. Divided and this application Oct. 17, 1963, Ser. No. 317,090
3 Claims. (Cl. 219—74)

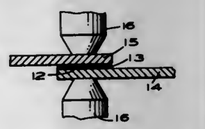


1. In an arc welding device the combination comprising; a container having disposed therein a filler rod, said container comprising an hermetically sealed housing, nozzle means mounted on said housing through which said filler rod can be fed from said container, means providing a shielding gas in said container, a pressure-sensitive device mounted on said housing and communicating with the interior thereof for indicating loss of gas from said container and means for feeding said filler rod to a welding zone.

3,350,536
METHOD FOR JOINING METAL SHEETS

G. Frederick Bush, Detroit, Frederick R. Cotton, Farmington, and Jules I. Cruchet, Dearborn Heights, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 387,955
11 Claims. (Cl. 219—92)

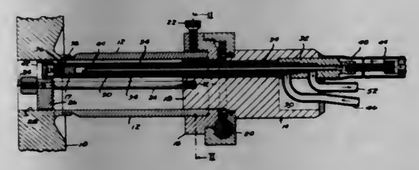


3. A method for joining two metal sheets by welding comprising the steps of establishing a substantially continuous bead of sealer having adhesive properties on one face of a continuous ribbon, applying said sealer to a surface of at least one of said sheets to cause the adherence of said ribbon to said surface, placing the other of said sheets in contact with the other face of said ribbon so that said ribbon and sealer are disposed between overlapping portions of said metal sheets, applying pressure to and passing a welding current at spots selected for welding through the overlapping portions of the metal sheets until sufficient metal for the spot weld has fused between the sheets to form a joint therebetween with the sealer providing a continuous seal for the joint.

3,350,537
INTERNAL STUB TUBE WELDING APPARATUS

Arthur Charles Lawrence, East Molesey, Surrey, and Ronald William Gotch, Ashford, Middlesex, England, assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed May 6, 1964, Ser. No. 365,349
10 Claims. (Cl. 219—125)



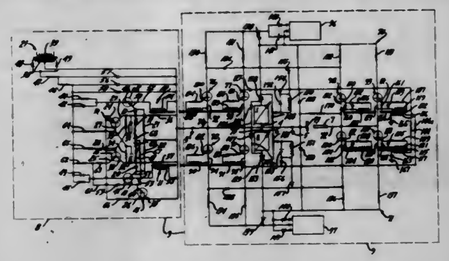
1. An inert gas shielded non-consumable electrode arc welding torch for internal welding of stub tubes to a surface, the stub tubes having a first end to be welded and a distal end remote from said first end, comprising,
a body portion of the torch,
an elongated electrode holder mounted in the body portion of the torch having a free end extending from the body portion,
an elongated insulating shield tube,
the electrode holder free end housed in the shield tube, said shield tube adapted to be inserted into the bore of the stub tube to be welded and having an opening therein,
an electrode protruding radially from the holder through the opening in the shield tube,
the torch further including guide means adapted to engage the distal end of the stub tube to maintain the holder with its axis parallel to the stub tube, the guide means having at least an insert portion adapted to be inserted within the bore of the stub tube of approximately the same diameter as the stub tube bore, means permitting rotation of the holder relative to the guide means.

3,350,538
PROGRAMMED WELDING WITH CONTROLLED RECTIFIER WELDING POWER SOURCE

Arthur E. Johnson, Elkhorn, Wis., assignor to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 7, 1964, Ser. No. 358,044
2 Claims. (Cl. 219—137)

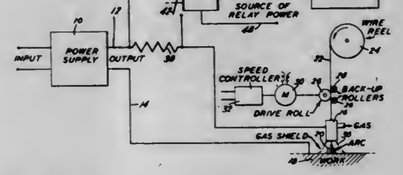
1. A method of consumable, continuous electrode arc welding with a power source capable of producing positive and negative current pulses of predetermined duration, said power source including control means for varying both voltage and current independently and for varying each successive current pulse completely independently of the other pulses in the sequence, including the steps of pre-programming the power source control means to produce a predetermined sequence of positive and negative current pulses of predetermined potential when the arc welding cycle is initiated on a workpiece, feeding the tip of said continuous electrode at a constant speed towards said workpiece while moving said tip and said workpiece relative to each other in a direction and speed to initiate and maintain an alternating current arc between said electrode and said workpiece, said arc having a predetermined sequence of current and voltage pulses each pulse being independently controlled, and changing the predetermined sequence of positive and negative current pulses automatically during welding when the welding conditions are changed during the course of welding.



3,350,539
METHOD FOR ELIMINATING WELD PUDDLE CRACKING

August F. Manz, Union, N.J., and Herbert B. Sargent, Indianapolis, Ind., assignors to Union Carbide Corporation, a corporation of New York

Filed Oct. 5, 1965, Ser. No. 493,169
17 Claims. (Cl. 219—137)



1. Method of consumable metal electrode arc working which comprises energizing an arc between the end of said consumable electrode and a workpiece; alternately changing the power supplied to the arc between a first value and a second value while depositing metal from the end of said consumable electrode to said workpiece at a frequency of alternation below 5 cycles per second to cause the arc to vary in length in response to the power change; the alternate change in arc power producing a change in the weld metal freeze pattern thereby eliminating the tendency for such weld metal to crack.

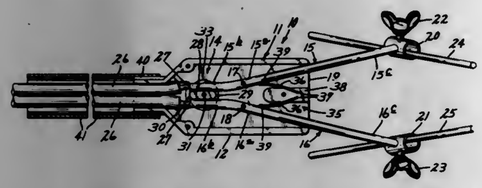
3,350,540
CARBON ARC TORCH

Allen R. Andre, Box 1113, Bismarck, N. Dak. 58501

Filed Nov. 12, 1964, Ser. No. 410,578
5 Claims. (Cl. 219—139)

1. In a device of the class described:
(a) an elongated tubular open-ended body,
(b) a pair of longitudinally extended laterally spaced arms,
(c) means pivotally mounting the intermediate portions of said arms on parallel axes within said body for swinging movements of the opposite ends thereof towards and away from each other,

(d) the outer end portions of said arms projecting outwardly from the open front end of said body in diverging relationship and being provided at their extreme ends with carbon rod clamping elements,
(e) the inner end portions of said arms terminating within said body in closely spaced generally parallel relationship and being adapted for connection, one each to an electrical conductor element entering said body from the open rear end thereof,

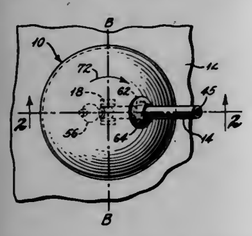


(f) a cam acting spreader element interposed between said inner end portions of said arms,
(g) means for imparting rocking movements to said spreader element, and
(h) yielding means maintaining said inner end arm portions in engagement with said spreader element.

3,350,541
ICING DETECTOR

David Allen Richardson, Wayne, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,127
18 Claims. (Cl. 219—200)



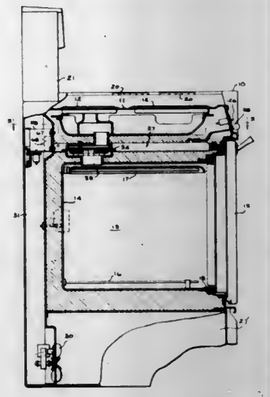
1. An icing detector comprising: a revolvable member, said member having an exposed surface on which ice may accumulate and being asymmetrical about its axis of revolution so that accumulation of ice on said exposed surface increases the centrifugal force acting on said member and moves said exposed surface of said member outwardly away from its axis of revolution; and means for sensing the outward movement of said exposed surface of said member.

3,350,542
OVEN DOOR LATCHING SYSTEM

Clarence Getman, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Continuation of abandoned application Ser. No. 323,809, Nov. 14, 1963. This application June 5, 1967, Ser. No. 645,542
10 Claims. (Cl. 219—412)

1. In a heated cavity formed by an insulated box-like body and an access door for closing and sealing said cavity, and heating means arranged for connection to an energy source for raising the temperature within the cavity, and door latching means movable between an open and closed position, locking means for holding the door latching means against movement in its closed position; the improvement comprising an electroresponsive means capable of over-riding the locking means so that the door latching means may be operated, and a normally-closed temperature responsive switch means located in heat transfer relation with the heated cavity and being in a series electrical circuit with the electroresponsive means and a momentary contact switch means so that closure of the momentary contact switch means

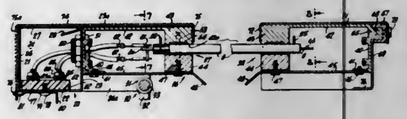


will energize the electroresponsive means and free the door latching means from the locking means, the rise in temperature within the heated cavity above a predetermined critical temperature serving to open the temperature responsive means and thereby de-activate the electroresponsive means until such temperature returns below the critical temperature limit.

3,350,543
ELECTRIC COOKING APPARATUS

Victor M. Berger, Bayside, and Sidney A. Scherer, Bronx, N.Y., assignors to Electro-Char Corporation, New York, N.Y., a corporation of New York

Filed Nov. 30, 1964, Ser. No. 414,747
5 Claims. (Cl. 219—447)



1. An electrified cooking grate comprising a laterally extending support casing having a front wall and a wiring raceway behind said front wall, a plurality of laterally abutting replaceable grate sections, each said grate section comprising opposed front and rear hollow grate casings each having a plurality of spaced apertures, a plurality of heating elements each comprising a generally straight hollow metal tube containing a heating wire, said tubes extending between said front and rear grate casings in spaced, generally parallel relationship with the ends of each tube respectively extending into apertures of the respective grate casings, the upper surfaces of said tubes being generally coplanar to provide a cooking surface, the space between immediately above and immediately below said tubes being unobstructed to permit placing food directly upon said cooking surface and to permit free flow of air around said tubes, means including open tubular means releasably attaching each said rear grate casing to said support casing front wall with said tubular means providing communication between the raceway and the hollow interior of said rear grate casing, means releasably securing together said front grate casing, said heating wires extending into said rear grate casings, and further wiring in said rear grate casings operatively connecting said heating wires and extending through said tubular means into said raceway.

3,350,544
THERMO-ELECTRICALLY CONTROLLED ELECTRICAL HEATER

Thomas H. Lennox, Corona, Calif., assignor to Arc-O-Vec, Inc., Gardena, Calif., a corporation of California

Filed May 1, 1964, Ser. No. 364,079
8 Claims. (Cl. 219—548)



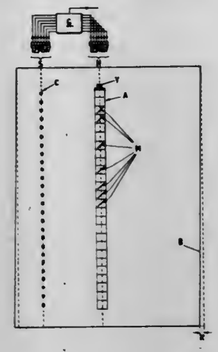
1. An electrical heater having an elongated body and terminal means mounted adjacent one end thereof comprising:
a thermally conductive housing comprising concentric spaced inner and outer metallic tubes electrically, hermetically, and conductively interconnected by metallic closure means at one end thereof and hermetically interconnected by insulating closure means at the second end thereof,
an electrical resistance heating means extending beyond said metallic tubes and substantially concentrically permanently mounted within the space defined by said tubes of said housing, by means establishing heat transfer relation with said tubes,
a thermally conductive electrical insulating material within said inner tube about said heating device for electrically insulating the latter from said inner tube,
a temperature responsive, electrical resistance material confined by said closure means disposed between said inner and outer tubes of said housing and establishing a heat transfer relation between said walls and having a specific electrical resistivity which decreases at a predetermined rate as the temperature of said resistance material increases,
a pair of first terminals conductively connected to said heating means and extending through said insulating closure means, and affording connection of said first terminals to an electrical power supply for energizing said heating means,
an electrode embedded in said temperature responsive material and substantially equally spaced from said tubes and extending through said insulating closure means, and
a pair of second terminals conductively connected to one another through said resistance material and affording connection of said second terminals and said resistance material in a control circuit for controlling energizing of said heating element by said power supply one of said terminals being electrically connected to said housing and the other of said terminals being electrically connected to said electrode.

3,350,545
APPARATUS FOR SENSING INFORMATION ON DOCUMENTS

Leslie John Street, Long Ashton, near Bristol, England, assignor to Parnall & Sons Limited, Birmingham, England, a British company

Filed Feb. 1, 1963, Ser. No. 255,558
Claims priority, application Great Britain, Feb. 5, 1962, 4,427/62
9 Claims. (Cl. 235—61.11)

2. Apparatus for sensing information in a predefined area of a document, comprising transport means for moving the document in a direction approximately parallel to the longitudinal extent of said area of the document, a first group of individual fixed read heads extending laterally of the direction of movement of said document across a greater width than that occupied by said predefined area, a second group of individual fixed read heads extending laterally of the direction of movement of said document

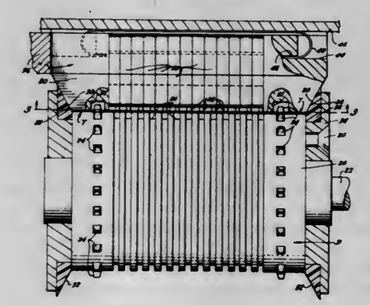


over a greater width than that occupied by a reference mark printed on the document in laterally spaced accurate parallel relation to said predefined area, and means connecting said first and second groups of read heads so that as associated read head of the first group is rendered operative as selected by the read head of the second group which is in register with said reference mark.

3,350,546
TAPE READER

Ernest B. Marjoram, West Covina, and William R. Swift, Placentia, Calif., assignors to Beattie-Coleman, Inc., Anaheim, Calif., a corporation of California

Filed Feb. 18, 1963, Ser. No. 259,251
19 Claims. (Cl. 235—61.11)

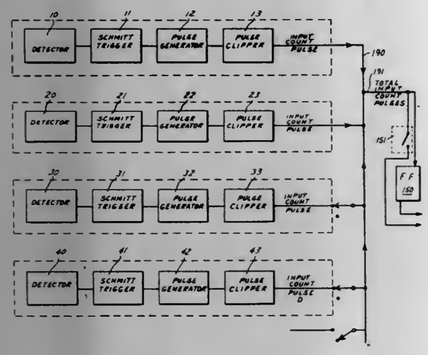


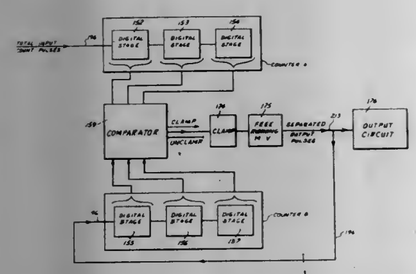
1. Means to read a multiple channel tape, comprising:
guide means contiguous to one face of the tape to guide the tape along a given path relative to the guide means,
said guide means having outwardly inclined surfaces on opposite sides of the path of the tape forming a tapered seat centered relative to the path;
a reading head having multiple reading elements corresponding to the multiple channels, said head being tapered to engage said seat to be centered thereby relative to the path of the tape; and
means to floatingly mount said head and urge the head into said seat.

3,350,547
COUNTING CIRCUIT FOR TRAFFIC DETECTION PULSE INPUTS AT RANDOM PULSE RATES TEMPORARILY EXCEEDING THE AVERAGE RATE

Peter C. Brockett, Milford, Conn., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Mar. 6, 1964, Ser. No. 349,985
14 Claims. (Cl. 235—92)



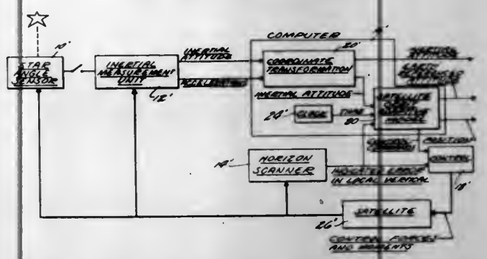


1. A traffic vehicle counting system for receiving random and sporadic pulses in response to random and sporadic actuation of a vehicle detection apparatus and for providing an output proportional to said pulses, including in combination vehicle actuated means for providing a pulse in response to and corresponding to a vehicle passing through a sampling point, first sequential stepping means, second sequential stepping means substantially identical to said first sequential stepping means, a circuit matrix sensing the output conditions of said first and second sequential stepping means and providing an output in response to nonmatching output conditions of said first and second sequential stepping means, a periodic pulse generator responsive to the output of said matrix to provide output pulses at a predetermined rate, means applying the output of said vehicle actuated means to said first sequential stepping means for changing its output conditions sequentially to advance one step in response to each pulse of said random and sporadic pulses, means applying the output of said pulse generator to said second sequential stepping means for changing its output condition sequentially to advance one step in response to each pulse of said pulse genrator, whereby said pulse generator is continually actuated to so apply its output pulses whenever said first sequential stepping means and said second sequential stepping means have unmatched output conditions.

3,350,548
ADAPTIVE ORBITAL CONTROL SYSTEM FOR SATELLITE NAVIGATION

Henry Philip Whitaker, Framingham, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Continuation of application Ser. No. 226,199, Sept. 28, 1962. This application June 17, 1966, Ser. No. 559,677
8 Claims. (Cl. 235—150.1)

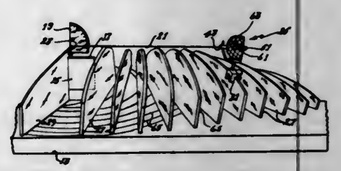


1. In a space navigation system for an orbiting vehicle employing inertial sensors for producing vehicle orientation and acceleration signals, a stellar sensor for correcting said orientation signals, and a horizon sensor for producing a measured position signal of said vehicle in said orbit, the improvement comprising:
means responsive to said corrected orientation signals and said acceleration signals for producing signals corresponding to selected parameters of the orbit of said vehicle,
means for generating from said selected orbital parameters signals a mathematical model simulating the orbit of said vehicle,
means responsive to said mathematical model for generating a signal representative of the indicated position of said vehicle in said orbit,
means for comparing said indicated and measured vehicle position signals and producing an error signal representative of the difference therebetween,
and means responsive to said error signal for generating a correction signal corresponding to each orbital parameter and selectively feeding back said correction signals to said orbital parameters signals producing means to update said orbital parameters signals and drive said error signal to a minimum.

3,350,549
SATELLITE TRAJECTORY SIMULATOR

Charles H. Bredall, Pacific Palisades, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 21, 1964, Ser. No. 361,599
4 Claims. (Cl. 235—150.27)

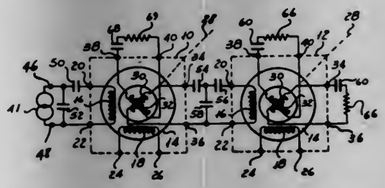


1. A satellite trajectory simulator for simulating the relative position of an earth satellite with respect to the earth comprising a base plane having earth range markings thereon, a horizontal protractor having its central axis located at an observation point and positioned a fixed distance above said base, a vertical protractor having its central axis coincident with said horizontal protractor and pivotally attached thereover, a plurality of trajectory cards spaced at fixed intervals on said base to represent corresponding earth surface distances, each of said trajectory cards having an upper edge curved in proportion to the radius of curvature of the earth, a statellite model assembly slidably attached to the upper curved edge of one of said trajectory cards, said satellite model assembly including a satellite model mounted thereon, means for adjusting said satellite model to predetermined yaw, pitch, and roll settings, and means for measuring the earth range distances from the point of observation to said satellite model.

3,350,550
AMPLIFIERLESS CASCADE RESOLVERS WITH MEANS TO MINIMIZE PHASE SHIFT BETWEEN STAGES

Howard C. Christiansen, Norwalk, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Nov. 8, 1963, Ser. No. 322,411
12 Claims. (Cl. 235—189)

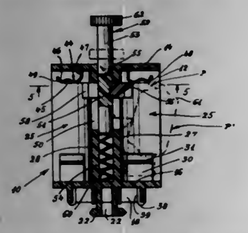


1. In a chain of cascaded resolvers, a resolver, means comprising a shunt-connected capacitor for neutralizing the magnetizing inductance of the resolver and means comprising a series-connected capacitor for neutralizing the leakage inductance of the resolver.

3,350,551
MULTIPLE FLASH BULB HOLDER

David E. Whitehead, Ardsley, N.Y. (% Cinek Films, Inc., 936 8th Ave., New York, N.Y. 10019)

Filed Mar. 7, 1966, Ser. No. 532,278
8 Claims. (Cl. 240—1.3)

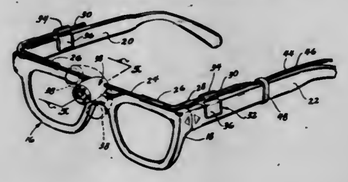


1. A reflector-holder for flash bulbs having generally cylindrical envelopes with flat grooved stems, wire terminals at opposite sides of the stems and pointed tips at upper ends of the envelopes, said reflector-holder comprising a polygonal body having top and bottom walls, a central core extending between the top and bottom walls, partitions extending radially outwardly of said core between said walls and with said walls defining a plurality of chambers, spring means at the bottom of each chamber for removably receiving and engaging the stem of a flash bulb, said partitions having highly reflective surfaces facing outwardly of said body, means extending downwardly from said bottom wall for rotatably mounting said body on a camera, manually operable means carried by said body for ejecting flash bulbs seated in the chambers, said latter means comprising shaft extending axially of the core and outwardly of said top wall, said core having an axial bore receiving said shaft and having axially extending slots circumferentially spaced around the core and communicating between said bore and the respective chambers, a coil spring in said bore normally holding the shaft in an inoperative position, and a lug operable by said shaft and extending radially thereof outwardly of any one slot into one chamber for displacing a flash bulb from said one chamber when the shaft and lug are operated in said body.

3,350,552
ILLUMINATING DEVICE FOR A PERSON'S HEAD

Paul A. Lawrence, 1660 Beaver, Des Moines, Iowa 50310

Filed Mar. 5, 1965, Ser. No. 437,514
8 Claims. (Cl. 240—2)

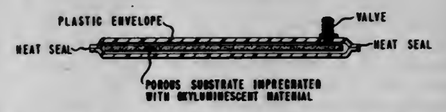


1. In combination,
an eyeglass frame having a front frame and a pair of spaced rearwardly extending temple members,
an elongated element, said elongated element extending along the front frame of said eyeglasses,
a light means mounted on said elongated element,
end elements telescopically secured to the ends of said elongated element, said end elements having portions extending at substantially right angles to the longitudinal axis of said elongated element and extending along said temples, and
fastener means detachably securing said end elements to said temples.

3,350,553
OXYLUMINESCENT LIGHT SOURCES AND PROCESSES OF MAKING SAME

Edward T. Cline, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation of application Ser. No. 463,398, June 11, 1965. This application Aug. 5, 1965, Ser. No. 477,614
18 Claims. (Cl. 240—2.25)



1. An oxyluminescent article comprising a plastic enclosure containing a porous substrate impregnated with a tetrakis(disubstituted-amino)ethylene oxyluminescent material, said enclosure being provided with means for admitting air in controllable amounts, and being further characterized by having at least one area which permits the passage of light.

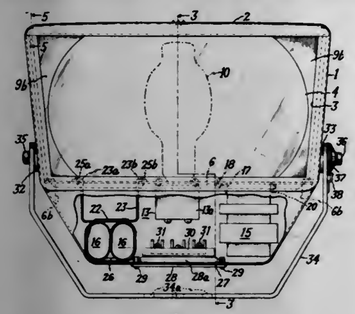
3,350,554
FLOODLIGHT

David L. Wood, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed June 19, 1964, Ser. No. 376,475
7 Claims. (Cl. 240—3)

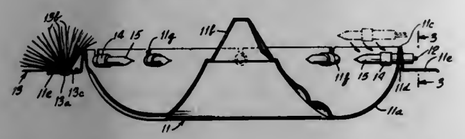
1. In a floodlight comprising a housing having an open top closed by a cover and having wall portions defining

with the cover a window opening in front of the housing, the improvement comprising downwardly converging windowpane-receiving grooves formed in the wall portions on opposite sides of the window opening, a transparent windowpane closing the window opening and having correspondingly downwardly converging lateral edges for fitting into said grooves, said wall portions having similar grooves rearward of and substantially



parallel to said first-mentioned grooves, a mounting plate extending across the interior of said housing approximately at the bottom of said window opening, a unitary reflector in said housing supported by said mounting plate and having a concave reflecting surface facing said window opening, said reflector having opposite lateral flanges with downwardly converging edges fitting into said similar grooves for retaining said reflector in operative position.

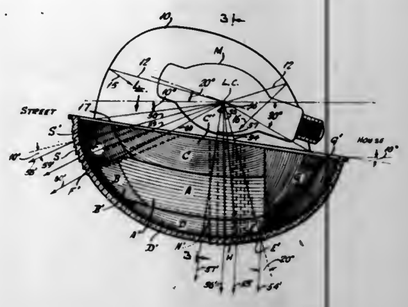
3,350,555
MULTI-COLORED LIGHT ORNAMENT CONSTRUCTION
Emidio Di Rico, East Elmhurst, N.Y., assignor to Raylite Electric Corp., Bronx, N.Y., a corporation of New York
Filed Oct. 5, 1965, Ser. No. 493,033
6 Claims. (Cl. 240—10)



1. A multi-colored light plaque comprising a bowl-shaped reflector having a peripheral wall terminating in a rim edge and a forwardy projecting light reflecting surface concentrically spaced from said rim edge, a plurality of spaced seats formed in said peripheral wall adjacent the rim edge, a string of multi-colored lights including a plurality of sockets, each socket carrying a colored lamp and being mounted in one of said seats with the lamp located between said peripheral wall and said forwardly projecting light reflecting surface to play its colored light upon the latter.

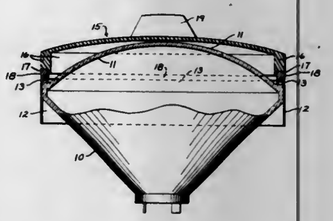
3,350,556
STREET LIGHTING LUMINAIRES
Kurt Franck and Robert G. McPhail, Newark, Ohio, assignors to Holophane Company Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 546,356, Nov. 14, 1955. This application June 28, 1966, Ser. No. 561,286
11 Claims. (Cl. 240—25)

1. A street lighting refractor of ovoidal bowl shape for redirecting onto an elongated street surface direct and reflected light from a light source above the bowl in its longitudinal median plane disposed transverse of the street direction and an oval, dome-shaped reflector about the source, symmetrical with respect to said plane. with an oblique mouth lower at the house end thereof than at the street end thereof and acting to cut off direct light at greater angles below the horizontal at the house end than at the street end and to reflect a band of light across the longitudinal median plane at angles too low for efficient street lighting, said refractor having an oblique mouth lower at its house end than at its street end and having on the inner surface of its sides an upper system and lower



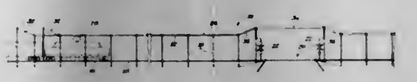
system of regressed prisms, the prisms of the lower system being parallel with one another, and substantially parallel with the upper edge of the refractor and of uniform refracting power to lift a band of substantially parallel, downwardly oblique rays substantially uniformly, the upper system of prisms being concentric about a center above the refractor mouth and acting to reduce the divergence of downwardly oblique light falling thereon and elevate the same and an external vertical band of prisms each extending round the bottom and both sides of the refractor in a transverse vertical plane and crossing the house end portions of the internal prisms.

3,350,557
FOG LENS ATTACHMENTS FOR VEHICLE HEADLIGHTS
Ronald Szymanski, 12913 W. Honey Lane, New Berlin, Wis. 53151
Filed June 9, 1965, Ser. No. 462,547
1 Claim. (Cl. 240—46.57)



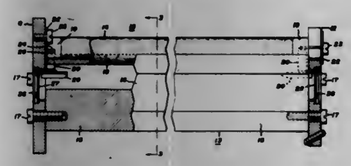
In combination with a vehicle headlight having a convex lens, and having an annular metal retaining ring securing said light to the vehicle, said retaining member including a protruding rim clampingly surrounding the periphery of said headlight lens, a detachable fog lens assembly comprising: a translucent colored lens molded of high heat plastic material, said plastic lens attachment being of substantially the same diameter as said headlight, and being concavo-convex in shape and formed on a radius of curvature greater than that of said headlight lens; an integral flange formed around the circumference of said plastic lens positionable on said metal retaining rim, said flange having an annular cutout opening in its face; a circular magnet permanently secured in said annular flange cutout, said circular magnet being engageable with the protruding rim portion of said metal retaining ring to removably secure said colored lens in covering relation on said vehicle light; and a tab formed on and projecting from the central exterior portion of said lens attachment to facilitate its installation and removal from the headlight.

3,350,558
RAILWAY CONTROL APPARATUS
Stanley J. Weiss, Del Bonita, Alberta, Canada
Filed Jan. 4, 1965, Ser. No. 423,217
5 Claims. (Cl. 246—126)



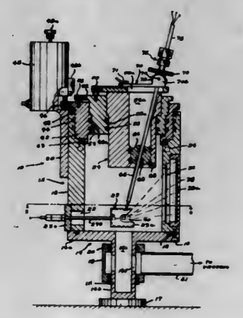
1. In a railway having a trackway for supporting an electricity generating, overhead trolley equipped, locomotive for movement thereon, an electrically responsive railway crossing signal mounted at a railway crossing and adjacent said trackway, an overhead cable supported above said trackway and extending a limited distance to the approaching and departing sides of said crossing, an electrically conducting means extending from a junction with said cable to said crossing signal to conduct current therebetween, said cable being engagable by an overhead trolley of a locomotive approaching and departing from said crossing signal to electrically connect said crossing signal to the generated source of electricity of the locomotive as the locomotive both approaches and departs from the crossing.

3,350,559
MONOPOLE MASS SPECTROMETER HAVING ONE CERAMIC ELECTRODE COATED WITH METAL TO WITHIN A SHORT DISTANCE OF EACH END
James R. Young, Rexford, and John B. Hudson and Robert L. Watters, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 26, 1965, Ser. No. 428,055
3 Claims. (Cl. 250—41.9)



1. A very high voltage low pressure monopole mass spectrometer analyzing tube comprising in combination,
(a) a pair of endplate spaced apart support members,
(b) a V-shaped electrode extending axially between and supported by said endplate members,
(c) a metal coated ceramic electrode extending between said plate members in parallel and precise spaced relationship with said V electrode,
(d) said ceramic electrode having the ends thereof uncoated,
(e) said ceramic electrode being arcuately shaped in cross section and positioned in conforming and confining relationship with said V electrode,
(f) said electrodes adapted to be connected to a source of electrical power to define therebetween an electrical field which is uniform axially,
(g) metal support means to precisely support said electrodes in parallel spaced relationship,
(h) said metal support means being positioned adjacent said end support members and in contact with an uncoated portion of said ceramic electrode,
(i) ion entrance means in said endplate support members to introduce ions into said electric field,
(j) ion exit means in the other of said endplate members to exit ions from said field.

3,350,560
X-RAY CRYSTALLOGRAPHY CAMERA HAVING PLURAL NESTED ROTATABLE ECCENTRIC SLEEVES IN ONE WALL THROUGH WHICH A TILTABLE SPECIMEN HOLDER EXTENDS
Robert L. Prickett, Dayton, Ohio, Theodore P. Jamus, Montvale, N.J., and William A. Wolk, Yonkers, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 24, 1965, Ser. No. 435,099
10 Claims. (Cl. 250—51.5)



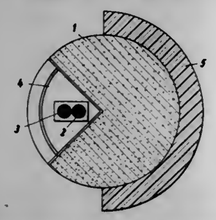
1. A crystallography camera adapted for internally supporting and orienting into predetermined adjustable position a test specimen to be impinged by an externally generated X-ray beam and comprising: a vertical cylindrical body member having a cavity with a circular opening at the top and further having a first and a second aperture in the side wall between the periphery of said body member and the cavity therein, said apertures being in circumferentially spaced relationship with each other and axially located in said body member to be adjacent each to the other; a first X-ray transmittable window joined to said body member within the first aperture in said body member; a second X-ray transmittable window joined to said body member within the second aperture in said body member; a film cassette for receiving a piece of photographic film and removably contained within the first aperture in said body member to be radially positioned outside said first window; a first circular sleeve member journaled for rotation within the circular opening of the cavity in said body member and having an eccentric axial bore therethrough; a second circular sleeve member journaled for rotation within the eccentric axial bore in said first circular sleeve member and having an eccentric axial bore therethrough; a third circular sleeve member journaled for rotation within the eccentric axial bore in said second circular sleeve member and having an eccentric axial bore open at the upper end and terminating at the lower end in a vertically arcuate seat; a tilting member movably retained within the vertically arcuate seat in said third circular sleeve member and having an axial bore therethrough extending into the eccentric axial bore in said third circular sleeve member; an elongated support tube slidably retained within the axial bore in said tilting member and having a lower end extending into the cavity in said body member and an upper end extending through said third

circular sleeve member, said support tube being adapted for supporting the test specimen within the camera; a first adjusting and locking means joining said first and said second circular sleeve members for adjusting and locking the angular relationship between said first and said second circular sleeve members; a second adjusting and locking means joining said second and said third circular sleeve members for adjusting and locking the angular relationship between said second and said third circular sleeve members; and actuating means joined to said body member and engaging said first circular sleeve member for imparting rotary movement in said body member to the unitary structure comprising said first, second and third circular sleeve members in the locked position; the X-ray beam entering said second window, impinging the test specimen with a portion of the X-rays being diffracted through said first window to impinge the film held in position by said film cassette.

3,350,561
MOISTURE CONTENT MEASUREMENT HAVING NEUTRON REFLECTING MATERIAL TO PROVIDE OPTIMUM COUNTING RANGE

Heinrich Dresia, Essen, Peter Fischotter, Wulfrath, and Reinhold Bessing, Wulfrath-Rohdenhaus, Germany, assignors to Rheinische Kalksteinwerke G.m.b.H., Wulfrath, Rhineland, Germany, a corporation of Germany

Filed Oct. 4, 1963, Ser. No. 314,060
2 Claims. (Cl. 250—83.1)



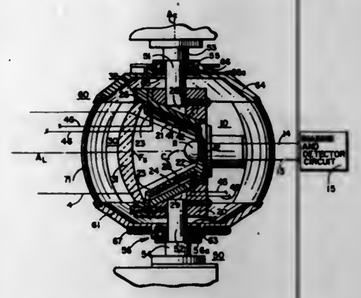
1. Apparatus for determining the moisture content of substances having a varying packing density by means of neutron radiation wherein a fast neutron source, a thermal neutron counting device and a container for the substance under examination are in the relationship wherein said source and said counting device are located adjacent each other and in closely proximately located in spaced relation to said container, so that said device counts an average portion of the thermal neutrons which have been slowed from fast neutrons from said source by interaction with the substance under investigation, the improvement comprising a reflecting material selected from hydrocarbon materials, synthetic plastic materials, synthetic resinous materials and hydraulic binding materials in abutment with only a portion of the external surface of said container remote from the portion of the surface adjacent the fast neutron source so that increased thermal neutrons are reflected to said counting device to provide an optimum counting range.

3,350,562
INFRARED RADIOMETER HAVING A BLACK BODY REFERENCE SURFACE AND A SPHERICAL CHOPPER

Edward F. Flint, Fullerton, Calif., assignor to North American Aviation, Inc.

Filed Oct. 2, 1964, Ser. No. 401,126
4 Claims. (Cl. 250—83.3)

1. A radiometer comprising a radiation detector element, a cavity having a black body reference surface disposed in the wall of the inner portion of said cavity, said radiation detector element being located on one side of said cavity for receiving rays therethrough, and a chopper comprising a concave reflecting surface rotatably mounted for movement across the opposite side of said cavity to alternately provide a concave reflecting surface for radiation emitted by said reference surface and an opening for receiving rays from an external source of

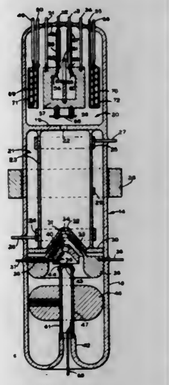


radiation, ray directing means comprising said concave reflecting surface, said ray directing means focused to reflect substantially only said black body reference surface disposed in the inner portion of the wall of said cavity, upon said radiation detector.

3,350,563
NEUTRON GENERATING APPARATUS HAVING A TARGET CONTAINING BOTH DEUTERIUM AND TRITIUM GASES

Wayne R. Arnold, deceased, late of Ridgefield, Conn., by Marian H. Arnold, executrix, Albuquerque, N. Mex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Application Sept. 8, 1958, Ser. No. 763,154, now Patent No. 3,082,326, dated Mar. 19, 1963, which is a division of application Ser. No. 414,761, Mar. 8, 1954, now Patent No. 2,914,677, dated Nov. 24, 1959. Divided and this application Mar. 8, 1963, Ser. No. 263,997
4 Claims. (Cl. 250—84.5)



3. A neutron source comprising a target of gas-absorbing solid material, a gas supply containing at least two gases characterized by different atomic weights to provide gases for said solid target, thermally responsive means for replenishing said gases and for establishing a substantially uniform pressure of said gases within the neutron source, means for producing an electrical field, and means for producing a magnetic field, said electrical field and said magnetic field coacting to ionize said gases at said uniform pressure and thereby enable at least some of said gases to fill said target.

3,350,564
VOID DETECTION UTILIZING NEUTRON ATTENUATION

Charles F. Bonilla, Tenafly, N.J., and William T. Sha, Pittsburgh, Pa., assignors to the United States of America as represented by the United States Atomic Energy Commission

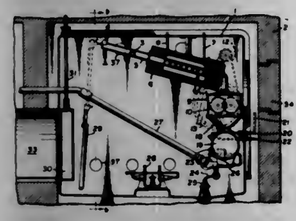
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,839
2 Claims. (Cl. 250—106)

1. A method of measuring the void fraction of boiling water comprising the steps of:
(a) dissolving a small amount of boron in said water in the range of 0–2000 p.p.m.;
(b) implanting in said water a neutron beam encapsulated isotopic source of low uniform energy;
(c) measuring the intensity of said beam of neutrons after passing through a given section of said water to produce a value which is a function of the void fraction of said water.

3,350,565
PROCESS FOR THE REMOVAL IN A SMALL VOLUME OF LIQUID SAMPLES PLACED IN CONTAINERS AND DEVICE FOR THE PRACTICAL APPLICATION OF THE PROCESS

André Calame-Longjean and Claude Palli, Les Escanaux, Bagnols-sur-Ceze, Gard, and Henri Gulliet, Aix-en-Provence, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed Mar. 2, 1965, Ser. No. 438,467
Claims priority, application France, Mar. 6, 1964, 966,509
5 Claims. (Cl. 250—106)



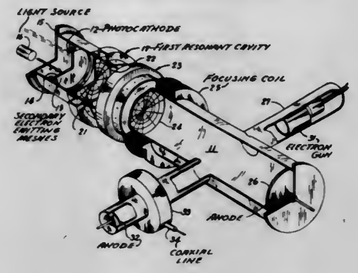
1. Process for the removal in small volume of samples of noxious liquid solutions in containers, the steps of cooling the liquid samples and their contaminated containers to a temperature at which the containers are embrittled and the liquids therein are frozen, then crushing the containers and frozen liquid samples therein and then heating, washing, conditioning and discharging the crushed fragments in a storage drum.

3,350,566
LASER MIXER AND IF AMPLIFIER

Victor A. Babits, La Jolla, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware

Filed Oct. 6, 1964, Ser. No. 401,901
4 Claims. (Cl. 250—199)

1. A coherent light frequency converter and difference frequency amplifier comprising,
a first source of a locally generated coherent beam of light having a first frequency and a second source of an intelligence-carrying coherent beam of light having a second frequency,
a first anode,
photocathode means responsive to light from said first and second sources for emitting a pulsed stream of electrons at the difference frequency of said first and second frequencies toward said first anode,
amplifier means for amplifying said pulsed stream of electrons,
means for converging said pulsed stream of electrons, means including an electron gun and a second anode for generating a cross electron beam that intersects said converged pulsed stream of electrons,

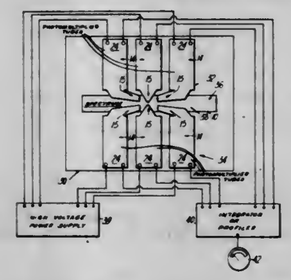


said pulsed stream of electrons modulating said cross electron beam to said difference frequency,
and a resonant means responsive solely to said modulated cross beam for providing an output signal corresponding to said difference frequency.

3,350,567
PHOTOELECTRIC ATTACHMENT FOR SPECTROMETRIC OR SPECTROGRAPHIC APPARATUS

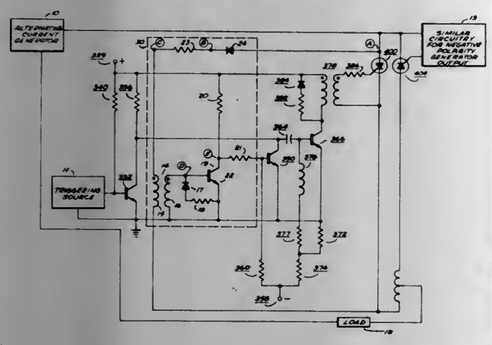
Albertus Strasheim, Pretoria, Transvaal, Republic of South Africa, assignor to South African Inventions Development Corporation, Pretoria, Transvaal, Republic of South Africa

Filed July 22, 1964, Ser. No. 384,485
Claims priority, application Great Britain, July 23, 1963, 29,192/63
4 Claims. (Cl. 250—226)



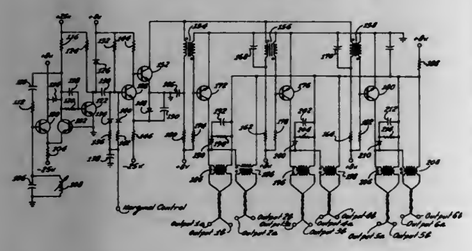
1. An attachment which includes
(a) at least two spectrometric photodetectors, each having a slit,
(b) means for attaching it to spectrometric apparatus such that the slits of the detectors are in the spectral focal plane of the said apparatus,
(c) the detectors
(i) having each a mounting permitting its displacement in a direction perpendicular to the longitudinal dimension of the spectral lines and in the focal plane, such that its slit is alignable with different spectral lines in the said focal plane, and
(ii) having their slits spaced relatively to each other in a direction parallel to the dimension of the spectral lines, such that the slits are alignable simultaneously with closely spaced spectral lines and even with a single spectral line, and such that independent observations can be made of a single spectral line by means of the said detectors.

3,350,568
VOLTAGE SENSING AND CONTROL CIRCUITS
Lawrence R. Peaslee, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Apr. 3, 1963, Ser. No. 270,286
1 Claim. (Cl. 307—88.5)



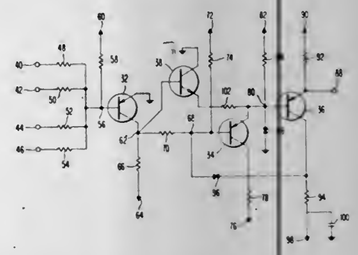
A circuit for controlling the conduction of a switch applying an asymmetrical alternating voltage to a load comprising pulse generating means coupled to said switch to periodically trigger said switch into conduction, voltage sensing means coupled to said switch to detect the polarity of said alternating voltage, said voltage sensing means including a transformer having a primary and a secondary winding and designed to have a low exciting current, unidirectional current conducting means oriented to couple said voltage across the primary winding of said transformer when said voltage is of a given polarity, first switch means coupled to said secondary winding and triggered into conduction by the application of said voltage to said primary winding, and second switch means coupled to said pulse generating means and controlled by the conduction of said first switch means to enable pulses to be applied to said switch only when the voltage across said switch is of said given polarity, the conduction of said first switch means limiting the voltage which can be applied to said transformer.

3,350,569
CLOCK GENERATOR
Robert M. Beck, Los Angeles, and Donald B. Cachelin, West Los Angeles, Calif., assignors to Scientific Data Systems, Inc., Santa Monica, Calif., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,634
21 Claims. (Cl. 307—88.5)



8. In combination,
first means for producing a plurality of pulses on a periodic basis,
means for providing a reference voltage,
second means operatively coupled to the first means and the reference voltage means and responsive to the pulses for producing clock signals independent of the reference voltage and having a substantially constant average amplitude level during the period between a plurality of the pulses,
third means operatively coupled to the second means and responsive to the clock signals for distributing the clock signals throughout the electric circuit substantially without radiation and substantially without changes in the electrical characteristics of the clock signals, and
fourth means having first and second states of operation and operatively coupled to the third means and responsive to the clock signals for operating in the first state at first particular times and for operating in the second state at second particular times in synchronism with the clock signals.

3,350,570
CURRENT DRIVER
Harvey Rosenberg, Huntington Woods, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 30, 1963, Ser. No. 312,575
7 Claims. (Cl. 307—88.5)



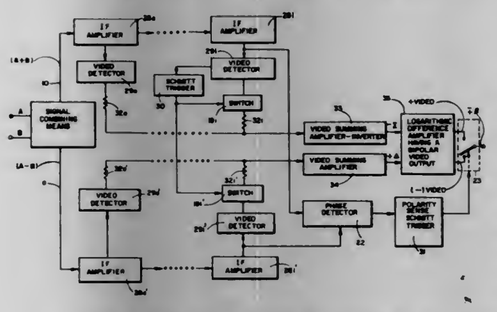
1. The combination comprising:
an input terminal adapted to receive a trigger pulse;
current-limiting impedance means;
semiconductor current-driving means having a control electrode electrically connected to said input terminal through said impedance means for providing a current output pulse upon receiving said trigger pulse;
valve means electrically connected to said input terminal independently of said impedance means, to the control electrode of said semiconductor current-driving means, and to a source of electrical charges for conducting electrical charges between said source and said semiconductor current-driving means while there is no trigger pulse on said input terminal, independently of the voltage applied thereto after said trigger pulse, and said semiconductor current-driving means is providing an output pulse.

3,350,571
SIGNAL COMPRESSION APPARATUS EMPLOYING SELECTIVELY ENABLED AMPLIFIER STAGES UTILIZED IN A MONOPULSE ANGLE-OFF-BORESIGHT RADAR
James A. Moulton, Santa Ana, and Albert E. Simpson, Buena Park, Calif., assignors to North American Aviation, Inc.
Filed Dec. 23, 1963, Ser. No. 332,472
8 Claims. (Cl. 307—88.5)

1. In a multi-channel monopulse radar receiver having a monopulse difference signal channel and a monopulse sum signal channel for determining the angle-off-boresight of a detected target, signal-compression means for maintaining the signal level of at least one channel of said multi-channel receiver below a preselected signal level comprising,

successive amplifying stages in each of the signal channels of said multi-channel receiver;
like switchable means for varying the effective number of said successive stages of each said channel by preselected amounts; and
logic means responsive to the signal level of said successive stages of said sum signal channel and cooperating with said switchable means for concurrently switching corresponding successive amplifying stages of said channels of said multi-channel receiver.

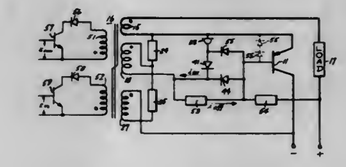
8. In a multi-channel signalling system for severally amplifying the sum and difference of two A-C input signals,
a sum and difference signal channel, each said channels comprising
video signal summing means,
a plurality of A-C amplifiers interconnected in cascade, the output of each amplifier operatively connected to a mutually exclusive one of the inputs of said summing means,
video detectors interposed between said video summing means and each said A-C amplifier,



video signal gating means interposed at the output of each said video detectors,
logarithmic signalling means responsive to the output of said video signal summing means;
said sum channel further comprising
a plurality of gating signal means each responsive to the signal level of a mutually exclusive one of said sum channel video detectors for providing a gating signal, the video gating means associated with said detector and the corresponding gating means of said difference channel being responsively connected to said gating signal means;
a phase detector responsive to the last amplifier of said cascaded amplifiers of each said channels for providing a phase-sensitive signal;
logarithmic signalling means responsive to said video signalling means for providing a video output signal indicative of the ratio of the difference between the inputs thereto to the sum thereof;
bipolar video, signalling means connected to said logarithmic signalling means and responsive to said phase-sensitive signal for providing a video output signal of a selected polarity.

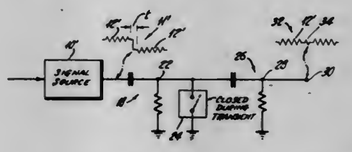
3,350,572
HIGH FREQUENCY CHOPPER CIRCUIT
Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 6, 1964, Ser. No. 357,381
12 Claims. (Cl. 307—88.5)

1. A high frequency transistor saturable transformer chopping circuit including in combination a power transistor having a base-emitter and an emitter-collector circuit, a saturable core transformer having at least inductively coupled primary and secondary windings, the primary winding being operatively connected in the emitter-collector circuit of the power transistor and the secondary winding being operatively connected in the emitter-base circuit of the transistor, means operatively connected in parallel circuit relationship with the emitter-base of the power transistor for increasing the switching speed of the power transistor, and a load operatively connected in series circuit relationship with the power transistor which in turn are connected across a source of operating potential, wherein the means for increasing the switching speed of the power transistor comprises a tunnel diode.



12. A new and improved high frequency power inverter circuit using high speed power transistors including in combination two sets of series-connected load current carrying high speed power transistors with each set being connected effectively in parallel circuit relationship across a pair of power supply terminals, a load connected between the juncture of each of the load current carrying power transistors in each set, a source of high frequency switching signals operatively coupled across the base-emitter of each of the high speed power transistors for switching the base-emitter current of each transistor at high speeds, and means comprising a tunnel diode operatively connected across the base-emitter of each power transistor in parallel with the switching signal source for increasing the switching speed of the power transistor.

3,350,573
CIRCUIT FOR SUPPRESSING NOISE WHEN SWITCHING BETWEEN VARIOUS A-C SOURCES SUPERIMPOSED ON DIFFERENT D-C BIASES
Janos T. Barany, Rego Park, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Sept. 14, 1964, Ser. No. 396,056
8 Claims. (Cl. 307—88.5)



1. A wave shaping circuit to separate the A-C signal from a composite signal consisting of said A-C signal superimposed on a changing D-C signal pedestals comprising:
a capacitor having a first and a second terminal,
a resistor having a first and a second terminal,
said capacitor and resistor being coupled serially by connecting said respective first terminals at a junction,
a plurality of transducers producing a low level alternating current output signal superimposed on various different D.C. pedestals,

means for selectively decoupling one of said output signals from said second terminal of said capacitor and coupling another one of said output signals thereto,

means for applying a reference source to said second terminal of said resistor, and

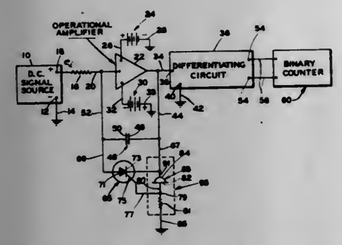
means for clamping said junction to said reference terminal during the decoupling of said one signal and the coupling of said other signal only.

3,350,574

NETWORK FOR CONVERTING A DIRECT CURRENT SIGNAL INTO PULSES HAVING A FREQUENCY CORRESPONDING TO THE AMPLITUDE OF THE DIRECT CURRENT SIGNAL

Robert L. James, Bloomfield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Jan. 11, 1965, Ser. No. 424,584
5 Claims. (Cl. 307—88.5)



1. Means for converting a variable amplitude direct current signal into a pulsating signal of a frequency proportional to the amplitude of the direct current signal, said converting means comprising:

means for amplifying said direct current signal, said amplifying means including an input and an output;

a negative feedback capacitor;

means for connecting the negative feedback capacitor between the input and the output of the amplifying means so as to apply an inverted amplified signal from said output to said input of the amplifying means;

a resistor for connecting the direct current signal to the input of the amplifier means and to said negative feedback capacitor so as to effect a delay in a charging of said capacitor by said direct current signal;

a control device connected across the negative feedback capacitor and including gating means having a silicon controlled rectifier including control means;

means for operating the control device being connected to the control means and including a voltage sensor responsive to the signal at the output of the amplifier means when said output signal is above a predetermined level for providing a first controlling output to render the control means effective to close the gating means to provide a shunting circuit for the negative feedback capacitor, said first controlling output thereby causing the control device to effect a discharge cycle for said capacitor so as to decrease the level of the amplifier output, said operating means being responsive to said output signal at a decreased level to provide a second controlling output to cause the control device to open the shunting circuit so as to thereby render effective a charging cycle for said capacitor; and

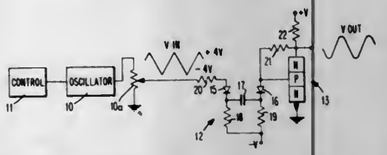
the periodic charging and discharging cycles for the negative feedback capacitor effecting at the output of the amplifying means a series of electrical pulses having a frequency proportional to the amplitude of the direct current signal.

3,350,575

APPLICATION OF TRIANGULAR WAVEFORMS TO EXPONENTIAL IMPEDANCE MEANS TO PRODUCE SINUSOIDAL WAVEFORMS

William G. Crouse, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 21, 1965, Ser. No. 426,847
23 Claims. (Cl. 307—88.5)



1. A frequency insensitive filter for a source of electrical signals which signals are characterized by the amplitude of one of the variables of the voltage-current characteristic varying linearly with time with a predetermined peak-to-peak amplitude, comprising

a pair of oppositely poled diodes,

means connecting the source to the diodes, and

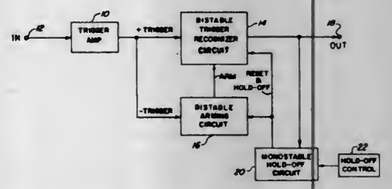
means biasing the diodes to a selected operating level which causes only an exponential change in impedance in one of the diodes as the signals change from their reference level to one of the peak levels and back to the reference level and only an exponential change in impedance in the other diode as the signals change from the reference level to the other peak level and back to the reference level to produce generally sinusoidal output signals in response to and at the same frequency as said electrical signals.

3,350,576

TRIGGER COUNTDOWN CIRCUIT WHICH IS ARMED AND TRIGGERED BY DIFFERENT PORTIONS OF THE SAME TRIGGER PULSE

Henry A. Zimmerman, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Jan. 29, 1965, Ser. No. 429,033
9 Claims. (Cl. 307—88.5)



8. A trigger circuit comprising:

a first switching circuit means having at least one stable state with an input connected to a trigger input terminal of the trigger circuit so that it is triggered from said one stable state to another state by a trigger pulse applied to said input terminal to produce an output pulse and having an output connected to an output terminal of the trigger circuit;

a second switching circuit means having two stable states and connected to said trigger input terminal so that it is triggered from a first stable state to a second stable state by a different portion of said trigger pulse than the first circuit, and having its output connected to said first circuit to transmit an arming signal to the first circuit to enable said first circuit to be triggered only after said second circuit has been triggered; and

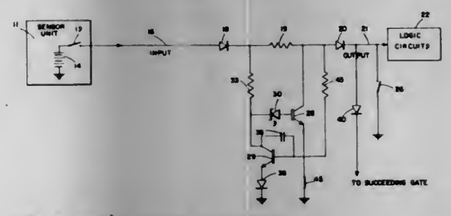
means for reverting said second circuit to its first stable state at least as late as the time the first circuit returns its said one stable state and for applying a hold-off signal to the second circuit to prevent said second circuit from being retriggered for a predetermined time after the second circuit is reverted to its first stable state.

3,350,577

SOLID STATE GATING CIRCUIT

Douglas A. Moore, Rolling Hills, Russell Kirby, Jr., Torrance, and John R. Buck, Gardena, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed Mar. 8, 1965, Ser. No. 437,787
11 Claims. (Cl. 307—88.5)



10. A gating circuit comprising

means for selectively producting a D-C control signal,

an input line, said D-C control signal being fed to said input line,

an output line,

means for coupling said input line to said output line,

means for selectively producing an override signal, and

means for eliminating said D-C control signal from said output line in response to said override signal comprising

first and second transistors each having a base, collector and emitter and connected in a flip-flop circuit,

means for connecting the base of said first transistor to said input and output lines whereby said first transistor is brought to the conductive state by said D-C control signal,

bias means connected between the collector of said first transistor and the base of said second transistor for preventing said second transistor from being driven to conduction while said first transistor is conducting,

integrator means connected in circuit with said first transistor to prevent said first transistor from being affected by short duration pulses, and

means for coupling said selectively produced override signal to said output line,

whereby when said override signal is coupled to the base of said first transistor, said first transistor is driven to cutoff thereby causing said second transistor to go to conduction.

3,350,578

CIRCUIT FOR DERIVING SQUARE WAVEFORM FROM INCOMING ALTERNATING SIGNAL

Ronald Philip Carter, Bristol, William Alan Cowin, Stafford, and Martin Clifford Hall, Kidsgrove, Stoke-on-Trent, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Mar. 31, 1965, Ser. No. 444,133
Claims priority, application Great Britain, June 20, 1961, 22,234/61
2 Claims. (Cl. 307—88.5)

1. A switching circuit comprising,

a voltage supply source,

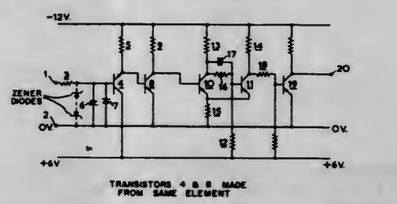
a first and a second transistor connected to said source, said transistors being constructed from the same element germanium but of opposite conductivity type to one another, and each having emitter-base and collector-base junctions,

input means for receiving an alternating input signal and limiting the positive- and negative-going excursions thereof, said input means comprising

a resistor connected to the base of the first transistor and,

a pair of silicon diodes each having positive and negative poles and connected together in parallel with their opposite poles connected to one another, the pair of diodes being connected between the base of said first transistor and the emitter of said second transistor, and the alternating input signal being applied to the base of the first transistor through the said resistor,

first circuit means connecting the first transistor in an emitter-follower configuration and in such a relationship to the supply source as to manifest a predetermined voltage drop across the emitter-base junction of said first transistor,



second circuit means connecting the second transistor in a common emitter configuration and in such a relationship to the supply source as to manifest a voltage drop across the emitter-base junction of said second transistor equal to that possessed by the first transistor, the second transistor being connected to the first transistor whereby to switch between a conducting state and a non-conducting state and develop an output in response to the positive- and negative-going excursions of the limited input signal applied to the first transitsor, and

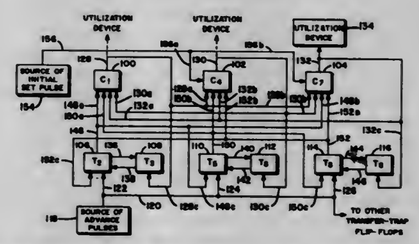
a trigger circuit connected to receive the output from the second transistor and operative to develop a square wave output signal in dependence on the said state assumed by the second transistor.

3,350,579

n-STATE CONTROL CIRCUIT

Richard M. Oman, Roseville, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 25, 1965, Ser. No. 466,964
14 Claims. (Cl. 307—88.5)



1. An *n*-stage control circuit, each stage capable of alternatively generating indicating and non-indicating output signals, the circuit operating at any given time so that only one of the *n*-stages generates an indicating

signal and all other stages generate non-indicating signals, said circuit comprising:

n two-state indicating circuits, where *n* is an integer greater than one, said indicating circuits being arranged in sequential order to form *n*-indicating stages, each of said indicating circuits having multiple-circuit output connections and multiple-circuit input connections, each of said indicating circuits having an output connection coupled to an input circuit of all other ones of said indicating circuits;

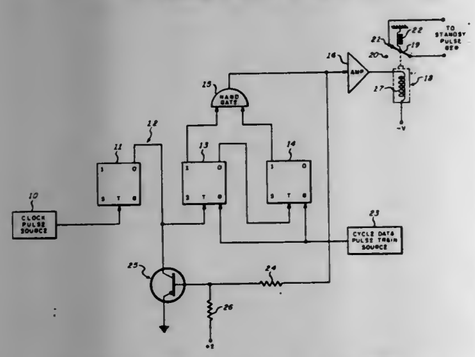
n transfer-trap circuits, each of said transfer-trap circuits respectively associated with a different one of said *n* indicating circuits, each of said transfer-trap circuits coupled to input circuits of all except the next sequential indicating circuit, and each of said tranfsfer-trap circuits coupled to an input circuit of the next sequential transfer-trap circuit, each of said transfer-trap circuits having an input circuit coupled to the output circuit of its associated indicating circuit, and each of said transfer-trap circuits including an advance input terminal for receiving time-spaced advance pulses for causing one of said transfer-trap circuits to switch the indicating state of its associated indicating circuit when the preceding stage indicating circuit was in the indicating state and for causing the previous indicating circuits to be switched to the non-indicating state.

3,350,580

MONITOR EMPLOYING LOGIC GATE AND COUNTER TO INDICATE NORMAL PULSE-TRAIN FAILURE AFTER PREDETERMINED TIME INTERVAL

John S. J. Harrison, Hicksville, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Nov. 30, 1965, Ser. No. 510,657
3 Claims. (Cl. 307—88.5)



1. A pulse train failure monitor for detecting the malfunction of a data pulse train comprising

(1) clock pulse generating means for providing clock pulses having a predetermined repetition rate,

(2) counting means responsive to said clock pulses and having first, second and third stages in cascade for counting in response to said clock pulses, said counting means including means for providing first and second outputs only from said second and third stages upon counting a predetermined number of said clock pulses coupled only to said first stage,

(3) data pulse train generating means for providing data pulses having a normal repetition rate greater than said predetermined number of clock pulses,

(4) said second and third stages of said counting means each including reset input terminal means responsive to said data pulses to normally reset said second and third stages prior to counting said predetermined number of clock pulses to prevent said first and second outputs during normal operation, and

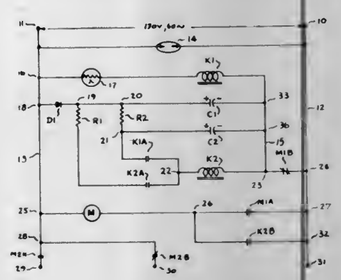
(5) algebraic summation means responsive to said first and second outputs for providing a monitoring signal when energized by both of said first and second outputs.

3,350,581

CONDITION-INITIATED CIRCUIT-CONTROLLING APPARATUS

Laurence B. Stein, Jr., Hingham, Mass., assignor to Sigma Instruments Inc., a corporation of Massachusetts

Filed July 11, 1963, Ser. No. 294,382
14 Claims. (Cl. 307—117)



1. Apparatus for controlling the transmission of electrical power between a power source and a power consuming load, comprising: condition sensing means operable in response to a predetermined first level of physical condition and inoperable in response to a predetermined second level of physical condition; a switch operating means connected to said source in series with said sensing means and operable from the power source by said condition sensing means when said sensing means is operable; rectifying means and capacitor means connected in series with each other in a charging circuit connected to said source; a discharge circuit for said capacitor means controlled by contacts operated by said switch operating means, said capacitor means being chargeable from the power source when said condition sensing means and said switch operating means are inoperable; said capacitor means, when charged, dischraging through said discharge circuit when said condition sensing means and said switch operating means become operable as the physical condition changes from said second level to said first level; a further switch operating means connected in said discharge circuit and operable responsive to discharge of said capacitor means; and timing means connected to said source and including contact means coupled between the load and the source, energized responsive to closure of further contacts by said further switch operating means to control the connection between the load and source for a predetermined time duration.

3,350,582

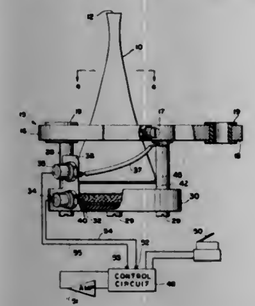
VIBRATORY APPARATUS

John G. Attwood, Oak Park, and Robert L. Kosrow, Elk Grove Village, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 13, 1965, Ser. No. 425,133
16 Claims. (Cl. 310—8.1)

1. Vibratory apparatus comprising an alternating current source of ultrasonic frequency, transducer means for converting alternating current from said source into periodic mechanical oscillations, an ultrasonic vibratory tool operatively associated with said transducer means, means for transmitting energy from said transducer means to said ultrasonic vibratory tool, a support for said transducer means electrically connected to said source, and

means interposed between said transducer means and said support for maintaining the same in spaced-apart relationship with each other and for providing a series of



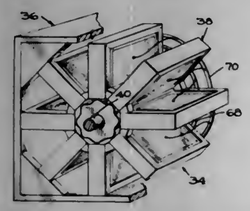
electrically conductive paths therebetween, to thereby transmit said alternating current to said transducer means.

3,350,583

ELECTRIC POWER SUPPLY

Edward L. Schiavone, 10502 Insley St., Silver Spring, Md. 20902

Filed Nov. 13, 1963, Ser. No. 323,384
13 Claims. (Cl. 310—8.3)



1. In a system for converting stored energy into electrical energy, a driver having a plurality of equally spaced lobes projecting therefrom, means mounting said driver for movement of said lobes in a fixed path, a plurality of piezoelectric elements equal in number to said plurality of spaced lobes having pressure surfaces simultaneously engaged and released by said lobes, means mounting said piezoelectric elements for holding each of said pressure surfaces thereof fixed against movement in a direction parallel to movement of each of said lobes when engaged therewith at the instant of maximum pressure, said pressure surfaces being fixedly spaced for simultaneous engagement and release by the lobes, and collector means operatively connecting to said piezoelectric elements in parallel for continuously conducting electrical current therefrom developed by said elements in response to movement of the driver.

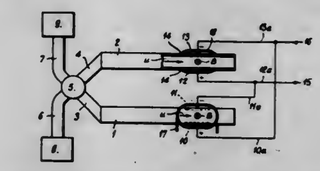
3,350,584

METHOD OF AND GENERATOR FOR PRODUCING ALTERNATING ELECTRIC POWER

Eric Brocher, 4 Chemin de l'Ecorcherie, Vandoeuvres, and Walter Dallenbach, 6 Sagerstrasse, Bern, Switzerland

Filed Apr. 15, 1964, Ser. No. 359,874
Claims priority, application Switzerland, Apr. 16, 1963, 4,653/63
8 Claims. (Cl. 310—11)

1. A generator for producing alternating electric power from the interaction of ionised fluid impulses with a magnetic field comprising; a first shock tube and a second shock tube, said first and second shock tubes each having an input and an output end, distributor means, first tank means containing a first fluid at a first pressure and at a temperature of the order of between 1000° K. and 2000° K., second tank means containing a second fluid at a second pressure and at a temperature of the order of between 1000° K. and 2000° K., said first pressure and said second pressure being in the ratio of the order of between 1:2 and 1:50, said distributor means being effective to connect each of said first and second tank means in turn, successively and cyclically, to each of said first and second shock tubes, first electrode means, second electrode means, said first and second electrode means being located in said first shock tube and symmetrically with respect to the axis of said first shock tube, and electrically



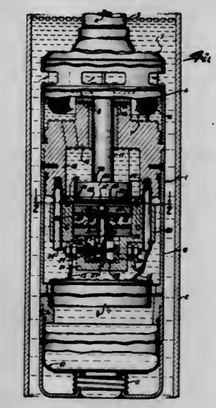
insulated therefrom, third electrode means, fourth electrode means, said third and fourth electrode means being located in said second shock tube, symmetrically with respect to the axis thereof and electrically insulated therefrom, means producing a magnetic field through said shock tubes, transversely thereof parallel to said electrode means, a first transformer winding connected across said first and second electrode means, a second transformer winding connected across said third and fourth electrode means, and a transformer secondary winding, in common with both said first and second transformer windings, providing an alternating current output from the generator.

3,350,585

MAGNETICALLY ACTUATED DEVICE HAVING A ROTATING INPUT MEANS

John T. Maynard, New Berlin, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Apr. 7, 1965, Ser. No. 446,236
21 Claims. (Cl. 310—68)



1. A magnetically actuated device including,

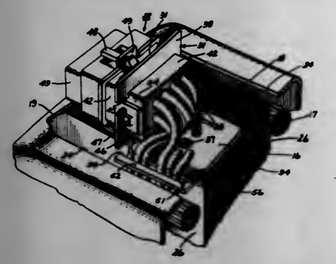
a magnetic member for establishing a magnetic field,

a conductive member disposed within said magnetic field,

means to mount said members for relative rotation whereby a similar magnetic field is established in

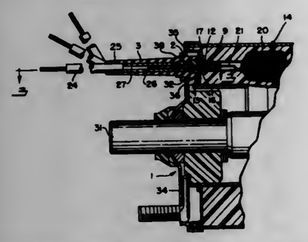
said conductive member, one of said members being freely rotatable and the other of said members being mounted for limited pivotal movement whereby the latter member is magnetically attracted to pivot in the direction of rotation of the first member, and biasing means establishing an opposing force continuously urging the pivotally mounted member in the direction opposite of that established by the rotating member.

3,350,586
DYNAMOELECTRIC MACHINE ELECTRICAL COMPONENT MOUNTING AND LEAD SECURING ARRANGEMENT
Charles W. Otto, De Kalb, Ill., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1965, Ser. No. 434,062
9 Claims. (Cl. 310—71)



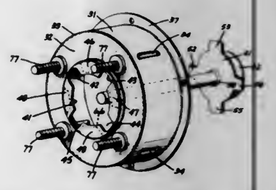
1. A dynamoelectric machine comprising a stator member having a core carrying excitation windings, a frame mounting the stator member and formed with an opening exposing a peripheral surface of the stator core, an electrical component, at least one electrical lead connecting the electrical component in circuit with the excitation windings means for mounting the electrical component and for anchoring the at least one electrical lead relative to the stator member, said means having a first section attached to said exposed peripheral surface of the core, said means including a second section having a raised portion projecting in a direction generally away from said exposed peripheral surface mounting said electrical component and a third section extending adjacent a side face of said core, said third section firmly securing a portion of said lead adjacent said side face intermediate said electrical component and the excitation windings for anchoring the at least one electrical lead firmly in place with respect to said stator member.

3,350,587
ELECTRICAL PLUG AND CONNECTOR
James R. Turk, Solon, Ohio, assignor to Vincent K. Smith, Gates Mills, Ohio
Filed Mar. 31, 1965, Ser. No. 444,136
5 Claims. (Cl. 310—71)



1. In combination, an electrical plug and connector, said plug comprising a body having a tapered leading end, an annular groove in said body adjacent said tapered leading end, a plurality of axially extending bores in said body, and electrically conductive plug pins disposed in said bores with the ends of said plug pins extending outwardly beyond both ends of said body; said connector comprising an elongated body member having a cavity in one end thereof, a plurality of axially extending bores in said body member for receipt of the ends of lead lines, electrically conductive tubular sleeves disposed in said connector bores in electrical contact with exposed ends of said lead lines, the end of said plug opposite said tapered leading end being disposed in said cavity in said connector with said one end of said connector located adjacent the inner edge of said annular groove in said plug, said bores in said plug and connector being in co-axial alignment with the ends of said pins projecting into the bores of said tubular sleeves, said plug pins being hollow and longitudinally slotted along their entire length and of a slightly greater diameter than the diameter of the bores in said tubular sleeves, whereby said pins yieldably grip said sleeves to establish electrical contact therewith.

3,350,588
DYNAMOELECTRIC MACHINE ROTOR SUPPORTING STRUCTURE
William A. Rutledge and Jack J. Clarkson, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Jan. 21, 1965, Ser. No. 426,854
4 Claims. (Cl. 310—90)

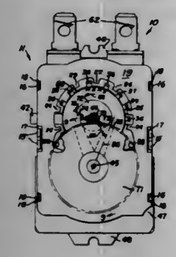


1. A dynamoelectric machine comprising a stationary assembly including a stator, a shaft, a rotor rotatably carried by said shaft in spaced relation to said stator forming an air gap therewith, an end frame including a first member formed of sheet material mounted adjacent at least one side of said stator, said member having a wall formed with a generally circular aperture at the axis of the machine, and a number of angularly spaced apart openings extended radially outward from the aperture in axial alignment with said air gap, to define at least two depending solid sections therebetween; a second sheet member mounting a bearing for rotatably supporting the shaft and formed with at least two outwardly extending sections, means attaching said depending and extending sections together with said openings in said first member being unobstructed by said second member and being sufficiently large to permit access to the air gap for removing shim means therefrom during assembly of the machine components.

3,350,589
ELECTRIC MOTOR CONSTRUCTION
Ted N. Svarnias, Elmwood Park, Ill., assignor to International Register Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 20, 1965, Ser. No. 481,315
17 Claims. (Cl. 310—164)

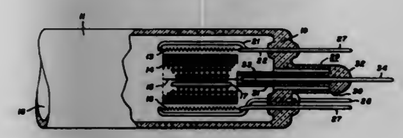
1. An electric motor construction comprising, a magnetic field structure including: a rectangular mounting plate having upstanding generally parallel sides along one pair of opposite edes and providing a flat bottom U-shape, a ore extending upwardly from and secured at its lower end to said flat bottom of said mounting plate midway said sides, an inner field plate secured to the upper end

of said core having a plurality of pole tips extending at right angles away from said core in spaced relation along a circle whose diameter is less than the distance between said sides of said mounting plate, and an outer field plate interconnecting the distal edges of said sides of said mounting plate, forming therewith a housing having a rectangular cross section, and having radially inwardly extending pole tips interspersed among said pole tips on said inner field plate along said circle; an energizing winding on said core between said mounting plate and said inner field plate for connection to an alternating current source, a shaft extending axially of said core and of said circle along which said pole tips are located, a permanent magnet rotor on said shaft rotatable within said pole tips and having a plurality of poles along its periph-



ery, a cam rotatable with said rotor having a pair of radially extending shoulders circumferentially facing in opposite directions, a pinion rotatable with said rotor, a gear driven by said pinion and rotatably mounted on said housing midway said sides, an arm rotatable about the axis of rotation of and frictionally engaging said gear, the distal end of said arm being engageable with one or the other of said shoulders depending upon the side of the axis of rotation of said cam on which said arm is positioned with said rotor located with respect to said pole tips such that it is positively vibrated by the alternating magnetic flux whereby said rotor starts to rotate in one direction or the other in a corresponding direction, and stop means limiting rotation of said arm in either direction when said distal end thereof is moved out of the path of the respective shoulder.

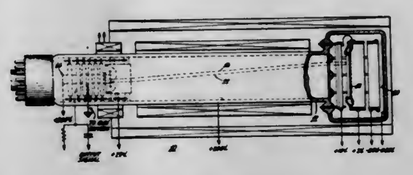
3,350,590
MINIATURE IONIZATION GAGE INCLUDING A GRID HAVING MULTITUDINOUS DISCRETE OPENINGS
James R. Young, Rexford, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 8, 1966, Ser. No. 563,870
6 Claims. (Cl. 313—7)



5. In a miniature ion vacuum gage of about 20 cc. volume comprising a cylindrical accelerating anode, a thermionic emissive filament electrode adjacent thereto, and a straight probe wire electrode positioned coaxially therein, the improvement comprising

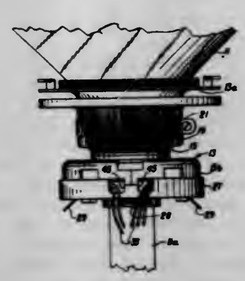
(a) a cylindrical shell grid structure for said accelerating anode,
(b) said grid structure being characterized by having multitudinous small discrete apertures therethrough,
(c) said cylindrical grid structure being less than about one inch diameter and less than about one inch length,
(d) said grid structure being a coextensive sheet of tungsten having multitudinous perforations therethrough in a ratio where the area of the openings represents about 90% transparency.

3,350,591
INDIUM DOPED PICKUP TUBE TARGET
Robert L. Van Asselt, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 21, 1961, Ser. No. 90,748
8 Claims. (Cl. 313—65)



8. A television pickup tube comprising an evacuated envelope having an electron gun in one end thereof for producing an electron beam directed along a first path, a photoemissive cathode in the other end of said envelope for producing a photoelectron image directed along a second path, and a target electrode positioned in the said first path of said electrode beam and in the said second path of said photoelectron image, said target electrode comprising a first material of aluminum oxide and a second material of indium.

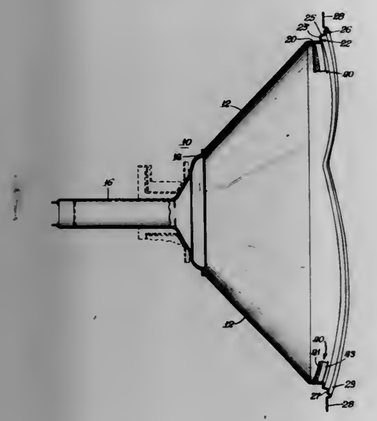
3,350,592
DEFLECTION YOKE WITH CONTACTS MATING WITH YOKE COVER CONTACTS
Richard L. Mason, Elmhurst, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 10, 1965, Ser. No. 458,816
5 Claims. (Cl. 313—76)



1. A deflection yoke assembly for use in a television receiver having a cathode ray tube and deflection circuits therefor, said deflection yoke assembly including in combination, a yoke body having a rear portion with a plurality of contacts thereon, winding means on said yoke body having leads extending therefrom terminating in respective ones of said contacts, a cover member having

centering means thereon for the electron beam in the cathode ray tube, said cover member further having a plurality of contacts thereon mating with respective ones of said contacts on said rear portion of said yoke body, and a plurality of leads directly connecting respective ones of said contacts on said cover member with the deflection circuits in the television receiver, whereby said cover member also serves as a plug connector in said yoke assembly.

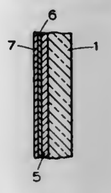
3,350,593
ONE PIECE METAL CONE FOR A CATHODE RAY TUBE
Richard J. Lindeman, Elmwood Park, and Ernest W. Reinwall, Jr., McHenry, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 31, 1964, Ser. No. 386,561
3 Claims. (Cl. 313—92)



1. A shadow mask type color cathode ray tube including in combination, a one-piece metal shell having a main body portion in the shape of a pyramidal frustum, the smaller end of said body portion having a generally circular opening therein, an annular flange around said circular opening, a generally cylindrical glass electron gun chamber having a flange portion sealed to said annular flange, the larger end of said body portion being opened and having a side wall defining a substantially rectangular opening, the free marginal edge of said side wall being formed into first and second steps to provide inner and outer seating ledges substantially rectangular in configuration, said inner seating ledge being continuous with the marginal edge of said side wall and including a first outwardly extending ledge portion and a first upwardly extending flange portion, said outer seating ledge being continuous with said first upwardly extending flange portion and including a second outwardly extending ledge portion and a second upwardly extending flange portion, the periphery of said outer seating ledge being greater than the periphery of said inner seating ledge, a generally rectangular outwardly curved glass faceplate panel seated on and sealed directly to said inner seating ledge, a transparent safety window having the same general contour as said faceplate panel secured in said outer seating ledge, and a plurality of inwardly extending indentations disposed around the periphery of said upwardly extending flange portion of said inner seating ledge for aligning said faceplate panel with the axis of said electron gun chamber with said panel being seated on said inner seating ledge.

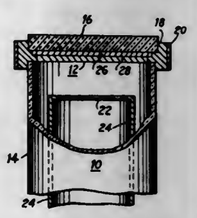
3,350,594
IMAGE INTENSIFIER HAVING CONTINUOUS CONDUCTING LAYER BETWEEN POROUS METALLIC COATING AND LUMINESCENT LAYER
Gordon Peter Davis, Sunbury-on-Thames, Middlesex, and Henry Alfred Benbow, Amersham, England, assignors to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain
Filed July 28, 1964, Ser. No. 385,664
Claims priority, application Great Britain, Aug. 2, 1963, 30,678/63
4 Claims. (Cl. 313—94)

1. A photo-electron emissive discharge device comprising a photo-electron emissive cathode for converting incident light into an electron stream, a target for said electron stream, said target being arranged to receive a high voltage so that electrons of said electron stream can impinge on the target with a high velocity and wherein to reduce the release of ions the surface of the target on which the photo-electrons impinge is provided with a porous coating formed by evaporation of metal onto the surface of the target in a gaseous atmosphere, which



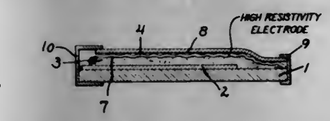
coating tends to trap such ions, said device constituting an image intensifier and in which said cathode converts an incident light image into an electron image which in operation of the device impinges on said target, and said target comprises a luminescent layer having a conducting metallic layer formed on the surface of the luminescent layer facing said cathode by evaporation in a high vacuum, said porous layer being provided on said conducting layer.

3,350,595
LOW DARK CURRENT PHOTOCONDUCTIVE DEVICE
William M. Kramer, Lancaster, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,728
10 Claims. (Cl. 313—94)



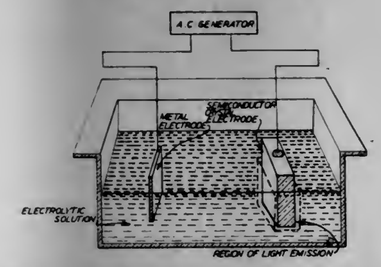
1. A photoconductive device having a target comprising:
(a) a conducting signal electrode made of a material of N-type conductivity, and
(b) a photoconductive layer over said signal electrode,
(1) said photoconductive layer comprising a vitreous alloy of selenium and tellurium, which has a higher percentage of tellurium at the surface portion thereof adjacent to said signal electrode than at the opposite surface portion thereof whereby a blocking junction is formed between said signal electrode and said photoconductive layer, for reducing the dark current of said device.

3,350,596
ELECTROLUMINESCENT LAMP HAVING A HIGH RESISTIVITY ELECTRODE
Laurence Burns, Swampscott, Mass., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed Aug. 17, 1953, Ser. No. 374,771
10 Claims. (Cl. 313—108)



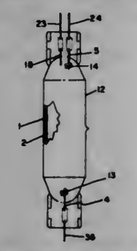
1. An electroluminescent lamp comprising two electrodes with a layer therebetween of an activated phosphor particle containing an acceptor impurity and being embedded in an insulating dielectric medium.

3,350,597
ELECTROLUMINESCENT PROCESS INCLUDING AN IONICALLY CONDUCTING ELECTROLYTE
Terry Cole, Dearborn, Mich., David K. Donald, Webster, N.Y., and John J. Lambe, Birmingham, and William C. Vassell, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,475
3 Claims. (Cl. 313—108)



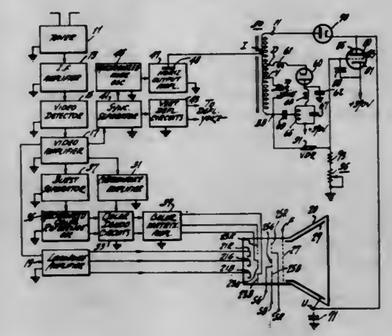
1. The process of producing electroluminescence comprising passing an electrical current between an ionically conducting electrolyte and a semiconducting crystalline mass of cadmium fluoride in contact with the ionically conducting electrolyte, said semiconducting material being doped with a rare earth compound.

3,350,598
HIGH PRESSURE ELECTRIC DISCHARGE DEVICE CONTAINING A FILL OF MERCURY, HALOGEN AND AN ALKALI METAL AND BARRIER REFRACTORY OXIDE LAYERS
Victor L. Corbin, Salem, Frederic Koury, Lexington, and Marie Levesque, Peabody, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 29, 1965, Ser. No. 527,407
9 Claims. (Cl. 313—220)



1. A high pressure electric discharge device comprising: a quartz arc tube; electrodes disposed at either end thereof; a fill including mercury atoms; halogen atoms and alkali metal atoms; a transparent coating on the inner surface of said arc tube comprising zirconium oxide atoms; and a transparent refractory oxide coating over said zirconium oxide coating.

3,350,599
COLOR TELEVISION KINESCOPE ULTOR VOLTAGE REGULATOR UTILIZING A VOLTAGE DEPENDENT RESISTOR IN THE CONTROL GRID CIRCUIT OF THE REGULATOR TRIODE
Alfred H. Rickling, West Lafayette, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 313,589, Oct. 3, 1963. This application Dec. 29, 1966, Ser. No. 605,935
8 Claims. (Cl. 315—22)



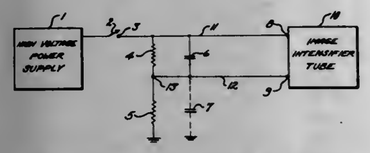
6. In a color television receiver including a color image reproducing device having an ultor electrode, a high voltage rectifier having an output electrode connected to said ultor electrode for supplying an energizing potential thereto, a source of reference potential, and voltage regulating means including a regulator device having input, output and common electrodes, the conductivity of the current path presented by said device between said output and common electrodes varying in accordance with the potential difference between the potentials of said input and common electrodes, said regulating means utilizing variations in the conductivity of said current path to oppose changes in the amplitude of said energizing potential, a control arrangement for said regulator device comprising, in combination:
means for applying said reference potential to said common electrode;
a source of control voltage appreciably smaller in magnitude than said energizing potential but significantly greater in magnitude than said reference potential, said control voltage being responsive to and reflective of variations in the amplitude of said energizing potential;
a voltage divider network comprising a first resistance-exhibiting portion and a second resistance-exhibiting portion connected in series in the order named between said control voltage source and a point of substantially unvarying potential, said first resistance-exhibiting portion varying in exhibited resistance inversely with respect to variations of said control voltage amplitude, the resistance of said second resistance-exhibiting portion being substantially invariant with respect to variations of said control voltage amplitude;
and means for connecting said regulator device input electrode to the junction of said first and second resistance-exhibiting portions of said voltage divider network.

3,350,600

RC CIRCUIT MEANS TO COMPENSATE FOR DEFOCUSING OF A PULSED IMAGE INTENSIFIER

William J. Hannan, Moorestown, N.J., assignor to the United States of America as represented by the Secretary of the Air Force

Filed May 24, 1965, Ser. No. 458,524
5 Claims. (Cl. 315—31)



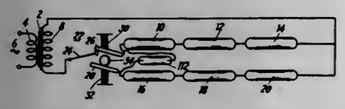
1. A focus compensation circuit for a pulsed image intensifier tube comprising a pulsed image intensifier tube having photo-cathode and focus electrodes, and a high voltage power supply connected to said photo-cathode electrode by way of a switch and simultaneously connected to said focus electrode by way of said switch and a focus compensation network including a voltage divider network compensated for stray capacitance.

3,350,601

DEVICE FOR SWITCHING OVER THE CURRENT FEEDING AT LEAST TWO ELECTRIC DISCHARGE TUBES CONTAINING AN IONIZABLE ATMOSPHERE

Edouard Gomonet, Paris, France, assignor to Claude Paz et Visseaux

Filed Jan. 18, 1965, Ser. No. 426,098
Claims priority, application France, Jan. 30, 1964, 962,049, Patent 1,395,639
15 Claims. (Cl. 315—90)



1. An arrangement for switching a source of energy from one circuit to another of a pair of circuits, each circuit containing at least one main discharge tube having an ionizable atmosphere, comprising an auxiliary tube having a pair of electrodes in an ionizable atmosphere, said auxiliary tube being connected in series with the main tubes, and switch means having a pair of terminals, one terminal being connected to one of said electrodes, respectively, said switch means selectively connecting one of said pair of circuits to said source of energy.

3,350,602

GASEOUS-DISCHARGE DEVICE HAVING A TRIGGER ELECTRODE AND A LIGHT PRODUCING SPARK GAP TO FACILITATE BREAKDOWN BETWEEN THE TRIGGER ELECTRODE AND ONE OF THE PRINCIPAL ELECTRODES

Kenneth J. Germeshausen, Weston, and John L. Turner, Needham, Mass., assignors to EG&G, Inc., a corporation of Massachusetts

Continuation of application Ser. No. 78,587, Dec. 27, 1960. This application Feb. 11, 1965, Ser. No. 438,155
9 Claims. (Cl. 315—150)

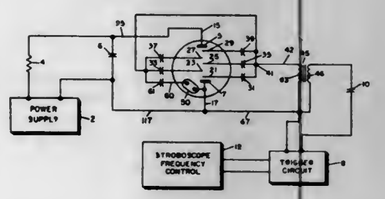
1. A gaseous-discharge device comprising:

a gas-filled envelope;

a pair of principal electrodes spaced from each other within the envelope and connected to a source of potential normally ineffective to produce a discharge therebetween;

a trigger electrode disposed adjacent the space between the principal electrodes for ionizing the gaseous medium therebetween in response to the application thereto of a triggering impulse;

a light-producing two-electrode spark gap disposed remote from said space between the principal electrodes where the light, emitted when the spark gap is energized, is directed to impinge upon one of said pair of principal electrodes to facilitate breakdown between the trigger electrode and said one of the principal electrodes; and



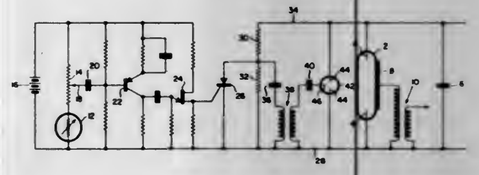
means for simultaneously energizing said trigger electrode and one electrode of said spark gap.

3,350,603

ELECTRONIC FLASH WITH AUTOMATIC TERMINATION MEANS

Roger D. Erickson, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,310
20 Claims. (Cl. 315—151)



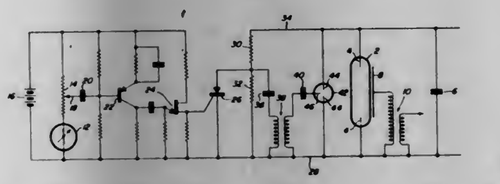
14. In an electronic flash circuit wherein an electrical charge stored on a capacitor is selectively discharged through a flash tube, a flash control circuit comprising a light sensitive circuit means responsive to an incident pulse of reflected light energy originating from said flash tube for producing an electrical signal representative of said reflected light energy, said light sensitive circuit means having a substantially non-reactive integrator consisting solely of a semi-conductive light sensitive element, and having a resistor and means for connecting a source of electrical energy across said element and said resistor in series, whereby said electrical signal represents an integration of said light energy pulse; an amplifier circuit connected to the output of said light sensitive circuit means for amplifying said electrical signal; trigger circuit means connected to said amplifier circuit and responsive to said amplified electrical signal to produce a trigger pulse when said signal reaches a predetermined value, said trigger circuit means including controlled trigger semi-conductor means; switch circuit means including an electronic switch element adapted to be rendered conductive upon the application of a trigger pulse thereto; means connecting said trigger circuit means to said switch circuit means to control the operation thereof; and means for connecting said electronic switch element in shunt with said flash tube whereby to short-circuit said flash tube when said switch element becomes conductive.

3,350,604

FLASH LAMP CONTROLLED BY PHOTOSENSITIVE LIGHT INTEGRATING DEVICE

Roger D. Erickson, Littleton, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,013
1 Claim. (Cl. 315—151)



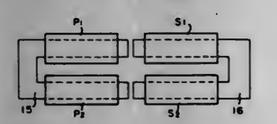
In an electronic flash apparatus wherein an electrical charge stored on a capacitor is selectively discharged through a flash tube, a flash control means comprising a light sensitive circuit means responsive to incident light energy derived from said flash tube and ambient light, said circuit means including a semi-conductor photocell exposed to said light energy and having a response characteristic with respect thereto which is affected by said ambient light, said photocell alone constituting a substantially non-reactive light integrator arranged to integrate said incident light and to produce an output signal representative of such integration, a response controlling source of light energy arranged to illuminate said photocell, adjustable means for varying the intensity of said light energy from said source, thereby to permit the adjustment of the effect which said ambient light produces on said response characteristic of said photocell, trigger circuit means connected to said photocell and responsive to said output signal to produce a trigger pulse when said output signal reaches a predetermined value, switch circuit means including an electronic switch element arranged to be rendered conductive upon the application of a trigger pulse thereto, means connecting said trigger circuit means to said switch circuit means to control the operation thereof, and means connecting said switch element in shunt with said flash tube to short-circuit the latter when said switch element is rendered conductive.

3,350,605

TRANSFORMER WITH TWO-PART CORE FOR FLUORESCENT LAMP CIRCUITS

Donald Frederick Chapman, London, England, assignor to Thorn Electrical Industries Limited, London, England

Filed June 9, 1965, Ser. No. 462,638
2 Claims. (Cl. 315—278)



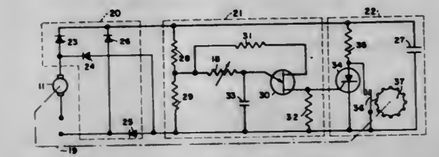
1. A circuit arrangement of the semi-resonant start type for an electric discharge lamp, said circuit comprising primary windings in series with the lamp and secondary windings in shunt with the lamp each including two coils connected in series and further comprising two U-shaped core parts having limbs around which said coils are wound, said core parts being arranged to form a magnetic circuit with air gaps between the ends of the said limbs, and each of the four coils of said windings being wound around a different one of the said limbs.

3,350,606

MEANS FOR INTERMITTENTLY DRIVING A CAM-CARRYING SHAFT

James A. Hirsch, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed July 1, 1965, Ser. No. 468,699
16 Claims. (Cl. 317—22)



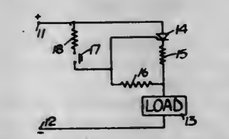
1. In a time sequence switch, a step-advance means comprising, a motor, said motor coupled to a first side of an alternating current source and to a semiconductor type bridge rectifier circuit, said bridge rectifier circuit coupled to a second side of said alternating current source, said bridge rectifier circuit consisting of four diodes, said diodes interconnected to provide full wave rectification of said alternating current source, a silicon controlled rectifier coupled across said bridge rectifier circuit, a capacitor coupled across said bridge rectifier circuit, said capacitor supplying holding current for said silicon controlled rectifier after said silicon controlled rectifier is fired, a resistor connected in series with said silicon controlled rectifier, said resistor functioning to limit current flow from said capacitor through said silicon controlled rectifier and to provide a voltage drop means for charging said capacitor, a timing circuit having a variable time interval output, said timing circuit consisting of a unijunction transistor, said unijunction transistor providing an output pulse, said output pulse firing said silicon controlled rectifier, a variable resistor-capacitor network triggering said unijunction transistor after a predetermined time interval, said variable resistor-capacitor network being the means for varying the time interval of said timing circuit, said silicon controlled rectifier energizing said motor, said motor driving a camshaft of said time sequence switch, said camshaft supporting and rotating a cam, said cam operating a switch, said switch shorting out said silicon controlled rectifier and said capacitor, and said switch open circuiting said motor and resetting said timing circuit, said motor advancing said time sequence switch a predetermined amount.

3,350,607

CATHODE LOADED OVERLOAD PROTECTION CIRCUIT

Peter David Jones, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Mar. 15, 1965, Ser. No. 439,814
Claims priority, application Great Britain, Apr. 22, 1964, 16,626/64
8 Claims. (Cl. 317—33)



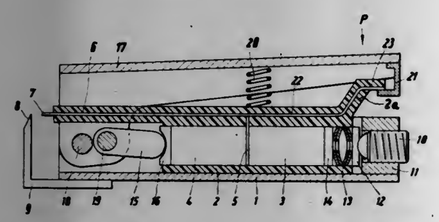
1. A D.C. overload protection circuit comprising in combination first and second terminals for connection to a D.C. source so as to be of positive and negative polarity respectively, a switchable rectifier having its anode connected to the first terminal and its cathode connected to the second terminal through a first resistor in series with

a load to be protected, means for applying positive pulses between the gate and cathode of the switchable rectifier to switch it on, and means connecting the gate of the switchable rectifier to a point intermediate the first resistor and load either permanently or when the switchable rectifier is conducting, the arrangement being such that when the switchable rectifier is conducting its gate will be at a negative potential relative to its cathode but this potential will be insufficient to switch off the switchable rectifier unless the current flowing in the load exceeds a predetermined value.

3,350,608
PIEZO-ELECTRIC IGNITER

Wolfgang Maltner, Oberstedten, Taunus, and Horst Dieterle, Frankfurt am Main, Germany, assignors to Heinrich Maltner G.m.b.H., Offenbach am Main, Germany

Filed Sept. 21, 1964, Ser. No. 397,801
Claims priority, application Germany, Sept. 21, 1963, M 58,290
12 Claims. (Cl. 317—96)



1. In a piezo-electric igniter, particularly for use in lighters and the like, in combination, a transducer crystal having a pair of poles; stress generating means arranged to subject said crystal to compressive stresses in the direction of its piezo-electric axis so that the crystal generates a voltage, said stress generating means comprising actuating means movable from a starting position to a second position to thereby effect compression of said crystal; and a pair of conductors normally in current-conducting contact with each other and each connected with one of said poles to short-circuit said crystal, one of said conductors being movable away from the other conductor in response to movement of said actuating means from said starting position to thereby terminate the current-conducting connection between said poles.

3,350,609
ELECTROMAGNETIC CONTROL MEANS

Owen S. Steele, Toronto, Ontario, Canada, assignor, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

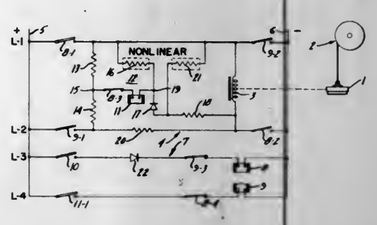
Filed Dec. 31, 1964, Ser. No. 422,739
13 Claims. (Cl. 317—123)

1. A circuit means for rapid discharge and reset of a magnetic load energized from a direct current source, comprising

power means for applying oppositely polarized currents to the load and having load terminals adapted to be connected to the load,

a discharge circuit connected in parallel with said load terminals and including a plurality of current paths at least one of which includes nonlinear impedance means and constructed to impress self-induced load voltages upon the nonlinear impedance, said discharge circuit including a pair of output terminals in different current paths, and

a control means for said power means connected to the output terminals and responsive to a selected voltage differential therebetween for momentarily applying a reverse current to the inductive load and the discharge circuit, said nonlinear impedance means serving to initially discharge a portion of the energy in



the load at a selected maximum voltage peak and then changing the voltage distribution in the associated current paths to establish the selected voltage differential.

3,350,610
ELECTRIC CHARGE STORAGE ELEMENTS

Akio Yamashita, Ikeda-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Mar. 10, 1964, Ser. No. 350,905
Claims priority, application Japan, Mar. 16, 1963, 38/14,538
6 Claims. (Cl. 317—234)

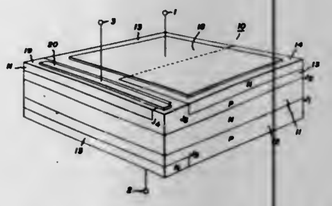


1. An electric charge storage element comprising a mixture of at least an electrical insulator and a semiconductor, said semiconductor being selected from the group consisting of Cu_2O, ZnO, NiO, PbO, Si, Ge, ZnSe, and anthracene; a carrier transformer disposed in direct contact with one side of said mixture, a second electrical insulator disposed on the opposite side of said mixture from said carrier transformer, and an electrode disposed on said second electrical insulator on the opposite side from said mixture.

3,350,611
GATE FIRED BIDIRECTIONAL SWITCH

Robert I. Scace, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 4, 1965, Ser. No. 430,425
9 Claims. (Cl. 317—235)

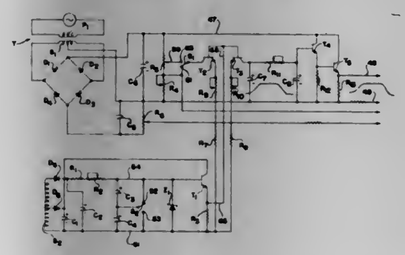


1. In a bidirectional switching device wherein a gate electrode provides the control for switching the device between non-conducting and conducting states for a current path between a pair of main current carrying electrodes, a semiconductor body having a plurality of alternating regions, adjacent regions being of opposite conductivity type separated by rectifying barriers, one of said regions adjacent one major surface of said body constituting a main emitter, said main emitter formed in the next adjacent region in such a manner that a portion of said next adjacent region is exposed at said one surface, one main current carrying electrode in ohmic contact with said one major surface of said body and extending over at least a portion of both said main emitter and said next adjacent region thereby defining a load current carrying area, a gate emitter region of the same conductivity type as said main emitter region formed in said next adjacent region adjacent said one surface of said body, a gate electrode ohmically connected to both said gate emitter region and said next adjacent region and positioned so that one edge which extends over both said gate emitter region and said next adjacent region is everywhere equidistant from one edge of said main electrode which extends over both said main emitter region and said next adjacent region.

3,350,612
JERKLESS PATTERN SIGNAL FOR MOTOR ACCELERATION

Hans R. A. Hansen and Robert C. Van Schaack, Akron, Ohio, assignors to The Imperial Electric Company, Akron, Ohio, a corporation of Ohio

Filed Feb. 19, 1964, Ser. No. 346,016
7 Claims. (Cl. 318—143)

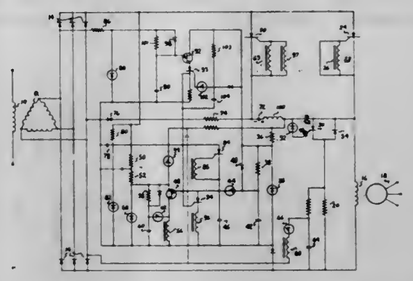


1. A variable speed control circuit for generating a motor speed control pattern comprising: jerk control circuit means for generating a signal pattern having a controlled linear charge portion and a controlled linear discharge portion, said jerk control circuit means including charge storage means, switching means for selectively charging and discharging said charge storage means to provide said linear charge and discharge portions of said signal pattern, means for limiting the charge on said charge storage means to a predetermined magnitude and first output circuit means for deriving said signal pattern from said jerk control circuit means; means for establishing the desired motor speed; current control means responsive to said motor speed establishing means and operatively connected to said first output means of said current control means including first means for controlling the said linear charge portion from said jerk control circuit means and second means for controlling the said linear discharge portion from said jerk control means; signal shaping means responsive to said current control means to provide controlled rates of change of said charge and discharge portions of said signal pattern to provide a jerkless acceleration and deceleration signal; and output circuit means responsive to said signal shaping means to provide a motor speed control signal at the output of said speed control circuit.

3,350,613
CONTROL SYSTEM FOR A SYNCHRONOUS MOTOR

John J. Brockman, Schenectady, and Barnard L. Goss, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 17, 1963, Ser. No. 288,426
9 Claims. (Cl. 318—176)



1. A control system for a synchronous motor comprising a rotor and stator having windings therein, a unidirectional power source for furnishing excitation to the field winding, a field switch interposed between the power source and the rotor field winding and selectively operable to establish a series loop circuit consisting essentially of said switch, said power source and said field winding, means in said switch withholding the application of excitation to the field winding until optimum conditions for synchronization take place in the motor, a resistive load and condition responsive means connected therewith and to the field winding for controlling insertion of the resistive load in parallel circuit with the field winding when the induced voltage therein reaches predetermined values, a synchronizing circuit connected with the field switch and the field winding for controlling application of the excitation to the field winding, said synchronizing circuit comprising detecting means for determining when the induced field current goes through zero during an acceptable cycle of slip frequency at which synchronization should take place, conducting devices connected with said detecting means and being associated with said field switch for transmitting an electrical pulse from said detecting means through said conducting devices to the field switch to convert the latter to a conducting state and thereby permit the application of excitation to the field winding, and a supplementary circuit associated with said conducting devices for energizing the latter and converting said field switch to a conducting state if the rotor synchronizes on reluctance torque without producing the stated acceptable conditions described above.

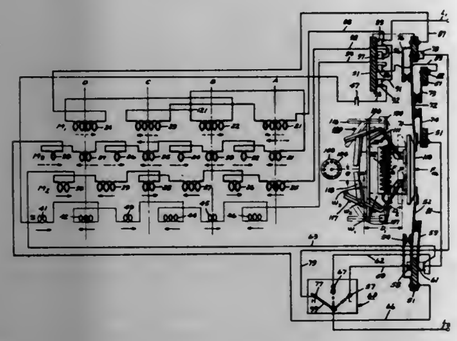
3,350,614
MULTISPEED INDUCTION TYPE ELECTRIC MOTOR

Harold C. Stout, De Kalb, Ill., assignor to General Electric Company, a corporation of New York

Filed Sept. 13, 1965, Ser. No. 486,674
7 Claims. (Cl. 318—224)

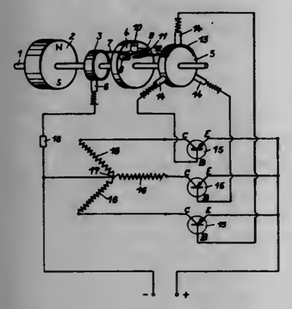
1. In a multispeed electric motor having a stator core and being selectively operative at three speeds, a plurality of main winding coils arranged on the stator core and connected to form selectively three groups of magnetic main poles M_1, M_2, and M_3, with each group of poles differing in total number to produce different speeds of operation, and with pole M_1 being least in number to produce a high running speed of operation for the motor; a plurality of auxiliary winding coils accommodated on the stator core and connected to form a group of magnetic starting poles S corresponding in number to one prede-

termined group of the main poles other than poles M_1; coil excitation control means including speed responsive switch means having first and second sets of switch contacts and speed selector switch means connected in circuit with said pluralities of winding coils for controlling the selective energization of said main winding coils and said auxiliary winding coils; said first and second sets of switch contacts of the speed responsive switch means each including at least one start contact and a run contact in spaced relation, with a movable contact supported



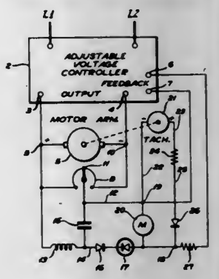
therebetween alternately engageable therewith in response to predetermined speed of the motor, and a speed responsive device in actuating relation with said movable contacts, said coil excitation control means and pluralities of coils being connected such that the main coils forming said predetermined group of main magnetic poles having a number in excess of poles M_1 and said auxiliary winding coils are always connected in parallel relation when said movable contacts are in engagement with their associated start contacts thereby developing high starting torque for a given energy input to the energized coils.

3,350,615
SPEED-CONTROLLED DIRECT-CURRENT MOTOR WITH CENTRIFUGAL SWITCH
Josef Lindner, Theresienplatz 8, Nurnberg, Germany
Filed May 25, 1964, Ser. No. 369,693
Claims priority, application Germany, May 30, 1963, W 34,618
5 Claims. (Cl. 318—325)



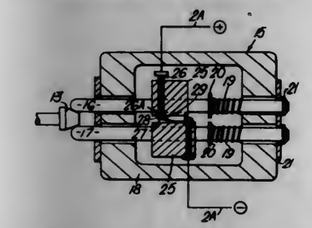
1. A direct-current motor comprising, in combination, a shaft; a rotor on said shaft consisting of a permanent magnet; a centrifugal switch on said shaft having a pair of contacts controlling the speed of said motor to maintain a constant speed thereof; a stator having a plurality of windings disposed at equal angular intervals from each other around said shaft adjacent said rotor; a respective single transistor operatively associated with each respective stator winding, each transistor having a collector-emitter system connected in series with the associated respective stator winding and with a source of potential, and each transistor having a base; a slip ring secured on said shaft and including an electrically conductive segment connected to one contact of said centrifugal switch; a respective brush for each respective transistor, each brush being electrically connected with the base of the associated transistor; said brushes being disposed at equal angular spacings around said shaft and bearing on said slip ring and the conductive segment thereof; and means connecting each of said stator windings to the other contact of said centrifugal switch; whereby the contacts of said centrifugal switch, when opened, interrupt only the relatively weak base currents of said transistors so that sparking of said contacts is substantially eliminated.

3,350,616
TACHOMETER FAILURE PROTECTION CIRCUIT FOR ELECTRIC MOTOR
Donald J. Greening, Thiensville, and Edward Q. Mead, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Dec. 22, 1964, Ser. No. 420,333
5 Claims. (Cl. 318—327)



1. In an electrical motor control system:
(a) an electric motor;
(b) an adjustable voltage, speed regulated controller for controlling the speed of said motor at various preselected speeds and having motor speed negative feedback signal sensing means for regulating said speed at said preselected speed;
(c) a primary source for providing a first motor speed feedback signal substantially proportional to the speed of said motor;
(d) a secondary source for providing a second motor speed feedback signal substantially proportional to the speed of said motor and normally of lower magnitude than said first feedback signal over substantially the entire operating speed range of said motor; and
(e) means for connecting said primary source and secondary source to the feedback sensing means of said controller comprising means for automatically substituting said second feedback signal for said first feedback signal to said feedback sensing means in the event of failure of said primary source whereby the speed of said motor will increase above the preselected running speed at the time of failure to the extent caused by the difference between said first and second feedback signals existing at the time of failure of said primary source.

3,350,617
POSITIONING DEVICE FOR USE ON MACHINE TOOLS
John Firth, Arbroath, Angus, Scotland, assignor to Giddings & Lewis-Fraser Limited, Angus, Scotland
Filed Feb. 8, 1965, Ser. No. 431,064
Claims priority, application Great Britain, Feb. 22, 1964, 7,489/64
3 Claims. (Cl. 318—468)

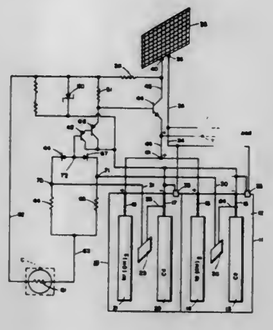


1. In a machine tool including a base, a worktable on the base and movable relative thereto in opposite directions, worktable motion-controlling means operatively connected to the worktable for driving and stopping the worktable, and an electric circuit including control means connected to the worktable motion-controlling means and capable of being actuated selectively in accordance with a change in the state of the electric circuit; a device for enabling the worktable to be stopped at a predetermined position on the base and including first and second members secured one to the base and one to the worktable and mutually engaged when the worktable is at the predetermined position, one of said members comprising a housing, a pair of plungers independently slidably received in the housing and disposed in side-by-side parallel relationship and projecting together from the housing, stops one on each plunger and positioned for engagement simultaneously with a part of the housing when the plungers adopt a predetermined maximum projecting position, spring means urging the plungers independently to their maximum projecting positions, first and second electric contacts carried one by each of the plungers and forming a part of the said electric circuit for effecting a change in the state of the said circuit by making and by breaking mutual contact respectively when the plungers adopt their maximum projecting position and when one of the plungers is depressed relative to the other plunger by more than a predetermined amount, the other of the said members having a projection for engaging the projecting ends of the plungers, when the worktable is at the predetermined position, the projecting ends of the plungers being positioned successively in the path of the projection, and cam faces one on the projecting end of each plunger and one on the projection for enabling the plungers to be depressed successively by the projection during movement of the worktable towards the predetermined position.

3,350,618
BATTERY CHARGING CONTROL
John D. Barney, Altadena, and Leland A. Zanteson, Pasadena, Calif., assignors to Space-General Corporation, El Monte, Calif., a corporation of California
Filed Apr. 1, 1964, Ser. No. 356,503
3 Claims. (Cl. 320—5)

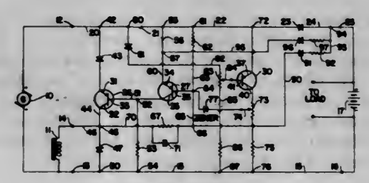
1. A power supply system comprising a solar cell having a pair of terminals for connection to an electrical load, a storage cell connected in parallel with the solar cell, whereby load current is supplied by a combination of the solar cell and storage cell, and whereby the solar cell when subject to ambient radiation serves to maintain the charge of the storage cell;

a current regulator connected in the current path between the solar cell and the storage cell, said current regulator including a transistor with emitter and collector electrodes in the series current path from the solar cell, and a voltage reference source for maintaining a predetermined maximum electrode bias on said transistor, and a pair of temperature sensitive resistance elements, one of said pair of resistance



elements positioned to be responsive to ambient temperature and one positioned to be responsive to the temperature of the electrolyte in the storage cell, means connecting said pair of temperature sensitive resistance elements to vary the base bias on the transistor and thereby the passage of the transistor current from the solar cell to the storage cell.

3,350,619
BATTERY CHARGING CIRCUIT RESPONSIVE TO GENERATOR OUTPUT VOLTAGE AND CURRENT
James Lee Jensen, St. Louis Park, Minn., assignor to Honeywell Inc., a corporation of Delaware
Original application Feb. 14, 1957, Ser. No. 640,168. Divided and this application Jan. 19, 1959, Ser. No. 787,455
22 Claims. (Cl. 320—32)

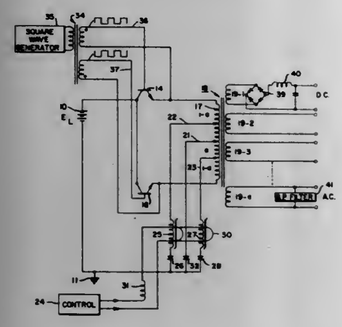


11. In a batttery charging circuit, the combination comprising, a direct current generator having a field winding for controlling the voltage output of said generator as a function of current flow therethrough, a load circuit connected to be energized from said generator, a storage battery connected with said load circuit, a rectifier connected between said generator and said storage battery for preventing current flow from said battery toward said generator, means for controling the voltage output of said generator including a transistor connected in circuit with said generator and field winding, an electric circuit for controlling the conduction of said transsistor, means for deriving a first voltage that is proportional to the output voltage of said power source, means for deriving a second voltage that is proportional to load current, and means for applying the difference of said first and second voltages to said electric circuit.

3,350,620
VOLTAGE CONVERTER CIRCUITS WITH SHIFTABLE TAP ON PRIMARY WINDING

Benjamin Barron, Malba, N.Y., assignor to Lear Siegler, Inc., Long Island City, N.Y., a corporation of Delaware

Filed Jan. 2, 1964, Ser. No. 335,010
11 Claims. (Cl. 321—2)



1. A circuit for converting direct current voltage from a source comprising:

a transformer having a primary and at least one secondary winding,

switching means electrically connected between said source and said transformer primary winding for converting said direct current voltage from said source into an alternating current voltage for application to said primary winding, the alternating current voltage at said primary being induced into a said secondary,

first unidirectional current conducting means connected to a first selected point on said primary winding and to a point of reference potential, said first unidirectional current conducting means normally being rendered conductive in response to said alternating current voltage produced by said switching means,

second unidirectional current conducting means connected to a second selected point on said transformer primary winding different from said first point and to a point of reference potential,

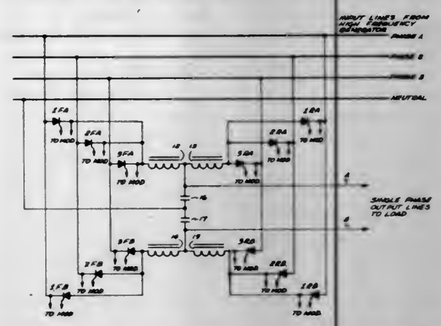
and means connected to said second unidirectional current conducting means for rendering the same conductive at a selected time during the alternating current voltage cycle produced by said switching means, the conduction of said second unidirectional current conducing means producing a voltage at said first selected point to render said first unidirectional current conducting means non-conductive.

3,350,621
INDEPENDENTLY CONTROLLED RECTIFIER BRIDGE CONVERTER

Samuel C. Caldwell, Chagrin Falls, Ohio, assignor to General Electric Company, a corporation of New York

Filed Mar. 25, 1964, Ser. No. 354,588
5 Claims. (Cl. 321—7)

4. A system for converting a first frequency of multiphase alternating current supplied on input lines from a source having a neutral to a second frequency of alternating current on output lines comprising a plurality of controlled rectifiers each having an anode, a cathode, and a control electrode, said controlled rectifiers permitting current to flow from said anode to said cathode in response to a control signal applied to said control electrode, means coupling said controlled rectifiers between said input lines and said output lines to provide anode to cathode current paths in opposite directions between each of said input lines and each of said output lines, means respectively coupling a reactive circuit between each of said output lines and said neutral, each reactive circuit

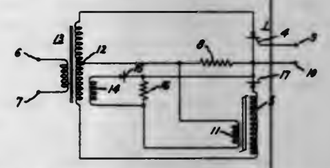


providing an alternative path for current to flow whenever the controlled rectifier which completes the path from an output line to an input line is not conducting, and means coupled to said controllable rectifiers for supplying control signals thereto in a predetermined order.

3,350,622
CONVERTER UTILIZING A SATURABLE REACTOR SLAVED WITH A SILICON CONTROLLED RECTIFIER

Harold W. Lord, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 11, 1962, Ser. No. 243,832
1 Claim. (Cl. 321—8)



A phase adjustable control circuit for providing full wave output unidirectional current to a load comprising: a bi-phase transformer including a primary for receiving an alternating current input, a secondary having first and second terminals and having a center tap lead for providing a common return for said load, and having a tertiary winding; a controlled unilateral conductor coupled between one of said terminals and said load; a saturating reactor having a principal winding coupled between said second terminal and said load, and having a control winding; a rectifier also coupled between said second terminal and said load in series with said principal winding; a saturating reactor control circuit for applying a voltage developed from said tertiary winding to said control winding for resetting said saturating reactor; and means for terminating the resetting of the saturating reactor in response to initiation of conduction of the controlled unilateral conductor.

3,350,623
LINEAR RECTIFIER CIRCUIT

Charles W. Clapp, Lynn, Mass., assignor to General Electric Company, a corporation of New York

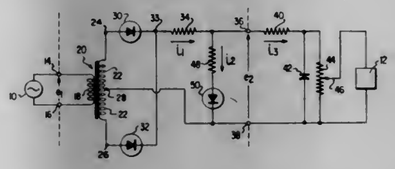
Filed Dec. 20, 1965, Ser. No. 514,922
10 Claims. (Cl. 321—8)

1. A circuit to convert a varying amplitude alternating current input signal to a direct current output signal directly proportional thereto comprising:

(a) a plurality of like rectifiers,

(b) a rectifier circuit including at least one of said rectifiers to convert the alternating current signal to a direct current signal,

(c) a series circuit connected in series with said rectifier circuit and comprising first and second substantially resistive impedance means and at least one of said rectifiers, said first impedance means being connected to said rectifier circuit, the ratio of said first impedance means to said second impedance means being substantially equal to the ratio of the number of said rectifiers conducting in series at any instant in said rectifier circuit to the number of said rectifiers in said series circuit, and

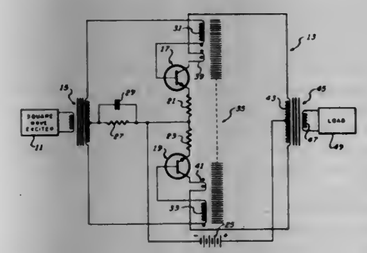


(d) a load in parallel with said second impendance means and said series circuit rectifier means, said load having a high impedance to alternating and direct currents relative to the impedance of said series circuit.

3,350,624
INVERTER CIRCUITS EMPLOYING LOAD-RESPONSIVE SATURABLE TRANSFORMERS

Anthony A. Annunziato, Floral Park, Adrian R. Doucette, Garden City, and Joseph W. Pfeifer, Hauppauge, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,520
8 Claims. (Cl. 321—18)

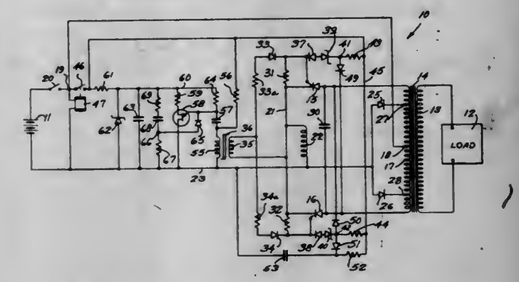


7. An inverter for supplying alternating current of at least a specified magnitude to a load comprising an output transformer having a center-tapped primary winding; a saturable core current transformer; first and second primary windings on said current transformer connected in series with the first and second ends respectively of the output transformer primary winding; first and second transistors connected to pass load currents to the output transformer through said first and second current transformer primary windings respectively; first and second secondary windings on said current transformer connected in series with the input terminals of said first and second transistors respectively; and a source of square waves for driving said transistors in an out-of-phase relationship, said current transformer having a sufficient number of turns on either primary winding to magnetically saturate the core only when the specified instantaneous peak load current is drawn.

3,350,625
PULSE CONTROLLED INVERTER CIRCUIT

Arthur B. Larsen, Parma, Ohio, assignor to TRW Inc., a corporation of Ohio

Filed Oct. 28, 1963, Ser. No. 319,264
7 Claims. (Cl. 321—45)

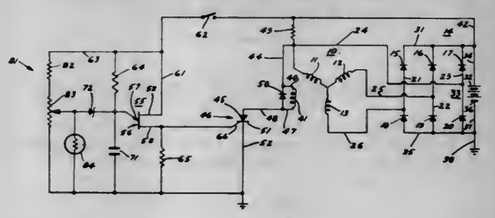


3. In an inverter for converting DC to AC, a transformer including primary winding means, at least one controlled rectifier having a gate electrode, means for connecting said primary winding means to a DC source through said rectifier, means for applying periodic triggering pulses to said gate electrode to cause conduction of said rectifier, commutating means for rendering said rectifier non-conductive, and locking means including an impedance having one terminal connected to said DC source and a second terminal coupled to said gate electrode to apply a holding voltage maintaining said rectifier conductive, and means including a diode coupling said second terminal to said commutating means for discontinuing application of said holding voltage upon operation of said commutating means.

3,350,626
VOLTAGE REGULATOR

Jacques Mosier, Ypsilanti, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

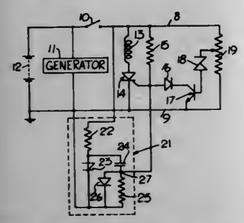
Filed May 4, 1964, Ser. No. 364,595
12 Claims. (Cl. 322—73)



1. In an electrical generating system, an alternator having an output winding and a control winding, a rectifier connected to said output winding for rectifying the alternating electrical energy output of said output winding, a controlled rectifier having output terminals and a control electrode, means connecting said control winding in circuit with said output terminals of said controlled rectifier for causing said controlled rectifier to control the energization of said control winding, circuit means connecting said control winding and said output terminals with said output winding of said alternator, an oscillator means having an input circuit coupled to the output of said rectifier and an output circuit coupled to said control electrode of said controlled rectifier for periodically applying to said control electrode pulses of electrical energy of a polarity and a magnitude to cause conduction of said controlled rectifier, and means connected to said input circuit of said oscillator means and the output circuit of said rectifier

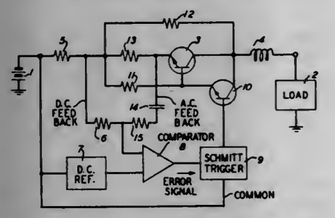
for causing said oscillator means to cease oscillating when the output voltage appearing at the output terminals of said rectifier exceeds a predetermined level.

3,350,627
VOLTAGE REGULATORS
Maurice James Wright, 15 Stanley Ave., Harborne, Birmingham, England
Filed Mar. 24, 1967, Ser. No. 625,674
Claims priority, application Great Britain, Nov. 1, 1961, 39,064/61
4 Claims. (Cl. 322—28)



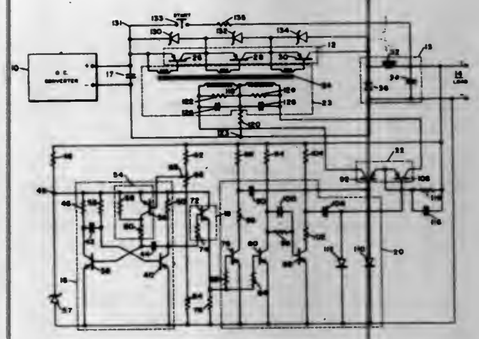
1. A voltage regulator for controlling the output voltage of a generator having a field winding, comprising in combination a gate controlled switch having an anode, a cathode and a gate, the anode and cathode of said gate controlled switch being connected in series with said field winding, and said gate controlled switch being switched on by a positive voltage applied between its gate and cathode, by being switched off by a negative voltage applied between its gate and cathode, means providing a positive voltage at the gate of said gate controlled switch to render it conductive, means operable by the output from said generator for supplying negative pulses intermittently to the gate of said gate controlled switch to switch it off, said gate controlled switch being switched on again on removal of each negative pulse by said positive voltage, voltage sensitive means connected across said generator output and adapted to operate when the output of the generator exceeds a predetermined value, and means coupled to said voltage sensitive means for removing said positive voltage from said gate controlled switch when said voltage sensitive means operates.

3,350,628
CURRENT REGULATOR WITH A.C. AND D.C. FEEDBACK
Lee E. Gallaher and Richard J. Redner, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 16, 1964, Ser. No. 383,038
8 Claims. (Cl. 323—4)



1. Apparatus for supplying current from a source to an output circuit, comprising a switching device connected between said source and said output circuit, a filter circuit connected between said switching device and said output circuit, a binary trigger circuit connected in controlling relationship to said switching device, means for sensing total current supplied from said source to said filter, means responsive to said sensing means for applying to said trigger circuit a first feedback signal of a sense to oppose a variation in said total current, said trigger circuit exhibiting hysteresis in controlling said switching device in response to said variation in said output circuit, means forming a parallel circuit with said switching device for supplying curent between said source and said filter when said switching device is open, and means coupled to said parallel circuit for supplying to said trigger circuit a second feedback signal responsive to a change of current produced between said source and said filter by said switch, said second feedback signal being of a sense to drive said switching device toward its open condition when closed and toward its closed condition when open.

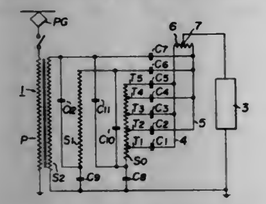
3,350,629
VOLTAGE REGULATOR
Robert A. Kirby, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 403,453
6 Claims. (Cl. 323—18)



1. A voltage regulator for controlling the voltage to a load from a D.C. supply which comprises:
a plurality of switching transistors connected in series;
a switching transformer, one side of said transformer being multifilar wound, there being a winding for and connected independently between the base and emitter of each switching transistor;
integrating means connected to the output of said switching transistors for providing a regulated output signal;
a multivibrator;
means to control the ratio of the "on"/"off" time of said multivibrator in response to variation in the regulated output signal; and
means for driving said switching transformer with the output of said multivibrator.

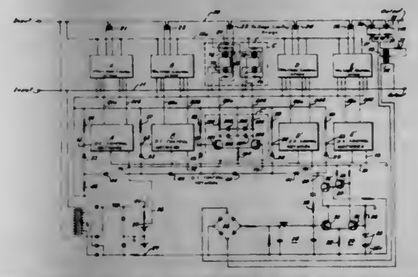
3,350,630
VOLTAGE CONTROL DEVICE
Yasunosuke Torii, Musashino-shi, Tokyo, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Dec. 7, 1964, Ser. No. 416,245
2 Claims. (Cl. 323—43.5)

1. A voltage control device comprising a source of alternating current, a load, a transformer connected between said source and said load, said transformer having a primary winding connected across said source of alternating current and a plurality of secondary windings, the first secondary winding being a regulating winding producing a voltage E and provided with a plurality of taps, the voltage between taps being E', the second secondary winding providing a voltage $E+E'$, the third secondary winding producing a voltage $2(E+E')$, and nth secondary winding producing a voltage $2^{n-2}(E+E')$, a first group of contactors each associated with the respective one of said taps of said regulating windings, a second group of contactors connected between the high voltage side of each of the secondary windings and the low voltage side of the other of said secondary windings, means to operate said first



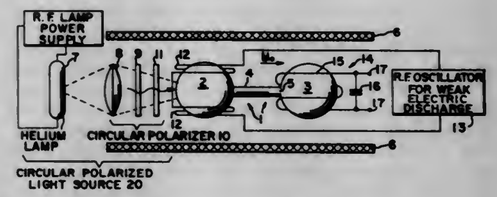
and second groups of contactors such that the voltage supplied to said load is gradually increased in the first step, by said regulating winding, in the second step by serially connecting said regulating winding and said second secondary winding, in the third step by connecting in series said regulating winding with said third secondary winding, in the fourth step by connecting in series said first, second and third secondary windings, and in the nth step by connecting in series all of said secondary windings.

3,350,631
VOLTAGE REGULATOR WITH SWITCHING MEANS INTRODUCING VOLTAGE INCREMENTS INTO THE INPUT SIDE
Thomas M. Ingman, North Ridge, Calif., assignor to Microdot, Inc., South Pasadena, Calif., a corporation of California
Filed Apr. 3, 1964, Ser. No. 357,127
17 Claims. (Cl. 323—45)



4. In combination for controlling a voltage at the output side of a line in accordance with variations of the voltage at the input side of the line:
a first saturable magnetic reactor having a first saturable magnetic core and having first and second windings magnetically coupled to the core to produce a saturation of the core in a first polarity upon a flow through the windings of a current of a first particular magnitude and of a first polarity,
a second saturable magnetic reactor having a second saturable magnetic core and having third and fourth windings magnetically coupled to the second core to produce a saturation of the second core in a second polarity upon a flow through the windings of a current of the first particular magnitude and of a second polarity opposite to the first polarity,
control means connecting the first, second, third and fourth windings in a bridge relationship having first and second pairs of opposite legs with the first and second windings constituting the first pair of opposite legs in the bridge and with the third and fourth windings constituting the second pair of opposite legs in the bridge,
first means coupled to the first and second windings and to the third and fourth windings in a push-pull relationship to selectively produce one of first and second operations where the first operation constitutes an increase of the current of the first polarity through the first and second windings to the particular magnitude and simultaneously a decrease of the current of the second polarity through the third and fourth windings below the particular magnitude and the second operation constitutes an increase of the current of the second polarity through the third and fourth windings to the particular amplitude and simultaneously a decrease of the current of the first polarity through the first and second windings below the particular amplitude,
means for providing a reference voltage,
means coupled to the control means and to the output side of the line and to the reference voltage means for obtaining selective ones of the first and second operations of the control means in accordance with the variations in the voltage at the output side of the line from the reference voltage, and
means coupled to the first and second saturable reactors and to the input side of the line for introducing to the input side of the line a voltage of a particular amplitude and a first polarity upon a saturation of the first saturable magnetic reactor, a voltage of a particular amplitude and a second polarity upon a saturation of the second saturable magnetic reactor and a variable voltage less than the particular amplitude in accordance with the relative state of saturation of the first and second saturable magnetic reactors when neither of the first and second saturable magnetic reactors becomes saturated.

3,350,632
OPTICALLY PUMPED ATOMIC DIFFUSION MASER WITH SEPARATE PUMPING AND OBSERVATION REGIONS
Hugh Gettyo Robinson, Waltham, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 25, 1964, Ser. No. 391,975
18 Claims. (Cl. 324—.5)



1. An atomic resonance apparatus for obtaining regenerative stimulated emission of atomic resonance radiation including, an envelope structure for containing a gaseous atomic medium therein at pressures wherein the predominant gas confining mechanism is one of successive gas to gas collisions, means for constricting diffusion of gaseous atoms from a first region of said envelope structure to a second region of said envelope structure, means for applying optical pumping radiation to said gaseous medium in a first one of said regions for producing certain nonequilibrium energy states of said gaseous atoms, electrical circuit means having the magnetic fields thereof coupled into said second region for electromagnetic interaction with an ensemble of the nonaquilibrium energy gaseous atoms that have diffused from said

first region into said second region, and the coupling between said electrical circuit means and said ensemble of gaseous atoms in said second region being sufficiently great such as to produce a net flow of coherent power at the atomic resonance frequency of said ensemble from said ensemble of gaseous atoms in said second region to said electrical circuit means, whereby said radiating ensemble of atoms is removed from the deleterious effects of pumping products produced in said first region and whereby said circuit means operates independently of the applied optical pumping radiation, applied in said first region, to monitor atomic resonance of said ensemble of gaseous atoms in said second region.

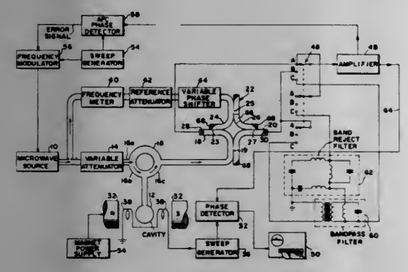
3,350,633

GYROMAGNETIC SPECTROMETER HAVING SEPARATE DISPERSION AND ABSORPTION MODE DETECTORS

James S. Hyde, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Continuation of abandoned application Ser. No. 323,041, Nov. 12, 1963. This application Apr. 18, 1966, Ser. No. 543,420

10 Claims. (Cl. 324—.5)



1. In a gyromagnetic resonance spectrometer, means forming a resonator structure for containing a sample of matter to be analyzed while immersed in a unidirectional polarizing magnetic field, means forming a source of an alternating signal applied to said resonator structure for exciting said resonator structure to produce an alternating magnetic field in the sample to excite gyromagnetic resonance of the sample while immersed in the polarizing magnetic field, means forming a mixer structure having a pair of detector means therein, means forming a resonance signal channel for applying a resonance signal derived from said resonator structure to said mixer structure, means forming a reference signal channel for applying a reference signal derived from said source of alternating signal to said mixer structure, the reference signal and the resonance signal being combined in each of said detector means within said mixer means to produce a pair of output signals, means forming a phase shifter in said mixer structure for shifting the phase of the signals applied thereto from said signal and reference channels such that the reference and resonance signals are combined in one of said detector means with a certain phase relation, and the reference and resonance signals are combined in the other one of said detector means with a phase relation between them which is different from the first certain phase relation by approximately 90°, whereby when the output of one of said detector means is predominantly characteristic of the dispersion resonance mode of the sample the output of the other detector means is predominantly characteristic of the absorption resonance mode of the sample.

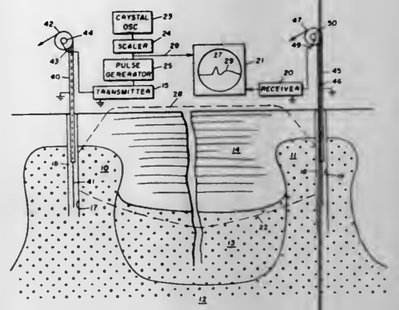
3,350,634

ELECTROMAGNETIC INVESTIGATION FOR SALT WEBS INTERCONNECTING SPACED SALT DOMES

Gustave L. Hoehn, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Dec. 22, 1964, Ser. No. 420,259

2 Claims. (Cl. 324—6)



1. A method of investigating a salt dome region to determine the presence of subsurface salt structure interconnecting spaced subsurface salt domes and extending substantially above the base of said domes, comprising the steps of:

locating a source of electromagnetic energy in one of said salt domes,

locating a receiver of electromagnetic energy in the other of said salt domes,

periodically generating a control signal,

applying said control signal to said source to generate pulses of electromagnetic energy spaced in time,

detecting at said receiver the electromagnetic energy resulting from said generated pulses and passing to said other salt dome by way of said salt structure, and

periodically employing said control signal to initiate the recording of the output of said receiver to obtain a measurement as a function of time of the electromagnetic energy detected by said receiver following each pulse of electromagnetic energy generated.

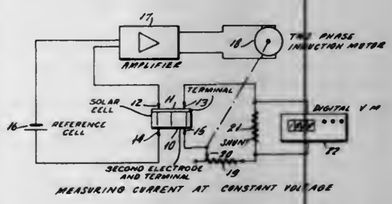
3,350,635

SOLAR CELL AND TEST CIRCUIT

Hans G. Mesch, Manhattan Beach, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Apr. 1, 1963, Ser. No. 269,295

4 Claims. (Cl. 324—29.5)



1. In combination, a test circuit and a solar cell; said solar cell having terminals; said test circuit comprising a first closed circuit connected in series with said terminals of said solar cell and a second closed circuit connected in series with said terminals of a solar cell; one of said circuits having a reference D-C source connected therein in opposing polarity with the voltage generated by said solar cell; the other of said circuits having an adjustable impedance connected therein; an amplifier having input and output terminals and a reversible motor connected to said output terminals of said amplifier; said amplifier input terminals connected in said one of said circuits whereby an input signal appears on said input terminals responsive to a voltage imbalance in said first circuit between said D-C source and said solar cell; said motor being mechanically connected to said adjustable impedance to thereby vary the value of said impedance until the voltage imbalance in said one of said circuits disappears; and a measuring instrument connected in circuit relation with said solar cell for measuring a variable parameter of said solar cell when said imbalance is eliminated.

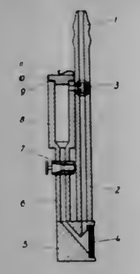
3,350,636

GAS DIFFUSION ELECTRODES AND pH MEASUREMENTS CARRIED OUT THEREWITH

August Winsel, Braunschweig, Germany, assignor to Varta Aktiengesellschaft, Hagen, Westphalia, and Siemens-Schuckertwerke Aktiengesellschaft, Berlin and Erlangen, Germany, both corporations of Germany

Filed Nov. 1, 1962, Ser. No. 234,765

11 Claims. (Cl. 324—30)



1. In the process for measuring the pH value of a solution with a porous gas diffusion electrode, the improvement which comprises initially prior to the measurement forcing a quantity of the solution to be measured through the pores of the electrode.

5. In a porous gas diffusion electrode having a gas chamber behind the porous electrode element and a conduit connecting said gas chamber for the passage of gas to said chamber, the improvement which comprises a second conduit connected to said gas chamber and means for passing a solution through said second conduit, said means for passing such solution being a metering pump.

3,350,637

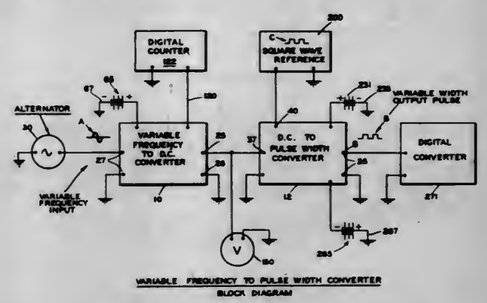
VARIABLE FREQUENCY TO PULSE-WIDTH CONVERTER

Michael Pochtar, Livingston, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed May 7, 1964, Ser. No. 365,679

14 Claims. (Cl. 324—78)

1. For use with an alternator having a rotor driven at a variable speed so as to provide an output voltage having a frequency directly proportional to the speed of rotation of the rotor of the alternator, and means to provide an external reference square wave current; a device comprising first means connected to the alternator for providing a direct current voltage of an amplitude proportional to the frequency of the output voltage from the alternator, second means connected to the means for providing an external reference square wave current and connected to the first means, and controlled by said direct current voltage from the first means so as to convert the square wave reference current into



pulses having a width variable as a function of said direct current voltage and a frequency equal to that of the square wave reference current.

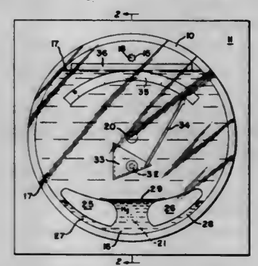
3,350,638

AMPERE-HOUR METER

Joseph R. Kohr, Philadelphia, Pa., assignor, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware

Filed Oct. 24, 1963, Ser. No. 318,667

4 Claims. (Cl. 324—94)



1. An ampere-hour meter comprising:

(a) A meter case having a transparent face piece and a back piece which are firmly attached by a side wall in such a manner as to form an enclosed space;

(b) said meter case having a filling means which is sealed after the desired amount of mercury and electrolyte are placed in said meter case;

(c) an upper electrode firmly attached to said back piece and in contact with an electrolyte containing mercury ions within said meter case;

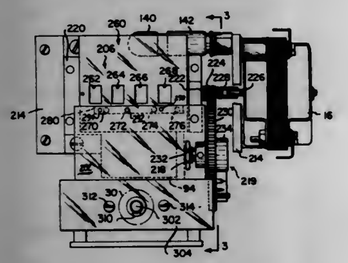
(d) a lower electrode firmly attached to said back piece and covered with mercury in a mercury reservoir at the bottom of said meter case;

(e) said mercury reservoir comprising two spaced members in contact with both the face piece and back piece, said members spaced from said side wall to form channels, an ion permeable membrane attached to the top of said members to separate the mercury from the electrolyte, and said mercury being present in sufficient amount that said lower electrode remains covered with mercury throughout the operation of said ampere-hour meter;

(f) pivotally mounted cup means located between said upper and lower electrodes, positioned so as to catch all of the mercury deposited on and dropping from said electrode, and mounted in such a manner that mercury dropping into said cup means will unbalance said cup means causing said cup means to rotate; and

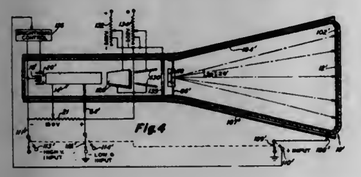
(g) indicator means attached to said cup means being calibrated so as to indicate that a battery which is electrically connected to said ampere-hour meter is charged when said cup means is empty and is discharged when all of the mercury deposited on said upper electrode during the discharging of the battery is in the cup means.

3,350,639
MULTIDIGIT DECIMAL PRESENTATION MEANS FOR DIGITAL METERS
Jule Hulman and Bernard Fisher, Dayton, Ohio, assignors to United Systems Corporation, Dayton, Ohio, a corporation of Ohio
Filed Jan. 9, 1963, Ser. No. 250,302
6 Claims. (Cl. 324—115)



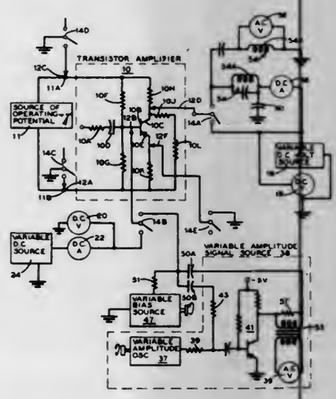
1. In a digital meter having a plurality of operating ranges, in combination:
a multidigit display means;
decimal presentation means associated with said display means including a stationary mask and a movable member;
said mask having a plurality of openings corresponding to a desired number of decimal points to be selectively displayed;
said meter providing a plurality of decimal point display positions corresponding to said plurality of operating ranges;
means for selecting a desired decimal point display position;
said movable member being operatively connected to said selecting means and being so associated and arranged with respect to said mask as to uncover only one opening in said mask for each decimal point display position with only one opening in said mask being uncovered at any operating position of said movable member.

3,350,640
ELECTRON DIFFRACTION VOLTMETER
Gertrude F. Rempfer, Rte. 1, Box 268–B, Forest Grove, Oreg. 97116
Filed Dec. 23, 1963, Ser. No. 332,422
8 Claims. (Cl. 324—121)



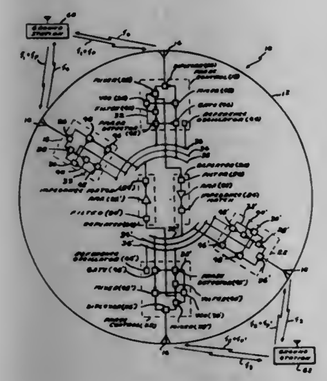
1. An electron diffraction voltmeter, comprising:
indicator means for indicating when electrons strike said indicator means;
a source of electrons;
an electron diffraction member of crystalline material;
means for supporting said diffraction member between said source and said indicator means;
means for focusing said electrons into a beam and for directing said beam onto said diffraction member so that at least some of the electrons in said beam are diffracted through a diffraction angle by said diffraction member onto said indicator means;
means for applying different D.C. input voltages between said source of electrons and said diffraction member to change the velocity of said electrons so that they are diffracted through different diffraction angles to change the size of the diffraction pattern formed on said indicator means by the diffracted electrons which provides an indication of the amplitude of the input voltage applied to said diffraction member.

3,350,641
TRANSISTOR TESTING APPARATUS FOR MEASURING THE BETA, LEAKAGE AND CUTOFF CURRENT PARAMETERS
Samuel Lubkin, Bayside, Norman Nesenoff, Syosset, and Saul Walker, Levittown, N.Y.; said Lubkin and said Walker assignors to Digital Electronics Inc., a corporation of New York
Filed Apr. 10, 1963, Ser. No. 271,972
17 Claims. (Cl. 324—158)



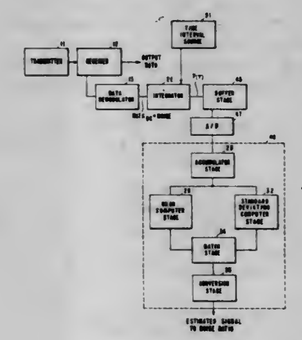
1. Apparatus for measuring the cutoff current for a particular collector voltage of a transistor, in situ, said transistor including emitter, collector and base terminals, a deenergized source of operating potentials including output terminals and coupling means for coupling the output terminals of said source of operating potentials to the terminals of said transistor, said apparatus comprising a reference potential means, means for connecting the output terminals of said source of operating potentials to said reference potential means, means for applying a direct-current voltage equal to the particular collector voltage with respect to said reference potential means directly to said collector, impedance means for connecting said base, emitter and collector terminals respectively to said reference potential means, means for generating a direct-current error signal proportional to the difference in the direct-current voltage of said base and said reference potential means voltage, a direct-current ammeter having first and second terminals, means for connecting said first terminal to said error signal generating means and said second terminal to said base whereby the direct current measured by said direct-current ammeter indicates the cutoff current.

3,350,642
NONORIENTED ACTIVE EARTH SATELLITE WITH IMPROVED ANTENNA GAIN
Ylo E. Stahler, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 22, 1964, Ser. No. 398,459
3 Claims. (Cl. 325—4)



1. A space satellite for use as a two-way repeater in a long distance communications system comprising:
an essentially spherical body adapted for orbital flight and communicating between two widely separated earth terminals arranged to irradiate said body simultaneously;
each of said terminals irradiating said body with a modulated signal containing the information to be relayed via said body and a continuous wave pilot signal centered in a band adjacent to but separate from said modulated signal;
a plurality of electrically isolated and closely packed antennas mounted on the outer surface of said body and being so distributed thereon as to present to each of said terminals roughly one-half the number of said antennas at times when said body is visible to both of said terminals;
said antennas being classified as first and second arrays whereby the antennas of said first array are separately and individually excited by the pilot signal and modulated signal from one terminal, and the antennas of said second array are separately and individually excited by the pilot signal and modulated signal from the other terminal;
independently operating phase control means disposed inside said body and coupled to each antenna for reducing essentially to zero all phase angle differences affecting the modulated signal irradiating each array, thereby correcting for different distances between said terminal and the diverse antenna locations on said body;
said excitation of said first array establishing through the phase control means connected thereto a first multiplicity of receiving circuits which terminate in a first common line additively combining the components of the modulated signal on said first array, and a first multiplicity of gated transmitting circuits actuated by said pilot signal in the adjacent band to said modulated signal on said first array such that only those antennas of said first array excited at a particular moment will be connected for reradiation toward said one earth terminal;
said excitation of said second array establishing through the phase control means connected thereto a second multiplicity of receiving circuits which terminate in a second common line additively combining the components of the modulated signal on said second array, and a second multiplicity of gated transmitting circuits actuated by said pilot signal in the adjacent band to said modulated signal on said second array such that only those antennas of said second array excited at a particular moment will be connected for reradiation toward said other earth terminal;
first active repeated means within said body unidirectionally connected between said first common line and said second multiplicity of transmitting circuits for amplifying the additively combined signal developed by said first array;
and second active repeater means within said body unidirectionally connected between said second common line and said first multiplicity of transmitting circuits for amplifying the additively combined signal developed by said second array.

3,350,643
SIGNAL-TO-NOISE RATIO ESTIMATING BY TAKING RATIO OF MEAN AND STANDARD DEVIATION OF INTEGRATED SIGNAL SAMPLES
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Carl E. Gilchriest, Sierra Madre, and Lucien A. Couvillon, Jr., Los Angeles, Calif.
Filed July 15, 1965, Ser. No. 472,372
13 Claims. (Cl. 325—31)

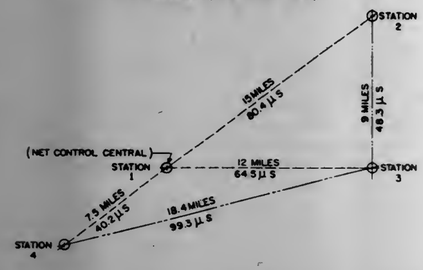


3. In a communication system wherein signals of a predetermined frequency are transmitted in a communication channel of a transmitting source to a receiver wherein said signals are received, said signals being combined with noise signals produced by extraneous noise sources in said communication system, a system for estimating the ratio of said signals to said noise signals comprising:
means for defining successive time intervals each having a period T;
means for integrating the signals received during each time interval and the noise signals combined therewith to provide an output at the end of each T period;
means for accumulating k outputs provided during a duration $k \times T$ and for providing a first signal representing the estimated means of said k outputs and a second signal representing the estimated standard deviation of said k outputs; and
means responsive to said first and second signals for estimating the ratio of said signals to said noise signals.

3,350,644
SLIP CORRECTOR MEANS AND METHOD FOR MULTISTATION NETWORKS

Robert John McNair, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed May 20, 1965, Ser. No. 457,345
12 Claims. (Cl. 325—58)



1. The method of maintaining synchronism between pseudo-random sequences at first and second transmitter-receiver stations of a wide band radio network which comprises the following steps:

generating a first pseudo-random sequence at the first station;

generating a second pseudo-random sequence at the second station;

delaying the second pseudo-random sequence to provide a principal reference sequence, which is delayed by a predetermined amount with reference to the second pseudo-random sequence, and several selectable sequences which are delayed by intermediate amounts with reference to the second pseudo-random sequence and time-advanced relative to the principal reference sequence;

transmitting signals modulated by said first pseudo-random sequence from the first station to the second station;

receiving said signals at the second station and demodulating them by utilizing said principal reference sequence;

synchronizing the principal reference sequence with the first pseudo-random sequence in such a manner that the principal reference sequence lags in time behind the first pseudo-random sequence by an amount which is dependent on the distance between the stations;

transmitting signals modulated by a selected one of the time-advanced sequences from the second station to the first station; and

receiving said signals at the first station and demodulating them by said first pseudo-random sequency;

the selected time-advanced sequence being time advanced relative to the principal reference sequence so as to be synchronized at the first station with the first sequence there generated, the magnitude of the time advance being proportioned to double said distance, and equal to the amount of said lag plus the time of signal travel between said stations.

3,350,645
COMPATIBLE SINGLE-SIDEBAND SYSTEM WITH SYNTHESIZED PHASE MODULATING WAVE

Leonard R. Kahn, 81 S. Bergen Place, Freeport, N.Y. 11520

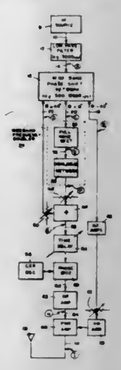
Filed Nov. 30, 1964, Ser. No. 414,712
16 Claims. (Cl. 325—137)

5. Means synthesizing an audio signal for phase modulating a carrier wave to have the phase modulation characteristic desired for compatible single-sideband transmission, said means comprising:

(a) a source of audio frequencies;

(b) a wide band phase shift network developing two phase shifted audio signal segments from an audio signal input from said source, the first such segment having a relative phase shift of 0°, with the second such segment having a phase shift of about 45° relative to such first segment;

(c) means doubling the frequency of said first signal segment;



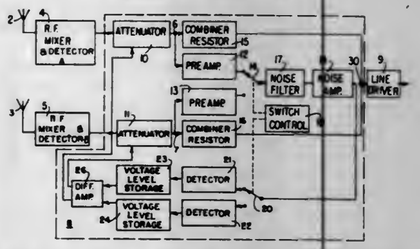
(d) a combiner wherein such second segment and the doubled frequency signal are summated to provide a complex audio signal composed essentially of the fundamental wave contributed by said second phase shifted segment and to a minor degree by the second harmonic of said first phase shifted segment; and

(e) means phase modulating a radio frequency carrier wave with the combined signal.

3,350,646
CLOSED LOOP RATIO SQUARED DIVERSITY COMBINER

Victor Graziano, Oak Park, Ill., and Frederick H. Hartke, Lynchburg, Va., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Mar. 24, 1964, Ser. No. 354,227
7 Claims. (Cl. 325—305)

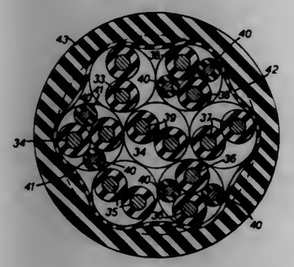


1. In a combiner system having first and second portions for receivng respectively first and second communication signals each containing the same information and having a signal-to-noise ratio independent of the signal-to-noise ratio of the other signal, and a third portion for translating a signal applied thereto; combiner means coupling the third portion to the first and second portions and being responsive to the communication signals from the first and second portion to apply a combined signal to the third portion, said combiner means including in combination, first and second attenuator means each having an input circuit coupled to the first and second portions respectively and an output circuit coupled to the third portion, each of said attenuator means having a sampling portion coupled to said output circuit and a control portion, means coupled to said sampling portions of said first and second attenuator means and responsive to the output signals from the attenuator to generate a control signal, and means coupling said control signal to said control portions, said attenuator means being responsive to said control signal to adjust the attenuation thereof whereby the signal-to-noise ratio of the combined signal applied to said third portion is greater than the signal-to-noise ratio of each of the first and second signals.

3,350,647
WIRED BROADCASTING SYSTEMS AND COMMUNICATION CABLES THEREFOR

Ralph P. Gabriel, Chobham, Surrey, and Rupert I. Kinross, Shepperton, Middlesex, England, assignors to Communications Patents Limited

Filed Oct. 21, 1963, Ser. No. 317,608
Claims priority, application Great Britain, Oct. 25, 1962, 40,403/62
4 Claims. (Cl. 325—308)

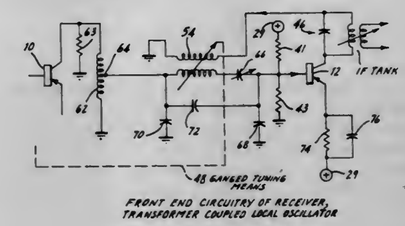


1. A wired broadcasting system comprising transmitting means for transmitting a plurality of high frequency signals corresponding to different television picture programs and a plurality of audio frequency signals corresponding to different sound programs, a plurality of subscriber receiver means for receiving the television picture signals and the audio frequency signals transmitted by said transmitting means and a signal distributing network connecting said transmitting means with each of said subscriber receiver means for transmitting the signals transmitted by said transmitting means to each of said subscriber receiver means, said signal distributing network including a signal transmitting cable comprising a central core element having a circumscribing cylinder, six pairs of insulated high frequency conductors each having a circumscribing cylinder having a diameter equal to that of said central core element, said pairs of high frequency conductors being positioned around said central core in a manner whereby the circumscribing cylinder of each of said pairs of high frequency conductors contacts the circumscribing cylinder of each adjacent pair of high frequency conductors and the circumscribing cylinder of said central core element, each of said pairs of high frequency conductors comprising a pair of conductors twisted together at a pitch different from that of the others, the conductors of each pair of high frequency conductors forming a pair of interstices therebetween, and at least three pairs of insulated audio frequency conductors, each of said pairs of audio frequency conductors being associated with a corresponding one of said pairs of high frequency conductors, each of said pairs of audio frequency conductors comprising a pair of conductors each positioned in a corresponding one of the pair of interstices of the pair of high frequency conductors with which said pair of conductors is associated, each conductor of each of said pairs of audio frequency conductors having a diameter which is two thirds the diameter of each conductor of each of said pairs of high frequency conductors whereby each of the interstices of said pairs of high frequency conductors associated with said pairs of audio frequency conductors is completely filled by the audio frqeuency conductor positioned therein.

3,350,648
CONVERTER STAGE IN WHICH OSCILLATOR TUNED CIRCUIT ALSO SERVES AS OUTPUT LOAD IMPEDANCE FOR RF STAGE

John F. Beres, Southampton, and Ralph Bray, Philadelphia, Pa., assignors to Philco-Ford Corporation, a corporation of Delaware

Filed Oct. 30, 1963, Ser. No. 320,094
5 Claims. (Cl. 325—440)



FRONT END CIRCUITRY OF RECEIVER, TRANSFORMER COUPLED LOCAL OSCILLATOR

5. In combination:

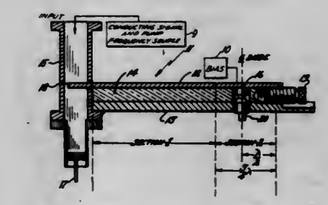
(a) a first transistor circuit arranged to amplify a radio frequency signal,

(b) a second transistor circuit arranged to provide a local oscillator signal and heterodyne therewith the amplified radio frequency signal supplied by said first transistor circuit, said second transistor circuit including a signal feedback circuit for providing said local oscillations, said feedback circuit including a transformer circuit tuned to the frequency of said local oscillator signal, said tuned transformer circuit also serving as an output lead impedance for said first transistor circuit, one winding of said transformer having a first capacitor in series therewith, said series-connected transformer winding and said first capacitor being paralleled by a second capacitor.

3,350,649
FREQUENCY CONVERTER UTILIZING A TUNNEL DIODE AND A MICROSTRIP LINE

Gustav H. Blaeser, Framingham, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 29, 1964, Ser. No. 341,143
2 Claims. (Cl. 325—449)

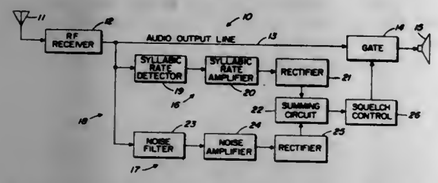


2. A low noise factor mixer for down conversion of microwave frequencies comprising: a signal source; a pump frequency source; a microstrip line; means for feeding simultaneously said signal source and said pump frequency source into said microstrip line; a microwave tunnel diode embedded at a predetermined position in said microstrip line; means for biasing said tunnel diode; and a variable short circuit located at one end of said microstrip line for adjusting the conductance thereof.

3,350,650
NOISE AND AUDIO CONTROLLED SQUELCH CIRCUIT

Arthur L. Kemper, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed June 17, 1964, Ser. No. 375,887
14 Claims. (Cl. 325—478)

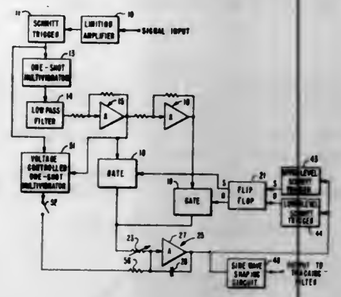


1. In a radio frequency receiving system having a demodulator IF output to an audio output line, a squelch circuit including: blanking means having input means and being constructed to be responsive to a predetermined squelch circuit derived signal voltage level; a noise channel connected for receiving an input from said audio output line, and including, filter means selectively passing a predetermined selected portion of the demodulator IF output of said radio receiving system; means amplifying the signal content passed through said filter means; rectifying means for developing a D-C output of a predetermined polarity, varying in magnitude with the signal content passed by said filter means and amplified by said means amplifying the signal; and a syllabic rate channel connected for receiving an input from said audio output line, and including, a syllabic rate detector adapted for passing substantially all syllabic varying amplitude signal content beneath a repetition rate of approximately 25 cycles per second contained in the demodulator IF output to said audio output line; syllabic rate sginal amplifying means, and rectifying means connected for amplifying and rectifying the output of the syllabic rate detector; and with said syllabic rate channel rectifier being constructed to develop a D-C output voltage opposite in polarity to the D-C output voltage out of the rectifier of the noise channel; summing circuit means connected for receiving both the noise channel and syllabic rate channel D-C outputs for developing a resulting voltage output applied as an input to a squelch voltage level controlled circuit of said blanking means; with said summing circuit means having a direct connection to said squelch voltage level controlled circuit; with the squelch voltage level controlled circuit including a multielectrode control device with the connection of said summing circuit means being directly to one of the electrodes of said multielectrode control device; voltage bias circuit means for various electrodes of said multielectrode control device; said voltage bias circuit means including, a voltage supply, and a voltage potential reference source; capacitive means and diode means series connected between the direct connection common junction, of said summing circuit means and said multielectrode control device, and said voltage potential reference source; and voltage dividing means having a connection to the common junction of said capacitive means and said diode means wherein said voltage dividing means includes sufficient impedance between said capacitive means and the voltage potential reference source to resist quick charging of the capacitive means when substantially the only charging path is through said impedance means; and said diode means having such cathode-anode orientation as to substantially limit charging of the capacitor to a circuit path including said impedance means when the output of said summing circuit is polarity going in the direction of the polarity output normally derived from syllabic rate signals through said syllabic rate channel.

3,350,651
WAVEFORM CONVERTERS

Robert D. Davis, Spring Valley, Calif., assignor to Spectral Dynamics Corporation, San Diego, Calif., a corporation of California

Filed Dec. 18, 1964, Ser. No. 419,315
21 Claims. (Cl. 328—181)

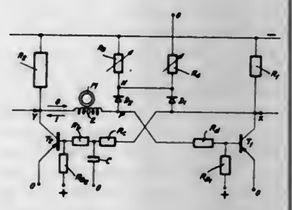


1. A circuit for generating a selected output waveform with a frequency proportional to the variable repetition rate of an input signal comprising: means for generating a DC voltage level proportional to the repetition rate of the input signal; and integrator circuit for integrating an applied voltage in linear fashion at a rate proportional to its amplitude; and means for applying the DC voltage level generated to the integrator circuit to charge and discharge between fixed upper and lower output levels thereby generating a triangular waveform with a frequency proportional to the repetition rate of the input signal.

3,350,652
BISTABLE DEVICE WITH MEMORY

Gérard Cottrez, Ruell, France, assignor to La Telemecanique Electrique, Nanterre, Seine, France, a company of France

Filed Apr. 10, 1963, Ser. No. 271,911
Claims priority, application France, Apr. 26, 1962, 895,717
2 Claims. (Cl. 328—190)

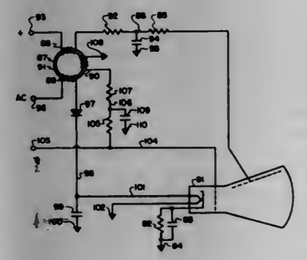


1. In a bistable electric circuit comprising a pair of electronic members, each having an input, an output and a control electrode; to cross-connections from the output electrode of one member to the control electrode of the other; and electric biassing means connected to said electrodes imparting thereto variable potential values, whereby the circuit is capable of assuming either of two stable conditions in which one of the electronic members is conductive and the other is blocked; the combination of a magnetic core having a substantially rectangular hysteresis loop; a winding carried by said core and serially connected in one of said cross-connections; a voltage divider connected to said biassing means for providing a selected potential intermediate the potential values existing at the output electrode of said members when the latter is conductive or blocked; a diode connecting the end of said winding romote from said output electrode terminating the corresponding cross-connection to the said selected potential, the conducting direction of said diode being directed from said winding end towards said potential; a delaying network comprising first resistors serially connected in the other of said cross-connections and a shunt capacitor; and further resistors equivalent to said first resistors serially connected in said one cross-connection.

3,350,653
THERMIONIC ELECTRON TUBE CIRCUIT

Tenny D. Lode, Madison, Wis., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota

Filed Dec. 4, 1964, Ser. No. 415,917
2 Claims. (Cl. 328—270)



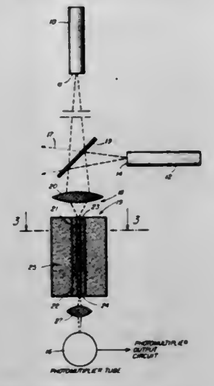
1. An electron tube circuit comprising an electron tube having a thermionic electron emitting cathode, an anode and a control grid, heating means for varying the cathode temperature, means coupled to the heating means for controlling the magnitude of the heating thereby controlling the cathode temperature, power terminals for connecting a direct voltage supply in series with the anode and cathode so that a current may flow from anode to cathode, signal terminals for applying a voltage signal to the control grid, first means responsive to the anode current effecting a first control of the magnitude of the heating, and second means responsive to the voltage at the signal terminals effecting a second control of the magnitude of the heating, whereby the temperature of the cathode is controlled in part by the anode current and in part by the voltage at the signal terminals.

3,350,654
LASER HETERODYNE SYSTEM FOR DETECTING LIGHT ENERGY INCLUDING HYBRID MODE DIELECTRIC WAVEGUIDE

Elias Snitzer, Sturbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed Jan. 9, 1964, Ser. No. 336,782
12 Claims. (Cl. 329—144)

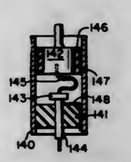
1. An optical system for detecting light energy having at least one frequency component and advancing along a propagation path, comprising means for creating and directing along said path light energy having at least one frequency component differing in frequency from that of said first-mentioned frequency component, at least one of said light energies being monochromatic; means, including an optical waveguide positioned in said path and dimensioned and adapted to support propagation in at least one wave-energy propagation mode of light energy having said first-mentioned and second-mentioned frequency components, for receiving and propagating in said one mode both said light energies in said path to provide therefrom light energies exiting from said waveguide in a common mode with mutually parallel plane wavefronts; and means having a non-linear light-energy detection characteristic for deriving from light energy propagated by said waveguide in said one mode energy of a frequency equal to the difference between the frequencies of said first-mentioned and second-mentioned frequency components.



3,350,655
ELECTRICAL CRYSTAL UNIT FOR USE AT MICROWAVE FREQUENCIES

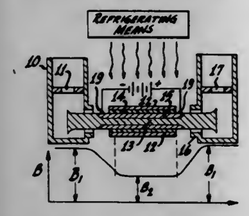
Theodore S. Saad, Westwood, Mass., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware

Continuation of abandoned application Ser. No. 167,092, Jan. 18, 1962, which is a division of application Ser. No. 484,763, Jan. 28, 1955, now Patent No. 3,028,560, dated Apr. 3, 1962. This application Nov. 16, 1965, Ser. No. 511,578
The portion of the term of the patent subsequent to Apr. 3, 1979, has been disclaimed
3 Claims. (Cl. 329—162)



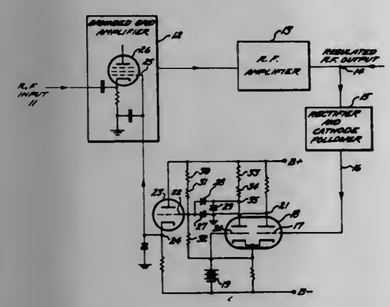
1. A crystal cartridge for microwave apparatus comprising a conductive shell, a crystal element and a cooperating catwhisker element within said shell, a conductive back plug on which the catwhisker element is mounted, an insulating support for said crystal element within and directly engaging said shell and supported thereby, a coaxial input extending through and mounted to the insulating support and making connection to said crystal element, a coaxial output connection on the back plug, said plug and said insulating support having a fixed spacing therebetween which establishes rectifying contact between said crystal and catwhisker elements, said fixed spacing being maintained by the secure mounting of said plug and said insulating support within said conductive shell, a thin metal sleeve surrounding the back plug and in electrical contact with the interior of the shell, and dielectric material between the metal sleeve and back plug to form a coaxial capacitor having low impedance at microwave frequencies.

3,350,656
SPIN WAVE TRAVELING WAVE AMPLIFIERS
Bayram Vural, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 29, 1966, Ser. No. 538,334
13 Claims. (Cl. 330—5)



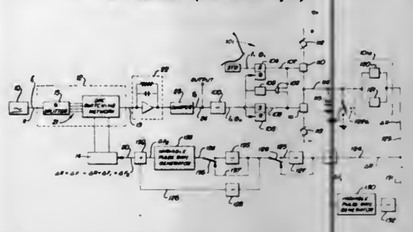
1. In combination,
(a) means for establishing a stream of charge carriers in a given direction,
(b) means for establishing a magnetic field in a direction longitudinal to said stream of carriers,
(c) means for propagating a spin wave longitudinal to and in the same direction as said stream of carriers,
(d) means including said magnetic field establishing means to couple said spin wave to said carrier stream to cause growing wave interaction.

3,350,657
FAIL SAFE DC DIFFERENTIAL AMPLIFIER
John F. Nicholas, Liverpool, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 30, 1964, Ser. No. 407,942
3 Claims. (Cl. 330—69)



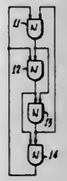
1. In a D-C differential amplifier circuit, the combination of a first and a second amplifier tube, each tube including a cathode, an anode, and a control grid, with a signal input terminal connected to the control grid of said first amplifier tube, and an output circuit connected to the anodes of said amplifier tubes; a source of positive high voltage supply, a pair of resistors connected to said high voltage supply, with the remote end of each resistor connected to the anodes of each tube; a source of low voltage negative bias supply, a cathode resistor connected thereto, the remote end of said resistor connected to each cathode; a source of reference voltage connected to the control grid of said second amplifier tube, biasing said tube in the forward direction; and output circuit comprising a first resistor and a second resistor connected in series at an output terminal with the remote end of said first resistor connected to the positive high voltage supply, and the remote end of said second resistor connected to the cathodes of said tubes, a first diode and a second diode connected to the anodes of said first tube and second tube respectively from said output terminal, said second diode being poled in the forward direction, a third diode connected from the anode of said second tube to ground and poled in the forward direction.

3,350,658
OSCILLATOR DRIFT COMPENSATION
Winston G. Walker, Santa Ana, Calif., assignor to Astrodata, Inc., Anaheim, Calif., a corporation of California
Filed May 19, 1966, Ser. No. 551,460
8 Claims. (Cl. 331—17)



1. In apparatus of the character described, a generator to produce a signal frequency f_1 subject to drift, phase splitting means responsive to the received signal frequency f_1 to produce multiple outputs of frequency f_1 respectively phase displaced so as to cancel if added, means connected to be responsive to an error signal for selectively passing and variably amplitude modulating different of said multiple output signals and thereafter combining the amplitude modulated signals to produce a version f_o of f_1, and means to compare f_o with the output of a frequency standard to derive said error signal.

3,350,659
LOGIC GATE OSCILLATOR
William Henn, Lexington, Mass., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 18, 1966, Ser. No. 551,065
3 Claims. (Cl. 331—57)

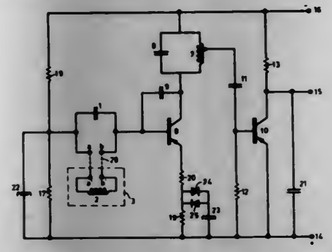


1. An oscillator comprising four two-input logic gates, each connected to apply its ouput to two of the other gates and each gate receiving its two inputs from two other gates.

3,350,660
VICINITY DETECTOR
Jean Engdahl and Henri de Reynold, Neuchatel, Switzerland, assignors to Ebauches S.A., Neuchatel, Switzerland, a firm
Filed Feb. 1, 1965, Ser. No. 429,559
Claims priority, application Switzerland, Feb. 5, 1964, 1,327/64
4 Claims. (Cl. 331—65)

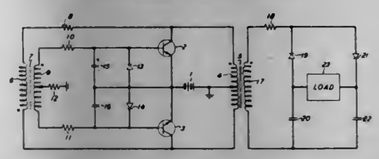
1. An oscillator for a vicinity detector serving to determine the approach or the presence of a ferro magnetic object comprising
(A) first and second, capacitatively coupled, tuned oscilliating circuits, each having a capacitor and a coil of a given inductance;
(B) a transistor having a base-electrode circuit, a collector-circuit and an emitter;

(C) a detecting head housing said coil of said first oscillating circuit, said inductance of said coil being variable by said ferro magnetic object;
(D) said first oscillating circuit being connected in said base-electrode circuit of said transistor and said second oscillating circuit being connected in said collector circuit;



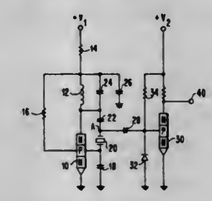
(E) a source of direct current having positive and negative terminals connected to said oscillating circuits;
(F) an emitter circuit for modifying the gain of said transistor as a function of the amplitude said circuit consisting of a pair of anti-parallel diodes, whereby the approach or the presence of said ferro magnetic object untunes said oscillating circuits one with respect to the other.

3,350,661
HIGH EFFICIENCY INVERTER WITH EXTENDED TRANSISTOR SATURATION INTERVALS
Stephen D. Bloom, Rockaway Township, Morris County, and Paul W. Ussery, Livingston, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 516,931
4 Claims. (Cl. 331—113)



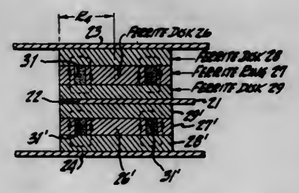
1. An inverter circuit comprising first and second transistors each having base, collector, and emitter electrodes, a transformer having primary and secondary windings, a source of input potential, means connecting the collector and emitter electrodes of said first and second transistors between said source of input potential and separate portions of said primary winding, feedback means including first and second diodes coupled to said primary winding and connected to the base and emitter electrodes of each of said first and second transistors to apply sufficient bias to the base and emitter electrodes of said first and second transistors to drive each of said first and second transistors alternately into saturation and cutoff, a load, means connecting said load to said secondary winding, and first and second capacitors connected respectively across the base and emitter electrodes of said first and second transistors to store energy during the alternate intervals that said feedback means biases said respective transistor into saturation and subsequently discharge the stored energy to provide base-emitter drive to extend the saturated interval of said respective transistor after the saturation drive from said feedback means is terminated, said first diode of said feedback means being connected across said first capacitor and poled to provide a charge path for said second capacitor as soon as said feedback means biases the base-emitter path of said second transistor into conduction, said second diode of said feedback means being connected across said second capacitor and poled to provide a charge path for said first capacitor as soon as said feedback means biases the base-emitter path of said first transistor into conduction, whereby the transistor being biased to cutoff is accelerated through a portion of the active state into cutoff.

3,350,662
CRYSTAL CONTROLLED OSCILLATOR CIRCUIT UTILIZING TRANSISTORS
Leonard Roy Harper, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,366
5 Claims. (Cl. 331—116)



1. A pulse generator comprising:
a transistor having emitter, collector and base electrodes;
means to supply operating potentials to said emitter and collector electrodes;
an electromechanical resonator element and a first impedance matching capacitor connected in series between said base and collector electrodes of said transistor with said capacitor being connected to the collector electrode and said electromechanical resonator element being connected to said base electrode;
means for coupling a relatively large second capacitor between said emitter and base electrodes of said transistor to compensate for the emitter-base inter-element capacitance;
means for coupling a relatively large third capacitor between said collector and emitter electrodes of said transistor to compensate for the collector-emitter inter-element capacitance; and
means for coupling the junction between said first capacitor and said electromechanical resonator element through an impedance matching element to a utilization circuit.

3,350,663
LATCHED FERRITE CIRCULATORS
Wieslaw W. Siekanowicz, Trenton, William A. Schilling, Metuchen, and Irwin Bardash, Willingboro, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Jan. 27, 1966, Ser. No. 523,372
7 Claims. (Cl. 333—1.1)



1. A circulator comprising,
at least three transmission lines coupled to one another at a common region,

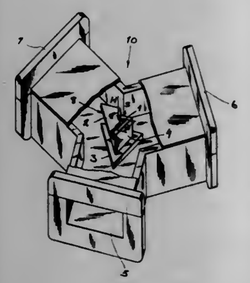
a ferrite unit positioned and centered solely within said common region with its axis perpendicular to the central axis of each of said transmission lines,

at least one magnetizing loop passing in its entirety within said ferrite unit and looping around the central portion of said ferrite unit to produce a magnetic flux flow through the center portion of said ferrite unit to magnetize it at a remanent state when pulse of current is passed through said loop and terminated,

said ferrite unit including a magnetic portion within said magnetizing loop for passing said flux flow,

said ferrite unit providing a closed magnetic path for the return flux flow through the end portions of said ferrite unit.

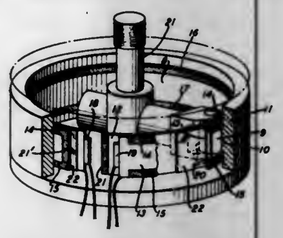
3,350,664
NONRECIPROCAL FERRITE DEVICE HAVING A THIN DIELECTRIC LAYER ENCIRCLING THE FERRITE ELEMENT
Angelo Pistilli and Pietro Susin, Milan, Italy, assignors to Società Italiana Telecommunicazioni Siemens S.p.A., Milan, Italy, a corporation of Italy
Filed Feb. 11, 1966, Ser. No. 526,844
Claims priority, application Italy, Feb. 15, 1965, 3,005/65
7 Claims. (Cl. 333—1.1)



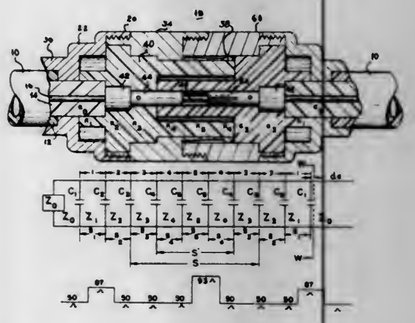
1. In a system for the nonreciprocal transmission of microwave energy from an input end of a waveguide to an output end thereof, the combination with said waveguide of a source of a unidirectional magnetic field transverse to the direction of wave propagation from said input end to said output end and a gyrotropic body disposed in said waveguide in the region of said magnetic field for intercepting transmitted microwaves, said body comprising a solid ferrite core having an axis aligned with said field and a substantially uniform cross-section perpendicular to said axis, and a dielectric layer on said core encircling said axis, said layer having a dielectric constant ranging between substantially 2 to 10, the thickness of said layer ranging between substantially 10% and 30% of the largest dimension of said cross-section.

3,350,665
VARIABLE ELASTIC WAVE DELAY LINE USING TWO STRIPS PRESSED TOGETHER
Irvin E. Fair, Center Valley, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 19, 1965, Ser. No. 508,674
7 Claims. (Cl. 333—30)

2. A variable delay line comprising a pair of elongated thin strips of elastic wave transmission material each having rectangular cross sections with width dimensions many times that of the thickness dimensions thereof, a transducer mounted on one end of each of said strips for generating and responding to elastic wave motion in that strip, and means for pressing said strips together in a restricted region that can be moved along the length of said strips to transfer wave motion from one strip to the other to define a transmission path between said transducers which has a propagation time along said path that depends upon the position of said region along said strips.



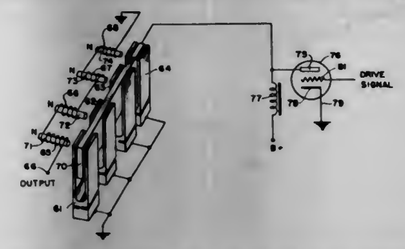
3,350,666
COAXIAL CONNECTOR
George W. Ziegler, Jr., Carlisle, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 30, 1963, Ser. No. 276,714
20 Claims. (Cl. 333—33)



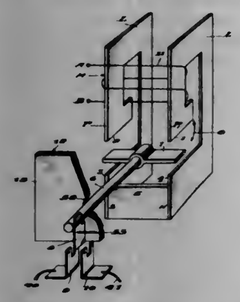
1. An improved broad band compensated coaxial connector for cable of characteristic impedance Z_0, including a connector body having inner and outer conductive portions of different diameters and sections along the length of the body forming distinct discontinuity capacitances and having a given total discontinuity capacitance, the said body having a length S comprised of a number of sections of different lengths with one or more sections comprising nearly the total length S of a characteristic impedance Z_0, and with the remaining length of S of characteristic impedances each being substantialy greater than Z_0 and with the said distinct discontiuity capacitances being located at predetermined points along the length of said body.

3,350,667
ELECTROSTATIC TUNING FORK RESONATOR
Robert R. Shreve, Massapequa, N.Y., assignor to Philamon Laboratories, Inc., Westbury, N.Y., a corporation of New York
Filed Nov. 13, 1962, Ser. No. 237,121
2 Claims. (Cl. 333—71)

1. An electromechanical frequency selective device comprising a plurality of tuning forks of different frequencies, at least one tine of each said tuning fork having a respective conductive surface area, one common electrode closely spaced with respect to all said surface areas, means for applying an input signal voltage between said electrode and said surface areas to cause said tines to be attracted toward said electrode in accordance with said signal voltage, and individual electromagnetic means for generating an electrical signal in accordance with the respective vibratory movement of each of said tuning forks.

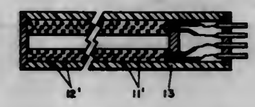


3,350,668
ELECTROMECHANICAL CHOPPER
Gilbert W. McCall, Cambridge, Md., assignor to Airpax Electronics Incorporated, Cambridge, Md., a corporation of Maryland
Filed Dec. 22, 1965, Ser. No. 515,693
4 Claims. (Cl. 335—91)



1. An electromechanical chopper comprising a supporting structure, a pair of C-shaped core members mounted on said structure and each including a pair of poles defining an air gap therebetween, the poles of said core members being transversely aligned, a single permanent magnet separating said core members so as to magnetize the poles on the same relative sides of the air gaps to have north-south characteristics respectively, a coil operatively wound relative to the other core member poles to affect the characteristics of said other poles without substantially affecting the characteristics of said first-mentioned poles and adapted to be energized by an AC source, said coil being wound to impart simultaneously the same north or south characteristic to said other poles depending upon the instantaneous sign of the energizing AC source signal, an armature mounting shaft held by the support structure and an armature fixed to the shaft for free armature movement through arcs between the poles defining air gaps, the armature movement being influenced by the attraction between diagonal poles of opposite characteristics and at the same time by the repulsion between the other two diagonal poles of like characteristic, contact means coupled to said shaft to move in response to shaft rotation and being spaced from said armature, a pair of spaced contacts adjacent said contact means and arranged so that the contact means engages one contact when the shaft rotates in one direction past a predetermined center and the contact means engages the other contact when the shaft rotates in the other direction past the predetermined center, and electrical connections to said contact means and said spaced contacts for conducting electrical current therethrough during engagement.

3,350,669
TEMPERATURE TRANSDUCER HAVING SUPERCONDUCTING WINDING
Joseph A. Di Leo, High Bridge, N.J., and James J. Drautman, Jamison, Pa., assignors to Malaker Laboratories, Inc., High Bridge, N.J., a corporation of New Jersey
Filed Dec. 11, 1964, Ser. No. 417,733
2 Claims. (Cl. 335—216)



1. A temperature-sensitive probe comprising,

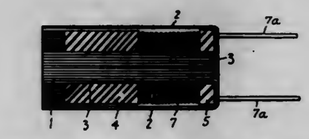
(a) a tubular housing,

(b) an axially-disposed rod carried by the housing, said rod being made of a paramagnetic material, the magnetic susceptibility of which changes with temperature,

(c) first and second windings carried by the rod in layers, said windings being substantially uniformly distributed along the rod with each layer comprising successive turns of the first winding disposed between successive turns of the second winding, said first winding being made of a material which is a superconductor at cryogenic temperatures, and

(d) connection terminals carried by the housing and individually connected to the ends of the windings.

3,350,670
INDUCTIVE PROBE
Heinrich Strauch, Leamington Spa, England, assignor to Associated Engineering Limited, Leamington Spa, England, a British company
Filed Dec. 21, 1964, Ser. No. 420,056
Claims priority, application Great Britain, Jan. 6, 1964, 531/64
2 Claims. (Cl. 336—90)



1. An inductive probe capable of working at high frequencies and withstanding a temperature of at least 150° C., comprising:

a core consisting of a bundle of ferromagnetic wires,

at least one coil extending around said core,

a first spacer member extending around said core on one side of said coil,

a second spacer member extending around said core on the other side of said coil,

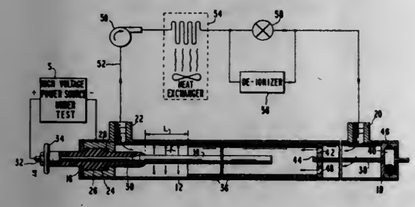
part of the length of said wires of the core being bent back around the outer surface of said first spacer member, and extending over the outer surface of said coil and the outer surface of said second spacer member,

said second spacer member serving to space the coil from one end of the probe by a desired amount,

an outer layer extending around the assembly of the coil, core and spacer members, and

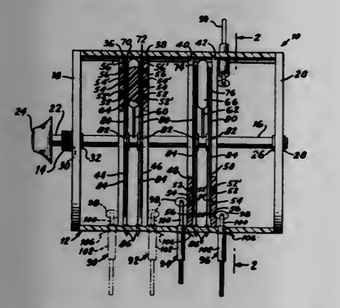
terminal means adjacent said first spacer member and extending axially of said probe for making electrical connections to said at least one coil.

3,350,671
HIGH POWER-HIGH VOLTAGE WATERLOAD
Robert C. Seamans, Jr., Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Duane P. Littlejohn, Santa Clara, and Arthur E. Reed, Sunnyvale, Calif.
Filed July 27, 1966, Ser. No. 568,352
6 Claims. (Cl. 338—82)



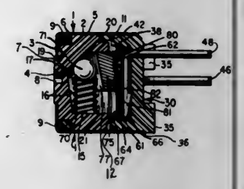
1. A test load for a direct current power supply of the type having first and second output terminals, said load comprising an elongate hollow conductive tube for connection to said first terminal, an elongate conductive rod mounted in said tube centrally and along the longitudinal axis thereof for connection to said second terminal, said rod having an outer cross-sectional extent less than the inner cross-sectional extent of said tube to define a chamber therebetween, means for conveying a conductive fluid through said chamber to establish a current path between said rod and said tube, an elongate insulative hollow sleeve mounted in said chamber, said sleeve having an outer configuration substantially congruent to the inner configuration of said tube to afford relative sliding movement therebetween in fluid tight relation, and means for adjustably positioning said sleeve to vary the area of the path between said tube and said rod through said fluid.

3,350,672
POTENTIOMETER
Robert Hoffman, 17 Copper Beach Place, Merrick, N.Y. 11566
Filed Feb. 18, 1965, Ser. No. 433,725
10 Claims. (Cl. 338—132)



1. A potentiometer comprising a case, a plurality of electrically insulative wafers disposed within said case, said wafers each having a plurality of conductive resistance paths thereon, a plurality of electrical contact tips mounted on said wafers integral with said resistance paths, means mounting a plurality of individual resistance selector mechanisms on said case so that each of said selector mechanisms engages one of said electrical contact tips on the corresponding wafer, said selector mechanisms having adjustment means located thereon for selective engagement with one of said contact tips, wiper means engaging said resistance paths, and means for rotating said wiper means to vary the resistance output of the potentiometer.

3,350,673
ADJUSTABLE ELECTRONIC COMPONENT
Robert W. Spaude, Milwaukee, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 10, 1966, Ser. No. 556,745
30 Claims. (Cl. 338—174)

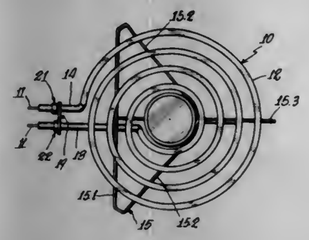


1. An adjustable electronic component comprising, in combination:
- a cup-shaped casing having a circular recess therein;
- a circular rotor having a diameter slightly less than the diameter of said recess positioned within the circular recess and rotational therein with the axis of rotation coincident with the longitudinal axis of the recess, the rotor having a cavity which cavity opens to the front face of the rotor, said cavity having a first top surface positively sloped with respect to the axis of rotation towards the front of said cavity;
- a stationary base positioned with in the circular recess and in alignment with the rotor, the stationary base supporting a plurality of individual spaced apart electrically conductive leads each having a shank portion emerging and extending outward from the base, the base further supporting a plurality of contact surfaces radially spaced apart in insulative relationship with one another, at least two of said contact surfaces electrically engaging the internal end of a conductive lead;
- an electrically conductive brush member having a front surface facing the stationary base and a back surface, said front surface carrying spaced apart foot contacts with the distance between two of said foot contacts coinciding with the radial distance between two of said contact surfaces, one of said foot contacts making continuous wiping contact with one of said contact surfaces, said back surface of the brush extending at least in part within the cavity;
- a compressible resilient member positioned within said cavity;
- a spherical member simultaneously engaging one end of the compressible resilient member, the top surface of said cavity and the back surface of the brush, the spherical member simultaneously maintaining the resilient member under compression and urging the foot contacts of the brush member towards said contact surfaces whereby the brush member is maintained in locked position within said cavity and rotatable with the rotor, and
- means for adjusting the rotational position of the rotor within the casing.

3,350,674
ELECTRIC HEATER ASSEMBLY
Lloyd S. Kozbelt and Donald M. Cunningham, Pittsburgh, Pa., assignors to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Feb. 23, 1965, Ser. No. 434,553
1 Claim. (Cl. 338—316)

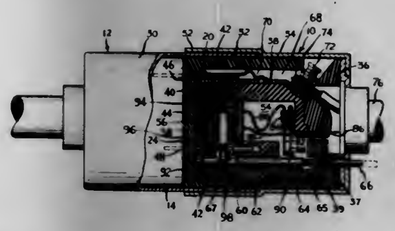
In an electric heafer assembly wherein an elongated, metal-sheathed electric resistance element has a convoluted, intermediate heat-generating portion providing a generally flat heating surface and terminal end portions

connected to and extending from said intermediate portion in spaced side-by-side relation, the improvement comprising a rigid connector plate having a pair of openings through which respective ones of said terminal end portions extend, one portion being fixedly secured to the connector plate and the other freely movable axially through



its opening, and a band member generally encompassing said other terminal portion and crimped securely thereto, said band member having at least one projecting portion which is engageable with said connector plate upon axial movement of said other terminal portion in a direction toward said connector plate.

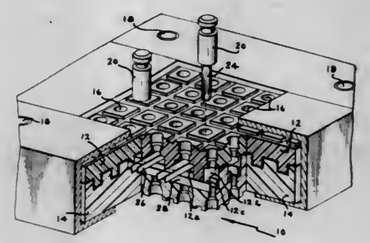
3,350,675
LOCKING ELECTRICAL CONNECTOR
John Misencik, Shelton, Czeslaw Mackiewicz, Trumbull, and Charles I. Poarch, Bridgeport, Conn., assignors to Harvey Hubbell Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 11, 1965, Ser. No. 494,604
8 Claims. (Cl. 339—12)



1. In an electrical connector body including a plurality of electrical contacts connectable to a power supply, the improvement which comprises: solenoid coil means connected for energization from said power supply; normally open switch means in series with said solenoid coil means; a solenoid core movable between a solenoid-energized position and solenoid-deenergized position, said core in its energized position being arranged to prevent engagement and disengagement of said connector body with a mating connector plug; spring means normally biasing said core to its deenergized position; and latching means on said body normally retaining said core in its energized position but manuallly operable to release said core and close said switch means.

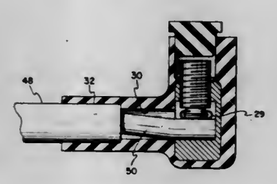
3,350,676
PINBOARD WITH LADDER TYPE CONTACT SPRINGS
Bruce Richard McFadden, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 6, 1965, Ser. No. 453,722
9 Claims. (Cl. 339—18)

1. In an assembly for selectively interconnecting electrical circuits, an insulating block structure having rows of transverse apertures therein, a series of conductive pin members adapted to be inserted in said apertures, a plurality of grooves within said block structure generally aligned with the rows of apertures and of a given width, a conductive contact member in each groove including a pair of flat strip side members of spring material extending along the groove length, said side members having interior facing contact surfaces in substantially parallel relationship normal to the axis to the said apertures so as



to receive a pin member inserted therebetween, means joined to said side members at spaced points along the length thereof for holding said members and said surfaces spaced apart by a distance less than said given width but greater than one-half said given width and less than the said apertures to provide resiliency to said side members by providing spring beams between said points and assure pin member insertion between said surfaces.

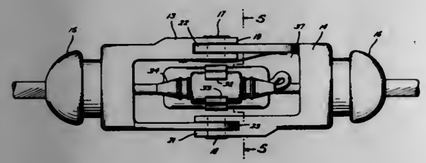
3,350,677
TELESCOPE WATERSEAL CONNECTOR
Leonard E. Daum, Morristown, N.J., assignor to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Mar. 30, 1965, Ser. No. 443,976
10 Claims. (Cl. 339—149)



1. An electrical connector having facilities for selectively accommodating electrical cables of relatively larger or smaller diameters, the cables having an electrical conductor and a jacket of insulating material surrounding the conductor, the jacket of the selected cable being stripped back to bare a portion of the conductor and the selected cable being received telescopically within the connector and gripped in watertight engagement therewith, said connector comprising:
- a body of insulating elastomeric material having an innermost hollow therein;
- an electrical contact within the hollow of the body; and
- a resiliently dilatable bore in said body communicating with said hollow and having stepped dimensions establishing relatively larger outer and relatively smaller inner bore portions of at least two different diameters, said bore including an innermost portion of smallest diameter at the innermost end of the bore, said innermost end being adjacent said hollow, the different diameters of the bore portions corresponding to the larger and smaller diameters, respectively, of the cable jackets, the relative dimensions of

the diameter of the jacket of each selected cable and each corresponding bore portion being such that a corresponding bore portion must be resiliently dilated to receive and engage the jacket of a selected cable in watertight relationship, the innermost bore portion having a diameter no smaller than the diameter of the conductor of the largest cable to be accommodated within the connector to allow passage of the conductor of any selected cable through the innermost bore portion and connection of the conductor to said electrical contact without further dilation of the bore portion engaged with the cable jacket.

3,350,678
SEISMIC CABLE SYSTEM
Kenneth W. McLoad, Houston, Tex., assignor to Vector Cable Company, Houston, Tex., a corporation of Texas
Filed Oct. 24, 1965, Ser. No. 504,715
4 Claims. (Cl. 339—151)



4. For a seismic cable system in which a seismic cable is reeled to and from a drum and take-out means are provided on the main cable at selected points along its length, the improvement comprising:

housing means in the length of main cable at said selected points protecting said take-out means, each of said housing means being connected to the main cable to form a part thereof;

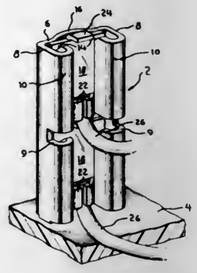
said housing means each being comprised of a pair of oppositely disposed members, each of said members having a pair of spaced parallel arms defining a cavity therebetween;

and pin means pivotally connecting the arms of said oppositely disposed members for providing an articulate connection therebetween to relieve stresses on said cable as said cable is reeled on a drum;

said take-out means being positioned in said housing cavity between said parallel arms.

3,350,679
ELECTRICAL CONNECTIONS
James Earl Marley, Middletown, and Thomas Parkison Warne, Jr., Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 23, 1964, Ser. No. 362,057
7 Claims. (Cl. 339—223)

1. An electrical connection comprising a terminal post, a conductor, and a connecting member, said post being in embracing relationship to said connecting member and having an open seam extending axially along one side thereof, said conductor being contained between



said post and said connecting member and emerging from confined relationship through said seam.

3,350,680
ELECTRICAL CONNECTORS HAVING POSITIVE GRIPPING ACTION
Gerard Benoit, 6 Rue du Cirque, Paris 8, France; Ferdy Mayer, 22 Rue Ampere, Grenoble, Isere, France; Franz Mayer, 6 Rue du Cirque, Paris 8, France; and Pierre Thomas, 2 Rue Charles Gounod, Grenoble, Isere, France
Filed Jan. 24, 1967, Ser. No. 618,242
Claims priority, application France, June 24, 1963, 939,143
15 Claims. (Cl. 339—253)



12. An electrical connector comprising, in combination:

(a) a housing defining a cavity which is in communication with the region outside said housing;

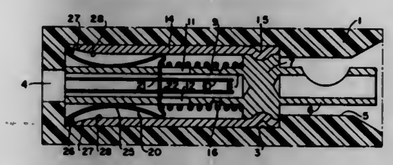
(b) at least one socket composed of a longitudinally extending elastically deformable strip disposed in said housing cavity for receiving a plug to be inserted in a longitudinal direction, said socket being movable in longitudinal direction between a first position and a second position, said socket further being elastically deformable in a transverse direction and, when in its first position, offering substantially no friction resistance to the insertion of the plug;

(c) elastic restoring means operatively connected with said socket for maintaining it in said first position;

(d) socket deforming means composed of a rotatable element having two stable positions and held under pressure between a point of attachment on said strip and a pivot point on a wall of said cavity for deforming said socket in said transverse direction, into plug-gripping condition, when said socket is in its said second position; and

(e) at least one control means disposed within said cavity and operatively associated with said socket, said control means being disposed in the path over which the plug will travel during insertion for movement in a longitudinal direction during at least the last portion of insertion travel of the plug for driving said socket from its said first position to its said second position when said control means is moved longitudinally by the plug.

3,350,681
ELECTRICAL CONNECTORS
Gerard Benoit, 6 Rue du Cirque, Paris 8, France; Ferdy Mayer, 22 Rue Ampere, Grenoble, Isere, France; Franz Mayer, 6 Rue du Cirque, Paris 8, France; and Pierre Thomas, 2 Rue Charles Gounod, Grenoble, Isere, France
Filed Jan. 24, 1967, Ser. No. 618,243
11 Claims. (Cl. 339—253)



1. An electrical connector comprising, in combination:

(a) a housing having a cavity formed therein, which cavity is formed so as to be in communication with the region outside of said housing;

(b) at least one socket, which is elastically deformable in a transverse direction, disposed in said housing cavity for receiving a plug to be inserted in a longitudinal direction in said socket;

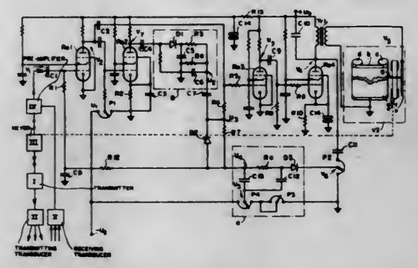
(c) elastic restoring means associated with said socket for normally maintaining it in a condition in which it offers substantially no friction resistance to the insertion of the plug;

(d) socket deforming means having a first portion which is stationary with respect to said housing and a second portion which is movable in a longitudinal direction with respect to, and in sliding contact with, said first portion, said second portion being operatively associated with said socket for elastically deforming said socket transversely into a position where it tightly grips the inserted plug;

(e) at least one control means means disposed within said housing cavity and connected for longitudinal movement with said second portion of said socket deforming means, said control means being disposed in the path over which the plug will travel when it is being inserted in a longitudinal direction into said socket to be moved longitudinally by the plug at least during the latter portion of its insertion travel, this movement of said control means operating to cause said second portion of said socket deforming means to deform said socket transversely into said position where it tightly grips the plug; and

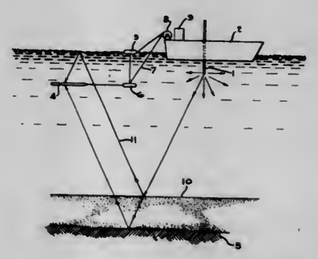
(f) friction locking means comprising a substantially longitudinally-extending surface and positioned to cooperate with said second portion of said deforming means, said surface constituting means for creating a longitudinally restraining friction force which acts to retain said second portion of said deforming means in the position where it causes said socket to tightly grip the plug, and to maintain a substantially constant gripping pressure on the plug, after the plug has been fully inserted and until the plug has been substantially completely withdrawn from contact with said socket, said locking means applying to said second portion of said deforming means a longitudinal restraining friction force which, until the plug has been completely withdrawn from contact with said socket, is at least as great as the combined opposing longitudinal force exerted on said second portion by said restoring means and by the plug when it is being withdrawn from said socket.

3,350,682
ECHO SOUNDING APPARATUS
Hans Drenkelfort, Kiel-Elmschenhagen, and Gustav Maass, Eutin, Germany, assignors to Electroacustic Gesellschaft mit Beschrankter Haftung, Kiel, Germany, a corporation of Germany
Filed June 28, 1965, Ser. No. 467,204
Claims priority, application Germany, June 26, 1964, E 27,282
11 Claims. (Cl. 340—3)



1. With sonar apparatus having a sonic-electric transducer for providing an echo signal voltage, electronic amplifier means for amplifying said signal voltage, and a recorder connected to said amplifier means for recording echo details on an electrically sensitive record sheet in response to the amplified signal voltage, in combination, first gain control means forming part of said amplifier means, and second gain control means joined with said first gain control means in opposed control relation thereto and having a smaller time constant than said first gain control means to counteract said first gain control means for an interval of time corresponding to an echo detail to be emphasized in the resulting recording.

3,350,683
OPTIMUM DETECTOR TYPE AND DEPTH IN MARINE SEISMIC EXPLORATION
Raymond L. Sengbush, Grand Prairie, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Mar. 8, 1966, Ser. No. 532,730
4 Claims. (Cl. 340—7)



1. The method of marine prospecting near the surface of a water layer overlaying a soft bottom having a negative reflection coefficient, said layer of water having a depth such that the two-way travel time of seismic energy between said surface and said bottom is T_w, said method comprising:

generating seismic energy near said surface which will penetrate and be reflected from subsurface strata, said seismic energy also being reflected between said bottom and said surface to produce reverberations, towing a pressure type seismic detector through said

water layer at a depth such that the two-way travel time T_P of seismic energy between said surface and said detector is given by:

$$T_P=\frac{m}{k}T_W$$

where m and k are integers and k is equal to or greater than m,

detecting the reflected seismic energy in said detector, and

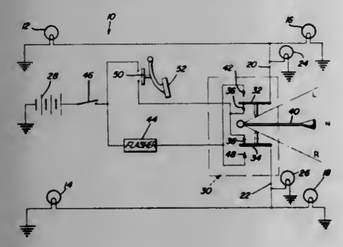
recording the detected seismic energy.

3,350,684

VEHICLE BRAKE AND TURN SIGNAL LIGHTING SYSTEM

Clarence C. Turner, Marion, Ind., assignor to T.H.K. Manufacturing Company, Inc., a corporation of Indiana

Filed Mar. 23, 1965, Ser. No. 442,044
5 Claims. (Cl. 340—67)



1. In a lighting system for a vehicle having a pair of rear brake lamps adapted to be simultaneously energized upon closing of a pedal operated brake switch, a pair of front signal lamps one of which is adapted to be intermittently energized upon displacement of a turn signal device in one direction from a neutral position and a pair of pilot lamps one of which is adapted to be energized simultaneously with the front signal lamps to indicate operation thereof, an interconnecting circuit comprising, a source of electrical energy for said lamps, flasher means interconnecting said source to the turn signal device for intermittent energization of one of said front signal lamps in response to displacement of the turn signal device, means connecting the respective rear brake lamps in parallel with said pilot lamps and said front signal lamps for simultaneous energization of one of the rear brake lamps with the intermittently energized front signal lamps, and means interconnecting the brake switch between the source and the turn signal device in by-pass relation to the flasher means for continuous energization of all of the lamps when the turn signal device is in the neutral position.

3,350,685

HAMMING MAGNITUDE COMPARATOR USING MULTI-INPUT BINARY THRESHOLD LOGIC ELEMENTS

John R. Lindaman, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 13, 1965, Ser. No. 479,419
12 Claims. (Cl. 340—146.2)

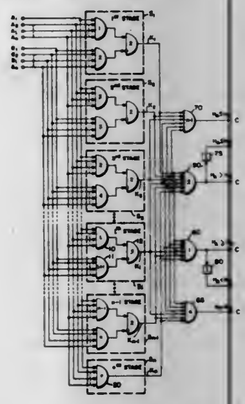
1. A Hamming magnitude comparator for generating a signal C representative of a comparison of two binary words of the form $A_n \ldots A_1 \ldots A_1$ and $B_n \ldots B_1 \ldots B_1$ whereby the Hamming magnitude, H_A, of the binary word A is compared to the Hamming magnitude, H_B, of the binary word B, said comparator comprising:

n signal generating stages, S_i, $i=1, 2, \ldots n$, for generating n signals representative of K_i,

each of said signal generating stages, S_i, $i=1, 2 \ldots n-1$ for generating a signal representative of K_i, comprising;

first and second threshold circuit means for receiving input signal representations of $A_n \ldots A_1 \ldots A_1$ and $B_n \ldots B_1 \ldots B_1$ respectively and generating first and second output signals and

third threshold circuit means coupled to said first and second circuit means for utilizing said first and second output signals to generate a signal representative of K_1 in accordance with the logical function,



$$K_i=(A_n^i \ldots A_1^i \ldots A_1)^2(\overline{B_n^{i+1} \ldots B_1^{i+1} \ldots B_1})$$

where superscript "i" indicates the threshold of said first circuit means, superscript "$i+1$" indicates the threshold of said second circuit means and superscript "2" indicates the threshold of said third circuit means, said signal generating stage, S_n, for generating K_n, comprising;

a single threshold circuit means for receiving signal representations of $A_n \ldots A_1 \ldots A_1$, and generating a signal representative of K_n in accordance with the logical function,

$$K_n=A_n^n \ldots A_1^n \ldots A_1$$

where superscript "n" indicates the threshold of said single threshold circuit means, and

an output threshold circuit means coupled to each of said n signal generating stages, S_i, $i=1, 2 \ldots n$ for utilizing said signals K_i, $i=1, 2, \ldots n$, to generate a signal representative of C.

3,350,686

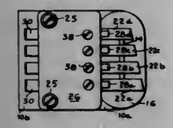
RESONANT REED ENCODER-DECODER, CHANNEL SELECTOR CIRCUITS THEREFOR AND COMMUNICATION CIRCUITS USING THE SAME

George Papaiconomou, Dayton, Ohio, assignor to Ledex, Inc., Dayton, Ohio, a corporation of Ohio

Filed Mar. 19, 1963, Ser. No. 266,267
4 Claims. (Cl. 340—156)

3. A selective frequency resonant relay responsive to simultaneously received multiple frequency signals comprising, in combination, an energizing coil, a first group of ferromagnetic reeds tuned to separate resonant frequencies and responsive to the magnetic field of said coil, a second group of conductive contact elements paired with said reeds for sensing vibratory movements of said reeds,

there being one contact element for each reed and cooperating with such reed to form a reed-contact pair, means mounting said contact element adjacent their respective reeds for contact therewith upon vibration thereof at a predetermined amplitude, a first conductor electrically connecting the members of one of said groups, a plurality of second conductors, there being one second conductor connected electrically to each member of said other group,



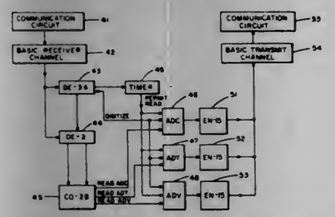
a first terminal, first selector switch means to selectively connect any one of said second conductors to said first terminal, a second terminal, and second selector switch means to selectively connect any one of said second conductors to said second terminal whereby upon selection of different reed-contact pairs by said selector switch means and simultaneous vibration of the reed-contact pairs selected an intermittent short circuit is produced between said first and second terminals.

3,350,687

CONTROL SYSTEM WITH TIME REFERENCE FOR DATA ACQUISITION

Reidar G. Gabrielson, Scottsdale, and Lawrence R. Smith, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 5, 1963, Ser. No. 299,727
11 Claims. (Cl. 340—163)



11. A supervisory control system with which information can be gathered at a central station from a plurality of remote stations by messages sent from different remote stations at different times but representing conditions existing at those remote stations at the same reference time, said system including in combination:

(a) a first sub-system adapted to be located at a central station and including first transmitting means, first receiving means, and first data processing means,

(b) a plurality of second sub-systems adapted to be located respectively at different remote stations and each including second transmitting means, second receiving means, and second data processing means,

(c) encoding means in said first data processing means for causing transmission of a uniquely coded all-stations freeze command by said first transmitting means,

(d) decoding means in each of said second data processing means and each capable of decoding said all-stations freeze command,

(e) timing means in each of said second data processing means controlled by the associated decoding means to provide a time reference timing cycle during which information may be acquired by said first sub-system from said second sub-systems by sequential interrogation thereof,

(f) and storage means in each of said second data processing means controlled by said decoding means and responsive to decoding of said all-stations command by said decoding means to store information representing different conditions at a reference time determined by receipt of said freeze command remote stations,

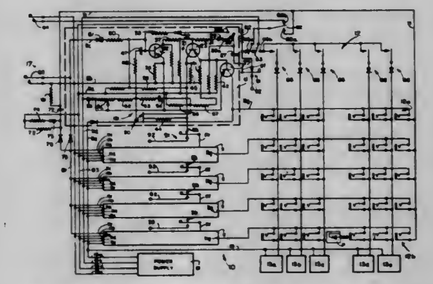
(g) and each of said timing means being responsive to decoding of said all-stations freeze command by said decoding means to start said timing cycle, and to enable said storage means to supply the time-referenced information stored thereby to the second transmitting means associated therewith only during said timing cycle.

3,350,688

MATRIX CIRCUITRY CONTROLLED BY TIMING MODULES HAVING INDIVIDUAL TIME DURATION OUTPUTS

Frank S. Kasper, Hazel Crest, and Robert L. Billingsley, Elmhurst, Ill., assignors to Amtron, Inc., Midlothian, Ill., a corporation of Illinois

Filed Sept. 30, 1964, Ser. No. 400,322
9 Claims. (Cl. 340—166)



1. A circuit for controlling the selective operation of a plurality of output devices which circuit comprises a switching matrix including means for establishing a selectively variable switching condition within said switching matrix, a plurality of individually adjustable timer modules for producing output signals of preselected duration, the output of each of said timer modules being connected to said switching matrix so that the operation of selected ones of said output devices is controlled by said timer modules in accordance with the preestablished switching condition of said switching matrix, and circuit means interconnecting said switching matrix and said timer modules so that said timer modules can be actuated individually or automatically in sequence, simultaneously and/or independently in response to external signals.

3,350,689

MULTIPLE COMPUTER SYSTEM

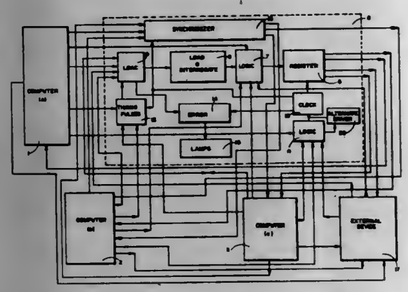
Noel B. Underhill, Lakewood, and Fred C. Hyatt, La Puente, Calif., assignors to North American Aviation, Inc.

Filed Feb. 10, 1964, Ser. No. 343,840
7 Claims. (Cl. 340—172.5)

1. In a system comprised of a plurality of computers, each of said plurality of computers having storage means for storing information in binary form, input means for reading information into a particular location of said storage means, means for generating a clock signal and other timing pulses, means for transferring information from said storage means to an output means; the improvement comprising,

a transfer system for interconnecting said plurality of computers for selectively exchanging information between said computers, said transfer system comprising means connected for receiving information in the form of data from predetermined ones of said plu-

rality of computers from the output means thereof, clocking means and means for synchronizing said clocking means with clock signals from said predetermined ones of said plurality of computer means when information is being received therefrom, said transfer system means including register means for storing said information, and further including means

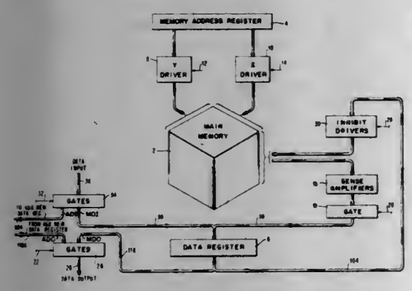


connected for transferring said information from said register means into an interrogating one of said plurality of computer means at the command of, and in synchronism with, said interrogating computer, and, means for preliminarily synchronizing said plurality of computers at a predetermined sector relationship with each other.

3,350,690
AUTOMATIC DATA CORRECTION FOR BATCH-FABRICATED MEMORIES

Rex Rice, Menlo Park, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Feb. 25, 1964, Ser. No. 347,206
4 Claims. (Cl. 340—172.5)



1. A memory system including a main memory storing a plurality of multibit word registers composed of binary characters wherein the binary bits forming one of said binary characters are permanently defective.

an auxiliary memory having pretested word registers of highest reliability,

means for indicating the presence of any permanently defective bit position within a character of a word register in main memory, said indicating means comprising a binary character formed of a fixed array of bits located within the word register adjacent that binary character that includes the defective bits,

means for also storing within said defective register, in the form of binary characters, the address in said auxiliary memory of substitutable characters that are needed to replace the bad character, indicating character and address characters of said partially defective word register in main memory,

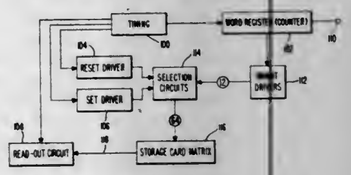
means for detecting the presence of said partially defective register during the attempted readout from main memory of said partially defective register, and

means for simultaneously gating out the substitutable characters in the auxiliary memory with the uncorrected characters in the partially defective word register.

3,350,691
ALTERABLE READ-ONLY STORAGE DEVICE

Donald R. Faulls, Norristown, Pa., and Robert B. Whitson, Baltimore, Md., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed May 6, 1964, Ser. No. 365,277
3 Claims. (Cl. 340—172.5)



1. The combination comprising:

information storage means for storing information in a code including a first signal at one of a plurality of locations represented by a predetermined range of reactance;

threshold sensitive indicating means for indicating which of said locations have stored said first signal;

read-out means, electrically connected to said information storage means and to said indicating means, for obtaining a differentiated signal pulse from those locations of said information storage means having said predetermined range of reactance, whereby said locations having stored said first signal are detected, comprising:

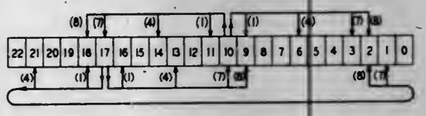
address means, electrically connected to said information storage means, for selectively applying substantially linear ramp voltage pulses to a selected one of said locations; and

impedance means, electrically connected to said information storage means, for obtaining a substantially constant current output of a predetermined differentiated amplitude from said information storage means when said selected location exhibits said predetermined range of reactance.

3,350,692
FAST REGISTER CONTROL CIRCUIT

William B. Cagle, Colts Neck, and Robert S. Menne, Little Silver, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 6, 1964, Ser. No. 380,274
15 Claims. (Cl. 340—172.5)



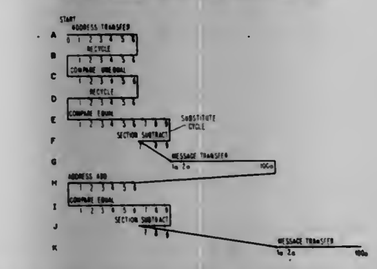
3. A control circuit for a data processor having a multistage data register and instruction means for indicating the number of positions which the bits in said register are to be shifted, said control circuit comprising a plurality of gating path means individually connecting each stage in said register to other stages in said register a predetermined number of positions away from said each stage, means for decoding the information in said instruction means, and means responsive to said decoding means for controlling the sequential operations of said gating

path means in accordance with the information in said instruction means, said controlling means controlling the simultaneous operations of all gating path means connected between stages separated by the same number of stages.

3,350,693
MULTIPLE SECTION TRANSFER SYSTEM

Kenneth D. Foulger and John J. Harmon, San Jose, Calif., and Arthur G. Silver, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 26, 1964, Ser. No. 383,540
8 Claims. (Cl. 340—172.5)



1. In a record transfer system for transferring a single message into a plurality of individually addressable file sections, a multiple section transfer system comprising,

means for storing a disk control field and said field comprises a plurality of groups of characters constituting the message and section address indicia for identifying that file section into which the initial character group is to be transferred and section count indicia for indicating the total number of file sections that are to receive message characters,

means for utilizing said stored section address to designate the file section into which said initial group is to be written,

means for writing said initial group into said designated section,

means for modifying said stored section address to designate the next file section which is to receive data,

said utilizing means including means for reading section addresses from the file,

means for comparing said modified section address with said address of said next file section read from the file,

said writing means being employed for writing said next successive group in the next file section to be addressed,

means for modifying said section count as each successive group of characters is written into each different designated file section, and

means for transferring control to said first modifying means until all message file groups are written into respective corresponding file sections.

3,350,694
DATA STORAGE SYSTEM

Arthur A. Kusnick, Peekskill, N.Y., and Wilhelm G. Spruth, Boeblingen, Germany, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

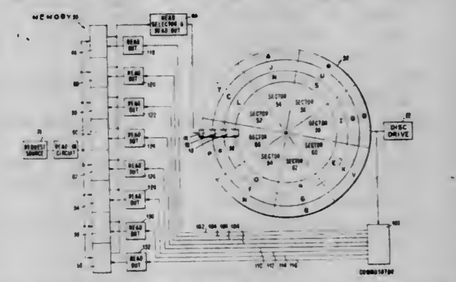
Filed July 27, 1964, Ser. No. 385,235
9 Claims. (Cl. 340—172.5)

8. In a data storage system including a first recirculating storage medium having addressed records stored thereon in a sequence of discrete sectors and first readout means mounted stationary with respect to said first recirculating storage medium for selectively reading out the records on said first recirculating means proximate thereto,

a source of record requests designating said records by associated sector,

a second storage medium responsive to said record requests for storing said requests in groups, requests for records in the same sector being stored in the same group and said groups being arranged in the same sequence as the sectors of said first storage medium,

a commutator coupled to and synchronous with said first recirculating storage medium for providing an output signal each time a sector of said first storage medium is proximate to said first readout means,



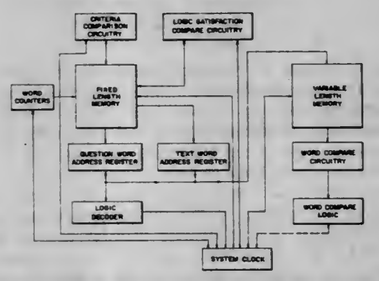
and second readout means associated with said second storage medium and connected to said commutator for reading out the requests in a separate one of said groups in response to separate ones of said signals from said commutators,

and wherein said first readout means is connected to said second readout means for reading out records of said first storage means in response to said corresponding requests read out of said second storage means.

3,350,695
INFORMATION RETRIEVAL SYSTEM AND METHOD

Samuel Kaufman, New York, and Joseph J. Magnino, Jr., Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 8, 1964, Ser. No. 416,719
24 Claims. (Cl. 340—172.5)



1. An Information Retrieval system for searching large quantities of an alpha-numeric data base predicated upon alpha-numeric word questions including:

a first system storage area wherein the data is stored in original text form, each word of said data being separately addressable,

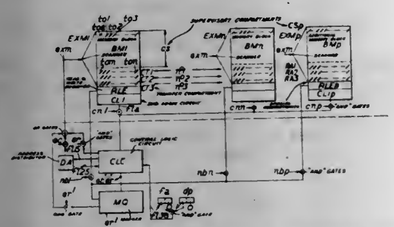
means for determining the relative address of each word in said original data base,

means for alpabetizing the data base together with the relative addresses,

means for extracting only the relative addresses from said alphabetized list,

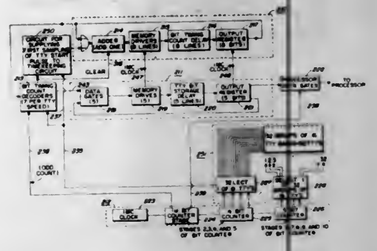
means for storing said extracted address list in a second system storage area,
means for storing an original text alpha-numeric question word group in its original format in a third storage area,
means for assigning relative addresses to the words of said question word group,
means for alphabetizing said question word group together with said relative addresses,
means for extracting the relative addresses only from said alphabetized list of question words,
means for storing said alphabetized list of addresses in a fourth system storage area,
means utilizing the alphabetized list of relative addresses in said second and fourth storage system areas to extract question words and text words from said first and third storage areas,
means for comparing the words so extracted for matches,
means for storing an indication of successful matches in a fifth system storage area.
means responsive to reaching the end of a question word group to examine the results tabulated in said fifth system storage area, and
means to determine whether a successful search against said data base has been accomplished.

3,350,696
SELECTION SYSTEM FOR ELECTRICAL CIRCUITS OR EQUIPMENTS
Stanislas Kobus, Paris, France, and Pe Tsi Chu, Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,771
Claims priority, application Netherlands, Dec. 30, 1963, 302,737
10 Claims. (Cl. 340—172.5)



1. A system for selecting particular common equipment from a plurality of common equipment, said system comprising memory blocks, said memory blocks comprising memory compartments, each of said memory compartments having an individual address, transfer compartments comprising certain of said memory compartments, sequential inscription means for sequentially inscribing the address of the calling one of said memory compartments in one of said transfer compartments in the order of presentation, means for temporarily associating said common circuits to the calling ones of said compartments in a priority order based on the order of inscription in the transfer compartments, and said sequential inscription means comprising auxiliary compartments, means associated with said auxiliary compartments containing write sequential circuits and read sequential circuits, means responsive to the operation of the write sequential circuits for sequentially inscribing the address of the calling ones of said compartments in said transfer compartments in the order of presentation and means responsive to the operation of said read sequential circuit for serving the calls in the order of inscription.

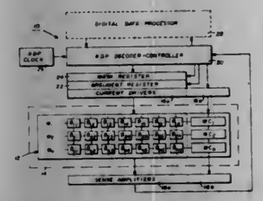
3,350,697
STORAGE MEANS FOR RECEIVING, ASSEMBLING, AND DISTRIBUTING TELETYPE CHARACTERS
Robert J. Hirvela, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Feb. 24, 1965, Ser. No. 434,964
30 Claims. (Cl. 340—172.5)



1. Character assembling means for assembling in parallel from encoded signals received in serial form from a plurality of character sources and comprising:
a first plurality of N circulating memories each having input means, output means, and in each circulating cycle a plurality of time positions with respect to an arbitrary time reference;
selecting means for connecting the output of any given character source to the inputs of successive one of said N circulating memories at integral multiples of the circulating time of said N circulating memories to store a single bit in each individual one of said N circulating memories at one of said time positions;
said selecting means further constructed to connect the outputs of said character sources other than said given character source to said N circulating memories at different and predetermined ones of said time positions;
time-keeping means comprising a second plurality of M circulating memories each having a plurality of time positions and constructed to respond to the circulation of data in the time positions of said N circulating memories to record separately the number of circulations of each data-containing time position of said N circulating memories;
and transferring means for transferring data from any given time position to said output means.

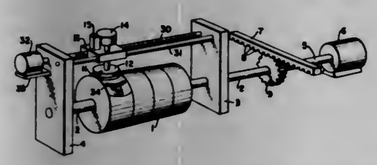
3,350,698
ASSOCIATIVE DATA PROCESSING SYSTEM
John P. Pritchard, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,029
20 Claims. (Cl. 340—172.5)

1. In an associative memory system, the combination of:
a plurality of memory registers each comprised of a corresponding number of binary memory cells each for storing a binary logic number, each memory cell including means for selectively comparing the logic number stored at each memory cell to a logic number asked,
a match register comprised of a binary indicator means for each memory word, each binary indicator means having a match status and a not match status, the match status being responsive to the relationship between the logic numbers stored in the memory bits of the word and the logic numbers asked, and being shifted back to the not match status when a predetermined mismatch between the logic numbers stored and the logic numbers asked occurs,
an enable register comprised of a binary indicator means for each memory word and having an enable status and a not enable status, the enable status being coupled to the memory bits of the corresponding word for enabling the memory bits for action,



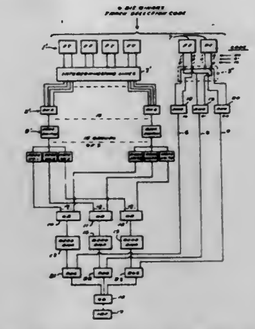
means coupled to the match register and the enable register for selectively setting the enable register to the enable status only at the first word identified by the match status of the match register, and
means for selectively resetting the match register from the match status to the not match status at those words identified by the enable status of the enable register.

3,350,699
AUTOMATIC POSITIONING APPARATUS UTILIZING MAGNETIC RECORDING MEANS
Warren J. Schmidt, Rockville, Md., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 8, 1963, Ser. No. 322,457
4 Claims. (Cl. 340—174.1)



1. In automatic positioning and data storage apparatus, the combination of
a movable member;
a magnetic recording medium;
a continuously moving transducer for recording magnetic marks on said recording medium and for detecting previously recorded magnetic marks, said transducer being adapted for continuous movement in an endless path and in a plane parallel to said recording medium;
means for maintaining the position of said transducer with respect to said recording medium as a function of the movable member position;
recording circuit means connected to selectively energize said transducer to record a position mark having a position on said recording medium representative of a movable member position and to record a plurality of binary data marks representative of playback control instructions; and
playback means connected to said transducer and operable to position said movable member in accordance with the position and the control instructions represented by previously recorded position and data marks.

3,350,700
TRACK SELECTION LOGIC FOR MAGNETIC STORAGE DRUM
Edward A. Aron, Needham, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Dec. 16, 1964, Ser. No. 418,935
1 Claim. (Cl. 340—174.1)

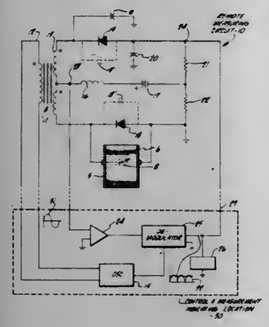


A track selection circuit for a multiple track magnetic storage drum having a separate head for each track, said heads being divisible into M groups of N heads each, said circuit being responsive to a binary track selection code of $n'+n''$ bits to select one of the drum tracks for readout of its recorded information, said circuit comprising: M head switches in a one-to-one correspondence with said M head groups, each head switch being connected to all of the N heads in its corresponding group and acting when actuated to render these heads simultaneously operative to read out the information recorded on their associated tracks; a decoder having M outputs coupled to said M head switches for receiving the n' bits of said code, where $2^{n'} \geqq M$, and for activating one of said head switches as called for by the n' portion of said code; N OR gates, each corresponding to one of the N heads in each of the M head groups; and means for applying the output of each head in each head group as an input to its corresponding OR gate; N AND gates corresponding to said N OR gates; means for applying the output of each OR gate as an input to its corresponding AND gate; a decoder having outputs coupled as inputs to each of said AND gates for receiving the n'' bits of said code, where $2^{n''} \geqq N$, and for conditioning one only of said AND gates to pass a signal as called for by the n'' portion of said code; and means including an additional OR gate for coupling the outputs of said AND gates to a recorded information utilization circuit.

3,350,701
MEASURING CIRCUIT EMPLOYING OPPOSITELY VARYING VOLTAGE DEPENDENT CAPACITIVE MEANS
Norton W. Bell, Pasadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed June 8, 1965, Ser. No. 462,214
12 Claims. (Cl. 340—186)

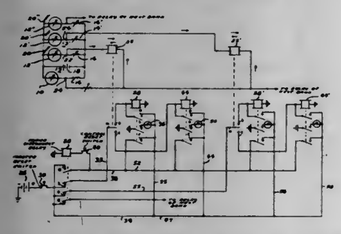
1. A measuring system comprising a bridge circuit having first and second arms, each arm comprising a capacitive element connected in parallel across a voltage sensitive variable capacitance means, a transformer winding having first and second end terminals and a center-tap terminal, means connecting the first terminal of said winding to one side of the parallel circuit of said first bridge arm and means connecting the second end terminal of said winding to one side of the parallel circuit of said

second bridge arm, a potential divider comprising first and second resistance means connected in series to ground, means connecting the first resistance means to the remaining side of the parallel circuit in said second arm to ground, a bias source connected between said center-tap and the junction formed by the series connected first and second resistance means, said bias source poled to complete a path for reverse biasing said variable capacitive



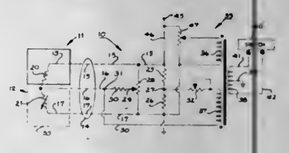
means at normally equal capacitive values, a source of bridge excitation and inductively coupled to said transformer winding, means connected to the center-tap of said winding for detecting a signal indicative of a capacitive change in either of said capacitive elements, and voltage feedback means connected between said signal detecting means and the ungrounded end of said potential divider for oppositely varying the voltage across said variable capacitance means until said bridge circuit is rebalanced.

3,350,702
INFRARED DETECTION SYSTEM FOR FAULT ISOLATION AND FAILURE PREDICTION
Ruth A. Herman, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 26, 1965, Ser. No. 428,273
2 Claims. (Cl. 340—228)



1. A system for determining when an energized circuit element is faulty by sensing and detecting variations in the intensity level of infrared radiation emitted from said circuit element as compared with a pre-established intensity of infrared radiation emitted by a normal circuit element, said system comprising a bridge circuit, a first thermistor forming one of the arms of said bridge and adapted to be located in radiation receiving relation to said energized circuit element whereby said first thermistor varies in resistance when exposed to intensity changes of infrared radiation emanating from said circuit element, a second thermistor forming another arm of said bridge, a fixed resistor forming a third arm of said bridge, a variable resistor forming the fourth arm of said bridge whose resistance is adjusted to establish null conditions in said bridge under the condition of infrared radiation emanating from said normal circuit element, a voltage source connected across two of the four common junctions of said bridge, a first relay connected to the other two common junctions of said bridge normally deenergized and becoming energized during unbalancing of said bridge by a predetermined amount in either direction, said relay including first and second normally open contacts, said first contact being closed when current flow in said first relay is in one direction and said second contact being closed when current flows in the opposite direction, a second relay, a pickup circuit for said second relay including said first contact of said first relay, first indicating means controlled by a front contact of said second relay, a third relay, a pickup circuit for said third relay including said second contact of said first relay, and second indicating means controlled by a front contact of said third relay.

3,350,703
GAS CONCENTRATION DETECTION APPARATUS
Kenneth W. Johnson, Palo Alto, Calif., assignor to Johnson-Williams, Inc., Mountain View, Calif., a corporation of California
Filed July 17, 1964, Ser. No. 383,484
4 Claims. (Cl. 340—237)

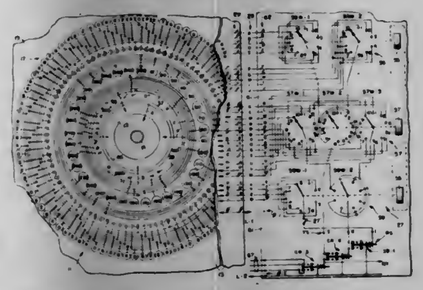


1. In a gas detector, the combination of:
a resistance bridge having an active element whose resistance is a function of gas concentration and a reference resistance element;
a protective enclosure enclosing the active and reference elements so as to permit gas flow adjacent the active element while shielding the reference element therefrom;
a magnetic comparator having
(1) a core of a material having a substantially rectangular hysteresis characteristic,
(2) a signal winding on said core,
(3) a control winding on said core, and
(4) an output winding on said core,
said comparator having a first magnetic condition and a second magnetic condition, and in which a predetermined magnitude of electrical current flow through the signal winding is operable to switch the comparator from its first to its second magnetic condition and a predetermined magnitude of electrical current flow through the control winding is operable to switch the comparator from its second to its first magnetic condition;
means for initiating a substantially constant flow of electrical current through the control winding so as to maintain the comparator, in the absence of a selected magnitude of current flow through the signal winding, in its first magnetic condition;
means for initiating an electrical current flow through the signal winding in response to an unbalance in the resistance bridge, the magnitude of which current flow is a function of the magnitude of the bridge unbalance;
an output circuit having a first actuation state and a second actuation state; and
means connecting the comparator output winding to the output circuit and operable to switch the output circuit between its first and second states to correspond in state to the magnetic state of the comparator.

3,350,704
FUEL STORAGE TANK INSTALLATIONS LEAK INDICATOR
Johann Kessler, Lindhooper Str. 20, Verden, Aller, Germany
Filed Apr. 13, 1965, Ser. No. 447,819
Claims priority, application Germany, Apr. 15, 1964, K 52,673
13 Claims. (Cl. 340—242)

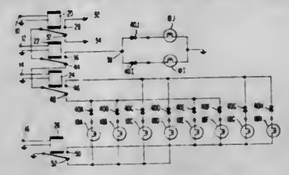
1. In combination with a fuel storage tank installation, a leak indicating and fluid loss preventing means comprising a pumping device and a vacuum control device for producing and maintaining in said tank a predetermined vacuum which corresponds at least to the prevailing fuel level in said tank, said vacuum control device including a float container with a float therein, means connecting the fluid space of said float container with the fluid body in said tank, means for connecting the air space in said float container with said pumping device for producing a vacuum in the air space of said float container, communicating means between the air space in said float container and the air space in said tank, and valve means in said communicating means controlled by said float and adapted to establish communication between said air space in said float container and the air space in said tank.

3,350,705
INDICATING APPARATUS
Bjarne C. Bendiksen, Glen Ellyn, Ill., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,360
5 Claims. (Cl. 340—324)



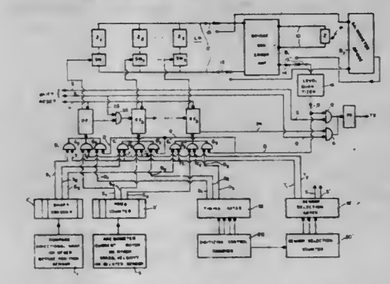
1. Monitor apparatus for cyclically operable means comprising a rotary monitor switch having an energizing member and a contact support member adapted for unidirectional relative rotation, in synchronism with the operable means to be monitored, said switch embodying a plurality of contact elements, including a number of contact buttons, circularly spaced upon said support member in position successively to make electrical connection with said energizing member as the members are relatively rotated, selector switch and associated relay means forming a command station adapted for connection with the monitor switch, and an operable device controlled by said relay means, said selector switch means being adjustable to select and isolate any desired one of said buttons as signal feed-back means operable, when electrically connected with said energizing member, to deliver an actuating signal, at the command station, for the actuation of the operable device by said relay means, selectively operable digit display apparatus for showing the angular displacement of the energizing member, from a datum position, when engaged with a selected contact button, and actuating means energized in response to engagement of said energizing member with the selected contact button to activate said display apparatus.

3,350,706
TRANSLATOR
Frederick H. Krantz, Bethesda, Md., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 6, 1964, Ser. No. 357,425
7 Claims. (Cl. 340—347)



3. Apparatus for applying a potential to selected output terminal means of a plurality of output terminal means in response to an input signal comprising:
a plurality of asymmetrical electric current conducting means each of which is electrically connected to a different one of said plurality of output terminal means;
first switch means having a terminal for receiving input signals for selectively connecting a first switch terminal to one of two voltage sources having opposite polarities in response to said input signal;
second switch means for electrically connecting said first switch terminal to a plurality of said asymmetrical current conducting means in which only those asymmetrical current conducting means which are poled so as to conduct current for said one of said two voltage sources is electrically connected to said selected output terminal means.

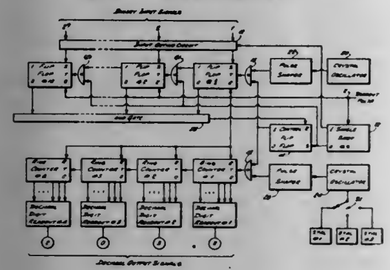
3,350,707
UNIVERSAL DIGITAL INFORMATION SYSTEM
Kenneth E. Perry, Wayland, Mass., assignor to Geodyne Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Aug. 30, 1965, Ser. No. 483,443
10 Claims. (Cl. 340—347)



1. Universal digital information system for enabling the sequential transmission of bit formats of digital data representative of changes in an electrical parameter and of sensor signals, having, in combination, a source of a changeable electrical parameter, analog-to-digital converter means comprising a plurality of switching circuits for producing a resultant output, means connected to said source and said converter means for comparing said parameter and said resultant output, means connected to said comparing means for individually and separately operating the switching circuits to vary said resultant output into substantial balance with changes in said electrical parameter, thereby to produce a first digital output representative of said changes, means connected to said converter means for transmitting said first digital output as a first signal, sensor means, means connected with the sensor means for digitizing the output of the sensor means

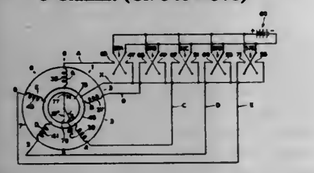
to produce a further digital output, means for serially connecting the said plurality of switching circuits as a shift register, means connected with the digitizing means for parallelly transferring said further digital output to the said plurality of switching circuits of the shift register, and means connected to said switching circuits for transmitting the resulting digital data from the shift register as a further signal.

3,350,708
DIGITAL CODE CONVERTER
William Adler, Westbury, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Aug. 21, 1964, Ser. No. 391,195
10 Claims. (Cl. 340—347)



1. A digital code converter comprising a digital input counter for receiving input information in a first digital code, a digital output counter for producing output information in a second digital code, means for entering digital input information into said input counter, first pulse generator means for applying a first train of pulses to said input counter, second pulse generator means for applying a second train of pulses to said output counter, means for simultaneously initiating said first and second trains of pulses subsequent to the entry of said input information, and means for simultaneously terminating said first and second train of pulses when said input counter reaches a predetermined state, thereby converting said input information from said first digital code to said second digital code.

3,350,709
ELECTROMAGNETIC INDICATOR DEVICE WITH MAGNETIC LOCKING MEANS
Leonard C. Pursiano, Ridgewood, and Arnold H. Cohen, Park Ridge, N.J., and George O. Ranes, Rolla, Mo., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed July 7, 1964, Ser. No. 380,899
6 Claims. (Cl. 340—378)



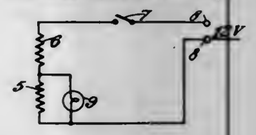
1. In an electromagnetic indicating apparatus for displaying a plurality of discrete indicia in response to electrical energization, said indicating apparatus being of a type including a permanent magnet rotor supported for deflection about an axis thereof relative to a plurality of N discrete angularly spaced positions, a plurality of $N/2$ electromagnetic coils, and the coils being positioned about said rotor axis and around magnetic cores extending radially in a direction substantially perpendicular to said rotor axis, the improvement comprising:

said permanent magnet rotor having opposed poles extending arcuately at an angle of less than one hundred-eighty degrees relative one to the other;

means for effecting selective energization of said coils with electrical signals of either of two opposed polarities to cause angular movement of said magnet rotor about the axis thereof from a first of the angularly spaced positions to a second of said positions; and

one of the poles of said magnet being positioned in an angular cooperative relation to one of the magnetic cores for causing in response to deenergization of one of said coils an angular movement of said magnetic rotor about the axis thereof towards said one core and into a third of said angularly spaced positions adjacent the second position for magnetically locking the rotor, and said angular movement being in a direction and sense predetermined by the arcuate extension of the poles in the angular relation of the one to the other of less than one hundred-eighty degrees.

3,350,710
LIQUID LEVEL INDICATORS
Donald Edward Bridges, Leatherhead, Surrey, England, assignor to Dipstix Limited, Weybridge, England, a British company
Filed Apr. 27, 1965, Ser. No. 451,218
Claims priority, application Great Britain, Apr. 28, 1964, 17,611/64
7 Claims. (Cl. 340—410)

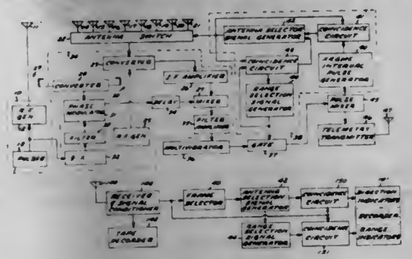


5. A level indicator for indicating the level of a flowable material comprising a length of wire for positioning at a location where the presence or absence of material is to be sensed, at least one electrical resistance connected in series with said length of wire, a current supply source for energizing the series circuit, said wire being of a material having an appreciable coefficient of resistance change with temperature, an indicator connected across part of said series circuit to give an indication when the length of wire is not immersed in a material which conducts away the heat produced in said wire and means operable to modify the voltage distribution in said series circuit to make extra current flow through said length of wire and thereby to cause the indicator to give an indication even if the length of wire is immersed in said material.

3,350,711
PULSED RANGE AND ANGLE MEASURING SYSTEM
Victor F. Cartwright, Fullerton, Calif., assignor to Babcock Electronics Corporation, Costa Mesa, Calif., a corporation of California
Filed May 2, 1966, Ser. No. 546,752
9 Claims. (Cl. 343—11)

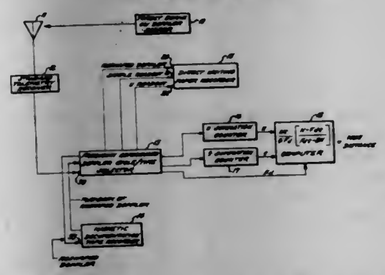
8. In a system for measuring range and angle from a target of a moving missile: transmitter means for transmitting pulses of radio frequency energy to a missile; receiving antenna means comprising a plurality of antennas each sensitive to a relatively different direction for intercepting said radio frequency after reflection from a missile; receiver means for providing output signals indicative of the range at which energy intercepted by said antenna means were reflected comprising a plurality

of mixers, means responsive to interception of such energy for introducing to one input of each of said mixers in parallel signals to one frequency, means responsive to generation of pulses of energy by said transmitter for applying to the other input of each of said mixers signals of said one frequency after a delay whose duration differs in the case of each mixer, and means for phase modulating the signal applied to one of said inputs of said mixer;



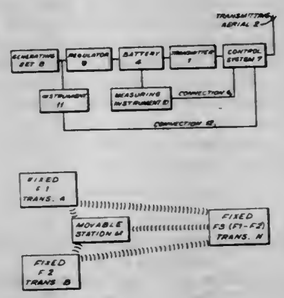
switching means for switching said plurality of antennas to said receiver means sequentially; and indicating means for indicating the range and direction of missiles reflecting radio signals from said transmitter means to said receiving antenna means including means responsive to said output signals for indicating range, and further including means for indicating which antenna was connected to said radio receiver means when said reflected signal was received.

3,350,712
DOPPLER METHOD AND SYSTEM FOR MEASURING MISS DISTANCE
Robert M. Stine, Holloman AFB, N. Mex., and Homer F. Roland, Fort Walton Beach, Fla., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 4, 1966, Ser. No. 584,284
2 Claims. (Cl. 343—12)



1. A system of extracting miss distance information from a Doppler signal resulting from missile passage through a radiated field surrounding an airborne target comprising an airborne target including a continuous wave radar operating to surround said airborne target with electromagnetic energy of a preselected wavelength, a continuous wave Doppler detector included with said continuous wave radar detecting said Doppler signal resulting from said missile passage through said radiated field surrounding said airborne target, a data link system including an airborne transmitter and ground based telemetry receiver, said transmitter being mounted in said airborne target and operating to transmit said detected Doppler signal to said ground based telemetry receiver, means to tape record the output Doppler signal from said telemetry receiver for documentation and playback purposes, means to simultaneously display said telemetry output signal on a direct writing recorder for examination of quality, means for selecting a reference Doppler frequency from said recorded signals, said selected Doppler frequency being representative of a predetermined point of approach of said missile to said airborne target, means to shape said output Doppler signal from said telemetry receiver to provide a constant amplitude Doppler signal with the frequencies thereof retained in the time dimension, means to sense the above and below frequency condition of said shaped Doppler signals with respect to said reference selected Doppler frequency, said sensing means detecting a first crossover from a high to low frequency about said selected Doppler frequency to provide a first output signal representative of said preselected point of approach of said missile to said airborne target, and also detecting a second crossover from a low to high frequency about said selected Doppler frequency to provide a second output signal representative of a point of departure of said missile from said airborne target with said point of approach and departure being equidistant from said airborne missile, a time counter receiving a predetermined timing signal, a cycle counter receiving said shaped Doppler signal, first and second switches normally closed and operating as a short across said time and cycle counters, respectively, said first output signal from said sensing means operating to remove said shorts to permit said time and cycle counters to operate and said second output signal from said sensing means operating to short said time and cycle counters to provide a precise time and cycle count between said point of approach and said point of departure, and means to compute the miss distance between said missile and said airborne target by utilizing said preselected wavelength, said selected Doppler frequency, the total number of cycles between said points of approach and departure, and the time measurement between said points of approach and departure.

3,350,713
EQUIPMENT FAULT INDICATOR FOR WIRELESS POSITION LOCATING SYSTEMS
Pierre Laurent, Fontenay-aux-Roses, France, assignor to Compagnie Generale de Geophysique, Paris, France, a corporation of France
Filed Dec. 3, 1964, Ser. No. 415,739
Claims priority, application France, Dec. 13, 1963, 957,082
2 Claims. (Cl. 343—105)



1. A position locating system comprising first and second fixed transmitting stations transmitting respective unmodulated carrier signals, a further fixed station determining the beat between said signals and transmitting a further carrier signal modulated by said beat, and a movable station adapted for comparing the phase between the beat of the first said signals which are directly received and the beat-modulated further carrier signals; and in said first and second stations: apparatus comprising at least one transmitter; said transmitter comprising first

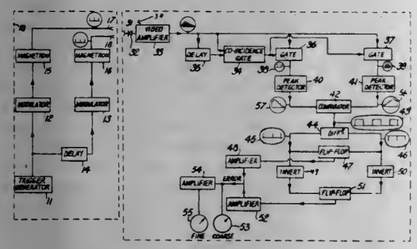
means for generating an unmodulated carrier wave, second means for transmitting said wave, third means for supplying electrical power to said first means, and fourth means responsive to an indication that said third means will lose its capability of supplying power, said fourth means being adapted to interrupt periodically the transmission by said second means thereby forming a warning signal consisting of a interrupted carrier wave, said third means including a battery coupled to said first means and said fourth means being sensitive to a decrease in output of said battery below a predetermined level to cause said interrupting.

3,350,714

RADIO GUIDANCE SYSTEM FOR AIRCRAFT

Philip Hulme Walker and David Cawsey, London, and Ronald Thomas Albert Howell, Chessington, England, assignors to Decca Limited, London, England, a British company

Filed Sept. 3, 1965, Ser. No. 484,886
11 Claims. (Cl. 343—106)



1. A radio system for guidance of an aircraft along required track, comprising:

a radio transmitter located near one end of the track; a directional aerial system coupled to said radio transmitter and operative to radiate two overlapping narrow directional beams angularly spaced in the plane in which track guidance is required; means for oscillating the radiated beams about the track line in the plane in which guidance is required; the transmitter providing signals on the two beams which are pulse modulated at the same pulse repetition frequency but with the pulses of one being delayed with respect to the pulses of the other beam; and on the aircraft, means for receiving and separating signals radiated on the two beams; means for determining the time instants when the signals of the beams are of equal amplitude; and means responsive to the differences in time periods between such successive time instants as the beams scan across the aircraft to determine thereby the deviation of the aircraft from the required track line.

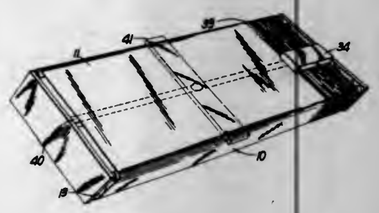
3,350,715

AUTOMATIC CHART POSITION DISPLAY APPARATUS

George Frederick King and Alan Laurence Wigzell, London, England, assignors to Decca Limited, London, England, a British company

Filed Oct. 20, 1966, Ser. No. 588,107
Claims priority, application Great Britain, May 3, 1966, 19,530/66
4 Claims. (Cl. 346—17)

1. In automatic chart display apparatus, a chart, means for traversing the chart in one direction and a chart marker movable across the chart in a transverse direction, said chart marker being arranged behind the chart and said chart being formed of a film of transparent plastic material, which film has on one surface a whitener arranged as a dotted screen in a regular pattern, the whitener being covered with a hardened coating having a smooth surface, said film having on its other surface a balancer coating having a hard smooth surface, one of said coatings being a



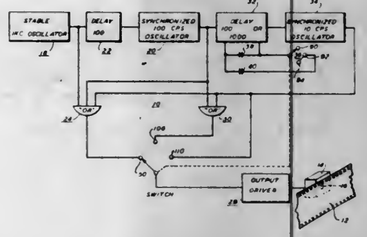
photographic emulsion carrying an image of a digital control track for photo-electric sensing of the position of the chart in the direction in which it is traversed.

3,350,716

TIMING APPARATUS FOR USE WITH PHOTOGRAPHIC EQUIPMENT

Andrew C. Trollo, Broomall, Pa., Boyce M. Adams, Moorestown, N.J., and Edward G. Busch, Newtown Square, Pa., assignors to Adtrol Electronics, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 9, 1965, Ser. No. 447,005
7 Claims. (Cl. 346—23)



1. Timing apparatus comprising a first source of constant frequency pulse signals, a second source of constant frequency pulse signals synchronized with said first source, said second frequency being an aliquot part of said first frequency, output means for receiving the output signals of said first and second sources and providing an output signal in accordance therewith, first delay means for delaying the output pulse signals from second source for a period less than the period between pulse signals from said first source so that said signals from said first and said second source are spaced in time, and film marking means for marking a moving photographic film each time an output signal is generated by said output means so that the marks on said film are never overlapping.

3,350,717

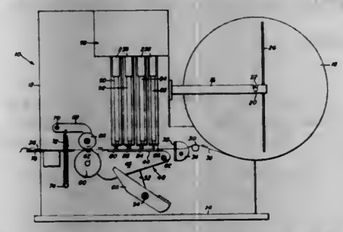
PLURAL PEN RECORDER

George M. Thomson, Woodside, N.Y., assignor, by mesne assignments, to Central Station Signals, Inc., New York, N.Y., a corporation of New York

Filed June 10, 1965, Ser. No. 462,905
12 Claims. (Cl. 346—49)

1. In a central station alarm system, a recording device comprising housing means; a plurality of movable pen recorders pivotally mounted on said housing; means for supplying recording tape to said pen recorders; table means pivotally attached to said housing; electric drive

motor means within said housing for drawing said recording tape across the upper surface of said table means,

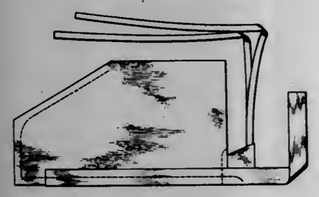


said pen recorders being adjacent to and in writing relationship with the tape on the surface of said table, whereby motion of said recording tape will cause all of said pens to inscribe traces thereon; thrust means for moving each of said pen recorders in a direction substantially perpendicular to the direction of motion of said tape, each said thrust means including an excitation coil mounted within said housing, a thrust pin extending through said housing to contact its corresponding pen recorder, and armature means responsive to energization of said excitation coil to drive said thrust pin against said pen recorder to move said recorder; and signal receiving means responsive to coded input signals to energize both the selected thrust means and said electric drive motor means, said selected thrust means being deenergized at the end of its input signal, and said electric drive motor means remaining energized a predetermined number of revolutions after the end of all coded input signals.

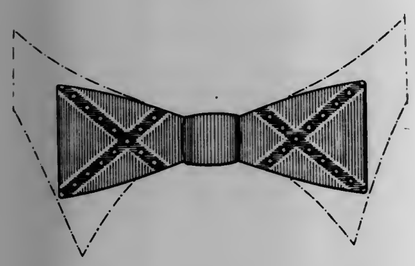
DESIGNS

OCTOBER 31, 1967

209,036
DISPOSABLE PROTECTIVE SHOE COVER
Harold Zimmon, Los Altos Hills, Calif. (% Zimmon & Co., Inc., 215 O'Neill Ave., Belmont, Calif. 94002)
Filed Apr. 18, 1966, Ser. No. 1,911
Term of patent 14 years
(Cl. D2—271)



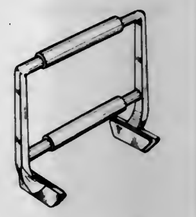
209,037
BOW TIE
John F. Kossow, 3513 50th St. S., Tampa, Fla. 33619
Filed Dec. 1, 1966, Ser. No. 4,876
Term of patent 14 years
(Cl. D2—353)



209,038
LIQUID SHAMPOO DISPENSER
Robert E. Watson, Farmington, Mich., assignor to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 30, 1966, Ser. No. 4,112
Term of patent 14 years
(Cl. D4—3)

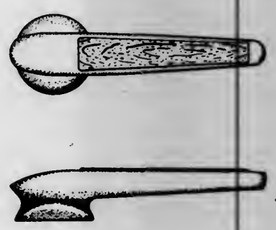


209,039
CLAMP-ON BATHTUB GRAB BAR
Vytant Aleks and John C. Brearley, Rockford, Ill., assignors to The Brearley Company, a corporation of Illinois
Filed Sept. 14, 1966, Ser. No. 3,857
Term of patent 14 years
(Cl. D4—4)

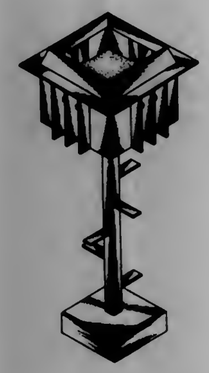


209,040
CLAMP-ON BATHTUB GRAB BAR
Vytant Aleks and John C. Brearley, Rockford, Ill., assignors to The Brearley Company, a corporation of Illinois
Filed Sept. 14, 1966, Ser. No. 3,858
Term of patent 14 years
(Cl. D4—4)

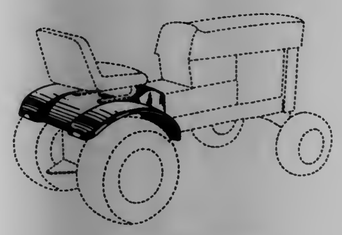
209,041
CAR DOOR HANDLE
Reginald J. Broad, 83 Live Oak St., Fairfax, Calif. 94930
Filed Mar. 22, 1967, Ser. No. 4,331
Term of patent 14 years
(Cl. D10—8)



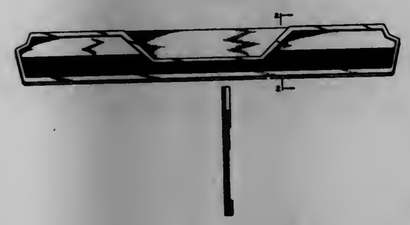
209,042
CAT HOUSE
James Davidson Harum, 9100 SW. 85th St., Miami, Fla. 33156
Filed Sept. 23, 1966, Ser. No. 4,004
Term of patent 3½ years
(Cl. D12—2)



209,043
COMBINED REAR FENDER AND DECK FOR A TRACTOR
William F. H. Purcell, Pasadena, and James M. Connor, Glendale, Calif., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 27, 1966, Ser. No. 3,226
Term of patent 14 years
(Cl. D14—3)



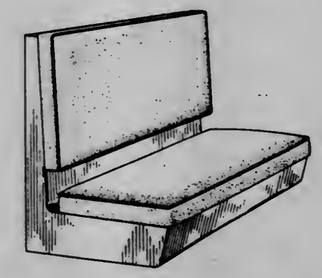
209,044
SPLASH GUARD FOR MOTOR VEHICLES
Robert Podall, Highland Park, Ill., assignor to Jeffrey-Allan Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed May 6, 1966, Ser. No. 2,197
Term of patent 14 years
(Cl. D14—6)



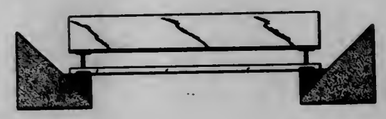
209,045
CHAIR
Wayland B. Parker, South Boston, Va., assignor to Schlumberger Limited (Schlumberger N.V.) Houston, Tex., a corporation of the Netherlands
Filed Nov. 25, 1966, Ser. No. 4,804
Term of patent 14 years
(Cl. D15—1)



209,046
BOOTH SEAT
Charles L. Hershberger, Joplin, Mo., assignor to H & H Manufacturing Company, Inc., Joplin, Mo., a corporation of Missouri
Filed Apr. 22, 1966, Ser. No. 1,990
Term of patent 14 years
(Cl. D15—11)



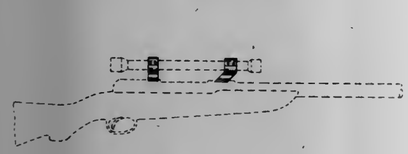
209,047
OUTDOOR BENCH
Luis F. Villa, 1727 Moravian St., Philadelphia, Pa. 19103
Filed July 12, 1966, Ser. No. 3,050
Term of patent 14 years
(Cl. D15—11)



209,048
STRADDLE BENCH
Jack E. Schafer, 4643 Sunset Drive, Sacramento, Calif. 95822, and Jack C. Ryder, 1050 W. Capitol Ave., West Sacramento, Calif. 95814
Filed Sept. 16, 1966, Ser. No. 3,886
Term of patent 14 years
(Cl. D15—11)



209,049
GUN HAVING A TELESCOPIC SIGHT MOUNT
Gerald B. Holden, Livonia, Mich., assignor to J. B. Holden Company, Livonia, Mich., a corporation of Michigan
Filed Aug. 1, 1966, Ser. No. 3,292
Term of patent 14 years
(Cl. D22—7)



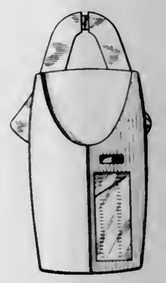
209,050
SCOPE LENS PROTECTOR
Rudy T. Saari, Ontonagon, Mich. 49953, and Eino F. Kananen, Box 57, Bruce Crossing, Mich. 49912
Filed Oct. 3, 1966, Ser. No. 4,131
Term of patent 14 years
(Cl. D22—13)



209,051
DENTAL CABINET
Donald G. Coburn, 57 Oak Knoll Drive, Hamilton, Ontario, Canada
Filed Sept. 13, 1966, Ser. No. 3,843
Term of patent 14 years
(Cl. D24—1)



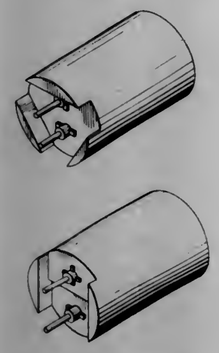
209,052
CLAMP-AROUND VOLT-AMMETER
Harvey A. Schwartz, Merrick, and Franklin Jacoby, New York, N.Y., and Ernest Calafano, Maywood, N.J., assignors to Soss Manufacturing Company, Detroit, Mich., a corporation of Nevada
Filed Aug. 29, 1966, Ser. No. 3,620
Term of patent 14 years
(Cl. D26—1)



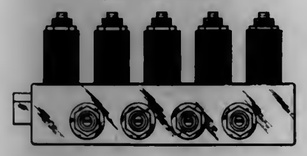
209,053
TEST PROBE
Lawrence J. Link, Jr., Columbia Heights, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 27, 1966, Ser. No. 4,051
Term of patent 14 years
(Cl. D26—1)



209,054
HOUSING FOR A CAPACITOR DEVICE
Jerry Braiman and Edwin W. Shieh, Indianapolis, Ind., assignors to P. L. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 4,765
Term of patent 14 years
(Cl. D26—1)



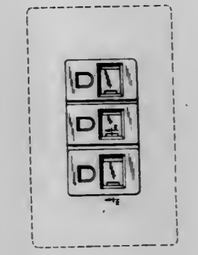
209,055
MULTIPLE VACUUM SWITCH ASSEMBLY
Roger L. Deal and Robert W. Hansen, San Jose, Calif., assignors to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 423
Term of patent 14 years
(Cl. D26—13)



209,056
ELECTROMAGNETICALLY ACTUATED GROUND ISOLATED RELAY
Roger L. Deal and Robert W. Hansen, San Jose, Calif., assignors to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 424
Term of patent 14 years
(Cl. D26—13)



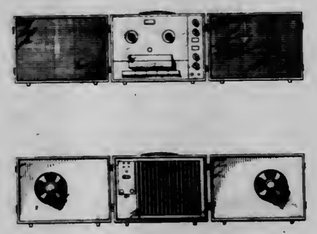
209,057
TRIPLEX RECEPTACLE OUTLET
Arthur J. Pulos, Fayetteville, and Paul B. Sweeney, Jr., Syracuse, N.Y., assignors to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 1,847
Term of patent 7 years
(Cl. D26—13)



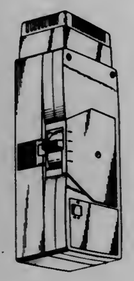
209,058
HAND TOOL FOR STRIPPING, CRIMPING, AND CUTTING WIRE OR THE LIKE
Vincent Bonito, 101 Meloy Road, New Haven, Conn. 06516
Filed Sept. 28, 1966, Ser. No. 4,061
Term of patert 7 years
(Cl. D26—13)



209,059
STEREO TAPE RECORDER
Moriyuki Watanuki, Tokyo, Japan, assignor to Denki Onkyo Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 23, 1966, Ser. No. 1,603
Claims priority, application Japan Sept. 25, 1965
Term of patent 14 years
(Cl. D26—14)



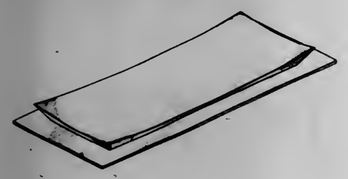
209,060
COMBINED SOUND RECORDING AND REPRODUCING MACHINE
Georg Probst, Munich, Bavaria, Germany, assignor to Messrs. Gatag Ltd., Zug, Switzerland
Filed May 9, 1966, Ser. No. 2,229
Term of patent 14 years
(Cl. D26—14)



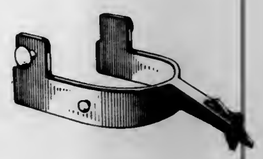
209,061
STATUETTE OR THE LIKE
Andrew Latzko, 24½ Main St., Luzerne, Pa. 18709
Filed July 20, 1964, Ser. No. 80,923
Term of patent 14 years
(Cl. D29—23)



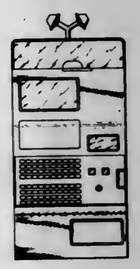
209,062
WALL PLAQUE
Heinrich Ramsthal, 30 Winterfeldstr., Berlin 88, Germany
Filed May 31, 1966, Ser. No. 2,464
Claims priority, application Germany Dec. 3, 1965
Term of patent 14 years
(Cl. D29—23)



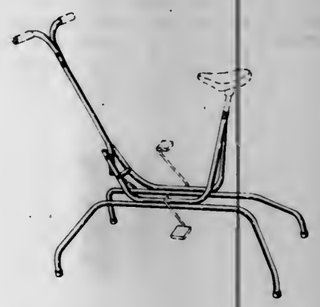
209,063
ANGULATED SPUR
Carl A. Nafzger, Clarksville, Tex., assignor of one-half to Walter P. Bignault, Porterville, Calif.
Filed Oct. 21, 1966, Ser. No. 4,374
Term of patent 14 years
(Cl. D30—31)



209,064
ELECTRONIC GAME CABINET
Harry F. Tiedemann, Reno, Nev., assignor to Nevada Electronics, Reno, Nev., a corporation of Nevada
Filed Oct. 10, 1966, Ser. No. 4,207
Term of patent 14 years
(Cl. D34—5)



209,065
BICYCLE EXERCISER OR THE LIKE
Eugene Weiss, Merrick, N.Y., assignor to Beacon Enterprises, Inc., New York, N.Y., a corporation of New York
Filed Nov. 17, 1966, Ser. No. 4,720
Term of patent 14 years
(Cl. D34—5)



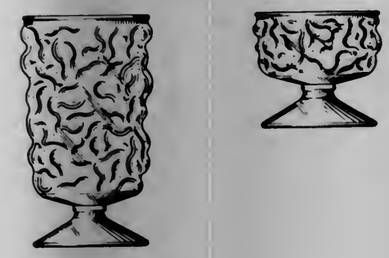
209,066
TOY SUBMARINE
Pui Chan, 34 Sands St., Kennedy Town, Hong Kong
Filed June 28, 1966, Ser. No. 2,961
Term of patent 7 years
(Cl. D34—15)



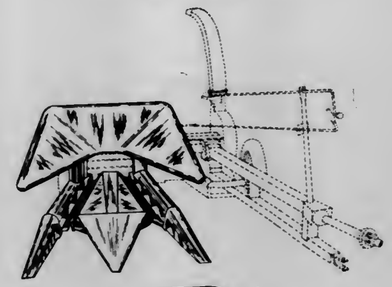
209,067
COMBINED TOY BUCKET, SHOVEL, FUNNEL, AND STRAINER
Sidney A. Tarrson, 518 S. Racine, Chicago, Ill. 60607
Filed Feb. 23, 1967, Ser. No. 5,914
Term of patent 14 years
(Cl. D34—15)

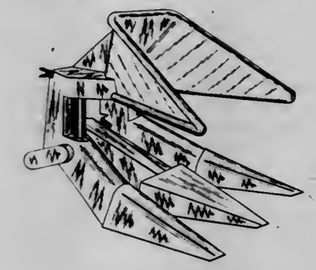


209,068
GOBLET OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed July 19, 1966, Ser. No. 3,156
Term of patent 14 years
(Cl. D36—8)



209,069
ROW CROP HARVESTING ATTACHMENT
David R. Markham, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 5,179
Term of patent 14 years
(Cl. D40—1)

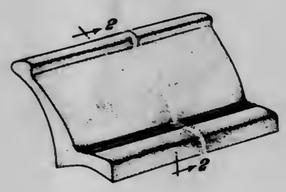




209,070
WRIST WATCH DIAL
Max Hetzel, Neuchatel, Switzerland, assignor to Centre Electronique Horloger S.A., a firm of Switzerland
Filed Apr. 20, 1965, Ser. No. 84,891
Claims priority, application Switzerland Oct. 30, 1964
Term of patent 14 years
(Cl. D42—1)



209,071
EXTRUDED CONVEYOR BELT CLEAT
Charles Henry Koch, Pasadena, Calif., assignor to Tatch-A-Cleat Products, Inc., Pasadena, Calif., a corporation of California
Filed Sept. 1, 1966, Ser. No. 3,681
Term of patent 14 years
(Cl. D43—1)



209,072
FOOD MIXER
Alan W. Duncan, Itasca, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Jan. 16, 1967, Ser. No. 5,431
Term of patent 7 years
(Cl. D44—1)



209,073
CARAFE
Gene Martin, 616 Richmond Road
East Meadow, N.Y. 11554
Filed Aug. 1, 1966, Ser. No. 3,300
Term of patent 14 years
(Cl. D44—21)



209,074
CONDIMENT DISPENSER
James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 4,355
Term of patent 14 years
(Cl. D44—22)



209,075
LIGHTING FIXTURE PRISM
Carl Wellhofer, Glenside, Pa., assignor to Lighting Corporation of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1966, Ser. No. 4,768
Term of patent 14 years
(Cl. D48—14)



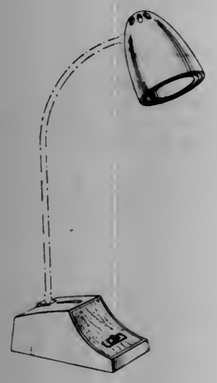
209,076
LIGHTING FIXTURE
Charles J. Ortega, Van Nuys, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif.
Filed Oct. 20, 1966, Ser. No. 4,351
Term of patent 14 years
(Cl. D48—20)



209,077
COMBINED LAMP AND MIRROR
Dan M. Andre, 8843 Kostner Terrace, Skokie, Ill. 60076
Filed Nov. 18, 1966, Ser. No. 4,732
Term of patent 14 years
(Cl. D48—20)



209,078
HIGH INTENSITY LAMP
Dan M. Andre, 8843 Kostner Terrace, Skokie, Ill. 60076
Filed Nov. 18, 1966, Ser. No. 4,737
Term of patent 3½ years
(Cl. D48—20)



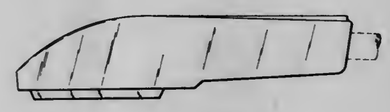
209,079
FLUORESCENT LAMP
Dan M. Andre, 8843 Kostner Terrace, Skokie, Ill. 60076
Filed Nov. 25, 1966, Ser. No. 4,801
Term of patent 3½ years
(Cl. D48—20)



209,080
DESK LAMP
Hiroshi Daito, Kyoto, Japan, assignor to Blackwell Electronics Ind., Co., Shimogyo-ku, Kyoto, Japan, a corporation of Japan
Filed Mar. 16, 1967, Ser. No. 6,251
Term of patent 14 years
Claims priority, application Japan Aug. 27, 1966
(Cl. D48—20)



209,081
OUTDOOR LIGHTING UNIT
Bjarne Netland, Liverpool, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Feb. 6, 1967, Ser. No. 5,692
Term of patent 7 years
(Cl. D48—31)



209,082
LOCK COVER OR THE LIKE
Bailey C. Williams, 1200 Marlboro Road, Raleigh, N.C. 27610
Filed Aug. 12, 1966, Ser. No. 3,462
Term of patent 14 years
(Cl. D50—7)



209,083
COMBINATION LOCK
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Feb. 3, 1967, Ser. No. 5,684
Term of patent 14 years
(Cl. D50—7)



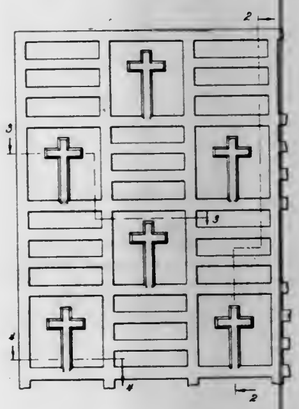
209,084
HOT BEVERAGE MERCHANDISER
Walter E. Moore, Bel-Nor, Mo., assignor to UMC Industries, Inc., St. Louis, Mo., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 5,147
Term of patent 14 years
(Cl. D52—3)



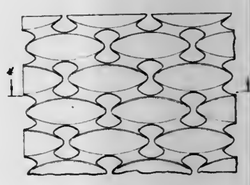
209,085
HANGER
Joseph M. Margolis, c/o Jiffy Enterprises, Inc., 146–150 13th St., Philadelphia, Pa. 19107
Filed Apr. 22, 1966, Ser. No. 1,980
Term of patent 14 years
(Cl. D54—1)



209,086
GRILLE MATERIAL
Judson E. Fuller, River Forest, Ill., assignor to The Harrington & King Perforating Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 6, 1967, Ser. No. 6,544
Term of patent 14 years
(Cl. D54—2)



209,087
GRILLE MATERIAL
Donald A. Przewodek, Warren, Mich., assignor to The Harrington & King Perforating Co., Inc., Chicago, Ill., a corporation of Illinois
Filed June 7, 1967, Ser. No. 7,379
Term of patent 14 years
(Cl. D54—2)



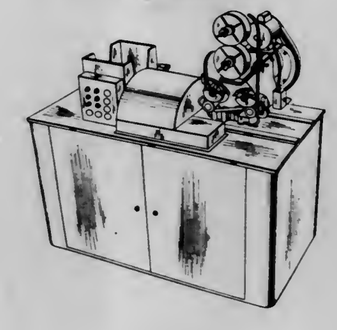
209,088
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Dec. 30, 1966, Ser. No. 5,249
Term of patent 14 years
(Cl. D54—12)



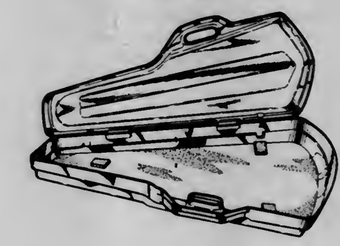
209,089
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Dec. 30, 1966, Ser. No. 5,250
Term of patent 14 years
(Cl. D54—12)



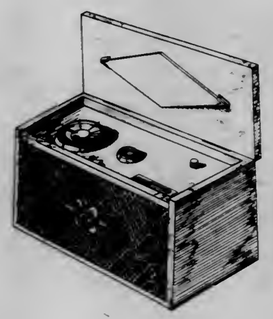
209,090
BOX END FOLDING AND STAPLING MACHINE
Frank Emmett Meyer and Lionel H. Saucier, New Orleans, La., assignors to Frank E. Meyer, New Orleans, La.
Filed Sept. 26, 1966, Ser. No. 4,012
Term of patent 14 years
(Cl. D55—1)



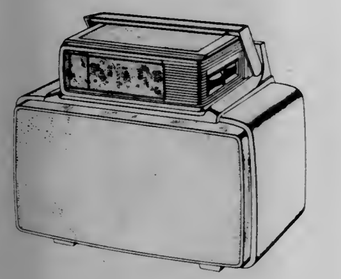
209,091
GUITAR CASE
Francis Luke Daniel, 1439 Olentangy River Road, Columbus, Ohio 43212
Filed Apr. 1, 1966, Ser. No. 1,723
Term of patent 14 years
(Cl. D56—1)



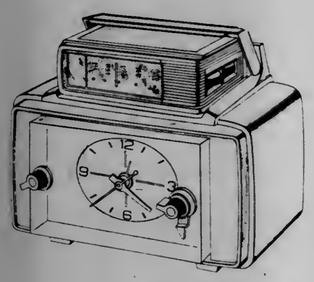
209,092
COMBINED SAVINGS BOX AND RADIO RECEIVER OR SIMILAR ARTICLE
Heihachiro Wada and Susumu Nakayama, Tokyo, Japan, assignors to Crown Radio Corporation, Taito-ku, Tokyo, Japan, a corporation of Japan
Filed Oct. 29, 1965, Ser. No. 87,954
Term of patent 14 years
(Cl. D56—4)



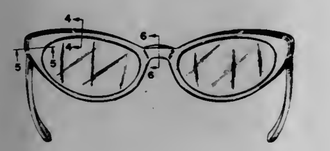
209,093
COMBINED RECHARGEABLE PORTABLE RADIO AND SEPARABLE CHARGER
Richard Culbertson, New Hartford, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 21, 1966, Ser. No. 4,749
Term of patent 7 years
(Cl. D56—4)



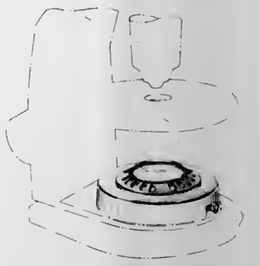
209,094
RECHARGEABLE PORTABLE RADIO AND SEPARABLE CLOCK-CHARGER THEREFOR
Richard Culbertson, New Hartford, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 21, 1966, Ser. No. 4,751
Term of patent 7 years
(Cl. D56—4)



209,095
PAIR OF SPECTACLES
Robert H. Ramp, Pittsford, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 27, 1966, Ser. No. 4,052
Term of patent 14 years
(Cl. D57—1)



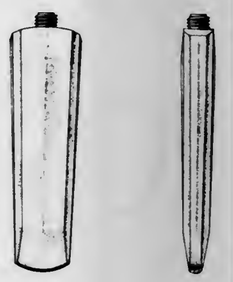
209,096
MICROSCOPE ILLUMINATOR
Edward N. Esmay and Paul A. Hoogesteger, Brighton, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Feb. 23, 1967, Ser. No. 5,912
Term of patent 14 years
(Cl. D57—1)



209,097
BOTTLE
George R. Stehl, Howard Beach, N.Y., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Feb. 17, 1966, Ser. No. 1,093
Term of patent 14 years
(Cl. D58—6)



209,098
BOTTLE
Dieter Spiess, Talstrasse 11, Kleinkarlbach, Pfalz, Germany
Filed July 11, 1966, Ser. No. 3,020
Term of patent 14 years
(Cl. D58—6)



209,099
BOTTLE
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 17, 1966, Ser. No. 3,506
Term of patent 14 years
(Cl. D58—6)



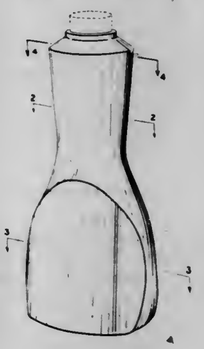
209,100
DECANTER
Ernest L. Du Pree, New York, N.Y., and Budd S. Sheesley, Matawan, N.J., assignors to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 4,221
Term of patent 14 years
(Cl. D58—6)



209,101
BOTTLE
Charles E. Finsilver, Hartdale, N.Y., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Aug. 29, 1966, Ser. No. 3,623
Term of patent 14 years
(Cl. D58—7)



209,102
BOTTLE
James L. Linn, Jr., Maumee, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Sept. 16, 1966, Ser. No. 3,896
Term of patent 14 years
(Cl. D58—8)



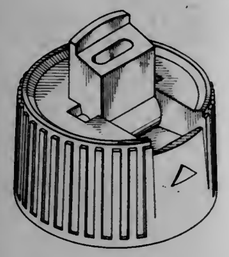
209,103
COMBINED MERCHANDISING AND DISPENSING CONTAINER
Cornelis Langewis, Walnut Creek, and Henry G. Henrickson, San Leandro, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed July 28, 1965, Ser. No. 86,331
Term of patent 14 years
(Cl. D58—11)



209,104
CLOSURE
William C. Harris, Racine County, and John J. Anderson, Kenosha County, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Nov. 9, 1966, Ser. No. 4,597
Term of patent 14 years
(Cl. D58—26)



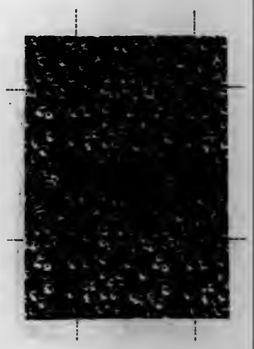
209,105
DISPENSING CLOSURE
Robert E. Hazard, North Kingstown, R.I., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Rhode Island
Filed Mar. 17, 1967, Ser. No. 6,273
Term of patent 14 years
(Cl. D58—26)



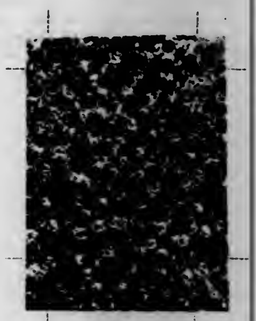
209,106
WRAPPING PAPER OR SIMILAR ARTICLE
Nathan Shapira, 555/308 Westwood Plaza, Los Angeles, Calif. 90024
Filed Jan. 7, 1966, Ser. No. 531
Claims priority, application Italy Sept. 29, 1965
Term of patent 14 years
(Cl. D59—2)



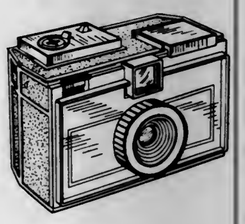
209,107
WRAPPING PAPER OR SIMILAR ARTICLE
Nathan Shapira, 555/308 Westwood Plaza, Los Angeles, Calif. 90024
Filed Jan. 7, 1966, Ser. No. 538
Claims priority, application Italy Sept. 29, 1965
Term of patent 14 years
(Cl. D59—2)



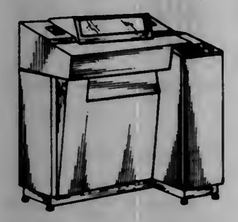
209,108
WRAPPING PAPER OR SIMILAR ARTICLE
Nathan Shapira, 555/308 Westwood Plaza, Los Angeles, Calif. 90024
Filed Jan. 17, 1966, Ser. No. 628
Claims priority, application Italy Sept. 29, 1965
Term of patent 14 years
(Cl. D59—2)



209,109
FLASH CAMERA
George Irwin, Highland Park, Ill., assignor to Imperial Camera Corp., Chicago, Ill., a corporation of Delaware
Filed May 19, 1966, Ser. No. 2,355
Term of patent 14 years
(Cl. D61—1)



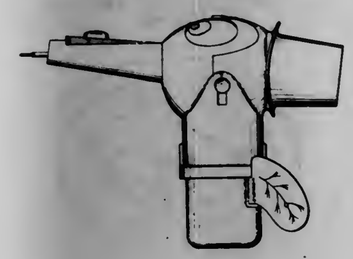
209,110
ELECTRONIC PRINTER CONSOLE
Lewis W. Bennett, Weston, John F. Eckert, Malden, and Joseph Konkel, Lynnfield Center, Mass., George H. Kress, East Orange, N.J., and David F. Sweeney, Wellesley, Mass., assignors to Anelex Corporation, Boston, Mass., a corporation of New Hampshire
Filed Feb. 21, 1966, Ser. No. 1,139
Term of patent 14 years
(Cl. D64—11)



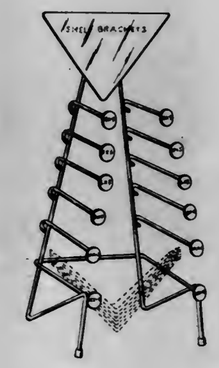
209,111
RAILWAY TRANSPORT CAR
Arthur I. Anderson, St. Paul, and Keith F. Solimar, Minneapolis, Minn., assignors to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Aug. 1, 1966, Ser. No. 3,279
Term of patent 14 years
(Cl. D66—1)



209,112
BATTERY OPERATED WRITING INSTRUMENT OR THE LIKE
Herbert A. Plassmann and Fred H. Searls, Bryan, Ohio, assignors, by mesne assignments, to Bernard S. Benson, Dordogne, France
Filed Aug. 15, 1966, Ser. No. 3,470
Term of patent 14 years
(Cl. D74—17)



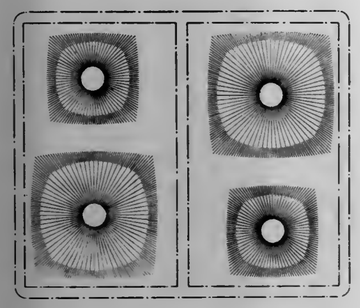
209,113
DISPLAY STAND
William F. Dean, University City, Mo., assignor to C. Hager & Sons Hinge Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed June 9, 1967, Ser. No. 7,418
Term of patent 14 years
(Cl. D80—10)



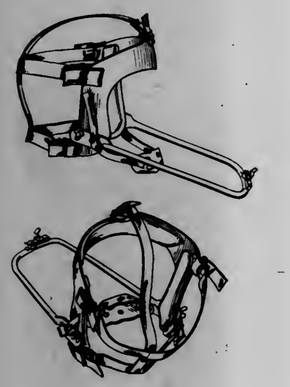
209,114
COOKSTOVE HOUSING
Milton A. Tuttle, Los Angeles, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed June 20, 1966, Ser. No. 2,750
Term of patent 14 years
(Cl. D81—4)



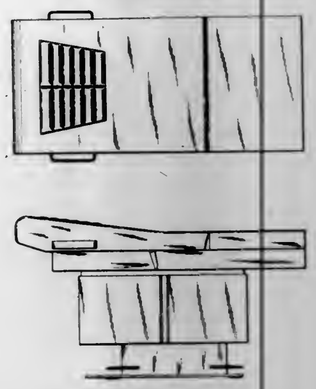
209,115
COOKING SURFACE OR THE LIKE
Jerry E. Wright, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 27, 1966, Ser. No. 2,459
Term of patent 14 years
(Cl. D81—25)



209,116
THERAPEUTIC TRACTION APPLIANCE
Edward J. Treutelaar, 8439 W. Sunnyside, Chicago, Ill. 60631
Filed Oct. 21, 1966, Ser. No. 4,371
Term of patent 7 years
(Cl. D83—1)



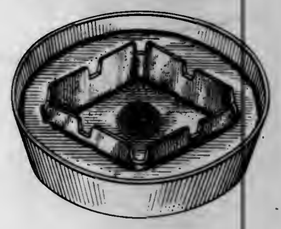
209,117
MEDICAL EXAMINATION TABLE OR THE LIKE
John Cuccio, Westport, Conn., assignor to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 16, 1966, Ser. No. 5,064
Term of patent 14 years
(Cl. D83—1)



209,118
COMBINATION HEAT CUSHION AND BACK MASSAGER
Clifford E. Grube, Niles, Ill., assignor to Associated Mills, Inc., Chicago, Ill.
Filed Jan. 16, 1967, Ser. No. 5,438
Term of patent 14 years
(Cl. D83—1)



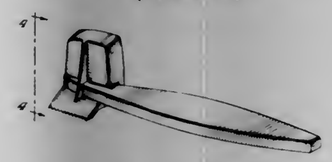
209,119
ASH TRAY
Frank J. Curran, 3250 N. Highland, Downers Grove, Ill. 60515
Filed Aug. 29, 1966, Ser. No. 3,625
Term of patent 14 years
(Cl. D85—2)



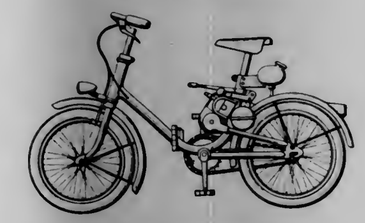
209,120
ILLUMINABLE VANITY CASE OR SIMILAR ARTICLE
Harold Brickman, 5517 N. California Ave., Chicago, Ill. 60645, and Robert Deschamps, 1196 S. Main St., Lombard, Ill. 60148
Filed Oct. 22, 1965, Ser. No. 87,743
Term of patent 14 years
(Cl. D87—5)



209,121
FRUIT PEELER OR THE LIKE
Samuel J. Popell, 2920 N. Commonwealth, Chicago, Ill. 60657
Filed Mar. 7, 1966, Ser. No. 1,304
Term of patent 14 years
(Cl. D89—1)



209,122
FOLDABLE MOTORBICYCLE
Emilio Elia, Milan, Italy
Filed May 19, 1966, Ser. No. 2,484
Claims priority, application Italy Oct. 13, 1964
Term of patent 14 years
(Cl. D90—8)



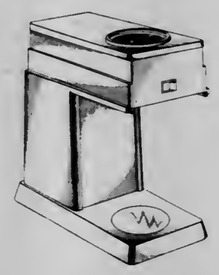
209,123
FOLDABLE BICYCLE
Emilio Elia, Milan, Italy
Filed May 19, 1966, Ser. No. 2,485
Claims priority, application Italy Oct. 13, 1964
Term of patent 14 years
(Cl. D90—8)



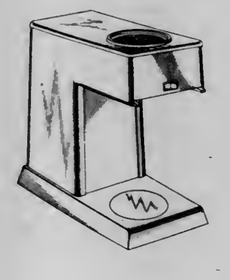
209,124
TABLECLOTH
Thomas William Binns, Huntingdon Valley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Dec. 1, 1966, Ser. No. 4,872
Term of patent 3½ years
(Cl. D92—26)



209,125
POUR-IN TYPE BEVERAGE MAKER
John C. Martin, Springfield, Ill., assignor to Bunn-O-Matic Corporation, Springfield, Ill., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 6,027
Term of patent 14 years
(Cl. D94—3)



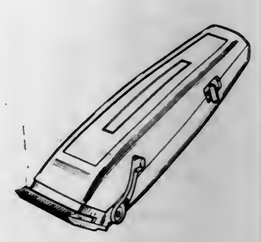
209,126
POUR-IN TYPE BEVERAGE MAKER
John C. Martin, Springfield, Ill., assignor to Bunn-O-Matic Corporation, Springfield, Ill., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 6,028
Term of patent 14 years
(Cl. D94—3)



209,127
POUR-IN TYPE BEVERAGE MAKER
John C. Martin, Springfield, Ill., assignor to Bunn-O-Matic Corporation, Springfield, Ill., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 6,030
Term of patent 14 years
(Cl. D94—3)



209,128
ELECTRIC HAIR CLIPPER
James H. Fox, Sterling, and Joseph R. Mango, Midlothian, Ill., assignors to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed Aug. 25, 1966, Ser. No. 3,586
Term of patent 14 years
(Cl. D95—5)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Abex Corp.: *See*—
Bradford, William R., Molnar, and Siperly. Re. 26,292.
Bradford, William R., S. Molnar, and B. H. Siperly, to Abex Corp. Microwave identification of railroad cars. Re. 26,292, 10–31–67, Cl. 343—6.5.
Carrier Mfg. Co.: *See*—
Carrier, Robert M., Jr. Re. 26,291.
Carrier, Robert M., Jr., to Carrier Mfg. Co. Feeding apparatus. Re. 26,291, 10–31–67, Cl. 198—220.
Molnar, Steven: *See*—
Bradford, William R., Molnar, and Siperly. Re. 26,292.
Payton, Lelan R., to Reynolds Metals Co. Method of making a low pressure, hermetically sealed, sheet metal container. Re. 26,293, 10–31–67, Cl. 113—121.
Pike Corp. of America: *See*—
Rand, William W. Re. 26,290.
Rand, William W., to Pike Corp. of America. Subaqueous drilling apparatus. Re. 26,290, 10–31–67, Cl. 166—.6.
Reynolds Metals Co.: *See*—
Payton, Lelan R. Re. 26,293.
Siperly, Bruce H.: *See*—
Bradford, William R., Molnar, and Siperly. Re. 26,292.

LIST OF DESIGN PATENTEES

Aleks, Vytant, and J. C. Brearley, to The Brearley Co. Clamp-on bathtub grab bar. 209,039, 10–31–67, Cl. D4—4.
Aleks, Vytant, and J. C. Brearley, to The Brearley Co. Clamp-on bathtub grab bar. 209,040, 10–31–67, Cl. D4—4.
Anchor Hocking Glass Corp.: *See*—
Benes, Frank J. 209,068.
Anderson, Arthur I., and K. F. Solimar, to Butler Mfg. Co. Railway transport car. 209,111, 10–31–67, Cl. D66—1.
Anderson, John J.: *See*—
Harris, William C., and Anderson. 209,104.
Andre, Dan M. Combined lamp and mirror. 209,077, 10–31–67, Cl. D48—20.
Andre, Dan M. High intensity lamp. 209,078, 10–31–67, Cl. D48—20.
Andre, Dan M. Fluorescent lamp. 209,079, 10–31–67, Cl. D48—20.
Anelex Corp.: *See*—
Bennett, Lewis W., Eckert, Konkel, Kress, and Sweeney. 209,110.
Associated Mills, Inc.: *See*—
Grube, Clifford E. 209,118.
Bausch & Lomb Inc.: *See*—
Esmay, Edward N., and Hoogesteger. 209,096.
Ramp, Robert H. 209,095.
Beacon Enterprises, Inc.: *See*—
Weiss, Eugene. 209,065.
Benes, Frank J., to Anchor Hocking Glass Corp. Goblet or similar article. 209,068, 10–31–67, Cl. D36—8.
Bennett, Lewis W., J. F. Eckert, J. Konkel, G. H. Kress, and D. F. Sweeney, to Anelex Corp. Electronic printer console. 209,110, 10–31–67, Cl. D64—11.
Benson, Bernard S.: *See*—
Plassmann, Herbert A., and Searls. 209,112.
Bignault, Walter P.: *See*—
Nafzger, Carl A. 209,063.
Binns, Thomas W., to Quaker Lace Co. Tablecloth. 209,124, 10–31–67, Cl. D92—26.
Blackwell Electronics Inc. Co.: *See*—
Daito, Hiroshi. 209,080.
Bonito, Vincent. Hand tool for stripping, crimping, and cutting wire or the like. 209,058, 10–31–67, Cl. D26—13.
Braiman, Jerry, and E. W. Shieh, to P. R. Mallory & Co., Inc. Housing for a capacitor device. 209,054, 10–31–67, Cl. D26—1.
Brearley Co., The: *See*—
Aleks, Vytant, and Brearley. 209,039.
Aleks, Vytant, and Brearley. 209,040.
Brearley, John C.: *See*—
Aleks, Vytant, and Brearley. 209,039.
Aleks, Vytant, and Brearley. 209,040.
Brickman, Harold, and R. Deschamps. An illuminable vanity case or similar article. 209,120, 10–31–67, Cl. D87—5.
Broad, Reginald J. Car door handle. 209,041, 10–31–67, Cl. D10—8.
Bunn-O-Matic Corp.: *See*—
Martin, John C. 209,125.
Martin, John C. 209,126.
Martin, John C. 209,127.
Butler Mfg. Co.: *See*—
Anderson, Arthur I., and Solimar. 209,111.
Calafano, Ernest: *See*—
Schwartz, Harvey A., Jacoby, and Calafano. 209,052.
Centre Electroniques: *See*—
Hetzel, Max. 209,070.
Chan, Pui. Toy submarine. 209,066, 10–31–67, Cl. D34—15.
Coburn, Donald G. Dental cabinet. 209,051, 10–31–67, Cl. D24—1.
Connor, James M.: *See*—
Purcell, William F. H., and Connor. 209,043.
Corning Glass Works: *See*—
Wright, Jerry E. 209,115.
Crouse-Hinds Co.: *See*—
Netland, Bjarne. 209,081.
Crown Radio Corp.: *See*—
Wada, Heihachiro, and Nakayama. 209,092.
Cuccio, John, to Ritter Pfaudler Corp. Medical examination table. 209,117, 10–31–67, Cl. D83—1.
Culbertson, Richard, to General Electric Co. Combined rechargeable portable radio and separable charger. 209,093, 10–31–67, Cl. D56—4.
Culbertson, Richard, to General Electric Co. Rechargeable portable radio and separable clock-charger therefor. 209,094, 10–31–67, Cl. D56—4.
Curran, Frank J. Ash tray. 209,119, 10–31–67, Cl. D85—2.
Daito, Hiroshi, to Blackwell Electronics Inc. Co. Desk lamp. 209,080, 10–31–67, Cl. D48—20.
Daniel, Francis L. Guitar case. 209,091, 10–31–67, Cl. D56—1.
Deal, Roger L., and R. W. Hansen, to Jennings Radio Mfg. Corp. Multiple vacuum switch assembly. 209,055, 10–31–67, Cl. D26—13.
Deal, Roger L., and R. W. Hansen, to Jennings Radio Mfg. Corp. Electromagnetically actuated ground isolated relay. 209,056, 10–31–67, Cl. D26—13.
Dean, William F., to C. Hager & Sons Hinge Mfg. Co. Display stand. 209,113, 10–31–67, Cl. D80—10.
Deere & Co.: *See*—
Markham, David R. 209,069.
Purcell, William F. H., and Connor. 209,043.
Denki Onkyo Co., Ltd.: *See*—
Watanuki, Moriyuki. 209,059.
Duncan, Alan W., to Sears Roebuck and Co. Food mixer. 209,072, 10–31–67, Cl. D44—1.
Dupree, Ernest I., and B. S. Sheesley, to Schenley Industries, Inc. Decanter. 209,100, 10–31–67, Cl. D58—6.
Eckert, John F.: *See*—
Bennett, Lewis W., Eckert, Konkel, Kress, and Sweeney. 209,110.
Eldon Industries, Inc.: *See*—
Ortega, Charles J. 209,076.
Ella, Emilio. Foldable motorbicycle. 209,122, 10–31–67, Cl. D90—8.
Ella, Emilio. Foldable bicycle. 209,123, 10–31–67, Cl. D90—8.
Esmay, Edward N., and P. A. Hoogesteger, to Bausch & Lomb Inc. Microscope illuminator. 209,096, 10–31–67, Cl. D57—1.
Finsilver, Charles E., to Lever Bros. Co. Bottle. 209,101, 10–31–67, Cl. D58—7.
Fox, James H., and J. R. Mango, to Wahl Clipper Corp. Electric hair clipper. 209,128, 10–31–67, Cl. D95—5.
Fuller, Judson E., to The Harrington & King Perforating Co., Inc. Grille material. 209,086, 10–31–67, Cl. D54—2.
Gehrie, Charles S., to Presto Lock Co., Inc. Combination lock. 209,053, 10–31–67, Cl. D50—7.
General Electric Co.: *See*—
Culbertson, Richard. 209,093.
Culbertson, Richard. 209,094.
Grube, Clifford E., to Associated Mills, Inc. Combination heat cushion and back massage. 209,118, 10–31–67, Cl. D83—1.
H & H Mfg. Co., Inc.: *See*—
Hershberger, Charles L. 209,046.
Hager, C., & Sons Hinge Mfg. Co.: *See*—
Dean, William F. 209,113.
Hansen, Robert W.: *See*—
Deal, Roger L., and Hansen. 209,055.
Deal, Roger L., and Hansen. 209,056.
Harrington & King Perforating Co., Inc., The: *See*—
Fuller, Judson E. 209,086.
Przewodek, Donald A. 209,087.
Harris, William C., and J. J. Anderson, to S. C. Johnson & Son, Inc. Closure. 209,104, 10–31–67, Cl. D58—26.
Harum, James D. Cat house. 209,042, 10–31–67, Cl. D12—2.
Hazard, Robert E., to Polytop Corp. Dispensing closure. 209,105, 10–31–67, Cl. D58—28.
Hershberger, Charles L., to H & H Mfg. Co., Inc. Booth seat. 209,046, 10–31–67, Cl. D15—11.
Hetzel, Max, to Centre Electroniques. Wrist watch dial. 209,070, 10–31–67, Cl. D42—1.

Holden, Gerald B., to J. B. Holden Co. Gun having a telescopic sight mount. 209,049, 10–31–67, Cl. D22—7.
Holden, J. B., Co.: *See*—
Holden, Gerald B. 209,049.
Honeywell Inc.: *See*—
Link, Lawrence J., Jr. 209,053.
Hoogesteger, Paul A.: *See*—
Esmay, Edward N., and Hoogesteger. 209,096.
Imperial Camera Corp.: *See*—
Irwin, George. 209,109.
Irwin, George, to Imperial Camera Corp. Flash camera. 209,-109, 10–31–67, Cl. D61—1.
Jacoby, Franklin: *See*—
Schwartz, Harvey A., Jacoby, and Calafano. 209,052.
Jeffrey-Allan Industries, Inc.: *See*—
Podall, Robert. 209,044.
Jennings Radio Mfg. Corp.: *See*—
Deal, Roger L., and Hansen. 209,055.
Deal, Roger L., and Hansen. 209,056.
Johnson, S. C., & Son, Inc.: *See*—
Harris, William C., and Anderson. 209,104.
Kaiser Aluminum & Chemical Corp.: *See*—
Langewis, Cornelis, and Henrickson. 209,103.
Kananen, Eino F.: *See*—
Saari, Rudy T., and Kananen. 209,050.
Koch, Charles H., to Tatch-A-Cleat Products, Inc. Extruded conveyor belt cleat. 209,071, 10–31–67, Cl. D43—1.
Konke, Joseph: *See*—
Bennett, Lewis W., Eckert, Konkel, Kress, and Sweeney. 209,110.
Kossow, John F. Bow tie. 209,037, 10–31–67, Cl. D2—353.
Kress, George H.: *See*—
Bennett, Lewis W., Eckert, Konkel, Kress, and Sweeney. 209,110.
Langewis, Cornelis, and H. G. Hendrickson, to Kaiser Aluminum & Chemical Corp. Combined merchandising and dispensing container. 209,103, 10–31–67, Cl. D58—11.
Latzko, Andrew. Statuette or the like. 209,061, 10–31–67, Cl. D29—23.
Lear Siegler, Inc.: *See*—
Tuttle, Milton A. 209,114.
Lever Bros. Co.: *See*—
Finsilver, Charles E. 209,101.
Stehl, George R. 209,097.
Lighting Corp. of America: *See*—
Wellhofer, Carl. 209,075.
Link, Lawrence J., Jr., to Honeywell Inc. Test probe. 209,053. 10–31–67, Cl. D26—1.
Linn, James L., Jr., to Owens-Illinois, Inc. Bottle. 209,102, 10–31–67, Cl. D58—8.
Mallory, P. R., & Co., Inc.: *See*—
Braiman, Jerry, and Shieh. 209,054.
Manderfield, Ellen B., to Oneida, Ltd. Spoon or similar article. 209,088, 10–31–67, Cl. D54—12.
Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 209,089, 10–31–67, Cl. D54—12.
Mango, Joseph R.: *See*—
Fox, James H., and Mango. 209,128.
Margolis, Joseph M. Hanger. 209,085, 10–31–67, Cl. D54—1.
Markham, David R. to Deere & Co. Row crop harvesting attachment. 209,069, 10–31–67, Cl. D40—1.
Martin, Gene. Carafe. 209,073, 10–31–67, Cl. D44—21.
Martin, John C., to Bunn-O-Matic Corp. Pour in type beverage maker. 209,125, 10–31–67, Cl. D94—3.
Martin, John C., to Bunn-O-Matic Corp. Pour in type beverage maker. 209,126, 10–31–67, Cl. D94—3.
Martin, John C., to Bunn-O-Matic Corp. Pour in type beverage maker. 209,127, 10–31–67, Cl. D94—3.
Messrs. Gatag Ltd.: *See*—
Probst, Georg. 209,060.
Meyer, Frank E.: *See*—
Meyer, Frank E., and Saucier. 209,090.
Meyer, Frank E., and L. H. Saucier, to F. E. Meyer. Box end folding and stapling machine. 209,090, 10–31–67, Cl. D55—1.
Moore, Walter E., to UMC Industries, Inc. Hot beverage merchandiser. 209,084, 10–31–67, Cl. D52—3.
Naffzger, Carl A., ½ to W. P. Bignault. Angulated spur. 209,063, 10–31–67, Cl. D30—31.
Nakayama, Susumu: *See*—
Wada, Heihachiro, and Nakayama. 209,092.
Netland, Bjarne, to Crouse-Hinds Co. Outdoor lighting unit. 209,081, 10–31–67, Cl. D48—31.
Nevada Electronics: *See*—
Tiedemann, Harry F. 209,064.
Oneida, Ltd.: *See*—
Manderfield, Ellen B. 209,088.
Manderfield, Ellen B. 209,089.
Ortega, Charles J., to Eldon Industries, Inc. Lighting fixture. 209,076, 10–31–67, Cl. D48—20.
Owens-Illinois, Inc.: *See*—
Linn, James L., Jr. 209,102.
Parker, Wayland B., to Schumberger Ltd. (Schlumberger N.V.) Chair. 209,045, 10–31–67, Cl. D15—1.
Pass & Seymour, Inc.: *See*—
Pulos, Arthur J., and Sweeney. 209,057.
Plassmann, Herbert A., and F. H. Searls, to B. S. Benson. Battery operated writing instrument or the like. 209,112, 10–31–67, Cl. D74—17.
Podall, Robert, to Jeffrey-Allan Industries, Inc. Splash guard for motor vehicles. 209,044, 10–31–67, Cl. D14—6.
Polytop Corp.: *See*—
Hazard, Robert E. 209,105.
Popell, Samuel J. Fruit peeler or the like. 209,121, 10–31–67, Cl. D89—1.
Presto Lock Co., Inc.: *See*—
Gehrie, Charles S. 209,083.
Probst, Georg, to Messrs. Gatag Ltd. Combined sound recording and reproducing machine. 209,060, 10–31–67, Cl. D26—14.
Procter & Gamble Co., The: *See*—
Vanderhyde, Harold J. 209,099.
Przewodek, Donald A., to The Harrington & King Perforating Co., Inc. Grille material. 209,087, 10–31–67, Cl. D54—2.
Pulos, Arthur J., and P. B. Sweeney, Jr., to Pass & Seymour, Inc. Triplex receptacle outlet. 209,057, 10–31–67, Cl. D26—13.
Purcell, William F. H., and J. M. Connor, to Deere & Co. Combined rear fender and deck for a tractor. 209,043, 10–31–67, Cl. D14—3.
Quaker Lace Co.: *See*—
Binns, Thomas W. 209,124.
Ramp, Robert H., to Bausch & Lomb Inc. Pair of spectacles. 209,095, 10–31–67, Cl. D57—1.
Ramsthal, Heinrich. Wall plaque. 209,062, 10–31–67, Cl. D29—23.
Rexall Drug and Chemical Co.: *See*—
Swett, James B. 209,074.
Ritter Pfaudler Corp.: *See*—
Cuccio, John. 209,117.
Ryder, Jack C.: *See*—
Schafer, Jack E., and Ryder. 209,048.
Saari, Rudy T., and E. F. Kananen. Scope lens protector. 209,050. 10–31–67, Cl. D22—13.
Saucier, Lionel H.: *See*—
Meyer, Frank E., and Saucier. 209,090.
Schafer, Jack E., and J. C. Ryder. Straddle bench. 209,048, 10–31–67, Cl. D15—11.
Schenley Industries, Inc.: *See*—
Dupree, Ernest I., and Sheesley. 209,100.
Schumberger Ltd. (Schlumberger N.V.): *See*—
Parker, Wayland B. 209,045.
Schwartz, Harvey A., F. Jacoby, and E. Calafano, to Soss Mfg. Co. Clamp-around VOLT-ammeter. 209,052, 10–31–67, Cl. D26—1.
Searls, Fred H.: *See*—
Plassmann, Herbert A., and Searls. 209,112.
Sears, Roebuck and Co.: *See*—
Duncan, Alan W. 209,072.
Shapira, Nathan. Wrapping paper or similar article. 209,106, 10–31–67, Cl. D59—2.
Shapira, Nathan. Wrapping paper or similar article. 209,107, 10–31–67, Cl. D59—2.
Shapira, Nathan. Wrapping paper or similar article. 209,108, 10–31–67, Cl. D59—2.
Sheesley, Budd S.: *See*—
Dupree, Ernest I., and Sheesley. 209,100.
Shieh, Edwin W.: *See*—
Braiman, Jerry, and Shieh. 209,054.
Solimar, Keith F.: *See*—
Anderson, Arthur I., and Solimar. 209,111.
Soss Mfg. Co.: *See*—
Schwartz, Harvey A., Jacoby, and Calafano. 209,052.
Spiess, Dieter. Bottle. 209,098, 10–31–67, Cl. D58—6.
Stehl, George R., to Lever Bros. Co. Bottle. 209,097, 10–31–67, Cl. D58—6.
Swedish Crucible Steel Co.: *See*—
Watson, Robert E. 209,038.
Sweeney, David F.: *See*—
Bennett, Lewis W., Eckert, Konkel, Kress, and Sweeney. 209,110.
Sweeney, Paul B., Jr.: *See*—
Pulos, Arthur J., and Sweeney. 209,057.
Swett, James B., to Rexall Drug and Chemical Co. Condiment dispenser. 209,074, 10–31–67, Cl. D44—22.
Tarrson, Sidney A. Combined toy bucket, shovel, funnel and strainer. 209,067, 10–31–67, Cl. D34—15.
Tatch-A-Cleat Products, Inc.: *See*—
Koch, Charles H. 209,071.
Tiedemann, Harry F., to Nevada Electronics. Electronic game cabinet. 209,064, 10–31–67, Cl. D34—5.
Tuttle, Milton A., to Lear Siegler, Inc. Cookstove housing. 209,114, 10–31–67, Cl. D81—4.
UMC Industries, Inc.: *See*—
Moore, Walter E. 209,084.
Vanderhyde, Harold J., to The Procter & Gamble Co. Bottle. 209,099, 10–31–67, Cl. D58—6.
Villa, Luis F. Outdoor bench. 209,047, 10–31–67, Cl. D15—11.
Wada, Heihachiro, and S. Nakayama, to Crown Radio Corp. Combined savings box and radio receiver or similar article. 209,092. 10–31–67, Cl. D56—4.
Wahl Clipper Corp.: *See*—
Fox, James H., and Mango. 209,128.
Watanuki, Moriyuki, to Denki Onkyo Co., Ltd. Stereo tape recorder. 209,059, 10–31–67, Cl. D26—14.
Watson, Robert E., to Swedish Crucible Steel Co. Liquid shampoo dispenser. 209,038, 10–31–67, Cl. D4—3.
Weiss, Eugene, to Beacon Enterprises, Inc. Bicycle exerciser or the like. 209,065, 10–31–67, Cl. D34—5.
Wellhofer, Carl, to Lighting Corp. of America. Lighting fixture prism. 209.075, 10–31–67, Cl. D48—14.
Williams, Bailey C. Lock cover or the like. 209,082, 10–31–67, Cl. D50—7.
Wright, Jerry E., to Corning Glass Works. Cooking surface or the like. 209,115, 10–31–67, Cl. D81—25.
Zimmon, Harold. Disposable protective shoe cover. 209,036, 10–31–67, Cl. D2—271.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF OCTOBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Transvertex: *See*—
Florin, Bengt, and Loimaranta. 3,349,882.
ACF Industries, Inc.: *See*—
Kalert, Ralph E., Jr., and Reise. 3,350,074.
McGrath, Earle. 3,350,141.
AMP Inc.: *See*—
Marley, James E., and Warne. 3,350,679.
McFadden, Bruce R. 3,350,676.
Ziegler, George W., Jr. 3,350,500.
Ziegler, George W., Jr. 3,350,666.
Abbott, Thomas I.: *See*—
Smith, James G., and Abbott. 3,350,204.
Abex Corp.: *See*—
Lucarell, James V. 3,350,084.
Pastan, Harvey L. 3,349,623.
Acree, William L.: *See*—
Greer, James E., and Acree. 3,349,578.
Adams, Arthur A. Cutting gage and guide. 3,349,496, 10–31–67, Cl. 33—143.
Adams, Boyce M.: *See*—
Trollo, Andrew C., Adams, and Busch. 3,350,716.
Adams, Douglas P., to United States of America, Air Force. Nomographic computer scanning means. 3,350,156, 10–31–67, Cl. 350—202.
Adams, George C., to Rollform, Inc. Expansion connection for fire rated ceiling grid system. 3,350,125, 10–31–67, Cl. 287—189.36.
Adams, Mark F.: *See*—
Herrick, Ivan, Adams, and Huffaker. 3,350,259.
Adamson-Allience Co. Ltd., The: *See*—
Burrows, Stanley. 3,349,601.
Adiel, William, to Servo Corporation of America. Digital code converter. 3,350.708, 10–31–67, Cl. 340—347.
Adrema-Werke G.m.b.H.: *See*—
Schottle, Helmut. 3,349,700.
Janzen, Heinz-Dieter. 3,349,701.
Adtrol Electronics, Inc.: *See*—
Trollo, Andrew C., Adams, and Busch. 3,350,716.
Aerojet-General Corp.: *See*—
Becker, John C., Jr., and Eubank. 3,349,464.
Cottrell, Richard F. 3,349,561.
Grakauskas, Vytautas. 3,350,172.
Afanador, Carlos P.: *See*—
Walther, William D., and Afanador. 3,349,871.
Aftergut, Siegfried, to General Electric Co. Cation exchange resins. 8,350,327, 10–31–67, Cl. 260—2.2.
Agnello, Eugene J., G. D. Laubach, and W. T. Moreland, to Chas. Pfizer & Co., Inc. Method for producing 16 methylene reichstein S and intermediates thereof. 3,350,394, 10–31–67, Cl. 260—239.5.
Ahlstone, Arthur G., to Ventura Tool Co. Seal ring holding device. 3,350,103, 10–31–67. Cl. 277—9.
Ahlstone, Arthur G., to Ventura Tool Co. Well bore running-in and retrieving tool. 3,350,130, 10–31–67, Cl. 294—86.25.
Air Products and Chemicals, Inc.: *See*—
Strohm, Paul F. 3,350,401.
Airpax Electronics Inc.: *See*—
McCall, Gilbert W. 3.350,668.
Aktiebolaget C. V. Heljestrand: *See*—
Rygg, Inge H. 3,349,772.
Aktiebolaget Gotaverken: *See*—
Hellström, Axel G. 3,349,761.
Aktiebolaget Kalstads Mekaniska Werkstad: *See*—
Jordansson, Lars B., and Wahlström. 3,350,263.
Alburn, Harvey E.: *See*—
Fletcher, Horace, 3rd, and Alburn. 3,350,407.
Alden, John B. Gate valves. 3,350,058, 10–31–67, Cl. 251—329.
Aldrich Chemical Co., Inc.: *See*—
Biel, John H., and Hoppa. 3,350,403.
Hoppa, Harvey B. 3 350,404.
Alexander, Richard B., to National Tile & Mfg. Co. Method and apparatus for handling placing tile bodies in precise locations. 3,349,541, 10–31–67, Cl. 53—55.
Allen-Bradley Co.: *See*—
Spaude, Robert W. 3,350,673.
Allen, David L., 25% to P. Daniels, and 25% to G. Stoll. Safety retaining belt for shopping carts. 3,350,136, 10–31–67, Cl. 297—388.
Allen, Jesse O. Variable valves. 3,349,798, 10–31–67, Cl. 137—625.17.
Allen, Kenneth M., and C. H. Harper. Inclined screw conveyor. 3,349,894, 10–31–67, Cl. 198—215.
Alleton, Jean C., to Societe d'Etudes Chimiques Pour l'Industrie et l'Agriculture. Fire extinguishing powders. 3,350,-306, 10–31–67, Cl. 252—7.
Alley, John K., and R. C. Johnson, to United States of America, Interior. Synthesis of aluminum borate whiskers. 3,350,166, 10–31–67, Cl. 23—59.
Allied Chemical Corp.: *See*—
Anello, Louis G., and Sweeney. 3,350,464.
Bonfield, John H., and Sogn. 3,350,444.
Kloss, Theodore E. 3,350,258.
Price, Alson K., and Sweeney. 3,350,457.
Reimschuessell, Herbert K., and Boardman. 3,350,364.
Allis-Chalmers Mfg. Co.: *See*—
Perry, Elijah E., and Mundon, and Frey. 3,350,520.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Forwald, Haakon. 3,350,529.
Almar-Naess, Almar. Method for corrosion protection. 3,350,-288, 10–31–67, Cl. 204—147.
Almond, Norman E.: *See*—
Stacy; Robert G., Almond, and Freholm. 3,349,874.
Alpha Microelectronics Co., Inc.: *See*—
Karp, Jay C. 3,349,481.
Alsch, Richard E., to Graham Transmissions, Inc. Variable speed transmission. 3,349,642, 10–31–67, Cl. 74—796.
Aluminum Co. of America.: *See*—
Brondyke, Kenneth J., and Craig. 3,349,837.
Aluminum Extrusions, Inc.: *See*—
Hinrichs, Carl B. 3,350,120.
Alvey, Francis B., to Celanese Coatings Co. Epoxide resin process. 3,350,353, 10–31–67, Cl. 260—47.
Amchem Products, Inc.: *See*—
Schiffman, Louis. 3,350,243.
Steinbrecher, Lester, Dollman, Buczkowski, and Harrison. 3,350,284.
American Aniline Products, Inc.: *See*—
Conway, Charles L. 3,350,383.
Conway, Charles L. 3,350,384.
Genta, Guido R. 3,350,425.
American Cyanamid Co.: *See*—
Weinberger, Arthur J., and De Lapp. 3,350,292.
American Handling Equipment Co.: *See*—
Maurer, Charles J., and Montgomery. 3,349,924.
American Home Products Corp.: *See*—
Bruce, William F. 3,350,446.
Fletcher, Horace, 3rd., and Alburn. 3,350,407.
American Machine & Foundry Co.: *See*—
Ferrary, Ferdinand F. 3,350,115.
Schmidt, Warren J. 3,350,699.
Tolchin, Hyman. 3,350,279.
Wallace, Bert H. 3,349,777.
American Motors Corp.: *See*—
Marten, Jack E. 3,350,128.
American Optical Co.: *See*—
Siegmund, Walter P., and Gilmore. 3,350,183.
Snitzer, Elias. 3,350,654.
American Saint Gobain Corp.: *See*—
Jones, John C., and Bundy. 3,349,900.
American Seating Co.: *See*—
Barecki, Chester J., and Nordmark. 3,349,728.
American Smelting and Refining Co.: *See*—
Baier, Richard. 3,349,838.
American Technical Machinery Corp.: *See*—
Gelardi, Joseph T. 3,349,659.
American Wibbert Vault Corp.: *See*—
Haase, Wilbert W., Jr., Reichle, and Wennerberg. 3,350,051.
Ames, Irving, and H. L. Caswell, to International Business Machines Corp. Hermetic seal for planar transistors and method. 3,350,222, 10–31–67, Cl. 117—212.
Ametek, Inc.: *See*—
Husted, Lawrence E. 3,350,124.
Amos, Stephen E., to E. I. du Pont de Nemours and Co. Web slitting and rewind machine. 3,350,026, 10–31–67, Cl. 242—56.9.
Amtron, Inc.: *See*—
Kasper, Frank S., and Billingsley. 3,350,688.
Anderson, Charles H., Jr.: *See*—
Shaw, Gilbert, and Anderson. 3,350,069.
Anderson Co., The: *See*—
Martens, Jack E. 3,350,135.
Anderson, David W., to McGraw-Edison Co. Electrical apparatus protected by internally mounted fuse. 3,350,526, 10–31–67, Cl. 200—120.
Anderson, Lars H. V., to Anson Inc. Picture frame easel. 3,350,047, 10–31–67, Cl. 248—464.
Andre, Allen R. Carbon arc torch. 3,350,540, 10–31–67, Cl. 219—139.
Andreadis, John T. Heat treatment cap. 3,349,825, 10–31–67, Cl. 150—2.3.
Anello, Louis G., and R. F. Sweeney, to Allied Chemical Corp. 1-hydro-perhalogenated cyclopentanols and cyclohexanols. 3,350,464, 10–31–67, Cl. 260—617.
Ang, Choh-Yi, and E. R. Helderman, to North American Aviation, Inc. Method of producing sintered alloys of beryllium. 3,350,201, 10–31–67, Cl. 75—214.
Annunziato, Anthony A., A. R. Doucette, and J. W. Pfeifer, to Sperry Rand Corp. Inverter circuits employing load-responsive saturable transformers. 3,350,624, 10–31–67, Cl. 321—18.
Anson Inc.: *See*—
Anderson, Lars H. V. 3,350,047.
Anspon, Harry D., W. H. Byler, and G. E. Ham, to Gulf Oil Corp. Ethylene/acrylate ester copolymers. 3,350,372, 10–31–67, Cl. 260—86.7.

Apple, Garold E. Tree stand. 3,350,043, 10–31–67, Cl. 248—48.
Appleton, Arthur I. Explosion-proof switch. 3,350,532, 10–31–67, Cl. 200—168.
Arai, Tatsuo: *See*—
Miyoshi, Shunji, Miura, and Arai. 3,350,181.
Arburg Maschinenfabrik Hehl & Sohne: *See*—
Hehl, Karl. 3,349,439.
Arc-O-Vec, Inc.: *See*—
Lennox, Thomas H. 3,350,544.
Archer, Fred C., R. B. De Diemar, and L. Schuman, to Barber-Greene Co. Adjusting means for gyratory crusher bowl. 3,350,019, 10–31–67, Cl. 241—37.
Archer, Sydney: *See*—
Schulenberg, John W., and Archer. 3,350,405.
Argabright, Perry A., to Esso Research and Engineering Co. Derivative of tetrahydrofuran. 3,350,414, 10–31–67, Cl. 260—347.7.
Argabright, Perry A., and L. J. Engel, to Esso Research and Engineering Co. High-energy propellant oxidizer and method for synthesis. 3,350,440, 10–31–67, Cl. 260—490.
Arkell and Smiths: *See*—
Woodford, Reinold T. 3,349,990.
Armour and Co.: *See*—
Schwaller, Lando. 3,349,583.
Armstrong, Robert H. Fluid actuated door operating mechanism. 3,349,516, 10–31–67, Cl. 49—25.
Arnold, Johannes: *See*—
Soenksen, Uwe, Bauer, Sanne, and Arnold. 3,350,340.
Arnold, John L., R. L. Pearce, and H. G. Scholten, to The Dow Chemical Co. Gas drying process. 3,349,544, 10–31–67, Cl. 55—32.
Arnold, Marian H.: *See*—
Arnold, Wayne R. 3,350,563.
Arnold, Wayne R., deceased; M. H. Arnold, executrix, to Schlumberger Technology Corp. Neutron generating apparatus having a target containing both deuterium and tritium gases. 3,350,563, 10–31–67, Cl. 250—84.5.
Aron, Edward A., to United States of America, Air Force. Track selection logic for magnetic storage drum. 3,350,700, 10–31–67, Cl. 340—174.1.
Aronoff, Leonard S. Illuminated sign. 3,349,511, 10–31–67, Cl. 40—130.
Artajo, José I. M., to Research Corp. Rotary positive displacement machine. 3,349,757, 10–31–67, Cl. 123—17.
Artisan Industries, Inc.: *See*—
Monty, Leo J. 3,349,828.
Asahi Glass Co., Ltd.: *See*—
Miyoshi, Shunji, Miura, and Arai. 3,350,181.
Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Wakasa, Ryoichi, Ishida, and Takeda. 3,350,365.
Wakasa, Ryoichi, Ishida, and Ohama. 3,350,367.
Suzuki, Minoru, and Uno. 3,349,678.
Ashby, Theodore L., and C. R. Dick, to The Dow Chemical Co. Water soluble polymer of diglycidyl ether and an alkanolamine. 3,350,325, 10–31–67, Cl. 260—2.
Ashton Automation International, Inc.: *See*—
Ashton, Harry M. 3,350,132.
Ashton, Harry M., to Ashton Automation International, Inc. Extractor jaw. 3,350,132, 10–31–67, Cl. 294—88.
Associated Engineering Ltd.: *See*—
Strauch, Heinrich. 3,350,670.
Associated Spring Corp.: *See*—
Cucuel, Norman A. 3,349,473.
Astrodata, Inc.: *See*—
Walker, Winston G. 3,350,658.
Atkinson, Francis D., to United States of America, Air Force. Differential pressure control switch. 3,350,524, 10–31–67, Cl. 200—82.
Atlantic Products Corp.: *See*—
Kish, Michael, Jr. 3,349,737.
Kish, Michael, Jr. 3,349,738.
Atlantic Research Corp.: *See*—
Blumenkranz, James J. 3,350,056.
Cromp, Theodore Q., and Savage. 3,350,098.
Atlas Kassenfabrik A.G.: *See*—
Gloor, Byron T. 3,349,559.
Atomic Power Development Associates, Inc.: *See*—
Warberg, Henrik S., and McClure. 3,350,276.
Attwood, John G., and R. L. Kosrow, to Union Special Machine Co. Vibratory apparatus. 3,350,582, 10–31–67, Cl. 310—8.1.
Austin, Arthur L.: *See*—
Patton, John T., Jr., Hartman, and Austin. 3,350,389.
Austin, Forrest L., and R. T. Cornelius, to The Cornelius Co. Coffee brewing apparatus. 3,349,691, 10–31–67, Cl. 99—289.
Automated Building Components, Inc.: *See*—
Jurelt, John C. 3,350,501.
Automation Products, Inc.: *See*—
Banks, William B. 3,349,604.
Automotive Products Co. Ltd.: *See*—
Townsend, Albert W. 3,350,121.
Avco Corp.: *See*—
McNair, Robert J. 3,350,644.
Stott, Ted, Schulze, and Gunyou. 3,349,823.
Averill, Charles C., to Union Steel Products Co. Portable and collapsible stacking bins or crates. 3,349,939, 10–31–67, Cl. 220—6.
Avery, Howard W., to General Electric Co. Fluid amplifier shift register circuit. 3,350,008, 10–31–67, Cl. 235—201.
B & W Mfg. Co., Inc.: *See*—
Boser, Ronald J. 3,349,734.
BOT Brassert Oxygen Technik A.G.: *See*—
Bashford, Roy W. 3,350,196.
Babcock Electronics Corp.: *See*—
Cartwright, Victor F. 3,350,711.
Babcock & Wilcox Co., The: *See*—
Poole, Arthur J., and Rackley. 3,349,826.
Rogers, Charles E. 3,349,546.
Babcock & Wilcox Ltd.: *See*—
Skubats, Wolfgang. 3,349,756.
Babits, Victor A., to General Dynamics Corp. Laser mixer and IF amplifier. 3,350,566, 10–31–67, Cl. 250—199.
Babos, Jean, to Societe d'Optique et de Mecanique de Haute Precision. Photogrammetric plotter. 3,349,491, 10–31–67, Cl. 33—20.
Bächtold, Theodor: *See*—
Bührer, Bächtold, and Hellmund. 3,350,083.
Bacon, Oliver M., to The Hunnewell Soap Co. Process for preparing a coagulant from pyrophyllite and clarifying water with it. 3,350,303, 10–31–67, Cl. 210—47.
Bacon, Oliver M., to The Hunnewell Soap Co. Water treatment compositions and processes. 3,350,804, 10–31–67, Cl. 210—52.
Badey, Paul E., and J. A. Oppel, to General Electric Co. High voltage electric circuit breaker with means for precisely coordinating the operation of widely spaced components. 3,350,519, 10–31–67, Cl. 200—48.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Friedenreich, Heinrich, and Erdmann. 3,350,119.
Huenig, Siegfried, and Luecke. 3,350,390.
Moeller, Hans. 3,350,881.
Petri, Norbert, and Strehler. 3,350,393.
Reicheneder, Franz, Fischer, and Dury. 3,350,193.
Soenksen, Uwe, Bauer, Sanne, and Arnold. 3,350,340.
Wisseroth, Karl, Pietsch, and Kastning. 3,350,376.
Baer, John, to Precision Specialties, Inc. Magnetic spring clutch assembly. 3,349,880, 10–31–67, Cl. 192—84.
Baer, Samuel. Nasal clamp. 3,349,771, 10–31–67, Cl. 128—325.
Bahl, James M., and R. E. Haight, to Deere & Co. Hydraulic control valve. 3,349,670, 10–31–67, Cl. 91—412.
Baier, Richard, to American Smelting and Refining Co. Float control valve for continuous casting. 3,349,838, 10–31–67, Cl. 164—281.
Baisero, Giobatta: *See*—
Stocchi, Virgilio, Magelli, and Baisero. 3,349,545.
Baker, Don R., H. M. Pitt, and S. Y. C. Soong, to Stauffer Chemical Co. Method of desuckering tobacco plants with di- and tri-thiocarbonates and thiodichloromethylsulfides. 3,350,191, 10–31–67, Cl. 71—78.
Baker, Donald E., and W. G. Culpin, to The E. T. Oakes Corp. Apparatus for dividing dough and like materials. 3,349,438, 10–31–67, Cl. 18—30.
Baker, J. T., Chemical Co.: *See*—
Schramm, Charles H., and Zief. 3,350,355.
Schramm, Charles H., and Zief. 3,350,356.
Baker, John G., to Baker Mfg. Co. Float for hydropneumatic tank. 3,349,945, 10–31–67, Cl. 220—26.
Baker Mfg. Co.: *See*—
Baker, John G. 3,349,945.
Baker Oil Tools, Inc.: *See*—
Chenoweth, David V. 3,349,858.
Bakis, Raimo, to International Business Machines Corp. Scanning apparatus employing means compensating for variations in character height and width and for variations in the position or linearity of lines of print. 3,350,505, 10–31–67, Cl. 178—6.8.
Balaguer, Rodolfo R., to Patent Holding Corp. Dry cell battery having carbonaceous material disposed between the layers of the battery mix. 3,350,235, 10–31–67, Cl. 136—107.
Balch, William, to Realist Inc. Combined slide file box and viewer. 3,349,509, 10–31–67, Cl. 40—63.
Balch, William, to The Quint Machine Corp. Evacuator assembly. 3,349,793, 10–31–67, Cl. 137—322.
Baldwin-Lima-Hamilton Corp.: *See*—
Pollak, Kurt. 3,349,598.
Balinski, Henry A., to United States Gypsum Co. Structural member with an X configuration web. 3,349,535, 10–31–67, Cl. 52—634.
Balmer, James G., Jr., and R. G. Plantholt, to Xerox Corp. Xerographic plate. 3,350,203, 10–31–67, Cl. 96—1.5.
Bandemer, George J., and C. E. Draper, to United States of America, Air Force. Adjustable spherical curvature correction device. 3,349,492, 10–31–67, Cl. 33—20.
Bang, Milton A., to King-Seeley Thermos Co. Door and track assembly. 3,350,152, 10–31–67, Cl. 312—323.
Banks, William B., to Automation Products, Inc. Apparatus for determining physical properties of materials. 3,349,604, 10–31–67, Cl. 73—32.
Barany, Janos T., to Potter Instrument Co., Inc. Circuit for suppressing noise when switching between various A-C sources superimposed on different D-C biases. 3,350,573, 10–31–67, Cl. 307—88.5.
Barber-Colman Co.: *See*—
Schewe, Richard A. 3,350,032.
Barber-Green Co.: *See*—
Archer, Fred C., De Diemar, and Schuman. 3,350,019.
Bardash, Irwin: *See*—
Siekanowicz, Wieslaw W., Schilling, and Bardash. 3,350,663.
Barecki, Chester J., and W. E. Nordmark, to American Seating Co. Folding table. 3,349,728, 10–31–67, Cl. 108—131.
Barger, Larry N. Device for typing an auxiliary character on a typewriter. 3,349,889, 10–31–67, Cl. 197—180.
Baring, John A., to Honeywell Inc. Flash exposure meter. 3,349,666, 10–31–67, Cl. 88—23.
Barmer Machinenfabrik Aktiengesellschaft Wuppertal-Oberbarman: *See*—
Schippers, Heinz, and Niemeyer. 3,349,433.
Barnes, Alfred H., deceased (by M. C. Seham, executor), and C. G. Hadwick, to Union Carbide Corp. High temperature vacuum furnace. 3,350,495, 10–31–67, Cl. 13—31.
Barney, John D., and L. A. Zanteson, to Space-General Corp. Battery charging control. 3,350,618, 10–31–67, Cl. 320—5.

Barre, Marcel J. C. Conveyor for handling bulk materials. 3,349,892, 10–31–67, Cl. 198—91.
Barrett, Marlin W., D. G. Cramer, and R. B. Oltman, to Pittsburgh Plate Glass Co. Apparatus for forming ribbon with lateral force means. 3,350,188, 10–31–67, Cl. 65—165.
Barron, Benjamin, to Lear Siegler, Inc. Voltage converter circuits with shiftable tap on primary winding. 3,350,620, 10–31–67, Cl. 321—2.
Bashford, Roy W., to BOT Brassert Oxygen Technik A.G. Basic steelmaking. 3,350,196, 10–31–67, Cl. 75—52.
Bassi, Mauro: *See*—
Manica, Michele, and Bassi. 3,350,343.
Bastian-Blessing Co., The: *See*—
Yuza, Rudolph A. 3,349,968.
Bauer, Ernst: *See*—
Soenksen, Uwe, Bauer, Sanne, and Arnold. 3,350,340.
Bauer, Ludwig, to International Standard Electric Corp. Pushbutton cover ring. 3,350,516, 10–31–67, Cl. 179—179.
Beach, John R., to Signode Corp. Metal buckle. 3,349,444, 10–31–67, Cl. 24—74.
Beattie-Coleman, Inc.: *See*—
Majoram, Ernest B., and Swift. 3,350,546.
Beck, Edward A., to A. E. Staley Mfg. Co. Method of crease-proofing and stiffening cellulose textile with dimethylol ethylene urea and amylopectin size. 3,350,162, 10–31–67, Cl. 8—116.6.
Beck, Robert M., and D. B. Cachelin, to Scientific Data Systems, Inc. Clock generator. 3,350,569, 10–31–67, Cl. 307—88.5.
Becker, John C., Jr., and H. A. Eubank, deceased (by J. S. Eubank, administratrix), to Aerojet-General Corp. Method of making rocket combustion chamber. 3,349,464, 10–31–67, Cl. 29—157.
Beckman, Edward V., W. R. Good, J. H. Schickling, and A. Young, to SKF Industries, Inc. Expansion mounting. 3,350,144, 10–31–67, Cl. 308—6.
Beckman Instruments, Inc.: *See*—
Pickels, Edward G. 3,350,002.
Neubauer, Louis. 3,350,118.
Bedi, Ram D., to M & T Chemicals Inc. Method of preventing etch on cast iron in plating baths. 3,350,287, 10–31–67, Cl. 204—147.
Beer, Ludwig A.: *See*—
Hardy, Edgar E., and Beer. 3,350,332.
Beer, Ludwig A., and E. E. Hardy, to Monsanto Co. Free-flowing particulate polyvinyl chloride blends. 3,350,333, 10–31–67, Cl. 260—22.
Beers, Melvin D., to General Electric Co. Organosilicon compositions. 3,350,344, 10–31–67, Cl. 260—37.
Beeton, Thomas B., D. J. N. Hoffman, and D. J. Du Plessis, to South African Iron and Steel Industrial Corp., Ltd. Ferrosilicon alloys. 3,350,197, 10–31–67, Cl. 75—122.5.
Begley, John W., to Phillips Petroleum Co. Masterbatching rubber cement and rubber reinforcing agents. 3,350,342, 10–31–67, Cl. 260—33.6.
Behlen Mfg. Co., Inc.: *See*—
Behlen, Walter D. 3,349,794.
Behlen, Walter D., to Behlen Mfg. Co., Inc. Hydraulically powered self-propelled continuously fed irrigation device. 3,349,794, 10–31–67, Cl. 137—344.
Bell, James A. E., and D. H. Laing, ½ each to said Bell, said Laing and J. D. Jones. Low temperature cigarette. 3,349,776, 10–31–67, Cl. 131—8.
Bell, John A., D. B. Cofer, and G. E. Sorber, said Cofer assignor to Southwire Co., Inc., and said Bell and Sorber assors. to Western Electric Co., Inc. Method for producing a continuous length of copper rod from molten copper metal. 3,349,471, 10–31–67, Cl. 29—528.
Bell & Howell Co.: *See*—
Bell, Norton W. 3,350,701.
Levin, Herman, and Maxon. 3,349,667.
Bell, Norton W., to Bell & Howell Co. Measuring circuit employing oppositely varying voltage dependent capacitive means. 3,350,701, 10–31–67, Cl. 340—186.
Bell Telephone Laboratories, Inc.: *See*—
Bloom, Stephen D., and Ussery. 3,350,661.
Cagle, William B., and Menne. 3,350,692.
Fair, Irvin E. 3,350,665.
Gallaher, Lee E., and Redner. 3,350,628.
Lee, Robert C., Soffel, and Vigilante. 3,350,509.
Smith, David H., and Tolman. 3,350,199.
Swanson, Richard M. 3,350,508.
Bemeter, Laszlo, B. Galgoczi, E. Bozzay, and I. Zagyval, to Nikex Nehezipari Kulkereskedelmi Vallalat. Clarification of surface waters. 3,350,302, 10–31–67, Cl. 210—45.
Benbow, Henry A.: *See*—
Davis, Gordon P., and Benbow. 3,350,594.
Bendiksen, Bjarne C., to U.S. Industries, Inc. Indicating apparatus. 3,350,705, 10–31–67, Cl. 340—324.
Bendix Corp., The: *See*—
James, Robert L. 3,350,574.
Pochtar, Michael. 3,350,637.
Pursiano, Leonard C., Cohen, and Ranes. 3,350,709.
Benjamin, Harley O., and A. J. Thompson, to Great Northern Paper Co. Apparatus for marking selected sections of a web material. 3,349,611, 10–31–67, Cl. 73—159.
Bennethum, George F.: *See*—
Goodhart, Peter L. 3,350,253.
Benoit, Gerard, Ferdy and Franz Mayer, and P. Thomas. Electrical connectors having positive gripping action. 3,350,680, 10–31–67, Cl. 339—253.
Benoit, Gerard, Ferdy and Franz Mayer, and P. Thomas. Electrical connectors. 3,350,681, 10–31–67, Cl. 339—253.
Bense, William M., to Leesona Corp. Winding machine. 3,350,022, 10–31–67, Cl. 242—45.
Benton Harbor Engineering Works, Inc.: *See*—
Hoffman, Robert L. 3,349,671.
Benusa, William F., and N. D. Coggeshall, to Gulf Research & Development Co. Absorption measuring apparatus and method. 3,349,625, 10–31–67, Cl. 73—432.
Beran, Jaromir, D. Misárek, and M. Futera, to Ckd Praha, oborovy podnik. Adjustable diffuser blades. 3,349,997, 10–31–67, Cl. 230—114.
Berec, John F., and R. Bray, to Philco Ford Corp. Converter stage in which oscillator tuned circuit also serves as output load impedance for RF stage. 3,350,648, 10–31–67, Cl. 325—440.
Berg, Louis A. Device for fastening lines. 3,349,745, 10–31–67, Cl. 114—230.
Berger, Bernard H., and P. M. Kerschner, to Cities Service Oil Co. Antifreeze composition. 3,350,816, 10–31–67, Cl. 252—75.
Berger, George C. Silage distributor. 3,349,929, 10–31–67, Cl. 214—17.
Berger, Victor M., and S. A. Scherer, to Electro-Char Corp. Electric cooking apparatus. 3,350,543, 10–31–67, Cl. 219—447.
Bergquist, Arthur E. Emergency track. 3,350,013, 10–31–67, Cl. 238—14.
Bergy, Malcolm E., and T. R. Pyke, to The Upjohn Co. Cremeomycin and process for making. 3,350,269, 10–31–67, Cl. 167—65.
Bernardi, Gian C.: *See*—
Sianesi, Dario, Bernardi, and Diotallevi. 3,350,373.
Berther, Claus: *See*—
Schultze, Hans-Joachim, and Berther. 3,350,392.
Bessing, Reinhold: *See*—
Dresia, Heinrich, Fischotter, and Bessing. 3,350,561.
Bessmer, Stanley J.: *See*—
Cash, Carl G., Brower, and Bessmer. 3,350,330.
Beteiligungs- und Patentverwaltungsgesellschaft mit Beschrankter Haftung: *See*—
Müller, Erich. 3,349,835.
Bethlehem Steel Corp.: *See*—
Thomas, Hulme W. 3,349,591.
Olsson, Dexter A., and Eriksson. 3,349,608.
Bettcher Industries, Inc.: *See*—
Bettcher, Louis A. 3,349,485.
Bettcher, Louis A., to Bettcher Industries, Inc. Rotary knife with sharpener. 3,349,485, 10–31–67, Cl. 30—138.
Betz, Carl R., to Components, Inc. Passivating silicon semiconductor devices with sputtered tungsten oxide at low temperatures. 3,350,293, 10–31–67, Cl. 204—192.
Biel, John H., and H. B. Hoppe, to Aldrich Chemical Co., Inc. N-phenyl amides of 4-phenyl-4-hydroxy-piperidino alkyl acids. 3,350,403, 10–31–67, Cl. 260—294.
Biermann, William A.: *See*—
Duncan, Robert J., and Biermann. 3,349,804.
Big Dutchman, Inc.: *See*—
Van Huis, Robert L. 3,349,753.
Big Eight Implement Co.: *See*—
Cain, Leonard L., and Rose. 3,349,854.
Bijvoet, Leonardus A. N., to Inland Steel Co. Method and apparatus for forming a plurality of axially spaced beads in a hollow, substantially cylindrical sheet metal blank. 3,349,600, 10–31–67, Cl. 72—393.
Bijvoet, Leonardus A. N., to Inland Steel Co. Reinforcement structure for shipping containers made of light gauge steel or the like. 3,349,952, 10–31–67, Cl. 220—67.
Billingsley, Robert L.: *See*—
Kasper, Frank S., and Billingsley. 3,350,688.
Binder, Horst: *See*—
Sandstede, Gerd, Binder, Kohling, and Richter. 3,350,200.
Bini, Riccardo. Continuous bread-making machine. 3,349,725, 10–31–67, Cl. 107—36.
Binning, Robert C., to Monsanto Co. Production and recovery of oxygenated hydrocarbons by plural distillation. 3,350,415, 10–31–67, Cl. 260—348.5.
Binning, Robert C.: *See*—
Null, Harold R., Bowe, and Binning. 3,350,419.
Binning, Robert C., H. R. Null, and S. L. Reid, to Monsanto Co. Production and recovery of oxygenated hydrocarbons by plural distillation. 3,350,416, 10–31–67, Cl. 260—348.5.
Binning, Robert C., and H. R. Null, to Monsanto Co. Production and recovery of propylene oxide by plural stage distillation and caustic addition. 3,350,417, 10–31–67, Cl. 260—348.5.
Binning, Robert C.: *See*—
Bowe, Leon E., Binning, and Null. 3,350,418.
Binning, Robert C., L. E. Bowe, and H. R. Null, to Monsanto Co. Production and recovery of oxygenated hydrocarbons by plural distillation. 3,350,421, 10–31–67, Cl. 260—348.5.
Binning, Robert C., L. E. Bowe, and H. R. Null, to Monsanto Co. Production and recovery of acetic acid by plural distillation. 3,350,445, 10–31–67, Cl. 260—533.
Bishop, Roy L., Jr.: *See*—
Bishop, Forest M., R. I. Bishop, Jr., and Howard. 3,350,101.
Bishop, Forest M., R. I. Bishop, Jr., and W. L. Howard. Golf swing aid. 3,350,101, 10–31–67, Cl. 273—186.
Black, Robert C.: *See*—
Foster, Walter E., and Black. 3,349,445.
Black, Sivalls & Bryson, Inc.: *See*—
Hoipkemeier, Fredrick L. 3,349,547.
Blaeser, Gustav H., to United States of America, Air Force. Frequency converter utilizing a tunnel diode and a microstrip line. 3,350,649, 10–31–67, Cl. 325—44.
Blake, George T. Device for attachment to the corner of a building to facilitate the construction thereof. 3,349,494, 10–31–67, Cl. 33—85.
Blanford, William F., to Parke, Davis & Co. Surgical drape. 3,349,765, 10–31–67, Cl. 128—132.
Blaskovic, Silvio U.: *See*—
Krakinowski, Morris, and Blaskovic. 3,350,518.

Blatt, Leland F. Material handling equipment. 3,349,927, 10,31,67, Cl. 214—1.

Blattner, Frederick R. Animation technique. 3,350,158, 10–31–67, Cl. 352—50.

Bleh, Otto: *See*—
Hass, Karl, Lenz, and Bleh. 3,350,463.

Bleiweiss, Arthur F., G. Colombo, and J. B. Dickson, to Lehigh Valley Industries, Inc. Fixed load thermomotive flasher with normally engaged contacts. 3,350,527, 10–31–67, Cl. 200—122.

Bliss, E. W., Co.: *See*—
Thomas, Charles S., and Neff. 3,350,037.

Blix, Weltzin B., Jr., and E. H. Krause, Jr. Tie bed scarifier. 3,349,717, 10–31–67, Cl. 104—9.

Bloom, Carl, to Worthington Corp. Unloading system for rotary compressor. 3,349,994, 10–31–67, Cl. 230—45.

Bloom, Earl M., Jr., and V. J. Faidley, to International Business Machines Corp. Universal character set addressing in high speed printers. 3,349,695, 10–31–67, Cl. 101—93.

Bloom, Stephen D., and P. W. Ussery, to Bell Telephone Laboratories, Inc. High efficiency inverter with extended transistor saturation intervals. 3,350,661, 10–31–67, Cl. 331—113.

Blume, Maurice. Fence stretcher. 3,350,064, 10–31–67, Cl. 254—83.

Blumenkranz, James J., to Atlantic Research Corp. Sealing means for a gate valve. 3,350,056, 10–31–67, Cl. 251—100.

Boardman, Franklin: *See*—
Reimschuessell, Herbert K., and Boardman. 3,350,364.

Bock Corp.: *See*—
Bock, John C. 3,349,754.

Bock, John C., to Bock Corp. Heat exchange device. 3,349,754, 10–31–67, Cl. 122—17.

Boeing Co., The: *See*—
Richardson, David A. 3,350,541.

Bollenbach, Frederic W.: *See*—
Ellis, Myron B., and Bollenbach. 3,349,993.

Bonfield, John H., and A. W. Sogn, to Allied Chemical Corp. Process for separating cyclohexane oxidation products. 3,350,444, 10–31–67, Cl. 260—531.

Bonilla, Charles F., and W. T. Sha, to United States of America, Atomic Energy Commission. Void detection utilizing neutron attenuation. 3,350,564, 10–31–67, Cl. 250—106.

Bono, Luigi, to Necchi Societa per Azioni. Sewing apparatus for sewing in accordance with a pre-formed pattern. 3,349,731, 10–31–67, Cl. 112—2.

Borne, Jean. Means for casting off knitted fabric stitches. 3,349,576, 10–31–67, Cl. 66—148.

Bosch, Robert, G.m.b.H.: *See*—
Sandstede, Gerd, Binder, Kohling, and Richter. 3,350,200.
Niemann, Gert. 3,350,236.

Boser, Ronald J., to B & W Mfg. Co., Inc. Sewing machine feeder drive means. 3,349,734, 10–31–67, Cl. 112—203.

Bourgeois, Hector S., to United Aircraft Corp. Bypass connection for splitting a fuel flow. 3,349,803, 10–31–67, Cl. 138—37.

Boutonnet, Alexandre, to Societe Rhodiaceta. False twist spindle. 3,349,554, 10–31–67, Cl. 57—77.3.

Bowe, Leon E., R. C. Binning, and H. R. Null, to Monsanto Co. Production and recovery of propylene oxide by plural distillation. 3,350,418, 10–31–67, Cl. 260—348.5.

Bowe, Leon E.: *See*—
Null, Harold R., Bowe, and Binning. 3,350,419.
Binning, Robert C., Bowe, and Null. 3,350,421.
Binning, Robert C., Bowe, and Null. 3,350,445.

Bowen, Elmer A.: *See*—
Shesler, Elmer G., Bowen, and Burden. 3,350,485.

Bowers, Rolland G., to Sun Oil Co. Method of producing spherical solids. 3,350,482, 10–31–67, Cl. 264—13.

Box, Theodor. Bottle carrying and stacking case. 3,349,943, 10–31–67, Cl. 220—21.

Boyen, John L., to C-C Industries. Cyclone separator for separating steam from water. 3,349,548, 10–31–67, Cl. 55—457.

Bozek, John W.: *See*—
Royer, David R., and Bozek. 3,349,919.

Bozzay, Emma: *See*—
Demeter, Laszlo, Galgoczi, Bozzay, and Zagyvai. 3,350,302.

Brach, Walter E.: *See*—
Siess, Otto, and Brach. 3,349,646.

Bradley, William: *See*—
Gretton, Neil B. C., Rees, and Bradley. 3,350,278.

Bradt, Lynn, and C. E. Jacoby, to SI Handling System, Inc. Material handling apparatus. 3,349,718, 10–31–67, Cl. 104—88.

Brady, William T.: *See*—
Hagemeyer, Hugh J., Jr., and Brady. 3,350,358.

Braid, Milton, and H. Myers, to Mobil Oil Corp. Lubricating oil additives. 3,350,348, 10–31–67, Cl. 252—46.6.

Braun, Philip N.: *See*—
Braun, Vincent P., Patell, and P. N. Braun. 3,349,673.

Braun, Vincent P., T. Patell, and P. N. Braun, to Tag-O-Matic Machine Co., Inc. Laundry listing and marking. 3,349,673. 10–31–67, Cl. 93—88.

Brautigam, Lawrence C. Package for enclosing and dispensing a coiled member. 3,349,901, 10–31–67, Cl. 206—78.

Bray, Ralph: *See*—
Berec, John F., and Bray. 3,350,648.

Bredall, Charles H., to United States of America, Air Force. Satellite trajectory simulator. 3,350,549, 10–31–67, Cl. 235—150.27.

Breen, Alvin L., to E. I. du Pont de Nemours and Co. Process for the production of sharp-edge fibers. 3,350,488, 10–31–67, Cl. 264—171.

Breneman, Joseph C., to Rubbermaid Inc. Continuous mixing machines. 3,349,432, 10–31–67, Cl. 18—2.

Breneman, Joseph C., to Rubbermaid Inc. Beverage container carrying case. 3,349,958, 10–31–67, Cl. 220—117.

Brewer-Titchener Corp., The: *See*—
Webb, Elmer J. 3,349,675.

Brichard, Edgard, E. Plumat, and M. Duperroy, to Glaverbel. Process and apparatus for the homogenisation of molten glass in the chamber connecting the refining furnace to the working compartment. 3,350,187, 10–31–67, Cl. 65—134.

Bridevaux, Georges O. Alarm time-piece. 3,349,555, 10–31–67, Cl. 58—16.

Bridges, Donald E., to Dipstix Ltd. Liquid level indicators. 3,350,710, 10–31–67, Cl. 340—410.

Bridges, Thomas F.: *See*—
Field, Sheldon B., and Bridges. 3,349,743.

Bristol-Myers Co.: *See*—
Granatek, Edmund S. and A. P. 3,350,266.

Bristol Siddley Engines Ltd.: *See*—
Tyrrell, Albert R., and Hunt. 3,349,566.

British Hydrocarbon Chemicals Ltd.: *See*—
Wirth, Max M. 3,350,474.

British Relay Ltd.: *See*—
Russell, Kenneth A. 3,350,502.

British Titan Products Co. Ltd.: *See*—
Callow, Alan E., Hughes, and Groves. 3,350,171.

Brocher, Eric, and W. Dallenbach. Method of and generator for producing alternating electric power. 3,350,584, 10–31–67, Cl. 310—11.

Brockett, Peter C., to Laboratory for Electronics, Inc. Counting circuit for traffic detection pulse inputs at random pulse rates temporarily exceeding the average rate. 3,350,547, 10–31–67, Cl. 235—92.

Brockman, John J., and B. L. Goss, to General Electric Co. Control system for a synchronous motor. 3,350,613, 10–31–67, Cl. 318—176.

Brondyke, Kenneth J., and R. T. Craig, to Aluminum Co. of America. Continuous casting apparatus with means supporting only outer portions of non-uniform ingot. 3,349,837, 10–31–67, Cl. 164—274.

Brooks, Burton: *See*—
Brooks, Richard J. and B. 3,350,428.

Brooks, Kenneth, to Rolls-Royce Ltd. Gas turbine by-pass jet engine. 3,349,560, 10–31–67, Cl. 60—224.

Brooks, Richard J. and B, to The Chemithon Corp. Continuous sulfonation process. 3,350,428, 10–31–67, Cl. 260—400.

Broughton, Douglas J.: *See*—
Elsenhelmer, Charles W., and Broughton. 3,349,590.

Brower, James R.: *See*—
Cash, Carl G., Brower, and Bessmer. 3,350,330.

Brown, Alexander, and H. J. Wellard, to Murex Welding Processes Ltd. Lubricating greases. 3,350,307, 10–31–67, Cl. 252—30.

Brown, Boveri & Cie, Aktiengesellschaft: *See*—
Plust, Heinz-Gunther, and Telschow. 3,350,233.

Brown, Harry: *See*—
Cowell, Murl. 3,349,730.

Brown, Harry W., to Cutler-Hammer, Inc. Miniature switches of the rocking contact type. 3,350,521, 10–31–67, Cl. 200—67.

Brown, Herbert C. Process of producing amines. 3,350,454, 10–31–67, Cl. 260—583.

Brown, Omar L., and D. B. Peters, to E. C. Fraze. Ring-shaped tab for tear strips of containers. 3,349,949, 10–31–67, Cl. 220—54.

Browning, Lester C., deceased by R. C. Browning, executrix, and D. A. Williams, to Chemetron Corp. Apparatus for holding liquefied gases. 3,350,105, 10–31–67, Cl. 277—26.

Browning, Ruth C.: *See*—
Browning, Lester C., and Williams. 3,350,105.

Bruce, William F., to American Home Products Corp. Process for preparing bisacetamides. 3,350,446, 10–31–67, Cl. 260—559.

Brueder, Antoine, to Societe Anonyme Andre Citroen. Lever actuated, spot type disc brake. 3,349,872, 10–31–67, Cl. 188—73.

Bruns, John R.: *See*—
Trantham, Joseph C., Hennigan, Petkovich, Tek, and Bruns. 3,349,846.

Bruns, Thomas C., to Brunspile Corp. Multi-level building construction including a combination pile and column. 3,349,527, 10–31–67, Cl. 52—169.

Brunspile Corp.: *See*—
Bruns, Thomas C. 3,349,527.

Brunswick Corp.: *See*—
Schaefer, George E. 3,350,133.

Brush Beryllium Co., The: *See*—
Grosa, Alfred G., Jr. 3,349,597.

Bryant, Andrew J. Device for holding rotary cutting tools. 3,349,521, 10–31–67, Cl. 51—225.

Buchheit, Paul: *See*—
Nitzsche, Siegfried, and Buchheit. 3,350,350.

Buck, John R.: *See*—
Moore, Douglas A., Kirby, and Buck. 3,350,577.

Buczkowski, Dwight E.: *See*—
Steinbrecher, Lester, Dollman, Buczkowski, and Harrison. 3,350 284.

Buczala, George S., W. E. Rosengarten, Jr., and L. L. Copeland; said Copeland, assor., to said Buczala, and said Rosengarten. Expendable mold with means to release trapped air and prevent escape of sealant. 3,350,050, 10–31–67, Cl. 249—89.

Budd Co., The: *See*—
Nelson, Harvey J. 3,349,602.
Stacy, Robert G., Almond, and Freholm. 3,349,874.
Weglarz, Walter. 3,349,470.

Buechner, Werner W. Photographic timer and method of timing photographic treating processes. 3,349,685, 10–31–67, Cl. 95—89.

Buechner, Werner W. Photographi ctreating apparatus. 3,349,686, 10–31–67, Cl. 95—93.

Buechner, Werner W. Temperature controlling photographic bath. 3,349,688, 10–31–67, Cl. 95—96.

Bueschner, Werner W. Photographic treating apparatus. 3,349,689, 10–31–67, Cl. 95—96.

Buehler, Fritz A., to Mobil Oil Corp. Stabilization of silicone fluids with an iron compound and a poly-carboxylic acid. 3,350,309, 10–31–67, Cl. 252—37.2.

Buhrer, Erwin,: *See*—
Bührer, Erwin, Bächtold, and Hellmund. 3,350,083.

Bührer, Erwin, T. Bächtold, and K.-H. Hellmund, to E. Buhrer. Tilting mechanism for induction furnace. 3,350,083, 10–31–67, Cl. 266—38.

Buczala: *See*—
Buczala, George S., Rosengarten, and Copeland. 3,350,050.

Bundschuh, John J., to Eastman Kodak Co. Sprocketless motion picture projector. 3,350,023, 10–31–67, Cl. 242—55.11.

Bundy, Albert J.: *See*—
Jones, John C., and Bundy. 3,349,900.

Buntin, George A., to Hercules Inc. Norbornyl-1,1-dimethyl ureas and thioureas and use as herbicides. 3,350,194, 10–31–67, Cl. 71—119.

Burch, Homer A., to The Norwich Pharmacal Co. 4-amino-1-alkyl - 6 - (5 - nitro-2-furyl)-1H-pyrazolo[3,4-d]pyrimidines. 3,350,397, 10–31–67, Cl. 260—247.5.

Burchett, Ray L., and J. P. Sain, to Jacques Kreisler Mfg. Corp. Safety gas-fueled candle. 3,349,577, 10–31–67, Cl. 67—87.

Burcz, Lawrence D.: *See*—
Croswhite, Howard L., Burcz, and Leonard. 3,349,641.

Burden, Ronald F.: *See*—
Shesler, Elmer G., Bowen, and Burden. 3,350,485.

Burdett, Harry W.: *See*—
Taylor, Elliot L. and Burdett. 3,349,563.

Burgess, Warren C., Jr. Apparatus for orienting articles. 3 349,891, 10–31–67, Cl. 198—33.

Burgh, Ernest E. Process for in situ retorting of oil shale. 3,349,848, 10–31–67, Cl. 166—39.

Burlington Industries, Inc.: *See*—
Greer, James E., and Acree. 3,349,578.
Poletajev, Gury. 3,349,971.

Burns, Laurence, to Sylvania Electric Products Inc. Electroluminescent lamp having a high resistivity electrode. 3,350,596, 10–31–67, Cl. 313—108.

Burroughs Corp.: *See*—
Faulis, Donald R., and Whitson. 3,350,691.
Krantz, Frederick H. 3,350,706.
Rosenberg, Harvey. 3,350,570.

Burrows, Stanley, to The Adamson-Alliance Co. Ltd. Manipulators. 3,349,601, 10–31–67, Cl. 72—420.

Busch, Edward G.: *See*—
Trollo, Andrew C., Adams, and Busch. 3,350,716.

Bush, G. Frederick, F. R. Cotton, and J. I. Cruchet, to Ford Motor Co. Method for joining metal sheets. 3,350,536, 10–31–67, Cl. 219—92.

Buy, Alexander, to Interlake Steel Corp. Bale tie. 3,349,442, 10–31–67, Cl. 24—23.

Buzzards Corp.: *See*—
Francis, Samuel A. 3,349,613.

Byggeriets Maskinstationer Aktieselskab Copenhagen: *See*—
Waerum, Kulius N. M., and Krex. 3,349,925.

Byler, William H.: *See*—
Anspon, Harry D., Byler, and Ham. 3,350,372.

Bylo, John J. Cargo ship. 3,349,742, 10–31–67, Cl. 114—77.

Byssing, George J., to Kaiser Gypsum Co., Inc. Hollow wall partition system. 3,349,529, 10–31–67, Cl. 52—241.

C.A.V. Ltd.: *See*—
Duffy, Kenneth A. 3,349,785.

C & C Button & Trimming Co. Inc.: *See*—
Carocci, Louis. 3,349,448.

C-C Industries: *See*—
Boyen, John L. 3,349,548.

Cachelin, Donald B.: *See*—
Beck, Robert M., and Cachelin. 3,350,569.

Cagle, William B., and R. S. Menne, to Bell Telephone Laboratories, Inc. Fast register control circuit. 3,350,692, 10–31–67, Cl. 340—172.5.

Cain, Leonard L., and M. M. Rose, to Big Eight Implement Co. Eccentric vibrator. 3,349,854, 10–61–67, Cl. 172—40.

Cairns, John C., and C. R. Suska, to The Stanley Works. Hinge. 3,349,427, 10–31–67, Cl. 16—128.

Cais, Michael: *See*—
Kozikowski, John, and Cais. 3,350,430.
Kozikowski, John, and Cais. 3,350,431.

Calame-Longjean, Andre, C. Palli, and H. Guillet, to Commissariat a l'Energie Atomique. Process for the removal in a small volume, of liquid samples placed in containers and device for the practical application of the process. 3,350,565, 10–31–67, Cl. 250—106.

Caldwell, Samuel C., to General Electric Co. Independently controlled rectifier bridge converter. 3,350,621, 10–31–67, Cl. 321—7.

Calhoun, Fredrick L., and R. A. Dawson, to Industrial Dynamics Co., Ltd. Optical inspection system. 3,349,906, 10–31–67, Cl. 209—111.7.

Callery Chemical Co.: *See*—
Carr, Bruce B. 3,350,298.

Callow, Alan E., W. Hughes, and J. D. Groves, to British Titan Products Co. Ltd. Vapour phase oxidation. 3,350,171, 10–31–67, Cl. 23—202.

Calovolo, Mario, to Fiat Societa per Azioni. Gas turbine. 3,350,062, 10–31–67, Cl. 253—78.

Camera Optics Mfg. Corp.: *See*—
Zweidinger, Carl E. 3,349,668.

Caminiti, Anthony D. Spare tire carriers and/or luggage racks. 3,349,977, 10–31–67, Cl. 224—42.1.

Camp, Vernon D., to The Seeburg Corp. Vending cycle lockout circuit. 3,349,881, 10–31–67, Cl. 194—10.

Campbell, James K., to Dow Corning Corp. Finish for glass cloth. 3,350,337, 10–31–67, Cl. 260—29.6.

Campbell, Rodney B., and E. W. Strull. Dual seal shutoff valve. 3,350,055, 10–31–67, Cl. 251—89.5.

Canada, Her Majesty the Queen in the Right of, as represented by the Minister of National Defence: *See*—
Dickinson, Lionel A. 3,350,245.

Canadian International Paper Co.: *See*—
Watkins, Cecil H. 3,349,959.

Cannell, Lawrence G., to Shell Oil Co. Quadricyclonon-8-ene and its production. 3,350,468, 10–31–67, Cl. 260—666.

Canonica, Luigi: *See*—
Cappuccio, Vittorio, and Canonica. 3,350,328.

Cappuccio, Vittorio, and L. Canonica, to Montecatini Edison S.p.A. Process for the regeneration of polyethylene terephthalate. 3,350,328, 10–31–67, Cl. 260—2.3.

Carlier, Leon, to Fives Lille-Cail. Aerial tramways. 3,349,721, 10–31–67, Cl. 104—196.

Carlyle, Robert L., to The Dow Chemical Co. Method of preparing ethers of thiobisphenol compounds. 3,350,423, 10–31–67, Cl. 260—348.6.

Carman, Richard W.: *See*—
Masterson, Earl E. 3,350,091.

Carmichael, Robert, and J. Southworth, Jr., to Union Carbide Corp. Galvanic cell closure. 3,349,543, 10–31–67, Cl. 53—366.

Carmines, Alfred B. Golfer's training aid including wrist movement indicator means. 3,350,100, 10–31–67, Cl. 273—183.

Carocci, Louis, to C&C Button & Trimming Co. Inc. Tufted back mold for fabric covered button. 3,349,448, 10–31–67, Cl. 24—92.

Carr, Bruce B., to Callery Chemical Co. Process for recovery of water from saline solutions. 3,350,298, 10–31–67, Cl. 210—21.

Carrier Corp.: *See*—
Kirtland, Howard W., and Endress. 3,349,999.
Stenerson, Randolph N. 3,350,179.

Carson, Charles J.: *See*—
Weaver, John R., Jr., and Carson. 3,350,497.

Carter, Ronald P., W. A. Cowin, and M. C. Hall, to The English Electric Co. Ltd. Circuit for deriving square wave from incoming alternating signal. 3,350,578, 10–31–67, Cl. 307—88.5.

Cartwright, Victor F., to Babcock Electronics Corp. Pulsed range and angle measuring system. 3,350,711, 10–31–67, Cl. 343—11.

Casey, John A., to Sun Oil Co. Stabilized polypropylene. 3,350,347, 10–31–67, Cl. 260—45.95.

Cash, Carl G., J. R. Brower, and S. J. Bessmer, to General Electric Co. Siloxane based, non-skid coating composition. 3,350,330, 10–31–67, Cl. 260—18.

Cassidy, Herbert W. D.: *See*—
Schwartz, Jules J., and Cassidy. 3,349,564.

Castedello, William, to The Kalart Co. Inc. Photographic cut-film or plate holder. 3,349,683, 10–31–67, Cl. 95—66.

Caswell, Hollis L.: *See*—
Ames, Irving, and Caswell. 3,350,222.

Caterpillar Tractor Co.: *See*—
Lipp, Charles E., Martin, Sage, and Vicary. 3,349,982.
Moyer, Edward J., and Sullivan. 3,349,934.

Catino, Sigmund C.: *See*—
Strobel, Albert F., and Catino. 3,350,395.

Cattin, Jean V. Locking devices for straps. 3,349,450, 10–31–67, Cl. 24—206.

Cawsey, David: *See*—
Walker, Philip H., Cawsey, and Howell. 3,350,714.

Celanese Coatings Co.: *See*—
Alvey, Francis B. 3,350,353.

Celanese Corp.: *See*—
Jamison, Saunders E. 3,350,489.

Central Engineering Co., Inc.: *See*—
Daneman, Ben. 3,349,970.

Central Station Signals, Inc.: *See*—
Thomson, George M. 3,350,717.

Centre Experimental de recherches et d'Etudes du Batiment et des T.P.: *See*—
Noel, Georges. 3,349,610.

Cesare, Frank C., to Uniroyal, Inc. Bis triphenylphosphine cadmium halide, aluminum powder, mercuric dihalide reaction product and trialkyl aluminum catalyst for the polymerization of butadiene-1,3. 3,350,379, 10–31–67, Cl. 260—94.3.

Ceskoslovenska Akademie ved: *See*—
Sorm, Frantisek, and Piskala. 3,350,388.

Chamberlain, James M. W., to U.S. Stoneware, Inc. Vibratory mill. 3,350,020, 10–31–67, Cl. 241—137.

Chambers, Neil R.: *See*—
Merrill, Edward W., Shaw, and Chambers. 3,349,606.

Chance, Leon H., and E. K. Leonard, to United States of America, Agriculture. Acid catalyzed modification of cellulosic materials with methylolated, halo-cyanoacetamides. 3,350,164, 10–31–67, Cl. 8—116.3.

Chandley, Edwin F., E. Levy, and A. J. Lowe, to Lankro Chemicals Ltd. Urethane polymers and methods of applying compositions containing the polymers. 3,350,361, 10–31–67, Cl. 260—77.5.

Chapman, Donald F., to Thorn Electric Industries Ltd. Transformer with two-part core for fluorescent lamp circuits. 3,350,605, 10–31–67, Cl. 315—278.

Chapman, Michael C., W. D. Weathrup, and L. F. Humphrey, to Reed Paper Group Ltd. Protective case. 3,349,986, 10–31–67, Cl. 229—14.

Chemetron Corp.: *See*—
Browning, Lester C., and Williams. 3,350,105.
Smith, Robert L. 3,349,973.

Chemical Construction Corp.: *See*—
Nebgen, William H. 3,349,569.
Nebgen, William H. 3,349,571.
Rinckhoff, John B. 3,350,169.

Chemithon Corp., The: *See*—
Brooks, Richard J. and B. 3,350,428.

Chenoweth, David V., to Baker Oil Tools, Inc. Hydraulic jarring apparatus having a restricted flow path from its chamber with constant flow regulator means. 3,349,858, 10–31–67, Cl. 175—297.

Cherbulies, Emile, and J. Rabinowitz, to Hooker Chemical Corp. Monoesters of phosphonic acids. 3,350,478, 10–31–67, Cl. 260—953.

Cherbulies, Emile, and J. Rabinowitz, to Hooker Chemical Corp. Monoesters of phosphonic acids. 3,350,479, 10–31–67, Cl. 260—956.

Cherbulies, Emile, and J. Rabinowitz, to Hooker Chemical Corp. Monoesters of phosphonic acids. 3,350,480, 10–31–67, Cl. 260—961.

Cherbulies, Emile, and J. Rabinowitz, to Hooker Chemical Corp. Monoesters of phosphonic acids. 3,350,481, 10–31–67, Cl. 260—901.

Chernow, Fred, to Electro-Tec Corp. Image forming screen utilising electroluminescent ferroelectric and photoconductive materials. 3,350,506, 10–31–67, Cl. 178—7.3.

Cheskin, David B. Construction of two-way composite building system. 3,349,539, 10–31–67, Cl. 52—741.

Chester, Henry, to Henco Mfg. Co., Inc. Fluid mixer with valving. 3,349,788, 10–31–67, Cl. 137—205.5.

Chevrette, Daniel M.: *See*—
Chevrette, Wilfred J. and D. M. 3,350,097.

Chevrette, Wilfred J. and D. M. Ball target with multi-directional discharge openings. 3,350,097, 10–31–67, Cl. 273—105.

Chicago Aerial Industries, Inc.: *See*—
Goldhammer, Jerome S. 3,349,687.

Choquette, J Walter, Jr., and W. H. Ridley, to The Foxboro Co. Boil control system. 3,350,012, 10–31–67, Cl. 236—17.

Christiansen, Gerald E., and W. E. Politz, to S. A. Young. Cam controlled anti-siphon mixing valve. 3,349,802, 10–31–67, Cl. 137—636.1.

Christiansen, Howard C., to United Aircraft Corp. Amplifierless cascade resolvers with means to minimize phase shift between stages. 3,350,550, 10–31–67, Cl. 235—189.

Christensen, Erik C. P., to F. L. Smidth & Co. Rotary kiln installations. 3,350,077, 10–31–67, Cl. 263—32.

Chu, Pe T.: *See*—
Kobus, Stanislas, and Chu. 3,350,696.

Cities Service Oil Co.: *See*—
Berger, Bernard H., and Kerschner. 3,350,316.

Ckd Praha, oborovy podnik: *See*—
Beran, Jaromir, Misarek, and Futera. 3,349,997.

Clapp, Charles W., to General Electric Co. Linear rectifier circuit. 3,350,623, 10–31–67, Cl. 321—8.

Clarkson, Jack, to Sir James Hill & Sons Ltd. Combing machinery. 3,349,440, 10–31–67, Cl. 19—122.

Clarkson, Jack J.: *See*—
Rutledge, William A.; and Clarkson. 3,350,588.

Clary Corp.: *See*—
Clary, Hugh L., and Schwend. 3,350,005.

Clary, Hugh L., and F. N. Schwend, to Clary Corp. Ten key printing calculating machine. 3,350,005, 10–31–67, Cl. 235—60.

Clasen, Edward W. Mobile walking aid with brake means. 3,350,095, 10–31–67, Cl. 272—70.3.

Claude Pas et Visseaux: *See*—
Gomonet, Edouard. 3,350,601.

Clay, Shirley G.: *See*—
McConnaughey, Paul W., and Clay. 3,350,175.

Clayton Anderson & Co.: *See*—
Reddick, John A. 3,349,911.

Clayton, Robert E.: *See*—
Vanderbilt, Byron M., and Clayton. 3,350,345.

Clements, Clarence J., Jr., and W. B. Leaf, to Prototypes, Inc. Blood pressure measuring and recording device. 3,349,763, 10–31–67, Cl. 128—2.05.

Cleveland Technical Center, Inc.: *See*—
Davis, Gary W. 3,349,722.

Clevite Corp.: *See*—
Stewart, Ross E., and Drake. 3,350,042.

Cline, Edward T., to E. I. du Pont de Nemours and Co. Oxyluminescent light sources and processes of making same. 3,350,553, 10–31–67, Cl. 240—2.25.

Closmann, Philip J., to Shell Oil Co. Thermoaugmentation of oil production from subterranean reservoirs. 3,349,849, 10–31–67, Cl. 166—40.

Cobb, James S., Jr., to E. I. du Pont de Nemours and Co. Spinneret surface finishing. 3,349,522, 10–31–67, Cl. 51—324.

Cochin, Solomon. Bottle cap. 3,349,935, 10–31–67, Cl. 215—9.

Coda, Albert B. Post for wire fences. 3,350,067, 10–31–67, Cl. 256—48.

Cofer, Daniel B.: *See*—
Bell, John A., Cofer, and Sorber. 3,349,471.

Coggeshall, Norman D.: *See*—
Benusa, William F., and Coggeshall. 3,349,625.

Cohen, Arnold H.: *See*—
Pursiano, Leonard C., Cohen, and Banes. 3,350,709.

Colby, Edward E., and R. G. Hager, to The Procter & Gamble Co. Method of making a canned, baked pie. 3,350,208, 10–31–67, Cl. 99—92.

Colby, Theodore W., Jr., and C. M. Kron, to Phillips Petroleum Co. Carbon black production. 3,350,173, 10–31–67, Cl .23—209.4.

Cole, Terry, D. K. Donald, J. J. Lambe, and W. C. Vassell, to Ford Motor Co. Electroluminescent process including an ionically conducting electrolyte. 3,350,597, 10–31–67, Cl. 313—108.

Colgate-Palmolive Co.: *See*—
Damron, William M. 3,349,975.
Douglas, Livingston C. 3,349,515.
Drukker, Alexander E., and Judd. 3,350,391.
Gagliardi, Domenick D. 3,350,218.
Hewitt, Gordon T. 3,350,320.

Collins Radio Co.: *See*—
Kemper, Arthur L. 3,350,650.
Hlrvela, Robert J. 3,350,697.

Colombo, George: *See*—
Bielweiss, Arthur F., Colombo, and Dickson. 3,350,527.

Colpo, Battista A. Automatic transmission. 3,349,636, 10–31–67, Cl. 74—368.

Colt Mfg. Co., Inc.: *See*—
Schlapman, William J., and Croisant. 3,349,631.

Commissariat a l'Energie Atomique: *See*—
Calame-Longjean, Andre, Palli, and Guillet. 3,350,565.
Costes, Didier. 3,350,277.
Le Nabour, Marcel P. 3,350,145.
Mallen, Jose, and Weisz. 3,350,241.
Vulliez, Paul. 3,349,632.

Communications Patents Ltd.: *See*—
Gabriel, Ralph P., and Kinross. 3,350,647.

Compagnie de Saint-Gobain: *See*—
Peyches, Pierre I. 3,350,213.

Compagnie Francaisede Raffinage: *See*—
Tannenberger, Helmut, Schachner, and Simm. 3,350,230.

Compagnie Generale de Geophysique: *See*—
Laurent, Pierre. 3,350,713.

Compo Shoe Machinery Corp.: *See*—
Woodman, Charles K. 3,349,417.

Components, Inc.: *See*—
Betz, Carl R. 3,350,293.

Conaway, Robert W., and J. S. Spindler, to The Goodyear Tire & Rubber Co. Anti-slosh media for fuel tanks. 3,349,953, 10–31–67, Cl. 220—85.

Concast, Inc.: *See*—
Rossi, Irving. 3,349,836.

Conn, Mervin E., to Esso Research and Engineering Co. Stable fluid emulsions of asphalt and other oleoresinous materials and preparation thereof. 3,350,321, 10–31–67, Cl. 252—311.5.

Conodec, Inc.: *See*—
Frantz, Woodrow W. 3,349,457.

Consolidated Electrodynamics Corp.: *See*—
Elazar, Shmuel. 3,349,629.

Continental Oil Co.: *See*—
Maxson, Orwin G. 3,350,346.
McClaflin, Gifford G. 3,350,360.

Constructa-Werke G.m.b.H.: *See*—
Geschka, Hugo W., and Gillessen. 3,349,879.

Contigea Societe Anonyme: *See*—
Vilbajo, Jean. 3,349,709.

Controls Co. of America: *See*—
Duncan, Robert J., and Biermann. 3,349,804.

Conway, Charles L., to American Aniline Products, Inc. Tetrakisazo dyes. 3,350,383, 10–31–67, Cl. 260—166.

Conway, Charles L., to American Aniline Products, Inc. Disazoresorcinol dyes. 3,350,384, 10–31–67, Cl. 260—184.

Cooke Engineering Co.: *See*—
Duff. Alan A., and Hayward. 3,349,937.

Cooke, William A., 50% to W. G. Finch. Radially broadcasting speaker system. 3,350,514, 10–31–67, Cl. 179—115.5.

Cooper, Robert S., to Stauffer Chemical Co. Copolymers of vinyl diphenylphosphine oxide. 3,350,477, 10–31–67, Cl. 260—870.

Cope, Geoffrey W., to Symington Wayne Corp. Manually controlled coupler positioning device. 3,349,916, 10–31–67, Cl. 213—16.

Cope, Glenn W. Fence structure and prop element for fence wires. 3,350,066, 10–31–67, Cl. 256—32.

Copeland, Lynn L.: *See*—
Buczala, George S., Rosengarten, and Copeland. 3,350,050.

Corbin, Victor L., F. Koury, and M. Levesque, to Sylvania Electric Products Inc. High pressure electric discharge device containing a fill of mercury, halogen and an alkali metal and barrier refractory oxide layers. 3,350,598, 10–31–67, Cl. 313—220.

Cornelius Co., The: *See*—
Austin, Forrest L., and Cornelius. 3,349,691.
Cornelius, Richard T. 3.349,940.
Cornelius, Richard T. 3,349,955.

Cornelius, Richard T.: *See*—
Austin, Forrest L., and Cornelius. 3,349,691.

Cornelius, Richard T., to The Cornelius Co. Thermally insulated tank. 3,349,940, 10–31–67. Cl. 220—9.

Cornelius, Richard T., to The Cornelius Co. Beverage container. 3,349,955. 10–31–67, Cl. 220—90.2.

Corsets Silhouette Ltd.: *See*—
Lobbenberg, Anne M. 3,349,773.

Costello, Alfred P., to Universal Patent and Development Ltd. Tape dispenser. 3 349,979, 10–31–67, Cl. 225—44.

Costes, Didier, to Commissariat a l'Energie Atomique. Flow-limiting device. especially for nuclear reactors. 3,350,277, 10–31–67, Cl. 176—87.

Cottis, Steve G.: *See*—
Rosenberg, Harold, and Cottis. 3,350,369.

Cotton, Frederick R.: *See*—
Bush, G. Frederick, Cotton, and Cruchet. 3,350,536.

Cottrell, Richard F., to Aerojet-General Corp. Quick-release closure for auxiliary port in rocket motor. 3,349,561, 10–31–67, Cl. 60—229.

Cottrez, Gérard, to La Telemecanique Electrique. Bistable device with memory. 3,350,652, 10–31–67, Cl. 328—190.

Courtaulds Ltd.: *See*—
Dixon, Olaf G., and Knibbs. 3,349,894.

Couvillon, Lucien A., Jr.: *See*—
Webb, James E. 3,350,643.

Cowell, Murl, 25% to A. H. Lindell, and 10% to H. Brown. Planter. 3,349,730, 10–31–67, Cl. 111—91.

Cowin, William A.: *See*—
Carter, Ronald P., Cowin, and Hall. 3,350,578.

Cox, Elvin H.: *See*—
Quinn, Richard E., and Cox. 3,349,581.
Quinn, Richard E., and Cox. 3,349,582.

Cox, Herbert F., Jr., and C. E. Strahl, to Inland Container Corp. Liquid fill apparatus. 3,349,859, 10–31–67, Cl. 177—118.

Craig, Burnie J. Razor blades. 3,349,488, 10–31–67, Cl. 30—346.6.

Craig, Richard T.: *See*—
Brondyke, Kenneth J., and Craig. 3,349,837.

Craig Systems Corp.: *See*—
Weaver, John R., Jr., and Carson. 3,350,497.

Crain, Robert L., and E. K. Pierce, Jr., to Gray Tool Co. Lubricated wedge gate valve. 3,349,789, 10–31–67, Cl. 137—246.22.

Cramer, Dean G.: *See*—
Barrett, Marlin W., Cramer, and Oltman. 3,350,188.

Crane, George J., to Huron Nassau Ltd. Process for producing alkali chlorate or alkali perchlorate. 3,350,286, 10–31–67, Cl. 204—95.

Crater, Wilbur D. Clutching means for launching and arresting aircraft and the like. 3,350,039, 10–31–67, Cl. 244—110.

Crawford, Lynn D., ½ to G. I Hanscom, and ½ to G. I. Hanscom, R. Magnuson, and L. J. Duggan, as trustees of the estate of R. M. Magnuson. Length sorter. 3,349,905, 10–31–67, Cl. 209—82.

Croisant, Elmer E.: *See*—
Schlapman, William J., and Croisant. 3,349,631.

Croll, Ian M., to International Business Machines Corp. Magnetic device with alternating lamina of magnetic material and non-magnetic metal on a substrate. 3,350,180, 10–31–67, Cl. 29—183.5.

Crommelin, Philip B., Jr., to Research-Cottrell, Inc. Gas and liquid contact apparatus. 3,350,076, 10–31–67, Cl. 261—118.

Cromp. Theodore Q., and J. W. Savage, to Atlantic Research Corp. Proximity-controlled article tumbling device. 3,350,098, 10–31–67, Cl. 278—145.

Crompton, James R., and Brothers Ltd.: *See*—
Johnson, Reginald. 3,350,260.

Crompton & Knowles Corp.: *See*—
Gustafson, Ralph P., and Smiley. 3,349,808.

Cromwell, Richard K., to Groov-Pin Corp. Alignment member for for insert driver tool. 3,349,652, 10–31–67, Cl. 81—53.

Crossman, A. Virginia. Tubular structure. 3,349,538, 10–31–67, Cl. 52—731.

Croswhite, Howard L., L. D. Burcs, and R. L. Leonard, to Ford Motor Co. Multiple speed ratio power transmission mechanism with close ratios. 3,349,641, 10–31–67, Cl. 74—763.

Croteau, Thomas H.: *See*—
Nathan, Jerome, and Croteau. 3,349,961.

Crouse, William G., to International Business Machines Corp. Application of triangular waveforms to exponential impedance means to produce sinusoidal waveforms. 3,350,575, 10–31–67, Cl. 307—88.5.

Crowdes, George J., and G. H. Hunt, to Simplex Wire and Cable Co. Method of forming sheathed conductor. 3,349,482, 10–31–67, Cl. 164—86.

Cruchet, Jules I.: *See*—
Bush, G. Frederick, Cotton, and Cruchet. 3,350,536.

Cucuel, Norman A., to Associated Spring Corp. Continuous spring forming, grinding and setting out machine. 3,349,473, 10–31–67, Cl. 29—564.

Culpin, William G.: *See*—
Baker, Donald E., and Culpin. 3,349,438.

Cummins, Orval J., to Oxford Paper Co. Web break sensing monitor for paper machines. 3,350,262, 10–31–67, Cl. 162—255.

Cunningham, Donald M.: *See*—
Kosbelt, Lloyd S., and Cunningham. 3,350,674.

Cusic, John W., and P. Yonan, to G. D. Searle & Co. Acyl derivatives of 1 - amino-4-xanthenylpiperazine. 3,350,402, 10–31–67, Cl. 260—268.

Cutler-Hammer, Inc.: *See*—
Brown, Harry W. 3,350,521.
Greening, Donald J., and Mead. 3,350,616.

Daley, Robert R., to Ingot Aid Co., Inc. Hot top with centering lugs. 3,350,062, 10–31–67, Cl. Cl. 249—198.

Dallenbach, Walter: *See*—
Brocher, Eric, and Dallenbach. 3,350,584.

Damron, William M., to Colgate-Palmolive Co. Container cover. 3,349,975, 10–31–67, Cl. 222—542.

Danadyne, Inc.: *See*—
Vanden Bosch, Peter. 3,349,435.
Vanden Bosch, Peter. 3,349,436.

Daneman, Ben, to Central Engineering Co., Inc. Hopper for spreader apparatus. 3,349,970, 10–31–67, Cl. 222—166.

Daniels, Patricia: *See*—
Allen, David L. 3,350,186.

Da Re, Paolo, to Societe d'Exploitation Chimiques et Pharmaceutiques Seceph S.A. Process for preparing 8-methylflavone-8-carboxylic acid. 3,350,411, 10–31–67, Cl. 260—345.2.

Darigo, Julius, R. E. Dickey, and D. S. Reed, to Remington Arms Co., Inc. Process of forming jacketed projectiles. 3,349,711, 10–31–67, Cl. 102—91.

Data Packaging Corp.: *See*—
Palson, Richard C. J., Gelardi, and Mathus. 3,349,898.

Daum, Leonard E., to Elastic Stop Nut Corp. of America. Telescope waterseal connector. 3,350,677, 10–31–67, Cl. 339—149.

Dauwalter, Charles R.: *See*—
Merrill, Edward W., Shaw, Chambers, and Dauwalter. 3,349,606.

Davis, Agnes E., and A. M. Sookne, to Gillette Research Institute, Inc. Continuous process for bleaching pigmented keratinous fibers. 3,350,160, 10–31–67, Cl. 8—102.

Davis, Gary W., to Cleveland Technical Center, Inc. Electrical resistance rail heater. 3,349,722, 10–31–67, Cl. 104—279.

Davis, George D., and E. C. Makin, to Monsanto Co. Extraction distillation of hydrocarbon mixtures of varying unsaturation. 3,350,282, 10–31–67, Cl. 203—54.

Davis, Gordon P., and H. A. Benbow, to Electric & Musical Industries Ltd. Image intensifier having continuous conducting layer between porous metallic coating and luminescent layer. 3,350,594, 10–31–67, Cl. 313—94.

Davis, Harry E. Method and apparatus for producing plastic tubing. 3,350,251, 10–31–67, Cl. 156—218.

Davis, Robert D., to Spectral Dynamics Corp. Waveform converters. 3,350,651, 10–31–67, Cl. 328—181.

Dawson, Ronald A.: *See*—
Calhoun, Fredrick L., and Dawson. 3,349,906.

Dawtrey, Sydney, and H. C. King, to Shell Oil Co. Foamable de-icing/defrosting composition and method of de-icing and defrosting. 3,350,314, 10–31–67, Cl. 252—70.

Dayco Corp.: *See*—
Terhune, Hugh D., and Waugh. 3,349,634.

Dayton Reliable Tool & Mfg. Co.: *See*—
Brown, Omar L., and Peters. 3,349,949.

Dayton Steel Foundry Co., The: *See*—
Walther, William D., and Afanador. 3,349,871.

De Baets, Jozef M. Proportioning installation. 3,349,815, 10–31–67, Cl. 141—104.

De Best Mfg. Co., Inc.: *See*—
Schwartz, Charles H., and Smyth. 3,349,412.

Decca Ltd.: *See*—
Parker, Bernhard D. 3,349,614.
King, George F., and Wigzell. 3,350,715.
Walker, Philip H., Cawsey, and Howell. 3,350,714.

Decker, Frederick J., to Flexible Air Seat Corp. Pneumatic seat. 3,350,086, 10–31–67, Cl. 267—1.

De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Differential supercharging of engines. 3,349,759, 10–31–67, Cl. 123—119.

De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Control of the power of the engine of a vehicle with an automatic gear-box and an electrically-operated clutch. 3,349,878, 10–31–67, Cl. 192—.92.

De Diemar, Ronald B.: *See*—
Archer, Fred C., De Diemar, and Schuman. 3,350,019.

Deegan, James J.: *See*—
Ullman, Frederick E., and Deegan. 3,349,599.

Deere & Co.: *See*—
Bahl, James M., and Haight. 3,349,670.
Vande Wiele, Robert J. 3,349,747.

De Feo, Richard J., to Esso Research and Engineering Co. Sorbing conjugated diolefins on ammonia treated faujasite. 3,350,472, 10–31–67, Cl. 260—677.

Deger, Thomas E.: *See*—
Goshorn, Roland H., and Deger. 3,350,410.

De Jean, Milton V., to General Electric Co. Method of manufacturing a rotor assembly. 3,349,478, 10–31–67, Cl. 29—598.

De Lapp, Darwin F.: *See*—
Weinberger, Arthur J., and De Lapp. 3,350,292.

De Lisle, Auguste L., to Phoenix Gems, Inc. Method of controlling insects in cow barns and the like areas. 3,350,264, 10–31–67, Cl. 167—14.

Demarest, Henry M., Jr., and J. S. Sieger, to Pittsburgh Plate Glass Co. Glass prepolishing method and apparatus. 3,350,248, 10–31–67, Cl. 156—24.

Demco, Inc.: *See*—
Magoon, Fred L. 3,349,639.

Demeter, Laszlo, B. Galgoczi, E. Bozzay, and I. Zagyvai, to Nikex Nehesipari Kulkereskedelmi Vallalat. Clarification of surface waters. 3,350,302, 10–31–67, Cl. 210—45.

Denk, Walter: *See*—
Krämer, Hans B. A., Messwarb, and Denk. 3,350,368.

De Reynold, Henri: *See*—
Engdahl, Jean, and De Reynold. 3,350,660.

De Soto, Inc.: *See*—
Sekmakas, Kazys. 3,350,389.
Levin, Herbert C. 3,349,962.

Detrick, M. H., Co.: *See*—
Over, Raymond E. 3,350,085.

Deutsch, Alexander T. Vehicle impact deflector arrangement. 3,349,865, 10–31–67, Cl. 180—93.

Deutsche Erdol-Aktiengesellschaft: *See*—
Schlicht G., E. M., and Lange. 3,349,850.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
Obrowski, Walter, and Liebich. 3,349,467.

Developak, Inc.: *See*—
Stone, Orison W. 3,349,897.

Diamond Alkali Co.: *See*—
Lasco, Ralph E. 3,350,467.

Dick, A. B., Co.: *See*—
Ort, George M. 3,349,704.

Dick, Clarence R.: *See*—
Ashby, Theodore L., and Dick. 3,350,325.

Dickerson, John W., H. T. Dinkelkamp, and J. L. Luna, to Stewart-Warner Corp. Pump. 3,349,715, 10–31–67, Cl. 103—50.

Dickey, Rex E.: *See*—
Darigo, Julius, Dickey, and Reed. 3,349,711.

Dickinson, Lionel A., to Her Majesty the Queen in the Right of Canada as represented by the Minister of National Defence. Composite polyether propellants. 3,350,245, 10–31–67, Cl. 149—19.

Dickson, John B.: *See*—
Bielweiss, Arthur F., Colombo, and Dickson. 3,350,527.

Didinger, Raymond G., to Welded Tube Co. of America. Rotary spray stencil apparatus and method. 3,349,697, 10–31–67, Cl. 101—118.

Dielectric Products Engineering Co., Inc.: *See*—
Sewell, Donald N. 3,349,479.

Dieterle, Horst: *See*—
Maltner, Wolfgang, and Dieterle. 3,350,608.

Digital: *See*—
Lubkin, Samuel, Nesenoff, and Walker. 3,350,641.

DiLeo, Joseph A., and J. J. Drautman, to Malaker Laboratories, Inc. Temperature transducer having superconducting winding. 3,350,669, 10–31–67, Cl. 335—216.

Dinkelkamp, Henry T.: *See*—
Dickerson, John W., Dinkelkamp, and Luna. 3,349,715.

Diotallevi, Gianfranco: *See*—
Sianesi, Dario, Bernardi, and Diotallevi. 3,350,373.

Dipstix Ltd.: *See*—
Bridges, Donald E. 3,350,710.

Di Rico, Emidio, to Raylite Electric Corp. Multi-colored light ornament construction. 3,350,555, 10–31–67, Cl. 240—10.

Dixon, Guy E. Track seal for folding doors. 3,349,829, 10–31–67, Cl. 160—40.

Dixon, Olaf G., and A. R. Knibbs, to Courtaulds Ltd. Compression of materials. 3,349,694, 10–31–67, Cl. 100—295.

Djerassi, Carl: *See*—
Ringold, Howard J., and Djerassi. 3,350,426.

Doherty, Jack R. Drill collar safety slip. 3,349,455, 10–31–67, Cl. 24—263.

Dollman, David Y.: *See*—
Steinbrecher, Lester, Dollman, Buczkowski, and Harrison. 3,350,284.

Dominion Engineering Works Ltd.: *See*—
Harris, Thomas E., and Hughes. 3,350,018.
Sproule, Robert S. 3,350,059.

Domtar Ltd.: *See*—
Douglas, Harold R. 3,350,075.

Donald, David K.: *See*—
Cole, Terry. Donald, Lambe, and Vassell. 3,350,597.

Donalies, Daniel J., to Xerox Corp. Xerographic development apparatus. 3,349,750, 10–31–67, Cl. 118—637.

Donofrio, David J. Anesthetizing, resuscitating, and respiratory apparatus. 3,349,766, 10–31–67, Cl. 128—145.6.

Dorr-Oliver Inc.: *See*—
Wall, Clarence J. 3,349,500.

Dostrup, Max, to F. L. Smidth & Co. Silo plant. 3,350,070, 10–31–67, Cl. 259—60.

Doucette, Adrian R.: *See*—
Annunziato, Anthony A., Doucette, and Pfeifer. 3,350,624.

Douglas, Harold R., to Domtar Ltd. Method for contacting fluids in countercurrent. 3,350,075, 10–31–67, Cl. 261—95.

Douglas, Livingston C., to Colgate-Palmolive Co. Container convertible to a powered toy. 3,349,515, 10–31–67, Cl. 46—11.

Dovell, Frederick S., and H. Greenfield, to Uniroyal, Inc. Process of preparing aromatic amines by the catalytic hydrogenation of aromatic nitro compounds. 3,350,450, 10–31–67, Cl. 260—577.

Dow Chemical Co., The: *See*—
Arnold, John L., Pearce, and Scholten. 3,349,544.
Ashby, Theodore L., and Dick. 3,350,325.

Dow Corning Corp.: *See*—
Campbell, James K. 3,350,337.
Carlyle, Robert L. 3,350,423.
Hansen, Darryl T., and Talcott. 3,350,351.
Hunter, Melvin J., Kern, and Hamill. 3,350,182.
Hyde, James F. 3,350,349.
Kucera, Clare, Leahy, and Merrill. 3,350,448.
McVannel, Donald E., Mishler, and Polmanteer. 3,350,216.
Napoli, Matthew J. 3,350,311.
Savage, Albert B. 3,350,338.
Smith, Hubert S., and Ulmanis. 3,349,568.
Wilson, John S. 3,349,705.

Downs, William T., to Lear Siegler, Inc. Power transmission mechanism. 3,349,877, 10–31–67, Cl. 192—.02.

Doyle, Collin M.: *See*—
Doyle, Wladzia G. P. and C. M. 3,350,000.
Doyle, Wladzia G. P. and C. M. 3,350,001.

Doyle, Wladzia G. P. and C. M. Integral gradient removable disc columns. 3,350,000, 10–31–67, Cl. 233—15.

Doyle, Wladzia G. P. and C. M. Method for fluid extraction and apparatus therefor. 3,350,001, 10–31–67, Cl. 233—15.

Drake, Robert T.: *See*—
Stewart, Ross E., and Drake. 3,350,042.

Draper, Clyde E.: *See*—
Bandemer, George J., and Draper. 3,349,492.

Drautman, James J.: *See*—
Di Leo, Joseph A., and Drautman. 3,350,669.

Drenkelfort, Hans, and G. Maass, to Electroacustic Gesellschaft mit Beschraenkter Haftung. Echo sounding apparatus. 3,350,682, 10–31–67, Cl. 340—3.

Dresia, Heinrich, P. Fischotter, and R. Bessing, to Rheinische Kalksteinwerke G.m.b.H. Moisture content measurement having neutron reflecting material to provide optimum counting range. 3,350,561, 10–31–67, Cl. 250—83.1.

Driscoll, Patrick R.: *See*—
Kaufman, Harold A., Kremer, and Driscoll. 3,350,409.

Drukker, Alexander E., and C. I. Judd, to Colgate-Palmolive Co. Novel morphantbridone oximes. 3,350,391, 10–31–67, Cl. 260—239.

Dryvent Ltd.: *See*—
Potts, Charles H. 3,349,570.

Duberoid Co., The: *See*—
Erb, Edward R., and Maass. 3,350,483.

Duddoff, Harold S. Partition-forming assemblies and components. 3,349,532, 10–31–67, Cl. 52—301.

Duff, Alan A., and N. G. Hayward, to Cooke Engineering Co. Titration apparatus. 3,349,937, 10–31–67, Cl. 217—25.5.

Duffy, Kenneth A., to C.A.V. Ltd. Driving means control responsive to speed including light sensitive elements. 3,349,785, 10–31–67, Cl. 137—30.

Duggan, Lois J.: *See*—
Crawford, Lynn D. 3,349,905.

Duncan, Robert J., and W. A. Biermann, to Controls Co. of America. Viscosity compensating fuel control. 3,349,804, 10–31–67, Cl. 138—45.

Dunn, Alfred G.: *See*—
Kaufman, Arnold, Dunn, and Wright. 3,349,653.

Dunne, Frank W.: *See*—
Varron, Frederick A., and Dunne. 3,349,703.

Duperroy, Marcel: *See*—
Brichard, Edgard, Plumat, and Duperroy. 3,350,187.

Du Plessis, David J.: *See*—
Beeton, Thomas B., Hoffman, and Du Plessis. 3,350,197.

Du Pont de Nemours, E. I., and Co.: *See*—
Amos, Stephen E. 3,350,026.
Breen, Alvin L. 3,350,488.
Cline, Edward T. 3,350,553.
Cobb, James S., Jr. 3,349,522.
Graham, Boynton. 3,350,324.
Graham, Peter J., Linn, and Middleton. 3,350,313.
Janosik, James F. 3,349,501.
Keller, William J., and Moore. 3,350,870.
Mainz, Michael H. 3,349,458.
Potrafke, Earl M., and Powell. 3,350,412.
Santmyers, Donald. 3,350,371.
Schaumann, Erik J. 3,349,706.
Short, Oliver A. 3,350,341.
Stephan, Paul G. 3,349,956.
Watson, William H. 3,350,354.

Dury, Johanna M.: *See*—
Reicheneder, Franz, Fischer, and Dury. 3,350,193.

Dury, Karl: *See*—
Reicheneder, Franz, Fischer, and Dury. 3,350,193.

Dymo Industries, Inc.: *See*—
Pedersen, Dane H. 3,349,883.

Dynacast Ltd.: *See*—
Perrella, Guido, and Picker. 3,349,732.

Dynamit Nobel Aktiengesellschaft: *See*—
Hass, Karl, Lenz, and Bieh. 3,350,463.

Dyson, Joseph & Sons, Inc.: *See*—
Fried, Louis. 3,349,805.

Dyson, Leslie M.: *See*—
Williams, Allan E., Dyson, and Matthies. 3,349,562.

E. G. & G. Inc.: *See*—
Germeshausen, Kenneth J., and Turner. 3,350,602.

ESB Inc.: *See*—
Kohr, Joseph R. 3,350,638.

Eastman Kodak Co.: *See*—
Bundschuh, John J. 3,350,023.
Hagemeyer, Hugh J., Jr., and Brady. 3,350,358.
Leonard, Ray E., and Kiefer. 3,349,779.
Nerwin, Hubert. 3,349,682.
Smith, James G., and Abbott. 3,350,204.
Sublett, Bobby J., and Touey. 3,349,780.

Eaton, John W. Bathtub hoist. 3,349,411, 10–31–67, Cl. 4—185.

Eaton Yale & Towne, Inc.: *See*—
Richards, Elmer A. 3,349,635.

Ebauches S.A.: *See*—
Engdahl, Jean, and De Reynold. 3,350,660.
Schneiter, Ali. 3,349,640.

Eberman, Augustus H.: *See*—
Jensen, Hans A., and Eberman. 3,349,540.

Eby, Ralph H.: *See*—
Friedmann, Anton R. J., and Eby. 3,350,015.

Eckman, Charles B., and P. H. Wilson, to Minnesota Mining and Mfg. Co. Method and apparatus for attaching adhesive tape to a rough surface. 3,350,256, 10–31–67, Cl. 156—497.

Edinger, Ladislav L., and I. Halasz. Self-illuminating tongue depressor with detachable tongue blade. 3,349,764, 10–31–67, Cl. 128—16.

Egan, Edward F., to F. W. Egan & Co. Flying transfer winder. 3,350,027, 10–31–67, Cl. 242—58.4.

Egan, Frank W., & Co.: *See*—
Egan, Edward F. 3,350,027.

Eimecke, Rolf: *See*—
Rabe, Peter, and Eimecke. 3,350,016.

Einrambof, Franz, and P. T. J. Piree, to North American Philips Co., Inc. Method of and apparatus for treating the electrodes of a cold discharge tube. 3,350,153, 10–31–67, Cl. 316—1.

Eisen und Metall Aktiengesellschaft: *See*—
Hutweiker, Walter. 3,349,674.

Ekco Products, Inc.: *See*—
Griese, Elmer W., Jr. 3,349,739.

Elastic Stop Nut Corp. of America: *See*—
Daum, Leonard E. 3,350,677.

Elazar, Shmuel, to Consolidated Electrodynamics Corp. Frequency damped transducer. 3,349,629, 10–31–67, Cl. 73—517.

Electric & Musical Industries Ltd.: *See*—
Davis, Gordon P., and Benbow. 3,350,594.
Percival, William S., and Trendell. 3,350,512.

Electric Storage Battery Co., The: *See*—
Kohr, Joseph R. 3,350,638.

Electro-Char Corp.: *See*—
Berger, Victor M., and Scherer. 3,350,543.

Electro-Tec Corp.: *See*—
Shernow, Fred. 3,359,506.

Electroacustic Gesellschaft mit beschraenkter Haftung: *See*—
Drenkelfort, Hans, and Maas. 3,350,682.

Elez, Milenko: *See*—
Wycoff, David C., and Elez. 3,349,873.

Elliot Bros. (London) Ltd.: *See*—
Tooze, Michael J. 3,350,011.

Ellis, John H. Automatic car wash. 3,349,783, 10–31–67, Cl. 134—45.

Ells, Myron B., and F. W. Bollenbach, to Package Products Co., Inc. Package. 3,349,993, 10–31–67, Cl. 229—66.

Elsey, Samuel E., Jr.: *See*—
Mack, Charles H., and Elsey. 3,350,163.

Eisenheimer, Charles W., and D. J. Broughton, to Prentice Corp. Key holder. 3,349,590, 10–31–67, Cl. 70—456.

Endress, James W.: *See*—
Kirtland, Howard W., and Endress. 3,349,999.

Engdahl, Jean, and H. De Reynold, to Ebauches S.A. Vicinity detector. 3,350,660, 10–31–67, Cl. 331—65.

Engel, Lawrence J.: *See*—
Argabright, Perry A., and Engel. 3,350,440.

Engel, Walter: *See*—
Schwager, Oskar, and Engel. 3,349,712.

Engelhard Industries, Inc.: *See*—
Rylander, Paul N., and Himelstein. 3,350,452.

Engelskirchen, Konrad, and J. Galinke, to Henkel & Cie G.m.b.H. Process for the purification of hydroxyalkyl ethers of galactomannans. 3,350,386, 10–31–67, Cl. 260—209.

Engineering Development Corp.: *See*—
Kittelson, Le Roy O. 3,349,463.

Englehard Industries, Inc.: *See*—
Green, Robert B., Geissler, and Kurpit. 3,350,176.

English Electric Co. Ltd., The: *See*—
Carter, Ronald P., Cowin, and Hall. 3,350,578.

English, William W. Kite construction. 3,350,014, 10–31–67, Cl. 244—153.

Engstrom, Carl-Gunnar D. Valve device in gas systems. 3,349,790, 10–31–67, Cl. 137—247.17.

Ensign, John D., and H. Hashimoto, to Measurement Science Corp. Disposable sheath and sheath retainer for temperature sensing probes. 3,349,896, 10–31–67, Cl. 206—16.5.

Eprova Ltd.: *See*—
Litmanowitsch, Menasche, and Suter. 3,350,399.
Suter, Hans, and Zutter. 3,350,400.

Erb, Edward R., and R. L. Maass, to The Duberoid Co. Floor covering method. 3,350,483, 10–31–67, Cl. 264—74.

Erdmann, Kurt: *See*—
Friedenreich, Heinrich, and Erdmann. 3,350,119.

Erickson, Roger D., to Honeywell Inc. Electronic flash with automatic termination means. 3,350,603, 10–31–67, Cl. 315—151.

Erickson, Roger D., to Honeywell Inc. Flash lamp controlled by photosensitive light integrating device. 3,350,604, 10–31–67, Cl. 315—151.

Erikson, Evans W., to Sundstrand Corp. Pressure switch. 3,350,523, 10–31–67, Cl. 200—82.

Eriksson, Carl W.: *See*—
Olsson, Dexter A., and Eriksson. 3,349,608.

Ermolov, Igor N.: *See*—
Ryzhov-Nikonov, Vladimir I., Grebennik, and Ermolov. 3,349,609.

Esso Production Research Co.: *See*—
Hildebrandt, Alexander B. 3,349,857.
Kirby, Robert A. 3,350,629.
Mifsud, Joseph F. 3,349,866.
Mounce, Whitman D. 3,349,867.
Peters, Beldon A. 3,349,852.
Rhea, John W., and Morse. 3,349,844.

Esso Research and Engineering Co.: *See*—
Argabright, Perry A., and Engel. 3,350,440.
Argabright, Perry A. 3,350,414.
Conn, Mervin E. 3,350,321.
De Feo, Richard J. 3,350,472.
Hamner, Glen P., and Mason. 3,350,295.
Mitchell, Willard N. 3,350,471.
Moerikofer, Andreas W., Shropshire, and Tarmy. 3,350,227.
Mowell, Roger W., and Mascenik. 3,349,816.
Shropshire, Joseph A. 3,350,228.
Torobin, Leonard B. 3,350,296.
Torobin, Leonard B. 3,350,297.
Vanderbilt, Byron M., and Clayton. 3,350,345.

Etablissements Neyrpic: *See*—
Vincendon, Jean. 3,350,068.

Ethicon, Inc.: *See*—
Sheehan, John P. 3,349,770.

Ethyl Corp.: *See*—
Gish, Rollin. 3,349,044.
Kozikowski, John, and Cals. 3,350,430.
Kozikowski, John, and Cals. 3,350,431.

Eubank, Harvey A.: *See*—
Becker, John C., Jr., and Eubank. 3,349,464.

Eubank, Jeanette S.: *See*—
Becker, John C., Jr., and Eubank. 3,349,464.

Evans, Jack. Sawhorse bracket. 3,349,869, 10–31–67, Cl. 182—226.

Eveson, Geoffrey F., and G. T. Richards, to Head, Wrightson & Co., Ltd. Fluidized bed separator. 3,349,912, 10–31–67, Cl. 209—474.

Exactel Instrument Co.: *See*—
Glassey, Eugene A. 3,349,622.

FMC Corp.: *See*—
Green, Robert L. 3,350,318.

Faidley, Victor J.: *See*—
Bloom, Earl M., Jr., and Faidley. 3,349,695.

Fair, Irvin E., to Bell Telephone Laboratories, Inc. Variable elastic wave delay line using two strips pressed together. 3,350,665, 10–31–67, Cl. 333—30.

Fall, Harry H., to The General Tire & Rubber Co. Process for the production of polyoxypropylene diols. 3,350,461, 10–31–67, Cl. 260—615.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Hennig, Hans J. 3,350,438.
Horn, Elmar-Manfred, Kleine-Weischede, Lang, and Niederprum. 3,30,326.
Simmler, Walter, Niederprum, and Jonas. 3,350,437.
Pelster, Heinrich, and Heiss. 3,350,459.

Farber, Herbert, to Firma Schloemann Aktiengesellschaft. Method for arresting a mandrel and tube discharged from a rolling mill. 3,349,468, 10–31–67, Cl. 29—427.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Kramer, Hans B. A., Messwarb, and Denk. 3,350,368.

Fariss, Robert H., to Monsanto Co. Production and recovery of oxygenated hydrocarbons by plural distillation. 3,350,420, 10–31–67, Cl. 260—348.5.

Fassbender, Herbert, to Glanzstoff Koln G.m.b.H. Process and device for mixing liquids of differing viscosities. 3,349,713, 10–31–67, Cl. 103—6.

Faulls, Donald R., and R. B. Whitson, to Burroughs Corp. Alterable read-only storage device. 3,350,691, 10–31–67, Cl. 340—172.5.

Feder, Aaron I. Shipping container. 3,349,923, 10–31–67, Cl. 211—123.

Federal Cartridge Corp.: *See*—
King, William N., and Merritt. 3,349,459.

Fee, Harry R., J. D. Ferguson, and R. W. Lawrence, to Hercules Inc. Aqueous inorganic oxidizer salt blasting compositions containing tamarind seed powder. 3,350,246, 10–31–67, Cl. 149—60.

Feldman, Julian, and M. Thomas, to National Distillers and Chemical Corp. Process for preparing aminoalkanenitriles. 3,350,439, 10–31–67, Cl. 260—465.5.

Ferguson, John D.: *See*—
Fee, Harry R., Ferguson, and Lawrence. 3,350,246.

Ferin, Aldo: *See*—
Stocchi, Virgilio, Ferin, and Magelli. 3,350,473.

Ferrary, Ferdinand F., to American Machine & Foundry Co. Bicycle coupling device. 3,350,115, 10–31–67, Cl. 280—209.

Ferri, Mario: *See*—
Romani, Roberto, and Ferri. 3,350,281.

Fetkovich, Michael J.: *See*—
Trantham, Joseph C., Hennigan, Fetkovich, Tek, and Bruns. 3,349,846.

Fetscher, Charles, and S. Lipowski, to Nopco Chemical Co. Methods for preparing polymers of hydroxytetrazole compounds and polymers of hydazide oxime compounds, and products. 3,350,374, 10–31–67, Cl. 260—88.7.

Fetzer, Maurice C.: *See*—
Muije, Pieter, Mohondro, and Fetzer. 3,349,469.

Fiat Societa per Azioni: *See*—
Calovolo, Mario. 3,350,062.

Field, Sheldon B., to John J. McMullen Associates Inc. Floating platform. 3,349,740, 10–31–67, Cl. 114—.5.

Field, Sheldon B., and T. F. Bridges, to John J. McMullen Associates, Inc. Ship stabilizer. 3,349,743, 10–31–67, Cl. 114—125.

Fieldcrest Mills, Inc.: *See*—
Troy, James E. 3,349,812.

Finch, Walter G.: *See*—
Cooke, William A. 3,350,514.

Finkl, Charles W. Marine speed indicators. 3,349,615, 10–31–67, Cl. 73—182.

Finn, John J., and J. N. Keith, to United States of America, Air Force. Preparation of sodium boroazide. 3,350,177, 10–31–67, Cl. 23—358.

Finneran, James A., and H. C. Mayo, to Pullman Inc. Process for carrying out cyclic synthesis reactions at elevated pressures. 3,350,170, 10–31–67, Cl. 23—199.

Firma Schloemann Aktiengesellschaft: *See*—
Farber, Herbert. 3,349,468.

Firma Uniplast Dr. Raehs KG.: *See*—
Raehs, Wilhelm J. 3,349,974.

Firth, John, to Giddings & Lewis-Fraser Ltd. Positioning device for use on machine tools. 3,350,617, 10–31–67, Cl. 318—468.

Fischer, Adolf: *See*—
Reicheneder, Franz, Fischer, and Dury. 3,350,193.

Fischotter, Peter: *See*—
Dresia, Heinrich, Fischotter, and Bessing. 3,350,561.

Fisher, Bernard: *See*—
Hulman, Jule, and Fisher. 3,350,639.

Fistedis, Stanley H., to United States of America, Atomic Energy Commission. Reactor containment vessel. 3,349,524, 10–31–67, Cl. 52—20.

Fives Lille-Cail: *See*—
Carlier, Leon. 3,349,721.

Flack, Ernest J. Toy vehicle. 3,350,112, 10–31–67, Cl. 280—16.

Fleckenstein, Andrew J.: *See*—
Fleckenstein, Lambert W. and A. J. 3,349,915.

Fleckenstein, Lambert W. and A. J. Control valve for water softeners. 3,349,915, 10–31–67, Cl. 210—134.

Fletcher, Horace, 3rd, and H. E. Alburn, to American Home Products Corp. Sulfur containing pyrazole derivatives. 3,350,407, 10–31–67, Cl. 260—310.

Flexible Air Seat Corp.: *See*—
Decker, Frederick J. 3,350,086.

Flint, Edward F., to North American Aviation, Inc. Infrared radiometer having a black body reference surface and a spherical chopper. 3,350,562, 10–31–67, Cl. 250—83.3.

Flint, John A., and J. E. George, to Power Jets (Research and Development) Ltd. Helicopter lift control mechanism. 3,349,853, 10–31–67, Cl. 170—135.4.

Florez, Angel R.: *See*—
La Fleur, James K., and Florez. 3,350,060.

Florin, Bengt, and K. Loimaranta, to AB Transvertex. Ciphering machine. 3,349,882, 10–31–67, Cl. 197—4.

Fomin, Alexel A.: *See*—
Kunitsky, Valery N., Lobashev, Stetsovsky, and Fomin. 3,350,494.
Fono, Laszlo. Method for pancake production. 3,349,726, 10–31–67, Cl. 107—54.
Ford Motor Co.: *See*—
Bush, G. Frederick, Cotton, and Cruchet. 3,350,536.
Cole, Terry, Donald, Lambe, and Vassell. 3,350,597.
Croswhite, Howard L., Burcz, and Leonard. 3,349,641.
Mosier, Jacques. 3,350,626.
Grenier, Emile P. 3,349,714.
Scala, Eugene L., Jr. 3,350,071.
Thomas, Michael J. 3,350,072.
Wilson, Harland D. 3,350,238.
Formax Mfg. Corp.: *See*—
McAleer, Howard J. 3,349,424.
Formica Corp.: *See*—
Groeheim, Gene E., and Hicks. 3,349,665.
Forwald, Haakon, to Allmanna Svenska Elektriska Aktiebolaget. Air blast circuit breaker with auxiliary enclosed housing. 3,350,529, 10–31–67, Cl. 200—148.
Foster, Walter E., and R. C. Black, to Irving Air Chute Co., Inc. Push Button type safety seat belt buckle. 3,349,445, 10–31–67, Cl. 24—77.
Foster Wheeler Corp.: *See*—
Lawrence, Arthur C., and Gotch. 3,350,537.
Foulger, Kenneth D., J. J. Harmon, and A. G. Silver, to International Business Machines Corp. Multiple section transfer system. 3,350,693, 10–31–67, Cl. 340—172.5.
Foxboro Co., The: *See*—
Strauss, William I., and Newell. 3,349,748.
Choquette, J. Walter, Jr., and Ridley. 3,350,012.
Fraga, Gilbert W., to The Regents of the University of California. Remotely controlled water sampling device. 3,349,624, 10–31–67, Cl. 73—421.
Francis, Samuel A., to Buzzards Corp. Aquatic probe. 3,349,613, 10–31–67, Cl. 73—170.
Francisco, Bernardino, to Ing. C. & C. Olivetti, S.p.A. Fault sensing device for a spring actuated typewriter. 3,349,884, 10–31–67, Cl. 197—17.
Franck, Kurt, and R. G. McPhail, to Holophane Co., Inc. Street lighting luminaires. 3,350,556, 10–31–67, Cl. 240—25.
Frangatos, Gerassimos: *See*—
McColl, John D., and Frangatos. 3,350,396.
Frank, Louis: *See*—
Precht, Walter, Geckle, and Frank. 3,349,466.
Frantz, Woodrow W., to Conodec, Inc. Apparatus for forming a prefabricated truss deck. 3,349,457, 10–31–67, Cl. 25—2.
Fraser, Peter E.: *See*—
Stuart, Duncan J. K., Fraser, Payne, and Shotter. 3,349,879.
Fraze, Ermal C.: *See*—
Brown, Omar L., and Peters. 3,349,949.
Fredette, Raymond W.: *See*—
Sims, Leland W., and Fredette. 3,350,040.
Freeland Gauge Co.: *See*—
Minix, William A. 3,349,605.
Freholm, Omar E.: *See*—
Stacy, Robert G., Almind, and Freholm. 3,349,874.
Frey, Albert M.: *See*—
Perry, Elijah R., Mundon, and Frey. 3,350,520.
Fricke, Alex, to Union Tool Co. Key construction. 3,349,589, 10–31–67, Cl. 70—395.
Fried, Louis, to Joseph Dyson & Sons, Inc. Washing machine drain hose. 3,349,805, 10–31–67, Cl. 138—109
Friedenreich, Heinrich, and K. Erdmann, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Detachable connection of a piston with a piston rod, especially for a piston compressor. 3,350,119, 10–31–67, Cl. 287—53.
Friedmann, Anton R. J., and R. H. Eby, to Ashley F. Ward Inc., d.b.a. The Skinner Irrigation Co. Rotary impulse sprinkler. 3,350,015, 10–31–67, Cl. 239—230.
Frostad, George C. Apparatus for exercising and training animals, particularly horses. 3,349,751, 10–31–67, Cl. 119—29.
Frugger, Richard E., to Thermoplastic Industries Inc. Chargeable package for liquids. 3,349,965, 10–31–67, Cl. 222—80.
Fry, Douglas J.: *See*—
Whitear, Brian R. D., and Fry. 3,350,382.
Fry, William L., to Joseph Lucas (Industries) Ltd. Switches for use with flexible printed circuits. 3,350,530, 10–31–67, Cl. 200—166.
Fuchs, Alfons, to Gesellschaft Fur Elektrometallurgie m.b.H. Method of producing a suitable product for nitriding and alloying steel. 3,350.242, 10–31–67, Cl. 148—16.6.
Fueg, Heinz, to Inventa A.G. für Porschung und Patentverwertung. Process for preparing cyclohexanone from cyclohexanol. 3,350,456, 10–31–67, Cl. 260—586.
Fujiwara, Shinobu, to TDK Electronics Co., Ltd. Ceramic dielectrics. 3,350,212, 10–31–67, Cl. 106—39.
Furukawa, Mitsuru: *See*—
Uedo, Takeo, Toyoshima, and Furukawa. 3,350,398.
Futera, Miroslav: *See*—
Beran, Jaromir, Misarek, and Futera. 3,349,997.
G.K.N. Screws & Easteners Ltd.: *See*—
Turnbull, John H., and Watt. 3,349,651.
Gabriel, Ralph P., and R. I. Kinross, to Communications Patents Ltd. Wired broadcasting systems and communication cables therefor. 3,350,647, 10–31–67, Cl. 325—308.
Gabrielson, Reidar G., and L. R. Smith, to Motorola, Inc. Control system with time reference for data acquisition. 3,350,687, 10–31–67, Cl. 340—163.
Gagliardi, Domenick D., to Colgate-Palmolive Co. Soil proofing with quaternary ammonium derivatives of highly fluorinated carboxylic acids. 3,350,218, 10–31–67, Cl. 117—76.
Galgoczi, Bela: *See*—
Demeter, Laszlo, Galgoczi, Bozzay, and Zagyvai. 3,350,302.
Galinke, Joachim: *See*—
Engelskirchen, Konrad, and Galinke. 3,350,886.
Gallaher, Lee E., and R. J. Redner, to Bell Telephone Laboratories, Inc. Current regulator with A.C. and D.C. feedback. 3,350,628, 10–31–67, Cl. 323—4.
Gandon, Louis: *See*—
Marcheguet, Henri G. L., and Gandon. 3,350,165.
Gardner, Homer K., Jr.: *See*—
Knoepfler, Nestor B., Gardner, and Vix. 3,350,486.
Gateway Erectors, Inc.: *See*—
Reiland, Frank D. 3,350,049.
Gaunt, Willim E., to Leeds-Dixon Laboratories, Inc. Aluminum aspirin film-enveloped therapeutic agents in sustained release dosage form. 3,350,270, 10–31–67, Cl. 167—82.
Gauthier, George E., to General Electric Co. Circuit breaker resetting mechanism. 3,350,525, 10–31–67, Cl. 200—116.
Gebert, William H., and N. Murrill, to Schering Corp. Process for the dehydrohalogenation of steroids. 3,350,427, 10–31–67, Cl. 260—397.4.
Geckle, Raymond J.: *See*—
Precht, Walter, Geckle, and Frank. 3,349,466.
Geissler, Hugo H.: *See*—
Green, Robert B., Geissler, and Kurpit. 3,350,176.
Gelardi, Anthony L.: *See*—
Palson, Richard C. J., Gelardi, and Mathus. 3,349,898.
Gelardi, Joseph T., to American Technical Machinery Corp. Brush sensing mechanism. 3,349,659, 10–31–67, Cl. 83—371.
General Aniline & Film Corp.: *See*—
Leary, Robert E., Nehmsmann, and Schenck. 3,350,462.
Leightle, George B. 3,350,441.
Merijan, Ashot. 3,350,366.
Strobel, Albert F., and Catino. 3,350,395.
General Bearing Co.: *See*—
Sanguinetti, Bradley E., and Hayden. 3,350,148.
General Dynamics Corp.: *See*—
Babits, Victor A. 3,350,566.
General Electric Co.: *See*—
Aftergut, Seigfried. 3,350,327.
Avery, Howard W. 3,350,008.
Badey, Paul E., and Oppel. 3,350,519.
Beers, Melvin D. 3,350,344.
Brockman, John J., and Goss. 3,350,613.
Caldwell, Samuel C. 3,350,621.
Cash, Carl G., Brower, and Bessmer. 3,350,330.
Clapp, Charles W. 3,350,623.
De Jean, Milton V. 3,349,478.
Ganthier, George E. 3,350,525.
Getman, Clarence. 3,350,542.
Libby, Henry T. 3,350,534.
Lord, Harold W. 3,350,622.
Morgan, Raymond E. 3,350,572.
Otto, Charles W. 3,350,586.
Peaslee, Lawrence R. 3,350,568.
Rose, Robert K. 3,350,009.
Rose, Robert K. 3,350,010.
Rutledge, William A., and Clarkson. 3,350,588.
Scace, Robert I. 3,350,611.
Stout, Harold C. 3,350,614.
Venier, Dominic A., and Lass. 3,350,275.
Wood, David L. 3,350,554.
Young, James R., Hudson, and Watters. 3,350,559.
Young, James R. 3,350,590.
General Foods Corp.: *See*—
Utschig, Walter C. 3,349,749.
General Protection Establishment: *See*—
Ritter, Karlheinz. 3,350,496.
General Tire & Rubber Co., The: *See*—
Fall, Harry H. 3,350,461.
Hein, Richard D. 3,349,418.
Genta, Guido R., to American Aniline Products, Inc. 1-alkylsulfonamido-4-anilino-anthraquinones. 3,350,425, 10–31–67, Cl. 260—374.
Geodyne Corp.: *See*—
Perry, Kenneth E. 3,350,707.
George, James E.: *See*—
Flint, John A., and George. 3,349,853.
Germantown Mfg. Co.: *See*—
Rodgers, Edgar B. 3,350,209.
Germeshausen, Kenneth J., and J. L. Turner, to E. G. & G., Inc. Gaseous-discharge device having a trigger electrode and a light producing spark gap to facilitate break-down between the trigger electrode and one of the principal electrodes. 3,350,602, 10–31–67, Cl. 315—150.
Geschka, Hugo W., and J. L. Gillessen, to Constructa-Werke G.m.b.H. Automatic washing machines. 3,349,579, 10–31–67, Cl. 68—12.
Gesellschaft Fur Elektrometallurgie m.b.H.: *See*—
Fuchs, Alfons. 3,350,242.
Getman, Clarence, to General Electric Co. Oven door latching system. 3,350,542, 10–31–67, Cl. 219—412.
Gewerkschaft Eisenbutte Westfalia Withemar bei Lunen: *See*—
Jordan, Friedrich, and Heuser. 3,349,893.
Giddings & Lewis-Frazer Ltd.: *See*—
Firth, John. 3,350,617.
Gidlund, Ake S. Injection syringe. 3,349,767, 10–31–67, Cl. 128—218.
Gilchriest, Carl E.: *See*—
Webb, James E. 3,350,643.
Gilleskie-Rogers-Pyatt Co., Inc.: *See*—
Scholl, Edward C. 3,350,329.
Gillessen, Josef L.: *See*—
Geschka, Hugo W., and Gillessen. 3,349,579.
Gillette Research Institute, Inc.: *See*—
Davis, Agnes E., and Sookne. 3,350,160.
Gilmore, Gregory B.: *See*—
Siegmund, Walter P., and Gilmore. 3,350,183.

Gish, Rollin, to Ethyl Corp. Vehicle engine control. 3,349,644, 10–31–67, Cl. 74—860.
Glanzstoff Koln G.m.b.H.: *See*—
Fassbender, Herbert. 3,349,713.
Glaser, Peter E., to Arthur D. Little, Inc. Inflatable flexible double-wall insulating sealed containers for transporting perishables in a controlled atmosphere. 3,349,574, 10–31–67, Cl. 62—239.
Glassey, Eugene A., to Exactel Instrument Co. Barometer construction. 3,349,622, 10–31–67, Cl. 73—385.
Glaverbel: *See*—
Brichard, Edgard, Plumat, and Duperroy. 3,350,187.
Gloor, Byron T., to Atlas Kassenfabrik A.G. Door-operating apparatus. 3,349,559, 10–31–67, Cl. 60—62.5.
Goetz, Raymond J., to United States of America, Air Force. Thin film strip line fabrication. 3,349,657, 10–31–67, Cl. 83—5.
Goff, Lindsay O., to S. D. Warren Co. Process for coating paper using the paper to be coated for working the coating. 3,350,217, 10–31–67, Cl. 117—64.
Goff, Willie, Jr., to International Business Machines Corp. Ribbon mechanism. 3,349,887, 10–31–67, Cl. 197—151.
Goffe, William L., to Xerox Corp. Method of image reproduction by photopolymerization and blushing. 3,350,205, 10–31–67, Cl. 96—35.1.
Goldberg, Gerald I., to United States of America, National Aeronautics and Space Administration. Reaction wheel scanner. 3,350,033, 10–31–67, Cl. 244—1.
Goldhammer, Jerome S., to Chicago Aerial Industries, Inc. Developer-processor for photographic web material. 3,349,687, 10–31–67, Cl. 95—94.
Gomonet, Edouard, to Claude Paz et Visseaux. Device for switching over the current feeding at least two electric discharge tubes containing an ionizable atmosphere. 3,350,601, 10–31–67, Cl. 315—90.
Good, Walter R.: *See*—
Beckman, Edward V., Good, Schickling, and Young. 3,350,144.
Goodhart, Peter L., ⅓ to G. F. Bennethum. Pasting device for trading stamps and method of using same. 3,350,253, 10–31–67, Cl. 156—230.
Goodman, Robert M., Jr., to Pioneer Heddle and Reed Co., Inc. Heddle bar locking device. 3,349,810, 10–31–67, Cl. 139—92.
Goodyear Tire & Rubber Co., The: *See*—
Conaway, Robert W., and Spindler. 3,349,953.
Meyer, Glen E., and Naples. 3,350,406.
Goshen Mfg. Co., Inc., The: *See*—
Kotler, Aaron L. 3,350,134.
Goshorn, Roland H., and T. E. Deger, to Pennsalt Chemicals Corp. Method of preparing tetrachlorothiophene. 3,350,410, 10–31–67, Cl. 260—332.5.
Goss, Barnard L.: *See*—
Brockman, John J., and Goss. 3,350,613.
Gotch, Ronald W.: *See*—
Lawrence, Arthur C., and Gotch. 3,350,537.
Grace, W. R. & Co.: *See*—
Gush, Donald P., and Marans. 3,350,290.
Olsen, Clarence G. 3,349,903.
Rubinstein, David, and Healy. 3,350,265.
Steadman, Thomas R., and Wood. 3,350,458.
Gragson, Robert A. Precombustion chamber device. 3,349,758, 10–31–67, Cl. 123—32.
Graham, Boynton, to E. I. du Pont de Nemours and Co. Polymers derived from dodecaboric acids and their preparation. 3,350,324, 10–31–67, Cl. 260—2.
Graham, Peter J., W. J. Linn, and W. J. Middleton, to E. I. du Pont de Nemours and Co. Sulfonium methylide compounds and polymeric compositions containing them. 3,300,313, 10–31–67, Cl. 252—63.7.
Graham Transmissions, Inc.: *See*—
Aisch, Richard E. 3,349,642.
Graham, Walter E. Modular transportation equipment. 3,350,113, 10–31–67, Cl. 280—43.23.
Grakauskas, Vytautas, to Aerojet-General Corp. Preparation of tetrafluorohydrazine from the oxidation of carbamates. 3,350,172, 10–31–67, Cl. 23—205.
Granatek, Alphonse P.: *See*—
Granatek, Edmund S. and A. 3,350,266.
Granatek, Edmund S. and A. P., to Bristol-Myers Co. Antacid composition comprising aluminum hydroxide, magnesium hydroxide and magnesium gluconate. 3,350,266, 10–31–67, Cl. 167—55.
Grant, Bruce F.: *See*—
Holbert, Don R., and Grant. 3,349,845.
Gray Tool Co.: *See*—
Crain, Robert L., and Pierce. 3,349,789.
Graziano, Victor, and F. H. Hartke, to Motorola, Inc. Closed loop ratio squared diversity combiner. 3,350,646, 10–31–67, Cl. 325—303.
Great Northern Paper Co.: *See*—
Benjamin, Harley O., and Thompson. 3,349,611.
Grebennik, Valery S.: *See*—
Ryzhov-Nikonov, Vladimir I., Grebennik, and Ermolov.
Green, Alfred J., to NVF Co. Fiberglass reinforced textile bobbin. 3 350.030, 10–31–67, Cl. 242—118.32.
Green, Charles A.: *See*—
Moore, William H., and Green. 3,349,831.
Green, Harold. One-way releasable snap fastener connection for webbing material. 3,349,452, 10–31–67, Cl. 24—218.
Green, Leland D.: *See*—
Nesin, Daniel J., Green, and Kynicki. 3,349,702.
Green, Robert B., H. H. Geissler, and S. S. Kurpit, to Englehard Industries, Inc. Hydrogen generator. 3,350,176, 10–31–67, Cl. 23—281.
Green, Robert L., to FMC Corp. Method of producing detergent composition. 3,350,318, 10–31–67, Cl. 252—135.
Greenfield, Harold: *See*—
Dovell, Frederick S., and Greenfield. 3,350,450.
Greening, Donald J., and E. Q. Mead, to Cutler-Hammer, Inc. Tachometer failure protection circuit for electric motor. 3,350,616, 10–31–67, Cl. 318—327.
Greenwald, Bernard W., to Merck & Co., Inc. Compositions useful in controlling marine fouling and methods for their use. 3,350,211, 10–31–67, Cl. 106—15.
Greer, James E., and W. L. Acree, to Burlington Industries, Inc. Sealing device. 3,349,578, 10–31–67, Cl. 68—5.
Gregg, David P., to Minnesota Mining and Mfg. Co. Electron beam recording and reproducing system. 3,350,503, 10–31–67, Cl. 179—6.6.
Gregoire Engineering and Development Co.: *See*—
Gregoire, Resta S. 3,349,533.
Gregoire, Resta S. 3,350,249.
Gregoire, Resta S., to Gregoire Engineering and Development Co. Method of making impregnated plastic rivet reenforced laminated fiber sheets. 3,350,249, 10–31–67, Cl. 156—92.
Gregoire, Resta S., to Gregoire Engineering and Development Co. Channel extrusion and seal for framing panel edges. 3,349,533, 10–31–67, Cl. 52—397.
Gregory, Arthur S.: *See*—
Roberts, James B., Gregory, and Morris. 3,350,261.
Grenier, Emile P., to Ford Motor Co. Power steering pump. 3,349,714, 10–31–67, Cl. 103—41.
Gretton, Nell B. C., J. T. Rees, and W. Bradley. Enzymatic glucose test composition and device. 3,350,278, 10–31–67, Cl. 195—127.
Griese, Elmer W., Jr., to Ekco Products, Inc. Production of formed metal foil containers. 3,349,739, 10–31–67, Cl. 113—120.
Grinnell Corp.: *See*—
Magson, Arthur. 3,349,916.
Grogan, Charles H.: *See*—
Rice, Leonard M., and Grogan. 3,350,442.
Grootenboer, Dirk, to Shell Oil Co. Method for forming unitary polyolefin hinges. 3,350,492, 10–31–67, Cl. 264—320.
Groov-Pin Corp.: *See*—
Cromwell, Richard K. 3,349,652.
Grosheim, Gene E., and C. T. Hicks, to Formica Corp. Characterizing light reflecting properties of a surface. 3,349,665, 10–31–67, Cl. 88—14.
Gross, Alfred G., Jr., to The Brush Beryllium Co. Method of producing beryllium wire. 3,349,597, 10–31–67, Cl. 72—286.
Gross, Richard E., and G. H. Hunt, to Simplex Wire and Cable Co. Dielectric compositions containing halogenated voltage stabilizing additives. 3,350,312, 10–31–67, Cl. 252—63.2.
Groves, James D.: *See*—
Callow, Alan E., Hughes, and Groves. 3,350,171.
Grundig, Max: *See*—
Stuiber, Walter, and Mueller. 3,349,885.
Grundmann, John F. Valve arrangement. 3,349,801, 10–31–67, Cl. 137—627.5.
Grunziweig & Hartmann A.G.: *See*—
Kurtze, Günter. 3,349,868.
Guckel, Gerhart A., to James Doel Engineering Co. Container seamer and enclosure therefor. 3,349,542, 10–31–67, Cl. 53—112.
Guillet, Henri: *See*—
Calame-Longjean, Andre, Palli, and Guillet. 3,350,565.
Guin, Joel B. Compact mass rapid transit car. 3,349,723, 10–31–67, Cl. 105—344.
Gulf Oil Corp.: *See*—
Anspon, Harry D., Byler, and Ham. 3,350,372.
Gulf Research & Development Co.: *See*—
Benusa, William F., and Coggeshall. 3,349,625.
Huitt, Jimmie L. 3,349,843.
Huitt, Jimmie L., and Lowe. 3,349,851.
Pellegrini, John P., Jr., and Spilners. 3,350,434.
Smith, Francis M., and Terwilliger. 3,349,847.
Weismann, Theodore J., and Zarrella. 3,350,476.
Gulton Industries Inc.: *See*—
Seiger, Harvey N. 3,350,225.
Guptill, Frank E., Jr.: *See*—
Hess, Howard V., and Guptill. 3,350,299.
Hess, Howard V., and Guptill. 3,350,300.
Guseva, Iraida S.: *See*—
Komarov, Nickolai V., and Guseva. 3,350,433.
Gush, Donald P., and N. S. Marans, to W. R. Grace & Co. Photochemical production of cyclopropane. 3,350,290, 10–31–67, Cl. 204—162.
Gustafson, Ralph P., and E. C. Smiley, to Crompton & Knowles Corp. Locking device. 3,349,408, 10–31–67, Cl. 139—66.
Gutner, Kenneth H. Bedrail element and method of manufacture. 3,349,414, 10–31–67, Cl. 5—296.
Guzman, Hector E., and G. E. Keefer, to Owens-Illinois, Inc. Directional flow control apparatus. 3,349,791, 10–31–67, Cl. 137—309.
Haanes, Arnt U. Self-contained reciprocatory hydraulic spring. 3,350.087, 10–31–67, Cl. 267—1.
Haase, Wilbert W., Jr., R. G. Reichle, and J. E. Wennerberg, Jr., to American Wibbert Vault Corp. Burial vault cover forming apparatus. 3,350,051, 10–31–67, Cl. 249—91.
Hadwick, Cecil G.: *See*—
Barnes, Alfred H., and Hadwick. 3,350,495.
Hagemeyer, Hugh J., Jr., and W. T. Brady, to Eastman Kodak Co. Process for preparing essentially ash-free polymers of aldehydes. 3,350,358, 10–31–67, Cl. 260—67.
Hager, Richard G.: *See*—
Colby, Edward E., and Hager. 3,350,208.
Haight, Robert E.: *See*—
Bahl, James M., and Haight. 3,349,670.
Halasz, Istvan: *See*—
Edinger, Ladislav L., and Halasz. 3,349,764.
Halcon International, Inc.: *See*—
Kollar, John. 3,350,422.

Halko, John J., Jr., and M. S. Reider, to Riv-Kap, Inc. Frame joint and fastener therefor. 3,349,536, 10–31–67, Cl. 52—656.

Halko, John J., Jr., to Riv-Kap, Inc. Corner protectors. 3,349,-984, 10–31–67, Cl. 229—14.

Hall, Alice N., to Munsingwear, Inc. Lady's garment. 3,349,-409, 10–31–67, Cl. 2—74.

Hall, John R., and J. T. Van Gemert, to Imperial Chemical Industries of Australia and New Zealand Ltd. Electrodes. 3,350,294, 10–31–67, Cl. 204—290.

Ham, George E.: *See*—
Anspon, Harry D., Byler, and Ham. 3,350,372.

Hamill, Dennis W.: *See*—
Hunter, Melvin J., Kern, and Hamill. 3,350,182.

Hamilton Cosco, Inc.: *See*—
Hamilton, John J., and Schroer. 3,349,727.

Hamilton, John J., and C. E. Schroer, to Hamilton Cosco. Inc. Tray table. 3,349,727, 10–31–67, Cl. 108—119.

Hamner, Glen P., and R. B. Mason, to Esso Research and Engineering Co. Oxidized binder pitch from dealkylated condensed aromatic petroleum fractions. 3,350,295, 10–31–67, Cl. 208—4.

Hancock Industries, Inc.: *See*—
Kirk, Joseph R. 3,350,046.

Hannan, William J., to United States of America, Air Force. RC circuit means to compensate for defocusing of a pulsed image intensifier. 3,350,600, 10–31–67, Cl. 315—31.

Hanscom, Genevieve I.: *See*—
Crawford, Lynn D. 3,349,905.

Hansen, Darryl T., and T. D. Talcott, to Dow Corning Corp. Organosilicon compositions and methods of preparation and vulcanization thereof. 3,350,351, 10–31–67, Cl. 260—46.5.

Hansen, Hans R. A., and R. C. Van Schaack, to Imperial Electric Co. Jerkless pattern signal for motor acceleration. 3,350,612, 10–31–67, Cl. 318—143.

Hansocom, Genevieve I.: *See*—
Crawford, Lynn D. 3,349,905.

Hansom, Bernard S., and F. F. Simpson, to Wilkinson Sword Ltd. Safety razors having a flexible razor blade band. 3,349,482, 10–31–67, Cl. 30—40.1.

Hanson-Van Winkle-Munning Co.: *See*—
McMullen, Warren H., Mooney, and Stoddard. 3,350,167.

Hardy, Edgar E., and L. A. Beer, to Monsanto Co. Rigid polyvinyl chloride blends having improved impact strength. 3,350,232, 10–31–67, Cl. 260—22.

Hardy, Edgar E.: *See*—
Beer, Ludwig A., and Hardy. 3,350,333.

Harmon, John J.: *See*—
Fonlger, Kenneth D., Harmon, and Silver. 3,350,693.

Harnischfeger Corp.: *See*—
Johnson, Arthur E. 3,350,538.
Searles, Thomas F. 3,349,477.
Wycoff, David C., and Elez. 3,349,873.

Harper, Chester H.: *See*—
Allen, Kenneth M., and Harper. 3,349,894.

Harper, Leonard R., to International Business Machines Corp. Crystal controlled oscillator circuit utilizing transistors. 3,350,662, 10–31–67, Cl. 331—116.

Harris, Thomas E., and S. J. Hughes, to Dominion Engineering Works Ltd. Grinding mill control or the like. 3,350,018, 10–31–67, Cl. 241—34.

Harrison, James W.: *See*—
Steinbrecher, Lester, Dollman, Buczkowski, and Harrison. 3,350,284.

Harrison, John S. J., to Sperry Rand Corp. Monitor employing logic gate and counter to indicate normal pulse-train failure after predetermined time interval. 3,350,580, 10–31–67, Cl. 307—88.5.

Hartke, Frederick H.: *See*—
Graziano, Victor, and Hartke. 3,350,646.

Hartman, Robert J.: *See*—
Patton, John T., Jr., Hartman, and Austin. 3,350,389.

Hartstone, John L. Metering and flow indicating device for use during milking. 3,349,617, 10–31–67, Cl. 73—202.

Hasegawa, Hiroshi, E. Suito, and M. Kondo, to Shiraishi Kogyo Kaisha. Ltd. Process for the manufacture of modified clays. 3,350,429, 10–31–67, Cl. 260—404.

Hashimoto, Hideo: *See*—
Ensign, John D., and Hashimoto. 3,349,896.

Hashimoto, Tadaichi, to C. F. Shepherd. Device for amalgamation of gold and silver. 3,349,908, 10–31–67, Cl. 209—185.

Hass, Karl, A. Lenz, and O. Bieh, to Dynamit Nobel Aktiengesellschaft. Process for the manufacture of esters of orthoformic acid with alkanols with 2 to 6 carbon atoms. 3,350,-463, 10–31–67, Cl. 260—615.

Hatfield, John E., to Irving Air Chute Co., Inc. Safety belt buckle and webbing. 3,349,449, 10–31–67, Cl. 24—197.

Hauf, Frederick W., and W. H. Quick, to North American Aviation Inc. Rotated vibrating whisker gyro. 3,349,627, 10–31–67, Cl. 73—505.

Hauffe, William L.: *See*—
Mueller, Frank H., and Hauffe. 3,349,799.

Hawkins, Edward L., and R. A. Taylor. Time-responsive control means for typographical composing machines. 3,349,-895, 10–31–67, Cl. 199—14.

Hawkins, Harold F., and R. J. Lloyd, to Humphris & Sons Ltd. Strip feed device. 3,349,981, 10–31–67, Cl. 226—155.

Hayden, Edward F.: *See*—
Sanguinetti, Bradley E., and Hayden. 3,350,148.

Haydock, Raymond S., ½ each to R. Haydock, Jr., and L. Haydock. Hooded caster wheel assembly. 3,349,426, 10–31–67, Cl. 16—46.

Haydock, Raymond, Jr.: *See*—
Haydock, Raymond S. 3,349,426.

Haygeman, Robert M. Box flap holder. 3,349,446, 10–31–67, Cl. 24—87.

Hayward, Norman G.: *See*—
Duff, Alan A., and Hayward. 3,349,937.

Head, Wrightson & Co., Ltd.: *See*—
Eveson, Geoffrey F., and Richards. 3,349,912.

Healy, James: *See*—
Rubinstein, David, and Healy. 3,350,265.

Hehl, Karl, to Arburg Maschinenfabrik Hehl & Sohne. Injection molding unit. 3,349,439, 10–31–67, Cl. 18—30.

Heico, Inc.: *See*—
Ziegler, Henry B. 3,350,168.

Heier, William, to Rudd-Melikian, Inc. Beverage brewing apparatus. 3,349,690, 10–31–67, Cl. 99—283.

Hell, Theodore, ½ to V. M. Watts. Green-sweeping brush attachment for a golf putter. 3,349,422, 10–31–67, Cl. 15—160.

Hein, Richard D., to The General Tire & Rubber Co. Low friction structural bearing. 3,349,418, 10–31–67, Cl. 14—16.

Heiss, Rudolf: *See*—
Pelster, Heinrich, and Heiss. 3,350,459.

Hekelaar, Marten, to North American Philips Co., Inc. Magnetic latch for a door. 3,350,127, 10–31–67, Cl. 292—251.5.

Helderman, Earl R.: *See*—
Ang, Choh-Yi, and Helderman. 3,350,201.

Hellenkamp, Johann F. Underwater scanning device. 3,349,-680, 10–31–67, Cl. 95—11.

Hellmund, Karl-Heinz: *See*—
Buhere, Erwin, Bachtold, and Hellmund. 3,350,083.

Hellström, Axel G., to Aktiebolaget Gotaverken. Entablatures for piston engines. 3,349,761, 10–31–67, Cl. 123—195.

Henco Mfg. Co., Inc.: *See*—
Chester, Henry. 3,349,788.

Henkel & Cie G.m.b.H.: *See*—
Engelskirchen, Konrad, and Galinke. 3,350,386.

Henn, William, to Radio Corp. of America. Logic gate oscillator. 3,350,659, 10–31–67, Cl. 331—57.

Hennig, Hans J., to Farbenfabriken Bayer Aktiengesellschaft. Process for preparing biuret polyisocyanates. 3,350,438, 10–31–67, Cl. 260—453.

Hennigan, Henry W.: *See*—
Trantham, Joseph C., Hennigan, Fetkovich, Tek, and Bruns. 3,349,846.

Hentz, Robert R., to Mobil Oil Corp. Fuel cell electrode and method of using same. 3,350,231, 10–31–67, Cl. 136—86.

Herbkersman, Earle C., to The Pipe Machinery Co. Tool carriage positioner and combination thereof with threading machine. 3,349,416, 10–31–67, Cl. 10—89.

Herbst, Richard A. Sail propulsion apparatus. 3,349,741, 10–31–67, Cl. 114—39.

Hercules Inc.: *See*—
Buntin, George A. 3,350,194.
Fee, Harry R., Ferguson, and Lawrence. 3,350,246.
Silver, Raymond P. 3,350,335.

Herd, Richard S., E. Koft, Jr., and F. P. Otto, to Mobil Oil Corp. Preparation of overbased calcium alkylphenate sulfides. 3,350,310, 10–31–67, Cl. 252—42.7.

Herion, Erich, and E. Ruchser, said Ruchser, assor. to said Herion. Multi-way changeover valve in the form of a flat slide valve with servo drive. 3,349,800, 10–31–67, Cl. 137—625.66.

Herman, Ruth A., to United States of America, Air Force. Infrared detection system for fault isolation and failure prediction. 3,350,702, 10–31–67, Cl. 340—228.

Herrick, Ivan, M. F. Adams, and E. M. Huffaker, to Northwest Magnesite Co. Purification of aqueous refuse liquids containing the ortho-hydroxyphenol molety. 3,350,259, 10–31–67, Cl. 162—16.

Hess, Howard V., and F. E. Guptill, Jr., to Texaco Inc. Recovery of desalted water form brine. 3,350,299, 10–31–67, Cl. 210—22.

Hess, Howard V., and F. E. Guptill, Jr., to Texaco Inc. Recovery of salt-free water form brine. 3,350,300, 10–31–67, Cl. 210—22.

Heuser, Ewald: *See*—
Jordan, Friedrich, and Heuser. 3,349,893.

Hewitt, Gordon T., to Colgate-Palmolive Co. Detergent bar containing fatty ketone. 3,350,320, 10–31–67, Cl. 252—161.

Hicks, Clark T.: *See*—
Grosheim, Gene E., and Hicks. 3,349,665.

Higatsberger, Michael J., to Osterreichische Studiengesellschaft Fur Atomenergie G.m.b.H. Matrix-type nuclear fuel element including fission product retentive materials. 3,350,-274, 10–31–67, Cl. 176—69.

Higuchi, Akira, and T. Miyamoto, to Sumitomo Special Metals Co. Ltd. Method of producing magnetically anisotropic single-crystal magnets. 3,350,240, 10–31–67, Cl. 148—1.6.

Hildebrandt, Alexander B., to Esso Production Research Co. Coring apparatus. 3,349,857, 10–31–67, Cl. 175—250.

Hill, Raymond R. Carburetor. 3,350,073, 10–31–67, Cl. 261—44.

Himelstein, Nathan G.: *See*—
Rylander, Paul N., and Himelstein. 33,50,452.

Hines, John, to The New England Lock and Hardware Co. Cylinder locks. 3,349,588, 10–31–67, Cl. 70—364.

Hingley, Colin G., to SKF Industries, Inc. Rolling bearing assembly. 3,350,147, 10–31–67, Cl. 308—187.

Hinrichs, Carl B., to Aluminum Extrusions, Inc. Structural pole assemblies. 3,350,120, 10–31–67, Cl. 287—58.

Hirsch, James A., to P. R. Mallory & Co. Means for intermittently driving a cam-carrying shaft. 3,350,606, 10–31–67, Cl. 317—22.

Hirvela, Robert J., to Collins Radio Co. Storage means for receiving, assembling, and distributing teletype characters. 3,350,697, 10–31–67, Cl. 340—172.5.

Hitz, Carson K. Nesting basket and carrier combination. 3,349,942, 10–31–67, Cl. 220—19.

Hodgson, Russell L., to Shell Oil Co. Production of sulfur-containing heterocyclic compounds. 3,350,408, 10–31–67, Cl. 260—327.

Hodler, Fritz. Pressure molding venting method. 3,349,833, 10–31–67, Cl. 164—113.

Hoehn, Gustave L., Jr., to Mobil Oil Corp. Electromagnetic investigation for salt webs interconnecting spaced salt domes. 3,350,634, 10–31–67, Cl. 324—6.

Hofer, Peter H., and H. A. Swallow, to Union Carbide Corp. Method for molding plastic articles. 3,350,487, 10–31–67, Cl. 264—161.

Hoffman, Daniel J. N.: *See*—
Beeton, Thomas B., Hoffman, and Du Plessis. 3,350,197.

Hoffman Electronics Corp.: *See*—
Ule, Louis A. 3,350,234.

Hoffman, Robert. Potentiometer. 3,350,672, 10–31–67, Cl. 338—132.

Hoffman, Robert L., to Benton Harbor Engineering Works, Inc. Holding valve with thermal relief. 3,349,671, 10–31–67, Cl. 91—420.

Hoffman, Wade H. Process for the purification of waste water by emulsion-breaking and flotation. 3,350,301, 10–31–67, Cl. 210—44.

Hogg, William J.: *See*—
Port, Morton I., and Hogg. 3,349,552.

Holpkemeier, Fredrick L., to Black, Sivalls & Bryson, Inc. Gas scrubber device. 3,349,547, 10–31–67, Cl. 55—324.

Holbert, Don R., and B. F. Grant, to Sinclair Oil & Gas Co. Method of establishing communication between wells. 3,349,-845, 10–31–67, Cl. 166—4.

Holder, Fritz. Pressure molding venting method. 3,349,833, 10–31–67, Cl. 164—113.

Holley Carburetor Co.: *See*—
Soeters, Raymond A. 3,350,517.

Holloway, William S., to Madison Industries, Inc. Adjustable boring tool. 3,349,648, 10–31–67, Cl. 77—58.

Holophane Co. Inc.: *See*—
Baring, John A. 3,349,666.
Erickson, Roger D. 3,350,603.
Erickson, Roger D. 3,350,604.
Ireland, Paul E. 3,350,031.
Jensen, James L. 3,350,619.
Kluge, Robert D. 3,349,510.
Masterson, Earl E., and Carman. 3,350,091.
Schmitz, Robert. 3,350,053.
Thieme, Horst R. 3,349,787.
Thomson, Henry (Harry) A. 3,349,454.

Honeywell Inc.: *See*—
Franck, Kurt, and McPhail. 3,350,556.

Hood, Henry A., to Wall Industries, Inc. Yarn twisting apparatus. 3,349 553, 10–31–67, Cl. 57—58.7.

Hooker Chemical Corp.: *See*—
Bacon, Oliver M. 3,350,303.
Bacon, Oliver M. 3,350,304.
Cherbuliez, Emile, and Rabinowitz. 3,350,478.
Cherbuliez, Emile, and Rabinowitz. 3,350,479.
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Hopfeld, Henry. Reinforced structural member. 3,349,537, 10–31–67, Cl. 52—729.

Hopps, Harvey B., to Aldrich Chemical Co., Inc. N-aralkyl amides of 4-phenyl-piperidino-4-alkanoic acids. 3,350,404, 10–31–67, Cl. 260—294.

Hopps, Harvey B.: *See*—
Biehl, John H., and Hopps. 3,350,403.

Horan, John J. Engine-ignition systems and components. 3,349,760, 10–31–67, Cl. 123—162.

Horn, Elmar-Manfred, K. Kleine-Weischede, K. Lang, and H. Niederprum, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of polymeric boron nitrogen compounds. 3,350,326, 10–31–67, Cl. 260—2.

Horner, Frank W., Ltd.: *See*—
McColl, John D., and Frangatos. 3,350,396.

Horning, Raymond H., to Phillips Petroleum Co. Gable top container with notched ridge. 3,349,988, 10–31–67, Cl. 229—17.

Houdaille Industries, Inc.: *See*—
Johns, John A., and Schott. 3,349,658.
Schott, Arthur K. 3,350,088.

Houk, Richard D., to Morse Controls Inc. Selective vernier control. 3,349,638, 10–31–67, Cl. 74—503.

Hourigan, Daniel P., and J. D. Shull, Jr., to National Gypsum Co. Plastic-covered gypsum wallboard. 3,350,257, 10–31–67, Cl. 161—43.

Howard, David F., to Read Corp. Rack type dough proofer. 3,349,928, 10–31–67. Cl. 214—16.4.

Howard, William L.: *See*—
Bishop, Forest M., R. I., Jr., and Howard. 3,350,101.

Howell, Elvin L., and C. M. Hyman, to International Harvester Co. Straw chopper and spreader. 3,350,017, 10–31–67, Cl. 239—660.

Howell, Robert B. Zipper foot attachments. 3,349,786, 10–31–67, Cl. 112—235.

Howell, Ronald T. A.: *See*—
Walker, Philip H., Cawsey, and Howell. 3,350,714.

Hubbell, Harvey, Inc.: *See*—
Misencik, John, Macklewicz, and Poarch. 3,350,675.

Hudson, Frederick W., to Xerox Corp. Xerographic development electrode apparatus. 3,349,676, 10–31–67, Cl. 95—1.7.

Hudson, John B.: *See*—
Young, James R., Hudson, and Watters. 3,350,559.

Huenig, Siegfried, and E. Luecke, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. 2(1'-cycloalken-1'-yl)-1-azacycloalk-1-ene compounds and production thereof. 3,350,390, 10–31–67, Cl. 260—239.

Huff, Joseph F. Contour positioning device. 3,349,983, 10–31–67, Cl. 228—7.

Huffaker, Ethan M.: *See*—
Herrick, Ivan, Adams, and Huffaker. 3,350,259.

Hughes, Charles R. Expanding arbor. 3,350,107, 10–31–67, Cl. 279—2.

Hughes, George W. Protective skillet lid. 3,349,948, 10–31–67, Cl. 220—44.

Hughes, Samuel J.: *See*—
Harris, Thomas E., and Hughes. 3,350,018.

Hughes, William: *See*—
Callow, Alan E., Hughes, and Groves. 3,350,171.

Huitt, Jimmie L., to Gulf Research & Development Co. Thermal recovery of petroleum hydrocarbons. 3,349,843, 10–31–67, Cl. 166—2.

Huitt, Jimmie L., and D. K. Lowe, to Gulf Research & Development Co. Fracturing process. 3,349,851, 10–31–67, Cl. 166—42.

Hulman, Jule, and B. Fisher, to United System Corp. Multidigit decimal presentation means for digital meters. 3,350,-639, 10–31–67, Cl. 324—115.

Humphrey, Leslie F.: *See*—
Chapman, Michael C., Westhrup, and Humphrey. 3,349,-986.

Humphris & Sons Ltd.: *See*—
Hawkins, Harold F., and Lloyd. 3,349,981.

Hunnewell Soap Co., The: *See*—
Bacon, Oliver M. 3,350,303.
Bacon, Oliver M. 3,350,304.

Hunt, George H.: *See*—
Crowdes, George J., and Hunt. 3,349,832.
Gross, Richard E., and Hunt. 3,350,312.

Hunt, Michael S.: *See*—
Tyrrell, Albert R., and Hunt. 3,349,566.

Hunter, Melvin J., E. L. Kern, and D. W. Hamill, to Dow Corning Corp. Silicon carbide glass fiber bushing and method of making said bushing. 3,350,182. 10–31–67, Cl. 65—1.

Hureau, Jacques, to Societe Generale Alimentaire G.a.s.A. Extrusion of articles with ribbed full walls. 3,349,484, 10–31–67, Cl. 18—12.

Huron Nassau Ltd.: *See*—
Crane, George J. 3,350,286.

Hurwitz, Melvin D., to Rohm and Haas Co. N-(acylamidoalkyl)-N'-vinyl-N,N'-alkyleneureas, polymers thereof and methods of making them. 3,350,363, 10–31–67, Cl. 260—77.5.

Husted, Lawrence E., to Ametek, Inc. Method of connecting parts and parts connected by the method. 3,350,124, 10–31–67, Cl. 287—189.36.

Hutchins, Alma A. Clip for sanding tool or the like. 3,349,523, 10–31–67, Cl. 51—386.

Hutwelker, Walter, to Elsen und Metall Aktiengesellschaft. Headlight shielding devices. 3,349,674, 10–31–67, Cl. 94—1.

Hyatt, Fred C.: *See*—
Underhill, Noel B., and Hyatt. 3,350,689.

Hyde, James F., to Dow Corning Corp. Room temperature curing organopolysiloxane resins. 3,350,349, 10–31–67, Cl. 260—46.5.

Hyde, James S., to Varian Associates. Gyromagnetic spectrometer having separate dispersion and absorption mode detectors. 3,350.633, 10–31–67, Cl. 324—.5.

Hyman, Charles M.: *See*—
Howell, Elvin L., and Hyman. 3,350,017.

Hynes, Joseph H., to Ventura Tool Co. Seal ring retaining apparatus. 3,350,104, 10–31–67, Cl. 277—9.

I.A.S. Bicor Corp.: *See*—
Ree, Roelof. 3,349,733.

I-T-E Circuit Breaker Co.: *See*—
McKeough, Daniel H. 3,350,528.

Ideal Industries, Inc.: *See*—
Swanson, Arthur F. 3,350,499.
Zulauf, Richard F. 3,350 044.

Iida, Chiyoichi, and H. Yano. Clip device. 3,349,453, 10–31–67, Cl. 24—252.

Iki, Yasuhiko, to Kiyohiko Iki. Magnetizable-particle type filtration apparatus capable of performing continuous filtering operation. 3,349,918, 10–31–67, Cl. 210—223.

Ilford Ltd.: *See*—
Whitear, Brian R. D., and Fry. 3,350,382.

Illinois Tool Works, Inc.: *See*—
Koepke, John A. 3,350,531.
Wanderer, Herbert J. 3,349,941.
Wanderer, Herbert J. 3,349,950.

Imperial Chemical Industries of Australia and New Zealand Ltd.: *See*—
Hall, John R., and Van Gemert. 3,350,294.

Imperial Electric Co.: *See*—
Hansen, Hans R., and Van Schaack. 3,350,612.

Indrike, Viktor, to Kalle Aktiengesellschaft. Manufacture of thermoplastic containers. 3,349,989, 10–31–67, Cl. 229—44.

Industrial Dynamics Co., Ltd.: *See*—
Calhoun, Frederick L., and Dawson. 3,349,906.

Industrial Washing Machine Corp.: *See*—
Sadwith, Howard M. 3,350,224.

Ingersoll-Rand Co.: *See*
Niedzwiecki, Joseph F. 3,349,461.
Stoker, Robert J. 3,349,841.

Ingman, Thomas M., to Microdot, Inc. Voltage regulator with switching means introducing voltage increments into the input side. 3,350,631, 10–31–67, Cl. 323—45.

Ingot Aid Co., Inc.: *See*—
Daley, Robert E. 3,350,052.

Ingram, Robert: *See*—
Stanford, Charles T. and C. 3,350,109.

Inland Container Corp.: *See*—
Cox, Herbert F., Jr., and Strahl. 3,349,859.
Ketler, Lester K. 3,349,960.

Inland Steel Co.: *See*—
Bijvoet, Leonardus A. N. 3,349,600.
Bijvoet, Leonardus A. N. 3,349,952.
Ullman, Frederick E., and Deegan. 3,349,599.

Intellux Inc.: *See*—
Leeds, Michael T. 3,350,498.
Interchemical Corp.: *See*—
Varron, Frederick A., and Dunne. 3,349,703.
Interlake Steel Corp.: *See*—
Buy, Alexander. 3,349,442.
International Business Machines Corp.: *See*—
Ames, Irving, and Caswell. 3,350,222.
Bakis, Raimo. 3,350,505.
Bloom, Earl M., Jr. and Faidley. 3,349,695.
Croll, Ian M. 3,350,180.
Crouse, William G. 3,350,575.
Foulger, Kenneth D., Harmon, and Silver. 3,350,693.
Goff, Willie, Jr. 3,349,887.
Harper, Leonard R. 3,350,662.
Jackowski, Charles S. 3,350,003.
Kaufman, Samuel, and Magnino. 3,350,695.
Krakinowski, Morris, and Blaskovic. 3,350,518.
Kusnick, Arthur A., and Spruth. 3,350,694.
Marinace, John C. 3,349,475.
Pilkuhn, Manfred H., and Rupprecht. 3,349,476.
Rashleigh, Clayton. 3,349,480.
Rice, Rex. 3,350,690.
Schmeckenbecher, Arnold F. 3,350,210.
Srinivasan, Rangaswamy. 3,350,291.
International Harvester Co.: *See*—
Howell, Elvin L., and Hyman. 3,350,017.
International Rectifier Corp.: *See*—
Mesch, Hans G. 3,350,633.
International Register Co.: *See*—
Svarnias, Ted N. 3,350,589.
International Standard Electric Corp.: *See*—
Bauer, Ludwig. 3,350,516.
Knauer, Hans, and Schmidt. 3,350,510.
Kobus, Stanislas, and Chu. 3,350,696.
Willrett, Helmut, Schönemeyer, and Siegel. 3,350,507.
International Steel Co.: *See*—
Sheckells, Amuel E. 3,349,876.
Inventa A.G. fur Forschung und Patentverwertung: *See*—
Schultze, Hans-Joachim, and Berther. 3,350,392.
Fueg, Heinz. 3,350,456.
Ireland, Paul E., to Honeywell Inc. Transmitting apparatus. 3,350,031, 10–31–67, Cl. 242—156.2.
Irkutsky Institute organicheskoi Khimii: *See*—
Kamarov, Nickolai V., and Guseva. 3,350,433.
Irving Air Chute Co., Inc.: *See*—
Foster, Walter E., and Black. 3,349,445.
Hatfield, John E. 3,349,449.
Isbell, Aubrey D. Pivoted spinning reel. 3,350,029, 10–31–67, Cl. 242—84.2.
Ishida, Shinichi: *See*—
Wakasa, Ryoichi, Ishida, and Ohama. 3,350,367.
Isreell, Jack, to The Technicon Co., Inc. Tissue processing for electron microscope examination thereof. 3,350,220, 10–31–67, Cl. 117—113.
Jablonski, Raymond C. Cigarette ashtray means. 3,349,778, 10–31–67, Cl. 131—241.
Jackowski, Charles S., to International Business Machines Corp. Fluid controlled actuating mechanism. 3,350,003, 10–31–67, Cl. 234—107.
Jacoby, Charles E.: *See*—
Bradt, Lynn, and Jacoby. 3,349,718.
Jacques Kreisler Mfg. Corp.: *See*—
Burchett, Ray L., and Sain. 3,349,577.
Jaffa, David: *See*—
Jaffa, Matthew L. and D. 3,349,698.
Jaffa, Matthew L. and D. Clamp assembly for use on screen printing machines. 3,349,698, 10–31–67, Cl. 101—126.
James Doel Engineering Co.: *See*—
Guckel, Gerhart A. 3,349,542.
James, Robert L., to The Bendix Corp. Network for converting a direct current signal into pulses having a frequency corresponding to the amplitude of the direct current signal. 3,350,574, 10–31–67, Cl. 307—88.5.
Jamison, Saunders E., to Celanese Corp. Polyvinylidene cyanide composition and method of producing fibers and films. 3,350,489, 10–31–67, Cl. 264—203.
Janosik, James P., to E. I. du Pont de Nemours and Co. Non-dimpling regenerated cellulose film. 3,349,501, 10–31–67, Cl. 34—41.
Janus, Theodore P.: *See*—
Prickett, Robert L., Janus, and Wolk. 3,350,560.
Janzen, Heinz-Dieter, to Adrema-Werke G.m.b.H. Address printing plate. 3,349,701, 10–31–67, Cl. 101—369.
Jaywoth Roof Tile Co., Inc.: *See*—
Wotherspoon, John G. 3,349,534.
Jeddeloh Bros. Sweed Mills, Inc.: *See*—
Larson, Charles L. 3,350,090.
Jeff, William J. Fishing lure. 3,349,513, 10–31–67, Cl. 43—42.02.
Jenard, Francis W.: *See*—
Jenard, Leonard J. and F. W. 3,350,215.
Jenard, Leonard J. and F. W., to Paulis Silk Co. Method of making cohesive fabric. 3,350,215, 10–31–67, Cl. 117—37.
Jensen, Hans A., and A. H. Eberman, to Oscar Mayer & Co., Inc. Method and apparatus for continuously forming packages. 3,349,540, 10–31–67, Cl. 53—22.
Jensen, James L., to Honeywell, Inc. Battery charging circuit responsive to generator output voltage and current. 3,350,619, 10–31–67, Cl. 320—32.
Jeppesen & Co.: *See*—
Urben, Frederick E. 3,350,007.
Johns, John A., and A. K. Schott, to Houdaille Industries, Inc. Workpiece positioning system. 3,349,658, 10–31–67, Cl. 83—71.
Johnson, Arthur E., to Harnischfeger Corp. Programmed welding with controlled rectifier welding power source. 3,350,538, 10–31–67, Cl. 219—137.
Johnson, Christopher L., to Rolls-Royce Ltd. Gas turbine engine fuel system. 3,349,557, 10–31–67, Cl. 60—39.28.
Johnson, Kenneth W., to Johnson-Williams, Inc. Gas concentration detection apparatus. 3,350,703, 10–31–67, Cl. 340—237.
Johnson, Reginald, to James R. Crompton and Bros. Ltd. Method of forming a configured fibrous web containing paper-making fibers and fibers of a heat-sealable material. 3,350,260, 10–31–67, Cl. 162—116.
Johnson, Robert C.: *See*—
Alley, John K., and Johnson. 3,350,166.
Johnson, Waldo O., to Weather-Seal, Inc. Window assembly including a storm sash and storm sash latch. 3,349,517, 10–31–67, Cl. 49—61.
Johnson, Waldo O., to Wather-Seal, Inc. Removable window with sash balance lock. 3,349,518, 10–31–67, Cl. 49—446.
Johnson, Wayne R., to Minnesota Mining and Mfg. Co. Speed indicator and control system. 3,350,511, 10–31–67, Cl. 179—100.2.
Johnson-Williams, Inc.: *See*—
Johnson, Kenneth W. 3,350,703.
Jonas, Heinz: *See*—
Simmler, Walter, Niederprum, and Jonas. 3,350,437.
Jones, John C., and A. J. Bundy, to American Saint Gobain Corp. Packaged plate glass. 3,349,900.
Jones, John R., to Morphy-Richards (Cray) Ltd. Temperature sensing arrangements for heating or cooking appliances. 3,349,692, 10–31–67, Cl. 99—331.
Jones, Peter D., to Joseph Lucas (Industries) Ltd. Cathode loaded overload protection circuit. 3,350,607, 10–31–67, Cl. 317—33.
Jordan, Friedrich, and E. Heuser, to Gewerkschaft Eisenhutte Westfalia Wthemar bei Lunen. Conveyor belt. 3,349,893, 10–31–67, Cl. 198—195.
Jordansson, Lars B., and P. B. Wahlström, to Aktiebolaget Kalstads Mekaniska Werkstad. Apparatus for removing liquid from fourdrinier wire in paper-making. 3,350,263, 10–31–67, Cl. 162—351.
Jorris, Terry R., to United States of America, Air Force. Spacecraft stadimetric ranging device for manual autonomous, altitude determination through a limited field of view. 3,349,493, 10–31–67, Cl. 33—64.
Joseph Lucas (Industries) Ltd.: *See*—
Fry, William L. 3,350,530.
Sealey, Frank. 3,350,237.
Judd, Claude I.: *See*—
Drukker, Alexander E., and Judd. 3,350,391.
Jung, Margarete: *See*—
Ryhiner, Gunther, Von Dobren, and Jung. 3,350,232.
Jureit, John C., to Automated Building Components, Inc. Cable protector. 3,350,501, 10–31–67, Cl. 174—135.
Justi, Eduard, to Siemens-Schuckertwerke Berlin and Erlangen, Germany, and Varta Aktiengesellschaft. Method and apparatus for storing gaseous fuel for the operation of fuel cells. 3,350,229, 10–31–67, Cl. 136—86.
Kabushiki Kaisha Taihei Seisakusho: *See*—
Nagaoka, Noriyuki. 3,349,820.
Kahn, Leonard R. Compatible single-sideband system with synthesized phase modulating wave. 3,350,645, 10–31–67, Cl. 325—137.
Kaiser Aluminum and Chemical Corp.: *See*—
Muije, Pieter, Mohondro, and Fetzer. 3,349,469.
Kaiser Gypsum Co., Inc.: *See*—
Byssing, George J. 3,349,529.
Kalart Co. Inc., The: *See*—
Castedello, William. 3,349,683.
Kalert, Ralph E., Jr., and D. A. Reise, to ACF Industries, Inc. Limited travel carburetor metering rod. 3,350,074, 10–31–67, Cl. 261—51.
Kalle Aktiengesellschaft: *See*—
Indrike, Viktor. 3,349,989.
Kelsey-Hayes Co.: *See*—
Stelzer, William. 3,349,875.
Kanegofuchi Roseki Kabushiki Kaisha, d/b/a Kanegafuchi Spinning Co. Ltd.: *See*—
Maeno, Minoru. 3,349,451.
Kapany, Narinder S., to Optics Technology, Inc. Blood flow indicator and process. 3,349,762, 10–31–67, Cl. 128—2.05.
Karecki, Marion R., to V-M Corp. Tape recorder. 3,350,024, 10–31–67, Cl. 242—55.12.
Karlovsky, Jerry, Jr., to National Mine Service Co. Mining machine with laterally extensible trim chain sprockets and locking means therefor. 3,350,137, 10–31–67, Cl. 299—61.
Karp, Jay C., to Alpha Microelectronics Co., Inc. Integrated circuit sealing method and structure. 3,349,481, 10–31–67, Cl. 29—627.
Kaspar, Bryce C. Speed measuring apparatus. 3,349,616, 10–31–67, Cl. 73—184.
Kasper, Frank S., and R. L. Billingsley, to Amtron, Inc. Matrix circuitry controlled by timing modules having individual time duration outputs. 3,350,084, 10–31–67, Cl. 340—166.
Kassmeier, William H., to Overland Products Co., Inc. Drawbar pin. 3,350,117, 10–31–67, Cl. 280—515.
Kastning, Ernst-Guenther: *See*—
Wisseroth, Karl, Pietsch, and Kastning. 3,350,376.
Katano, Toshio. Method for drying raw material chips of synthetic resin. 3,349,499, 10–31–67, Cl. 34—10.
Kaufman, Arnold, A. G. Dunn, and S. G. Wright, to Leytool Ltd. Ratchet spanner. 3,349,053, 10–31–67, Cl. 81—60.
Kaufman, Harold A., R. A. Kremer, and P. R. Driscoll, to Mobil Oil Corp. Vapor phase ring closure. 3,350,409, 10–31–67, Cl. 260—332.3.
Kaufman, Samuel, and J. J. Magnino, Jr., to International Business Machines Corp. Information retrieval system and method. 3,350,695, 10–31–67, Cl. 340—172.5.
Kaufmann, Frank H., to Steel Heddle Mfg. Co. Heddles. 3,349,811, 10–31–67, Cl. 139—96.

Kawazura, Hiroshi: *See*—
Yoshioka, Sadao, Noro, Kawazura, and Takita. 3,350,359.
Keane, Francis X. Portable urinal provided with suction means for use in micturition. 3,349,768, 10–31–67, Cl. 128—276.
Keefer, George E.: *See*—
Guzman, Hector E., and Keefer. 3,349,791.
Keith, James N.: *See*—
Finn, John J., and Keith. 3,350,177.
Keller, Ernst. Method of increasing the number of different locking combinations. 3,349,587, 10–31–67, Cl. 70—358.
Keller, George F.: *See*—
Ketterer, Stanley J., and Keller. 3,349,735.
Keller, Marion A.: *See*—
Ketterer, Stanley J., and Keller. 3,349,735.
Keller, William J., and A. L. Moore, to E. I. du Pont de Nemours and Co. Process for terpolymeric solvent-free hydrocarbon crumbs. 3,350,370, 10–31–67, Cl. 260—80.78.
Kelley, Everett J., to Rohm & Haas Co. Substituted acrylamides, polymers thereof, and methods of making same. 3,350,336, 10–31–67, Cl. 260—22.
Kelley, Everett J., to Rohm & Haas Co. Amido-amine-substituted vinyl ethers and polymers thereof. 3,350,375, 10–31–67, Cl. 260—89.7.
Kellner, Ferdinand. Photographic recording lens system with fully automatic diaphragm operation. 3,349,681, 10–31–67, Cl. 95—64.
Kemper, Arthur L., to Collins Radio Co. Noise and audio controlled squelch circuit. 3,350,650, 10–31–67, Cl. 325—478.
Kendall Co., The: *See*—
Taylor, Philip S. 3,350,221.
Kephart, Charles B., Jr. File holder. 3,349,460, 10–31–67, Cl. 29—78.
Kern, Edward L.: *See*—
Hunter, Melvin J., Kern, and Hamill. 3,350,182.
Kerns, Wilson D.: *See*—
Schultz, Alvy P., O'Neill, and Kerns. 3,350,078.
Kerschner, Paul M.: *See*—
Berger, Bernard H., and Kerschner. 3,350,316.
Kessler, Johann. Fuel storage tank installation leak indicator. 3,350,704, 10–31–67, Cl. 340—242.
Kessler, Leonard, to Quality Transparent Bag Co. Flexible container. 3,349,991, 10–31–67, Cl. 229—56.
Ketler, Lester K., to Inland Container Corp. Refrigerated dispenser container. 3,349,960, 10–31–67, Cl. 221—96.
Ketterer, Stanley J., and G. F. Keller, deceased (by M. A. Keller, executrix), to The Singer Co. Work feeding mechanism for sewing machines. 3,349,735, 10–31–67, Cl. 112—214.
Kiefer, John E.: *See*—
Leonard, Ray E., and Kiefer. 3,349,779.
Kiefer, Reginald R., to The Trescott Co., Inc. Apparatus for shrinking film-wrappings on articles. 3,349,502, 10–31–67, Cl. 34—216.
Kieny, Albert J., C. F. Kramer, and F. H. Kaufmann, to Steel Heddle Mfg. Co. Loom harness. 3,349,809, 10–31–67, Cl. 139—91.
Kile, Samuel E., and H. F. McClain. Batter's front foot guide. 3,350,096, 10–31–67, Cl. 273—26.
King, George F., and A. L. Wigzell, to Decca Ltd. Automatic chart position display apparatus. 3,350,715, 10–31–67, Cl. 346—1.
King, Harold C.: *See*—
Dawtrey, Sydney, and King. 3,350,814.
King, Robert W.: *See*—
Webb, James E. 3,349,814.
King-Seeley Thermos Co.: *See*—
Bang, Milton A. 3,350,152.
King, William N., and E. E. Merritt, to Federal Cartridge Corp. Method of making plastic tubes. 3,349,459, 10–31–67, Cl. 29—1.3.
Kinross, Rupert I.: *See*—
Gabriel, Ralph P., and Kinross. 3,350,647.
Kirby, Robert A. to Esso Production Research Co. Voltage regulator. 3,350,629, 10–31–67, Cl. 323—18.
Kirby, Russell, Jr.: *See*—
Moore, Douglas A., Kirby, and Buck. 3,350,577.
Kirk, Joseph R., to Hancock Industries, Inc. Seat slide assembly for automotive vehicles. 3,350,046, 10–31–67, Cl. 248—430.
Kirtland, Howard W., and J. W. Endress, to Carrier Corp. Centrifugal compressor. 3,349,999, 10–31–67, Cl. 230—132.
Kish, Michael, Jr., to Atlantic Products Corp. Method of sewing a golf bag. 3,349,737, 10–31–67, Cl. 112—262.
Kish, Michael, Jr., to Atlantic Products Corp. Butt joint connection. 3,349,738, 10–31–67, Cl. 112—441.
Kittelson, Le Roy O., to Engineering Development Corp. Method for making valves for internal combustion engines. 3,349,463, 10–31–67, Cl. 29—156.7.
Kiyohiko, Iki: *See*—
Iki, Yasuhiko. 3,349,918.
Klann, Paul A. Pneumatically operated control means. 3,349,660, 10–31–67, Cl. 84—90.
Kleine-Weischede, Klaus: *See*—
Horn, Elmar-Manfred, Kleine-Weischede, Lang, and Niederprum. 3,350,326.
Kleine-Weischede, Karl. Chain welding machine. 3,350,533, 10–31–67, Cl. 219—51.
Klimstra, Paul D., to G. D. Searle & Co. 3α-azido-5α-androstan-17-one and derivatipes thereof. 3,350,424, 10–31–67, Cl. 260—349.
Klindt, Kenneth K., to United States of America, Atomic Energy Commission. Ultrasonic flaw detection in small diameter metal tubing. 3,349,607, 10–31–67, Cl. 73—67.5.
Kloss, Theodore E., to Allied Chemical Corp. Two stage pulping process including impregnating chips with ammonia, then liberating the ammonia and pulping with magnesium compound. 3,350,258, 10–31–67, Cl. 162—15.
Kluge, Robert D., to Honeywell Inc. Slide tray positioning apparatus for a projecting apparatus. 3,349,510, 10–31–67, Cl. 40—79.
Knauer, Hans U., and G. Schmidt, to International Standard Electric Corp. Balancing network for telephone subscriber stations. 3,350,510, 10–31–67, Cl. 179—81.
Knibbs, Arthur R.: *See*—
Dixon, Olaf G., and Knibbs. 3,349,694.
Knoepfler, Nestor B., H. K. Gardner, Jr., and H. L. E. Vix, to United States of America, Agriculture. Method of producing contour molded cotton batting. 3,350,486, 10–31–67, Cl. 264—112.
Knudson, Glenn C. Hydraulic plow bottom trip device. 3,349,855, 10–31–67, Cl. 172—261.
Kobus, Stanislas, and P. T. Chu, to International Standard Electric Corp. Selection system for electrical circuits or equipments. 3,350,696, 10–31–67, Cl. 340—172.5.
Koepke, John A., to Illinois Tool Works Inc. Switch assembly including indicating means. 3,350,531, 10–31–67, Cl. 200—167.
Koft, Emil, Jr.: *See*—
Herd, Richard S., Koft, and Otto. 3,350,310.
Kohl, Eberhard: *See*—
Meier, Alfred, Kohl, and Rossmann. 3,349,672.
Kohlenberger, Charles W., to North American Aviation, Inc. Optical collimation device. 3,349,664, 10–31–67, Cl. 88—14.
Kohling, Alfons: *See*—
Sandstede, Gerd, Binder, Kohling, and Richter. 3,350,200.
Kohr, Joseph R., to ESB Inc. Ampere-hour meter. 3,350,638, 10–31–67, Cl. 324—94.
Kollar, John, to Halcon International, Inc. Catalytic epoxidation of an olefinically unsaturated compound using an organic hydroperoxide as an epoxidizing agent. 3,350,422, 10–31–67, Cl. 260—348.5.
Kolling, Georg: *See*—
Schlegel, Jurgen, and Kolling. 3,350,443.
Komarov, Nickolai V., and I. S. Guseva, to Irkutsky Institute organicheskoi Khimii. Method of preparing vinylethinyl stannanes. 3,350,433, 10–31–67, Cl. 260—429.7.
Kondo, Mitsuji: *See*—
Hasegawa, Hiroshi, Sulto, and Kondo. 3,350,429.
Koons, Gene L. Saw table and guide. 3,349,819, 10–31–67, Cl. 143—174.
Koppers Co., Inc.: *See*—
Payne, Charles. 3,349,525.
Koren, Paul M., and J. H. Menzies, to The Procter & Gamble Co. Continuous bread making process with pumpable shortening containing a high level of fatty triglyceride solids. 3,350,207, 10–31–67, Cl. 99—90.
Kosrow, Robert L.: *See*—
Attwood, John G., and Kosrow. 3,350,582.
Kotler, Aaron L., to The Goshen Mfg. Co., Inc. Glider oscillating on rollers. 3,350,134, 10–31–67, Cl. 297—246.
Koury, Frederic: *See*—
Corbin, Victor L., Koury, and Levesque. 3,350,598.
Kozbelt, Lloyd S., and D. M. Cunningham, to Edwin L. Wiegand Co. Electric heater assembly. 3,350,674, 10–31–67, Cl. 338—316.
Kozikowski, John, and M. Cais, to Ethyl Corp. [(P-tolylsulfamoyl) cyclopentadienyl] manganese tricarbonyl. 3,350,430, 10–31–67, Cl. 260—429.
Kozikowski, John, and M. Cais, to Ethyl Corp. Alkali metal salts of cyclopentadienyl carboxylic acid manganese tricarbonyls and their free acids. 3,350,431, 10–31–67, Cl. 260—429.
Krakinowski, Morris, and S. U. Blaskovic, to International Business Machines Corp. Reader for punched record. 3,350,518, 10–31–67, Cl. 200—46.
Kramer, Charles F.: *See*—
Kieny, Albert J., Kramer, and Kaufmann. 3,349,809.
Kramer, Hans B. A., G. Messwarb, and W. Denk, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Reaction product of polyvinylphosphonic acid and 1-4-butanediol. 3,350 368, 10–31–67, Cl. 260—80.
Kramer, William M., to Radio Corp. of America. Low dark current photoconductive device. 3,350,595, 10–31–67, Cl. 313—94.
Krantz, Frederick H., to Burroughs Corp. Translator. 3,350,706, 10–31–67, Cl. 340—347.
Krause, Edward H., Jr.: *See*—
Bilx, Weltzin B., Jr., and Krause. 3,349,717.
Kremer, Ross A.: *See*—
Kaufman, Harold A., Kremer, and Driscoll. 3,350,409.
Krex, Helge E.: *See*—
Waerum, Kulius N. M., and Krex. 3,349,925.
Kron, Carl M.: *See*—
Colby, Theodore W., Jr., and Kron. 3,350,173.
Kropp, Paul J., to The Procter & Gamble Co. Irradiation of cross-conjugated cyclohexadienones. 3,350,289, 10–31–67, Cl. 204—158.
Kucera, Clare, W. J. Leahy, and C. E. Merrill, to The Dow Chemical Co. Process for fluorinating biguanide. 3,350,448, 10–31–67, Cl. 260—564.
Kudlaty, Walter J., to Marvel Engineering Co. Automatic filter assembly. 3,349,914, 10–31–67, Cl. 210—90.
Kuhl, Henry Y. and P. R. Egg washing equipment. 3,349,419, 10–31–67, Cl. 15—3.13.
Kuhl, Paul R.: *See*—
Kuhl, Henry Y. and P. R. 3,349,419.
Kunitsky, Valery N., B. P. Lobashev, M. N. Stetsovsky, and A. A. Fomin, to Tsentralay Nauchno-Issledovatelsky Institute Chernoi Metallurgii imeni I.P. Bardina. Induction furnace. 3,350,494, 10–31–67, Cl. 13—27.
Kurpit, Stanley S.: *See*—
Green, Robert B., Geissler, and Kurpit. 3,350,176.

Kurtze, Günter, to Grunziweig & Hartmann A.G. Sound suppressors particularly for jet engines. 3,349,868, 10–31–67, Cl. 181—51.

Kusaka, Takeshi: *See*—
Nishigaki, Susumu, Kusaka, and Sato. 3,350,285.

Kušnick, Arthur A., and W. G. Spruth, to International Business Machines Corp. Data storage system. 3,350,694, 10–31–67, Cl. 340—172.5.

Kynicki, Witold: *See*—
Nesin, Daniel J., Green, and Kynicki. 3,349,702.

Laboratory for Electronics, Inc.: *See*—
Brockett, Peter C. 3,350,547.

Ladoniczki, H. Joseph, and L. H. Meyer. Electrically heating and dispensing a metered quantity of fluent material. 3,349,964, 10–31–67, Cl. 222—54.

La Fleur Corp., The: *See*—
La Fleur, James K., and Florez. 3,350,060.

La Fleur, James K., and A. R. Florez, to The La Fleur Corp. Turbine starting system. 3,350,060, 10–31–67, Cl. 253—39.

Lafranca, Joseph J., Jr., M. Mayer, Jr., and H. W. Weller, Jr., to United States of America, Agriculture. Fiber fractionating apparatus and process. 3,349,902, 10–31–67, Cl. 209—2.

Laing, David H.: *See*—
Bell, James A. E., and Laing. 3,349,776.

Lambe, John J.: *See*—
Cole, Terry, Donald, Lambe, and Vassell. 3,350,597.

Lamberti, Vincent, to Lever Bros. Co. Method for the preparation of glycerol alpha ethers and thio ethers. 3,350,460, 10–31–67, Cl. 260—609.

Lambrecht, Josef, and G. Stadlmann, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Tiltable support mechanism for crucible or converter. 3,350,082, 10–31–67, Cl. 266—36.

Lang, Konrad: *See*—
Horn, Elmar-Manfred, Kleine-Weischede, Lang, and Niederprum. 3,350,326.

Lange, Hans: *See*—
Schlicht, Gunther, and Lange. 3,349,850.

Langguth, Robert P., and W. W. Morgenthaler, to Monsanto Co. Corrosion-inhibited phosphate fire-fighting solutions and compositions useful for manufacturing them. 3,350,305, 10–31–67, Cl. 252—2.

Lankro Chemicals Ltd.: *See*—
Chandley, Edwin F., Levy, and Lowe. 3,350,361.

La Pan, Alfred F., and R. L. Neumeister, to United Aircraft Corp. Tube-to-sheet joint making. 3,349,465, 10–31–67, Cl. 29—157.3.

Larkin, Mark E., to Phillips Petroleum Co. Tapping T and valve. 3,349,792, 10–31–67, Cl. 137—318.

Larsen, Arthur B., to TRW Inc. Pulse controlled inverter circuit. 3,350,625, 10–31–67, Cl. 321—45.

Larson, Charles L., to Jeddeloh Bros. Sweed Mills, Inc. Sheet advancer. 3,350,090, 10–31–67, Cl. 271—43.

Lasco, Ralph H., to Diamond Alkali Co. Method for side-chain chlorination of xylene. 3,350,467, 10–31–67, Cl. 260—651.

Lass, James L.: *See*—
Venier, Dominic A., and Lass. 3,350,275.

La Telemecanique Electrique: *See*—
Cottrez, Gerard. 3,350,652.

Laubach, Gerald D.: *See*—
Agnello, Eugene J., Laubach, and Moreland. 3,350,394.

Laurent, Pierre, to Compagnie Generale de Geophysique. Equipment fault indicator for wireless position locating systems. 3,350,713, 10–31–67, Cl. 343—105.

Lawrence, Arthur C., and R. W. Gotch, to Foster Wheeler Corp. Internal stub tube welding apparatus. 3,350,537, 10–31–67, Cl. 219—125.

Lawrence, Paul A. Illuminating device for a person's head. 3,350,552, 10–31–67, Cl. 240—2.

Lawrence, Robert W.: *See*—
Fee, Harry R., Ferguson, and Lawrence. 3,350,246.

Leaf, William B.: *See*—
Clements, Clarence J., Jr., and Leaf. 3,349,763.

Leahy, William J.: *See*—
Kucera, Clare, Leahy, and Merrill. 3,350,448.

Lear Jet Industries, Inc.: *See*—
Lear, William P. 3,350,025.
Lear, William P. 3,350,028.

Lear Siegler, Inc.: *See*—
Barron, Benjamin. 3,350,620.
Downs, William T. 3,349,877.

Lear, William P., to Lear Jet Industries, Inc. Magnetic tape cartridge. 3,350,025, 10–31–67, Cl. 242—55.19.

Lear, William P., to Lear Jet Industries, Inc. Spool construction for magnetic tape. 3,350,028, 10–31–67, Cl. 242—71.8.

Leary, Robert E., L. J. Nehmsmann III, and L. M. Schenck, to General Aniline & Film Corp. Preparation of nonionic surface active agents of high wetting power. 3,350,462, 10–31–67, Cl. 260—615.

Le Beau, Lee. Inexpensive clinical thermometer. 3,350,490, 10–31–67, Cl. 264—275.

Ledex, Inc.: *See*—
Papaiconomou, George. 3,350,686.

Ledwidge, Thomas J.: *See*—
Maidment, Leslie, and Ledwidge. 3,350,271.

Lee, Hop. Electric outlet box. 3,349,946, 10–31–67, Cl. 220—3.2.

Lee, Robert C., R. O. Soffel, and F. S. Vigliante, to Bell Telephone Laboratories, Inc. Time division tone signaling system. 3,350,509, 10–31–67, Cl. 179—18.

Leebrick, John R., to M & T Chemicals Inc. Organobismuth ethylenic carboxylates and polymers thereof. 3,350,436, 10–31–67, Cl. 260—447.

Leeds-Dixon Laboratories, Inc.: *See*—
Gaunt, William E. 3,350,270.

Leeds, Michael T., to Intellux Inc. Multilayer circuit and method of making the same. 3,350,498, 10–31–67, Cl. 174—68.5.

Leesona Corp.: *See*—
Bense, William M. 3,350,022.
Lieb, Harry C., and Moos. 3,350,226.

Lehigh Valley Industries, Inc.: *See*—
Bielweiss, Arthur F., Colombo, and Dickson. 3,350,527.

Leightle, George B., to General Aniline & Film Corp. Process of preparing cleve's acid. 3,350,441, 10–31–67, Cl. 260—508.

Lemoigne, Pierre M. High-lift aircraft. 3,350,036, 10–31–67, Cl. 244—35.

Le Nabour, Marcel P. to Commissariat a l'Energie Atomique. Fluid-bearing. 3,350,145, 10–31–67, Cl. 308—122.

Lennox, Thomas H., to Arc-O-Vec, Inc. Thermo-electrically controlled electrical heater. 3,350,544, 10–31–67, Cl. 219—548.

Lensi, Peter N.: *See*—
Wortley, Austin M., Jr., Lensi, and Rinehart. 3,349,707.

Lenz, Arnold: *See*—
Hass, Karl, Lenz, and Bleh. 3,350,463.

Leonard, Ethel K.: *See*—
Chance, Leon H., and Leonard. 3,350,164.

Leonard, Ray E., and J. E. Kiefer, to Eastman Kodak Co. Cigarette filter element containing certain hexahydrotriazines for the selective removal of acrolein. 3,349,779, 10–31–67, Cl. 131—266.

Leonard, Richard L.: *See*—
Croswhite, Howard L., Burcz, and Leonard. 3,349,641.

Leonard, Robert F., to Litho Chemical and Supply Co., Inc. Lithographic plates, gluconate solutions therefor and process for producing the same. 3,350,206, 10–31–67, Cl. 96—75.

Lever Brothers Co.: *See*—
Lamberti, Vincent. 3,350,460.

Levesque, Marie: *See*—
Corbin, Victor L., Koury, and Levesque. 3,350,598.

Levin, Gertrude. Child's educational toy. 3,349,503, 10–31–67, Cl. 35—8.

Levin, Herbert C., to DeSoto, Inc. Automatic paint colorant dispensers. 3,349,962, 10–31–67, Cl. 222—2.

Levin, Herman, and E. K. Maxon, to Bell & Howell Co. Auto focus slide projector. 3,349,667, 10–31–67, Cl. 88—26.

Levy, Ernest: *See*—
Chandley, Edwin F., Levy, and Lowe. 3,350,361.

Lew, Heung. Pressing machines. 3,349,976, 10–31–67, Cl. 223—73.

Leytool Ltd.: *See*—
Kaufman, Arnold, Dunn, and Wright. 3,349,653.

Libby, Henry T., to General Electric Co. Electrode holder. 3,350,534, 10–31–67, Cl. 219—60.

Licari, James J.: *See*—
Sanz, Manual C., Wymer, and Licari. 3,350,250.

Lichowsky, Abraham, to Radio Corp. of America. Silde bearing employing a fluorocarbon lubricant. 3,350,143, 10–31–67, Cl. 308—3.

Lieb, Harry C., and A. M. Moos, to Leesona Corp. Method of suppressing corrosion in fuel cell containing alkaline hydroxide electrolyte. 3,350,226, 10–31–67, Cl. 136—86.

Lieb, Nathaniel H., and A. J. Turchi, to Star Dental Mfg. Co., Inc. (also known as Star Dental Mfg. Co., Inc., and Star Mfg. Co., Inc.). Straight handpiece. 3,349,490, 10–31–67, Cl. 32—28.

Liebich, Dieter: *See*—
Obrowski, Walter, and Liebich. 3,349,467.

Lieblein, George. Flatstep ladder. 3,349,870, 10–31–67, Cl. 182—228.

Liebling, Raymond, and R. Steckler, to Nopco Chemical Co. Unsaturated polyester resin formed from an aromatic glycol and articles coated therewith. 3,350,331, 10–31–67, Cl. 260—22.

Lindaman, John R., to Sperry Rand Corp. Hamming magnitude comparator using multi-input binary threshold logic elements. 3,350,685, 10–31–67, Cl. 340—146.2.

Linde Aktiengesellschaft: *See*—
Strass, Wilfried. 3,350,061.

Lindell, A. H.: *See*—
Cowell, Murl. 3,349,730.

Lindeman, Richard J., and E. W. Reinwall, Jr., to Motorola, Inc. One piece metal cone for a cathode ray tube. 3,350,593, 10–31–67, Cl. 313—92.

Lindner, Josef. Speed controlled direct current motor with centrifugal switch. 3,350,615, 10–31–67, Cl. 318—325.

Linn, William J.: *See*—
Graham, Peter J., Linn, and Middleton. 3,350,313.

Lipowski, Stanley: *See*—
Fetscher, Charles, and Lipowski. 3,350,374.

Lipp, Charles E., E. R. Martin, I. H. Sage, and G. W. Vicary, to Caterpillar Tractor Co. Friction welding machine with storage means for inertial masses. 3,349,982, 10–31–67, Cl. 228—2.

Litho Chemical and Supply Co., Inc.: *See*—
Leonard, Robert F. 3,350,206.

Litmanowitsch, Manasche, and H. Suter, to Eprova Ltd. Method of preparing pyrazinoic acid. 3,350,399, 10–31–67, Cl. 260—250.

Little, Arthur D., Inc.: *See*—
Glaser, Peter E. 3,349,574.

Little, Clifford R., and R. J. Overy, Sr. Load hanger. 3,349,978, 10–31–67, Cl. 224—43.

Littlejohn, Duane P.: *See*—
Seamans, Robert C., Jr. 3,350,671.

Lloyd, Reginald J.: *See*—
Hawkins, Harold F., and Lloyd. 3,349,981.

Lobashev, Boris P.: *See*—
Kunitsky, Valery N., Lobashev, Stetsovsky, and Fomin. 3,350,494.

Lobbenberg, Anne M., to Corsets Silhouette Ltd. Foundation garment with ancillary reinforcing webs. 3,349,773, 10–31–67, Cl. 128—539.

Locke, William N. Wrench having a bundle of rods individually retractable to conform to a variety of fastener configurations. 3,349,655, 10–31–67, Cl. 81—185.

Lode, Tenny D., to Rosemount Engineering Co. Copying machine exposure control. 3,349,684, 10–31–67, Cl. 95—75.

Lode, Tenny D., to Rosemount Engineering Co. Thermionic electron tube circuit. 3,350,653, 10–31–67, Cl. 328—270.

Lodge & Shipley Co., The: *See*—
Sporck, Claus L. 3,349,594.

Loewy Engineering Co. Ltd., The: *See*—
Smith, Cyril E., and Tracy. 3,349,420.

Lobman, Joseph A., III. Photo identification apparatus. 3,349,679, 10–31–67, Cl. 95—11.

Loimaranta, Kalevi: *See*—
Florin, Bengt, and Loimaranta. 3,349,882.

Loken, Oliver T. Sifter device for cleaning grain. 3,349,910, 10–31–67, Cl. 209—245.

Long, Roger A. High temperature compositions. 3,350,214, 10–31–67, Cl. 106—55.

Lopez, Segundo C. Children's footwear. 3,349,505, 10–31–67, Cl. 36—2.5.

Lord, Harold W., to General Electric Co. Converter utilizing a saturable reactor slaved with a silicon controlled rectifier. 3,350,622, 10–31–67, Cl. 321—8.

Lotz, Horst K., and A. Pfeuffer, to Messer Griesheim G.m.b.H. Cutting cycle for flame cutting of billets. 3,350,079, 10–31–67, Cl. 266—23.

Lourenco, Anthony L.: *See*—
Starkey, Orval R. 3,349,550.

Lousberg, Etienne. Rotary brushes. 3,349,423, 10–31–67, Cl. 15—183.

Lovig, Olin D. Sickle bar anvil. 3,349,603, 10–31–67, Cl. 72—477.

Loving, Robert C., and R. M. Poland. Framing clip. 3,350,123, 10–31–67, Cl. 287—189.35.

Lowe, Arnold J.: *See*—
Chandley, Edwin F., Levy, and Lowe. 3,350,361.

Lowe, Donald K.: *See*—
Huitt, Jimmie L., and Lowe. 3,349,851.

Lubkin, Samuel, N. Nesenoff, and S. Walker; said Lubkin and said Walker, assors. to Digital. Transistor testing apparatus for measuring the beta, leakage and cutoff current parameters. 3,350,641, 10–31–67, Cl. 324—158.

Lubrizol Corp., The: *See*—
McMillen, Richard L. 3,350,308.

Lucarell, James V., to Abex Corp. Tuyere with divided passageway. 3,350,084, 10–31–67, Cl. 266—41.

Lucas, Joseph, (Industries) Ltd.: *See*—
Jones, Peter D. 3,350,607.

Luckenbill, Lawrence F., to Mueller Co. Retainer ring and thrust washer arrangement for valves or the like. 3,350,057, 10–31–67, Cl. 251—312.

Luecke, Eberhard: *See*—
Huenig, Siegfried, and Luecke. 3,350,390.

Luna, Jose L.: *See*—
Dickerson, John W., Dinkelkamp, and Luna. 3,349,715.

M & T Chemicals Inc.: *See*—
Bedl, Ram D. 3,350,287.
Leebrick, John R. 3,350,436.

Maass, Gustav: *See*—
Drenkelfort, Hans, and Maass. 3,350,682.

Maass, Richard L.: *See*—
Erb Edward R., and Maass. 3,350,483.

MacCarthy, Richard W. Manual mechanical razor with stationary circular blade. 3,349,483, 10–31–67, Cl. 30—43.6.

Macher, Karl H., to Jos. Schneider & Co., Optische Werke. Varifocal objective system. 3,350,155, 10–31–67, Cl. 350—176.

Mack, Charles H., and S. E. Elizey, Jr., to United States of America, Agriculture. Aftertreating isocyanate-modified cellulosic fibers with dimethyl sulfoxide, pyridine or dimethyl formamide. 3 350,163, 10–31–67, Cl. 8—116.

Mack Trucks, Inc.: *See*—
Waterhouse, Clarence. 3,350,322.

Mackiewicz, Czeslaw: *See*—
Misencik, John, Mackiewicz, and Poarch. 3,350,675.

Madey, Jesse M., and E. W. Travis, to United States of America, National Aeronautics and Space Administration. Satellite appendage tie-down cord. 3,350,034, 10–31–67, Cl. 244—1.

Madison Industries Inc.: *See*—
Holloway, William S. 3,349,648.

Madison, Theodore N., and R. E. McGrath, to Royal Typewriter Co., Inc. Mechanism for locking the keyboard of electric typewriters or like machines. 3,349,886, 10–31–67, Cl. 197—107.

Mano, Minoru, to Kanegofuchi Roseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co. Ltd. Plastic gripper button. 3,349,451, 10–31–67, Cl. 24—208.

Magelli, Augusto: *See*—
Stocchi, Virgilio, Ferin, and Magelli. 3,350,473.
Stocchi, Virgilio, Magelli, and Baisero. 3,349,545.

Magill, Donald G., Jr., to Riegel Paper Corp. Method and apparatus for making battery separators and the like. 3,350,484, 10–31–67, Cl. 264—90.

Magnino, Joseph J., Jr.: *See*—
Kaufman, Samuel, and Magnino. 3,350,695.

Magnuson, Robert: *See*—
Crawford, Lynn D. 3,349,905.

Magoon, Fred L., to Demco, Inc. Valve control mechanism. 3,349,639, 10–31–67, Cl. 74—527.

Magson, Arthur, to Grinnell Corp. Self-cleaning rotary strainer. 3,349,916, 10–31–67, Cl. 210—143.

Mahle Komm.-Ges.: *See*—
Meier, Alfred, Kohl, and Rossmann. 3,349,672.

Maidment, Leslie, and T. J. Ledwidge, to United Kingdom Atomic Energy Authority. Nuclear reactor transducer. 3,350,271, 10–31–67, Cl. 176—19.

Mainz, Michael H., to E. I. du Pont de Nemours and Co. Process for producing an elastic fabric. 3,349,458, 10–31–67, Cl. 28—76.

Maki, Isao. Structural elements for an artificial ski slide. 3,350,092, 10–31–67, Cl. 272—56.5.

Makin, Earle C., Jr.: *See*—
Davis, George D., and Makin. 3,350,282.

Makin, Earle C., Jr., and F. E. Resenberger, to Monsanto Co. Extractive distillation of hydrocarbon mixtures of varying unsaturation. 3,350,283, 10–31–67, Cl. 203—54.

Malaker Laboratories, Inc.: *See*—
Di Leo, Joseph A., and Drautman. 3,350,669.

Mallen, Jose, and M. Weisz, to Commissariat a l'Energie Alomeque. Process for improving the mechanical characteristic of objects consisting of beryllium or beryllium alloy. 3,350,241, 10–31–67, Cl. 148—11.5.

Mallory, P. R., & Co.: *See*—
Hirsch, James A. 3,350,606.

Maltner, Heinrich, G.m.b.H.: *See*—
Maltner, Wolfgang, and Dieterle. 3,350,608.
Rabe, Peter, and Elmecke. 3,350,016.

Maltner, Wolfgang, and H. Dieterle, to Heinrich Maltner G.m.b.H. Piezo-electric igniter. 3,350,608, 10–31–67, Cl. 317—96.

Manica, Michele, and M. Bassi, to Montecatini Edison S.p.A. Printing ink composition. 3,350,343, 10–31–67, Cl. 260—33.8.

Manke, William K., to Mobay Chemical Co. Emulsion separation of aromatic nitro compounds. 3,350,466, 10–31–67, Cl. 260—645.

Mankey, Harry S., to Standard Mfg. Co., Inc. Scissor-type linear actuator with high extension ratio and selectable extension rate and power requirement. 3,350,065, 10–31–67, Cl. 254—122.

Manton, Douglas N. Oxygen lance with helical cooling coil. 3,350,080, 10–31–67, Cl. 266—34.

Manz, August F., and H. B. Sargent, to Union Carbide Corp. Method for eliminating weld puddle cracking. 3,350,539, 10–31–67, Cl. 219—137.

Marans, Nelson S.: *See*—
Gush, Donald P., and Marans. 3,350,290.

Marcheguet, Henri G. L., and L. Gandon, to Nobel-Bozel. Method of removing sulphur dioxide from gases. 3,350,165, 10–31–67, Cl. 23—2.

Marciniak, Edmund, to Societe d'Etudes et de Richuches de Materiel Textiles (Sermatex). Thread winding machine. 3,350,021, 10–31–67, Cl. 242—18.

Marcinkowski, Mieczyslaw, to Polymer Corp. Ltd. 1,3-butadiene polymers. 3,350,378, 10–31–67, Cl. 260—94.3.

Marinace, John C., to International Business Machines Corp. Planar injection laser structure. 3,349,475, 10–31–67, Cl. 29—578.

Marjoram, Ernest B., and W. R. Swift, to Beattie-Coleman, Inc. Tape reader. 3,350,546, 10–31–67, Cl. 235—61.11.

Marley, James E., and T. P. Warne, Jr., to AMP Inc. Electrical connections. 3,350,679, 10–31–67, Cl. 339—223.

Marshall, Burton H.: *See*—
Seabury, William A., III. 3,349,497.

Martens, Jack E., to American Motors Corp. Door lock striker. 3,350,128, 10–31–67, Cl. 292—341.12.

Martens, Jack E., to The Anderson Co. Position retaining device. 3,350,135, 10–31–67, Cl. 297—355.

Martin, Eugene R.: *See*—
Lipp, Charles E., Martin, Sage, and Vicary. 3,349,982.

Martin, James. Pressure-sensitive mechanism. 3,349,786, 10–31–67, Cl. 137—68.

Martin, James B., to The Procter & Gamble Co. Acidic lipid anhydrides. 3,350,413, 10–31–67, Cl. 260—346.8.

Martin-Marietta Corp.: *See*—
Precht, Walter, Geckle, and Frank. 3,349,466.

Marvel Engineering Co.: *See*—
Kudlaty, Walter J. 3,349,914.

Maryland National Bank: *See*—
Shackelford, John H. 3,349,489.

Mascenik, John: *See*—
Mowell, Roger W., and Mascenik. 3,349,816.

Maslekoff, Lisa: *See*—
Poole, Renee J., and Maslekoff. 3,349,781.

Mason, Ralph B.: *See*—
Hamner, Glen P., and Mason. 3,350,295.

Mason, Richard L., to Motorola, Inc. Deflection yoke with contacts mating with yoke cover contacts. 3,350,592, 10–31–67, Cl. 313—76.

Masterson, Earl E., and R. W. Carman, to Honeywell Inc. Record transport device. 3,350,091, 10–31–67, Cl. 271—52.

Mathus, Gregory: *See*—
Palson, Richard C. J., Gelardi, and Mathus. 3,349,898.

Matsushita Electric Industrial Co., Ltd.: *See*—
Yamashita, Akio. 3,350,610.

Mattel, Inc.: *See*—
Ryan, John W. 3,349,774.

Mattenheimer, Hermann, to Miles Laboratories, Inc. Process of determining hemoglobin separated from peroxidase inhibitors in urine. 3,350,174, 10–31–67, Cl. 23—230.

Matthies, Lowell F.: *See*—
Williams, Allan E., Dyson, and Matthies. 3,349,562.

Matsutani, Kunio, to NGK Insulators, Ltd. Diaphragm valve including a snap ring connection. 3,349,795, 10–31–67, Cl. 137—375.

Maurer, Charles J., and R. S. Montgomery, to American Handling Equipment Co. Storage device for articles and method. 3,349,924, 10–31–67, Cl. 211—177.

Maxon, Eric K.: *See*—
Levin, Herman, and Maxon. 3,349,667.

Maxson, Orwin G., to Continental Oil Co. Stress cracking inhibitor. 3,350,346, 10–31–67, Cl. 260—45.7.

Maxwell, Charles W. Apparatus for use with milking machines for measuring and indicating the milk yield. 3,349,618, 10–31–67, Cl. 73—202.

May, Fredrick, Radiator cap for pressurized cooling systems. 3,349,954, 10–31–67, Cl. 220—86.

Mayer, Ferdy: *See*—
Benoit, Gerard, Ferdy and Franz Mayer, and Thomas. 3,350,680.
Benoit, Gerard, Ferdy and Franz Mayer, and Thomas. 3,350,681.

Mayer, Franz: *See*—
Benoit, Gerard, Ferdy and Franz Mayer, and Thomas. 3,350,680.
Benoit, Gerard, Ferdy and Franz Mayer, and Thomas. 3,350,681.

Mayer, Mayer, Jr.: *See*—
Lafranca, Joseph J., Jr., Mayer, and Weller. 3,349,902.

Maynard, John T., to A. O. Smith Corp. Magnetically actuated device having a rotating input means. 3,350,585, 10–31–67, Cl. 310—68.

Mayo, Hayes C.: *See*—
Finneran, James A., and Mayo. 3,350,170.

Mazzanti, Giorgio: *See*—
Natta, Giulp, Mazzanti, and Pregaglia. 3,350,357.

Massarantani, Renato E.: *See*—
Walberg, Nathan C., and Mazzarantani. 3,350,126.

McAleer, Howard J., to Formax Mfg. Corp. Buffing wheel. 3,349,424, 10–31–67, Cl. 15—230.14.

McCall, Gilbert W., to Airpax Electronics Inc. Electromechanical chopper. 3,350,668, 10–31–67, Cl. 335—91.

McClaflin. Gifford G., to Continental Oil Co. Separation of olefins from aluminum trialkoxides. 3,350,360, 10–31–67, Cl. 260—677.

McClain, Howard F.: *See*—
Kile, Samuel E., and McClain. 3,350,096.

McClure, Vernon V.: *See*—
Warberg, Henrik S., and McClure. 3,350,276.

McColl, John D., and G. Frangatos, to Frank W. Horner, Ltd. Quaternary ammonium salts of morpholinoethyl 3,4,5-trimethoxybenzoate. 3,350,396, 10–31–67, Cl. 260—247.1.

McConnaughey, Paul W., and S. G. Clay, to Mine Safty Appliances Co. Colorimetric indicator device for the determination of gases. 3,350,175, 10–31–67, Cl. 23—254.

McDonnell Douglas Corp.: *See*—
Meinhard, James E. 3,350,186.

McFadden, Bruce R., to AMP Inc. Pinboard with ladder type contact springs. 3,350,676, 10–31–67, Cl. 339—18.

McGill, Harriet E.: *See*—
Walker, George W., Theiler, and McGill. 3,349,904.

McGrath, Earle, to ACF Industries, Inc. Pneumatic outlet for unloading particulate materials. 3,350,141, 10–31–67, Cl. 302—52.

McGrath, Robert E.: *See*—
Madison Theodore N., and McGrath. 3,349,886.

McGraw-Edison Co.: *See*—
Anderson, David W. 3,350,526.

McKeough, Daniel H., to I-T-E Circuit Breaker Co. Dual pressure gas circuit breaker having movable bridging contact connected to blast valve and cut-off valve which are upatream of the movable contact. 3,350,528, 10–31–67, Cl. 200—148.

McKibben, Richard K., to Southwestern Engineering Co. Clamp band tensioning device. 3,349,456, 10–31–67, Cl. 24—279.

McKinnis, Art C., to Union Oil Co. of California. Solvent extraction. 3,350,470, 10–31–67, Cl. 260—674.

McLoad, Kenneth W., to Vector Cable Co. Seismic cable system. 3,350,678, 10–31–67, Cl. 339—151.

McMillen, Richard L., to The Lubrizol Corp. Method for preparing calcium sulfonate complexes. 3,350,308, 10–31–67, Cl. 252—33.

McMullen. John J., Associates Inc.: *See*—
Field, Sheldon B. 3,349,740.
Field, Sheldon B., and Bridges. 3,349,743.

McMullen, Warren H., T. J. Mooney, and W. B. Stoddard, Jr., to Hanson-Van Winkle-Munning Co. Method of preparing hydrated nickel carbonate and the product thereof. 3,350,-167, 10–31–67, Cl. 23—61.

McNair, Robert J., to Avco Corp. Slip corrector means and method for multistation networks. 3,350,644, 10–31–67, Cl. 325—58.

McPhail, Robert G.: *See*—
Franck, Kurt, and McPhail. 3,350,556.

McVannel, Donald E., J. L. Mishler, and K. E. Polmanteer, to Dow Corning Corp. Hydrophilic contact lens and method of making same. 3,350,216, 10–31–67, Cl. 117—47.

Mead Corp., The: *See*—
Wood, Prentice J. 3,349,957.

Mead, Edward Q.: *See*—
Greening, Donald J., and Mead. 3,350,616.

Measurement Science Corp.: *See*—
Ensign, John D., and Haashimoto. 3,349,896.

Meier, Alfred, E. Kohl, and Rossmann, to Mahle Komm.-Ges. Piston for internal combustion engines. 3,349,672, 10–31–67, Cl. 92—231.

Meinhard, James E., to McDonnell Douglas Corp. Process for encapsulating materials with a thermal-plastic cover. 3,350,-186, 10–31–67, Cl. 65—36.

Mele, Joseph J. Press-fit bushing. 3,349,649, 10–31–67, Cl. 77—62.

Melind, Louis, Co.: *See*—
Sterrett, David B., Sr. 3,349,699.

Menke, William K. Emulsion separation of aromatic nitro compounds. 3,350,466, 10–31–67, Cl. 260—645.

Menne, Robert S.: *See*—
Cagle, William B., and Menne. 3,350,692.

Menzies, James H.: *See*—
Koren, Paul M., and Menzies. 3,350,207.

Mercier, Bernard: *See*—
Mercier, Jean and B. 3,349,744.

Mercier, Jean and B., said B. Mercier, assor. to said J. Mercier. Hydraulic control system for rudders and/or deflectors of a ship. 3,349,744, 10–31–67, Cl. 114—150.

Mercier, Jean: *See*—
Mercier, Jean and B. 3,349,744.

Merck & Co., Inc.: *See*—
Greenwald, Bernard W. 3,350,211.
Wallick, Hyman. 3,350,267.

Merelis, Morris C., to Rose-Derry Co. Brace for infant's car bed. 3,349,413, 10–31–67, Cl. 5—94.

Meriam Instrument Co., The: *See*—
Millar, Gordon H. 3,349,619.

Merijan, Ashot, to General Aniline & Film Corp. Cross-linking of polymeric N-vinyl lactams, polymeric vinyl esters and polymeric acrylate esters with alpha-omega aliphatic diolefins. 3,350,366, 10–31–67, Cl. 260—78.

Merrill, Claude E.: *See*—
Kucera, Clare, Leahy, and Merrill. 3,350,448.

Merrill, Edward W., E. E. Shaw, N. R. Chambers, and C. R. Dauwalter. Viscometers. 3,349,606, 10–31–67, Cl. 73—60.

Merrill, Reynold C.: *See*—
Yale, Harry L., and Merrill. 3,350,268.

Merritt, Edward E.: *See*—
King, William N., and Merritt. 3,349,459

Mesch, Hans G., to International Rectifier Corp. Solar cell and test circuit. 3,350,635, 10–31–67, Cl. 324—29.5.

Messer Griesheim G.m.b.H.: *See*—
Lotz, Horst K., and Pfeuffer. 3,350,079.

Messwarb, Günter: *See*—
Krämer, Hans B. A., Messwarb, and Denk. 3,350,368.

Meyer, Glen E., and F. J. Naples, to The Goodyear Tire & Rubber Co. Elastomers and plasticizer from mixtures of thioether compounds and epoxy resins with acids. 3,350,406, 10–31–67, Cl. 260—30.8.

Meyer, Lyle H.: *See*—
Ladoniczki, Joseph, and Meyer. 3,349,964.

Meyers, Lawrence S. Article holder. 3,350,045, 10–31–67, Cl. 248—205.

Meyers-Sherman Corp., The: *See*—
Shatidock, Roland E. 3,350,139.

Microdot, Inc.: *See*—
Ingman, Thomas M. 3,350,631.

Mid-Century Corp.: *See*—
Peterson, Oscar A. 3,349,951.

Middleton, William J.: *See*—
Graham, Peter J., Linn, and Middleton. 3,350,313.

Midland Engineering and Machine Co.: *See*—
Twigg, Robert W. 3,350,255.

Midland-Ross Corp.: *See*—
Schuman, Leslie N. 3,350,142.

Mifsud, Joseph F., to Esso Production Research Co. Directive transducer array for seismic exploration. 3,349,866, 10–31–67, Cl. 181—.5.

Miles Laboratories, Inc.: *See*—
Mattenheimer, Hermann. 3,350,174.

Millar, Gordon H., to The Meriam Instrument Co. Laminar flow element and flow meter. 3,349,619, 10–31–67, Cl. 73—205.

Miller, Avy L. Recirculating flow water heater. 3,349,755, 10–31–67, Cl. 122—406.

Miller, Forbes M., to Wall Colmonoy Corp. Sealing device. 3,350,178, 10–31–67, Cl. 29—182.3.

Mills, King L., to Phillips Petroleum Co. Production of beneficiated iron ore-coked product. 3,350,195, 10–31–67, Cl. 75—.1.

Mine Safety Appliances Co.: *See*—
McConnaughey, Paul W., and Clay. 3,350,175.

Minikay A G.: *See*—
Niemann, Hans H. R. 3,349,572.

Minix, William A., to Freeland Gauge Co. Precision pneumatic relay. 3,349,605, 10–31–67, Cl. 73—37.9.

Minneman, Lester C., D. E. Powell, and B. W. Spear, to Owens-Illinois, Inc. Reinforced cathode-ray tube and face plate therefor. 3,350,154, 10–31–67, Cl. 316—19.

Minnesota Mining and Mfg. Co.: *See*—
Eckman, Charles B., and Wilson. 3,350,256.
Gregg, David P. 3,350,503.
Johnson, Wayne E. 3,350,511.
Smith, Carl M., and Wear. 3,350,352.

Misárek, Dušan: *See*—
Beran, Jaromir, Misárek, and Futera. 3,349,997.

Misenčik, John, C. Mackiewics, and C. T. Poarch, to Harvey Hubbell, Inc. Locking electrical connector. 3,350,675, 10–31–67, Cl. 339—12.

Mishler, James L.: *See*—
McVannel, Donald E., Mishler, and Polmanteer. 3,350,-216.

Mitchell, Paul J., Jr., to Stowe-Woodward, Inc. Roll cover construction. 3,349,693, 10–31–67, Cl. 100—90.

Mitchell, Willard N., to Esso Research and Engineering Co. Heavy aromatic added to the feed in a normal paraffin molecular sieve separation process. 3,350,471, 10–31–67, Cl. 260—676.

Miura, Takehiro: *See*—
Miyoshi, Shunji, Miura, and Arai. 3,350,181.

Miyamoto, Toshinobu: *See*—
Higuchi, Akira, and Miyamoto. 3,350,240.

Miyoshi, Shunji, T. Miura, and T. Arai, to Asahi Glass Co., Ltd. Spacers for multiple glass sheet glazing unit. 3,350,-181, 10–31–67, Cl. 29—183.5.

Mobay Chemical Co.: *See*—
Manke, William K. 3,350,466.

Mobil Oil Corp.: *See*—
Braid, Milton, and Myers. 3,350,848.
Buehler, Fritz A. 3,350,309.
Hentz, Robert R. 3,350,231.
Herd, Richard S., Koft, and Otto. 3,350,310.
Hoehn, Gustave L., Jr. 3,350,634.
Kaufman, Harold A., Kremer, and Driscoll. 3,350,409.
Sengbush, Raymond L. 3,350,688.

Moedritzer, Kurt: *See*—
Van Waser, John R., Moedritzer, and Rausch. 3,350,435.

Moeller, Axel, to Moeller Mfg. Co., Inc. Egg venting device. 3,349,821, 10–31–67, Cl. 146—2.

Moeller, Axel, to Moeller Mfg. Co., Inc. Stop limit means for dip stick closures. 3,349,944, 10–31–67, Cl. 220—24.5.

Moeller, Hans, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of modified polyolefin waxes. 3,350,-381, 10–31–67, Cl. 260—94.9.

Moeller Mfg. Co., Inc.: *See*—
Moeller, Axel. 3,349,821.
Moeller, Axel. 3,349,944.

Moerikofer, Andreas W., J. A. Shropshire, and B. L. Tarmy, to Esso Research and Engineering Co. Method of regenerating nitric acid oxidant of fuel cell. 3,350,227, 10–31–67, Cl. 136—86.

Mohondro, William R.: *See*—
Mulje, Pieter, Mohondro, and Fetzer. 3,349,469.

Monsanto Co.: *See*—
Beer, Ludwig A., and Hardy. 3,350,333.
Binning, Robert C. 3,350,415.
Binning, Robert C., Bowe, and Null. 3,350,421.
Binning, Robert C., Bowe, and Null. 3,350,445.
Binning, Robert C., and Null. 3,350,417.
Binning, Robert C., Null, and Reid. 3,350,416.
Bowe, Leon E., Binning, and Null. 3,350,418.
Davis, George D., and Makin. 3,350,282.
Farlas, Robert H. 3,350,420.
Hardy, Edgar E., and Beer. 3,350,332.
Langguth, Robert P., and Morgenthaler. 3,350,305.
Makin, Earle C., Jr., and Resenberger. 3,350,283.
Null, Harold R., Bowe, and Binning. 3,350,419.
Ratts, Kenneth W. 3,350,447.
Symes, William F. 3,350 317.
Van Waser, John R., Moedritzer, and Rausch. 3,350,435.

Monteath, Robert G., Jr. Plural step method for cleaning the liquid cooling system of an internal combustion engine. 3,350,223, 10–31–67, Cl. 134—22.

Montecatini Edison S.p.A.: *See*—
Cappuccio, Vittorio, and Canonica. 3,350,328.
Manica, Michele, and Bassi. 3,350,343.
Natta, Giulp, Mazzanti, and Pregaglia. 3,350,357.
Sianesi, Dario, Bernardi, and Diotalievi. 3,350,373.
Stocchi, Virgilio, Ferin, and Magelli. 3,350,473.
Stocchi, Virgilio, Magelli, and Baisero. 3,349,545.

Montgomery, Robert S.: *See*—
Maurer, Charles J., and Montgomery. 3,349,924.

Monty, Leo J., to Artisan Industries, Inc. Rotary wiped film evaporator with annular ring for process material flow control. 3,349,828, 10–31–67, Cl. 159—6.

Mo Och Domsjo Aktiebolag: *See*—
Schonfeldt, Nikolaus A. 3,350,319.

Mooney, Thomas J.: *See*—
McMullen, Warren H., Mooney, and Stoddard. 3,350,167.

Moore, Albert L.: *See*—
Keller, William J., and Moore. 3,350,370.

Moore, Bruce H., to Morse Controls Inc. Rotary actuator for push-pull cables. 3,349,637, 10–31–67, Cl. 74—501.

Moore, Douglas A., R. Kirby, Jr., and J. R. Buck, to Northrop Corp. Solid state gating circuit. 3,350,577, 10–31–67, Cl. 307—88.5.

Moore, William H., and C. A. Green. Process of producing a cast member having a varying graphite structure. 3,349,831, 10–31–67, Cl. 164—58.

Moorhusen, Robert W., to Xerox Corp. Vacuum transport device. 3,349,980, 10–31–67, Cl. 226—95.

Moos, Anthony M.: *See*—
Lieb, Harry C., and Moos. 3,350,226.

Moreland, Walter T.: *See*—
Agnello, Eugene J., Laubach, and Moreland. 3,350,394.

Morgan Adhesives Co.: *See*—
Morgan, Burton D., and Questel. 3,350,254.

Morgan, Burton D., and J. M. Questel, to Morgan Adhesives Co. Picture lifting method. 3,350,254, 10–31–67, Cl. 156—235.

Morgan, Raymond E., to General Electric Co. High frequency chopper circuit. 3,350 572, 10–31–67, Cl. 307—88.5.

Morgenthaler, William W.: *See*—
Langguth, Robert P., and Morgenthaler. 3,350,305.

Morphy-Richards (Cray) Ltd.: *See*—
Jones, John R. 3,349,692.

Morris, Richard M.: *See*—
Roberts, James R., Gregory, and Morris. 3,350.261.

Morrison, James P. Necktie rack. 3,349,922, 10–31–67, Cl. 211—113.

Morse Controls Inc.: *See*—
Moore, Bruce H. 3,349,637.
Houk, Richard D. 3,349,638.

Morse, Joe V.: *See*—
Rhea, John W., and Morse. 3,349,844.

Morse Instruments Inc.: *See*—
Houk, Richard D. 3,349,638.

Morton, James R. and W. L. Clothes hamper. 3,349,936, 10–31–67, Cl. 217—3.

Morton, Wayne L.: *See*—
Morton, James R. and W. L. 3,349,936.

Mosier, Jacques, to Ford Motor Co. Voltage regulator. 3,350,626, 10–31–67, Cl. 322—73.

Moss, Donald H. Retractable diving board. 3,350,094, 10–31–67, Cl. 272—66.

Motorola, Inc.: *See*—
Gabrielson, Reidar G., and Smith. 3 350,687.
Graziano, Victor, and Hartke. 3,350,646.
Lindeman, Richard J., and Reinwall. 3,350,593.
Mason, Richard L. 3,350,592.

Mott, Lambert H. Air roller. 3,349,462, 10–31–67, Cl. 29—116.

Moulton, James A., and A. E. Simpson, to North American Aviation, Inc. Signal compression apparatus employing selectively enabled amplifier stages utilized in a monopulse angle-off-boresight radar. 3,350,571, 10–31–67, Cl. 307—88.5.

Mounce, Whitman D., to Esso Production Research Co. Vacuum energized seismic pulse generator. 3,349,867, 10–31–67, Cl. 181—.5.

Mowell, Roger W., and J. Mascenik, to Esso Research and Engineering Co. Bow mooring. 3,349,816, 10–31–67, Cl. 141—387.

Moyer, Edward J., and R. J. Sullivan, to Caterpillar Tractor Co. Belt ejector bucket and control linkage therefor. 3,349,934, 10–31–67, Cl. 214—767.

Mueller Co.: *See*—
Luckenbill, Lawrence F. 3,350,057.
Mueller, Frank H., and Hauffe. 3,349,799.

Mueller, Frank H., and W. L. Hauffe, to Mueller Co. Rotary plug valve. 3,349,799, 10–31–67, Cl. 137—625.22.

Mueller, Georg: *See*—
Stuiber, Walter, and Mueller. 3,349,885.

Mulje, Pieter, W. R. Mohondro, and M. C. Fetzer, to Kaiser Aluminum and Chemical Corp. Method of making laminated sheet. 3.349,469, 10–31–67, Cl. 29—487.

Mullen, Charles F. Combination exerciser and strength testing device. 3,349,521, 10–31–67, Cl. 73—380.

Müller, Erich, to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung. Continuous horizontal strip-casting apparatus. 3,349,835, 10–31–67, Cl. 164—158.

Mundon, Jerry L.: *See*—
Perry, Elijah R., Mundon, and Frey. 3,350,520.

Munn, John E. Mine roof support and method of providing same. 3,349,567, 10–31–67, Cl. 61—45.

Munsingwear, Inc.: *See*—
Hall, Alice N. 3,349,409.

Murex Welding Processes Ltd.: *See*—
Brown, Alexander, and Wellard. 3,350,307.

Murphy, Raymond E. Poultry brooder. 3,349,752, 10–31–67, Cl. 119—32.

Murrill, Nathaniel: *See*—
Gebert, William H., and Murrill. 3,350,427.

NGK Insulators, Ltd.: *See*—
Matsutani, Kunio. 3,349,795.
Nishigaki, Susumu, Kusaka, and Sato. 3,350,285.

NVF Co.: *See*—
Green, Alfred J. 3,350,030.

Nagaoka, Noriyuki, to Kabushiki Kaisha Taihei Seisakusho. Feed control mechanism in a rotary veneer lathe. 3,349,820, 10–31–67, Cl. 144—209.

Nanba, Masayski: *See*—
Watanabe, Hiroshi, Tonami, Watanabe, and Nanba. 3,350,475.

Naples, Felix J.: *See*—
Meyer, Glen E., and Naples. 3,350,406.

Napoli, Matthew J., to Dow Corning Corp. Lubricating fluids containing 4,4′ - bis(triorganosilyl)diphenylalkylamines. 3,350,311, 10–31–67, Cl. 252—49.6.

Nathan, Jerome, and T. H. Croteau, to The Seeburg Corp. Vending machine having a lock-out means. 3,349,961, 10–31–67, Cl. 221—125.

National Aeronautics and Space Administration: *See*—
Seamans, Robert C., Jr. 3,350,671.

National Distillers and Chemical Corp.: *See*—
Feldman, Julian, and Thomas. 3,350,439.
Quackenbush, John J. 3,349,437.

National Gypsum Co.: *See*—
Hourigan, Daniel P., and Shull. 3,350,257.

National Lead Co.: *See*—
Stynes, James A. 3,350,432.

National Lock Co.: *See*—
Walters, Russell W. 3,349,585.

National Mine Service Co.: *See*—
Karlovsky, Jerry, Jr. 3,350,137.

National Tile & Mfg. Co.: *See*—
Alexander, Richard B. 3,349,541.

Natta, Giulp, G. Mazzanti, and G. Pregaglia, to Montecatini Edison S.p.A. Process for preparing ketoketene polymers. 3,350,357, 10–31–67, Cl. 260—63.

Nebgen, William H., to Chemical Construction Corp. Anhydrous ammonia scrubbing of ammonia synthesis gas. 3,349,-569, 10–31–67, Cl. 62—17.

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Necchi Societa per Azioni: *See*—
Bono, Luigi. 3,349,731.

Neff, Russell J.: *See*—
Thomas, Charles S., and Neff. 3,350,037.

Nehlig, Albert. Shaped element of plastic material for composite door frames. 3,349,519, 10–31–67, Cl. 49—504.

Nehmsmann Louis J., III: *See*—
Leary, Robert E., Nehmsmann, and Schenck. 3,350,462.

Nelson, Harvey J., to The Budd Co. Press unloader. 3,349,602, 10–31–67, Cl. 72—426.

Nerwin, Hubert, to Eastman Kodak Co. One-piece exposure-controlling structure. 3,349,682, 10–31–67, Cl. 95—64.

Nesenoff, Norman: *See*—
Lubkin, Samuel, Nesenoff, and Walker. 3,350,641.

Nesin, Daniel J., L. D. Green, and W. Kynicki, to Xerox Corp. Fuser having heated and unheated portions for print fixing purposes. 3,349,702, 10–31–67, Cl. 101—416.

Neubauer, Louis, to Beckman Instruments, Inc. Fitting for tubing. 3,350,118, 10–31–67, Cl. 285—305.

Neumeister, Robert L.: *See*—
La Pan, Alfred F., and Neumeister. 3,349,465.

New England Lock and Hardware Co., The: *See*—
Hines, John. 3,349,588.

Newell, Richard B.: *See*—
Strauss, William I., and Newell. 3,349,748.
Niccoli, George J., to The Frederick Post Co. Sheet-feeding method and apparatus. 3,350,089, 10–31–67, Cl. 270—58.
Nicholas, John F., to United States of America, Air Force. Fail safe DC differential amplifier. 3,350,657, 10–31–67, Cl. 330—69.
Niederer, Herbert O.: *See*—
Niederer, Otto C. and H. O. 3,349,907.
Niederer, Otto C. and H. O. Egg grader. 3,349,907, 10–31–67, Cl. 209—121.
Niederprum, Hans: *See*—
Horn, Elmar-Manfred, Kleine-Weischede, Lang, and Niederprum. 3,350,326.
Niederprum, Hans: *See*—
Simmler, Walter, Niederprum, and Jonas. 3,350,437.
Niedzwiecki, Joseph F., to Ingersoll-Rand Co. Descaling tool. 3,349,461, 10–31–67, Cl. 29—81.
Niemann, Gert, to Robert Bosch, G.m.b.H. Method of producing storage batteries. 3,350,236, 10–31–67, Cl. 136—176.
Niemann, Hans H. R., to Minikay A.G. Insulation of containers for the storage of liquids which boil at atmospheric or slightly superatmospheric pressure. 3,349,572, 10–31–67, Cl. 62—55.
Niemeyer, Walter: *See*—
Schippers, Heinz, and Niemeyer. 3,349,433.
Nightingale, William J., 25% to C. F. Voytech. Torsionally adjustable spring diving board. 3,350,093, 10–31–67, Cl. 272—66.
Nikex Nehezipari Kulkereskedelmi Vallalat: *See*—
Bemeter, Laszlo, Galgoczi, Bozzay, and Zagyvai. 3,350,302.
Nippon Gosei Kagaku Kogyo Kabushiki Kaisha: *See*—
Yoshioka, Sadao, Noro, Kawazura, and Takita. 3,350,359.
Nishigaki, Susumu, T. Kusaka, and M. Sato, to NGK Insulators, Ltd. Method of forming rust-proofing and corrosion-resisting coating on metal surfaces. 3,350,285, 10–31–67, Cl. 204—56.
Nitzsche, Siegfried, and P. Buchheit, to Wacker-Chemie G.m.b.H. Method for preparing polysilarylene-polysiloxane copolymers. 3,350,350, 10–31–67, Cl. 260—46.5.
Niwa, Takenao, and S. Ozaki. Process for converting sulfate pump waste residues into high utility material and means of applying same. 3,349,921, 10–31–67, Cl. 210—509.
Nobel-Bozel: *See*—
Marcheguet, Henri G. L., and Gandon. 3,350,165.
Noel, Georges, to Centre Experimental de recherches et d'Etudes du Batiment et des T. P. Soil deformation measuring cell with positioning liner. 3,349,610, 10–31–67, Cl. 73—84.
Nopco Chemical Co.: *See*—
Fetscher, Charles, and Lipowski. 3,350,374.
Liebling, Raymond, and Steckler. 3,350,331.
Nordgren, Simon N. Combined spanner and ratchet wrench. 3,349,654, 10–31–67, Cl. 81—126.
Nordmark, Walter E.: *See*—
Barecki, Chester J., and Nordmark. 3,349,728.
Noro, Ken: *See*—
Yoshioka, Sadao, Noro, Kawazura, and Takita. 3,350,359.
North American Aviation, Inc.: *See*—
Ang, Choh-Yi, and Helderman. 3,350,201.
Flint, Edward F. 3,350,562.
Hauf, Frederick W., and Quick. 3,349,627.
Kohlenberger, Charles W. 3,349,664.
Moulton, James A., and Simpson. 3,350,571.
Quick, William H. 3,349,628.
Sanz, Manual C., Wymer, and Licari. 3,350,250.
Schultz, Alvy P., O'Neill, and Kerns. 3,350,078.
Skiff, Russell A. 3,350,334.
Underhill, Noel B., and Hyatt. 3,350,689.
North American Philips Co., Inc.: *See*—
Einramhof, Franz, and Piree. 3,350,153.
Hekelaar, Marten. 3,350,127.
North British Rubber Co. Ltd., The: *See*—
Salisbury, Wilfred. 3,350,114.
Northrop Corp.: *See*—
Moore, Douglas A., Kirby, and Buck. 3,350,577.
Northwest Magnesite Co.: *See*—
Herrick, Ivan, Adams, and Huffaker. 3,350,259.
Norwich Pharmacal Co., The: *See*—
Burch, Homer A. 3,350,397.
Norwood, Donald D., to Phillips Petroleum Co. Bulk polymerization of conjugated diolefins. 3,350,377, 10–31–67, Cl. 260—94.2.
Novak, Joseph B., to United States Steel Corp. Plate handling device. 3,350,129, 10–31–67, Cl. 294—67.
Nowak, Edward A., to Owens-Illinois, Inc. Paste mold machines for making glass articles. 3,350,189, 10–31–67, Cl. 65—302.
Null, Harold R.: *See*—
Binning, Robert C., Bowe, and Null. 3,350,421.
Binning, Robert C., Bowe, and Null. 3,350,445.
Binning, Robert C., and Null. 3,350,417.
Binning, Robert C., Null, and Reid. 3,350,416.
Bowe, Leon E., Binning, and Null. 3,350,418.
Null, Harold R., L. E. Bowe, and R. C. Binning, to Monsanto Co. Production and recovery of propylene oxide by plural distillation. 3,350,419, 10–31–67, Cl. 260—348.5.
Oakes, E. T. Corp., The: *See*—
Baker, Donald E., and Culpin. 3,349,438.
Oberlander, Georg. Aircraft catapult system. 3,350,038, 10–31–67, Cl. 244—63.
O'Brien, Joseph L.: *See*—
White, Robert W., and O'Brien. 3,350,455.
Obrowski, Walter, and D. Liebich, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for the production of noble metal thermoelectric wires. 3,349,467, 10–31–67, Cl. 29—420.5.
Oechsler, Albert, to SKF Fugellagerfabriken Gesellschaft mit beschrankter Haftung. Cage for roller bearings. 3,350,149, 10–31–67, Cl. 308—217.
Oerlikon-Buhrle Holding A.G.: *See*—
Schwager, Oskar, and Engel. 3,349,712.
Ohama, Hiroshi: *See*—
Wakasa, Ryoichi, Ishida, and Ohama. 3,350,367.
Ohio Art Co., The: *See*—
Searls, Fred H. 3,349,661.
Oliver, Willis J., and R. L. Tucker, to Seismograph Service Corp. Large hole caliper. 3,349,498, 10–31–67, Cl. 33—178.
Olivetti, Ing. C. & C., S.p.A.: *See*—
Francisco, Bernardino. 3,349,884.
Rattin, Luciano, and Ricciardi. 3,350,004.
Olivier, Georges. Method and apparatus for maintaining the security of paper currency. 3,349,729, 10–31–67, Cl. 109—25.
Olsen, Clarence G., to W. R. Grace & Co. Process for beneficiating unground pebble phosphate ore. 3,349,903, 10–31–67, Cl. 209—3.
Olson, David A., to Stackpole Carbon Co. Push-pull electric switch. 3,350,522, 10–31–67, Cl. 200—76.
Olsson, Dexter A., and C. W. Eriksson, to Bethlehem Steel Corp. Ultrasonic thickness comparator device. 3,349,608, 10–31–67, Cl. 73—67.8.
Oltman, Roger B.: *See*—
Barrett, Marlin W., Cramer, and Oltman. 3,350,188.
Oman, Richard M., to Sperry Rand Corp. n-State control circuit. 3,350,579, 10–31–67, Cl. 307—88.5.
O'Neill, Michael S.: *See*—
Schultz, Alvy P., O'Neill, and Kerns. 3,350,078.
Oppel, John A.: *See*—
Badey, Paul E., and Oppel. 3,350,519.
Optics Technology, Inc.: *See*—
Kapany, Narinder S. 3,349,762.
Oral, Jaroslav A. Traction device for motor vehicles. 3,349,861, 10–31–67, Cl. 180—9.54.
Ort, George M., to A. B. Dick Co. Coated paper duplicating master. 3,349,704, 10–31–67, Cl. 101—461.
Oscar Mayer & Co., Inc.: *See*—
Jensen, Hans A., and Eberman. 3,349,540.
Osterreichische Studiengesellschaft fur Atomenergie Ges. m.b.H.: *See*—
Higatsberger, Michael J. 3,350,274.
Otto, Charles W., to General Electric Co. Dynamoelectric machine electrical component mounting and lead securing arrangement. 3,350,586, 10–31–67, Cl. 310—71.
Otto, Ferdinand P.: *See*—
Herd, Richard S., Koft, and Ferdinand. 3,350,310.
Over, Raymond E., to M. H. Detrick Co. Refractory lining for conical portion of a furnace and brick therefor. 3,350,085, 10–31–67, Cl. 266—43.
Overland Products Co., Inc.: *See*—
Kassmeier, William H. 3,350,117.
Overy, Robert J., Sr.: *See*—
Little, Clifford R., and Overy. 3,349,978.
Owens-Illinois, Inc.: *See*—
Guzman, Hector E., and Keefer. 3,349,791.
Minneman, Lester C., Powell, and Spear. 3,350,154.
Nowak, Edward A. 3,350,189.
Piel, Theodore F. 3,350,190.
Rough, Robert R. 3,350,185.
Oxford Paper Co.: *See*—
Cummins, Orval J. 3,350,262.
Ozaki, Shuniti: *See*—
Niwa, Takenao, and Ozaki. 3,349,921.
Package Products Co., Inc.: *See*—
Ellis, Myron B., and Bollenbach. 3,349,993.
Page, Paul F., to Royal Typewriter Co., Inc. Vibrator type ribbon handling mechanism. 3,349,888, 10–31–67, Cl. 197—158.
Paget, Win W. Rocket projectile. 3,349,705, 10–31–67, Cl. 102—49.3.
Palacios, Amando. Bubble balancing machine to balance tires; tire balancing plate. 3,349,626, 10–31–67, Cl. 73—487.
Palli, Claude: *See*—
Calame-Longjean, Andre, Palli, and Guillet. 3,350,565.
Palson, Richard C. J., A. L. Gelardi, and G. Mathus, to Data Packaging Corp. Reel case with rotatable lock. 3,349,898, 10–31–67, Cl. 206—52.
Papaiconomou, George, to Ledex, Inc. Resonant reed encoder-decoder, channel selector circuits therefor and communication circuits using the same. 3,350,686, 10–31–67, Cl. 340—156.
Papini, Henry. Bleaching cottons by aqueous solutions of urea peroxide. 3,350,161, 10–31–67, Cl. 8—111.
Parke, Davis & Co.: *See*—
Blanford, William F. 3,349,765.
Parker, Bernhard D., to Decca Ltd. Speed measuring devices. 3,349,614, 10–31–67, Cl. 73—181.
Parnall & Sons Ltd.: *See*—
Street, Leslie J. 3,350,545.
Parr, Albert W. Hot and cold water cross-over fitting. 3,349,797, 10–31–67, Cl. 137—594.
Pastan, Harvey L., to Abex Corp. Fluid filled pressure transducer. 3,349,623, 10–31–67, Cl. 73—398.
Pastuszak, Ronald F., to Western Electric Co., Inc. Methods and apparatus for aligning resilient leads. 3,349,813, 10–31–67, Cl. 140—147.
Patchogue-Plymouth Co.: *See*—
Port, Morton I., and Hogg. 3,349,552.
Patell, Thomas: *See*—
Braun, Vincent P., Patell, and Braum. 3,349,673.
Patent Holding Corp.: *See*—
Balaguer, Rodolfo R. 3,350,235.

Patton, John T., Jr., R. J. Hartman, and A. L. Austin, to Wyandotte Chemicals Corp. Process for the preparation of phosphorus-containing sucrose polyols. 3,350,389, 10–31–67, Cl. 260—234.
Paulis Silk Co.: *See*—
Jenard, Leonard J. and F. W. 3,350,215.
Pavlovec, Oldfich, to Smeralory Zarody. Method and apparatus for making pinion wire and the like. 3,349,596, 10–31–67, Cl. 72—279.
Payne, Charles, to Koppers Co., Inc. Interacting laminar shell structural component. 3,349,525, 10–31–67, Cl. 52—80.
Payne, Clyde E. Snow plow. 3,349,507, 10–31–67, Cl. 37—44.
Payne, John M.: *See*—
Stuart, Duncan J. K., Fraser, Payne, and Shotter. 3,349,879.
Pearce, Roscoe L.: *See*—
Arnold, John L., Pearce, and Scholten. 3,349,544.
Peaslee, Lawrence R., to General Electric Co. Voltage sensing and control circuits. 3,350,568, 10–31–67, Cl. 307—88.5.
Pedersen, Dane H., to Dymo Industries, Inc. Embossing tools and magazine supplies for use in combination therewith. 3,349,883, 10–31–67, Cl. 197—6.7.
Pedersen, Holger E.: *See*—
Scholin, Harold W., and Pedersen. 3,349,796.
Pellegrini, John P., Jr., and I. J. Spilners, to Gulf Research & Development Co. Triorganotin and lead derivatives of ferrocene. 3,350,434, 10–31–67, Cl. 260—429.7.
Pelster, Heinrich, and R. Heiss, to Farbenfabriken Bayer Aktiengesellschaft. Mercapto-nitrophenols and a process for preparing them. 3,350,459, 10–31–67, Cl. 260—609.
Pender, David R. Ski lift. 3,349,720, 10–31–67, Cl. 104—173.
Penguin Associates, Inc.: *See*—
Wortley, Austin M., Jr., Lenal, and Rinehart. 3,349,707.
Penman, Dexter D. Process of limiting ripping of high pressure compressible fluid conduit and means therefor. 3,349,807, 10–31–67, Cl. 138—172.
Pennsalt Chemicals Corp.: *See*—
Goshorn, Roland H., and Deger. 3,350,410.
Percival, William S., and E. G. Trendell, to Electric & Musical Industries Ltd. Sound recording and transmission systems utilizing compansion for noise elimination. 3,350,512, 10–31–67, Cl. 179—100.2.
Perrella, Guido, and F. Picker, to Dynacast Ltd. Indexing apparatus for sewing machines. 3,349,732, 10–31–67, Cl. 112—65.
Perrine-Cutler Ridge Bank: *See*—
Sherman, Charles I. 3,349,612.
Perry, Elijah R., J. L. Mundon, and A. M. Frey, to Allis-Chalmers Mfg. Co. Contacts for pantograph switch. 3,350,520, 10–31–67, Cl. 200—48.
Perry, Kenneth E., to Geodyne Corp. Universal digital information system. 3,350,707, 10–31–67, Cl. 340—347.
Peters, Beldon A., to Esso Production Research Co. Apparatus for repairing pipe strings. 3,349,852, 10–31–67, Cl. 166—113.
Peters, Don B.: *See*—
Brown, Omar L., and Peters. 3,349,949.
Petersen, Anita E.: *See*—
Petersen, Gerald A. 3,349,508.
Petersen, Erich H., and H. K. Steuer, to Reimers-Getriebe K.G. Automatic belt or chain tightening mechanism for an infinitely variable cone pulley transmission. 3,349,633, 10–31–67, Cl. 74—230.17.
Petersen, Gerald A., ¼ to A. E. Petersen. Tooth with T-shaped shank. 3,349,508, 10–31–67, Cl. 37—142.
Peterson, Oscar A., to Mid-Century Corp. Connections for alloy lined vessels. 3,349,951, 10–31–67, Cl. 220—63.
Petri, Norbert, and H. Strehler, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of pure caprolactam. 3,350,393, 10–31–67, Cl. 260—239.3.
Petry, Robert C., and S. F. Reed, Jr., to Rohm & Haas Co. Alkyl compounds containing nitrogen and fluorine. 3,350,453. 10–31–67, Cl. 260—583.
Peyches, Pierre I., to Compagnie de Saint-Gobain. Method of and apparatus for glass making. 3,350,213, 10–31–67, Cl. 106—52.
Pfeifer, Joseph W.: *See*—
Annunziato, Anthony A., Doucette, and Pfeifer. 3,350,624.
Pfeuffer, Alfred: *See*—
Lotz, Horst K., and Pfeuffer. 3,350,079.
Pfister, William T. Flock-applying apparatus. 3,350,014, 10–31–67, Cl. 239—144.
Pfizer, Chas., & Co., Inc.: *See*—
Agnello, Eugene J., Laubach, and Moreland. 3,350,394.
Philamon Laboratories, Inc.: *See*—
Shreve, Robert R. 3,350,667.
Philco Ford Corp.: *See*—
Beres, John F., and Bray. 3,350,648.
Phillips, Donald W. Counter structures for machines-tools or the like used for direct while-you-wait services. 3,350,151, 10–31–67, Cl. 312—140.4.
Phillips Petroleum Co.: *See*—
Begley, John W. 3,350,342.
Colby, Theodore W., Jr., and Kron. 3,350,173.
Horning, Raymond H. 3,349,988.
Larkin, Mark E. 3,349,792.
Mills, King L. 3,350,195.
Norwood, Donald D. 3,350,377.
Rasmussen, Ole-Bendt. 3,349,431.
Rasmussen, Ole-Bendt. 3,350,491.
Strobel, Charles W. 3,350,380.
Trantham, Joseph C., Hennigan, Fetkovich, Tek, and Bruns. 3,349,846.
Phoenix Gems, Inc.: *See*—
De Lisle, Auguste L. 3,350,264.
Pickels, Edward G., to Beckman Instruments, Inc. Centrifuge apparatus. 3,350,002, 10–31–67, Cl. 233—28.
Picker, Frank: *See*—
Perrella, Guido, and Picker. 3,349,732.
Pickett, John E. P. Glass hone plate resurfacing apparatus. 3,349,520, 10–31–67, Cl. 51—28.
Pickrell, John W. Hay rake. 3,349,551, 10–31–67, Cl. 56—377.
Piekarski, Clara L., to South Side Nursing Home, Inc. Incontinent pad with barrier around the edge. 3,349,769, 10–31–67, Cl. 128—284.
Piel, Theodore F., to Owens-Illinois, Inc. Spray mist proportioning system for glass machine. 3,350,190, 10–31–67, Cl. 65—355.
Pierce, Elwood K., Jr.: *See*—
Crain, Robert L., and Pierce. 3,349,789.
Pietsch, Walter: *See*—
Wisseroth, Karl, Pietsch, and Kastning. 3,350,376.
Pilkuhn, Manfred H., and H. S. Rupprecht, to International Business Machines Corp. Formation of large area contacts to semiconductor devices. 3,349,476, 10–31–67, Cl. 29—590.
Pioneer Heddle and Reed Co., Inc.: *See*—
Goodman, Robert M., Jr. 3,349,810.
Pipe Machinery Co., The: *See*—
Herbkersman, Earle C. 3,349,416.
Piree, Pierre T. J.: *See*—
Einramhof, Frans, and Piree. 3,350,153.
Piskala, Alois: *See*—
Sorm, Frantisek, and Piskala. 3,350,388.
Pistilli, Angelo, and P. Susin, to Societa Italiana Telecomunicazioni Siemens S.p.A. Nonreciprocal ferrite device having a thin dielectric layer encircling the ferrite element. 3,350,664, 10–31–67, Cl. 333—1.1.
Pitt, Harold M.: *See*—
Baker, Don R., Pitt, and Soong. 3,350,191.
Pittsburgh Plate Glass Co.: *See*—
Barrett, Marlin W., Cramer, and Oltman. 3,350,188.
Demarest, Henry M., Jr., and Sieger. 3,350,248.
Plantholt, Robert G.: *See*—
Balmer, James G., Jr., and Plantholt. 3,350,203.
Plessey Co. Ltd., The: *See*—
Wray, Ronald J., and Tribe. 3,350,054.
Plevyak, Joseph B. Lathe cut-off device. 3,349,656, 10–31–67, Cl. 82—101.
Plumat, Emile: *See*—
Brichard, Edgard, Plumat, and Duperroy. 3,350,187.
Plust, Heinz-Gunther, and C. G. Telschow, to Brown, Boveri & Cie, Aktiengesellschaft. Electrochemical low-temperature fuel cell. 3,350,233, 10–31–67, Cl. 136—86.
Poarch, Charles T.: *See*—
Misencik, John, Mackiewicz, and Poarch. 3,350,675.
Pochtar, Michael, to The Bendix Corp. Variable frequency to pulse-width converter. 3,350,637, 10–31–67, Cl. 324—78.
Poland, Robert M.: *See*—
Loving, Robert C., and Poland. 3,350,123.
Poletajev, Gury, to Burlington Industries, Inc. Edge sealer for pile fabric. 3,349,971, 10–31–67, Cl. 222—191.
Politz, William E.: *See*—
Christiansen, Gerald E., and Politz. 3,349,802.
Pollak, Kurt, to Baldwin-Lima-Hamilton Corp. Plate stretcher. 3,349,598, 10–31–67, Cl. 72—295.
Polmanteer, Keith E.: *See*—
McVannel, Donald E., Mishler, and Polmanteer. 3,350,216.
Polymer Corp Ltd.: *See*—
Marcinkowski, Mieczyslaw. 3,350,378.
Poole, Arthur J., and J. M. Rackley, to The Babcock & Wilcox Co. Combination oil and gas burner. 3,349,826, 10–31–67, Cl. 158—11.
Poole, Renee J., and L. Maslekoff. Hair coloring method. 3,349,781, 10–31–67, Cl. 132—7.
Port, Morton I., and W. J. Hogg, to Patchogue-Plymouth Co. Composite paper and plastic yarn. 3,349,552, 10–31–67, Cl. 57—31.
Porter, William F., to United States Gypsum Co. Fiber attenuating apparatus. 3,350,184, 10–31–67, Cl. 65—14.
Post, Frederick, Co., The: *See*—
Niccoli, George J. 3,350,089.
Potrafke, Earl M., and W. H. Powell, to E. I. du Pont de Nemours and Co. Process for the preparation of a pentafluorophenyl-magnesium chloride-tetrahydrofuran complex. 3,350,412, 10–31–67, Cl. 260—346.1.
Potter Instrument Co., Inc.: *See*—
Barany, Janos T. 3,350,573.
Potter, John T. 3,349,696.
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Potts, Charles H., to Dryvent Ltd. Adsorptive removal of contaminants from compressed gas mixture. 3,349,570, 10–31–67, Cl. 62—18.
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Powell, Daryl E.: *See*—
Minneman, Lester C., Powell, and Spear. 3,350,154.
Powell, Warren H.: *See*—
Potrafke, Earl M., and Powell. 3,350,412.
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Baer, John. 3,349,880.
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Natta, Giulp, Mazzanti, and Pregaglia. 3,350,357.
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Priestley, Ronald. Heat exchanger apparatus. 3,349,839, 10–31–67. Cl. 165—3.
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Colby, Edward E., and Hager. 3,350,208.
Koren, Paul M., and Mensies. 3,350,207.
Kropp, Paul J. 3,350,289.
Martin, James B. 3,350,413.
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Clements, Clarence J., Jr., and Leaf. 3,349,763.
Prybil, John T., to Vapor Corp. Heat exchanger coil assembly. 3,349,842, 10–31–67, Cl. 165—163.
Puhringer, Othmar, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Apparatus for forcing off mouth skulls. 3,350,081, 10–31–67, Cl. 266—36.
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Bergy, Malcolm E., and Pyke. 3,350,269.
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Morgan, Burton D., and Questel. 3,350,254.
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Hauf, Frederick W., and Quick. 3,349,627.
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Cherbuliez, Emile, and Rabinowitz. 3,350,478.
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Rackley, John M.: *See*—
Poole, Arthur J., and Rackley. 3,349,826.
Radio Corp. of America: *See*—
Henn, William. 3,350,659.
Kramer, William M. 3,350,595.
Lichowsky, Abraham. 3,350,143.
Rauscher, Daniel H. 3,349,474.
Rickling, Alfred H. 3,350,599.
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Van Asselt, Robert L. 3,350,591.
Vural, Bayram. 3,350,656.
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Rashleigh, Clayton, to International Business Machines Corp. Method of forming through hole conductor lines. 3,349,480, 10–31–67, Cl. 29—624.
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Ratts, Kenneth W., to Monsanto Co. N-phenylcarbamoylmethyl sulfonium iodides. 3,350,447, 10–31–67, Cl. 260—562.
Rausch, Marvin D.: *See*—
Van Wazer, John R., Moedritzer, and Rausch. 3,350,435.
Rauscher, Daniel H., to Radio Corp. of America. Semiconductor device. 3,349,474, 10–31–67, Cl. 29—574.
Rauth, Robert G. Fresh corn trimming and grading machine. 3,349,822, 10–31–67, Cl. 146—78.
Raylite Electric Corp.: *See*—
Di Rico, Emidio. 3,350,555.
Reactor Centrum Nederland (Stichting): *See*—
Van Der Laken, Robert A. 3,350,273.
Read Corp.: *See*—
Howard, David F. 3,349,928.
Realist Inc.: *See*—
Balch, William. 3,349,509.
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Vanderhaeghe, Hubert. 3,350,387.
Reddick, John A., to Clayton Anderson & Co. Fractionating apparatus. 3,349,911, 10–31–67, Cl. 209—304.
Redner, Richard J.: *See*—
Gallaher, Lee E., and Redner. 3,350,628.
Ree, Roelof, to I.A.S. Bicor Corp. Thread holding and releasing system in change-color embroidery machines. 3,349,733, 10–31–67, Cl. 112—83.
Reed, Arthur E.: *See*—
Seamans, Robert C., Jr. 3,350,671.
Reed, Davis S.: *See*—
Darigo, Julius, Dickey, and Reed. 3,349,711.
Reed Paper Group Ltd.: *See*—
Chapman, Michael C., Weathrup, and Humphrey. 3,349,-986.
Reed, Samuel F., Jr.: *See*—
Petry, Robert C., and Reed. 3,350,453.
Rees, James T.: *See*—
Gretton, Neil B. C., Rees, and Bradley. 3,350,278.
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Fraga, Gilbert W. 3,349,624.
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Reichle, Richard G.: *See*—
Haase, Wilbert W., Jr., Reichle, and Wennerberg. 3,350,-051.
Reid, Stanley L.: *See*—
Binning, Robert C., Null, and Reid. 3,350,416.
Reider, Marvin S.: *See*—
Halko, John J., Jr., and Reider. 3,349,536.
Reiland, Frank D., to Gateway Erectors, Inc. Concrete forms. 3,350,049, 10–31–67, Cl. 249—48.
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Petersen, Erich H., and Steuer. 3,349,633.
Reimschuessell, Herbert K., and F. Boardman, to Allied Chemical Corp. Polymerization of lactams using an N-acyl unsaturated heterocyclic compound as a promoter. 3,350,364, 10–31–67, Cl. 260—78.
Reinwall, Ernest W., Jr.: *See*—
Lindeman, Richard J., and Reinwall. 3,350,593.
Reise, Donald A.: *See*—
Kalert, Ralph E., Jr., and Reise. 3,350,074.
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Tope, Paul H., and Reiter. 3,349,840.
Rempfer, Gertrude F. Electron diffraction voltmeter. 3,350,-640, 10–31–67, Cl. 324—121.
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Research Corp.: *See*—
Artajo, José I. M. 3,349,757.
Research-Cottrell, Inc.: *See*—
Crommelin, Philip B., Jr. 3,350,076.
Resenberger, Frederick E.: *See*—
Makin, Earle C., Jr., and Resenberger. 3,350,283.
Reynolds, Eugene E., to SCM Corp. Calculating machine. 3,350,006, 10–31–67, Cl. 235—63.
Rhea, John W., and J. V. Morse, to Esso Production Research Co. Repair of channels between well bores. 3,349,844, 10–31–67, Cl. 166—4.
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Dresia, Heinrich, Fischotter, and Bessing. 3,350,561.
Ricciardi, Giuseppe: *See*—
Rattin, Luciano, and Ricciardi. 3,350,004.
Rice, Leonard M., and C. H. Grogan, to Tri-Ken Corp. Spiro acids. 3,350,442, 10–31–67, Cl. 260—614.
Rice, Rex, to International Business Machines Corp. Automatic data correction for batch-fabricated memories. 3,350,-690, 10–31–67, Cl. 340—172.5.
Rice, Robert C., Jr. Aerosol shaving cream dispenser and applicator. 3,350,159, 10–31–67, Cl. 401—190.
Richard, Charles D.: *See*—
Turner, Sally I., and Richard. 3,349,441.
Richards, Elmer A., to Eaton Yale & Towne, Inc. Automotive device. 3,349,635, 10–31–67, Cl. 74—331.
Richards, George T.: *See*—
Eveson, Geoffrey F., and Richards. 3,349,912.
Richardson, David A., to The Boeing Co. Icing detector. 3,350,-541, 10–31–67, Cl. 219—200.
Richardson, Rolland A. Ram attitude control system. 3,349,-669, 10–31–67, Cl. 91—171.
Richardson, Vernon C. H., to United States of America, National Science Foundation. Bumper sub position indicator. 3,349,856, 10–31–67, Cl. 175—40.
Richter, Kurt: *See*—
Sandstede, Gerd, Binder, Kohling, and Richter. 3,350,200.
Richter, Sidney B., to Velsicol Chemical Corp. Method for pre-emergence control of undesirable plant life. 3,350,192, 10–31–67, Cl. 71—82.
Rickling, Alfred H., to Radio Corp. of America. Color television kinescope uitor voltage regulator utilising a voltage dependent resistor in the control grid circuit of the regulator triode. 3,350,599, 10–31–67, Cl. 315—22.
Ridley, Walter H.: *See*—
Choquette, J. Walter, Jr., and Ridley. 3,350,012.

Riegel Paper Corp.: *See*—
Magill, Donald G., Jr. 3,350,484.
Riesser, Gregor H.: *See*—
Willatt, John M., and Riesser. 3,350,323.
Rinckhoff, John B., to Chemical Construction Corp. Production of sulfuric acid. 3,350,169, 10–31–67, Cl. 23—168.
Rinehart, Joseph A.: *See*—
Wortley, Austin M., Jr., Lensi, and Rinehart. 3,349,707.
Ringold, Howard J., and C. Djerassi, to Syntex Corp. 6α,16α-dimethyl-1,4-pregnadien-17α-ol-3,20-dione and esters thereof. 3,350,426, 10–31–67, Cl. 260—397.4.
Ritter, Karlheins, to General Protection Establishment. Lightning rod with great ionising power. 3,350,496, 10–31–67, Cl. 174—4.
Riv-Kap, Inc.: *See*—
Halko, John J., Jr., and Reider. 3,349,536.
Halko, John J., Jr. 3,349,984.
Roberts, Alfred H. Cone loudspeakers. 3,350,513, 10–31–67, Cl. 179—115.5.
Roberts, Charles G. Shelter attachment for automobiles. 3,349,784, 10–31–67, Cl. 135—5.
Roberts, Fred T., & Co.: *See*—
Roberts, Robert E. 3,349,806.
Roberts, James R., A. S. Gregory, and R. M. Morris, to Weyerhaeuser Co. Paper stiffened with bark extractives and method of making the same. 3,350,261, 10–31–67, Cl. 162—117.
Roberts, Robert E., to Fred T. Roberts & Co. Reinforced hose construction and method of making the same. 3,349,806, 10–31–67, Cl. 138—122.
Robins, Walter A. Blade holder with sliding blade assembly. 3,349,487, 10–31–67, Cl. 30—335.
Robinson, ES & A (Holdings) Ltd.: *See*—
Salway, Brian. 3,349,985.
Robinson, Hugh G., to Varian Associates. Optically pumped atomic diffusion maser with separate pumping and observation regions. 3,350,632, 10–31–67, Cl. 324—.5.
Robinson, Paul E.: *See*—
Smyth, Donald, and Robinson. 3,349,421.
Rodgers, Edgar B., to Germantown Mfg. Co. Stabilized topping. 3,350,209, 10–31–67, Cl. 99—139.
Rogers, Charles E., to The Babcock & Wilcox Co. Chemical and heat absorbing apparatus. 3,349,546, 10–31–67, Cl. 55—227.
Rohm & Haas Co.: *See*—
Hurwitz, Melvin D. 3,350,363.
Kelley, Everett J. 3,350,336.
Kelley, Everett J. 3,350,375.
Petry, Robert C., and Reed. 3,350,453.
White, Robert W. and O'Brien. 3,350,455.
Roland, Homer F.: *See*—
Stine, Robert M., and Roland. 3,350,712.
Roll-Lok Corp.: *See*—
Rabelos, Nicholas A. 3,349,425.
Rollform, Inc.: *See*—
Adams, George C. 3,350,125.
Rolls-Royce Ltd.: *See*—
Brooks, Kenneth. 3,349,560.
Johnson, Christopher L. 3,349,557.
Smith, Ian. 3,349,558.
Romani, Roberto, and M. Ferri, to Societa Rhodiatoce S.p.A. Process for separating adiponitrile from reaction mixture by stripping with ammonia. 3,350,281, 10–31–67, Cl. 203—29.
Rosaen Filter Co., The: *See*—
Royer, David R., and Bosek. 3,349,919.
Rose-Derry Co.: *See*—
Merella. Morris C. 3,349,413.
Rose, Merle M.: *See*—
Cain, Leonard L., and Rose. 3,349,854.
Rose, Robert K., to General Electric Co. Fluid amplifier serial digital adder logic circuit. 3,350,009, 10–31–67, Cl. 235—201.
Rose, Robert K., to General Electric Co. Fluid amplifier serial digital complementer logic circuit. 3,350,010, 10–31–67, Cl. 235—201.
Rosemount Engineering Co.: *See*—
Lode, Tenny D. 3,350,653.
Lode, Tenny D. 3,349,684.
Rosenberg, Harold, and S. G. Cottis, to United States of America, Air Force. Ferrocene-containing monomers and polymers and process for preparing same. 3,350,369, 10–31–67, Cl. 260—80.
Rosenberg, Harvey, to Burroughs Corp. Current driver. 3,350,570, 10–31–67, Cl. 307—88.5.
Rosengarten, Walter E., Jr.: *See*—
Bucsala, George S., Rosengarten, and Copeland. 3,350,-050.
Rosenvold, Lloyd K. and R. J. Ophthalmic mounting hinge. 3,349,430, 10–31–67, Cl. 16—169.
Rosenvold, Robert J.: *See*—
Rosenvold, Lloyd K. and R. J. 3,349,430.
Ross, William A., to Sundstrand Corp. Hydrostatic transmission. 3,349,860, 10–31–67, Cl. 180—6.44.
Rossi, Irving, to Concast, Inc. Continuous casting mold with armor strips. 3,349,836, 10–31–67, Cl. 164—278.
Rossmann, Eberhard: *See*—
Meier, Alfred, Kohl, and Rossmann. 3,349,672.
Rough, Robert R., to Owens-Illinois, Inc. Method of eliminating a form blanket on the surface of molten glass. 3,350,185, 10–31–67, Cl. 65—32.
Rountree, Calvin. Adjustable mechanical movement. 3,349,-643, 10–31–67, Cl. 74—838.
Rowekamp, Richard J. Solar freezing method for desalting sea water. 3,349,573, 10–31–67, Cl. 62—123.
Royal Typewriter Co., Inc.: *See*—
Madison, Theodore N., and McGrath. 3,349,886.
Page, Paul F. 3,349,888.
Royer, David R., and J. W. Bosek, to The Rosaen Filter Co. Telescoping filter assembly. 3,349,919, 10–31–67, Cl. 210—232.
Rubbermaid Inc.: *See*—
Breneman, Joseph C. 3,349,422.
Breneman, Joseph C. 3,349,958.
Rubin, George H. Disc snow thrower. 3,349,506, 10–31–67, Cl. 37—43.
Rubinstein, David, and J. Healy, to W. R. Grace & Co. Aqueous polymers latex with silver and sodium hypachlorite, hydrogen peroxide, or formaldehyde germicides. 3,350,265, 10–31–67, Cl. 167—38.6.
Rubissow, George A. Vertical file. 3,349,775, 10–31–67, Cl. 129—3.
Ruchser, Erich: *See*—
Herion, Erich, and Ruchser. 3,349,900.
Rudd-Melikian, Inc.: *See*—
Heier, William. 3,349,690.
Rupprecht, Hans S.: *See*—
Pilkuhn, Manfred H., and Rupprecht. 3,349,476.
Russell, Carl D. End-of-page limiting device. 3,349,890, 10–31–67, Cl. 197—189.
Russell, Fred J., and G. B. Soloviеff, said Soloviеff assor. to said Russell. Dial and key operated padlock. 3,349,584, 10–31–67, Cl. 70—21.
Russell, Fred J., and G. B. Soloviеff, said Soloviеff assor. to said Russell. Combination lock mechanism. 3,349,586, 10–31–67, Cl. 70—316.
Russell, Kenneth A., to British Relay Ltd. Electrical signal distributing systems. 3,350,502, 10–31–67, Cl. 178—6.
Rutledge, William A., and J. J. Clarkson, to General Electric Co. Dynamoelectric machine rotor supporting structure. 3,350,588, 10–31–67, Cl. 310—90.
Ryan, John W., to Mattel, Inc. Loose-leaf binder and paper-punch combination. 3,349,774, 10–31–67, Cl. 129—7.
Ryan, Patrick W., to Sinclair Research Inc. Method for the production of paraxylene. 3,350,469, 10–31–67, Cl. 260—672.
Rygg, Inge H., to Aktiebolaget C. V. Heljestrand. Needle holding instrument for applying continuous sutures. 3,349,-772, 10–31–67, Cl. 128—340.
Ryhiner, Gunther, H. H. Von Dohren, and M. Jung, to Varta Aktiengesellschaft. Homeoporous electrode for electrochemical devices, method of its manufacture, and fuel cell incorporating such electrodes. 3,350,232, 10–31–67, Cl. 136—86.
Rylander, Paul N., and N. G. Himelstein, to Engelhard Industries, Inc. Process for preparing aromatic primary halo-amines. 3,350,452, 10–31–67, Cl. 260—580.
Ryshov-Nikonov, Vladimir I., V. S. Grebennik, and I. N. Ermolov, to Tsentralny Nauchno-Issledovatelsky Institute Tekhnologii i Mashinostroenia. Ultrasonic pulse echo flaw-detector. 3,349,609, 10–31–67, Cl. 73—67.9.
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Smyth, Donald, and Robinson. 3,349,421.
SCM Corp.: *See*—
Reynolds, Eugene E. 3,350,006.
SI Handling System, Inc.: *See*—
Bradt, Lynn, and Jacoby. 3,349,718.
SKF Fugellagerfabriken Gesellschaft mit beschrankter Haftung: *See*—
Oechsler, Albert. 3,350,149.
SKF Industries, Inc.: *See*—
Beckman, Edward V., Good, Schickling, and Young. 3,350,144.
Hingley, Colin G. 3,350,147.
Saad, Theodore S., to Sylvania Electric Products Inc. Electrical crystal unit for use at microwave frequencies. 3,350,655, 10–31–67, Cl. 329—162.
Sadwith, Howard M., to Industrial Washing Machine Corp. Washing small parts. 3,350,224, 10–31–67, Cl. 134—33.
Sage, Ira H.: *See*—
Lipp, Charles E., Martin, Sage, and Vicary. 3,349,982.
Sain, John P.: *See*—
Burchett, Ray L., and Sain. 3,349.577.
Sandstede, Gerd, H. Binder, A. Kohling, and K. Richter, to Robert Bosch G.m.b.H. Method of making a sintered fuel cell electrode structure. 3,350,200, 10–31–67, Cl. 75—208.
Sanguinetti, Bradley E., and E. F. Hayden, to General Bearing Co. Ball bearing seal assembly. 3,350,148, 10–31–67, Cl. 308—187.2.
Sanne, Walter: *See*—
Soenksen, Uwe, Bauer, Sanne, and Arnold. 3,350,340.
Santmyers, Donald, to E. I. du Pont de Nemours and Co. Process for the production of styrene-butadiene rubber in presence of coagulating system. 3,350,371, 10–31–67, Cl. 260—85.1.
Sans, Manual C., R. W. Wymer, and J. J. Licari, to North American Aviation, Inc. Method of making printed wire circuitry. 3,350,250, 10–31–67, Cl. 156—150.
Salisbury, Wilfred, to The North British Rubber Co. Ltd. Rubber article. 3,350,114, 10–31–67, Cl. 280—154.5.
Salomon, Georges P. J. Safety ski binding. 3,350,110, 10–31–67, Cl. 280—11.35.
Salt, John A. Portable partition with telescoping tube support. 3,349,528, 10–31–67, Cl. 52—239.
Salway, Brian, to E. S. & A. Robinson (Holdings) Ltd. Package. 3,349,985, 10–31–67, Cl. 229—14.
Sargent, Herbert B.: *See*—
Manz, August F., and Sargent. 3,350,539.
Sato, Masanori: *See*—
Nishigaki, Susumu, Kusaka, and Sato. 3,350,285.
Savage, Albert B., to The Dow Chemical Co. Acrylic amide polymers having improved water dispersibility. 3,350,338, 10–31–67, Cl. 260—29.6.
Savage, John W.: *See*—
Cromp, Theodore Q., and Savage. 3,350,098.

Sawin, Robert L. Hair styling comb with driving means. 3,349,782, 10–31–67, Cl. 132—11.

Scace, Robert I., to General Electric Co. Gate fired bidirectional switch. 3,350,611, 10–31–67, Cl. 317—235.

Scala, Eugene L., Jr., to Ford Motor Co. Temperature compensated accelerating pump. 3,350,071, 10–31–67, Cl. 261—34.

Schachner, Herbert: *See*—
Tannenberger, Helmut, Schachner, and Simm. 3,350,230.

Schaefer, George E., to Brunswick Corp. Chair. 3,350,133, 10–31–67, Cl. 297—232.

Schafers, Josef F. Box opener. 3,349,938, 10–31–67, Cl. 217—57.

Schaumann, Erik J., to E. I. du Pont de Nemours and Co. Tailless connector. 3,349,706, 10–31–67, Cl. 102—27.

Schell, Merrill A., to A. O. Smith Corp. Hot metal extrusion method. 3,349,593, 10–31–67, Cl. 72—38.

Schenck, Leslie M.: *See*—
Leary, Robert E., Nehmsmann, and Schenck. 3,350,462.

Scherer, Sidney A.: *See*—
Berger, Victor M., and Scherer. 3,350,543.

Schering Corp.: *See*—
Gebert, William H., and Murrill. 3,350,427.

Schewe, Richard A., to Barber-Colman Co. Bobbin with tucked-in thread retainer. 3,350,032, 10–31–67, Cl. 242—164.

Schiavone, Edward L. Electric power supply. 3,350,583, 10–31–67, Cl. 310—8.3.

Schickling, Joseph H.: *See*—
Beckman, Edward V., Good, Schickling, and Young. 3,350,144.

Schiffman, Louis, to Amchem Products, Inc. Method of and composition for controlling scale formation on ferriferous surfaces. 3,350,243, 10–31–67, Cl. 148—18.

Schilling, William A.: *See*—
Siekanowicz, Wieslaw W., Schilling, and Bardash. 3,350,663.

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Schlapman, William J., and E. E. Croisant, to Colt Mfg. Co., Inc. Front axle and PTO shaft. 3,349,631, 10–31–67, Cl. 74—15.63.

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Schlegel, Werner. Process for pressure-forming metallic bodies. 3,349,472, 10–31–67, Cl. 29—528.

Schlicht, Erika M.: *See*—
Schlicht, Gunther, and Lange. 3,349,850.

Schlicht, Gunther, deceased (by E. M. Schlicht, legal representative), and H. Lange, to Deutsche Erdol-Aktiengesellschaft. Method for the extraction of underground bituminous deposits. 3,349,850, 10–31–67, Cl. 166—40.

Schlieben, Ernest W. VTOL with cylindrical wing. 3,350,035, 10–31–67, Cl. 244—7.

Schlumberger Technology Corp.: *See*—
Arnold, Wayne R. 3,350,563.

Schmeckenbecher, Arnold F., to International Business Machines Corp. Electroless plating of magnetic material. 3,350,210, 10–31–67, Cl. 106—1.

Schmidt, Gerhard: *See*—
Knauer, Hans U., and Schmidt. 3,350,510.

Schmidt, Warren J., to American Machine & Foundry Co. Automatic positioning apparatus utilizing magnetic recording means. 3,350,699, 10–31–67, Cl. 340—174.1.

Schmitz, Robert, to Honeywell Inc. Controlling apparatus. 3,350,053, 10–31–67, Cl. 251—5.

Schneider, Frank L. Road salt composition. 3,350,315, 10–31–67, Cl. 252—70.

Schneider, Hans, to Sulzer Bros. Ltd. Method of making a casting mold. 3,349,830, 10–31–67, Cl. 164—43.

Schneider, John R. Automatic device for controlling feed of aids to filtration. 3,349,913, 10–31–67, Cl. 210—85.

Schneider, Jos., & Co., Optische Werke: *See*—
Macher, Karl H. 3,350,155.
Sollisch, Rudolf, and Woltche. 3,350,157.

Schneiter, Ali, to Ebauches S.A. Means for balancing a rotary or oscillatory fly-wheel. 3,349,640, 10–31–67, Cl. 74—573.

Schneller, John W. Toiletry dispenser. 3,349,967, 10–31–67, Cl. 222—130.

Scholin, Harold W., and H. E. Pedersen; said Pedersen assor. to said Scholin. Fluid flow control unit. 3,349,796, 10–31–67, Cl. 137—501.

Scholl, Edward C., to Gilleskie-Rogers-Pyatt Co., Inc. Coating compositions of shellac, melamine formaldehyde, and styrene-acrylate emulsions. 3,350,329, 10–31–67, Cl. 260—8.

Scholle, Roger A. Sectional boat construction and hinged seat connecting means therefor. 3,349,415, 10–31–67, Cl. 9—2.

Scholten, Hermann G.: *See*—
Arnold, John L., Pearce, and Scholten. 3,349,544.

Schönemeyer, Hilmar: *See*—
Willrett, Helmut, Schönemeyer, and Siegel. 3,350,507.

Schonfeldt, Nikolaus A., to Mo Och Domsjo Aktiebolag. Aqueous detergent-inorganic builder concentrates. 3,350,319, 10–31–67, Cl. 252—138.

Schott, Arthur K.: *See*—
Johns, John A., and Schott. 3,349,658.

Schott, Arthur K., to Houdaille Industries, Inc. Workpiece positioning mechanism for a machine tool. 3,350,088, 10–31–67, Cl. 269—60.

Schottle, Helmut, to Adrema-Werke G.m.b.H. Printing plate. 3,349,700, 10–31–67, Cl. 101—369.

Schramm, Charles H., and M. Zief, to J. T. Baker Chemical Co. Resinous condensation product of 2,2-di(4-hydroxyphenyl) propane dialkylcarbamate and formaldehyde. 3,350,355, 10–31–67, Cl. 260—51.

Schramm, Charles H., and M. Zief, to J. T. Baker Chemical Co. 1-chloro-2-chlorocarbonatobutanone-3 and process for polymerization. 3,350,356, 10–31–67, Cl. 260—63.

Schroer, Charles E.: *See*—
Hamilton, John J., and Schroer. 3,349,727.

Schulenberg, John W., and S. Archer, to Sterling Drug Inc. Amino - lower - alkoxy - dibenzo[a,d]cycloheptен-5-ones and 10,11-dihydro derivatives thereof. 3,350,405, 10–31–67, Cl. 260—294.7.

Schulze, Herman H.: *See*—
Stott, Ted, Schulze, and Gunyou. 3,349,823.

Schultz, Alvy P., M. S. O'Neill, and W. D. Kerns, to North American Aviation, Inc. Fabrication and heat-treating die means. 3,350,078, 10–31–67, Cl. 266—4.

Schultze, Hans-Joachim, and C. Berther, to Inventa A. G., fur Forschung und Patentverwertung. Process for the separation of -dodecalactam and cyclododecanecarboxylic acid from mixtures thereof in sulfuric acid. 3,350,392, 10–31–67, Cl. 260—239.3.

Schuman, Le Roy: *See*—
Archer, Fred C., De Diemar, and Schuman. 3,350,019.

Schuman, Leslie N., to Midland-Ross Corp. Actuator system. 3,350,142, 10–31–67, Cl. 303—7.

Schuster, Wilhelm. Collapsible structural unit, reversibly resilient in a predetermined direction and rigid in a second predetermined direction. 3,349,526, 10–31–67, Cl. 52—108.

Schwager, Oskar, and W. Engel, to Oerlikon-Buhrle Holding AG. Sabot projectile. 3,349,712, 10–31–67, Cl. 102—93.

Schwaller, Lando, to Armour and Co. Hide wringing apparatus. 3,349,583, 10–31–67, Cl. 69—43.

Schwarm, George R. Book holder. 3,350,150, 10–31–67, Cl. 312—117.

Schwartz, Alvin. Warp knit fabric with looped yarn surface. 3,349,575, 10–31–67, Cl. 66—86.

Schwartz, Charles H., and G. F. Smyth, to De Best Mfg. Co., Inc. Gasket ferrule. 3,349,412, 10–31–67, Cl. 4—252.

Schwartz, Jules J., and H. W. D. Cassidy, to Thiokol Chemical Corp. Solid propellant rocket motor. 3,349,564, 10–31–67, Cl. 60—253.

Schwartzman, Gilbert S. Two-part mixture package and applicator. 3,349,966, 10–31–67, Cl. 222—80.

Schwend, Fred N.: *See*—
Clary, Hugh L., and Schwend. 3,350,005.

Scientific Data Systems, Inc.: *See*—
Beck, Robert M., and Cachelin. 3,350,569.

Seabury, William A., III, to B. H. Marshall. Device for counting sheetlike items. 3,349,497, 10–31–67, Cl. 33—147.

Sealey, Frank, to Joseph Lucas (Industries) Ltd. Method of making electric storage batteries. 3,350,237, 10–31–67, Cl. 136—176.

Seamans, Robert C., Jr., deputy administrator of the National Aeronautics and Space Administration with respect to an invention of D. P. Littlejohn and A. E. Reed. High power-high voltage waterload. 3,350,671, 10–31–67, Cl. 338—82.

Searle, G. D., & Co.: *See*—
Cusic, John W., and Yonan. 3,350,402.
Kilmstra, Paul D. 3,350,424.

Searles, Thomas F., to Harnischfeger Corp. Process for manufacturing circumferentially segmented induction members. 3,349,477, 10–31–67, Cl. 29—598.

Searls, Fred H., to The Ohio Art Co. Revolving scenic music box. 3,349,661, 10–31–67, Cl. 84—94.

Seeburg Corp., The: *See*—
Camp, Vernon D. 3,349,881.
Nathan, Jerome, and Croteau. 3,349,961.

Seham, Martin C.: *See*—
Barnes, Alfred H., Seham, and Hadwick. 3,350,495.

Seiger, Harvey N., to Gulton Industries Inc. Rechargeable sealed secondary battery. 3,350,225, 10–31–67, Cl. 136—6.

Seismograph Service Corp.: *See*—
Oliver Willis J., and Tucker. 3,349,498.

Sekmakas, Kazys, to De Soto, Inc. Pigmented dispersion containing binder of unsaturated oxirane, ethyl acrylate, methyl methacrylate emulsion copolymer. 3,350,339, 10–31–67, Cl. 260—29.6.

Seliger, Victor H., and A. F. Wermund, to United States of America, Air Force. Drift compensation computer. 3,349,630, 10–31–67, Cl. 74—5.34.

Seltorp, Leonard J. Heterogeneous nuclear reactor and fuel element therefor. 3,350,272, 10–31–67, Cl. 176—32.

Semon, Lawrence J. Telephone line testing unit. 3,350,515, 10–31–67, Cl. 179—175.1.

Senard et Fils, R.: *See*—
Senard, Pierre J. R. 3,349,595.

Senard, Pierre J. R, to R. Senard et Fils. Bending machines. 3,349 595, 10–31–67, Cl. 72—156.

Sengbush, Raymond L., to Mobil Oil Corp. Optimum detector type and depth in marine seismic exploration. 3,350,683, 10–31–67, Cl. 340—7.

Servo Corp.: *See*—
Adler, William. 3,350,708.

Sewell, Donald N., to Dielectric Products Engineering Co., Inc. Method of manufacturing a coaxial electrical transmission line. 3,349,479, 10–31–67, Cl. 29—600.

Sha, William T.: *See*—
Bonilla, Charles F., and Sha. 3,350,564.

Shackelford, John H., deceased; Maryland National Bank executor. Multiple celled pressure sensitive dental device for measuring relative occlusal pressures. 3,349,489, 10–31–67, Cl. 32—19.

Shaddock, Roland E., to The Meyers-Sherman Corp. Materials transporting apparatus. 3,350,139, 10–31–67, Cl. 302—27.

Shaler, Amos J., to Stackpole Carbon Co. Evaporating metal employing porous member. 3,350,219, 10–31–67, Cl. 117—107.

Shanklin, Dunbar L. Flux life extender. 3,350,244, 10–31–67, Cl. 148—26.

Shaw, Edward E.: *See*—
Merrill, Edward W., Shaw, Chambers, and Dauwalter. 3,349,606.

Shaw, Gilbert, and C. H. Anderson, Jr.; said Anderson, assor. to said Shaw. Method and apparatus for mixing dissimilar types of fibers. 3,350,069, 10–31–67, Cl. 259—54.

Shearer, Bette J. Removable covering for women's shoes and method of forming it. 3,349,504, 10–31–67, Cl. 36—2.5.

Sheckells, Amuel E., to International Steel Co. Revolving door operating mechanism and speed controller. 3,349,876, 10–31–67, Cl. 188—185.

Sheehan, John P., to Ethicon, Inc. Plastic prosthesis useful in gynaecological surgery. 3,349,770, 10–31–67, Cl. 128—303.

Sheesley, John M. Reciprocating booster pump. 3,349,995, 10–31–67, Cl. 230—52.

Shell Oil Co.: *See*—
Cannell, Lawrence G. 3,350,468.
Closmann, Philip J. 3,349,849.
Dawtrey, Sydney, and King. 3,350,314.
Grootenboer, Dirk. 3,350,492.
Hodgson, Russell L. 3,350,408.
Smutny, Edgar J. 3,350,451.
Studer, Heins P. 3,349,909.
Willatt, John M., and Riesser. 3,350,323.

Shepherd, Charles F.: *See*—
Hashimoto, Tadaichi. 3,349,908.

Shepler, James A.: *See*—
Hobbs, Raymon E., and Shepler. D208,950.

Sherman, Charles I., to Perrine-Cutler Ridge Bank. Silhouette coin grader. 3,349,612, 10–31–67, Cl. 73—163.

Shesler, Elmer G., E. A. Bowen, and R. F. Burden, to Union Carbide Corp. Apparatus for and method of controlling the T/L ratio of the CTE in extruded carbonaceous stock. 3,350,485, 10–31–67, Cl. 264—105.

Shiraishi Kogyo Kaisha, Ltd.: *See*—
Hasegawa, Hiroshi, Suito, and Kondo. 3,350,429.

Shirey, Theodore R., Jr. Power drive for wheeled vehicle. 3,349,862, 10–31–67, Cl. 180—15.

Shlein, William J. Ski pole. 3,350,111, 10–31–67, Cl. 280—163.7.

Short, Oliver A., to E. I. du Pont de Nemours and Co. Silver compositions containing novel vitreous binders and a vehicle. 3,350,341, 10–31–67, Cl. 260—29.8.

Shotter, Douglas R.: *See*—
Stuart, Duncan J. K., Fraser, Payne, and Shotter. 3,349,879.

Shreve, Robert R., to Philamon Laboratories, Inc. Electrostatic tuning fork resonator. 3,350,667, 10–31–67, Cl. 333—71.

Shropshire, Joseph A.: *See*—
Moerikofer, Andreas W., Shropshire, and Tarmy. 3,350,227.

Shropshire, Joseph A., to Esso Research and Engineering Co. Electrolyte solution containing soluble rhenium compound. 3,350,228, 10–31–67, Cl. 136—86.

Shull, John D., Jr.: *See*—
Hourigan, Daniel P., and Shull. 3,350,257.

Sianesi, Dario, G. C. Bernardi, and G. Diotallevi, to Montecatini Edison S.p.A. Copolymers for 1,2,3,3,3-pentafluoropropylene and tetrafluoroethylene and process for preparing same. 3,350,373, 10–31–67, Cl. 260—87.5.

Siegel, Herbert: *See*—
Willrett, Helmut, Schonemeyer, and Siegel. 3,350,507.

Sieger, John S.: *See*—
Demarest, Henry M., Jr., and Sieger. 3,350,248.

Siegmund, Walter P., and G. B. Gilmore, to American Optical Co. Method of making energy-conducting components formed of fiber elements. 3,350,183, 10–31–67, Cl. 65—4.

Siekanowicz, Wieslaw W., W. A. Schilling, and I. Bardash, to Radio Corp. of America. Latched ferrite circulators. 3,350,663, 10–31–67, Cl. 333—1.1.

Siemens-Schuckertwerke A.G.: *See*—
Justi, Eduard. 3,350,229.
Winsel, August. 3,350,636.

Siess, Otto, and W. E. Brach. Razor blade sharpening device. 3,349,646, 10–31–67, Cl. 76—89.2.

Sigma Instruments Inc.: *See*—
Stein, Laurence B., Jr. 3,350,581.

Signode Corp.: *See*—
Beach, John R. 3,349,444.

Silver, Arthur G.: *See*—
Fouiger, Kenneth D., Harmon, and Silver. 3,350,693.

Silver, Julius L., to Union Carbide Corp. Method of xerographically photosensitizing planographic printing plates. 3,350,202, 10–31–67, Cl. 96—1.4.

Silver, Raymond P., to Hercules Inc. Nondrying alkyd resins and process of making same. 3,350,335, 10–31–67, Cl. 260—22.

Silvey, Elmer R., to K. A. Silvey. Saw chain grinding machine. 3,349,645, 10–31–67, Cl. 76—40.

Silvey, Katherine A.: *See*—
Silvey, Elmer R. 3,349,645.

Simm, Wolfgang: *See*—
Tannenberger, Helmut, Schachner, and Simm. 3,350,230.

Simmler, Walter, H. Niederprum, and H. Jonas, to Farbenfabriken Bayer Aktiengesellschaft. Organomercaptomethyl silicon compounds and production thereof. 3,350,437, 10–31–67, Cl. 260—448.2.

Simon, Warner H. Hermetically sealed container for welding rod. 3,350,535, 10–31–67, Cl. 219—74.

Simplex Wire and Cable Co.: *See*—
Crowdes, George J., and Hunt. 3,349,832.
Gross, Richard E., and Hunt. 3,350,312.

Simpson, Albert E.: *See*—
Moulton, James A., and Simpson. 3,350,571.

Simpson, Edward F. and F. W., Jr. Pavement lifter. 3,349,933, 10–31–67, Cl. 214—145.

Simpson, Frank F.: *See*—
Hansom, Bernard S., and Simpson. 3,349,482.

Sims, Leland W., and R. W. Fredette, to United States of America, Air Force. High speed deceleration device. 3,350,040, 10–31–67, Cl. 244—145.

Sinclair Oil & Gas Co.: *See*—
Holbert, Don R., and Grant. 3,349,845.

Sinclair Research Inc.: *See*—
Ryan, Patrick W. 3,350,469.

Singer Co., The: *See*—
Ketterer, Stanley J., and Keller. 3,349,735.

Sir James Hill & Sons Ltd.: *See*—
Clarkson, Jack. 3,349,440.

Skiff, Russell A., to North American Aviation, Inc. Castor oil-hexachloroendomethylenetetrahydrophthalic anhydride reaction product. 3,350,334, 10–31–67, Cl. 260—22.

Skinner, Robert C. Cover for shopping bags. 3,349,992, 10–31–67, Cl. 229—62.

Skirvin, Enoch, W. and P. G. Rotatable log bunk. 3,350,116, 10–31–67, Cl. 280—404.

Skirvin, Paul G.: *See*—
Skirvin, Enoch, W. and P. G. 3,350,116.

Skirvin, Walter: *See*—
Skirvin, Enoch, W. and P. G. 3,350,116.

Skubatz, Wolfgang, to Babcock & Wilcox Ltd. Steam generating, superheating and reheating apparatus. 3,349,756, 10–31–67, Cl. 122—476.

Slee, Max E. Primer reloader. 3,349,663, 10–31–67, Cl. 86—38.

Smart, Louis L. Golf course. 3,350,099, 10–31–67, Cl. 273—176.

Smeralory Zarody: *See*—
Pavlovec, Oldrich. 3,349,596.

Smidth, F. L. & Co.: *See*—
Christensen, Erik C. P. 3,350,077.
Dostrup, Max. 3,350,070.

Smiley, Edwin C.: *See*—
Gustafson, Ralph P., and Smiley. 3,349,808.

Smith, A. O., Corp.: *See*—
Maynard, John T. 3,350,585.
Schell, Merrill A. 3,349,593.
Stasenko, Stephen. 3,349,968.
Steele, Owen S. 3,350,609.

Smith, Carl M., and R. L. Wear, to Minnesota Mining and Mfg. Co. Halogenated bisphenols and glycidyl polyethers thereof. 3,350,352, 10–31–67, Cl. 260—47.

Smith, Cyril E., and J. A. Tracy, to The Loewy Engineering Co. Ltd. Power-driven rotary brush for cleaning the rolls of a rolling mill. 3,349,420, 10–31–67, Cl. 15—21.

Smith, David H., and E. M. Tolman, to Bell Telephone Laboratories, Inc. Composition comprising Ni-Fe-N with or without silver and magnetic memory element utilizing same. 3,350,199, 10–31–67, Cl. 75—170.

Smith, Eugene E., to United States Steel Corp. Apparatus for supporting optical scanning heads. 3,349,592, 10–31–67, Cl. 72—37.

Smith, Francis M., and P. L. Terwilliger, to Gulf Research & Development Co. Process for recovering oil by in situ combustion. 3,349,847, 10–31–67, Cl. 166—39.

Smith, Hubert S., and E. Ulmanis, to The Dow Chemical Co. Method of and apparatus for foaming in place underground conduit. 3,349,568, 10–31–67, Cl. 61—72.2.

Smith, Ian, to Rolls-Royce Ltd. Combustion apparatus, e.g. for a gas turbine engine. 3,349,558, 10–31–67, Cl. 60—39.65.

Smith Industries International, Inc.: *See*—
Wilms, Carl A. 3,350,138.

Smith, James G., and T. I. Abbott, to Eastman Kodak Co. Colloid transfer process utilizing an oil-soluble U.V. absorber. 3,350,204, 10–31–67, Cl. 96—28.

Smith, Lawrence R.: *See*—
Gabrielson, Reidar G., and Smith. 3,350,687.

Smith, Robert L., to Chemetron Corp. Receptacle filling machines. 3,349,973, 10–31–67, Cl. 222—380.

Smith, Vincent K.: *See*—
Turk, James R. 3,350,587.

Smutny, Edgar J., to Shell Oil Co. Production of N-(2,7-alkadienyl) amines. 3,350,451, 10–31–67, Cl. 260—577.

Smyth, Donald, and P. E. Robinson, to S.A. Brush Co. Ltd. Carpet sweeper. 3,349,421, 10–31–67, Cl. 15—48.

Smyth, George F.: *See*—
Schwartz, Charles H., and Smyth. 3,349,412.

Snitzer, Elias, to American Optical Co. Laser heterodyne system for detecting light energy including hybrid mode dielectric waveguide. 3,350,654, 10–31–67, Cl. 329—144.

Societa Italiana Telecommunicazioni Siemens S.p.A.: *See*—
Pistilli, Angelo, and Susin. 3,350,664.

Societe Anonyme Andre Citroen: *See*—
Brueder, Antoine. 3,349,872.

Societe des Accumulateurs Fixes et de Traction (Société Anonyme): *See*—
Stanimirovitch, Douchan. 3,350,239.

Societe d'Etudes Chimiques Pour l'Industrie et l'Agriculture: *See*—
Alleton, Jean C. 3,350,306.

Societe d'Etudes et de Richuches de Materiel Textiles (Sermatex): *See*—
Marciniak, Edmund. 3,350,021.

Societe d'Exploitation Chimiques et pharmaceutiques Seceph S.A.: *See*—
Da Re, Paolo. 3,350,411.

Societe d'Optique et de Mecanique de Haute Precision: *See*—
Babox, Jean. 3,349,491.

Societe Generale Alimentaire G.a.s.A.: *See*—
Hureau, Jacques. 3,349,434.

Societe Rhodiaceta: *See*—
Boutonnet, Alexandre. 3,349,554.

Societa Rhodiatoce S.p.A.: *See*—
Romani, Roberto, and Ferri. 3,350,281.

Soenksen, Uwe, E. Bauer, W. Sanne, and J. Arnold, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Chemically modified polymers of 1,2-alkyleniminos and a process for their production. 3,350,340, 10–31–67, Cl. 260—29.6.

Soetens, Raymond A., to Holley Carburetor Co. Ignition distributor with improved means for adjusting the breaker points. 3,350,517, 10–31–67, Cl. 200—31.

Soffel, Robert O.: *See*—
Lee, Robert C., Soffel, and Vigliante.

Sogn, Allen W.: *See*—
Bonfield, John H., and Sogn. 3,350,444.

Solisch, Rudolf, and W. Woltche, to Jos. Schneider & Co., Optische Werke. High-speed camera objective. 3,350,157, 10–31–67, Cl. 350—210.

Solovieff, George B.: *See*—
Russell, Fred J., and Solovieff. 3,349,584.
Russell, Fred J., and Solovieff. 3,349,586.

Sookne, Arnold M.: *See*—
Davis, Agnes E., and Sookne. 3,350,160.

Soong, Stassen Y. C.: *See*—
Baker, Don B., Pitt, and Soong. 3,350,191.

Sorber, Gilbert E.: *See*—
Bell, John A., Cofer, and Sorber. 3,349,471.

Sorm, Frantisek, and A. Piskala, to Ceskoslovenska Akademie ved. Process for the manufacture of 1-glycosyl-5-asacytosines. 3,350,388, 10–31–67, Cl. 260—211.5.

South African Invention Development Corp.: *See*—
Strasheim, Albertus. 3,350,567.

South African Iron and Steel Industrial Corp. Ltd.: *See*—
Boston, Thomas B., Hoffman, and Du Plessis. 3,350,197.

South Side Nursing Home, Inc.: *See*—
Piekarski, Clara L. 3,349,769.

Southwestern Engineering Co.: *See*—
McKibben, Richard K. 3,349,456.

Southwire Co., Inc.: *See*—
Bell, John A., Cofer, and Sorber. 3,349,471.

Southworth, James, Jr.: *See*—
Carmichael, Robert, and Southworth. 3,349,543.

Space-General Corp.: *See*—
Barney, John D., and Zanteson. 3,350,618.

Spalvins, Janis V. Electric mitering machine. 3,349,817, 10–31–67, Cl. 143—7.

Spande, Robert W., to Allen-Bradley Co. Adjustable electronic component. 3,350,673, 10–31–67, Cl. 338—174.

Spear, Burton W.: *See*—
Minneman, Lester C., Powell, and Spear. 3,350,154.

Spectral Dynamics Corp.: *See*—
Davis, Robert D. 3,350,651.

Speiser, Maximilian R. Circuit actuating means for computer type golf games. 3,349,620, 10–31–67, Cl. 73—379.

Sperry Rand Corp.: *See*—
Annunziato, Anthony A., Doucette, and Pfeifer. 3,350,624.
Harrison, John S. J. 3,350,580.
Lindaman, John R. 3,350,685.
Oman, Richard M. 3,350,579.

Spialter, Leonard, and G. L. Untereiner. Synthesis of azo compounds by rearrangement of hydrazones. 3,350,385, 10–31–67, Cl. 260—192.

Spilners, Ilgvard J.: *See*—
Pellegrini, John P., Jr., and Spilners. 3,350,434.

Spindler, James S.: *See*—
Conaway, Robert W., and Spindler. 3,349,953.

Sporck, Claus L., to The Lodge & Shipley Co. Metal working. 3,349,594, 10–31–67, Cl. 72—78.

Sposimo, Dino. Strip carrier for explosive socket caps for toy guns. 3,349,710, 10–31–67, Cl. 102—86.5.

Sproule, Robert S., to Dominion Engineering Works Ltd. Anti-circulation seal. 3,350,059, 10–31–67, Cl. 253—26.

Spruth, Wilhelm G.: *See*—
Kusnick, Arthur A., and Spruth. 3,350,694.

Squibb, E. R., & Sons, Inc.: *See*—
Yale, Harry L., and Merrill. 3,350,268.

Srinivasan, Rangaswamy, to International Business Machines Corp. Method of preparing strained polycyclic hydrocarbon. 3,350,291, 10–31–67, Cl. 204—162.

Stackpole Carbon Co.: *See*—
Olson, David A. 3,350,522.
Shaler, Amos J. 3,350,219.

Stacy, Robert G., N. E. Almond, and O. E. Freholm, to The Budd Co. Railway disc brake. 3,349,874, 10–31–67, Cl. 188—107.

Stadlmann, Georg: *See*—
Lambrecht, Josef, and Stadlmann. 3,350,082.

Stahler, Ylo E., to United States of America, Air Force. Non-oriented active earth satellite with improved antenna gain. 3,350,642, 10–31–67, Cl. 325—4.

Staley, A. E., Mfg. Co.: *See*—
Beck, Edward A. 3,350,162.

Stamicarbon N.V.: *See*—
Steeman, Johannes W. M., and von den Hoff. 3,350,465.

Stan, Louis J. Bowling ball drilling method and apparatus. 3,349,647, 10–31–67, Cl. 77—5.

Standal, George M. Log carriage apparatus. 3,349,818, 10–31–67, Cl. 143—105.

Standard Car Truck Co.: *See*—
Williams, Ray C. 3,350,146.

Standard Mfg. Co., Inc.: *See*—
Mankey, Harry S. 3,350,065.

Standard Oil Co., The, Ohio: *See*—
West, Howard F. 3,350,280.

Stanford, Charles T. and C., said C. Stanford, assor. of 10% to R. Ingram. Rock and roll horse. 3,350,109, 10–31–67, Cl. 280—1.184.

Stanford, Clarence: *See*—
Stanford, Charles T. and C. 3,350,109.

Stanimirovitch, Douchan, to Societe des Accumulateurs Fixes et de Traction (Société Anonyme). Process for manufacturing primary and secondary cells. 3,350,239, 10–31–67, Cl. 136—176.

Stanley Works, The: *See*—
Cairns, John C., and Suska. 3,349,427.
Suska, Charles R. 3,349,428.
Suska, Charles R. 3,349,429.

Star Dental Mfg. Co., Inc.: *See*—
Lieb, Nathaniel H., and Turchi. 3,349,490.

Star Mfg. Co., Inc.: *See*—
Lieb, Nathaniel H., and Turchi. 3,349,490.

Stark, Robert E., to Union Carbide Corp. Cadmium metal sponge. 3,350,198, 10–31–67, Cl. 75—151.

Starkey, Orval R., 50% to A. L. Lourenco. Plant compressing apparatus for mechanical pickers. 3,349,550, 10–31–67, Cl. 56—42.

Stasenko, Stephen, to A. O. Smith Corp. Dispensing control apparatus. 3,349,963, 10–31–67, Cl. 222—35.

Stauffer Chemical Co.: *See*—
Baker, Don R., Pitt, and Soong. 3,350,191.
Cooper, Robert S. 3,350,477.

Steadman, Thomas R., and L. L. Wood, to W. R. Grace & Co. Process for preparing hydrindantin. 3,350,458, 10–31–67, Cl. 260—590.

Steckler, Robert: *See*—
Liebling, Raymond, and Steckler. 3,350,331.

Steel Heddle Mfg. Co.: *See*—
Kaufmann, Frank H. 3,349,811.
Kleny, Albert J., Kramer, and Kaufmann. 3,349,809.

Steele, Owen S., to A. O. Smith Corp. Electromagnetic control means. 3,350,609, 10–31–67, Cl. 317—123.

Steeman, Johannes W. M., and von den Hoff, to Stamicarbon N.V. Process for preparing a cyclic alcohol. 3,350,465, 10–31–67, Cl. 260—631.

Stein, Laurence B., Jr., to Sigma Instruments Inc. Condition-initiated circuit-controlling apparatus. 3,350,581, 10–31–67, Cl. 307—117.

Steinberg, David J. Method of protecting finished surfaces. 3,350,247, 10–31–67, Cl. 156—1.

Steinbrecher, Lester, D. Y. Dollman, D. E. Buczkowski, and J. W. Harrison, to Archen Products, Inc. Method and apparatus for measuring fluoride activity. 3,350,284, 10–31–67, Cl. 204—1.

Stelzer, William, to Kelsey-Hayes Co. Controlled torque drum brake. 3,349,875, 10–31–67, Cl. 188—152.

Stenerson, Randolph N., to Carrier Corp. Brassing preform. 3,350,179, 10–31–67, Cl. 29—182.5.

Stephan, Paul G., to E. I. du Pont de Nemours and Co. Article of manufacture. 3,349,956, 10–31–67, Cl. 220—97.

Sterling Drug Inc.: *See*—
Schulenberg, John W., and Archer. 3,350,405.

Sterrett, David B., Sr., to Louis Melind Co. Label printing machine. 3,349,699, 10–31–67, Cl. 101—310.

Stetsovsky, Mikhail N.: *See*—
Kunitsky, Valery N., Lobashev, Stetsovsky, and Fomin. 3,350,494.

Steuer, Herbert K.: *See*—
Petersen, Erich H., and Steuer. 3,349,633.

Stewart, Ross E., and R. T. Drake, to Clevite Corp. Corrugated resilient mount. 3,350,042, 10–31–67, Cl. 248—22.

Stewart-Warner Corp.: *See*—
Dickerson, John W., Dinkelkamp, and Luna. 3,349,715.

Stine, Robert M., and H. F. Roland, to United States of America, Air Force. Doppler method and system for measuring miss distance. 3,350,712, 10–31–67, Cl. 343—12.

Stirling, Leo M. Ventilating apparatus. 3,349,998, 10–31–67, Cl. 230—114.

Stocchi, Virgilio, A. Magelli, and G. Baisero, to Montecatini Edison S.p.A. Process for the purification of raw cracked gases containing acetylene. 3,349,545, 10–31–67, Cl. 55—65.

Stocchi, Virgilio, A. Ferin, and A. Magelli, to Montecatini Edison S.p.A. Process for the depuration of acetylene contained in the gases obtained by cracking of hydrocarbons. 3,350,473, 10–31–67, Cl. 260—679.

Stoddard, William B., Jr.: *See*—
McMullen, Warren H., Monney, and Stoddard. 3,350,167.

Stoker, Robert J., to Ingersoll-Rand Co. Air cooler for surface condensers. 3,349,841, 10–31–67, Cl. 165—113.

Stoll, Gail: *See*—
Allen, David L. 3,350,136.

Stone, Orison W., to Developak, Inc. Article-supporting and displaying devices. 3,349,897, 10–31–67, Cl. 206—45.14.

Stott, Ted, H. H. Schulze, and L. J. Gunyou, to Avco Corp. Corn grinder for field operation. 3,349,823, 10–31–67, Cl. 146—79.

Stout, Harold C., to General Electric Co. Multispeed induction type electric motor. 3,350,614, 10–31–67, Cl. 318—224.

Stowe-Woodward, Inc.: *See*—
Mitchell Paul J. 3,349,693.
Twickler, George H. 3,350,252.

Strahl, Clyde E.: *See*—
Cox, Herbert F., Jr., and Strahl. 3,349,859.

Strasheim, Albertus, to South African Invention Development Corp. Photoelectric attachment for spectrometric or spectrographic apparatus. 3,350,567, 10–31–67, Cl. 250—226.

Strass, Wilfried, to Linde Aktiengesellschaft. Expansion-turbine nozzle ring and apparatus incorporating same. 3,350,061, 10–31–67, Cl. 253—40.

Strauch, Heinrich, to Associated Engineering Ltd. Inductive probe. 3,350,670, 10–31–67, Cl. 336—90.

Strauss, William I. and R. B. Newell, to The Foxboro Co. Indicator. 3,349,748, 10–31–67, Cl. 116—129.

Street, Leslie J., to Parnall & Sons Ltd. Apparatus for sensing information on documents. 3,350,548, 10–31–67, Cl. 235—61.11.

Strehler, Hugo: *See*—
Petri, Norbert, and Strehler. 3,350,393.

Strickland, Frank H. Strainer assembly for floor drains. 3,349,917, 10–31–67, Cl. 210—164.

Strobel, Charles W., to Phillips Petroleum Co. Process for the prevention of cold flow in polybutadiene. 3,350,380, 10–31–67, Cl. 260—94.7.

Strobel, Albert F., and S. C. Catino, to General Aniline & Film Corp. 4,4'-Bis [(4-N-2-sulfoethylamino)-6-sulfophenoxy - S - triazin - 2 - ylamino] - 2,2'-stilbenedisulfonic acid brighteners. 3,350,395, 10–31–67, Cl. 260—240.

Strohm, Paul F., to Air Products and Chemicals, Inc. Polymethylene bis-quaternized derivatives of triethylenediamine. 3,350,401, 10–31–67, Cl. 260—268.

Strull, Edward W.: *See*—
Campbell, Rodney B., and Strull. 3,350,055.

Strydom, Maurits L. Conveying slab shaped articles. 3,350,140, 10–31–67, Cl. 302—31.

Stuart, Duncan J. K., P. E. Fraser, J. M. Payne, and D. R. Shotter, to Edward Williams Holdings Ltd. Clutch and brake with control valve. 3,349,879, 10–31–67, Cl. 192—18.

Studer, Heinz P., to Shell Oil Co. Process of separating particles of different water wettability. 3,349,909, 10–31–67, Cl. 209—207.

Stuiber, Walter, and G. Mueller, to Max Grundig. Type bar drive composed of two different components. 3,349,885, 10–31–67, Cl. 197—17.

Stynes, James A., to National Lead Co. Glyceratozirconium halides and their preparation. 3,350,432, 10–31–67, Cl. 260—429.3.

Sublett, Bobby J., and G. P. Touey, to Eastman Kodak Co. Acetate filter elements containing carbon. 3,349,780, 10–31–67, Cl. 131—266.

Suito, Eiji: *See*—
Hasegawa, Hiroshi, Suito, and Kondo. 3,350,429.

Sullivan, Robert J.: *See*—
Moyer, Edward J., and Sullivan. 3,349,934.

Sulzer Brothers Ltd.: *See*—
Schneider, Hans. 3,349,830.

Sumitomo Special Metals Co. Ltd.: *See*—
Higuchi, Akira, and Miyamoto. 3,350,240.

Sun Oil Co.: *See*—
Bowers, Rolland G. 3,350,482.
Casey, John A. 3,350,347.

Sundstrand Corp.: *See*—
Erikson, Evans W. 3,350,523.
Ross, William A. 3,349,860.

Supreme Products Corp.: *See*—
Troka, Albin G. 3,350,108.

Sury, Peter. Fastener clip for mounting pictures and the like. 3,349,443, 10–31–67, Cl. 24—73.

Suska, Charles R., to The Stanley Works. Hinge. 3,349,428, 10–31–67, Cl. 16—128.

Suska, Charles R., to The Stanley Works. Hinge. 3,349,429, 10–31–67, Cl. 16—128.

Susin, Pietro: *See*—
Pistilli, Angelo, and Susin. 3,350,664.

Suska, Charles R.: *See*—
Cairns, John C., and Suska. 3,349,427.

Suter, Hans: *See*—
Litmanowitsch, Menasche, and Suter. 3,350,399.

Suter, Hans, and H. Zutter, to Eprova Ltd. 7-(picolinylaminoalkyl)-theophylline and its salts. 3,350,400, 10–31–67, Cl. 260—253.

Susuki, Minoru, and N. Uno, to Asahi Kogaku Kogyo Kabushiki Kaisha. Automatic light responsive shutter timing mechanism. 3,349,678, 10–31–67, Cl. 95—10.

Svarnias, Ted N., to International Register Company. Electric motor construction. 3,350,589, 10–31–67, Cl. 310—164.

Swallow, Herbert A.: *See*—
Hofer, Peter H., and Swallow. 3,350,487.

Swanson, Arthur F., to Ideal Industries, Inc. Insulated connector. 3,350,499, 10–31–67, Cl. 174—87.

Swanson, Richard M., to Bell Telephone Laboratories, Inc. Immediate ringing circuit for telephone systems. 3,350,508, 10–31–67, Cl. 179—18.

Sweeney, Richard F.: *See*—
Anello, Louis G., and Sweeney. 3,350,464.
Price, Alson K., and Sweeney. 3,350,457.

Swift, William R.: *See*—
Marjoram, Ernest B., and Swift. 3,350,546.

Sydoriak, Alexander. Craft for swimmers. 3,349,746, 10–31–67, Cl. 115—22.3.

Sylvania Electric Products Inc.: *See*—
Burns, Laurence. 3,350,596.
Corbin, Victor L., Koury, and Levesque. 3,350,598.
Saad, Theodore S. 3,350,655.

Symes, William F., to Monsanto Co. Sterilising, disinfecting, oxidising and bleaching composition. 3,350,317, 10–31–67, Cl. 252—99.

Symington Wayne Corp.: *See*—
Cope, Geoffrey W. 3,349,926.

Syntex Corp.: *See*—
Ringold, Howard J., and Djerassi. 3,350,426.

Szymanski, Ronald. For lens attachments for vehicle headlights. 3,350 557, 10–31–67, Cl. 240—46.57.

TDK Electronics Co., Ltd.: *See*—
Fujiwara, Shinobu. 3,350,212.

T. H. K. Mfg. Co., Inc.: *See*—
Turner, Clarence C. 3,350,684.

TRW Inc.: *See*—
Larsen, Arthur B. 3,350,625.

Taban, Louis. Pancakes or the like pastry automatic making machine. 3,349,724, 10–31–67, Cl. 107—4.

Tag-O-Matic Machine Co., Inc.: *See*—
Braun, Vincent P., Patell, and P. N. Braun. 3 349,673.

Takayanagi, Kenjiro, to Victor Co. of Japan, Ltd. Frequency modulated magnetic recording and reproducing system. 3,350,504, 10–31–67, Cl. 178—6.6.

Takeda, Junichi: *See*—
Wakasa, Ryoichi, Yshida, and Takeda. 3,350,365.

Takita, Hiroshi: *See*—
Yoshioka, Sadao, Noro, Kawasura, and Takita. 3,350,359.

Talbot, Yorck J. External rear-view mirror for vehicles. 3,350,048, 10–31–67, Cl. 248—481.

Talcott, Thomas D.: *See*—
Hansen, Darryl T., and Talcott. 3,350,351.

Tannenberger, Helmut, H. Schachner, and W. Simm, to Compagnie Francaise de Raffinage. Fuel cell having solid stabilised zirconium oxide electrolyte. 3,350,230, 10–31–67, Cl. 136—86.

Tanser, John J. Combined carrying unit and coaster. 3,350,131, 10–31–67, Cl. 294—87.2.

Tarmy, Barry L.: *See*—
Moerikofer, Andreas W., Shropshire, and Tarmy. 3,350,227.

Taylor, Elliot L., and H. W. Burdett, to Thiokol Chemical Corp. Thrust control apparatus for plastic propellant rocket motor. 3,349,563, 10–31–67, Cl. 60—252.

Taylor, Philip S., to The Kendall Co. Process for making filter-sheet material. 3,350,221, 10–31–67, Cl. 117—140.

Taylor, Richard A.: *See*—
Hawkins, Edward L., and Taylor. 3,349,895.

Technicon Co., Inc., The: *See*—
Isreeli, Jack. 3,350,220.

Tek, Mehmet R.: *See*—
Trantham, Joseph C., Henningan, Fetkovich, Tek, and Bruns. 3,349,846.

Tektronix, Inc.: *See*—
Zimmerman, Henry A. 3,350,576.

Telschow, Carl G.: *See*—
Plust, Heins-Gunther, and Telschow. 3,350,233.

Terbune, Hugh D., and D. L. Waugh, to Dayco Corp. Transmission belt and method of manufacture. 3,349,634, 10–31–67, Cl. 74—231.

Terwilliger, Paul L.: *See*—
Smith, Francis M., and Terwilliger. 3,349,347.

Texaco Inc.: *See*—
Hess, Howard V., and Guptill. 3,350,299.
Hess, Howard V., and Guptill. 3,350,300.

Texas Instruments Inc.: *See*—
Pritchard, John P., Jr. 3,350,698.

Texas Industries Inc.: *See*—
Van Der Lely. 3,349,549.

Theiler, Jean M.: *See*—
Walker, George W. 3,349,904.

Thermoplastic Industries Inc.: *See*—
Frugger, Richard E. 3,349,965.

Thieme, Horst R., to Honeywell Inc. Controlling apparatus. 3,349,787, 10–31–67, Cl. 137—85.

Thiokol Chemical Corp.: *See*—
Schwartz, Jules J., and Cassidy. 3,349,564.
Taylor, Elliot L., and Burdett. 3,349,563.
Williams, Allan E. 3,349,565.
Williams, Allan E., Dyson, and Matthies. 3,349,562.

Thomas, Charles S., and R. J. Neff, to E. W. Bliss Co. Aircraft launching and arresting gear. 3,350,037, 10–31–67, Cl. 244—63.

Thomas, Hulme W., to Bethlehem Steel Corp. Bar positioner. 3,349,591, 10–31–67, Cl. 72—24.

Thomas, Martin: *See*—
Feldman, Julian, and Thomas. 3,350,439.

Thomas, Michael J., to Ford Motor Co. Air valve carburetor. 3,350,072, 10–31–67, Cl. 261—39.

Thomas, Pierre: *See*—
Benoit, Gerard, Ferdy and Frans Mayer, and Thomas. 3,350,680.
Benoit, Gerard, Ferdy and Frans Mayer, and Thomas. 3,350,681.

Thompson, Albion J.: *See*—
Benjamin, Harley O., and Thompson. 3,349,611.

Thomson, George M., to Central Station Signals, Inc. Plural pen recorder. 3,350,717, 10–31–67, Cl. 346—49.

Thomson, Henry (Harry) A., to Honeywell Inc. Retaining apparatus. 3,349,454, 10–31–67, Cl. 24—259.

Thorn Electric Industries Ltd.: *See*—
Chapman, Donald F. 3,350,605.

Thurlow, Reginald J., III: *See*—
Thurlow, Reginald J., Sr. and R. J. Thurlow III. 3,350,063.

Thurlow, Reginald J., Sr. and R. J. Thurlow III. Hydraulic jack for camper bodies. 3,350,063, 10–31–67, Cl. 254—45.

Tiernan, Frank M., Jr. Golfer's head movement control device. 3,350,102, 10–31–67, Cl. 273—190.

Tokyo Shibaura Electric Co., Ltd.: *See*—
Torii, Yasunosuke. 3,350,630.

Tolchin, Hyman, to American Machine & Foundry Co. Distillation apparatus. 3,350,279, 10–31–67, Cl. 202—83.

Tolman, Edward M.: *See*—
Smith, David H., and Tolman. 3,350,199.

Tonami, Nobuo: *See*—
Watanabe, Hiroshi, Tonami, Watanabe, and Nanba. 3,350,475.

Toose, Michael J., to Elliot Brothers (London) Ltd. Data processing apparatus. 3,350,011, 10–31–67, Cl. 235—201.

Tope, Paul H., and A. L. Reiter, to Whirlpool Corp. Fluid flow control apparatus. 3,349,840, 10–31–67, Cl. 165—26.

Torii, Yasunosuke, to Tokyo Shibaura Electric Co., Ltd. Voltage control device. 3,350,630, 10–31–67, Cl. 322—43.5.

Torobin, Leonard B., to Esso Research and Engineering Co. Wax separation by countercurrent contact with an immiscible coolant. 3,350,296, 10–31–67, Cl. 208—37.

Torobin, Leonard B., to Esso Research and Engineering Co. Staged centrifugation of wax from a countercurrent extraction process. 3,350,297, 10–31–67, Cl. 208—37.

Touey, George P.: *See*—
Sublett, Bobby J., and Touey. 3,349,780.

Townsend, Albert W., to Automotive Products Co. Ltd. Ball and socket joints. 3,350,121, 10–31–67, Cl. 287—90.

Toyo Koatsu Industries Inc.: *See*—
Watanabe, Hiroshi, Tonami, T. Watanabe, and Nanba. 3,350,475.

Toyoshima, Shigeshi: *See*—
Uedo, Takeo, Toyoshima, and Furukawa. 3,350,398.
Tracy, John A.: *See*—
Smith, Cyril E., and Tracy. 3,349,420.
Trantham, Joseph C., H. W. Hennigan, M. J. Fetkovich, M. R. Tek, and J. R. Bruns, to Phillips Petroleum Co. Production of heavy crude oil by heating. 3,349,846, 10–31–67, Cl. 166—11.
Travis, Elmer W.: *See*—
Madey, Jesse M., and Travis. 3,350,034.
Trechot, Roger L. A. Apparatus for the capture of live animals. 3,349,514, 10–31–67, Cl. 43—60.
Trendell, Edward G.: *See*—
Percival, William S., and Trendell. 3,350,512.
Trenor, Irene. Food dicer. 3,349,824, 10–31–67, Cl. 146—203.
Trescott Co., Inc., The: *See*—
Kiefer, Reginald R. 3,349,502.
Tri-Ken Corp.: *See*—
Rice, Leonard M., and Grogan. 3,350,442.
Tribe, Leonard T.: *See*—
Wray, Ronald J., and Tribe. 3,350,054.
Troka, Albin G., to Supreme Products Corp. Keyless chucks. 3,350,108, 10–31–67, Cl. 279—58.
Trollo, Andrew C., B. M. Adams, and E. G. Busch, to Adtrol Electronics, Inc. Timing apparatus for use with photographic equipment. 3.350,716, 10–31–67, Cl. 346—23.
Troy, James E., to Fieldcrest Mills, Inc. Shaggy cut pile fabric. 3,349,812, 10–31–67, Cl. 139—402.
Tsentralny Nauchno-Issledovatelsky Institute Chernoi Metallurgii imeni I.P. Bardina: *See*—
Kunitsky, Valery N., Lobashev, Stetsovsky, and Fomin. 3,350,494.
Tsentralny Nauchno-Issledovatelsky Institute Tekhnologii i Mashinostroenia: *See*—
Ryzhov-Nikonov, Vladimir I., Grebennik, and Ermolov. 3,349,609.
Tucker, Robert L.: *See*—
Oliver, Willis J., and Tucker. 3,349,498.
Turchi, Anthony J.: *See*—
Lieb, Nathaniel H., and Turchi. 3,349,490.
Turk, James R., to V. K. Smith. Electrical plug and connector. 3,350,587, 10–31–67, Cl. 310—71.
Turnbull, John H., and A. B. Watt, to G.K.N. Screws & Fasteners Ltd. Tool for piercing and threading a workpiece. 3,349,651, 10–31–67, Cl. 81—52.3.
Turner, Clarence C., to T.H.K. Mfg. Co., Inc. Vehicle brake and turn signal lighting system. 3,350,684, 10–31–67, Cl. 340—67.
Turner, John L.: *See*—
Germeshausen, Kenneth J., and Turner. 3,350,602.
Turner, Sally L., and C. D. Richard; said Richard assor. to said Turner. Corsage holder. 3,349,441, 10–31–67, Cl. 24—6.
Twickler, George H., to Stowe-Woodward, Inc. Structure and manufacture of bowling balls. 3,350,252, 10–31–67, Cl. 156—228.
Twigg, Robert W., to Midland Engineering and Machine Co. Tape-wrapping machine. 3,350,255, 10–31–67, Cl. 156—475.
Tyrrell, Albert R., and M. S. Hunt, to Bristol Siddley Engines Ltd. Rocket engines. 3,349,566, 10–31–67, Cl. 60—260.
U.S. Industries, Inc.: *See*—
Bendicsen, Bjarne C. 3,350,705.
U.S. Stoneware, Inc.: *See*—
Chamberlain, James M. W. 3,350,020.
Uedo, Takeo, S. Toyoshima, and M. Furukawa. 2,4-diamino-6-amido-s-triazines. 3,350,398, 10–31–67, Cl. 260—249.9.
Ulderup, Jürgen. Ball joint device. 3,350,122, 10–31–67, Cl. 287—90.
Ule, Louis A., to Hoffman Electronics Corp. Flexible solar-cell concentrator array. 3,350,234, 10–31–67, Cl. 136—89.
Ullman, Frederick E., and J. J. Deegan, to Inland Steel Co. Method and apparatus for forming a beaded shell. 3,349,599, 10–13–67, Cl. 72—393.
Ulmanis, Eugene: *See*—
Smith, Hubert S., and Ulmanis. 3,349,568.
Underhill, Noel B., and F. C. Hyatt, to North American Aviation, Inc. Multiple computer system. 3,350,689, 10–31–67, Cl. 340—172.5.
Union Carbide Corp.: *See*—
Barnes, Alfred H., and Hadwick. 3,350,495.
Carmichael, Robert, and Southworth. 3,349,543.
Hofer, Peter H., and Swallow. 3,350,487.
Mans, August F., and Sargent. 3,350,539.
Potts, James E., and Purcell. 3,350,362.
Shesler, Elmer G., Bowen, and Burden. 3,350,485.
Silver, Julius L. 3,350,202.
Stark, Robert E. 3,350,198.
Union Oil Co. of California: *See*—
McKinnis, Art C. 3,350,470.
Union Special Machine Co.: *See*—
Attwood, John G., and Kosrow. 3,350,582.
Union Steel Products Co.: *See*—
Averill, Charles C. 3,349,939.
Union Tool Co.: *See*—
Fricke, Alex. 3,349,589.
Uniroyal, Inc.: *See*—
Cesare, Frank C. 3,350,379.
Dovell, Frederick S., and Greenfield. 3,350,450.
Wheeler, Edward L. 3,350,449.
United Aircraft Corp.: *See*—
Bourgeois, Hector S. 3,349,803.
Christiansen, Howard C. 3,350,550.
La Pan, Alfred F., and Neumeister. 3,349,465.
Whitaker, Henry P. 3,350,548.
United Kingdom Atomic Energy Authority: *See*—
Maidment, Leslie, and Ledwidge. 3,350,271.
United States of America
Agriculture: *See*—
Chance, Leon H., and Leonard. 3,350,164.
Knoepfler, Nestor B., Gardner, and Vix. 3,350,486.
Lafranca, Joseph J., Jr., Mayer, and Weller. 3,349,902.
Mack, Charles H., and Elizey. 3,350,163.
Air Force: *See*—
Adams, Douglas P. 3,350,156.
Aron, Edward A. 3,350,700.
Atkinson, Francis D. 3,350,524.
Bandemer, George J., and Draper. 3,349,492.
Blaeser, Gustav H. 3,350,649.
Bredall, Charles H. 3,350,549.
Finn, John J., and Keith. 3,350,177.
Goetz, Raymond J. 3,349,657.
Hannan, William J. 3,350,600.
Herman, Ruth A. 3,350,702.
Jorris, Terry R. 3,349,493.
Nicholas, John F. 3,350,657.
Prickett, Robert L., Janus, and Wolk. 3,350,560.
Rosenberg, Harold, and Cottis. 3,350,369.
Seliger, Victor H., and Wermund. 3,349,630.
Sims, Leland W., and Fredette. 3,350,040.
Stahler, Ylo E. 3,350,642.
Stine, Robert M., and Roland. 3,350,712.
Atomic Energy Commission: *See*—
Bonilla, Charles F., and Sha. 3,350,564.
Fistedis, Stanley H. 3,349,524.
Klindt, Kenneth K. 3,349,607.
Interior: *See*—
Alley, John K., and Johnson. 3,350,166.
National Aeronautics and Space Administration: *See*—
Goldberg, Gerald I. 3,350,033.
Madey, Jesse M., and Travis. 3,350,034.
National Science Foundation: *See*—
Richardson, Vernon C. H. 3,349,856.
United States Gypsum Co.: *See*—
Balinski, Henry A. 3,349,535.
Porter, William F. 3,350,184.
United States Steel Corp.: *See*—
Novak, Joseph B. 3,350,129.
Smith, Eugene E. 3,349,592.
Wilson, James H. 3,349,834.
Zemberry, William L. 3,349,495.
United System Corp.: *See*—
Huiman, Jule, and Fisher. 3,350,639.
Universal Patent and Development Ltd.: *See*—
Costello, Alfred P. 3,349,979.
Uno, Naoyuki: *See*—
Suzuki, Minoru, and Uno. 3,349,678.
Untereiner, Gerald L.: *See*—
Spialter, Leonard, and Untereiner. 3,350,385.
Upjohn Co., The: *See*—
Bergy, Malcolm E., and Pyke. 3,350,269.
Urben, Frederick E., to Jeppesen & Co. Navigation slide rule. 3,350,007, 10–31–67, Cl. 235—88.
Ussery, Paul W.: *See*—
Bloom, Stephen D., and Ussery. 3,350,661.
Utschig, Walter C., to General Foods Corp. Production of glossy coated paper. 3,349,749, 10–31–67, Cl. 118—60.
V-M Corp.: *See*—
Karecki, Marion R. 3,350,024.
Valls, Conrado. Device for the continuous treatment of textile materials. 3,349,580, 10–31–67, Cl. 68—22.
Van Asselt, Robert L., to Radio Corp. of America. Indium doped pickup tube target. 3,350,591, 10–31–67, Cl. 313—65.
Vande Wiele, Robert J., to Deere & Co. Indicator for combine header or the like. 3,349,747, 10–31–67, Cl. 116—124.
Vanden, Bosch P., to Danadyne, Inc. Precision die for manufacture of foamed plastics and the like. 3,349,435, 10–31–67, Cl. 18—14.
Vanden, Bosch P., to Danadyne, Inc. Apparatus for extruding foamed plastics and the like. 3,349,436, 10–31–67, Cl. 18—14.
Vanderbilt, Byron M., and R. E. Clayton, to Esso Research and Engineering Co. Bonded rubber-siliceous materials and process of producing same. 3,350,345, 10–31–67, Cl. 260—41.5.
Vanderhaeghe, Hubert, Recherche et Industrie Therapeutiques, R.I.T. Poly-N-alkylated neomycins, kanamycins and paromomycins. 3,350,387, 10–31–67, Cl. 260—210.
Van Der Laken, Robert A., to Reactor Centrum Nederland (Stichting). Pressure pipe nuclear reactor with insulating and prestressing arrangement of coaxial pipe assembly. 3,350,273, 10–31–67, Cl. 176—43.
Van Der Lely, Cornelis, to Texas Industries Inc. Harvesters. 3,349,549, 10–31–67, Cl. 56—21.
Van Gemert, Johannes T.: *See*—
Hall, John R., and Van Gemert. 3.350,294.
Van Huis, Robert L., to Big Dutchman, Inc. Automatic weight operated poultry feeding device. 3,349,753, 10–31–67, Cl. 119—52.
Van Schaack, Robert C.: *See*—
Hansen, Hans R., and Van Schaack. 3,350,612.
Van Wazer, John R., K. Moedritzer, and M. D. Rausch, to Monsanto Co. Organo-arsenic-nitrogen compounds and the preparation thereof. 3,350,435, 10–31–67, Cl. 260—440.
Vapor Corp.: *See*—
Prybil, John T. 3,349,842.
Varian Associates: *See*—
Hyde, James S. 3,350,633.
Robinson, Hugh G. 3,350,632.
Varron, Frederick A., and F. W. Dunne, to Interchemical Corp. Electrostatic printing with two groups of particles of same composition and different size. 3,349,703, 10–31–67, Cl. 101—426.

Varta Aktiengesellschaft: *See*—
Ryhiner, Gunther, Von Dohren, and Jung. 3,350,232.
Winsel, August. 3,350,636.
Vassell, William C.: *See*—
Cole, Terry, Donald, Lambe, and Vassell. 3,350,597.
Vector Cable Co.: *See*—
McLoad, Kenneth W. 3,350,678.
Velsicol Chemical Corp.: *See*—
Richter, Sidney B. 3,350,192.
Velt, Evert D. Safety closure for spray cans. 3,349,969, 10–31–67, Cl. 222—153.
Venier, Dominic A., and J. L. Lass, to General Electric Co. Reactor fuel assembly device. 3,350,275, 10–31–67, Cl. 176—78.
Ventura Tool Co.: *See*—
Ahlstone, Arthur G. 3,350,103.
Ahlstone, Arthur G. 3,350,130.
Hynes, Joseph H. 3,350,104.
Vereinigte Osterreichische Eisen-und Stahlwerke Aktiengesellschaft: *See*—
Lambrecht, Josef, and Stadlmann. 3,350,082.
Puhringer, Othmar. 3,350,081.
Vicary, George W.: *See*—
Lipp, Charles E., Martin, Sage, and Vicary. 3,349,982.
Victor Co. of Japan, Ltd.: *See*—
Takayanagi, Kenjiro. 3,350,504.
Vigliante, Frank S.: *See*—
Lee, Robert C., Soffel, and Vigliante. 3,350,509.
Vilbajo, Jean, to Contigea Societe Anonyme. Piezoelectric generators for ammunition. 3,349,709, 10–31–67, Cl. 102—70.2.
Vincendon, Jean, to Etablissements Neyrpic. Material processing apparatus. 3,350,068, 10–31–67, Cl. 259—3.
Vincent, Daniel B. Waste heat recovery systems for dehydrating pulpy solids and syrup forming liquid. 3,349,827, 10–31–67, Cl. 159—4.
Vix, Henry L. E.: *See*—
Knoepfler, Nestor B., Gardner, and Vix. 3,350,486.
Voight, Jack R. Trimmer for trimming the edges of wallpaper and the like. 3,349,486, 10–31–67, Cl. 30—294.
Von den Hoff, Johan P. H.: *See*—
Steeman, Johannes W. M., and Von den Hoff. 3,350,465.
Von Dohren, Hans H.: *See*—
Ryhiner, Gunther, Von Dohren, and Jung. 3,350,232.
Voytech, Cherles F.: *See*—
Nightingale, William J. 3,350,093.
Vulliez, Paul, ½ to Commissariat a l'Energie Atomique. Device for the transmission of movements. 3,349,632, 10–31–67, Cl. 74—89.15.
Vural, Bayram, to Radio Corp. of America. Spin wave traveling wave amplifiers. 3,350,656, 10–31–67, Cl. 330—5.
Wacker-Chemie G.m.b.H.: *See*—
Nitzsche, Siegfried, and Buchheit. 3,350,350.
Waerum, Kulius N. M., and H. E. Krex, to Byggeriets Maskinstationer Aktieselskab Copenhagen. Jib crane. 3,349,925, 10–31–67, Cl. 212—48.
Wagner, Eddie B., to Wagner Mining Scoop, Inc. Oscillating axle suspension. 3,349,863, 10–31–67, Cl. 180—22.
Wagner, Eddie B., to Wagner Mining Scoop, Inc. Transmission mounting in an articulated vehicle. 3,349,864, 10–31–67, Cl. 180—51.
Wagner, Eddie B., to Wagner Mining Scoop, Inc. Telescoping unloading truck. 3,349,931, 10–31–67, Cl. 214—82.
Wagner, Eddie B., to Wagner Mfg., Inc. Side dump loader. 3,349,932. 10–31–67, Cl. 214—138.
Wagner Mfg., Inc.: *See*—
Wagner, Eddie B. 3,349,932.
Wagner Mining Scoop, Inc.: *See*—
Wagner, Eddie B. 3,349,863.
Wagner, Eddie B. 3,349,864.
Wagner, Eddie B. 3,349,931.
Wahlström, Per B.: *See*—
Jordansson, Lars B., and Wahlström. 3,350,263.
Wakasa, Ryoichi, S. Ishida, and J. Takeda, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for polymerizing N-carboxyl-a-amino acid anhydrides. 3,350,365, 10–31–67, Cl. 260—78.
Wakasa, Ryoichi, S. Ishida, and J. Takeda, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for production of thioacetal polymers. 3,350,367, 10–31–67, Cl. 260—79.
Walberg, Nathan C., and R. E. Mazzarantani. Lock for sliding doors. 3,350,126, 10–31–67, Cl. 292—179.
Walker, Claude J. Interchangeable rod and reel carrier apparatus. 3,349,512, 10–31–67. Cl. 43—26.
Walker, George W., deceased, by J. M. Theiler and H. E. McGill, executrices, to A. F. Wintercorn. Method of separating ore particles. 3,349,904, 10–31–67, Cl. 209—29.
Walker, Philip H., D. Cawsey, and R. T. A. Howell, to Decca Ltd. Radio guidance system for aircraft. 3,350,714, 10–31–67, Cl. 343—106.
Walker, Saul: *See*—
Lubkin, Samuel, Nesenoff, and Walker. 3,350,641.
Walker, Winston G., to Astrodata, Inc. Oscillator drift compensation. 3 350,658, 10–31–67, Cl. 331—17.
Wallace, Bert H., to American Machine & Foundry Co. High speed spiral wrapper machine and method. 3,349,777, 10–31–67, Cl. 131—59.
Wall, Clarence J., to Dorr-Oliver Inc. Agglomerative drying. 3.349,500, 10–31–67, Cl. 34—10.
Wall Colmonoy Corp.: *See*—
Miller, Forbes M. 3,350,178.
Wall Industries, Inc.: *See*—
Hood, Henry A. 3,349,553.
Wallick, Hyman, to Merck & Co., Inc. Controlling antibiotic resistant strains of micrococcus pyogenes and other pathogenic bacteria with novobiocin and other antibiotics. 3,350,267, 10–31–67, Cl. 167—65.
Walter, Henry W. Staple making machine. 3,349,556, 10–31–67. Cl. 59—71.
Walters, Russell W., to National Lock Co. Lock assembly with a removable bolt. 3,349,585, 10–31–67, Cl. 70—86.
Walther, William D., and C. P. Afanador, to The Dayton Steel Foundry Co. Pad structure. 3,349,871, 10–31–67, Cl. 188—73.
Wanderer, Herbert J., to Illinois Tool Works, Inc. Compartmented container package. 3,349,941, 10–31–67, Cl. 220—18.
Wanderer, Herbert J., to Illinois Tool Works, Inc. Container with segmented lid seat. 3,349,950, 10–31–67, Cl. 220—60.
Warberg, Henrik S., and V. V. McClure, to Atomic Power Development Associates, Inc. Sectional support grid for intermittently necked-down fuel pins. 3,350,276, 10–31–67, Cl. 176—78.
Ward, Ashley F., Inc.: *See*—
Friedmann, Anton R. J., and Eby. 3,350,015.
Warne, Thomas P., Jr.: *See*—
Marley, James E., and Warne. 3,350,679.
Warren, S. D., Co.: *See*—
Goff, Lindsay O. 3,350,217.
Watanabe, Hiroshi, N. Tonami, T. Watanabe, and M. Nanba, to Toyo Koatsu Industries Inc. Utilizing borax trifinoride as a B-stage gelling agent. 3,350,475, 10–31–67, Cl. 260—865.
Watanabe, Takeshi: *See*—
Watanabe, Hiroshi, Tonami, T. Watanabe, and Nanba. 3,350,475.
Waterhouse, Clarence, to Mack Trucks, Inc. Air cleaner water extraction device. 3,350,322, 10–31–67, Cl. 252—362.
Waters Associates: *See*—
Waters, James L. 3,349,920.
Waters, James L., to Waters Associates. System for protecting liquid chromatography columns. 3,349,920, 10–31–67, Cl. 210—251.
Watkins, Cecil H., to Canadian International Paper Co. Box for dispensing stacked sheets. 3,349,959, 10–31–67, Cl. 221—48.
Watson, George H. Frangible connector assembly for stanchions, poles and standards. 3,349,531, 10–31–67, Cl. 52—296.
Watson, William H., to E. I. du Pont de Nemours and Co. Polymeric polyesters of m-terphenyl-4,4-dicarboxylic acid. 3,350,354, 10–31–67, Cl. 260—47.
Watt, Alexander B.: *See*—
Turnbull, John H., and Watt. 3,349,651.
Watters, Robert L.: *See*—
Young, James R., Hudson, and Watters. 3,350,559.
Watts, Virgil M.: *See*—
Heil, Theodore. 3,349,422.
Waugh, Dale L.: *See*—
Terhune, Hugh D., and Waugh. 3,349,634.
Wear, Robert L.: *See*—
Smith, Carl M., and Wear. 3,350,352.
Weather-Seal, Inc.: *See*—
Johnson, Waldo O. 3,349,517.
Johnson, Waldo O. 3,349,518.
Weathrup, William D.: *See*—
Chapman, Michael C., Weathrup, and Humphrey. 3,349,986.
Weaver, John R., Jr., and C. J. Carson, to Craig Systems Corp. Shielded passageway interconnection for radio-frequency shelters. 3,350,497, 10–31–67, Cl. 174—35.
Webb, Elmer J., to The Brewer-Fitchener Corp. Transverse joint assembly for concrete pavements. 3,349,675, 10–31–67, Cl. 94—8.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of R. W. King and R. W. West, Jr. Method and apparatus for making a heat insulating and ablative structure. 3,349,814, 10–31–67, Cl. 141—5.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of C. E. Glichriest and L. A. Convillion, Jr. Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples. 3,350,643, 10–31–67, Cl. 325—31.
Weber, George H. Pumps. 3,349,716, 10–31–67, Cl. 103—148.
Weglarz, Walter, to The Budd Co. Mold for casting process. 3,349,470, 10–31–67, Cl. 29—527.
Weinberger. Arthur J., and D. F. De Lapp, ½ to American Cyanamid Co. and ½ to United States of America. Interior. Utilization of saline water. 3,350,292, 10–31–67, Cl. 204—180.
Weismann, Theodore J., and W. M. Zarrella, to Gulf Research & Development Co. Process for the polymerization of ethylenically unsaturated compounds by an alkali metal-boron-triaryl catalyst. 3,350,476, 10–31–67, Cl. 260—878.
Weiss, Stanley J. Railway control apparatus. 3,350,558, 10–31–67, Cl. 246—126.
Weisz, Michel: *See*—
Mallen, Jose, and Weisz. 3,350,241.
Weltzner, Dorothea M. Suction tube dispensing means for beverage containers. 3,349,987, 10–31–67, Cl. 229—15.
Welborn, Robert E. Distributor. 3,349,930, 10–31–67, Cl. 214—17.
Welded Tube Co. of America: *See*—
Didinger, Raymond G. 3,349,697.
Wellard, Harold J.: *See*—
Brown, Alexander, and Wellard. 3,350,307.
Weller, Heber W., Jr.: *See*—
Lafranca, Joseph J., Jr., Mayer, and Weller. 3,349,902.
Wennerberg, John E., Jr.: *See*—
Hasse, Wilbert W., Jr., Reichle, and Wennerberg. 3,350,051.
Wermund, Arthur F.: *See*—
Seliger, Victor H., and Wermund. 3,349,630.

West, Howard F., to The Standard Oil Co. Retort for oil-bearing shales. 3,350,280, 10–31–67, Cl. 202—99.

West, Roy W., Jr.: *See*—
Webb, James E. 3,349,814.

Western Electric Co., Inc.: *See*—
Pastuszak, Ronald F. 3,349,813.

Weyerhaeuser Co.: *See*—
Roberts, James R., Gregory, and Morris. 3,350,261.

Whalen, Lorraine E.: *See*—
Raleigh, Norman G., Jr. 3,349,447.

Wheeler, Edgar L. Packing gland. 3,350,106, 10–31–67, Cl. 277—59.

Wheeler, Edward L., to Uniroyal, Inc. 4,4'-diamino-N-methyldiphenyl-amines. 3,350,449, 10–31–67, Cl. 260—576.

Whirlpool Corp.: *See*—
Tope, Paul H., and Reiter. 3,349,840.

Whitaker, Henry P., to United Aircraft Corp. Adaptive orbital control system for satellite navigation. 3,350,548, 10–31–67, Cl. 235—150.1.

White, Norman O. Lock-down shirt button tab. 3,349,410, 10–31–67, Cl. 2—22.9.

White, Robert W., and J. L. O'Brien, to Rohm & Haas Co. Method for the preparation of aliphatic diamines. 3,350,455, 10–31–67, Cl. 260—585.

Whitear, Brian R. D., and D. J. Fry, to Ilford Ltd. Arylsulphonyltriazene compounds. 3,350,382, 10–31–67, Cl. 260—140.

Whiteford, Carlton L. Dispenser closure. 3,349,972, 10–31–67, Cl. 222—212.

Whitehead, David E. Multiple flash bulb holder. 3,350,551, 10–31–67, Cl. 240—1.3.

Whitson, Robert B.: *See*—
Faulis, Donald R., and Whitson. 3,350,691.

Wiegand, Edwin L., Co.: *See*—
Kozbelt, Lloyd S., and Cunningham. 3,350,674.

Wigzell, Alan L.: *See*—
King, George F., and Wigzell. 3,350,715.

Wilkinson Sword Ltd.: *See*—
Hansom, Bernard S., and Simpson. 3,349,482.

Williams, Allan E., to Thiokol Chemical Corp. Variable thrust solid propellant rocket motor. 3,349,565, 10–31–67, Cl. 60—254.

Williams, Allan E., L. M. Dyson, and L. F. Matthies, to Thiokol Chemical Corp. High energy additive addition means for a rocket motor. 3,349,562, 10–31–67, Cl. 60—251.

Williams, Chester I. Rotatively-set anchor assembly for a mine bolt. 3,349,662, 10–31–67, Cl. 85—74.

Williams, David A.: *See*—
Browning, Lester C., and Williams. 3,350,105.

Williams, Edward, Holdings Ltd.: *See*—
Stuart, Duncan J. K., Fraser, Payne, and Shotter. 3,349,879.

Williams, Ray C., to Standard Car Truck Co. Railroad car truck side bearing and bolster retainer. 3,350,146, 10–31–67, Cl. 308—138.

Willrett, Helmut, H. Schönemeyer, and H. Siegel, to International Standard Electric Corp. Class of service telephone system. 3,350,507, 10–31–67, Cl. 179—18.

Wilms, Carl A., to Smith Industries International, Inc. Bucket head mining machine having roof engaging anchor and conveyor. 3,350,138, 10–31–67, Cl. 299—67.

Wilson, Forbes. Compressor and method. 3,349,996, 10–31–67, Cl. 230—52.

Wilson, Harland D., to Ford Motor Co. Method of binding battery elements to container. 3,350,238, 10–31–67, Cl. 136—176.

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Wilson, John S., to The Dow Chemical Co. Presplitting device. 3,349,705, 10–31–67, Cl. 102—24.

Wilson, Paul H.: *See*—
Eckman, Charles B., and Wilson. 3,350,256.

Winsel, August, to Varta Aktiengesellschaft and Siemens-Schuckert-Werke Aktiengesellschaft. Gas diffusion electrodes and pH measurements carried out therewith. 3,350,636, 10–31–67, Cl. 324—30.

Wintercorn, Andrew F.: *See*—
Walker, George W. 3,349,904.

Wirth, Max M., to British Hydrocarbon Chemicals Ltd. Production of conjugated diolefines. 3,350,474, 10–31–67, Cl. 260—681.

Wisseroth, Karl, W. Pietsch, and E.-G. Kastning, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Method of carrying out polymerization processes. 3,350,376, 10–31–67, Cl. 260—92.1.

Wolk, William A.: *See*—
Prickett, Robert L., Janus, and Wolk. 3,350,560.

Woltche, Walter: *See*—
Solisch, Rudolf, and Woltche. 3,350,157.

Wood, David L., to General Electric Co. Floodlight. 3,350,554, 10–31–67, Cl. 240—3.

Wood, Louis L.: *See*—
Steadman, Thomas R., and Wood. 3,350,458.

Wood, Prentice J., to The Mead Corp. Article carrier. 3,349,957. 10–31–67, Cl. 220—113.

Woodford, Reinold T., to Arkell and Smiths. Multi-wall mailing container. 3,349,990. 10–31–67, Cl. 229—55.

Woodman, Charles K., to Compo Shoe Machinery Corp. Method of mulling and heat-setting in shoe manufacture. 3,349,417, 10–31–67, Cl. 12—142.

Worthington Corp.: *See*—
Bloom, Carl. 3,349,994.

Wortley, Austin M., Jr., P. N. Lensi, and J. A. Rinehart, to Penguin Associates, Inc. Cartridge. 3,349,707, 10–31–67, Cl. 102—37.6.

Wotherspoon, John G., to Jaywoth Roof Tile Co., Inc. Roofing tile. 3,349,534, 10–31–67, Cl. 52—520.

Wray, Ronald J., and L. T. Tribe, to The Plessey Co. Ltd. Pneumatically operated servo-control devices for valves. 3,350,054, 10–31–67, Cl. 251—29.

Wright, Howard. Dual pivotal wrench. 3,349,650, 10–31–67, Cl. 81—13.

Wright, Maurice J. Voltage regulators. 3,350,627, 10–31–67, Cl. 322—28.

Wright, Sidney G.: *See*—
Kaufman, Arnold, Dunn, and Wright. 3,349,653.

Wyandotte Chemicals Corp.: *See*—
Patton, John T., Jr., Hartman, and Austin. 3,350,389.

Wycoff, David C., and M. Eles, to Harnischfeger Corp. Self-adjusting power operated brake. 3,349,873, 10–31–67, Cl. 188—75.

Wymer, Richard W.: *See*—
Sans, Manual C., Wymer, and Licari. 3,350,250.

Xerox Corp.: *See*—
Balmer, James G., Jr., and Plantholt. 3,350,203.
Donalies, Daniel J. 3,349,750.
Goffe, William L. 3,350,205.
Hudson, Frederick W. 3,349,676.
Moorhusen, Robert W. 3,349,980.
Nesin, Daniel J., Green, and Kynicki. 3,349,702.
Young, James E. 3,349,677.

Yale, Harry L., and R. C. Merrill, to E. R. Squibb & Sons, Inc. Compositions and method of employing phenothiazine salts. 3,350,268, 10–31–67, Cl. 167—65.

Yamashita, Akio, to Matsushita Electric Industrial Co., Ltd. Electric charge storage elements. 3,350,610, 10–31–67, Cl. 317—234.

Yano, Hiroshi: *See*—
Iida, Chiyoichi, and Yano. 3,349,453.

Yonan, Peter: *See*—
Cusic, John W., and Yonan. 3,350,402.

Yoshioka, Sadao, K. Noro, H. Kawasura, and H. Takita, to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha. Polymerization of aldehydes. 3,350,359, 10–31–67, Cl. 260—67.

Young, Archie: *See*—
Beckman, Good, Shickling, and Young. 3,350,144.

Young, James E., to Xerox Corp. Alpha numeric character printer. 3,349,677, 10–31–67, Cl. 95—4.5.

Young, James R., to General Electric Co. Miniature ionization gage including a grid having multitudinous discrete openings. 3,350,590, 10–31–67, Cl. 313—7.

Young, James R., J. B. Hudson, and R. L. Watters, to General Electric Co. Monopole mass spectrometer having one ceramic electrode coated with metal to within a short distance of each end. 3,350,559, 10–31–67, Cl. 250—41.9.

Young, Raymond A. Transit system. 3,349,719, 10–31–67, Cl. 104—91.

Young, Stephen A.: *See*—
Christiansen, Gerald E., and Politz. 3,349,802.

Yshida, Shinichi: *See*—
Wakasa, Ryoichi, Yshida, and Takeda. 3,350,365.

Yuza, Rudolph A., to The Bastian-Blessing Co. Multi-flavor carbonated drink dispenser. 3,349,968, 10–31–67, Cl. 222—132.

Zagyvai, Istvan: *See*—
Demeter, Laszlo, Galgoczi, Bozzay, and Zagyvai. 3,350,302.

Zanteson, Leland A.: *See*—
Barney, John D., and Zanteson. 3,350,615.

Zarrella, William M.: *See*—
Weismann, Theodore J., and Zarrella. 3,350,476.

Zeles, Valentinus M. Folding safety razor. 3,349,484, 10–31–67, Cl. 30—47.

Zemberry, William L., to United States Steel Corp. Method of measuring simulated flaws in standard specimens. 3,349,495, 10–31–67. Cl. 33—125.

Zief, Morris: *See*—
Schramm, Charles H., and Zief. 3,350,355
Schramm, Charles H., and Zief. 3,350,356.

Ziegler, George W., Jr., to AMP Inc. Connections for coaxial cable means. 3,350,500, 10–31–67, Cl. 174—89.

Ziegler, George W., Jr., to AMP Inc. Coaxial connector. 3,350,666, 10–31–67, Cl. 333—33.

Ziegler, Henry B., to Helco, Inc. Methods of preventing decomposition of anhydrous ammonium thiosulfate. 3,350,168, 10–31–67. Cl. 23—115.

Zigler, Herbert L. Adjustable trim clip. 3,349,530, 10–31–67, Cl. 52—288.

Zimmerman, Henry A., to Tektronix, Inc. Trigger countdown circuit which is armed and triggered by different portions of the same trigger pulse. 3,350,576, 10–31–67, Cl. 307—88.5.

Zulauf, Richard F., to Ideal Industries, Inc. Conduit positioning device. 3,350,044, 10–31–67, Cl. 248—49.

Zumwalt, Arlie I. Closure. 3,349,947, 10–31–67, Cl. 220—33.

Zutter, Hans: *See*—
Suter, Hans, and Zutter. 3,350,400.

Zweidinger, Carl E., to Camera Optics Mfg. Corp. Film slide projector. 3,349,668, 10–31–67, Cl. 88—27.

CLASSIFICATION OF PATENTS

ISSUED OCTOBER 31, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2– 74	3,349,409	29–574	3,349,474	60–253	3,349,564	74–763	3,349,641	103–148	3,349,716	136– 86	3,350,230
229	3,349,410	578	3,349,475	254	3,349,565	796	3,349,642	104– 9	3,349,717		3,350,231
4–185	3,349,411	590	3,349,476	259	3,349,566	838	3,349,643	88	3,349,718		3,350,232
252	3,349,412	598	3,349,477	61– 45	3,349,567	860	3,349,644	91	3,349,719		3,350,233
5– 94	3,349,413		3,349,478	72.2	3,349,568	75– 1	3,350,195	173	3,349,720	89	3,350,234
296	3,349,414	600	3,349,479	62– 17	3,349,569	52	3,350,196	196	3,349,721	107	3,350,235
8–102	3,350,160	624	3,349,480	18	3,349,570	122.5	3,350,197	279	3,349,722	176	3,350,236
111	3,350,161	627	3,349,481	23	3,349,571	151	3,350,198	105–344	3,349,723		3,350,237
115.6	3,350,162	30– 40.1	3,349,482	55	3,349,572	170	3,350,199	106– 1	3,350,210		3,350,238
116	3,350,163	43.6	3,349,483	123	3,349,573	208	3,350,200	15	3,350,211		3,350,239
116.3	3,350,164	47	3,349,484	239	3,349,574	214	3,350,201	39	3,350,212	137– 30	3,349,785
9– 2	3,349,415	138	3,349,485	65– 1	3,350,182	76– 40	3,349,645	52	3,350,213	68	3,349,786
10– 89	3,349,416	294	3,349,486	4	3,350,183	89.2	3,349,646	55	3,350,214	85	3,349,787
12–142	3,349,417	335	3,349,487	14	3,350,184	77– 5	3,349,647	107– 4	3,349,724	205.5	3,349,788
13– 22	3,350,493	346.6	3,349,488	32	3,350,185	58	3,349,648	36	3,349,725	246.22:	3,349,789
27	3,350,494	32– 19	3,349,489	36	3,350,186	62	3,349,649	54	3,349,726	247.17:	3,349,790
31	3,350,495	28	3,349,490	134	3,350,187	81– 13	3,349,650	108–119	3,349,727	309	3,349,791
14– 16	3,349,418	33– 20	3,349,491	165	3,350,188	52.3	3,349,651	131	3,349,728	318	3,349,792
15– 3.13:	3,349,419		3,349,492	302	3,350,189	53	3,349,652	109– 25	3,349,729	322	3,349,793
21	3,349,420	64	3,349,493	355	3,350,190	60	3,349,653	111– 91	3,349,730	344	3,349,794
48	3,349,421	85	3,349,494	66– 86	3,349,575	126	3,349,654	112– 2	3,349,731	375	3,349,795
160	3,349,422	125	3,349,495	148	3,349,576	185	3,349,655		3,349,732	501	3,349,796
183	3,349,423	143	3,349,496	67– 87	3,349,577	82–101	3,349,656	65	3,349,733	594	3,349,797
230.14:	3,349,424	147	3,349,497	68– 5	3,349,578	83– 5	3,349,657	83	3,349,734	625.17:	3,349,798
16– 44	3,349,425	178	3,349,498	12	3,349,579	71	3,349,658	203	3,349,735	625.22:	3,349,799
46	3,349,426	34– 10	3,349,499	22	3,349,580	371	3,349,659	214	3,349,736	625.66:	3,349,800
128	3,349,427		3,349,500	69– 30	3,349,581	84– 90	3,349,660	235	3,349,737	627.5	3,349,801
	3,349,428	41	3,349,501		3,349,582	94	3,349,661	262	3,349,738	636.1	3,349,802
	3,349,429	216	3,349,502	43	3,349,583	85– 74	3,349,662	441	3,349,739	138– 37	3,349,803
169	3,349,430	35– 8	3,349,503	70– 21	3,349,584	86– 38	3,349,663	113–120	3,349,739	45	3,349,804
18– 1	3,349,431	36– 2.5	3,349,504	86	3,349,585	88– 14	3,349,664	121	RE.26,293	109	3,349,805
2	3,349,432		3,349,505	316	3,349,586		3,349,665	114– .5	3,349,740	122	3,349,806
12	3,349,433	37– 43	3,349,506	358	3,349,587	23	3,349,666	39	3,349,741	172	3,349,807
	3,349,434	44	3,349,507	364	3,349,588	26	3,349,667	77	3,349,742	139– 66	3,349,808
14	3,349,435	142	3,349,508	395	3,349,589	27	3,349,668	125	3,349,743	91	3,349,809
	3,349,436	40– 63	3,349,509	456	3,349,590	91–171	3,349,669	150	3,349,744	92	3,349,810
	3,349,437	79	3,349,510	71– 78	3,350,191	412	3,349,670	230	3,349,745	96	3,349,811
30	3,349,438	130	3,349,511	82	3,350,192	420	3,349,671	115– 22.3	3,349,746	402	3,349,812
	3,349,439	43– 26	3,349,512	92	3,350,193	92–231	3,349,672	116–124	3,349,747	140–147	3,349,813
19–122	3,349,440	42.02:	3,349,513	119	3,350,194	93– 88	3,349,673	129	3,349,748	141– 5	3,349,814
23– 2	3,350,165	60	3,349,514	72– 24	3,349,591	94– 1	3,349,674	117– 37	3,350,215	104	3,349,815
59	3,350,166	46– 11	3,349,515	37	3,349,592	8	3,349,675	47	3,350,216	387	3,349,816
61	3,350,167	49– 25	3,349,516	38	3,349,593	95– 1.7	3,349,676	64	3,350,217	143– 7	3,349,817
115	3,350,168	61	3,349,517	78	3,349,594	4.5	3,349,677	76	3,350,218	105	3,349,818
168	3,350,169	446	3,349,518	156	3,349,595	10	3,349,678	107	3,350,219	174	3,349,819
199	3,350,170	504	3,349,519	279	3,349,596	11	3,349,679	113	3,350,220	144–209	3,349,820
202	3,350,171	51– 26	3,349,520	286	3,349,597		3,349,680	140	3,350,221	146– 2	3,349,821
205	3,350,172	225	3,349,521	295	3,349,598	64	3,349,681	212	3,350,222	78	3,349,822
209.4	3,350,173	324	3,349,522	393	3,349,599		3,349,682	118– 60	3,349,749	79	3,349,823
230	3,350,174	386	3,349,523		3,349,600	66	3,349,683	637	3,349,750	203	3,349,824
254	3,350,175	52– 20	3,349,524	420	3,349,601	75	3,349,684	119– 29	3,349,751	148– 1.6	3,350,240
281	3,350,176	80	3,349,525	426	3,349,602	89	3,349,685	32	3,349,752	11.5	3,350,241
358	3,350,177	108	3,349,526	477	3,349,603	93	3,349,686	52	3,349,753	16.6	3,350,242
24– 6	3,349,441	169	3,349,527	73– 32	3,349,604	94	3,349,687	122– 17	3,349,754	18	3,350,243
23	3,349,442	239	3,349,528	37.9	3,349,605	96	3,349,688	406	3,349,755	26	3,350,244
73	3,349,443	241	3,349,529	60	3,349,606		3,349,689	476	3,349,756	149– 19	3,350,245
74	3,349,444	288	3,349,530	67.5	3,349,607	96– 1.4	3,350,202	123– 17	3,349,757	60	3,350,246
77	3,349,445	296	3,349,531	67.8	3,349,608	1.5	3,350,203	32	3,349,758	150– 2.3	3,349,825
87	3,349,446	301	3,349,532	67.9	3,349,609	28	3,350,204	119	3,349,759	156– 1	3,350,247
90	3,349,447	397	3,349,533	84	3,349,610	35.1	3,350,205	162	3,349,760	24	3,350,248
92	3,349,448	520	3,349,534	159	3,349,611	75	3,350,206	195	3,349,761	92	3,350,249
197	3,349,449	634	3,349,535	163	3,349,612	99– 90	3,350,207	128– 2.05:	3,349,762	150	3,350,250
206	3,349,450	656	3,349,536	170	3,349,613	92	3,350,208		3,349,763	218	3,350,251
208	3,349,451	729	3,349,537	181	3,349,614	139	3,350,209	16	3,349,764	228	3,350,252
218	3,349,452	731	3,349,538	182	3,349,615	283	3,349,690	132	3,349,765	230	3,350,253
252	3,349,453	741	3,349,539	184	3,349,616	289	3,349,691	145.6	3,349,766	235	3,350,254
259	3,349,454	53– 22	3,349,540	202	3,349,617	331	3,349,692	218	3,349,767	475	3,350,255
263	3,349,455	55	3,349,541		3,349,618	100– 90	3,349,693	276	3,349,768	497	3,350,256
279	3,349,456	112	3,349,542	205	3,349,619	295	3,349,694	284	3,349,769	158– 11	3,349,826
25– 2	3,349,457	366	3,349,543	379	3,349,620	101– 93	3,349,695	303	3,349,770	159– 4	3,349,827
28– 76	3,349,458	55– 32	3,349,544	380	3,349,621		3,349,696	325	3,349,771	6	3,349,828
29– 1.3	3,349,459	65	3,349,545	385	3,349,622	118	3,349,697	340	3,349,772	160– 40	3,349,829
78	3,349,460	227	3,349,546	398	3,349,623	126	3,349,698	539	3,349,773	161– 43	3,350,257
81	3,349,461	324	3,349,547	421	3,349,624	310	3,349,699	129– 7	3,349,774	162– 15	3,350,258
116	3,349,462	457	3,349,548	432	3,349,625	369	3,349,700	8	3,349,775	16	3,350,259
156.7	3,349,463	56– 21	3,349,549	487	3,349,626		3,349,701	131– 8	3,349,776	116	3,350,260
157	3,349,464	42	3,349,550	505	3,349,627	416	3,349,702	59	3,349,777	117	3,350,261
157.3	3,349,465	377	3,349,551		3,349,628	426	3,349,703	241	3,349,778	255	3,350,262
182.3	3,350,178	57– 31	3,349,552	517	3,349,629	461	3,349,704	266	3,349,779	351	3,350,263
182.5	3,350,179	58.7	3,349,553	74– 5.34:	3,349,630	102– 24	3,349,705		3,349,780	164– 43	3,349,830
183.5	3,350,180	77.3	3,349,554	15.63:	3,349,631	27	3,349,706	132– 7	3,349,781	58	3,349,831
	3,350,181	58– 16	3,349,555	89.15:	3,349,632	37.6	3,349,707	11	3,349,782	86	3,349,832
420.5	3,349,466	59– 71	3,349,556	230.17:	3,349,633	49.3	3,349,708	134– 22	3,350,223	113	3,349,833
	3,349,467	60– 39.28:	3,349,557	231	3,349,634	70.2	3,349,709	33	3,350,224	155	3,349,834
427	3,349,468	39.65:	3,349,558	331	3,349,635	86.5	3,349,710	45	3,349,783	158	3,349,835
487	3,349,469	62.5	3,349,559	368	3,349,636	91	3,349,711	135– 5	3,349,784	273	3,349,836
527	3,349,470	224	3,349,560	501	3,349,637	93	3,349,712	136– 6	3,350,225	274	3,349,837
528	3,349,471	229	3,349,561	503	3,349,638	103– 6	3,349,713	86	3,350,226	281	3,349,838
	3,349,472	251	3,349,562	527	3,349,639	41	3,349,714		3,350,227	165– 3	3,349,839
564	3,349,473	252	3,349,563	573	3,349,640	50	3,349,715		3,350,228	26	3,349,840
									3,350,229		

165–113 : 3,349,841	200–116 : 3,350,525	220– 63 : 3,349,951
163 : 3,349,842	120 : 3,350,526	67 : 3,349,952
166– .6 : RE.26,290	122 : 3,350,527	85 : 3,349,953
2 : 3,349,843	148 : 3,350,528	86 : 3,349,954
4 : 3,349,844	3,350,529	90.2 : 3,349,955
3,349,845	166 : 3,350,530	97 : 3,349,956
11 : 3,349,846	167 : 3,350,531	113 : 3,349,957
39 : 3,349,847	168 : 3,350,532	117 : 3,349,958
3,349,848	202– 83 : 3,350,279	221– 48 : 3,349,959
40 : 3,349,849	99 : 3,350,280	96 : 3,349,960
3,349,850	203– 29 : 3,350,281	125 : 3,349,961
42 : 3,349,851	54 : 3,350,282	222– 2 : 3,349,962
113 : 3,349,852	3,350,283	35 : 3,349,963
167– 14 : 3,350,264	204– 1 : 3,350,284	54 : 3,349,964
38.6 : 3,350,265	56 : 3,350,285	80 : 3,349,965
55 : 3,350,266	95 : 3,350,286	3,349,966
65 : 3,350,267	147 : 3,350,287	130 : 3,349,967
3,350,268	3,350,288	132 : 3,349,968
3,350,269	158 : 3,350,289	153 : 3,349,969
82 : 3,350,270	162 : 3,350,290	166 : 3,349,970
170–135.4 : 3,349,853	3,350,291	191 : 3,349,971
172– 40 : 3,349,854	180 : 3,350,292	212 : 3,349,972
261 : 3,349,855	192 : 3,350,293	380 : 3,349,973
174– 4 : 3,350,496	290 : 3,350,294	394 : 3,349,974
35 : 3,350,497	206– 16.5 : 3,349,896	542 : 3,349,975
68.5 : 3,350,498	45.14: 3,349,897	223– 73 : 3,349,976
87 : 3,350,499	52 : 3,349,898	224– 42.1 : 3,349,977
89 : 3,350,500	56 : 3,349,899	43 : 3,349,978
135 : 3,350,501	62 : 3,349,900	225– 44 : 3,349,979
175– 40 : 3,349,856	78 : 3,349,901	226– 95 : 3,349,980
250 : 3,349,857	208– 4 : 3,350,295	155 : 3,349,981
297 : 3,349,858	37 : 3,350,296	228– 2 : 3,349,982
176– 19 : 3,350,271	3,350,297	7 : 3,349,983
32 : 3,350,272	209– 2 : 3,349,902	229– 14 : 3,349,984
43 : 3,350,273	3 : 3,349,903	3,349,985
69 : 3,350,274	29 : 3,349,904	3,349,986
78 : 3,350,275	82 : 3,349,905	15 : 3,349,987
3,350,276	111.7 : 3,349,906	17 : 3,349,988
87 : 3,350,277	121 : 3,349,907	44 : 3,349,989
177–118 : 3,349,859	185 : 3,349,908	55 : 3,349,990
178– 6 : 3,350,502	207 : 3,349,909	56 : 3,349,991
6.6 : 3,350,503	245 : 3,349,910	62 : 3,349,992
3,350,504	304 : 3,349,911	66 : 3,349,993
6.8 : 3,350,505	474 : 3,349,912	230– 45 : 3,349,994
7.3 : 3,350,506	210– 21 : 3,350,298	52 : 3,349,995
179– 18 : 3,350,507	22 : 3,350,299	3,349,996
3,350,508	3,350,300	114 : 3,349,997
3,350,509	44 : 3,350,301	3,349,998
81 : 3,350,510	45 : 3,350,302	132 : 3,349,999
100.2 : 3,350,511	47 : 3,350,303	233– 15 : 3,350,000
3,350,512	52 : 3,350,304	3,350,001
115.5 : 3,350,513	85 : 3,349,913	28 : 3,350,002
3,350,514	90 : 3,349,914	234–107 : 3,350,003
175.1 : 3,350,515	134 : 3,349,915	235– 60 : 3,350,004
179 : 3,350,516	143 : 3,349,916	3,350,005
180– 6.44: 3,349,860	164 : 3,349,917	61.11: 3,350,545
9.54: 3,349,861	223 : 3,349,918	3,350,546
15 : 3,349,862	232 : 3,349,919	63 : 3,350,006
22 : 3,349,863	251 : 3,349,920	88 : 3,350,007
51 : 3,349,864	509 : 3,349,921	92 : 3,350,547
93 : 3,349,865	211–113 : 3,349,922	150.1 : 3,350,548
181– .5 : 3,349,866	123 : 3,349,923	150.27: 3,350,549
3,349,867	177 : 3,349,924	189 : 3,350,550
51 : 3,349,868	212– 48 : 3,349,925	201 : 3,350,008
182–226 : 3,349,869	213– 16 : 3,349,926	3,350,009
228 : 3,349,870	214– 1 : 3,349,927	3,350,010
188– 73 : 3,349,871	16.4 : 3,349,928	3,350,011
3,349,872	17 : 3,349,929	236– 17 : 3,350,012
75 : 3,349,873	3,349,930	238– 14 : 3,350,013
107 : 3,349,874	82 : 3,349,931	239–144 : 3,350,014
152 : 3,349,875	138 : 3,349,932	230 : 3,350,015
185 : 3,349,876	145 : 3,349,933	552 : 3,350,016
192– .02: 3,349,877	767 : 3,349,934	660 : 3,350,017
.092 3,349,878	215– 9 : 3,349,935	240– 1.3 : 3,350,551
18 : 3,349,879	217– 3 : 3,349,936	2 : 3,350,552
84 : 3,349,880	25.5 : 3,349,937	2.25: 3,350,553
194– 10 : 3,349,881	57 : 3,349,938	3 : 3,350,554
195–127 : 3,350,278	219– 51 : 3,350,533	10 : 3,350,555
197– 4 : 3,349,882	60 : 3,350,534	25 : 3,350,556
6.7 : 3,349,883	74 : 3,350,535	46.57: 3,350,557
17 : 3,349,884	92 : 3,350,536	241– 34 : 3,350,018
3,349,885	125 : 3,350,537	37 : 3,350,019
107 : 3,349,886	137 : 3,350,538	137 : 3,350,020
151 : 3,349,887	3,350,539	242– 18 : 3,350,021
158 : 3,349,888	139 : 3,350,540	45 : 3,350,022
180 : 3,349,889	200 : 3,350,541	55.11: 3,350,023
189 : 3,349,890	412 : 3,350,542	55.12: 3,350,024
198– 33 : 3,349,891	447 : 3,350,543	55.19: 3,350,025
91 : 3,349,892	548 : 3,350,544	56.9 : 3,350,026
195 : 3,349,893	220– 3.2 : 3,349,946	58.4 : 3,350,027
215 : 3,349,894	6 : 3,349,939	71.8 : 3,350,028
220 : RE.26,291	9 : 3,349,940	84.2 : 3,350,029
199– 14 : 3,349,895	17 : 3,349,941	118.32: 3,350,030
200– 31 : 3,350,517	19 : 3,349,942	156.2 : 3,350,031
46 : 3,350,518	21 : 3,349,943	164 : 3,350,032
48 : 3,350,519	24.5 : 3,349,944	244– 1 : 3,350,033
3,350,520	26 : 3,349,945	3,350,034
67 : 3,350,521	33 : 3,349,947	7 : 3,350,035
76 : 3,350,522	44 : 3,349,948	35 : 3,350,036
82 : 3,350,523	54 : 3,349,949	63 : 3,350,037
3,350,524	60 : 3,349,950	3,350,038

244–110 : 3,350,039	260– 78 : 3,350,364	260–645 : 3,350,466
145 : 3,350,040	3,350,365	651 : 3,350,467
153 : 3,350,041	3,350,366	666 : 3,350,468
246–126 : 3,350,558	79 : 3,350,367	672 : 3,350,469
248– 22 : 3,350,042	80 : 3,350,368	674 : 3,350,470
48 : 3,350,043	3,350,369	676 : 3,350,471
49 : 3,350,044	80.78: 3,350,370	677 : 3,350,360
205 : 3,350,045	85.1 : 3,350,371	3,350,472
430 : 3,350,046	86.7 : 3,350,372	679 : 3,350,473
464 : 3,350,047	87.5 : 3,350,373	681 : 3,350,474
481 : 3,350,048	88.7 : 3,350,374	865 : 3,350,475
249– 48 : 3,350,049	89.7 : 3,350,375	870 : 3,350,477
89 : 3,350,050	93.7 : 3,350,376	878 : 3,350,476
91 : 3,350,051	94.2 : 3,350,377	953 : 3,350,478
198 : 3,350,052	94.3 : 3,350,378	956 : 3,350,479
250– 41.9 : 3,350,559	3,350,379	961 : 3,350,480
51.5 : 3,350,560	94.7 : 3,350,380	3,350,481
83.1 : 3,350,561	94.9 : 3,350,381	261– 34 : 3,350,071
83.3 : 3,350,562	140 : 3,350,382	39 : 3,350,072
84.5 : 3,350,563	166 : 3,350,383	44 : 3,350,073
106 : 3,350,564	184 : 3,350,384	51 : 3,350,074
3,350,565	192 : 3,350,385	95 : 3,350,075
199 : 3,350,566	209 : 3,350,386	118 : 3,350,076
226 : 3,350,567	210 : 3,350,387	263– 32 : 3,350,077
251– 5 : 3,350,053	211.5 : 3,350,388	264– 13 : 3,350,482
29 : 3,350,054	234 : 3,350,389	74 : 3,350,483
89.5 : 3,350,055	239 : 3,350,390	90 : 3,350,484
100 : 3,350,056	3,350,391	105 : 3,350,485
312 : 3,350,057	239.3 : 3,350,392	112 : 3,350,486
329 : 3,350,058	3,350,393	161 : 3,350,487
252– 2 : 3,350,305	239.5 : 3,350,394	171 : 3,350,488
7 : 3,350,306	240 : 3,350,395	203 : 3,350,489
30 : 3,350,307	247.1 : 3,350,396	275 : 3,350,490
33 : 3,350,308	247.5 : 3,350,397	288 : 3,350,491
37.2 : 3,350,309	249.9 : 3,350,398	320 : 3,350,492
42.7 : 3,350,310	250 : 3,350,399	266– 4 : 3,350,078
46.6 : 3,350,348	253 : 3,350,400	23 : 3,350,079
49.6 : 3,350,311	268 : 3,350,401	34 : 3,350,080
63.2 : 3,350,312	3,350,402	36 : 3,350,081
63.7 : 3,350,313	294 : 3,350,403	3,350,082
70 : 3,350,314	3,350,404	38 : 3,350,083
3,350,315	294.7 : 3,350,405	41 : 3,350,084
75 : 3,350,316	310 : 3,350,407	43 : 3,350,085
99 : 3,350,317	327 : 3,350,408	267– 1 : 3,350,086
135 : 3,350,318	332.3 : 3,350,409	3,350,087
138 : 3,350,319	332.5 : 3,350,410	269– 60 : 3,350,088
161 : 3,350,320	345.2 : 3,350,411	270– 58 : 3,350,089
311.5 : 3,350,321	346.1 : 3,350,412	271– 43 : 3,350,090
362 : 3,350,322	346.8 : 3,350,413	52 : 3,350,091
456 : 3,350,323	347.7 : 3,350,414	272– 56.5 : 3,350,092
253– 26 : 3,350,059	348.5 : 3,350,415	66 : 3,350,093
39 : 3,350,060	3,350,416	3,350,094
40 : 3,350,061	3,350,417	70.3 : 3,350,095
78 : 3,350,062	3,350,418	273– 26 : 3,350,096
254– 45 : 3,350,063	3,350,419	105 : 3,350,097
83 : 3,350,064	3,350,420	145 : 3,350,098
122 : 3,350,065	3,350,421	176 : 3,350,099
256– 32 : 3,350,066	3,350,422	183 : 3,350,100
48 : 3,350,067	348.6 : 3,350,423	186 : 3,350,101
259– 3 : 3,350,068	349 : 3,350,424	190 : 3,350,102
54 : 3,350,069	374 : 3,350,425	277– 9 : 3,350,103
60 : 3,350,070	397.4 : 3,350,426	3,350,104
260– 2 : 3,350,324	3,350,427	26 : 3,350,105
3,350,325	400 : 3,350,428	59 : 3,350,106
3,350,326	404 : 3,350,429	279– 2 : 3,350,107
2.2 : 3,350,327	429 : 3,350,430	58 : 3,350,108
2.3 : 3,350,328	3,350,431	280– 1.184 3,350,109
8 : 3,350,329	429.3 : 3,350,432	11.35: 3,350,110
18 : 3,350,330	429.7 : 3,350,433	11.37: 3,350,111
22 : 3,350,331	3,350,434	16 : 3,350,112
3,350,332	440 : 3,350,435	43.23: 3,350,113
3,350,333	447 : 3,350,436	154.5 : 3,350,114
3,350,334	448.2 : 3,350,437	209 : 3,350,115
3,350,335	453 : 3,350,438	404 : 3,350,116
3,350,336	465.5 : 3,350,439	515 : 3,350,117
29.6 : 3,350,337	490 : 3,350,440	285–305 : 3,350,118
3,350,338	508 : 3,350,441	287– 53 : 3,350,119
3,350,339	514 : 3,350,442	58 : 3,350,120
3,350,340	523 : 3,350,443	90 : 3,350,121
29.8 : 3,350,341	531 : 3,350,444	3,350,122
30.8 : 3,350,406	533 : 3,350,445	189.35: 3,350,123
33.6 : 3,350,342	559 : 3,350,446	189.36: 3,350,124
33.8 : 3,350,343	562 : 3,350,447	3,350,125
37 : 3,350,344	564 : 3,350,448	292–179 : 3,350,126
41.5 : 3,350,345	576 : 3,350,449	251.5 : 3,350,127
45.7 : 3,350,346	577 : 3,350,450	341.12: 3,350,128
45.95: 3,350,347	3,350,451	294– 67 : 3,350,129
46.5 : 3,350,349	580 : 3,350,452	86.25: 3,350,130
3,350,350	583 : 3,350,453	87.2 : 3,350,131
3,350,351	3,350,454	88 : 3,350,132
47 : 3,350,352	585 : 3,350,455	297–232 : 3,350,133
3,350,353	586 : 3,350,456	246 : 3,350,134
3,350,354	3,350,457	355 : 3,350,135
51 : 3,350,355	590 : 3,350,458	388 : 3,350,136
63 : 3,350,356	609 : 3,350,459	299– 61 : 3,350,137
3,350,357	3,350,460	67 : 3,350,138
67 : 3,350,358	615 : 3,350,461	302– 27 : 3,350,139
3,350,359	3,350,462	31 : 3,350,140
77.5 : 3,350,361	3,350,463	52 : 3,350,141
3,350,362	617 : 3,350,464	303– 7 : 3,350,142
3,350,363	631 : 3,350,465	307– 88.5 : 3,350,568

307– 88.5 : 3,350,569	312–117 : 3,350,150	318–176 : 3,350,613
3,350,570	140.4 : 3,350,151	224 : 3,350,614
3,350,571	323 : 3,350,152	325 : 3,350,615
3,350,572	313– 7 : 3,350,590	327 : 3,350,616
3,350,573	65 : 3,350,591	468 : 3,350,617
3,350,574	76 : 3,350,592	320– 5 : 3,350,618
3,350,575	92 : 3,350,593	32 : 3,350,619
3,350,576	94 : 3,350,594	321– 2 : 3,350,620
3,350,577	3,350,595	7 : 3,350,621
3,350,578	108 : 3,350,596	8 : 3,350,622
3,350,579	3,350,597	3,350,623
3,350,580	220 : 3,350,598	18 : 3,350,624
117 : 3,350,581	315– 22 : 3,350,599	45 : 3,350,625
308– 3 : 3,350,143	31 : 3,350,600	322– 28 : 3,350,627
6 : 3,350,144	90 : 3,350,601	73 : 3,350,626
122 : 3,350,145	150 : 3,350,602	323– 4 : 3,350,628
138 : 3,350,146	151 : 3,350,603	18 : 3,350,629
187 : 3,350,147	3,350,604	43.5 : 3,350,630
187.2 : 3,350,148	278 : 3,350,605	45 : 3,350,631
217 : 3,350,149	316– 1 : 3,350,153	324– .5 : 3,350,632
310– 8.1 : 3,350,582	19 : 3,350,154	3,350,633
8.3 : 3,350,583	317– 22 : 3,350,606	6 : 3,350,634
11 : 3,350,584	33 : 3,350,607	29.5 : 3,350,635
68 : 3,350,585	96 : 3,350,608	30 : 3,350,636
71 : 3,350,586	123 : 3,350,609	78 : 3,350,637
3,350,587	234 : 3,350,610	94 : 3,350,638
90 : 3,350,588	235 : 3,350,611	115 : 3,350,639
164 : 3,350,589	318–143 : 3,350,612	121 : 3,350,640

324–158 : 3,350,641	335–216 : 3,350,669	340–172.5 : 3,350,697
325– 4 : 3,350,642	336– 90 : 3,350,670	3,350,698
31 : 3,350,643	338– 82 : 3,350,671	174.1 : 3,350,699
58 : 3,350,644	132 : 3,350,672	3,350,700
137 : 3,350,645	174 : 3,350,673	186 : 3,350,701
305 : 3,350,646	316 : 3,350,674	228 : 3,350,702
308 : 3,350,647	339– 12 : 3,350,675	237 : 3,350,703
440 : 3,350,648	18 : 3,350,676	242 : 3,350,704
449. : 3,350,649	149 : 3,350,677	324 : 3,350,705
478 : 3,350,650	151 : 3,350,678	347 : 3,350,706
328–181 : 3,350,651	223 : 3,350,679	3,350,707
190 : 3,350,652	253 : 3,350,680	3,350,708
270 : 3,350,653	3,350,681	378 : 3,350,709
329–144 : 3,350,654	340– 3 : 3,350,682	410 : 3,350,710
162 : 3,350,655	7 : 3,350,683	343– 6.5 : RE.26,292
330– 5 : 3,350,656	67 : 3,350,684	11 : 3,350,711
69 : 3,350,657	146.2 : 3,350,685	12 : 3,350,712
331– 17 : 3,350,658	156 : 3,350,686	105 : 3,350,713
57 : 3,350,659	163 : 3,350,687	106 : 3,350,714
65 : 3,350,660	166 : 3,350,688	346– 17 : 3,350,715
113 : 3,350,661	172.5 : 3,350,689	23 : 3,350,716
116 : 3,350,662	3,350,690	49 : 3,350,717
333– 1.1 : 3,350,663	3,350,691	350–176 : 3,350,155
3,350,664	3,350,692	202 : 3,350,156
30 : 3,350,665	3,350,693	210 : 3,350,157
33 : 3,350,666	3,350,694	352– 50 : 3,350,158
71 : 3,350,667	3,350,695	401–190 : 3,350,159
335– 91 : 3,350,668	3,350,696	

CLASSIFICATION OF DESIGNS

D 2–271 : 209,036	D26– 1 : 209,052	D36– 8 : 209,068	D52– 3 : 209,084	D58– 6 : 209,099	D81– 4 : 209,114
353 : 209,037	209,053	D40– 1 : 209,069	D54– 1 : 209,085	209,100	25 : 209,115
400.1 : 209,051	209,054	D42– 1 : 209,070	2 : 209,086	7 : 209,101	D83– 1 : 209,116
D 4– 3 : 209,038	13 : 209,055	D43– 1 : 209,071	209,087	8 : 209,102	209,117
4 : 209,039	209,056	D44– 1 : 209,072	12 : 209,088	11 : 209,103	209,118
209,040	209,057	21 : 209,073	209,089	26 : 209,104	D85– 2 : 209,119
D10– 8 : 209,041	209,058	22 : 209,074	D55– 1 : 209,090	209,105	D87– 5 : 209,120
D12– 2 : 209,042	14 : 209,059	D48– 14 : 209,075	D56– 1 : 209,091	D59– 2 : 209,106	D89– 1 : 209,121
D14– 3 : 209,043	209,060	20 : 209,076	4 : 209,092	209,107	D90– 8 : 209,122
6 : 209,044	D29– 23 : 209,061	209,077	209,093	209,108	209,123
D15– 1 : 209,045	209,062	209,078	209,094	D61– 1 : 209,109	D92– 26 : 209,124
11 : 209,046	D30– 31 : 209,063	209,079	D57– 1 : 209,095	D64– 11 : 209,110	D94– 3 : 209,125
209,047	D34– 5 : 209,064	209,080	209,096	D66– 1 : 209,111	209,126
209,048	209,065	31 : 209,081	D58– 6 : 209,097	D74– 17 : 209,112	209,127
D22– 7 : 209,049	15 : 209,066	D50– 7 : 209,082	209,098	D80– 10 : 209,113	D95– 5 : 209,128
13 : 209,050	209,067	209,083			

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,349,513
3,349,708
3,350,113
3,350,453
4 : 3,349,452
3,349,551
3,350,159
3,350,264
3,350,293
3,350,687
5 : 3,349,447
6 : RE.26,290
RE.26,292
3,349,412
3,349,422
3,349,443
3,349,456
3,349,464
3,349,483
3,349,487
3,349,488
3,349,496
3,349,500
3,349,504
3,349,508
3,349,511
3,349,516
3,349,523
3,349,529
3,349,534
3,349,537
3,349,542
3,349,548
3,349,550
3,349,561
3,349,584
3,349,586
3,349,588
3,349,622
3,349,624
3,349,627
3,349,628
3,349,629
3,349,664
3,349,669
3,349,702
3,349,719
3,349,726
3,349,742
3,349,755

6 : 3,349,762
3,349,774
3,349,788
3,349,801
3,349,807
3,349,845
3,349,862
3,349,883
3,349,889
3,349,899
3,349,905
3,349,906
3,349,913
3,349,938
3,349,946
3,349,969
3,350,002
3,350,005
3,350,014
3,350,039
3,350,055
3,350,056
3,350,060
3,350,072
3,350,073
3,350,078
3,350,100
3,350,103
3,350,104
3,350,106
3,350,107
3,350,118
3,350,123
3,350,130
3,350,138
3,350,143
3,350,172
3,350,186
3,350,188
3,350,191
3,350,201
3,350,214
3,350,234
3,350,250
3,350,275
3,350,334
3,350,408
3,350,451
3,350,468
3,350,470

6 : 3,350,490
3,350,498
3,350,503
3,350,511
3,350,515
3,350,524
3,350,535
3,350,544
3,350,546
3,350,549
3,350,562
3,350,566
3,350,569
3,350,571
3,350,577
3,350,618
3,350,631
3,350,633
3,350,635
3,350,651
3,350,658
3,350,662
3,350,689
3,350,690
3,350,693
3,350,701
3,350,703
3,350,711
8 : 3,349,430
3,349,454
3,349,510
3,349,663
3,349,666
3,349,848
3,349,908
3,350,007
3,350,029
3,350,031
3,350,063
3,350,303
3,350,304
3,350,603
3,350,604
9 : 3,349,427
3,349,428
3,349,429
3,349,437
3,349,462
3,349,473
3,349,590

9 : 3,349,683
3,349,711
3,349,716
3,349,793
3,349,806
3,349,886
3,349,888
3,349,901
3,349,961
3,349,972
3,350,041
3,350,115
3,350,183
3,350,292
3,350,394
3,350,449
3,350,450
3,350,488
3,350,525
3,350,547
3,350,550
3,350,563
3,350,675
3,350,686
10 : 3,349,458
3,349,536
3,349,564
3,349,616
3,349,984
3,350,030
3,350,194
3,350,324
3,350,341
3,350,370
3,350,412
3,350,553
11 : 3,349,814
3,349,865
3,350,288
3,350,643
3,350,671
12 : 3,349,525
3,349,528
3,349,532
3,349,538
3,349,612
3,349,650
3,349,680
3,349,821
3,349,822

12 : 3,349,827
3,349,829
3,349,903
3,349,933
3,349,944
3,349,964
3,349,977
3,350,094
3,350,126
3,350,235
3,350,501
13 : 3,349,425
3,349,693
3,349,810
3,349,957
3,350,096
3,350,109
3,350,197
17 : 3,349,414
3,349,426
3,349,442
3,349,444
3,349,471
3,349,486
3,349,503
3,349,524
3,349,535
3,349,539
3,349,585
3,349,599
3,349,615
3,349,619
3,349,635
3,349,667
3,349,687
3,349,699
3,349,704
3,349,715
3,349,739
3,349,747
3,349,782
3,349,796
3,349,799
3,349,824
3,349,842
3,349,860
3,349,869
3,349,914
3,349,934
3,349,941

17 : 3,349,950
3,349,962
3,349,968
3,349,982
3,350,000
3,350,001
3,350,032
3,350,040
3,350,044
3,350,049
3,350,057
3,350,074
3,350,085
3,350,089
3,350,093
3,350,108
3,350,134
3,350,137
3,350,139
3,350,146
3,350,162
3,350,174
3,350,177
3,350,184
3,350,192
3,350,255
3,350,261
3,350,311
3,350,339
3,350,402
3,350,424
3,350,469
3,350,477
3,350,499
3,350,523
3,350,531
3,350,532
3,350,582
3,350,586
3,350,589
3,350,592
3,350,593
3,350,614
3,350,646
3,350,688
3,350,705
18 : RE.26,291
3,349,410
3,349,418
3,349,541

18 : 3,349,592
3,349,727
3,349,802
3,349,876
3,349,930
3,349,960
3,350,043
3,350,454
3,350,588
3,350,599
3,350,606
3,350,684
19 : 3,349,460
3,349,603
3,349,670
3,349,794
3,349,936
3,350,017
3,350,552
3,350,650
3,350,697
20 : 3,349,411
3,349,917
3,350,025
3,350,028
3,350,064
3,350,067
21 : 3,349,445
3,349,887
3,349,973
3,350,353
3,350,542
22 : 3,349,527
3,349,902
3,350,163
3,350,164
3,350,295
3,350,472
3,350,486
23 : 3,349,611
3,350,058
3,350,217
3,350,258
24 : 3,349,465
3,349,466
3,349,481
3,349,489
3,349,562
3,349,565
3,349,657
3,349,752
3,349,763
3,349,819
3,350,033
3,350,034
3,350,098
3,350,112
3,350,290
3,350,458
3,350,514
3,350,583
3,350,668
3,350,699
3,350,706
25 : 3,349,413
3,349,417
3,349,474
3,349,479
3,349,484
3,349,574
3,349,581
3,349,582
3,349,606
3,349,613
3,349,623
3,349,655
3,349,748
3,349,808
3,349,817
3,349,828
3,349,832
3,349,898
3,349,920
3,349,965
3,349,983
3,349,994
3,350,012
3,350,091
3,350,156
3,350,221
3,350,244
3,350,252
3,350,265
3,350,312
3,350,332
3,350,333
3,350,426
3,350,497
3,350,506
3,350,534
3,350,548

25 : 3,350,581
3,350,596
3,350,598
3,350,602
3,350,623
3,350,632
3,350,649
3,350,654
3,350,655
3,350,659
3,350,700
3,350,707
26 : 3,349,424
3,349,507
3,349,544
3,349,568
3,349,594
3,349,602
3,349,605
3,349,641
3,349,644
3,349,647
3,349,662
3,349,671
3,349,685
3,349,686
3,349,688
3,349,689
3,349,705
3,349,714
3,349,728
3,349,753
3,349,783
3,349,784
3,349,840
3,349,875
3,349,877
3,349,919
3,349,927
3,349,935
3,349,939
3,349,991
3,350,024
3,350,046
3,350,071
3,350,087
3,350,097
3,350,099
3,350,120
3,350,125
3,350,128
3,350,132
3,350,133
3,350,135
3,350,136
3,350,178
3,350,182
3,350,203
3,350,216
3,350,269
3,350,276
3,350,287
3,350,337
3,350,338
3,350,349
3,350,351
3,350,389
3,350,430
3,350,431
3,350,517
3,350,536
3,350,570
3,350,597
3,350,626
27 : 3,349,409
3,349,459
3,349,493
3,349,691
3,349,929
3,349,940
3,349,955
3,350,013
3,350,152
3,350,256
3,350,352
3,350,442
3,350,579
3,350,619
3,350,685
29 : 3,349,492
3,349,634
3,349,745
3,350,095
3,350,141
3,350,282
3,350,283
3,350,305
3,350,317
3,350,372
3,350,415
3,350,416

29 : 3,350,417
3,350,418
3,350,419
3,350,420
3,350,421
3,350,435
3,350,445
3,350,447
31 : 3,349,910
3,350,117
3,350,717
32 : 3,349,758
34 : 3,349,419
3,349,435
3,349,436
3,349,441
3,349,552
3,349,553
3,349,563
3,349,577
3,349,630
3,349,646
3,349,652
3,349,656
3,349,698
3,349,703
3,349,706
3,349,733
3,349,735
3,349,737
3,349,738
3,349,770
3,349,816
3,349,838
3,349,841
3,349,880
3,349,907
3,349,951
3,349,975
3,349,993
3,350,027
3,350,037
3,350,076
3,350,148
3,350,167
3,350,169
3,350,176
3,350,199
3,350,202
3,350,224
3,350,225
3,350,227
3,350,228
3,350,231
3,350,246
3,350,247
3,350,267
3,350,268
3,350,270
3,350,296
3,350,297
3,350,309
3,350,310
3,350,316
3,350,320
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	3,350,476		3,350,022		3,349,849		3,350,380		3,350,101		3,349,873
	3,350,483		3,350,047		3,349,852		3,350,423		3,350,259		3,349,904
	3,350,500		3,350,215		3,349,854		3,350,471		3,350,428		3,349,915
	3,350,513		3,350,218		3,349,856		3,350,634	54	3,350,466		3,349,945
	3,350,519	45	3,349,720		3,349,858		3,350,678	55	3,349,446		3,349,967
	3,350,522		3,349,798		3,349,861		3,350,683		3,349,461		3,349,970
	3,350,541		3,350,006		3,349,867		3,350,698		3,349,477		3,350,019
	3,350,591		3,350,066		3,349,909	49	3,349,896		3,349,506		3,350,051
	3,350,638		3,350,161		3,349,911	50	3,350,069		3,349,509		3,350,131
	3,350,648	47	3,349,607		3,349,922	51	Re.26,293		3,349,540		3,350,391
	3,350,665		3,349,778		3,349,948		3,349,501		3,349,583		3,350,403
	3,350,666		3,349,779		3,349,954		3,349,522		3,349,593		3,350,404
	3,350,674		3,349,780		3,349,995		3,349,660		3,349,621		3,350,521
	3,350,676		3,349,881		3,349,996		3,349,679		3,349,631		3,350,538
	3,350,679		3,349,900		3,350,065		3,349,937		3,349,642		3,350,557
	3,350,691		3,350,166		3,350,158		3,350,160		3,349,684		3,350,585
	3,350,716	48	3,349,455		3,350,173		3,350,568		3,349,717		3,350,616
44	3,349,448		3,349,604		3,350,323	53	3,349,463		3,349,754		3,350,653
	3,349,589		3,349,626		3,350,325		3,349,469		3,349,769		3,350,673
	3,349,648		3,349,789		3,350,358		3,349,531				

DESIGN PATENTS

6	209,036	9	209,117	17	209,118	26	209,050	36	209,088	39	209,091
	209,041	12	209,037		209,119		209,087		209,089		209,102
	209,043		209,042		209,120	27	209,053		209,093		209,112
	209,048	17	209,039		209,121		209,111		209,094	42	209,047
	209,055		209,040		209,125	29	209,046		209,095		209,061
	209,056		209,044		209,126		209,084		209,096		209,075
	209,071		209,067		209,127		209,113		209,097		209,085
	209,076		209,072		209,128	32	209,064		209,099		209,124
	209,103		209,077	18	209,054	34	209,083		209,100	44	209,074
	209,106		209,078	19	209,069	36	209,052		209,101		209,105
	209,107		209,079	22	209,090		209,057		209,115	48	209,063
	209,108		209,086	25	209,110		209,065	37	209,082	51	209,045
	209,114		209,109	26	209,038		209,073	39	209,068	55	209,104
9	209,058		209,116		209,049		209,081				

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

October 31, 1967 Volume 843 Number 5

TRADEMARKS

NOTICES

Notice of Tentative Recordation of a Trade Name

[T.D. 67-234]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 2, 1967

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

"BEAUNIT CORPORATION," is a trade name used by Beaunit Corporation (also doing business as Beaunit Fibers and Beaunit Textiles), a corporation organized under the laws of the State of New York, located at 261 Madison Avenue, New York, New York, 10016. The trade name is used in connection with man-made fibers, knitted and woven fabrics and garments, manufactured in the United States.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after October 31, 1967, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1967, of any opposition proceedings.

Until 45 days after October 31, 1967, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not

CONDITION OF TRADEMARK APPLICATIONS AS OF AUGUST 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,726
Date of oldest new application	Oct. 18, 1966
Date of oldest amended application (filing date)	July 5, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-25-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-25-66	1-14-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-18-66	7-5-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-24-66	10-30-64
Renewals (All Classes)	7-3-67	.....
Sec. 12(c) Publications (All Classes)	6-29-67	.....

Applications filed during the month of August 1967—2,513

Registrations Issued	435—No. 837,706 to No. 838,140
Renewals Issued	60

For the quarter July 1, 1967 through September 30, 1967

Applications filed	6,819
Registrations issued	4,861
Renewals issued	960
Cancellations under Section 8	1,337

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

LESTER D. JOHNSON,
Commissioner of Customs.

Veterans Day Holiday

Since Veterans Day falls this year on a Saturday, the preceding day, Friday, November 10, is considered to be a holiday within the District of Columbia and the Patent Office will be closed for business on that day. Accordingly, any action due on November 10, or November 11, 1967, is to be considered timely if taken on November 13, 1967.

By direction of the Acting Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Oct. 11, 1967.

Service by Publication

A petition to cancel the registration identified below having been filed, and the notice of such proceedings sent by registered mail to registrant at the last known address having been returned by the Post Office as undeliverable, and this Office having been advised that registrant is deceased, notice is hereby given that unless the registrant's assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancellation will be proceeded with as in the case of default.

Frank Hoffman, assignee of Herbert Greenewald, d.b.a. Solar Laboratories, Wildwood, N.J., Reg. No. 276,173, Canc. No. 8,999.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Nutrient or tonic beverages; **Reg. No. 47,189**, same, Tonic beverages and syrups for the manufacture of such beverages; **Reg. No. 238,145**, same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146**, same; **Reg. No. 415,755**, same, Nonalcoholic maltless beverages and the syrups for making such beverages, filed Aug. 14, 1967, D.C., N.D. Calif. (San Francisco), Doc. 47653, *The Coca-Cola Co.* v. *John O'Hanlon and Gerald Hanson.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 600,018 (PLAYBOY), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 645,386**, same, Cuff links; **Reg. No. 652,412**, same, Phonograph records; **Reg. No. 676,726**, same, Compilations of stories issued annually, and calendars; **Reg. No. 719,668** (PLAYBOY LIQUOR CADDY AND DESIGN), same, Bottle holder; **Reg. No. 773,132**, same, Puppets; **Reg. No. 643,926** (DESIGN OF RABBIT'S HEAD), same, Monthly magazine; **Reg. No. 675,006** (FANCIFUL REPRESENTATION OF HEAD OF RABBIT), same, Mechanically grooved phonograph records; **Reg. No. 679,997** (REPRESENTATION OF RABBIT'S HEAD), same, Cocktail glasses; **Reg. No. 762,884** (CARICATURE OF A WOMAN DEPICTING A BUNNY), same, Operating establishments which feature food, drink and entertainment; **Reg. No. 810,555** (BUNNY), same, filed Aug. 17, 1967, D.C., S.D.N.Y., Doc. 67–C–3148, *HMH Publishing Co., Inc. and Playboy Clubs International, Inc.* v. *Elka Toy and Novelty Mfg. Corp. et al.*

Reg. No. 695,246 (TV TRI-VALLEY AND DESIGN), Tri-Valley Packing Association, Canned fruit, filed Aug. 22, 1967, D.C., E.D. Mich. (Detroit), Doc. 30273, *Tri-Valley Growers* v. *King Frost Foods, Inc.*

Reg. No. 666,451 ("PINCH"), Haig and Haig Limited, Scotch whisky; **Reg. No. 670,723** (DESIGN OF BOTTLE), same, Whisky, filed Aug. 28, 1967, D.C., S.D.N.Y., Doc. 67–C–3276, *John Haig & Company Ltd.* v. *Countess Mara, Inc., et al.*

Reg. No. 643,926. (See Reg. No. 600,018).

Reg. No. 645,386. (See Reg. No. 600,018.)

Reg. No. 648,159 (CERAMAGNET), Stackpole Carbon Co., Articles, whether magnetized or not, made from ceramic permanent magnet material, filed Apr. 13, 1964, D.C.N.J. (Newark), Doc. 372–66, *Stackpole Carbon Company* v. *Ceramagnetics, Inc.* Consent judgment for permanent injunction, Apr. 14, 1966.

Reg. No. 652,412. (See Reg. No. 600,018.)

Reg. No. 670,723. (See Reg. No. 608,457.)

Reg. No. 675,006. (See Reg. No. 600,018.)

Reg. No. 676,726. (See Reg. No. 600,018.)

Reg. No. 679,997. (See Reg. No. 600,018.)

Reg. No. 719,668. (See Reg. No. 600,018.)

Reg. No. 738,144. (See Reg. No. 810,886.)

Reg. No. 762,884. (See Reg. No. 600,018.)

Reg. No. 773,132. (See Reg. No. 600,018.)

Reg. No. 810,555. (See Reg. No. 600,018.)

Reg. No. 810,886 (SHOP-RITE), Wakefern Food Corp., Wholesale distributorship services for grocery and department stores; **Reg. No. 812,305**, same, Retail store service (commonly known as supermarkets); **Reg. No. 812,306** (SHOP-RITE SUPERMARKETS AND DESIGN), same; **Reg. No. 738,144** (SHOP-RITE), Shop-Rite Supermarkets, Cigarettes, filed May 19, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–493, *Wakefern Food Corp.* v. *Fred J. Lomangino et ano.* Order on stipulation, discontinuing action, Aug. 16, 1967.

Reg. No. 812,305. (See Reg. No. 810,886.)

Reg. No. 812,306. (See Reg. No. 810,886.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 228,502. Acme Cotton Products Co., Inc., Valley Stream, N.Y. Filed Sept. 24, 1965.



The logo forming the trademark conceives of the formation of the letter "A" from a roll of absorbent cotton on a background triangle in contrasting colors.

Class 39—Clothing

For Examination Capes and Nurses' Caps.

Class 44—Dental, Medical, and Surgical Appliances

For Adhesive Bandages in Strips and Rolls; Gauze Bandages in Rolls and Pads; Absorbent Cotton, Cellulose and Gauze; Adhesive Moleskin, Elastic Bandages; Cotton-Tipped Applicators; Sanitary Belts; Throw-Away Diapers; Eye Pads; Mouth and Throat Swabs; Cotton and Cellulose Balls; Surgical Absorbent Cotton; Surgical Adhesive Tape in Rolls and on Spools; Surgical Plaster of Paris; Plaster of Paris Bandages and Splints; Drainage Pads; Operating Room Caps and Face Masks; Hospital Obstetrical Pads; Maternity Catamenial Packs; Pre-Wrapped Sterile Sponges; Moisture-Proof Non-Woven Underpads for Hospital and Sickroom Use; and Surgical Wadding.

First use on or about Apr. 15, 1965.

SN 236,908. Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany. Filed Jan. 20, 1966.

LURGI

Owner of U.S. Reg. No. 670,186.

Class 100—Miscellaneous

For Engineering, Planning and Designing of Plants and Equipment to the Specification and/or Order of Others in the Chemical, Metallurgical, and Petroleum Processing Industries, and Research and Development Services for Said Industries.

Class 103—Construction and Repair

For Construction of Plants and Equipment to the Specification and/or Order of Others in the Chemical Metallurgical, and Petroleum Processing Industries.

First use on or about Oct. 24, 1914; in commerce January 1958.

SN 240,581. Alberto Cernuschi, Paris, France. Filed Mar. 10, 1966.

PSYCHOANALYTICAL DECORATION

The word "Decoration" is disclaimed apart from the mark as shown.

Class 32—Furniture and Upholstery

For Beds, Chairs, Tables, Stands, Mirrors, Cabinets, and Desks.

Class 38—Prints and Publications

For Oil and Water Coloring Paintings.

Class 50—Merchandise Not Otherwise Classified

For Three-Dimensional Works of Art and Wall Decorations.

First use Nov. 1, 1965; in commerce Nov. 1, 1965.

SN 250,711. Kurashiki Rayon Co., Ltd., Kurashiki City, Japan. Filed July 21, 1966.

Clarino

The word "Clarino" is derived from the Italian and designates an old musical instrument like a trumpet.

Class 1—Raw or Partly Prepared Materials

For Artificial Leathers.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Bags Made of Artificial Leather.

Class 39—Clothing

For Shoes, Boots and Gloves Made of Artificial Leather; and Clothes—Namely, Coats, Overcoats, Trousers, Skirts, Jumpers, and Jackets, made of Artificial Leather.

First use July 10, 1965; in commerce Mar. 31, 1966.

SN 254,483. Hallett Manufacturing Company, Los Angeles, Calif. Filed Sept. 15, 1966.

HALLETT

Class 21—Electrical Apparatus, Machines, and Supplies

For Shielded Ignition Systems, Radio Shielding Systems, Radio Frequency Interference Shielding Systems, Radio Frequency Suppression Systems, Suppression Kits, Suppressed Ignition Systems, Battery Charging Circuit Shielding Systems, Shielding Systems for Automotive, Aircraft, Marine and Industrial Gasoline Engines, Shielded Conduits, Shielded Lead Assemblies, Conduits and Lead Assemblies, Shielded Harnesses and Cable Assemblies, Flexible Fluid and Electrical Hose Lines and Assemblies, Connectors, Adaptors, Contacts and Springs, Electrical Harness and Cable Assemblies, and Ground Straps.
First use Mar. 12, 1942.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Flexible Metal Hoses.
First use at least as early as January 1959.

SN 255,162. General Laboratory Associates, Inc., Norwich, N.Y. Filed Sept. 27, 1966.

GLA

Owner of Reg. No. 601,578.

Class 21—Electrical Apparatus, Machines, and Supplies

For Ignition Systems for Gas Turbine Engines; Components of Such Systems—Namely, Exciter Units, Cables and Harnesses; Ordnance Firing Systems for Missiles and Satellites; Energy Storage and Discharge Systems; and High Temperature, High Voltage Components—Namely, Capacitors, Leads, Connectors, and Discharge Tubes.

Class 26—Measuring and Scientific Appliances

For Thermocouple Assemblies.
First use Aug. 25, 1966.

SN 256,898. Palco Linings, Inc., Indio, Calif. Filed Oct. 21, 1966.

PALCO

Class 5—Adhesives

For Adhesive Cement for Impermeable Plastic Membranes Which Are Used as Water Barriers.
First use March 1966.

Class 103—Construction and Repair

For Construction and Installation of Water-Proof Membranes in Lakes, Reservoirs, Pools, and the Like, To Prevent Water Seepage.
First use July 1958.

SN 257,339. Schlumberger Limited, New York, N.Y., assignee of Schlumberger Technology Corporation, d.b.a. Schlumberger Well Services, Houston, Tex. Filed Oct. 27, 1966.

SCHLUMBERGER

Owner of Reg. No. 563,702.

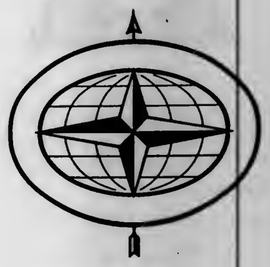
Class 100—Miscellaneous

For Services Rendered in Connection With Open and Cased Wells—Namely, Well Logging and Surveying; Production Logging; Formation and Log Analysis; Testing and Sampling; Depth Determining and Controlling; and Perforating.
First use 1934.

Class 103—Construction and Repair

For Completion and Remedial Services Including Well Tool Setting, Formation Treating, Downhole Casing Repairing, and Casing and Tubing Cutting.
First use May 1949.

SN 258,996. First National City Bank, New York, N.Y. Filed Nov. 18, 1966.



Owner of Reg. Nos. 671,967 and 673,223.

Class 102—Insurance and Financial

For Banking Services, Investment, Estate and Trust Management, Payroll Processing, and Issuance of Travellers Checks and Credit Cards.
First use December 1960.

Class 105—Transportation and Storage

For Arranging Travellers' Itineraries, Hotel and Transportation Reservations and Car Rentals, and Selling Transportation Tickets.
First use June 1, 1966.

SN 259,877. American Commercial Incorporated, Los Angeles, Calif. Filed Dec. 2, 1966.



MIKASA

Owner of Reg. Nos. 681,148, 791,389, and others.

Class 30—Crockery, Earthenware, and Porcelain

For China Dinnerware.
First use 1962.

Class 33—Glassware

For Glass Tumblers, Water Glasses, and Stemware.
First use May 9, 1966.

SN 261,606. Kilfrost Limited, Newcastle upon Tyne, England. Filed Dec. 21, 1966.

KILFROST

Class 6—Chemicals and Chemical Compositions

For Chemical Preparation for the Preventing and Melting of Ice and Frost; Antifreeze for Use in Automobile Radiators; Chemicals for Increasing the Thermal Efficiency of and for Defrosting Cold Storage Systems; Chemicals for Inhibiting Adhesion of Ice and/or Snow to Exposed Surfaces; Chemical Additives to Lubricants for Use in Ice- and Frost-Proofing and Moisture Absorption Resisting Ropes, Cords and Twines; Chemical Substances To Inhibit Rust and Corrosion in Internal Combustion Engines.
First use 1935; in commerce Dec. 9, 1936.

Class 15—Oils and Greases

For Chemical Additives for Use as Lubricants in Low Temperature Liquid Power Transmission Systems; Lubricants for Railway Slide Chains and Railway Signal Mechanisms; Lubricants for Mechanisms and Articles Exposed to Temperature Extremes, and for Use in Ice and Snow Proofing and in Resisting Moisture Penetration in Ropes, Cords and Twines.
First use Dec. 9, 1936; in commerce Dec. 9, 1936.

SN 271,009. American Cyanamid Company, Wayne, N.J. Filed May 9, 1967.

PREEN

Owner of Reg. Nos. 427,115, 774,324, and others.

Class 4—Abrasives and Polishing Materials

For Furniture Polish, and Cleaning and Waxing Preparation for Cars.

Class 52—Detergents and Soaps

For Rug Shampoo.
First use Apr. 26, 1967.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 240,766. Moore Chemical Corporation, San Francisco, Calif. Filed Mar. 11, 1966.

MOORE

For Thermoplastic Resins, Polyvinyl Chloride, Polyethylene, Natural and Synthetic Rubber, and Plastic Tubing.
First use on or about June 15, 1960.

SN 252,093. Genset Corporation, Newark, N.J. Filed Aug. 10, 1966.



The mark is a monogram design composed of the letters "GS."
For Poromeric Material, i.e., Microporous and Permeable Coriaceous Sheet Material for Generalized Use in the Industrial Arts.
First use June 1, 1966.

SN 253,425. DeWine & Hamma Seed Company, Inc., d.b.a. DeWine Seeds, Yellow Springs, Ohio. Filed Aug. 30, 1966.

SLO-POKE



For Orchard Grass Seed.
First use Dec. 6, 1965.

SN 260,150. W. R. Grace & Co., New York, N.Y. Filed Dec. 6, 1966.

GOLD PRIZE

For Lawn and Grass Seed.
First use Jan. 23, 1960.

SN 260,151. W. R. Grace & Co., New York, N.Y. Filed Dec. 6, 1966.

SPROUT

For Lawn and Grass Seed.
First use Jan. 17, 1958.

SN 266,623. Foster Grant Co., Inc., Leominster, Mass. Filed Mar. 14, 1967.

FOSTA-NET

Owner of Reg. Nos. 363,365, 796,995, and others.
For Extruded Plastic Mesh for General Use in the Industrial Arts, Including Packaging, Decorative and Other Industrial Applications.
First use Feb. 2, 1967.

Class 2—Receptacles

SN 206,078. Royalburgers, Inc., Corvallis, Oreg. Filed Nov. 12, 1964.

Royalburgers

For Sandwich Bags, Containers and Packages for Sandwiches and Condiments.
First use Aug. 31, 1964.

SN 232,456. Ex-Cell-O Corporation, Detroit, Mich. Filed Nov. 10, 1965.

PURE-KAP

For Plastic Can Covers Which Also Serve as a Carrying Handle.
First use on or about Oct. 26, 1965.

SN 239,021. Rexall Drug and Chemical Company, Los Angeles, Calif., assignee of Consolidated Thermoplastics Co., d.b.a. Imco Container Company, Los Angeles, Calif. Filed Feb. 17, 1966.

REXPAK

Owner of Reg. Nos. 784,625 and 827, 290.
For Plastic Bottles and Closures.
First use Jan. 17, 1966.

SN 242,366. Brown Company, New York, N.Y., assignee of KVP Sutherland Paper Company, Kalamazoo, Mich. Filed Mar. 31, 1966.

SHASTA

For Receptacles—Namely, Dishes, Plates, Bowls, Trays, and Cups of Paper, Plastic-Coated Paper, or Plastic.
First use Feb. 18, 1966.

SN 244,612. The Ohio Art Company, Bryan, Ohio. Filed Apr. 29, 1966.

CAPTAIN ASTRO

For Lunch Boxes and Lunch Pails.
First use Dec. 8, 1965.

SN 245,066. Doringer Co., Inc., Long Island City, N.Y. Filed May 6, 1966.

Swinger

For Trays.
First use Apr. 8, 1966.

SN 247,405. Premiums, Inc., Seattle, Wash. Filed June 6, 1966.

COOLER CHUTE

The Component word "Cooler" is disclaimed apart from the trademark "Cooler Chute."
For Insulated, Portable, Cooler To Hold Cans of Beverages.
First use Nov. 5, 1965.

SN 251,552. J. & C. Manufacturing Co. Ltd., Vancouver, British Columbia, Canada. Filed Aug. 2, 1966.

JC

For Plastic Flower Pots and Bottles.
First use Jan. 26, 1962; in commerce May 10, 1962.

SN 257,394. R. A. Jones and Company, Inc., Covington, Ky. Filed Oct. 27, 1966.

TUK-FRAME

For Shadow Box Cartons Wherein the Articles Within the Cartons Are Adapted To Be Viewed Through at Least One Face of the Carton.
First use Jan. 20, 1966.

SN 262,196. Roll m-t Wholesale Pharmacy, Sioux City, Iowa. Filed Jan. 9, 1967.

ROLL m-t

For Plastic Dispensing Bags Sold With or Without Drugs for Use on Animal or Human Tissue.
First use Jan. 4, 1967.

SN 263,029. Dare Products Incorporated, Battle Creek, Mich. Filed Jan. 23, 1967.

TUF-SPOOL

No claim is made to the exclusive right to use "Spool," apart from the combination shown in the drawing.
For Reels for Carrying Rope, Cord, Tape, Wire, and the Like.
First use Jan. 5, 1967.

SN 264,082. National Can Corporation, Chicago, Ill. Filed Feb. 6, 1967.

NYLAP

For Solderless Side Seam Which Is Incorporated Into Metal Containers, Particularly, Beer, Beverage, Food, and Like Containers.
First use Nov. 15, 1966.

SN 264,162. Protective Lining Corporation, Brooklyn, N.Y. Filed Feb. 7, 1967.

PRO-TRON

For Bags and/or Drum Liners Made of Polyethylene Film.
First use September 1966.

SN 265,566. Stix Brands, Inc., Chicago, Ill. Filed Feb. 27, 1967.

SWISH 'N FILL

For Sausage Casings.
First use Oct. 28, 1966.

SN 266,535. Green Bay Packaging Inc., Green Bay, Wis. Filed Mar. 13, 1967.

PACKERSEAL

Owner of Reg. No. 791,431.
For Corrugated Paperboard Boxes.
First use Feb. 6, 1967.

SN 266,591. Ryan Heating Co., Inc., St. Louis, Mo. Filed Mar. 13, 1967.



Applicant disclaims the word "Chest" apart from the mark as shown.
For Tool Chests.
First use Oct. 17, 1966.

SN 267,432. International Paper Company, New York, N.Y. Filed Mar. 23, 1967.

VEG-A-SEAL

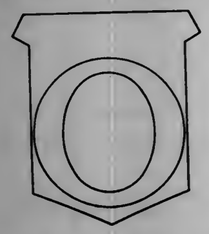
For Folding Cartons.
First use June 1964.

SN 267,777. Weyerhaeuser Company, Tacoma, Wash. Filed Mar. 28, 1967.

DOUBLE-QUAD

For Shipping Containers With Integral Dividers.
First use Nov. 22, 1966.

SN 272,544. Cutter Laboratories, Inc., Los Angeles, Calif. Filed May 29, 1967.



For Bottles, Vials, Jars, Boxes, Jugs, Carboys, and Similar Containers Made of Molded Plastic Materials.
First use on or about Apr. 27, 1954.

SN 276,612. Robert Nusbaum, d.b.a. Nash Associates, New York, N.Y. Filed July 24, 1967.

LITTER-CRITTER

For Containers for the Reception of Travel Trash.
First use July 2, 1967.

Class 5—Adhesives

SN 255,844. Wood Conversion Company, St. Paul, Minn. Filed Oct. 5, 1966.

CONWED

For Tile Adhesive.
First use about July 21, 1966.

SN 255,845. Wood Conversion Company, St. Paul, Minn. Filed Oct. 5, 1966.

CONWED

Owner of Reg. Nos. 820,946, 832,362, and others.
For Pressure Sensitive Tape.
First use about July 21, 1966.

SN 258,672. Peter Cooper Corporations, Gowanda, N.Y. Filed Nov. 15, 1966.

PETER COOPER

"Peter Cooper" is the name of a philanthropist who lived from 1791 to 1883 and founded Cooper Institute.
For Animal Glue.
First use prior to 1911.

SN 258,673. Peter Cooper Corporations, Gowanda, N.Y. Filed Nov. 15, 1966.

PETER COOPER'S

"Peter Cooper" is the name of a philanthropist who lived from 1791 to 1883 and founded Cooper Institute. Owner of Reg. No. 709,499.
For Animal Glue, Dextrine Glue Compositions, and Starch Glue Compositions.
First use prior to 1911.

SN 269,386. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Apr. 18, 1967.

PYRALIN

Owner of Reg. No. 213,806.
For Polyimide Adhesive Solutions and Primers Therefor, for Electrical or High Temperature Applications.
First use Mar. 14, 1967.

Class 6—Chemicals and Chemical Compositions

SN 248,681. Continental Oil Company, Ponca City, Okla. Filed June 22, 1966.

CONOCO

Owner of Reg. Nos. 270,389, 804,481, and others.
For Automotive Chemical Specialties—Namely, Radiator Antifreeze; Anti-Rust Composition; Hydraulic Brake Fluid; and Windshield Ice Melting Solution.
First use September 1952.

SN 252,290. Standard International Corporation, Andover, Mass. Filed Aug. 12, 1966.

SUN SPRAY

Applicant disclaims any exclusive rights in the word "Spray" apart from the mark as shown.
For Fabric Brightener.
First use July 19, 1966.

SN 254,658. American Timber & Trading Co., Inc., Portland, Oreg. Filed Sept. 19, 1966.

amerinate

For Fire Retardant Compound for Wood and Wood Laminations.
First use Aug. 22, 1966.

SN 254,718. K. J. Quinn & Co. Inc., Malden, Mass. Filed Sept. 19, 1966.

MIRA-LUSTRE

For Preparation in Paste or Semi-Paste Form To Be Applied to Leather as a Dressing and as a Water Repellent.
First use at least as early as March 1939.

SN 255,829. The Standard Oil Company, Cleveland, Ohio. Filed Oct. 5, 1966.

VISTRON

For Methacrylonitrile, a Vinyl Monomer Containing a Nitrile Group Suitable for Use in Formulating Synthetic Plastics, Coatings, and Elastomers.
First use Oct. 4, 1966.

SN 259,314. W. R. Grace & Co., New York, N.Y. Filed Nov. 23, 1966.

SLUDGTROL

For Boiler Compound Used To Prevent Sludge and Corrosion in Steam Generating Equipment.
First use Sept. 21, 1966.

SN 266,417. Fisher Scientific Company, Pittsburgh, Pa. Filed Mar. 10, 1967.

SPECTRANALYZED

For Ultrapure Chemical Reagents for Laboratory Use in Spectrophotometric Analysis.
First use November 1956.

SN 266,867. Drew Chemical Corporation, New York, N.Y. Filed Mar. 16, 1967.

RESISTOL

For Catalysts for Hydrogenation of Industrial Fats and Oils.
First use Oct. 16, 1945.

SN 266,869. W. F. Fancourt Co., Inc., Greensboro, N.C. Filed Mar. 16, 1967.

NYADUR

For Industrial Chemical Which Is a Phenolic-Amino Formaldehyde Resin Used To Increase the Resistance of Nylon to Heat and Hydrolysis, To Stiffen Nylon Fibers and Implant Superior Dimensional Stability to Nylon Fabrics.
First use Aug. 27, 1965.

SN 266,877. Robert H. Goodale and Betty L. Goodale (joint owners), d.b.a. Canton Bio-Medical Products, St. Canton, Mass. Filed Mar. 16, 1967.

MICROFIL

For Liquid Polymeric Compound Used To Fill and Opacify the Vascular Spaces of Non-Surviving and Post Mortem Tissues by Injection.
First use on or about Oct. 14, 1966.

SN 266,995. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Mar. 17, 1967.

EUVIPRINT

For Dyestuffs.
First use Sept. 3, 1964; in commerce Oct. 28, 1966.

SN 266,996. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Mar. 17, 1967.

CITOWETT

Owner of German Reg. No. 688,078, dated Aug. 7, 1954.
For Emulsifying and Dispersing Agents for Industrial Purposes.

SN 267,230. Armour and Company, Chicago, Ill. Filed Mar. 21, 1967.

ARDEFOAM

For Anti-Foaming and Defoaming Agents.
First use on or before Sept. 27, 1966.

SN 267,277. A. L. Wilson Chemical Company, Kearny, N.J. Filed Mar. 21, 1967.

DroGo

Owner of Reg. No. 589,017.
For Preparation To Brighten, Whiten, and Add Body to Fabrics.
First use Dec. 9, 1966.

SN 267,462. Waters Associates, Inc., Framingham, Mass. Filed Mar. 23, 1967.

porasil

For Porous Silica Gel.
First use Feb. 1, 1967.

SN 271,839. Rohm and Haas Company, Philadelphia, Pa. Filed May 18, 1967.

STRATABED

Owner of Reg. No. 546,031.
For Synthetic, Organic Chemical Compositions in Resin Form, Particularly for Use as an Ion Exchange Material.
First use on or about May 10, 1967.

SN 275,817. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 12, 1967.

FLUORAD

Owner of Reg. No. 690,742.
For Surface Active Agents or Surfactants.
First use June 1, 1967.

SN 276,899. Stauffer Chemical Company, New York, N.Y. Filed July 27, 1967.

SWAN

Owner of Reg. Nos. 236,109 and 501,214.
For Dusting Sulfur, an Agricultural Insecticide and Fungicide.
First use at least as early as Mar. 24, 1927.

SN 277,825. Encap Products Company, Park Ridge, Ill. Filed Aug. 8, 1967.

POP-IN

For Pre-Measured Insecticide and Fungicide Preparations for Use on Flowers, Vegetable Plants, and Fruit Trees, and on Pre-Measured Weed Control Preparations.
First use Aug. 8, 1966.

SN 278,455. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Aug. 17, 1967.

CALIBRATE

For Standards in Serum Used for Setting Up Standard Curves in the Clinical Chemistry Laboratory.
First use May 17, 1966.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 267,506. Coast Fuse, Inc., Livermore, Calif. Filed Mar. 24, 1967.

HI-GLO

For Detonating Fuse.
First use Feb. 17, 1967.

Class 12—Construction Materials

SN 264,773. Woodhill Chemical Sales Corporation, Cleveland, Ohio. Filed Feb. 15, 1967.

DURO PLASTIC

Without waving its common law rights, applicant disclaims the word "Plastic" apart from the mark as shown. Owner of Reg. Nos. 751,116, 733,270, and others.
For Compositions Containing Finely Divided Metal in a Plastic Binder for Use in Repairing Metal Bodies.
First use Aug. 15, 1949.

SN 267,492. Esten Air Structures, Inc., d.b.a. Cidair Structures Co., Pawtucket, R.I. Filed Mar. 24, 1967.

CID WAIRHOUSE

The word "Wairhouse" is disclaimed apart from the mark as shown without disclaiming any common law rights therein.
For Air Supported Building Structures for Covering Swimming Pools; for Use as Aircraft Hangars, Gymnasiums, Exhibition Halls; and for General Industrial and Farm Use as a Building.
First use December 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 242,473. Murray Corporation, Towson, Md. Filed Apr. 1, 1966.

MINI-CLAMP

For Clamps To Fasten Hose and Tubing.
First use at least as early as November 1964.

SN 249,714. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed July 7, 1966.

FIESTA

For Sink Basins.
First use Apr. 28, 1966.

SN 254,943. Robert H. Sevey, d.b.a. Tofters, Excelsior, Minn. Filed Sept. 22, 1966.

STA/MASTER

For Adjustable Tension Mechanism, in the Nature of a Turnbuckle, for Holding or Positioning Structural Members.
First use Prior to Jan. 9, 1966.

SN 257,702. Fluid Dynamics, Incorporated, New York, N.Y. Filed Nov. 1, 1966.

FLUID DYNAMICS

For Ball Valves.
First use September 1960.

SN 260,681. Regal Ware, Inc., Kewaskum, Wis. Filed Dec. 13, 1966.

REGALCOTE

Owner of Reg. No. 528,672.
For Coated Cookware.
First use in or about October 1966.

SN 260,899. Frank Wheatley Industries, Inc., Tulsa, Okla. Filed Dec. 15, 1966.

FWI

For Valves and Check Valve Slam Minimizing Devices.
First use Mar. 1, 1965.

SN 261,889. Standard Screw Company, Hartford, Conn. Filed Jan. 3, 1967.

MOENFLO

Owner of Reg. No. 797,677.
For Shower Heads.
First use Nov. 2, 1966.

SN 261,947. Standard Screw Company, Hartford, Conn. Filed Jan. 3, 1967.

CHATEAU

For Fluid Valves—Namely, Faucets.
First use Dec. 13, 1966.

SN 263,220. Stephen A. Young Corporation, Flora, Ind. Filed Jan. 24, 1967.

TRIP GRIP

For Plumbing Fixtures—Namely, Bath Drains and Parts Therefor, Namely, Lift Wires and Connecting Parts Therefor.
First use in or about October 1966.

SN 263,221. Stephen A. Young Corporation, Flora, Ind. Filed Jan. 24, 1967.

TOP-LOCK

For Plumbing Fixtures—Namely, Sink Faucets, Lavatory Faucets, Bath Faucets, and Basin Cocks.
First use in or about December 1966.

SN 263,304. Wittek Manufacturing Co., Chicago, Ill. Filed Jan. 25, 1967.

UNI-TITE

Owner of Reg. Nos. 611,313, 693,049, and 804,514.
For Hose Clamps.
First use on or about Dec. 16, 1966.

SN 267,142. Garcy Corporation, Chicago, Ill. Filed Mar. 20, 1967.

FRESCO

For Supporting Brackets and Standards Therefor To Hang Shelves and Accessories on Walls.
First use on or about July 1, 1966.

Class 14—Metals and Metal Castings and Forgings

SN 252,360. Deventer-Werke GmbH, Marburg, Germany. Filed Aug. 15, 1966.

DEVA

Owner of German Reg. No. 635,762, dated Mar. 13, 1953.
For Metals, Lead and Alloys of Base Metal in Raw and Partly Finished Form, Sintered Metal Blanks, Metal Powder, Metal Fibers, Powder-Metal Blanks, Metal-Fiber Blanks, Molded-Metal Articles, Gasketing, Sealing and Packing Metals; and Metal Castings and Forgings—Namely, Sealing Rings, Piston Rings, Stuffing Boxes, and Sockets.
First use in or about May 1958; in commerce in or about May 1958.

SN 256,055. Associated Spring Corporation, Bristol, Conn. Filed Oct. 10, 1966.

HEP

For Strips for Determining the Degree of Hydrogen Embrittlement of Metals.
First use Jan. 25, 1966.

Class 15—Oils and Greases

SN 248,956. Ashland Oil & Refining Company, Ashland, Ky. Filed June 27, 1966.

CHEMALOY

Owner of Reg. No. 715,291.
For Oil Additives.
First use Mar. 16, 1960.

SN 255,927. The Standard Oil Company, Cleveland, Ohio. Filed Oct. 6, 1966.

NITRON

Owner of Reg. Nos. 542,090, 754,910, and 754,911.
For Motor Oil.
First use May 11, 1966.

SN 257,100. Special Oils Manufacturing Co., West New York, N.J. Filed Oct. 24, 1966.



The drawing is lined for the colors orange, gold, and blue.
Owner of Reg. No. 597,269.
For Petroleum Products—Namely, Cutting Fluids, Fuel Oil Sludge Solvents Used as a Fuel Oil Additive, Concrete Form Oil, Plastic Release Agents Used as a Lubricant During a Molding Process, Penetrating Oils, Fuel and Motor Oil Additives, Metallic Soaps Used as an Additive for a Lubricant, Sulfurized Oils, High and Low Pressure Lubricating Oils and Greases.
First use Sept. 1, 1966.

SN 260,178. Jasper Pizzitola, d.b.a. Trans-Fix Manufacturing Company, Houston, Tex. Filed Dec. 6, 1966.



For Automatic Transmission Additive.
First use February 1963.

Class 16—Protective and Decorative Coatings

SN 258,997. The Flecto Company, Inc., Oakland, Calif. Filed Nov. 18, 1966.

HUMICURE

Owner of Reg. Nos. 721,528 and 755,336.
For Paint-Like Liquid Plastic, for Use on Interior and Exterior Surfaces.
First use July 13, 1966.

SN 260,969. Chester Whitfield Smith, d.b.a. Whitfield Chemical Company, Detroit, Mich. Filed Dec. 16, 1966.

WHITFIELD

For Removable Coating in the Nature of Paint for Paint Spray Booths.
First use 1948.

SN 263,961. Sterling Lacquer Manufacturing Co., St. Louis, Mo. Filed Feb. 3, 1967.

SKYMASTER

For Finishing Coating Compositions in the Nature of Synthetic Resins.
First use Dec. 21, 1966.

SN 264,155. Liquid Carpet & Wallpaper Corp., New York, N.Y. Filed Feb. 7, 1967.

LIQUID WALLPAPER

For Kind of Finish Producing a Pearl Effect for Interior and Exterior Use.
First use Dec. 1, 1966.

SN 264,948. McDougall-Butler Co., Inc., Buffalo, N.Y. Filed Feb. 17, 1967.

Caprice

For Vinyl-Latex Paint Formulated To Produce a Patterned Effect on Ceilings.
First use Jan. 31, 1967.

Class 17—Tobacco Products

SN 262,665. The American Tobacco Company, New York, N.Y. Filed Jan. 17, 1967.

LONG VIEW

Owner of Reg. No. 794,690.
For Cigarettes.
First use Jan. 9, 1967.

SN 278,770. Philip Morris Incorporated, New York, N.Y. Filed Aug. 22, 1967.

PERK

Owner of Reg. No. 829,371.
For Cigarettes.
First use Nov. 28, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 244,109. Haver-Lockhart Laboratories, Incorporated, Shawnee, Kans. Filed Apr. 22, 1966.

AMINOBOLIC

For Preparation for Supplying Amino Acids to Animals.
First use Nov. 15, 1965.

SN 251,466. Philips Roxane, Inc., New York, N.Y. Filed Aug. 1, 1966.

SF-5

For Feed Supplement—Namely, a Cultured Dairy Product Incorporated as an Ingredient in a Preparation for Prevention and Treatment of Iron Deficiency Anemia in Baby Pigs.
First use Oct. 28, 1965.

SN 259,957. Parke, Davis & Company, Detroit, Mich. Filed Dec. 2, 1966.

EUTHYMOL

Owner of Reg. No. 58,085.
For Tablet for Use in Preparing Nasal Douche, Gargle or Mouthwash.
First use on or before Nov. 14, 1966.

SN 261,716. Chemie Grunenthal G.m.b.H., Stolberg im Rheinland, Germany. Filed Dec. 30, 1966.

ACABEL

Owner of German Reg. No. 708,512, dated Nov. 19, 1957.
For Pharmaceutical Preparations—Namely, Spasmolitics, Analgesics, and Combined Preparations Containing Spasmolitics and/or Analgesics.

SN 261,796. Betan Company, Inc., Knoxville, Tenn. Filed Jan. 3, 1967.

CORANE

For Antihistamines.
First use Dec. 5, 1966.

SN 268,847. Mead Johnson & Company, Evansville, Ind. Filed Apr. 11, 1967.

DYNOVIL

For Progestational Agent.
First use on or prior to Apr. 6, 1967.

SN 269,600. International Pharmaceutical Corporation, King of Prussia, Pa. Filed Apr. 20, 1967.

DIA-QUEL

For Medication for the Control of Human Diarrhea.
First use Mar. 22, 1967.

SN 274,480. Ortho Pharmaceutical Corporation, d.b.a. Ortho Diagnostics, Raritan, N.J. Filed June 22, 1967.

ORTHOGAMM

Owner of Reg. Nos. 387,080, 807,167, and others.
For Gamma Globulin Injectable Solution.
First use June 21, 1966.

SN 277,600. Parke, Davis & Company, Detroit, Mich. Filed Aug. 7, 1967.

PREQUEST

For Antiserum for Use in Test of Pregnancy.
First use July 27, 1967.

Class 19—Vehicles

SN 255,627. Jo Bud Inc., Englewood, Colo. Filed Oct. 3, 1966.

THE LOW TRAV'LER

For Telescoping House and Camping Trailers.
First use on or about May 15, 1966.

SN 260,125. White Motor Corporation, Cleveland, Ohio. Filed Dec. 5, 1966.

REOLYTE

Owner of Reg. No. 54,722 and others.
For Trucks, Highway Tractors, and Parts Therefor.
First use at least as early as July 1964.

SN 260,259. Machinale Glasfabriek de Maas N.V., Panovenweg, Tiel, Netherlands. Filed Dec. 7, 1966.

MAASGLAS

Owner of Dutch Reg. No. 151,216, dated Apr. 1, 1964; and U.S. Reg. No. 809,258.
For Glass Windshields for Vehicles (Automobiles, Airplanes, and Ships).

SN 260,422. General Motors Corporation, Detroit, Mich. Filed Dec. 9, 1966.

PLEASURIZER

For Shock Absorbers.
First use Oct. 14, 1966.

SN 260,423. General Motors Corporation, Detroit, Mich. Filed Dec. 9, 1966.

PLEASUR-LIFT

For Shock Absorbers.
First use Oct. 14, 1966.

SN 261,599. Stanray Corporation, Chicago, Ill. Filed Dec. 28, 1966.

LYNX

For Pleasure Boats.
First use Dec. 14, 1966.

SN 279,253. D. P. Harris Hardware & Manufacturing Co., Inc., New York, N.Y. Filed Aug. 29, 1967.

ORLY

For Bicycles.
First use Nov. 4, 1963.

Class 20—Linoleum and Oiled Cloth

SN 279,138. Chris-Craft Industries, Inc., Oakland, Calif. Filed Aug. 28, 1967.

RAIN or SHINE

For Needle Punch Polypropylene Floor Covering.
First use Dec. 15, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 234,549. Electric Cleaner Company, Inc., Osseo, Wis. Filed Dec. 14, 1965.

BOOSTER POWER

For Electric Motor for Portable Vacuum Cleaner.
First use Sept. 1, 1958.

SN 241,184. General Sales Corporation, Fort Smith, Ark., assignee of Rebel Manufacturing Company, Inc., Fort Smith, Ark. Filed Mar. 16, 1966.

DOME-SITE

For Fluid Level Indicating Caps for Storage Batteries.
First use Jan. 7, 1966.

SN 245,466. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed May 12, 1966.

FANSTEEL

Owner of Reg. Nos. 179,283, 678,817, and others.
For Films for Forming Printed Electronic Circuits.
First use Sept. 21, 1965.

SN 245,620. Sanders Associates, Inc., Nashua, N.H. Filed May 13, 1966.

INSTARECT

For Extensible Masts, Extensible Booms, Extensible Reel Stored Booms and Extensible Reel Stored Masts as Used in Conjunction With Electrical Systems, Communications Systems, Space Structure Systems, and the Like.
First use May 26, 1965.

SN 245,851. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed May 17, 1966.

EV

For Switches for Electrical Power Distribution Circuits.
First use 1961.

SN 249,736. Cox & Fritts, Kansas City, Mo. Filed July 7, 1966.

KWIK CHEK

For Battery Closure Caps.
First use May 20, 1966.

SN 250,786. H. W. Tuttle & Company, Tecumseh, Mich. Filed July 21, 1966.

For Electrical Resistance Duct and Space Heaters.
First use Mar. 3, 1966.

SN 255,913. Mining & Chemical Products Limited, London, England. Filed Oct. 6, 1966.

CADMANODE

Owner of British Reg. No. 887,941, dated Dec. 8, 1965.
For Metal Anodes.

SN 257,874. Midland International Corporation, North Kansas City, Mo. Filed Nov. 3, 1966.

For Radio Receivers and Transceivers, Intercommunication Sets, Batteries and Battery Chargers.
First use in or about May 1966.

SN 257,903. Westel Company, San Mateo, Calif. Filed Oct. 21, 1966.

WESTEL

For Video Tape Recorders and Parts Thereof.
First use in or about March 1966.

SN 257,904. Westel Company, San Mateo, Calif. Filed Oct. 21, 1966.

The mark consists of a stylized "W."
For Video Tape Recorders and Parts Thereof.
First use in or about March 1966.

SN 258,194. Lightning Fastener Company Limited, St. Catharines, Ontario, Canada. Filed Nov. 7, 1966.

LIGHTNING CIRCUITS

Applicant disclaims the word "Circuits" apart from the mark as shown. Owner of Canadian Reg. No. 140,689, dated June 11, 1965.
For Components of Electrical Systems—Namely, Printed Circuit Boards and Circuit Modules.

SN 259,342. Rogers Corporation, Rogers, Conn. Filed Nov. 23, 1966.

SF/DUROID

For Electrical Insulating Materials, Sold in Sheets or in Continuous Rolls.
First use on or about July 15, 1963.

SN 262,299. Columbia Technical Corporation, Woodside, N.Y. Filed Jan. 11, 1967.

INDOMICA

For Mica Plate for Electrical Insulation.
First use Dec. 8, 1966.

Class 22—Games, Toys, and Sporting Goods

SN 258,107. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed Nov. 7, 1966.

Frenchy Fry

The name "Frenchy Fry" is fictitious.
For Toy Kit Comprising Parts Sold as a Unit for Making Unusual Toy Figures.
First use on or about Oct. 14, 1966.

SN 258,111. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed Nov. 7, 1966.

Frankie Frank

The name "Frankie Frank" is fictitious.
For Toy Kit Comprising Parts Sold as a Unit for Making Unusual Toy Figures.
First use on or about Oct. 14, 1966.

SN 260,320. Herbert S. Collin, Boston, Mass. Filed Dec. 8, 1966.

Probability

For Equipment for Playing Card Games—Namely, Playing Cards, Instructions, and Score Sheets.
First use Sept. 13, 1966.

SN 261,620. The Avalon Hill Company, Baltimore, Md. Filed Dec. 29, 1966.

SHAKESPEARE

For Equipment Sold as a Unit for Playing a Board Game.
First use Aug. 17, 1966.

SN 265,525. James W. Hetrick, St. Marys, Pa. Filed Feb. 27, 1967.



For Fishing Lures, Jigs, Hooks, and Fishing Equipment of All Kinds.
First use June 2, 1966.

SN 265,601. Astor Playing Card Co., Inc., New York, N.Y. Filed Feb. 28, 1967.

ASTOR

For Playing Cards.
First use Jan. 3, 1957.

SN 265,815. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Mar. 2, 1967.

RANGER

For Golf Balls.
First use Jan. 31, 1967.

SN 278,644. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

HOT WHEELS

For Scale Model Toy Vehicles.
First use July 20, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 240,284. Firma Franz Müller, Monchen-Gladbach, Germany. Filed Mar. 7, 1966.



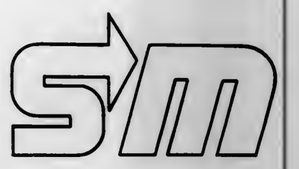
Owner of German Reg. No. 679,885, dated Aug. 2, 1955.
For Napping Machines.

SN 241,408. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Mar. 21, 1966.

BIO-CON

For Package Plant for Treatment of Sewage and Other Waste Products.
First use Sept. 8, 1965.

SN 246,616. The Soil Mover Manufacturing Corporation, Columbus, Nebr. Filed May 25, 1966.



For Farm and Industrial Equipment—Namely, Scrapers, Back-Fill Blades, Ditchers, and Levelers.
First use as early as 1963, on scrapers.

SN 250,292. Munck International A/S, Bergen, Norway. Filed July 14, 1966.

MUNCK PALSTAK

For Stacker Cranes Used in Warehouses.
First use May 1965; in commerce November 1965.

SN 253,906. Pines Engineering Co., Inc., Aurora, Ill. Filed Sept. 6, 1966.

NUMRI-FORM

For Numerically Controlled Tube-Bending Machines.
First use Sept. 17, 1963.

SN 255,553. Standard Oil Company of California, San Francisco, Calif. Filed Sept. 30, 1966.



For Windshield Scrapers.
First use Sept. 7, 1966.

SN 255,554. Standard Oil Company of California, San Francisco, Calif. Filed Sept. 30, 1966.

CHEVRON

For Windshield Scrapers.
First use Sept. 7, 1966.

SN 255,833. Textron Inc., Providence, R.I. Filed Oct. 5, 1966.

HOMELITE

Owner of Reg. Nos. 151,508, 770,727, and others.
For Power Operated, Portable Circular Saws.
First use June 22, 1964.

SN 255,987. Anna Margaret Kirkpatrick, d.b.a. Brevitype, Lemon Grove, Calif. Filed Oct. 7, 1966.

BREVITYPE

For Shorthand Writing Machines.
First use Oct. 15, 1945.

SN 256,789. Yeomans Brothers Company, Melrose Park, Ill. Filed Oct. 19, 1966.

YEOCONE

Owner of Reg. Nos. 510,855, 809,855, and others.
For Surface Aerators.
First use Nov. 18, 1965.

SN 258,000. Sterling-Detroit Company, Detroit, Mich. Filed Nov. 4, 1966.

CQT.*

For Belt Conveyors, and Quenching and Trimming Stations for the Automation of Die-Casting Machines.
First use Nov. 1, 1965.

SN 258,189. Keystone Supplies Ltd., Vancouver, British Columbia, Canada. Filed Nov. 7, 1966.

NALCO

Priority claimed under Sec. 44(d) on Canadian application filed June 3, 1966; Reg. No. 150,355, dated Apr. 21, 1967.
For Wire Rope Blocks and Sledge Hammers.
First use as early as 1960; in commerce as early as 1960.

SN 258,949. Wayne Home Equipment Co., Inc., Fort Wayne, Ind. Filed S.R. 11-17-66; Am. P.R. 8-31-67.

PORTAPUMP

Applicant disclaims the word "Pump" apart from the mark as shown.
For Self-Priming Water Pumps.
First use Sept. 19, 1966.

SN 259,418. The Gates Rubber Company, Denver, Colo. Filed Nov. 25, 1966.

Gates

Owner of Reg. Nos. 424,054, 549,898, and others.
For Grooved Pulleys.
First use Oct. 28, 1944.

SN 259,588. Stevens Corporation, Fort Worth, Tex. Filed Nov. 28, 1966.

MULTI-SIZE

For Printing Presses and Associated Equipment Therefor—Namely, Sheeters, Binders, Folders, and Parts Therefor.
First use at least as early as Sept. 1, 1964.

SN 260,316. Arrow Manufacturing Company, Denver, Colo. Filed Dec. 8, 1966.



Owner of Reg. Nos. 433,570 and 810,434.
For Tractors and Tractor Mounted Accessories and Attachments—Namely, Hammers, Drills, Post Drivers, Side-Boom Cranes, and Auger Backfillers.
First use Apr. 1, 1966.

SN 260,564. Mosley Machinery Co., Inc., Waco, Tex. Filed Dec. 12, 1966.

SNIPPY

For Heavy Duty Apparatus for Severing Scrap Metal by Piercing and Tearing.
First use on or about Nov. 18, 1966.

SN 260,567. Mosley Machinery Co., Inc., Waco, Tex. Filed Dec. 12, 1966.



For Heavy Duty Apparatus for Compacting and Shearing Scrap Metal and for Severing Scrap Metal by Piercing and Tearing.
First use on or about Nov. 18, 1966.

SN 260,656. Eureka Products Company, Inc., Newark, N.J. Filed Dec. 13, 1966.

POWERHOUSE

For Aquarium Pumps.
First use Oct. 1, 1965.

SN 260,864. Lloyd A. Kreider, d.b.a. G.D.L. Machine & Tool Co., Sturgis, Mich. Filed Dec. 15, 1966.

KRIDERKUT

For Metal Working Machines.
First use May 1, 1961.

SN 262,360. Vaughan & Bushnell Mfg. Co., Chicago, Ill. Filed Jan. 11, 1967.

SAFETY FIRST

For Ball Peen Hammers and Similar Striking Tools.
First use Dec. 12, 1966.

SN 272,614. The J. B. Knight Company, Inc., Brownfield, Tex. Filed May 29, 1967.

TRI-MATIC

Owner of Reg. No. 791,760.
For Self-Propelled Sprinkler Irrigation System.
First use Jan. 24, 1964.

Class 24—Laundry Appliances and Machines

SN 255,354. Radio Corporation of America, New York, N.Y. Filed Sept. 28, 1966.

RCA

Owner of Reg. Nos. 589,647, 709,060, and others.
For Dry Cleaning Machines and Parts Thereof.
First use July 29, 1960.

Class 26—Measuring and Scientific Appliances

SN 232,081. Minolta Corporation, New York, N.Y., assignee of Minolta Camera Company, Ltd., Minami-ku, Osaka, Japan. Filed Nov. 3, 1965.

AUTOPAK-8

Owner of Reg. Nos. 647,455 and 649,285.
For Cameras.
First use Aug. 4, 1965; in commerce Sept. 1, 1965.

SN 237,195. Baird-Atomic, Inc., Cambridge, Mass. Filed Jan. 25, 1966.

BA BAIRD-ATOMIC

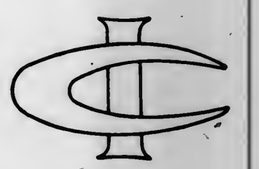
For Optical, Electro-Optical, Electronic and Nuclear Instrumentation—Namely, Accumulators, Amplifiers, Bolometers, Dosimeters, Electro-Medical Equipment, Paging Receivers, Photometers, Transistor Test Instruments, Turbidity Indicators, Densitometers, Emission Spectrophotometers, Absorption Spectrophotometers, Evaporographs, Gas Analyzers, Infrared Spectrophotometers, Interferometers, Spectrographs, Analyzers, Counters, Rate and Survey Meters, Scalers and High Temperature Laboratory Furnaces.
First use Nov. 17, 1965.

SN 242,860. Torque Controls, Inc., South El Monte, Calif. Filed Apr. 6, 1966.

TCI

For Hand Operated Torque Testers and Hand Operated Torque Gages.
First use May 16, 1961.

SN 245,716. Intertech Corporation, Princeton, N.J. Filed May 16, 1966.



For Optical Interferometers and Wind Tunnels.
First use June 1962.

SN 248,931. Spex Industries Inc., Metuchen, N.J. Filed June 24, 1966.

SPEX

For Measuring and Scientific Instruments—Namely, Spectroscope, Spectrometer, Spectrograph, Spectrophotometer, Polarimeter, and Colorimeter.
First use June 1, 1959.

SN 255,343. Optomechanisms, Inc., Plainview, N.Y. Filed Sept. 28, 1966.

DIGIDISC

For Linear Measuring Apparatus, Comprising a Pair of Traveling Wheel Operated Encoder-Transmitters Connected to Digital Display Means.
First use July 11, 1966.

SN 255,856. Amermac, Inc., Americus, Ga. Filed Oct. 6, 1966.

AMERMAC

For Machinery for Correcting Defects in Automobile Wheels, Including Tire Trueing Machines, Electrical and Electronic Passenger Car and Wheel Spin Balancers To Determine the Amount and Location of the Unbalanced Parts of Automobile Tires and Wheels, Roller Bearing Wheel Sets, Jack Ramps, Universal Truck Adapters for Disc-Type Wheels, and Gauges for Rapidly Determining the Amount of Out of Trueness of Wheels and Tires.
First use on or about July 24, 1959.

SN 257,221. Web Press Engineering, Inc., Addison, Ill. Filed Oct. 25, 1966.

WEB PRESS

The words "Web Press" are disclaimed apart from the mark as shown, but applicant waives none of its common law rights in the mark shown, or any feature thereof.
For Automatic Controls for Printing Presses Responsive to Variables Such as Positioning of Web, Tension on Web, Conditioning of Web Prior to Printing, Printing Ink, Quality and Feed, Web Temperature, Chill Roll Temperature, and the Like.
First use September 1962.

SN 262,772. Devco, Inc., Detroit, Mich. Filed Jan. 18, 1967.

DEVCO STAINOMATIC

For Tissue-Staining and Microscopic Slide Processing Unit for Laboratory and Hospital Applications.
First use Oct. 11, 1965.

SN 263,285. Otter Controls Limited, Buxton, England. Filed Jan. 25, 1967.

OTTER

For Thermostats.
First use 1947; in commerce 1950.

SN 263,462. Grinnell Corporation, Providence, R.I. Filed Jan. 27, 1967.

PROTOMATIC

For Pneumatic Rate of Temperature Rise Valve Release for Use in Fire Protection Systems.
First use Nov. 27, 1966.

SN 264,059. Holotron Corporation, Wilmington, Del. Filed Feb. 6, 1967.

HOLOTRON

For Holograms.
First use Nov. 30, 1966.

SN 264,187. The Bendix Corporation, Detroit, Mich. Filed Feb. 8, 1967.

AUTOSYN

Owner of Reg. No. 610,993.
For Electrical Transmitting and/or Receiving Devices of the Telemetric Type by Means of Which a Function Is Measured at One Point and Transmitted to and Indicated at Another and Remote Point or Transmitted to Another and Remote Point To Provide a Control Force Thereat.
First use Jan. 9, 1933.

SN 273,955. Gakken Company Limited, Ota-ku, Tokyo, Japan. Filed June 15, 1967.

gakken

For Cameras and Cine-Projectors.
First use Oct. 15, 1965; in commerce Aug. 15, 1966.

Class 27—Horological Instruments

SN 252,979. Waltham Watch Company, Chicago, Ill. Filed Aug. 23, 1966.

Waltham

Owner of Reg. Nos. 86,188, 431,380, and others.
For Watches.
First use Jan. 1, 1961; on or about Dec. 1, 1859, as to "Waltham" in a different form.

SN 262,344. Medco, Inc., Kansas City, Mo. Filed Jan. 11, 1967.

TIME CAT

For Watches.
First use Dec. 6, 1966.

SN 263,273. Jeco Company, Limited, Meguro-ku, Tokyo, Japan. Filed Jan. 25, 1967.



Owner of Japanese Reg. No. 712,002, dated July 1, 1966.
For Clocks.
First use Oct. 1, 1964; in commerce July 1966.

SN 263,356. Criterion Watch Company, Inc., Brooklyn, N.Y. Filed Jan. 26, 1967.

Lady Arthur

The name "Lady Arthur," forming the mark, is fanciful.
For Ladies' Wrist Watches, Ladies' Pendant Watches, Clocks, and Other Types of Novelty Watches and Clocks.
First use Jan. 4, 1967.

SN 263,357. Criterion Watch Company, Inc., Brooklyn, N.Y. Filed Jan. 26, 1967.

Criterion

For Men's Wrist Watches, Men's Pocket Watches, Ladies' Wrist Watches, Ladies' Pendant Watches, Clocks, and Other Types of Novelty Watches and Clocks.
First use July 1966.

SN 263,358. Criterion Watch Company, Inc., Brooklyn, N.Y. Filed Jan. 26, 1967.

Lord Arthur

The name "Lord Arthur," forming the mark, is fanciful.
For Men's Wrist Watches, Pocket Watches, Pendant Watches, Clocks, and Other Types of Novelty Watches and Clocks.
First use Jan. 4, 1967.

SN 265,315. Medco, Inc., Kansas City, Mo. Filed Feb. 23, 1967.

BONAIRE

For Watches.
First use Dec. 27, 1966.

SN 270,781. Hammel, Riglander & Company, Inc., New York, N.Y. Filed May 5, 1967.

FITRITE

Owner of Reg. Nos. 195,549 and 79,245.
For Watch and Clock Materials—Namely, Watch and Clock Main-Springs, Stems, Balance Staffs, Setting Levers, Screws, Wheels, Winding and Clutch Pinions, Jewels, Hairsprings, Clicks and Click Springs.
First use May 1, 1923.

SN 270,970. H. Steele y Cia., S.A., Mexico City, Mexico. Filed May 8, 1967.

STEELCO

Owner of Mexican Reg. No. 28,184, dated July 10, 1928.
For Watches and Clocks and Parts Thereof.

Class 28 — Jewelry and Precious-Metal Ware

SN 240,876. Gaytone Products Inc., Dayton, Ohio. Filed Mar. 14, 1966.

GAY

For Rings.
First use July 19, 1958.

SN 257,206. Spritzer & Fuhrmann-New York, Inc., New York, N.Y. Filed Oct. 25, 1966.

S+F

For Jewelry and Precious Metalware—Namely, Pins, Rings, Earrings, and Dresser Sets.
First use May 1, 1965.

SN 261,403. S-K-L Co., Inc., New York, N.Y. Filed Dec. 23, 1966.

BEAUTYCREST

For Jewelry for Personal Wear, Not Including Watches.
First use February 1953.

SN 263,900. Duchess Jewelry Mfg. Corp., Hoboken, N.J. Filed Feb. 3, 1967.

ST. JAMES

For Watch Bands.
First use Jan. 5, 1967.

SN 264,081. Najarda Corporation, New York, N.Y. Filed Feb. 6, 1967.

NACRO-LUSTRE

For Shell-Base Simulated Pearls.
First use April 1965.

SN 264,441. Oneida Ltd., Oneida, N.Y. Filed Feb. 10, 1967.

PEMBROOKE

Owner of Reg. Nos. 436,280, 646,815, and others.
For Sterling Silver Flatware.
First use Jan. 30, 1967.

SN 267,392. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers, Philadelphia, Pa. Filed Mar. 23, 1967.

PLAIN & Fancy

For Diamond Rings.
First use on or about Oct. 14, 1966.

SN 270,616. Schmid & Son, Inc., Mountainside, N.J. Filed May 3, 1967.



For Jewelry.
First use Mar. 1, 1967.

SN 271,163. The Mates Company, Hyannis, Mass. Filed May 10, 1967.



For Jewelry.
First use Feb. 10, 1967.

SN 274,788. Tiffany and Company, New York, N.Y. Filed June 26, 1967.

TEECO

For Jewelry.
First use Apr. 27, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 240,595. Dustikin Products, Inc., Bronx, N.Y. Filed Mar. 10, 1966.

DUSTIKINS

Owner of Reg. No. 802,904.
For Wipers—Namely, Dusting and Polishing Cloths.
First use June 7, 1956.

SN 250,003. AB. Bo Landberg & Co., Ormaryd, Sweden. Filed July 11, 1966.

CHAMP-PAD

For Artificial Sponges, Artificial Chamois Cloths, Artificial Sponge Mops, Both Non-Impregnated and Impregnated With Cleaning and/or Polishing Materials.
First use April 1965; in commerce September 1965.

SN 260,555. M. u. C. Schiffer, Neustadt-Wied Uber Linz (Rhine), Germany. Filed Dec. 12, 1966.

ship

Owner of German Reg. No. 706,282, dated Sept. 12, 1957.
For Toothbrushes.

SN 262,304. All-American Brush Mfg. Corp., Newark, N.J. Filed Jan. 11, 1967.

DISCO

For Hair Brush.
First use July 1, 1964.

Class 32 — Furniture and Upholstery

SN 256,467. New Concepts Inc., Armonk, N.Y. Filed Oct. 14, 1966.

SHOWMATIC

For Display Rack for Merchandise and Advertising Material.
First use Aug. 12, 1966.

SN 256,469. Novelty Pillows, Inc., Columbus, Ga. Filed Oct. 14, 1966.

Glamour Comfort

Applicant disclaims the use of the expression "Comfort" apart from its use in the mark as a whole.
For Pillows.
First use June 9, 1966.

SN 258,165. The Spring Air Company, Chicago, Ill. Filed Nov. 7, 1966.

QUILT-LOC

For Mattresses and Box Springs.
First use Jan. 21, 1966.

SN 258,914. Albert M. Lock & Son, Inc., Boston, Mass. Filed Nov. 17, 1966.



For Furniture for Living Rooms, Dining Rooms, Bedrooms, Occasional Furniture, and Framed Mirrors.
First use Apr. 8, 1966.

SN 261,914. Bro-Dart Industries, Newark, N.J., by merger from Bro-Dart Industries, Inc., Newark, N.J. Filed Jan. 4, 1967.

SHELF-GRIP

For Book Supports.
First use July 22, 1966.

SN 262,470. Aimcee Wholesale Corporation, New York, N.Y. Filed Jan. 13, 1967.

AMCREST

For Men's Valet Stands.
First use April 1965.

SN 263,402. Rose-Derry Company, Newton, Mass. Filed Jan. 26, 1967.

ROCK-A-TUNE LOUNGER

Applicant claims no rights in the word "Lounger," apart from the mark as shown.
For Infant's Reclining Chairs.
First use Jan. 2, 1965.

SN 264,213. Hoover Ball and Bearing Company, Saline, Mich. Filed Feb. 8, 1967.

Uni-coil

For Wire Springs for Seat Structures.
First use Dec. 27, 1966.

SN 268,533. The Shaw-Walker Company, Muskegon, Mich. Filed Apr. 6, 1967.

DUO-Syncro

For Office Furniture.
First use Mar. 31, 1967.

SN 269,182. The General Fireproofing Company, Youngstown, Ohio. Filed Apr. 14, 1967.

GF

Owner of Reg. Nos. 286,715, 755,074, and others.
For Desks, Consoles, Chairs, and Filing Cabinets.
First use Apr. 10, 1962; Apr. 29, 1931, as to the letters "GF" in a different form.

SN 269,657. The General Fireproofing Company, Youngstown, Ohio. Filed Apr. 20, 1967.

LO-4

For Filing Cabinets.
First use Feb. 27, 1967.

SN 270,603. Orna-Metal, Inc., St. Louis, Mo. Filed May 3, 1967.



For Metal Office Furniture.
First use Jan. 7, 1967.

SN 270,772. The Englander Company, Inc., New York, N.Y. Filed May 5, 1967.

CRAFT-MASTER

For Mattresses and Springs and Bed and Sofa Combinations.
First use Jan. 4, 1967.

SN 272,139. Classic Furniture Inc., Fort Smith, Ark. Filed May 23, 1967.



For Wood-Grained Plastic Material Made Into Occasional Furniture.
First use at least as early as Jan. 27, 1967.

SN 275,019. John Stuart International, Inc., New York, N.Y. Filed June 29, 1967.

SR²

For Chairs.
First use Apr. 14, 1967.

SN 279,351. Visirecord, Inc., Coplague, N.Y. Filed Aug. 30, 1967.

VISIcard

Owner of Reg. Nos. 389,598, 828,555, and others.
For Card-Holding Device, Consisting of One or More Visible Reference Panels, for Use in Record-Keeping Systems, and Filing Cards for Use Therewith.
First use Aug. 14, 1967.

Class 33 — Glassware

SN 267,386. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Mar. 23, 1967.

LIVING GLASS

No claim is made to the word "Glass" apart from the trademark as shown, without waiver of any common law rights.
For Glass Tableware.
First use during December 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 243,084. Lester T. Bowers, d.b.a. Scott Chemical & Welding Products Co., Oreland, Pa. Filed Apr. 11, 1966.

SPATTER PADDER

The word "Spatter" is disclaimed apart from the mark as shown.
For Anti-Spatter Welding Compound.
First use Dec. 10, 1964.

SN 249,305. Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany. Filed June 30, 1966.



Owner of German Reg. No. 461,232, dated Nov. 20, 1933; and U.S. Reg. Nos. 790,394, 799,460, and 799,796.
For Air Conditioners and Structural Parts Thereof.

SN 257,147. Atlantic Company, Atlanta, Ga. Filed Oct. 25, 1966.

WORLD BAZAAR

For Iron Wall Sconces, Iron Candle Holders, Iron Barbecues, Grills, and Brass Candlestick Holders.
First use on or about Nov. 15, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 239,817. Clifton T. Spear, d.b.a. The Diamond Spear Co., Texarkana, Tex. Filed Feb. 28, 1966.

PERMO-WELD

For Blow-Out and Nail Hole Boots, Hose and Tire Repair Kits and Patches.
First use Jan. 2, 1920.

Class 36 — Musical Instruments and Supplies

SN 234,911. Mastertape (Magnetic) Limited, Colnbrook, Slough, England. Filed Dec. 20, 1965.

MAGICLEAD

Priority claimed under Sec. 44(d) on British Reg. No. 886,179, dated Oct. 28, 1965.
For Sound Records and Magnetic Recording Tapes.

SN 237,541. Crown Radio Corporation, Taito-ku, Tokyo, Japan. Filed Jan. 28, 1966.

Auto-Level

For Tape Recorders.
First use Jan. 6, 1966; in commerce Jan. 6, 1966.

SN 256,342. Bärenreiter-Verlag Karl Vötterle K.G., Kassel-Wilhelmshohe, Germany. Filed Oct. 13, 1966.



Applicant disclaims "Bach-Studio" apart from the mark as shown. Owner of German Reg. No. 804,904, dated June 3, 1965.
For Phonograph Records; Prerecorded Magnetic Tapes and Prerecorded Magnetic Belts.

SN 257,077. Phipps Piano Co., Inc., Birmingham, Ala. Filed Oct. 24, 1966.

CHEAPEE

For Pianos, Organs, Guitars, Drums, Trumpets, Saxophones, Clarinets, Banjos, and Trombones.
First use Sept. 1, 1966.

SN 257,404. Product Forming Corporation, Elkhart, Ind. Filed Oct. 27, 1966.

DURITE

For Musical Instrument Cases.
First use Nov. 16, 1965.

SN 257,876. Midland International Corporation, North Kansas City, Mo. Filed Nov. 3, 1966.



For Phonographs, Tape Recorders, Tape Players, and Accessories Therefor.
First use in or about May 1966.

SN 258,308. Melvin Kaiser, d.b.a. Melmark Records, Arcadia, Calif. Filed Nov. 9, 1966.



The word "Records" and the representation of the music staff and the music notes are disclaimed apart from the mark as shown.
For Phonograph Records and Tape Recordings.
First use May 12, 1965.

SN 267,068. Scientific Music Industries, Inc., Chicago, Ill. Filed Mar. 17, 1967.

TONE EDUCATOR

Applicant disclaims the word "Tone" apart from the mark as shown.
For Sets of Musical Tone Bars Mounted Upon Resonating Chambers.
First use Mar. 10, 1960.

SN 271,408. F.E.L. Church Publications, Ltd., Chicago, Ill. Filed May 15, 1967.

FLAIR

For Phonograph Records.
First use in or about October 1966.

SN 275,414. Discos Musart, S.A., Azcapotzalco, D.F., Mexico. Filed July 6, 1967.

MUSART

For Phonograph Records and Stereo Tape Cartridges.
First use April 1959; in commerce April 1959.

Class 37—Paper and Stationery

SN 239,896. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 1, 1966.

DRAFTRACE

For Tracing Vellum.
First use November 1958.

SN 244,201. L. & C. Hardtmuth, Inc., Bloomsbury, N.J., assignee of Eberhard Faber Inc., Wilkes-Barre, Pa. Filed Apr. 25, 1966.

PROJECTACHROME

For Marking Pens.
First use Apr. 13, 1966.

SN 251,590. The Acme Shear Company, Bridgeport, Conn. Filed Aug. 3, 1966.

WESTCOTT

Owner of Reg. No. 585,949.
For Paper Fasteners.
First use about July 28, 1966.

SN 258,261. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Nov. 8, 1966.

MINUET

Owner of Reg. No. 749,860.
For Paper Napkins and Bathroom Tissue.
First use January 1959.

SN 263,765. Lindy Pen Company Incorporated, North Hollywood, Calif. Filed Feb. 1, 1967.

AUDITOR'S SHORTY

Owner of Reg. No. 815,488.
For Ball Point Pens.
First use during October 1955.

SN 263,977. Zip-Mark Corporation, Bordentown, N.J. Filed Feb. 3, 1967.

PERM-INK

For Felt Tipped Marking Pens.
First use Jan. 6, 1967.

SN 264,309. Eastex Incorporated, Silsbee, Tex. Filed Feb. 9, 1967.

TEXSEAL

Owner of Reg. Nos. 637,744, 797,819, and others.
For Polyethylene-Coated Board for Manufacture of Cartons, Containers, etc.
First use Jan. 17, 1967.

SN 264,317. Fort Howard Paper Company, Green Bay, Wis. Filed Feb. 9, 1967.

Edon

Owner of Reg. No. 610,423.
For Paper Napkins and Paper Towels.
First use Feb. 2, 1967.

SN 264,731. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed Feb. 15, 1967.

DART

For Marking Pens.
First use Jan. 31, 1967.

SN 264,792. Beekley Corporation, West Hartford, Conn. Filed Feb. 16, 1967.

SHARP

For Hospital Record Forms.
First use in or about July 1963.

SN 264,793. Beekley Corporation, West Hartford, Conn. Filed Feb. 16, 1967.

Micro-Mount

For Mounting Sheets for Reports.
First use in or about June 1961.

SN 265,214. Scott Paper Company, Philadelphia, Pa. Filed Feb. 21, 1967.

VIVA

Owner of Reg. No. 815,882.
For Paper Towels and Paper Napkins.
First use Feb. 10, 1967.

SN 265,519. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Feb. 27, 1967.

Hallmark

Owner of Reg. No. 113,655.
For Writing Instruments—Namely, Pens and Pencils, and Parts Thereof.
First use July 7, 1916.

SN 265,666. Tuckersharpe Pen Company, Inc., Richmond, Va. Filed Feb. 28, 1967.

SCORE

For Ink Marking Pens.
First use about December 1966.

SN 274,101. Sperry Rand Corporation, New York, N.Y. Filed June 16, 1967.

REDI-FILE

For File Folders.
First use Sept. 27, 1945.

Class 38—Prints and Publications

SN 235,530. Rudkin-Wiley Corporation, Seymour, Conn. Filed Dec. 29, 1965.

Chord-a-Ranger

For Printed Sliding Chart for Selecting Chord Forming Musical Notes.
First use on or about Dec. 15, 1965.

SN 239,913. Verna M. Leonard, Fresno, Calif. Filed Mar. 1, 1966.

GLO-NOTE

For Printed Movable Charts for Musical Instruction.
First use Oct. 15, 1965.

SN 253,121. The Christian Science Board of Directors of The Mother Church, The First Church of Christ, Scientist, in Boston, Mass., Boston, Mass. Filed Aug. 25, 1966.



For Books Containing Hymns of The Christian Science Church.
First use on or about Feb. 8, 1932.

SN 255,876. Cube Card Corp., San Rafael, Calif. Filed Oct. 6, 1966.

HARPOON

For Three-Dimensional Greeting Cards.
First use Sept. 8, 1966.

SN 257,382. Graphic Products Corporation, Rolling Meadows, Ill. Filed Oct. 27, 1966.

FORMATT

For Graphic Art Aids—Namely, Printed Adhesive-Backed Transfer Sheets of Letters, Numbers, Symbols, Borders, Rulings, Corners, Leaders, Ornaments, Photo-Masks, and Shadings.
First use Oct. 1, 1962.

SN 258,590. Seymour Mittelmark Organization, Inc., New York, N.Y. Filed Nov. 14, 1966.

DRESSVERTISING WEEKLY

The word "Weekly" is disclaimed apart from the mark as shown.
For Weekly Bulletin.
First use January 1956.

SN 258,591. Seymour Mittelmark Organization, Inc., New York, N.Y. Filed Nov. 14, 1966.

BAGVERTISING WEEKLY

The word "Weekly" is disclaimed apart from the mark as shown.
For Weekly Bulletin.
First use January 1956.

SN 258,592. Seymour Mittelmark Organization, Inc., New York, N.Y. Filed Nov. 14, 1966.

HATVERTISING WEEKLY

The word "Weekly" is disclaimed apart from the mark as shown.
For Weekly Bulletin.
First use January 1956.

SN 258,593. Seymour Mittelmark Organization, Inc., New York, N.Y. Filed Nov. 14, 1966.

COATVERTISING WEEKLY

The word "Weekly" is disclaimed apart from the mark as shown.
For Weekly Bulletin.
First use January 1956.

SN 259,088. Continental Oil Company, Ponca City, Okla. Filed Nov. 21, 1966.

CONOCO

For Company Magazines.
First use Jan. 20, 1963.

SN 260,549. Happiness, Inc., Kansas City, Kans. Filed Dec. 12, 1966.

LOVABLES

For Greeting Cards.
First use Nov. 25, 1966.

SN 260,857. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Dec. 15, 1966.

LOVERLIES

For Greeting Cards.
First use Mar. 24, 1966.

SN 260,872. The Miller Publishing Company, Minneapolis, Minn. Filed Dec. 15, 1966.

manufactured milk products journal

For Monthly Trade Magazine.
First use Dec. 15, 1910.

SN 263,699. Safeguard Business Systems Corporation, Lansdale, Pa. Filed Jan. 31, 1967.

BUDGET-GUARD

For Printed Material Used as a Home Budget Accounting System.
First use Jan. 11, 1967.

SN 263,844. New England Teen Scene, Inc., Revere, Mass. Filed Feb. 2, 1967.

New England TEEN SCENE

Applicant disclaims the wording "Scouting for Local Talent."
For Magazine.
First use Dec. 14, 1966.

SN 265,592. Acoustical Publications, Inc., Cleveland, Ohio. Filed Feb. 28, 1967.

SV sound and vibration

No registration rights are claimed for the words "Sound" and "Vibration" apart from the mark as shown.
For Magazine Published Periodically Relating to Engineering Acoustics and Sound and Vibration Control.
First use on or about Jan. 24, 1967.

SN 269,251. Claude Michael, Inc., Glendale, Calif. Filed Apr. 17, 1967.

SOLDERING Tips

For House Organ Published Periodically Pertaining to Soldering and Related Matters.
First use at least as early as March 1962.

SN 270,324. Xerox Corporation, Rochester, N.Y. Filed May 1, 1967.

CHALLENGES IN CURRENT AFFAIRS

For Paperback Books.
First use July 14, 1966.

SN 277,238. Columbia Broadcasting System, Inc., New York, N.Y. Filed July 31, 1967.



The drawing is lined for the color green.
For Series of Booklets Containing Printed Marketing Studies.
First use on or about July 6, 1965.

SN 277,501. National Machine Tool Builders' Association, Washington, D.C. Filed Aug. 4, 1967.

nmtba

For Bulletins; Newsletters; Technical and Training Textbooks; Instruction Manuals; Directories; Booklets; Statistical Releases; and Press Releases Concerning Matters of Interest to the Machine Tool Industry.
First use June 15, 1964.

Class 39 — Clothing

SN 221,904. Donnkenny, New York, N.Y. Filed June 24, 1965.

donny-press

For Ladies' and Misses' Dresses, Blouses, Shirts, Pants, Slacks, Jackets, and Skirts.
First use Apr. 26, 1965.

SN 235,011. Robbie Jo Parks, Madisonville, Ky. Filed Dec. 21, 1965.

girlstuf

For Women's Wearing Apparel—Namely, Scarves and Smocks.
First use Oct. 5, 1965.

SN 235,681. The Klinger Manufacturing Company, Ltd., London, England. Filed Jan. 3, 1966.

SOFLONS

For Ladies' Stockings.
First use Nov. 29, 1965; in commerce Nov. 29, 1965.

SN 236,747. Handcraft Company, Inc., Princeton, Wis. Filed Jan. 18, 1966.

Boudoirettes

For Bedroom Slippers.
First use Aug. 16, 1965.

SN 248,325. Sally Gee Creations, d.b.a. Sally Gee, Inc., New York, N.Y. Filed June 17, 1966.

SALLY GEE
NEW YORK
THE SHOWCASE OF
THE WORLD

"Sally Gee" identifies "Sally Goldenstein" a living individual whose consent is of record. The expression "New York, the Showcase of the World" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 748,503 and 768,813.
For Sportswear—Namely, Sweaters, Skirts, Scarves, and Stoles.
First use Oct. 15, 1962; 140 as to "Sally Gee."

SN 249,587. Shoe House, Inc., Memphis, Tenn. Filed July 5, 1966.

the Enchanted Shoe

The word "Shoe" is disclaimed apart from the mark as shown.
For Children's Footwear.
First use on or about June 15, 1966.

SN 249,735. Ivan E. Cox, Kansas City, Mo. Filed July 7, 1966.

Crestwood Kickers

"Kickers" is disclaimed except in conjunction with other features of the mark.
For Men's Shoes.
First use on or about June 1, 1966.

SN 251,068. Murphy, Brill and Sahner, Incorporated, New York, N.Y. Filed July 26, 1966.

Rollers

For Hosiery.
First use January 1956.

SN 251,216. Huntley Knitting Mills, Inc., York, S.C. Filed July 28, 1966.

Will de Laine

The mark "Will de Laine" is the given name of Will de Laine Sachsenmaier of Fort Lauderdale, Florida, whose written consent to use and register such name as a trademark is of record. Owner of Reg. No. 423,989.
For Sweaters and Shirts.
First use on or about Jan. 1, 1957.

SN 251,289. H. Daroff & Sons, Inc., Philadelphia, Pa. Filed July 29, 1966.

Natural Gentlemen

For Men's Suits, Topcoats, and Overcoats.
First use on or about June 15, 1961.

SN 252,262. Knit Products Corporation, Belmont, N.C. Filed Aug. 12, 1966.

TOOTSEES

For Anklets.
First use Feb. 27, 1964.

SN 255,721. Queen's-Way to Fashion, Inc., Niles, Ill. Filed Oct. 4, 1966.

Queen's-Way to Fashion

For Women's and Children's Clothing—Namely, Suits, Jackets, Skirts, Dresses, Coats, Blouses, Shirts, Shorts, Vests, Sweaters, Slacks, Pullovers, Shifts, Nightgowns, Robes, Dusters, and Pajamas.
First use March 1952.

SN 256,000. Piedmont Shirt Company, Greenville, S.C. Filed Oct. 7, 1966.

AWARD TRADITIONAL

For Men's and Boys' Shirts, Pajamas, and Swimwear.
First use Aug. 16, 1966.

SN 257,209. Superba Cravats, Inc., Rochester, N.Y. Filed Oct. 25, 1966.

DON LOPER

"Don Loper" is the name of a living individual whose consent is of record.
For Neckties, Men's Dress Shirts, Men's Sport Shirts, Men's Play Shorts, Men's Walking Shorts, Men's Swim Wear and Swim Trunks, Men's Cabana Sets, Men's Sweaters, and Men's Slacks.
First use Jan. 2, 1962.

SN 260,810. Anderson Brothers Consolidated Companies, Incorporated, Danville, Va. Filed Dec. 15, 1966.

ANDERALL

For Coveralls.
First use Oct. 18, 1966.

SN 260,874. National Merchandising Corporation, New York, N.Y. Filed Dec. 15, 1966.

NOBLEPRESS

No claim is made to the word "Press" apart from the mark as shown. Owner of Reg. Nos. 629,622, 819,143, and others.
For Dress and Sport Shirts for Men and Boys; Skirts, Pants, Dress and Sport Shirts and Blouses, Pajamas, Slips, Robes, and Slacks for Women and Young Women.
First use Oct. 21, 1965.

SN 261,597. Shoe Corporation of America, Columbus, Ohio. Filed Dec. 28, 1966.

WiPS

For Tennis Shoes.
First use Nov. 23, 1966.

SN 261,820. The Enro Shirt Company, Inc., Louisville, Ky. Filed Jan. 3, 1967.

Patio lounger

For Men's Sleeping Garments.
First use Aug. 1, 1963.

SN 261,949. The Status Shoe Corp., New York, N.Y. Filed Jan. 4, 1967.

Resorl

For Shoes.
First use Sept. 1, 1966.

SN 262,400. Casual Time, Inc., New York, N.Y. Filed Jan. 12, 1967.

CASUAL TIME

For Girls' Coordinated Sportswear Comprising Blouses, Jumpers, Dresses, Skirts, Slacks, Shorts, Jackets and Shirts, and Outerwear Comprising Coats and Jackets, Including Raincoats and Rain Jackets; and Boys' Coats, Jackets, Suits, and Slacks.
First use Sept. 1, 1966.

SN 263,197. Charles Pindyck, Inc., New York, N.Y. Filed Jan. 24, 1967.

HEMLOCK

For Combined Garments for Sleeping and Playing for Infants and Small Children.
First use June 30, 1966.

SN 263,526. Big Ace Corporation, Athens, Ga. Filed Jan. 30, 1967.

SNAPPERS

For Pants.
First use Jan. 20, 1967.

SN 264,276. Majestic Specialties, Inc., Ridgefield, N.J. Filed Feb. 9, 1967.

Knit-o-Crats

For Knit Dresses.
First use Dec. 1, 1966.

SN 264,606. Spring City Knitting Company, Spring City, Pa. Filed Feb. 13, 1967.

Sport-tex

Owner of Reg. No. 227,368.
For Men's and Boys' Knit Underwear.
First use July 1946.

SN 264,972. Sally Gee, Inc., New York, N.Y. Filed Feb. 17, 1967.

PEBBLE KNIT BY SALLY GEE

"Sally Gee" identifies "Sally Goldenstein," a living individual whose consent is of record. Owner of Reg. No. 748,503.
For Ladies' Sweaters.
First use Feb. 15, 1965; 1940 as to "Sally Gee."

SN 269,823. Ecks' Shoes, Inc., Hyattsville, Md. Filed Apr. 24, 1967.

TRAMPSTERS

For Men's, Women's, and Children's Shoes.
First use February 1965.

SN 270,461. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed May 2, 1967.

Ramblers
A FLORSHEIM SHOE

Applicant disclaims the word "Shoe" apart from the mark as shown.
Owner of Reg. Nos. 73,586, 146,737, and others.
For Women's Shoes.
First use March 1960; January 1890 as to "Florsheim"; at least as early as 1936 as to "Rambler."

SN 274,689. Forte Neckwear Company, Inc., Bethlehem, Pa. Filed June 26, 1967.

Classic Saddle

The word "Saddle" is disclaimed apart from the mark as shown.
For Men's and Boys' Neckties.
First use May 31, 1967.

SN 275,419. Jantzen Inc., Portland, Oreg. Filed July 6, 1967.

LIQUID FIT

The word "Fit" is disclaimed apart from the mark as shown.
For Women's Clothing—Namely, Pants.
First use November 1963.

SN 276,073. Jantzen Inc., Portland, Oreg. Filed July 17, 1967.

JANTZEN

Owner of Reg. Nos. 418,710, 825,722, and others.
For Articles of Clothing for Men, Women, and Children—Namely, Pants, Slacks, Dresses, Blouses, Shirts, Suits, Slips, and Swimming Caps.
First use January 1915.

SN 278,159. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Aug. 14, 1967.

LANVIN

Owner of Reg. Nos. 556,672, 823,756, and others.
For Neckties.
First use December 1966.

SN 278,768. Arthur R. Lewis, Inc., New York, N.Y. Filed Aug. 22, 1967.

HIP-NA-TOSE

For Combined Panty Girdle and Hose.
First use Aug. 9, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 273,233. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1967.

3M

For Adhesive-Backed Pads for Use on Office and Household Articles To Prevent Surface Scratching and Marring.
First use May 12, 1967.

SN 276,289. Stratford, Inc., Minneapolis, Minn. Filed July 19, 1967.

TIARA

For Hair Pieces.
First use June 1, 1967.

SN 276,901. Shane Hite, Inc., Hialeah, Fla. Filed July 27, 1967.

LUSTRE LIFT

Applicant disclaims the descriptive word "Lift."
For Comb With Long Prongs.
First use June 12, 1967.

SN 279,026. Fashion Tress, Inc., Miami Beach, Fla. Filed Aug. 25, 1967.

GARBO

For Ladies' Wigs and Hairpieces.
First use Aug. 1, 1967.

SN 279,596. Fashion Tress, Inc., Miami Beach, Fla. Filed Sept. 5, 1967.

LUV

For Ladies' Wigs and Hairpieces.
First use on or about Aug. 15, 1967.

Class 41—Canes, Parasols, and Umbrellas

SN 259,326. Kortenbach & Rauh Kommanditgesellschaft, Solingen-Weyer, Germany. Filed Nov. 23, 1966.

FLIRT

Owner of German Reg. No. 502,015, dated Mar. 5, 1938.
For Umbrellas, Umbrella Frames, and Umbrella Accessories.

SN 266,179. Swank, Inc., Attleboro, Mass. Filed Mar. 7, 1967.

RAIN CANE

For Umbrellas.
First use Feb. 17, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 252,530. Albany Felt Company, Albany, N.Y. Filed Aug. 17, 1966.

MICROTAIN

For Synthetic Fabric Used for Dust Collection or Fume Filtration Such as in Fume Bags and/or Dust Bags.
First use on or about Aug. 1, 1961.

SN 253,545. Niedieck A.G., Lobberich, near Krefeld, Germany. Filed Aug. 31, 1966.



Applicant disclaims the words "Brilliant Velvet" apart from the mark as shown.
For Piece Goods for Making Dresses, Blouses, Coats, Draperies, and the Like, of Cotton Velvet or Velvet.
First use January 1960; in commerce January 1960.

SN 256,860. Ramchandra Hassamal Shamdasani, Liverpool, England. Filed Oct. 20, 1966.

INDEUREX

Owner of British Reg. No. 860,811, dated Feb. 27, 1964.
For Textile Fabrics of All Kinds for Making Into Men's, Women's, and Children's Wearing Apparel.

SN 264,565. Midwest Curtain Company, St. Louis, Mo. Filed Feb. 13, 1967.

Fes-to-vals

For Textile Festoons, Cascades, and Valances for Windows.
First use September 1966.

SN 265,982. Canton Textile Mills, Inc., Canton, Ga. Filed Mar. 6, 1967.

POWER SET

For Fabrics of Cotton, Wool, and Synthetic Materials and Combinations Thereof.
First use Jan. 6, 1967.

SN 275,208. CKL Distributing Co., Inc., Cleveland, Ohio. Filed July 3, 1967.

TUFF FLUFF

For Netting Used To Encase Meat Products and Having a Surface Property Which Enhances the Release of the Netting From the Meat After Cooking, Baking or the Like.
First use June 28, 1967.

SN 278,935. Deering Milliken, Inc., New York, N.Y. Filed Aug. 24, 1967.

IRONSIDE

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers and Combinations Thereof.
First use as early as 1898.

SN 279,344. Deering Milliken, Inc., New York, N.Y. Filed Aug. 30, 1967.

ZEBRA

Owner of Reg. No. 708,449.
For Elastic Fabrics Made of Spandex Yarn and Nylon.
First use May 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 247,390. National Patent Development Corporation, New York, N.Y. Filed June 6, 1966.

ELECTROSONE

For Electronic Sleep Machine Which Induces Sleep in a Patient by Applying Periodic Electric Impulses to the Eyelids.
First use Oct. 13, 1965.

SN 254,495. Abbott Laboratories, North Chicago, Ill. Filed Sept. 15, 1966.

ABBO-TRAY

For Sterile Disposable Tray, Carrying Anesthetics and Equipment Such as Syringes and Needles for Administration of Anesthetics.
First use June 27, 1966.

SN 255,347. Pedi-Q Products, Inc., New York, N.Y. Filed Sept. 28, 1966.

Pedi-Q

For Safety Corn and Callous Remover, in the Form of Blade Holder and Blades.
First use Mar. 1, 1963.

SN 257,414. Southwestern Drug Corporation, d.b.a. Truett Laboratories, Dallas, Tex. Filed Oct. 27, 1966.

FLEX-O-TEMP

For Hot and Cold Packs for Small Areas Where Cold or Hot Therapy Is Needed.
First use Feb. 3, 1966.

SN 258,956. Youngs Drug Products Corporation, New York, N.Y. Filed Nov. 17, 1966.

THE SYMBOL OF SAFETY

Owner of Reg. No. 521,348.
For Prophylactic Rubber Articles for the Prevention of Contagious Diseases.
First use Nov. 17, 1947.

SN 259,386. American Cyanamid Company, Wayne, N.J. Filed Nov. 25, 1966.

DISPETTE

Owner of Reg. No. 817,871.
For Disposable Dosage Pipette Dispenser.
First use Nov. 4, 1966.

SN 261,851. Kaltenbach & Voigt, Biberach/Riss, Germany. Filed Jan. 3, 1967.

KaVo All-air

Owner of German Reg. No. 801,024, dated Jan. 7, 1965; and U.S. Reg. No. 597,438.
For Air Driven Dental Handpieces.

SN 262,639. Surgical Eng. & Research Corp., Victoria, Tex. Filed Jan. 16, 1967.

SERCO

For Hypothermia Instruments Used for Controlling Body Temperature, as Well as for Inducing Local Anesthesia.
First use at least as early as Oct. 19, 1965.

SN 262,917. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Jan. 20, 1967.

RSP

For Recirculating Single Pass Dialyzer.
First use Sept. 25, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 271,096. PepsiCo, Inc., New York, N.Y. Filed May 10, 1967.

SNO BALL

For Carbonated Soft Drinks and Syrups and Concentrates for Their Preparation.
First use July 1, 1966.

SN 272,680. Castle & Cooke, Inc., d.b.a. Dole Company, Honolulu, Hawaii. Filed May 31, 1967.



No claim is made to the term "Pineapple Ade" and the representation of same apart from the mark as shown. Owner of Reg. Nos. 387,468, 798,241, and others.
For Canned Fruit Juice Drink Containing Water.
First use Mar. 8, 1966; 1927 as to "Dole."

Class 46—Foods and Ingredients of Foods

SN 197,019. Joseph Wolf K.G. Geback Waffeln Schokolade, Alsbach an der Bergstrasse, Germany. Filed July 2, 1964.

CRISKI

For Cocktail Crackers.
First use Jan. 11, 1963; in commerce Jan. 11, 1963.

SN 244,464. Clougherty Packing Company, Vernon, Calif. Filed Apr. 28, 1966.

FARMER JOHN

Owner of Reg. Nos. 426,538 and 709,414.
For Bacon; Sausage Containing Pork Meat, Cereal and Spices; Pickle and Pimiento Meat Loaf; Wieners; Head Cheese; Bologna; Smoked Ham, Fully Cooked Ham; Salami; Liver Sausage Containing Pork Liver, Pork Head Meat, Beef Cheeks, Cereal and Spices; Liverwurst; Smoked Pork Shoulder; Pork Chitterlings; Lard; and Shortening Made From Meat and Vegetable Fats.
First use on or about July 1, 1939.

SN 249,247. California Leaf Company, d.b.a. California Ficgo Company, Burbank, Calif. Filed June 29, 1966.

Ficgo

Owner of Reg. No. 416,352.
For Coffee Substitute.
First use July 1929.

SN 257,204. South Atlantic Sales Company, Inc., Baltimore, Md. Filed Oct. 25, 1966.

SEAFOOD TIMES BRAND

The words "Seafood" and "Brand" are disclaimed apart from the mark as shown.
For Fresh and Frozen Prepared, Ready To Cook Seafoods.
First use Oct. 4, 1966.

SN 261,685. Jeff Shih, d.b.a. Mulsen Trading Co., Ltd., Seattle, Wash. Filed Dec. 29, 1966.

PACIFIC FRIEND

For Canned and Frozen Fruits, Vegetables, and Seafoods.
First use Nov. 6, 1966.

SN 263,209. Standard Brands Incorporated, New York, N.Y. Filed Jan. 24, 1967.

VAC-FLEX

For Coffee.
First use Jan. 20, 1966.

SN 263,466. Judson's Candies, Inc., San Antonio, Tex. Filed Jan. 27, 1967.

PECANEROS

For Pecan Candy.
First use during October 1953.
Subj. to Intf. with SN 264,186.

SN 264,186. Beatrice Foods Co., Chicago, Ill. Filed Feb. 8, 1967.

PECAN·A·ROOS

For Candy.
First use Aug. 1, 1966.
Subj. to Intf. with SN 263,466.

SN 276,510. Mead Johnson & Company, Evansville, Ind. Filed July 21, 1967.

LIGHT

Owner of Reg. No. 822,059.
For Dietary in Powdered Form To Be Mixed With Milk.
First use on or prior to July 20, 1967.

SN 276,995. Klein Chocolate Company, Elizabethtown, Pa. Filed July 28, 1967.

mr.k bar

Applicant disclaims the word "Bar" apart from the mark as as a whole. Owner of Reg. No. 812,279.
For Candy.
First use Aug. 12, 1963.

SN 276,996. Klein Chocolate Company, Elizabethtown, Pa. Filed July 28, 1967.

ROYAL

Owner of Reg. No. 669,973.
For Candy.
First use April 1936.

SN 278,509. Mars, Incorporated, d.b.a. M & M Candies, Wilmington, Del. Filed Aug. 17, 1967.

SWITCH

For Candy.
First use July 31, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 260,582. Potter Distilleries Ltd., Langley, British Columbia, Canada. Filed Dec. 12, 1966.

POTTER'S CROWN

Owner of Canadian Reg. No. 147,888, dated Nov. 4, 1966.
For Canadian Whisky.

Class 50 — Merchandise Not Otherwise Classified

SN 256,196. Brown Memorials, Inc., Florence, S.C. Filed Oct. 11, 1966.

BROWN Memorials

Applicant provisionally disclaims the notation "Memorials Since 1908," when used apart from the mark and design.
For Cemetery Markers, Monuments, Mausoleums, and Public Memorials.
First use 1908.

SN 260,713. Arlington Aluminum Company, Detroit, Mich. Filed Dec. 14, 1966.

Safe-Lode

For Poster Holders.
First use on or about Oct. 1, 1966.

SN 274,920. Wyomissing Corporation, Reading, Pa. Filed June 28, 1967.

VECTOR

For Self-Instructional Kit Comprising Plastic Writing Surface and Cards.
First use June 15, 1967.

SN 276,792. Union Wadding Company, Pawtucket, R.I. Filed July 26, 1967.

POLY-TEX

For Christmas Tree Skirt.
First use May 2, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 242,024. Mildred M. Krumsieg, d.b.a. Lovely Lady Cosmetics, Chicago, Ill. Filed Mar. 28, 1966.

LOVELY LADY

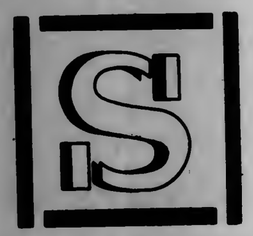
For Cleansing Creams, Night Creams, Eye Tissue Creams, Hand and Body Creams, Skin Creams, Skin Fresheners, Powder Bases, Neck Lotions, Pore Lotions, Finger Nail Creams, Cream Rouges, Oil Cake Rouges, Eye Shadows, Eyebrow Pencils, Eyelash Creams, Lipsticks, Perfumes, Colognes, and Face Powders.
First use on or about Mar. 7, 1963.

SN 249,674. Sopas Profumi S.p.A., Pisa, Italy. Filed July 6, 1966.

BUONA SERA

Owner of Italian Reg. No. 277/66, dated Jan. 13, 1966.
For Perfumery, Cosmetics, Make-Up, and Toilet Preparations—Namely, Perfumes, Cologne, and Toilet Water; Shaving Lotions; Hair Lotions, Cream, and Gel; Brilliantine; Face, Hand, and Skin Protective and Suntan Creams and Lotions; Bath Oil; Talcum Powder; Personal Deodorants; and Dentifrices.

SN 253,326. Marion Laboratories, Inc., d.b.a. Scott-Seaton Laboratories, Kansas City, Mo. Filed Aug. 29, 1966.



For Mouthwash in Solid Form.
First use Aug. 19, 1966.

SN 255,315. Helene Curtis Industries, Inc., d.b.a. Helene Curtis, Chicago, Ill. Filed Sept. 28, 1966.

FOAM SILK

Without yielding common law rights, applicant disclaims the word "Foam" apart from the mark as shown.
For Bath Oil.
First use July 7, 1966.

SN 255,723. Revlon, Inc., New York, N.Y. Filed Oct. 4, 1966.

ZP11

For Hair Dressing for the Control of Dandruff.
First use Sept. 20, 1966.

SN 257,575. Bailey Laboratories, Inc., Buffalo, N.Y. Filed Oct. 31, 1966.



For Personal Deodorant.
First use Apr. 15, 1965.

SN 258,235. Kenneth Beauty Salons & Products, Inc., New York, N.Y. Filed Nov. 8, 1966.

râmu

The word mark "Ramu" and the design means "to love" in the Sumerian language.
For Perfume and Bath Products—Namely, Cologne, Bath Oil, Bath Spray, Bath Powder, and Toilet Water.
First use Oct. 7, 1966.

SN 260,281. Shafer's Laboratories, Inc., Jacksonville Beach, Fla. Filed Dec. 7, 1966.



For Bath Salts.
First use Nov. 23, 1966.

SN 260,817. Bristol-Myers Company, New York, N.Y. Filed Dec. 15, 1966.

FOR THE MAN WHO KNOWS THE SCORE

Owner of Reg. Nos. 757,490, 830,307, and others.
For Hair Tonic.
First use July 25, 1966.

SN 261,070. Genesco Inc., Nashville, Tenn. Filed Dec. 19, 1966.

PLUS ONE

For Cosmetics—Namely, Lipstick and Lip Color.
First use Apr. 28, 1965.

SN 265,425. Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. Filed Feb. 24, 1967.

SIMPATIA

The mark "Simpatia" translated into English as "sympathy."
For Perfume, Cologne, Dusting Powder, and Personal Deodorant.
First use Dec. 14, 1966.

SN 265,899. Franz J. Greiter, d.b.a. Marga Greiter, Wien-Weidling, Austria. Filed Mar. 3, 1967.

Marga Greiter

"Marga Greiter" identifies a living individual whose consent is of record. Owner of Austrian Reg. No. 43,353, dated Feb. 6, 1960.
For Cosmetics for Skin and Beauty Care—Namely, Facial Creams for Cleansing Dry and Oily Skin; Lotions for Cleansing; Face Milk for Cleansing and Care of the Skin; Facial Mask for Vitalizing and Toning of the Skin; Massaging Oils for the Body and Face; and Texture Oils for the Body and Face.

SN 265,900. Franz J. Greiter, d.b.a. Marga Greiter, Wien-Weidling, Austria. Filed Mar. 3, 1967.

Piz Buin

For Preparations for Sun Protection—Namely, Protective Sun Cream.
First use December 1948; in commerce December 1963.

SN 266,067. Benjamin E. Nye, Los Angeles, Calif. Filed Mar. 6 ,1967.

BEN NYE

For Foundation Cream, Cheek Rouge, Eye Shadow, Face Powder, Lipstick, and Moisturizing Cream.
First use Feb. 9, 1967.

SN 266,094. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 6, 1967.

COTERIE

For Cologne.
First use Feb. 3, 1967.

SN 266,414. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 10, 1967.

IDYL

For Cologne.
First use Feb. 3, 1967.

SN 266,456. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 10, 1967.

IDYLLE

For Cologne.
First use Feb. 3, 1967.

SN 266,457. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 10, 1967.

ESCADRILLE

For After Shave Cologne.
First use Feb. 3, 1967.

SN 272,793. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed June 1, 1967.

ORIGIN-ALO

Owner of Reg. Nos. 775,943, 831,277, and others.
For Skin Moisturizing Lotion.
First use Apr. 5, 1967.

SN 274,033. Dep Corporation, Los Angeles, Calif. Filed June 16, 1967.

2 WEEKS IN THE SUN

For Shampoo Hair Lightener for Men.
First use June 7, 1967.

SN 274,694. Redken Laboratories, Inc., Van Nuys, Calif. Filed June 26, 1967.

POLYOXIDE

For Oxidizing Agent for Use in Conjunction With Hair Coloring.
First use November 1961.

SN 275,349. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed July 5, 1967.

NOVESSCENCE

Owner of Reg. Nos. 365,361, 632,844, and 761,471.
For Skin Cream.
First use June 9, 1967.

SN 276,070. Redken Laboratories, Inc., Van Nuys, Calif. Filed July 17, 1967.

H.P. 19

For Hair Wave Setting Lotion.
First use November 1960.

SN 276,411. Chesebrough-Pond's Inc., New York, N.Y. Filed July 20, 1967.

LORD CHESSLYN

Owner of Reg. No. 657,265.
For Hair Dressing.
First use July 11, 1967.

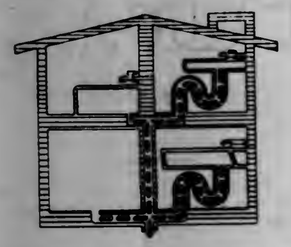
Class 52—Detergents and Soaps

SN 206,073. P & C Food Markets, Inc., Syracuse, N.Y. Filed Nov. 12, 1964.

EXEL

Owner of Reg. No. 821,802.
For Detergent for Dishwashing.
First use at least as early as July 1, 1964.

SN 244,688. The Drackett Company, d.b.a. The Drackett Products Company, Cincinnati, Ohio. Filed May 2, 1966.



The drawing is lined for the colors red and blue.
For Drain Cleaner.
First use Mar. 8, 1966.

SN 251,432. International Laboratories, Inc., Oklahoma City, Okla. Filed Aug. 1, 1966.



For Heavy Duty Degreaser for Industrial and Commercial Use.
First use Apr. 12, 1966.

SN 254,934. Helene Curtis Industries, Inc., Chicago, Ill. Filed Sept. 22, 1966.

fracion

For Hair Shampoo.
First use on or about Aug. 24, 1966.

SN 255,298. Drew Chemical Corporation, New York, N.Y. Filed Sept. 28, 1966.

NAPTHONE XXX

Owner of Reg. No. 580,744.
For Detergent for Institutional, Industrial, and Restaurant Use.
First use at least as early as Dec. 18, 1959.

SN 256,791. Lever's Zeep Maatschappij N.V., Rotterdam, Netherlands. Filed Oct. 20, 1966.

LUVIL

Owner of Dutch Reg. No. 149,414, dated Aug. 13, 1963.
For Detergents for General Washing and Cleansing.

SN 259,351. Sterling Drug Inc., New York, N.Y. Filed Nov. 23, 1966.

pHiso

Owner of Reg. Nos. 408,558, 764,556, and others.
For Emollient, Antibacterial Detergent for Use on the Skin and Mucous Membranes.
First use Oct. 21, 1966.

SN 259,829. Hudson National, Inc., New York, N.Y. Filed Dec. 1, 1966.

PET-A-POO

For Aerosol Spray Shampoo for Pets.
First use Sept. 16, 1966.

SN 260,019. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 2, 1966.

CRYSTAL WHITE

Owner of Reg. Nos. 131,208, 813,761, and others.
For Detergent for Washing Dishes and Fabrics.
First use August 1961.

SN 261,972. Chesebrough-Pond's Inc., New York, N.Y. Filed Jan. 5, 1967.

ZEFF

For Hair Shampoo and Toilet Soaps.
First use Nov. 30, 1966.

SN 262,120. Binzel Products, Inc., Birmingham, Ala. Filed Jan. 9, 1967.

INFALLIBLE

For Machine Dishwashing Compound.
First use July 5, 1966.

SN 264,154. Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. Filed Feb. 7, 1967.

SIMPATIA

The mark "Simpatia" may be translated into English as "sympathy."
For Toilet Soaps.
First use Dec. 14, 1966.

SN 266,758. Hillyard Enterprises, Inc., St. Joseph, Mo. Filed Mar. 15, 1967.

Phene-o-clean

For Preparation for Cleaning, Disinfecting and Deodorizing Vitreous Toilet Bowls and Urinals.
First use Feb. 6, 1967.

SN 278,450. Lever Brothers Company, New York, N.Y. Filed Aug. 17, 1967.

CARESS

Owner of Reg. Nos. 735,044, 738,793, and others.
For Detergents for Laundry and Dishwashing.
First use Aug. 7, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 246,577. Little Caesar Enterprises, Inc., Detroit, Mich. Filed May 25, 1966.



For Restaurant Services.
First use May 7, 1959.

SN 246,578. Little Caesar Enterprises, Inc., Detroit, Mich. Filed May 25, 1966.

LITTLE CAESARS

For Restaurant Services.
First use May 7, 1959.

SN 252,102. Illinois State Medical Society, Chicago, Ill. Filed Aug. 10, 1966.



The mark is fanciful and does not represent the portrait of a particular living individual.
For Association Services—Namely, Promoting the Interests of Members and Promoting Health by Dissemination of Information to the Public Through News Media Such as Radio, TV, and Newspapers and by Pamphlets, Exhibits, Records, and Personal Appearances.
First use June 1, 1964.

SN 255,276. Anikeeff & Associates, La Jolla, Calif. Filed Sept. 28, 1966.



For Consultation and Research Services in the Area of Psychology, Industrial Relations, Industrial Management, Human Factors, and Executive Development.
First use Apr. 15, 1966.

SN 255,644. Puritan Leasing Company, Santa Barbara, Calif. Filed Oct. 3, 1966.

Pur-Ag

For Leasing of Buildings, Machinery, and Capital Equipment of Any Type.
First use Dec. 13, 1963.

SN 258,718. The Pancake House, Inc., Cincinnati, Ohio, assignee of Perkins Pancake Houses, Cincinnati, Ohio. Filed Nov. 15, 1966.



Applicant disclaims the words "Pancake House" apart from the mark as shown. Owner of Reg. Nos. 809,680, 820,000, and 820,475.
For Restaurant Service.
First use July 1, 1965.

SN 265,466. Buffalo Bill's Steak Village, Inc., Los Angeles, Calif. Filed Feb. 27, 1967.



For Restaurant Services.
First use Sept. 8, 1966.

Class 101 — Advertising and Business

SN 252,274. D. P. Pentecost, d.b.a. Penny's Real Estate, Houston, Tex. Filed Aug. 12, 1966.

Penny's

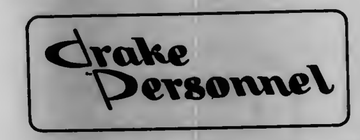
For Real Estate Investment and Brokerage Services.
First use on or about May 1, 1963.

SN 256,336. Adams, Martin & Nelson, Inc., Minneapolis, Minn. Filed Oct. 13, 1966.

STAMP-IT-RICH!

For Promoting the Sale of the Goods and Services of Others Through the Use of Games To Win Stamps.
First use Apr. 15, 1965.

SN 261,557. Drake International Services Limited, Toronto, Ontario, Canada. Filed Nov. 30, 1966.



Applicant disclaims the word "Personnel" apart from the mark as shown.
For Employment Agency Services.
First use May 11, 1959; in commerce May 1, 1965.

SN 261,558. Drake International Services Limited, Toronto, Ontario, Canada. Filed Nov. 30, 1966.



For Employment Agency Services.
First use May 11, 1959; in commerce May 1, 1965.

SN 265,141. Miller Printing Machinery Co., Pittsburgh, Pa. Filed Feb. 21, 1967.

MIL-AD

For Advertising and Public Relations Services.
First use Jan. 11, 1967.

SN 265,691. Capitol Bank of Springfield, Springfield, Ill. Filed Mar. 1, 1967.

CAPITOL CHARGE

The word "Charge" is disclaimed apart from the mark as shown.
For Extension of Credit Through Issuance of Credit Identification Cards.
First use Mar. 1, 1959.

Class 102 — Insurance and Financial

SN 250,234. American International Underwriters Corporation, New York, N.Y., assignee of American International Life Assurance Company of New York, Inc., New York, N.Y. Filed July 14, 1966.



Applicant disclaims the Use of the Words "Life Insurance Worldwide," separate and apart from the mark as shown.
For Underwriting of Life, Accident, and Health Insurance and Annuities.
First use July 15, 1965.

SN 257,307. Pacific Standard Life Insurance Company, Burlingame, Calif. Filed Oct. 26, 1966.



For Underwriting Life, Accident, and Health Insurance.
First use Aug. 9, 1965.

SN 259,077. BSP Insurance Company, Scottsdale, Ariz. Filed Nov. 21, 1966.



For Underwriting Insurance Which Covers Blood Bank Charges and Blood Replacement.
First use on or before May 19, 1966.

SN 275,200. Metropolitan Life Insurance Company, New York, N.Y. Filed July 3, 1967.



The mark consists of four fanciful representations of the letter "M" combined with the letter "L."
For Insurance and Annuity Underwriting.
First use June 27, 1967.

SN 275,852. Security First National Bank, Los Angeles, Calif. Filed July 5, 1967.



The mark consists of two fanciful representations of the letter "S."
For Banking Services.
First use Oct. 5, 1966.

Class 103 — Construction and Repair

SN 241,566. Calvert Homes, Inc., Washington, D.C. Filed Mar. 15, 1966.



For Repair, Remodeling, Construction, and Maintenance of Homes to Specification and/or Order.
First use January 1966.

Class 105 — Transportation and Storage

SN 264,460. W. Wingate & Johnston, Ltd., London, England. Filed Feb. 10, 1967.

WINGAIR

For Transportation of Property by Air or Land.
First use March 1960; in commerce July 1961.

Class 106 — Material Treatment

SN 266,965. Kim Color Corporation, d.b.a. Tremendous Color, Hialeah, Fla. Filed Mar. 2, 1967.



For Color Photograph Developing Services.
First use Mar. 1, 1961.
Subj. to Intf. with SN 267,467.

Class 107 — Education and Entertainment

SN 258,081. Encyclopaedia Britannica Educational Corporation, Chicago, Ill. Filed Nov. 7, 1966.

PROJECT DISCOVERY

For Assisting Educational Institutions in the Use of Audio-visual Materials.
First use May 20, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 261,190. Automotive Engine Rebuilders Association, Glenview, Ill. Filed Dec. 21, 1966.



The name "Automotive Engine Rebuilders Association" is disclaimed apart from the mark as shown and without any disclaimer of any common law rights in such name.
For Indicating Membership in the Applicant Association.
First use Nov. 25, 1965.

CERTIFICATION MARKS

Class A — Goods

SN 269,074. Homemaker Testing Corporation, Washington, D.C. Filed Apr. 13, 1967.



Applicant disclaims right to exclusive use of the words "Homemaker Tested and Approved" and "By Consumers for Consumers" apart from the mark as shown. The mark certifies that the goods have been tested and approved by homemakers in accordance with the procedures established and carried out by applicant.
For Food Products and Household Appliances.
First use Dec. 23, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

837,706. SPENCER KELLOGG SK AND DESIGN. Textron Inc. MULTIPLE CLASS (Classes 1, 6, 15, and 16). SN 220,421. Pub. 8–15–67. Filed 6–4–65.

837,707. U AND DESIGN. United Packaging Corporation. SN 233,658. Pub. 8–15–67. Filed 11–30–65.

837,708. ROWTEX. Rowland Products, Incorporated. SN 249,447. Pub. 8–15–67. Filed 7–1–66.

837,709. MODAL. Chimiotex S.A. SN 249,946. Pub. 8–15–67. Filed 7–11–66.

837,710. GR. W. R. Grace & Co. SN 251,210. Pub. 8–15–67. Filed 7–28–66.

837,711. ENBEK. Beckwith-Arden Inc. SN 255,689. Pub. 8–15–67. Filed 10–4–66.

837,712. REXALON. Rexall Drug and Chemical Company, d.b.a. Rexall Chemical Company. SN 256,004. Pub. 8–15–67. Filed 10–7–66.

837,713. POLYLOOM. Chevron Chemical Company. SN 256,721. Pub. 8–15–67. Filed 10–19–66.

837,714. VISTRON. The Standard Oil Company. SN 257,102. Pub. 8–15–67. Filed 10–24–66.

Class 2—Receptacles

837,715. NEATRAE. Admart, Inc. SN 202,727. Pub. 8–15–67. Filed 9–28–64.

837,716. FRISCH'S. Frisch's Restaurants, Inc. MULTIPLE CLASS (Classes 2, 8, 22, 37, 38, 39, 44, 46, and 50). SN 208,185. Pub. 8–15–67. Filed 12–15–64.

837,717. SAMPSAK. Valcon Corporation. SN 250,316. Pub. 8–15–67. Filed 7–14–66.

837,718. GLOBETROTTER. Aladdin Industries, Incorporated. SN 255,273. Pub. 8–15–67. Filed 9–28–66.

837,719. PACADOONI. Dorothy Hess, Inc. SN 255,530. Pub. 8–15–67. Filed 9–30–66.

837,720. DURINO. Container Corporation of America. SN 257,942. Pub. 8–15–67. Filed 11–4–66.

837,721. 3M. Minnesota Mining and Manufacturing Company. SN 271,317. Pub. 8–15–67. Filed 5–12–67.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

837,722. SARA DEE. Safdeye Dabah International, Inc. MULTIPLE CLASS (Classes 3 and 39). SN 241,524. Pub. 8–15–67. Filed 3–21–66.

837,723. SCRATCH AWAY! J/W Products. SN 247,509. Pub. 8–15–67. Filed 6–7–66.

837,724. SHORT SNORTER AND DESIGN. Clayton Benjamin Burton. SN 249,733. Pub. 8–15–67. Filed 7–7–66.

Class 4—Abrasives and Polishing Materials

837,725. ARWET. Armour and Company, d.b.a. Armour Abrasives Company. SN 256,912. Pub. 8–15–67. Filed 10–21–66.

837,726. NYLAM. American Steel Wool Mfg. Co., Inc. SN 257,919. Pub. 8–15–67. Filed 11–4–66.

837,727. SHOUT. S. C. Johnson & Son, Inc. SN 271,992. Pub. 8–15–67. Filed 5–22–67.

837,728. BELIEVE. S. C. Johnson & Son, Inc. SN 272,068. Pub. 8–15–67. Filed 5–22–67.

Class 5—Adhesives

837,729. BESTBOND. Textron, Inc. SN 243,271. Pub. 8–15–67. Filed 4–12–66.

837,730. DEXTRABOND. Lauhoff Grain Company. SN 247,132. Pub. 8–15–67. Filed 6–2–66.

837,731. MARK 200. Pecora Chemical Corporation. SN 257,509. Pub. 8–15–67. Filed 10–28–66.

837,732. FOSTER JAC-TAC. Benjamin Foster Company. SN 257,578. Pub. 8–15–67. Filed 10–31–66.

Class 6—Chemicals and Chemical Compositions

837,706. (See Class 1 for this trademark.)

837,733. KASUMIN. Hokko Chemical Industry Co., Ltd. SN 238,528. Pub. 8–15–67. Filed 2–10–66.

837,734. ADIPASE. Cudahy Company. SN 241,436. Pub. 8–15–67. Filed 3–21–66.

837,735. PROTECT-O-COAT. JFL, Inc. SN 245,493. Pub. 8–15–67. Filed 5–12–66.

837,736. GLUSULASE. Endo Laboratories, Inc. SN 247,682. Pub. 8–15–67. Filed 6–9–66.

837,737. POLYCIN. The Baker Castor Oil Company. SN 252,635. Pub. 8–15–67. Filed 8–18–66.

837,738. PHOS-CHEK. Monsanto Company. SN 252,876. Pub. 8–15–67. Filed 8–22–66.

837,739. SEEDVAX. United States Rubber Company. SN 253,368. Pub. 8–15–67. Filed 8–29–66.

837,740. SAFETY-WALK. Minnesota Mining and Manufacturing Company. SN 254,215. Pub. 8–15–67. Filed 9–12–66.

837,741. DITRECON. HRB-Singer, Inc. MULTIPLE CLASS (Classes 6 and 26). SN 268,546. Pub. 8–15–67. Filed 4–7–67.

Class 8—Smokers' Artides, Not Including Tobacco Products

837,716. (See Class 2 for this trademark.)

Class 9—Explosives, Firearms, Equipments, and Projectiles

837,742. SAC AND DESIGN. Sullivan Arms Corporation. SN 265,242. Pub. 8–15–67. Filed 2–23–67.

837,743. AA AND DESIGN. Olin Mathieson Chemical Corporation, d.b.a. Olin. SN 269,148. Pub. 8–15–67. Filed 4–14–67.

837,744. DOUBLE A. Olin Mathieson Chemical Corporation, d.b.a. Olin. SN 269,149. Pub. 8–15–67. Filed 4–14–67.

Class 12—Construction Materials

837,745. SMITH AND DESIGN. Elwin G. Smith & Co., Inc. SN 245,250. Pub. 8–15–67. Filed 5–9–66.

837,746. KORON. Foseco International Limited. SN 250,471. Pub. 8–15–67. Filed 7–18–66.

837,747. RIGI FLEX. Crane Plastics, Inc. SN 250,643. Pub. 5–9–67. Filed 7–20–66.

837,748. VANGUARD AND DESIGN. Vanguard Corporation. SN 251,254. Pub. 8–15–67. Filed 7–28–66.

837,749. ARAGON. The Cambridge Tile Manufacturing Company. SN 252,815. Pub. 8–15–67. Filed 8–22–66.

837,750. SUPREZIST. H. K. Porter Company, Inc. SN 253,049. Pub. 8–15–67. Filed 8–24–66.

837,751. AQUAPEL. Chevron Asphalt Company. SN 253,279. Pub. 8–15–67. Filed 8–29–66.

837,752. CCC-CRETE. Chemical Cement Co. SN 253,730. Pub. 8–15–67. Filed 9–2–66.

837,753. ANCHOR-MASTER ETC. AND DESIGN. Chemical Cement Co. SN 253,731. Pub. 8–15–67. Filed 9–2–66.

837,754. DEK-N-AL. International United Chemical Company. SN 254,879. Pub. 8–15–67. Filed 9–21–66.

837,755. VISTRON. The Standard Oil Company. SN 258,167. Pub. 8–15–67. Filed 11–7–66.

837,756. READTEX. Readco Industries Inc. SN 258,402. Pub. 8–15–67. Filed 11–10–66.

837,757. IMPERVA-DOR. Caron Door Manufacturing Corporation. SN 259,298. Pub. 8–15–67. Filed 11–23–66.

837,758. SHELLKURB. Shell Oil Company. SN 259,344. Pub. 8–15–67. Filed 11–23–66.

837,759. U-200. Unarco Industries, Inc. SN 260,102. Pub. 8–15–67. Filed 12–5–66.

837,760. FLEXI-DECK. Powerlock Floors, Inc. SN 260,179. Pub. 8–15–67. Filed 12–6–66.

837,761. ALSCO. Alsco, Inc. SN 260,224. Pub. 8–15–67. Filed 12–7–66.

837,762. THERMO-RITE. K-Lath Corporation. SN 260,257. Pub. 8–15–67. Filed 12–7–66.

837,763. VARIETEX. Readco Industries, Inc. SN 262,059. Pub. 8–15–67. Filed 1–6–67.

837,764. TAPECOAT 20. The Tapecoat Company, Inc. SN 262,088. Pub. 8–15–67. Filed 1–9–67.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

837,765. SOAP CADDIE. IXL Manufacturing Corporation. SN 230,649. Pub. 8–15–67. Filed 10–20–65.

837,766. MAGNETIC SOAP CADDIE AND DESIGN. IXL Manufacturing Corporation. SN 230,650. Pub. 8–15–67. Filed 10–20–65.

837,767. SMINOX. Societa Metallurgica Italiana. MULTIPLE CLASS (Classes 13 and 14). SN 230,916. Pub. 8–15–67. Filed 10–21–65.

837,768. SCANLI. Vefa, Inc. SN 238,988. Pub. 8–15–67. Filed 2–16–66.

837,769. BARLOW. The Barlow Corporation. SN 251,367. Pub. 8–15–67. Filed 8–1–66.

837,770. SANI-JON. Sani-Jon of America, Inc. SN 255,822. Pub. 8–15–67. Filed 10–5–66.

837,771. CONWED. Wood Conversion Company. SN 255,846. Pub. 8–15–67. Filed 10–5–66.

837,772. "A THING OF BEAUTYWARE IS A JOY FOREVER." Lincoln Metal Products Corporation. SN 255,906. Pub. 8–15–67. Filed 10–6–66.

837,773. MSL AND DESIGN. MSL Industries, Inc. SN 256,109. Pub. 8–15–67. Filed 10–10–66.

837,774. ANSOFLO. Penn-Union Electric Corporation. SN 256,130. Pub. 8–15–67. Filed 10–10–66.

837,775. CHEVRON (DESIGN). Standard Oil Company of California. SN 256,153. Pub. 8–15–67. Filed 10–10–66.

837,776. UP-TITE. Up-Rite Hook Company. SN 256,159. Pub. 8–15–67. Filed 10–10–66.

837,777. VISTRON. The Standard Oil Company. SN 258,329. Pub. 8–15–67. Filed 11–9–66.

Class 14—Metals and Metal Castings and Forgings

837,767. (See Class 13 for this trademark.)

837,778. SMI MADE IN ITALY AND DESIGN. Societa Metallurgica Italiana. SN 230,927. Pub. 8–15–67. Filed 10–21–65.

837,779. LITHIPAC. Specialloy, Inc. SN 242,062. Pub. 8–8–67. Filed 3–28–66.

837,780. XL-1 FAIR. Poor & Company. SN 251,236. Pub. 8–15–67. Filed 7–28–66.

Class 15—Oils and Greases

837,706. (See Class 1 for this trademark.)

837,781. HANCOCK 500. Signal Oil and Gas Company. SN 186,777. Pub. 8–15–67. Filed 2–14–64.

837,782. LEONARD. Leonard Refineries, Inc. SN 254,606. Pub. 8–15–67. Filed 9–16–66.

837,783. ARCO. Atlantic Richfield Company. SN 254,854. Pub. 8–15–67. Filed 9–21–66.

837,784. GEOMETRIC DESIGN. Atlantic Richfield Company. SN 254,855. Pub. 8–15–67. Filed 9–21–66.

837,785. VISTRON. The Standard Oil Company. SN 262,008. Pub. 8–15–67. Filed 1–5–67.

Class 16—Protective and Decorative Coatings

837,706. (See Class 1 for this trademark.)

837,786. PS (DESIGN). Pierce & Stevens Chemical Corp. SN 228,932. Pub. 8–15–67. Filed 9–29–65.

837,787. SURE SPRAY. Harris Paint Co. SN 246,685. Pub. 8–15–67. Filed 5–26–66.

837,788. RUST-OLEUM. Rust-Oleum Corporation. SN 257,092. Pub. 8–15–67. Filed 10–24–66.

837,789. OSMOSEAL. Osmose Wood Preserving Co. of America Inc. SN 259,462. Pub. 8–15–67. Filed 11–25–66.

837,790. WEATHERED AND DESIGN. Valor Paint Corporation. SN 261,540. Pub. 8–15–67. Filed 12–27–66.

Class 17—Tobacco Products

837,791. MOUNTAIN STREAM. Rothmans of Pall Mall Limited. SN 259,162. Pub. 8–15–67. Filed 11–21–66.

Class 18—Medicines and Pharmaceutical Preparations

837,792. DEXTROSE 50. Marshman Development Corporation. SN 242,621. Pub. 2–21–67. Filed 4–4–66.

837,793. GBADE A. Tri Associates, Inc. SN 243,928. Pub. 8–15–67. Filed 4–20–66.

837,794. STOCKMAN'S CHOICE. Vit-A-Way, Inc. SN 252,776. Pub. 8–15–67. Filed 8–19–66.

837,795. FLYING V. AG. Research, Inc. SN 254,104. Pub. 8–15–67. Filed 9–9–66.

837,796. SKIN CLINIC. Noxell Corporation. SN 254,709. Pub. 8–15–67. Filed 9–19–66.

837,797. ALTERNATE DAYPAK. The Upjohn Company. SN 255,371. Pub. 8–15–67. Filed 9–28–66.

837,798. SPD. American Pharmaceutical Company. SN 256,416. Pub. 8–15–67. Filed 10–14–66.

837,799. FEROMA. Merck & Co., Inc. SN 259,444. Pub. 8–15–67. Filed 11–25–66.

837,800. MODURETIC. Merck & Co., Inc. SN 259,446. Pub. 8–15–67. Filed 11–25–66.

837,801. MODURET. Merck & Co., Inc. SN 259,447. Pub. 8–15–67. Filed 11–25–66.

837,802. CEPTRONAL. Merck & Co., Inc. SN 259,448. Pub. 8–15–67. Filed 11–25–66.

837,803. BLIST-AWAY. Boyle & Company, d.b.a. American Laboratories. SN 260,404. Pub. 8–15–67. Filed 12–9–66.

837,804. JENETTES. Bristol-Meyers Company. SN 261,707. Pub. 8–15–67. Filed 12–30–66.

837,805. CILLORETS. Bristol-Myers Company. SN 261,708. Pub. 8–15–67. Filed 12–30–66.

837,806. LENITAS. Bristol-Myers Company. SN 261,709. Pub. 8–15–67. Filed 12–30–66.

837,807. AMFOROL. Bristol-Myers Company. SN 261,710. Pub. 8–15–67. Filed 12–30–66.

837,808. TANAPEN. Bristol-Myers Company. SN 261,711. Pub. 8–15–67. Filed 12–30–66.

837,809. TANABIOTIC. Bristol-Myers Company. SN 261,712. Pub. 8–15–67. Filed 12–30–66.

837,810. BRIMOS. Bristol-Myers Company. SN 261,713. Pub. 8–15–67. Filed 12–30–66.

837,811. PIP-Z. Allied Mills, Inc. SN 268,361. Pub. 8–15–67. Filed 4–5–67.

837,812. MAST-AID. Allied Mills, Inc. SN 268,363. Pub. 8–15–67. Filed 4–5–67.

Class 19—Vehicles

837,813. PANDA AND DESIGN. John Cicchetti, d.b.a. Hi-Way Body Builders. SN 224,074. Pub. 8–15–67. Filed 7–23–65.

837,814. S AND DESIGN. Roland Reed Associates, Inc. SN 239,803. Pub. 8–15–67. Filed 2–28–66.

837,815. DC–9. McDonnell Douglas Corporation, assignee of Douglas Aircraft Company, Inc. SN 247,489. Pub. 8–15–67. Filed 6–7–66.

837,816. ROTO-FLEX. The Firestone Tire & Rubber Company. SN 251,197. Pub. 8–15–67. Filed 7–28–66.

837,817. MTD. The M.T. & D. Company. SN 252,187. Pub. 8–15–67. Filed 8–11–66.

837,818. C. Conductron Corporation. SN 252,642. Pub. 8–15–67. Filed 8–18–66.

837,819. GUIDE TESTED AND DESIGN. Lund Metalcraft. SN 254,170. Pub. 8–15–67. Filed 9–9–66.

837,820. QUEEN AIR. Beech Aircraft Corporation. SN 255,864. Pub. 8–15–67. Filed 10–6–66.

837,821. DEBONAIR. Beech Aircraft Corporation. SN 255,865. Pub. 8–15–67. Filed 10–6–66.

837,822. KING AIR. Beech Aircraft Corporation. SN 255,866. Pub. 8–15–67. Filed 10–6–66.

837,823. BARON. Beech Aircraft Corporation. SN 255,867. Pub. 8–15–67. Filed 10–6–66.

837,824. DYNASTAT. Goodyear Aerospace Corporation. SN 256,087. Pub. 8–15–67. Filed 10–10–66.

837,825. PIRANHA. AMT Corporation. MULTIPLE CLASS (Classes 19 and 22). SN 256,406. Pub. 8–15–67. Filed 10–14–66.

837,826. DMI AND DESIGN. Donnelly Mirrors, Inc. SN 257,043. Pub. 8–15–67. Filed 10–24–66.

837,827. YUKON-KING. Moorhead Plastics, Inc. SN 258,832. Pub. 8–15–67. Filed 11–16–66.

837,828. SUNBEAM TIGER. Rootes Motors Ltd. SN 268,646. Pub. 8–15–67. Filed 4–10–67.

837,829. GRANTURISMO. G. Nava. SN 272,243. Pub. 8–15–67. Filed 5–24–67.

Class 21—Electrical Apparatus, Machines, and Supplies

837,830. GLAMORENE. Glamorene Products Corporation. SN 249,158. Pub. 8–15–67. Filed 6–28–66.

837,831. TOTE-M PAK. Belden Corporation, by change of name from Belden Manufacturing Company. SN 249,939. Pub. 8–15–67. Filed 7–11–66.

837,832. SOLITRON. Solitron Devices, Inc. SN 250,043. Pub. 8–15–67. Filed 7–11–66.

837,833. S AND DESIGN. Solitron Devices, Inc. SN 250,600. Pub. 8–15–67. Filed 7–19–66.

837,834. MAXELL AND DESIGN. Hitachi Maxell, Ltd. SN 250,664. Pub. 8–15–67. Filed 7–20–66.

837,835. MAXELL AND DESIGN. Hitachi Maxell, Ltd. SN 252,002. Pub. 8–15–67. Filed 7–20–66.

837,836. DYNAGARD. Wagner Electric Corporation, by change of name and assignment from Tung-Sol Electric Inc. SN 255,138. Pub. 8–15–67. Filed 9–26–66.

837,837. LOAD/VAC. General Electric Company. SN 255,201. Pub. 8–15–67. Filed 9–27–66.

837,838. WOCIR. Southern Weaving Company. SN 255,551. Pub. 8–15–67. Filed 9–30–66.

837,839. IBI. International Battery, Inc. SN 256,940. Pub. 8–15–67. Filed 10–21–66.

837,840. ELOTUNG. Elox Corporation. SN 257,045. Pub. 8–15–67. Filed 10–24–66.

837,841. MODIFLEX. Industrial Condenser Corporation. SN 257,489. Pub. 8–15–67. Filed 10–28–66.

837,842. CHEVRON (DESIGN). Standard Oil Company of California. SN 259,036. Pub. 8–15–67. Filed 11–18–66.

837,843. CHEVRON. Standard Oil Company of California. SN 259,037. Pub. 8–15–67. Filed 11–18–66.

837,844. TROJAN. Steinberg-Baum Co. SN 259,681. Pub. 8–15–67. Filed 11–29–66.

837,845. SOLITRODE. Solitron Devices, Inc. SN 262,716. Pub. 8–15–67. Filed 1–17–67.

837,846. SANTA LAND. New York Merchandise Company, Inc. SN 271,674. Pub. 8–15–67. Filed 5–17–67.

Class 22—Games, Toys, and Sporting Goods

837,716. (See Class 2 for this trademark.)

837,825. (See Class 19 for this trademark.)

837,847. TOY 'N JOY AND DESIGN. L. M. Becker & Co. MULTIPLE CLASS (Classes 22 and 23). SN 233,168. Pub. 8–15–67. Filed 11–23–65.

837,848. PEE WEE. Uneeda Doll Co., Inc. SN 240,809. Pub. 8–15–67. Filed 3–11–66.

837,849. H AND DESIGN. Hart Ski Mfg. Co., Inc. SN 247,357. Pub. 8–15–67. Filed 6–6–66.

837,850. DYNASTAR. Les Plastiques Synthetiques S.A. SN 249,542. Pub. 8–15–67. Filed 7–5–66.

837,851. ACTION SOLDIERS OF THE WORLD. Hassenfeld Bros. Inc. SN 250,958. Pub. 8–15–67. Filed 7–25–66.

837,852. FIGHTING MEN. Hassenfeld Bros. Inc. SN 250,960. Pub. 8–15–67. Filed 7–25–66.

837,853. LET'S GO JOE. Hassenfeld Bros. Inc. SN 250,961. Pub. 8–15–67. Filed 7–25–66.

837,854. COMPOUND. Les Plastiques Synthetiques S.A. SN 251,440. Pub. 8–15–67. Filed 8–1–66.

837,855. PK-USA. Peter Kennedy, Inc. SN 251,929. Pub. 8–15–67. Filed 8–8–66.

837,856. PK. Peter Kennedy, Inc. SN 251,930. Pub. 8–15–67. Filed 8–8–66.

837,857. MTD. The M. T. & D. Company. SN 252,188. Pub. 8–15–67. Filed 8–11–66.

837,858. SUGAR 'N SPICE. Viscount Products, Inc. SN 252,702. Pub. 8–15–67. Filed 8–18–66.

837,859. HARTZ MOUNTAIN. Harts Mountain Products Corp. SN 252,952. Pub. 8–15–67. Filed 8–23–66.

837,860. CHUCHIN-BOL. M. C. Davis Enterprises, Inc. SN 253,635. Pub. 8–15–67. Filed 9–1–66.

837,861. BOWL-AND-SCORE. E. S. Lowe Company, Inc. SN 254,397. Pub. 8–15–67. Filed 9–13–66.

837,862. SOK-KER. Tennessee Industries, Inc. SN 254,744. Pub. 8–15–67. Filed 9–19–66.

837,863. FINNSPECIAL. Paul H. Whitney. SN 255,388. Pub. 8–15–67. Filed 9–28–66.

837,864. SKY-TOP AND DESIGN. Unusual Toy Mfg., Inc. SN 256,021. Pub. 8–15–67. Filed 10–7–66.

837,865. MIDWEST MICRO CUT AND DESIGN. Midwest Products Company, Inc. SN 256,113. Pub. 8–15–67. Filed 10–10–66.

837,866. BID-WRITE. Elliot S. Sears. SN 256,145. Pub. 8–15–67. Filed 10–10–66.

837,867. GOLD LION. Wittek Golf Range Supply Co., Inc. SN 256,167. Pub. 8–15–67. Filed 10–10–66.

837,868. AQUABOARD. Aquaslide Corporation. SN 256,261. Pub. 8–15–67. Filed 10–12–66.

837,869. WHIRLYBIRD. Whopper Stopper, Inc. SN 256,894. Pub. 8–15–67. Filed 10–20–66.

837,870. WHITE STREAK. The Faultless Rubber Company. SN 257,377. Pub. 8–15–67. Filed 10–27–66.

837,871. "WEIGHTS-YOU-WEAR." Elmer's Weights, Inc. SN 257,596. Pub. 8–15–67. Filed 10–31–66.

837,872. FUNNY MOONERS. Hassenfeld Bros. Inc. SN 257,626. Pub. 8–15–67. Filed 10–31–66.

837,873. UNIVERSAL. Athletic Sales Co., d.b.a. Universal Athletic Sales Co. SN 259,391. Pub. 8–15–67. Filed 11–25–66.

837,874. SKY-VAULTER. B & D Enterprises. SN 259,392. Pub. 8–15–67. Filed 11–25–66.

837,875. PORT-A-POOL. Port-A-Pool Corporation. SN 259,466. Pub. 8–15–67. Filed 11–25–66.

837,876. PORT-A-POOL AND DESIGN. Port-A-Pool Corporation. SN 259,467. Pub. 8–15–67. Filed 11–25–66.

837,877. CRESTLINE. Federal Steel Corporation. SN 259,721. Pub. 8–15–67. Filed 11–30–66.

837,878. DAMBLOCKS. Spare-Time Products, Inc. SN 266,392. Pub. 8–15–67. Filed 3–10–67.

837,879. T-LINE. Peter A. Freeman. SN 268,003. Pub. 8–15–67. Filed 3–31–67.

837,880. BLACK FURY. Sheldons', Inc. SN 268,005. Pub. 8–15–67. Filed 3–31–67.

837,881. ZOO-A-RAMA. Buddy L Corporation. SN 271,105. Pub. 8–15–67. Filed 5–10–67.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

837,847. (See Class 22 for this trademark.)

837,882. SMD. Scott Machine Development Corporation Inc. SN 227,775. Pub. 8–15–67. Filed 9–14–65.

837,883. SERENADE. Ken-Kraft Company, Inc. SN 231,428. Pub. 8–15–67. Filed 10–23–65.

837,884. OB (DESIGN). The Ohio Brass Company. SN 233,381. Pub. 8–15–67. Filed 11–26–65.

837,885. UNI-SPAN. The Alliance Machine Company. SN 236,342. Pub. 4–4–67. Filed 1–13–66.

837,886. DIAMANT. VEB Fahrradwerk Elite-Diamant. SN 236,677. Pub. 8–15–67. Filed 1–17–66.

837,887. PROFILE-SIZERS AND DESIGN. Adcox-Smith Company. SN 239,689. Pub. 8–15–67. Filed 2–28–66.

837,888. FANCIFUL H IMPOSED ON P (DESIGN). Hamilton-Pax, Inc. SN 240,096. Pub. 8–15–67. Filed 3–3–66.

837,889. CYCLOMATIC. East Chicago Machine Tool Corporation. SN 241,129. Pub. 8–15–67. Filed 3–16–66.

837,890. BALEMASTER. East Chicago Machine Tool Corporation. SN 241,131. Pub. 8–15–67. Filed 3–16–66.

837,891. COUNTRYSIDE. Oneida Ltd. SN 241,173. Pub. 8–15–67. Filed 3–16–66.

837,892. LIMA. Baldwin-Lima-Hamilton. SN 241,850. Pub. 8–15–67. Filed 3–25–66.

837,893. MISCELLANEOUS DESIGN. Astrosystems International, Inc. MULTIPLE CLASS (Classes 23 and 26). SN 244,072. Pub. 8–15–67. Filed 4–22–66.

837,894. RELIABILT. General Motors Corporation. SN 244,319. Pub. 8–15–67. Filed 4–26–66.

837,895. JET-CIT-THRU. Jet-Cit-Thru, Inc. SN 247,605. Pub. 8–15–67. Filed 6–8–66.

837,896. MILK-O-MATIC. Edgar R. Fleming, d.b.a. Ed Fleming Co. SN 247,689. Pub. 8–15–67. Filed 6–9–66.

837,897. GUARD-LITE. Robert G. Evans Company. SN 249,851. Pub. 8–15–67. Filed 7–8–66.

837,898. FLICK A LINE. Bryant White. SN 249,897. Pub. 8–15–67. Filed 7–8–66.

837,899. MORLOK. Vesuvius Crucible Company. SN 250,110. Pub. 8–15–67. Filed 7–12–66.

837,900. CLEVELAND. The Cleveland Twist Drill Company. SN 251,707. Pub. 8–15–67. Filed 8–4–66.

837,901. ECCEN-TOOLS. E.T.M. Corporation. SN 251,996. Pub. 8–15–67. Filed 8–9–66.

837,902. PRESTONE. Union Carbide Corporation. SN 252,770. Pub. 8–15–67. Filed 8–19–66.

837,903. VIKING PUMPS AND DESIGN. Viking Pump Company. SN 252,977. Pub. 8–15–67. Filed 8–23–66.

837,904. AGITOR. Graymills Corporation. SN 253,524. Pub. 8–15–67. Filed 8–31–66.

837,905. CHOKE-PROOF. Gustafson Manufacturing Company, Inc. SN 254,048. Pub. 8–15–67. Filed 9–8–66.

837,906. TYLER. Tyler Corporation. SN 254,382. Pub. 8–15–67. Filed 9–12–66.

837,907. STUDIO-TWELVE. Margaret E. Weymouth, d.b.a. Studio Twelve. SN 255,249. Pub. 8–15–67. Filed 9–27–66.

837,908. WISSALOY. J. Wiss and Sons Co. SN 255,389. Pub. 8–15–67. Filed 9–28–66.

837,909. NICHOLSON AND DESIGN. Nicholson File Company. SN 255,814. Pub. 8–15–67. Filed 10–5–66.

837,910. WOND-R-FIL. Doughboy Industries, Inc. SN 255,971. Pub. 8–15–67. Filed 10–7–66.

837,911. POLYMASTER. Dayco Corporation. SN 257,944. Pub. 8–15–67. Filed 11–3–66.

837,912. NOVAMATIC. Officine Meccaniche Antonio Nova. SN 271,578. Pub. 8–15–67. Filed 5–16–67.

Class 25—Locks and Safes

837,913. RS. Sargent & Greenleaf, Inc. SN 256,009. Pub. 8–15–67. Filed 10–7–66.

Class 26—Measuring and Scientific Appliances

837,741. (See Class 6 for this trademark.)

837,893. (See Class 23 for this trademark.)

837,914. QUAD. Avant Incorporated. SN 221,783. Pub. 8–15–67. Filed 6–23–65.

837,915. REGNA. Jørgen Sigurd Lien, d.b.a. Jørgen S. Lien. SN 240,449. Pub. 8–15–67. Filed 3–8–66.

837,916. BENSON'S. N. P. Benson Optical Company, assignee of Benson Opticians, Inc. MULTIPLE CLASS (Classes 26 and 100). SN 242,530. Pub. 7–25–67. Filed 4–4–66.

837,917. SCANALYZER. Mechanical Product Development Corp. SN 244,335. Pub. 8–15–67. Filed 4–26–66.

837,918. AQUAMATIC. Wilson, Walton International Incorporated. SN 250,200. Pub. 8–15–67. Filed 7–13–66.

837,919. LUNAR COM AND DESIGN. Communications Company, Inc. SN 250,451. Pub. 8–15–67. Filed 7–18–66.

837,920. PFC. Heinemann Electric Company. SN 251,132. Pub. 8–15–67. Filed 7–27–66.

837,921. SPECTROGARD. Textron Electronics, Inc., d.b.a. Spectrolab. SN 256,610. Pub. 8–15–67. Filed 10–17–66.

837,922. OMNIAC. International Dynamics Corporation. SN 256,669. Pub. 8–15–67. Filed 10–18–66.

837,923. PCMI. The National Cash Register Company. SN 257,880. Pub. 8–15–67. Filed 11–3–66.

837,924. DORAL. Global Import & Export, Inc. SN 264,052. Pub. 8–15–67. Filed 2–6–67.

837,925. NULLLINE AND DESIGN. Electro-Nite Co., by change of name from Electro-Nite Engineering Company, d.b.a. Electro-Nite Company. SN 268,458. Pub. 8–15–67. Filed 4–6–67.

837,926. 3M. Minnesota Mining and Manufacturing Company. SN 271,320. Pub. 8–15–67. Filed 5–12–67.

Class 27 — Horological Instruments

837,927. STYLEX. Stylex Timecraft & Jewelry Corp. SN 239,085. Pub. 8–15–67. Filed 2–17–66.

837,928. DURABILT. Bulova Watch Company, Inc. SN 254,581. Pub. 8–15–67. Filed 9–16–66.

837,929. PENDULUM (DESIGN). Bulova Watch Company, Inc. SN 254,582. Pub. 8–15–67. Filed 9–16–66.

837,930. FIELDSTON. Edward A. Waldman Co., Inc. SN 254,824. Pub. 8–15–67. Filed 9–20–66.

837,931. ULTRA-CHRON. Longines-Wittnauer Watch Co., Inc. SN 255,448. Pub. 8–15–67. Filed 9–29–66.

837,932. EMERA. Solari & C./Udine S.p.A. SN 256,315. Pub. 8–15–67. Filed 10–12–66.

Class 28 — Jewelry and Precious-Metal Ware

837,933. SONETTE. W. Bell & Co. Inc. SN 245,459. Pub. 8–15–67. Filed 5–12–66.

837,934. 18-K AND DESIGN. Alamar Jewelry Corporation. SN 258,766. Pub. 8–15–67. Filed 11–16–66.

837,935. PERSIAN LOVE. Uncas Manufacturing Company. SN 270,643. Pub. 8–15–67. Filed 5–4–67.

Class 31 — Filters and Refrigerators

837,936. JETFLO. A.J. Industries, Inc. SN 247,862. Pub. 8–15–67. Filed 6–13–66.

837,937. CENTROL. General Filter Company. SN 250,660. Pub. 8–15–67. Filed 7–20–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

837,938. FINELINE. Rayline, Inc. SN 229,374. Pub. 8–15–67. Filed 10–5–65.

837,939. MINUTEMAN AND DESIGN. Yankee Oil Co., Inc., assignee of Allan L. Schwartz. MULTIPLE CLASS (Classes 34, 39, and 103). SN 231,656. Pub. 8–15–67. Filed 10–27–65.

837,940. DRI-HEAT. Franklin Products Corp., by merger from Dri-Heat Food System, Inc. SN 244,092. Pub. 8–15–67. Filed 4–22–66.

837,941. LINDBERG. Sola Basic Industries, Inc. SN 250,187. Pub. 8–15–67. Filed 7–13–66.

837,942. THREE SQUARES WITH "V" IN CENTER OF EACH (DESIGN). Jenn-Air Corporation. SN 250,846. Pub. 8–15–67. Filed 7–22–66.

837,943. CANDLELIGHT RHAPSODY. Premier Creations, Inc. SN 251,948. Pub. 8–15–67. Filed 8–8–66.

837,944. COPR-TRODE. Ampco Metal, Inc. SN 253,202. Pub. 8–15–67. Filed 8–26–66.

837,945. BONDED. Omark Industries, Inc. SN 255,118. Pub. 8–15–67. Filed 9–26–66.

837,946. COBRA. M. K. Products, Inc. SN 255,633. Pub. 8–15–67. Filed 10–3–66.

837,947. SHIELD. Wagoner Corporation. SN 256,023. Pub. 8–15–67. Filed 10–7–66.

837,948. WAGONER. Wagoner Corporation. SN 256,024. Pub. 8–15–67. Filed 10–7–66.

837,949. BL. Buffalo Forge Company. SN 267,606. Pub. 8–15–67. Filed 3–27–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

837,950. NATURAL-TRED CR LUG. The Firestone Tire & Rubber Company. SN 248,319. Pub. 8–15–67. Filed 6–17–66.

837,951. CARBO-TRED HT LUG. The Firestone Tire & Rubber Company. SN 248,320. Pub. 8–15–67. Filed 6–17–66.

837,952. ASTROSTAR. The Kelly-Springfield Tire Company. SN 256,672. Pub. 8–15–67. Filed 10–18–66.

837,953. UFD. Periflex Inc. SN 256,678. Pub. 8–15–67. Filed 10–18–66.

837,954. TIRE AND BELT (DESIGN). The Armstrong Rubber Company. SN 257,028. Pub. 8–15–67. Filed 10–24–66.

837,955. FITZ-CO. The Fitzgerald Manufacturing Company. SN 257,265. Pub. 8–15–67. Filed 10–26–66.

837,956. MAJESTIC. Delta Tire Corporation. SN 257,465. Pub. 8–15–67. Filed 10–28–66.

Class 36 — Musical Instruments and Supplies

837,957. COMPACT. Farfisa S.p.A. SN 223,108. Pub. 8–15–67. Filed 7–12–65.

837,958. KENT. Buegeleisen & Jacobson, Inc. SN 233,246. Pub. 8–15–67. Filed 11–24–65.

837,959. AUDIO-PRO. Recoton Corporation. SN 248,052. Pub. 8–15–67. Filed 6–14–66.

837,960. OCAL. Edward Lobis Thompson. SN 248,748. Pub. 8–15–67. Filed 6–22–66.

837,961. LION (DESIGN). Metro-Goldwyn-Mayer Inc. SN 254,459. Pub. 8–15–67. Filed 9–14–66.

Class 37 — Paper and Stationery

837,716. (See Class 2 for this trademark.)

Class 38 — Prints and Publications

837,716. (See Class 2 for this trademark.)

837,962. FOREVER. Chester D. Johnson. SN 245,869. Pub. 8–15–67. Filed 5–3–66.

837,963. GRAPHIC ARTS MONTHLY AND THE PRINTING INDUSTRY. Graphic Arts Publishing Company. SN 246,784. Pub. 8–15–67. Filed 5–27–66.

837,964. FURNITURE DESIGN & MANUFACTURING. Graphic Arts Publishing Company. SN 246,785. Pub. 8–15–67. Filed 5–27–66.

837,965. MINKUS. Minkus Publications, Inc. SN 247,044. Pub. 8–15–67. Filed 6–1–66.

837,966. SPORTY AND DESIGN. Sportsman's Market. SN 249,589. Pub. 8–15–67. Filed 7–5–66.

837,967. KWIK-SPACE. The Meyercord Co. SN 251,144. Pub. 8–15–67. Filed 7–27–66.

837,968. PHILIPS AND DESIGN. N.V. Philips' Gloeilampenfabrieken. SN 251,745. Pub. 8–15–67. Filed 8–4–66.

837,969. HONOR. Ivan Obolensky, Inc. SN 254,788. Pub. 8–15–67. Filed 9–20–66.

837,970. JUNIOR SECRETARY. McGraw-Hill, Inc. SN 257,284. Pub. 8–15–67. Filed 10–26–66.

837,971. PSI. Clarence T. Engdall. SN 258,517. Pub. 8–15–67. Filed 11–14–66.

837,972. SEMINAR. The Copley Press, Inc. SN 259,410. Pub. 8–15–67. Filed 11–25–66.

837,973. EAS AND DESIGN. Eastern Analytical Symposium. SN 265,254. Pub. 8–15–67. Filed 2–23–67.

837,974. GOLF-N-WIN. Spot-O-Gold Corporation. SN 266,485. Pub. 8–15–67. Filed 3–13–67.

837,975. IMPROMPTU AND DESIGN. New York College of Music. SN 266,776. Pub. 8–15–67. Filed 3–15–67.

837,976. SLAP-STIX. Jeanmarie Creations, Inc. SN 271,097. Pub. 8–15–67. Filed 5–10–67.

Class 39 — Clothing

837,716. (See Class 2 for this trademark.)

837,722. (See Class 3 for this trademark.)

837,939. (See Class 34 for this trademark.)

837,977. CARRIGLEN. Stern & Herff Corp. SN 245,761. Pub. 8–15–67. Filed 5–16–66.

837,978. LION SIDAE CLOTHES CO., LTD. AND DESIGN. Sidae Clothes Co., Ltd. SN 251,472. Pub. 8–15–67. Filed 8–1–66.

837,979. EDWARDS THE BIG HOUSE FOR LITTLE SHOES AND DESIGN. J. Edwards & Co. SN 252,556. Pub. 8–15–67. Filed 8–17–66.

837,980. THE RANDOLPH. William P. Clegg. SN 257,830. Pub. 8–15–67. Filed 11–3–66.

837,981. KODIAK KING AND DESIGN. L. S. Brown Co. SN 258,666. Pub. 8–15–67. Filed 11–15–66.

837,982. DOLLAR STRETCHER. Rudin & Roth, Inc. SN 269,481. Pub. 8–15–67. Filed 4–19–67.

Class 40 — Fancy Goods, Furnishings, and Notions

837,983. SHEEBA. Pharmaceutical Laboratories, Inc. SN 258,578. Pub. 8–15–67. Filed 11–14–66.

837,984. LIBERTY STATUE. I. Posner, Inc. SN 266,359. Pub. 8–8–67. Filed 3–9–67.

Class 41 — Canes, Parasols, and Umbrellas

837,985. MINI-BRELLA. Polan, Katz & Company, Incorporated. SN 262,284. Pub. 8–15–67. Filed 1–10–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

837,986. CABIN CRAFTS MAKES THE CARPET THAT MAKES THE HOME. Cabin Crafts, Inc. SN 254,772. Pub. 8–15–67. Filed 9–20–66.

837,987. TITWILLOW. Westwood Textile Manufacturing, Inc. SN 257,902. Pub. 8–15–67. Filed 11–3–66.

837,988. KALON & DESIGN. Wedgwood Fabrics. SN 258,630. Pub. 8–15–67. Filed 11–14–66.

837,989. KEEP. The Kendall Company. SN 259,658. Pub. 8–15–67. Filed 11–29–66.

837,990. SILHOUETTE OF TWINS (DESIGN). Twinco Products Company, Inc. SN 262,451. Pub. 8–15–67. Filed 1–12–67.

837,991. MIRA-CORD. Beacon Manufacturing Company. SN 262,758. Pub. 8–15–67. Filed 1–18–67.

837,992. DANAIR. Dan River Mills, Incorporated. SN 262,767. Pub. 8–15–67. Filed 1–18–67.

837,993. FUTURECALE. Mosse, Incorporated. SN 268,453. Pub. 8–15–67. Filed 4–6–67.

Class 44 — Dental, Medical, and Surgical Appliances

837,716. (See Class 2 for this trademark.)

Class 45 — Soft Drinks and Carbonated Waters

837,994. KICK. Royal Crown Cola Co. SN 212,248. Pub. 8–15–67. Filed 2–17–65.

Class 46 — Foods and Ingredients of Foods

837,716. (See Class 2 for this trademark.)

837,995. PIGGY SNAX. Fairmont Foods Company, assignee of Giant Distributing Co. SN 191,047. Pub. 11–16–65. Filed 4–14–64.

837,996. SUN VISTA. Sun Vista Foods, Inc. SN 195,983. Pub. 2–1–66. Filed 6–18–64.

837,997. MR. COOL AND DESIGN. National Dairy Products Corporation. SN 207,641. Pub. 8–15–67. Filed 12–7–64.

837,998. HUMAN (DESIGN). New York Snacktime, Inc. SN 209,945. Pub. 8–15–67. Filed 1–14–65.

837,999. TREASURE VALLEY TV AND DESIGN. Mountain States Wholesale Company, by change of name and assignment from Mountain States Wholesale Company. MULTIPLE CLASS (Classes 46 and 52). SN 211,556. Pub. 1–4–66. Filed 2–8–65.

838,000. SUSIE SEWARD AND DESIGN. Seward's Dairy, Inc. SN 222,299. Pub. 6–28–66. Filed 6–29–65.

838,001. SEA TREASURE. Inter-American Foods Inc. SN 229,354. Pub. 7–19–66. Filed 10–5–65.

838,002. DQ JET. American Dairy Queen Corporation. SN 230,997. Pub. 8–15–67. Filed 10–22–65.

838,003. YUM-TENDERLOIN. Council Manufacturing Corporation, assignee of The Yum-burger Corporation of America. SN 231,337. Pub. 8-15-67. Filed 10-22-65.

838,004. YUM-FISH. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,338. Pub. 8-15-67. Filed 10-22-65.

838,005. YUM-BURGER. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,339. Pub. 8-15-67. Filed 10-22-65.

838,006. YUM-DOG. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,341. Pub. 8-15-67. Filed 10-22-65.

838,007. YUM-RINGS. Council Manufacturing Corporation, assignee of The Yum-Burger Corporation of America. SN 231,342. Pub. 8-15-67. Filed 10-22-65.

838,008. MRS. KINSER'S ETC. AND DESIGN. Mrs. Kinser's Home Style Foods, Inc. SN 243,457. Pub. 8-15-67. Filed 4-14-66.

838,009. DINNER HOUR. Davis-Le Grand Company. SN 246,890. Pub. 3-14-67. Filed 5-31-66.

838,010. MORRISON'S. The Morrison Milling Co. SN 247,141. Pub. 8-15-67. Filed 6-2-66.

838,011. PURIS AND DESIGN. Illinois Syrup Company. SN 247,508. Pub. 8-15-67. Filed 6-7-66.

838,012. FLORIDA DIET. Lake Hamilton Concentrate, Inc. SN 248,145. Pub. 8-15-67. Filed 6-15-66.

838,013. FIELDCREST. Dean Foods Company. SN 254,920. Pub. 8-15-67. Filed 9-22-66.

838,014. WEST BAY. Traverse City Canning Company. SN 254,952. Pub. 8-15-67. Filed 9-22-66.

838,015. RAISIN-KINS. Beatrice Foods Co. SN 256,714. Pub. 8-15-67. Filed 10-19-66.

838,016. VITAL 7. General Mills, Inc. SN 257,606. Pub. 8-15-67. Filed 10-31-66.

838,017. BORRELLI'S PERFECTION AND DESIGN. Fresno Macaroni Manufacturing Company, Inc., d.b.a. Perfection Macaroni Company. SN 257,704. Pub. 8-15-67. Filed 11-1-66.

838,018. TENDER LEAN ETC. AND DESIGN. Nash-Finch Company. SN 257,794. Pub. 8-15-67. Filed 11-2-66.

838,019. GEMINI. Fisher Flouring Mills Co. SN 258,090. Pub. 8-15-67. Filed 11-7-66.

838,020. CAPSUL. National Starch and Chemical Corporation. SN 259,260. Pub. 8-15-67. Filed 11-22-66.

838,021. NATURE'S DIET. Albert Valdora, d.b.a. Valdora Produce Co. SN 268,662. Pub. 8-15-67. Filed 4-10-67.

Class 49 — Distilled Alcoholic Liquors

838,022. CONSULATE. Distillers Corporation (S.A.) Limited. SN 216,067. Pub. 6-21-66. Filed 4-8-65.

838,023. COOPERSTOWN. Hiram Walker & Sons, Inc. SN 256,511. Pub. 8-15-67. Filed 10-17-66.

Class 50 — Merchandise Not Otherwise Classified

837,716. (See Class 2 for this trademark.)

838,024. RIBBON. Big Dutchman, Inc., by change of name from Automatic Poultry Feeder Company. SN 184,423. Pub. 8-15-67. Filed 1-13-64.

838,025. MAGNA-FLEX. Florida Plastics, Inc. SN 251,810. Pub. 8-15-67. Filed 8-5-66.

838,026. LANE-MAKER. York Label Corporation. SN 253,072. Pub. 8-15-67. Filed 8-24-66.

838,027. CONWED. Wood Conversion Company. SN 255,848. Pub. 8-15-67. Filed 10-5-66.

838,028. WONDERFALL. Navan Incorporated. SN 256,304. Pub. 8-15-67. Filed 10-12-66.

838,029. MY-RO. My-Ko Chemical Corporation. SN 262,801. Pub. 8-15-67. Filed 1-18-67.

Class 51 — Cosmetics and Toilet Preparations

838,030. WELLA COLORMATIC. The Wella Corporation. SN 188,315. Pub. 11-3-64. Filed 3-9-64.

838,031. JUST ONCE. Colgate-Palmolive Company, assignee of John H. Breck, Inc. SN 199,876. Pub. 3-16-65. Filed 8-14-64.

838,032. ONCE. Colgate-Palmolive Company, assignee of John H. Breck, Inc. SN 201,179. Pub. 4-20-65. Filed 9-3-64.

838,033. KARNAK. Cosway Company, Inc., assignee of The Robert H. Clark Company. SN 218,390. Pub. 8-15-67. Filed 5-10-65.

838,034. GENTIQUE. Bristol-Myers Company. SN 246,649. Pub. 11-8-66. Filed 5-26-66.

838,035. YAMA. Houbigant, Inc. SN 248,185. Pub. 8-15-67. Filed 6-15-66.

838,036. BUBBLE FUN. White Cross Stores, Inc. SN 248,564. Pub. 8-15-67. Filed 6-20-66.

838,037. DRY LEMON. The Mennen Company. SN 250,501. Pub. 8-15-67. Filed 7-18-66.

838,038. SUNTIME BLONDE. Clairol Incorporated. SN 254,116. Pub. 8-15-67. Filed 9-9-66.

838,039. SUNTIME LIGHT. Clairol Incorporated. SN 254,117. Pub. 8-15-67. Filed 9-9-66.

838,040. SUNSHINE LIGHT. Clairol Incorporated. SN 254,122. Pub. 8-15-67. Filed 9-9-66.

838,041. MAC. Beecham Products Inc. SN 257,923. Pub. 8-15-67. Filed 11-4-66.

838,042. VANLON. Claude H. Davis, d.b.a. Vanlon Products Company. SN 258,073. Pub. 8-15-67. Filed 11-7-66.

838,043. NAKED SATIN. American Home Products Corporation. SN 264,713. Pub. 5-23-67. Filed 2-15-67.

838,044. CARON. Caron Corporation. SN 268,288. Pub. 8-15-67. Filed 4-4-67.

Class 52 — Detergents and Soaps

837,999. (See Class 46 for this trademark.)

838,045. SOFTERGENT. Colgate-Palmolive Company. SN 214,248. Pub. 8-15-67. Filed 3-16-65.

838,046. MAGIC FOAM. Amway Corporation. SN 243,620. Pub. 4-11-67. Filed 4-18-66.

838,047. K AND BELL DESIGN. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 247,806. Pub. 8-15-67. Filed 6-10-66.

838,048. FIDELEX. Fidelity Chemical Products Corp. SN 253,430. Pub. 8-15-67. Filed 8-30-66.

838,049. POWER ON. American Cyanamid Company. SN 255,404. Pub. 8-15-67. Filed 9-29-66.

838,050. TRIWITE. H. Kohnstamm & Co., Inc. SN 256,105. Pub. 8-15-67. Filed 10-10-66.

838,051. CHEMITHON. The Chemithon Corporation. SN 267,486. Pub. 8-15-67. Filed 3-24-67.

838,052. YP YOUNGS AND DESIGN. Youngs Drug Products Corporation. SN 272,247. Pub. 8-15-67. Filed 5-24-67.

Service Marks

Class 100 — Miscellaneous

837,916. (See Class 26 for this trademark.)

838,053. YUM-BURGER. Council Manufacturing Corporation. SN 217,531. Pub. 8-15-67. Filed 4-28-65.

838,054. GIAC AND DESIGN. General Innkeeping Acceptance Corporation. MULTIPLE CLASS (Classes 100 and 102). SN 228,457. Pub. 8-15-67. Filed 9-23-65.

838,055. ROAD LOGGER. Dresser Industries, Inc. SN 231,552. Pub. 8-15-67. Filed 10-24-65.

838,056. MISCELLANEOUS DESIGN. Employee Relocation Real Estate Advisory Committee, Inc. SN 241,445. Pub. 8-15-67. Filed 3-21-66.

838,057. TULSA STOCKYARDS. Tulsa Stockyards. SN 242,072. Pub. 8-15-67. Filed 3-28-66.

838,058. CRYOCAL. Cryocal, Inc. SN 243,849. Pub. 8-15-67. Filed 4-20-66.

838,059. WELLS FARGO. Wells Fargo & Company. SN 245,640. Pub. 8-15-67. Filed 5-13-66.

838,060. DANKERS AND DESIGN. Dotnic Corporation. SN 250,647. Pub. 8-15-67. Filed 7-20-66.

838,061. TOURWAY INN OF AMERICA AND DESIGN. Tourway Inns of America. SN 253,461. Pub. 8-15-67. Filed 8-30-66.

838,062. COLONEL SANDERS' RECIPE KENTUCKY FRIED CHICKEN. Kentucky Fried Chicken Corporation. SN 265,370. Pub. 8-15-67. Filed 2-24-67.

838,063. SKY HOST HOTELS AND DESIGN. International Airport Hotel System, Inc. SN 268,190. Pub. 8-15-67. Filed 4-3-67.

838,064. APS. Arizona Public Service Company. SN 270,098. Pub. 8-15-67. Filed 4-27-67.

Class 101 — Advertising and Business

837,916. (See Class 26 for this trademark.)

838,065. CPIC (DESIGN). Compendium Publishers International Corp. SN 228,333. Pub. 8-15-67. Filed 9-22-65.

838,066. GOPHER. Gopher Shooter's Supply Company, Inc. SN 232,307. Pub. 8-15-67. Filed 11-8-65.

838,067. AMERICAN EXPRESS AND DESIGN. American Express Company. MULTIPLE CLASS (Classes 101, 102, and 105). SN 234,986. Pub. 8-15-67. Filed 12-21-65.

838,068. CLOCK FACE WITH THREE PEOPLE (DESIGN). William Olsten. SN 240,112. Pub. 8-15-67. Filed 3-3-66.

838,069. ALEXTRONICS. Alextronics Corporation. SN 241,571. Pub. 8-15-67. Filed 3-22-66.

838,070. RIGHT MAN. Right Girl Temporary Service, Inc. SN 242,287. Pub. 8-15-67. Filed 3-30-66.

838,071. STOPLIGHT. Melandrea, Inc. SN 243,337. Pub. 8-15-67. Filed 4-13-66.

838,072. MISS MISSISSIPPI UNIVERSE. Miss Universe, Inc. SN 243,341. Pub. 8-15-67. Filed 4-13-66.

838,073. MISS FLORIDA UNIVERSE. Miss Universe, Inc. SN 243,342. Pub. 8-15-67. Filed 4-13-66.

838,074. ADSCOR. Heubner Publications, Inc. SN 245,489. Pub. 8-15-67. Filed 5-12-66.

838,075. MODULAR STAFFING. Statistical Tabulating Corporation. SN 249,590. Pub. 8-15-67. Filed 7-5-66.

Class 102 — Insurance and Financial

838,054. (See Class 100 for this trademark.)

838,067. (See Class 101 for this trademark.)

838,076. "THE FEDERAL THAT LOOKS AFTER YOUR INTEREST" AND DESIGN. Fidelity Federal Savings and Loan Association of Nashville, Tennessee, and Chattanooga Federal Savings and Loan Association of Chattanooga, Tennessee (joint applicants). SN 240,423. Pub. 8-15-67. Filed 3-8-66.

838,077. IAP ETC. Investors Accumulation Plan, Inc., d.b.a. Investors Accumulation Plan. SN 240,916. Pub. 8-15-67. Filed 3-14-66.

838,078. ACORN ENCIRCLED (DESIGN). Investors Syndicate of America, Inc. SN 240,917. Pub. 8-15-67. Filed 3-14-66.

838,079. MISCELLANEOUS DESIGN. Survivors Benefit Insurance Company. SN 241,198. Pub. 8-15-67. Filed 3-16-66.

838,080. AMERICAN HERITAGE LIFE INSURANCE COMPANY AND DESIGN. American Heritage Life Insurance Company. SN 252,992. Pub. 8-15-67. Filed 8-24-66.

838,081. KEY TO SECURITY AND DESIGN. Equitable Life Insurance Company of Iowa. SN 253,642. Pub. 8-15-67. Filed 9-1-66.

838,082. REVERSED F (DESIGN). The Fund American Companies. SN 254,381. Pub. 8-15-67. Filed 9-13-66.

Class 103 — Construction and Repair

837,939. (See Class 34 for this trademark.)

838,083. COOK'S PEST CONTROL AND DESIGN. Cook's Pest Control, Inc. SN 222,672. Pub. 8-2-66. Filed 7-6-65.

838,084. G & G LANDSCAPE COMPANY INCORPORATED AND DESIGN. G and G Landscape Company, Inc. SN 248,034. Pub. 8-15-67. Filed 6-14-66.

838,085. TOLAS. Tompkins' Label Service. SN 250,315. Pub. 8-15-67. Filed 7-14-66.

Class 104 — Communication

838,086. DATA-PHONE. American Telephone and Telegraph Company. SN 242,315. Pub. 5-9-67. Filed 3-31-66.

Class 105 — Transportation and Storage

838,067. (See Class 101 for this trademark.)

838,087. SENTRY AND DESIGN. Sentry Baggage Protection Company. SN 240,667. Pub. 8-15-67. Filed 3-10-66.

838,088. GOLD LINE SERVICE. American Transportation Enterprises, Inc. SN 241,409. Pub. 8-15-67. Filed 3-21-66.

838,089. TRANSCO. Transcontinental Gas Pipe Line Corporation. SN 253,460. Pub. 8-15-67. Filed 8-30-66.

838,090. G.O.A.T. AND DESIGN. Gene Osborne Auto Transport. SN 258,461. Pub. 8-15-67. Filed 11-14-66.

Class 107 — Education and Entertainment

838,091. 12 HOURS OF SEBRING. The Automobile Racing Club of Florida, Inc. SN 230,228. Pub. 8-15-67. Filed 10-15-65.

838,092. CAP'N DELTA. KOVR Broadcasting Company. SN 235,513. Pub. 8-8-67. Filed 12-29-65.

838,093. ABRASIVE TECH. Norton Company. SN 242,639. Pub. 8-15-67. Filed 4-4-66.

838,094. CHIEFS AND DESIGN. Atlanta Braves, Inc. SN 271,402. Pub. 8-15-67. Filed 5-15-67.

838,095. CHIEFS. Atlanta Braves, Inc. SN 271,403. Pub. 8-15-67. Filed 5-15-67.

838,096. DESIGN OF INDIAN HEAD. Atlanta Braves, Inc. SN 271,404. Pub. 8-15-67. Filed 5-15-67.

Certification Mark

Class A — Goods

838,097. CERTIFIED RATINGS AUTHORIZED BY AMCA AND DESIGN. Air Moving and Conditioning Association, Inc. SN 253,477. Pub. 8-15-67. Filed 8-31-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1—Raw or Partly Prepared Materials

838,098. Moultrie Manufacturing Company, d.b.a. City Gardens, Moultrie, Ga. SN 241,597. Filed P.R. 3–22–66; Am. S.R. 8–3–67.

TOMATO TUB

For Planter, Including Tomato Seeds, Medium for Growing Same, and Container Therefor.
First use Nov. 29, 1965.

838,099. Freeport Sulphur Company, New York, N.Y. SN 259,913. Filed P.R. 12–2–66; Am. S.R. 8–22–67.

FREEPORT

For Kaolin.
First use May 16, 1966.

Class 6—Chemicals and Chemical Compositions

838,100. Hysan Products Company, Chicago, Ill., assignee of Green Lawn Laboratories, Inc., Skokie, Ill. SN 258,860. Filed P.R. 11–14–66; Am. S.R. 7–26–67.

INSTANT GREEN

For Horticultural Compound Comprising a Concentrate for Making an Aqueous Solution Thereof To Be Sprayed on Grass To Form a Green Film Thereon and Sold as Such.
First use on or about Oct. 10, 1962.

838,101. Wyandotte Chemicals Corporation, Wyandotte, Mich. SN 265,940. Filed 3–3–67.

BETTER BLEND SODA

For Bicarbonate of Soda.
First use June 1941.

Class 15—Oils and Greases

838,102. Dow Corning Corporation, Midland, Mich. SN 261,465. Filed P.R. 12–27–66; Am. S.R. 8–18–67.

SPRAY-KOTE

For Lubricants Containing Molybdenum Disulfide in an Aerosol Package.
First use January 1955.

Class 18—Medicines and Pharmaceutical Preparations

838,103. The Purdue Frederick Company, Yonkers, N.Y. SN 243,896. Filed P.R. 4–21–66; Am. S.R. 9–6–67.

RECTOL

For Suppositories To Relieve the Pain and Discomfort of Hemorrhoids.
First use Mar. 21, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

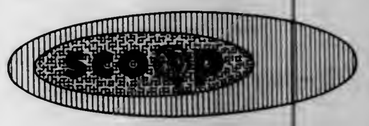
838,104. Transcon Manufacturing Co., Dallas, Tex. SN 253,458. Filed P.R. 8–30–66; Am. S.R. 9–6–67.

CABLE.rap

For Plastic Flexible Spiral Wrapping for Electrical Harnesses, Groups of Leads, Cables or Conductors.
First use Feb. 10, 1965.

Class 22—Games, Toys, and Sporting Goods

838,105. Ajay Golf Products Inc., Delavan, Wis., assignee of AJ Industries Corporation, Delavan, Wis. SN 244,219. Filed 4–25–66.



The drawing is lined for red and yellow but color is not claimed as a feature of the mark.
For Golf Ball Retriever.
First use Mar. 1, 1965.

838,106. Strategic Merchandising Corp., New York, N.Y. SN 260,974. Filed P.R. 12–16–66; Am. S.R. 9–5–67.

PRESIDENTS & PRIZES

For Promotional Printed Game Materials of the Public Participation Type for Distribution by Retail Outlets for Playing a Promotional Game To Stimulate the Sale of Their Goods and Services.
First use May 1, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

838,107. Anderson Electric Corporation, Leeds, Ala., assignee of The Singer Company, New York, N.Y. SN 252,626. Filed P.R. 8–18–66; Am. S.R. 8–28–67.

THIN PROFILE PACKAGER

For Packaging Machinery.
First use July 25, 1966.

Class 26—Measuring and Scientific Appliances

838,108. Fairchild Camera and Instrument Corporation, Syosset, N.Y. SN 242,580. Filed P.R. 4–4–66; Am. S.R. 9–1–67.

MOVIEPAK

For Cartridge for Motion Picture Film and Sound Motion Picture Film.
First use Apr. 15, 1964.

838,109. Armorlite Lens Company, Inc., Burbank, Calif. SN 249,398. Filed P.R. 7–1–66; Am. S.R. 9–5–67.

POLYFOCAL

For Ophthalmic Lenses Including Spectacle and Contact.
First use Feb. 14, 1966.

Class 36—Musical Instruments and Supplies

838,110. Ceskoslovenske Hudebni Nastroje, Narodni Podnik, Hradec Kralove, Czechoslovakia. SN 240,855. Filed P.R. 3–14–66; Am. S.R. 9–1–67.

PETROF

Owner of Czechoslovakian Reg. No. 112,183, dated May 26, 1942.
For Pianos; Uprights; Harmoniums; Melodeons; Organs; Keyboard Covers, Cast-Iron Frames and Other Parts of Said Musical Instruments.

Class 37—Paper and Stationery

838,111. Time Saving Specialties, Minneapolis, Minn. SN 195,826. Filed P.R. 6–16–64; Am. S.R. 3–23–66.

Felt-Riter

For Felt Marking Pen.
First use July 31, 1958.

838,112. Golf Digest, Inc., South Norwalk, Conn. SN 251,130. Filed P.R. 7–27–66; Am. S.R. 8–29–67.

PRO SHOP OPERATIONS

For Magazine.
First use during September 1965.

838,113. Paperback Library, Inc., New York, N.Y. SN 253,094. Filed P.R. 8–25–66; Am. S.R. 8–30–67.

PAPERBACK LIBRARY



For Books.
First use Aug. 16, 1966.

838,114. Hammond Incorporated, Maplewood, N.J. SN 259,112. Filed P.R. 11–21–66; Am. S.R. 8–31–67.

HAMMOND

For Atlases, Workbooks, Charts With Relatively Slidable Sections, Transparency Frames and Maps and Other Transparencies for Overhead Projection.
First use June 1, 1966.

838,115. Concrete Construction Publications, Inc., Elmhurst, Ill. SN 259,223. Filed P.R. 11–22–66; Am. S.R. 8–29–67.

Ready Mixed Concrete

For Monthly Magazine Relating to Concrete Industry.
First use on or about Mar. 1, 1964.

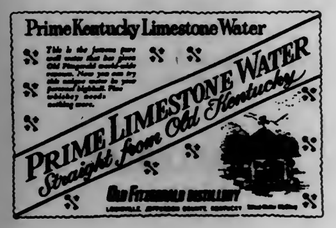
838,116. The Miller Publishing Company, Minneapolis, Minn. SN 260,870. Filed 12–15–66.

HOG FARM MANAGEMENT

For Monthly Trade Magazine.
First use June 9, 1964.

Class 45—Soft Drinks and Carbonated Waters

838,117. Stitzel-Weller Distillery, d.b.a. Old Fitzgerald Distillery, Louisville, Ky. SN 254,197. Filed 9-9-66.



For Water for Beverage Purposes.
First use Mar. 18, 1965.

838,118. Burgie Foods Company, Memphis, Tenn. SN 260,922. Filed P.R. 12-16-66; Am. S.R. 9-8-67.

SERV "10"

For Fruit Drinks Containing Water Sold in Bottles and Cans.
First use Feb. 24, 1959.

Class 46—Foods and Ingredients of Foods

838,119. R. J. Reynolds Foods, Inc., New York, N.Y., assignee by mesne assignments from Filler Products, Inc., Forest Park, Ga. SN 242,349. Filed P.R. 3-31-66; Am. S.R. 9-12-67.

BAKON BITTIES

For Fried Pork Rinds.
First use on or before Nov. 17, 1965.

838,120. Nevada Meat Market, d.b.a. Nevada Meat Co., New York, N.Y. SN 246,847. Filed P.R. 5-23-66; Am. S.R. 7-3-67.

ROLY POLY TURKEY

For Fresh Turkeys.
First use January 1963.

838,121. Batchelors Foods Limited, Sheffield, England. SN 251,698. Filed P.R. 8-4-66; Am. S.R. 8-24-67.

BATCHELORS

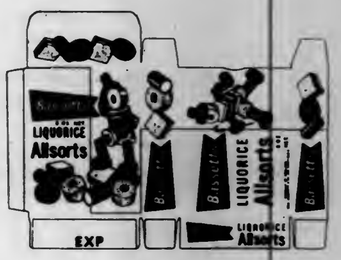
For Piccalilli, Pickles, Pickled Onions and Chutney.
First use Apr. 25, 1966; in commerce Apr. 25, 1966.

838,122. Geo. Bassett & Co. Limited, Sheffield, England. SN 252,338. Filed P.R. 8-15-66; Am. S.R. 8-21-67.



Owner of U.S. Reg. Nos. 565,586, 724,636, and 727,835.
For Liquorice Candy.
First use Aug. 5, 1963; in commerce Aug. 5, 1963.

838,123. Geo. Bassett & Co. Limited, Sheffield, England. SN 252,339. Filed P.R. 8-15-66; Am. S.R. 8-21-67.



Owner of U.S. Reg. Nos. 565,586, 724,636, and 727,835.
For Liquorice Candy.
First use Aug. 5, 1963; in commerce on or about Aug. 5, 1963.

Class 47—Wines

838,124. Fernando A. De Terry S.A., Puerto de Santa Maria (Cadiz), Spain. SN 255,196. Filed P.R. 9-27-66; Am. S.R. 8-25-67.



The drawing is lined for gold. Owner of Spanish Reg. No. 463,051, dated May 20, 1965; and U.S. Reg. Nos. 753,824, 771,570, and others.
For Wine.

Class 49—Distilled Alcoholic Liquors

838,125. Societe Saint-Louvent Peyrat & Cie, Cognac, France. SN 237,279. Filed P.R. 2-3-66; Am. S.R. 7-3-67.

RENAULT & CO.

Owner of French Reg. No. 14,574, dated July 22, 1964 (Cognac); Natl. Inst. No. 230,550.
For Cognac Brandy.

838,126. Societe Saint-Louvent Peyrat & Cie., Cognac, France. SN 237,280. Filed P.R. 2-3-66; Am. S.R. 7-3-67.

RENAULT

Owner of French Reg. No. 14,574, dated July 22, 1964 (Cognac); Natl. Inst. No. 230,550.
For Cognac Brandy.

838,127. L. J. McGuinness and Co. Limited, Mimico, Ontario, Canada. SN 238,554. Filed P.R. 2-10-66; Am. S.R. 9-1-67.

OLD CANADA

For Canadian Whisky.
First use Sept. 10, 1965; in commerce Sept. 10, 1965.

838,128. Fernando A. De Terry S.A., Puerto de Santa Maria (Cadiz), Spain. SN 255,197. Filed P.R. 9-27-66; Am. S.R. 8-25-67.

The drawing is lined for gold. Owner of Spanish Reg. No. 463,052, dated May 20, 1965; and U.S. Reg. Nos. 753,824, 771,570, and others.
For Brandy.

Class 51—Cosmetics and Toilet Preparations

838,129. Revlon, Inc., New York, N.Y. SN 245,229. Filed P.R. 5-9-66; Am. S.R. 8-14-67.

SILVER NOUGAT

For Lipstick and Nail Enamel.
First use Mar. 17, 1966.

838,130. Jose Sendra Marti, d.b.a. Crusellas, Miami, Fla. SN 245,328. Filed P.R. 5-10-66; Am. S.R. 9-11-67.



For Brilliantine
First use Mar. 12, 1966.

838,131. Bristol-Myers Company, New York, N.Y. SN 247,320. Filed P.R. 6-6-66; Am. S.R. 9-8-67.

MR. HYDE

For Hair Groom and Conditioner.
First use Apr. 26, 1966.

838,132. Loesch Laboratory Consultants, Inc., Houston, Tex. SN 251,550. Filed 8-2-66.

PROMPT DRY

For Hair Setting Spray.
First use July 20, 1965.

838,133. Bristol-Myers Company, New York, N.Y. SN 253,721. Filed P.R. 9-2-66; Am. S.R. 9-8-67.

MR. HYDE

For After Shave Cologne.
First use Aug. 8, 1966.

838,134. Revlon, Inc., New York, N.Y. SN 253,986. Filed P.R. 9-7-66; Am. S.R. 9-8-67.

CHERRY BLACK

For Eyeline Liquid-Mascara.
First use June 29, 1966.

838,135. Revlon, Inc., New York, N.Y. SN 253,989. Filed P.R. 9-7-66; Am. S.R. 9-11-67.

PLUM RUM

For Lipstick and Nail Enamel.
First use July 25, 1966.

838,136. Revlon, Inc., New York, N.Y. SN 253,991. Filed P.R. 9-7-66; Am. S.R. 9-11-67.

CANDIED BRANDY

For Lipstick and Nail Enamel.
First use July 25, 1966.

838,137. Thos. Christy & Co. Limited, Aldershot, Hampshire, England. SN 254,078. Filed P.R. 9–8–66; Am. S.R. 9–1–67.

CHRISTY'S

For Lanoline Face Pack.
First use 1952; in commerce July 1966.

838,138. Clairol Incorporated, New York, N.Y. SN 254,513. Filed P.R. 9–15–66; Am. S.R. 8–23–67.

SUMMER HAZE

For Hair Tinting, Dyeing and Coloring Preparation.
First use July 8, 1966.

838,189. Guerlain, Inc., New York, N.Y. SN 257,008. Filed P.R. 10–24–66; Am. S.R. 9–5–67.

FILM SPRAY

For Body Lotion.
First use Aug. 26, 1966.

Service Mark

Class 102 — Insurance and Financial

838,140. Credit Bureau of Cincinnati, Inc., Cincinnati, Ohio. SN 186,238. Filed P.R. 2–7–64; Am. S.R. 6–16–67.



The drawing is lined for red.
For Supplying Information to Parties Regarding the Soundness of Personal and Business Checks Submitted to Them for Honoring.
First use Dec. 9, 1963.

TRADEMARK REGISTRATIONS RENEWED

63,287. OSGOOD'S INDIA CHOLAGOGUE. Cl. 18. 6–11–07.
63,687. ANCHOR AND DESIGN. Cl. 37. 7–2–07.
65,092. EUREKA. Cl. 7. 9–10–07.
65,662. LADY BROADWAY. Cl. 39. 10–15–07.
65,996. WALES GOODYEAR AND DESIGN. Cl. 39. 11–5–07.
227,289. KALA ANGELO AND DESIGN. Cl. 1. 5–3–27.
227,291. ABTN ANGELO AND DESIGN. Cl. 1. 5–3–27.
227,434. TN 1 ANGELO AND DESIGN. Cl. 1. 5–3–27.
227,435. CVTN ANGELO AND DESIGN. Cl. 1. 5–3–27.
228,747. LESCASCADES. Cl. 51. 6–7–27.
228,764. ELLIOTT BAY. Cl. 46. 6–7–27.
228,871. POROLASTIK. Cl. 42. 6–14–27.
229,254. NUSAN. Cl. 44. 6–21–27.
231,520. KNIGHT KLUB. Cl. 46. 8–23–27.
231,824. ALABAM GIRL. Cl. 46. 8–30–27.
232,002. BREAK-O-POWDER. Cl. 52. 8–30–27.
232,174. TAMALINA. Cl. 46. 9–6–27.
232,260. PACEMAKER. Cl. 46. 9–6–27.
232,312. TUG OF WAR. Cl. 5. 9–6–27.
232,313. SELECTUS. Cl. 5. 9–6–27.
232,314. HERCULES. Cl. 5. 9–6–27.
232,315. SUPERHESIVE. Cl. 5. 9–6–27.
232,316. ECONOMY. Cl. 5. 9–6–27.
232,317. SUPREMUS. Cl. 5. 9–6–27.
232,423. ENDURO. Cl. 5. 9–6–27.
232,424. VISCO. Cl. 5. 9–6–27.
232,897. PALMOLE. Cl. 52. 9–20–27.
233,018. DIAZINE. Cl. 6. 9–20–27.
233,059. SULFINDONE. Cl. 6. 9–20–27.
233,102. CELASTIC. Cl. 1. 9–20–27.
233,179. SOLAR. Cl. 44. 9–27–27.
235,366. TEMP-TEE. Cl. 46. 11–15–27.
237,160. ADJUSTA. Cl. 40. 1–3–28.
238,169. "JENNINGS" AND RECTANGULAR DESIGN. Cl. 23. 1–31–28.
239,203. CHAMP. Cl. 46. 2–28–28.
430,187. SPECTROL. Cl. 52. 6–10–47.
431,053. NIPHOS. Cl. 6. 7–1–47.
431,117. LUCKY TRIPPER. Cl. 3. 7–8–47.
431,165. COMPAX. Cl. 27. 7–15–47.
431,166. TRI-COMPAX. Cl. 27. 7–15–47.
431,167. UNI-COMPAX. Cl. 27. 7–15–47.
432,440. NIDATON. Cl. 18. 9–2–47.
432,503. SWIFT'S. Cl. 10. 9–2–47.
432,975. MINNEHAHA. Cl. 23. 9–23–47.
433,075. KODACHROME. Cl. 38. 9–23–47.
433,188. MOBO. Cl. 22. 9–30–47.
433,452. TENITE. Cl. 6. 10–14–47.
433,468. LAMB (DESIGN). Cl. 39. 10–14–47.
434,306. MYST. Cl. 28. 11–18–47.
434,599. SNOW BALL. Cl. 43. 11–25–47.
434,622. KOYLON. Cl. 40. 11–25–47.
434,682. RESODULL. Cl. 6. 12–2–47.
435,707. ACCENT. Cl. 46. 1–6–48.
435,709. ACME. Cl. 52. 1–6–48.
435,880. DUO-LIZER. Cl. 46. 1–13–48.
435,951. CCC. Cl. 2. 1–20–48.
436,385. ALCON. Cl. 21. 2–3–48.
436,623. MISCELLANEOUS DESIGN. Cl. 23. 2–17–48.
436,726. HUNTO-PINE. Cl. 6. 2–17–48.
436,900. UNION METAL. Cl. 50. 3–2–48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

677,844. VAC-TITE. Cl. 2. 5–5–59.
690,546. HI-TURBIANT. Cl. 34. 12–29–59.
695,133. FLEX-O-FIX. Cl. 5. 3–29–60.
695,267. ROTO-IMP ETC. AND DESIGN. Cl. 23. 3–29–60.
696,626. JONES AND DESIGN. Cl. 12. 4–26–60.
699,746. PYRISTOR. Cl. 21. 6–21–60.
702,532. PENGUIN. Cl. 23. 8–9–60.
702,789. MECCO AND DESIGN. Cl. 12. 8–16–60.
703,002. LOOMTEX. Cl. 42. 8–16–60.
703,235. UTE HYDRATE AND REPRESENTATION OF INDIAN HEAD. Cl. 1. 12–13–60.
710,937. ROMPS. Cl. 39. 2–7–61.

The following registrations issued Sept. 12, 1961

721,167. EAU-NO AND DESIGN. Cl. 1.
721,171. DELSUEDE. Cl. 1.
721,172. GREEN BOND. Cl. 1.
721,173. CROWN-SEAL. Cl. 1.
721,176. SHUCRAFT. Cl. 1.
721,177. GENFOAM. Cl. 1.
721,178. WYOBOND. Cl. 1.
721,179. WYO-JEL. Cl. 1.
721,182. GLAMOR BRANCH. Cl. 1.
721,187. SLIDE-A-PIC. Cl. 2.
721,191. Z-N. Cl. 4.
721,194. POLY URETHANE AND DESIGN. Cl. 6.

721,197. AYR-TRAP. Cl. 6.
721,209. TRAYGAY. Cl. 8.
721,218. BUCKS COUNTY PROVINCIAL. Cl. 13.
721,222. KOVE-PLEX. Cl. 13.
721,223. FERRALIUM. Cl. 14.
721,228. COLOR-MIST. Cl. 16.
721,229. TORPEDO. Cl. 16.
721,230. EPILUX. Cl. 16.
721,233. UPEPTOID-B. Cl. 18.
721,234. UPEPTOID-A. Cl. 18.
721,235. UNOID-A. Cl. 18.
721,236. UPNEOID-C. Cl. 18.
721,237. UTROPHOID-C. Cl. 18.
721,238. UPNEOID-A. Cl. 18.
721,239. UMORPHOID-A. Cl. 18.
721,244. VISTA-VISOR. Cl. 19.
721,245. KING KART. Cl. 19.
721,246. SNO–TRAVELER. Cl. 19.
721,249. CROWN AND FANCIFUL SHIELD (DESIGN). Cl. 21.
721,250. MONOGRAM. Cl. 21.
721,251. FE FIDELITY ENGINEERS AND DESIGN. Cl. 21.
721,252. NAVCO. Cl. 21.
721,254. SEMCOR AND REPRESENTATION OF FULL WAVE LOGOTYPE. Cl. 21.
721,255. ONONDAGA ELECTRONICS AND DESIGN. Cl. 21.
721,266. SIGHT-O. Cl. 22.
721,267. JIFAROO. Cl. 22.
721,268. CORVETTE 37. Cl. 22.
721,270. AMERESE. Cl. 22.
721,271. KINDER. Cl. 22.
721,273. THE MASTER. Cl. 23.
721,275. PERFECTROL. Cl. 23.
721,279. DIAL-A-BREAKER. Cl. 23.
721,286. THE NEWSBOY THAT NEVER SLEEPS. Cl. 23.
721,288. THE NEWSBOY THAT NEVER SLEEPS READ-O-MAT-JUNIOR. Cl. 23.
721,289. THE NEWSBOY THAT NEVER SLEEPS READ-O-MAT. Cl. 23.
721,295. MOCRAFT. Cl. 23.
721,298. REPRESENTATION OF GREEK LETTER OMEGA AND LETTER I. Cl. 26.
721,299. AIRCRAFT ARMAMENTS INC. AND DESIGN. Cl. 26.
721,300. SHIELD WITH PSI AND DESIGN. Cl. 26.
721,301. AIR-DATA-MATIC. Cl. 26.
721,303. FLOWCON. Cl. 26.
721,304. NAVCO. Cl. 26.
721,306. ROTAN. Cl. 26.
721,307. DRAINOMETER. Cl. 26.
721,309. TRANSFER-A-MATIC. Cl. 26.
721,313. DIAMOND FLEX. Cl. 28.
721,316. SEA MIST PEARLS AND DESIGN. Cl. 28.
721,318. LA VIE. Cl. 28.
721,319. WORKMASTER. Cl. 29.
721,323. COMFORT ANGLE. Cl. 32.
721,324. SEQUENCE. Cl. 32.
721,325. MARSEILLE. Cl. 32.
721,326. WAVERLY. Cl. 32.
721,327. CENTURA. Cl. 32.
721,328. PLANAROUND. Cl. 32.
721,329. RHAPSODY. Cl. 32.
721,330. FD AND DESIGN. Cl. 32.
721,332. ENDEX. Cl. 34.
721,339. RAY-BAN. Cl. 37.
721,343. DREAM STARS. Cl. 37.
721,347. INVESTOGRAPHS. Cl. 38.
721,349. MEDICINE IN THE MAGAZINES. Cl. 38.
721,352. EL AVANCE CRIOLLO. Cl. 38.
721,353. WHAT'S NEW IN PLANT-ENGINEERING EQUIPMENT AND DESIGN. Cl. 38.
721,358. HM AND DESIGN. Cl. 39.
721,359. PRINCESS APRONS AND DESIGN. Cl. 39.
721,361. MAGIC-FLEX. Cl. 39.
721,368. MISS BONNIE DOON. Cl. 39.
721,372. PANTRIFIC. Cl. 39.
721,373. SHAPEMASTERS. Cl. 39.
721,376. SEERSUCKER DOLL-UP. Cl. 42.
721,377. SIENEAU. Cl. 42.
721,384. LAMIKIN AND DESIGN. Cl. 43.
721,385. BERNHARD ALTMANN. Cl. 43.
721,391. VI-AD. Cl. 46.
721,392. VI-AD ETC. AND DESIGN. Cl. 46.
721,393. VI-AD. Cl. 46.
721,394. VI-AD AND DESIGN. Cl. 46.
721,395. VI-AD THE DIAMOND QUALITY EGG AND DESIGN. Cl. 46.
721,400. CAREFREE. Cl. 46.
721,405. NEW ORLEANS KITCHENS AND DESIGN. Cl. 46.
721,408. WHOLE COW AND DESIGN. Cl. 46.
721,416. CLOSTER ETC. AND DESIGN. Cl. 49.
721,417. SAF-T-SAKE MESSAGE SENDER. Cl. 50.
721,418. SAF-T-SAKE. Cl. 50.
721,420. RYDEN AND DESIGN. Cl. 50.
721,422. ELECTRONIC - RODENT - REPELLER AND DESIGN. Cl. 50.
721,424. MARK OF A MAN. Cl. 51.
721,428. GENTLEMAN JIM AND DESIGN. Cl. 51.
721,430. TUMBLEWEED. Cl. 51.
721,431. PARFUM LORLE AND DESIGN. Cl. 51.
721,434. SILI-WICK. Cl. 52.
721,437. REPRESENTATION OF ARTISTS' PALETTE. Cl. 100.
721,438. LARG-O-CHROME. Cl. 101.
721,439. LARG-O-COLOR. Cl. 101.
721,440. SCIENTIFIC TECHNICAL LITERATURE RESEARCH AND DESIGN. Cl. 101.
721,446. G.E.M. Cl. B.
721,449. SPRA-BATH. Cl. 22.
721,450. PLA-BATH. Cl. 22.
721,452. SOURCE LEGERE CONTREXEVILLE AND DESIGN. Cl. 45.
721,457. ALTE VIERKANT-FLASCHE MIT DER BLEIPLOMBE AND DESIGN. Cl. 47.
721,460. ALTE VIERKANT-FLASCHE MIT DER BLEIPLOMBE AND DESIGN. Cl. 49.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

171,053. BERMICO. Cl. 21. 7–31–23. Brown Company, Berlin, N.H. Amended to appear:

BERMICO

723,417. WALLPAPER COUNCIL MEMBER AND DESIGN. Cl. 200. 10–31–61. Wallpaper Council Incorporated. Wallcoverings Council Incorporated, New York, N.Y. Amended to appear:



742,487. SUCRO-LEIN. Cl. 52. 12–18–62. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

763,343. UNIFLEX. Cl. 16. 1–21–64. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

767,013. A AMSPRO AND DESIGN. Cl. 16. 3–24–64. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

767,014. AMSPRO. Cl. 16. 3–24–64. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

768,583. KOOL-SEAL. Cls. 12 and 16. 4–28–64. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

777,708. GRIPTITE. Cl. 16. 9–29–64. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

805,007. CHARBO. Cl. 16. 3–8–66. Acorn Chemical Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

832,253. REDDI SUN. Cl. 46. 7–18–67. Thompson's Dairy, Inc., doing business as Washington Dairy Foods and Thompson's, Honor Dairy, Washington, D.C. Corrected: In the statement, column 1, before line 1, *Reddi-Whip, Inc. (Missouri corporation), 8025 Melrose Ave., Los Angeles, Calif., assignee of* should be inserted.

833,209. BEKUNIS. Cl. 18. 8–8–67. Robe-Werk Walter Buhner & Co., Bremen-Oberneuland, Germany. Corrected: In the statement, column 1, line 2, "Vremen" should be deleted and *Bremen* should be inserted.

833,766. MOL-MIX. Cl. 46. 8–15–67. National Molasses Company, Willow Grove, Pa. Corrected: In the statement, column 1, line 3, "Groove" should be deleted and *Grove* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

130,812. PIED PIPER. Cl. 39. Marathon Shoe Co. 5–4–20. New Cert. Sec. 7(c) to Smith Shoe Corporation, Newmarket, N.H.

284,366. TELETYPESETTER. Cl. 21. Teletype Corporation. 6–23–31. New Cert. Sec. 7(c) to Fairchild Camera and Instrument Corporation, Syosset, N.Y.

284,631. TELETYPESETTER. Cl. 23. Teletype Corporation. 7–7–31. New Cert. Sec. 7(c) to Fairchild Camera and Instrument Corporation, Syosset, N.Y.

648,982. POSTURATOR. Cl. 39. Pied Piper Shoe Co. 7–23–57. New Cert. Sec. 7(c) to Smith Shoe Corporation, Newmarket, N.H.

659,093. HIALEAH. Cl. 39. Pied Piper Shoe Co. 3–4–58. New Cert. Sec. 7(c) to Smith Shoe Corporation, Newmarket, N.H.

720,865. CLIPEX. Cl. 13. Richard Manufacturing Co. 9–5–61. New Cert. Sec. 7(c) to M. Brunson Motley, Inc., Van Nuys, Calif.

732,640. OKADEE. Cl. 13. The Okadee Company. 6–12–62. New Cert. Sec. 7(c) to Maxon Premix Burner Company, Inc., Muncie, Ind.

733,404. FUEL-GARD. Cl. 31. Warner Lewis Company. 6–26–62. New Cert. Sec. 7(c) to Fram Corporation, Providence, R.I.

INDEX OF REGISTRANTS

OCTOBER 31, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AG. Research, Inc., Brighton, Colo. 837,795, pub. 8–15–67. Cl. 18.
AJ Industries Corp.: *See*—
Ajay Golf Products, Inc.
A.J. Industries, Inc., Los Angeles, Calif. 837,936, pub. 8–15–67. Cl. 31.
AMT Corp., Phoenix, Ariz. 837,825, pub. 8–15–67. Multiple Class (Classes 19 and 22).
Acme Visible Records, Inc., Crozet, Va. 435,709, ren. 10–31–67. Cl. 32.
Acorn Chemical Co., Cleveland, Ohio. 742,487, cor. Cl. 52.
Acorn Chemical Co., Cleveland, Ohio. 763,343, cor. Cl. 16.
Acorn Chemical Co., Cleveland, Ohio. 767,013–14, cor. Cl. 16.
Acorn Chemical Co., Cleveland, Ohio. 768,583, cor. Multiple Class (Classes 12 and 16).
Acorn Chemical Co., Cleveland, Ohio. 777,708, cor. Cl. 16.
Acorn Chemical Co., Cleveland, Ohio. 805,007, cor. Cl. 16.
Adcox-Smith Co., Shelley, Idaho. 837,887, pub. 8–15–67. Cl. 23.
Adjusta Co., New York, N.Y. 237,160, ren. 10–31–67. Cl. 40.
Admart, Inc., Chicago, Ill. 837,715, pub. 8–15–67. Cl. 2.
Air Moving and Conditioning Association, Inc., Park Ridge, Ill. 838,097, pub. 8–15–67. Cl. A.
Aircraft Armaments, Inc., Cockeysville, Md. 721,299, canc. Cl. 26.
Ajay Golf Products, Inc., from AJ Industries Corp., Delavan, Wis. 838,105. Cl. 22.
Aktiebolaget Aw. Ryden, Nybro, Sweden. 721,420, canc. Cl. 50.
Aladdin Industries, Inc., Chicago, Ill. 837,718; pub. 8–15–67. Cl. 2.
Alamar Jewelry Corp., New York, N.Y. 837,934, pub. 8–15–67. Cl. 28.
Alcon Metal Products, Inc., to Alcon Metal Products, Inc., Chicago, Ill. 436,385, ren. 10–31–67. Cl. 21.
Alextronics Corp., Cleveland, Ohio. 838,069, pub. 8–15–67. Cl. 101.
Alliance Machine Co., The, Alliance, Ohio. 837,885, pub. 8–15–67. Cl. 23.
Allied Chemical Corp.: *See*—
National Aniline & Chemical Co., Inc.
Allied Mills, Inc., Chicago, Ill. 837,811–12, pub. 8–15–67. Cl. 18.
Alsco, Inc., Akron, Ohio. 837,761, pub. 8–15–67. Cl. 12.
Altmann, Bernhard, Corp., The, New York, N.Y. 721,385, canc. Cl. 43.
American Cyanamid Co., Wayne, N.J. 838,049, pub. 8–15–67. Cl. 52.
American Dairy Queen Corp., Minneapolis, Minn. 838,002, pub. 8–15–67. Cl. 46.
American Doll & Toy Corp., Brooklyn, N.Y. 721,449–50, canc. Cl. 22.
American Express Co., New York, N.Y. 838,067, pub. 8–15–67. Cl. 101.
American Greetings Corp., Cleveland, Ohio. 721,209, canc. Cl. 8.
American Heritage Life Insurance Co., Jacksonville, Fla. 838,080, pub. 8–15–67. Cl. 102.
American Home Products Corp., New York, N.Y. 838,043, pub. 8–15–67. Cl. 51.
American-Japanese Export Import Corp., Houston, Tex. 721,270, canc. Cl. 22.
American Laboratories: *See*—
Boyle & Co.
American MCW Dispensers, Inc., Dallas, Tex. 721,187, canc. Cl. 2.
American Pharmaceutical Co., New York, N.Y. 837,798, pub. 8–15–67. Cl. 18.
American Steel Wool Mfg. Co., Inc., Long Island City, N.Y. 837,726, pub. 8–15–67. Cl. 4.
American Telephone and Telegraph Co., New York, N.Y. 838,086, pub. 5–9–67. Cl. 104.
American Transportation Enterprises, Inc., Wilmington, Del. 838,088, pub. 8–15–67. Cl. 105.
Amipco Metal, Inc., Milwaukee, Wis. 837,944, pub. 8–15–67. Cl. 34.
Amway Corp., Ada, Mich. 838,046, pub. 4–11–67. Cl. 52.
Anderson Electric Corp., Leeds, Ala., from The Singer Co., New York, N.Y. 838,107. Cl. 23.
Andrews, A. B., Co., New York, N.Y., to RHM, Inc., Rossville, Ga. 65,662, ren. 10–31–67. Cl. 39.
Angelo Bros., Ltd., British, India. 227,289, ren. 10–31–67. Cl. 1.
Angelo Bros., Ltd., British, India. 227,291, ren. 10–31–67. Cl. 1.
Angelo Bros., Ltd., British, India. 227,434–5, ren. 10–31–67. Cl. 1.
Anthony, Alfred A., Westport, Conn. 721,428, canc. Cl. 51.
Antler Tool & Die Co., Grand Rapids, Mich. 721,323, canc. Cl. 32.
Aquaslide Corp., South El Monte, Calif. 837,868, pub. 8–15–67. Cl. 22.
Archer-Daniels-Midland Co., Minneapolis, Minn. 721,172, canc. Cl. 1.
Archer-Daniels-Midland Co., Minneapolis, Minn. 721,178–9, canc. Cl. 1.
Arizona Public Service Co., Phoenix, Ariz. 838,064, pub. 8–15–67. Cl. 100.
Arkansas Co., Inc., Newark, N.J. 434,682, ren. 10–31–67. Cl. 6.
Armorlite Lens Co., Inc., Burbank, Calif. 838,109. Cl. 26.
Armour Abrasives Co.: *See*—
Armour and Co.
Armour and Co., Chicago, Ill. 721,171, canc. Cl. 1.
Armour and Co., from Armour and Co., Chicago, Ill. 721,400, canc. Cl. 46.
Armour and Co., d.b.a. Armour Abrasives Co., Chicago, Ill. 837,725, pub. 8–15–67. Cl. 4.
Armstrong Rubber Co., The, West Haven, Conn. 837,954, pub. 8–15–67. Cl. 35.
Astrosystems International, Inc., Fairfield, N.J. 837,893, pub. 8–15–67. Multiple Class (Classes 25 and 26).
Athletic Sales Co., d.b.a. Universal Athletic, Fresno, Calif. 837,873, pub. 8–15–67. Cl. 22.
Atlanta Braves, Inc., Atlanta, Ga. 838,094–6, pub. 8–15–67. Cl. 107.
Atlantic Richfield Co., Philadelphia, Pa. 837,783–4, pub. 8–15–67. Cl. 15.
Automatic Poultry Feeder Co.: *See*—
Big Dutchman, Inc.
Automobile Racing Club of Florida, Inc., The, Sebring, Fla. 838,091, pub. 8–15–67. Cl. 107.
Avant Inc., Lincoln, Mass. 837,914, pub. 8–15–67. Cl. 26.
B & D Enterprises, Cincinnati, Ohio. 837,874, pub. 8–15–67. Cl. 22.
Baker Castor Oil Co., The, Bayonne, N.J. 837,737, pub. 8–15–67. Cl. 6.
Baldwin-Lima-Hamilton, Philadelphia, Pa. 837,892, pub. 8–15–67. Cl. 23.
Barlow Corp., The, Philadelphia, Pa. 837,769, pub. 8–15–67. Cl. 13.
Bassett Furniture Industries, Inc., Bassett, Va. 721,325–29, canc. Cl. 32.
Bassett, Geo., & Co., Ltd., Sheffield, England. 838,122–23. Cl. 46.
Batchelors Foods, Ltd., Sheffield, England. 838,121. Cl. 46.
Battle Creek Equipment Co., *See*—
Sanitarium & Hospital Equipment Co.
Beacon Mfg., Co., Swannanoa, N.C. 837,991, pub. 8–15–67. Cl. 42.
Beatrice Foods Co., Chicago, Ill. 838,015, pub. 8–15–67. Cl. 46.
Becker, L. M., & Co., Ltd., Appleton, Wis. 837,847, pub. 8–15–67. Multiple Class (Classes 22 and 23).
Beckwith-Arden, Inc., Watertown, Mass. 837,711, pub. 8–15–67. Cl. 1.
Beech Aircraft Corp., Wichita, Kans. 837,820–23, pub. 8–15–67. Cl. 19.
Beecham Products Inc., Clifton, N.J. 838,041, pub. 8–15–67. Cl. 51.
Belden Corp., from Belden Mfg. Co., Chicago, Ill. 837,831, pub. 8–15–67. Cl. 21.
Belden Mfg. Co.: *See*—
Belden Corp.
Bell, W., & Co., Inc., Washington, D.C. 837,933, pub. 8–15–67. Cl. 28.
Benson, N. P., Optical Co., from Benson Opticians, Inc., Minneapolis, Minn. 837,916, pub. 7–25–67. Multiple Class (Classes 26 and 100).
Benson Opticians, Inc.: *See*—
Benson, N. P., Optical Co.
Big Dutchman, Inc., from Automatic Poultry Feeder Co., Zeeland, Mich. 838,024, pub. 8–15–67. Cl. 50.
Bissell Inc., Grand Rapids, Mich. 721,273, canc. Cl. 23.
Bissell Inc., Grand Rapids, Mich. 721,319, canc. Cl. 29.
Bloom, Abraham S., d.b.a. Pioneer Shoe Co., Minneapolis, Minn. 710,937, canc. Cl. 39.
Borden Co., The, New York, N.Y. 435,880, ren. Cl. 46.
Boyle & Co., d.b.a. American Laboratories, Bell Gardens, Calif. 837,803, pub. 8–15–67. Cl. 18.
Breakstone Bros., Inc., to National Dairy Products Corp., New York, N.Y. 235,366, ren. Cl. 46.
Breck, John H., Inc.: *See*—
Colgate-Palmolive Co.
Bristol-Myers Co., New York, N.Y. 837,804–10, pub. 8–15–67. Cl. 18.
Bristol-Myers Co., New York, N.Y. 838,034, pub. 11–8–66. Cl. 51.
Bristol-Myers Co., New York, N.Y. 838,131. Cl. 51.
Bristol-Myers Co., New York, N.Y. 838,133. Cl. 51.
British Paints Ltd., Newcastle-On-Tyne, England. 721,229–30, canc. Cl. 16.
Brown Co., Berlin, N.H. 171,053. Am. 7(d). Cl. 21.
Brown, L. S., Co., Atlanta, Ga. 837,981, pub. 8–15–67. Cl. 39.
Bucks County Provincial, Inc., Palm Beach, Fla. 721,218, canc. Cl. 13.
Buddy L Corp., East Moline, Ill. 837,881, pub. 8–15–67. Cl. 22.
Buegeleisen & Jacobson, Inc., New York, N.Y. 837,958, pub. 8–15–67. Cl. 36.
Buffalo Forge Co., Buffalo, N.Y. 837,949, pub. 8–15–67. Cl. 34.

Bulova Watch Co., Inc., Flushing, N.Y. 837,928–9, pub. 8–15–67. Cl. 27.
Burgie Foods Co., Memphis, Tenn. 838,118. Cl. 45.
Burton, Clayton B., Tampa, Fla. 837,724, pub. 8–15–67. Cl. 3.
Cabin Crafts Inc., Dalton, Ga. 721,376, canc. Cl. 42.
Cabin Crafts, Inc., Dalton, Ga. 837,986, pub. 8–15–67. Cl. 42.
Cambridge Tile Mfg. Co., The, Cincinnati, Ohio. 837,749, pub. 8–15–67. Cl. 12.
Cardinal Mfg. Corp., Shreveport, La. 721,222, canc. Cl. 13.
Carlson Farms: *See*— Minnesota Rubber Co.
Caron Corp., New York, N.Y. 838,044, pub. 8–15–67. Cl. 51.
Caron Door Mfg. Corp., Addison, Ill. 837,757, pub. 8–15–67. Cl. 12.
Celastic Corp., The, Wilmington, Del., and Arlington, to Celastic Mfg. Co., Kearny, N.J. 233,102, ren. Cl. 1.
Celastic Mfg. Co.: *See*— Celastic Corp., The.
Ceskoslovenske Hudebni Nastroje, Narodni Podnik, Hradec Kralove, Czechoslovakia. 838,110. Cl. 36.
Charak Furniture Co., Boston, Mass. 721,324, canc. Cl. 32.
Chemex Corp.: *See*— Schlumbohm, Peter.
Chemical Cement Co., Belleville, N.J. 837,752–3, pub. 8–15–67. Cl. 12.
Chemithon Corp., The, Seattle, Wash. 838,051, pub. 8–15–67. Cl. 52.
Chemsol Corp., Chicago, Ill. 721,228, canc. Cl. 16.
Chevron Asphalt Co., San Francisco, Calif. 837,751, pub. 8–15–67. Cl. 12.
Chevron Chemical Co., San Francisco, Calif. 837,713, pub. 8–15–67. Cl. 1.
Chicago Color Laboratories, Inc., Chicago, Ill. 721,438–9, canc. Cl. 101.
Chimiotex S.A., Geneva, Switzerland. 837,709, pub. 8–15–67. Cl. 1.
Christy, Thos., & Co., Ltd., Hampshire, England. 838,137. Cl. 51.
Ciba Pharmaceutical Products Inc., Summit, N.J. 721,349, canc. Cl. 38.
Cicchetti, John, d.b.a. Hi-Way Body Builders, Westmont, Ill. 837,813, pub. 8–15–67. Cl. 19.
Clairol Inc., New York, N.Y. 838,038–40, pub. 8–15–67. Cl. 51.
Clairol, Inc., New York, N.Y. 838,138. Cl. 51.
Clark, Robert H., Co., The: *See*— Cosway Co., Inc.
Clegg, William P., Wasley, Ala. 837,980, pub. 8–15–67. Cl. 39.
Cleveland Twis Drill Co., The, Cleveland, Ohio. 837,900, pub. 8–15–67. Cl. 23.
Clover Industries, Inc., Tonawanda, N.Y. 677,844, canc. Cl. 2.
Colgate-Palmolive Co.: *See*— Palmolive-Peet Co., The.
Colgate-Palmolive Co., New York, N.Y., from John H. Breck, Inc., Springfield, Mass. 832,031–2, pub. 3–16–65. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 838,045, pub. 8–15–67. Cl. 52.
Colorado Milling & Elevator Co., The, Denver, Colo. 232,260, ren. 10–31–67. Cl. 46.
Columbian Rope Co., Auburn, N.Y. 65,092, ren. 10–31–67. Cl. 7.
Commerce-Pacific, Inc., Los Angeles, Calif. 721,268, canc. Cl. 22.
Communications Co., Inc., Coral Gables, Fla. 837,919, pub. 8–15–67. Cl. 26.
Compendium Publishers International Corp., New York, N.Y. 838,065, pub. 8–15–67. Cl. 101.
Concrete Construction Publications, Inc., Elmhurst, Ill. 838,115. Cl. 38.
Conductron Corp., Ann Arbor, Mich. 837,818, pub. 8–15–67. Cl. 19.
Container Corp. of America, Chicago, Ill. 837,720, pub. 8–15–67. Cl. 2.
Continental Can Co., Inc., New York, N.Y. 435,951, ren. 10–31–67. Cl. 2.
Cook's Pest Control, Inc., Decatur, Ala. 838,083, pub. 8–2–66. Cl. 103.
Copley Press, Inc., The, La Jolla, Calif. 837,972, pub. 8–15–67. Cl. 38.
Cosway Co., Inc., from The Robert H. Clark Co., Beverly Hills, Calif. 838,033, pub. 8–15–67. Cl. 51.
Council Mfg. Corp., Fort Smith, Ark., from The Yum-Berger Corp. of America, Springfield, Mo. 838,003–7, pub. 8–15–67. Cl. 46.
Council Mfg. Corp., Fort Smith, Ark. 838,053, pub. 8–15–67. Cl. 100.
Crane Plastics, Inc., Columbus, Ohio. 837,747, pub. 5–9–67. Cl. 12.
Credit Bureau of Cincinnati, Inc., Cincinnati, Ohio. 838,140. Cl. 102.
Crown Zellerbach Corp., San Francisco, Calif. 721,173, canc. Cl. 1.
Crusellas: *See*— Marti, Jose S.
Cryocal, Inc., Rivera Beach, Fla. 838,058, pub. 8–15–67. Cl. 100.
Cudahy Co., Phoenix, Ariz. 837,734, pub. 8–15–67. Cl. 6.
Curtis, A. M. E., Mfg. Co.: *See*— Curtis, Morris E.
Curtis, Morris E., d.b.a. A. M. E. Curtis Mfg. Co., Boston, Mass. 702,789, canc. Cl. 12.
DTM Engineering, Inc., Milwaukee, Wis. 721,245, canc. Cl. 19.
Dan River Mills, Inc., Danville, Va. 837,992, pub. 8–15–67. Cl. 42.
Daniels, John E., Leather Co., Boston, Mass. 721,167, canc. Cl. 1.
Davis, Claude H., d.b.a. Vanlon Products Co., Greenville, Miss. 838,042, pub. 8–15–67. Cl. 51.
Davis, M. C., Enterprises, Inc., Cincinnati, Ohio. 837,860, pub. 8–15–67. Cl. 22.
Davis-Le Grand Co., Long Beach, Calif. 838,009. pub. 8–15–67. Cl. 46.
Dayco Corp., Dayton, Ohio. 837,911, pub. 8–15–67. Cl. 23.
Daystrom Inc., Murray Hills, N.J. 721,303, canc. Cl. 26.
Dean Foods Co., Franklin Park, Ill. 838,013, pub. 8–15–67. Cl. 46.
Delisle, J. L., Co., Inc., Fitchburg, Mass. 721,359, canc. Cl. 39.
Delta Tire Corp., Detroit, Mich. 837,956, pub. 8–15–67. Cl. 35.
De Terry, Fernando A., S.A., Puerto De Santa Maria (Cadiz), Spain. 838,124. Cl. 47.
De Terry, Fernando A., S.A., Puerto De Santa Maria (Cadiz), Spain. 838,128. Cl. 49.
Distillers Corp. (S.A.) Ltd., Stellenbosch, South Africa. 838,022. pub. 6–21–66. Cl. 49.
Donnelly Mirrors, Inc., Holland, Mich. 837,824, pub. 8–15–67. Cl. 19.
Dotnic Corp., Washington, D.C. 838,060, pub. 8–15–67. Cl. 100.
Doughboy Industries, Inc., New Richmond, Wis. 837,910, pub. 8–15–67. Cl. 23.
Douglas Aircraft Co., Inc.: *See*— Douglas. McDonnell. Corp.
Dow Corning Corp., Midland, Mich. 838,102. Cl. 15.
Dresser Industries, Inc., Dallas, Tex. 838,055, pub. 8–15–67. Cl. 100.
Dri-Heat Food System, Inc.: *See*— Franklin Products Corp.
E.T.M. Corp., Monrovia, Calif. 837,901, pub. 8–15–67. Cl. 23.
East Chicago Machine Tool Corp., East Chicago, Ind. 837,889, pub. 8–15–67. Cl. 23.
East Chicago Machine Tool Corp., East Chicago, Ind. 837,890, pub. 8–15–67. Cl. 23.
Eastern Analytical Symposium, New York, N.Y. 837,973, pub. 8–15–67. Cl. 38.
Eastman Kodak Co., Rochester, N.Y. 433,075, ren. 10–31–67. Cl. 38.
Eastman Kodak Co.: *See*— Tennessee Eastman Corp.
Ed Fleming Co.: *See*— Fleming, Edgar R.
Edwards J., & Co., Philadelphia, Pa. 837,979, pub. 8–15–67. Cl. 39.
Electro-Nite Co., from Electro-Nite Engineering Co., d.b.a Electro-Nite Co., Philadelphia, Pa. 837,925, pub. 8–15–67. Cl. 26.
Electro-Nite Engineering Co.: *See*— Electro-Nite Co.
Elmer's Weights, Inc., Lubbock, Tex. 837,871, pub. 8–15–67. Cl. 22.
Elox Corp. Troy, Mich. 837,840, pub. 8–15–67. Cl. 21.
Employee Relocation Real Estate Advisory Committee, Inc., Chicago, Ill. 838,056, pub. 8–15–67. Cl. 100.
Endo Laboratories, Inc., Garden City, N.Y. 837,736, pub. 8–15–67. Cl. 6.
Engdall, Clarence T., Chicago, Ill. 837,971, pub. 8–15–67. Cl. 38.
Engineering Sales Corp., Wellesley Hills, Mass. 721,275, canc. Cl. 23.
Equitable Life Insurance Co. of Iowa, Des Moines, Iowa. 838,081, pub. 8–15–67. Cl. 102.
Evans, Robert G., Co., Kansas City, Mo. 837,997, pub. 8–15–67. Cl. 23.
Excelsior Underwear, Inc., New York, N.Y. 721,361, canc. Cl. 39.
Fairchild Camera & Instrument Corp., Syosset, N.Y. 838,108. Cl. 26.
Fairmont Food Co., Omaha, Nebr., from Giant Distributing Co., Oakland, Calif. 837,995, pub. 8–15–67. Cl. 46.
Farfisa S.p.A., Ancona, Italy. 837,957, pub. 8–15–67. Cl. 36.
Faultless Rubber Co., The, Ashland, Ohio. 837,870, pub. 8–15–67. Cl. 22.
Feature Ring Co., Inc., New York, N.Y. 721,313, canc. Cl. 28.
Federal Steel Corp., Raritan, N.J. 837,877, pub. 8–15–67. Cl. 22.
Fidelity Chemical Products Corp., Newark, N.J. 838,048, pub. 8–15–67. Cl. 52.
Fidelity Federal Savings and Loan Association of Nashville, Tenn., and Chattanooga Federal Savings and Loan Association of Chattanooga, Tenn., Nashville, Tenn. 838,076. pub. 8–15–67. Cl. 102.
Fieldcrest Mills, Inc., Spray, N.C. 721,377, canc. Cl. 42.
Filler Products, Inc.: *See*— Reynolds, R. J., Foods, Inc.
Firestone Tire & Rubber Co., The, Akron, Ohio. 837,816, pub. 8–15–67. Cl. 19.
Firestone Tire & Rubber Co., The, Akron, Ohio. 837,950–1, pub. 8–15–67. Cl. 35.
Fisher Flouring Mills Co., Seattle, Wash. 838,019, pub. 8–15–67. Cl. 46.
Fitzgerald Mfg., Co., The, Torrington, Conn. 837,955, pub. 8–15–67. Cl. 35.
Fleming, Edgar R., d.b.a. Ed Fleming Co., Parsons, Kans. 837,896, pub. 8–15–67. Cl. 23.
Florida Ornamental Foliage Co., Fort Myers, Fla. 721,182, canc. Cl. 1.
Florida Plastics, Inc., Palmetto, Fla. 838,025, pub. 8–15–67. Cl. 50.
Foseco International, Ltd., Birmingham, England. 837,746, pub. 8–15–67. Cl. 12.
Foster, Benjamin, Co., Philadelphia, Pa. 837,732, pub. 8–15–67. Cl. 5.

Franklin Products Corp., from Dri-Heat Food System, Inc., Chicago, Ill. 837,940, pub. 8–15–67. Cl. 34.
Frederick, Purdue, Co., The, Yonkers, N.Y. 838,103. Cl. 18.
Freeman, Peter A., Baltimore, Md. 837,879, pub. 8–15–67. Cl. 22.
Freeport Sulphur Co., New York, N.Y. 838,099. Cl. 1.
Fresno Macaroni Mfg. Co., Inc., d.b.a. Perfection Macaroni Co., Fresno, Calif. 838,017, pub. 8–15–67. Cl. 46.
Frisch's Restaurants, Inc., Cincinnati, Ohio. 837,716, pub. 8–15–67. Multiple Class (Classes 2, 8, 22, 37, 38, 39, 44, 46, and 50).
Frund Products Co., Chicago, Ill. 695,133, canc. Cl. 5.
Fund American Companies, The, San Francisco, Calif. 838,082, pub. 8–15–67. Cl. 102.
Furniture Dynamics, Inc., Los Angeles, Calif. 721,330, canc. Cl. 32.
G and G Landscape Co., Inc., Shreveport, La. 838,084, pub. 8–15–67. Cl. 103.
General Aniline & Film Corp., New York, N.Y. 721,309, canc. Cl. 26.
General Electric Co., Philadelphia, Pa. 837,837, pub. 8–15–67. Cl. 21.
General Filter Co., Ames, Iowa. 837,937, pub. 8–15–67. Cl. 31.
General Innkeeping Acceptance Corp., Memphis, Tenn. 838,054, pub. 8–15–67. Multiple Class (Classes 100 and 102).
General Mills, Inc., Minneapolis, Minn. 838,016, pub. 8–15–67. Cl. 46.
General Motors Corp., Detroit, Mich. 837,894, pub. 8–15–67. Cl. 23.
General Tire & Rubber Co., The, Akron, Ohio. 721,177, canc. Cl. 1.
Giant Distributing Co.: *See*— Fairmont Foods Co.
Glamorene Products Corp., Clifton, N.J. 837,830, pub. 8–15–67. Cl. 21.
Global Import & Export, Inc., Miami, Fla. 837,924, pub. 8–15–67. Cl. 26.
Golf Digest, Inc., South Norwalk, Conn. 838,112. Cl. 38.
Goodyear Aerospace Corp., Akron, Ohio. 837,824, pub. 8–15–67. Cl. 19.
Goodyear's Rubber Shoe Co., The, Naugatuck, Conn., to Uniroyal, Inc., New York, N.Y. 65,996, ren. 10–31–67. Cl. 39.
Gopher Shooter's Supply Co., Inc., Faribault, Minn. 838,066, pub. 8–15–67. Cl. 101.
Grace, W. R., & Co., New York, N.Y. 837,710, pub. 8–15–67. Cl. 1.
Graphic Arts Publishing Co., Chicago, Ill. 837,963–4, pub. 8–15–67. Cl. 38.
Graymills Corp., Chicago, Ill. 837,904, pub. 8–15–67. Cl. 23.
Green Lawn Laboratories, Inc.: *See*— Hysan Products Co.
Guerlain, Inc., New York, N.Y. 838,139. Cl. 51.
Gustafson Mfg. Co., Inc., Corpus Christi, Tex. 837,905, pub. 8–15–67. Cl. 23.
H. & M. Sportswear, Inc., New Bedford, Mass. 721,372, canc. Cl. 39.
HRB-Singer, Inc., State College, Pa. 837,741, pub. 8–15–67. Multiple Class (Classes 6 and 26).
Hamilton-Pax, Inc., Chicago, Ill. 837,888, pub. 8–15–67. Cl. 23.
Hammond, Inc., Maplewood, N.J. 838,114. Cl. 38.
Hank Mann, Inc., Temple, Tex. 721,358, canc. Cl. 39.
Harris Paint Co., Tampa, Fla. 837,787, pub. 8–15–67. Cl. 16.
Hart Ski Mfg. Co., Inc., St. Paul, Minn. 837,849, pub. 8–15–67. Cl. 22.
Hartz Mountain Products Corp., New York, N.Y. 837,859, pub. 8–15–67. Cl. 22.
Hassenfeld Bros., Inc., Pawtucket, R.I. 837,851–3, pub. 8–15–67. Cl. 22.
Hassenfeld Bros., Inc., Pawtucket, R.I. 837,872, pub. 8–15–67. Cl. 22.
Heinemann Electric Co., Trenton, N.J. 837,920, pub. 8–15–67. Cl. 26.
Hess, Dorothy, Inc., Reisterstown, Md. 837,719, pub. 8–15–67. Cl. 2.
Hi-Way Body Builders: *See*— Cicchetti, John.
Hokko Chemical Industry Co., Ltd., Tokyo, Japan. 837,733. pub. 8–15–67. Cl. 6.
Hornstein Photo Sales, Inc., Chicago, Ill. 721,251, canc. Cl. 21.
Houbigant, Inc., New York, N.Y. 838,035, pub. 8–15–67. Cl. 51.
Hubbard, C. D., Fruit Co., to Santa Barbara Lemon Assn., Carpinteria, Calif. 239,203, ren. 10–31–67. Cl. 46.
Hudnut, Richard, Morris Plains, N.J. 228,747, ren. 10–31–67. Cl. 51.
Huebner Publications, Inc., Cleveland, Ohio. 838,074, pub. 8–15–67. Cl. 101.
Huntington Laboratories, Inc., Huntington, Ind. 436,726, ren. 10–31–67. Cl. 6.
Hysan Products Co., Chicago, from Green Lawn Laboratories, Inc., Skokie, Ill. 838,100. Cl. 6.
IXL Mfg. Corp., Wichita, Kans. 837,765–6, pub. 8–15–67. Cl. 13.
Illinois Syrup Co., Chicago, Ill. 838,011, pub. 8–15–67. Cl. 46.
Incentive Ideas, Inc., Dallas, Tex. 721,266, canc. Cl. 22.
Industrial Condenser Corp., Chicago, Ill. 837,841, pub. 8–15–67. Cl. 21.
Inter-American Foods Inc., Brownsville, Tex. 838,001, pub. 8–15–67. Cl. 46.
International Airport Hotel System, Inc., Los Angeles, Calif. 838,063, pub. 8–15–67. Cl. 100.
International Battery, Inc., Schiller Park, Ill. 837,839, pub. 8–15–67. Cl. 21.
International Dynamics Corp., Fort Madison, Iowa. 837,922, pub. 8–15–67. Cl. 26.
International Minerals & Chemical Corp., Skokie, Ill. 435,707, ren. 10–31–67. Cl. 46.
International Products Corp., New York, N.Y. 721,430–1, canc. Cl. 51.
International United Chemical Co., Los Angeles, Calif. 837,754, pub. 8–15–67. Cl. 12.
Investors Accumulation Plan: *See*— Investors Accumulation Plan, Inc.
Investors Accumulation Plan, Inc., d.b.a. Investors Accumulation Plan, Minneapolis, Minn. 838,077, pub. 8–15–67. Cl. 102.
Investors Syndicate of America, Inc., Minneapolis, Minn. 838,078. pub. 8–15–67. Cl. 102.
JFL, Inc., Dallas, Tex. 837,735, pub. 8–15–67. Cl. 6.
J/W Products, New York, N.Y. 837,723, pub. 8–15–67. Cl. 3.
Jack, Bill, Scientific Instrument Co., Solano Beach, Calif. 695,267, canc. Cl. 23.
Jamieson Laboratories, Inc., from Thermocal, Inc., Santa Monica, Calif. 699,746, canc. Cl. 21.
Jeanmarie Creations, Inc., Tulsa, Okla. 837,976, pub. 8–15–67. Cl. 38.
Jenn-Air Corp., Indianapolis, Ind. 837,942, pub. 8–15–67. Cl. 34.
Jet-Cit-Thru, Inc., Marshalltown, Iowa. 837,895, pub. 8–15–67. Cl. 23.
Johnson, Chester D., Omaha, Nebr. 837,962, pub. 8–15–67. Cl. 38.
Johnson, S. C., & Son, Inc., Racine, Wis. 837,727–8, pub. 8–15–67. Cl. 4.
Jones, Harold R., Inc., Eugene, Oreg. 696,626, canc. Cl. 12.
KOVR Broadcasting Co., Sacramento, Calif. 838,092, pub. 8–15–67. Cl. 107.
KVP Sutherland Paper Co., Kalamazoo, Mich. 721,339, canc. Cl. 37.
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Miyakojima-ku, Osaka, Japan. 838,047, pub. 8–15–67. Cl. 52.
Kenegafuchi Spinning Co., Ltd.: *See*— Kanegafuchi Boseki Kabushiki Kaisha.
Kelly-Springfield Tire Co., The, Cumberland, Md. 837,952, pub. 8–15–67. Cl. 35.
Kendall Co., The, Walpole, Mass. 837,989, pub. 8–15–67. Cl. 42.
Ken-Kraft Co., Inc., Milwaukee, Wis. 837,883, pub. 8–15–67. Cl. 23.
Kennametal, Inc., Latrobe, Pa. 721,279, canc. Cl. 23.
Kennedy, Peter, Inc., Seattle, Wash. 837,853–6, pub. 8–15–67. Cl. 22.
Kentucky Fried Chicken Corp., Nashville, Tenn. 838,062, pub. 8–15–67. Cl. 100.
K-Lath Corp., Monrovia, Calif. 837,762, pub. 8–15–67. Cl. 12.
Klosterbrennerei A.G. Erste Badische Wein- und Edelbranntweinbrennerei, Emmendingen, Germany. 721,416, canc. Cl. 49.
Klosterbrennerei A.G. Erste Badische Wein- und Edelbranntweinbrennerei, Emmendingen, Germany. 721,457, canc. Cl. 47.
Klosterbrennerei A.G. Erste Badische Wein- und Edelbranntweinbrennerei, Emmendingen, Germany. 721,460, canc. Cl. 49.
Kohnstamm, H., & Co., Inc., New York, N.Y. 838,050, pub. 8–15–67. Cl. 52.
Kroner Laboratories, New York, N.Y., to Pfeifbring-Werke A.G., Berlin-Charlottenburg, Germany. 430,187, ren. 10–31–67. Cl. 52.
L-U-C-E Mfg. Co., Kansas City, Mo. 431,117, ren. 10–31–67. Cl. 3.
La Vie Jewelry Corp., New York, N.Y. 721,318, canc. Cl. 28.
Lake Hamilton Concentrate, Inc., Bartow, Fla. 838,012, pub. 8–15–67. Cl. 46.
Langley Alloys Ltd., Langley, Slough, Buckinghamshire, England. 721,223, canc. Cl. 14.
Lauhoff Grain Co., Danville, Ill. 837,730, pub. 8–15–67. Cl. 5.
Lazier, J. F., Mfg. Co., St. Louis, Mo. 231,520, ren. 10–31–67. Cl. 46.
Leonard Refineries, Inc., Alma, Mich. 837,782, pub. 8–15–67. Cl. 15.
Les Plastiques Synthetiques S.A., Haute-Savoie, France. 837,850, pub. 8–15–67. Cl. 22.
Les Plastiques Synthetiques S.A., Haute-Savoie, France. 837,854, pub. 8–15–67. Cl. 22.
Lewis, Warner, Co., to Fram Corp., Providence, R.I. 733,404, new cert. Cl. 31.
Lien, Jorgen S., d.b.a. Jorgen S. Lien, Bergen, Norway. 837,915, pub. 8–15–67. Cl. 26.
Lincoln Metal Products Corp., Brooklyn, N.Y. 837,772, pub. 8–15–67. Cl. 13.
Loesch Laboratory Consultants, Inc., Houston, Tex. 838,132. Cl. 51.
Longines-Wittnauer Watch Co., Inc., New York, N.Y. 837,931, pub. 8–15–67. Cl. 27.
Loomtex Mills, Inc., Dalton, Ga. 703,002, canc. Cl. 42.
Lowe, E. S., Co., Inc., New York, N.Y. 837,861, pub. 8–15–67. Cl. 22.
Lund Metalcraft, New York Mills, Minn. 837,819, pub. 8–15–67. Cl. 19.
M. K. Products, Inc., Santa Ana, Calif. 837,946, pub. 8–15–67. Cl. 34.
MSL Industries, Inc., Chicago, Ill. 837,773, pub. 8–15–67. Cl. 13.
M. T. & D. Co., The, Cleveland, Ohio. 837,817, pub. 8–15–67. Cl. 19.
M. T. & D. Co., The, Cleveland, Ohio. 837,857, pub. 8–15–67. Cl. 22.

Manufacture des Montres Universal, Perret et Berthoud SA. (Universal Watch Factory, Perret & Berthoud, Ltd.), to Manufacture des Montres Universal Perret Freres SA., Geneva, Switzerland. 831,165–7, ren. 10–31–67. Cl. 27.

Manufacture des Montres Universal Perret Freres SA.: *See*—
Manufacture des Montres Universal, Perret et Berthoud SA. (Universal Watch Factory, Perret & Berthoud, Ltd.).

Marathon Shoe Co., to Smith Shoe Corp., Newmarket, N.H. 130,812, new cert. Cl. 39.

Marshman Development Corp., Chicago, Ill. 837,792, pub. 2–21–67. Cl. 18.

Marti, Jose S., d.b.a. Crusellas, Miami, Fla. 838,130. Cl. 51.

Martinez, B., Sons Co., San Antonio, Tex. 232,174, ren. 10–31–67. Cl. 46.

Mathieson, Olin, Chemical Corp., d.b.a. Olin, New York, N.Y. 837,743–4, pub. 8–15–67. Cl. 5.

Maxell, Hitachi, Ltd., Osaka, Japan. 837,834–5, pub. 8–15–67. Cl. 21.

McDonnell Douglas Corp., from Douglas Aircraft Co., Inc., Santa Monica, Calif. 837,815, pub. 8–15–67. Cl. 19.

McGraw-Hill, Inc., New York, N.Y. 837,970, pub. 8–15–67. Cl. 38.

McGuinnes, L. J., & Co., Ltd., Mimico, Ontario, Canada. 838,127. Cl. 49.

Mechanical Product Development Corp., Norwood, Pa. 837,917, pub. 8–15–67. Cl. 26.

Melandrea, Inc., New York, N.Y. 838,071, pub. 8–15–67. Cl. 101.

Menendez, E., Miami, Fla. 721,352, canc. Cl. 38.

Mennen Co., The, Morristown, N.J. 838,037, pub. 8–15–67. Cl. 51.

Merck & Co., Inc., Rahway, N.J. 837,799–801, pub. 8–15–67. Cl. 18.

Metro-Goldwyn-Mayer Inc., New York, N.Y. 837,961, pub. 8–15–67. Cl. 36.

Meyer, Joseph H., Bros., Brooklyn, to The Richelieu Corp., Holbrook, N.Y. 434,306, ren. 10–31–67. Cl. 28.

Meyercord Co., The, Chicago, Ill. 837,967, pub. 8–15–67. Cl. 38.

Midland Co., The, South Milwaukee, Wis. 702,532, canc. Cl. 23.

Midwest Products Co., Inc., Hobart, Ind. 837,865, pub. 8–15–67. Cl. 22.

Miller Publishing Co., The, Minneapolis, Minn. 838,116. Cl. 38.

Minkus Publications, Inc., New York, N.Y. 837,965, pub. 8–15–67. Cl. 38.

Minneapolis-Moline Co., Hopkins, Minn. 721,295, canc. Cl. 23.

Minnesota Mining and Mfg. Co., St. Paul, Minn. 721,191, canc. Cl. 4.

Minnesota Mining & Mfg. Co., St. Paul, Minn. 837,721, pub. 8–15–67. Cl. 2.

Minnesota Mining & Mfg. Co., St. Paul, Minn. 837,740, pub. 8–15–67. Cl. 6.

Minnesota Mining and Mfg. Co., St. Paul, Minn. 837,926, pub. 8–15–67. Cl. 26.

Minnesota Rubber, Minneapolis, from Minnesota Rubber Properties, Inc., d.b.a. Carlson Farms, St. Paul, Minn. 721,391–2, canc. Cl. 46.

Minnesota Rubber Co., d.b.a. Carlson Farms, Minneapolis, Minn. 721,393–5, canc. Cl. 46.

Minnesota Rubber Properties, Inc.: *See*—
Minnesota Rubber Co.

Miss Universe, Inc., New York, N.Y. 838,072–3, pub. 8–15–67. Cl. 101.

Mrs. Kinser's Home Style Foods, Inc., Atlanta, Ga. 838,008, pub. 8–15–67. Cl. 46.

Mobay Chemical Co., Pittsburgh, Pa. 721,194, canc. Cl. 6.

Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 431,053, ren. 10–31–67. Cl. 6.

Monsanto Co.: *See*—
Monsanto Chemical Co.

Monsanto Co., St. Louis, Mo. 837,738, pub. 8–15–67. Cl. 6.

Moorhead Plastics, Inc., Moorhead, Minn. 837,827, pub. 8–15–67. Cl. 19.

Morris, Paul, New York, N.Y. 721,316, canc. Cl. 28.

Morrison Milling Co., The, Denton, Tex. 838,010, pub. 8–15–67. Cl. 46.

Mosse, Inc., New York, N.Y. 837,993, pub. 8–15–67. Cl. 42.

Motor Travel Services, Inc., Minneapolis, Minn. 721,446, canc. Cl. B.

Moultrie Mfg. Co., Moultrie, Ga. 838,098. Cl. 1.

Mountain States Wholesale Co., Boise, Idaho. 837,999, pub. 8–15–67. Multiple Class (Classes 46 and 52).

Myers, Geo. T., & Co., to New England Fish Co., Seattle, Wash. 228,764, ren. 10–31–67. Cl. 46.

My-Ko Chemical Corp., Milwaukee, Wis. 838,029, pub. 8–15–67. Cl. 50.

N.V. Philips Gloeilampenfabrieken, Eindhoven, Netherlands. 837,968, pub. 8–15–67. Cl. 38.

Narrow Fabric Co., The, West Reading, to Wyomissing Corp., Reading, Pa. 228,871, ren. 10–31–67. Cl. 42.

Narrow Fabric Co., The, West Reading, to Wyomissing Corp., Reading, Pa. 229,254, ren. 10–31–67. Cl. 44.

Nash Engineering Co., South Norwalk, Conn. 238,169, ren. 10–31–67. Cl. 23.

Nash-Finch Co., Minneapolis, Minn. 838,018, pub. 8–15–67. Cl. 46.

National Aniline & Chemical Co., Inc., to Allied Chemical Corp., New York, N.Y. 233,018, ren. 10–31–67. Cl. 6.

National Aniline & Chemical Co., Inc., to Allied Chemical Corp., New York, N.Y. 233,059, ren. 10–31–67. Cl. 6.

National Cash Register Co., The, Dayton, Ohio. 837,923, pub. 8–15–67. Cl. 26.

National Dairy Products Corp.: *See*—
Breakstone Bros., Inc.

National Dairy Products Corp., New York, N.Y. 837,997, pub. 2–1–67. Cl. 46.

National Molasses Co., Willow Grove, Pa. 833,766, cor. Cl. 46.

National Starch and Chemical Corp., New York, N.Y. 838,020, pub. 8–15–67. Cl. 46.

Nava, G., Milan, Italy. 837,829, pub. 8–15–67. Cl. 19.

Navan, Inc., El Segundo, Calif. 838,028, pub. 8–15–67. Cl. 50.

Navco, Inc., St. Louis, Mo. 721,252, canc. Cl. 21.

Navco, Inc., St. Louis, Mo. 721,304, canc. Cl. 26.

Nevada Meat Co.: *See*—
Nevada Meat Market.

Nevada Meat Market, d.b.a. Nevada Meat Co., New York, N.Y. 838,120. Cl. 46.

New England Fish Co.: *See*—
Myers, Geo. T., & Co.

New Orleans Kitchen, Inc., Lafayette, La. 721,405, canc. Cl. 46.

New York College of Music, New York, N.Y. 837,975, pub. 8–15–67. Cl. 38.

New York Merchandise Co., Inc., New York, N.Y. 837,846, pub. 8–15–67. Cl. 21.

New York Snacktime, Inc., New York, N.Y. 837,998, pub. 8–15–67. Cl. 46.

Nicholson File Co., Providence, R.I. 837,909, pub. 8–15–67. Cl. 23.

Norton Co., Watervliet, N.Y. 838,093, pub. 8–15–67. Cl. 107.

Noxell Corp., Baltimore, Md. 837,796, pub. 8–15–67. Cl. 18.

Obolensky, Ivan, Inc., New York, N.Y. 837,969, pub. 8–15–67. Cl. 38.

Officine Meccaniche Antonio Nova, Milan, Italy. 837,912, pub. 8–15–67. Cl. 23.

Ohio Brass Co., The, Mansfield, Ohio. 837,884, pub. 8–15–67. Cl. 23.

Ohadee Co., The, to Maxon Premix Burner Co., Inc., Muncie, Ind. 732,640, new cert. Cl. 13.

Old Fitzgerald Distillery: *See*—
Stitzel-Weller Distillery.

Olin: *See*—
Olin Mathieson Chemical Corp.

Olsten, William, New York, N.Y. 838,068, pub. 8–15–67. Cl. 101.

Omark Industries, Inc., Portland, Oreg. 837,945, pub. 8–15–67. Cl. 34.

Omega Instrument Co.: *See*—
Rutishauser, Hans.

Oneida Ltd., Oneida, N.Y. 837,891, pub. 8–15–67. Cl. 23.

Organon, Inc.: *See*—
Roche-Organon, Inc.

Osborne, Gene, Anto Transport, San Francisco, Calif. 838,090, pub. 8–15–67. Cl. 105.

Osgood, C. H. & F. L., Norwich, Conn., to Osgood's India Cholagogue, Inc., Palisades Park, N.J. 63,287, ren. 10–31–67. Cl. 18.

Osgood's India Cholagogue, Inc.: *See*—
Osgood, C. H. & F. L.

Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y. 837,789, pub. 8–15–67. Cl. 16.

Packard-Bell Electronics Corp., Los Angeles, Calif. 721,249, canc. Cl. 21.

Palmolive-Peet Co., The, Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 232,897, ren. 10–31–67. Cl. 52.

Paperback Library, Inc., New York, N.Y. 838,113. Cl. 38.

Patent Searching Service: *See*—
Sernak, Cyril W.

Pecora Chemical Corp., Philadelphia, Pa. 837,731, pub. 8–15–67. Cl. 5.

Penn-Union Electric Corp., Erie, Pa. 837,774, pub. 8–15–67. Cl. 13.

Perfection Macaroni Co.: *See*—
Fresno Macaroni Mfg. Co., Inc.

Periflex Inc., Southfield, Mich. 837,953, pub. 8–15–67. Cl. 35.

Pfeibring-Werke A.G.: *See*—
Kroner Laboratories.

Pharmaceutical Laboratories, Inc., Jersey City, N.Y. 837,983, pub. 8–15–67. Cl. 40.

Pied Piper Shoe Co., to Smith Shoe Corp., Newmarket, N.H. 648,982, new cert. Cl. 39.

Pied Piper Shoe Co., to Smith Shoe Corp., Newmarket, N.H. 659,093, new cert. Cl. 39.

Pierce & Stevens Chemical Corp., Buffalo, N.Y. 837,786, pub. 8–15–67. Cl. 16.

Pioneer Industries, Inc., Darby, Pa. 721,424, canc. Cl. 51.

Pitchford Scientific Instruments Corp., Pittsburgh, Pa. 721,300, canc. Cl. 26.

Polan, Katz, & Co., Inc., Baltimore, Md. 837,985, pub. 8–15–67. Cl. 41.

Polaris Industries, Inc., Roseau, Minn. 721,246, canc. Cl. 19.

Poor & Co., Chicago, Ill. 837,780, pub. 8–15–67. Cl. 14.

Port-A-Pool Corp., Los Angeles, Calif. 837,875–6, pub. 8–15–67. Cl. 22.

Porter, H. K., Co., Inc., Pittsburgh, Pa. 837,750, pub. 8–15–67. Cl. 12.

Posner, I., Inc., Corona, N.Y. 837,984, pub. 8–15–67. Cl. 40.

Powerlock Floors, Inc., Philadelphia, Pa. 837,760, pub. 8–15–67. Cl. 12.

Premier Creations, Inc., Maspeth, N.Y. 837,943, pub. 8–15–67. Cl. 34.

Procter & Gamble Co., The, Cincinnati, Ohio. 721,267, canc. Cl. 22.

Publisher's Vending Services Inc., Minneapolis, Minn. 721,286, canc. Cl. 23.

Publisher's Vending Services Inc., Minneapolis, Minn. 721,288–9, canc. Cl. 23.

Putman Publishing Co., Chicago, Ill. 721,353, canc. Cl. 38.

Quinn, Edwin S.: *See*—
Strum, Van, & Towne, Inc.

RHM, Inc.: *See*—
Andrews, A. B., Co.

Radio Corp. of America, New York, N.Y. 721,250, canc. Cl. 21.

Rayline, Inc., Mineola, N.Y. 837,938, pub. 8–15–67. Cl. 34.

Readco Industries, Inc., Reading, Mass. 837,756, pub. 8–15–67. Cl. 12.

Readco Industries, Inc., Reading, Mass. 837,763, pub. 8–15–67. Cl. 12.

Recoton Corp., Long Island City, N.Y. 837,959, pub. 8–15–67. Cl. 36.

Reed, Roland, Associates, Inc., Alameda, Calif. 837,814, pub. 8–15–67. Cl. 19.

Revlon, Inc., New York, N.Y. 838,129. Cl. 51.

Revlon, Inc., New York, N.Y. 838,134–6. Cl. 51.

Rexall Chemical Co.: *See*—
Rexall Drug & Chemical Co.

Rexall Drug & Chemical Co., d.b.a. Rexall Chemical Co., Los Angeles, Calif. 837,712, pub. 8–15–67. Cl. 1.

Reynolds, R. J., Foods, Inc., New York, N.Y., from Filler Products, Inc., Forest Park, Ga. 838,119. Cl. 46.

Richard Mfg. Co., to M. Brunson Motley, Inc., Van Nuys, Calif. 720,865, new cert. Cl. 13.

Richelieu Corp., The: *See*—
Meyer, Joseph H., Bros.

Right Girl Temporary Service, Inc., Chicago, Ill. 838,070, pub. 8–15–67. Cl. 101.

Roche-Organon, Inc., Nutley, to Organon, Inc., West Orange, N.J. 432,440, ren. 10–31–67. Cl. 18.

Rogers Peet Co., New York, N.Y. 433,468, ren. 10–31–67. Cl. 39.

Roba-Werk Walter Buhner & Co., Bremen-Oberneuland, Germany. 833,209, cor. Cl. 18.

Rootes Motors, Ltd., London, England. 837,828, pub. 8–15–67. Cl. 19.

Rothmans of Pall Mall, Ltd., Zurich, Switzerland. 837,791, pub. 8–15–67. Cl. 17.

Rowland Products, Inc., Kensington, Conn. 837,708, pub. 8–15–67. Cl. 1.

Royal Crown Cola Co., Columbus, Ga. 837,994, pub. 8–15–67. Cl. 45.

Rudin & Roth, Inc., New York, N.Y. 837,982, pub. 8–15–67. Cl. 39.

Rust-Oleum Corp., Evanston, Ill. 837,788, pub. 8–15–67. Cl. 16.

Rutishauser, Hans, d.b.a. Omega Instrument Co., Pasadena, Calif. 721,298, canc. Cl. 26.

Safdeye Dabah International, Inc., New York, N.Y. 837,722, pub. 8–15–67. Multiple Class (Classes 3 and 39).

Safety Sake Enterprises, Inc., Washington, D.C. 721,417–8, canc. Cl. 50.

Sani-Jon of America, Inc., Warren, Mich. 837,770, pub. 8–15–67. Cl. 13.

Sanitarium & Hospital Equipment Co., to Battle Creek Equipment Co., Battle Creek, Mich. 233,179, ren. 10–31–67. Cl. 44.

Santa Barbara Lemon Assn.: *See*—
Hubbard, C. D., Fruit Co.

Sargent & Greenleaf, Inc., Rochester, N.Y. 837,913, pub. 8–15–67. Cl. 25.

Schlumbohm, Peter, to Chemex Corp., New York, N.Y. 432,975, ren. 10–31–67. Cl. 23.

Schultz, Dick: *See*—
Schultz, Richard M.

Schultz, Richard, d.b.a. Dick Schultz, Welcome, Minn. 721,408, canc. Cl. 46.

Schwartz, Allan L.: *See*—
Yankee Oil Co., Inc.

Scott Machine Development Corp., Inc., Walton, N.Y. 837,882, pub. 8–15–67. Cl. 23.

Sears, Elliot S., Pacific Palisades, Calif. 837,866, pub. 8–15–67. Cl. 22.

Sebel, D., & Co., Ltd., Erith, Kent, England. 433,183, ren. 10–31–67. Cl. 22.

Sentry Baggage Protection Co., New Canaan, Conn. 838,087, pub. 8–15–67. Cl. 105.

Sernk, Cyril W., d.b.a. Patent Searching Service, Washington, D.C. 721,440, canc. Cl. 101.

Seward's Dairy, Inc., Rutland, Vt. 838,000, pub. 8–15–67. Cl. 46.

Sheldons', Inc., Antigo, Wis. 837,880, pub. 8–15–67. Cl. 22.

Shell Oil Co., New York, N.Y. 837,758, pub. 8–15–67. Cl. 12.

Sida Clother Co., Ltd., Pusan, Korea. 837,978, pub. 8–15–67. Cl. 39.

Sifo Co., St. Paul, Minn. 721,271, canc. Cl. 22.

Signal Oil & Gas Co., Los Angeles, Calif. 837,781, pub. 8–15–67. Cl. 15.

Singer Co., The: *See*—
Anderson Electric Corp.

Siris, A. J., Products, New York, N.Y. 721,343, canc. Cl. 37.

Slim-Bilt, Inc., Wellesley, Mass. 721,373, canc. Cl. 39.

Smith, Elwin G., & Co., Inc., Pittsburgh, Pa. 837,745, pub. 8–15–67. Cl. 12.

Societa Metallurgica Italiana, Florence, Italy. 837,767, pub. 8–15–67. Multiple Class (Classes 13 and 14).

Societa Metallurgica Italiana, Florence, Italy. 837,778, pub. 8–15–67. Cl. 14.

Societe des Eaux Minerales de Contrexeville (Vosges), Paris, France. 721,452, canc. Cl. 45.

Societe Saint-Louvent Peyrat & Cie, Cognac, France. 838,125–6. Cl. 49.

Sola Basic Industries, Inc., Milwaukee, Wis. 837,941, pub. 8–15–67. Cl. 34.

Solari & C./Udine S.p.A., Udine, Italy. 837,932, pub. 8–15–67. Cl. 27.

Solitron Devices, Inc., Tappan, N.Y. 837,832–3, pub. 8–15–67. Cl. 21.

Solitron Devices, Inc., Tappan, N.Y. 837,845, pub. 8–15–67. Cl. 21.

Southern Weaving Co., Greenville, S.C. 837,838, pub. 8–15–67. Cl. 21.

Spare-Time Products, Inc., Cincinnati, Ohio. 837,878, pub. 8–15–67. Cl. 22.

Spaulding & Co., Chicago, Ill. 436,623, ren. 10–31–67. Cl. 23.

Specialloy, Inc., Chicago, Ill. 837,779, pub. 8–8–67. Cl. 14.

Specialties, Inc., Syosset, N.Y. 721,301, canc. Cl. 26.

Speer Carbon Co., Saint Marys, Pa. 721,255, canc. Cl. 21.

Sportsman's Market, Cincinnati, Ohio. 837,966, pub. 8–15–67. Cl. 38.

Spot-O-Gold Corp., Philadelphia, Pa. 837,974, pub. 8–15–67. Cl. 38.

Stader, Otto, d.b.a. Ardmore Specialties, Ardmore, Pa. 721,422, canc. Cl. 50.

Standard Oil Co., The, Cleveland, Ohio. 837,714, pub. 8–15–67. Cl. 1.

Standard Oil Co., The, Cleveland, Ohio. 837,755, pub. 8–15–67. Cl. 12.

Standard Oil Co., The, Cleveland, Ohio. 837,777, pub. 8–15–67. Cl. 13.

Standard Oil Co., The, Cleveland, Ohio. 837,785, pub. 8–15–67. Cl. 15.

Standard Oil Co. of California, San Francisco, Calif. 721,307, canc. Cl. 26.

Standard Oil Co. of California, San Francisco, Calif. 837,775, pub. 8–15–67. Cl. 13.

Standard Oil Co. of California, San Francisco, Calif. 837,842–3, pub. 8–15–67. Cl. 21.

Statistical Tabulating Corp., Chicago, Ill. 838,075, pub. 8–15–67. Cl. 101.

Steinberg-Baum Co., Chicago, Ill. 837,844, pub. 8–15–67. Cl. 21.

Steinberger Bros., Inc., New York, N.Y. 434,599, ren. 10–31–67. Cl. 43.

Stern & Herff Corp., New York, N.Y. 837,977, pub. 8–15–67. Cl. 39.

Stitzel-Weller Distillery, d.b.a. Old Fitzgerald Distillery, Louisville, Ky. 838,117. Cl. 45.

Strategic Merchandising Corp., New York, N.Y. 838,106. Cl. 22.

Strum, Van & Towne, Inc., New York, from Edwin S. Quinn, Rochester, N.Y. 721,347, canc. Cl. 38.

Studio Twelve: *See*—
Weymouth, Margaret E.

Stylex Timecraft & Jewelry Corp., New York, N.Y. 837,927, pub. 8–15–67. Cl. 27.

Sullivan Arms Corp., Indianapolis, Ind. 837,742, pub. 8–15–67. Cl. 9.

Sun Chemical Corp., New York, N.Y. 721,197, canc. Cl. 6.

Sun Vista Foods, Inc., Montebello, Calif. 837,996, pub. 2–1–66. Cl. 46.

Sunbeam Equipment Corp., Meadville, Pa. 721,332, canc. Cl. 34.

Superior Laboratories, Inc., Tyler, Tex. 721,434, canc. Cl. 52.

Survivors Benefit Insurance Co., Kansas City, Mo. 838,079, pub. 8–15–67. Cl. 102.

Swift & Co., Chicago, Ill. 232,002, ren. 10–31–67. Cl. 52.

Swift & Co., Chicago, Ill. 232,312–17, ren. 10–31–67. Cl. 5.

Swift & Co., Chicago, Ill. 232,423–4, ren. 10–31–67. Cl. 5.

Swift & Co., Chicago, Ill. 432,503, ren. 10–31–67. Cl. 10.

Tapecoat Co., Inc., The, Evanston, Ill. 837,764, pub. 8–15–67. Cl. 12.

Tektronix, Inc., Portland, Oreg. 721,306, canc. Cl. 26.

Teletype Corp., to Fairchild Camera and Instrument Corp., Syosset, N.Y. 284,366, new cert. Cl. 21.

Teletype Corp., to Fairchild Camera and Instrument Corp., Syosset, N.Y. 284,631, new cert. Cl. 23.

Tennessee Eastman Corp., Kingsport, Tenn., to Eastman Kodak Co., Rochester, N.Y. 433,452, ren. 10–31–67. Cl. 6.

Tennessee Industries, Inc., Jackson, Tenn. 837,862, pub. 8–15–67. Cl. 22.

Textron Electronics, Inc., d.b.a. Spectrolba, Sylmar, Calif. 837,921, pub. 8–15–67. Cl. 26.

Textron, Inc., Providence, R.I. 837,706, pub. 8–15–67. Multiple Class (Classes 1, 6, 15, and 16).

Textron, Inc., Providence, R.I. 837,729, pub. 8–15–67. Cl. 5.

Thermocal, Inc.: *See*—
Jamieson Laboratories, Inc.

Thompson, Edward L., Berkeley, Calif. 837,960, pub. 8–15–67. Cl. 36.

Thompson's Dairy, Inc., d.b.a. Washington Dairy Foods and Thompson's Honor Dairy, Washington, D.C. 832,253, cor. Cl. 46.

Time Saving Specialties, Minneapolis, Minn. 838,111. Cl. 37.

Tompkins' Label Service, Philadelphia, Pa. 838,085, pub. 8–15–67. Cl. 103.

Tourway Inns of America, Florence, Ala. 838,061, pub. 8–15–67. Cl. 100.

Transcon Mfg. Co., Dallas, Tex. 838,104. Cl. 21.

Transcontinental Gas Pipe Line Corp., Houston, Tex. 838,089, pub. 8–15–67. Cl. 105.

Traverse City Canning Co., Traverse City, Mich. 838,014, pub. 8–15–67. Cl. 46.

Tri Associates, Inc., Minneapolis, Minn. 837,793, pub. 8–15–67. Cl. 18.

Trostel, Albert, & Sons Co., Milwaukee, Wis. 721,176, canc. Cl. 1.

Tulsa Stockyards, Tulsa, Okla. 838,057, pub. 8–15–67. Cl. 100.

Tung-Sol Electric, Inc.: *See*—
Wagner Electric Corp.

Twinco Products Co., Inc., San Fernando, Calif. 837,990, pub. 8–15–67. Cl. 42.

Tyler Corp., Benson, Minn. 837,906, pub. 8–15–67. Cl. 23.

Ubiotica Corp., Detroit, Mich. 721,233–9, canc. Cl. 18.

Unarco Industries, Inc., Chicago, Ill. 837,759, pub. 8–15–67. Cl. 12.
Uncas Mfg. Co., Providence, R.I. 837,935, pub. 8–15–67. Cl. 28.
Uneeda Doll Co., Inc., New York, N.Y. 837,848, pub. 8–15–67. Cl. 22.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 63,687, ren. 10–31–67. Cl. 37.
Union Camp Corp.: *See*—
Union Bag & Paper Co., The.
Union Carbide Corp., New York, N.Y. 837,902, pub. 8–15–67. Cl. 23.
Union Metal Co., The, Canton, Ohio. 436,900, ren. 10–31–67. Cl. 50.
Uniroyal, Inc.: *See*—
Goodyear's Rubber Shoe Co., The.
United States Rubber Co.
United Industrial Corp.: *See*—
U.S. Semiconductor Products, Inc.
United Packaging Corp., Woburn, Mass. 837,707, pub. 8–15–67. Cl. 1.
United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 434,622, ren. 10–31–67. Cl. 40.
United States Rubber Co., New York, N.Y. 837,739, pub. 8–15–67. Cl. 6.
U.S. Semiconductor Products, Inc., from United Industrial Corp., Phoenix, Ariz. 721,254, canc. Cl. 21.
Unusual Toy Mfg., Inc., Denver, Colo. 837,864, pub. 8–15–67. Cl. 22.
Upjohn Co., The, Kalamazoo, Mich. 837,797, pub. 8–15–67. Cl. 18.
Up-Rite Hook Co., Toledo, Ohio. 837,776, pub. 8–15–67. Cl. 13.
Utah Lime & Stone Co., Salt Lake City, Utah. 708,235, canc. Cl. 1.
VEB Fahrradwerk Elite-Diamant, Karl-Marx-Stadt W, Germany. 837,886, pub. 8–15–67. Cl. 23.
Valcon Corp., Fort Smith, Ark. 837,717, pub. 8–15–67. Cl. 2.
Valdora, Albert, d.b.a. Valdora Produce Co., Riverside, Calif. 838,021, pub. 8–15–67. Cl. 46.
Valdora Produce Co.: *See*—
Valdora, Albert.
Valor Paint Corp., Springfield, Mass. 837,790, pub. 8–15–67. Cl. 16.
Vanguard Corp., Chicago, Ill. 837,748, pub. 8–15–67. Cl. 12.
Vanlon Products Co.: *See*—
Claude H. Davis.
Vefa, Inc., New York, N.Y. 837,768, pub. 8–15–67. Cl. 13.
Vesuvius Crucible Co., Swissvale, Pittsburgh, Pa. 38,899, pub. 8–15–67. Cl. 23.
Viking Pump Co., Cedar Falls, Iowa. 837,903, pub. 8–15–67. Cl. 23.
Viscount Products, Inc., New York, N.Y. 837,858, pub. 8–15–67. Cl. 22.
Vista-Visor Inc., Detroit, Mich. 721,244, canc. Cl. 19.
Vit-A-Way, Inc., Fort Worth, Tex. 837,794, pub. 8–15–67. Cl. 18.
W. & W. Pickle & Canning Co., to Whitfield Pickle Co., Inc., Montgomery, Ala. 231,824, ren. 10–31–67. Cl. 46.
Wagner Electric Corp., South Bend, Ind., from Tung-Sol Electric, Inc., Newark, N.J. 837,836, pub. 8–15–67. Cl. 21.
Wagoner Corp., Nashville, Tenn. 837,947–8, pub. 8–15–67. Cl. 34.
Waldman, Edward A., Co., Inc., New York, N.Y. 837,930, pub. 8–15–67. Cl. 27.
Walker, Hiram, & Sons, Inc., Peoria, Ill. 838,023, pub. 8–15–67. Cl. 49.
Walker Studio, Inc., The, Yonkers, N.Y. 721,437, canc. Cl. 100.
Wallau, Alex Lee, Inc., New York, N.Y. 721,368, canc. Cl. 39.
Wallpaper Council Inc. Wallcoverings Council Inc., New York, N.Y. 723,417. Am. 7(d). Cl. 200.
Waterman, Merrill, Largen & Co., New York, N.Y. 721,384, canc. Cl. 43.
Wedgwood Fabrics, New York, N.Y. 837,988, pub. 8–15–67. Cl. 42.
Wella Corp., The, Englewood, N.J. 838,030, pub. 11–3–64. Cl. 51.
Wells Fargo & Co., New York, N.Y. 838,059, pub. 8–15–67. Cl. 100.
Western Precipitation Corp., Los Angeles, Calif. 690,546, canc. Cl. 34.
Westwood Textile Mfg., Inc., Southbridge, Mass. 837,987, pub. 8–15–67. Cl. 42.
Weymouth, Margaret E., d.b.a. Studio Twelve, Pasadena, Calif., 837,907, pub. 8–15–67. Cl. 23.
White, Bryant, Louisville, Ky. 837 898, pub. 8–15–67. Cl. 23.
White Cross Stores, Inc., Monroeville, Pa. 838,036, pub. 8–15–67. Cl. 51.
Whitfield Pickle Co., Inc.: *See*—
W. & W. Pickle & Canning Co.
Whitney, Paul H., Clarendon Hills, Ill. 837,863, pub. 8–15–67. Cl. 22.
Whopper Stopper, Inc., Sherman, Tex. 837,869, pub. 8–15–67. Cl. 22.
Wilson, Walton, International Inc., Hoboken, N.J. 837,918, pub. 8–15–67. Cl. 26.
Wiss, J., and Sons Co., Newark, N.J. 837,908, pub. 8–15–67. Cl. 23.
Wittek Golf Range Supply Co., Inc., Chicago, Ill. 837,867, pub. 8–15–67. Cl. 22.
Wood Conversion Co., St. Paul, Minn. 837,771, pub. 8–15–67. Cl. 13.
Wood Conversion Co., St. Paul, Minn. 838,027, pub. 8–15–67. Cl. 50.
Wyandotte Chemicals Corp., Wyandotte, Mich. 838,101. Cl. 6.
Wyomissing Corp.: *See*—
Narrow Fabric Co., The.
Yankee Oil Co., Inc., Springfield, from Allan L. Schwartz, Longmeadow, Mass. 837,939, pub. 8–15–67. Multiple Class (Classes 34, 39, and 103).
York Label Corp., York, Pa. 838,026, pub. 8–15–67. Cl. 50.
Youngs Drug Products Corp., New York, N.Y. 838,052, pub. 8–15–67. Cl. 52.
Yum-Burger Corp. of America, The: *See*—
Council Mfg. Corp.

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